

Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton 4101 Shuffel Street NW North Canton, OH 44720 Tel: (330)497-9396

Laboratory Job ID: 240-144668-1 Client Project/Site: Ford LTP - Off Site

For:

ARCADIS U.S., Inc. 28550 Cabot Drive Suite 500 Novi, Michigan 48377

Attn: Kristoffer Hinskey

More Del Your

Authorized for release by: 3/5/2021 2:32:16 PM

Michael DelMonico, Project Manager I

(330)497-9396

Michael.DelMonico@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-144668-1

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Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

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

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

Duplicate Error Ratio (normalized absolute difference) **DER**

Dil Fac **Dilution Factor**

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

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

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control**

Relative Error Ratio (Radiochemistry) **RER**

Reporting Limit or Requested Limit (Radiochemistry) RL

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

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

Too Numerous To Count **TNTC**

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Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Job ID: 240-144668-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-144668-1

Comments

No additional comments.

Receipt

The samples were received on 2/19/2021 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 was 1.4° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Job ID: 240-144668-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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Sample Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Job ID: 240-144668-1

Lab Sample ID 240-144668-1	Client Sample ID TRIP BLANK	Matrix Water	Collected 02/17/21 00:00	Received 02/19/21 08:00	Asset I
240-144668-2	MW-125S_021721	Water	02/17/21 09:40	02/19/21 08:00	
240-144668-3	MW-125_021721	Water	02/17/21 10:55	02/19/21 08:00	

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Detection Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site	Job ID: 240-144668-1
Client Sample ID: TRIP BLANK	Lab Sample ID: 240-144668-1
No Detections.	
Client Sample ID: MW-125S_021721	Lab Sample ID: 240-144668-2
No Detections.	
Client Sample ID: MW-125_021721	Lab Sample ID: 240-144668-3

No Detections.

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK

Date Collected: 02/17/21 00:00 Date Received: 02/19/21 08:00 Lab Sample ID: 240-144668-1

Matrix: Water

Method: 8260B - Volatile O Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L		· ·	02/25/21 19:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 19:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 19:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 19:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 19:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			75 - 130					02/25/21 19:46	1
4-Bromofluorobenzene (Surr)	66		47 - 134					02/25/21 19:46	1
Toluene-d8 (Surr)	80		69 - 122					02/25/21 19:46	1
Dibromofluoromethane (Surr)	110		78 - 129					02/25/21 19:46	1

Eurofins TestAmerica, Canton

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-125S_021721

Date Collected: 02/17/21 09:40 Date Received: 02/19/21 08:00 Lab Sample ID: 240-144668-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/25/21 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133					02/25/21 21:07	1
Method: 8260B - Volatile O	rganic Compo	unds (GC/I	MS)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 23:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 23:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 23:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 23:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 23:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 23:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			75 - 130					02/25/21 23:44	1
4-Bromofluorobenzene (Surr)	66		47 - 134					02/25/21 23:44	1
Toluene-d8 (Surr)	79		69 - 122					02/25/21 23:44	1
Dibromofluoromethane (Surr)	108		78 - 129					02/25/21 23:44	1

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-125_021721

Date Collected: 02/17/21 10:55 Date Received: 02/19/21 08:00 Lab Sample ID: 240-144668-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/25/21 21:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/25/21 21:33	1
Method: 8260B - Volatile O	rganic Compo	unds (GC/I	VIS)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 00:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 00:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:08	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 00:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 00:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130					02/26/21 00:08	1
4-Bromofluorobenzene (Surr)	63		47 - 134					02/26/21 00:08	1
Toluene-d8 (Surr)	80		69 - 122					02/26/21 00:08	1
Dibromofluoromethane (Surr)	113		78 - 129					02/26/21 00:08	1

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Surrogate Summary

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

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

Matrix: Water Prep Type: Total/NA

			Pe	ercent Surre	ogate Reco
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-144668-1	TRIP BLANK	111	66	80	110
240-144668-2	MW-125S_021721	112	66	79	108
240-144668-3	MW-125_021721	110	63	80	113
240-144711-E-2 MS	Matrix Spike	93	88	91	94
240-144711-F-2 MSD	Matrix Spike Duplicate	91	92	91	92
LCS 240-474507/4	Lab Control Sample	88	88	88	91
MB 240-474507/7	Method Blank	102	68	80	101

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(70-133)	
240-144568-J-3 MS	Matrix Spike	79	
240-144568-J-3 MSD	Matrix Spike Duplicate	83	
240-144668-2	MW-125S_021721	80	
240-144668-3	MW-125_021721	81	
LCS 240-474490/4	Lab Control Sample	79	
MB 240-474490/5	Method Blank	81	

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

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1 Project/Site: Ford LTP - Off Site

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

Lab Sample ID: MB 240-474507/7

Matrix: Water

Analysis Batch: 474507

Client Sample ID: Method Blan	k
Prep Type: Total/N	A

MB	MB							
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene 1.0	U	1.0	0.19	ug/L			02/25/21 17:22	1
cis-1,2-Dichloroethene 1.0	U	1.0	0.16	ug/L			02/25/21 17:22	1
Tetrachloroethene 1.0	U	1.0	0.15	ug/L			02/25/21 17:22	1
trans-1,2-Dichloroethene 1.0	U	1.0	0.19	ug/L			02/25/21 17:22	1
Trichloroethene 1.0	U	1.0	0.10	ug/L			02/25/21 17:22	1
Vinyl chloride 1.0	U	1.0	0.20	ug/L			02/25/21 17:22	1

		MB	MB				
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	102		75 - 130		02/25/21 17:22	1
	4-Bromofluorobenzene (Surr)	68		47 - 134		02/25/21 17:22	1
	Toluene-d8 (Surr)	80		69 - 122		02/25/21 17:22	1
l	Dibromofluoromethane (Surr)	101		78 - 129		02/25/21 17:22	1

Lab Sample ID: LCS 240-474507/4

Matrix: Water

Analysis Batch: 474507

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

randy or Edition in 1001	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	10.0	9.27		ug/L		93	73 - 129
cis-1,2-Dichloroethene	10.0	9.22		ug/L		92	75 - 124
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 125
trans-1,2-Dichloroethene	10.0	9.77		ug/L		98	74 - 130
Trichloroethene	10.0	9.71		ug/L		97	71 - 121
Vinyl chloride	10.0	8.03		ug/L		80	61 - 134

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	88		47 - 134
Toluene-d8 (Surr)	88		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144711-E-2 MS

Matrix: Water

Analysis Batch: 474507

Client Sample ID: Matrix Spike
Prep 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	10.0	8.83		ug/L		88	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.92		ug/L		89	68 - 121
Tetrachloroethene	1.0	U	10.0	11.2		ug/L		112	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.58		ug/L		96	69 - 126
Trichloroethene	1.0	U	10.0	9.00		ug/L		90	56 - 124
Vinyl chloride	1.0	U	10.0	8.39		ug/L		84	49 - 136

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	88		47 - 134
Toluene-d8 (Surr)	91		69 - 122

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Prep Type: Total/NA

Client Sample ID: Matrix Spike

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

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

Lab Sample ID: 240-144711-E-2 MS

Matrix: Water

Analysis Batch: 474507

MS MS

%Recovery Qualifier Surrogate Limits Dibromofluoromethane (Surr) 94 78 - 129

Lab Sample ID: 240-144711-F-2 MSD

Matrix: Water

Analysis Batch: 474507

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	10.0	9.03		ug/L		90	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.44		ug/L		94	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	11.3		ug/L		113	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.55		ug/L		96	69 - 126	0	35
Trichloroethene	1.0	U	10.0	9.26		ug/L		93	56 - 124	3	35
Vinyl chloride	1.0	U	10.0	8.55		ug/L		86	49 - 136	2	35

MSD MSD %Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 91 75 - 130 4-Bromofluorobenzene (Surr) 92 47 - 134 Toluene-d8 (Surr) 91 69 - 122 Dibromofluoromethane (Surr) 92 78 - 129

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

MB MB

Lab Sample ID: MB 240-474490/5

Matrix: Water

Analysis Batch: 474490

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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,4-Dioxane 2.0 U 2.0 02/25/21 12:43 0.86 ug/L MB MB

%Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 81 70 - 133 02/25/21 12:43

Lab Sample ID: LCS 240-474490/4

Matrix: Water

Analysis Batch: 474490

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 1,4-Dioxane 10.0 10.7 ug/L 107 80 - 135

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 70 - 133 79

Lab Sample ID: 240-144568-J-3 MS

Matrix: Water

Analysis Batch: 474490

Allalysis Datell. 41 4450										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	46 - 170	

Eurofins TestAmerica, Canton

Client Sample ID: Matrix Spike

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QC Sample Results

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

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

	MS	MS									
Surrogate	%Recovery		Limits								
1,2-Dichloroethane-d4 (Surr)	79	4	70 - 133								
Lab Sample ID: 240-1445 Matrix: Water Analysis Batch: 474490	668-J-3 MSD					Client	Samp	le ID: N	Matrix Spil Prep Ty		
7 maryolo Batom 47 4400	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limi
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	46 - 170	0	26
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1 2-Dichloroethane-d4 (Surr)	83		70 133								

QC Association Summary

Client: ARCADIS U.S., Inc.

Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

GC/MS VOA

Analysis Batch: 474490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144668-2	MW-125S_021721	Total/NA	Water	8260B SIM	
240-144668-3	MW-125_021721	Total/NA	Water	8260B SIM	
MB 240-474490/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474490/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144568-J-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144568-J-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 474507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144668-1	TRIP BLANK	Total/NA	Water	8260B	
240-144668-2	MW-125S_021721	Total/NA	Water	8260B	
240-144668-3	MW-125_021721	Total/NA	Water	8260B	
MB 240-474507/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474507/4	Lab Control Sample	Total/NA	Water	8260B	
240-144711-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-144711-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

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Lab Chronicle

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144668-1 Date Collected: 02/17/21 00:00 **Matrix: Water**

Date Received: 02/19/21 08:00

Batch Batch Dilution Batch **Prepared** Method **Factor** Number or Analyzed **Prep Type** Type Run Analyst Lab Total/NA Analysis 8260B 474507 02/25/21 19:46 LRW TAL CAN

Client Sample ID: MW-125S_021721

Lab Sample ID: 240-144668-2 Date Collected: 02/17/21 09:40 **Matrix: Water**

Date Received: 02/19/21 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B			474507	02/25/21 23:44	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474490	02/25/21 21:07	SAM	TAL CAN

Client Sample ID: MW-125 021721 Lab Sample ID: 240-144668-3

Date Collected: 02/17/21 10:55

Date Received: 02/19/21 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474507	02/26/21 00:08	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474490	02/25/21 21:33	SAM	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Matrix: Water

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1 Project/Site: Ford LTP - Off Site

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Da		
California	State	2927	02-23-21 *		
Connecticut	State	PH-0590	12-31-21		
Florida	NELAP	E87225	06-30-21		
Georgia	State	4062	02-23-21 *		
Illinois	NELAP	004498	07-31-21		
Iowa	State	421	06-01-21		
Kansas	NELAP	E-10336	04-30-21		
Kentucky (UST)	State	112225	02-23-21 *		
Kentucky (WW)	State	KY98016	12-31-21		
Minnesota	NELAP	OH00048	12-31-21		
Minnesota (Petrofund)	State	3506	08-01-21		
New Jersey	NELAP	OH001	06-30-21		
New York	NELAP	10975	03-31-21		
Ohio VAP	State	CL0024	12-21-23		
Oregon	NELAP	4062	02-23-22		
Pennsylvania	NELAP	68-00340	08-31-21		
Texas	NELAP	T104704517-18-10	08-31-21		
USDA	US Federal Programs	P330-18-00281	09-17-21		
Virginia	NELAP	010101	09-14-21		
Washington	State	C971	01-12-22		
West Virginia DEP	State	210	12-31-21		

 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

T	TestAmerica Laboratory location; Brighton — 10448 Cital	10448 Citation Drive. Suite 200 / Brighton, MI 48116 / 810229-2763	-2763 MICHIGAN	
Client Contact	Regulatory program: DW	NPDES - RCRA - Other	190	
Company Name, Altauls	Client Project Manager: Kris Hinskey	Site Contact: Julia McClafferty	Lab Contact: Mike DelMonico	TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 734-644-5131	Telephone: 330-497-9396	
City/State/Zip: Novi. MI. 48377	Email: kristoffer. hinskev@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240	<i>y</i> .			
Project Name: Ford LTP Off-Site	Sampler Name:	ED TO		Walk-in client
Project Number: 30050315,402.04	Method of Shipment/Carrier:	(N		Lab sampling
PO#30050315.402.04	Shipping/Tracking No:	Crab:	82608	Job/SDG No:
Sample Identification	Sample Date Scaline Altra Solid Time Altra (Vilheer:	H1204	cis-1,2-DCE 8 Trans-1,2-DCE PCE 82608 TCE 82608 Vinyl Chloride Vinyl Chloride 8	Sample Speeific Notes / Special Instructions:
TRIP BLANK			×	1 Trip blank
MW-1255_021721	9 3/4/2	\ \mathcal{Z}	× × × ×	3 Uper For \$260 B
154) 50 251 - MM	7	50	X X X X X X	1
	240-144668 Chain of Custody			
Possible Hazard identification Non-Hazard	ant Poison B Unknown	Sample Disposal (A fee may be assessed itsamples are retained longer than 1 month) Return to Client Disposal Rel ah Archive Ear Month	ples are retained longer than 1 month) Archive For	
x/QC Requirements & Comments: s through Cadena at Itomalia@c ig requested.		CALCHI TO CARCHI TO TABOSAI DA LAD	Argive For 1 Months	
Relinquished by: Relinquished by: Relinquished by:	5	1630 Received by MUMIN 1700 Received by NOUT (COLD STORMSE ARCANTS	Date Time: 21 1630 Date Time: 21 1630 Date Time: 21 1630
Commence Construction of The Construction of T	118/8/1/2 HT 3/18/34	11:38 Chard B.	that the	1:01 16/8/16

Contacted Fivi	Date	by	via Verbal V	oice Mail Other
Concerning				
18. CHAIN OF CUST	ODY & SAMPLE DISC	CREPANCIES add	litional next page	Samples processed by:
19. SAMPLE CONDITION Sample(s)		_were received after the	recommended hold	ing time had expired.
30.1111116151				
Sample(s)		were received v	ith bubble >6 mm	in diameter. (Notify PM)
		were received v	/ith bubble >6 mm i	in diameter. (Notify PM)
Sample(s)	RVATION			rther preserved in the laboratory.

DATA VERIFICATION REPORT



March 05, 2021

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: 30050315.402.04 off site

Event Specific Scope of Work References: Sample COC

Laboratory: TestAmerica - North Canton

Laboratory submittal: 144668-1 Sample date: 2021-02-17

Report received by CADENA: 2021-03-05

Initial Data Verification completed by CADENA: 2021-03-05

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

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

There were no significant QC anomalies or exceptions to report.

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

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

Analytical Results Summary

Reportable Results Only

CADENA Project ID: E203631

Laboratory: TestAmerica - North Canton

Laboratory Submittal: 144668-1

		Sample Name:	TRIP BLA	ANK			MW-125	5S_0217	21		MW-12	5_02172	1	
		Lab Sample ID:	2401446	5681			2401446	5682			2401446	6683		
		Sample Date:	2/17/20	21			2/17/20	21			2/17/20	21		
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSW-8260	<u>OB</u>													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
OSW-8260	<u>OBBSim</u>													
	1,4-Dioxane	123-91-1					ND	2.0	ug/l		ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-144668-1

CADENA Verification Report: 2021-03-05

Analyses Performed By: TestAmerica

North Canton, Ohio

Report # 40595R Review Level: Tier III Project: 30050315.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-144668-1 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) includes 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 C			Ana	lysis
Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	voc	VOC SIM
TRIP BLANK	240-144668-1	Water	02/17/2021		Х	
MW-125S_021721	240-144668-2	Water	02/17/2021		X	Х
MW-125_021721	240-144668-3	Water	02/17/2021		Х	X

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

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

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260B and 8260B SIM. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

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.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - 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 8260B/8260B-SIM	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

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

System performance and column resolution were acceptable.

3. Calibration

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

3.1 Initial Calibration

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

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

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

3.2 Continuing Calibration

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

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

4. Internal Standard Performance

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

All internal standard responses were within control limits.

5. Field Duplicate Analysis

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

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

6. Compound Identification

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

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

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

DATA VALIDATION CHECKLIST FOR VOCs

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

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE:

DATE: March 17, 2021

PEER REVIEW: Andrew Korycinski

DATE: March 18, 2021

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

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

MICHIGAN

TestAmerica

Client Contact	Regula	tory program	1:	200	W	-	NPDES		" RCRA		(Other	and applications	***********			-	9()			
Company Name: Arcadis	Client Besieve	VI	***			Tai															TestAmerica Laboratories,
Address: 28550 Cabot Drive, Suite 500	Cheft Project	Manager: Kris	Hinsi	Key		Site	Contact:	Julia !	1cClaffer	rty			La	b Conta	ict: Mi	ke Del	Мопіс	•			COC No:
City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240					Telephone: 734-644-5131					Telephone: 330-497-9396										
	Email: kristof	Email: kristoffer.hinskey@arcadis.com Sampler Name:					Analysis Turnaround Time TAT if different from below						A	nalys	es			of COCs For lab use only			
Phone: 248-994-2240												T									
Project Name: Ford LTP Off-Site						IAI	if different		weeks	-											Walk-in client
Project Number: 30050315.402.04	Emma	Withe	265	COCH		_ 1	0 day		weeks												Lab sampling
Project Number: 30050515.402.04	Method of Ship	oment/Carrier:				1			week days		2	5		8			_	SIM			
PO # 30050315.402.04	Shipping/Trac	king No:				1			day		Sample (Y/N)	Č.	90508	826			8260	8093			Job/SDG No:
				Matr	ix	上	Containe	rs & Pr	eservatives	3	amp	C C	929029	DOC	9	8	ride	ne 82			
Sample Identification	Sample Date	Sample Time	Air	Aqueous Sediment	Solid Other:	H2SO4	HNO3	NaOH ZaAe/	NaOH Unpres		Filtered S	Composite=C / Grab=G	1,1-DUE 826	Trans-1,2-DCE 82608	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B			Sample Specific Notes / Special Instructions:
TRIP BLANK							1						, .								1 - 2 - 1 - 1
				1							7	G ?	XX	<u>, X</u>	X	X	X	X	\perp		1 Trip blank
MW-1255_021721	2/17/21	940		6			6				2	9	XX	X	X	X	X	X			3 vocs for \$260 3
MW-125_021721	2/17/21	1055		6			6				10	3	KX	X	X	X	X	X			*
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									++			1		+	\dagger						
Possible Hazard Identification Non-Hazard ilammable sin Irri					1	S			A fee ma	y be as	sesse	d ifsa	mples				than 1				
Non-Hazard lammable cin Irri Special Instructions/QC Requirements & Comments:	tant Poise	on B	Unk	nown			Retu	m to Cl	ient	✓ Di	sposa	ByL	ab		Archiv	e For		Mont	hs		
Submit all results through Cadena at jtomalia@cadena Level IV Reporting requested.	co.com. Cadena i	#E203631					/														
Relinquished by	Company:	A -		Date/Tjme		-		Receiv	ed by/	1		1				Com	nanyi				Date/Time:
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Relinquished by:	Company: AR	CT 0-1-3	<u>'</u>	Date/Time:	"/	1/ 17	100	Receiv	ed in Lab			<u> </u>		,00	OIC		OE pany	1	TRUF	TUL	2/17/2/// 170 Date/Time:
Relinquished by:		adis	- 1													7	A				21921 800
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British A		730		2/18/ 2/18/	1/1	, , 1	20	10	ver	cu		D		un	u	7	t	5/1	/		9/18/81 10.
- June Falling	71	71	0	L/10/	H	//	58														

Client: ARCADIS U.S., Inc. Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144668-1 Date Collected: 02/17/21 00:00

Matrix: Water Date Received: 02/19/21 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 19:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 19:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 19:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 19:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 19:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130			-		02/25/21 19:46	1
4-Bromofluorobenzene (Surr)	66		47 - 134					02/25/21 19:46	1
Toluene-d8 (Surr)	80		69 - 122					02/25/21 19:46	1
Dibromofluoromethane (Surr)	110		78 - 129					02/25/21 19:46	1

Lab Sample ID: 240-144668-2 Client Sample ID: MW-125S_021721

Date Collected: 02/17/21 09:40 Date Received: 02/19/21 08:00

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/25/21 21:07	1
Surrogate 1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits 70 - 133			-	Prepared	Analyzed 02/25/21 21:07	Dil Fac

Method: 8260B - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 23:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 23:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 23:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 23:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 23:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 23:44	1

Surrogate	%Recovery	Qualifier	Limits	Pr	epared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130			02/25/21 23:44	1
4-Bromofluorobenzene (Surr)	66		47 - 134			02/25/21 23:44	1
Toluene-d8 (Surr)	79		69 - 122			02/25/21 23:44	1
Dibromofluoromethane (Surr)	108		78 - 129			02/25/21 23:44	1

Client Sample ID: MW-125 021721 Lab Sample ID: 240-144668-3

Date Collected: 02/17/21 10:55 Date Received: 02/19/21 08:00

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL Un	nit D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86 ug/	g/L		02/25/21 21:33	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	81		70 - 133				02/25/21 21:33	1	

Matrix: Water

Matrix: Water

Client: ARCADIS U.S., Inc.

Job ID: 240-144668-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-125_021721 Lab Sample ID: 240-144668-3

Date Collected: 02/17/21 10:55 Matrix: Water Date Received: 02/19/21 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 00:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 00:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:08	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 00:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 00:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130					02/26/21 00:08	1
4-Bromofluorobenzene (Surr)	63		47 - 134					02/26/21 00:08	1
Toluene-d8 (Surr)	80		69 - 122					02/26/21 00:08	1
Dibromofluoromethane (Surr)	113		78 - 129					02/26/21 00:08	1



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton 4101 Shuffel Street NW North Canton, OH 44720 Tel: (330)497-9396

Laboratory Job ID: 240-144705-1 Client Project/Site: Ford LTP - Off Site

For:

ARCADIS U.S., Inc. 28550 Cabot Drive Suite 500 Novi, Michigan 48377

Attn: Kristoffer Hinskey

Mode Del Your

Authorized for release by: 3/8/2021 10:51:44 AM

Michael DelMonico, Project Manager I (330)497-9396 Michael.DelMonico@Eurofinset.com

·····LINKS ······

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-144705-1

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Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

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

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

Duplicate Error Ratio (normalized absolute difference) **DER**

Dil Fac **Dilution Factor**

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

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

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control**

Relative Error Ratio (Radiochemistry) **RER**

Reporting Limit or Requested Limit (Radiochemistry) RL

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

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

Too Numerous To Count **TNTC**

Eurofins TestAmerica, Canton

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Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Job ID: 240-144705-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-144705-1

Comments

No additional comments.

Receipt

The samples were received on 2/20/2021 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 was 1.7° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Job ID: 240-144705-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Job ID: 240-144705-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144705-1	TRIP BLANK	Water			ASSECTED
240-144705-2	MW-129S_021821	Water	02/18/21 09:50	02/20/21 08:00	
240-144705-3	MW-129_021821	Water	02/18/21 11:20	02/20/21 08:00	

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Detection Summary

Client Sample ID: TRIP BLANK	Lab Sample ID: 240-144705-1
No Detections.	
Client Sample ID: MW-129S_021821	Lab Sample ID: 240-144705-2
No Detections.	
Client Sample ID: MW-129_021821	Lab Sample ID: 240-144705-3

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Job ID: 240-144705-1

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Client: ARCADIS U.S., Inc.

No Detections.

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144705-1 Date Collected: 02/18/21 00:00

Matrix: Water Date Received: 02/20/21 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 16:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 16:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:47	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 16:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 16:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130					02/26/21 16:47	1
4-Bromofluorobenzene (Surr)	103		47 - 134					02/26/21 16:47	1
Toluene-d8 (Surr)	90		69 - 122					02/26/21 16:47	1
Dibromofluoromethane (Surr)	102		78 - 129					02/26/21 16:47	1

3/8/2021

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-129S_021821

Date Collected: 02/18/21 09:50 Date Received: 02/20/21 08:00

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Lab Sample ID: 240-144705-2

02/26/21 17:12

02/26/21 17:12

02/26/21 17:12

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 15:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/26/21 15:25	1
Method: 8260B - Volatile O	rganic Compo	unds (GC/	MS)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 17:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 17:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 17:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			75 - 130					02/26/21 17:12	

47 - 134

69 - 122

78 - 129

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3/8/2021

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-129_021821

Date Collected: 02/18/21 11:20 Date Received: 02/20/21 08:00 Lab Sample ID: 240-144705-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 15:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/26/21 15:50	1
Method: 8260B - Volatile O	rganic Compo	unds (GC/I	MS)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 17:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 17:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 17:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			75 - 130					02/26/21 17:36	1
4-Bromofluorobenzene (Surr)	103		47 - 134					02/26/21 17:36	1
Toluene-d8 (Surr)	93		69 - 122					02/26/21 17:36	1
Dibromofluoromethane (Surr)	102		78 - 129					02/26/21 17:36	1

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Surrogate Summary

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

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

Matrix: Water Prep Type: Total/NA

			Pe	ercent Surre	ogate Reco
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-144705-1	TRIP BLANK	102	103	90	102
240-144705-2	MW-129S_021821	101	105	93	99
240-144705-3	MW-129_021821	101	103	93	102
240-144712-E-3 MS	Matrix Spike	92	103	94	93
240-144712-H-3 MSD	Matrix Spike Duplicate	93	103	94	94
LCS 240-474649/5	Lab Control Sample	93	103	93	94
MB 240-474649/8	Method Blank	101	103	91	103

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(70-133)	
240-144705-2	MW-129S_021821	81	
240-144705-3	MW-129_021821	81	
240-144712-L-3 MS	Matrix Spike	80	
240-144712-L-3 MSD	Matrix Spike Duplicate	81	
LCS 240-474632/4	Lab Control Sample	80	
MB 240-474632/5	Method Blank	80	

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

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3/8/2021

Client: ARCADIS U.S., Inc.

Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: MB 240-474649/8

Matrix: Water

Analysis Batch: 474649

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

MB MB Result Qualifier RL **MDL** Unit Dil Fac Analyte D Prepared Analyzed 1,1-Dichloroethene 1.0 U 1.0 0.19 ug/L 02/26/21 12:15 cis-1,2-Dichloroethene 1.0 U 1.0 0.16 ug/L 02/26/21 12:15 1.0 U Tetrachloroethene 1.0 0.15 ug/L 02/26/21 12:15 0.19 ug/L trans-1,2-Dichloroethene 1.0 U 1.0 02/26/21 12:15 02/26/21 12:15 Trichloroethene 10 U 1.0 0.10 ug/L Vinyl chloride 1.0 U 1.0 0.20 ug/L 02/26/21 12:15

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 75 - 130 1,2-Dichloroethane-d4 (Surr) 101 02/26/21 12:15 4-Bromofluorobenzene (Surr) 103 47 - 134 02/26/21 12:15 91 69 - 122 02/26/21 12:15 Toluene-d8 (Surr) Dibromofluoromethane (Surr) 103 78 - 129 02/26/21 12:15

Lab Sample ID: LCS 240-474649/5

Matrix: Water

Analysis Batch: 474649

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

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit %Rec 1,1-Dichloroethene 20.0 20.0 100 73 - 129 ug/L cis-1,2-Dichloroethene 20.0 19.8 ug/L 99 75 - 124 Tetrachloroethene 20.0 19.2 70 - 125 ug/L 96 74 - 130 trans-1.2-Dichloroethene 20.0 19.5 ug/L 97 Trichloroethene 20.0 18.2 91 71 - 121 ug/L Vinyl chloride 20.0 23.3 ug/L 116 61 - 134

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 75 - 130 4-Bromofluorobenzene (Surr) 103 47 - 134 69 - 122 Toluene-d8 (Surr) 93 78 - 129 Dibromofluoromethane (Surr) 94

Lab Sample ID: 240-144712-E-3 MS

Matrix: Water

Analysis Batch: 474649

Client Sample ID: Matrix Spike Prep 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	20.0	19.7		ug/L		99	64 - 132	
cis-1,2-Dichloroethene	1.0	U	20.0	20.1		ug/L		100	68 - 121	
Tetrachloroethene	1.0	U	20.0	19.0		ug/L		95	52 - 129	
trans-1,2-Dichloroethene	1.0	U	20.0	19.7		ug/L		98	69 - 126	
Trichloroethene	1.0	U	20.0	17.6		ug/L		88	56 - 124	
Vinyl chloride	1.0	U	20.0	25.7		ug/L		129	49 - 136	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	94		69 - 122

Eurofins TestAmerica, Canton

3/8/2021

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Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Job ID: 240-144705-1

Client Sample ID: Matrix Spike

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

Lab Sample ID: 240-144712-E-3 MS

Matrix: Water

Analysis Batch: 474649

Prep Type: Total/NA

MS MS

%Recovery Qualifier Limits Surrogate Dibromofluoromethane (Surr) 93 78 - 129

Lab Sample ID: 240-144712-H-3 MSD

Matrix: Water

Analysis Batch: 474649

Client Sample ID: Matrix Spike Duplicate **Prep Type: Total/NA**

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits RPD Limit Analyte Result Qualifier Unit D %Rec 1.0 U 1,1-Dichloroethene 20.0 20.7 ug/L 104 64 - 132 5 35 cis-1,2-Dichloroethene 1.0 U 20.0 21 0 ug/L 105 68 - 121 35 4 Tetrachloroethene 1.0 U 20.0 19.5 ug/L 97 52 - 129 35 trans-1.2-Dichloroethene 1.0 U 20.0 20.2 101 35 ug/L 69 - 126 3 Trichloroethene 1.0 U 20.0 19.0 ug/L 95 56 - 124 8 35 Vinyl chloride 1.0 U 20.0 25.1 ug/L 125 49 - 136 35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	94		78 - 129

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

Lab Sample ID: MB 240-474632/5

Matrix: Water

Analysis Batch: 474632

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

MB MB **Analyte** Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,4-Dioxane 2.0 U 2.0 0.86 ug/L 02/26/21 10:47

MB MB

%Recovery Qualifier Limits Dil Fac Surrogate Prepared Analyzed 1,2-Dichloroethane-d4 (Surr) 80 70 - 133 02/26/21 10:47

Lab Sample ID: LCS 240-474632/4

Analysis Batch: 474632

Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Spike LCS LCS Added Result Qualifier Analyte Unit D %Rec Limits 1,4-Dioxane 10.0 10.5 ug/L 105 80 - 135

LCS LCS

2.0 U

%Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 70 - 133 80

Lab Sample ID: 240-144712-L-3 MS

Matrix: Water

1,4-Dioxane

Matrix: water									Prep Type: 10	tai/NA
Analysis Batch: 474632										
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	

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ug/L

Eurofins TestAmerica, Canton

3/8/2021

Client Sample ID: Matrix Spike

46 - 170

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QC Sample Results

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

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

	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	80		70 - 133								
Lab Sample ID: 240-144 Matrix: Water Analysis Batch: 474632						Client	Samp	le ID: N	latrix Spil Prep Ty		
•		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	10.2		ug/L		102	46 - 170	0	26
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	81		70 - 133								

QC Association Summary

Client: ARCADIS U.S., Inc.

Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

GC/MS VOA

Analysis Batch: 474632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144705-2	MW-129S_021821	Total/NA	Water	8260B SIM	
240-144705-3	MW-129_021821	Total/NA	Water	8260B SIM	
MB 240-474632/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474632/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144712-L-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144712-L-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 474649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144705-1	TRIP BLANK	Total/NA	Water	8260B	
240-144705-2	MW-129S_021821	Total/NA	Water	8260B	
240-144705-3	MW-129_021821	Total/NA	Water	8260B	
MB 240-474649/8	Method Blank	Total/NA	Water	8260B	
LCS 240-474649/5	Lab Control Sample	Total/NA	Water	8260B	
240-144712-E-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-144712-H-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

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Lab Chronicle

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Date Received: 02/20/21 08:00

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144705-1 Date Collected: 02/18/21 00:00

Matrix: Water

Batch Batch Dilution Batch **Prepared** Method **Factor** or Analyzed **Prep Type** Type Run Number Analyst Lab Total/NA Analysis 8260B 474649 02/26/21 16:47 HMB TAL CAN

Client Sample ID: MW-129S_021821

Lab Sample ID: 240-144705-2 Date Collected: 02/18/21 09:50 **Matrix: Water**

Date Received: 02/20/21 08:00

		Batch	Batch		Dilution	Batch	Prepared		
Pre	р Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Tota	al/NA	Analysis	8260B		1	474649	02/26/21 17:12	HMB	TAL CAN
Tota	al/NA	Analysis	8260B SIM		1	474632	02/26/21 15:25	SAM	TAL CAN

Client Sample ID: MW-129 021821

Lab Sample ID: 240-144705-3 Date Collected: 02/18/21 11:20 **Matrix: Water**

Date Received: 02/20/21 08:00

Batch Dilution **Batch Batch** Prepared Method Number **Prep Type** Type Run **Factor** or Analyzed Analyst Lab 474649 02/26/21 17:36 HMB Total/NA Analysis 8260B TAL CAN Total/NA Analysis 8260B SIM 474632 02/26/21 15:50 SAM TAL CAN 1

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 240-144705-1 Project/Site: Ford LTP - Off Site

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	er Expiration Date		
California	State	2927	02-23-21 *		
Connecticut	State	PH-0590	12-31-21		
Florida	NELAP	E87225	06-30-21		
Georgia	State	4062	02-23-21 *		
Illinois	NELAP	004498	07-31-21		
lowa	State	421	06-01-21		
Kansas	NELAP	E-10336	04-30-21		
Kentucky (UST)	State	112225	02-23-21 *		
Kentucky (WW)	State	KY98016	12-31-21		
Minnesota	NELAP	OH00048	12-31-21		
Minnesota (Petrofund)	State	3506	08-01-21		
New Jersey	NELAP	OH001	06-30-21		
New York	NELAP	10975	03-31-21		
Ohio VAP	State	CL0024	12-21-23		
Oregon	NELAP	4062	02-23-22		
Pennsylvania	NELAP	68-00340	08-31-21		
Texas	NELAP	T104704517-18-10	08-31-21		
USDA	US Federal Programs	P330-18-00281	09-17-21		
Virginia	NELAP	010101	09-14-21		
Washington	State	C971	01-12-22		
West Virginia DEP	State	210	12-31-21		

 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Chapter Name; Variety Chap	I	TestAmerica Laboratory Iocation: Brighton 10448 Citati	10448 Citation Drive. Suite 200 / Brighton, MI 48116 / 810:229-2763	MIC	HGAN STATE OF STREET, STATE OF
Marie 1989 Cale Drive, Sain 500 Cont Paper Sain 500 Trapper 20 wat 20 to 1 Trapper 20 wat 20 to 2 Trapper 20 wat 20 w	Client Contact Company Name: Arcadis		RCRA		
Concentration Concentratio	Address: 28550 Cabot Drive. Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Julia McClafferty	Lab Contact: Mike DelMonico	COC No:
Property 146 Political Property Prop	City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 734-644-5131	Telephone: 330-497-9396	-
Project View Ford LTP Off Sine Propert View Project View P	Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	
TRIP BLANK	Project Name: Ford LTP Off-Site	Sampler Name:	TAT if different from below 3 weeks		Walk-in client
No. 124 02.05	Project Number: 30050315.402.04	Method of Shipment/Carrier:	1 week	1	Lab sampling
Sumple transferation Sumple Date Sumple Continued by Sumple Co	PO # 30050315.402.64	Shipping/Tracking No:	/ X) ə[8560B 8 8260	Job/SDG No:
Straigle teastification Straigle Date Straigle Time 2 2 2 2 2 2 2 2 2			Containers & Preservatives mp	1,2-DCE 82 260B 260B	O company
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Possible Hazard Identification Van-Hazard Sample Hazard Identification Van-Hazard Sample Disposal (A fee may be assessed Hamples are retained longer than I month) Special Instructions/QC Requirements & Comments: Submit all results through Gadena at Journalia@cadenaco.com, Cadena #E203631 Level IV Reporting requested. Relinquished by: Received in Laboratory by: Company: Date/Ime: Date/Ime: Date			240-144705 Chain of Custody		
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Sumple Disposal (A fee may be assessed ifamples are retained longer than 1 month) Special Instructions/OR Requirements & Comments: Submit all results through Cadena #E203631 Level IV Reporting requested. Relinquished by: Company:					
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Kelinquista by: Company: Date/Time: Date/Time: A 14.33 Received in Laboratory by: Company: Date/Time: Date/Tim	and the same of th	adis 2		Me Company.	Date/Time: Date/10.11
1000 February Librarians Librarians of Landscape Part of Control Contr	Charles the batter his	The Direction	8	Company	2.

WI-NC-099

_____were further preserved in the laboratory.

VOA Sample Preservation - Date/Time VOAs Frozen:

20. SAMPLE PRESERVATION

Time preserved: Preservative(s) added/Lot number(s):

Sample(s)

DATA VERIFICATION REPORT



March 08, 2021

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: 30050315.402.04 off site

Event Specific Scope of Work References: Sample COC

Laboratory: TestAmerica - North Canton

Laboratory submittal: 144705-1 Sample date: 2021-02-18

Report received by CADENA: 2021-03-08

Initial Data Verification completed by CADENA: 2021-03-08

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

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

There were no significant QC anomalies or exceptions to report.

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description							
<	Less than the reported concentration.							
>	Greater than the reported concentration.							
В	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.							
Е	e 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

Reportable Results Only

CADENA Project ID: E203631

Laboratory: TestAmerica - North Canton

Laboratory Submittal: 144705-1

		Sample Name:	TRIP BLA	ANK			MW-129	9S_0218	21		MW-129	9_02182	1	
		Lab Sample ID:	2401447	7051			2401447	7052			2401447	7053		
		Sample Date:	2/18/20	21			2/18/20	21			2/18/20	21		
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSW-8260	<u>OB</u>													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
OSW-8260	<u>OBBSim</u>													
	1,4-Dioxane	123-91-1					ND	2.0	ug/l		ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-144705-1

CADENA Verification Report: 2021-03-08

Analyses Performed By: TestAmerica

North Canton, Ohio

Report # 40600R Review Level: Tier III Project: 30050315.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-144705-1 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) includes 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	240-144705-1	Water	02/18/2021		Х	
MW-129S_021821	240-144705-2	Water	02/18/2021		X	X
MW-129_021821	240-144705-3	Water	02/18/2021		Х	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

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

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260B and 8260B SIM. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

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.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - 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 8260B/8260B-SIM	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

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

System performance and column resolution were acceptable.

3. Calibration

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

3.1 Initial Calibration

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

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

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

3.2 Continuing Calibration

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

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

4. Internal Standard Performance

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

All internal standard responses were within control limits.

5. Field Duplicate Analysis

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

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

6. Compound Identification

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

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

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

DATA VALIDATION CHECKLIST FOR VOCs

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

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE:

DATE: March 17, 2021

PEER REVIEW: Andrew Korycinski

DATE: March 18, 2021

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

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

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Client Contact	Regulat	tory program	:		DW		- NI	PDES			RCF	RA	-	Othe								-10	90					
Company Name: Arcadis																						1.	/0		Т	estAmerica L	aboratories, l	Inc.
Address: 28550 Cabot Drive, Suite 500	Client Project	Manager: Kris	Hinsl	ey			Site Co	ntact:	Julia	a Mc	Claff	ferty				Lab (Contac	t: Mil	e Del	Monic	0				C	OC No:		
City/State/Zip: Novi, MI, 48377	Telephone: 248	-994-2240					Teleph	one: 7	34-6-	44-51	31		-			Telephone: 330-497-9396					七			\dashv				
Chy/State/Zap: Novi, Nii, 483//	Email: kristoff	er.hinskev@ar	rcadis.	com			An	alysis	Turn	arou	ound Itine					Analyses								for lab use only		COCs	\exists	
Phone: 248-994-2240													1											\dashv				
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Possible Hazard Identification							Sam	mlo INi		1 (4	fan '	may be		-4:6				11-										
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Submit all results through Cadena at jtomalia@cadena Level IV Reporting requested.	aco.com. Cadena #	E203631																										
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Client: ARCADIS U.S., Inc.

Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK Lab Sample ID: 240-144705-1

Date Collected: 02/18/21 00:00 Matrix: Water Date Received: 02/20/21 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 16:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 16:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:47	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 16:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 16:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130					02/26/21 16:47	1
4-Bromofluorobenzene (Surr)	103		47 - 134					02/26/21 16:47	1
Toluene-d8 (Surr)	90		69 - 122					02/26/21 16:47	1
Dibromofluoromethane (Surr)	102		78 - 129					02/26/21 16:47	1

Date Collected: 02/18/21 09:50 Date Received: 02/20/21 08:00

Method: 8260B SIM - Volati	le Organic Co	mpounds ((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			02/26/21 15:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133			-		02/26/21 15:25	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 17:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 17:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 17:12	1

Surrogate	%Recovery Qual	alifier Limits	Prepared Analyze	ed Dil Fac
1,2-Dichloroethane-d4 (Surr)	101	75 - 130	02/26/21 1	7:12 1
4-Bromofluorobenzene (Surr)	105	47 - 134	02/26/21 1	7:12 1
Toluene-d8 (Surr)	93	69 - 122	02/26/21 1	7:12 1
Dibromofluoromethane (Surr)	99	78 - 129	02/26/21 1	7:12 1

Client Sample ID: MW-129 021821 Lab Sample ID: 240-144705-3

Date Collected: 02/18/21 11:20 Date Received: 02/20/21 08:00

Method: 8260B SIM - Volati	ile Organic Co	mpounds (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			02/26/21 15:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133			-		02/26/21 15:50	1

Matrix: Water

Matrix: Water

Client: ARCADIS U.S., Inc.

Job ID: 240-144705-1

Project/Site: Ford LTP - Off Site

Date Collected: 02/18/21 11:20 Matrix: Water Date Received: 02/20/21 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 17:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 17:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 17:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 17:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130					02/26/21 17:36	1
4-Bromofluorobenzene (Surr)	103		47 - 134					02/26/21 17:36	1
Toluene-d8 (Surr)	93		69 - 122					02/26/21 17:36	1
Dibromofluoromethane (Surr)	102		78 - 129					02/26/21 17:36	1