

# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 240-140282-1 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: 11/30/2020 8:55:05 AM

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.

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-140282-1

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# **Definitions/Glossary**

Client: ARCADIS U.S., Inc.

Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

# **Qualifiers**

# **GC/MS VOA**

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U Indicates the analyte was analyzed for but not detected.

# **Glossary**

Abbreviation	These commonly	used abbreviations may	or may not be	present in this report.
/ tobiotiation	THOSE COMMISSING	acca approvidencino ma	, or may not so	procent in time reporti

Example 2 Listed under the "D" column to designate that the result is reported on a dry weight basis

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

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

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Eurofins TestAmerica, Canton

# **Case Narrative**

Client: ARCADIS U.S., Inc.

Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

Job ID: 240-140282-1

Laboratory: Eurofins TestAmerica, Canton

**Narrative** 

## **CASE NARRATIVE**

Client: ARCADIS U.S., Inc.

**Project: Ford LTP - Off Site** 

Report Number: 240-140282-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

### **RECEIPT**

The samples were received on 11/13/2020 9:25 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.4° C, 1.5° C, 2.3° C and 3.6° C.

# **VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples TRIP BLANK (240-140282-1) and MW-117S\_111120 (240-140282-2) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/24/2020.

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

# **VOLATILE ORGANIC COMPOUNDS (GCMS SIM)**

Sample MW-117S\_111120 (240-140282-2) was analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/19/2020.

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

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# **Method Summary**

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

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

Job ID: 240-140282-1

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# **Sample Summary**

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site Job ID: 240-140282-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140282-1	TRIP BLANK	Water	11/11/20 00:00	11/13/20 09:25	
240-140282-2	MW-117S_111120	Water	11/11/20 11:10	11/13/20 09:25	

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# **Detection Summary**

Client: ARCADIS U.S., Inc.

Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

# **Client Sample ID: TRIP BLANK**

Lab Sample ID: 240-140282-1

No Detections.

# Client Sample ID: MW-117S\_111120

Lab Sample ID: 240-140282-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.18	J	1.0	0.16	ug/L	1	_	8260B	Total/NA
Trichloroethene	0.30	J	1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	0.62	J	1.0	0.20	ug/L	1		8260B	Total/NA

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# **Client Sample Results**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

**Client Sample ID: TRIP BLANK** 

Lab Sample ID: 240-140282-1

Date Collected: 11/11/20 00:00 **Matrix: Water** Date Received: 11/13/20 09:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 18:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 18:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:05	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 18:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 130					11/24/20 18:05	1
4-Bromofluorobenzene (Surr)	99		47 - 134					11/24/20 18:05	1
Toluene-d8 (Surr)	102		69 - 122					11/24/20 18:05	1
Dibromofluoromethane (Surr)	94		78 - 129					11/24/20 18:05	1

# **Client Sample Results**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

Lab Sample ID: 240-140282-2 Client Sample ID: MW-117S\_111120

Date Collected: 11/11/20 11:10 **Matrix: Water** 

Date Received: 11/13/20 09:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/19/20 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	128		70 - 133					11/19/20 21:00	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			11/24/20 18:30	1
cis-1,2-Dichloroethene	0.18	J	1.0	0.16	ug/L			11/24/20 18:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 18:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:30	1
Trichloroethene	0.30	J	1.0	0.10	ug/L			11/24/20 18:30	1
Vinyl chloride	0.62	J	1.0	0.20	ug/L			11/24/20 18:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 130					11/24/20 18:30	1
4-Bromofluorobenzene (Surr)	96		47 - 134					11/24/20 18:30	1
Toluene-d8 (Surr)	100		69 - 122					11/24/20 18:30	1
Dibromofluoromethane (Surr)	93		78 - 129					11/24/20 18:30	1

# **Surrogate Summary**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

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

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

			Pe	Percent Surrogate Recov			
		DCA	BFB	TOL	DBFM		
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)		
240-140259-D-6 MS	Matrix Spike	106	104	105	85		
240-140259-E-6 MSD	Matrix Spike Duplicate	107	107	104	85		
240-140282-1	TRIP BLANK	119	99	102	94		
240-140282-2	MW-117S_111120	119	96	100	93		
LCS 240-462570/5	Lab Control Sample	104	106	103	82		
MB 240-462570/8	Method Blank	121	100	102	95		
MB 240-462570/8	Method Blank	121	100	102	95		

**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)	
240-140106-C-3 MS	Matrix Spike	130	
240-140106-C-3 MSD	Matrix Spike Duplicate	127	
240-140282-2	MW-117S_111120	128	
LCS 240-461848/4	Lab Control Sample	124	
MB 240-461848/5	Method Blank	124	
Surrogate Legend			

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

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

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

Lab Sample ID: MB 240-462570/8

**Matrix: Water** 

Analysis Batch: 462570

Project/Site: Ford LTP - Off Site

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 11/24/20 12:18 cis-1,2-Dichloroethene 1.0 U 1.0 0.16 ug/L 11/24/20 12:18 1.0 U Tetrachloroethene 1.0 0.15 ug/L 11/24/20 12:18 0.19 ug/L trans-1,2-Dichloroethene 1.0 U 1.0 11/24/20 12:18 Trichloroethene 10 U 1.0 0.10 ug/L 11/24/20 12:18 Vinyl chloride 1.0 U 1.0 0.20 ug/L 11/24/20 12:18

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 1,2-Dichloroethane-d4 (Surr) 121 75 - 130 11/24/20 12:18 4-Bromofluorobenzene (Surr) 100 47 - 134 11/24/20 12:18 102 69 - 122 Toluene-d8 (Surr) 11/24/20 12:18 Dibromofluoromethane (Surr) 95 78 - 129 11/24/20 12:18

Lab Sample ID: LCS 240-462570/5

**Matrix: Water** 

**Analysis Batch: 462570** 

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

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec 20.0 18.9 94 73 - 129 1,1-Dichloroethene ug/L cis-1,2-Dichloroethene 20.0 19.0 95 ug/L 75 - 124 Tetrachloroethene 20.0 17.5 70 - 125 ug/L 88 74 - 130 trans-1.2-Dichloroethene 20.0 18.8 ug/L 94 Trichloroethene 20.0 16.0 80 71 - 121 ug/L Vinyl chloride 20.0 22.5 ug/L 113 61 - 134

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 104 75 - 130 4-Bromofluorobenzene (Surr) 106 47 - 134 69 - 122 Toluene-d8 (Surr) 103 78 - 129 Dibromofluoromethane (Surr) 82

Lab Sample ID: 240-140259-D-6 MS

**Matrix: Water** 

Analysis Batch: 462570

**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	18.1		ug/L		91	64 - 132	
cis-1,2-Dichloroethene	1.0	U	20.0	18.2		ug/L		91	68 - 121	
Tetrachloroethene	1.0	U	20.0	15.4		ug/L		77	52 - 129	
trans-1,2-Dichloroethene	1.0	U	20.0	17.9		ug/L		90	69 - 126	
Trichloroethene	1.0	U	20.0	14.5		ug/L		73	56 - 124	
Vinyl chloride	1.0	U	20.0	22.2		ug/L		111	49 - 136	

	MS		
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	105		69 - 122

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Client: ARCADIS U.S., Inc. Job ID: 240-140282-1 Project/Site: Ford LTP - Off Site

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

Lab Sample ID: 240-140259-D-6 MS

**Matrix: Water** 

**Analysis Batch: 462570** 

MS MS

%Recovery Qualifier Surrogate Limits Dibromofluoromethane (Surr) 85 78 - 129

Lab Sample ID: 240-140259-E-6 MSD

**Matrix: Water** 

Analysis Batch: 462570

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Client Sample ID: Matrix Spike

**Prep Type: Total/NA** 

Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1.0	U	20.0	20.5		ug/L		102	64 - 132	12	35
1.0	U	20.0	20.3		ug/L		101	68 - 121	11	35
1.0	U	20.0	16.9		ug/L		85	52 - 129	9	35
1.0	U	20.0	19.8		ug/L		99	69 - 126	10	35
1.0	U	20.0	16.3		ug/L		81	56 - 124	11	35
1.0	U	20.0	22.6		ug/L		113	49 - 136	2	35
	Result 1.0 1.0 1.0 1.0 1.0 1.0	Sample   Sample   Result   Qualifier   U	Result         Qualifier         Added           1.0         U         20.0           1.0         U         20.0	Result         Qualifier         Added         Result           1.0         U         20.0         20.5           1.0         U         20.0         20.3           1.0         U         20.0         16.9           1.0         U         20.0         19.8           1.0         U         20.0         16.3	Result         Qualifier         Added         Result         Qualifier           1.0         U         20.0         20.5           1.0         U         20.0         20.3           1.0         U         20.0         16.9           1.0         U         20.0         19.8           1.0         U         20.0         16.3	Result         Qualifier         Added         Result         Qualifier         Unit           1.0         U         20.0         20.5         ug/L           1.0         U         20.0         20.3         ug/L           1.0         U         20.0         16.9         ug/L           1.0         U         20.0         19.8         ug/L           1.0         U         20.0         16.3         ug/L	Result         Qualifier         Added         Result         Qualifier         Unit         D           1.0         U         20.0         20.5         ug/L           1.0         U         20.0         20.3         ug/L           1.0         U         20.0         16.9         ug/L           1.0         U         20.0         19.8         ug/L           1.0         U         20.0         16.3         ug/L	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           1.0         U         20.0         20.5         ug/L         102           1.0         U         20.0         20.3         ug/L         101           1.0         U         20.0         16.9         ug/L         85           1.0         U         20.0         19.8         ug/L         99           1.0         U         20.0         16.3         ug/L         81	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           1.0         U         20.0         20.5         ug/L         102         64 - 132           1.0         U         20.0         20.3         ug/L         101         68 - 121           1.0         U         20.0         16.9         ug/L         85         52 - 129           1.0         U         20.0         19.8         ug/L         99         69 - 126           1.0         U         20.0         16.3         ug/L         81         56 - 124	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           1.0         U         20.0         20.5         ug/L         102         64 - 132         12           1.0         U         20.0         20.3         ug/L         101         68 - 121         11           1.0         U         20.0         16.9         ug/L         85         52 - 129         9           1.0         U         20.0         19.8         ug/L         99         69 - 126         10           1.0         U         20.0         16.3         ug/L         81         56 - 124         11

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		75 - 130
4-Bromofluorobenzene (Surr)	107		47 - 134
Toluene-d8 (Surr)	104		69 - 122
Dibromofluoromethane (Surr)	85		78 - 129

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

Lab Sample ID: MB 240-461848/5

**Matrix: Water** 

Analysis Batch: 461848

**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 11/19/20 13:34 0.86 ug/L

MB MB

%Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 124 70 - 133 11/19/20 13:34

Lab Sample ID: LCS 240-461848/4

**Analysis Batch: 461848** 

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

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 1,4-Dioxane 10.0 10.4 ug/L 104 80 - 135

LCS LCS

Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 124 70 - 133

Lab Sample ID: 240-140106-C-3 MS

**Matrix: Water** 

Analysis Batch: 461848

Allalysis Datell. 401040										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	2.0	U	10.0	10.6		ug/L		106	46 - 170	

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Client Sample ID: Matrix Spike

Prep Type: Total/NA

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# **QC Sample Results**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

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)	130		70 - 133								
Lab Sample ID: 240-140' Matrix: Water Analysis Batch: 461848	106-C-3 MSD					Client	Samp	le ID: N	latrix Spil Prep Ty	•	
	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	10.5		ug/L		105	46 - 170	1	26
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	127		70 - 133								

# **QC Association Summary**

Client: ARCADIS U.S., Inc.

Project/Site: Ford LTP - Off Site

Job ID: 240-140282-1

# **GC/MS VOA**

# Analysis Batch: 461848

Lab Sample ID 240-140282-2	Client Sample ID MW-117S_111120	Prep Type Total/NA	Matrix Water	Method 8260B SIM	Prep Batch
MB 240-461848/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-461848/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-140106-C-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-140106-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

# **Analysis Batch: 462570**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140282-1	TRIP BLANK	Total/NA	Water	8260B	_ <u> </u>
240-140282-2	MW-117S_111120	Total/NA	Water	8260B	
MB 240-462570/8	Method Blank	Total/NA	Water	8260B	
LCS 240-462570/5	Lab Control Sample	Total/NA	Water	8260B	
240-140259-D-6 MS	Matrix Spike	Total/NA	Water	8260B	
240-140259-E-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

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# **Lab Chronicle**

Client: ARCADIS U.S., Inc.

Job ID: 240-140282-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK Lab Sample ID: 240-140282-1

Date Collected: 11/11/20 00:00 Matrix: Water

Date Received: 11/13/20 09:25

Batch Batch Dilution Batch **Prepared** Method **Factor** Number or Analyzed **Prep Type** Type Run Analyst Lab Total/NA Analysis 8260B 462570 11/24/20 18:05 HMB TAL CAN

Date Collected: 11/11/20 11:10 Date Received: 11/13/20 09:25

Batch Batch Dilution Batch **Prepared Prep Type** Type Method Run Factor Number or Analyzed Analyst Lab Total/NA Analysis 8260B 462570 11/24/20 18:30 HMB TAL CAN Total/NA Analysis 8260B SIM 1 461848 11/19/20 21:00 SAM TAL CAN

Laboratory References:

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

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**Matrix: Water** 

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# **Accreditation/Certification Summary**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1

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	<b>Expiration Date</b>
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	12-31-20
Minnesota	NELAP	OH00048	12-31-20
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	06-05-21
Oregon	NELAP	4062	02-24-21
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	01-12-21
West Virginia DEP	State	210	12-31-20

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# Chain of Custody Record

<u>TestAmerica</u>

er Name:	r.hinskey@arc	cadis.c				Tele	Contac phone:				rty				Lab C	ontac	t: Mil	e Del	Monic	0			COC No:	
er Name:	r.hinskey@arc	_	om				phone:	734-6	544.51															
er Name:		_	om				Telephone: 248-994-2240 Telephone: 734-644-5131 Telephone: 330-497-						-	-	Telep	hone:	330-4	97-93	96					
er Name:		_	_	Email: kristoffer.hinskey@arcadis.com				Analysis Turnaround Time						Analyses					-	of COCs For lab use only				
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ole Date	Sample Time	Alr	T	car		H2S04		T	T			Filtered Sam	Composite=(	1,1-DCE 826	cis-1,2-DCE	Trans-1,2-D0	PCE 8260B	TCE 8260B	Vinyl Chlorid	1,4-Dioxane			Sample Specific Notes / Special Instructions:	
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Eurofins TestAmerica Canton Sample Receipt Form/Narrative Canton Facility	Login #: 140282
	Cooler unpacked by:
Client Ar codiS Site Name  Cooler Received on 11-13-2) Opened on 11-(4-20	matkning
Cooler Received on 11-13-20 Opened on 11-14-20   FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier	Other
Receipt After-hours: Drop-off Date/Time Storage Location	Odlei
Packing material used: Bubble Wap Foam Plastic Bag None Other  COOLANT: Wet lee Blue Ice Dry Ice Water None  1. Cooler temperature upon receipt	m
IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. °C Corrected Cooler T	Temp°C
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?  -Were tamper/custody seals intact and uncompromised?  3. Shippers' packing slip attached to the cooler(s)?  4. Did custody papers accompany the sample(s)?  5. Were the custody papers relinquished & signed in the appropriate place?  6. Was/were the person(s) who collected the samples clearly identified on the COC?  7. Did all bottles arrive in good condition (Unbroken)?  8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?  9. For each sample, does the COC specify preservatives (Y)N), # of containers (Y)N), and sa 10. Were correct bottle(s) used for the test(s) indicated?  11. Sufficient quantity received to perform indicated analyses?  12. Are these work share samples and all listed on the COC?  If yes, Questions 13-17 have been checked at the originating laboratory.  13. Were all preserved sample(s) at the correct pH upon receipt?  Yes  14. Were VOAs on the COC?  15. Were air bubbles >6 mm in any VOA vials?  Larger than this.  Yes  Yes  Larger than this.	No NA No NA No NA No N
17. Was a LL Hg or Me Hg trip blank present?Yes	S NO
Contacted PM Date by via Verbal V	Toice Mail Other
Concerning	
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES  additional next page	Samples processed by:
19. SAMPLE CONDITION	
Sample(s) were received after the recommended holdi	ing time had expired.
	l in a broken container.
Sample(s) were received with bubble >6 mm i	n diameter. (Notify PM)
20. SAMPLE PRESERVATION	
Sample(s) were fur Time preserved: Preservative(s) added/Lot number(s):	rther preserved in the laboratory.
Time preserved:Preservative(s) added/Lot number(s):	
VOA Sample Preservation - Date/Time VOAs Frozen:	

WI-NC-099

Login #: 140282

	Description (ircle)	IR Gun # (Circle)	Observed Temp °C	Ceipt Multiple Cooler F Corrected Temp °C	Coolant (Circle)
IA) Client			06	1.5	Wette Blue Ice Dry Ic
TA Client		R-1D IR-12	2.7	3.6	Wet ice Blue ice Dry ice Water None
JA) Client		(IR-1) IR-12	85	1,4	Welter Blue Ice Dry Ic
TA Client		IR-11 IR-12	1.4	2.3	Wellice Blue Ice Dry Ic
TA Client		IR-11 IR-12			Wet ice Blue ice Dry ice Water None
TA Client		IR-11 IR-12			Wet ice Blue ice Dry ic
TA Client	-	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
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TA Client		IR-11 IR-12			Wet ice Blue ice Dry ic
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TA Client		IR-11 IR-12			Water None  Wet Ice Blue Ice Dry Ice Water None
TA Client		IR-11 IR-12			Wet Ice Blue Ice Dry Ic Water None
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TA Client		IR-11 IR-12			Wet Ice Blue Ice Dry Id
TA Client		IR-11 IR-12			Water None Wet Ice Blue Ice Dry Ic
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TA Client		IR-11 IR-12			Water None Wet Ice Blue Ice Dry Ic
TA Client		IR-11 IR-12			Water None Wet Ice Blue Ice Dry Ic
TA Client		IR-11 IR-12			Wet Ice Blue Ice Dry Ic
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TA Client		IR-11 IR-12			Water None Wet Ice Blue Ice Dry Ic
TA Client		IR-11 IR-12			Water None Wet Ice Blue Ice Dry Ic
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TA Client		IR-11 IR-12			Water None Wet ice Blue ice Dry ic
TA Client	Box Other			☐ See Te	Water None emperature Excursion Form

# DATA VERIFICATION REPORT



November 30, 2020

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: 140282-1

Sample date: 2020-11-11

Report received by CADENA: 2020-11-30

Initial Data Verification completed by CADENA: 2020-11-30

Number of Samples: 1 Water and 1 trip blank

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.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

**Project Scientist** 

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

# **CADENA Valid Qualifiers**

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

# **Analytical Results Summary**

**CADENA Project ID:** E203631

**Laboratory:** TestAmerica - North Canton

**Laboratory Submittal:** 140282-1

	Sample Name:	TRIP BLA	ANK			MW-117S_111120			
	Lab Sample ID:	2401402	2821			2401402	2822		
	Sample Date:	11/11/2	020			11/11/2	020		
			Report		Valid		Report		Valid
Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC									
<u>OSW-8260B</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		0.18	1.0	ug/l	J
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		0.30	1.0	ug/l	J
Vinyl chloride	75-01-4	ND	1.0	ug/l		0.62	1.0	ug/l	J
OSW-8260BBSim									
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 # 240-140282-1

CADENA Verification Report: 2020-11-30

Analyses Performed By:

TestAmerica North Canton, Ohio

Report #39486R Review Level: Tier III Project: 30050315.402.02

# **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-140282-1 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		Analy	/sis
Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	VOC (Full Scan)	VOC (SIM)
TRIP BLANK	240-140282-1	Water	11/11/20		X	
MW-117S_111120	240-140282-2	Water	11/11/20		X	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		X		X	
2. Requested analyses and sample results		Х		X	
Master tracking list		Х		X	
4. Methods of analysis		Х		X	
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	Re	ported		ormance eptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMET	RY (GC/I	VIS)			
Tier II Validation					
Holding times/Preservation		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		Х	
Continuing calibration RRFs		X		Х	
Continuing calibration %Ds		Х		X	
Instrument tune and performance check		X		X	
lon abundance criteria for each instrument used		X		X	
Field Duplicate RPD	Х				Х
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		Х	
B. Quantitation Reports		X		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	
NI_4					.1

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE:

DATE: December 14, 2020

PEER REVIEW: Andrew Korycinski

DATE: December 15, 2020

# NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

# CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

# **Chain of Custody Record**

Client Contact	Regulat	ory program:			DW		- NF	DES		- RC	RA	<b>□</b> 0	ther						HIGA 190	7.4	-			
ompany Name: Arcadis	Client Project ?	Janager: Kris	Hinskey	_	_	18	Site Co	ntact:	Julia	McCla	ferty		_	Lab	Cont	act: N	like D	lMoni				tAmerica C No:	Laborat	ories, I
ddress: 28550 Cabot Drive, Suite 500	Telephone: 248	***************************************								14-5131							-497-9				-			
ity/State/Zip: Novi, M1, 48377													_	lei	ephon	e: 330						of		OCs
none: 248-994-2240	Email: kristoff	er.hinskey@ar	cadis.co	m		-	An	alysis	1 urn:	around	ime	11	-	_	T	$\top$	T	Analy	ses	TT	For	lab use or	ily	
roject Name: Ford LTP Off-Site	Sampler Name	: 1	1111				TATire	lifferent f		olow 3 weeks									1 1		Wal	k-in clien		
		mx	NH	vers	per	a	10 d	lay	1	2 weeks			-				1	1			Lab	sampling		
roject Number: 30050315.402.04	Method of Ship	ment/Carrier:			•					1 week 2 days		2			82608			8	SIM	1 1				
O # 30050315.402.04	Shipping/Tracking No:						Г	1 day		mple (Y / N)	5 8	82608	F 826			8260	8260B SIM		Job	SDG No:				
				Mat	trix	100	C	ontaine	rs & I	Preservat	ives	Samp		CE 8	20-2	B	80	oride			200	SECTION.		
Sample Identification	Sample Date	Sample Time	Alr	Sediment	Selid		H2SO4	нсі	NaOH	ZaAci NaOH Unpres	Other:	Filtered Sample (Y / N)	1 1-DCF 8	cis-1,2-DCE	Trans-1 2-DCF	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dіохапе				Specific N	
TRIP BLANK		_	П	1			T	1				NO	3/7	( x		1>	( x	X	X		1	Tr	ip bla	nk
MW-1175_111120	11/11/20	1117	1					6				NA	i	X	1	X	X		1		3	voas	for 82	760
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# **Client Sample Results**

Client: ARCADIS U.S., Inc. Job ID: 240-140282-1 Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140282-1

Date Collected: 11/11/20 00:00 **Matrix: Water** Date Received: 11/13/20 09:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 18:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 18:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:05	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 18:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 130					11/24/20 18:05	1
4-Bromofluorobenzene (Surr)	99		47 - 134					11/24/20 18:05	1
Toluene-d8 (Surr)	102		69 - 122					11/24/20 18:05	1
Dibromofluoromethane (Surr)	94		78 - 129					11/24/20 18:05	1

**Client Sample ID: MW-117S\_111120** Lab Sample ID: 240-140282-2

Date Collected: 11/11/20 11:10 Date Received: 11/13/20 09:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/19/20 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	128		70 - 133			-		11/19/20 21:00	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:30	1
cis-1,2-Dichloroethene	0.18	J	1.0	0.16	ug/L			11/24/20 18:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 18:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:30	1
Trichloroethene	0.30	J	1.0	0.10	ug/L			11/24/20 18:30	1
Vinyl chloride	0.62	J	1.0	0.20	ug/L			11/24/20 18:30	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119	75 - 130	<u> </u>	1/24/20 18:30	1
4-Bromofluorobenzene (Surr)	96	47 - 134	1:	1/24/20 18:30	1
Toluene-d8 (Surr)	100	69 - 122	1:	1/24/20 18:30	1
Dibromofluoromethane (Surr)	93	78 - 129	1:	1/24/20 18:30	1

**Matrix: Water**