

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Tel: (330)497-9396

Laboratory Job ID: 240-126245-1
Client Project/Site: Ford LTP Off Site

For:
ARCADIS U.S., Inc.
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Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
2/27/2020 10:10:29 AM

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



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Definitions/Glossary

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

Job ID: 240-126245-1

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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Case Narrative

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

Job ID: 240-126245-1

Job ID: 240-126245-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Off Site

Report Number: 240-126245-1

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 2/13/2020 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-126245-1), MW-79D_021120 (240-126245-2), MW-79SR_021120 (240-126245-3), MW-141S_021120 (240-126245-4) and DUP-08 (240-126245-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/18/2020.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-79D_021120 (240-126245-2), MW-79SR_021120 (240-126245-3), MW-141S_021120 (240-126245-4) and DUP-08 (240-126245-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/19/2020.

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

Method Summary

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

Job ID: 240-126245-1

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: 240-126245-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126245-1	TRIP BLANK	Water	02/11/20 00:00	02/13/20 08:40	
240-126245-2	MW-79D_021120	Water	02/11/20 10:17	02/13/20 08:40	
240-126245-3	MW-79SR_021120	Water	02/11/20 11:37	02/13/20 08:40	
240-126245-4	MW-141S_021120	Water	02/11/20 12:37	02/13/20 08:40	
240-126245-5	DUP-08	Water	02/11/20 00:00	02/13/20 08:40	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-126245-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126245-1

No Detections.

Client Sample ID: MW-79D_021120

Lab Sample ID: 240-126245-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.1		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-79SR_021120

Lab Sample ID: 240-126245-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.23	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-141S_021120

Lab Sample ID: 240-126245-4

No Detections.

Client Sample ID: DUP-08

Lab Sample ID: 240-126245-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.90	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	2.2		1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-126245-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126245-1

Date Collected: 02/11/20 00:00

Matrix: Water

Date Received: 02/13/20 08:40

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			02/18/20 16:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/20 16:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/20 16:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 16:22	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/20 16:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/20 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 130		02/18/20 16:22	1
4-Bromofluorobenzene (Surr)	104		47 - 134		02/18/20 16:22	1
Toluene-d8 (Surr)	94		69 - 122		02/18/20 16:22	1
Dibromofluoromethane (Surr)	88		78 - 129		02/18/20 16:22	1

Client Sample Results

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

Job ID: 240-126245-1

Client Sample ID: MW-79D_021120

Lab Sample ID: 240-126245-2

Date Collected: 02/11/20 10:17

Matrix: Water

Date Received: 02/13/20 08:40

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			02/19/20 13:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/19/20 13:56	1

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			02/18/20 18:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/20 18:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/20 18:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 18:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/20 18:27	1
Vinyl chloride	2.1		1.0	0.20	ug/L			02/18/20 18:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130		02/18/20 18:27	1
4-Bromofluorobenzene (Surr)	102		47 - 134		02/18/20 18:27	1
Toluene-d8 (Surr)	92		69 - 122		02/18/20 18:27	1
Dibromofluoromethane (Surr)	87		78 - 129		02/18/20 18:27	1

Client Sample Results

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

Job ID: 240-126245-1

Client Sample ID: MW-79SR_021120

Lab Sample ID: 240-126245-3

Date Collected: 02/11/20 11:37

Matrix: Water

Date Received: 02/13/20 08:40

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			02/19/20 14:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/19/20 14:21	1

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			02/18/20 18:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/20 18:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/20 18:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 18:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/20 18:54	1
Vinyl chloride	0.23	J	1.0	0.20	ug/L			02/18/20 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 130		02/18/20 18:54	1
4-Bromofluorobenzene (Surr)	100		47 - 134		02/18/20 18:54	1
Toluene-d8 (Surr)	94		69 - 122		02/18/20 18:54	1
Dibromofluoromethane (Surr)	84		78 - 129		02/18/20 18:54	1

Client Sample Results

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

Job ID: 240-126245-1

Client Sample ID: MW-141S_021120

Lab Sample ID: 240-126245-4

Date Collected: 02/11/20 12:37

Matrix: Water

Date Received: 02/13/20 08:40

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			02/19/20 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 133		02/19/20 14:47	1

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			02/18/20 19:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/20 19:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/20 19:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 19:19	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/20 19:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/20 19:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/18/20 19:19	1
4-Bromofluorobenzene (Surr)	104		47 - 134		02/18/20 19:19	1
Toluene-d8 (Surr)	96		69 - 122		02/18/20 19:19	1
Dibromofluoromethane (Surr)	86		78 - 129		02/18/20 19:19	1

Client Sample Results

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

Job ID: 240-126245-1

Client Sample ID: DUP-08

Lab Sample ID: 240-126245-5

Date Collected: 02/11/20 00:00

Matrix: Water

Date Received: 02/13/20 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.90	J	2.0	0.86	ug/L	-		02/19/20 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 133		02/19/20 15:12	1

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	-		02/18/20 19:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		02/18/20 19:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		02/18/20 19:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		02/18/20 19:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		02/18/20 19:44	1
Vinyl chloride	2.2		1.0	0.20	ug/L	-		02/18/20 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		02/18/20 19:44	1
4-Bromofluorobenzene (Surr)	103		47 - 134		02/18/20 19:44	1
Toluene-d8 (Surr)	92		69 - 122		02/18/20 19:44	1
Dibromofluoromethane (Surr)	89		78 - 129		02/18/20 19:44	1

Surrogate Summary

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

Job ID: 240-126245-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-126243-E-2 MS	Matrix Spike	83	109	97	89
240-126243-F-2 MSD	Matrix Spike Duplicate	87	104	93	89
240-126245-1	TRIP BLANK	84	104	94	88
240-126245-2	MW-79D_021120	85	102	92	87
240-126245-3	MW-79SR_021120	84	100	94	84
240-126245-4	MW-141S_021120	88	104	96	86
240-126245-5	DUP-08	86	103	92	89
LCS 240-423222/4	Lab Control Sample	85	102	94	89
MB 240-423222/7	Method Blank	89	105	96	89

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)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-126245-2	MW-79D_021120	102
240-126245-3	MW-79SR_021120	102
240-126245-4	MW-141S_021120	103
240-126245-5	DUP-08	105
240-126250-C-3 MS	Matrix Spike	100
240-126250-C-3 MSD	Matrix Spike Duplicate	101
LCS 240-423320/4	Lab Control Sample	104
MB 240-423320/5	Method Blank	97

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-126245-1

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

Lab Sample ID: MB 240-423222/7

Matrix: Water

Analysis Batch: 423222

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 14:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/20 14:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/20 14:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/20 14:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/20 14:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/20 14:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		02/18/20 14:41	1
4-Bromofluorobenzene (Surr)	105		47 - 134		02/18/20 14:41	1
Toluene-d8 (Surr)	96		69 - 122		02/18/20 14:41	1
Dibromofluoromethane (Surr)	89		78 - 129		02/18/20 14:41	1

Lab Sample ID: LCS 240-423222/4

Matrix: Water

Analysis Batch: 423222

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	9.76		ug/L		98	73 - 129
cis-1,2-Dichloroethene	10.0	9.53		ug/L		95	75 - 124
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 125
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	74 - 130
Trichloroethene	10.0	9.46		ug/L		95	71 - 121
Vinyl chloride	10.0	11.2		ug/L		112	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	102		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-126243-E-2 MS

Matrix: Water

Analysis Batch: 423222

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	9.61		ug/L		96	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.56		ug/L		96	68 - 121
Tetrachloroethene	1.0	U	10.0	9.02		ug/L		90	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.94		ug/L		99	69 - 126
Trichloroethene	0.30	J	10.0	8.78		ug/L		85	56 - 124
Vinyl chloride	0.90	J	10.0	12.0		ug/L		111	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	109		47 - 134
Toluene-d8 (Surr)	97		69 - 122

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QC Sample Results

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

Job ID: 240-126245-1

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

Lab Sample ID: 240-126243-E-2 MS
Matrix: Water
Analysis Batch: 423222

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-126243-F-2 MSD
Matrix: Water
Analysis Batch: 423222

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.40		ug/L		94	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	68 - 121	5	35
Tetrachloroethene	1.0	U	10.0	8.71		ug/L		87	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.94		ug/L		99	69 - 126	0	35
Trichloroethene	0.30	J	10.0	8.88		ug/L		86	56 - 124	1	35
Vinyl chloride	0.90	J	10.0	12.4		ug/L		115	49 - 136	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

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

Lab Sample ID: MB 240-423320/5
Matrix: Water
Analysis Batch: 423320

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/19/20 05:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133		02/19/20 05:48	1

Lab Sample ID: LCS 240-423320/4
Matrix: Water
Analysis Batch: 423320

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	8.53		ug/L		85	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 133

Lab Sample ID: 240-126250-C-3 MS
Matrix: Water
Analysis Batch: 423320

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.9		ug/L		109	46 - 170

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QC Sample Results

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

Job ID: 240-126245-1

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	100		70 - 133

Lab Sample ID: 240-126250-C-3 MSD
Matrix: Water
Analysis Batch: 423320

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	46 - 170	5	26

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	101		70 - 133

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QC Association Summary

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

Job ID: 240-126245-1

GC/MS VOA

Analysis Batch: 423222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126245-1	TRIP BLANK	Total/NA	Water	8260B	
240-126245-2	MW-79D_021120	Total/NA	Water	8260B	
240-126245-3	MW-79SR_021120	Total/NA	Water	8260B	
240-126245-4	MW-141S_021120	Total/NA	Water	8260B	
240-126245-5	DUP-08	Total/NA	Water	8260B	
MB 240-423222/7	Method Blank	Total/NA	Water	8260B	
LCS 240-423222/4	Lab Control Sample	Total/NA	Water	8260B	
240-126243-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-126243-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 423320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126245-2	MW-79D_021120	Total/NA	Water	8260B SIM	
240-126245-3	MW-79SR_021120	Total/NA	Water	8260B SIM	
240-126245-4	MW-141S_021120	Total/NA	Water	8260B SIM	
240-126245-5	DUP-08	Total/NA	Water	8260B SIM	
MB 240-423320/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-423320/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-126250-C-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-126250-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-126245-1

Client Sample ID: TRIP BLANK

Date Collected: 02/11/20 00:00

Date Received: 02/13/20 08:40

Lab Sample ID: 240-126245-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423222	02/18/20 16:22	LRW	TAL CAN

Client Sample ID: MW-79D_021120

Date Collected: 02/11/20 10:17

Date Received: 02/13/20 08:40

Lab Sample ID: 240-126245-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423222	02/18/20 18:27	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423320	02/19/20 13:56	TJL2	TAL CAN

Client Sample ID: MW-79SR_021120

Date Collected: 02/11/20 11:37

Date Received: 02/13/20 08:40

Lab Sample ID: 240-126245-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423222	02/18/20 18:54	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423320	02/19/20 14:21	TJL2	TAL CAN

Client Sample ID: MW-141S_021120

Date Collected: 02/11/20 12:37

Date Received: 02/13/20 08:40

Lab Sample ID: 240-126245-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423222	02/18/20 19:19	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423320	02/19/20 14:47	TJL2	TAL CAN

Client Sample ID: DUP-08

Date Collected: 02/11/20 00:00

Date Received: 02/13/20 08:40

Lab Sample ID: 240-126245-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423222	02/18/20 19:44	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423320	02/19/20 15:12	TJL2	TAL CAN

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.
Project/Site: Ford LTP Off Site

Job ID: 240-126245-1

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 Date
California	State	2927	02-23-20 *
Connecticut	State	PH-0590	12-31-19 *
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20 *
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20 *
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19 *
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Canton

Chain of Custody Record

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

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kris@hinskey.com		Site Contact: Julia McClafferty Telephone: 734-644-5131	
Project Name: Ford LTP Off-Site Project Number: 30042006.0402.02 PO # 30042006.0402.02		Analysis Turnaround Time TAT if different from below: 10 day <input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input checked="" type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <input type="checkbox"/>	
Sampler Name: H. Woodcum Method of Shipment/Carrier: Shipping/Tracking No:		Containers & Preservatives H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> ZnOH <input type="checkbox"/> Other: <input type="checkbox"/>	
Sample Identification		Matrix Solid <input type="checkbox"/> Sediment <input type="checkbox"/> Aqueous <input type="checkbox"/> Other: <input type="checkbox"/>	
Sample Date Sample Time		Filtered Sample (Y / N)	
TRIP BLANK		NG	
MW-79D-021120		X	
MW-79SR-021120		X	
MW-141S-021120		X	
DUP-08		X	
2/11/20 1017		X	
2/11/20 1137		X	
2/11/20 1237		X	
2/11/20 1635		X	
2/11/20 1510		X	
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Eurofins TestAmerica Canton Sample Receipt Form/Narrative			Login # : <u>26245</u>
Canton Facility			
Client <u>Aradics</u>	Site Name _____		Cooler unpacked by: <u>Ryan</u>
Cooler Received on <u>2-13-20</u>	Opened on <u>2-13-20</u> <u>840</u>		
FedEx: 1 st <input checked="" type="radio"/> Grd <input type="radio"/> Exp	UPS	FAS	Clipper
Client Drop Off		TestAmerica Courier	Other _____
Receipt After-hours: Drop-off Date/Time		Storage Location	
TestAmerica Cooler # <u>7A</u>	Foam Box	Client Cooler	Box Other _____
Packing material used: <input checked="" type="radio"/> Bubble Wrap <input checked="" type="radio"/> Foam <input checked="" type="radio"/> Plastic Bag <input type="radio"/> None Other _____			
COOLANT: <input checked="" type="radio"/> Wet Ice <input type="radio"/> Blue Ice <input type="radio"/> Dry Ice <input type="radio"/> Water <input type="radio"/> None			
1. Cooler temperature upon receipt			<input type="checkbox"/> See Multiple Cooler Form
IR GUN# IR-10 (CF +0.7 °C)	Observed Cooler Temp. <u>2.3</u> °C	Corrected Cooler Temp. <u>3.0</u> °C	
IR GUN #IR-11 (CF +0.9°C)	Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C	
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>			<input checked="" type="radio"/> Yes <input type="radio"/> No
-Were the seals on the outside of the cooler(s) signed & dated?			<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?			<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA
-Were tamper/custody seals intact and uncompromised?			<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA
3. Shippers' packing slip attached to the cooler(s)?			<input checked="" type="radio"/> Yes <input type="radio"/> No
4. Did custody papers accompany the sample(s)?			<input checked="" type="radio"/> Yes <input type="radio"/> No
5. Were the custody papers relinquished & signed in the appropriate place?			<input checked="" type="radio"/> Yes <input type="radio"/> No
6. Was/were the person(s) who collected the samples clearly identified on the COC?			<input checked="" type="radio"/> Yes <input type="radio"/> No
7. Did all bottles arrive in good condition (Unbroken)?			<input checked="" type="radio"/> Yes <input type="radio"/> No
8. Could all bottle labels be reconciled with the COC?			<input checked="" type="radio"/> Yes <input type="radio"/> No
9. Were correct bottle(s) used for the test(s) indicated?			<input checked="" type="radio"/> Yes <input type="radio"/> No
10. Sufficient quantity received to perform indicated analyses?			<input checked="" type="radio"/> Yes <input type="radio"/> No
11. Are these work share samples?			<input checked="" type="radio"/> Yes <input type="radio"/> No
If yes, Questions 12-16 have been checked at the originating laboratory.			
12. Were all preserved sample(s) at the correct pH upon receipt?			<input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> NA pH Strip Lot# <u>HC995364</u>
13. Were VOAs on the COC?			<input checked="" type="radio"/> Yes <input type="radio"/> No
14. Were air bubbles >6 mm in any VOA vials? Larger than this.			<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____			<input checked="" type="radio"/> Yes <input type="radio"/> No
16. Was a LL Hg or Me Hg trip blank present? _____			<input checked="" type="radio"/> Yes <input type="radio"/> No
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____			
Concerning _____			

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES	Samples processed by: <u>At</u>
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
18. SAMPLE CONDITION	
Sample(s) _____ were received after the recommended holding time had expired.	
Sample(s) _____ were received in a broken container.	
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)	
19. SAMPLE PRESERVATION	
Sample(s) _____ were further preserved in the laboratory.	
Time preserved: _____ Preservative(s) added/Lot number(s): _____	
VOA Sample Preservation - Date/Time VOAs Frozen: _____	