

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Laboratory Job ID: 240-130754-1
Client Project/Site: Ford LTP Off-Site

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
6/8/2020 10:30:29 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: 240-130754-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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)
MQL	Method Quantitation Limit
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: 240-130754-1

Job ID: 240-130754-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Off-Site

Report Number: 240-130754-1

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 5/22/2020 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-130754-1), MW-101S_052020 (240-130754-2), MW-75D_052020 (240-130754-3) and MW-75SR_052020 (240-130754-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/01/2020 and 06/02/2020.

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-101S_052020 (240-130754-2), MW-75D_052020 (240-130754-3) and MW-75SR_052020 (240-130754-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/30/2020.

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: 240-130754-1

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: 240-130754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-130754-1	TRIP BLANK	Water	05/20/20 00:00	05/22/20 09:20	
240-130754-2	MW-101S_052020	Water	05/20/20 09:42	05/22/20 09:20	
240-130754-3	MW-75D_052020	Water	05/20/20 12:01	05/22/20 09:20	
240-130754-4	MW-75SR_052020	Water	05/20/20 13:21	05/22/20 09:20	

- 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: 240-130754-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-130754-1

No Detections.

Client Sample ID: MW-101S_052020

Lab Sample ID: 240-130754-2

No Detections.

Client Sample ID: MW-75D_052020

Lab Sample ID: 240-130754-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.3		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-75SR_052020

Lab Sample ID: 240-130754-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.59	J	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: 240-130754-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-130754-1

Date Collected: 05/20/20 00:00

Matrix: Water

Date Received: 05/22/20 09:20

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			06/01/20 20:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/20 20:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/20 20:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/20 20:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/20 20:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/20 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		06/01/20 20:40	1
4-Bromofluorobenzene (Surr)	81		47 - 134		06/01/20 20:40	1
Toluene-d8 (Surr)	88		69 - 122		06/01/20 20:40	1
Dibromofluoromethane (Surr)	91		78 - 129		06/01/20 20:40	1

Client Sample Results

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

Job ID: 240-130754-1

Client Sample ID: MW-101S_052020

Lab Sample ID: 240-130754-2

Date Collected: 05/20/20 09:42

Matrix: Water

Date Received: 05/22/20 09:20

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	-		05/30/20 11:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 133		05/30/20 11:23	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	-		06/01/20 21:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		06/01/20 21:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		06/01/20 21:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		06/01/20 21:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		06/01/20 21:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		06/01/20 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130		06/01/20 21:03	1
4-Bromofluorobenzene (Surr)	82		47 - 134		06/01/20 21:03	1
Toluene-d8 (Surr)	88		69 - 122		06/01/20 21:03	1
Dibromofluoromethane (Surr)	91		78 - 129		06/01/20 21:03	1

Client Sample Results

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

Job ID: 240-130754-1

Client Sample ID: MW-75D_052020

Lab Sample ID: 240-130754-3

Date Collected: 05/20/20 12:01

Matrix: Water

Date Received: 05/22/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			05/30/20 11:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133		05/30/20 11:49	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			06/01/20 21:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/20 21:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/20 21:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/20 21:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/20 21:27	1
Vinyl chloride	1.3		1.0	0.20	ug/L			06/01/20 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130		06/01/20 21:27	1
4-Bromofluorobenzene (Surr)	81		47 - 134		06/01/20 21:27	1
Toluene-d8 (Surr)	88		69 - 122		06/01/20 21:27	1
Dibromofluoromethane (Surr)	91		78 - 129		06/01/20 21:27	1

Client Sample Results

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

Job ID: 240-130754-1

Client Sample ID: MW-75SR_052020

Lab Sample ID: 240-130754-4

Date Collected: 05/20/20 13:21

Matrix: Water

Date Received: 05/22/20 09:20

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	-		05/30/20 12:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 133		05/30/20 12:15	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	-		06/02/20 04:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		06/02/20 04:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		06/02/20 04:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		06/02/20 04:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		06/02/20 04:40	1
Vinyl chloride	0.59	J	1.0	0.20	ug/L	-		06/02/20 04:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130		06/02/20 04:40	1
4-Bromofluorobenzene (Surr)	80		47 - 134		06/02/20 04:40	1
Toluene-d8 (Surr)	86		69 - 122		06/02/20 04:40	1
Dibromofluoromethane (Surr)	89		78 - 129		06/02/20 04:40	1

Surrogate Summary

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

Job ID: 240-130754-1

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)
240-130751-D-2 MS	Matrix Spike	86	89	89	88
240-130751-E-2 MSD	Matrix Spike Duplicate	86	90	90	90
240-130754-1	TRIP BLANK	92	81	88	91
240-130754-2	MW-101S_052020	93	82	88	91
240-130754-3	MW-75D_052020	94	81	88	91
240-130754-4	MW-75SR_052020	91	80	86	89
240-130789-E-22 MS	Matrix Spike	87	89	89	91
240-130789-F-22 MSD	Matrix Spike Duplicate	87	89	90	91
LCS 240-436358/4	Lab Control Sample	90	92	93	91
LCS 240-436424/4	Lab Control Sample	89	90	91	90
MB 240-436358/7	Method Blank	92	83	88	89
MB 240-436424/7	Method Blank	90	79	88	91

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)
240-130724-B-4 MS	Matrix Spike	95
240-130724-B-4 MSD	Matrix Spike Duplicate	96
240-130754-2	MW-101S_052020	100
240-130754-3	MW-75D_052020	96
240-130754-4	MW-75SR_052020	101
LCS 240-436242/4	Lab Control Sample	95
MB 240-436242/5	Method Blank	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (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
		(10-150)
MRL 240-436242/6	Lab Control Sample	96

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-130754-1

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

Lab Sample ID: MB 240-436358/7

Matrix: Water

Analysis Batch: 436358

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			06/01/20 13:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/20 13:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/20 13:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/20 13:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/20 13:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/20 13:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		06/01/20 13:54	1
4-Bromofluorobenzene (Surr)	83		47 - 134		06/01/20 13:54	1
Toluene-d8 (Surr)	88		69 - 122		06/01/20 13:54	1
Dibromofluoromethane (Surr)	89		78 - 129		06/01/20 13:54	1

Lab Sample ID: LCS 240-436358/4

Matrix: Water

Analysis Batch: 436358

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	9.84		ug/L		98	73 - 129
cis-1,2-Dichloroethene	10.0	9.82		ug/L		98	75 - 124
Tetrachloroethene	10.0	10.9		ug/L		109	70 - 125
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121
Vinyl chloride	10.0	8.13		ug/L		81	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	92		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-130751-D-2 MS

Matrix: Water

Analysis Batch: 436358

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	9.22		ug/L		92	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.36		ug/L		94	68 - 121
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.56		ug/L		96	69 - 126
Trichloroethene	1.0	U	10.0	9.39		ug/L		94	56 - 124
Vinyl chloride	1.0	U	10.0	7.84		ug/L		78	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	89		47 - 134
Toluene-d8 (Surr)	89		69 - 122

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QC Sample Results

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

Job ID: 240-130754-1

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

Lab Sample ID: 240-130751-D-2 MS
Matrix: Water
Analysis Batch: 436358

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	88		78 - 129

Lab Sample ID: 240-130751-E-2 MSD
Matrix: Water
Analysis Batch: 436358

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	9.31		ug/L		93	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.57		ug/L		96	68 - 121	2	35
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.88		ug/L		99	69 - 126	3	35
Trichloroethene	1.0	U	10.0	9.31		ug/L		93	56 - 124	1	35
Vinyl chloride	1.0	U	10.0	7.86		ug/L		79	49 - 136	0	35

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	86		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	90		47 - 134
<i>Toluene-d8 (Surr)</i>	90		69 - 122
<i>Dibromofluoromethane (Surr)</i>	90		78 - 129

Lab Sample ID: MB 240-436424/7
Matrix: Water
Analysis Batch: 436424

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			06/02/20 01:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/02/20 01:51	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/02/20 01:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/02/20 01:51	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/02/20 01:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/02/20 01:51	1

<i>Surrogate</i>	<i>MB</i> <i>%Recovery</i>	<i>MB</i> <i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	90		75 - 130		06/02/20 01:51	1
<i>4-Bromofluorobenzene (Surr)</i>	79		47 - 134		06/02/20 01:51	1
<i>Toluene-d8 (Surr)</i>	88		69 - 122		06/02/20 01:51	1
<i>Dibromofluoromethane (Surr)</i>	91		78 - 129		06/02/20 01:51	1

Lab Sample ID: LCS 240-436424/4
Matrix: Water
Analysis Batch: 436424

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	9.32		ug/L		93	73 - 129
cis-1,2-Dichloroethene	10.0	9.84		ug/L		98	75 - 124
Tetrachloroethene	10.0	10.3		ug/L		103	70 - 125
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	74 - 130
Trichloroethene	10.0	10.0		ug/L		100	71 - 121

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QC Sample Results

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

Job ID: 240-130754-1

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

Lab Sample ID: LCS 240-436424/4
Matrix: Water
Analysis Batch: 436424

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	7.61		ug/L		76	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	89		75 - 130				
4-Bromofluorobenzene (Surr)	90		47 - 134				
Toluene-d8 (Surr)	91		69 - 122				
Dibromofluoromethane (Surr)	90		78 - 129				

Lab Sample ID: 240-130789-E-22 MS
Matrix: Water
Analysis Batch: 436424

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	8.72		ug/L		87	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.31		ug/L		93	68 - 121
Tetrachloroethene	1.0	U	10.0	9.03		ug/L		90	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.53		ug/L		95	69 - 126
Trichloroethene	1.0	U	10.0	8.84		ug/L		88	56 - 124
Vinyl chloride	35	F1	10.0	37.7	F1	ug/L		29	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	87		75 - 130						
4-Bromofluorobenzene (Surr)	89		47 - 134						
Toluene-d8 (Surr)	89		69 - 122						
Dibromofluoromethane (Surr)	91		78 - 129						

Lab Sample ID: 240-130789-F-22 MSD
Matrix: Water
Analysis Batch: 436424

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	8.55		ug/L		86	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.38		ug/L		94	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	9.00		ug/L		90	52 - 129	0	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.50		ug/L		95	69 - 126	0	35
Trichloroethene	1.0	U	10.0	9.00		ug/L		90	56 - 124	2	35
Vinyl chloride	35	F1	10.0	37.9	F1	ug/L		31	49 - 136	0	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	87		75 - 130								
4-Bromofluorobenzene (Surr)	89		47 - 134								
Toluene-d8 (Surr)	90		69 - 122								
Dibromofluoromethane (Surr)	91		78 - 129								

QC Sample Results

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

Job ID: 240-130754-1

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

Lab Sample ID: MB 240-436242/5
Matrix: Water
Analysis Batch: 436242

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			05/30/20 06:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133					05/30/20 06:10	1

Lab Sample ID: LCS 240-436242/4
Matrix: Water
Analysis Batch: 436242

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	8.98		ug/L		90	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	95		70 - 133				

Lab Sample ID: MRL 240-436242/6
Matrix: Water
Analysis Batch: 436242

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.00100	0.00141	J	ng/uL		141	10 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	96		10 - 150				

Lab Sample ID: 240-130724-B-4 MS
Matrix: Water
Analysis Batch: 436242

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	10.7		ug/L		107	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	95		70 - 133						

Lab Sample ID: 240-130724-B-4 MSD
Matrix: Water
Analysis Batch: 436242

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	Limit
1,4-Dioxane	2.0	U	10.0	9.79		ug/L		98	46 - 170	9	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	96		70 - 133								

Eurofins TestAmerica, Canton

QC Association Summary

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

Job ID: 240-130754-1

GC/MS VOA

Analysis Batch: 436242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130754-2	MW-101S_052020	Total/NA	Water	8260B SIM	
240-130754-3	MW-75D_052020	Total/NA	Water	8260B SIM	
240-130754-4	MW-75SR_052020	Total/NA	Water	8260B SIM	
MB 240-436242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-436242/4	Lab Control Sample	Total/NA	Water	8260B SIM	
MRL 240-436242/6	Lab Control Sample	Total/NA	Water	8260B SIM	
240-130724-B-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-130724-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 436358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130754-1	TRIP BLANK	Total/NA	Water	8260B	
240-130754-2	MW-101S_052020	Total/NA	Water	8260B	
240-130754-3	MW-75D_052020	Total/NA	Water	8260B	
MB 240-436358/7	Method Blank	Total/NA	Water	8260B	
LCS 240-436358/4	Lab Control Sample	Total/NA	Water	8260B	
240-130751-D-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-130751-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 436424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130754-4	MW-75SR_052020	Total/NA	Water	8260B	
MB 240-436424/7	Method Blank	Total/NA	Water	8260B	
LCS 240-436424/4	Lab Control Sample	Total/NA	Water	8260B	
240-130789-E-22 MS	Matrix Spike	Total/NA	Water	8260B	
240-130789-F-22 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-130754-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-130754-1

Date Collected: 05/20/20 00:00

Matrix: Water

Date Received: 05/22/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	436358	06/01/20 20:40	LRW	TAL CAN

Client Sample ID: MW-101S_052020

Lab Sample ID: 240-130754-2

Date Collected: 05/20/20 09:42

Matrix: Water

Date Received: 05/22/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	436358	06/01/20 21:03	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	436242	05/30/20 11:23	TJL2	TAL CAN

Client Sample ID: MW-75D_052020

Lab Sample ID: 240-130754-3

Date Collected: 05/20/20 12:01

Matrix: Water

Date Received: 05/22/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	436358	06/01/20 21:27	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	436242	05/30/20 11:49	TJL2	TAL CAN

Client Sample ID: MW-75SR_052020

Lab Sample ID: 240-130754-4

Date Collected: 05/20/20 13:21

Matrix: Water

Date Received: 05/22/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	436424	06/02/20 04:40	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	436242	05/30/20 12:15	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: 240-130754-1

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	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

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 Project Name: Ford LTP Off-Site Project Number: 30050315.402.04 PO #: 30050315.402.04		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: kristoffer.hinskey@arcadis.com Sampler Name: GARY SCHAFER Method of Shipment/Carrier: Shipping/Tracking No:		Site Contact: Julia McClafferty Telephone: 734-644-5131 Lab Contact: Mike DeMonico Telephone: 330-497-9396	
Analysis Turnaround Time TAT if different from below <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Containers & Preservatives NaOH <input type="checkbox"/> HCl <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> ZnAc <input type="checkbox"/> Other: <input type="checkbox"/> Other: <input type="checkbox"/>	
Matrix Air <input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Solid <input type="checkbox"/> Other: <input type="checkbox"/>		Filtered Sample (Y/N) Composite-C / Grab-C <input type="checkbox"/>	
Sample Identification Sample Date Sample Time TRIP BLANK 5/20/20 MW-1015-052020 5/20/20 9:42 MW-75D-052020 5/20/20 12:01 MW-75SR-052020 5/20/20 13:21		Analyses 1,1-DCE 8260B X X X X X cis-1,2-DCE 8260B X X X X X Trans-1,2-DCE 8260B X X X X X PCE 8260B X X X X X TCE 8260B X X X X X Vinyl Chloride 8260B X X X X X 1,4-Dioxane 8260B SIM X X X X X	
Sample Specific Notes / Special Instructions:		Walk-in client <input type="checkbox"/> Lab sampling <input type="checkbox"/> Job/SDG No: <input type="checkbox"/> For lab use only <input type="checkbox"/> COCs <input type="checkbox"/> of <input type="checkbox"/>	



Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Relinquished by: <i>ASchaf</i>	Company: Arcadis	Date/Time: 5/20/20 1355	Received by: RACHEL BIELEK Paul Fald	Company: ARCADIS	Date/Time: 5/20/20 1355
Relinquished by: RACHEL BIELEK Paul Fald	Company: ARCADIS	Date/Time: 5/20/20 1620	Received by: ADONI COLD STORAGE	Company: ARCADIS	Date/Time: 5/20/20 1620
Relinquished by: <i>Adam Gerner</i>	Company: Arcadis	Date/Time: 5/21/20 0845	Received by: <i>Adam Gerner</i>	Company: ENM m1	Date/Time: 5/21/20 8:54

Relinquished by *Angela my* ENM m1 5/21/20 8:54
Adam Gerner 5-22-20 9:20

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Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Adam Jensen

Cooler Received on 5-22-20 Opened on 5-22-20

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

TestAmerica Cooler # 74 Foam Box _____ Client Cooler _____ Box _____ Other _____

Packing material used: Bubble Wrap Foam _____ Plastic Bag _____ None _____ Other _____

COOLANT: Wet Ice Blue Ice _____ Dry Ice _____ Water _____ None _____

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN# IR-10 (CF +0.7°C) Observed Cooler Temp. 13 °C Corrected Cooler Temp. 20 °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 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels be reconciled with the COC? Yes No

9. Were correct bottle(s) used for the test(s) indicated? Yes No

10. Sufficient quantity received to perform indicated analyses? Yes No

11. Are these work share samples? Yes 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? Yes No NA pH Strip Lot# HC902937

13. Were VOAs on the COC? Yes No

14. Were air bubbles >6 mm in any VOA vials? Yes No NA ● ← Larger than this.

15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 04177016 Yes No

16. Was a LL Hg or Me Hg trip blank present? Yes 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: _____

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: _____