

ANALYTICAL REPORT

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

Laboratory Job ID: 240-126341-1
Client Project/Site: Ford LTP On Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
2/28/2020 10:34:21 AM

Michael DelMonico, Project Manager I
(330)497-9396
michael.delmonico@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Surrogate Summary	14
QC Sample Results	15
QC Association Summary	18
Lab Chronicle	19
Certification Summary	20
Chain of Custody	21

Definitions/Glossary

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

Job ID: 240-126341-1

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 On Site

Job ID: 240-126341-1

Job ID: 240-126341-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On Site

Report Number: 240-126341-1

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 2/14/2020 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.6° C, 4.4° C and 4.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-126341-1), MW-55D_021220 (240-126341-2), MW-54_021220 (240-126341-3), MW-54S_021220 (240-126341-4), MW-53_021220 (240-126341-5) and MW-57_021220 (240-126341-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/20/2020.

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-55D_021220 (240-126341-2), MW-54_021220 (240-126341-3), MW-54S_021220 (240-126341-4), MW-53_021220 (240-126341-5) and MW-57_021220 (240-126341-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/24/2020.

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 On Site

Job ID: 240-126341-1

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 On Site

Job ID: 240-126341-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126341-1	TRIP BLANK	Water	02/12/20 00:00	02/14/20 08:50	
240-126341-2	MW-55D_021220	Water	02/12/20 09:33	02/14/20 08:50	
240-126341-3	MW-54_021220	Water	02/12/20 11:00	02/14/20 08:50	
240-126341-4	MW-54S_021220	Water	02/12/20 12:38	02/14/20 08:50	
240-126341-5	MW-53_021220	Water	02/12/20 14:13	02/14/20 08:50	
240-126341-6	MW-57_021220	Water	02/12/20 16:06	02/14/20 08:50	

Detection Summary

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

Job ID: 240-126341-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126341-1

No Detections.

Client Sample ID: MW-55D_021220

Lab Sample ID: 240-126341-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.35	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-54_021220

Lab Sample ID: 240-126341-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.2		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-54S_021220

Lab Sample ID: 240-126341-4

No Detections.

Client Sample ID: MW-53_021220

Lab Sample ID: 240-126341-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.20	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-57_021220

Lab Sample ID: 240-126341-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.60	J	1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126341-1

Date Collected: 02/12/20 00:00

Matrix: Water

Date Received: 02/14/20 08:50

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			02/20/20 17:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 17:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 17:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 17:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 17:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/20/20 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 130		02/20/20 17:00	1
4-Bromofluorobenzene (Surr)	69		47 - 134		02/20/20 17:00	1
Toluene-d8 (Surr)	90		69 - 122		02/20/20 17:00	1
Dibromofluoromethane (Surr)	120		78 - 129		02/20/20 17:00	1

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: MW-55D_021220

Lab Sample ID: 240-126341-2

Date Collected: 02/12/20 09:33

Matrix: Water

Date Received: 02/14/20 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			02/24/20 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 133		02/24/20 15:30	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			02/20/20 20:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 20:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 20:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 20:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 20:10	1
Vinyl chloride	0.35	J	1.0	0.20	ug/L			02/20/20 20:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 130		02/20/20 20:10	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/20/20 20:10	1
Toluene-d8 (Surr)	88		69 - 122		02/20/20 20:10	1
Dibromofluoromethane (Surr)	120		78 - 129		02/20/20 20:10	1

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: MW-54_021220

Lab Sample ID: 240-126341-3

Date Collected: 02/12/20 11:00

Matrix: Water

Date Received: 02/14/20 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.5		2.0	0.86	ug/L			02/24/20 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 133		02/24/20 15:56	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			02/20/20 20:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 20:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 20:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 20:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 20:34	1
Vinyl chloride	1.2		1.0	0.20	ug/L			02/20/20 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130		02/20/20 20:34	1
4-Bromofluorobenzene (Surr)	70		47 - 134		02/20/20 20:34	1
Toluene-d8 (Surr)	88		69 - 122		02/20/20 20:34	1
Dibromofluoromethane (Surr)	119		78 - 129		02/20/20 20:34	1

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: MW-54S_021220

Lab Sample ID: 240-126341-4

Date Collected: 02/12/20 12:38

Matrix: Water

Date Received: 02/14/20 08:50

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			02/24/20 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 133		02/24/20 16:22	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			02/20/20 20:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 20:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 20:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 20:58	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 20:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/20/20 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 130		02/20/20 20:58	1
4-Bromofluorobenzene (Surr)	66		47 - 134		02/20/20 20:58	1
Toluene-d8 (Surr)	84		69 - 122		02/20/20 20:58	1
Dibromofluoromethane (Surr)	124		78 - 129		02/20/20 20:58	1

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: MW-53_021220

Lab Sample ID: 240-126341-5

Date Collected: 02/12/20 14:13

Matrix: Water

Date Received: 02/14/20 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			02/24/20 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 133		02/24/20 16:48	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			02/20/20 21:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 21:21	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 21:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 21:21	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 21:21	1
Vinyl chloride	0.20	J	1.0	0.20	ug/L			02/20/20 21:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		02/20/20 21:21	1
4-Bromofluorobenzene (Surr)	64		47 - 134		02/20/20 21:21	1
Toluene-d8 (Surr)	85		69 - 122		02/20/20 21:21	1
Dibromofluoromethane (Surr)	118		78 - 129		02/20/20 21:21	1

Client Sample Results

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

Job ID: 240-126341-1

Client Sample ID: MW-57_021220

Lab Sample ID: 240-126341-6

Date Collected: 02/12/20 16:06

Matrix: Water

Date Received: 02/14/20 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.86	ug/L			02/24/20 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 133		02/24/20 17:14	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			02/20/20 21:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 21:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 21:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 21:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 21:45	1
Vinyl chloride	0.60	J	1.0	0.20	ug/L			02/20/20 21:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130		02/20/20 21:45	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/20/20 21:45	1
Toluene-d8 (Surr)	86		69 - 122		02/20/20 21:45	1
Dibromofluoromethane (Surr)	115		78 - 129		02/20/20 21:45	1

Surrogate Summary

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

Job ID: 240-126341-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
190-22324-G-6 MS	Matrix Spike	95	95	97	96
190-22324-H-6 MSD	Matrix Spike Duplicate	95	95	97	98
240-126341-1	TRIP BLANK	113	69	90	120
240-126341-2	MW-55D_021220	116	68	88	120
240-126341-3	MW-54_021220	105	70	88	119
240-126341-4	MW-54S_021220	116	66	84	124
240-126341-5	MW-53_021220	109	64	85	118
240-126341-6	MW-57_021220	115	68	86	115
LCS 240-423592/4	Lab Control Sample	96	95	96	99
MB 240-423592/7	Method Blank	109	64	89	116

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-126341-2	MW-55D_021220	103
240-126341-3	MW-54_021220	103
240-126341-4	MW-54S_021220	104
240-126341-5	MW-53_021220	101
240-126341-6	MW-57_021220	105
240-126349-G-5 MS	Matrix Spike	103
240-126349-G-5 MSD	Matrix Spike Duplicate	105
LCS 240-423939/4	Lab Control Sample	101
MB 240-423939/5	Method Blank	102

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-126341-1

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

Lab Sample ID: MB 240-423592/7
Matrix: Water
Analysis Batch: 423592

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			02/20/20 15:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/20/20 15:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/20/20 15:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/20/20 15:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/20/20 15:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/20/20 15:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		02/20/20 15:25	1
4-Bromofluorobenzene (Surr)	64		47 - 134		02/20/20 15:25	1
Toluene-d8 (Surr)	89		69 - 122		02/20/20 15:25	1
Dibromofluoromethane (Surr)	116		78 - 129		02/20/20 15:25	1

Lab Sample ID: LCS 240-423592/4
Matrix: Water
Analysis Batch: 423592

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	10.6		ug/L		106	73 - 129
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	75 - 124
Tetrachloroethene	10.0	10.8		ug/L		108	70 - 125
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	74 - 130
Trichloroethene	10.0	11.1		ug/L		111	71 - 121
Vinyl chloride	10.0	7.36		ug/L		74	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	96		69 - 122
Dibromofluoromethane (Surr)	99		78 - 129

Lab Sample ID: 190-22324-G-6 MS
Matrix: Water
Analysis Batch: 423592

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	9.91		ug/L		99	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 121
Tetrachloroethene	1.0	U	10.0	10.5		ug/L		105	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	69 - 126
Trichloroethene	1.0	U	10.0	10.1		ug/L		101	56 - 124
Vinyl chloride	1.0	U	10.0	7.02		ug/L		70	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	97		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-126341-1

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

Lab Sample ID: 190-22324-G-6 MS
Matrix: Water
Analysis Batch: 423592

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	96		78 - 129

Lab Sample ID: 190-22324-H-6 MSD
Matrix: Water
Analysis Batch: 423592

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	10.2		ug/L		102	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	10.8		ug/L		108	68 - 121	4	35
Tetrachloroethene	1.0	U	10.0	10.3		ug/L		103	52 - 129	2	35
trans-1,2-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	69 - 126	3	35
Trichloroethene	1.0	U	10.0	9.79		ug/L		98	56 - 124	3	35
Vinyl chloride	1.0	U	10.0	7.15		ug/L		72	49 - 136	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	97		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129

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

Lab Sample ID: MB 240-423939/5
Matrix: Water
Analysis Batch: 423939

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			02/24/20 11:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/24/20 11:11	1

Lab Sample ID: LCS 240-423939/4
Matrix: Water
Analysis Batch: 423939

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	9.41		ug/L		94	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 133

Lab Sample ID: 240-126349-G-5 MS
Matrix: Water
Analysis Batch: 423939

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	9.98		ug/L		100	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-126341-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	103		70 - 133

Lab Sample ID: 240-126349-G-5 MSD
Matrix: Water
Analysis Batch: 423939

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	46 - 170	2	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	105		70 - 133



QC Association Summary

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

Job ID: 240-126341-1

GC/MS VOA

Analysis Batch: 423592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126341-1	TRIP BLANK	Total/NA	Water	8260B	
240-126341-2	MW-55D_021220	Total/NA	Water	8260B	
240-126341-3	MW-54_021220	Total/NA	Water	8260B	
240-126341-4	MW-54S_021220	Total/NA	Water	8260B	
240-126341-5	MW-53_021220	Total/NA	Water	8260B	
240-126341-6	MW-57_021220	Total/NA	Water	8260B	
MB 240-423592/7	Method Blank	Total/NA	Water	8260B	
LCS 240-423592/4	Lab Control Sample	Total/NA	Water	8260B	
190-22324-G-6 MS	Matrix Spike	Total/NA	Water	8260B	
190-22324-H-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 423939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126341-2	MW-55D_021220	Total/NA	Water	8260B SIM	
240-126341-3	MW-54_021220	Total/NA	Water	8260B SIM	
240-126341-4	MW-54S_021220	Total/NA	Water	8260B SIM	
240-126341-5	MW-53_021220	Total/NA	Water	8260B SIM	
240-126341-6	MW-57_021220	Total/NA	Water	8260B SIM	
MB 240-423939/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-423939/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-126349-G-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-126349-G-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-126341-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126341-1

Date Collected: 02/12/20 00:00

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 17:00	LRW	TAL CAN

Client Sample ID: MW-55D_021220

Lab Sample ID: 240-126341-2

Date Collected: 02/12/20 09:33

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 20:10	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423939	02/24/20 15:30	SAM	TAL CAN

Client Sample ID: MW-54_021220

Lab Sample ID: 240-126341-3

Date Collected: 02/12/20 11:00

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 20:34	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423939	02/24/20 15:56	SAM	TAL CAN

Client Sample ID: MW-54S_021220

Lab Sample ID: 240-126341-4

Date Collected: 02/12/20 12:38

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 20:58	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423939	02/24/20 16:22	SAM	TAL CAN

Client Sample ID: MW-53_021220

Lab Sample ID: 240-126341-5

Date Collected: 02/12/20 14:13

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 21:21	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423939	02/24/20 16:48	SAM	TAL CAN

Client Sample ID: MW-57_021220

Lab Sample ID: 240-126341-6

Date Collected: 02/12/20 16:06

Matrix: Water

Date Received: 02/14/20 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423592	02/20/20 21:45	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423939	02/24/20 17:14	SAM	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-126341-1

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 (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.



Chain of Custody Record



TestAmerica Laboratories, Inc.
THE LEADER IN ENVIRONMENTAL TESTING

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

Sample Identification	Sample Date	Sample Time	Matrix				Filtered Sample (Y/N)	Composite (C/Grab/G)	Analyses						Sample Specific Notes / Special Instructions		
			Air	Aqueous	Sediment	Solid			Other:	1,1-DCE 8260B	1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B		Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM
TRIP BLANK	---	---	1					NG	X	X	X	X	X	X			
MW-557-021220	2/12/20	0933	6					NG	X	X	X	X	X	X			TRIP BLANK 3 Vials for 8260B 3 Vials for 8260B
MW-54-021220	2/12/20	1100	6					NG	X	X	X	X	X	X			3 Vials for 8260B
MW-545-021220	2/12/20	1238	6					NG	X	X	X	X	X	X			
MW-53-021220	2/12/20	1413	6					NG	X	X	X	X	X	X			
MW-57-021220	2/12/20	1606	6					NG	X	X	X	X	X	X			

240-126341 Chain of Custody

Possible Hazard Identification: Non-Hazard Irritant Flammable Poison B Unknown
 Special Instructions/QC Requirements & Comments: Longer than 1 month
 Submit all results through Cadena at jomalisa@cadenaco.com. Cadena #E203728
 Level IV Reporting requested.

Requisitioned by:	Date/Time:	Company:
Melissa Weaver	2/12/20 1625	ARCADIS
John [Signature]	2/12/20 1730	ARCADIS
Melissa Weaver	2/13/20 15:35	ARCADIS
Melissa Weaver	2/13/20 1640	ARCADIS

Received in Laboratory by: Molly Maxson
 Company: ETAL-MI
 Date/Time: 2/14/20 8:50



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility


Login # : 126341

Client Arcadis Site Name _____
 Cooler Received on 2-14-20 Opened on 2-14-20
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by: _____

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

TestAmerica Cooler # NA 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. B °C Corrected Cooler Temp. _____ °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 3 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# HC995364
 13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # NA Yes No
 16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: _____

AG

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: _____

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-10 IR-11	2.9	3.6	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11	3.7	4.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11	3.9	4.6	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None

See Temperature Excursion Form