

ANALYTICAL REPORT

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

Laboratory Job ID: 240-139961-1
Client Project/Site: Ford LTP - On Site

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



Authorized for release by:
11/24/2020 4:16:19 PM

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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 - On Site

Job ID: 240-139961-1

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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 240-139961-1

Job ID: 240-139961-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - On Site

Report Number: 240-139961-1

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

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

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

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

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

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

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

RECEIPT

The samples were received on 11/11/2020 9:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.8° C and 2.9° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-139961-1), MW-55D_110620 (240-139961-2), MW-55_110620 (240-139961-3), MW-56_110620 (240-139961-4) and MW-58_110620 (240-139961-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/19/2020.

Samples MW-56_110620 (240-139961-4)[2.5X] and MW-58_110620 (240-139961-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-56_110620 (240-139961-4) and MW-58_110620 (240-139961-5). Elevated reporting limits (RLs) are provided.

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_110620 (240-139961-2), MW-55_110620 (240-139961-3), MW-56_110620 (240-139961-4) and MW-58_110620 (240-139961-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The

Case Narrative

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

Job ID: 240-139961-1

Job ID: 240-139961-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

samples were analyzed on 11/16/2020.

Sample MW-55_110620 (240-139961-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-55_110620 (240-139961-3). Elevated reporting limits (RLs) are provided.

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

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Method Summary

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

Job ID: 240-139961-1

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

Protocol References:

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

Laboratory References:

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

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Sample Summary

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

Job ID: 240-139961-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-139961-1	TRIP BLANK	Water	11/06/20 00:00	11/11/20 09:15	
240-139961-2	MW-55D_110620	Water	11/06/20 09:40	11/11/20 09:15	
240-139961-3	MW-55_110620	Water	11/06/20 10:38	11/11/20 09:15	
240-139961-4	MW-56_110620	Water	11/06/20 12:10	11/11/20 09:15	
240-139961-5	MW-58_110620	Water	11/06/20 13:47	11/11/20 09:15	

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- 13
- 14

Detection Summary

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

Job ID: 240-139961-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-139961-1

No Detections.

Client Sample ID: MW-55D_110620

Lab Sample ID: 240-139961-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-55_110620

Lab Sample ID: 240-139961-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.8	J	4.0	1.7	ug/L	2		8260B SIM	Total/NA
Vinyl chloride	0.31	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-56_110620

Lab Sample ID: 240-139961-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.1	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.65	J	2.5	0.40	ug/L	2.5		8260B	Total/NA

Client Sample ID: MW-58_110620

Lab Sample ID: 240-139961-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.1		2.0	0.86	ug/L	1		8260B SIM	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: 240-139961-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-139961-1

Date Collected: 11/06/20 00:00

Matrix: Water

Date Received: 11/11/20 09:15

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			11/19/20 17:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/19/20 17:51	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/19/20 17:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/19/20 17:51	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/19/20 17:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/19/20 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		11/19/20 17:51	1
4-Bromofluorobenzene (Surr)	94		47 - 134		11/19/20 17:51	1
Toluene-d8 (Surr)	86		69 - 122		11/19/20 17:51	1
Dibromofluoromethane (Surr)	105		78 - 129		11/19/20 17:51	1

Client Sample Results

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

Job ID: 240-139961-1

Client Sample ID: MW-55D_110620

Lab Sample ID: 240-139961-2

Date Collected: 11/06/20 09:40

Matrix: Water

Date Received: 11/11/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.86	ug/L			11/16/20 16:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 133		11/16/20 16:33	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			11/19/20 18:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/19/20 18:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/19/20 18:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/19/20 18:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/19/20 18:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/19/20 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		11/19/20 18:13	1
4-Bromofluorobenzene (Surr)	100		47 - 134		11/19/20 18:13	1
Toluene-d8 (Surr)	91		69 - 122		11/19/20 18:13	1
Dibromofluoromethane (Surr)	108		78 - 129		11/19/20 18:13	1

Client Sample Results

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

Job ID: 240-139961-1

Client Sample ID: MW-55_110620

Lab Sample ID: 240-139961-3

Date Collected: 11/06/20 10:38

Matrix: Water

Date Received: 11/11/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.8	J	4.0	1.7	ug/L			11/16/20 16:58	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		70 - 133		11/16/20 16:58	2

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			11/19/20 18:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/19/20 18:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/19/20 18:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/19/20 18:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/19/20 18:35	1
Vinyl chloride	0.31	J	1.0	0.20	ug/L			11/19/20 18:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		11/19/20 18:35	1
4-Bromofluorobenzene (Surr)	97		47 - 134		11/19/20 18:35	1
Toluene-d8 (Surr)	89		69 - 122		11/19/20 18:35	1
Dibromofluoromethane (Surr)	111		78 - 129		11/19/20 18:35	1

Client Sample Results

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

Job ID: 240-139961-1

Client Sample ID: MW-56_110620

Lab Sample ID: 240-139961-4

Date Collected: 11/06/20 12:10

Matrix: Water

Date Received: 11/11/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.1	J	2.0	0.86	ug/L			11/16/20 17:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		70 - 133					11/16/20 17:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			11/19/20 18:58	2.5
cis-1,2-Dichloroethene	0.65	J	2.5	0.40	ug/L			11/19/20 18:58	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			11/19/20 18:58	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.48	ug/L			11/19/20 18:58	2.5
Trichloroethene	2.5	U	2.5	0.25	ug/L			11/19/20 18:58	2.5
Vinyl chloride	2.5	U	2.5	0.50	ug/L			11/19/20 18:58	2.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130					11/19/20 18:58	2.5
4-Bromofluorobenzene (Surr)	97		47 - 134					11/19/20 18:58	2.5
Toluene-d8 (Surr)	89		69 - 122					11/19/20 18:58	2.5
Dibromofluoromethane (Surr)	112		78 - 129					11/19/20 18:58	2.5

Client Sample Results

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

Job ID: 240-139961-1

Client Sample ID: MW-58_110620

Lab Sample ID: 240-139961-5

Date Collected: 11/06/20 13:47

Matrix: Water

Date Received: 11/11/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.1		2.0	0.86	ug/L			11/16/20 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		70 - 133		11/16/20 17:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/19/20 19:20	2
cis-1,2-Dichloroethene	2.0	U	2.0	0.32	ug/L			11/19/20 19:20	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			11/19/20 19:20	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/19/20 19:20	2
Trichloroethene	2.0	U	2.0	0.20	ug/L			11/19/20 19:20	2
Vinyl chloride	2.0	U	2.0	0.40	ug/L			11/19/20 19:20	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		11/19/20 19:20	2
4-Bromofluorobenzene (Surr)	95		47 - 134		11/19/20 19:20	2
Toluene-d8 (Surr)	87		69 - 122		11/19/20 19:20	2
Dibromofluoromethane (Surr)	110		78 - 129		11/19/20 19:20	2

Surrogate Summary

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

Job ID: 240-139961-1

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)
240-139961-1	TRIP BLANK	97	94	86	105
240-139961-2	MW-55D_110620	104	100	91	108
240-139961-3	MW-55_110620	102	97	89	111
240-139961-4	MW-56_110620	104	97	89	112
240-139961-5	MW-58_110620	104	95	87	110
240-139961-5 MS	MW-58-MS_110620	99	95	84	108
240-139961-5 MSD	MW-58-MSD_110620	104	97	86	111
LCS 240-461801/5	Lab Control Sample	100	100	88	112
MB 240-461801/8	Method Blank	104	98	90	108

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)
240-139961-2	MW-55D_110620	114
240-139961-3	MW-55_110620	115
240-139961-4	MW-56_110620	118
240-139961-5	MW-58_110620	117
240-139961-5 MS	MW-58-MS_110620	115
240-139961-5 MSD	MW-58-MSD_110620	112
LCS 240-461111/4	Lab Control Sample	102
MB 240-461111/5	Method Blank	104

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-139961-1

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

Lab Sample ID: MB 240-461801/8
Matrix: Water
Analysis Batch: 461801

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/19/20 11:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/19/20 11:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/19/20 11:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/19/20 11:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/19/20 11:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/19/20 11:27	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		11/19/20 11:27	1
4-Bromofluorobenzene (Surr)	98		47 - 134		11/19/20 11:27	1
Toluene-d8 (Surr)	90		69 - 122		11/19/20 11:27	1
Dibromofluoromethane (Surr)	108		78 - 129		11/19/20 11:27	1

Lab Sample ID: LCS 240-461801/5
Matrix: Water
Analysis Batch: 461801

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	20.0	19.0		ug/L		95	73 - 129
cis-1,2-Dichloroethene	20.0	20.3		ug/L		102	75 - 124
Tetrachloroethene	20.0	19.1		ug/L		95	70 - 125
trans-1,2-Dichloroethene	20.0	18.3		ug/L		91	74 - 130
Trichloroethene	20.0	22.7		ug/L		113	71 - 121
Vinyl chloride	20.0	18.3		ug/L		91	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		75 - 130
4-Bromofluorobenzene (Surr)	100		47 - 134
Toluene-d8 (Surr)	88		69 - 122
Dibromofluoromethane (Surr)	112		78 - 129

Lab Sample ID: 240-139961-5 MS
Matrix: Water
Analysis Batch: 461801

Client Sample ID: MW-58-MS_110620
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	2.0	U	40.0	36.1		ug/L		90	64 - 132
cis-1,2-Dichloroethene	2.0	U	40.0	38.7		ug/L		97	68 - 121
Tetrachloroethene	2.0	U	40.0	33.8		ug/L		84	52 - 129
trans-1,2-Dichloroethene	2.0	U	40.0	35.1		ug/L		88	69 - 126
Trichloroethene	2.0	U	40.0	40.7		ug/L		102	56 - 124
Vinyl chloride	2.0	U	40.0	31.3		ug/L		78	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	84		69 - 122

QC Sample Results

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

Job ID: 240-139961-1

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

Lab Sample ID: 240-139961-5 MS
Matrix: Water
Analysis Batch: 461801

Client Sample ID: MW-58-MS_110620
Prep Type: Total/NA

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	108		78 - 129

Lab Sample ID: 240-139961-5 MSD
Matrix: Water
Analysis Batch: 461801

Client Sample ID: MW-58-MSD_110620
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	2.0	U	40.0	39.8		ug/L		100	64 - 132	10	35
cis-1,2-Dichloroethene	2.0	U	40.0	43.1		ug/L		108	68 - 121	11	35
Tetrachloroethene	2.0	U	40.0	37.8		ug/L		95	52 - 129	11	35
trans-1,2-Dichloroethene	2.0	U	40.0	38.3		ug/L		96	69 - 126	9	35
Trichloroethene	2.0	U	40.0	45.2		ug/L		113	56 - 124	11	35
Vinyl chloride	2.0	U	40.0	33.9		ug/L		85	49 - 136	8	35

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	86		69 - 122
Dibromofluoromethane (Surr)	111		78 - 129

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

Lab Sample ID: MB 240-461111/5
Matrix: Water
Analysis Batch: 461111

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			11/16/20 11:12	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 133		11/16/20 11:12	1

Lab Sample ID: LCS 240-461111/4
Matrix: Water
Analysis Batch: 461111

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

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	11.4	ug/L		114	80 - 135

Surrogate	%Recovery	LCS LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 133

Lab Sample ID: 240-139961-5 MS
Matrix: Water
Analysis Batch: 461111

Client Sample ID: MW-58-MS_110620
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS Result Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	3.1		10.0	14.5	ug/L		115	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-139961-1

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)	115		70 - 133

Lab Sample ID: 240-139961-5 MSD
Matrix: Water
Analysis Batch: 461111

Client Sample ID: MW-58-MSD_110620
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	3.1		10.0	14.1		ug/L		111	46 - 170	3	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	112		70 - 133



QC Association Summary

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

Job ID: 240-139961-1

GC/MS VOA

Analysis Batch: 461111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139961-2	MW-55D_110620	Total/NA	Water	8260B SIM	
240-139961-3	MW-55_110620	Total/NA	Water	8260B SIM	
240-139961-4	MW-56_110620	Total/NA	Water	8260B SIM	
240-139961-5	MW-58_110620	Total/NA	Water	8260B SIM	
MB 240-461111/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-461111/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-139961-5 MS	MW-58-MS_110620	Total/NA	Water	8260B SIM	
240-139961-5 MSD	MW-58-MSD_110620	Total/NA	Water	8260B SIM	

Analysis Batch: 461801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139961-1	TRIP BLANK	Total/NA	Water	8260B	
240-139961-2	MW-55D_110620	Total/NA	Water	8260B	
240-139961-3	MW-55_110620	Total/NA	Water	8260B	
240-139961-4	MW-56_110620	Total/NA	Water	8260B	
240-139961-5	MW-58_110620	Total/NA	Water	8260B	
MB 240-461801/8	Method Blank	Total/NA	Water	8260B	
LCS 240-461801/5	Lab Control Sample	Total/NA	Water	8260B	
240-139961-5 MS	MW-58-MS_110620	Total/NA	Water	8260B	
240-139961-5 MSD	MW-58-MSD_110620	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-139961-1

Client Sample ID: TRIP BLANK

Date Collected: 11/06/20 00:00

Date Received: 11/11/20 09:15

Lab Sample ID: 240-139961-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461801	11/19/20 17:51	HMB	TAL CAN

Client Sample ID: MW-55D_110620

Date Collected: 11/06/20 09:40

Date Received: 11/11/20 09:15

Lab Sample ID: 240-139961-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461801	11/19/20 18:13	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	461111	11/16/20 16:33	SAM	TAL CAN

Client Sample ID: MW-55_110620

Date Collected: 11/06/20 10:38

Date Received: 11/11/20 09:15

Lab Sample ID: 240-139961-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461801	11/19/20 18:35	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		2	461111	11/16/20 16:58	SAM	TAL CAN

Client Sample ID: MW-56_110620

Date Collected: 11/06/20 12:10

Date Received: 11/11/20 09:15

Lab Sample ID: 240-139961-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	461801	11/19/20 18:58	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	461111	11/16/20 17:23	SAM	TAL CAN

Client Sample ID: MW-58_110620

Date Collected: 11/06/20 13:47

Date Received: 11/11/20 09:15

Lab Sample ID: 240-139961-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	461801	11/19/20 19:20	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	461111	11/16/20 17:47	SAM	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 - On Site

Job ID: 240-139961-1

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

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-225-2763

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: kristoffer.hinskey@arcadis.com		Site Contact: Julia McClafferty Telephone: 734-644-5131	
Lab Contact: Mike DeMontico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ _____ of _____ COCs For lab use only	
Sampler Name: Xenia Chan Method of Shipment/Carrier: Shipping/Tracking No:		Analyses Walk-in client Lab sampling Job/SDG No: _____ Sample Specific Notes / Special Instructions:	
Sample Identification Sample Date Sample Time Sample ID		TAT if different from below 10 day <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	
Matrix Air Aqueous Sediment Solid Other:		Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc Umpres Other:	
Sample Date Sample Time Sample ID		Filtered Sample (Y/N) Composite-C/Grab-C	
Sample Date Sample Time Sample ID		1,1-DCE 8260B cis-1,2-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TCE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM	
Sample Date Sample Time Sample ID		1 Trip Blank 3 Vials for 8260B 3 Vials for 8260B SIM	
Sample Date Sample Time Sample ID		Run MS/MSD Run MS/MSD	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown			
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203728 Level IV Reporting requested.			
Relinquished by: <i>Kris Hinskey</i> Relinquished by: <i>Julia McClafferty</i> Relinquished by: <i>Julia McClafferty</i>		Received by: <i>Non Cold Storage</i> Received by: <i>David Law</i> Received in Laboratory by: <i>[Signature]</i>	
Company: Arcadis Date/Time: 11/6/20 1510		Company: Arcadis Date/Time: 11/10/20 1440	
Company: Arcadis Date/Time: 11/6/20 1510		Company: ETA Date/Time: 11/10/20 1440	
Company: Arcadis Date/Time: 11/6/20 1510		Company: ETA Date/Time: 11/10/20 1700	
Company: Arcadis Date/Time: 11/6/20 1510		Company: ETA Date/Time: 11/10/20 1700	



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 139961

Canton Facility

Client Arcadis Site Name Cooler Received on 11-11-20 Opened on 11-12-20 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 # 77 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-11 (CF +0.9 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C IR GUN #IR-12 (CF +0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 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 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 (ID/Date/Time) be reconciled with the COC? Yes No 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No 10. Were correct bottle(s) used for the test(s) indicated? Yes No 11. Sufficient quantity received to perform indicated analyses? Yes No 12. Are these work share samples and all listed on the COC? Yes No If yes, Questions 13-17 have been checked at the originating laboratory. 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861 14. Were VOAs on the COC? Yes No 15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this. 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # NA Yes No 17. 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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. 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)

20. 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)
<u>TA</u> Client Box Other	IR-11 <u>IR-12</u>	2.0	2.9	Wet Ice Blue Ice Dry Ice Water None
<u>TA</u> Client Box Other	IR-11 <u>IR-12</u>	1.9	2.8	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None

See Temperature Excursion Form

