

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-125764-1
Client Project/Site: Ford LTP Off Site

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



Authorized for release by:
2/19/2020 10:16:07 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: 240-125764-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

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

Job ID: 240-125764-1

Job ID: 240-125764-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Off Site

Report Number: 240-125764-1

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 2/5/2020 8:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.5° C and 3.0° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-125764-1), MW-85SR_020320 (240-125764-2), MW-85_020320 (240-125764-3), MW-142S_020320 (240-125764-4), MW-108S_020320 (240-125764-5) and DUP-05 (240-125764-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/06/2020.

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-85SR_020320 (240-125764-2), MW-85_020320 (240-125764-3), MW-142S_020320 (240-125764-4), MW-108S_020320 (240-125764-5) and DUP-05 (240-125764-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/06/2020 and 02/07/2020.

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: 240-125764-1

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: 240-125764-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-125764-1	TRIP BLANK	Water	02/03/20 00:00	02/05/20 08:20	
240-125764-2	MW-85SR_020320	Water	02/03/20 10:57	02/05/20 08:20	
240-125764-3	MW-85_020320	Water	02/03/20 12:50	02/05/20 08:20	
240-125764-4	MW-142S_020320	Water	02/03/20 14:07	02/05/20 08:20	
240-125764-5	MW-108S_020320	Water	02/03/20 15:54	02/05/20 08:20	
240-125764-6	DUP-05	Water	02/03/20 00:00	02/05/20 08:20	

- 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: 240-125764-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-125764-1

No Detections.

Client Sample ID: MW-85SR_020320

Lab Sample ID: 240-125764-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.4		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-85_020320

Lab Sample ID: 240-125764-3

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	4.9		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-142S_020320

Lab Sample ID: 240-125764-4

No Detections.

Client Sample ID: MW-108S_020320

Lab Sample ID: 240-125764-5

No Detections.

Client Sample ID: DUP-05

Lab Sample ID: 240-125764-6

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
Vinyl chloride	5.0		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 Off Site

Job ID: 240-125764-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-125764-1

Date Collected: 02/03/20 00:00

Matrix: Water

Date Received: 02/05/20 08:20

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			02/06/20 16:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 16:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 16:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 16:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 16:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/06/20 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		02/06/20 16:37	1
4-Bromofluorobenzene (Surr)	74		47 - 134		02/06/20 16:37	1
Toluene-d8 (Surr)	82		69 - 122		02/06/20 16:37	1
Dibromofluoromethane (Surr)	85		78 - 129		02/06/20 16:37	1

Client Sample Results

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

Job ID: 240-125764-1

Client Sample ID: MW-85SR_020320

Lab Sample ID: 240-125764-2

Date Collected: 02/03/20 10:57

Matrix: Water

Date Received: 02/05/20 08:20

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			02/06/20 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125		02/06/20 21:23	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			02/06/20 16:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 16:59	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 16:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 16:59	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 16:59	1
Vinyl chloride	1.4		1.0	0.20	ug/L			02/06/20 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 130		02/06/20 16:59	1
4-Bromofluorobenzene (Surr)	70		47 - 134		02/06/20 16:59	1
Toluene-d8 (Surr)	80		69 - 122		02/06/20 16:59	1
Dibromofluoromethane (Surr)	81		78 - 129		02/06/20 16:59	1

Client Sample Results

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

Job ID: 240-125764-1

Client Sample ID: MW-85_020320

Lab Sample ID: 240-125764-3

Date Collected: 02/03/20 12:50

Matrix: Water

Date Received: 02/05/20 08:20

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			02/06/20 21:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		63 - 125		02/06/20 21:49	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			02/06/20 17:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 17:20	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 17:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 17:20	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 17:20	1
Vinyl chloride	4.9		1.0	0.20	ug/L			02/06/20 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		02/06/20 17:20	1
4-Bromofluorobenzene (Surr)	74		47 - 134		02/06/20 17:20	1
Toluene-d8 (Surr)	85		69 - 122		02/06/20 17:20	1
Dibromofluoromethane (Surr)	83		78 - 129		02/06/20 17:20	1

Client Sample Results

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

Job ID: 240-125764-1

Client Sample ID: MW-142S_020320

Lab Sample ID: 240-125764-4

Date Collected: 02/03/20 14:07

Matrix: Water

Date Received: 02/05/20 08:20

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			02/06/20 22:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125		02/06/20 22:15	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			02/06/20 17:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 17:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 17:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 17:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 17:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/06/20 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130		02/06/20 17:42	1
4-Bromofluorobenzene (Surr)	73		47 - 134		02/06/20 17:42	1
Toluene-d8 (Surr)	83		69 - 122		02/06/20 17:42	1
Dibromofluoromethane (Surr)	85		78 - 129		02/06/20 17:42	1

Client Sample Results

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

Job ID: 240-125764-1

Client Sample ID: MW-108S_020320

Lab Sample ID: 240-125764-5

Date Collected: 02/03/20 15:54

Matrix: Water

Date Received: 02/05/20 08:20

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			02/06/20 22:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125		02/06/20 22:41	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			02/06/20 18:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 18:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 18:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 18:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 18:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/06/20 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/06/20 18:04	1
4-Bromofluorobenzene (Surr)	70		47 - 134		02/06/20 18:04	1
Toluene-d8 (Surr)	80		69 - 122		02/06/20 18:04	1
Dibromofluoromethane (Surr)	82		78 - 129		02/06/20 18:04	1

Client Sample Results

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

Job ID: 240-125764-1

Client Sample ID: DUP-05

Lab Sample ID: 240-125764-6

Date Collected: 02/03/20 00:00

Matrix: Water

Date Received: 02/05/20 08:20

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			02/07/20 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125		02/07/20 15:59	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			02/06/20 18:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 18:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 18:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 18:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 18:26	1
Vinyl chloride	5.0		1.0	0.20	ug/L			02/06/20 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/06/20 18:26	1
4-Bromofluorobenzene (Surr)	71		47 - 134		02/06/20 18:26	1
Toluene-d8 (Surr)	81		69 - 122		02/06/20 18:26	1
Dibromofluoromethane (Surr)	81		78 - 129		02/06/20 18:26	1

Surrogate Summary

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

Job ID: 240-125764-1

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)
240-125756-E-2 MSD	Matrix Spike Duplicate	88	74	83	88
240-125756-F-2 MS	Matrix Spike	88	76	83	85
240-125764-1	TRIP BLANK	89	74	82	85
240-125764-2	MW-85SR_020320	87	70	80	81
240-125764-3	MW-85_020320	89	74	85	83
240-125764-4	MW-142S_020320	91	73	83	85
240-125764-5	MW-108S_020320	88	70	80	82
240-125764-6	DUP-05	90	71	81	81
LCS 240-421752/4	Lab Control Sample	84	76	81	90
MB 240-421752/7	Method Blank	88	74	83	84

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
		(63-125)
240-125683-C-2 MS	Matrix Spike	100
240-125683-C-2 MSD	Matrix Spike Duplicate	98
240-125764-2	MW-85SR_020320	98
240-125764-3	MW-85_020320	97
240-125764-4	MW-142S_020320	99
240-125764-5	MW-108S_020320	99
240-125764-6	DUP-05	98
240-125766-G-3 MS	Matrix Spike	100
240-125766-G-3 MSD	Matrix Spike Duplicate	106
LCS 240-421767/4	Lab Control Sample	97
LCS 240-421906/4	Lab Control Sample	91
MB 240-421767/5	Method Blank	98
MB 240-421906/5	Method Blank	97

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-125764-1

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

Lab Sample ID: MB 240-421752/7
Matrix: Water
Analysis Batch: 421752

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			02/06/20 12:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/06/20 12:15	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/06/20 12:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/20 12:15	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/06/20 12:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/06/20 12:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/06/20 12:15	1
4-Bromofluorobenzene (Surr)	74		47 - 134		02/06/20 12:15	1
Toluene-d8 (Surr)	83		69 - 122		02/06/20 12:15	1
Dibromofluoromethane (Surr)	84		78 - 129		02/06/20 12:15	1

Lab Sample ID: LCS 240-421752/4
Matrix: Water
Analysis Batch: 421752

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	11.1		ug/L		111	73 - 129
cis-1,2-Dichloroethene	10.0	11.1		ug/L		111	75 - 124
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 125
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	74 - 130
Trichloroethene	10.0	10.8		ug/L		108	71 - 121
Vinyl chloride	10.0	9.53		ug/L		95	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	76		47 - 134
Toluene-d8 (Surr)	81		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

Lab Sample ID: 240-125756-E-2 MSD
Matrix: Water
Analysis Batch: 421752

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	8.73		ug/L		87	64 - 132	4	35
cis-1,2-Dichloroethene	0.22	J	10.0	9.36		ug/L		91	68 - 121	3	35
Tetrachloroethene	1.0	U	10.0	8.15		ug/L		81	52 - 129	7	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.70		ug/L		87	69 - 126	8	35
Trichloroethene	1.0	U	10.0	8.63		ug/L		86	56 - 124	4	35
Vinyl chloride	3.5		10.0	12.1		ug/L		86	49 - 136	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	74		47 - 134
Toluene-d8 (Surr)	83		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-125764-1

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

Lab Sample ID: 240-125756-E-2 MSD
Matrix: Water
Analysis Batch: 421752

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-125756-F-2 MS
Matrix: Water
Analysis Batch: 421752

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	8.34		ug/L		83	64 - 132
cis-1,2-Dichloroethene	0.22	J	10.0	9.11		ug/L		89	68 - 121
Tetrachloroethene	1.0	U	10.0	7.60		ug/L		76	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.04		ug/L		80	69 - 126
Trichloroethene	1.0	U	10.0	8.32		ug/L		83	56 - 124
Vinyl chloride	3.5		10.0	11.4		ug/L		79	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	76		47 - 134
Toluene-d8 (Surr)	83		69 - 122
Dibromofluoromethane (Surr)	85		78 - 129

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

Lab Sample ID: MB 240-421767/5
Matrix: Water
Analysis Batch: 421767

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			02/06/20 12:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125		02/06/20 12:43	1

Lab Sample ID: LCS 240-421767/4
Matrix: Water
Analysis Batch: 421767

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	10.5		ug/L		105	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		63 - 125

Lab Sample ID: 240-125683-C-2 MS
Matrix: Water
Analysis Batch: 421767

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	10.2		ug/L		102	52 - 129

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-125764-1

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)	100		63 - 125

Lab Sample ID: 240-125683-C-2 MSD
Matrix: Water
Analysis Batch: 421767

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	10.7		ug/L		107	52 - 129	5	13

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	98		63 - 125

Lab Sample ID: MB 240-421906/5
Matrix: Water
Analysis Batch: 421906

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/07/20 11:39	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	97		63 - 125		02/07/20 11:39	1

Lab Sample ID: LCS 240-421906/4
Matrix: Water
Analysis Batch: 421906

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	10.0	10.2		ug/L		102	59 - 131

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS LCS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	91		63 - 125

Lab Sample ID: 240-125766-G-3 MS
Matrix: Water
Analysis Batch: 421906

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	2.0	U	10.0	9.58		ug/L		96	52 - 129

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	100		63 - 125

Lab Sample ID: 240-125766-G-3 MSD
Matrix: Water
Analysis Batch: 421906

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	9.36		ug/L		94	52 - 129	2	13

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-125764-1

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

Lab Sample ID: 240-125766-G-3 MSD
Matrix: Water
Analysis Batch: 421906

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

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		63 - 125

- 1
- 2
- 3
- 4
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- 10
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- 12
- 13
- 14

QC Association Summary

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

Job ID: 240-125764-1

GC/MS VOA

Analysis Batch: 421752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-125764-1	TRIP BLANK	Total/NA	Water	8260B	
240-125764-2	MW-85SR_020320	Total/NA	Water	8260B	
240-125764-3	MW-85_020320	Total/NA	Water	8260B	
240-125764-4	MW-142S_020320	Total/NA	Water	8260B	
240-125764-5	MW-108S_020320	Total/NA	Water	8260B	
240-125764-6	DUP-05	Total/NA	Water	8260B	
MB 240-421752/7	Method Blank	Total/NA	Water	8260B	
LCS 240-421752/4	Lab Control Sample	Total/NA	Water	8260B	
240-125756-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-125756-F-2 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 421767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-125764-2	MW-85SR_020320	Total/NA	Water	8260B SIM	
240-125764-3	MW-85_020320	Total/NA	Water	8260B SIM	
240-125764-4	MW-142S_020320	Total/NA	Water	8260B SIM	
240-125764-5	MW-108S_020320	Total/NA	Water	8260B SIM	
MB 240-421767/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-421767/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-125683-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-125683-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 421906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-125764-6	DUP-05	Total/NA	Water	8260B SIM	
MB 240-421906/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-421906/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-125766-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-125766-G-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-125764-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-125764-1

Date Collected: 02/03/20 00:00

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 16:37	LEE	TAL CAN

Client Sample ID: MW-85SR_020320

Lab Sample ID: 240-125764-2

Date Collected: 02/03/20 10:57

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 16:59	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	421767	02/06/20 21:23	SAM	TAL CAN

Client Sample ID: MW-85_020320

Lab Sample ID: 240-125764-3

Date Collected: 02/03/20 12:50

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 17:20	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	421767	02/06/20 21:49	SAM	TAL CAN

Client Sample ID: MW-142S_020320

Lab Sample ID: 240-125764-4

Date Collected: 02/03/20 14:07

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 17:42	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	421767	02/06/20 22:15	SAM	TAL CAN

Client Sample ID: MW-108S_020320

Lab Sample ID: 240-125764-5

Date Collected: 02/03/20 15:54

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 18:04	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	421767	02/06/20 22:41	SAM	TAL CAN

Client Sample ID: DUP-05

Lab Sample ID: 240-125764-6

Date Collected: 02/03/20 00:00

Matrix: Water

Date Received: 02/05/20 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421752	02/06/20 18:26	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	421906	02/07/20 15:59	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 Off Site

Job ID: 240-125764-1

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

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

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



Chain of Custody Record

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

Regulatory program: DW NPDES RCRA Other

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: 30042006.0402.02
PO # 30042006.0402.02

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kris@hinskey.com
Site Contact: Julia McClafferty
Telephone: 734-644-5131
Lab Contact: Mike DeLMonico
Telephone: 330-497-9396

Sampler Name: *Madison Olander*
Method of Shipment/Carrier:
Shipping/Tracking No:

Analysis Turnaround Time: 10 day
TAT if different from below:
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Containers & Preservatives:
ZnAc
NaOH
HCl
HNO3
H2SO4
Other:

Matrix:
Aqueous
Sediment
Solid
Other:

Filtered Sample (Y/N)
Composite C / Grab C

Analyses:
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 Specific Notes / Special Instructions:
1 trip blank
3 vials for 8260B
3 vials for 8260B SIM

Possible Hazard Identification
 Non-Hazard Flammable Corrosive Irritant Unknown
 Toxic Volatile Reactive Other

Sample Disposal (A fee may be assessed for disposal of samples):
 Return to Client Disposal By Lab Archive For _____ Months



Sample Identification	Sample Date	Sample Time	Matrix	Containers & Preservatives	Filtered Sample (Y/N)	Composite C / Grab C	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 Specific Notes / Special Instructions
TRIP BLANK							X							1 trip blank
MW-855R-020320	2/3/20	1057	X					X	X	X	X	X	X	3 vials for 8260B 3 vials for 8260B SIM
MW-85-020320		1250												
MW-142S-020320		1407												
MW-108S-020320		1554												
DUP-05														

Relinquished by: *Julia McClafferty*
Date/Time: 2/3/20 1700
Company: Arcadis

Relinquished by: *Madison Olander*
Date/Time: 2/3/20 1817
Company: Arcadis

Relinquished by: *Rachel Belak*
Date/Time: 2/4/20 1136
Company: Arcadis

Relinquished by: *Molly Maxson*
Date/Time: 2/4/20 1603
Company: Arcadis

Received by: *Matthew Woodman*
Date/Time: 2/3/20 1700
Company: Arcadis

Received by: *Arcadis Cold Storage*
Date/Time: 2/3/20 1817
Company: Arcadis

Received in Laboratory by: *Molly Maxson*
Date/Time: 2/4/20 1136
Company: Arcadis

Signature: *Rachel Belak*
Signature: *Molly Maxson*
Signature: *Matthew Woodman*
Signature: *ARCADIS*

Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 125764

Canton Facility

Client Arcadis Site Name Cooler Received on 2-5-20 Opened on 2-5-20 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 # 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 [X] See Multiple Cooler Form IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. °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 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 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? [X] 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: RC

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:

