

ANALYTICAL REPORT

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

Laboratory Job ID: 240-140271-1
Client Project/Site: Ford LTP - Off Site

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



Authorized for release by:
11/30/2020 3:59:52 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 - Off Site

Job ID: 240-140271-1

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 - Off Site

Job ID: 240-140271-1

Job ID: 240-140271-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - Off Site

Report Number: 240-140271-1

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 11/14/2020 10:00 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 3.2° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-140271-1), MW-131S_111220 (240-140271-2), MW-105S_111220 (240-140271-3), MW-102_111220 (240-140271-4), MW-102S_111220 (240-140271-5) and DUP-15 (240-140271-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/24/2020.

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-131S_111220 (240-140271-2), MW-105S_111220 (240-140271-3), MW-102_111220 (240-140271-4), MW-102S_111220 (240-140271-5) and DUP-15 (240-140271-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/22/2020.

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: 240-140271-1

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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- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-140271-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140271-1	TRIP BLANK	Water	11/12/20 00:00	11/14/20 10:00	
240-140271-2	MW-131S_111220	Water	11/12/20 09:50	11/14/20 10:00	
240-140271-3	MW-105S_111220	Water	11/12/20 11:05	11/14/20 10:00	
240-140271-4	MW-102_111220	Water	11/12/20 12:40	11/14/20 10:00	
240-140271-5	MW-102S_111220	Water	11/12/20 13:30	11/14/20 10:00	
240-140271-6	DUP-15	Water	11/12/20 00:00	11/14/20 10:00	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-140271-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140271-1

No Detections.

Client Sample ID: MW-131S_111220

Lab Sample ID: 240-140271-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.59	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-105S_111220

Lab Sample ID: 240-140271-3

No Detections.

Client Sample ID: MW-102_111220

Lab Sample ID: 240-140271-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.88	J	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-102S_111220

Lab Sample ID: 240-140271-5

No Detections.

Client Sample ID: DUP-15

Lab Sample ID: 240-140271-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.63	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 - Off Site

Job ID: 240-140271-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140271-1

Date Collected: 11/12/20 00:00

Matrix: Water

Date Received: 11/14/20 10:00

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			11/24/20 18:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 18:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 18:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 18:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 18:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 18:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130		11/24/20 18:25	1
4-Bromofluorobenzene (Surr)	69		47 - 134		11/24/20 18:25	1
Toluene-d8 (Surr)	84		69 - 122		11/24/20 18:25	1
Dibromofluoromethane (Surr)	98		78 - 129		11/24/20 18:25	1

Client Sample Results

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

Job ID: 240-140271-1

Client Sample ID: MW-131S_111220

Lab Sample ID: 240-140271-2

Date Collected: 11/12/20 09:50

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 07:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					11/22/20 07:03	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			11/24/20 20:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 20:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 20:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 20:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 20:00	1
Vinyl chloride	0.59	J	1.0	0.20	ug/L			11/24/20 20:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130					11/24/20 20:00	1
4-Bromofluorobenzene (Surr)	72		47 - 134					11/24/20 20:00	1
Toluene-d8 (Surr)	85		69 - 122					11/24/20 20:00	1
Dibromofluoromethane (Surr)	96		78 - 129					11/24/20 20:00	1

Client Sample Results

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

Job ID: 240-140271-1

Client Sample ID: MW-105S_111220

Lab Sample ID: 240-140271-3

Date Collected: 11/12/20 11:05

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 08:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133		11/22/20 08:19	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			11/24/20 20:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 20:24	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 20:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 20:24	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 20:24	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 20:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		11/24/20 20:24	1
4-Bromofluorobenzene (Surr)	71		47 - 134		11/24/20 20:24	1
Toluene-d8 (Surr)	85		69 - 122		11/24/20 20:24	1
Dibromofluoromethane (Surr)	99		78 - 129		11/24/20 20:24	1

Client Sample Results

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

Job ID: 240-140271-1

Client Sample ID: MW-102_111220

Lab Sample ID: 240-140271-4

Date Collected: 11/12/20 12:40

Matrix: Water

Date Received: 11/14/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.88	J	2.0	0.86	ug/L			11/22/20 08:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					11/22/20 08:44	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			11/24/20 20:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 20:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 20:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 20:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 20:48	1
Vinyl chloride	1.2		1.0	0.20	ug/L			11/24/20 20:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130					11/24/20 20:48	1
4-Bromofluorobenzene (Surr)	70		47 - 134					11/24/20 20:48	1
Toluene-d8 (Surr)	86		69 - 122					11/24/20 20:48	1
Dibromofluoromethane (Surr)	100		78 - 129					11/24/20 20:48	1

Client Sample Results

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

Job ID: 240-140271-1

Client Sample ID: MW-102S_111220

Lab Sample ID: 240-140271-5

Date Collected: 11/12/20 13:30

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 09:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 133					11/22/20 09:09	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			11/24/20 21:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 21:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 21:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 21:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 21:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 21:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130					11/24/20 21:12	1
4-Bromofluorobenzene (Surr)	70		47 - 134					11/24/20 21:12	1
Toluene-d8 (Surr)	85		69 - 122					11/24/20 21:12	1
Dibromofluoromethane (Surr)	100		78 - 129					11/24/20 21:12	1

Client Sample Results

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

Job ID: 240-140271-1

Client Sample ID: DUP-15

Lab Sample ID: 240-140271-6

Date Collected: 11/12/20 00:00

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 09:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133					11/22/20 09:34	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			11/24/20 21:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 21:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 21:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 21:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 21:35	1
Vinyl chloride	0.63	J	1.0	0.20	ug/L			11/24/20 21:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130					11/24/20 21:35	1
4-Bromofluorobenzene (Surr)	69		47 - 134					11/24/20 21:35	1
Toluene-d8 (Surr)	85		69 - 122					11/24/20 21:35	1
Dibromofluoromethane (Surr)	100		78 - 129					11/24/20 21:35	1

Surrogate Summary

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

Job ID: 240-140271-1

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)
240-140271-1	TRIP BLANK	93	69	84	98
240-140271-2	MW-131S_111220	88	72	85	96
240-140271-3	MW-105S_111220	89	71	85	99
240-140271-4	MW-102_111220	93	70	86	100
240-140271-5	MW-102S_111220	94	70	85	100
240-140271-6	DUP-15	91	69	85	100
LCS 240-462601/4	Lab Control Sample	90	93	102	99
MB 240-462601/7	Method Blank	85	71	84	95

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)
240-140271-2	MW-131S_111220	88
240-140271-2 MS	MW-131S_111220	87
240-140271-2 MSD	MW-131S_111220	88
240-140271-3	MW-105S_111220	87
240-140271-4	MW-102_111220	87
240-140271-5	MW-102S_111220	90
240-140271-6	DUP-15	89
LCS 240-462242/4	Lab Control Sample	90
MB 240-462242/5	Method Blank	89

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-140271-1

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

Lab Sample ID: MB 240-462601/7
Matrix: Water
Analysis Batch: 462601

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			11/24/20 14:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 14:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 14:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 14:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 14:26	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 14:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130		11/24/20 14:26	1
4-Bromofluorobenzene (Surr)	71		47 - 134		11/24/20 14:26	1
Toluene-d8 (Surr)	84		69 - 122		11/24/20 14:26	1
Dibromofluoromethane (Surr)	95		78 - 129		11/24/20 14:26	1

Lab Sample ID: LCS 240-462601/4
Matrix: Water
Analysis Batch: 462601

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	10.2		ug/L		102	73 - 129
cis-1,2-Dichloroethene	10.0	9.70		ug/L		97	75 - 124
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 125
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	74 - 130
Trichloroethene	10.0	9.19		ug/L		92	71 - 121
Vinyl chloride	10.0	8.47		ug/L		85	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	102		69 - 122
Dibromofluoromethane (Surr)	99		78 - 129

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

Lab Sample ID: MB 240-462242/5
Matrix: Water
Analysis Batch: 462242

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			11/22/20 04:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		11/22/20 04:31	1

QC Sample Results

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

Job ID: 240-140271-1

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

Lab Sample ID: LCS 240-462242/4
Matrix: Water
Analysis Batch: 462242

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	10.8		ug/L		108	80 - 135
Surrogate							
	%Recovery	LCS Qualifier	LCS Limits				
1,2-Dichloroethane-d4 (Surr)	90		70 - 133				

Lab Sample ID: 240-140271-2 MS
Matrix: Water
Analysis Batch: 462242

Client Sample ID: MW-131S_111220
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	10.8		ug/L		108	46 - 170
Surrogate									
	%Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	87		70 - 133						

Lab Sample ID: 240-140271-2 MSD
Matrix: Water
Analysis Batch: 462242

Client Sample ID: MW-131S_111220
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	11.5		ug/L		115	46 - 170	7	26
Surrogate											
	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	88		70 - 133								

QC Association Summary

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

Job ID: 240-140271-1

GC/MS VOA

Analysis Batch: 462242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140271-2	MW-131S_111220	Total/NA	Water	8260B SIM	
240-140271-3	MW-105S_111220	Total/NA	Water	8260B SIM	
240-140271-4	MW-102_111220	Total/NA	Water	8260B SIM	
240-140271-5	MW-102S_111220	Total/NA	Water	8260B SIM	
240-140271-6	DUP-15	Total/NA	Water	8260B SIM	
MB 240-462242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-462242/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-140271-2 MS	MW-131S_111220	Total/NA	Water	8260B SIM	
240-140271-2 MSD	MW-131S_111220	Total/NA	Water	8260B SIM	

Analysis Batch: 462601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140271-1	TRIP BLANK	Total/NA	Water	8260B	
240-140271-2	MW-131S_111220	Total/NA	Water	8260B	
240-140271-3	MW-105S_111220	Total/NA	Water	8260B	
240-140271-4	MW-102_111220	Total/NA	Water	8260B	
240-140271-5	MW-102S_111220	Total/NA	Water	8260B	
240-140271-6	DUP-15	Total/NA	Water	8260B	
MB 240-462601/7	Method Blank	Total/NA	Water	8260B	
LCS 240-462601/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-140271-1

Client Sample ID: TRIP BLANK

Date Collected: 11/12/20 00:00

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 18:25	LRW	TAL CAN

Client Sample ID: MW-131S_111220

Date Collected: 11/12/20 09:50

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 20:00	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 07:03	TJL2	TAL CAN

Client Sample ID: MW-105S_111220

Date Collected: 11/12/20 11:05

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 20:24	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 08:19	TJL2	TAL CAN

Client Sample ID: MW-102_111220

Date Collected: 11/12/20 12:40

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 20:48	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 08:44	TJL2	TAL CAN

Client Sample ID: MW-102S_111220

Date Collected: 11/12/20 13:30

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 21:12	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 09:09	TJL2	TAL CAN

Client Sample ID: DUP-15

Date Collected: 11/12/20 00:00

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140271-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462601	11/24/20 21:35	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 09:34	TJL2	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: 240-140271-1

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



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: 20550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford LTP Off-Site
 Project Number: 30050315-402.04
 PO #: 30060315-402.04

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

Analyses Turnaround Time
 TAT (if different from below)
 10 day 3 weeks 2 weeks 1 week 2 days 1 day

Containers & Preservatives
 H2SO4 HNO3 HCl NaOH ZnAc NaOH Other:

Matrix
 Air Aqueous Sediment Solid Other:

Sample Identification	Sample Date	Sample Time	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			NG		X	X	X	X	X	X	X	1 Trip Blank
MW-1315-111220	11/12/20	0950										3 VOAs 8260B
MW-1055-111220		1105										3 VOAs 8260B SIM
MW-102-111220		1240										
MW-1025-111220		1330										
DUP-15												



Possible Hazard Identification
 Non-Hazard Flammable Irritant Unknown

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

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jomalina@cadenaco.com. Cadena #E203631
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	Arcadis	11/12/20 1500	NOVI Cold Storage	Arcadis	11/12/20 1500
<i>[Signature]</i>	Arcadis	11/13/20 1500	Gama Rivera	ETA	11-13-20 1500
<i>[Signature]</i>	ETA	11-13-20 1700	Gama Rivera	ETA	11-14-20 1000

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login #: 140271

Canton Facility

Client Arcadis Site Name Cooler unpacked by: Yang Rong
Cooler Received on 11-14-20 Opened on 11-14-20
FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # TA 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
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
-Were the seals on the outside of the cooler(s) signed & dated?
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?
-Were tamper/custody seals intact and uncompromised?
3. Shippers' packing slip attached to the cooler(s)?
4. Did custody papers accompany the sample(s)?
5. Were the custody papers relinquished & signed in the appropriate place?
6. Was/were the person(s) who collected the samples clearly identified on the COC?
7. Did all bottles arrive in good condition (Unbroken)?
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated?
11. Sufficient quantity received to perform indicated analyses?
12. Are these work share samples and all listed on the COC?
13. Were all preserved sample(s) at the correct pH upon receipt?
14. Were VOAs on the COC?
15. Were air bubbles >6 mm in any VOA vials?
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #
17. Was a LL Hg or Me Hg trip blank present?

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: Rong

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)		
TA	Client	Box	Other	IR-11	IR-12	2.3	3.2	Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12	1.9	2.0	Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	
TA	Client	Box	Other	IR-11	IR-12			Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11	IR-12			Water	None	

See Temperature Excursion Form