

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Laboratory Job ID: 240-140111-1
Client Project/Site: Ford LTP - Off Site

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



Authorized for release by:
11/27/2020 10:12:15 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: 240-140111-1

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: 240-140111-1

Job ID: 240-140111-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - Off Site

Report Number: 240-140111-1

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 11/12/2020 9:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-140111-1), MW-87_111020 (240-140111-2) and MW-87S_111020 (240-140111-3) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/21/2020 and 11/23/2020.

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-87_111020 (240-140111-2) and MW-87S_111020 (240-140111-3) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/19/2020.

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: 240-140111-1

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-140111-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140111-1	TRIP BLANK	Water	11/10/20 00:00	11/12/20 09:15	
240-140111-2	MW-87_111020	Water	11/10/20 08:35	11/12/20 09:15	
240-140111-3	MW-87S_111020	Water	11/10/20 09:30	11/12/20 09:15	

- 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: 240-140111-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140111-1

No Detections.

Client Sample ID: MW-87_111020

Lab Sample ID: 240-140111-2

No Detections.

Client Sample ID: MW-87S_111020

Lab Sample ID: 240-140111-3

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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: 240-140111-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140111-1

Date Collected: 11/10/20 00:00

Matrix: Water

Date Received: 11/12/20 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			11/23/20 14:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/23/20 14:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/23/20 14:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/23/20 14:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/23/20 14:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/23/20 14:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 130		11/23/20 14:50	1
4-Bromofluorobenzene (Surr)	105		47 - 134		11/23/20 14:50	1
Toluene-d8 (Surr)	102		69 - 122		11/23/20 14:50	1
Dibromofluoromethane (Surr)	91		78 - 129		11/23/20 14:50	1

Client Sample Results

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

Job ID: 240-140111-1

Client Sample ID: MW-87_111020

Lab Sample ID: 240-140111-2

Date Collected: 11/10/20 08:35

Matrix: Water

Date Received: 11/12/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/19/20 20:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133					11/19/20 20:58	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			11/23/20 15:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/23/20 15:15	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/23/20 15:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/23/20 15:15	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/23/20 15:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/23/20 15:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 130					11/23/20 15:15	1
4-Bromofluorobenzene (Surr)	103		47 - 134					11/23/20 15:15	1
Toluene-d8 (Surr)	100		69 - 122					11/23/20 15:15	1
Dibromofluoromethane (Surr)	92		78 - 129					11/23/20 15:15	1

Client Sample Results

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

Job ID: 240-140111-1

Client Sample ID: MW-87S_111020

Lab Sample ID: 240-140111-3

Date Collected: 11/10/20 09:30

Matrix: Water

Date Received: 11/12/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/19/20 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 133		11/19/20 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			11/21/20 00:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/21/20 00:14	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/21/20 00:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/21/20 00:14	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/21/20 00:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/21/20 00:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		11/21/20 00:14	1
4-Bromofluorobenzene (Surr)	103		47 - 134		11/21/20 00:14	1
Toluene-d8 (Surr)	80		69 - 122		11/21/20 00:14	1
Dibromofluoromethane (Surr)	89		78 - 129		11/21/20 00:14	1

Surrogate Summary

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

Job ID: 240-140111-1

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)
240-140111-1	TRIP BLANK	113	105	102	91
240-140111-2	MW-87_111020	113	103	100	92
240-140111-3	MW-87S_111020	88	103	80	89
240-140111-3 MS	MW-87S-MS_111020	85	108	78	85
240-140111-3 MSD	MW-87S-MSD_111020	87	109	79	88
240-140259-F-3 MS	Matrix Spike	102	109	101	83
240-140259-I-3 MSD	Matrix Spike Duplicate	100	108	101	82
LCS 240-462075/4	Lab Control Sample	84	109	81	81
LCS 240-462350/5	Lab Control Sample	101	110	104	85
MB 240-462075/7	Method Blank	84	107	79	87
MB 240-462350/8	Method Blank	110	103	100	89

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)
240-140111-2	MW-87_111020	89
240-140111-3	MW-87S_111020	90
240-140111-3 MS	MW-87S-MS_111020	89
240-140111-3 MSD	MW-87S-MSD_111020	91
LCS 240-461808/14	Lab Control Sample	86
MB 240-461808/15	Method Blank	85

Surrogate Legend
DCA = 1,2-Dichloroethane-d4 (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 (10-150)
MRL 240-461808/16	Lab Control Sample	85

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

QC Sample Results

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

Job ID: 240-140111-1

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

Lab Sample ID: MB 240-462075/7
Matrix: Water
Analysis Batch: 462075

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			11/20/20 15:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/20/20 15:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/20/20 15:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/20/20 15:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/20/20 15:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/20/20 15:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 130		11/20/20 15:55	1
4-Bromofluorobenzene (Surr)	107		47 - 134		11/20/20 15:55	1
Toluene-d8 (Surr)	79		69 - 122		11/20/20 15:55	1
Dibromofluoromethane (Surr)	87		78 - 129		11/20/20 15:55	1

Lab Sample ID: LCS 240-462075/4
Matrix: Water
Analysis Batch: 462075

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	10.1		ug/L		101	73 - 129
cis-1,2-Dichloroethene	10.0	9.72		ug/L		97	75 - 124
Tetrachloroethene	10.0	9.81		ug/L		98	70 - 125
trans-1,2-Dichloroethene	10.0	9.43		ug/L		94	74 - 130
Trichloroethene	10.0	9.78		ug/L		98	71 - 121
Vinyl chloride	10.0	9.80		ug/L		98	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	109		47 - 134
Toluene-d8 (Surr)	81		69 - 122
Dibromofluoromethane (Surr)	81		78 - 129

Lab Sample ID: 240-140111-3 MS
Matrix: Water
Analysis Batch: 462075

Client Sample ID: MW-87S-MS_111020
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	10.0		ug/L		100	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.93		ug/L		99	68 - 121
Tetrachloroethene	1.0	U	10.0	8.82		ug/L		88	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.35		ug/L		94	69 - 126
Trichloroethene	1.0	U	10.0	9.78		ug/L		98	56 - 124
Vinyl chloride	1.0	U	10.0	9.31		ug/L		93	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	108		47 - 134
Toluene-d8 (Surr)	78		69 - 122

QC Sample Results

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

Job ID: 240-140111-1

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

Lab Sample ID: 240-140111-3 MS
Matrix: Water
Analysis Batch: 462075

Client Sample ID: MW-87S-MS_111020
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	85		78 - 129

Lab Sample ID: 240-140111-3 MSD
Matrix: Water
Analysis Batch: 462075

Client Sample ID: MW-87S-MSD_111020
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>
1,1-Dichloroethene	1.0	U	10.0	10.5		ug/L		105	64 - 132	4	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.89		ug/L		99	68 - 121	0	35
Tetrachloroethene	1.0	U	10.0	8.56		ug/L		86	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.51		ug/L		95	69 - 126	2	35
Trichloroethene	1.0	U	10.0	9.62		ug/L		96	56 - 124	2	35
Vinyl chloride	1.0	U	10.0	9.65		ug/L		97	49 - 136	4	35

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	87		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	109		47 - 134
<i>Toluene-d8 (Surr)</i>	79		69 - 122
<i>Dibromofluoromethane (Surr)</i>	88		78 - 129

Lab Sample ID: MB 240-462350/8
Matrix: Water
Analysis Batch: 462350

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>
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/23/20 11:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/23/20 11:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/23/20 11:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/23/20 11:57	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/23/20 11:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/23/20 11:57	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>
<i>1,2-Dichloroethane-d4 (Surr)</i>	110		75 - 130		11/23/20 11:57	1
<i>4-Bromofluorobenzene (Surr)</i>	103		47 - 134		11/23/20 11:57	1
<i>Toluene-d8 (Surr)</i>	100		69 - 122		11/23/20 11:57	1
<i>Dibromofluoromethane (Surr)</i>	89		78 - 129		11/23/20 11:57	1

Lab Sample ID: LCS 240-462350/5
Matrix: Water
Analysis Batch: 462350

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>
1,1-Dichloroethene	20.0	19.4		ug/L		97	73 - 129
cis-1,2-Dichloroethene	20.0	19.8		ug/L		99	75 - 124
Tetrachloroethene	20.0	18.2		ug/L		91	70 - 125
trans-1,2-Dichloroethene	20.0	19.5		ug/L		97	74 - 130
Trichloroethene	20.0	16.5		ug/L		82	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-140111-1

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

Lab Sample ID: LCS 240-462350/5
Matrix: Water
Analysis Batch: 462350

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	20.0	23.4		ug/L		117	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	101		75 - 130				
4-Bromofluorobenzene (Surr)	110		47 - 134				
Toluene-d8 (Surr)	104		69 - 122				
Dibromofluoromethane (Surr)	85		78 - 129				

Lab Sample ID: 240-140259-F-3 MS
Matrix: Water
Analysis Batch: 462350

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	20.0	18.0		ug/L		90	64 - 132
cis-1,2-Dichloroethene	1.0	U	20.0	18.5		ug/L		92	68 - 121
Tetrachloroethene	1.0	U	20.0	15.5		ug/L		78	52 - 129
trans-1,2-Dichloroethene	1.0	U	20.0	18.0		ug/L		90	69 - 126
Trichloroethene	1.0	U	20.0	14.8		ug/L		74	56 - 124
Vinyl chloride	1.0	U	20.0	23.4		ug/L		117	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	102		75 - 130						
4-Bromofluorobenzene (Surr)	109		47 - 134						
Toluene-d8 (Surr)	101		69 - 122						
Dibromofluoromethane (Surr)	83		78 - 129						

Lab Sample ID: 240-140259-I-3 MSD
Matrix: Water
Analysis Batch: 462350

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	20.0	19.7		ug/L		98	64 - 132	9	35
cis-1,2-Dichloroethene	1.0	U	20.0	19.6		ug/L		98	68 - 121	6	35
Tetrachloroethene	1.0	U	20.0	17.8		ug/L		89	52 - 129	14	35
trans-1,2-Dichloroethene	1.0	U	20.0	19.6		ug/L		98	69 - 126	9	35
Trichloroethene	1.0	U	20.0	16.5		ug/L		83	56 - 124	11	35
Vinyl chloride	1.0	U	20.0	22.4		ug/L		112	49 - 136	4	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	100		75 - 130								
4-Bromofluorobenzene (Surr)	108		47 - 134								
Toluene-d8 (Surr)	101		69 - 122								
Dibromofluoromethane (Surr)	82		78 - 129								

QC Sample Results

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

Job ID: 240-140111-1

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

Lab Sample ID: MB 240-461808/15
Matrix: Water
Analysis Batch: 461808

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			11/19/20 16:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					11/19/20 16:21	1

Lab Sample ID: LCS 240-461808/14
Matrix: Water
Analysis Batch: 461808

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	10.7		ug/L		107	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	86		70 - 133				

Lab Sample ID: MRL 240-461808/16
Matrix: Water
Analysis Batch: 461808

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.00100	0.00123	J	ng/uL		123	10 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	85		10 - 150				

Lab Sample ID: 240-140111-3 MS
Matrix: Water
Analysis Batch: 461808

Client Sample ID: MW-87S-MS_111020
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	10.5		ug/L		105	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	89		70 - 133						

Lab Sample ID: 240-140111-3 MSD
Matrix: Water
Analysis Batch: 461808

Client Sample ID: MW-87S-MSD_111020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	46 - 170	0	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	91		70 - 133								

QC Association Summary

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

Job ID: 240-140111-1

GC/MS VOA

Analysis Batch: 461808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140111-2	MW-87_111020	Total/NA	Water	8260B SIM	
240-140111-3	MW-87S_111020	Total/NA	Water	8260B SIM	
MB 240-461808/15	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-461808/14	Lab Control Sample	Total/NA	Water	8260B SIM	
MRL 240-461808/16	Lab Control Sample	Total/NA	Water	8260B SIM	
240-140111-3 MS	MW-87S-MS_111020	Total/NA	Water	8260B SIM	
240-140111-3 MSD	MW-87S-MSD_111020	Total/NA	Water	8260B SIM	

Analysis Batch: 462075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140111-3	MW-87S_111020	Total/NA	Water	8260B	
MB 240-462075/7	Method Blank	Total/NA	Water	8260B	
LCS 240-462075/4	Lab Control Sample	Total/NA	Water	8260B	
240-140111-3 MS	MW-87S-MS_111020	Total/NA	Water	8260B	
240-140111-3 MSD	MW-87S-MSD_111020	Total/NA	Water	8260B	

Analysis Batch: 462350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140111-1	TRIP BLANK	Total/NA	Water	8260B	
240-140111-2	MW-87_111020	Total/NA	Water	8260B	
MB 240-462350/8	Method Blank	Total/NA	Water	8260B	
LCS 240-462350/5	Lab Control Sample	Total/NA	Water	8260B	
240-140259-F-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-140259-I-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-140111-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140111-1

Date Collected: 11/10/20 00:00

Matrix: Water

Date Received: 11/12/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462350	11/23/20 14:50	HMB	TAL CAN

Client Sample ID: MW-87_111020

Lab Sample ID: 240-140111-2

Date Collected: 11/10/20 08:35

Matrix: Water

Date Received: 11/12/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462350	11/23/20 15:15	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	461808	11/19/20 20:58	SAM	TAL CAN

Client Sample ID: MW-87S_111020

Lab Sample ID: 240-140111-3

Date Collected: 11/10/20 09:30

Matrix: Water

Date Received: 11/12/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462075	11/21/20 00:14	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	461808	11/19/20 21:23	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 - Off Site

Job ID: 240-140111-1

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



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		Lab Contact: Mike DelMontico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ of _____ COCs	
Client Project Manager: Kris Himskey Telephone: 248-994-2240 Email: kristoffer.himskey@arcadis.com		Site Contact: Julia McClafferty Telephone: 734-644-5131		Analyses 1,1-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> 1,2-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> Trans-1,2-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> PCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> TCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> Vinyl Chloride 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> 1,4-Dioxane 8260B SIM <input type="checkbox"/> <input checked="" type="checkbox"/>			
Sampler Name: ELIEN Redner		Analysis Turnaround Time IAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Containers & Preservatives H2SO4 <input type="checkbox"/> <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> <input checked="" type="checkbox"/> HCl <input type="checkbox"/> <input checked="" type="checkbox"/> NaOH <input type="checkbox"/> <input checked="" type="checkbox"/> Zinc <input type="checkbox"/> <input checked="" type="checkbox"/> Upters <input type="checkbox"/> <input checked="" type="checkbox"/> Other: _____			
Method of Shipment/Carrier: Shipping/Tracking No: _____		Matrix Air <input type="checkbox"/> <input checked="" type="checkbox"/> Aqueous <input type="checkbox"/> <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> <input checked="" type="checkbox"/> Solid <input type="checkbox"/> <input checked="" type="checkbox"/> Other: _____		Filtered Sample (Y/N) Composite=C / Grab=G 1,1-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> 1,2-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> Trans-1,2-DCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> PCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> TCE 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> Vinyl Chloride 8260B <input type="checkbox"/> <input checked="" type="checkbox"/> 1,4-Dioxane 8260B SIM <input type="checkbox"/> <input checked="" type="checkbox"/>			
Sample Identification TRIP BLANK MW-87-111020 MW-87S-111020 MW-87S-MS-111020 MW-87S-MSD-111020		Sample Date --- 11/10/20 11/10/20 11/10/20 11/10/20		Sample Time --- 0835 0930 0930 0930		Sample Disposal (A fee may be assessed if samples are retained long) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritable <input type="checkbox"/> Inflammable <input type="checkbox"/> Air Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		11/10/20 11/10/20 11/10/20 11/10/20		240-140111 Chain of Custody			
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631 Level IV Reporting requested.		Relinquished by: [Signature]		Received by: [Signature]		Company: Arcadis	
Relinquished by: [Signature]		Received by: [Signature]		Company: Arcadis		Date/Time: 11/10/20 1730	
Relinquished by: [Signature]		Received by: [Signature]		Company: ETA		Date/Time: 11/10/20 1150	
Relinquished by: [Signature]		Received by: [Signature]		Company: ETA		Date/Time: 11/11/20 1700	



Canton Facility _____

Client Arcadis Site Name _____ Cooler unpacked by: Harry Page

Cooler Received on 11-12-20 Opened on 11-12-20

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

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

TestAmerica Cooler # 174 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. 1.2 °C Corrected Cooler Temp. 2.1 °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 NA

-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 (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 NA

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

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ 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: _____