

ANALYTICAL REPORT

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Laboratory Job ID: 240-135351-1
Client Project/Site: Ford LTP On-Site

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



Authorized for release by:
9/8/2020 2:56:49 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

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

Job ID: 240-135351-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
F1	MS and/or MSD recovery exceeds control limits.
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.
X	Surrogate recovery exceeds control limits

Glossary

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

Case Narrative

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

Job ID: 240-135351-1

Job ID: 240-135351-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On-Site

Report Number: 240-135351-1

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 8/21/2020 9:20 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-135351-1), MW-3_081920 (240-135351-2), MW-2_081920 (240-135351-3), MW-5_081920 (240-135351-4), MW-4_081920 (240-135351-5) and DUP-15 (240-135351-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/01/2020.

Samples MW-2_081920 (240-135351-3)[250X], MW-4_081920 (240-135351-5)[714.28X] and DUP-15 (240-135351-6)[833.33X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-3_081920 (240-135351-2), MW-2_081920 (240-135351-3), MW-5_081920 (240-135351-4), MW-4_081920 (240-135351-5) and DUP-15 (240-135351-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/28/2020.

Internal standard responses were outside of acceptance limits for the following samples: MW-4_081920 (240-135351-5) and DUP-15

Case Narrative

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

Job ID: 240-135351-1

Job ID: 240-135351-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

(240-135351-6). The samples shows evidence of matrix interference.

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

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Method Summary

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

Job ID: 240-135351-1

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

Protocol References:

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

Laboratory References:

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

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Sample Summary

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

Job ID: 240-135351-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135351-1	TRIP BLANK	Water	08/19/20 00:00	08/21/20 09:20	
240-135351-2	MW-3_081920	Water	08/19/20 09:55	08/21/20 09:20	
240-135351-3	MW-2_081920	Water	08/19/20 11:15	08/21/20 09:20	
240-135351-4	MW-5_081920	Water	08/19/20 12:25	08/21/20 09:20	
240-135351-5	MW-4_081920	Water	08/19/20 15:15	08/21/20 09:20	
240-135351-6	DUP-15	Water	08/19/20 00:00	08/21/20 09:20	

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- 14

Detection Summary

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

Job ID: 240-135351-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135351-1

No Detections.

Client Sample ID: MW-3_081920

Lab Sample ID: 240-135351-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.8	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-2_081920

Lab Sample ID: 240-135351-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.4		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	4100		250	96	ug/L	250		8260B	Total/NA
trans-1,2-Dichloroethene	980		250	110	ug/L	250		8260B	Total/NA
Vinyl chloride	200	J	250	120	ug/L	250		8260B	Total/NA

Client Sample ID: MW-5_081920

Lab Sample ID: 240-135351-4

No Detections.

Client Sample ID: MW-4_081920

Lab Sample ID: 240-135351-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J*3	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	16000		710	270	ug/L	714.28		8260B	Total/NA
trans-1,2-Dichloroethene	610	J	710	310	ug/L	714.28		8260B	Total/NA
Trichloroethene	24000		710	260	ug/L	714.28		8260B	Total/NA
Vinyl chloride	1300		710	350	ug/L	714.28		8260B	Total/NA

Client Sample ID: DUP-15

Lab Sample ID: 240-135351-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.3	J*3	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	15000		830	320	ug/L	833.33		8260B	Total/NA
trans-1,2-Dichloroethene	640	J	830	360	ug/L	833.33		8260B	Total/NA
Trichloroethene	23000		830	300	ug/L	833.33		8260B	Total/NA
Vinyl chloride	1400		830	410	ug/L	833.33		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135351-1

Date Collected: 08/19/20 00:00

Matrix: Water

Date Received: 08/21/20 09:20

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	0.46	ug/L			09/01/20 22:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/01/20 22:39	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/01/20 22:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/01/20 22:39	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/01/20 22:39	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/01/20 22:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		09/01/20 22:39	1
4-Bromofluorobenzene (Surr)	84		47 - 134		09/01/20 22:39	1
Toluene-d8 (Surr)	93		69 - 122		09/01/20 22:39	1
Dibromofluoromethane (Surr)	87		78 - 129		09/01/20 22:39	1

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: MW-3_081920

Lab Sample ID: 240-135351-2

Date Collected: 08/19/20 09:55

Matrix: Water

Date Received: 08/21/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.8	J	2.0	0.86	ug/L			08/28/20 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 133		08/28/20 18:51	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	0.46	ug/L			09/01/20 23:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/01/20 23:01	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/01/20 23:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/01/20 23:01	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/01/20 23:01	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/01/20 23:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		09/01/20 23:01	1
4-Bromofluorobenzene (Surr)	85		47 - 134		09/01/20 23:01	1
Toluene-d8 (Surr)	92		69 - 122		09/01/20 23:01	1
Dibromofluoromethane (Surr)	92		78 - 129		09/01/20 23:01	1

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: MW-2_081920

Lab Sample ID: 240-135351-3

Date Collected: 08/19/20 11:15

Matrix: Water

Date Received: 08/21/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.4		2.0	0.86	ug/L			08/28/20 19:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					08/28/20 19:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	250	U	250	120	ug/L			09/01/20 15:49	250
cis-1,2-Dichloroethene	4100		250	96	ug/L			09/01/20 15:49	250
Tetrachloroethene	250	U	250	82	ug/L			09/01/20 15:49	250
trans-1,2-Dichloroethene	980		250	110	ug/L			09/01/20 15:49	250
Trichloroethene	250	U	250	90	ug/L			09/01/20 15:49	250
Vinyl chloride	200	J	250	120	ug/L			09/01/20 15:49	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130					09/01/20 15:49	250
4-Bromofluorobenzene (Surr)	67		47 - 134					09/01/20 15:49	250
Toluene-d8 (Surr)	89		69 - 122					09/01/20 15:49	250
Dibromofluoromethane (Surr)	105		78 - 129					09/01/20 15:49	250

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: MW-5_081920

Lab Sample ID: 240-135351-4

Date Collected: 08/19/20 12:25

Matrix: Water

Date Received: 08/21/20 09:20

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			08/28/20 19:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 133					08/28/20 19:42	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	0.46	ug/L			09/01/20 16:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/01/20 16:13	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/01/20 16:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/01/20 16:13	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/01/20 16:13	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/01/20 16:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130					09/01/20 16:13	1
4-Bromofluorobenzene (Surr)	70		47 - 134					09/01/20 16:13	1
Toluene-d8 (Surr)	91		69 - 122					09/01/20 16:13	1
Dibromofluoromethane (Surr)	107		78 - 129					09/01/20 16:13	1

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: MW-4_081920

Lab Sample ID: 240-135351-5

Date Collected: 08/19/20 15:15

Matrix: Water

Date Received: 08/21/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J*3	2.0	0.86	ug/L			08/28/20 20:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					08/28/20 20:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	710	U	710	330	ug/L			09/01/20 16:37	714.28
cis-1,2-Dichloroethene	16000		710	270	ug/L			09/01/20 16:37	714.28
Tetrachloroethene	710	U	710	230	ug/L			09/01/20 16:37	714.28
trans-1,2-Dichloroethene	610	J	710	310	ug/L			09/01/20 16:37	714.28
Trichloroethene	24000		710	260	ug/L			09/01/20 16:37	714.28
Vinyl chloride	1300		710	350	ug/L			09/01/20 16:37	714.28
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130					09/01/20 16:37	714.28
4-Bromofluorobenzene (Surr)	68		47 - 134					09/01/20 16:37	714.28
Toluene-d8 (Surr)	93		69 - 122					09/01/20 16:37	714.28
Dibromofluoromethane (Surr)	101		78 - 129					09/01/20 16:37	714.28

Client Sample Results

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

Job ID: 240-135351-1

Client Sample ID: DUP-15

Lab Sample ID: 240-135351-6

Date Collected: 08/19/20 00:00

Matrix: Water

Date Received: 08/21/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.3	J*3	2.0	0.86	ug/L			08/28/20 20:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					08/28/20 20:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	830	U	830	380	ug/L			09/01/20 17:01	833.33
cis-1,2-Dichloroethene	15000		830	320	ug/L			09/01/20 17:01	833.33
Tetrachloroethene	830	U	830	270	ug/L			09/01/20 17:01	833.33
trans-1,2-Dichloroethene	640	J	830	360	ug/L			09/01/20 17:01	833.33
Trichloroethene	23000		830	300	ug/L			09/01/20 17:01	833.33
Vinyl chloride	1400		830	410	ug/L			09/01/20 17:01	833.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130					09/01/20 17:01	833.33
4-Bromofluorobenzene (Surr)	65		47 - 134					09/01/20 17:01	833.33
Toluene-d8 (Surr)	92		69 - 122					09/01/20 17:01	833.33
Dibromofluoromethane (Surr)	104		78 - 129					09/01/20 17:01	833.33

Surrogate Summary

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

Job ID: 240-135351-1

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)
240-135342-C-28 MS	Matrix Spike	69 X	88	99	87
240-135342-C-28 MSD	Matrix Spike Duplicate	66 X	86	98	86
240-135351-1	TRIP BLANK	92	84	93	87
240-135351-2	MW-3_081920	96	85	92	92
240-135351-3	MW-2_081920	101	67	89	105
240-135351-4	MW-5_081920	98	70	91	107
240-135351-5	MW-4_081920	89	68	93	101
240-135351-6	DUP-15	86	65	92	104
240-135358-A-5 MS	Matrix Spike	85	99	100	87
240-135358-C-5 MSD	Matrix Spike Duplicate	85	99	100	89
LCS 240-449570/4	Lab Control Sample	82	91	100	91
LCS 240-449582/4	Lab Control Sample	85	101	98	86
MB 240-449570/7	Method Blank	99	67	90	103
MB 240-449582/7	Method Blank	91	83	92	88

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)
240-135350-C-3 MS	Matrix Spike	84
240-135350-C-3 MSD	Matrix Spike Duplicate	90
240-135351-2	MW-3_081920	92
240-135351-3	MW-2_081920	87
240-135351-4	MW-5_081920	94
240-135351-5	MW-4_081920	81
240-135351-6	DUP-15	81
LCS 240-449176/4	Lab Control Sample	87
MB 240-449176/5	Method Blank	86

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-135351-1

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

Lab Sample ID: MB 240-449570/7
Matrix: Water
Analysis Batch: 449570

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			09/01/20 15:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/01/20 15:02	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/01/20 15:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/01/20 15:02	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/01/20 15:02	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/01/20 15:02	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	99		75 - 130		09/01/20 15:02	1
4-Bromofluorobenzene (Surr)	67		47 - 134		09/01/20 15:02	1
Toluene-d8 (Surr)	90		69 - 122		09/01/20 15:02	1
Dibromofluoromethane (Surr)	103		78 - 129		09/01/20 15:02	1

Lab Sample ID: LCS 240-449570/4
Matrix: Water
Analysis Batch: 449570

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	9.73		ug/L		97	73 - 129
cis-1,2-Dichloroethene	10.0	9.96		ug/L		100	75 - 124
Tetrachloroethene	10.0	11.4		ug/L		114	70 - 125
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	74 - 130
Trichloroethene	10.0	9.49		ug/L		95	71 - 121
Vinyl chloride	10.0	9.83		ug/L		98	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	91		47 - 134
Toluene-d8 (Surr)	100		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-135342-C-28 MS
Matrix: Water
Analysis Batch: 449570

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	5.0	U	50.0	48.0		ug/L		96	64 - 132
cis-1,2-Dichloroethene	130	F1	50.0	159	F1	ug/L		61	68 - 121
Tetrachloroethene	5.0	U	50.0	53.1		ug/L		106	52 - 129
trans-1,2-Dichloroethene	2.2	J	50.0	51.2		ug/L		102	69 - 126
Trichloroethene	4.7	J	50.0	46.1		ug/L		83	56 - 124
Vinyl chloride	5.0	U	50.0	51.6		ug/L		103	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	69	X	75 - 130
4-Bromofluorobenzene (Surr)	88		47 - 134
Toluene-d8 (Surr)	99		69 - 122

QC Sample Results

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

Job ID: 240-135351-1

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

Lab Sample ID: 240-135342-C-28 MS

Matrix: Water

Analysis Batch: 449570

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	87		78 - 129

Lab Sample ID: 240-135342-C-28 MSD

Matrix: Water

Analysis Batch: 449570

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	5.0	U	50.0	45.4		ug/L		91	64 - 132	6	35
cis-1,2-Dichloroethene	130	F1	50.0	158	F1	ug/L		59	68 - 121	1	35
Tetrachloroethene	5.0	U	50.0	52.0		ug/L		104	52 - 129	2	35
trans-1,2-Dichloroethene	2.2	J	50.0	54.2		ug/L		108	69 - 126	6	35
Trichloroethene	4.7	J	50.0	46.4		ug/L		83	56 - 124	1	35
Vinyl chloride	5.0	U	50.0	49.6		ug/L		99	49 - 136	4	35

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	66	X	75 - 130
4-Bromofluorobenzene (Surr)	86		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

Lab Sample ID: MB 240-449582/7

Matrix: Water

Analysis Batch: 449582

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	0.46	ug/L			09/01/20 21:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/01/20 21:55	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/01/20 21:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/01/20 21:55	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/01/20 21:55	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/01/20 21:55	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130		09/01/20 21:55	1
4-Bromofluorobenzene (Surr)	83		47 - 134		09/01/20 21:55	1
Toluene-d8 (Surr)	92		69 - 122		09/01/20 21:55	1
Dibromofluoromethane (Surr)	88		78 - 129		09/01/20 21:55	1

Lab Sample ID: LCS 240-449582/4

Matrix: Water

Analysis Batch: 449582

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	8.91		ug/L		89	73 - 129
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	75 - 124
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 125
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Trichloroethene	10.0	9.63		ug/L		96	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135351-1

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

Lab Sample ID: LCS 240-449582/4
Matrix: Water
Analysis Batch: 449582

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	8.71		ug/L		87	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	85		75 - 130				
4-Bromofluorobenzene (Surr)	101		47 - 134				
Toluene-d8 (Surr)	98		69 - 122				
Dibromofluoromethane (Surr)	86		78 - 129				

Lab Sample ID: 240-135358-A-5 MS
Matrix: Water
Analysis Batch: 449582

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	7.16		ug/L		72	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.75		ug/L		87	68 - 121
Tetrachloroethene	1.0	U	10.0	8.16		ug/L		82	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.40		ug/L		84	69 - 126
Trichloroethene	1.0	U	10.0	7.41		ug/L		74	56 - 124
Vinyl chloride	1.0	U	10.0	5.83		ug/L		58	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	85		75 - 130						
4-Bromofluorobenzene (Surr)	99		47 - 134						
Toluene-d8 (Surr)	100		69 - 122						
Dibromofluoromethane (Surr)	87		78 - 129						

Lab Sample ID: 240-135358-C-5 MSD
Matrix: Water
Analysis Batch: 449582

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	8.05		ug/L		81	64 - 132	12	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.09		ug/L		91	68 - 121	4	35
Tetrachloroethene	1.0	U	10.0	9.13		ug/L		91	52 - 129	11	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.93		ug/L		89	69 - 126	6	35
Trichloroethene	1.0	U	10.0	7.90		ug/L		79	56 - 124	6	35
Vinyl chloride	1.0	U	10.0	7.32		ug/L		73	49 - 136	23	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	85		75 - 130								
4-Bromofluorobenzene (Surr)	99		47 - 134								
Toluene-d8 (Surr)	100		69 - 122								
Dibromofluoromethane (Surr)	89		78 - 129								

QC Sample Results

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

Job ID: 240-135351-1

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

Lab Sample ID: MB 240-449176/5
Matrix: Water
Analysis Batch: 449176

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			08/28/20 10:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133					08/28/20 10:51	1

Lab Sample ID: LCS 240-449176/4
Matrix: Water
Analysis Batch: 449176

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	10.6		ug/L		106	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	87		70 - 133				

Lab Sample ID: 240-135350-C-3 MS
Matrix: Water
Analysis Batch: 449176

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	10.9		ug/L		109	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	84		70 - 133						

Lab Sample ID: 240-135350-C-3 MSD
Matrix: Water
Analysis Batch: 449176

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
1,4-Dioxane	2.0	U	10.0	10.7		ug/L		107	46 - 170	2	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	90		70 - 133								

QC Association Summary

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

Job ID: 240-135351-1

GC/MS VOA

Analysis Batch: 449176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135351-2	MW-3_081920	Total/NA	Water	8260B SIM	
240-135351-3	MW-2_081920	Total/NA	Water	8260B SIM	
240-135351-4	MW-5_081920	Total/NA	Water	8260B SIM	
240-135351-5	MW-4_081920	Total/NA	Water	8260B SIM	
240-135351-6	DUP-15	Total/NA	Water	8260B SIM	
MB 240-449176/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-449176/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135350-C-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-135350-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 449570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135351-3	MW-2_081920	Total/NA	Water	8260B	
240-135351-4	MW-5_081920	Total/NA	Water	8260B	
240-135351-5	MW-4_081920	Total/NA	Water	8260B	
240-135351-6	DUP-15	Total/NA	Water	8260B	
MB 240-449570/7	Method Blank	Total/NA	Water	8260B	
LCS 240-449570/4	Lab Control Sample	Total/NA	Water	8260B	
240-135342-C-28 MS	Matrix Spike	Total/NA	Water	8260B	
240-135342-C-28 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 449582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135351-1	TRIP BLANK	Total/NA	Water	8260B	
240-135351-2	MW-3_081920	Total/NA	Water	8260B	
MB 240-449582/7	Method Blank	Total/NA	Water	8260B	
LCS 240-449582/4	Lab Control Sample	Total/NA	Water	8260B	
240-135358-A-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-135358-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-135351-1

Client Sample ID: TRIP BLANK

Date Collected: 08/19/20 00:00

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449582	09/01/20 22:39	LEE	TAL CAN

Client Sample ID: MW-3_081920

Date Collected: 08/19/20 09:55

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449582	09/01/20 23:01	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449176	08/28/20 18:51	SAM	TAL CAN

Client Sample ID: MW-2_081920

Date Collected: 08/19/20 11:15

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	449570	09/01/20 15:49	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	449176	08/28/20 19:16	SAM	TAL CAN

Client Sample ID: MW-5_081920

Date Collected: 08/19/20 12:25

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449570	09/01/20 16:13	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	449176	08/28/20 19:42	SAM	TAL CAN

Client Sample ID: MW-4_081920

Date Collected: 08/19/20 15:15

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		714.28	449570	09/01/20 16:37	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	449176	08/28/20 20:06	SAM	TAL CAN

Client Sample ID: DUP-15

Date Collected: 08/19/20 00:00

Date Received: 08/21/20 09:20

Lab Sample ID: 240-135351-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		833.33	449570	09/01/20 17:01	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	449176	08/28/20 20:31	SAM	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-135351-1

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	07-31-20 *
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	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

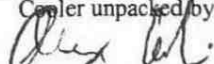
* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility


Login # : 135351

Client Arcaadis Site Name _____
 Cooler Received on 8/21/20 Opened on 8/21/20
 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 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. 3.4 °C Corrected Cooler Temp. 4.3 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 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?
 If yes, Questions 12-16 have been checked at the originating laboratory. Yes No
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC911298
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes No NA
 Larger than this. 
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0363161F 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: _____

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: _____