

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 240-95403-1

Client Project/Site: Ford LTP Livonia MI - E203631

For:

ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
5/24/2018 8:57:30 AM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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 Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
X	Surrogate is outside 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
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Job ID: 240-95403-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-95403-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 TestAmerica and its client.

RECEIPT

The samples were received on 5/10/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.3° C, 1.7° C and 2.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-95403-1), MW-85_050818 (240-95403-2), MW-79S_050818 (240-95403-3), MW-79D_050818 (240-95403-4), MW-84_050818 (240-95403-5), MW-78_050818 (240-95403-6), MW-80S_050818 (240-95403-7), MW-72_050818 (240-95403-8) and MW-73S_050818 (240-95403-9) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/13/2018.

Toluene-d8 (Surr) failed the surrogate recovery criteria high for MW-72_050818MS (240-95403-8MS). Refer to the QC report for details.

Vinyl chloride failed the recovery criteria high for the MS of sample MW-72_050818MS (240-95403-8) in batch 240-326584.

Vinyl chloride failed the recovery criteria high for the MSD of sample MW-72_050818MSD (240-95403-8) in batch 240-326584. cis-1,2-Dichloroethene exceeded the RPD limit. Refer to the QC report for details.

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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Job ID: 240-95403-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-85_050818 (240-95403-2), MW-79S_050818 (240-95403-3), MW-79D_050818 (240-95403-4), MW-84_050818 (240-95403-5), MW-78_050818 (240-95403-6), MW-80S_050818 (240-95403-7), MW-72_050818 (240-95403-8) and MW-73S_050818 (240-95403-9) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/14/2018 and 05/15/2018.

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 Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-95403-1	TRIP BLANK	Water	05/08/18 00:00	05/10/18 09:50
240-95403-2	MW-85_050818	Water	05/08/18 08:42	05/10/18 09:50
240-95403-3	MW-79S_050818	Water	05/08/18 10:02	05/10/18 09:50
240-95403-4	MW-79D_050818	Water	05/08/18 10:42	05/10/18 09:50
240-95403-5	MW-84_050818	Water	05/08/18 13:07	05/10/18 09:50
240-95403-6	MW-78_050818	Water	05/08/18 14:07	05/10/18 09:50
240-95403-7	MW-80S_050818	Water	05/08/18 15:07	05/10/18 09:50
240-95403-8	MW-72_050818	Water	05/09/18 11:02	05/10/18 09:50
240-95403-9	MW-73S_050818	Water	05/09/18 12:32	05/10/18 09:50

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Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-95403-1

No Detections.

Client Sample ID: MW-85_050818

Lab Sample ID: 240-95403-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.45	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	7.5		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-79S_050818

Lab Sample ID: 240-95403-3

No Detections.

Client Sample ID: MW-79D_050818

Lab Sample ID: 240-95403-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.49	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	3.5		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-84_050818

Lab Sample ID: 240-95403-5

No Detections.

Client Sample ID: MW-78_050818

Lab Sample ID: 240-95403-6

No Detections.

Client Sample ID: MW-80S_050818

Lab Sample ID: 240-95403-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.46	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	6.3		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-72_050818

Lab Sample ID: 240-95403-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.32	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.5	F1	1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-73S_050818

Lab Sample ID: 240-95403-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.3		1.0	0.30	ug/L	1		8260B	Total/NA
Trichloroethene	0.38	J	1.0	0.33	ug/L	1		8260B	Total/NA
Vinyl chloride	1.2		1.0	0.45	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-95403-1

Date Collected: 05/08/18 00:00

Matrix: Water

Date Received: 05/10/18 09:50

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	0.27	ug/L			05/13/18 19:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 19:48	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 19:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 19:48	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 19:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/18 19:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		61 - 138		05/13/18 19:48	1
4-Bromofluorobenzene (Surr)	78		69 - 120		05/13/18 19:48	1
Toluene-d8 (Surr)	103		73 - 120		05/13/18 19:48	1
Dibromofluoromethane (Surr)	103		69 - 124		05/13/18 19:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-85_050818

Lab Sample ID: 240-95403-2

Date Collected: 05/08/18 08:42

Matrix: Water

Date Received: 05/10/18 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.45	J	2.0	0.24	ug/L			05/14/18 22:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		63 - 125					05/14/18 22:14	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	0.27	ug/L			05/13/18 20:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:11	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 20:11	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 20:11	1
Vinyl chloride	7.5		1.0	0.45	ug/L			05/13/18 20:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/13/18 20:11	1
4-Bromofluorobenzene (Surr)	79		69 - 120					05/13/18 20:11	1
Toluene-d8 (Surr)	105		73 - 120					05/13/18 20:11	1
Dibromofluoromethane (Surr)	106		69 - 124					05/13/18 20:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-79S_050818

Lab Sample ID: 240-95403-3

Date Collected: 05/08/18 10:02

Matrix: Water

Date Received: 05/10/18 09:50

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	0.24	ug/L			05/14/18 22:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/14/18 22:39	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	0.27	ug/L			05/13/18 20:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:33	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 20:33	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 20:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/18 20:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		61 - 138					05/13/18 20:33	1
4-Bromofluorobenzene (Surr)	80		69 - 120					05/13/18 20:33	1
Toluene-d8 (Surr)	108		73 - 120					05/13/18 20:33	1
Dibromofluoromethane (Surr)	104		69 - 124					05/13/18 20:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-79D_050818

Lab Sample ID: 240-95403-4

Date Collected: 05/08/18 10:42

Matrix: Water

Date Received: 05/10/18 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.49	J	2.0	0.24	ug/L			05/14/18 23:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		63 - 125					05/14/18 23:04	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	0.27	ug/L			05/13/18 20:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:56	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 20:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 20:56	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 20:56	1
Vinyl chloride	3.5		1.0	0.45	ug/L			05/13/18 20:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		61 - 138					05/13/18 20:56	1
4-Bromofluorobenzene (Surr)	77		69 - 120					05/13/18 20:56	1
Toluene-d8 (Surr)	107		73 - 120					05/13/18 20:56	1
Dibromofluoromethane (Surr)	104		69 - 124					05/13/18 20:56	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-84_050818

Lab Sample ID: 240-95403-5

Date Collected: 05/08/18 13:07

Matrix: Water

Date Received: 05/10/18 09:50

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	0.24	ug/L			05/14/18 23:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125					05/14/18 23:29	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	0.27	ug/L			05/13/18 21:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 21:19	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 21:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 21:19	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 21:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/18 21:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		61 - 138					05/13/18 21:19	1
4-Bromofluorobenzene (Surr)	76		69 - 120					05/13/18 21:19	1
Toluene-d8 (Surr)	107		73 - 120					05/13/18 21:19	1
Dibromofluoromethane (Surr)	102		69 - 124					05/13/18 21:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-78_050818

Lab Sample ID: 240-95403-6

Date Collected: 05/08/18 14:07

Matrix: Water

Date Received: 05/10/18 09:50

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	0.24	ug/L			05/14/18 23:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125					05/14/18 23:54	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	0.27	ug/L			05/13/18 21:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 21:41	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 21:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 21:41	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 21:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/18 21:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		61 - 138					05/13/18 21:41	1
4-Bromofluorobenzene (Surr)	69		69 - 120					05/13/18 21:41	1
Toluene-d8 (Surr)	97		73 - 120					05/13/18 21:41	1
Dibromofluoromethane (Surr)	95		69 - 124					05/13/18 21:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-80S_050818

Lab Sample ID: 240-95403-7

Date Collected: 05/08/18 15:07

Matrix: Water

Date Received: 05/10/18 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.46	J	2.0	0.24	ug/L			05/15/18 00:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125					05/15/18 00:19	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	0.27	ug/L			05/13/18 22:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 22:04	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 22:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 22:04	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 22:04	1
Vinyl chloride	6.3		1.0	0.45	ug/L			05/13/18 22:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		61 - 138					05/13/18 22:04	1
4-Bromofluorobenzene (Surr)	79		69 - 120					05/13/18 22:04	1
Toluene-d8 (Surr)	108		73 - 120					05/13/18 22:04	1
Dibromofluoromethane (Surr)	105		69 - 124					05/13/18 22:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-72_050818

Lab Sample ID: 240-95403-8

Date Collected: 05/09/18 11:02

Matrix: Water

Date Received: 05/10/18 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.32	J	2.0	0.24	ug/L			05/15/18 12:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125					05/15/18 12:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/13/18 22:27	1
cis-1,2-Dichloroethene	1.0	U F2	1.0	0.30	ug/L			05/13/18 22:27	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 22:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 22:27	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 22:27	1
Vinyl chloride	1.5	F1	1.0	0.45	ug/L			05/13/18 22:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		61 - 138					05/13/18 22:27	1
4-Bromofluorobenzene (Surr)	73		69 - 120					05/13/18 22:27	1
Toluene-d8 (Surr)	98		73 - 120					05/13/18 22:27	1
Dibromofluoromethane (Surr)	94		69 - 124					05/13/18 22:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-73S_050818

Lab Sample ID: 240-95403-9

Date Collected: 05/09/18 12:32

Matrix: Water

Date Received: 05/10/18 09:50

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	0.24	ug/L			05/15/18 00:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/15/18 00:44	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	0.27	ug/L			05/13/18 23:35	1
cis-1,2-Dichloroethene	1.3		1.0	0.30	ug/L			05/13/18 23:35	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 23:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 23:35	1
Trichloroethene	0.38	J	1.0	0.33	ug/L			05/13/18 23:35	1
Vinyl chloride	1.2		1.0	0.45	ug/L			05/13/18 23:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		61 - 138					05/13/18 23:35	1
4-Bromofluorobenzene (Surr)	69		69 - 120					05/13/18 23:35	1
Toluene-d8 (Surr)	102		73 - 120					05/13/18 23:35	1
Dibromofluoromethane (Surr)	99		69 - 124					05/13/18 23:35	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (61-138)	BFB (69-120)	TOL (73-120)	DBFM (69-124)
240-95403-1	TRIP BLANK	108	78	103	103
240-95403-2	MW-85_050818	110	79	105	106
240-95403-3	MW-79S_050818	104	80	108	104
240-95403-4	MW-79D_050818	106	77	107	104
240-95403-5	MW-84_050818	102	76	107	102
240-95403-6	MW-78_050818	95	69	97	95
240-95403-7	MW-80S_050818	108	79	108	105
240-95403-8	MW-72_050818	96	73	98	94
240-95403-8 MS	MW-72_050818	131	96	121 X	120
240-95403-8 MSD	MW-72_050818	107	83	109	103
240-95403-9	MW-73S_050818	99	69	102	99
LCS 240-326584/4	Lab Control Sample	107	79	107	101
MB 240-326584/6	Method Blank	99	72	98	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(63-125)
240-95360-C-3 MS	Matrix Spike	96
240-95360-C-3 MSD	Matrix Spike Duplicate	94
240-95403-2	MW-85_050818	88
240-95403-3	MW-79S_050818	94
240-95403-4	MW-79D_050818	91
240-95403-5	MW-84_050818	93
240-95403-6	MW-78_050818	93
240-95403-7	MW-80S_050818	93
240-95403-8	MW-72_050818	90
240-95403-8 MS	MW-72_050818	93
240-95403-8 MSD	MW-72_050818	94
240-95403-9	MW-73S_050818	94
LCS 240-326731/4	Lab Control Sample	92
LCS 240-326885/4	Lab Control Sample	90
MB 240-326731/5	Method Blank	88
MB 240-326885/5	Method Blank	94

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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

Lab Sample ID: MB 240-326584/6

Matrix: Water

Analysis Batch: 326584

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	0.27	ug/L			05/13/18 14:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 14:08	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/13/18 14:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/13/18 14:08	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/13/18 14:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/18 14:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		61 - 138		05/13/18 14:08	1
4-Bromofluorobenzene (Surr)	72		69 - 120		05/13/18 14:08	1
Toluene-d8 (Surr)	98		73 - 120		05/13/18 14:08	1
Dibromofluoromethane (Surr)	98		69 - 124		05/13/18 14:08	1

Lab Sample ID: LCS 240-326584/4

Matrix: Water

Analysis Batch: 326584

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	8.95		ug/L		90	65 - 127
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	77 - 120
Tetrachloroethene	10.0	9.45		ug/L		95	80 - 122
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	74 - 124
Trichloroethene	10.0	9.99		ug/L		100	76 - 124
Vinyl chloride	10.0	12.2		ug/L		122	65 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		61 - 138
4-Bromofluorobenzene (Surr)	79		69 - 120
Toluene-d8 (Surr)	107		73 - 120
Dibromofluoromethane (Surr)	101		69 - 124

Lab Sample ID: 240-95403-8 MS

Matrix: Water

Analysis Batch: 326584

Client Sample ID: MW-72_050818

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	10.4		ug/L		104	62 - 127
cis-1,2-Dichloroethene	1.0	U F2	10.0	12.3		ug/L		123	69 - 127
Tetrachloroethene	1.0	U	10.0	10.3		ug/L		103	69 - 126
trans-1,2-Dichloroethene	1.0	U	10.0	11.5		ug/L		115	66 - 131
Trichloroethene	1.0	U	10.0	11.5		ug/L		115	68 - 129
Vinyl chloride	1.5	F1	10.0	16.0	F1	ug/L		145	55 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	131		61 - 138
4-Bromofluorobenzene (Surr)	96		69 - 120
Toluene-d8 (Surr)	121	X	73 - 120

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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

Lab Sample ID: 240-95403-8 MS
Matrix: Water
Analysis Batch: 326584

Client Sample ID: MW-72_050818
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	120		69 - 124

Lab Sample ID: 240-95403-8 MSD
Matrix: Water
Analysis Batch: 326584

Client Sample ID: MW-72_050818
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	10.2		ug/L		102	62 - 127	3	14
cis-1,2-Dichloroethene	1.0	U F2	10.0	10.9	F2	ug/L		109	69 - 127	12	11
Tetrachloroethene	1.0	U	10.0	9.57		ug/L		96	69 - 126	7	18
trans-1,2-Dichloroethene	1.0	U	10.0	10.4		ug/L		104	66 - 131	10	11
Trichloroethene	1.0	U	10.0	10.6		ug/L		106	68 - 129	8	12
Vinyl chloride	1.5	F1	10.0	14.3	F1	ug/L		127	55 - 123	11	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		61 - 138
4-Bromofluorobenzene (Surr)	83		69 - 120
Toluene-d8 (Surr)	109		73 - 120
Dibromofluoromethane (Surr)	103		69 - 124

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

Lab Sample ID: MB 240-326731/5
Matrix: Water
Analysis Batch: 326731

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	0.24	ug/L			05/14/18 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		63 - 125		05/14/18 14:21	1

Lab Sample ID: LCS 240-326731/4
Matrix: Water
Analysis Batch: 326731

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	9.20		ug/L		92	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		63 - 125

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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

Lab Sample ID: 240-95360-C-3 MS

Matrix: Water
Analysis Batch: 326731

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	15		10.0	24.3		ug/L		89	52 - 129
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	96		63 - 125						

Lab Sample ID: 240-95360-C-3 MSD

Matrix: Water
Analysis Batch: 326731

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	15		10.0	24.5		ug/L		92	52 - 129	1	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		63 - 125								

Lab Sample ID: MB 240-326885/5

Matrix: Water
Analysis Batch: 326885

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	0.24	ug/L			05/15/18 11:50	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/15/18 11:50	1

Lab Sample ID: LCS 240-326885/4

Matrix: Water
Analysis Batch: 326885

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	9.20		ug/L		92	59 - 131
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	90		63 - 125				

Lab Sample ID: 240-95403-8 MS

Matrix: Water
Analysis Batch: 326885

Client Sample ID: MW-72_050818
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.32	J	10.0	9.71		ug/L		94	52 - 129
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	93		63 - 125						

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

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

Lab Sample ID: 240-95403-8 MSD
 Matrix: Water
 Analysis Batch: 326885

Client Sample ID: MW-72_050818
 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	0.32	J	10.0	9.85		ug/L		95	52 - 129	1	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		63 - 125								

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

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

GC/MS VOA

Analysis Batch: 326584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95403-1	TRIP BLANK	Total/NA	Water	8260B	
240-95403-2	MW-85_050818	Total/NA	Water	8260B	
240-95403-3	MW-79S_050818	Total/NA	Water	8260B	
240-95403-4	MW-79D_050818	Total/NA	Water	8260B	
240-95403-5	MW-84_050818	Total/NA	Water	8260B	
240-95403-6	MW-78_050818	Total/NA	Water	8260B	
240-95403-7	MW-80S_050818	Total/NA	Water	8260B	
240-95403-8	MW-72_050818	Total/NA	Water	8260B	
240-95403-9	MW-73S_050818	Total/NA	Water	8260B	
MB 240-326584/6	Method Blank	Total/NA	Water	8260B	
LCS 240-326584/4	Lab Control Sample	Total/NA	Water	8260B	
240-95403-8 MS	MW-72_050818	Total/NA	Water	8260B	
240-95403-8 MSD	MW-72_050818	Total/NA	Water	8260B	

Analysis Batch: 326731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95403-2	MW-85_050818	Total/NA	Water	8260B SIM	
240-95403-3	MW-79S_050818	Total/NA	Water	8260B SIM	
240-95403-4	MW-79D_050818	Total/NA	Water	8260B SIM	
240-95403-5	MW-84_050818	Total/NA	Water	8260B SIM	
240-95403-6	MW-78_050818	Total/NA	Water	8260B SIM	
240-95403-7	MW-80S_050818	Total/NA	Water	8260B SIM	
240-95403-9	MW-73S_050818	Total/NA	Water	8260B SIM	
MB 240-326731/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-326731/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-95360-C-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-95360-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 326885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95403-8	MW-72_050818	Total/NA	Water	8260B SIM	
MB 240-326885/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-326885/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-95403-8 MS	MW-72_050818	Total/NA	Water	8260B SIM	
240-95403-8 MSD	MW-72_050818	Total/NA	Water	8260B SIM	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: TRIP BLANK

Date Collected: 05/08/18 00:00

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 19:48	LEE	TAL CAN

Client Sample ID: MW-85_050818

Date Collected: 05/08/18 08:42

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 20:11	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/14/18 22:14	SAM	TAL CAN

Client Sample ID: MW-79S_050818

Date Collected: 05/08/18 10:02

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 20:33	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/14/18 22:39	SAM	TAL CAN

Client Sample ID: MW-79D_050818

Date Collected: 05/08/18 10:42

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 20:56	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/14/18 23:04	SAM	TAL CAN

Client Sample ID: MW-84_050818

Date Collected: 05/08/18 13:07

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 21:19	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/14/18 23:29	SAM	TAL CAN

Client Sample ID: MW-78_050818

Date Collected: 05/08/18 14:07

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 21:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/14/18 23:54	SAM	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Client Sample ID: MW-80S_050818

Date Collected: 05/08/18 15:07

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 22:04	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/15/18 00:19	SAM	TAL CAN

Client Sample ID: MW-72_050818

Date Collected: 05/09/18 11:02

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 22:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326885	05/15/18 12:41	SAM	TAL CAN

Client Sample ID: MW-73S_050818

Date Collected: 05/09/18 12:32

Date Received: 05/10/18 09:50

Lab Sample ID: 240-95403-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	326584	05/13/18 23:35	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	326731	05/15/18 00:44	SAM	TAL CAN

Laboratory References:

TAL CAN = 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 Livonia MI - E203631

TestAmerica Job ID: 240-95403-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-18 *
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18 *
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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

MICHIGAN
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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1.6/C1.7 2-2/C2.3
1.2/C1.3

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

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kristoffer.hinskey@arcadis.com

Site Contact: Angela DeGrandis
Telephone: 734-320-0065

Lab Contact: Denise Pohl
Telephone: 330-966-9789

Company Name: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377

Phone: 248-994-2240

Project Name: Ford LTP

Project Number: M1001454.0004.0000-6601-AD

PO # M1001454.0004.00002

Shipping/Tracking No: 00002

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

Method of Shipment/Carrier: 00002

Analysis Turnaround Time:
Walk-in client
For lab use only

Barcode: 240-85403 Chain of Custody

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives				Filtered Sample (Y/N)	Composite=C/Grab=C	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	Date/Time		
			Air	Aqueous	Sediment	Solid	Other:	HCl	NaOH											ZnAc	NaOH
MW-23-050718	5/7/18	1527	X																		
TRIPBLANK	-	-	X																		
MW-85-050818	5/8/18	0842	X																		
MW-79S-050818		1002	X																		
MW-79D-050818		1042	X																		
MW-84-050818		1307	X																		
MW-78-050818		1407	X																		
MW-80S-050818		1507	X																		
MW-72-050918	5/9/18	1102	X																		
MW-73S-050918		1232	X																		

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Special Instructions/OC Requirements & Comments:

Relinquished by: ASHLEY ARSHEL / Arcadis
 Date/Time: 5/9/18 1307
 Company: Arcadis

Relinquished by: [Signature] / TestAmerica
 Date/Time: 5/9/18 1450
 Company: TestAmerica

Relinquished by: [Signature] / TestAmerica
 Date/Time: 5/10/18 950
 Company: TestAmerica

Submit all results through Cadmus at jim.tomalia@cadmus.com, Cadmus #E203531
 Label: _____

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TestAmerica Canton Sample Receipt Form/Narrative Login # : 95403
Canton Facility

Client ARCADIS Site Name - Cooler unpacked by: POP
Cooler Received on 5-10-18 Opened on 5-10-18
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 See Multiple Cooler Form
IR GUN# IR-8 (CF +0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #36 (CF +0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # 627 (CF -1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °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
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC732776
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B734501WB Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: P.O.P

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): _____

