

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Laboratory Job ID: 240-119757-1

Client Project/Site: Ford LTP Livonia MI - E203728
Revision: 1

For:
ARCADIS U.S., Inc.
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Authorized for release by:
11/1/2019 10:35:01 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 Livonia MI - E203728

Job ID: 240-119757-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance 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.

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 - E203728

Job ID: 240-119757-1

Job ID: 240-119757-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-119757-1

Revision

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.

Report revised on 11/1/2019 to report cis-1,2-dichloroethene.

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 10/1/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-15-61D_092819 (240-119757-1), MW-34_092819 (240-119757-2), MW-53_092819 (240-119757-3), MW-42_092819 (240-119757-4) and TRIP BLANK (240-119757-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/11/2019.

1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2-Dibromoethane, Bromodichloromethane and trans-1,3-Dichloropropene failed the recovery criteria low for LCS 240-405286/4. Cyclohexane failed the recovery criteria high. Refer to the QC report for details.

The continuing calibration verification (CCV) for analytical batch 240-405286 exceeded control criteria for 1,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analytes. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compounds were detected; therefore the data has been reported.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Job ID: 240-119757-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

No further corrective action was required: MW-15-61D_092819 (240-119757-1), MW-34_092819 (240-119757-2), MW-53_092819 (240-119757-3), MW-42_092819 (240-119757-4), TRIP BLANK (240-119757-5) and (CCVIS 240-405286/2).

The laboratory control sample (LCS) for analytical batch 240-405286 recovered outside control limits for the following analyte: Cyclohexane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data has been reported: MW-15-61D_092819 (240-119757-1), MW-34_092819 (240-119757-2), MW-53_092819 (240-119757-3), MW-42_092819 (240-119757-4), TRIP BLANK (240-119757-5) and (LCS 240-405286/4).

The laboratory control sample (LCS) analyzed in batch 240-405286 was below the recovery control criteria for multiple analytes. This variance only affects results measured above the reporting limit. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. This demonstrates the analyte reporting limit is valid, and it is acceptable to report ND results (non-detects). The samples associated with the LCS were non-detects for the affected analytes; therefore, the results were reported. The following samples are impacted: MW-15-61D_092819 (240-119757-1), MW-34_092819 (240-119757-2), MW-53_092819 (240-119757-3), MW-42_092819 (240-119757-4), TRIP BLANK (240-119757-5) and (LCS 240-405286/4).

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-15-61D_092819 (240-119757-1), MW-34_092819 (240-119757-2), MW-53_092819 (240-119757-3) and MW-42_092819 (240-119757-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 10/07/2019.

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 - E203728

Job ID: 240-119757-1

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

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-119757-1	MW-15-61D_092819	Water	09/28/19 09:25	10/01/19 09:30	
240-119757-2	MW-34_092819	Water	09/28/19 10:44	10/01/19 09:30	
240-119757-3	MW-53_092819	Water	09/28/19 13:34	10/01/19 09:30	
240-119757-4	MW-42_092819	Water	09/28/19 12:01	10/01/19 09:30	
240-119757-5	TRIP BLANK	Water	09/28/19 00:00	10/01/19 09:30	

- 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 Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-15-61D_092819

Lab Sample ID: 240-119757-1

No Detections.

Client Sample ID: MW-34_092819

Lab Sample ID: 240-119757-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	7.2		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.64	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	2.2		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-53_092819

Lab Sample ID: 240-119757-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.84	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-42_092819

Lab Sample ID: 240-119757-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.92	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119757-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-15-61D_092819

Lab Sample ID: 240-119757-1

Date Collected: 09/28/19 09:25

Matrix: Water

Date Received: 10/01/19 09:30

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			10/07/19 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125		10/07/19 16:30	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			10/11/19 20:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/11/19 20:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 20:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 20:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 20:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/11/19 20:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120		10/11/19 20:32	1
Dibromofluoromethane (Surr)	101		75 - 128		10/11/19 20:32	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 121		10/11/19 20:32	1
Toluene-d8 (Surr)	93		70 - 123		10/11/19 20:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-34_092819

Lab Sample ID: 240-119757-2

Date Collected: 09/28/19 10:44

Matrix: Water

Date Received: 10/01/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.2		2.0	0.86	ug/L			10/07/19 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					10/07/19 16:56	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			10/11/19 20:58	1
cis-1,2-Dichloroethene	0.64	J	1.0	0.16	ug/L			10/11/19 20:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 20:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 20:58	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 20:58	1
Vinyl chloride	2.2		1.0	0.20	ug/L			10/11/19 20:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					10/11/19 20:58	1
Dibromofluoromethane (Surr)	104		75 - 128					10/11/19 20:58	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 121					10/11/19 20:58	1
Toluene-d8 (Surr)	96		70 - 123					10/11/19 20:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-53_092819

Lab Sample ID: 240-119757-3

Date Collected: 09/28/19 13:34

Matrix: Water

Date Received: 10/01/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			10/07/19 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125		10/07/19 17:20	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			10/11/19 21:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/11/19 21:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 21:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 21:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 21:23	1
Vinyl chloride	0.84	J	1.0	0.20	ug/L			10/11/19 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120		10/11/19 21:23	1
Dibromofluoromethane (Surr)	100		75 - 128		10/11/19 21:23	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 121		10/11/19 21:23	1
Toluene-d8 (Surr)	94		70 - 123		10/11/19 21:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-42_092819

Lab Sample ID: 240-119757-4

Date Collected: 09/28/19 12:01

Matrix: Water

Date Received: 10/01/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.0		2.0	0.86	ug/L			10/07/19 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					10/07/19 17:45	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			10/11/19 21:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/11/19 21:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 21:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 21:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 21:49	1
Vinyl chloride	0.92	J	1.0	0.20	ug/L			10/11/19 21:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120					10/11/19 21:49	1
Dibromofluoromethane (Surr)	102		75 - 128					10/11/19 21:49	1
1,2-Dichloroethane-d4 (Surr)	94		70 - 121					10/11/19 21:49	1
Toluene-d8 (Surr)	91		70 - 123					10/11/19 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119757-5

Date Collected: 09/28/19 00:00

Matrix: Water

Date Received: 10/01/19 09:30

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			10/11/19 22:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/11/19 22:14	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 22:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 22:14	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 22:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/11/19 22:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		59 - 120		10/11/19 22:14	1
Dibromofluoromethane (Surr)	105		75 - 128		10/11/19 22:14	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 121		10/11/19 22:14	1
Toluene-d8 (Surr)	100		70 - 123		10/11/19 22:14	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(59-120)	(75-128)	(70-121)	(70-123)
240-119753-H-3 MS	Matrix Spike	75	106	97	100
240-119753-I-3 MSD	Matrix Spike Duplicate	73	101	101	95
240-119757-1	MW-15-61D_092819	75	101	97	93
240-119757-2	MW-34_092819	76	104	97	96
240-119757-3	MW-53_092819	77	100	88	94
240-119757-4	MW-42_092819	75	102	94	91
240-119757-5	TRIP BLANK	70	105	95	100
LCS 240-405286/4	Lab Control Sample	77	102	102	98
MB 240-405286/7	Method Blank	71	106	99	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

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

TOL = Toluene-d8 (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)
240-119753-C-2 MS	Matrix Spike	103
240-119753-C-2 MSD	Matrix Spike Duplicate	104
240-119757-1	MW-15-61D_092819	101
240-119757-2	MW-34_092819	101
240-119757-3	MW-53_092819	101
240-119757-4	MW-42_092819	101
LCS 240-404405/4	Lab Control Sample	100
MB 240-404405/5	Method Blank	101

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Lab Sample ID: MB 240-405286/7
Matrix: Water
Analysis Batch: 405286

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			10/11/19 14:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/11/19 14:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/11/19 14:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/11/19 14:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/11/19 14:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/11/19 14:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		59 - 120		10/11/19 14:28	1
Dibromofluoromethane (Surr)	106		75 - 128		10/11/19 14:28	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 121		10/11/19 14:28	1
Toluene-d8 (Surr)	92		70 - 123		10/11/19 14:28	1

Lab Sample ID: LCS 240-405286/4
Matrix: Water
Analysis Batch: 405286

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.32		ug/L		93	69 - 134
1,1,1,2-Tetrachloroethane	10.0	5.11	*	ug/L		51	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	12.0		ug/L		120	50 - 156
1,1,2-Trichloroethane	10.0	6.48	*	ug/L		65	78 - 133
1,1-Dichloroethane	10.0	12.0		ug/L		120	75 - 133
1,1-Dichloroethene	10.0	9.22		ug/L		92	65 - 139
1,2,4-Trichlorobenzene	10.0	8.43		ug/L		84	42 - 133
1,2,4-Trimethylbenzene	10.0	8.28		ug/L		83	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	4.96		ug/L		50	46 - 132
1,2-Dibromoethane	10.0	6.74	*	ug/L		67	77 - 123
1,2-Dichlorobenzene	10.0	8.74		ug/L		87	78 - 120
1,2-Dichloroethane	10.0	10.5		ug/L		105	71 - 135
1,2-Dichloropropane	10.0	12.1		ug/L		121	78 - 133
1,3,5-Trimethylbenzene	10.0	8.21		ug/L		82	75 - 121
1,3-Dichlorobenzene	10.0	9.19		ug/L		92	78 - 120
1,4-Dichlorobenzene	10.0	8.77		ug/L		88	78 - 120
2-Butanone (MEK)	20.0	15.1		ug/L		75	39 - 163
2-Hexanone	20.0	13.0		ug/L		65	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	15.0		ug/L		75	49 - 143
Acetone	20.0	18.7		ug/L		94	21 - 162
Benzene	10.0	9.35		ug/L		93	80 - 123
Bromodichloromethane	10.0	7.31	*	ug/L		73	77 - 125
Bromoform	10.0	5.95		ug/L		60	49 - 141
Bromomethane	10.0	8.60		ug/L		86	41 - 175
Carbon disulfide	10.0	8.23		ug/L		82	60 - 138
Carbon tetrachloride	10.0	10.3		ug/L		103	63 - 140
Chlorobenzene	10.0	8.85		ug/L		88	80 - 121
Chloroethane	10.0	9.82		ug/L		98	33 - 173
Chloroform	10.0	8.66		ug/L		87	79 - 127

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Lab Sample ID: LCS 240-405286/4
Matrix: Water
Analysis Batch: 405286

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	10.0	11.1		ug/L		111	54 - 143
cis-1,2-Dichloroethene	10.0	9.67		ug/L		97	76 - 128
cis-1,3-Dichloropropene	10.0	7.04		ug/L		70	64 - 132
Cyclohexane	10.0	14.8	*	ug/L		148	58 - 145
Dibromochloromethane	10.0	7.08		ug/L		71	70 - 132
Dichlorodifluoromethane	10.0	6.18		ug/L		62	29 - 148
Diethyl ether	10.0	12.7		ug/L		127	70 - 146
Ethylbenzene	10.0	9.14		ug/L		91	80 - 120
Isopropylbenzene	10.0	8.78		ug/L		88	74 - 120
Methyl acetate	20.0	17.1		ug/L		85	52 - 145
Methyl tert-butyl ether	10.0	6.53		ug/L		65	51 - 133
Methylcyclohexane	10.0	9.82		ug/L		98	60 - 125
Methylene Chloride	10.0	7.34		ug/L		73	70 - 134
Styrene	10.0	8.05		ug/L		80	79 - 120
Tetrachloroethene	10.0	12.5		ug/L		125	74 - 130
Toluene	10.0	8.77		ug/L		88	78 - 129
trans-1,2-Dichloroethene	10.0	9.00		ug/L		90	78 - 133
trans-1,3-Dichloropropene	10.0	5.44	*	ug/L		54	55 - 128
Trichloroethene	10.0	10.5		ug/L		105	76 - 125
Trichlorofluoromethane	10.0	10.3		ug/L		103	51 - 164
Vinyl chloride	10.0	11.4		ug/L		114	58 - 143
Xylenes, Total	20.0	17.9		ug/L		90	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	77		59 - 120
Dibromofluoromethane (Surr)	102		75 - 128
1,2-Dichloroethane-d4 (Surr)	102		70 - 121
Toluene-d8 (Surr)	98		70 - 123

Lab Sample ID: 240-119753-H-3 MS
Matrix: Water
Analysis Batch: 405286

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
1,1,1-Trichloroethane	1.0	U	10.0	9.56		ug/L		96	51 - 138
1,1,1,2-Tetrachloroethane	1.0	U F1 *	10.0	4.98	F1	ug/L		50	60 - 137
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	13.1		ug/L		131	31 - 156
1,1,2-Trichloroethane	1.0	U F1 *	10.0	6.22	F1	ug/L		62	76 - 132
1,1-Dichloroethane	1.0	U	10.0	12.2		ug/L		122	63 - 136
1,1-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	53 - 140
1,2,4-Trichlorobenzene	1.0	U	10.0	7.56		ug/L		76	30 - 126
1,2,4-Trimethylbenzene	1.0	U	10.0	8.15		ug/L		82	62 - 120
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	4.95		ug/L		50	38 - 124
1,2-Dibromoethane	1.0	U F1 *	10.0	6.24	F1	ug/L		62	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	8.26		ug/L		83	64 - 120
1,2-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	65 - 135
1,2-Dichloropropane	1.0	U	10.0	11.9		ug/L		119	70 - 132
1,3,5-Trimethylbenzene	1.0	U	10.0	8.09		ug/L		81	64 - 120

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Lab Sample ID: 240-119753-H-3 MS

Matrix: Water

Analysis Batch: 405286

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
1,3-Dichlorobenzene	1.0	U	10.0	9.12		ug/L		91	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.85		ug/L		89	63 - 120
2-Butanone (MEK)	10	U	20.0	14.8		ug/L		74	37 - 156
2-Hexanone	10	U	20.0	13.0		ug/L		65	42 - 150
4-Methyl-2-pentanone (MIBK)	10	U	20.0	16.3		ug/L		81	44 - 143
Acetone	10	U	20.0	16.0		ug/L		80	10 - 168
Benzene	1.0	U	10.0	9.80		ug/L		98	71 - 122
Bromodichloromethane	1.0	U *	10.0	6.95		ug/L		70	64 - 125
Bromoform	1.0	U	10.0	5.55		ug/L		56	44 - 129
Bromomethane	1.0	U	10.0	6.18		ug/L		62	19 - 187
Carbon disulfide	5.0	U	10.0	10.9		ug/L		109	43 - 144
Carbon tetrachloride	1.0	U	10.0	10.8		ug/L		108	41 - 143
Chlorobenzene	1.0	U	10.0	8.51		ug/L		85	70 - 123
Chloroethane	1.0	U	10.0	8.37		ug/L		84	11 - 189
Chloroform	1.0	U	10.0	8.45		ug/L		85	68 - 130
Chloromethane	1.0	U	10.0	5.31		ug/L		53	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	9.22		ug/L		92	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	6.68		ug/L		67	48 - 127
Cyclohexane	1.0	U F1 *	10.0	16.9	F1	ug/L		169	42 - 135
Dibromochloromethane	1.0	U	10.0	6.20		ug/L		62	60 - 129
Dichlorodifluoromethane	1.0	U	10.0	6.66		ug/L		67	28 - 136
Diethyl ether	1.0	U	10.0	12.2		ug/L		122	65 - 134
Ethylbenzene	1.0	U	10.0	8.80		ug/L		88	66 - 120
Isopropylbenzene	1.0	U	10.0	8.85		ug/L		88	59 - 120
Methyl acetate	10	U	20.0	17.8		ug/L		89	41 - 142
Methyl tert-butyl ether	1.0	U	10.0	6.62		ug/L		66	41 - 136
Methylcyclohexane	1.0	U	10.0	10.8		ug/L		108	37 - 123
Methylene Chloride	5.0	U	10.0	7.30		ug/L		73	61 - 130
Styrene	1.0	U	10.0	8.46		ug/L		85	68 - 120
Tetrachloroethene	1.0	U	10.0	12.0		ug/L		120	51 - 136
Toluene	1.0	U	10.0	8.36		ug/L		84	62 - 132
trans-1,2-Dichloroethene	1.0	U	10.0	9.11		ug/L		91	68 - 133
trans-1,3-Dichloropropene	1.0	U *	10.0	5.44		ug/L		54	40 - 125
Trichloroethene	1.0	U	10.0	10.8		ug/L		108	55 - 131
Trichlorofluoromethane	1.0	U	10.0	10.5		ug/L		105	37 - 174
Vinyl chloride	5.9		10.0	18.2		ug/L		123	43 - 154
Xylenes, Total	2.0	U	20.0	17.4		ug/L		87	67 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	75		59 - 120
Dibromofluoromethane (Surr)	106		75 - 128
1,2-Dichloroethane-d4 (Surr)	97		70 - 121
Toluene-d8 (Surr)	100		70 - 123

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Lab Sample ID: 240-119753-I-3 MSD
Matrix: Water
Analysis Batch: 405286

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1,1-Trichloroethane	1.0	U	10.0	9.35		ug/L		94	51 - 138	2	27
1,1,1,2-Tetrachloroethane	1.0	U F1 *	10.0	5.12	F1	ug/L		51	60 - 137	3	31
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	12.4		ug/L		124	31 - 156	5	35
1,1,2-Trichloroethane	1.0	U F1 *	10.0	6.45	F1	ug/L		64	76 - 132	4	25
1,1-Dichloroethane	1.0	U	10.0	11.9		ug/L		119	63 - 136	3	23
1,1-Dichloroethene	1.0	U	10.0	9.71		ug/L		97	53 - 140	4	35
1,2,4-Trichlorobenzene	1.0	U	10.0	7.91		ug/L		79	30 - 126	5	35
1,2,4-Trimethylbenzene	1.0	U	10.0	8.04		ug/L		80	62 - 120	1	27
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	4.24		ug/L		42	38 - 124	15	35
1,2-Dibromoethane	1.0	U F1 *	10.0	5.78	F1	ug/L		58	71 - 123	8	27
1,2-Dichlorobenzene	1.0	U	10.0	8.44		ug/L		84	64 - 120	2	30
1,2-Dichloroethane	1.0	U	10.0	10.9		ug/L		109	65 - 135	7	24
1,2-Dichloropropane	1.0	U	10.0	11.9		ug/L		119	70 - 132	0	26
1,3,5-Trimethylbenzene	1.0	U	10.0	7.65		ug/L		76	64 - 120	6	23
1,3-Dichlorobenzene	1.0	U	10.0	8.86		ug/L		89	62 - 120	3	31
1,4-Dichlorobenzene	1.0	U	10.0	8.99		ug/L		90	63 - 120	2	28
2-Butanone (MEK)	10	U	20.0	17.0		ug/L		85	37 - 156	14	35
2-Hexanone	10	U	20.0	12.8		ug/L		64	42 - 150	1	35
4-Methyl-2-pentanone (MIBK)	10	U	20.0	16.5		ug/L		82	44 - 143	1	35
Acetone	10	U	20.0	17.7		ug/L		89	10 - 168	10	35
Benzene	1.0	U	10.0	9.26		ug/L		93	71 - 122	6	22
Bromodichloromethane	1.0	U *	10.0	7.10		ug/L		71	64 - 125	2	27
Bromoform	1.0	U	10.0	6.01		ug/L		60	44 - 129	8	28
Bromomethane	1.0	U	10.0	5.93		ug/L		59	19 - 187	4	35
Carbon disulfide	5.0	U	10.0	11.0		ug/L		110	43 - 144	0	33
Carbon tetrachloride	1.0	U	10.0	10.5		ug/L		105	41 - 143	3	30
Chlorobenzene	1.0	U	10.0	8.49		ug/L		85	70 - 123	0	23
Chloroethane	1.0	U	10.0	8.65		ug/L		87	11 - 189	3	35
Chloroform	1.0	U	10.0	8.43		ug/L		84	68 - 130	0	23
Chloromethane	1.0	U	10.0	4.93		ug/L		49	31 - 154	8	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.51		ug/L		95	64 - 130	3	21
cis-1,3-Dichloropropene	1.0	U	10.0	6.87		ug/L		69	48 - 127	3	30
Cyclohexane	1.0	U F1 *	10.0	16.3	F1	ug/L		163	42 - 135	4	35
Dibromochloromethane	1.0	U	10.0	6.51		ug/L		65	60 - 129	5	26
Dichlorodifluoromethane	1.0	U	10.0	6.72		ug/L		67	28 - 136	1	35
Diethyl ether	1.0	U	10.0	12.8		ug/L		128	65 - 134	5	33
Ethylbenzene	1.0	U	10.0	8.76		ug/L		88	66 - 120	1	24
Isopropylbenzene	1.0	U	10.0	8.81		ug/L		88	59 - 120	0	31
Methyl acetate	10	U	20.0	18.1		ug/L		91	41 - 142	2	35
Methyl tert-butyl ether	1.0	U	10.0	6.81		ug/L		68	41 - 136	3	29
Methylcyclohexane	1.0	U	10.0	10.4		ug/L		104	37 - 123	4	35
Methylene Chloride	5.0	U	10.0	8.67		ug/L		87	61 - 130	17	29
Styrene	1.0	U	10.0	7.85		ug/L		79	68 - 120	7	26
Tetrachloroethene	1.0	U	10.0	11.6		ug/L		116	51 - 136	3	23
Toluene	1.0	U	10.0	8.19		ug/L		82	62 - 132	2	23
trans-1,2-Dichloroethene	1.0	U	10.0	8.86		ug/L		89	68 - 133	3	24
trans-1,3-Dichloropropene	1.0	U *	10.0	5.44		ug/L		54	40 - 125	0	27
Trichloroethene	1.0	U	10.0	10.6		ug/L		106	55 - 131	2	23

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

Lab Sample ID: 240-119753-I-3 MSD
Matrix: Water
Analysis Batch: 405286

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
Trichlorofluoromethane	1.0	U	10.0	10.5		ug/L		105	37 - 174	0	35
Vinyl chloride	5.9		10.0	18.0		ug/L		120	43 - 154	1	29
Xylenes, Total	2.0	U	20.0	16.5		ug/L		83	67 - 120	5	25
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	73		59 - 120								
Dibromofluoromethane (Surr)	101		75 - 128								
1,2-Dichloroethane-d4 (Surr)	101		70 - 121								
Toluene-d8 (Surr)	95		70 - 123								

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

Lab Sample ID: MB 240-404405/5
Matrix: Water
Analysis Batch: 404405

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			10/07/19 12:46	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					10/07/19 12:46	1

Lab Sample ID: LCS 240-404405/4
Matrix: Water
Analysis Batch: 404405

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	11.8		ug/L		118	59 - 131
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	100		63 - 125				

Lab Sample ID: 240-119753-C-2 MS
Matrix: Water
Analysis Batch: 404405

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	4.4		10.0	15.3		ug/L		108	52 - 129
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	103		63 - 125						

Lab Sample ID: 240-119753-C-2 MSD
Matrix: Water
Analysis Batch: 404405

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	4.4		10.0	14.7		ug/L		103	52 - 129	4	13

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

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

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	104		63 - 125

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QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

GC/MS VOA

Analysis Batch: 404405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119757-1	MW-15-61D_092819	Total/NA	Water	8260B SIM	
240-119757-2	MW-34_092819	Total/NA	Water	8260B SIM	
240-119757-3	MW-53_092819	Total/NA	Water	8260B SIM	
240-119757-4	MW-42_092819	Total/NA	Water	8260B SIM	
MB 240-404405/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-404405/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-119753-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-119753-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 405286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119757-1	MW-15-61D_092819	Total/NA	Water	8260B	
240-119757-2	MW-34_092819	Total/NA	Water	8260B	
240-119757-3	MW-53_092819	Total/NA	Water	8260B	
240-119757-4	MW-42_092819	Total/NA	Water	8260B	
240-119757-5	TRIP BLANK	Total/NA	Water	8260B	
MB 240-405286/7	Method Blank	Total/NA	Water	8260B	
LCS 240-405286/4	Lab Control Sample	Total/NA	Water	8260B	
240-119753-H-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-119753-I-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119757-1

Client Sample ID: MW-15-61D_092819

Lab Sample ID: 240-119757-1

Date Collected: 09/28/19 09:25

Matrix: Water

Date Received: 10/01/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405286	10/11/19 20:32	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	404405	10/07/19 16:30	SAM	TAL CAN

Client Sample ID: MW-34_092819

Lab Sample ID: 240-119757-2

Date Collected: 09/28/19 10:44

Matrix: Water

Date Received: 10/01/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405286	10/11/19 20:58	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	404405	10/07/19 16:56	SAM	TAL CAN

Client Sample ID: MW-53_092819

Lab Sample ID: 240-119757-3

Date Collected: 09/28/19 13:34

Matrix: Water

Date Received: 10/01/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405286	10/11/19 21:23	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	404405	10/07/19 17:20	SAM	TAL CAN

Client Sample ID: MW-42_092819

Lab Sample ID: 240-119757-4

Date Collected: 09/28/19 12:01

Matrix: Water

Date Received: 10/01/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405286	10/11/19 21:49	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	404405	10/07/19 17:45	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119757-5

Date Collected: 09/28/19 00:00

Matrix: Water

Date Received: 10/01/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405286	10/11/19 22:14	LRW	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 Livonia MI - E203728

Job ID: 240-119757-1

Laboratory: Eurofins TestAmerica, Canton

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

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

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

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis

Address: 28550 Cabot Drive, Suite 500

City/State/Zip: Novi, MI, 48377

Phone: 248-994-2240

Project Name: Ford LTP

Project Number: M1001454.0004.00001

PO # M1001454.0004.00001

Client Project Manager: Kris Hinskey

Telephone: 248-994-2240

Email: kristoffer.hinskey@arcadis.com

Method of Shipment/Carrier:

Shipping/Tracking No:

Site Contact: Angela DeGrandis

Telephone: 330-497-9396

Lab Contact: Mike DelMonico

COC No: 1 of 1 COCs

Analysis: Walk-in client, Lab sampling, Job/SDG No.

Sample Identification: MW-15-G1D-092819, MW-34-092819, MW-53-092819, MW-42-092819, Trip/blank

Sample Date: 9/28/19, 10/4, 13/4, 12/01

Sample Time: 925, 1044, 1334, 1201

Matrix: Air, Aqueous, Sediment, Solid, Other

Containers & Preservatives: H2SO4, HNO3, HCl, NaOH, ZnAc, NaOH, Other

Filtered Sample (Y/N): NG, NG, NG, NG

Composite (C/Grab): NG, NG, NG, NG

VOCs 8260B: X, X, X, X

1,4-Dioxane 8260B SIM: X, X, X, X

Sample Specific Notes / Special Instructions: Lab bottles

Barcode: 240-119757 Chain of Custody

Possible Hazard Identification: Non-Hazard, Irritable, Inflammable, Corrosive, Acute Toxic, Chronic Toxic, Carcinogenic, Reproductive, Other

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728

Level IV Reporting:

Relinquished by: Julia Malley

Relinquished by: Kelly Wilson

Relinquished by: Kelly Wilson

Company: Arcadis

Company: ARCADIS

Company: ARCADIS

Date/Time: 9/28/19

Date/Time: 9/30/19 1048

Date/Time: 9/30/19 1420

Company: Arcadis

Company: Arcadis

Company: Arcadis

Date/Time: 9/28/19 / 1630

Date/Time: 9/30/19 1048

Date/Time: 10-01-19 930

Received by: Navi Cabot Stange

Received by: Kelly Wilson

Received in Laboratory by: [Signature]

Company: Arcadis

Company: Arcadis

Company: Arcadis

Company: Arcadis

Company: Arcadis

Company: Arcadis

Company: Arcadis

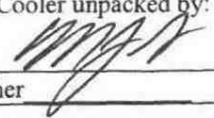
Company: Arcadis



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 119757


Client Arcadis Site Name _____
 Cooler Received on 10-01-19 Opened on 10-01-19

Cooler unpacked by:


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

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

TestAmerica Cooler # 1A 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. 2.7 °C Corrected Cooler Temp. 3.4 °C
 IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 4 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?
 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# HC991818
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 # NA Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

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

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

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:


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: _____