

ANALYTICAL REPORT

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Laboratory Job ID: 240-113071-1

Client Project/Site: Ford LTP Livonia MI - E203631

For:

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



Authorized for release by:
6/6/2019 3:37:30 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 Livonia MI - E203631

Job ID: 240-113071-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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.
▫	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

Job ID: 240-113071-1

Job ID: 240-113071-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-113071-1

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 5/22/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-134S_052019 (240-113071-1), MW-135S_052019 (240-113071-2) and DUP-06_052019 (240-113071-3) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/31/2019.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-134S_052019 (240-113071-1), MW-135S_052019 (240-113071-2) and DUP-06_052019 (240-113071-3) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/29/2019.

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 - E203631

Job ID: 240-113071-1

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 - E203631

Job ID: 240-113071-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-113071-1	MW-134S_052019	Water	05/20/19 16:32	05/22/19 09:45	
240-113071-2	MW-135S_052019	Water	05/20/19 15:08	05/22/19 09:45	
240-113071-3	DUP-06_052019	Water	05/20/19 00:00	05/22/19 09:45	

- 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 - E203631

Job ID: 240-113071-1

Client Sample ID: MW-134S_052019

Lab Sample ID: 240-113071-1

No Detections.

Client Sample ID: MW-135S_052019

Lab Sample ID: 240-113071-2

No Detections.

Client Sample ID: DUP-06_052019

Lab Sample ID: 240-113071-3

No Detections.

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

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-113071-1

Client Sample ID: MW-134S_052019

Lab Sample ID: 240-113071-1

Date Collected: 05/20/19 16:32

Matrix: Water

Date Received: 05/22/19 09:45

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			05/29/19 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		63 - 125		05/29/19 17:52	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			05/31/19 03:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/31/19 03:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/31/19 03:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/31/19 03:57	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/31/19 03:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/31/19 03:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 121		05/31/19 03:57	1
4-Bromofluorobenzene (Surr)	105		59 - 120		05/31/19 03:57	1
Toluene-d8 (Surr)	105		70 - 123		05/31/19 03:57	1
Dibromofluoromethane (Surr)	100		75 - 128		05/31/19 03:57	1

Client Sample Results

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

Job ID: 240-113071-1

Client Sample ID: MW-135S_052019

Lab Sample ID: 240-113071-2

Date Collected: 05/20/19 15:08

Matrix: Water

Date Received: 05/22/19 09:45

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			05/29/19 18:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125		05/29/19 18:17	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			05/31/19 04:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/31/19 04:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/31/19 04:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/31/19 04:22	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/31/19 04:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/31/19 04:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		70 - 121		05/31/19 04:22	1
4-Bromofluorobenzene (Surr)	102		59 - 120		05/31/19 04:22	1
Toluene-d8 (Surr)	104		70 - 123		05/31/19 04:22	1
Dibromofluoromethane (Surr)	99		75 - 128		05/31/19 04:22	1

Client Sample Results

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

Job ID: 240-113071-1

Client Sample ID: DUP-06_052019

Lab Sample ID: 240-113071-3

Date Collected: 05/20/19 00:00

Matrix: Water

Date Received: 05/22/19 09:45

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	-		05/29/19 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		63 - 125		05/29/19 18:42	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	0.19	ug/L	-		05/31/19 04:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		05/31/19 04:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		05/31/19 04:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		05/31/19 04:47	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		05/31/19 04:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		05/31/19 04:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		70 - 121		05/31/19 04:47	1
4-Bromofluorobenzene (Surr)	102		59 - 120		05/31/19 04:47	1
Toluene-d8 (Surr)	103		70 - 123		05/31/19 04:47	1
Dibromofluoromethane (Surr)	100		75 - 128		05/31/19 04:47	1

Surrogate Summary

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

Job ID: 240-113071-1

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 (70-121)	BFB (59-120)	TOL (70-123)	DBFM (75-128)
240-113071-1	MW-134S_052019	114	105	105	100
240-113071-2	MW-135S_052019	113	102	104	99
240-113071-3	DUP-06_052019	117	102	103	100
240-113074-B-1 MS	Matrix Spike	113	107	108	99
240-113074-B-1 MSD	Matrix Spike Duplicate	111	106	107	98
LCS 240-383802/4	Lab Control Sample	106	104	106	95
MB 240-383802/7	Method Blank	114	102	102	99

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)
240-113065-C-1 MS	Matrix Spike	89
240-113065-C-1 MSD	Matrix Spike Duplicate	91
240-113071-1	MW-134S_052019	87
240-113071-2	MW-135S_052019	90
240-113071-3	DUP-06_052019	87
LCS 240-383493/4	Lab Control Sample	88
MB 240-383493/5	Method Blank	86

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-113071-1

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

Lab Sample ID: MB 240-383802/7
Matrix: Water
Analysis Batch: 383802

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			05/30/19 23:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/30/19 23:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/30/19 23:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/30/19 23:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/30/19 23:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/30/19 23:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 121		05/30/19 23:49	1
4-Bromofluorobenzene (Surr)	102		59 - 120		05/30/19 23:49	1
Toluene-d8 (Surr)	102		70 - 123		05/30/19 23:49	1
Dibromofluoromethane (Surr)	99		75 - 128		05/30/19 23:49	1

Lab Sample ID: LCS 240-383802/4
Matrix: Water
Analysis Batch: 383802

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	20.0	20.2		ug/L		101	65 - 139
cis-1,2-Dichloroethene	20.0	19.5		ug/L		97	76 - 128
Tetrachloroethene	20.0	20.6		ug/L		103	74 - 130
trans-1,2-Dichloroethene	20.0	20.7		ug/L		103	78 - 133
Trichloroethene	20.0	19.3		ug/L		97	76 - 125
Vinyl chloride	20.0	21.0		ug/L		105	58 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 121
4-Bromofluorobenzene (Surr)	104		59 - 120
Toluene-d8 (Surr)	106		70 - 123
Dibromofluoromethane (Surr)	95		75 - 128

Lab Sample ID: 240-113074-B-1 MS
Matrix: Water
Analysis Batch: 383802

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	6.3	U	125	102		ug/L		82	53 - 140
cis-1,2-Dichloroethene	11		125	112		ug/L		81	64 - 130
Tetrachloroethene	10		125	104		ug/L		75	51 - 136
trans-1,2-Dichloroethene	6.3	U	125	104		ug/L		83	68 - 133
Trichloroethene	65		125	155		ug/L		72	55 - 131
Vinyl chloride	6.3	U	125	136		ug/L		109	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 121
4-Bromofluorobenzene (Surr)	107		59 - 120
Toluene-d8 (Surr)	108		70 - 123

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QC Sample Results

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

Job ID: 240-113071-1

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

Lab Sample ID: 240-113074-B-1 MS
Matrix: Water
Analysis Batch: 383802

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	99		75 - 128

Lab Sample ID: 240-113074-B-1 MSD
Matrix: Water
Analysis Batch: 383802

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	6.3	U	125	115		ug/L		92	53 - 140	12	35
cis-1,2-Dichloroethene	11		125	125		ug/L		91	64 - 130	11	21
Tetrachloroethene	10		125	116		ug/L		84	51 - 136	10	23
trans-1,2-Dichloroethene	6.3	U	125	118		ug/L		95	68 - 133	13	24
Trichloroethene	65		125	169		ug/L		83	55 - 131	9	23
Vinyl chloride	6.3	U	125	134		ug/L		107	43 - 154	2	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		70 - 121
4-Bromofluorobenzene (Surr)	106		59 - 120
Toluene-d8 (Surr)	107		70 - 123
Dibromofluoromethane (Surr)	98		75 - 128

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

Lab Sample ID: MB 240-383493/5
Matrix: Water
Analysis Batch: 383493

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			05/29/19 11:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125		05/29/19 11:59	1

Lab Sample ID: LCS 240-383493/4
Matrix: Water
Analysis Batch: 383493

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	11.6		ug/L		116	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		63 - 125

Lab Sample ID: 240-113065-C-1 MS
Matrix: Water
Analysis Batch: 383493

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	11.8		ug/L		118	52 - 129

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QC Sample Results

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

Job ID: 240-113071-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	89		63 - 125

Lab Sample ID: 240-113065-C-1 MSD
 Matrix: Water
 Analysis Batch: 383493

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	11.8		ug/L		118	52 - 129	0	13

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	91		63 - 125

QC Association Summary

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

Job ID: 240-113071-1

GC/MS VOA

Analysis Batch: 383493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-113071-1	MW-134S_052019	Total/NA	Water	8260B SIM	
240-113071-2	MW-135S_052019	Total/NA	Water	8260B SIM	
240-113071-3	DUP-06_052019	Total/NA	Water	8260B SIM	
MB 240-383493/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-383493/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-113065-C-1 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-113065-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 383802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-113071-1	MW-134S_052019	Total/NA	Water	8260B	
240-113071-2	MW-135S_052019	Total/NA	Water	8260B	
240-113071-3	DUP-06_052019	Total/NA	Water	8260B	
MB 240-383802/7	Method Blank	Total/NA	Water	8260B	
LCS 240-383802/4	Lab Control Sample	Total/NA	Water	8260B	
240-113074-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-113074-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-113071-1

Client Sample ID: MW-134S_052019

Lab Sample ID: 240-113071-1

Date Collected: 05/20/19 16:32

Matrix: Water

Date Received: 05/22/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	383802	05/31/19 03:57	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	383493	05/29/19 17:52	SAM	TAL CAN

Client Sample ID: MW-135S_052019

Lab Sample ID: 240-113071-2

Date Collected: 05/20/19 15:08

Matrix: Water

Date Received: 05/22/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	383802	05/31/19 04:22	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	383493	05/29/19 18:17	SAM	TAL CAN

Client Sample ID: DUP-06_052019

Lab Sample ID: 240-113071-3

Date Collected: 05/20/19 00:00

Matrix: Water

Date Received: 05/22/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	383802	05/31/19 04:47	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	383493	05/29/19 18:42	SAM	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-113071-1

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-20
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19 *
Illinois	NELAP	5	200004	07-31-19 *
Iowa	State Program	7	421	06-01-21
Kansas	NELAP	7	E-10336	04-30-20
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19 *
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19 *
New York	NELAP	2	10975	03-31-20
Ohio VAP	State Program	5	CL0024	09-06-19 *
Oregon	NELAP	10	4062	02-23-20
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19 *
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

MICHIGAN Chain of Custody Record
190

1,4/CL2



Sample Tracking No.
 Test Number

Client Information Client Contact: Caitlin O'Neill Company: ARCADIS U.S. Inc Address: 28550 Cabot Drive Suite 500 City: Novi State/Zip: MI, 48377 Phone: PO #: MI001318.0002.00002 WO #: Cadena #: E203631 Project #: Ford LTP Livonia MI - E203631 Site:		Lab Pk#: DelMontico, Michael E-Mail: michael.delmonico@testamertainc.com Carrier Tracking No(s): COC No: 240-60548-25803.8 Page: 1 of 1 Job #: 10E1	
Analysis Requested			
Due Date Requested: TAT Requested (days): 10		Preservation Codes: M - Hexane N - None O - AsNI02 P - Na2OHS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 X - EDTA Y - EDA Z - other (specify) Other:	
Sample Identification MW-134S-052019 MW-135S-052019 DUP-06-052019		Total Number of Containers: 6 Special Instructions/Note:	
Sample Date: 5-20-19 5-20-19 5-20-19	Sample Time: 1632 1508 -	Sample Type (C=comp, G=grab): G G G	Matrix (Water, S-solid, Over-sat, GFT-Tissue, A=Air): Water Water Water
Field Filtered Sample (Yes or No): X Perform MS/MSD (Yes or No): X 8260B, 8260B SIM 8260B - VOCs (Short List): A A		Sample Instructions/Note:	
240-113071 Chain of Custody			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, V Other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Special Instructions/OC Requirements:			
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: [Signature] Relinquished Date: 5-20-19 / 1830 Relinquished by: [Signature] Relinquished Date: 5/21/19 1000 Relinquished by: [Signature] Relinquished Date: 5-21-19 1500		Received by: [Signature] Received by: [Signature] Received by: [Signature]	
Custody Seal No.:		Company: ARCADIS Company: ARCADIS Company: ARCADIS	
Cooler Temperature(s) °C and Other Remarks:			



Ver: 01/16/2019

Client Arcadis Site Name _____ Cooler unpacked by: _____
 Cooler Received on 5-22-19 Opened on 5-22-19
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # 74 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 -0.2 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.2 °C
 IR GUN #36 (CF +0.7°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# HC984738
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 # _____ 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: RC

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: _____