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ANALYTICAL REPORT

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

Laboratory Job ID: 240-130752-1
Client Project/Site: Ford LTP On-Site

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

Attn: Kristoffer Hinskey

Authorized for release by:
6/8/2020 10:17:05 AM

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)
MQL	Method Quantitation Limit
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)

Job ID: 240-130752-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On-Site

Report Number: 240-130752-1

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 5/22/2020 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-130752-1), MW-2_052020 (240-130752-2), MW-4_052020 (240-130752-3) and MW-10_052020 (240-130752-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/01/2020.

Samples MW-2_052020 (240-130752-2)[100X], MW-4_052020 (240-130752-3)[1250X] and MW-10_052020 (240-130752-4)[200X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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-2_052020 (240-130752-2), MW-4_052020 (240-130752-3) and MW-10_052020 (240-130752-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/30/2020 and 06/02/2020.

Sample MW-4_052020 (240-130752-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Job ID: 240-130752-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

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 On-Site

Job ID: 240-130752-1

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 On-Site

Job ID: 240-130752-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-130752-1	TRIP BLANK	Water	05/20/20 00:00	05/22/20 09:20	
240-130752-2	MW-2_052020	Water	05/20/20 09:12	05/22/20 09:20	
240-130752-3	MW-4_052020	Water	05/20/20 10:07	05/22/20 09:20	
240-130752-4	MW-10_052020	Water	05/20/20 11:02	05/22/20 09:20	

Detection Summary

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

Job ID: 240-130752-1

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-130752-1

No Detections.

Client Sample ID: MW-2_052020 — Lab Sample ID: 240-130752-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	3200		100	16	ug/L	100		8260B	Total/NA
trans-1,2-Dichloroethene	840		100	19	ug/L	100		8260B	Total/NA
Vinyl chloride	150		100	20	ug/L	100		8260B	Total/NA

Client Sample ID: MW-4_052020 — Lab Sample ID: 240-130752-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	21000		1300	200	ug/L	1250		8260B	Total/NA
trans-1,2-Dichloroethene	950	J	1300	240	ug/L	1250		8260B	Total/NA
Trichloroethene	36000		1300	130	ug/L	1250		8260B	Total/NA
Vinyl chloride	810	J	1300	250	ug/L	1250		8260B	Total/NA

Client Sample ID: MW-10_052020 — Lab Sample ID: 240-130752-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.4		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	3300		200	40	ug/L	200		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-130752-1

Client Sample ID: TRIP BLANK
Date Collected: 05/20/20 00:00
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-1
Matrix: Water

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			06/01/20 18:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/20 18:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/20 18:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/20 18:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/20 18:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/20 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*06/01/20 18:17*	*1*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*		*06/01/20 18:17*	*1*
Toluene-d8 (Surr)	*88*		*69 - 122*		*06/01/20 18:17*	*1*
Dibromofluoromethane (Surr)	*89*		*78 - 129*		*06/01/20 18:17*	*1*

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

Job ID: 240-130752-1

Client Sample ID: MW-2_052020
Date Collected: 05/20/20 09:12
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.5**		2.0	0.86	ug/L			05/30/20 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 133*		*05/30/20 15:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	100	U	100	19	ug/L			06/01/20 18:40	100
cis-1,2-Dichloroethene	**3200**		100	16	ug/L			06/01/20 18:40	100
Tetrachloroethene	100	U	100	15	ug/L			06/01/20 18:40	100
trans-1,2-Dichloroethene	**840**		100	19	ug/L			06/01/20 18:40	100
Trichloroethene	100	U	100	10	ug/L			06/01/20 18:40	100
Vinyl chloride	**150**		100	20	ug/L			06/01/20 18:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*		*06/01/20 18:40*	*100*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*06/01/20 18:40*	*100*
Toluene-d8 (Surr)	*89*		*69 - 122*		*06/01/20 18:40*	*100*
Dibromofluoromethane (Surr)	*92*		*78 - 129*		*06/01/20 18:40*	*100*

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

Job ID: 240-130752-1

Client Sample ID: MW-4_052020
Date Collected: 05/20/20 10:07
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	20	U	20	8.6	ug/L			05/30/20 16:07	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 133*		*05/30/20 16:07*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1300	U	1300	240	ug/L			06/01/20 19:04	1250
cis-1,2-Dichloroethene	**21000**		1300	200	ug/L			06/01/20 19:04	1250
Tetrachloroethene	1300	U	1300	190	ug/L			06/01/20 19:04	1250
trans-1,2-Dichloroethene	**950**	**J**	1300	240	ug/L			06/01/20 19:04	1250
Trichloroethene	**36000**		1300	130	ug/L			06/01/20 19:04	1250
Vinyl chloride	**810**	**J**	1300	250	ug/L			06/01/20 19:04	1250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*06/01/20 19:04*	*1250*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*06/01/20 19:04*	*1250*
Toluene-d8 (Surr)	*90*		*69 - 122*		*06/01/20 19:04*	*1250*
Dibromofluoromethane (Surr)	*91*		*78 - 129*		*06/01/20 19:04*	*1250*

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

Job ID: 240-130752-1

Client Sample ID: MW-10_052020

Date Collected: 05/20/20 11:02
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.4**		2.0	0.86	ug/L			06/02/20 06:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 133*		*06/02/20 06:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	200	U	200	38	ug/L			06/01/20 19:28	200
cis-1,2-Dichloroethene	200	U	200	32	ug/L			06/01/20 19:28	200
Tetrachloroethene	200	U	200	30	ug/L			06/01/20 19:28	200
trans-1,2-Dichloroethene	200	U	200	38	ug/L			06/01/20 19:28	200
Trichloroethene	200	U	200	20	ug/L			06/01/20 19:28	200
Vinyl chloride	**3300**		200	40	ug/L			06/01/20 19:28	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*		*06/01/20 19:28*	*200*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*06/01/20 19:28*	*200*
Toluene-d8 (Surr)	*89*		*69 - 122*		*06/01/20 19:28*	*200*
Dibromofluoromethane (Surr)	*90*		*78 - 129*		*06/01/20 19:28*	*200*

Surrogate Summary

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

Job ID: 240-130752-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-130751-D-2 MS	Matrix Spike	86	89	89	88
240-130751-E-2 MSD	Matrix Spike Duplicate	86	90	90	90
240-130752-1	TRIP BLANK	90	82	88	89
240-130752-2	MW-2_052020	92	83	89	92
240-130752-3	MW-4_052020	90	85	90	91
240-130752-4	MW-10_052020	92	83	89	90
LCS 240-436358/4	Lab Control Sample	90	92	93	91
MB 240-436358/7	Method Blank	92	83	88	89

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(70-133)
240-130724-B-4 MS	Matrix Spike	95
240-130724-B-4 MSD	Matrix Spike Duplicate	96
240-130752-2	MW-2_052020	100
240-130752-3	MW-4_052020	99
240-130752-4	MW-10_052020	97
240-130793-C-2 MS	Matrix Spike	103
240-130793-C-2 MSD	Matrix Spike Duplicate	102
LCS 240-436242/4	Lab Control Sample	95
LCS 240-436445/4	Lab Control Sample	93
MB 240-436242/5	Method Blank	96
MB 240-436445/5	Method Blank	93

Surrogate Legend

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

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

Lab Sample ID: MB 240-436358/7
Matrix: Water
Analysis Batch: 436358

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			06/01/20 13:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/20 13:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/20 13:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/20 13:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/20 13:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/20 13:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*		*06/01/20 13:54*	*1*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*06/01/20 13:54*	*1*
Toluene-d8 (Surr)	*88*		*69 - 122*		*06/01/20 13:54*	*1*
Dibromofluoromethane (Surr)	*89*		*78 - 129*		*06/01/20 13:54*	*1*

Lab Sample ID: LCS 240-436358/4
Matrix: Water
Analysis Batch: 436358

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	9.84		ug/L		98	73 - 129
cis-1,2-Dichloroethene	10.0	9.82		ug/L		98	75 - 124
Tetrachloroethene	10.0	10.9		ug/L		109	70 - 125
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121
Vinyl chloride	10.0	8.13		ug/L		81	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*
Toluene-d8 (Surr)	*93*		*69 - 122*
Dibromofluoromethane (Surr)	*91*		*78 - 129*

Lab Sample ID: 240-130751-D-2 MS
Matrix: Water
Analysis Batch: 436358

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	9.22		ug/L		92	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.36		ug/L		94	68 - 121
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.56		ug/L		96	69 - 126
Trichloroethene	1.0	U	10.0	9.39		ug/L		94	56 - 124
Vinyl chloride	1.0	U	10.0	7.84		ug/L		78	49 - 136

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*
4-Bromofluorobenzene (Surr)	*89*		*47 - 134*
Toluene-d8 (Surr)	*89*		*69 - 122*

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

Lab Sample ID: 240-130751-D-2 MS
Matrix: Water
Analysis Batch: 436358

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-130751-E-2 MSD
Matrix: Water
Analysis Batch: 436358

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.31		ug/L		93	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.57		ug/L		96	68 - 121	2	35
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.88		ug/L		99	69 - 126	3	35
Trichloroethene	1.0	U	10.0	9.31		ug/L		93	56 - 124	1	35
Vinyl chloride	1.0	U	10.0	7.86		ug/L		79	49 - 136	0	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	90		47 - 134
Toluene-d8 (Surr)	90		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

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

Lab Sample ID: MB 240-436242/5
Matrix: Water
Analysis Batch: 436242

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			05/30/20 06:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133		05/30/20 06:10	1

Lab Sample ID: LCS 240-436242/4
Matrix: Water
Analysis Batch: 436242

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	8.98		ug/L		90	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 133

Lab Sample ID: 240-130724-B-4 MS
Matrix: Water
Analysis Batch: 436242

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.7		ug/L		107	46 - 170

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 133

Lab Sample ID: 240-130724-B-4 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 436242

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.79		ug/L		98	46 - 170	9	26

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 133

Lab Sample ID: MB 240-436445/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 436445

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			06/02/20 05:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 133		06/02/20 05:36	1

Lab Sample ID: LCS 240-436445/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 436445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.10		ug/L		91	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 133

Lab Sample ID: 240-130793-C-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 436445

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.9	J	10.0	10.7		ug/L		89	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 133

Lab Sample ID: 240-130793-C-2 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 436445

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	1.9	J	10.0	10.7		ug/L		89	46 - 170	0	26

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

Lab Sample ID: 240-130793-C-2 MSD
Matrix: Water
Analysis Batch: 436445

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 133*

QC Association Summary

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

Job ID: 240-130752-1

GC/MS VOA

Analysis Batch: 436242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130752-2	MW-2_052020	Total/NA	Water	8260B SIM	
240-130752-3	MW-4_052020	Total/NA	Water	8260B SIM	
MB 240-436242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-436242/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-130724-B-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-130724-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 436358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130752-1	TRIP BLANK	Total/NA	Water	8260B	
240-130752-2	MW-2_052020	Total/NA	Water	8260B	
240-130752-3	MW-4_052020	Total/NA	Water	8260B	
240-130752-4	MW-10_052020	Total/NA	Water	8260B	
MB 240-436358/7	Method Blank	Total/NA	Water	8260B	
LCS 240-436358/4	Lab Control Sample	Total/NA	Water	8260B	
240-130751-D-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-130751-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 436445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-130752-4	MW-10_052020	Total/NA	Water	8260B SIM	
MB 240-436445/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-436445/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-130793-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-130793-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-130752-1

Client Sample ID: TRIP BLANK
Date Collected: 05/20/20 00:00
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	436358	06/01/20 18:17	LRW	TAL CAN

Client Sample ID: MW-2_052020
Date Collected: 05/20/20 09:12
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	436358	06/01/20 18:40	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	436242	05/30/20 15:41	TJL2	TAL CAN

Client Sample ID: MW-4_052020
Date Collected: 05/20/20 10:07
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1250	436358	06/01/20 19:04	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		10	436242	05/30/20 16:07	TJL2	TAL CAN

Client Sample ID: MW-10_052020
Date Collected: 05/20/20 11:02
Date Received: 05/22/20 09:20

Lab Sample ID: 240-130752-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	436358	06/01/20 19:28	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	436445	06/02/20 06:55	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 On-Site

Job ID: 240-130752-1

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

MICHIGAN
190

0.9/1.6

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Julia McClafferty	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis				
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 734-644-5131	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Novi, MI, 48377	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240	Sampler Name: H. Woodrum	TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day; 10 day		Walk-in client:
Project Name: Ford LTP On-Site	Method of Shipment/Carrier:			Lab sampling:
Project Number: 30050315.401.03	Shipping/Tracking No:			Job/SDG No:
PO # 30050315.401.03				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK	—	—		1						1					N	G	X	X	X	X	X	X	X	TRIP BLANK
MW-2_052020	5/20/20	912		6						6					N	G	X	X	X	X	X	X	X	3 VOA for 8260B 3 VOA for 8260BSIM
MW-4_052020	5/20/20	1007		6						6					N	G	X	X	X	X	X	X	X	1
MW-10_052020	5/20/20	1102		6						6					N	G	X	X	X	X	X	X	X	

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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/QC Requirements & Comments:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Heather Woodrum	Arcadis	5/20/20 1205	RACHEL BIELAK	ARCADIS	5/20/20 1205
RACHEL BIELAK	ARCADIS	5/20/20 1620	NOVI COLD STORAGE	ARCADIS	5/20/20 1620
Andrew Bassett	Arcadis	5/21/20 0850	Received in Laboratory by:	Company: ETA MI	Date/Time: 5/21/20 8:54

ETA 5-22-20 920

Relinquished by Angel My ETA MI 5/21/20 8:54

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 130752**
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Ryan C

Cooler Received on 5-22-20 Opened on 5-22-20 920

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-10 (CF +0.7 °C) Observed Cooler Temp. 0.9 °C Corrected Cooler Temp. 1.6 °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 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# **HC902937**
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 # 59072 (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: _____

WI-NC-099