

ANALYTICAL REPORT

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

Laboratory Job ID: 240-149736-1
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:
6/4/2021 11:25:16 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 On-Site

Job ID: 240-149736-1

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

Case Narrative

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

Job ID: 240-149736-1

Job ID: 240-149736-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-149736-1

Comments

No additional comments.

Receipt

The samples were received on 5/20/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

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

Job ID: 240-149736-1

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

Protocol References:

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

Laboratory References:

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

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- 13
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Sample Summary

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

Job ID: 240-149736-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149736-1	TRIP BLANK_87	Water	05/15/21 00:00	05/20/21 08:00	
240-149736-2	MW-40_051521	Water	05/15/21 09:06	05/20/21 08:00	
240-149736-3	MW-31_051521	Water	05/15/21 10:21	05/20/21 08:00	
240-149736-4	MW-208S_051521	Water	05/15/21 11:51	05/20/21 08:00	
240-149736-5	MW-30_051521	Water	05/15/21 13:16	05/20/21 08:00	

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- 13
- 14

Detection Summary

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

Job ID: 240-149736-1

Client Sample ID: TRIP BLANK_87

Lab Sample ID: 240-149736-1

No Detections.

Client Sample ID: MW-40_051521

Lab Sample ID: 240-149736-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.2		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.33	J	1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	0.38	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-31_051521

Lab Sample ID: 240-149736-3

No Detections.

Client Sample ID: MW-208S_051521

Lab Sample ID: 240-149736-4

No Detections.

Client Sample ID: MW-30_051521

Lab Sample ID: 240-149736-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	14		2.0	0.86	ug/L	1		8260B SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-149736-1

Client Sample ID: TRIP BLANK_87

Lab Sample ID: 240-149736-1

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/20/21 08:00

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			05/27/21 13:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 13:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 13:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 13:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 13:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130		05/27/21 13:41	1
4-Bromofluorobenzene (Surr)	72		47 - 134		05/27/21 13:41	1
Toluene-d8 (Surr)	87		69 - 122		05/27/21 13:41	1
Dibromofluoromethane (Surr)	107		78 - 129		05/27/21 13:41	1

Client Sample Results

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

Job ID: 240-149736-1

Client Sample ID: MW-40_051521

Lab Sample ID: 240-149736-2

Date Collected: 05/15/21 09:06

Matrix: Water

Date Received: 05/20/21 08:00

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			05/25/21 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133					05/25/21 14:55	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			05/27/21 14:03	1
cis-1,2-Dichloroethene	2.2		1.0	0.16	ug/L			05/27/21 14:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 14:03	1
trans-1,2-Dichloroethene	0.33	J	1.0	0.19	ug/L			05/27/21 14:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 14:03	1
Vinyl chloride	0.38	J	1.0	0.20	ug/L			05/27/21 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130					05/27/21 14:03	1
4-Bromofluorobenzene (Surr)	69		47 - 134					05/27/21 14:03	1
Toluene-d8 (Surr)	85		69 - 122					05/27/21 14:03	1
Dibromofluoromethane (Surr)	104		78 - 129					05/27/21 14:03	1

Client Sample Results

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

Job ID: 240-149736-1

Client Sample ID: MW-31_051521

Lab Sample ID: 240-149736-3

Date Collected: 05/15/21 10:21

Matrix: Water

Date Received: 05/20/21 08:00

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			05/25/21 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133		05/25/21 15:20	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			05/27/21 14:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 14:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 14:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 14:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 14:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130		05/27/21 14:25	1
4-Bromofluorobenzene (Surr)	71		47 - 134		05/27/21 14:25	1
Toluene-d8 (Surr)	88		69 - 122		05/27/21 14:25	1
Dibromofluoromethane (Surr)	105		78 - 129		05/27/21 14:25	1

Client Sample Results

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

Job ID: 240-149736-1

Client Sample ID: MW-208S_051521

Lab Sample ID: 240-149736-4

Date Collected: 05/15/21 11:51

Matrix: Water

Date Received: 05/20/21 08:00

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			05/25/21 15:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					05/25/21 15:45	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			05/27/21 14:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 14:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 14:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 14:47	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 14:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 14:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130					05/27/21 14:47	1
4-Bromofluorobenzene (Surr)	67		47 - 134					05/27/21 14:47	1
Toluene-d8 (Surr)	83		69 - 122					05/27/21 14:47	1
Dibromofluoromethane (Surr)	100		78 - 129					05/27/21 14:47	1

Client Sample Results

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

Job ID: 240-149736-1

Client Sample ID: MW-30_051521

Lab Sample ID: 240-149736-5

Date Collected: 05/15/21 13:16

Matrix: Water

Date Received: 05/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	14		2.0	0.86	ug/L			05/25/21 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		05/25/21 16:09	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			05/27/21 15:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 15:09	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 15:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 15:09	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 15:09	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 15:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130		05/27/21 15:09	1
4-Bromofluorobenzene (Surr)	69		47 - 134		05/27/21 15:09	1
Toluene-d8 (Surr)	87		69 - 122		05/27/21 15:09	1
Dibromofluoromethane (Surr)	110		78 - 129		05/27/21 15:09	1

Surrogate Summary

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

Job ID: 240-149736-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-149671-A-1 MS	Matrix Spike	90	93	93	90
240-149671-C-1 MSD	Matrix Spike Duplicate	91	96	97	94
240-149736-1	TRIP BLANK_87	110	72	87	107
240-149736-2	MW-40_051521	109	69	85	104
240-149736-3	MW-31_051521	110	71	88	105
240-149736-4	MW-208S_051521	107	67	83	100
240-149736-5	MW-30_051521	112	69	87	110
LCS 240-487790/4	Lab Control Sample	92	97	97	96
MB 240-487790/7	Method Blank	108	75	88	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-149630-G-3 MS	Matrix Spike	85
240-149630-M-3 MSD	Matrix Spike Duplicate	86
240-149736-2	MW-40_051521	82
240-149736-3	MW-31_051521	83
240-149736-4	MW-208S_051521	81
240-149736-5	MW-30_051521	84
LCS 240-487432/4	Lab Control Sample	82
MB 240-487432/5	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-149736-1

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

Lab Sample ID: MB 240-487790/7
Matrix: Water
Analysis Batch: 487790

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 09:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 09:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 09:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 09:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 09:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 09:42	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		05/27/21 09:42	1
4-Bromofluorobenzene (Surr)	75		47 - 134		05/27/21 09:42	1
Toluene-d8 (Surr)	88		69 - 122		05/27/21 09:42	1
Dibromofluoromethane (Surr)	99		78 - 129		05/27/21 09:42	1

Lab Sample ID: LCS 240-487790/4
Matrix: Water
Analysis Batch: 487790

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	10.0	8.94		ug/L		89	75 - 124
Tetrachloroethene	10.0	9.51		ug/L		95	70 - 125
trans-1,2-Dichloroethene	10.0	8.91		ug/L		89	74 - 130
Trichloroethene	10.0	9.09		ug/L		91	71 - 121
Vinyl chloride	10.0	7.97		ug/L		80	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	97		69 - 122
Dibromofluoromethane (Surr)	96		78 - 129

Lab Sample ID: 240-149671-A-1 MS
Matrix: Water
Analysis Batch: 487790

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

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	10.0	10.2		ug/L		102	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.62		ug/L		86	68 - 121
Tetrachloroethene	1.0	U	10.0	9.14		ug/L		91	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.83		ug/L		88	69 - 126
Trichloroethene	1.0	U	10.0	8.75		ug/L		88	56 - 124
Vinyl chloride	1.0	U	10.0	8.53		ug/L		85	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	93		69 - 122

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QC Sample Results

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

Job ID: 240-149736-1

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

Lab Sample ID: 240-149671-A-1 MS
Matrix: Water
Analysis Batch: 487790

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	90		78 - 129

Lab Sample ID: 240-149671-C-1 MSD
Matrix: Water
Analysis Batch: 487790

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	8.41		ug/L		84	64 - 132	19	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.13		ug/L		91	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	9.74		ug/L		97	52 - 129	6	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.02		ug/L		90	69 - 126	2	35
Trichloroethene	1.0	U	10.0	9.10		ug/L		91	56 - 124	4	35
Vinyl chloride	1.0	U	10.0	8.66		ug/L		87	49 - 136	2	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	97		69 - 122
Dibromofluoromethane (Surr)	94		78 - 129

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

Lab Sample ID: MB 240-487432/5
Matrix: Water
Analysis Batch: 487432

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			05/25/21 14:06	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		05/25/21 14:06	1			

Lab Sample ID: LCS 240-487432/4
Matrix: Water
Analysis Batch: 487432

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.1		ug/L		101	80 - 135

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 133

Lab Sample ID: 240-149630-G-3 MS
Matrix: Water
Analysis Batch: 487432

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	2.2		10.0	13.3		ug/L		111	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149736-1

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)	85		70 - 133

Lab Sample ID: 240-149630-M-3 MSD
Matrix: Water
Analysis Batch: 487432

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	2.2		10.0	13.2		ug/L		110	46 - 170	1	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	86		70 - 133



QC Association Summary

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

Job ID: 240-149736-1

GC/MS VOA

Analysis Batch: 487432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149736-2	MW-40_051521	Total/NA	Water	8260B SIM	
240-149736-3	MW-31_051521	Total/NA	Water	8260B SIM	
240-149736-4	MW-208S_051521	Total/NA	Water	8260B SIM	
240-149736-5	MW-30_051521	Total/NA	Water	8260B SIM	
MB 240-487432/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487432/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149630-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149630-M-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 487790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149736-1	TRIP BLANK_87	Total/NA	Water	8260B	
240-149736-2	MW-40_051521	Total/NA	Water	8260B	
240-149736-3	MW-31_051521	Total/NA	Water	8260B	
240-149736-4	MW-208S_051521	Total/NA	Water	8260B	
240-149736-5	MW-30_051521	Total/NA	Water	8260B	
MB 240-487790/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487790/4	Lab Control Sample	Total/NA	Water	8260B	
240-149671-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-149671-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-149736-1

Client Sample ID: TRIP BLANK_87

Lab Sample ID: 240-149736-1

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487790	05/27/21 13:41	LEE	TAL CAN

Client Sample ID: MW-40_051521

Lab Sample ID: 240-149736-2

Date Collected: 05/15/21 09:06

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487790	05/27/21 14:03	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 14:55	CS	TAL CAN

Client Sample ID: MW-31_051521

Lab Sample ID: 240-149736-3

Date Collected: 05/15/21 10:21

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487790	05/27/21 14:25	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 15:20	CS	TAL CAN

Client Sample ID: MW-208S_051521

Lab Sample ID: 240-149736-4

Date Collected: 05/15/21 11:51

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487790	05/27/21 14:47	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 15:45	CS	TAL CAN

Client Sample ID: MW-30_051521

Lab Sample ID: 240-149736-5

Date Collected: 05/15/21 13:16

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487790	05/27/21 15:09	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 16:09	CS	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: 240-149736-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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



Chain of Custody Record

TestAmerica
 TestAmerica Laboratories, Inc.
 NC

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

MICHIGAN
 190

Regulatory program: DW NPDES RCRA Other

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

Site Contact: Julia McClafferty
 Telephone: 734-644-5131

Lab Contact: Mike DeMontico
 Telephone: 334-497-9396

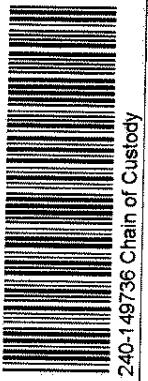
Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240

Project Name: Ford LTP On-Site
 Project Number: 30080642.401.03
 PO #: 30080642.401.03

Sampler Name: Gary Schaefer
 Method of Shipment/Carrier:
 Shipping/Tracking No:

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

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite C/Grab-G	Analyses					Sample Specific Notes Special Instructions:							
			Air	Aqueous	Sediment	Solid	Other	H2SO4	HNO3	HCl			NaOH	ZnAc	NaOH	Other	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	
TFP Blank 87	---	---	X																					1 Trip Blank	
MW 40-05/521	05/15/21	9:06	X																						3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-31-05/521	05/15/21	10:21	X																						
MW-208S-05/521	05/15/21	11:51	X																						
MW-30-05/521	05/15/21	13:16	X																						



Possible Hazard Identification
 Non-Hazard 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 jitomata@cadenaco.com. Cadena #E203728
 Level IV Reporting requested.

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
<i>[Signature]</i>	5/15/21 14:05	ARCADIS	NOVIC COLO STORAGE	5/15/21 14:05	ARCADIS
<i>[Signature]</i>	5/18/21 9:45	ARCADIS	<i>[Signature]</i>	5/18/21 9:45	ARCADIS
<i>[Signature]</i>	5/20/21 8:00	ARCADIS	<i>[Signature]</i>	5/20/21 8:00	ARCADIS

Relinquished by: *[Signature]* Date/Time: 5/15/21 14:05 Company: ARCADIS
 Relinquished by: *[Signature]* Date/Time: 5/18/21 9:45 Company: ARCADIS
 Relinquished by: *[Signature]* Date/Time: 5/20/21 8:00 Company: ARCADIS

Eurofins TestAmerica Canton Sample Receipt Form/Narrative		Login # <u>149736</u>
Canton Facility		
Client <u>Acad 5</u>	Site Name _____	Cooler unpacked by: <u>[Signature]</u>
Cooler Received on <u>5/20/21</u>	Opened on <u>5/20/21</u>	
FedEx 1 st Grd Exp <u>UPS FAS Clipper</u>	Client Drop Off <u>TestAmerica Courier</u>	Other _____
Receipt After-hours Drop-off Date/Time		Storage Location
TestAmerica Cooler # _____	Foam Box <u>Client Cooler</u>	Box _____ Other _____
Packing material used <u>Bubble Wrap</u>	Foam <u>Plastic Bag</u>	None _____ Other _____
COOLANT: <u>Wet Ice</u>	Blue Ice <u>Dry Ice</u>	Water <u>None</u>
1 Cooler temperature upon receipt <input type="checkbox"/> See Multiple Cooler Form IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp <u>25</u> °C Corrected Cooler Temp <u>26</u> °C IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp _____ °C Corrected Cooler Temp _____ °C		
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u> -Were the seals on the outside of the cooler(s) signed & dated? <u>Yes</u> No NA -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? <u>Yes</u> No NA -Were tamper/custody seals intact and uncompromised? <u>Yes</u> No NA		
3 Shippers' packing slip attached to the cooler(s)? <u>Yes</u> No <u>ABC 5/20/21</u>		
4 Did custody papers accompany the sample(s)? <u>Yes</u> No		
5 Were the custody papers relinquished & signed in the appropriate place? <u>Yes</u> No		
6 Was/were the person(s) who collected the samples clearly identified on the COC? <u>Yes</u> No <u>5/20/21</u>		
7 Did all bottles arrive in good condition (Unbroken)? <u>Yes</u> No		
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? <u>Yes</u> No		
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? <u>Yes</u> No		
10 Were correct bottle(s) used for the test(s) indicated? <u>Yes</u> No <u>ATE 5/20/21</u>		
11 Sufficient quantity received to perform indicated analyses? <u>Yes</u> No		
12 Are these work share samples and all listed on the COC? <u>Yes</u> No		
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt? <u>Yes</u> No <u>NA</u> pH Strip Lot# <u>HC022887</u>		
14 Were VOAs on the COC? <u>Yes</u> No		
15 Were air bubbles >6 mm in any VOA vials? <u>Yes</u> <u>NA</u> <u>Larger than this</u>		
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u>covered</u> <u>Yes</u> No		
17 Was a LL Hg or Me Hg trip blank present? <u>Yes</u> No		
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES <input type="checkbox"/> additional next page	Samples processed by _____

19. 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)

20. 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 _____