

ANALYTICAL REPORT

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

Laboratory Job ID: 240-149695-1
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 10:45:15 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: 240-149695-1

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.
S1+	Surrogate recovery exceeds control limits, high biased.
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: 240-149695-1

Job ID: 240-149695-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-149695-1

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 0.9° C.

GC/MS VOA

Method 8260B: Surrogate recovery for the following sample was outside the upper control limit: MW-33_051821 (240-149695-4). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

VOA Prep

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

Method Summary

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

Job ID: 240-149695-1

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
- 14

Sample Summary

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

Job ID: 240-149695-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149695-1	TRIP BLANK_103	Water	05/18/21 00:00	05/19/21 08:00	
240-149695-2	MW-195S_051821	Water	05/18/21 09:56	05/19/21 08:00	
240-149695-3	MW-221S_051821	Water	05/18/21 11:40	05/19/21 08:00	
240-149695-4	MW-33_051821	Water	05/18/21 14:12	05/19/21 08:00	
240-149695-5	MW-39_051821	Water	05/18/21 15:48	05/19/21 08:00	

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- 13
- 14

Detection Summary

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

Job ID: 240-149695-1

Client Sample ID: TRIP BLANK_103

Lab Sample ID: 240-149695-1

No Detections.

Client Sample ID: MW-195S_051821

Lab Sample ID: 240-149695-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	120		50	8.0	ug/L	50			8260B	Total/NA
trans-1,2-Dichloroethene	170		50	9.5	ug/L	50			8260B	Total/NA
Trichloroethene	3200		50	5.0	ug/L	50			8260B	Total/NA
Vinyl chloride	13	J	50	10	ug/L	50			8260B	Total/NA

Client Sample ID: MW-221S_051821

Lab Sample ID: 240-149695-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.0		1.0	0.16	ug/L	1			8260B	Total/NA

Client Sample ID: MW-33_051821

Lab Sample ID: 240-149695-4

No Detections.

Client Sample ID: MW-39_051821

Lab Sample ID: 240-149695-5

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-149695-1

Client Sample ID: TRIP BLANK_103

Lab Sample ID: 240-149695-1

Date Collected: 05/18/21 00:00

Matrix: Water

Date Received: 05/19/21 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			05/28/21 15:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 15:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 15:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 15:58	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 15:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		75 - 130		05/28/21 15:58	1
4-Bromofluorobenzene (Surr)	103		47 - 134		05/28/21 15:58	1
Toluene-d8 (Surr)	115		69 - 122		05/28/21 15:58	1
Dibromofluoromethane (Surr)	121		78 - 129		05/28/21 15:58	1

Client Sample Results

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

Job ID: 240-149695-1

Client Sample ID: MW-195S_051821

Lab Sample ID: 240-149695-2

Date Collected: 05/18/21 09:56

Matrix: Water

Date Received: 05/19/21 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			05/24/21 22:44	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133					05/24/21 22:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	50	U	50	9.5	ug/L			05/28/21 20:58	50
cis-1,2-Dichloroethene	120		50	8.0	ug/L			05/28/21 20:58	50
Tetrachloroethene	50	U	50	7.5	ug/L			05/28/21 20:58	50
trans-1,2-Dichloroethene	170		50	9.5	ug/L			05/28/21 20:58	50
Trichloroethene	3200		50	5.0	ug/L			05/28/21 20:58	50
Vinyl chloride	13 J		50	10	ug/L			05/28/21 20:58	50
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 130					05/28/21 20:58	50
4-Bromofluorobenzene (Surr)	98		47 - 134					05/28/21 20:58	50
Toluene-d8 (Surr)	110		69 - 122					05/28/21 20:58	50
Dibromofluoromethane (Surr)	121		78 - 129					05/28/21 20:58	50

Client Sample Results

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

Job ID: 240-149695-1

Client Sample ID: MW-221S_051821

Lab Sample ID: 240-149695-3

Date Collected: 05/18/21 11:40

Matrix: Water

Date Received: 05/19/21 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			05/24/21 23:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133		05/24/21 23:09	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			05/29/21 17:02	1
cis-1,2-Dichloroethene	2.0		1.0	0.16	ug/L			05/29/21 17:02	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/29/21 17:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/29/21 17:02	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/29/21 17:02	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/29/21 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		05/29/21 17:02	1
4-Bromofluorobenzene (Surr)	98		47 - 134		05/29/21 17:02	1
Toluene-d8 (Surr)	106		69 - 122		05/29/21 17:02	1
Dibromofluoromethane (Surr)	113		78 - 129		05/29/21 17:02	1

Client Sample Results

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

Job ID: 240-149695-1

Client Sample ID: MW-33_051821

Lab Sample ID: 240-149695-4

Date Collected: 05/18/21 14:12

Matrix: Water

Date Received: 05/19/21 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			05/24/21 23:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133		05/24/21 23:34	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			05/28/21 20:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 20:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 20:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 20:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 20:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 20:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	130		75 - 130		05/28/21 20:12	1
4-Bromofluorobenzene (Surr)	106		47 - 134		05/28/21 20:12	1
Toluene-d8 (Surr)	114		69 - 122		05/28/21 20:12	1
Dibromofluoromethane (Surr)	130	S1+	78 - 129		05/28/21 20:12	1

Client Sample Results

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

Job ID: 240-149695-1

Client Sample ID: MW-39_051821

Lab Sample ID: 240-149695-5

Date Collected: 05/18/21 15:48

Matrix: Water

Date Received: 05/19/21 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			05/26/21 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133		05/26/21 20:56	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			05/28/21 20:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 20:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 20:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 20:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 20:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 20:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	125		75 - 130		05/28/21 20:35	1
4-Bromofluorobenzene (Surr)	106		47 - 134		05/28/21 20:35	1
Toluene-d8 (Surr)	115		69 - 122		05/28/21 20:35	1
Dibromofluoromethane (Surr)	129		78 - 129		05/28/21 20:35	1

Surrogate Summary

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

Job ID: 240-149695-1

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 (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-149695-1	TRIP BLANK_103	124	103	115	121
240-149695-2	MW-195S_051821	122	98	110	121
240-149695-3	MW-221S_051821	108	98	106	113
240-149695-4	MW-33_051821	130	106	114	130 S1+
240-149695-5	MW-39_051821	125	106	115	129
240-149695-5 MS	MW-39-MS_051821	106	109	109	109
240-149695-5 MSD	MW-39-MSD_051821	103	107	107	106
240-149874-J-2 MS	Matrix Spike	98	102	104	103
240-149874-R-2 MSD	Matrix Spike Duplicate	94	102	105	103
LCS 240-488080/5	Lab Control Sample	109	111	110	114
LCS 240-488191/5	Lab Control Sample	106	111	110	113
MB 240-488080/7	Method Blank	118	104	111	118
MB 240-488191/7	Method Blank	108	104	107	112

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
		(70-133)
240-149527-I-2 MS	Matrix Spike	96
240-149527-P-2 MSD	Matrix Spike Duplicate	97
240-149695-2	MW-195S_051821	98
240-149695-3	MW-221S_051821	98
240-149695-4	MW-33_051821	96
240-149695-5	MW-39_051821	85
240-149695-5 MS	MW-39-MS_051821	87
240-149695-5 MSD	MW-39-MSD_051821	84
LCS 240-487242/4	Lab Control Sample	100
LCS 240-487671/4	Lab Control Sample	84
MB 240-487242/5	Method Blank	97
MB 240-487671/5	Method Blank	83

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-149695-1

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

Lab Sample ID: MB 240-488080/7
Matrix: Water
Analysis Batch: 488080

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			05/28/21 13:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 13:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 13:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 13:16	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 13:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 13:16	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	118		75 - 130		05/28/21 13:16	1
4-Bromofluorobenzene (Surr)	104		47 - 134		05/28/21 13:16	1
Toluene-d8 (Surr)	111		69 - 122		05/28/21 13:16	1
Dibromofluoromethane (Surr)	118		78 - 129		05/28/21 13:16	1

Lab Sample ID: LCS 240-488080/5
Matrix: Water
Analysis Batch: 488080

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	25.0	28.8		ug/L		115	73 - 129
cis-1,2-Dichloroethene	25.0	28.0		ug/L		112	75 - 124
Tetrachloroethene	25.0	27.7		ug/L		111	70 - 125
trans-1,2-Dichloroethene	25.0	29.1		ug/L		116	74 - 130
Trichloroethene	25.0	27.5		ug/L		110	71 - 121
Vinyl chloride	25.0	26.1		ug/L		104	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	109		75 - 130
4-Bromofluorobenzene (Surr)	111		47 - 134
Toluene-d8 (Surr)	110		69 - 122
Dibromofluoromethane (Surr)	114		78 - 129

Lab Sample ID: 240-149695-5 MS
Matrix: Water
Analysis Batch: 488080

Client Sample ID: MW-39-MS_051821
Prep Type: Total/NA

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	25.0	26.6		ug/L		106	64 - 132
cis-1,2-Dichloroethene	1.0	U	25.0	25.3		ug/L		101	68 - 121
Tetrachloroethene	1.0	U	25.0	25.6		ug/L		102	52 - 129
trans-1,2-Dichloroethene	1.0	U	25.0	26.3		ug/L		105	69 - 126
Trichloroethene	1.0	U	25.0	25.0		ug/L		100	56 - 124
Vinyl chloride	1.0	U	25.0	23.5		ug/L		94	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		75 - 130
4-Bromofluorobenzene (Surr)	109		47 - 134
Toluene-d8 (Surr)	109		69 - 122

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QC Sample Results

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

Job ID: 240-149695-1

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

Lab Sample ID: 240-149695-5 MS
Matrix: Water
Analysis Batch: 488080

Client Sample ID: MW-39-MS_051821
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	109		78 - 129

Lab Sample ID: 240-149695-5 MSD
Matrix: Water
Analysis Batch: 488080

Client Sample ID: MW-39-MSD_051821
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>
1,1-Dichloroethene	1.0	U	25.0	26.3		ug/L		105	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	25.0	25.0		ug/L		100	68 - 121	1	35
Tetrachloroethene	1.0	U	25.0	26.0		ug/L		104	52 - 129	2	35
trans-1,2-Dichloroethene	1.0	U	25.0	25.6		ug/L		103	69 - 126	2	35
Trichloroethene	1.0	U	25.0	24.7		ug/L		99	56 - 124	1	35
Vinyl chloride	1.0	U	25.0	23.6		ug/L		94	49 - 136	0	35

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	107		47 - 134
<i>Toluene-d8 (Surr)</i>	107		69 - 122
<i>Dibromofluoromethane (Surr)</i>	106		78 - 129

Lab Sample ID: MB 240-488191/7
Matrix: Water
Analysis Batch: 488191

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/29/21 13:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/29/21 13:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/29/21 13:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/29/21 13:33	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/29/21 13:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/29/21 13:33	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	108		75 - 130		05/29/21 13:33	1
<i>4-Bromofluorobenzene (Surr)</i>	104		47 - 134		05/29/21 13:33	1
<i>Toluene-d8 (Surr)</i>	107		69 - 122		05/29/21 13:33	1
<i>Dibromofluoromethane (Surr)</i>	112		78 - 129		05/29/21 13:33	1

Lab Sample ID: LCS 240-488191/5
Matrix: Water
Analysis Batch: 488191

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,1-Dichloroethene	25.0	24.3		ug/L		97	73 - 129
cis-1,2-Dichloroethene	25.0	26.8		ug/L		107	75 - 124
Tetrachloroethene	25.0	28.2		ug/L		113	70 - 125
trans-1,2-Dichloroethene	25.0	26.7		ug/L		107	74 - 130
Trichloroethene	25.0	27.7		ug/L		111	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149695-1

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

Lab Sample ID: LCS 240-488191/5

Matrix: Water

Analysis Batch: 488191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	25.0	29.4		ug/L		117	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	106		75 - 130				
4-Bromofluorobenzene (Surr)	111		47 - 134				
Toluene-d8 (Surr)	110		69 - 122				
Dibromofluoromethane (Surr)	113		78 - 129				

Lab Sample ID: 240-149874-J-2 MS

Matrix: Water

Analysis Batch: 488191

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	25.0	20.9		ug/L		83	64 - 132
cis-1,2-Dichloroethene	1.0	U	25.0	23.3		ug/L		93	68 - 121
Tetrachloroethene	1.0	U	25.0	24.8		ug/L		99	52 - 129
trans-1,2-Dichloroethene	1.0	U	25.0	22.5		ug/L		90	69 - 126
Trichloroethene	1.0	U	25.0	23.7		ug/L		95	56 - 124
Vinyl chloride	1.0	U	25.0	25.2		ug/L		101	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		75 - 130						
4-Bromofluorobenzene (Surr)	102		47 - 134						
Toluene-d8 (Surr)	104		69 - 122						
Dibromofluoromethane (Surr)	103		78 - 129						

Lab Sample ID: 240-149874-R-2 MSD

Matrix: Water

Analysis Batch: 488191

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	25.0	22.1		ug/L		89	64 - 132	6	35
cis-1,2-Dichloroethene	1.0	U	25.0	24.3		ug/L		97	68 - 121	4	35
Tetrachloroethene	1.0	U	25.0	26.4		ug/L		106	52 - 129	6	35
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		95	69 - 126	5	35
Trichloroethene	1.0	U	25.0	25.0		ug/L		100	56 - 124	5	35
Vinyl chloride	1.0	U	25.0	27.7		ug/L		111	49 - 136	10	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		75 - 130								
4-Bromofluorobenzene (Surr)	102		47 - 134								
Toluene-d8 (Surr)	105		69 - 122								
Dibromofluoromethane (Surr)	103		78 - 129								

QC Sample Results

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

Job ID: 240-149695-1

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

Lab Sample ID: MB 240-487242/5
Matrix: Water
Analysis Batch: 487242

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			05/24/21 16:31	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133					05/24/21 16:31	1

Lab Sample ID: LCS 240-487242/4
Matrix: Water
Analysis Batch: 487242

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	10.3		ug/L		103	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	100		70 - 133				

Lab Sample ID: 240-149527-I-2 MS
Matrix: Water
Analysis Batch: 487242

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	10.3		ug/L		103	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	96		70 - 133						

Lab Sample ID: 240-149527-P-2 MSD
Matrix: Water
Analysis Batch: 487242

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	Limit
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	46 - 170	1	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	97		70 - 133								

Lab Sample ID: MB 240-487671/5
Matrix: Water
Analysis Batch: 487671

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			05/26/21 15:59	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133					05/26/21 15:59	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149695-1

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

Lab Sample ID: LCS 240-487671/4
Matrix: Water
Analysis Batch: 487671

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	10.5		ug/L		105	80 - 135
Surrogate							
	%Recovery	LCS	LCS Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	84			70 - 133			

Lab Sample ID: 240-149695-5 MS
Matrix: Water
Analysis Batch: 487671

Client Sample ID: MW-39-MS_051821
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
Surrogate									
	%Recovery	MS	MS Qualifier	Limits					
1,2-Dichloroethane-d4 (Surr)	87			70 - 133					

Lab Sample ID: 240-149695-5 MSD
Matrix: Water
Analysis Batch: 487671

Client Sample ID: MW-39-MSD_051821
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	2.0	U	10.0	10.4		ug/L		104	46 - 170	3	26
Surrogate											
	%Recovery	MSD	MSD Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	84			70 - 133							

QC Association Summary

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

Job ID: 240-149695-1

GC/MS VOA

Analysis Batch: 487242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149695-2	MW-195S_051821	Total/NA	Water	8260B SIM	
240-149695-3	MW-221S_051821	Total/NA	Water	8260B SIM	
240-149695-4	MW-33_051821	Total/NA	Water	8260B SIM	
MB 240-487242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487242/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149527-I-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149527-P-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 487671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149695-5	MW-39_051821	Total/NA	Water	8260B SIM	
MB 240-487671/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487671/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149695-5 MS	MW-39-MS_051821	Total/NA	Water	8260B SIM	
240-149695-5 MSD	MW-39-MSD_051821	Total/NA	Water	8260B SIM	

Analysis Batch: 488080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149695-1	TRIP BLANK_103	Total/NA	Water	8260B	
240-149695-2	MW-195S_051821	Total/NA	Water	8260B	
240-149695-4	MW-33_051821	Total/NA	Water	8260B	
240-149695-5	MW-39_051821	Total/NA	Water	8260B	
MB 240-488080/7	Method Blank	Total/NA	Water	8260B	
LCS 240-488080/5	Lab Control Sample	Total/NA	Water	8260B	
240-149695-5 MS	MW-39-MS_051821	Total/NA	Water	8260B	
240-149695-5 MSD	MW-39-MSD_051821	Total/NA	Water	8260B	

Analysis Batch: 488191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149695-3	MW-221S_051821	Total/NA	Water	8260B	
MB 240-488191/7	Method Blank	Total/NA	Water	8260B	
LCS 240-488191/5	Lab Control Sample	Total/NA	Water	8260B	
240-149874-J-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-149874-R-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-149695-1

Client Sample ID: TRIP BLANK_103

Lab Sample ID: 240-149695-1

Date Collected: 05/18/21 00:00

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488080	05/28/21 15:58	SAM	TAL CAN

Client Sample ID: MW-195S_051821

Lab Sample ID: 240-149695-2

Date Collected: 05/18/21 09:56

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	488080	05/28/21 20:58	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 22:44	CS	TAL CAN

Client Sample ID: MW-221S_051821

Lab Sample ID: 240-149695-3

Date Collected: 05/18/21 11:40

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488191	05/29/21 17:02	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 23:09	CS	TAL CAN

Client Sample ID: MW-33_051821

Lab Sample ID: 240-149695-4

Date Collected: 05/18/21 14:12

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488080	05/28/21 20:12	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 23:34	CS	TAL CAN

Client Sample ID: MW-39_051821

Lab Sample ID: 240-149695-5

Date Collected: 05/18/21 15:48

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488080	05/28/21 20:35	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487671	05/26/21 20:56	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: 240-149695-1

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.



070101

Chain of Custody Record

MICHIGAN 190

TestAmerica

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

Client Contact: 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

Regulatory program: DW NPDES RCRA Other
 Client Project Manager: Kris Hinsky
 Telephone: 248-994-2240
 Email: kristoffer.hinsky@arcadis.com

Lab Contact: Mike DelMonico
 Telephone: 330-497-9396
 Site Contact: Julia McClafferty
 Telephone: 734-644-5131

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

Shipping/Tracking No.:
 Sample Date: 5/18/21
 Sample Time: 0956
 1140
 1412
 1518
 1548
 1548

Sample Identification
 Trip Blank - 103
 MW-155-051821
 MW-225-051821
 MW-33-051821
 MW-39-051821
 MW-39-MS-051821
 MS-39-MS-051821

Matrix
 Air
 Aqueous
 Sediment
 Solid
 Other:

Containers & Preservatives
 H2SO4
 HNO3
 HCl
 NaOH
 NaCl
 Other:

Filtered Sample (Y/N)
 Composite = C / Grab = G
 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

Analyses
 Walk-in client
 Lab sampling
 Job/SDG No:

Sample Specific Notes
 Special Instructions:
 1 Trip Blank
 3 VOAs for 8260B
 3 VOAs for 8260B SIM
 RIA2 MS
 R100 MSD

Possible Hazard Identification
 Non-Hazard
 Irritant
 Inflammable
 Unknown

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cademaco.com, Cadena #E203728
 Level IV Reporting requested

Relinquished by: Arcadis
 Relinquished by: Arcadis
 Relinquished by: Arcadis

Received by: Arcadis
 Received by: Arcadis
 Received in Laboratory by: Arcadis

Date/Time: 5/18/21 1700
 Date/Time: 5/19/21
 Date/Time: 5/19/21 1521

Company: Arcadis
 Company: Arcadis
 Company: Arcadis

240-149695 Chain of Custody
 Barcode
 retained longer than 1 month
 Archive For: _____ Month

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login #: 149695

Canton Facility

Client Arcadis Site Name

Cooler unpacked by Trent C

Cooler Received on 5/20/21 Opened on 5/20/21

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

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

TestAmerica Cooler # 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-11 (CF +0.1 °C) Observed Cooler Temp. 09 °C Corrected Cooler Temp. 09 °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 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 TC
-Were tamper/custody seals intact and uncompromised? Yes No NA

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

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 (ID/Date/Time) be reconciled with the COC? Yes No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10 Were correct bottle(s) used for the test(s) indicated? Yes No
11 Sufficient quantity received to perform indicated analyses? Yes No
12 Are these work share samples and all listed on the COC? Yes 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? Yes No NA pH Strip Lot# HC022887
14 Were VOAs on the COC? Yes No
15 Were air bubbles >6 mm in any VOA vials? Larger than this Yes No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # covered Yes No
17 Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES 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