

## ANALYTICAL REPORT

Eurofins TestAmerica, Canton  
4101 Shuffel Street NW  
North Canton, OH 44720  
Tel: (330)497-9396

Laboratory Job ID: 240-149976-1  
Client Project/Site: Ford LTP - On Site  
Revision: 1

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
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Michael DelMonico, Project Manager I  
(330)497-9396  
[Michael.DelMonico@Eurofinset.com](mailto:Michael.DelMonico@Eurofinset.com)

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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: 240-149976-1

## 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: 240-149976-1

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## Job ID: 240-149976-1

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Laboratory: Eurofins TestAmerica, Canton

### Narrative

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Job Narrative  
240-149976-1

### Comments

No additional comments.

### Receipt

The samples were received on 5/22/2021 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 1.9° C.

### GC/MS VOA

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 240-488395.

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: 240-149976-1

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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- 11
- 12
- 13
- 14

# Sample Summary

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

Job ID: 240-149976-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149976-1	TRIP BLANK_133	Water	05/20/21 00:00	05/22/21 08:00	
240-149976-2	MW-19_052021	Water	05/20/21 12:30	05/22/21 08:00	
240-149976-3	MW-219S_052021	Water	05/20/21 09:35	05/22/21 08:00	
240-149976-4	MW-38_052021	Water	05/20/21 10:50	05/22/21 08:00	

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- 9
- 10
- 11
- 12
- 13
- 14

# Detection Summary

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

Job ID: 240-149976-1

## Client Sample ID: TRIP BLANK\_133

Lab Sample ID: 240-149976-1

No Detections.

## Client Sample ID: MW-19\_052021

Lab Sample ID: 240-149976-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	540		10	4.3	ug/L	5		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.49	J	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.57	J	1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	1.1		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-219S\_052021

Lab Sample ID: 240-149976-3

No Detections.

## Client Sample ID: MW-38\_052021

Lab Sample ID: 240-149976-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		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: 240-149976-1

**Client Sample ID: TRIP BLANK\_133**

**Lab Sample ID: 240-149976-1**

**Date Collected: 05/20/21 00:00**

**Matrix: Water**

**Date Received: 05/22/21 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			06/01/21 22:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/21 22:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/21 22:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/21 22:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/21 22:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/21 22:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		75 - 130		06/01/21 22:41	1
4-Bromofluorobenzene (Surr)	90		47 - 134		06/01/21 22:41	1
Toluene-d8 (Surr)	97		69 - 122		06/01/21 22:41	1
Dibromofluoromethane (Surr)	87		78 - 129		06/01/21 22:41	1



# Client Sample Results

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

Job ID: 240-149976-1

**Client Sample ID: MW-19\_052021**

**Lab Sample ID: 240-149976-2**

Date Collected: 05/20/21 12:30

Matrix: Water

Date Received: 05/22/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	540		10	4.3	ug/L			06/03/21 04:08	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					06/03/21 04:08	5

**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			06/01/21 23:06	1
cis-1,2-Dichloroethene	0.49	J	1.0	0.16	ug/L			06/01/21 23:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/21 23:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/21 23:06	1
Trichloroethene	0.57	J	1.0	0.10	ug/L			06/01/21 23:06	1
Vinyl chloride	1.1		1.0	0.20	ug/L			06/01/21 23:06	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	81		75 - 130					06/01/21 23:06	1
4-Bromofluorobenzene (Surr)	90		47 - 134					06/01/21 23:06	1
Toluene-d8 (Surr)	97		69 - 122					06/01/21 23:06	1
Dibromofluoromethane (Surr)	84		78 - 129					06/01/21 23:06	1

# Client Sample Results

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

Job ID: 240-149976-1

**Client Sample ID: MW-219S\_052021**

**Lab Sample ID: 240-149976-3**

Date Collected: 05/20/21 09:35

Matrix: Water

Date Received: 05/22/21 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			06/03/21 00:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		70 - 133					06/03/21 00:49	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			06/02/21 19:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/02/21 19:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/02/21 19:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/02/21 19:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/02/21 19:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/02/21 19:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 130					06/02/21 19:34	1
4-Bromofluorobenzene (Surr)	85		47 - 134					06/02/21 19:34	1
Toluene-d8 (Surr)	98		69 - 122					06/02/21 19:34	1
Dibromofluoromethane (Surr)	88		78 - 129					06/02/21 19:34	1

# Client Sample Results

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

Job ID: 240-149976-1

**Client Sample ID: MW-38\_052021**

**Lab Sample ID: 240-149976-4**

Date Collected: 05/20/21 10:50

Matrix: Water

Date Received: 05/22/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.6		2.0	0.86	ug/L			06/01/21 21:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		06/01/21 21:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/21 23:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/21 23:31	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/21 23:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/21 23:31	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/21 23:31	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/21 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		75 - 130		06/01/21 23:31	1
4-Bromofluorobenzene (Surr)	89		47 - 134		06/01/21 23:31	1
Toluene-d8 (Surr)	94		69 - 122		06/01/21 23:31	1
Dibromofluoromethane (Surr)	85		78 - 129		06/01/21 23:31	1

# Surrogate Summary

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

Job ID: 240-149976-1

## 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)
240-149975-E-2 MS	Matrix Spike	81	95	96	86
240-149975-F-2 MSD	Matrix Spike Duplicate	81	95	98	89
240-149976-1	TRIP BLANK_133	83	90	97	87
240-149976-2	MW-19_052021	81	90	97	84
240-149976-3	MW-219S_052021	81	85	98	88
240-149976-3 MS	MW-219S-MS_052021	84	97	99	93
240-149976-3 MSD	MW-219S-MSD_052021	82	90	100	93
240-149976-4	MW-38_052021	78	89	94	85
LCS 240-488334/4	Lab Control Sample	79	94	98	87
LCS 240-488605/4	Lab Control Sample	79	96	98	91
MB 240-488334/7	Method Blank	79	94	98	86
MB 240-488605/7	Method Blank	80	91	101	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-149976-2	MW-19_052021	85
240-149976-3	MW-219S_052021	79
240-149976-3 MS	MW-219S-MS_052021	79
240-149976-3 MSD	MW-219S-MSD_052021	78
240-149976-4	MW-38_052021	88
LCS 240-488395/4	Lab Control Sample	83
LCS 240-488696/4	Lab Control Sample	84
MB 240-488395/5	Method Blank	84
MB 240-488696/5	Method Blank	85

**Surrogate Legend**

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

# QC Sample Results

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

Job ID: 240-149976-1

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

**Lab Sample ID: MB 240-488334/7**  
**Matrix: Water**  
**Analysis Batch: 488334**

**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			06/01/21 15:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/01/21 15:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/01/21 15:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/01/21 15:33	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/01/21 15:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/01/21 15:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		75 - 130		06/01/21 15:33	1
4-Bromofluorobenzene (Surr)	94		47 - 134		06/01/21 15:33	1
Toluene-d8 (Surr)	98		69 - 122		06/01/21 15:33	1
Dibromofluoromethane (Surr)	86		78 - 129		06/01/21 15:33	1

**Lab Sample ID: LCS 240-488334/4**  
**Matrix: Water**  
**Analysis Batch: 488334**

**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	7.62		ug/L		76	73 - 129
cis-1,2-Dichloroethene	10.0	9.99		ug/L		100	75 - 124
Tetrachloroethene	10.0	11.2		ug/L		112	70 - 125
trans-1,2-Dichloroethene	10.0	8.80		ug/L		88	74 - 130
Trichloroethene	10.0	9.49		ug/L		95	71 - 121
Vinyl chloride	10.0	11.3		ug/L		113	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

**Lab Sample ID: 240-149975-E-2 MS**  
**Matrix: Water**  
**Analysis Batch: 488334**

**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	7.15		ug/L		72	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.23		ug/L		92	68 - 121
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.39		ug/L		84	69 - 126
Trichloroethene	1.0	U	10.0	9.30		ug/L		93	56 - 124
Vinyl chloride	1.0	U	10.0	11.1		ug/L		111	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	96		69 - 122

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# QC Sample Results

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

Job ID: 240-149976-1

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

**Lab Sample ID: 240-149975-E-2 MS**  
**Matrix: Water**  
**Analysis Batch: 488334**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	86		78 - 129

**Lab Sample ID: 240-149975-F-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 488334**

**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	6.94		ug/L		69	64 - 132	3	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.23		ug/L		92	68 - 121	0	35
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129	0	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.54		ug/L		85	69 - 126	2	35
Trichloroethene	1.0	U	10.0	8.76		ug/L		88	56 - 124	6	35
Vinyl chloride	1.0	U	10.0	11.8		ug/L		118	49 - 136	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

**Lab Sample ID: MB 240-488605/7**  
**Matrix: Water**  
**Analysis Batch: 488605**

**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			06/02/21 14:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/02/21 14:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/02/21 14:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/02/21 14:58	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/02/21 14:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/02/21 14:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		75 - 130		06/02/21 14:58	1
4-Bromofluorobenzene (Surr)	91		47 - 134		06/02/21 14:58	1
Toluene-d8 (Surr)	101		69 - 122		06/02/21 14:58	1
Dibromofluoromethane (Surr)	89		78 - 129		06/02/21 14:58	1

**Lab Sample ID: LCS 240-488605/4**  
**Matrix: Water**  
**Analysis Batch: 488605**

**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	7.56		ug/L		76	73 - 129
cis-1,2-Dichloroethene	10.0	9.40		ug/L		94	75 - 124
Tetrachloroethene	10.0	9.99		ug/L		100	70 - 125
trans-1,2-Dichloroethene	10.0	8.91		ug/L		89	74 - 130
Trichloroethene	10.0	9.37		ug/L		94	71 - 121

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-149976-1

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

**Lab Sample ID: LCS 240-488605/4**  
**Matrix: Water**  
**Analysis Batch: 488605**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	10.3		ug/L		103	61 - 134
<b>Surrogate</b>							
	<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	79		75 - 130				
4-Bromofluorobenzene (Surr)	96		47 - 134				
Toluene-d8 (Surr)	98		69 - 122				
Dibromofluoromethane (Surr)	91		78 - 129				

**Lab Sample ID: 240-149976-3 MS**  
**Matrix: Water**  
**Analysis Batch: 488605**

**Client Sample ID: MW-219S-MS\_052021**  
**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	7.54		ug/L		75	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.96		ug/L		90	68 - 121
Tetrachloroethene	1.0	U	10.0	9.79		ug/L		98	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.42		ug/L		84	69 - 126
Trichloroethene	1.0	U	10.0	8.79		ug/L		88	56 - 124
Vinyl chloride	1.0	U	10.0	11.1		ug/L		111	49 - 136
<b>Surrogate</b>									
	<b>MS %Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	84		75 - 130						
4-Bromofluorobenzene (Surr)	97		47 - 134						
Toluene-d8 (Surr)	99		69 - 122						
Dibromofluoromethane (Surr)	93		78 - 129						

**Lab Sample ID: 240-149976-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 488605**

**Client Sample ID: MW-219S-MSD\_052021**  
**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	7.43		ug/L		74	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.27		ug/L		93	68 - 121	3	35
Tetrachloroethene	1.0	U	10.0	9.76		ug/L		98	52 - 129	0	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.74		ug/L		87	69 - 126	4	35
Trichloroethene	1.0	U	10.0	8.80		ug/L		88	56 - 124	0	35
Vinyl chloride	1.0	U	10.0	11.3		ug/L		113	49 - 136	1	35
<b>Surrogate</b>											
	<b>MSD %Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	82		75 - 130								
4-Bromofluorobenzene (Surr)	90		47 - 134								
Toluene-d8 (Surr)	100		69 - 122								
Dibromofluoromethane (Surr)	93		78 - 129								

# QC Sample Results

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

Job ID: 240-149976-1

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

**Lab Sample ID: MB 240-488395/5**  
**Matrix: Water**  
**Analysis Batch: 488395**

**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			06/01/21 15:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133					06/01/21 15:27	1

**Lab Sample ID: LCS 240-488395/4**  
**Matrix: Water**  
**Analysis Batch: 488395**

**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	9.79		ug/L		98	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	83		70 - 133				

**Lab Sample ID: MB 240-488696/5**  
**Matrix: Water**  
**Analysis Batch: 488696**

**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			06/02/21 18:37	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					06/02/21 18:37	1

**Lab Sample ID: LCS 240-488696/4**  
**Matrix: Water**  
**Analysis Batch: 488696**

**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
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	84		70 - 133				

**Lab Sample ID: 240-149976-3 MS**  
**Matrix: Water**  
**Analysis Batch: 488696**

**Client Sample ID: MW-219S-MS\_052021**  
**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	10.0		ug/L		100	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	79		70 - 133						



# QC Sample Results

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

Job ID: 240-149976-1

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

**Lab Sample ID: 240-149976-3 MSD**

**Client Sample ID: MW-219S-MSD\_052021**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 488696**

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	10.3		ug/L		103	46 - 170	3	26
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	78		70 - 133								

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

# QC Association Summary

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

Job ID: 240-149976-1

## GC/MS VOA

### Analysis Batch: 488334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149976-1	TRIP BLANK_133	Total/NA	Water	8260B	
240-149976-2	MW-19_052021	Total/NA	Water	8260B	
240-149976-4	MW-38_052021	Total/NA	Water	8260B	
MB 240-488334/7	Method Blank	Total/NA	Water	8260B	
LCS 240-488334/4	Lab Control Sample	Total/NA	Water	8260B	
240-149975-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-149975-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 488395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149976-4	MW-38_052021	Total/NA	Water	8260B SIM	
MB 240-488395/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-488395/4	Lab Control Sample	Total/NA	Water	8260B SIM	

### Analysis Batch: 488605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149976-3	MW-219S_052021	Total/NA	Water	8260B	
MB 240-488605/7	Method Blank	Total/NA	Water	8260B	
LCS 240-488605/4	Lab Control Sample	Total/NA	Water	8260B	
240-149976-3 MS	MW-219S-MS_052021	Total/NA	Water	8260B	
240-149976-3 MSD	MW-219S-MSD_052021	Total/NA	Water	8260B	

### Analysis Batch: 488696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149976-2	MW-19_052021	Total/NA	Water	8260B SIM	
240-149976-3	MW-219S_052021	Total/NA	Water	8260B SIM	
MB 240-488696/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-488696/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149976-3 MS	MW-219S-MS_052021	Total/NA	Water	8260B SIM	
240-149976-3 MSD	MW-219S-MSD_052021	Total/NA	Water	8260B SIM	

# Lab Chronicle

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

Job ID: 240-149976-1

## Client Sample ID: TRIP BLANK\_133

Lab Sample ID: 240-149976-1

Date Collected: 05/20/21 00:00

Matrix: Water

Date Received: 05/22/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488334	06/01/21 22:41	LRW	TAL CAN

## Client Sample ID: MW-19\_052021

Lab Sample ID: 240-149976-2

Date Collected: 05/20/21 12:30

Matrix: Water

Date Received: 05/22/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488334	06/01/21 23:06	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		5	488696	06/03/21 04:08	CS	TAL CAN

## Client Sample ID: MW-219S\_052021

Lab Sample ID: 240-149976-3

Date Collected: 05/20/21 09:35

Matrix: Water

Date Received: 05/22/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488605	06/02/21 19:34	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	488696	06/03/21 00:49	CS	TAL CAN

## Client Sample ID: MW-38\_052021

Lab Sample ID: 240-149976-4

Date Collected: 05/20/21 10:50

Matrix: Water

Date Received: 05/22/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488334	06/01/21 23:31	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	488395	06/01/21 21:52	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: 240-149976-1

## 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.

Eurofins TestAmerica, Canton

18117

Chain of Custody Record

TestAmerica

MICHIGAN 190

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

Regulatory program: DW NPDES RCRA Other

TestAmerica Laboratories, Inc.  
COC No:

Lab Contact: Mike DeMonico  
Telephone: 330-497-9396

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

Client Project Manager: Kris Hinskey  
Telephone: 248-994-2240

Client Name: Arcadis  
Address: 26550 Cabot Drive, Suite 500  
City/State/Zip: Novi, MI, 48377

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

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

Sampler Name: EMMA WITHERSPOON  
Method of Shipment/Carrier:  
Shipping/Tracking No:

Containers & Preservatives:  
ZnAc  NaOH  HCl  HNO3  H2SO4  Other:

Matrix:  
Aqueous  Solid  Sediment  Other:

Sample Date Sample Time

Sample Identification

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:

1 Trip Blank  
3 VOAs for 8260B  
3 VOAs for 8260B SIM  
Run M / SD

Sample Disposal (A fee may be assessed):  
Return to Client  Dispo:

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

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

Date/Time: 5/20/21 1330  
Date/Time: 5/21/21 1215  
Date/Time: 5/21/21 0800

Company: Arcadis  
Company: Arcadis  
Company: Arcadis

Received by: JON SOLO Storage  
Received by: Emma WITHERSPOON  
Received by: JON SOLO

Received in Possession by: JON SOLO

Company: Arcadis

Company: Arcadis

Company: Arcadis



**Eurofins TestAmerica Canton Sample Receipt Form/Narrative**  
**Canton Facility**

Login # : 149976

Client ARCADIS Site Name FORD LTP Cooler unpacked by MJL  
 Cooler Received on 5/22/21 Opened on 5/22/21  
 FedEx 1<sup>st</sup> 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 1.8  See Multiple Cooler Form  
 IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp 1.9 °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 g/d  
 -Were tamper/custody seals intact and uncompromised? Yes No g/d

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

TEMPERATURE CORRECTIONS  
 MJL 5/25/21

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

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. \_\_\_\_\_