

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-145230-1  
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:  
3/17/2021 5:18:44 PM  
Opal Johnson, Project Manager II  
(330)966-9279

[Opal.Johnson@Eurofinset.com](mailto:Opal.Johnson@Eurofinset.com)

Designee for  
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: 240-145230-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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: 240-145230-1

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## Job ID: 240-145230-1

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Laboratory: Eurofins TestAmerica, Canton

### Narrative

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#### Job Narrative 240-145230-1

### Comments

No additional comments.

### Receipt

The samples were received on 3/3/2021 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

Method 8260B: The continuing calibration verification (CCV) associated with batch 475627 recovered above the upper control limit for 1,1-Dichloroethene. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: TRIP BLANK (240-145230-1) and TW-16-03\_030121 (240-145230-3).

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: 240-145230-1

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: 240-145230-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-145230-1	TRIP BLANK	Water	03/01/21 00:00	03/03/21 08:00	
240-145230-2	TW-16-04_030121	Water	03/01/21 10:53	03/03/21 08:00	
240-145230-3	TW-16-03_030121	Water	03/01/21 12:28	03/03/21 08:00	
240-145230-4	MW-224S_030121	Water	03/01/21 13:49	03/03/21 08:00	
240-145230-5	MW-25_030121	Water	03/01/21 15:30	03/03/21 08:00	

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- 13
- 14

# Detection Summary

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

Job ID: 240-145230-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-145230-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.19	J	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.29	J	1.0	0.10	ug/L	1		8260B	Total/NA

## Client Sample ID: TW-16-04\_030121

Lab Sample ID: 240-145230-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	13		2.0	0.32	ug/L	2		8260B	Total/NA
Vinyl chloride	30		2.0	0.40	ug/L	2		8260B	Total/NA

## Client Sample ID: TW-16-03\_030121

Lab Sample ID: 240-145230-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	32		2.5	0.40	ug/L	2.5		8260B	Total/NA
Trichloroethene	0.35	J	2.5	0.25	ug/L	2.5		8260B	Total/NA
Vinyl chloride	69		2.5	0.50	ug/L	2.5		8260B	Total/NA

## Client Sample ID: MW-224S\_030121

Lab Sample ID: 240-145230-4

No Detections.

## Client Sample ID: MW-25\_030121

Lab Sample ID: 240-145230-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.2		2.0	0.86	ug/L	1		8260B SIM	Total/NA

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: 240-145230-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-145230-1**

**Date Collected: 03/01/21 00:00**

**Matrix: Water**

**Date Received: 03/03/21 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			03/05/21 18:48	1
<b>cis-1,2-Dichloroethene</b>	<b>0.19</b>	<b>J</b>	1.0	0.16	ug/L			03/05/21 18:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/05/21 18:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/05/21 18:48	1
<b>Trichloroethene</b>	<b>0.29</b>	<b>J</b>	1.0	0.10	ug/L			03/05/21 18:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/05/21 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		03/05/21 18:48	1
4-Bromofluorobenzene (Surr)	76		47 - 134		03/05/21 18:48	1
Toluene-d8 (Surr)	83		69 - 122		03/05/21 18:48	1
Dibromofluoromethane (Surr)	120		78 - 129		03/05/21 18:48	1



# Client Sample Results

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

Job ID: 240-145230-1

**Client Sample ID: TW-16-04\_030121**

**Lab Sample ID: 240-145230-2**

Date Collected: 03/01/21 10:53

Matrix: Water

Date Received: 03/03/21 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			03/09/21 12:17	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)	86		70 - 133					03/09/21 12:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			03/08/21 14:43	2
<b>cis-1,2-Dichloroethene</b>	<b>13</b>		2.0	0.32	ug/L			03/08/21 14:43	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			03/08/21 14:43	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			03/08/21 14:43	2
Trichloroethene	2.0	U	2.0	0.20	ug/L			03/08/21 14:43	2
<b>Vinyl chloride</b>	<b>30</b>		2.0	0.40	ug/L			03/08/21 14:43	2
<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)	99		75 - 130					03/08/21 14:43	2
4-Bromofluorobenzene (Surr)	90		47 - 134					03/08/21 14:43	2
Toluene-d8 (Surr)	105		69 - 122					03/08/21 14:43	2
Dibromofluoromethane (Surr)	98		78 - 129					03/08/21 14:43	2

# Client Sample Results

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

Job ID: 240-145230-1

**Client Sample ID: TW-16-03\_030121**

**Lab Sample ID: 240-145230-3**

Date Collected: 03/01/21 12:28

Matrix: Water

Date Received: 03/03/21 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			03/09/21 12:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					03/09/21 12:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			03/05/21 19:31	2.5
<b>cis-1,2-Dichloroethene</b>	<b>32</b>		2.5	0.40	ug/L			03/05/21 19:31	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			03/05/21 19:31	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.48	ug/L			03/05/21 19:31	2.5
<b>Trichloroethene</b>	<b>0.35</b>	<b>J</b>	2.5	0.25	ug/L			03/05/21 19:31	2.5
<b>Vinyl chloride</b>	<b>69</b>		2.5	0.50	ug/L			03/05/21 19:31	2.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130					03/05/21 19:31	2.5
4-Bromofluorobenzene (Surr)	73		47 - 134					03/05/21 19:31	2.5
Toluene-d8 (Surr)	87		69 - 122					03/05/21 19:31	2.5
Dibromofluoromethane (Surr)	120		78 - 129					03/05/21 19:31	2.5

# Client Sample Results

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

Job ID: 240-145230-1

**Client Sample ID: MW-224S\_030121**

**Lab Sample ID: 240-145230-4**

**Date Collected: 03/01/21 13:49**

**Matrix: Water**

**Date Received: 03/03/21 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			03/09/21 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133		03/09/21 13:07	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			03/08/21 15:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/08/21 15:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/08/21 15:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/08/21 15:05	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/08/21 15:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/08/21 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 130		03/08/21 15:05	1
4-Bromofluorobenzene (Surr)	84		47 - 134		03/08/21 15:05	1
Toluene-d8 (Surr)	96		69 - 122		03/08/21 15:05	1
Dibromofluoromethane (Surr)	90		78 - 129		03/08/21 15:05	1

# Client Sample Results

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

Job ID: 240-145230-1

**Client Sample ID: MW-25\_030121**

**Lab Sample ID: 240-145230-5**

Date Collected: 03/01/21 15:30

Matrix: Water

Date Received: 03/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.2		2.0	0.86	ug/L			03/09/21 13:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		03/09/21 13:32	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			03/08/21 15:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/08/21 15:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/08/21 15:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/08/21 15:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/08/21 15:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/08/21 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		03/08/21 15:27	1
4-Bromofluorobenzene (Surr)	80		47 - 134		03/08/21 15:27	1
Toluene-d8 (Surr)	92		69 - 122		03/08/21 15:27	1
Dibromofluoromethane (Surr)	91		78 - 129		03/08/21 15:27	1

# Surrogate Summary

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

Job ID: 240-145230-1

## 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)
240-145179-B-1 MS	Matrix Spike	94	101	97	107
240-145179-B-1 MSD	Matrix Spike Duplicate	92	99	98	105
240-145230-1	TRIP BLANK	109	76	83	120
240-145230-2	TW-16-04_030121	99	90	105	98
240-145230-3	TW-16-03_030121	108	73	87	120
240-145230-4	MW-224S_030121	95	84	96	90
240-145230-5	MW-25_030121	92	80	92	91
240-145297-B-13 MS	Matrix Spike	92	83	93	86
240-145297-B-13 MSD	Matrix Spike Duplicate	94	88	99	93
LCS 240-475627/4	Lab Control Sample	90	95	92	100
LCS 240-475842/4	Lab Control Sample	88	79	90	87
MB 240-475627/7	Method Blank	101	80	86	106
MB 240-475842/6	Method Blank	94	84	98	93

### 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)
240-145230-2	TW-16-04_030121	86
240-145230-3	TW-16-03_030121	87
240-145230-4	MW-224S_030121	82
240-145230-5	MW-25_030121	84
500-195631-C-27 MS	Matrix Spike	89
500-195631-C-27 MSD	Matrix Spike Duplicate	79
LCS 240-476007/4	Lab Control Sample	82
MB 240-476007/5	Method Blank	87

### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-145230-1

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

**Lab Sample ID: MB 240-475627/7**  
**Matrix: Water**  
**Analysis Batch: 475627**

**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			03/05/21 12:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/05/21 12:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/05/21 12:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/05/21 12:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/05/21 12:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/05/21 12:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		03/05/21 12:36	1
4-Bromofluorobenzene (Surr)	80		47 - 134		03/05/21 12:36	1
Toluene-d8 (Surr)	86		69 - 122		03/05/21 12:36	1
Dibromofluoromethane (Surr)	106		78 - 129		03/05/21 12:36	1

**Lab Sample ID: LCS 240-475627/4**  
**Matrix: Water**  
**Analysis Batch: 475627**

**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	12.9		ug/L		129	73 - 129
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	75 - 124
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 125
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	74 - 130
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	11.6		ug/L		116	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	92		69 - 122
Dibromofluoromethane (Surr)	100		78 - 129

**Lab Sample ID: 240-145179-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 475627**

**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	200	U	2000	2410		ug/L		121	64 - 132
cis-1,2-Dichloroethene	4100		2000	5950		ug/L		94	68 - 121
Tetrachloroethene	200	U	2000	1640		ug/L		82	52 - 129
trans-1,2-Dichloroethene	200	U	2000	2120		ug/L		106	69 - 126
Trichloroethene	3200		2000	4520		ug/L		68	56 - 124
Vinyl chloride	67	J	2000	2620		ug/L		128	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	97		69 - 122

# QC Sample Results

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

Job ID: 240-145230-1

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

**Lab Sample ID: 240-145179-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 475627**

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

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	107		78 - 129

**Lab Sample ID: 240-145179-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 475627**

**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	200	U	2000	2520		ug/L		126	64 - 132	4	35
cis-1,2-Dichloroethene	4100		2000	6410		ug/L		116	68 - 121	7	35
Tetrachloroethene	200	U	2000	1890		ug/L		95	52 - 129	14	35
trans-1,2-Dichloroethene	200	U	2000	2100		ug/L		105	69 - 126	1	35
Trichloroethene	3200		2000	4920		ug/L		89	56 - 124	9	35
Vinyl chloride	67	J	2000	2580		ug/L		126	49 - 136	2	35

  

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	105		78 - 129

**Lab Sample ID: MB 240-475842/6**  
**Matrix: Water**  
**Analysis Batch: 475842**

**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			03/08/21 12:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/08/21 12:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/08/21 12:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/08/21 12:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/08/21 12:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/08/21 12:29	1

  

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130		03/08/21 12:29	1
4-Bromofluorobenzene (Surr)	84		47 - 134		03/08/21 12:29	1
Toluene-d8 (Surr)	98		69 - 122		03/08/21 12:29	1
Dibromofluoromethane (Surr)	93		78 - 129		03/08/21 12:29	1

**Lab Sample ID: LCS 240-475842/4**  
**Matrix: Water**  
**Analysis Batch: 475842**

**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	7.61		ug/L		76	73 - 129
cis-1,2-Dichloroethene	10.0	8.51		ug/L		85	75 - 124
Tetrachloroethene	10.0	8.68		ug/L		87	70 - 125
trans-1,2-Dichloroethene	10.0	8.32		ug/L		83	74 - 130
Trichloroethene	10.0	8.50		ug/L		85	71 - 121

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-145230-1

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

**Lab Sample ID: LCS 240-475842/4**  
**Matrix: Water**  
**Analysis Batch: 475842**

**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	7.78		ug/L		78	61 - 134
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	88		75 - 130				
4-Bromofluorobenzene (Surr)	79		47 - 134				
Toluene-d8 (Surr)	90		69 - 122				
Dibromofluoromethane (Surr)	87		78 - 129				

**Lab Sample ID: 240-145297-B-13 MS**  
**Matrix: Water**  
**Analysis Batch: 475842**

**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	270	J F1 F2	10000	6160	F1	ug/L		59	64 - 132
cis-1,2-Dichloroethene	1000	U	10000	8580		ug/L		86	68 - 121
Tetrachloroethene	1000	U	10000	6890		ug/L		69	52 - 129
trans-1,2-Dichloroethene	1000	U	10000	7720		ug/L		77	69 - 126
Trichloroethene	1000	U	10000	7920		ug/L		79	56 - 124
Vinyl chloride	1000	U	10000	6540		ug/L		65	49 - 136
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	92		75 - 130						
4-Bromofluorobenzene (Surr)	83		47 - 134						
Toluene-d8 (Surr)	93		69 - 122						
Dibromofluoromethane (Surr)	86		78 - 129						

**Lab Sample ID: 240-145297-B-13 MSD**  
**Matrix: Water**  
**Analysis Batch: 475842**

**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	270	J F1 F2	10000	8860	F2	ug/L		86	64 - 132	36	35
cis-1,2-Dichloroethene	1000	U	10000	8840		ug/L		88	68 - 121	3	35
Tetrachloroethene	1000	U	10000	9360		ug/L		94	52 - 129	30	35
trans-1,2-Dichloroethene	1000	U	10000	8600		ug/L		86	69 - 126	11	35
Trichloroethene	1000	U	10000	9200		ug/L		92	56 - 124	15	35
Vinyl chloride	1000	U	10000	8720		ug/L		87	49 - 136	29	35
<b>Surrogate</b>											
	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	94		75 - 130								
4-Bromofluorobenzene (Surr)	88		47 - 134								
Toluene-d8 (Surr)	99		69 - 122								
Dibromofluoromethane (Surr)	93		78 - 129								



# QC Sample Results

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

Job ID: 240-145230-1

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

**Lab Sample ID: MB 240-476007/5**  
**Matrix: Water**  
**Analysis Batch: 476007**

**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			03/09/21 11:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					03/09/21 11:03	1

**Lab Sample ID: LCS 240-476007/4**  
**Matrix: Water**  
**Analysis Batch: 476007**

**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)	82		70 - 133				

**Lab Sample ID: 500-195631-C-27 MS**  
**Matrix: Water**  
**Analysis Batch: 476007**

**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	1.5	J	10.0	11.6		ug/L		101	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	89		70 - 133						

**Lab Sample ID: 500-195631-C-27 MSD**  
**Matrix: Water**  
**Analysis Batch: 476007**

**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	1.5	J	10.0	11.2		ug/L		97	46 - 170	3	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	79		70 - 133								

# QC Association Summary

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

Job ID: 240-145230-1

## GC/MS VOA

### Analysis Batch: 475627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145230-1	TRIP BLANK	Total/NA	Water	8260B	
240-145230-3	TW-16-03_030121	Total/NA	Water	8260B	
MB 240-475627/7	Method Blank	Total/NA	Water	8260B	
LCS 240-475627/4	Lab Control Sample	Total/NA	Water	8260B	
240-145179-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-145179-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 475842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145230-2	TW-16-04_030121	Total/NA	Water	8260B	
240-145230-4	MW-224S_030121	Total/NA	Water	8260B	
240-145230-5	MW-25_030121	Total/NA	Water	8260B	
MB 240-475842/6	Method Blank	Total/NA	Water	8260B	
LCS 240-475842/4	Lab Control Sample	Total/NA	Water	8260B	
240-145297-B-13 MS	Matrix Spike	Total/NA	Water	8260B	
240-145297-B-13 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 476007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145230-2	TW-16-04_030121	Total/NA	Water	8260B SIM	
240-145230-3	TW-16-03_030121	Total/NA	Water	8260B SIM	
240-145230-4	MW-224S_030121	Total/NA	Water	8260B SIM	
240-145230-5	MW-25_030121	Total/NA	Water	8260B SIM	
MB 240-476007/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-476007/4	Lab Control Sample	Total/NA	Water	8260B SIM	
500-195631-C-27 MS	Matrix Spike	Total/NA	Water	8260B SIM	
500-195631-C-27 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

# Lab Chronicle

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

Job ID: 240-145230-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-145230-1

Date Collected: 03/01/21 00:00

Matrix: Water

Date Received: 03/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475627	03/05/21 18:48	LEE	TAL CAN

## Client Sample ID: TW-16-04\_030121

Lab Sample ID: 240-145230-2

Date Collected: 03/01/21 10:53

Matrix: Water

Date Received: 03/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	475842	03/08/21 14:43	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	476007	03/09/21 12:17	SAM	TAL CAN

## Client Sample ID: TW-16-03\_030121

Lab Sample ID: 240-145230-3

Date Collected: 03/01/21 12:28

Matrix: Water

Date Received: 03/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	475627	03/05/21 19:31	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	476007	03/09/21 12:42	SAM	TAL CAN

## Client Sample ID: MW-224S\_030121

Lab Sample ID: 240-145230-4

Date Collected: 03/01/21 13:49

Matrix: Water

Date Received: 03/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475842	03/08/21 15:05	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	476007	03/09/21 13:07	SAM	TAL CAN

## Client Sample ID: MW-25\_030121

Lab Sample ID: 240-145230-5

Date Collected: 03/01/21 15:30

Matrix: Water

Date Received: 03/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475842	03/08/21 15:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	476007	03/09/21 13:32	SAM	TAL CAN

### Laboratory References:

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

# Accreditation/Certification Summary

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

Job ID: 240-145230-1

## Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21 *
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21 *
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
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.



2.5126

Chain of Custody Record

TestAmerica Laboratory location: Brighton — 10448 Cilation Drive, Suite 200 / Brighton, MI 48116 / 810-239-2763

<b>Client Contact</b> 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: 30050315.401.03 PO # 30050315.401.03		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
<b>Client Project Manager:</b> Kris Illinsky Telephone: 248-994-2240 Email: kristoffer_hinskey@arcadis.com		<b>Lab Contact:</b> Mike DelMonico Telephone: 330-497-9396	
<b>Sampler Name:</b> <i>Kristoffer Hinskey</i> <b>Method of Shipment/Carrier:</b> <b>Shipping/Tracking No.:</b>		<b>Analyses</b> 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	
<b>Sample Identification</b>		<b>Analysis Turnaround Time</b> TAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
<b>Sample Date</b> <b>Sample Time</b>		<b>Containers &amp; Preservatives</b> H2SO4    HNO3    HCl    NaOH    ZnAc    NaOH    Other: Sediment    Solid    Other: Air    Aqueous    Sediment    Solid    Other:	
TRIP BLANK TW-16-04-030121 TW-16-03-030121 MW-224S-030121 MW-25-030121		Filtered Sample (Y / N) Composite = C / Grab = G 1,1-DCE 8260B cis-1,2-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TCE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritable <input type="checkbox"/> In Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive For _____ Months	
<b>Special Instructions/QC Requirements &amp; Comments:</b> Submit all results through Cadena at jtomialia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.			



Relinquished by: <i>Kim D. [Signature]</i>	Company: Arcadis	Date/Time: 3/1/21 1722	Received by: <i>Novi Cold Storage</i>	Company: Arcadio	Date/Time: 3/1/21 1722
Relinquished by: <i>RACHEL BIGLAK Paul [Signature]</i>	Company: ARCADIS	Date/Time: 3/2/21 10:00	Received by: <i>Umarah-Battushul</i>	Company: ETA	Date/Time: 3/2/21 10:01
Relinquished by: <i>Umarah-Battushul</i>	Company: ETA	Date/Time: 3/2/21 10:52	Received in Laboratory by: <i>[Signature]</i>	Company: ETA	Date/Time: 3-3-21 800

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 145230

Canton Facility

Client Arcadis Site Name

Cooler unpacked by:

Cooler Received on 3-3-21 Opened on 3-3-21

Matt Smyke

FedEx: 1st Grd Exp UPS FAS (Clipped) Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other
Packing material used: Bubble Wrap Foam Plastic Bag None Other
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt
IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 2.5 °C Corrected Cooler Temp. 2.6 °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
-Were the seals on the outside of the cooler(s) signed & dated?
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?
-Were tamper/custody seals intact and uncompromised?

3. Shippers' packing slip attached to the cooler(s)?

4. Did custody papers accompany the sample(s)?

5. Were the custody papers relinquished & signed in the appropriate place?

6. Was/were the person(s) who collected the samples clearly identified on the COC?

7. Did all bottles arrive in good condition (Unbroken)?

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated?

11. Sufficient quantity received to perform indicated analyses?

12. Are these work share samples and all listed on the COC?

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? pH Strip Lot# HC022887

14. Were VOAs on the COC?

15. Were air bubbles >6 mm in any VOA vials? Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0212801F

17. Was a LL Hg or Me Hg trip blank present?

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:

Blank lines for Chain of Custody and Sample Discrepancies.

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: