

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-144512-1  
Client Project/Site: Ford LTP - Off Site

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
2/24/2021 11:48:20 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 - Off Site

Job ID: 240-144512-1

## 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

# Method Summary

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

Job ID: 240-144512-1

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

**Protocol References:**

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

**Laboratory References:**

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



# Sample Summary

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

Job ID: 240-144512-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144512-1	TRIP BLANK	Water	02/11/21 00:00	02/13/21 08:00	
240-144512-2	MW-73SR_021121	Water	02/11/21 10:17	02/13/21 08:00	
240-144512-3	MW-73D_021121	Water	02/11/21 11:57	02/13/21 08:00	
240-144512-4	MW-74_021121	Water	02/11/21 13:57	02/13/21 08:00	
240-144512-5	DUP-09	Water	02/11/21 00:00	02/13/21 08:00	
240-144512-6	MW-74S_021121	Water	02/11/21 15:32	02/13/21 08:00	

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

# Detection Summary

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

Job ID: 240-144512-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144512-1

No Detections.

## Client Sample ID: MW-73SR\_021121

Lab Sample ID: 240-144512-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.17	J	1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	0.55	J	1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-73D\_021121

Lab Sample ID: 240-144512-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

## Client Sample ID: MW-74\_021121

Lab Sample ID: 240-144512-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.33	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	3.1		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: DUP-09

Lab Sample ID: 240-144512-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.32	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	3.2		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-74S\_021121

Lab Sample ID: 240-144512-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.84	J	1.0	0.16	ug/L	1		8260B	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 - Off Site

Job ID: 240-144512-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-144512-1**

**Date Collected: 02/11/21 00:00**

**Matrix: Water**

**Date Received: 02/13/21 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			02/22/21 13:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/22/21 13:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 13:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 13:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 13:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/22/21 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 130		02/22/21 13:40	1
4-Bromofluorobenzene (Surr)	111		47 - 134		02/22/21 13:40	1
Toluene-d8 (Surr)	104		69 - 122		02/22/21 13:40	1
Dibromofluoromethane (Surr)	95		78 - 129		02/22/21 13:40	1

# Client Sample Results

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

Job ID: 240-144512-1

**Client Sample ID: MW-73SR\_021121**

**Lab Sample ID: 240-144512-2**

Date Collected: 02/11/21 10:17

Matrix: Water

Date Received: 02/13/21 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			02/19/21 14:56	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)	82		70 - 133					02/19/21 14:56	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			02/22/21 14:03	1
<b>cis-1,2-Dichloroethene</b>	<b>1.5</b>		1.0	0.16	ug/L			02/22/21 14:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 14:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 14:03	1
<b>Trichloroethene</b>	<b>0.17</b>	<b>J</b>	1.0	0.10	ug/L			02/22/21 14:03	1
<b>Vinyl chloride</b>	<b>0.55</b>	<b>J</b>	1.0	0.20	ug/L			02/22/21 14:03	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)	99		75 - 130					02/22/21 14:03	1
4-Bromofluorobenzene (Surr)	113		47 - 134					02/22/21 14:03	1
Toluene-d8 (Surr)	107		69 - 122					02/22/21 14:03	1
Dibromofluoromethane (Surr)	94		78 - 129					02/22/21 14:03	1



# Client Sample Results

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

Job ID: 240-144512-1

**Client Sample ID: MW-73D\_021121**

**Lab Sample ID: 240-144512-3**

Date Collected: 02/11/21 11:57

Matrix: Water

Date Received: 02/13/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			02/19/21 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133		02/19/21 15:21	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			02/22/21 14:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/22/21 14:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 14:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 14:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 14:26	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/22/21 14:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130		02/22/21 14:26	1
4-Bromofluorobenzene (Surr)	115		47 - 134		02/22/21 14:26	1
Toluene-d8 (Surr)	108		69 - 122		02/22/21 14:26	1
Dibromofluoromethane (Surr)	98		78 - 129		02/22/21 14:26	1

# Client Sample Results

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

Job ID: 240-144512-1

**Client Sample ID: MW-74\_021121**

**Lab Sample ID: 240-144512-4**

Date Collected: 02/11/21 13:57

Matrix: Water

Date Received: 02/13/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.86	ug/L			02/19/21 15:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/19/21 15:47	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			02/22/21 14:48	1
cis-1,2-Dichloroethene	0.33	J	1.0	0.16	ug/L			02/22/21 14:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 14:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 14:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 14:48	1
Vinyl chloride	3.1		1.0	0.20	ug/L			02/22/21 14:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130					02/22/21 14:48	1
4-Bromofluorobenzene (Surr)	117		47 - 134					02/22/21 14:48	1
Toluene-d8 (Surr)	108		69 - 122					02/22/21 14:48	1
Dibromofluoromethane (Surr)	97		78 - 129					02/22/21 14:48	1

# Client Sample Results

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

Job ID: 240-144512-1

**Client Sample ID: DUP-09**  
**Date Collected: 02/11/21 00:00**  
**Date Received: 02/13/21 08:00**

**Lab Sample ID: 240-144512-5**  
**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>2.0</b>		2.0	0.86	ug/L			02/19/21 16:12	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)	80		70 - 133					02/19/21 16:12	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			02/22/21 15:11	1
<b>cis-1,2-Dichloroethene</b>	<b>0.32</b>	<b>J</b>	1.0	0.16	ug/L			02/22/21 15:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 15:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 15:11	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 15:11	1
<b>Vinyl chloride</b>	<b>3.2</b>		1.0	0.20	ug/L			02/22/21 15:11	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)	102		75 - 130					02/22/21 15:11	1
4-Bromofluorobenzene (Surr)	113		47 - 134					02/22/21 15:11	1
Toluene-d8 (Surr)	108		69 - 122					02/22/21 15:11	1
Dibromofluoromethane (Surr)	98		78 - 129					02/22/21 15:11	1

# Client Sample Results

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

Job ID: 240-144512-1

**Client Sample ID: MW-74S\_021121**

**Lab Sample ID: 240-144512-6**

Date Collected: 02/11/21 15:32

Matrix: Water

Date Received: 02/13/21 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			02/19/21 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		70 - 133					02/19/21 16:38	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			02/22/21 15:33	1
<b>cis-1,2-Dichloroethene</b>	<b>0.84</b>	<b>J</b>	1.0	0.16	ug/L			02/22/21 15:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 15:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 15:33	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 15:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/22/21 15:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130					02/22/21 15:33	1
4-Bromofluorobenzene (Surr)	115		47 - 134					02/22/21 15:33	1
Toluene-d8 (Surr)	108		69 - 122					02/22/21 15:33	1
Dibromofluoromethane (Surr)	101		78 - 129					02/22/21 15:33	1

# Surrogate Summary

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

Job ID: 240-144512-1

## 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)
240-144512-1	TRIP BLANK	100	111	104	95
240-144512-2	MW-73SR_021121	99	113	107	94
240-144512-3	MW-73D_021121	107	115	108	98
240-144512-4	MW-74_021121	105	117	108	97
240-144512-5	DUP-09	102	113	108	98
240-144512-6	MW-74S_021121	108	115	108	101
240-144515-D-3 MS	Matrix Spike	108	118	110	101
240-144515-E-3 MSD	Matrix Spike Duplicate	104	115	106	98
LCS 240-473923/5	Lab Control Sample	105	118	109	99
MB 240-473923/8	Method Blank	103	112	106	95

### 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)
240-144512-2	MW-73SR_021121	82
240-144512-3	MW-73D_021121	82
240-144512-4	MW-74_021121	81
240-144512-5	DUP-09	80
240-144512-6	MW-74S_021121	79
240-144515-J-3 MS	Matrix Spike	82
240-144515-J-3 MSD	Matrix Spike Duplicate	80
LCS 240-473720/4	Lab Control Sample	82
MB 240-473720/5	Method Blank	81

### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-144512-1

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

**Lab Sample ID: MB 240-473923/8**  
**Matrix: Water**  
**Analysis Batch: 473923**

**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			02/22/21 11:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/22/21 11:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 11:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 11:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 11:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/22/21 11:12	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		75 - 130		02/22/21 11:12	1
4-Bromofluorobenzene (Surr)	112		47 - 134		02/22/21 11:12	1
Toluene-d8 (Surr)	106		69 - 122		02/22/21 11:12	1
Dibromofluoromethane (Surr)	95		78 - 129		02/22/21 11:12	1

**Lab Sample ID: LCS 240-473923/5**  
**Matrix: Water**  
**Analysis Batch: 473923**

**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	20.0	18.8		ug/L		94	73 - 129
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	75 - 124
Tetrachloroethene	20.0	19.8		ug/L		99	70 - 125
trans-1,2-Dichloroethene	20.0	18.6		ug/L		93	74 - 130
Trichloroethene	20.0	18.8		ug/L		94	71 - 121
Vinyl chloride	20.0	19.9		ug/L		99	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		75 - 130
4-Bromofluorobenzene (Surr)	118		47 - 134
Toluene-d8 (Surr)	109		69 - 122
Dibromofluoromethane (Surr)	99		78 - 129

**Lab Sample ID: 240-144515-D-3 MS**  
**Matrix: Water**  
**Analysis Batch: 473923**

**Client Sample ID: Matrix Spike**  
**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	20.0	19.1		ug/L		96	64 - 132
cis-1,2-Dichloroethene	1.0	U	20.0	18.1		ug/L		91	68 - 121
Tetrachloroethene	1.0	U	20.0	20.0		ug/L		100	52 - 129
trans-1,2-Dichloroethene	1.0	U	20.0	18.6		ug/L		93	69 - 126
Trichloroethene	1.0	U	20.0	18.8		ug/L		94	56 - 124
Vinyl chloride	1.0	U	20.0	17.9		ug/L		90	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		75 - 130
4-Bromofluorobenzene (Surr)	118		47 - 134
Toluene-d8 (Surr)	110		69 - 122

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-144512-1

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

**Lab Sample ID: 240-144515-D-3 MS**  
**Matrix: Water**  
**Analysis Batch: 473923**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	101		78 - 129

**Lab Sample ID: 240-144515-E-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 473923**

**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	20.0	19.4		ug/L		97	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	20.0	17.9		ug/L		89	68 - 121	1	35
Tetrachloroethene	1.0	U	20.0	19.6		ug/L		98	52 - 129	2	35
trans-1,2-Dichloroethene	1.0	U	20.0	18.5		ug/L		92	69 - 126	1	35
Trichloroethene	1.0	U	20.0	18.3		ug/L		92	56 - 124	2	35
Vinyl chloride	1.0	U	20.0	18.3		ug/L		92	49 - 136	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	115		47 - 134
Toluene-d8 (Surr)	106		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129

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

**Lab Sample ID: MB 240-473720/5**  
**Matrix: Water**  
**Analysis Batch: 473720**

**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			02/19/21 11:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133		02/19/21 11:08	1

**Lab Sample ID: LCS 240-473720/4**  
**Matrix: Water**  
**Analysis Batch: 473720**

**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	9.95		ug/L		100	80 - 135

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

**Lab Sample ID: 240-144515-J-3 MS**  
**Matrix: Water**  
**Analysis Batch: 473720**

**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	11.0		ug/L		110	46 - 170

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-144512-1

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

<u>Surrogate</u>	<u>MS</u> <u>%Recovery</u>	<u>MS</u> <u>Qualifier</u>	<u>Limits</u>
1,2-Dichloroethane-d4 (Surr)	82		70 - 133

**Lab Sample ID: 240-144515-J-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 473720**

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

<u>Analyte</u>	<u>Sample</u> <u>Result</u>	<u>Sample</u> <u>Qualifier</u>	<u>Spike</u> <u>Added</u>	<u>MSD</u> <u>Result</u>	<u>MSD</u> <u>Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec.</u> <u>Limits</u>	<u>RPD</u>	<u>RPD</u> <u>Limit</u>
1,4-Dioxane	2.0	U	10.0	10.6		ug/L		106	46 - 170	3	26

<u>Surrogate</u>	<u>MSD</u> <u>%Recovery</u>	<u>MSD</u> <u>Qualifier</u>	<u>Limits</u>
1,2-Dichloroethane-d4 (Surr)	80		70 - 133

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# QC Association Summary

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

Job ID: 240-144512-1

## GC/MS VOA

### Analysis Batch: 473720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144512-2	MW-73SR_021121	Total/NA	Water	8260B SIM	
240-144512-3	MW-73D_021121	Total/NA	Water	8260B SIM	
240-144512-4	MW-74_021121	Total/NA	Water	8260B SIM	
240-144512-5	DUP-09	Total/NA	Water	8260B SIM	
240-144512-6	MW-74S_021121	Total/NA	Water	8260B SIM	
MB 240-473720/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-473720/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144515-J-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144515-J-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 473923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144512-1	TRIP BLANK	Total/NA	Water	8260B	
240-144512-2	MW-73SR_021121	Total/NA	Water	8260B	
240-144512-3	MW-73D_021121	Total/NA	Water	8260B	
240-144512-4	MW-74_021121	Total/NA	Water	8260B	
240-144512-5	DUP-09	Total/NA	Water	8260B	
240-144512-6	MW-74S_021121	Total/NA	Water	8260B	
MB 240-473923/8	Method Blank	Total/NA	Water	8260B	
LCS 240-473923/5	Lab Control Sample	Total/NA	Water	8260B	
240-144515-D-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-144515-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# Lab Chronicle

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

Job ID: 240-144512-1

## Client Sample ID: TRIP BLANK

Date Collected: 02/11/21 00:00

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 13:40	HMB	TAL CAN

## Client Sample ID: MW-73SR\_021121

Date Collected: 02/11/21 10:17

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 14:03	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	473720	02/19/21 14:56	SAM	TAL CAN

## Client Sample ID: MW-73D\_021121

Date Collected: 02/11/21 11:57

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 14:26	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	473720	02/19/21 15:21	SAM	TAL CAN

## Client Sample ID: MW-74\_021121

Date Collected: 02/11/21 13:57

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 14:48	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	473720	02/19/21 15:47	SAM	TAL CAN

## Client Sample ID: DUP-09

Date Collected: 02/11/21 00:00

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 15:11	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	473720	02/19/21 16:12	SAM	TAL CAN

## Client Sample ID: MW-74S\_021121

Date Collected: 02/11/21 15:32

Date Received: 02/13/21 08:00

Lab Sample ID: 240-144512-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473923	02/22/21 15:33	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	473720	02/19/21 16:38	SAM	TAL CAN

### Laboratory References:

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

Eurofins TestAmerica, Canton

# Accreditation/Certification Summary

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

Job ID: 240-144512-1

## 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	02-24-21
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



**Chain of Custody Record**

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

<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 Off-Site Project Number: 30050315.402.04 PO # 30050315.402.04		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com Sampler Name: Method of Shipment/Carrier: Shipping/Tracking No:		Site Contact: Julia McClafferty Telephone: 734-644-5131 Lab Contact: Mike DelMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: of / COCs For lab use only Walk-in client Lab sampling Job/SDG No: Sample Specific Notes / Special Instructions:	
Analysis Turnaround Time TAT if different from below 3 weeks 2 weeks 10 day <input checked="" type="checkbox"/> 1 week 2 days 1 day		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		Containers & Preservatives H2SO4 HNO3 HCl NaOH Zinc Unpres Other:		Matrix Air Aqueous Sediment Solid Other:	
Sample Identification TRIP BLANK MW-735R-021121 MW-735D-021121 MW-74-021121 DUP-09 MW-74S-021121		Sample Date Sample Time --- 2/11/21 10:17 2/11/21 11:57 2/11/21 13:57 2/11/21 --- 2/11/21 15:32		Analysis 1,1-DCE 8260B cis-1,2-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TCE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM		Sample Disposal (A fee may be assessed if samples are returned) Return to Client <input type="checkbox"/> Disposed By Lab <input checked="" type="checkbox"/> Archive For _____ Months 240-144512 Chain of Custody 	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Relinquished by: <i>Julia McClafferty</i> Relinquished by: <i>Witherspoon</i> Relinquished by: <i>Julia McClafferty</i>		Received by: <i>EMMA WITHERSPOON</i> Received by: <i>NOV. Cold Storage</i> Received in Laboratory by: <i>Amanda Balthasar</i>		Date/Time: 2/11/21 16:00 Date/Time: 2/11/21 17:00 Date/Time: 2/12/2021	
Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested.		Company: Arcadis Company: Arcadis Company: Arcadis		Company: Arcadis Company: Arcadis Company: Arcadis		Date/Time: 2/11/21 16:00 Date/Time: 2/11/21 17:00 Date/Time: 2/12/2021	

10:05 2/12/21  
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 Amanda Balthasar  
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**Canton Facility**

Client ArCADIS Site Name \_\_\_\_\_ Cooler unpacked by: Ryan C

Cooler Received on 2-13-21 Opened on 2-13-21

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 # 7A 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. 1.4 °C Corrected Cooler Temp. 1.5 °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

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes NO

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (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)?

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# HC907861

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 59072 Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes NO

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

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_

Concerning \_\_\_\_\_

**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: \_\_\_\_\_