

ANALYTICAL REPORT

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

Laboratory Job ID: 240-144754-1
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:
3/9/2021 10:01:03 AM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	18
Lab Chronicle	19
Certification Summary	20
Chain of Custody	21



Definitions/Glossary

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

Job ID: 240-144754-1

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: 240-144754-1

Job ID: 240-144754-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-144754-1

Comments

No additional comments.

Receipt

The samples were received on 2/23/2021 9:20 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 240-475044 recovered above the upper control limit for Vinyl Chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported: MW-18_021921 (240-144754-4), MW-198_021921 (240-144754-5) and (CCVIS 240-475044/3).

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: 240-144754-1

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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- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-144754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144754-1	TRIP BLANK	Water	02/19/21 00:00	02/23/21 09:20	
240-144754-2	MW-49_021921	Water	02/19/21 10:23	02/23/21 09:20	
240-144754-3	MW-220S_021921	Water	02/19/21 11:39	02/23/21 09:20	
240-144754-4	MW-18_021921	Water	02/19/21 14:00	02/23/21 09:20	
240-144754-5	MW-198_021921	Water	02/19/21 15:13	02/23/21 09:20	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-144754-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144754-1

No Detections.

Client Sample ID: MW-49_021921

Lab Sample ID: 240-144754-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	60		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	50000		1000	160	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	210	J	500	95	ug/L	500		8260B	Total/NA
Vinyl chloride	12000		500	100	ug/L	500		8260B	Total/NA

Client Sample ID: MW-220S_021921

Lab Sample ID: 240-144754-3

No Detections.

Client Sample ID: MW-18_021921

Lab Sample ID: 240-144754-4

No Detections.

Client Sample ID: MW-198_021921

Lab Sample ID: 240-144754-5

No Detections.

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: 240-144754-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144754-1

Date Collected: 02/19/21 00:00

Matrix: Water

Date Received: 02/23/21 09:20

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			03/01/21 18:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/01/21 18:53	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/01/21 18:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/21 18:53	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/01/21 18:53	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/01/21 18:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		03/01/21 18:53	1
4-Bromofluorobenzene (Surr)	102		47 - 134		03/01/21 18:53	1
Toluene-d8 (Surr)	91		69 - 122		03/01/21 18:53	1
Dibromofluoromethane (Surr)	106		78 - 129		03/01/21 18:53	1

Client Sample Results

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

Job ID: 240-144754-1

Client Sample ID: MW-49_021921

Lab Sample ID: 240-144754-2

Date Collected: 02/19/21 10:23

Matrix: Water

Date Received: 02/23/21 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	60		2.0	0.86	ug/L			02/26/21 18:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133					02/26/21 18:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	95	ug/L			03/01/21 19:18	500
cis-1,2-Dichloroethene	50000		1000	160	ug/L			03/02/21 17:06	1000
Tetrachloroethene	500	U	500	75	ug/L			03/01/21 19:18	500
trans-1,2-Dichloroethene	210	J	500	95	ug/L			03/01/21 19:18	500
Trichloroethene	500	U	500	50	ug/L			03/01/21 19:18	500
Vinyl chloride	12000		500	100	ug/L			03/01/21 19:18	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130					03/01/21 19:18	500
1,2-Dichloroethane-d4 (Surr)	106		75 - 130					03/02/21 17:06	1000
4-Bromofluorobenzene (Surr)	103		47 - 134					03/01/21 19:18	500
4-Bromofluorobenzene (Surr)	104		47 - 134					03/02/21 17:06	1000
Toluene-d8 (Surr)	91		69 - 122					03/01/21 19:18	500
Toluene-d8 (Surr)	90		69 - 122					03/02/21 17:06	1000
Dibromofluoromethane (Surr)	106		78 - 129					03/01/21 19:18	500
Dibromofluoromethane (Surr)	110		78 - 129					03/02/21 17:06	1000

Client Sample Results

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

Job ID: 240-144754-1

Client Sample ID: MW-220S_021921

Lab Sample ID: 240-144754-3

Date Collected: 02/19/21 11:39

Matrix: Water

Date Received: 02/23/21 09:20

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			02/26/21 19:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					02/26/21 19:14	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			03/01/21 19:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/01/21 19:43	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/01/21 19:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/21 19:43	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/01/21 19:43	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/01/21 19:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130					03/01/21 19:43	1
4-Bromofluorobenzene (Surr)	103		47 - 134					03/01/21 19:43	1
Toluene-d8 (Surr)	92		69 - 122					03/01/21 19:43	1
Dibromofluoromethane (Surr)	107		78 - 129					03/01/21 19:43	1

Client Sample Results

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

Job ID: 240-144754-1

Client Sample ID: MW-18_021921

Lab Sample ID: 240-144754-4

Date Collected: 02/19/21 14:00

Matrix: Water

Date Received: 02/23/21 09:20

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			02/26/21 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		02/26/21 19:39	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			03/02/21 17:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/02/21 17:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/02/21 17:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/02/21 17:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/02/21 17:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/02/21 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130		03/02/21 17:30	1
4-Bromofluorobenzene (Surr)	105		47 - 134		03/02/21 17:30	1
Toluene-d8 (Surr)	91		69 - 122		03/02/21 17:30	1
Dibromofluoromethane (Surr)	109		78 - 129		03/02/21 17:30	1

Client Sample Results

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

Job ID: 240-144754-1

Client Sample ID: MW-198_021921

Lab Sample ID: 240-144754-5

Date Collected: 02/19/21 15:13

Matrix: Water

Date Received: 02/23/21 09:20

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			02/26/21 20:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					02/26/21 20:03	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			03/02/21 17:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/02/21 17:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/02/21 17:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/02/21 17:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/02/21 17:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/02/21 17:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130					03/02/21 17:54	1
4-Bromofluorobenzene (Surr)	107		47 - 134					03/02/21 17:54	1
Toluene-d8 (Surr)	90		69 - 122					03/02/21 17:54	1
Dibromofluoromethane (Surr)	106		78 - 129					03/02/21 17:54	1

Surrogate Summary

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

Job ID: 240-144754-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-144754-1	TRIP BLANK	104	102	91	106
240-144754-2	MW-49_021921	103	103	91	106
240-144754-2	MW-49_021921	106	104	90	110
240-144754-2 MS	MW-49_021921	93	104	94	93
240-144754-2 MS	MW-49_021921	95	105	97	97
240-144754-2 MSD	MW-49_021921	93	103	93	95
240-144754-2 MSD	MW-49_021921	91	103	93	97
240-144754-3	MW-220S_021921	105	103	92	107
240-144754-4	MW-18_021921	105	105	91	109
240-144754-5	MW-198_021921	106	107	90	106
LCS 240-474864/5	Lab Control Sample	92	101	93	91
LCS 240-475044/5	Lab Control Sample	93	106	96	93
MB 240-474864/8	Method Blank	101	102	93	99
MB 240-475044/8	Method Blank	103	102	91	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-144711-O-2 MS	Matrix Spike	85
240-144711-O-2 MSD	Matrix Spike Duplicate	86
240-144754-2	MW-49_021921	82
240-144754-3	MW-220S_021921	91
240-144754-4	MW-18_021921	88
240-144754-5	MW-198_021921	88
LCS 240-474631/4	Lab Control Sample	82
MB 240-474631/5	Method Blank	80

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144754-1

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

Lab Sample ID: MB 240-474864/8
Matrix: Water
Analysis Batch: 474864

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			03/01/21 13:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/01/21 13:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/01/21 13:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/21 13:08	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/01/21 13:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/01/21 13:08	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		03/01/21 13:08	1
4-Bromofluorobenzene (Surr)	102		47 - 134		03/01/21 13:08	1
Toluene-d8 (Surr)	93		69 - 122		03/01/21 13:08	1
Dibromofluoromethane (Surr)	99		78 - 129		03/01/21 13:08	1

Lab Sample ID: LCS 240-474864/5
Matrix: Water
Analysis Batch: 474864

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	20.5		ug/L		103	73 - 129
cis-1,2-Dichloroethene	20.0	20.9		ug/L		104	75 - 124
Tetrachloroethene	20.0	20.8		ug/L		104	70 - 125
trans-1,2-Dichloroethene	20.0	20.5		ug/L		102	74 - 130
Trichloroethene	20.0	19.8		ug/L		99	71 - 121
Vinyl chloride	20.0	23.6		ug/L		118	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144754-2 MS
Matrix: Water
Analysis Batch: 474864

Client Sample ID: MW-49_021921
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	500	U	10000	9650		ug/L		96	64 - 132
Tetrachloroethene	500	U	10000	9480		ug/L		95	52 - 129
trans-1,2-Dichloroethene	210	J	10000	9670		ug/L		95	69 - 126
Trichloroethene	500	U	10000	9110		ug/L		91	56 - 124
Vinyl chloride	12000		10000	22900		ug/L		111	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	93		78 - 129

QC Sample Results

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

Job ID: 240-144754-1

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

Lab Sample ID: 240-144754-2 MSD
Matrix: Water
Analysis Batch: 474864

Client Sample ID: MW-49_021921
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	500	U	10000	10800		ug/L		108	64 - 132	11	35
Tetrachloroethene	500	U	10000	10200		ug/L		102	52 - 129	7	35
trans-1,2-Dichloroethene	210	J	10000	10800		ug/L		106	69 - 126	11	35
Trichloroethene	500	U	10000	9990		ug/L		100	56 - 124	9	35
Vinyl chloride	12000		10000	25200		ug/L		134	49 - 136	9	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	95		78 - 129

Lab Sample ID: MB 240-475044/8
Matrix: Water
Analysis Batch: 475044

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			03/02/21 12:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/02/21 12:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/02/21 12:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/02/21 12:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/02/21 12:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/02/21 12:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130		03/02/21 12:39	1
4-Bromofluorobenzene (Surr)	102		47 - 134		03/02/21 12:39	1
Toluene-d8 (Surr)	91		69 - 122		03/02/21 12:39	1
Dibromofluoromethane (Surr)	108		78 - 129		03/02/21 12:39	1

Lab Sample ID: LCS 240-475044/5
Matrix: Water
Analysis Batch: 475044

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	20.0	20.0		ug/L		100	73 - 129
cis-1,2-Dichloroethene	20.0	20.2		ug/L		101	75 - 124
Tetrachloroethene	20.0	19.9		ug/L		100	70 - 125
trans-1,2-Dichloroethene	20.0	20.1		ug/L		101	74 - 130
Trichloroethene	20.0	18.9		ug/L		95	71 - 121
Vinyl chloride	20.0	22.8		ug/L		114	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	106		47 - 134
Toluene-d8 (Surr)	96		69 - 122
Dibromofluoromethane (Surr)	93		78 - 129

QC Sample Results

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

Job ID: 240-144754-1

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

Lab Sample ID: 240-144754-2 MS
Matrix: Water
Analysis Batch: 475044

Client Sample ID: MW-49_021921
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
cis-1,2-Dichloroethene	50000		20000	67700		ug/L		89	68 - 121	
Surrogate	%Recovery	MS Qualifier	MS Limits							
1,2-Dichloroethane-d4 (Surr)	95		75 - 130							
4-Bromofluorobenzene (Surr)	105		47 - 134							
Toluene-d8 (Surr)	97		69 - 122							
Dibromofluoromethane (Surr)	97		78 - 129							

Lab Sample ID: 240-144754-2 MSD
Matrix: Water
Analysis Batch: 475044

Client Sample ID: MW-49_021921
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	50000		20000	69400		ug/L		98	68 - 121	3	35
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	91		75 - 130								
4-Bromofluorobenzene (Surr)	103		47 - 134								
Toluene-d8 (Surr)	93		69 - 122								
Dibromofluoromethane (Surr)	97		78 - 129								

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

Lab Sample ID: MB 240-474631/5
Matrix: Water
Analysis Batch: 474631

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			02/26/21 10:51	1	
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac				
1,2-Dichloroethane-d4 (Surr)	80		70 - 133		02/26/21 10:51	1				

Lab Sample ID: LCS 240-474631/4
Matrix: Water
Analysis Batch: 474631

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	9.80		ug/L		98	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	82		70 - 133				

QC Sample Results

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

Job ID: 240-144754-1

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

Lab Sample ID: 240-144711-O-2 MS
Matrix: Water
Analysis Batch: 474631

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	9.26		ug/L		93	46 - 170
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	85		70 - 133						

Lab Sample ID: 240-144711-O-2 MSD
Matrix: Water
Analysis Batch: 474631

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
1,4-Dioxane	2.0	U	10.0	9.91		ug/L		99	46 - 170	7	26
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	86		70 - 133								



QC Association Summary

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

Job ID: 240-144754-1

GC/MS VOA

Analysis Batch: 474631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144754-2	MW-49_021921	Total/NA	Water	8260B SIM	
240-144754-3	MW-220S_021921	Total/NA	Water	8260B SIM	
240-144754-4	MW-18_021921	Total/NA	Water	8260B SIM	
240-144754-5	MW-198_021921	Total/NA	Water	8260B SIM	
MB 240-474631/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474631/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144711-O-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144711-O-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 474864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144754-1	TRIP BLANK	Total/NA	Water	8260B	
240-144754-2	MW-49_021921	Total/NA	Water	8260B	
240-144754-3	MW-220S_021921	Total/NA	Water	8260B	
MB 240-474864/8	Method Blank	Total/NA	Water	8260B	
LCS 240-474864/5	Lab Control Sample	Total/NA	Water	8260B	
240-144754-2 MS	MW-49_021921	Total/NA	Water	8260B	
240-144754-2 MSD	MW-49_021921	Total/NA	Water	8260B	

Analysis Batch: 475044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144754-2	MW-49_021921	Total/NA	Water	8260B	
240-144754-4	MW-18_021921	Total/NA	Water	8260B	
240-144754-5	MW-198_021921	Total/NA	Water	8260B	
MB 240-475044/8	Method Blank	Total/NA	Water	8260B	
LCS 240-475044/5	Lab Control Sample	Total/NA	Water	8260B	
240-144754-2 MS	MW-49_021921	Total/NA	Water	8260B	
240-144754-2 MSD	MW-49_021921	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144754-1

Client Sample ID: TRIP BLANK

Date Collected: 02/19/21 00:00

Date Received: 02/23/21 09:20

Lab Sample ID: 240-144754-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474864	03/01/21 18:53	HMB	TAL CAN

Client Sample ID: MW-49_021921

Date Collected: 02/19/21 10:23

Date Received: 02/23/21 09:20

Lab Sample ID: 240-144754-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	474864	03/01/21 19:18	HMB	TAL CAN
Total/NA	Analysis	8260B		1000	475044	03/02/21 17:06	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 18:49	SAM	TAL CAN

Client Sample ID: MW-220S_021921

Date Collected: 02/19/21 11:39

Date Received: 02/23/21 09:20

Lab Sample ID: 240-144754-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474864	03/01/21 19:43	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 19:14	SAM	TAL CAN

Client Sample ID: MW-18_021921

Date Collected: 02/19/21 14:00

Date Received: 02/23/21 09:20

Lab Sample ID: 240-144754-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475044	03/02/21 17:30	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 19:39	SAM	TAL CAN

Client Sample ID: MW-198_021921

Date Collected: 02/19/21 15:13

Date Received: 02/23/21 09:20

Lab Sample ID: 240-144754-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475044	03/02/21 17:54	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 20:03	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: 240-144754-1

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.



Chain of Custody Record

Test America Laboratory location: Brighton --- 10448 Cilation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford LTP On-Site
 Project Number: 30050315.401.03
 PO # 30050315.401.03

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

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

Lab Contact: Mike DeMonico
 Telephone: 330-497-9196

Sampler Name: Xenia Chan
 Method of Shipment/Carrier:
 Shipping/Tracking No:

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

Sample Identification	Sample Date	Sample Time	Matrix					Containers & Preservatives					Filtered Sample (Y/N)	Composite=C / Grab=G	Analyses					Sample Specific Notes / Special Instructions:				
			Air	Aqueous	Solid	Other:	H2SO4	HNO3	HCl	NaOH	Zn/NaOH	Cupres			Other:	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	
TRIP BLANK			1																				1 TRIP BLANK	
MW-49-021921	2/19/21	1023	6																					3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-2205-021921	2/19/21	1139	6																					
MW-18-021921	2/19/21	1400	6																					
MW-198-021921	2/19/21	1513	6																					



Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive For _____ Months

Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203728
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	Arcadis	2/19/21 1635	Non cold storage	Arcadis	2/19/21 1635
<i>[Signature]</i>	Arcadis	2/22/2021	<i>[Signature]</i>	ETA	2/22/21 10:05
<i>[Signature]</i>	ETA	2/22/21 11:19	<i>[Signature]</i>	TA	2-23-21 9:20



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 144754

Client Arcadis Site Name _____

Cooler unpacked by: _____

Cooler Received on 2-23-21 Opened on 2-23-21

FedEx: 1st Exp UPS FAS Clipper 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 See Multiple Cooler Form
 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 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

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

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
 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?  ← Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____