

ANALYTICAL REPORT

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

Laboratory Job ID: 240-144583-1
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:
3/3/2021 10:34:43 AM

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



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Definitions/Glossary

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

Job ID: 240-144583-1

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: 240-144583-1

Job ID: 240-144583-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-144583-1

Comments

No additional comments.

Receipt

The samples were received on 2/17/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

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

Job ID: 240-144583-1

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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Sample Summary

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

Job ID: 240-144583-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144583-1	TRIP BLANK	Water	02/13/21 00:00	02/17/21 08:00	
240-144583-2	MW-120_021321	Water	02/13/21 09:30	02/17/21 08:00	
240-144583-3	MW-52_021321	Water	02/13/21 10:50	02/17/21 08:00	
240-144583-4	MW-43_021321	Water	02/13/21 11:45	02/17/21 08:00	
240-144583-5	MW-213S_021321	Water	02/13/21 12:40	02/17/21 08:00	

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Detection Summary

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

Job ID: 240-144583-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144583-1

No Detections.

Client Sample ID: MW-120_021321

Lab Sample ID: 240-144583-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.6		1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: MW-52_021321

Lab Sample ID: 240-144583-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.3		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-43_021321

Lab Sample ID: 240-144583-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-213S_021321

Lab Sample ID: 240-144583-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.77	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.72	J	1.0	0.20	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 - On Site

Job ID: 240-144583-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144583-1

Date Collected: 02/13/21 00:00

Matrix: Water

Date Received: 02/17/21 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			02/24/21 15:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 15:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 15:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 15:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 15:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		02/24/21 15:39	1
4-Bromofluorobenzene (Surr)	89		47 - 134		02/24/21 15:39	1
Toluene-d8 (Surr)	100		69 - 122		02/24/21 15:39	1
Dibromofluoromethane (Surr)	98		78 - 129		02/24/21 15:39	1

Client Sample Results

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

Job ID: 240-144583-1

Client Sample ID: MW-120_021321

Lab Sample ID: 240-144583-2

Date Collected: 02/13/21 09:30

Matrix: Water

Date Received: 02/17/21 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			02/23/21 20:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133					02/23/21 20:14	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			02/24/21 16:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 16:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 16:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 16:01	1
Trichloroethene	3.6		1.0	0.10	ug/L			02/24/21 16:01	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130					02/24/21 16:01	1
4-Bromofluorobenzene (Surr)	92		47 - 134					02/24/21 16:01	1
Toluene-d8 (Surr)	106		69 - 122					02/24/21 16:01	1
Dibromofluoromethane (Surr)	104		78 - 129					02/24/21 16:01	1

Client Sample Results

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

Job ID: 240-144583-1

Client Sample ID: MW-52_021321

Lab Sample ID: 240-144583-3

Date Collected: 02/13/21 10:50

Matrix: Water

Date Received: 02/17/21 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			02/23/21 20:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133		02/23/21 20:39	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			02/25/21 16:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 16:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 16:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 16:01	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 16:01	1
Vinyl chloride	2.3		1.0	0.20	ug/L			02/25/21 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130		02/25/21 16:01	1
4-Bromofluorobenzene (Surr)	90		47 - 134		02/25/21 16:01	1
Toluene-d8 (Surr)	100		69 - 122		02/25/21 16:01	1
Dibromofluoromethane (Surr)	100		78 - 129		02/25/21 16:01	1

Client Sample Results

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

Job ID: 240-144583-1

Client Sample ID: MW-43_021321

Lab Sample ID: 240-144583-4

Date Collected: 02/13/21 11:45

Matrix: Water

Date Received: 02/17/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.6		2.0	0.86	ug/L			02/23/21 21:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133		02/23/21 21:55	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			02/25/21 16:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 16:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 16:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 16:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 16:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		02/25/21 16:23	1
4-Bromofluorobenzene (Surr)	82		47 - 134		02/25/21 16:23	1
Toluene-d8 (Surr)	96		69 - 122		02/25/21 16:23	1
Dibromofluoromethane (Surr)	96		78 - 129		02/25/21 16:23	1

Client Sample Results

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

Job ID: 240-144583-1

Client Sample ID: MW-213S_021321

Lab Sample ID: 240-144583-5

Date Collected: 02/13/21 12:40

Matrix: Water

Date Received: 02/17/21 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			02/23/21 22:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/23/21 22:21	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			02/25/21 16:46	1
cis-1,2-Dichloroethene	0.77	J	1.0	0.16	ug/L			02/25/21 16:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 16:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 16:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 16:46	1
Vinyl chloride	0.72	J	1.0	0.20	ug/L			02/25/21 16:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130					02/25/21 16:46	1
4-Bromofluorobenzene (Surr)	84		47 - 134					02/25/21 16:46	1
Toluene-d8 (Surr)	96		69 - 122					02/25/21 16:46	1
Dibromofluoromethane (Surr)	97		78 - 129					02/25/21 16:46	1

Surrogate Summary

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

Job ID: 240-144583-1

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)
240-144583-1	TRIP BLANK	101	89	100	98
240-144583-2	MW-120_021321	107	92	106	104
240-144583-3	MW-52_021321	103	90	100	100
240-144583-4	MW-43_021321	97	82	96	96
240-144583-5	MW-213S_021321	101	84	96	97
240-144584-D-3 MSD	Matrix Spike Duplicate	100	96	99	91
240-144584-F-3 MS	Matrix Spike	91	86	92	92
240-144585-E-7 MS	Matrix Spike	96	91	97	100
240-144585-E-7 MSD	Matrix Spike Duplicate	101	98	105	103
LCS 240-474261/4	Lab Control Sample	93	91	98	95
LCS 240-474477/4	Lab Control Sample	97	91	100	96
MB 240-474261/6	Method Blank	102	93	105	100
MB 240-474477/6	Method Blank	88	78	90	84

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)
240-144583-2	MW-120_021321	84
240-144583-3	MW-52_021321	83
240-144583-3 MS	MW-52_021321	84
240-144583-3 MSD	MW-52_021321	84
240-144583-4	MW-43_021321	82
240-144583-5	MW-213S_021321	81
LCS 240-474127/4	Lab Control Sample	79
MB 240-474127/5	Method Blank	83

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144583-1

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

Lab Sample ID: MB 240-474261/6
Matrix: Water
Analysis Batch: 474261

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			02/24/21 11:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 11:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 11:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 11:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 11:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 11:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		02/24/21 11:12	1
4-Bromofluorobenzene (Surr)	93		47 - 134		02/24/21 11:12	1
Toluene-d8 (Surr)	105		69 - 122		02/24/21 11:12	1
Dibromofluoromethane (Surr)	100		78 - 129		02/24/21 11:12	1

Lab Sample ID: LCS 240-474261/4
Matrix: Water
Analysis Batch: 474261

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	10.2		ug/L		102	73 - 129
cis-1,2-Dichloroethene	10.0	9.76		ug/L		98	75 - 124
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 125
trans-1,2-Dichloroethene	10.0	9.65		ug/L		97	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121
Vinyl chloride	10.0	9.62		ug/L		96	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	91		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	95		78 - 129

Lab Sample ID: 240-144585-E-7 MS
Matrix: Water
Analysis Batch: 474261

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	17	U	167	148		ug/L		89	64 - 132
cis-1,2-Dichloroethene	260		167	407		ug/L		90	68 - 121
Tetrachloroethene	17	U	167	148		ug/L		89	52 - 129
trans-1,2-Dichloroethene	17	U	167	161		ug/L		96	69 - 126
Trichloroethene	17	U	167	149		ug/L		89	56 - 124
Vinyl chloride	460		167	594		ug/L		78	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	91		47 - 134
Toluene-d8 (Surr)	97		69 - 122

QC Sample Results

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

Job ID: 240-144583-1

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

Lab Sample ID: 240-144585-E-7 MS
Matrix: Water
Analysis Batch: 474261

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

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	100		78 - 129

Lab Sample ID: 240-144585-E-7 MSD
Matrix: Water
Analysis Batch: 474261

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	17	U	167	167		ug/L		100	64 - 132	12	35
cis-1,2-Dichloroethene	260		167	426		ug/L		101	68 - 121	5	35
Tetrachloroethene	17	U	167	165		ug/L		99	52 - 129	11	35
trans-1,2-Dichloroethene	17	U	167	168		ug/L		101	69 - 126	4	35
Trichloroethene	17	U	167	166		ug/L		99	56 - 124	11	35
Vinyl chloride	460		167	625		ug/L		96	49 - 136	5	35

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	103		78 - 129

Lab Sample ID: MB 240-474477/6
Matrix: Water
Analysis Batch: 474477

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			02/25/21 12:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 12:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 12:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 12:19	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 12:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 12:19	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/25/21 12:19	1
4-Bromofluorobenzene (Surr)	78		47 - 134		02/25/21 12:19	1
Toluene-d8 (Surr)	90		69 - 122		02/25/21 12:19	1
Dibromofluoromethane (Surr)	84		78 - 129		02/25/21 12:19	1

Lab Sample ID: LCS 240-474477/4
Matrix: Water
Analysis Batch: 474477

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	10.6		ug/L		106	73 - 129
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	75 - 124
Tetrachloroethene	10.0	12.0		ug/L		120	70 - 125
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	74 - 130
Trichloroethene	10.0	10.4		ug/L		104	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144583-1

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

Lab Sample ID: LCS 240-474477/4

Matrix: Water

Analysis Batch: 474477

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	10.6		ug/L		106	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	97		75 - 130				
4-Bromofluorobenzene (Surr)	91		47 - 134				
Toluene-d8 (Surr)	100		69 - 122				
Dibromofluoromethane (Surr)	96		78 - 129				

Lab Sample ID: 240-144584-D-3 MSD

Matrix: Water

Analysis Batch: 474477

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.38		ug/L		94	64 - 132	12	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.35		ug/L		94	68 - 121	7	35
Tetrachloroethene	1.0	U	10.0	9.52		ug/L		95	52 - 129	9	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.07		ug/L		91	69 - 126	7	35
Trichloroethene	1.0	U	10.0	9.83		ug/L		98	56 - 124	12	35
Vinyl chloride	0.59	J	10.0	10.1		ug/L		95	49 - 136	2	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	100		75 - 130								
4-Bromofluorobenzene (Surr)	96		47 - 134								
Toluene-d8 (Surr)	99		69 - 122								
Dibromofluoromethane (Surr)	91		78 - 129								

Lab Sample ID: 240-144584-F-3 MS

Matrix: Water

Analysis Batch: 474477

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	8.35		ug/L		84	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.68		ug/L		87	68 - 121
Tetrachloroethene	1.0	U	10.0	8.69		ug/L		87	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.43		ug/L		84	69 - 126
Trichloroethene	1.0	U	10.0	8.68		ug/L		87	56 - 124
Vinyl chloride	0.59	J	10.0	9.87		ug/L		93	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	91		75 - 130						
4-Bromofluorobenzene (Surr)	86		47 - 134						
Toluene-d8 (Surr)	92		69 - 122						
Dibromofluoromethane (Surr)	92		78 - 129						

QC Sample Results

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

Job ID: 240-144583-1

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

Lab Sample ID: MB 240-474127/5
Matrix: Water
Analysis Batch: 474127

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			02/23/21 13:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133					02/23/21 13:30	1

Lab Sample ID: LCS 240-474127/4
Matrix: Water
Analysis Batch: 474127

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	10.8		ug/L		108	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	79		70 - 133				

Lab Sample ID: 240-144583-3 MS
Matrix: Water
Analysis Batch: 474127

Client Sample ID: MW-52_021321
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.9		ug/L		109	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	84		70 - 133						

Lab Sample ID: 240-144583-3 MSD
Matrix: Water
Analysis Batch: 474127

Client Sample ID: MW-52_021321
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.7		ug/L		107	46 - 170	2	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	84		70 - 133								

QC Association Summary

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

Job ID: 240-144583-1

GC/MS VOA

Analysis Batch: 474127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144583-2	MW-120_021321	Total/NA	Water	8260B SIM	
240-144583-3	MW-52_021321	Total/NA	Water	8260B SIM	
240-144583-4	MW-43_021321	Total/NA	Water	8260B SIM	
240-144583-5	MW-213S_021321	Total/NA	Water	8260B SIM	
MB 240-474127/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474127/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144583-3 MS	MW-52_021321	Total/NA	Water	8260B SIM	
240-144583-3 MSD	MW-52_021321	Total/NA	Water	8260B SIM	

Analysis Batch: 474261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144583-1	TRIP BLANK	Total/NA	Water	8260B	
240-144583-2	MW-120_021321	Total/NA	Water	8260B	
MB 240-474261/6	Method Blank	Total/NA	Water	8260B	
LCS 240-474261/4	Lab Control Sample	Total/NA	Water	8260B	
240-144585-E-7 MS	Matrix Spike	Total/NA	Water	8260B	
240-144585-E-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 474477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144583-3	MW-52_021321	Total/NA	Water	8260B	
240-144583-4	MW-43_021321	Total/NA	Water	8260B	
240-144583-5	MW-213S_021321	Total/NA	Water	8260B	
MB 240-474477/6	Method Blank	Total/NA	Water	8260B	
LCS 240-474477/4	Lab Control Sample	Total/NA	Water	8260B	
240-144584-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-144584-F-3 MS	Matrix Spike	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144583-1

Client Sample ID: TRIP BLANK

Date Collected: 02/13/21 00:00

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144583-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474261	02/24/21 15:39	LEE	TAL CAN

Client Sample ID: MW-120_021321

Date Collected: 02/13/21 09:30

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144583-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474261	02/24/21 16:01	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	474127	02/23/21 20:14	SAM	TAL CAN

Client Sample ID: MW-52_021321

Date Collected: 02/13/21 10:50

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144583-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474477	02/25/21 16:01	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	474127	02/23/21 20:39	SAM	TAL CAN

Client Sample ID: MW-43_021321

Date Collected: 02/13/21 11:45

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144583-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474477	02/25/21 16:23	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	474127	02/23/21 21:55	SAM	TAL CAN

Client Sample ID: MW-213S_021321

Date Collected: 02/13/21 12:40

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144583-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474477	02/25/21 16:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	474127	02/23/21 22:21	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: 240-144583-1

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

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

Regulatory program: DW NPDES RCRA Other

Client Contact
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

Client Project Manager: Kris Hinskey
Site Contact: Julia McClafferty
Telephone: 248-994-2240
Telephone: 734-644-5131
Email: krisofor.hinskey@arcadis.com

Sampler Name: **CHRISTINA WEAVER**
Method of Shipment/Carrier:
Shipping/Tracking No:

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	Sediment	Solid	Other:	H2SO4	HNO3	HCl			NaOH	NaOH	Unpres	Other:	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	2/13/21	—	1																					1 TRIP BLANK
MW-120-021321	2/13/21	0930	6																					3 VOAS METHOD 8260B
MW-52-021321	2/13/21	1050	6																					3 VOAS METHOD 8260B
MW-43-021321	2/13/21	1145	6																					
MW-213S-021321	2/13/21	1240	6																					

Possible Hazard Identification
 Non-Hazard
 Irritant
 Poison B
 Unknown

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

Relinquished by: *Justin W...*
 Relinquished by: *Christina Weaver*
 Relinquished by: *Christina Weaver*

Company: ARCADIS
 Date/Time: 2/13/21 / 1340
 Company: ARCADIS
 Date/Time: 2/15/21 / 1010
 Company: ETA
 Date/Time: 2/15/21 10:57

Company: ARCADIS
 Date/Time: 2/13/21 / 1340
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Company: ARCADIS
 Date/Time: 2/13/21 / 1340
 Company: ARCADIS
 Date/Time: 2/15/21 / 1010
 Company: ETA
 Date/Time: 2/15/21 10:57



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 141503

Canton Facility

Client Arcadia's Site Name

Cooler unpacked by:

Cooler Received on 2-17-21 Opened on 2-17-21

Math Snyder

FedEx: 1st Grd 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. 2.9 °C Corrected Cooler Temp. 2.8 °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 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: