

ANALYTICAL REPORT

Eurofins Canton
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Laboratory Job ID: 240-167154-1
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:
6/8/2022 9:32:33 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: 240-167154-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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: 240-167154-1

Job ID: 240-167154-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-167154-1

Comments

No additional comments.

Receipt

The samples were received on 5/24/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 2.2° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-528862 was outside the method criteria for multiple analytes. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated: TRIP BLANK_37 (240-167154-1), MW-03_051922 (240-167154-2) and (CCVIS 240-528862/3).

Method 8260D: The MSD for batch 240-528896 was analyzed outside of the tune time, due to an instrument fault. This is a batch QC sample; therefore, the data have been reported.

Method 8260D SIM: The following samples were analyzed outside of analytical holding time due to instrument malfunction: MW-03_051922 (240-167154-2), MW-45_051922 (240-167154-3), MW-70_051922 (240-167154-4), MW-71_052022 (240-167154-5) and MW-122_052022 (240-167154-6).

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

VOA Prep

No additional 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: 240-167154-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030C	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 Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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- 13
- 14

Sample Summary

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

Job ID: 240-167154-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-167154-1	TRIP BLANK_37	Water	05/19/22 00:00	05/24/22 10:00
240-167154-2	MW-03_051922	Water	05/19/22 14:36	05/24/22 10:00
240-167154-3	MW-45_051922	Water	05/19/22 12:40	05/24/22 10:00
240-167154-4	MW-70_051922	Water	05/19/22 11:10	05/24/22 10:00
240-167154-5	MW-71_052022	Water	05/20/22 12:28	05/24/22 10:00
240-167154-6	MW-122_052022	Water	05/20/22 11:05	05/24/22 10:00

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- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-167154-1

Client Sample ID: TRIP BLANK_37

Lab Sample ID: 240-167154-1

No Detections.

Client Sample ID: MW-03_051922

Lab Sample ID: 240-167154-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J H	2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-45_051922

Lab Sample ID: 240-167154-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	9.5		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	33		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-70_051922

Lab Sample ID: 240-167154-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J H	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	15		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	30		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-71_052022

Lab Sample ID: 240-167154-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.81	J	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	0.53	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-122_052022

Lab Sample ID: 240-167154-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.5		1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: TRIP BLANK_37

Lab Sample ID: 240-167154-1

Date Collected: 05/19/22 00:00

Matrix: Water

Date Received: 05/24/22 10:00

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 14:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 14:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 14:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 14:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 14:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/02/22 14:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		06/02/22 14:22	1
4-Bromofluorobenzene (Surr)	97		56 - 136		06/02/22 14:22	1
Toluene-d8 (Surr)	95		78 - 122		06/02/22 14:22	1
Dibromofluoromethane (Surr)	117		73 - 120		06/02/22 14:22	1

Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: MW-03_051922

Lab Sample ID: 240-167154-2

Date Collected: 05/19/22 14:36

Matrix: Water

Date Received: 05/24/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	J H	2.0	0.86	ug/L			06/06/22 21:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120					06/06/22 21:38	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 14:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 14:46	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 14:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 14:46	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 14:46	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/02/22 14:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137					06/02/22 14:46	1
4-Bromofluorobenzene (Surr)	97		56 - 136					06/02/22 14:46	1
Toluene-d8 (Surr)	93		78 - 122					06/02/22 14:46	1
Dibromofluoromethane (Surr)	115		73 - 120					06/02/22 14:46	1

Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: MW-45_051922

Lab Sample ID: 240-167154-3

Date Collected: 05/19/22 12:40

Matrix: Water

Date Received: 05/24/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U H	2.0	0.86	ug/L			06/06/22 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120		06/06/22 22:03	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 20:09	1
cis-1,2-Dichloroethene	9.5		1.0	0.46	ug/L			06/02/22 20:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 20:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:09	1
Vinyl chloride	33		1.0	0.45	ug/L			06/02/22 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		62 - 137		06/02/22 20:09	1
4-Bromofluorobenzene (Surr)	85		56 - 136		06/02/22 20:09	1
Toluene-d8 (Surr)	83		78 - 122		06/02/22 20:09	1
Dibromofluoromethane (Surr)	91		73 - 120		06/02/22 20:09	1

Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: MW-70_051922

Lab Sample ID: 240-167154-4

Date Collected: 05/19/22 11:10

Matrix: Water

Date Received: 05/24/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J H	2.0	0.86	ug/L			06/06/22 22:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 120					06/06/22 22:28	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 20:34	1
cis-1,2-Dichloroethene	15		1.0	0.46	ug/L			06/02/22 20:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 20:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:34	1
Vinyl chloride	30		1.0	0.45	ug/L			06/02/22 20:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137					06/02/22 20:34	1
4-Bromofluorobenzene (Surr)	83		56 - 136					06/02/22 20:34	1
Toluene-d8 (Surr)	82		78 - 122					06/02/22 20:34	1
Dibromofluoromethane (Surr)	89		73 - 120					06/02/22 20:34	1

Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: MW-71_052022

Lab Sample ID: 240-167154-5

Date Collected: 05/20/22 12:28

Matrix: Water

Date Received: 05/24/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U H	2.0	0.86	ug/L			06/06/22 22:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 120		06/06/22 22:53	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 20:59	1
cis-1,2-Dichloroethene	0.81	J	1.0	0.46	ug/L			06/02/22 20:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 20:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 20:59	1
Vinyl chloride	0.53	J	1.0	0.45	ug/L			06/02/22 20:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		62 - 137		06/02/22 20:59	1
4-Bromofluorobenzene (Surr)	83		56 - 136		06/02/22 20:59	1
Toluene-d8 (Surr)	81		78 - 122		06/02/22 20:59	1
Dibromofluoromethane (Surr)	91		73 - 120		06/02/22 20:59	1

Client Sample Results

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

Job ID: 240-167154-1

Client Sample ID: MW-122_052022

Lab Sample ID: 240-167154-6

Date Collected: 05/20/22 11:05

Matrix: Water

Date Received: 05/24/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U H	2.0	0.86	ug/L			06/06/22 23:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 120		06/06/22 23:18	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 21:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 21:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 21:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 21:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 21:25	1
Vinyl chloride	1.5		1.0	0.45	ug/L			06/02/22 21:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137		06/02/22 21:25	1
4-Bromofluorobenzene (Surr)	82		56 - 136		06/02/22 21:25	1
Toluene-d8 (Surr)	79		78 - 122		06/02/22 21:25	1
Dibromofluoromethane (Surr)	89		73 - 120		06/02/22 21:25	1

Surrogate Summary

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

Job ID: 240-167154-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-166988-A-25 MS	Matrix Spike	80	90	81	91
240-166988-A-25 MSD	Matrix Spike Duplicate	78	89	80	92
240-167012-E-7 MSD	Matrix Spike Duplicate	89	106	101	96
240-167012-H-7 MS	Matrix Spike	88	107	102	98
240-167154-1	TRIP BLANK_37	104	97	95	117
240-167154-2	MW-03_051922	105	97	93	115
240-167154-3	MW-45_051922	84	85	83	91
240-167154-4	MW-70_051922	83	83	82	89
240-167154-5	MW-71_052022	86	83	81	91
240-167154-6	MW-122_052022	85	82	79	89
LCS 240-528862/5	Lab Control Sample	88	105	99	94
LCS 240-528896/5	Lab Control Sample	77	91	81	90
MB 240-528862/8	Method Blank	104	99	97	114
MB 240-528896/8	Method Blank	83	85	81	93

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-167154-2	MW-03_051922	108
240-167154-3	MW-45_051922	108
240-167154-4	MW-70_051922	107
240-167154-5	MW-71_052022	103
240-167154-6	MW-122_052022	105
240-167581-C-2 MS	Matrix Spike	113
240-167581-C-2 MSD	Matrix Spike Duplicate	113
LCS 240-529389/3	Lab Control Sample	106
MB 240-529389/4	Method Blank	108

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-167154-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-528862/8
Matrix: Water
Analysis Batch: 528862

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	0.49	ug/L			06/02/22 11:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 11:28	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 11:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 11:28	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 11:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/02/22 11:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		06/02/22 11:28	1
4-Bromofluorobenzene (Surr)	99		56 - 136		06/02/22 11:28	1
Toluene-d8 (Surr)	97		78 - 122		06/02/22 11:28	1
Dibromofluoromethane (Surr)	114		73 - 120		06/02/22 11:28	1

Lab Sample ID: LCS 240-528862/5
Matrix: Water
Analysis Batch: 528862

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	22.6		ug/L		113	63 - 134
cis-1,2-Dichloroethene	20.0	20.6		ug/L		103	77 - 123
Tetrachloroethene	20.0	21.9		ug/L		109	76 - 123
trans-1,2-Dichloroethene	20.0	20.7		ug/L		104	75 - 124
Trichloroethene	20.0	21.0		ug/L		105	70 - 122
Vinyl chloride	20.0	14.9		ug/L		75	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	105		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-167012-E-7 MSD
Matrix: Water
Analysis Batch: 528862

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
cis-1,2-Dichloroethene	1.0	U	20.0	21.8		ug/L		109	66 - 128	1	14
trans-1,2-Dichloroethene	1.0	U	20.0	21.9		ug/L		110	56 - 136	2	15
Trichloroethene	1.0	U	20.0	21.0		ug/L		105	61 - 124	4	15
Vinyl chloride	1.4		20.0	16.8		ug/L		77	43 - 157	5	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	106		56 - 136
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

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QC Sample Results

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

Job ID: 240-167154-1

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

Lab Sample ID: 240-167012-H-7 MS

Matrix: Water

Analysis Batch: 528862

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
cis-1,2-Dichloroethene	1.0	U	20.0	21.5		ug/L		107	66 - 128
trans-1,2-Dichloroethene	1.0	U	20.0	22.4		ug/L		112	56 - 136
Trichloroethene	1.0	U	20.0	21.9		ug/L		110	61 - 124
Vinyl chloride	1.4		20.0	15.9		ug/L		72	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	107		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: MB 240-528896/8

Matrix: Water

Analysis Batch: 528896

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	0.49	ug/L			06/02/22 13:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 13:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 13:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 13:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 13:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/02/22 13:52	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	83		62 - 137		06/02/22 13:52	1
4-Bromofluorobenzene (Surr)	85		56 - 136		06/02/22 13:52	1
Toluene-d8 (Surr)	81		78 - 122		06/02/22 13:52	1
Dibromofluoromethane (Surr)	93		73 - 120		06/02/22 13:52	1

Lab Sample ID: LCS 240-528896/5

Matrix: Water

Analysis Batch: 528896

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
		Added	Result				
1,1-Dichloroethene	20.0	18.7		ug/L		93	63 - 134
cis-1,2-Dichloroethene	20.0	19.9		ug/L		99	77 - 123
Tetrachloroethene	20.0	20.6		ug/L		103	76 - 123
trans-1,2-Dichloroethene	20.0	20.1		ug/L		100	75 - 124
Trichloroethene	20.0	21.3		ug/L		107	70 - 122
Vinyl chloride	20.0	17.7		ug/L		88	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	77		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	81		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

QC Sample Results

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

Job ID: 240-167154-1

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

Lab Sample ID: 240-166988-A-25 MS
Matrix: Water
Analysis Batch: 528896

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
cis-1,2-Dichloroethene	320		250	504		ug/L		73		66 - 128
Tetrachloroethene	13	U	250	219		ug/L		87		62 - 131
trans-1,2-Dichloroethene	13	U	250	229		ug/L		92		56 - 136
Trichloroethene	13	U	250	233		ug/L		93		61 - 124
Vinyl chloride	340		250	467		ug/L		50		43 - 157
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	80		62 - 137							
4-Bromofluorobenzene (Surr)	90		56 - 136							
Toluene-d8 (Surr)	81		78 - 122							
Dibromofluoromethane (Surr)	91		73 - 120							

Lab Sample ID: 240-166988-A-25 MSD
Matrix: Water
Analysis Batch: 528896

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
cis-1,2-Dichloroethene	320		250	555		ug/L		94		66 - 128	10	14
Tetrachloroethene	13	U	250	238		ug/L		95		62 - 131	9	20
trans-1,2-Dichloroethene	13	U	250	247		ug/L		99		56 - 136	8	15
Trichloroethene	13	U	250	257		ug/L		103		61 - 124	10	15
Vinyl chloride	340		250	499		ug/L		63		43 - 157	7	24
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	78		62 - 137									
4-Bromofluorobenzene (Surr)	89		56 - 136									
Toluene-d8 (Surr)	80		78 - 122									
Dibromofluoromethane (Surr)	92		73 - 120									

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

Lab Sample ID: MB 240-529389/4
Matrix: Water
Analysis Batch: 529389

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			06/06/22 19:33	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	108		66 - 120		06/06/22 19:33	1			

Lab Sample ID: LCS 240-529389/3
Matrix: Water
Analysis Batch: 529389

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits

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QC Sample Results

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

Job ID: 240-167154-1

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

Lab Sample ID: LCS 240-529389/3
Matrix: Water
Analysis Batch: 529389

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

	LCS	LCS	
<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

Lab Sample ID: 240-167581-C-2 MS
Matrix: Water
Analysis Batch: 529389

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

<u>Analyte</u>	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	<u>Result</u>	<u>Qualifier</u>	<u>Added</u>	<u>Result</u>	<u>Qualifier</u>				<u>Limits</u>	
1,4-Dioxane	2.5		10.0	14.7		ug/L		122		51 - 153
<u>Surrogate</u>	MS	MS								
1,2-Dichloroethane-d4 (Surr)	113		66 - 120							

Lab Sample ID: 240-167581-C-2 MSD
Matrix: Water
Analysis Batch: 529389

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

<u>Analyte</u>	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	<u>Result</u>	<u>Qualifier</u>	<u>Added</u>	<u>Result</u>	<u>Qualifier</u>				<u>Limits</u>		
1,4-Dioxane	2.5		10.0	14.4		ug/L		118		3	16
<u>Surrogate</u>	MSD	MSD									
1,2-Dichloroethane-d4 (Surr)	113		66 - 120								

QC Association Summary

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

Job ID: 240-167154-1

GC/MS VOA

Analysis Batch: 528862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167154-1	TRIP BLANK_37	Total/NA	Water	8260D	
240-167154-2	MW-03_051922	Total/NA	Water	8260D	
MB 240-528862/8	Method Blank	Total/NA	Water	8260D	
LCS 240-528862/5	Lab Control Sample	Total/NA	Water	8260D	
240-167012-E-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-167012-H-7 MS	Matrix Spike	Total/NA	Water	8260D	

Analysis Batch: 528896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167154-3	MW-45_051922	Total/NA	Water	8260D	
240-167154-4	MW-70_051922	Total/NA	Water	8260D	
240-167154-5	MW-71_052022	Total/NA	Water	8260D	
240-167154-6	MW-122_052022	Total/NA	Water	8260D	
MB 240-528896/8	Method Blank	Total/NA	Water	8260D	
LCS 240-528896/5	Lab Control Sample	Total/NA	Water	8260D	
240-166988-A-25 MS	Matrix Spike	Total/NA	Water	8260D	
240-166988-A-25 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 529389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167154-2	MW-03_051922	Total/NA	Water	8260D SIM	
240-167154-3	MW-45_051922	Total/NA	Water	8260D SIM	
240-167154-4	MW-70_051922	Total/NA	Water	8260D SIM	
240-167154-5	MW-71_052022	Total/NA	Water	8260D SIM	
240-167154-6	MW-122_052022	Total/NA	Water	8260D SIM	
MB 240-529389/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-529389/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-167581-C-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-167581-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-167154-1

Client Sample ID: TRIP BLANK_37
Date Collected: 05/19/22 00:00
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528862	06/02/22 14:22	HMB	TAL CAN

Client Sample ID: MW-03_051922
Date Collected: 05/19/22 14:36
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528862	06/02/22 14:46	HMB	TAL CAN
Total/NA	Analysis	8260D SIM		1	529389	06/06/22 21:38	CS	TAL CAN

Client Sample ID: MW-45_051922
Date Collected: 05/19/22 12:40
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528896	06/02/22 20:09	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	529389	06/06/22 22:03	CS	TAL CAN

Client Sample ID: MW-70_051922
Date Collected: 05/19/22 11:10
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528896	06/02/22 20:34	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	529389	06/06/22 22:28	CS	TAL CAN

Client Sample ID: MW-71_052022
Date Collected: 05/20/22 12:28
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528896	06/02/22 20:59	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	529389	06/06/22 22:53	CS	TAL CAN

Client Sample ID: MW-122_052022
Date Collected: 05/20/22 11:05
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167154-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528896	06/02/22 21:25	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	529389	06/06/22 23:18	CS	TAL CAN

Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

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

Job ID: 240-167154-1

Laboratory: Eurofins 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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-22-16	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



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

Regulatory program: DW NPDES RCRA Other

TestAmerica Laboratories, Inc.
COC No:

Client Project Manager: Kris Hinskey
Telephone: 269-832-7478
Site Contact: Christina Weaver
Telephone: 248-994-2329
Lab Contact: Mike DelMonico
Telephone: 330-966-9783

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: 30080642.401.03
PO # 30080642.401.03

Sampler Name: *Sara Hinde*
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	ZnAc	Tap/H2O	Upres	Other:	1,1-DCE 8260D		1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D
TRIP BLANK_37	5/19/22	—		X											X	X	X	X	X	X	X	1 Trip Blank
MW-03-051922	5/19/22	14:30		X											X	X	X	X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM
MW-45-051922	5/19/22	12:40		X											X	X	X	X	X	X	X	4
MW-70-051922	5/19/22	11:10		X											X	X	X	X	X	X	X	4
MW-71-052022	5/20/22	12:20		X											X	X	X	X	X	X	X	4
MW-122-052022	5/20/22	11:05		X											X	X	X	X	X	X	X	4

Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Injurious Unknown
 Sample Disposal (A fee may be assessed if sampled)
 Return to Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements & Comments:
 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	5/20/22 15:40	<i>[Signature]</i>	Arcadis	5/20/22 15:40
<i>[Signature]</i>	Arcadis	5/23/22 0850	<i>[Signature]</i>	EE7A	5/23/22 0850
<i>[Signature]</i>	EE7A	5/23/22 0854	<i>[Signature]</i>	EE7A	5/24/22 10:00



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


Login # : 167154

Client ARCADIS Site Name _____ Cooler unpacked by: M. A. A.
Cooler Received on 5/24/22 Opened on 5/24/22

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-13 (CF 0.0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #IR-15 (CF -0.7°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# HC157842
 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 # N/A 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) MW-03/45 (12 HCL VOA EACH) 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: _____

