eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-163386-1
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:
3/22/2022 9:28:40 AM

Michael DelMonico, Project Manager I
(330)497-9396
Michael.DelMonico@Eurofinset.com

Table of Contents

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.
S1-	Surrogate recovery exceeds control limits, low biased.
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.
¤	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

Job ID: 240-163386-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-163386-1

Comments
No additional comments.

Receipt
The samples were received on 3/8/2022 9:50 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 0.8º C and 1.3º C.

GC/MS VOA
Method 8260B SIM: The matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-519570 was above calibration range.

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: 240-163386-1

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

Sample Summary

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

Job ID: 240-163386-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-163386-1	TRIP BLANK_85	Water	03/04/22 00:00	03/08/22 09:50
240-163386-2	MW-201_030422	Water	03/04/22 09:05	03/08/22 09:50
240-163386-3	MW-201S_030422	Water	03/04/22 09:55	03/08/22 09:50
240-163386-4	MW-19_030422	Water	03/04/22 11:00	03/08/22 09:50
240-163386-5	DUP-01	Water	03/04/22 00:00	03/08/22 09:50
240-163386-6	MW-23_030422	Water	03/04/22 11:55	03/08/22 09:50

Detection Summary

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

Job ID: 240-163386-1

Client Sample ID: TRIP BLANK_85 — Lab Sample ID: 240-163386-1

No Detections.

Client Sample ID: MW-201_030422 — Lab Sample ID: 240-163386-2

No Detections.

Client Sample ID: MW-201S_030422 — Lab Sample ID: 240-163386-3

No Detections.

Client Sample ID: MW-19_030422 — Lab Sample ID: 240-163386-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	210		4.0	1.7	ug/L	2		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.54	J	1.0	0.46	ug/L	1		8260B	Total/NA
Trichloroethene	0.91	J	1.0	0.44	ug/L	1		8260B	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-163386-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.1	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	29000		1000	460	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	980	J	1000	510	ug/L	1000		8260B	Total/NA
Trichloroethene	5300		1000	440	ug/L	1000		8260B	Total/NA

Client Sample ID: MW-23_030422 — Lab Sample ID: 240-163386-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.89	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	29000		1000	460	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	910	J	1000	510	ug/L	1000		8260B	Total/NA
Trichloroethene	5400		1000	440	ug/L	1000		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-163386-1

Client Sample ID: TRIP BLANK_85

Date Collected: 03/04/22 00:00
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-1

Matrix: Water

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	0.49	ug/L			03/10/22 16:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 16:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 16:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*69*		*62 - 137*		*03/10/22 16:14*	*1*
4-Bromofluorobenzene (Surr)	*117*		*56 - 136*		*03/10/22 16:14*	*1*
Toluene-d8 (Surr)	*78*		*78 - 122*		*03/10/22 16:14*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*03/10/22 16:14*	*1*

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

Job ID: 240-163386-1

Client Sample ID: MW-201_030422

Date Collected: 03/04/22 09:05
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/10/22 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*		*03/10/22 00:05*	*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	0.49	ug/L			03/10/22 16:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 16:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 16:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*65*		*62 - 137*		*03/10/22 16:38*	*1*
4-Bromofluorobenzene (Surr)	*112*		*56 - 136*		*03/10/22 16:38*	*1*
Toluene-d8 (Surr)	*78*		*78 - 122*		*03/10/22 16:38*	*1*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*03/10/22 16:38*	*1*

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

Job ID: 240-163386-1

Client Sample ID: MW-201S_030422

Date Collected: 03/04/22 09:55
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/10/22 00:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*		*03/10/22 00:29*	*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	0.49	ug/L			03/10/22 17:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 17:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 17:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 17:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 17:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*69*		*62 - 137*		*03/10/22 17:02*	*1*
4-Bromofluorobenzene (Surr)	*115*		*56 - 136*		*03/10/22 17:02*	*1*
Toluene-d8 (Surr)	*79*		*78 - 122*		*03/10/22 17:02*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*03/10/22 17:02*	*1*

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

Job ID: 240-163386-1

Client Sample ID: MW-19_030422
Date Collected: 03/04/22 11:00
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**210**		4.0	1.7	ug/L			03/15/22 04:39	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*66 - 120*		*03/15/22 04:39*	*2*

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	0.49	ug/L			03/10/22 17:27	1
cis-1,2-Dichloroethene	**0.54**	**J**	1.0	0.46	ug/L			03/10/22 17:27	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 17:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 17:27	1
Trichloroethene	**0.91**	**J**	1.0	0.44	ug/L			03/10/22 17:27	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*68*		*62 - 137*		*03/10/22 17:27*	*1*
4-Bromofluorobenzene (Surr)	*117*		*56 - 136*		*03/10/22 17:27*	*1*
Toluene-d8 (Surr)	*80*		*78 - 122*		*03/10/22 17:27*	*1*
Dibromofluoromethane (Surr)	*92*		*73 - 120*		*03/10/22 17:27*	*1*

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

Job ID: 240-163386-1

Client Sample ID: DUP-01
Date Collected: 03/04/22 00:00
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.1**	**J**	2.0	0.86	ug/L			03/10/22 02:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*03/10/22 02:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1000	U	1000	490	ug/L			03/10/22 21:04	1000
cis-1,2-Dichloroethene	**29000**		1000	460	ug/L			03/10/22 21:04	1000
Tetrachloroethene	1000	U	1000	440	ug/L			03/10/22 21:04	1000
trans-1,2-Dichloroethene	**980**	**J**	1000	510	ug/L			03/10/22 21:04	1000
Trichloroethene	**5300**		1000	440	ug/L			03/10/22 21:04	1000
Vinyl chloride	1000	U	1000	450	ug/L			03/10/22 21:04	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*69*		*62 - 137*		*03/10/22 21:04*	*1000*
4-Bromofluorobenzene (Surr)	*114*		*56 - 136*		*03/10/22 21:04*	*1000*
Toluene-d8 (Surr)	*78*		*78 - 122*		*03/10/22 21:04*	*1000*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*03/10/22 21:04*	*1000*

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

Job ID: 240-163386-1

Client Sample ID: MW-23_030422
Date Collected: 03/04/22 11:55
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163386-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.89**	**J**	2.0	0.86	ug/L			03/10/22 02:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*66 - 120*		*03/10/22 02:29*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1000	U	1000	490	ug/L			03/10/22 21:28	1000
cis-1,2-Dichloroethene	**29000**		1000	460	ug/L			03/10/22 21:28	1000
Tetrachloroethene	1000	U	1000	440	ug/L			03/10/22 21:28	1000
trans-1,2-Dichloroethene	**910**	**J**	1000	510	ug/L			03/10/22 21:28	1000
Trichloroethene	**5400**		1000	440	ug/L			03/10/22 21:28	1000
Vinyl chloride	1000	U	1000	450	ug/L			03/10/22 21:28	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*66*		*62 - 137*		*03/10/22 21:28*	*1000*
4-Bromofluorobenzene (Surr)	*115*		*56 - 136*		*03/10/22 21:28*	*1000*
Toluene-d8 (Surr)	*79*		*78 - 122*		*03/10/22 21:28*	*1000*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*03/10/22 21:28*	*1000*

Surrogate Summary

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

Job ID: 240-163386-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-163386-1	TRIP BLANK_85	69	117	78	94
240-163386-2	MW-201_030422	65	112	78	93
240-163386-3	MW-201S_030422	69	115	79	95
240-163386-4	MW-19_030422	68	117	80	92
240-163386-5	DUP-01	69	114	78	95
240-163386-6	MW-23_030422	66	115	79	97
240-163386-6 MS	MW-23_030422	66	116	76 S1-	90
240-163386-6 MSD	MW-23_030422	64	116	78	91
LCS 240-519609/5	Lab Control Sample	66	114	78	92
MB 240-519609/8	Method Blank	68	120	79	95

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(66-120)
240-163386-2	MW-201_030422	81
240-163386-3	MW-201S_030422	81
240-163386-4	MW-19_030422	96
240-163386-5	DUP-01	82
240-163386-6	MW-23_030422	80
240-163560-C-30 MS	Matrix Spike	100
240-163560-C-30 MSD	Matrix Spike Duplicate	100
LCS 240-519570/4	Lab Control Sample	81
LCS 240-519885/3	Lab Control Sample	96
MB 240-519570/5	Method Blank	84
MB 240-519885/4	Method Blank	95

Surrogate Legend

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

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

Lab Sample ID: MB 240-519609/8
Matrix: Water
Analysis Batch: 519609

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			03/10/22 13:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 13:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 13:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 13:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 13:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 13:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*68*		*62 - 137*		*03/10/22 13:21*	*1*
4-Bromofluorobenzene (Surr)	*120*		*56 - 136*		*03/10/22 13:21*	*1*
Toluene-d8 (Surr)	*79*		*78 - 122*		*03/10/22 13:21*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*03/10/22 13:21*	*1*

Lab Sample ID: LCS 240-519609/5
Matrix: Water
Analysis Batch: 519609

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	23.9		ug/L		120	63 - 134
cis-1,2-Dichloroethene	20.0	23.9		ug/L		119	77 - 123
Tetrachloroethene	20.0	17.2		ug/L		86	76 - 123
trans-1,2-Dichloroethene	20.0	23.9		ug/L		119	75 - 124
Trichloroethene	20.0	24.5		ug/L		122	70 - 122
Vinyl chloride	20.0	16.8		ug/L		84	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*66*		*62 - 137*
4-Bromofluorobenzene (Surr)	*114*		*56 - 136*
Toluene-d8 (Surr)	*78*		*78 - 122*
Dibromofluoromethane (Surr)	*92*		*73 - 120*

Lab Sample ID: 240-163386-6 MS
Matrix: Water
Analysis Batch: 519609

Client Sample ID: MW-23_030422
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1000	U	20000	22600		ug/L		113	56 - 135
cis-1,2-Dichloroethene	29000		20000	49400		ug/L		104	66 - 128
Tetrachloroethene	1000	U	20000	15200		ug/L		76	62 - 131
trans-1,2-Dichloroethene	910	J	20000	23400		ug/L		113	56 - 136
Trichloroethene	5400		20000	27500		ug/L		111	61 - 124
Vinyl chloride	1000	U	20000	17400		ug/L		87	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*66*		*62 - 137*
4-Bromofluorobenzene (Surr)	*116*		*56 - 136*
Toluene-d8 (Surr)	*76*	*S1-*	*78 - 122*

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

Lab Sample ID: 240-163386-6 MS
Matrix: Water
Analysis Batch: 519609

Client Sample ID: MW-23_030422
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*90*		*73 - 120*

Lab Sample ID: 240-163386-6 MSD
Matrix: Water
Analysis Batch: 519609

Client Sample ID: MW-23_030422
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	1000	U	20000	22100		ug/L		111	56 - 135	2	26
cis-1,2-Dichloroethene	29000		20000	48900		ug/L		102	66 - 128	1	14
Tetrachloroethene	1000	U	20000	15300		ug/L		76	62 - 131	0	20
trans-1,2-Dichloroethene	910	J	20000	23100		ug/L		111	56 - 136	1	15
Trichloroethene	5400		20000	27200		ug/L		109	61 - 124	1	15
Vinyl chloride	1000	U	20000	19200		ug/L		96	43 - 157	10	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*64*		*62 - 137*
4-Bromofluorobenzene (Surr)	*116*		*56 - 136*
Toluene-d8 (Surr)	*78*		*78 - 122*
Dibromofluoromethane (Surr)	*91*		*73 - 120*

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

Lab Sample ID: MB 240-519570/5
Matrix: Water
Analysis Batch: 519570

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/09/22 19:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*84*		*66 - 120*		*03/09/22 19:19*	*1*

Lab Sample ID: LCS 240-519570/4
Matrix: Water
Analysis Batch: 519570

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 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*

Lab Sample ID: MB 240-519885/4
Matrix: Water
Analysis Batch: 519885

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/14/22 19:29	1

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120		03/14/22 19:29	1

Lab Sample ID: LCS 240-519885/3
Matrix: Water
Analysis Batch: 519885

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	9.71		ug/L		97	80 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		66 - 120

Lab Sample ID: 240-163560-C-30 MS
Matrix: Water
Analysis Batch: 519885

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	1.3	J	10.0	11.8		ug/L		105	51 - 153		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 120

Lab Sample ID: 240-163560-C-30 MSD
Matrix: Water
Analysis Batch: 519885

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	1.3	J	10.0	12.3		ug/L		110	51 - 153	4	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 120

QC Association Summary

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

Job ID: 240-163386-1

GC/MS VOA

Analysis Batch: 519570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163386-2	MW-201_030422	Total/NA	Water	8260B SIM	
240-163386-3	MW-201S_030422	Total/NA	Water	8260B SIM	
240-163386-5	DUP-01	Total/NA	Water	8260B SIM	
240-163386-6	MW-23_030422	Total/NA	Water	8260B SIM	
MB 240-519570/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-519570/4	Lab Control Sample	Total/NA	Water	8260B SIM	

Analysis Batch: 519609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163386-1	TRIP BLANK_85	Total/NA	Water	8260B	
240-163386-2	MW-201_030422	Total/NA	Water	8260B	
240-163386-3	MW-201S_030422	Total/NA	Water	8260B	
240-163386-4	MW-19_030422	Total/NA	Water	8260B	
240-163386-5	DUP-01	Total/NA	Water	8260B	
240-163386-6	MW-23_030422	Total/NA	Water	8260B	
MB 240-519609/8	Method Blank	Total/NA	Water	8260B	
LCS 240-519609/5	Lab Control Sample	Total/NA	Water	8260B	
240-163386-6 MS	MW-23_030422	Total/NA	Water	8260B	
240-163386-6 MSD	MW-23_030422	Total/NA	Water	8260B	

Analysis Batch: 519885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163386-4	MW-19_030422	Total/NA	Water	8260B SIM	
MB 240-519885/4	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-519885/3	Lab Control Sample	Total/NA	Water	8260B SIM	
240-163560-C-30 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-163560-C-30 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-163386-1

Client Sample ID: TRIP BLANK_85
Lab Sample ID: 240-163386-1
Date Collected: 03/04/22 00:00
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	519609	03/10/22 16:14	LEE	TAL CAN

Client Sample ID: MW-201_030422
Lab Sample ID: 240-163386-2
Date Collected: 03/04/22 09:05
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	519609	03/10/22 16:38	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 00:05	CS	TAL CAN

Client Sample ID: MW-201S_030422
Lab Sample ID: 240-163386-3
Date Collected: 03/04/22 09:55
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	519609	03/10/22 17:02	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 00:29	CS	TAL CAN

Client Sample ID: MW-19_030422
Lab Sample ID: 240-163386-4
Date Collected: 03/04/22 11:00
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	519609	03/10/22 17:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		2	519885	03/15/22 04:39	CS	TAL CAN

Client Sample ID: DUP-01
Lab Sample ID: 240-163386-5
Date Collected: 03/04/22 00:00
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	519609	03/10/22 21:04	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 02:05	CS	TAL CAN

Client Sample ID: MW-23_030422
Lab Sample ID: 240-163386-6
Date Collected: 03/04/22 11:55
Matrix: Water
Date Received: 03/08/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	519609	03/10/22 21:28	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 02:29	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: 240-163386-1

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	02-23-22 *
Connecticut	State	PH-0590	12-31-21 *
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22 *
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	11-06-22
New York	NELAP	10975	03-31-22
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	03-16-22
Oregon	NELAP	4062	03-16-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-21-14	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.

MICHIGAN
190

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Julia McClafferty	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis	Telephone: 248-994-2240	Telephone: 734-644-5131	Telephone: 330-497-9396	of COCs
Address: 28550 Cabot Drive, Suite 500	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time		For lab use only
City/State/Zip: Novi, MI, 48377	Sampler Name: Christian Garrido	TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day — 10 day		Walk-in client:
Phone: 248-994-2240	Method of Shipment/Carrier:			Lab sampling:
Project Name: Ford LTP On-Site	Shipping/Tracking No:			Job/SDG No:
Project Number: 30080642.401.03				
PO # 30080642.401.03				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	Analyses: 1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK_ES	3/4/22	—		X						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-201_030422		405		X						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-201S_030422		955		X						6					N	G	X	X	X	X	X	X	X	
MW-14_030422		1100		X						6					N	G	X	X	X	X	X	X	X	
DUP-01		—		X						6					N	G	X	X	X	X	X	X	X	
MW-23_030422		1155		X						6					N	G	X	X	X	X	X	X	X	

240-163386 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ 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

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:
Christian Garrido	Arcadis	3/4/22 1310	Novi Cold Storage	Arcadis	3/4/22 1330
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[illegible]	Arcadis	3/7/22 1240	[illegible]	EEA	3/7/22
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
[illegible]	EEA	3/7/22	[illegible]	ETNC 950	3-8-22 950

3/22/2022

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 163386**
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Tammy Royer

Cooler Received on 3-8-22 Opened on 3-8-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # 1 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-14 (CF -0.2 °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? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 60358	Yes	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

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

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : ______________

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	1.5	1.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1.0	0.8	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
			☐ See Temperature Excursion Form	

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers