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ANALYTICAL REPORT

Eurofins Canton
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Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-163393-1
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 10:09:27 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: 240-163393-1

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.
¤	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: 240-163393-1

Job ID: 240-163393-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-163393-1

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: No MS/MSD in batch 519762 due to a re-analysis needed: MW-57_030322 (240-163393-5).

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: 240-163393-1

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: 240-163393-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-163393-1	TRIP BLANK_94	Water	03/03/22 00:00	03/08/22 09:50
240-163393-2	MW-53_030322	Water	03/03/22 12:31	03/08/22 09:50
240-163393-3	MW-54S_030322	Water	03/03/22 13:51	03/08/22 09:50
240-163393-4	MW-54_030322	Water	03/03/22 15:01	03/08/22 09:50
240-163393-5	MW-57_030322	Water	03/03/22 16:31	03/08/22 09:50

Detection Summary

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

Job ID: 240-163393-1

Client Sample ID: TRIP BLANK_94 — Lab Sample ID: 240-163393-1

No Detections.

Client Sample ID: MW-53_030322 — Lab Sample ID: 240-163393-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-54S_030322 — Lab Sample ID: 240-163393-3

No Detections.

Client Sample ID: MW-54_030322 — Lab Sample ID: 240-163393-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.2		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-57_030322 — Lab Sample ID: 240-163393-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.68	J	1.0	0.45	ug/L	1		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: 240-163393-1

Client Sample ID: TRIP BLANK_94

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

Lab Sample ID: 240-163393-1

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 14:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 14:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 14:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 14:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 14:57	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*03/10/22 14:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*03/10/22 14:57*	*1*
Toluene-d8 (Surr)	*102*		*78 - 122*		*03/10/22 14:57*	*1*
Dibromofluoromethane (Surr)	*109*		*73 - 120*		*03/10/22 14:57*	*1*

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

Job ID: 240-163393-1

Client Sample ID: MW-53_030322
Date Collected: 03/03/22 12:31
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163393-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			03/10/22 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*66 - 120*		*03/10/22 03:41*	*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 15:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 15:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 15:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 15:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 15:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*03/10/22 15:45*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*03/10/22 15:45*	*1*
Toluene-d8 (Surr)	*107*		*78 - 122*		*03/10/22 15:45*	*1*
Dibromofluoromethane (Surr)	*111*		*73 - 120*		*03/10/22 15:45*	*1*

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

Job ID: 240-163393-1

Client Sample ID: MW-54S_030322
Date Collected: 03/03/22 13:51
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163393-3
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 04:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*03/10/22 04:04*	*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 16:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 16:08	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 16:08	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*03/10/22 16:08*	*1*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*		*03/10/22 16:08*	*1*
Toluene-d8 (Surr)	*103*		*78 - 122*		*03/10/22 16:08*	*1*
Dibromofluoromethane (Surr)	*112*		*73 - 120*		*03/10/22 16:08*	*1*

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

Job ID: 240-163393-1

Client Sample ID: MW-54_030322
Date Collected: 03/03/22 15:01
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163393-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.0**		2.0	0.86	ug/L			03/10/22 04:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*03/10/22 04:28*	*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 16:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 16:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 16:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 16:32	1
Vinyl chloride	**1.2**		1.0	0.45	ug/L			03/10/22 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*62 - 137*		*03/10/22 16:32*	*1*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*		*03/10/22 16:32*	*1*
Toluene-d8 (Surr)	*106*		*78 - 122*		*03/10/22 16:32*	*1*
Dibromofluoromethane (Surr)	*114*		*73 - 120*		*03/10/22 16:32*	*1*

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

Job ID: 240-163393-1

Client Sample ID: MW-57_030322
Date Collected: 03/03/22 16:31
Date Received: 03/08/22 09:50

Lab Sample ID: 240-163393-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.86	ug/L			03/14/22 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*66 - 120*		*03/14/22 19:11*	*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			03/11/22 16:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/11/22 16:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/11/22 16:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/11/22 16:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/11/22 16:00	1
Vinyl chloride	0.68	J	1.0	0.45	ug/L			03/11/22 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*03/11/22 16:00*	*1*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*		*03/11/22 16:00*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*03/11/22 16:00*	*1*
Dibromofluoromethane (Surr)	*109*		*73 - 120*		*03/11/22 16:00*	*1*

Surrogate Summary

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

Job ID: 240-163393-1

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)
240-163359-B-13 MS	Matrix Spike	105	107	109	111
240-163359-B-13 MSD	Matrix Spike Duplicate	105	114	115	113
240-163393-1	TRIP BLANK_94	106	98	102	109
240-163393-2	MW-53_030322	109	102	107	111
240-163393-3	MW-54S_030322	109	100	103	112
240-163393-4	MW-54_030322	112	103	106	114
240-163393-5	MW-57_030322	106	99	101	109
LCS 240-519638/5	Lab Control Sample	99	102	104	105
LCS 240-519762/5	Lab Control Sample	104	107	110	108
MB 240-519638/8	Method Blank	102	101	101	108
MB 240-519762/8	Method Blank	104	102	104	108

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(66-120)
240-163393-2	MW-53_030322	83
240-163393-3	MW-54S_030322	82
240-163393-4	MW-54_030322	82
240-163393-5	MW-57_030322	78
240-163560-E-5 MS	Matrix Spike	82
240-163560-E-5 MSD	Matrix Spike Duplicate	83
LCS 240-519570/4	Lab Control Sample	81
LCS 240-519881/4	Lab Control Sample	80
MB 240-519570/5	Method Blank	84
MB 240-519881/5	Method Blank	80

Surrogate Legend

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

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

Lab Sample ID: MB 240-519638/8
Matrix: Water
Analysis Batch: 519638

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 14:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/10/22 14:33	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 14:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/10/22 14:33	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/10/22 14:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/10/22 14:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*03/10/22 14:33*	*1*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*03/10/22 14:33*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*03/10/22 14:33*	*1*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*03/10/22 14:33*	*1*

Lab Sample ID: LCS 240-519638/5
Matrix: Water
Analysis Batch: 519638

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	25.0	25.3		ug/L		101	63 - 134
cis-1,2-Dichloroethene	25.0	23.8		ug/L		95	77 - 123
Tetrachloroethene	25.0	24.8		ug/L		99	76 - 123
trans-1,2-Dichloroethene	25.0	25.2		ug/L		101	75 - 124
Trichloroethene	25.0	23.9		ug/L		96	70 - 122
Vinyl chloride	25.0	23.8		ug/L		95	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*105*		*73 - 120*

Lab Sample ID: 240-163359-B-13 MS
Matrix: Water
Analysis Batch: 519638

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
cis-1,2-Dichloroethene	1300		2500	3470		ug/L		87	66 - 128
Tetrachloroethene	2600		2500	4790		ug/L		86	62 - 131
Trichloroethene	580		2500	2700		ug/L		85	61 - 124
Vinyl chloride	610		2500	2700		ug/L		83	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*
4-Bromofluorobenzene (Surr)	*107*		*56 - 136*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*111*		*73 - 120*

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

Lab Sample ID: 240-163359-B-13 MSD
Matrix: Water
Analysis Batch: 519638

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	1300		2500	3380		ug/L		83	66 - 128	3	14
Tetrachloroethene	2600		2500	4840		ug/L		88	62 - 131	1	20
Trichloroethene	580		2500	2670		ug/L		84	61 - 124	1	15
Vinyl chloride	610		2500	2820		ug/L		88	43 - 157	4	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*
4-Bromofluorobenzene (Surr)	*114*		*56 - 136*
Toluene-d8 (Surr)	*115*		*78 - 122*
Dibromofluoromethane (Surr)	*113*		*73 - 120*

Lab Sample ID: MB 240-519762/8
Matrix: Water
Analysis Batch: 519762

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			03/11/22 15:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/11/22 15:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/11/22 15:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/11/22 15:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/11/22 15:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/11/22 15:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*		*03/11/22 15:13*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*03/11/22 15:13*	*1*
Toluene-d8 (Surr)	*104*		*78 - 122*		*03/11/22 15:13*	*1*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*03/11/22 15:13*	*1*

Lab Sample ID: LCS 240-519762/5
Matrix: Water
Analysis Batch: 519762

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	25.0	26.0		ug/L		104	63 - 134
cis-1,2-Dichloroethene	25.0	24.2		ug/L		97	77 - 123
Tetrachloroethene	25.0	23.4		ug/L		94	76 - 123
trans-1,2-Dichloroethene	25.0	25.4		ug/L		101	75 - 124
Trichloroethene	25.0	23.0		ug/L		92	70 - 122
Vinyl chloride	25.0	24.0		ug/L		96	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*
4-Bromofluorobenzene (Surr)	*107*		*56 - 136*
Toluene-d8 (Surr)	*110*		*78 - 122*
Dibromofluoromethane (Surr)	*108*		*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 240-519881/5
Matrix: Water
Analysis Batch: 519881

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 18:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*66 - 120*		*03/14/22 18:24*	*1*

Lab Sample ID: LCS 240-519881/4
Matrix: Water
Analysis Batch: 519881

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	10.6		ug/L		106	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*66 - 120*

Lab Sample ID: 240-163560-E-5 MS
Matrix: Water
Analysis Batch: 519881

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	12.1		ug/L		108	51 - 153

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*

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

Lab Sample ID: 240-163560-E-5 MSD
Matrix: Water
Analysis Batch: 519881

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	12.1		ug/L		108	51 - 153	0	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*66 - 120*

GC/MS VOA

Analysis Batch: 519570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163393-2	MW-53_030322	Total/NA	Water	8260B SIM	
240-163393-3	MW-54S_030322	Total/NA	Water	8260B SIM	
240-163393-4	MW-54_030322	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: 519638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163393-1	TRIP BLANK_94	Total/NA	Water	8260B	
240-163393-2	MW-53_030322	Total/NA	Water	8260B	
240-163393-3	MW-54S_030322	Total/NA	Water	8260B	
240-163393-4	MW-54_030322	Total/NA	Water	8260B	
MB 240-519638/8	Method Blank	Total/NA	Water	8260B	
LCS 240-519638/5	Lab Control Sample	Total/NA	Water	8260B	
240-163359-B-13 MS	Matrix Spike	Total/NA	Water	8260B	
240-163359-B-13 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 519762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163393-5	MW-57_030322	Total/NA	Water	8260B	
MB 240-519762/8	Method Blank	Total/NA	Water	8260B	
LCS 240-519762/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 519881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163393-5	MW-57_030322	Total/NA	Water	8260B SIM	
MB 240-519881/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-519881/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-163560-E-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-163560-E-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-163393-1

Client Sample ID: TRIP BLANK_94
Lab Sample ID: 240-163393-1
Date Collected: 03/03/22 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	519638	03/10/22 14:57	SAM	TAL CAN

Client Sample ID: MW-53_030322
Lab Sample ID: 240-163393-2
Date Collected: 03/03/22 12:31
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	519638	03/10/22 15:45	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 03:41	CS	TAL CAN

Client Sample ID: MW-54S_030322
Lab Sample ID: 240-163393-3
Date Collected: 03/03/22 13:51
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	519638	03/10/22 16:08	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 04:04	CS	TAL CAN

Client Sample ID: MW-54_030322
Lab Sample ID: 240-163393-4
Date Collected: 03/03/22 15:01
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	519638	03/10/22 16:32	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	519570	03/10/22 04:28	CS	TAL CAN

Client Sample ID: MW-57_030322
Lab Sample ID: 240-163393-5
Date Collected: 03/03/22 16:31
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	519762	03/11/22 16:00	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	519881	03/14/22 19:11	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: 240-163393-1

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: Gary Schafer	TAT if different from below: 10 day; ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 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	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_94	—	—		X						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-53_030322	03/03/22	12:31		X						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-545_030322	03/03/22	13:51		X						6					N	G	X	X	X	X	X	X	X	
MW-54_030322	03/03/22	15:01		X						6					N	G	X	X	X	X	X	X	X	
MW-57_030322	03/03/22	16:31		X						6					N	G	X	X	X	X	X	X	X	

240-153393 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☑ Disposal By Lab ☐ Archive For ☐ Mo

Special Instructions/QC Requirements & Comments:

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

	Company	Date/Time		Company	Date/Time
Relinquished by: Gary Schafer	Arcadis	3/4/22 8:20	Received by: Novi cold storage	Arcadis	3/4/22 8:20
Relinquished by:	Company: Arcadis	Date/Time: 3/7/22 1240	Received by:	Company: EETA	Date/Time: 3/4/22
Relinquished by:	Company: EETA	Date/Time: 3/7/22	Received in Laboratory by: Tammy Porge	Company: EETDC	Date/Time: 3-8-22 950

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 240-163393-1

Login Number: 163393
List Number: 1
Creator: Royer, Tammy R

List Source: Eurofins Canton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		Refer to CRF
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		