

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-144711-1
Client Project/Site: Ford LTP - Off Site

For:
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
3/8/2021 11:02:24 AM

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

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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 - Off Site

Job ID: 240-144711-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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 - Off Site

Job ID: 240-144711-1

Job ID: 240-144711-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-144711-1

Comments

No additional comments.

Receipt

The samples were received on 2/20/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7° C.

GC/MS VOA

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

VOA Prep

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

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- 13
- 14

Method Summary

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

Job ID: 240-144711-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-144711-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144711-1	TRIP BLANK	Water	02/18/21 00:00	02/20/21 08:00	
240-144711-2	MW-84_021821	Water	02/18/21 13:41	02/20/21 08:00	
240-144711-3	MW-84S_021821	Water	02/18/21 15:11	02/20/21 08:00	
240-144711-4	MW-78S_021821	Water	02/18/21 16:46	02/20/21 08:00	

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- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-144711-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144711-1

No Detections.

Client Sample ID: MW-84_021821

Lab Sample ID: 240-144711-2

No Detections.

Client Sample ID: MW-84S_021821

Lab Sample ID: 240-144711-3

No Detections.

Client Sample ID: MW-78S_021821

Lab Sample ID: 240-144711-4

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-144711-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144711-1

Date Collected: 02/18/21 00:00

Matrix: Water

Date Received: 02/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 00:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 00:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 00:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 00:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		02/26/21 00:32	1
4-Bromofluorobenzene (Surr)	65		47 - 134		02/26/21 00:32	1
Toluene-d8 (Surr)	79		69 - 122		02/26/21 00:32	1
Dibromofluoromethane (Surr)	109		78 - 129		02/26/21 00:32	1

Client Sample Results

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

Job ID: 240-144711-1

Client Sample ID: MW-84_021821

Lab Sample ID: 240-144711-2

Date Collected: 02/18/21 13:41

Matrix: Water

Date Received: 02/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 13:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					02/26/21 13:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 00:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 00:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 00:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 00:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 00:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130					02/26/21 00:55	1
4-Bromofluorobenzene (Surr)	65		47 - 134					02/26/21 00:55	1
Toluene-d8 (Surr)	80		69 - 122					02/26/21 00:55	1
Dibromofluoromethane (Surr)	115		78 - 129					02/26/21 00:55	1

Client Sample Results

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

Job ID: 240-144711-1

Client Sample ID: MW-84S_021821

Lab Sample ID: 240-144711-3

Date Collected: 02/18/21 15:11

Matrix: Water

Date Received: 02/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 15:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133		02/26/21 15:04	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	0.19	ug/L			02/26/21 02:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 02:07	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 02:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 02:07	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 02:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 02:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		02/26/21 02:07	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/26/21 02:07	1
Toluene-d8 (Surr)	82		69 - 122		02/26/21 02:07	1
Dibromofluoromethane (Surr)	106		78 - 129		02/26/21 02:07	1

Client Sample Results

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

Job ID: 240-144711-1

Client Sample ID: MW-78S_021821

Lab Sample ID: 240-144711-4

Date Collected: 02/18/21 16:46

Matrix: Water

Date Received: 02/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 133					02/26/21 15:29	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	0.19	ug/L			02/26/21 16:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 16:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 16:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 16:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 16:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130					02/26/21 16:03	1
4-Bromofluorobenzene (Surr)	65		47 - 134					02/26/21 16:03	1
Toluene-d8 (Surr)	80		69 - 122					02/26/21 16:03	1
Dibromofluoromethane (Surr)	105		78 - 129					02/26/21 16:03	1

Surrogate Summary

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

Job ID: 240-144711-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-144710-E-5 MS	Matrix Spike	94	91	94	96
240-144710-F-5 MSD	Matrix Spike Duplicate	93	89	87	89
240-144711-1	TRIP BLANK	108	65	79	109
240-144711-2	MW-84_021821	109	65	80	115
240-144711-2 MS	MW-84-MS_021821	93	88	91	94
240-144711-2 MSD	MW-84-MSD_021821	91	92	91	92
240-144711-3	MW-84S_021821	106	68	82	106
240-144711-4	MW-78S_021821	104	65	80	105
LCS 240-474507/4	Lab Control Sample	88	88	88	91
LCS 240-474676/4	Lab Control Sample	87	93	92	89
MB 240-474507/7	Method Blank	102	68	80	101
MB 240-474676/7	Method Blank	104	68	83	102

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-144711-2	MW-84_021821	91
240-144711-2 MS	MW-84-MS_021821	85
240-144711-2 MSD	MW-84-MSD_021821	86
240-144711-3	MW-84S_021821	91
240-144711-4	MW-78S_021821	92
LCS 240-474631/4	Lab Control Sample	82
MB 240-474631/5	Method Blank	80

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144711-1

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

Lab Sample ID: MB 240-474507/7
Matrix: Water
Analysis Batch: 474507

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 17:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 17:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 17:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 17:22	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 17:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 17:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		02/25/21 17:22	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/25/21 17:22	1
Toluene-d8 (Surr)	80		69 - 122		02/25/21 17:22	1
Dibromofluoromethane (Surr)	101		78 - 129		02/25/21 17:22	1

Lab Sample ID: LCS 240-474507/4
Matrix: Water
Analysis Batch: 474507

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	9.27		ug/L		93	73 - 129
cis-1,2-Dichloroethene	10.0	9.22		ug/L		92	75 - 124
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 125
trans-1,2-Dichloroethene	10.0	9.77		ug/L		98	74 - 130
Trichloroethene	10.0	9.71		ug/L		97	71 - 121
Vinyl chloride	10.0	8.03		ug/L		80	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	88		47 - 134
Toluene-d8 (Surr)	88		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144711-2 MS
Matrix: Water
Analysis Batch: 474507

Client Sample ID: MW-84-MS_021821
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	8.83		ug/L		88	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.92		ug/L		89	68 - 121
Tetrachloroethene	1.0	U	10.0	11.2		ug/L		112	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.58		ug/L		96	69 - 126
Trichloroethene	1.0	U	10.0	9.00		ug/L		90	56 - 124
Vinyl chloride	1.0	U	10.0	8.39		ug/L		84	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 130
4-Bromofluorobenzene (Surr)	88		47 - 134
Toluene-d8 (Surr)	91		69 - 122

QC Sample Results

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

Job ID: 240-144711-1

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

Lab Sample ID: 240-144711-2 MS
Matrix: Water
Analysis Batch: 474507

Client Sample ID: MW-84-MS_021821
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	94		78 - 129

Lab Sample ID: 240-144711-2 MSD
Matrix: Water
Analysis Batch: 474507

Client Sample ID: MW-84-MSD_021821
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,1-Dichloroethene	1.0	U	10.0	9.03		ug/L		90	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.44		ug/L		94	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	11.3		ug/L		113	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.55		ug/L		96	69 - 126	0	35
Trichloroethene	1.0	U	10.0	9.26		ug/L		93	56 - 124	3	35
Vinyl chloride	1.0	U	10.0	8.55		ug/L		86	49 - 136	2	35

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	91		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	92		47 - 134
<i>Toluene-d8 (Surr)</i>	91		69 - 122
<i>Dibromofluoromethane (Surr)</i>	92		78 - 129

Lab Sample ID: MB 240-474676/7
Matrix: Water
Analysis Batch: 474676

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 15:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 15:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 15:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 15:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 15:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 15:39	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	104		75 - 130		02/26/21 15:39	1
<i>4-Bromofluorobenzene (Surr)</i>	68		47 - 134		02/26/21 15:39	1
<i>Toluene-d8 (Surr)</i>	83		69 - 122		02/26/21 15:39	1
<i>Dibromofluoromethane (Surr)</i>	102		78 - 129		02/26/21 15:39	1

Lab Sample ID: LCS 240-474676/4
Matrix: Water
Analysis Batch: 474676

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,1-Dichloroethene	10.0	9.57		ug/L		96	73 - 129
cis-1,2-Dichloroethene	10.0	9.15		ug/L		91	75 - 124
Tetrachloroethene	10.0	12.0		ug/L		120	70 - 125
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	74 - 130
Trichloroethene	10.0	9.71		ug/L		97	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144711-1

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

Lab Sample ID: LCS 240-474676/4
Matrix: Water
Analysis Batch: 474676

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	8.29		ug/L		83	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	87		75 - 130				
4-Bromofluorobenzene (Surr)	93		47 - 134				
Toluene-d8 (Surr)	92		69 - 122				
Dibromofluoromethane (Surr)	89		78 - 129				

Lab Sample ID: 240-144710-E-5 MS
Matrix: Water
Analysis Batch: 474676

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	8.98		ug/L		90	64 - 132
cis-1,2-Dichloroethene	4.2		10.0	13.3		ug/L		91	68 - 121
Tetrachloroethene	1.0	U	10.0	10.6		ug/L		106	52 - 129
trans-1,2-Dichloroethene	0.64	J	10.0	10.4		ug/L		98	69 - 126
Trichloroethene	1.0	U	10.0	9.13		ug/L		91	56 - 124
Vinyl chloride	14		10.0	20.4		ug/L		69	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	94		75 - 130						
4-Bromofluorobenzene (Surr)	91		47 - 134						
Toluene-d8 (Surr)	94		69 - 122						
Dibromofluoromethane (Surr)	96		78 - 129						

Lab Sample ID: 240-144710-F-5 MSD
Matrix: Water
Analysis Batch: 474676

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.48		ug/L		95	64 - 132	5	35
cis-1,2-Dichloroethene	4.2		10.0	12.9		ug/L		87	68 - 121	3	35
Tetrachloroethene	1.0	U	10.0	10.9		ug/L		109	52 - 129	2	35
trans-1,2-Dichloroethene	0.64	J	10.0	10.3		ug/L		96	69 - 126	1	35
Trichloroethene	1.0	U	10.0	9.48		ug/L		95	56 - 124	4	35
Vinyl chloride	14		10.0	20.5		ug/L		70	49 - 136	1	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	93		75 - 130								
4-Bromofluorobenzene (Surr)	89		47 - 134								
Toluene-d8 (Surr)	87		69 - 122								
Dibromofluoromethane (Surr)	89		78 - 129								

QC Sample Results

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

Job ID: 240-144711-1

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

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

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/21 10:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133					02/26/21 10:51	1

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

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.80		ug/L		98	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	82		70 - 133				

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

Client Sample ID: MW-84-MS_021821
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	9.26		ug/L		93	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	85		70 - 133						

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

Client Sample ID: MW-84-MSD_021821
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	9.91		ug/L		99	46 - 170	7	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	86		70 - 133								

QC Association Summary

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

Job ID: 240-144711-1

GC/MS VOA

Analysis Batch: 474507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144711-1	TRIP BLANK	Total/NA	Water	8260B	
240-144711-2	MW-84_021821	Total/NA	Water	8260B	
240-144711-3	MW-84S_021821	Total/NA	Water	8260B	
MB 240-474507/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474507/4	Lab Control Sample	Total/NA	Water	8260B	
240-144711-2 MS	MW-84-MS_021821	Total/NA	Water	8260B	
240-144711-2 MSD	MW-84-MSD_021821	Total/NA	Water	8260B	

Analysis Batch: 474631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144711-2	MW-84_021821	Total/NA	Water	8260B SIM	
240-144711-3	MW-84S_021821	Total/NA	Water	8260B SIM	
240-144711-4	MW-78S_021821	Total/NA	Water	8260B SIM	
MB 240-474631/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474631/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144711-2 MS	MW-84-MS_021821	Total/NA	Water	8260B SIM	
240-144711-2 MSD	MW-84-MSD_021821	Total/NA	Water	8260B SIM	

Analysis Batch: 474676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144711-4	MW-78S_021821	Total/NA	Water	8260B	
MB 240-474676/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474676/4	Lab Control Sample	Total/NA	Water	8260B	
240-144710-E-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-144710-F-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144711-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144711-1

Date Collected: 02/18/21 00:00

Matrix: Water

Date Received: 02/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474507	02/26/21 00:32	LRW	TAL CAN

Client Sample ID: MW-84_021821

Lab Sample ID: 240-144711-2

Date Collected: 02/18/21 13:41

Matrix: Water

Date Received: 02/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474507	02/26/21 00:55	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 13:48	SAM	TAL CAN

Client Sample ID: MW-84S_021821

Lab Sample ID: 240-144711-3

Date Collected: 02/18/21 15:11

Matrix: Water

Date Received: 02/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474507	02/26/21 02:07	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 15:04	SAM	TAL CAN

Client Sample ID: MW-78S_021821

Lab Sample ID: 240-144711-4

Date Collected: 02/18/21 16:46

Matrix: Water

Date Received: 02/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474676	02/26/21 16:03	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474631	02/26/21 15:29	SAM	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

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

Job ID: 240-144711-1

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21 *
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21 *
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 144711

Client Arcadis Site Name _____

Cooler unpacked by: _____

Cooler Received on 2-20-21 Opened on 2-20-21

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.7 °C
 IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C


2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No
 If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials?  ← Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____