

ANALYTICAL REPORT

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

Laboratory Job ID: 240-149703-1
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:
6/3/2021 2:44:55 PM

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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: 240-149703-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 240-149703-1

Job ID: 240-149703-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-149703-1

Comments

No additional comments.

Receipt

The samples were received on 5/19/2021 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 2.8° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

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

Job ID: 240-149703-1

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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- 13
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Sample Summary

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

Job ID: 240-149703-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149703-1	TRIP BLANK_108	Water	05/17/21 00:00	05/19/21 08:00	
240-149703-2	MW-79D_051721	Water	05/17/21 11:41	05/19/21 08:00	
240-149703-3	DUP-14	Water	05/17/21 00:00	05/19/21 08:00	
240-149703-4	MW-79SR_051721	Water	05/17/21 12:42	05/19/21 08:00	
240-149703-5	MW-141S_051721	Water	05/17/21 13:31	05/19/21 08:00	

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Detection Summary

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

Job ID: 240-149703-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-149703-1

No Detections.

Client Sample ID: MW-79D_051721

Lab Sample ID: 240-149703-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.0		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: DUP-14

Lab Sample ID: 240-149703-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.0		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-79SR_051721

Lab Sample ID: 240-149703-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.86	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-141S_051721

Lab Sample ID: 240-149703-5

No Detections.

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: 240-149703-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-149703-1

Date Collected: 05/17/21 00:00

Matrix: Water

Date Received: 05/19/21 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			05/27/21 14:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 14:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 14:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 14:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 14:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 14:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		05/27/21 14:48	1
4-Bromofluorobenzene (Surr)	94		47 - 134		05/27/21 14:48	1
Toluene-d8 (Surr)	100		69 - 122		05/27/21 14:48	1
Dibromofluoromethane (Surr)	110		78 - 129		05/27/21 14:48	1

Client Sample Results

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

Job ID: 240-149703-1

Client Sample ID: MW-79D_051721

Lab Sample ID: 240-149703-2

Date Collected: 05/17/21 11:41

Matrix: Water

Date Received: 05/19/21 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			05/25/21 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		05/25/21 16:34	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			05/27/21 19:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 19:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 19:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 19:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 19:25	1
Vinyl chloride	2.0		1.0	0.20	ug/L			05/27/21 19:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130		05/27/21 19:25	1
4-Bromofluorobenzene (Surr)	101		47 - 134		05/27/21 19:25	1
Toluene-d8 (Surr)	103		69 - 122		05/27/21 19:25	1
Dibromofluoromethane (Surr)	113		78 - 129		05/27/21 19:25	1

Client Sample Results

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

Job ID: 240-149703-1

Client Sample ID: DUP-14
Date Collected: 05/17/21 00:00
Date Received: 05/19/21 08:00

Lab Sample ID: 240-149703-3
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			05/25/21 16:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133					05/25/21 16:59	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			05/27/21 19:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 19:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 19:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 19:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 19:48	1
Vinyl chloride	2.0		1.0	0.20	ug/L			05/27/21 19:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 130					05/27/21 19:48	1
4-Bromofluorobenzene (Surr)	97		47 - 134					05/27/21 19:48	1
Toluene-d8 (Surr)	102		69 - 122					05/27/21 19:48	1
Dibromofluoromethane (Surr)	111		78 - 129					05/27/21 19:48	1

Client Sample Results

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

Job ID: 240-149703-1

Client Sample ID: MW-79SR_051721

Lab Sample ID: 240-149703-4

Date Collected: 05/17/21 12:42

Matrix: Water

Date Received: 05/19/21 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			05/25/21 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		05/25/21 17:24	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			05/27/21 20:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 20:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 20:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 20:11	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 20:11	1
Vinyl chloride	0.86	J	1.0	0.20	ug/L			05/27/21 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 130		05/27/21 20:11	1
4-Bromofluorobenzene (Surr)	99		47 - 134		05/27/21 20:11	1
Toluene-d8 (Surr)	103		69 - 122		05/27/21 20:11	1
Dibromofluoromethane (Surr)	115		78 - 129		05/27/21 20:11	1

Client Sample Results

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

Job ID: 240-149703-1

Client Sample ID: MW-141S_051721

Lab Sample ID: 240-149703-5

Date Collected: 05/17/21 13:31

Matrix: Water

Date Received: 05/19/21 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			05/25/21 17:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					05/25/21 17:48	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			05/27/21 20:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 20:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 20:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 20:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 20:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 20:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130					05/27/21 20:34	1
4-Bromofluorobenzene (Surr)	98		47 - 134					05/27/21 20:34	1
Toluene-d8 (Surr)	105		69 - 122					05/27/21 20:34	1
Dibromofluoromethane (Surr)	116		78 - 129					05/27/21 20:34	1

Surrogate Summary

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

Job ID: 240-149703-1

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)
240-149697-F-4 MS	Matrix Spike	107	106	105	106
240-149697-F-4 MSD	Matrix Spike Duplicate	104	107	105	107
240-149703-1	TRIP BLANK_108	108	94	100	110
240-149703-2	MW-79D_051721	111	101	103	113
240-149703-3	DUP-14	114	97	102	111
240-149703-4	MW-79SR_051721	118	99	103	115
240-149703-5	MW-141S_051721	115	98	105	116
LCS 240-487854/5	Lab Control Sample	105	108	108	107
MB 240-487854/7	Method Blank	109	98	101	111

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)
240-149630-G-3 MS	Matrix Spike	85
240-149630-M-3 MSD	Matrix Spike Duplicate	86
240-149703-2	MW-79D_051721	84
240-149703-3	DUP-14	84
240-149703-4	MW-79SR_051721	84
240-149703-5	MW-141S_051721	85
LCS 240-487432/4	Lab Control Sample	82
MB 240-487432/5	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-149703-1

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

Lab Sample ID: MB 240-487854/7
Matrix: Water
Analysis Batch: 487854

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			05/27/21 13:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 13:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 13:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 13:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 13:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 13:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		05/27/21 13:39	1
4-Bromofluorobenzene (Surr)	98		47 - 134		05/27/21 13:39	1
Toluene-d8 (Surr)	101		69 - 122		05/27/21 13:39	1
Dibromofluoromethane (Surr)	111		78 - 129		05/27/21 13:39	1

Lab Sample ID: LCS 240-487854/5
Matrix: Water
Analysis Batch: 487854

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	28.8		ug/L		115	73 - 129
cis-1,2-Dichloroethene	25.0	26.9		ug/L		108	75 - 124
Tetrachloroethene	25.0	26.3		ug/L		105	70 - 125
trans-1,2-Dichloroethene	25.0	27.7		ug/L		111	74 - 130
Trichloroethene	25.0	26.4		ug/L		105	71 - 121
Vinyl chloride	25.0	26.4		ug/L		105	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		75 - 130
4-Bromofluorobenzene (Surr)	108		47 - 134
Toluene-d8 (Surr)	108		69 - 122
Dibromofluoromethane (Surr)	107		78 - 129

Lab Sample ID: 240-149697-F-4 MS
Matrix: Water
Analysis Batch: 487854

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	13	U	313	344		ug/L		110	64 - 132
cis-1,2-Dichloroethene	330		313	653		ug/L		105	68 - 121
Tetrachloroethene	13	U	313	311		ug/L		100	52 - 129
trans-1,2-Dichloroethene	92		313	424		ug/L		106	69 - 126
Trichloroethene	400		313	700		ug/L		97	56 - 124
Vinyl chloride	13	U	313	303		ug/L		97	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		75 - 130
4-Bromofluorobenzene (Surr)	106		47 - 134
Toluene-d8 (Surr)	105		69 - 122

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QC Sample Results

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

Job ID: 240-149703-1

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

Lab Sample ID: 240-149697-F-4 MS
Matrix: Water
Analysis Batch: 487854

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	106		78 - 129

Lab Sample ID: 240-149697-F-4 MSD
Matrix: Water
Analysis Batch: 487854

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	13	U	313	340		ug/L		109	64 - 132	1	35
cis-1,2-Dichloroethene	330		313	648		ug/L		103	68 - 121	1	35
Tetrachloroethene	13	U	313	307		ug/L		98	52 - 129	1	35
trans-1,2-Dichloroethene	92		313	419		ug/L		105	69 - 126	1	35
Trichloroethene	400		313	703		ug/L		97	56 - 124	0	35
Vinyl chloride	13	U	313	310		ug/L		99	49 - 136	2	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	107		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	107		78 - 129

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

Lab Sample ID: MB 240-487432/5
Matrix: Water
Analysis Batch: 487432

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			05/25/21 14:06	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		05/25/21 14:06	1			

Lab Sample ID: LCS 240-487432/4
Matrix: Water
Analysis Batch: 487432

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	10.1		ug/L		101	80 - 135

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 133

Lab Sample ID: 240-149630-G-3 MS
Matrix: Water
Analysis Batch: 487432

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	2.2		10.0	13.3		ug/L		111	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149703-1

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133

Lab Sample ID: 240-149630-M-3 MSD
Matrix: Water
Analysis Batch: 487432

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
1,4-Dioxane	2.2		10.0	13.2		ug/L		110	46 - 170	1	26

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	86		70 - 133

- 1
- 2
- 3
- 4
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- 12
- 13
- 14

QC Association Summary

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

Job ID: 240-149703-1

GC/MS VOA

Analysis Batch: 487432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149703-2	MW-79D_051721	Total/NA	Water	8260B SIM	
240-149703-3	DUP-14	Total/NA	Water	8260B SIM	
240-149703-4	MW-79SR_051721	Total/NA	Water	8260B SIM	
240-149703-5	MW-141S_051721	Total/NA	Water	8260B SIM	
MB 240-487432/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487432/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149630-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149630-M-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 487854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149703-1	TRIP BLANK_108	Total/NA	Water	8260B	
240-149703-2	MW-79D_051721	Total/NA	Water	8260B	
240-149703-3	DUP-14	Total/NA	Water	8260B	
240-149703-4	MW-79SR_051721	Total/NA	Water	8260B	
240-149703-5	MW-141S_051721	Total/NA	Water	8260B	
MB 240-487854/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487854/5	Lab Control Sample	Total/NA	Water	8260B	
240-149697-F-4 MS	Matrix Spike	Total/NA	Water	8260B	
240-149697-F-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-149703-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-149703-1

Date Collected: 05/17/21 00:00

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487854	05/27/21 14:48	SAM	TAL CAN

Client Sample ID: MW-79D_051721

Lab Sample ID: 240-149703-2

Date Collected: 05/17/21 11:41

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487854	05/27/21 19:25	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 16:34	CS	TAL CAN

Client Sample ID: DUP-14

Lab Sample ID: 240-149703-3

Date Collected: 05/17/21 00:00

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487854	05/27/21 19:48	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 16:59	CS	TAL CAN

Client Sample ID: MW-79SR_051721

Lab Sample ID: 240-149703-4

Date Collected: 05/17/21 12:42

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487854	05/27/21 20:11	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 17:24	CS	TAL CAN

Client Sample ID: MW-141S_051721

Lab Sample ID: 240-149703-5

Date Collected: 05/17/21 13:31

Matrix: Water

Date Received: 05/19/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487854	05/27/21 20:34	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487432	05/25/21 17:48	CS	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: 240-149703-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
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	03-31-22
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.



6-17-20

Chain of Custody Record

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

MICHIGAN
190

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
 Telephone: 248-994-2240
 Email: kristoffer.hinskey@arcadis.com

Site Contact: Julia McClafferty
 Telephone: 734-644-5131

TestAmerica Laboratories, Inc.
COC No: 1 of 1 COCs

Company Name: Arcadis
 Address: 28550 Cahot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford LTP Off-Site
 Project Number: 30080642.402.04
 PO # 30080642.402.04

Sampler Name: ALLYSON HARTZ
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite C / Grab = G	Analytes							Sample Specific Notes / Special Instructions:				
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl			NaOH	ZnAc	Capres	Other:	1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B		PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM
TRIP BLANK_108	---	---	X																					1 Trip Blank
MW-790_051721	5/17/21	11:41	X																					3 VOAs for 8260B 3 VOAs for 8260B SIM
DUP-14	5/17/21	---	X																					
MW-79SR_051721	5/17/21	12:42	X																					
MW-141S_051721	5/17/21	13:31	X																					



Possible Hazard Identification
 Non-Hazard Irritant Corrosive Flammable Toxic Other

Special Instructions/QC Requirements & Comments:
 Return to Client Disposal By Lab Archive for _____ Months

Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>AWMB</i>	Arcadis	5/17/21 1400	NOVICY GOLD STORAGE	ARCAOIS	5/17/21 1600
<i>Cheryl Hartz</i>	ARCAOIS	5/18/21	<i>Edward Bultman</i>	ETA	5/18/21 945
<i>Edward Bultman</i>	ETA	5/18/21 1028	<i>Jan Du</i>	ETA	5-19-21 900



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 149903

Canton Facility

Client Arcadis Site Name

Cooler unpacked by: Trent C

Cooler Received on 6-19-21 Opened on 5-20-21

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
IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 2.8 °C
IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 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# HC022887
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 # Lot covered 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:

1

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: