

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-159307-1
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:
11/18/2021 3:19:29 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: 240-159307-1

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: 240-159307-1

Job ID: 240-159307-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-159307-1

Comments

No additional comments.

Receipt

The samples were received on 11/4/2021 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 1.0° 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: 240-159307-1

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
- 14

Sample Summary

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

Job ID: 240-159307-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-159307-1	TRIP BLANK_29	Water	11/02/21 00:00	11/04/21 08:00
240-159307-2	MW-142S_110221	Water	11/02/21 12:00	11/04/21 08:00
240-159307-3	MW-132S_110221	Water	11/02/21 14:00	11/04/21 08:00
240-159307-4	MW-131S_110221	Water	11/02/21 15:40	11/04/21 08:00
240-159307-5	DUP-12	Water	11/02/21 00:00	11/04/21 08:00

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- 12
- 13
- 14

Detection Summary

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

Job ID: 240-159307-1

Client Sample ID: TRIP BLANK_29

Lab Sample ID: 240-159307-1

No Detections.

Client Sample ID: MW-142S_110221

Lab Sample ID: 240-159307-2

No Detections.

Client Sample ID: MW-132S_110221

Lab Sample ID: 240-159307-3

No Detections.

Client Sample ID: MW-131S_110221

Lab Sample ID: 240-159307-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.53	J	1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: DUP-12

Lab Sample ID: 240-159307-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.51	J	1.0	0.45	ug/L	1		8260B	Total/NA

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: 240-159307-1

Client Sample ID: TRIP BLANK_29

Lab Sample ID: 240-159307-1

Date Collected: 11/02/21 00:00

Matrix: Water

Date Received: 11/04/21 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	0.49	ug/L			11/11/21 15:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 15:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 15:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 15:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 15:18	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 15:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		62 - 137		11/11/21 15:18	1
4-Bromofluorobenzene (Surr)	70		56 - 136		11/11/21 15:18	1
Toluene-d8 (Surr)	90		78 - 122		11/11/21 15:18	1
Dibromofluoromethane (Surr)	106		73 - 120		11/11/21 15:18	1

Client Sample Results

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

Job ID: 240-159307-1

Client Sample ID: MW-142S_110221

Lab Sample ID: 240-159307-2

Date Collected: 11/02/21 12:00

Matrix: Water

Date Received: 11/04/21 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			11/10/21 22:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		66 - 120		11/10/21 22:10	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			11/11/21 15:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 15:40	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 15:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 15:40	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 15:40	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 15:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		62 - 137		11/11/21 15:40	1
4-Bromofluorobenzene (Surr)	72		56 - 136		11/11/21 15:40	1
Toluene-d8 (Surr)	89		78 - 122		11/11/21 15:40	1
Dibromofluoromethane (Surr)	107		73 - 120		11/11/21 15:40	1

Client Sample Results

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

Job ID: 240-159307-1

Client Sample ID: MW-132S_110221

Lab Sample ID: 240-159307-3

Date Collected: 11/02/21 14:00

Matrix: Water

Date Received: 11/04/21 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			11/10/21 22:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		66 - 120		11/10/21 22:34	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	0.49	ug/L			11/11/21 16:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 16:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 16:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		62 - 137		11/11/21 16:02	1
4-Bromofluorobenzene (Surr)	70		56 - 136		11/11/21 16:02	1
Toluene-d8 (Surr)	89		78 - 122		11/11/21 16:02	1
Dibromofluoromethane (Surr)	107		73 - 120		11/11/21 16:02	1

Client Sample Results

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

Job ID: 240-159307-1

Client Sample ID: MW-131S_110221

Lab Sample ID: 240-159307-4

Date Collected: 11/02/21 15:40

Matrix: Water

Date Received: 11/04/21 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			11/10/21 22:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		66 - 120		11/10/21 22:57	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			11/11/21 16:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 16:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 16:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:24	1
Vinyl chloride	0.53	J	1.0	0.45	ug/L			11/11/21 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		62 - 137		11/11/21 16:24	1
4-Bromofluorobenzene (Surr)	73		56 - 136		11/11/21 16:24	1
Toluene-d8 (Surr)	89		78 - 122		11/11/21 16:24	1
Dibromofluoromethane (Surr)	107		73 - 120		11/11/21 16:24	1

Client Sample Results

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

Job ID: 240-159307-1

Client Sample ID: DUP-12

Lab Sample ID: 240-159307-5

Date Collected: 11/02/21 00:00

Matrix: Water

Date Received: 11/04/21 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			11/10/21 23:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		66 - 120		11/10/21 23:21	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			11/11/21 16:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 16:46	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 16:46	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 16:46	1
Vinyl chloride	0.51	J	1.0	0.45	ug/L			11/11/21 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	123		62 - 137		11/11/21 16:46	1
4-Bromofluorobenzene (Surr)	70		56 - 136		11/11/21 16:46	1
Toluene-d8 (Surr)	89		78 - 122		11/11/21 16:46	1
Dibromofluoromethane (Surr)	111		73 - 120		11/11/21 16:46	1

Surrogate Summary

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

Job ID: 240-159307-1

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 (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-159307-1	TRIP BLANK_29	122	70	90	106
240-159307-2	MW-142S_110221	121	72	89	107
240-159307-3	MW-132S_110221	122	70	89	107
240-159307-4	MW-131S_110221	120	73	89	107
240-159307-5	DUP-12	123	70	89	111
240-159310-H-2 MS	Matrix Spike	103	98	103	94
240-159310-K-2 MSD	Matrix Spike Duplicate	103	96	102	92
LCS 240-512503/4	Lab Control Sample	102	94	101	93
MB 240-512503/7	Method Blank	114	77	90	98

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
		(66-120)
240-159307-2	MW-142S_110221	85
240-159307-3	MW-132S_110221	85
240-159307-4	MW-131S_110221	83
240-159307-5	DUP-12	85
240-159310-G-2 MS	Matrix Spike	84
240-159310-M-2 MSD	Matrix Spike Duplicate	84
LCS 240-512369/6	Lab Control Sample	85
MB 240-512369/5	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: 240-159307-1

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

Lab Sample ID: MB 240-512503/7
Matrix: Water
Analysis Batch: 512503

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/11/21 13:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 13:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 13:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 13:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 13:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 13:07	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	114		62 - 137		11/11/21 13:07	1
4-Bromofluorobenzene (Surr)	77		56 - 136		11/11/21 13:07	1
Toluene-d8 (Surr)	90		78 - 122		11/11/21 13:07	1
Dibromofluoromethane (Surr)	98		73 - 120		11/11/21 13:07	1

Lab Sample ID: LCS 240-512503/4
Matrix: Water
Analysis Batch: 512503

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	8.54		ug/L		85	63 - 134
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	77 - 123
Tetrachloroethene	10.0	9.61		ug/L		96	76 - 123
trans-1,2-Dichloroethene	10.0	11.3		ug/L		113	75 - 124
Trichloroethene	10.0	9.58		ug/L		96	70 - 122
Vinyl chloride	10.0	8.69		ug/L		87	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	93		73 - 120

Lab Sample ID: 240-159310-H-2 MS
Matrix: Water
Analysis Batch: 512503

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	8.69		ug/L		87	56 - 135
cis-1,2-Dichloroethene	1.0	U	10.0	9.70		ug/L		97	66 - 128
Tetrachloroethene	1.0	U	10.0	8.74		ug/L		87	62 - 131
trans-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	56 - 136
Trichloroethene	1.0	U	10.0	8.43		ug/L		84	61 - 124
Vinyl chloride	1.0	U	10.0	8.11		ug/L		81	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	103		78 - 122

QC Sample Results

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

Job ID: 240-159307-1

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

Lab Sample ID: 240-159310-H-2 MS
Matrix: Water
Analysis Batch: 512503

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-159310-K-2 MSD
Matrix: Water
Analysis Batch: 512503

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	8.78		ug/L		88	56 - 135	1	26
cis-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	66 - 128	3	14
Tetrachloroethene	1.0	U	10.0	8.65		ug/L		86	62 - 131	1	20
trans-1,2-Dichloroethene	1.0	U	10.0	10.2		ug/L		102	56 - 136	1	15
Trichloroethene	1.0	U	10.0	8.58		ug/L		86	61 - 124	2	15
Vinyl chloride	1.0	U	10.0	8.51		ug/L		85	43 - 157	5	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

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

Lab Sample ID: MB 240-512369/5
Matrix: Water
Analysis Batch: 512369

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			11/10/21 19:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		66 - 120		11/10/21 19:46	1

Lab Sample ID: LCS 240-512369/6
Matrix: Water
Analysis Batch: 512369

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	9.53		ug/L		95	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		66 - 120

Lab Sample ID: 240-159310-G-2 MS
Matrix: Water
Analysis Batch: 512369

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	2.0	U F1	10.0	9.69		ug/L		97	51 - 153

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-159307-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	84		66 - 120

Lab Sample ID: 240-159310-M-2 MSD
Matrix: Water
Analysis Batch: 512369

Client Sample ID: Matrix Spike Duplicate
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>
1,4-Dioxane	2.0	U F1	10.0	9.59		ug/L		96	51 - 153	1	16

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	84		66 - 120



QC Association Summary

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

Job ID: 240-159307-1

GC/MS VOA

Analysis Batch: 512369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159307-2	MW-142S_110221	Total/NA	Water	8260B SIM	
240-159307-3	MW-132S_110221	Total/NA	Water	8260B SIM	
240-159307-4	MW-131S_110221	Total/NA	Water	8260B SIM	
240-159307-5	DUP-12	Total/NA	Water	8260B SIM	
MB 240-512369/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-512369/6	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159310-G-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-159310-M-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 512503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159307-1	TRIP BLANK_29	Total/NA	Water	8260B	
240-159307-2	MW-142S_110221	Total/NA	Water	8260B	
240-159307-3	MW-132S_110221	Total/NA	Water	8260B	
240-159307-4	MW-131S_110221	Total/NA	Water	8260B	
240-159307-5	DUP-12	Total/NA	Water	8260B	
MB 240-512503/7	Method Blank	Total/NA	Water	8260B	
LCS 240-512503/4	Lab Control Sample	Total/NA	Water	8260B	
240-159310-H-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-159310-K-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-159307-1

Client Sample ID: TRIP BLANK_29

Lab Sample ID: 240-159307-1

Date Collected: 11/02/21 00:00

Matrix: Water

Date Received: 11/04/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512503	11/11/21 15:18	LEE	TAL CAN

Client Sample ID: MW-142S_110221

Lab Sample ID: 240-159307-2

Date Collected: 11/02/21 12:00

Matrix: Water

Date Received: 11/04/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512503	11/11/21 15:40	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512369	11/10/21 22:10	CS	TAL CAN

Client Sample ID: MW-132S_110221

Lab Sample ID: 240-159307-3

Date Collected: 11/02/21 14:00

Matrix: Water

Date Received: 11/04/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512503	11/11/21 16:02	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512369	11/10/21 22:34	CS	TAL CAN

Client Sample ID: MW-131S_110221

Lab Sample ID: 240-159307-4

Date Collected: 11/02/21 15:40

Matrix: Water

Date Received: 11/04/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512503	11/11/21 16:24	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512369	11/10/21 22:57	CS	TAL CAN

Client Sample ID: DUP-12

Lab Sample ID: 240-159307-5

Date Collected: 11/02/21 00:00

Matrix: Water

Date Received: 11/04/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512503	11/11/21 16:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512369	11/10/21 23:21	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: 240-159307-1

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	06-30-22
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	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
Address: 28550 Cabot 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

Client Project Manager: Kris Hinskey
Site Contact: Julia McClafferty
Telephone: 248-994-2240
Telephone: 734-644-5131
Email: krisoffer.hinskey@arcadis.com

Lab Contact: Mike DeMonico
Telephone: 330-497-9396

Sampler Name: CHRISTINA WEAVER
SAM HINDLE
Method of Shipment/Carrier:
Shipping/Tracking No:

Analysis Turnaround Time
TAT if different from below
10 day
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite C / Grab G	1-DCE 8260B	CS-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:
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl										
TRIP BLANK_29	---	---	X																	1 Trip Blank
MW-1425_110221	11/2/21	1200	6																	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-1325_110221	11/2/21	1400	6																	
MW-1315_110221	11/2/21	1540	6																	
DUP-12	11/2/21	---	6																	

Possible Hazard Identification
 Non-Hazard Flammable Irritant Corrosive

Special Instructions/OC Requirements & Comments:
Submit all results through Cadena at jtomalia@cadena.com. Cadena #E203631
Level IV Reporting requested

Received by: Christina Weaver
Date/Time: 11/2/21 / 17:30
Company: ARCADIS

Received by: Christina Weaver
Date/Time: 11/3/21 / 0940
Company: ARCADIS

Received by: Sam Hindle
Date/Time: 11/3/21 / 1006
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA

Received by: NOVI COOL STORAGE
Date/Time: 11/2/21 / 17:30
Company: ARCADIS

Received by: JENI HOE
Date/Time: 11/3/21 / 946
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
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Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA

Received by: Mandy Blod
Date/Time: 11/21 / 8:00
Company: ETA



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 59307

Client Arcadis Site Name _____
 Cooler Received on 11-4-21 Opened on 11-4-21
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Cooler unpacked by:
Mandy Blue

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-14 (CF +0.1 °C) Observed Cooler Temp 0.9 °C Corrected Cooler Temp. 1.0 °C
 IR GUN #IR-15 (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 _____ 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 NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No NA
 4. Did custody papers accompany the sample(s)? Yes No NA
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No NA
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NA
 7. Did all bottles arrive in good condition (Unbroken)? Yes No NA
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No NA

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No NA
 11. Sufficient quantity received to perform indicated analyses? Yes No NA
 12. Are these work share samples and all listed on the COC? Yes No NA

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 NA
 15. Were air bubbles >6 mm in any VOA vials? Yes ← Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No NA
 17. Was a LL Hg or Me Hg trip blank present? Yes No NA

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

The TB is not logged for SIM due to insufficient volume.
MW 11-4-21

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: _____