

ANALYTICAL REPORT

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

Laboratory Job ID: 240-145163-1
Client Project/Site: Ford LTP - On Site

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



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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: 240-145163-1

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 - On Site

Job ID: 240-145163-1

Job ID: 240-145163-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-145163-1

Comments

No additional comments.

Receipt

The samples were received on 3/2/2021 9:15 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 2.1° 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 - On Site

Job ID: 240-145163-1

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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Sample Summary

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

Job ID: 240-145163-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-145163-1	TRIP BLANK	Water	02/26/21 00:00	03/02/21 09:15	
240-145163-2	MW-15-60D_022621	Water	02/26/21 09:50	03/02/21 09:15	
240-145163-3	MW-15-59D_022621	Water	02/26/21 12:00	03/02/21 09:15	
240-145163-4	MW-200S_022621	Water	02/26/21 13:40	03/02/21 09:15	
240-145163-5	MW-200_022621	Water	02/26/21 15:00	03/02/21 09:15	

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Detection Summary

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

Job ID: 240-145163-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-145163-1

No Detections.

Client Sample ID: MW-15-60D_022621

Lab Sample ID: 240-145163-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.35	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-15-59D_022621

Lab Sample ID: 240-145163-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.37	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-200S_022621

Lab Sample ID: 240-145163-4

No Detections.

Client Sample ID: MW-200_022621

Lab Sample ID: 240-145163-5

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 - On Site

Job ID: 240-145163-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-145163-1

Date Collected: 02/26/21 00:00

Matrix: Water

Date Received: 03/02/21 09:15

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			03/04/21 19:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/04/21 19:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 19:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 19:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 19:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130		03/04/21 19:29	1
4-Bromofluorobenzene (Surr)	72		47 - 134		03/04/21 19:29	1
Toluene-d8 (Surr)	81		69 - 122		03/04/21 19:29	1
Dibromofluoromethane (Surr)	113		78 - 129		03/04/21 19:29	1

Client Sample Results

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

Job ID: 240-145163-1

Client Sample ID: MW-15-60D_022621

Lab Sample ID: 240-145163-2

Date Collected: 02/26/21 09:50

Matrix: Water

Date Received: 03/02/21 09:15

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			03/04/21 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 133					03/04/21 16:00	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			03/04/21 19:53	1
cis-1,2-Dichloroethene	0.35	J	1.0	0.16	ug/L			03/04/21 19:53	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 19:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 19:53	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 19:53	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130					03/04/21 19:53	1
4-Bromofluorobenzene (Surr)	63		47 - 134					03/04/21 19:53	1
Toluene-d8 (Surr)	77		69 - 122					03/04/21 19:53	1
Dibromofluoromethane (Surr)	113		78 - 129					03/04/21 19:53	1

Client Sample Results

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

Job ID: 240-145163-1

Client Sample ID: MW-15-59D_022621

Lab Sample ID: 240-145163-3

Date Collected: 02/26/21 12:00

Matrix: Water

Date Received: 03/02/21 09:15

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			03/04/21 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 133		03/04/21 16:25	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			03/04/21 20:16	1
cis-1,2-Dichloroethene	0.37	J	1.0	0.16	ug/L			03/04/21 20:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 20:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 20:16	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 20:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 20:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		03/04/21 20:16	1
4-Bromofluorobenzene (Surr)	70		47 - 134		03/04/21 20:16	1
Toluene-d8 (Surr)	79		69 - 122		03/04/21 20:16	1
Dibromofluoromethane (Surr)	110		78 - 129		03/04/21 20:16	1

Client Sample Results

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

Job ID: 240-145163-1

Client Sample ID: MW-200S_022621

Lab Sample ID: 240-145163-4

Date Collected: 02/26/21 13:40

Matrix: Water

Date Received: 03/02/21 09:15

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			03/09/21 11:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133		03/09/21 11:52	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			03/04/21 20:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/04/21 20:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 20:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 20:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 20:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130		03/04/21 20:40	1
4-Bromofluorobenzene (Surr)	64		47 - 134		03/04/21 20:40	1
Toluene-d8 (Surr)	87		69 - 122		03/04/21 20:40	1
Dibromofluoromethane (Surr)	111		78 - 129		03/04/21 20:40	1

Client Sample Results

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

Job ID: 240-145163-1

Client Sample ID: MW-200_022621

Lab Sample ID: 240-145163-5

Date Collected: 02/26/21 15:00

Matrix: Water

Date Received: 03/02/21 09:15

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			03/04/21 17:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 133					03/04/21 17:16	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			03/04/21 21:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/04/21 21:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 21:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 21:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 21:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 21:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130					03/04/21 21:04	1
4-Bromofluorobenzene (Surr)	69		47 - 134					03/04/21 21:04	1
Toluene-d8 (Surr)	78		69 - 122					03/04/21 21:04	1
Dibromofluoromethane (Surr)	113		78 - 129					03/04/21 21:04	1

Surrogate Summary

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

Job ID: 240-145163-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-145163-1	TRIP BLANK	115	72	81	113
240-145163-2	MW-15-60D_022621	112	63	77	113
240-145163-3	MW-15-59D_022621	108	70	79	110
240-145163-4	MW-200S_022621	110	64	87	111
240-145163-5	MW-200_022621	111	69	78	113
240-145164-M-2 MS	Matrix Spike	95	93	89	92
240-145164-N-2 MSD	Matrix Spike Duplicate	84	85	87	90
LCS 240-475466/4	Lab Control Sample	84	87	86	88
MB 240-475466/7	Method Blank	106	64	79	109

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-145136-J-2 MS	Matrix Spike	85
240-145136-J-2 MSD	Matrix Spike Duplicate	86
240-145163-2	MW-15-60D_022621	94
240-145163-3	MW-15-59D_022621	92
240-145163-4	MW-200S_022621	83
240-145163-5	MW-200_022621	94
500-195631-C-27 MS	Matrix Spike	89
500-195631-C-27 MSD	Matrix Spike Duplicate	79
LCS 240-475458/4	Lab Control Sample	84
LCS 240-476007/4	Lab Control Sample	82
MB 240-475458/5	Method Blank	87
MB 240-476007/5	Method Blank	87

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-145163-1

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

Lab Sample ID: MB 240-475466/7
Matrix: Water
Analysis Batch: 475466

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	0.19	ug/L			03/04/21 16:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/04/21 16:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/21 16:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/21 16:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/21 16:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/21 16:39	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		03/04/21 16:39	1
4-Bromofluorobenzene (Surr)	64		47 - 134		03/04/21 16:39	1
Toluene-d8 (Surr)	79		69 - 122		03/04/21 16:39	1
Dibromofluoromethane (Surr)	109		78 - 129		03/04/21 16:39	1

Lab Sample ID: LCS 240-475466/4
Matrix: Water
Analysis Batch: 475466

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	11.0		ug/L		110	73 - 129
cis-1,2-Dichloroethene	10.0	9.51		ug/L		95	75 - 124
Tetrachloroethene	10.0	12.0		ug/L		120	70 - 125
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Trichloroethene	10.0	9.56		ug/L		96	71 - 121
Vinyl chloride	10.0	10.8		ug/L		108	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	86		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-145164-M-2 MS
Matrix: Water
Analysis Batch: 475466

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	11.0		ug/L		110	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.35		ug/L		93	68 - 121
Tetrachloroethene	1.0	U	10.0	12.4		ug/L		124	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	10.6		ug/L		106	69 - 126
Trichloroethene	1.0	U	10.0	9.05		ug/L		90	56 - 124
Vinyl chloride	1.0	U	10.0	10.9		ug/L		109	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	89		69 - 122

QC Sample Results

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

Job ID: 240-145163-1

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

Lab Sample ID: 240-145164-M-2 MS
Matrix: Water
Analysis Batch: 475466

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	92		78 - 129

Lab Sample ID: 240-145164-N-2 MSD
Matrix: Water
Analysis Batch: 475466

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	9.07		ug/L		91	64 - 132	19	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.16		ug/L		82	68 - 121	14	35
Tetrachloroethene	1.0	U	10.0	10.4		ug/L		104	52 - 129	18	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.75		ug/L		87	69 - 126	20	35
Trichloroethene	1.0	U	10.0	9.44		ug/L		94	56 - 124	4	35
Vinyl chloride	1.0	U	10.0	9.34		ug/L		93	49 - 136	15	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	85		47 - 134
Toluene-d8 (Surr)	87		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

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

Lab Sample ID: MB 240-475458/5
Matrix: Water
Analysis Batch: 475458

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			03/04/21 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133		03/04/21 11:50	1

Lab Sample ID: LCS 240-475458/4
Matrix: Water
Analysis Batch: 475458

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	8.91		ug/L		89	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		70 - 133

Lab Sample ID: 240-145136-J-2 MS
Matrix: Water
Analysis Batch: 475458

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	4.1		10.0	13.2		ug/L		91	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-145163-1

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

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

Lab Sample ID: 240-145136-J-2 MSD
Matrix: Water
Analysis Batch: 475458

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	4.1		10.0	14.1		ug/L		100	46 - 170	6	26

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

Lab Sample ID: MB 240-476007/5
Matrix: Water
Analysis Batch: 476007

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>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/09/21 11:03	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,2-Dichloroethane-d4 (Surr)	87		70 - 133		03/09/21 11:03	1

Lab Sample ID: LCS 240-476007/4
Matrix: Water
Analysis Batch: 476007

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>
1,4-Dioxane	10.0	10.1		ug/L		101	80 - 135

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

Lab Sample ID: 500-195631-C-27 MS
Matrix: Water
Analysis Batch: 476007

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	1.5	J	10.0	11.6		ug/L		101	46 - 170

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	89		70 - 133

Lab Sample ID: 500-195631-C-27 MSD
Matrix: Water
Analysis Batch: 476007

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	1.5	J	10.0	11.2		ug/L		97	46 - 170	3	26

QC Sample Results

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

Job ID: 240-145163-1

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

Lab Sample ID: 500-195631-C-27 MSD
Matrix: Water
Analysis Batch: 476007

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

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	79		70 - 133

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QC Association Summary

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

Job ID: 240-145163-1

GC/MS VOA

Analysis Batch: 475458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145163-2	MW-15-60D_022621	Total/NA	Water	8260B SIM	
240-145163-3	MW-15-59D_022621	Total/NA	Water	8260B SIM	
240-145163-5	MW-200_022621	Total/NA	Water	8260B SIM	
MB 240-475458/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-475458/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-145136-J-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-145136-J-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 475466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145163-1	TRIP BLANK	Total/NA	Water	8260B	
240-145163-2	MW-15-60D_022621	Total/NA	Water	8260B	
240-145163-3	MW-15-59D_022621	Total/NA	Water	8260B	
240-145163-4	MW-200S_022621	Total/NA	Water	8260B	
240-145163-5	MW-200_022621	Total/NA	Water	8260B	
MB 240-475466/7	Method Blank	Total/NA	Water	8260B	
LCS 240-475466/4	Lab Control Sample	Total/NA	Water	8260B	
240-145164-M-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-145164-N-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 476007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145163-4	MW-200S_022621	Total/NA	Water	8260B SIM	
MB 240-476007/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-476007/4	Lab Control Sample	Total/NA	Water	8260B SIM	
500-195631-C-27 MS	Matrix Spike	Total/NA	Water	8260B SIM	
500-195631-C-27 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-145163-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-145163-1

Date Collected: 02/26/21 00:00

Matrix: Water

Date Received: 03/02/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475466	03/04/21 19:29	LRW	TAL CAN

Client Sample ID: MW-15-60D_022621

Lab Sample ID: 240-145163-2

Date Collected: 02/26/21 09:50

Matrix: Water

Date Received: 03/02/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475466	03/04/21 19:53	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	475458	03/04/21 16:00	SAM	TAL CAN

Client Sample ID: MW-15-59D_022621

Lab Sample ID: 240-145163-3

Date Collected: 02/26/21 12:00

Matrix: Water

Date Received: 03/02/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475466	03/04/21 20:16	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	475458	03/04/21 16:25	SAM	TAL CAN

Client Sample ID: MW-200S_022621

Lab Sample ID: 240-145163-4

Date Collected: 02/26/21 13:40

Matrix: Water

Date Received: 03/02/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475466	03/04/21 20:40	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	476007	03/09/21 11:52	SAM	TAL CAN

Client Sample ID: MW-200_022621

Lab Sample ID: 240-145163-5

Date Collected: 02/26/21 15:00

Matrix: Water

Date Received: 03/02/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	475466	03/04/21 21:04	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	475458	03/04/21 17:16	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 - On Site

Job ID: 240-145163-1

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.



Chain of Custody Record

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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

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

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

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

Project Name: Ford LTP On-Site
Project Number: 30050315.401.03
PO # 30050315.401.03

Sampler Name: Emma Witherspoon
Method of Shipment/Carrier:
Shipping/Tracking No:
Analysis Turnaround Time: 10 day
TAT, if different from below:
3 weeks
2 weeks
1 week
2 days
1 day

Containers & Preservatives:
Matrix:
Air
Aqueous
Sediment
Solid
Other:
H2SO4
HNO3
HCl
NaOH
NaOH
Unpres
Other:
Filtered Sample (Y/N)
Composite-C / Grab-G

Sample Identification	Sample Date	Sample Time	Matrix	Containers & Preservatives	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	Special Instructions:
TRIP BLANK	-	-	1		N		X	X	X	X	X	X	X	1 TRIP BLANK
MW-15-60D_022621	2/26/21	950	6		N		X	X	X	X	X	X	X	3 UOCS For 8260B
MW-15-59D_022621	2/26/21	1200	6		N		X	X	X	X	X	X	X	3 UOCS For 8260B SIM
MW-2005_022621	2/26/21	1340	6		N		X	X	X	X	X	X	X	
MW-200_022621	2/26/21	1500	6		N		X	X	X	X	X	X	X	

Barcode: 240-145163 Chain of Custody

Possible Hazard Identification: Non-Hazard Flammable 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 _____ Months

Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Witherspoon	2/26/21 1500	Arcadis	MONI (cap storage)	2/26/21 1700	Arcadis
RACHEL BIEYAK	3/1/21 1100	ARCADIS	Mwanda Balthazar	3/1/21 11:01	ETA
Mwanda Balthazar	3/1/21 10:53	ETA	Received in Laboratory by:	3/22/21 9:15	ETA

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 145163

Client Arco's Site Name _____
 Cooler Received on 3-2-21 Opened on 3-2-21
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by:
Mattson

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

TestAmerica Cooler # TD 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. 2.0 °C Corrected Cooler Temp. 2.1 °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

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

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? Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0303101F 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: _____