

ANALYTICAL REPORT

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

Laboratory Job ID: 240-144439-1
Client Project/Site: Ford LTP - On Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
2/24/2021 11:26:50 AM

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

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

Job ID: 240-144439-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: 240-144439-1

Job ID: 240-144439-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-144439-1

Comments

No additional comments.

Receipt

The samples were received on 2/12/2021 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 0.3° 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: 240-144439-1

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 - On Site

Job ID: 240-144439-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144439-1	TRIP BLANK	Water	02/10/21 00:00	02/12/21 08:00	
240-144439-2	MW-66_021021	Water	02/10/21 10:00	02/12/21 08:00	
240-144439-3	MW-22_021021	Water	02/10/21 11:25	02/12/21 08:00	
240-144439-4	MW-23_021021	Water	02/10/21 12:38	02/12/21 08:00	
240-144439-5	PW-16-01_021021	Water	02/10/21 14:00	02/12/21 08:00	
240-144439-6	DUP-01	Water	02/10/21 00:00	02/12/21 08:00	

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Detection Summary

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

Job ID: 240-144439-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144439-1

No Detections.

Client Sample ID: MW-66_021021

Lab Sample ID: 240-144439-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.93	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	2.9		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-22_021021

Lab Sample ID: 240-144439-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	34		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	59	J	100	16	ug/L	100		8260B	Total/NA
Vinyl chloride	1200		100	20	ug/L	100		8260B	Total/NA

Client Sample ID: MW-23_021021

Lab Sample ID: 240-144439-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	46000		2000	320	ug/L	2000		8260B	Total/NA
trans-1,2-Dichloroethene	1700	J	2000	380	ug/L	2000		8260B	Total/NA
Trichloroethene	12000		2000	200	ug/L	2000		8260B	Total/NA

Client Sample ID: PW-16-01_021021

Lab Sample ID: 240-144439-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	10		2.0	0.32	ug/L	2		8260B	Total/NA
Vinyl chloride	34		2.0	0.40	ug/L	2		8260B	Total/NA

Client Sample ID: DUP-01

Lab Sample ID: 240-144439-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	42000		2000	320	ug/L	2000		8260B	Total/NA
trans-1,2-Dichloroethene	1400	J	2000	380	ug/L	2000		8260B	Total/NA
Trichloroethene	12000		2000	200	ug/L	2000		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 - On Site

Job ID: 240-144439-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144439-1

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 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			02/18/21 12:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/21 12:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 12:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 12:01	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 12:01	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 12:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/18/21 12:01	1
4-Bromofluorobenzene (Surr)	84		47 - 134		02/18/21 12:01	1
Toluene-d8 (Surr)	91		69 - 122		02/18/21 12:01	1
Dibromofluoromethane (Surr)	90		78 - 129		02/18/21 12:01	1

Client Sample Results

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

Job ID: 240-144439-1

Client Sample ID: MW-66_021021

Lab Sample ID: 240-144439-2

Date Collected: 02/10/21 10:00

Matrix: Water

Date Received: 02/12/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.93	J	2.0	0.86	ug/L			02/17/21 14:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133					02/17/21 14:37	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			02/18/21 12:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/21 12:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 12:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 12:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 12:23	1
Vinyl chloride	2.9		1.0	0.20	ug/L			02/18/21 12:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130					02/18/21 12:23	1
4-Bromofluorobenzene (Surr)	86		47 - 134					02/18/21 12:23	1
Toluene-d8 (Surr)	98		69 - 122					02/18/21 12:23	1
Dibromofluoromethane (Surr)	99		78 - 129					02/18/21 12:23	1

Client Sample Results

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

Job ID: 240-144439-1

Client Sample ID: MW-22_021021

Lab Sample ID: 240-144439-3

Date Collected: 02/10/21 11:25

Matrix: Water

Date Received: 02/12/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	34		2.0	0.86	ug/L			02/17/21 15:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					02/17/21 15:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	100	U	100	19	ug/L			02/18/21 12:46	100
cis-1,2-Dichloroethene	59	J	100	16	ug/L			02/18/21 12:46	100
Tetrachloroethene	100	U	100	15	ug/L			02/18/21 12:46	100
trans-1,2-Dichloroethene	100	U	100	19	ug/L			02/18/21 12:46	100
Trichloroethene	100	U	100	10	ug/L			02/18/21 12:46	100
Vinyl chloride	1200		100	20	ug/L			02/18/21 12:46	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130					02/18/21 12:46	100
4-Bromofluorobenzene (Surr)	91		47 - 134					02/18/21 12:46	100
Toluene-d8 (Surr)	97		69 - 122					02/18/21 12:46	100
Dibromofluoromethane (Surr)	94		78 - 129					02/18/21 12:46	100

Client Sample Results

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

Job ID: 240-144439-1

Client Sample ID: MW-23_021021

Lab Sample ID: 240-144439-4

Date Collected: 02/10/21 12:38

Matrix: Water

Date Received: 02/12/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.86	ug/L			02/17/21 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		70 - 133					02/17/21 16:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2000	U	2000	380	ug/L			02/22/21 10:08	2000
cis-1,2-Dichloroethene	46000		2000	320	ug/L			02/22/21 10:08	2000
Tetrachloroethene	2000	U	2000	300	ug/L			02/22/21 10:08	2000
trans-1,2-Dichloroethene	1700	J	2000	380	ug/L			02/22/21 10:08	2000
Trichloroethene	12000		2000	200	ug/L			02/22/21 10:08	2000
Vinyl chloride	2000	U	2000	400	ug/L			02/22/21 10:08	2000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130					02/22/21 10:08	2000
4-Bromofluorobenzene (Surr)	85		47 - 134					02/22/21 10:08	2000
Toluene-d8 (Surr)	95		69 - 122					02/22/21 10:08	2000
Dibromofluoromethane (Surr)	96		78 - 129					02/22/21 10:08	2000

Client Sample Results

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

Job ID: 240-144439-1

Client Sample ID: PW-16-01_021021

Lab Sample ID: 240-144439-5

Date Collected: 02/10/21 14:00

Matrix: Water

Date Received: 02/12/21 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			02/17/21 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133					02/17/21 16:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			02/22/21 10:30	2
cis-1,2-Dichloroethene	10		2.0	0.32	ug/L			02/22/21 10:30	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			02/22/21 10:30	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			02/22/21 10:30	2
Trichloroethene	2.0	U	2.0	0.20	ug/L			02/22/21 10:30	2
Vinyl chloride	34		2.0	0.40	ug/L			02/22/21 10:30	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130					02/22/21 10:30	2
4-Bromofluorobenzene (Surr)	79		47 - 134					02/22/21 10:30	2
Toluene-d8 (Surr)	89		69 - 122					02/22/21 10:30	2
Dibromofluoromethane (Surr)	89		78 - 129					02/22/21 10:30	2

Client Sample Results

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

Job ID: 240-144439-1

Client Sample ID: DUP-01
Date Collected: 02/10/21 00:00
Date Received: 02/12/21 08:00

Lab Sample ID: 240-144439-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			02/17/21 17:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		70 - 133					02/17/21 17:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2000	U	2000	380	ug/L			02/22/21 10:53	2000
cis-1,2-Dichloroethene	42000		2000	320	ug/L			02/22/21 10:53	2000
Tetrachloroethene	2000	U	2000	300	ug/L			02/22/21 10:53	2000
trans-1,2-Dichloroethene	1400	J	2000	380	ug/L			02/22/21 10:53	2000
Trichloroethene	12000		2000	200	ug/L			02/22/21 10:53	2000
Vinyl chloride	2000	U	2000	400	ug/L			02/22/21 10:53	2000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130					02/22/21 10:53	2000
4-Bromofluorobenzene (Surr)	85		47 - 134					02/22/21 10:53	2000
Toluene-d8 (Surr)	98		69 - 122					02/22/21 10:53	2000
Dibromofluoromethane (Surr)	99		78 - 129					02/22/21 10:53	2000

Surrogate Summary

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

Job ID: 240-144439-1

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)
240-144429-B-3 MS	Matrix Spike	92	89	95	94
240-144429-B-3 MSD	Matrix Spike Duplicate	98	93	99	98
240-144439-1	TRIP BLANK	90	84	91	90
240-144439-2	MW-66_021021	96	86	98	99
240-144439-3	MW-22_021021	93	91	97	94
240-144439-4	MW-23_021021	92	85	95	96
240-144439-4 MS	MW-23_021021	97	97	104	100
240-144439-4 MSD	MW-23_021021	96	93	100	99
240-144439-5	PW-16-01_021021	89	79	89	89
240-144439-6	DUP-01	97	85	98	99
LCS 240-473551/4	Lab Control Sample	86	87	93	91
LCS 240-473889/4	Lab Control Sample	92	90	97	96
MB 240-473551/6	Method Blank	96	92	98	95
MB 240-473889/6	Method Blank	101	92	102	99

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)
240-144439-2	MW-66_021021	83
240-144439-3	MW-22_021021	85
240-144439-3 MS	MW-22_021021	84
240-144439-3 MSD	MW-22_021021	85
240-144439-4	MW-23_021021	77
240-144439-5	PW-16-01_021021	86
240-144439-6	DUP-01	77
LCS 240-473381/4	Lab Control Sample	80
MB 240-473381/5	Method Blank	81

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144439-1

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

Lab Sample ID: MB 240-473551/6
Matrix: Water
Analysis Batch: 473551

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			02/18/21 10:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/21 10:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 10:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 10:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 10:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 10:54	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		02/18/21 10:54	1
4-Bromofluorobenzene (Surr)	92		47 - 134		02/18/21 10:54	1
Toluene-d8 (Surr)	98		69 - 122		02/18/21 10:54	1
Dibromofluoromethane (Surr)	95		78 - 129		02/18/21 10:54	1

Lab Sample ID: LCS 240-473551/4
Matrix: Water
Analysis Batch: 473551

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	9.70		ug/L		97	73 - 129
cis-1,2-Dichloroethene	10.0	9.41		ug/L		94	75 - 124
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 125
trans-1,2-Dichloroethene	10.0	9.39		ug/L		94	74 - 130
Trichloroethene	10.0	9.55		ug/L		95	71 - 121
Vinyl chloride	10.0	9.63		ug/L		96	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144429-B-3 MS
Matrix: Water
Analysis Batch: 473551

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
1,1-Dichloroethene	2000	U	20000	18800		ug/L		94	64 - 132
cis-1,2-Dichloroethene	15000		20000	32400		ug/L		86	68 - 121
Tetrachloroethene	59000	F1	20000	68500	F1	ug/L		46	52 - 129
trans-1,2-Dichloroethene	1800	J	20000	21200		ug/L		97	69 - 126
Trichloroethene	37000		20000	49400		ug/L		62	56 - 124
Vinyl chloride	2000	U	20000	20100		ug/L		100	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	89		47 - 134
Toluene-d8 (Surr)	95		69 - 122

QC Sample Results

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

Job ID: 240-144439-1

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

Lab Sample ID: 240-144429-B-3 MS
Matrix: Water
Analysis Batch: 473551

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	94		78 - 129

Lab Sample ID: 240-144429-B-3 MSD
Matrix: Water
Analysis Batch: 473551

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	2000	U	20000	19000		ug/L		95	64 - 132	1	35
cis-1,2-Dichloroethene	15000		20000	32900		ug/L		88	68 - 121	1	35
Tetrachloroethene	59000	F1	20000	73100		ug/L		70	52 - 129	7	35
trans-1,2-Dichloroethene	1800	J	20000	20600		ug/L		94	69 - 126	3	35
Trichloroethene	37000		20000	51500		ug/L		73	56 - 124	4	35
Vinyl chloride	2000	U	20000	20700		ug/L		104	49 - 136	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	99		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129

Lab Sample ID: MB 240-473889/6
Matrix: Water
Analysis Batch: 473889

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			02/22/21 09:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/22/21 09:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/22/21 09:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/22/21 09:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/22/21 09:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/22/21 09:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		02/22/21 09:46	1
4-Bromofluorobenzene (Surr)	92		47 - 134		02/22/21 09:46	1
Toluene-d8 (Surr)	102		69 - 122		02/22/21 09:46	1
Dibromofluoromethane (Surr)	99		78 - 129		02/22/21 09:46	1

Lab Sample ID: LCS 240-473889/4
Matrix: Water
Analysis Batch: 473889

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	10.4		ug/L		104	73 - 129
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	75 - 124
Tetrachloroethene	10.0	11.0		ug/L		110	70 - 125
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144439-1

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

Lab Sample ID: LCS 240-473889/4
Matrix: Water
Analysis Batch: 473889

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	9.49		ug/L		95	61 - 134
Surrogate							
	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	92		75 - 130				
4-Bromofluorobenzene (Surr)	90		47 - 134				
Toluene-d8 (Surr)	97		69 - 122				
Dibromofluoromethane (Surr)	96		78 - 129				

Lab Sample ID: 240-144439-4 MS
Matrix: Water
Analysis Batch: 473889

Client Sample ID: MW-23_021021
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	2000	U	20000	16800		ug/L		84	64 - 132
cis-1,2-Dichloroethene	46000		20000	61300		ug/L		78	68 - 121
Tetrachloroethene	2000	U	20000	16300		ug/L		82	52 - 129
trans-1,2-Dichloroethene	1700	J	20000	20200		ug/L		93	69 - 126
Trichloroethene	12000		20000	28600		ug/L		84	56 - 124
Vinyl chloride	2000	U	20000	18700		ug/L		93	49 - 136
Surrogate									
	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	97		75 - 130						
4-Bromofluorobenzene (Surr)	97		47 - 134						
Toluene-d8 (Surr)	104		69 - 122						
Dibromofluoromethane (Surr)	100		78 - 129						

Lab Sample ID: 240-144439-4 MSD
Matrix: Water
Analysis Batch: 473889

Client Sample ID: MW-23_021021
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	2000	U	20000	18800		ug/L		94	64 - 132	11	35
cis-1,2-Dichloroethene	46000		20000	63400		ug/L		89	68 - 121	3	35
Tetrachloroethene	2000	U	20000	19400		ug/L		97	52 - 129	17	35
trans-1,2-Dichloroethene	1700	J	20000	20200		ug/L		93	69 - 126	0	35
Trichloroethene	12000		20000	30600		ug/L		94	56 - 124	7	35
Vinyl chloride	2000	U	20000	19900		ug/L		99	49 - 136	6	35
Surrogate											
	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	96		75 - 130								
4-Bromofluorobenzene (Surr)	93		47 - 134								
Toluene-d8 (Surr)	100		69 - 122								
Dibromofluoromethane (Surr)	99		78 - 129								

QC Sample Results

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

Job ID: 240-144439-1

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

Lab Sample ID: MB 240-473381/5
Matrix: Water
Analysis Batch: 473381

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			02/17/21 09:33	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/17/21 09:33	1

Lab Sample ID: LCS 240-473381/4
Matrix: Water
Analysis Batch: 473381

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.8		ug/L		108	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	80		70 - 133				

Lab Sample ID: 240-144439-3 MS
Matrix: Water
Analysis Batch: 473381

Client Sample ID: MW-22_021021
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	34		10.0	43.3		ug/L		91	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	84		70 - 133						

Lab Sample ID: 240-144439-3 MSD
Matrix: Water
Analysis Batch: 473381

Client Sample ID: MW-22_021021
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	34		10.0	42.6		ug/L		83	46 - 170	2	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	85		70 - 133								

QC Association Summary

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

Job ID: 240-144439-1

GC/MS VOA

Analysis Batch: 473381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144439-2	MW-66_021021	Total/NA	Water	8260B SIM	
240-144439-3	MW-22_021021	Total/NA	Water	8260B SIM	
240-144439-4	MW-23_021021	Total/NA	Water	8260B SIM	
240-144439-5	PW-16-01_021021	Total/NA	Water	8260B SIM	
240-144439-6	DUP-01	Total/NA	Water	8260B SIM	
MB 240-473381/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-473381/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144439-3 MS	MW-22_021021	Total/NA	Water	8260B SIM	
240-144439-3 MSD	MW-22_021021	Total/NA	Water	8260B SIM	

Analysis Batch: 473551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144439-1	TRIP BLANK	Total/NA	Water	8260B	
240-144439-2	MW-66_021021	Total/NA	Water	8260B	
240-144439-3	MW-22_021021	Total/NA	Water	8260B	
MB 240-473551/6	Method Blank	Total/NA	Water	8260B	
LCS 240-473551/4	Lab Control Sample	Total/NA	Water	8260B	
240-144429-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-144429-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 473889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144439-4	MW-23_021021	Total/NA	Water	8260B	
240-144439-5	PW-16-01_021021	Total/NA	Water	8260B	
240-144439-6	DUP-01	Total/NA	Water	8260B	
MB 240-473889/6	Method Blank	Total/NA	Water	8260B	
LCS 240-473889/4	Lab Control Sample	Total/NA	Water	8260B	
240-144439-4 MS	MW-23_021021	Total/NA	Water	8260B	
240-144439-4 MSD	MW-23_021021	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144439-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144439-1

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473551	02/18/21 12:01	LEE	TAL CAN

Client Sample ID: MW-66_021021

Lab Sample ID: 240-144439-2

Date Collected: 02/10/21 10:00

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473551	02/18/21 12:23	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 14:37	SAM	TAL CAN

Client Sample ID: MW-22_021021

Lab Sample ID: 240-144439-3

Date Collected: 02/10/21 11:25

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	473551	02/18/21 12:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 15:02	SAM	TAL CAN

Client Sample ID: MW-23_021021

Lab Sample ID: 240-144439-4

Date Collected: 02/10/21 12:38

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2000	473889	02/22/21 10:08	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 16:17	SAM	TAL CAN

Client Sample ID: PW-16-01_021021

Lab Sample ID: 240-144439-5

Date Collected: 02/10/21 14:00

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	473889	02/22/21 10:30	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 16:43	SAM	TAL CAN

Client Sample ID: DUP-01

Lab Sample ID: 240-144439-6

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2000	473889	02/22/21 10:53	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 17:08	SAM	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-144439-1

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	02-24-21
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



Chain of Custody Record

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

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Himskey Telephone: 248-994-2240 Email: kristoffer.himskey@arcadis.com		Site Contact: Julia McClafferty Telephone: 734-644-5131	
Sampler Name: KRISTINA WEAVER		Analyses Walk-in client Lab sampling Job/SDG No:	
Method of Shipment/Carrier: Shipping/Tracking No:		For lab use only COC No:	
Sample Identification Sample Date Sample Time TRIP BLANK NW-66-021021 NW-22-021021 NW-23-021021 PW-16-01-021021 OUP-01		TAT if different from below 10 day <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
Matrix Aqueous Sediment Solid Other: 1 6 6 6 6 6 6		Containers & Preservatives HCl NaOH Zinc Other: 1 6 6 6 6 6	
Sample Disposal (Y/N) Composite C / Grab-G 1,1-DCE 8260B cis-1,2-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TCE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM		Sample Specific Notes / Special Instructions: TRIP BLANK #3 VOAS METHOD 8260B 3 VOAS METHOD 8260B " " " " " " " "	



Sample Disposal (A fee may be assessed if same):
 Return to Client Disposal By Lab

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

Relinquished by: <i>Christine Allen</i>	Company: ARCADIS	Date/Time: 2/10/21 / 1530	Received by: <i>NOVE GOLD STORAGE</i>	Company: ARCADIS	Date/Time: 2/10/21 / 1530
Relinquished by: <i>Christine Allen</i>	Company: ARCADIS	Date/Time: 2/11/21 / 0953	Received by: <i>Channah Holt</i>	Company: <i>ETA</i>	Date/Time: 2/11/21 / 0953
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: <i>ETA</i>	Company: <i>ETA</i>	Date/Time: 2-12-21 / 800



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 144439

Canton Facility

Client Arcadis Site Name

Cooler unpacked by:

Cooler Received on 2-12-21 Opened on 2-12-21 800

Ryan C

FedEx: 1st Grd Exp UPS FAS Clipper 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. 0.2 °C Corrected Cooler Temp. 0.3 °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 3 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

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)? Yes No 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

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? Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 59072 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: