

ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-140276-1
Client Project/Site: Ford LTP - On Site

For:
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Authorized for release by:
11/30/2020 4:11:39 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 - On Site

Job ID: 240-140276-1

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: 240-140276-1

Job ID: 240-140276-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - On Site

Report Number: 240-140276-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/14/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.8° C and 3.2° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-140276-1), LMW-20-11_111220 (240-140276-2), MW-113_111220 (240-140276-3), MW-26_111220 (240-140276-4) and MW-29_111220 (240-140276-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/24/2020.

The continuing calibration verification (CCV) for analytical batch 462426 exceeded control criteria for one or multiple compounds. The samples associated with this CCV were non-detect for the affected analytes. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compounds were detected; therefore the data has been reported. No further corrective action was required: TRIP BLANK (240-140276-1), LMW-20-11_111220 (240-140276-2), MW-113_111220 (240-140276-3), MW-26_111220 (240-140276-4) and MW-29_111220 (240-140276-5).

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples LMW-20-11_111220 (240-140276-2), MW-113_111220 (240-140276-3), MW-26_111220 (240-140276-4) and MW-29_111220 (240-140276-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The

Case Narrative

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

Job ID: 240-140276-1

Job ID: 240-140276-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

samples were analyzed on 11/22/2020.

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

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Method Summary

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

Job ID: 240-140276-1

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



Sample Summary

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

Job ID: 240-140276-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140276-1	TRIP BLANK	Water	11/12/20 00:00	11/14/20 10:00	
240-140276-2	LMW-20-11_111220	Water	11/12/20 09:45	11/14/20 10:00	
240-140276-3	MW-113_111220	Water	11/12/20 10:46	11/14/20 10:00	
240-140276-4	MW-26_111220	Water	11/12/20 11:45	11/14/20 10:00	
240-140276-5	MW-29_111220	Water	11/12/20 13:14	11/14/20 10:00	

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- 13
- 14

Detection Summary

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

Job ID: 240-140276-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140276-1

No Detections.

Client Sample ID: LMW-20-11_111220

Lab Sample ID: 240-140276-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.27	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-113_111220

Lab Sample ID: 240-140276-3

No Detections.

Client Sample ID: MW-26_111220

Lab Sample ID: 240-140276-4

No Detections.

Client Sample ID: MW-29_111220

Lab Sample ID: 240-140276-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	18		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.5		1.0	0.20	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 - On Site

Job ID: 240-140276-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140276-1

Date Collected: 11/12/20 00:00

Matrix: Water

Date Received: 11/14/20 10:00

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			11/24/20 05:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 05:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 05:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 05:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 05:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 05:35	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/24/20 05:35	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/24/20 05:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130					11/24/20 05:35	1
4-Bromofluorobenzene (Surr)	75		47 - 134					11/24/20 05:35	1
Toluene-d8 (Surr)	97		69 - 122					11/24/20 05:35	1
Dibromofluoromethane (Surr)	102		78 - 129					11/24/20 05:35	1

Client Sample Results

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

Job ID: 240-140276-1

Client Sample ID: LMW-20-11_111220

Lab Sample ID: 240-140276-2

Date Collected: 11/12/20 09:45

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 11:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		11/22/20 11:15	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			11/24/20 05:57	1
cis-1,2-Dichloroethene	0.27	J	1.0	0.16	ug/L			11/24/20 05:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 05:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 05:57	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 05:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 05:57	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/24/20 05:57	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/24/20 05:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130		11/24/20 05:57	1
4-Bromofluorobenzene (Surr)	72		47 - 134		11/24/20 05:57	1
Toluene-d8 (Surr)	96		69 - 122		11/24/20 05:57	1
Dibromofluoromethane (Surr)	97		78 - 129		11/24/20 05:57	1

Client Sample Results

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

Job ID: 240-140276-1

Client Sample ID: MW-113_111220

Lab Sample ID: 240-140276-3

Date Collected: 11/12/20 10:46

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 11:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		11/22/20 11:41	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			11/24/20 06:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 06:18	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 06:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 06:18	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 06:18	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 06:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130		11/24/20 06:18	1
4-Bromofluorobenzene (Surr)	74		47 - 134		11/24/20 06:18	1
Toluene-d8 (Surr)	97		69 - 122		11/24/20 06:18	1
Dibromofluoromethane (Surr)	100		78 - 129		11/24/20 06:18	1

Client Sample Results

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

Job ID: 240-140276-1

Client Sample ID: MW-26_111220

Lab Sample ID: 240-140276-4

Date Collected: 11/12/20 11:45

Matrix: Water

Date Received: 11/14/20 10:00

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			11/22/20 12:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					11/22/20 12:06	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			11/24/20 06:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 06:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 06:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 06:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 06:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/24/20 06:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130					11/24/20 06:40	1
4-Bromofluorobenzene (Surr)	71		47 - 134					11/24/20 06:40	1
Toluene-d8 (Surr)	91		69 - 122					11/24/20 06:40	1
Dibromofluoromethane (Surr)	93		78 - 129					11/24/20 06:40	1

Client Sample Results

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

Job ID: 240-140276-1

Client Sample ID: MW-29_111220

Lab Sample ID: 240-140276-5

Date Collected: 11/12/20 13:14

Matrix: Water

Date Received: 11/14/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	18		2.0	0.86	ug/L			11/22/20 12:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					11/22/20 12:31	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			11/24/20 07:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/24/20 07:02	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/24/20 07:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/24/20 07:02	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/24/20 07:02	1
Vinyl chloride	1.5		1.0	0.20	ug/L			11/24/20 07:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130					11/24/20 07:02	1
4-Bromofluorobenzene (Surr)	76		47 - 134					11/24/20 07:02	1
Toluene-d8 (Surr)	99		69 - 122					11/24/20 07:02	1
Dibromofluoromethane (Surr)	103		78 - 129					11/24/20 07:02	1

Surrogate Summary

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

Job ID: 240-140276-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	TOL	DBFM
		(75-130)	(47-134)	(69-122)	(78-129)
240-140276-1	TRIP BLANK	106	75	97	102
240-140276-2	LMW-20-11_111220	103	72	96	97
240-140276-3	MW-113_111220	105	74	97	100
240-140276-4	MW-26_111220	98	71	91	93
240-140276-5	MW-29_111220	107	76	99	103
240-140276-5 MS	MW-29_111220	91	97	106	88
240-140276-5 MSD	MW-29_111220	91	93	105	86
LCS 240-462426/4	Lab Control Sample	86	96	104	84
MB 240-462426/7	Method Blank	97	76	96	91

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)
240-140276-2	LMW-20-11_111220	89
240-140276-3	MW-113_111220	88
240-140276-4	MW-26_111220	88
240-140276-5	MW-29_111220	87
LCS 240-462242/4	Lab Control Sample	90
MB 240-462242/5	Method Blank	89

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-140276-1

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

Lab Sample ID: MB 240-462426/7
Matrix: Water
Analysis Batch: 462426

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			11/23/20 22:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/23/20 22:59	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/23/20 22:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/23/20 22:59	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/23/20 22:59	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/23/20 22:59	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/23/20 22:59	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/23/20 22:59	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		11/23/20 22:59	1
4-Bromofluorobenzene (Surr)	76		47 - 134		11/23/20 22:59	1
Toluene-d8 (Surr)	96		69 - 122		11/23/20 22:59	1
Dibromofluoromethane (Surr)	91		78 - 129		11/23/20 22:59	1

Lab Sample ID: LCS 240-462426/4
Matrix: Water
Analysis Batch: 462426

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	7.85		ug/L		79	73 - 129
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	75 - 124
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 125
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	74 - 130
Trichloroethene	10.0	8.72		ug/L		87	71 - 121
Vinyl chloride	10.0	7.69		ug/L		77	61 - 134
Naphthalene	10.0	8.19		ug/L		82	28 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	104		69 - 122
Dibromofluoromethane (Surr)	84		78 - 129

Lab Sample ID: 240-140276-5 MS
Matrix: Water
Analysis Batch: 462426

Client Sample ID: MW-29_111220
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	6.88		ug/L		69	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.21		ug/L		92	68 - 121
Tetrachloroethene	1.0	U	10.0	7.73		ug/L		77	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.62		ug/L		86	69 - 126
Trichloroethene	1.0	U	10.0	6.66		ug/L		67	56 - 124
Vinyl chloride	1.5		10.0	9.03		ug/L		75	49 - 136
Naphthalene	1.0	U	10.0	5.74		ug/L		57	30 - 125

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-140276-1

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

Lab Sample ID: 240-140276-5 MS
Matrix: Water
Analysis Batch: 462426

Client Sample ID: MW-29_111220
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	106		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-140276-5 MSD
Matrix: Water
Analysis Batch: 462426

Client Sample ID: MW-29_111220
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	6.75		ug/L		68	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.29		ug/L		93	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	7.95		ug/L		79	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.81		ug/L		88	69 - 126	2	35
Trichloroethene	1.0	U	10.0	6.98		ug/L		70	56 - 124	5	35
Vinyl chloride	1.5		10.0	8.58		ug/L		71	49 - 136	5	35
Naphthalene	1.0	U	10.0	6.94		ug/L		69	30 - 125	19	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

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

Lab Sample ID: MB 240-462242/5
Matrix: Water
Analysis Batch: 462242

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			11/22/20 04:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		11/22/20 04:31	1

Lab Sample ID: LCS 240-462242/4
Matrix: Water
Analysis Batch: 462242

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)	90		70 - 133

QC Association Summary

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

Job ID: 240-140276-1

GC/MS VOA

Analysis Batch: 462242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140276-2	LMW-20-11_111220	Total/NA	Water	8260B SIM	
240-140276-3	MW-113_111220	Total/NA	Water	8260B SIM	
240-140276-4	MW-26_111220	Total/NA	Water	8260B SIM	
240-140276-5	MW-29_111220	Total/NA	Water	8260B SIM	
MB 240-462242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-462242/4	Lab Control Sample	Total/NA	Water	8260B SIM	

Analysis Batch: 462426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140276-1	TRIP BLANK	Total/NA	Water	8260B	
240-140276-2	LMW-20-11_111220	Total/NA	Water	8260B	
240-140276-3	MW-113_111220	Total/NA	Water	8260B	
240-140276-4	MW-26_111220	Total/NA	Water	8260B	
240-140276-5	MW-29_111220	Total/NA	Water	8260B	
MB 240-462426/7	Method Blank	Total/NA	Water	8260B	
LCS 240-462426/4	Lab Control Sample	Total/NA	Water	8260B	
240-140276-5 MS	MW-29_111220	Total/NA	Water	8260B	
240-140276-5 MSD	MW-29_111220	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-140276-1

Client Sample ID: TRIP BLANK

Date Collected: 11/12/20 00:00

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140276-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462426	11/24/20 05:35	LEE	TAL CAN

Client Sample ID: LMW-20-11_111220

Date Collected: 11/12/20 09:45

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140276-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462426	11/24/20 05:57	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 11:15	TJL2	TAL CAN

Client Sample ID: MW-113_111220

Date Collected: 11/12/20 10:46

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140276-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462426	11/24/20 06:18	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 11:41	TJL2	TAL CAN

Client Sample ID: MW-26_111220

Date Collected: 11/12/20 11:45

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140276-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462426	11/24/20 06:40	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 12:06	TJL2	TAL CAN

Client Sample ID: MW-29_111220

Date Collected: 11/12/20 13:14

Date Received: 11/14/20 10:00

Lab Sample ID: 240-140276-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462426	11/24/20 07:02	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	462242	11/22/20 12:31	TJL2	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: 240-140276-1

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	12-31-20
Minnesota	NELAP	OH00048	12-31-20
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	06-05-21
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	01-12-21
West Virginia DEP	State	210	12-31-20

Chain of Custody Record

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 On-Site
Project Number: 30050315.401.03
PO # 30050315.401.03

Site Contact: Julia McClafferty
Telephone: 734-644-5131
Email: kristoffer.hinskey@arcadis.com

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240

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

Company Name: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240
Project Name: Ford LTP On-Site
Project Number: 30050315.401.03
PO # 30050315.401.03

Sampler Name: *Xenia Chan*
Method of Shipment/Carrier:
Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix						Containers & Preservatives						Filtered Sample (Y/N)	Composite-C/Grab-C	Analyses						Sample Specific Notes / Special Instructions:				
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	Unpres	Other:			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	naphthalene	2-methylnaphthalene	
TRIP BLANK																											1 Trip Blank
LMW-20-11-11220	11/12/20	945																									3 vials for 8260B 3 vials for 8260B SIM
MW-113-11220	11/12/20	1046																									
MW-26-11220	11/12/20	1145																									
MW-29-111220	11/12/20	1314																									

Possible Hazard Identification
 Non-Hazard Flammable Corrosive Irritant Toxic 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	Company	Date/Time	Received by	Company	Date/Time
<i>John McClafferty</i>	Arcadis	11/12/20 1435	NOVI Cold Storage	Arcadis	11/12/20 1435
<i>John McClafferty</i>	Arcadis	11/13/20 1500	Gama Rivera	ETA	11-13-20 1500
<i>Gama Rivera</i>	ETA	11-13-20 1700	<i>Gama Rivera</i>	ETA	11-14-20 1000

Barcode: 240-140276 Chain of Custody



Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 140276
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Yang Rea
Cooler Received on 11-14-20 Opened on 11-14-20
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 +0.9 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #IR-12 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 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
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
If yes, Questions 13-17 have been checked at the originating laboratory.

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

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

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: Yang Rea

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: _____

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form							
Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA	Client	Box	Other	IR-11 IR-12	2.3	3.2	Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12	1.9	2.0	Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None

See Temperature Excursion Form

