

ANALYTICAL REPORT

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

Laboratory Job ID: 240-135201-1
Client Project/Site: Ford LTP On-Site

For:
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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: 240-135201-1

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: 240-135201-1

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Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On-Site

Report Number: 240-135201-1

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.

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

RECEIPT

The samples were received on 8/19/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-135201-1), MW-40_081520 (240-135201-2), MW-31_081520 (240-135201-3) and MW-208S_081520 (240-135201-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/27/2020.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-40_081520 (240-135201-2), MW-31_081520 (240-135201-3) and MW-208S_081520 (240-135201-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/26/2020.

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

Method Summary

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

Job ID: 240-135201-1

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: 240-135201-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135201-1	TRIP BLANK	Water	08/15/20 00:00	08/19/20 09:30	
240-135201-2	MW-40_081520	Water	08/15/20 08:45	08/19/20 09:30	
240-135201-3	MW-31_081520	Water	08/15/20 09:45	08/19/20 09:30	
240-135201-4	MW-208S_081520	Water	08/15/20 11:10	08/19/20 09:30	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-135201-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135201-1

No Detections.

Client Sample ID: MW-40_081520

Lab Sample ID: 240-135201-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.3		1.0	0.38	ug/L			1	8260B	Total/NA
trans-1,2-Dichloroethene	0.49	J	1.0	0.43	ug/L			1	8260B	Total/NA
Vinyl chloride	0.52	J	1.0	0.50	ug/L			1	8260B	Total/NA

Client Sample ID: MW-31_081520

Lab Sample ID: 240-135201-3

No Detections.

Client Sample ID: MW-208S_081520

Lab Sample ID: 240-135201-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-135201-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135201-1

Date Collected: 08/15/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

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	0.46	ug/L			08/27/20 01:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/27/20 01:39	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/27/20 01:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/27/20 01:39	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/27/20 01:39	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/27/20 01:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		08/27/20 01:39	1
4-Bromofluorobenzene (Surr)	92		47 - 134		08/27/20 01:39	1
Toluene-d8 (Surr)	105		69 - 122		08/27/20 01:39	1
Dibromofluoromethane (Surr)	104		78 - 129		08/27/20 01:39	1

Client Sample Results

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

Job ID: 240-135201-1

Client Sample ID: MW-40_081520

Lab Sample ID: 240-135201-2

Date Collected: 08/15/20 08:45

Matrix: Water

Date Received: 08/19/20 09:30

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			08/26/20 14:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					08/26/20 14:49	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	0.46	ug/L			08/27/20 02:01	1
cis-1,2-Dichloroethene	3.3		1.0	0.38	ug/L			08/27/20 02:01	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/27/20 02:01	1
trans-1,2-Dichloroethene	0.49	J	1.0	0.43	ug/L			08/27/20 02:01	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/27/20 02:01	1
Vinyl chloride	0.52	J	1.0	0.50	ug/L			08/27/20 02:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130					08/27/20 02:01	1
4-Bromofluorobenzene (Surr)	93		47 - 134					08/27/20 02:01	1
Toluene-d8 (Surr)	99		69 - 122					08/27/20 02:01	1
Dibromofluoromethane (Surr)	107		78 - 129					08/27/20 02:01	1

Client Sample Results

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

Job ID: 240-135201-1

Client Sample ID: MW-31_081520

Lab Sample ID: 240-135201-3

Date Collected: 08/15/20 09:45

Matrix: Water

Date Received: 08/19/20 09:30

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			08/26/20 15:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		08/26/20 15:14	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	0.46	ug/L			08/27/20 02:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/27/20 02:46	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/27/20 02:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/27/20 02:46	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/27/20 02:46	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/27/20 02:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		08/27/20 02:46	1
4-Bromofluorobenzene (Surr)	90		47 - 134		08/27/20 02:46	1
Toluene-d8 (Surr)	103		69 - 122		08/27/20 02:46	1
Dibromofluoromethane (Surr)	104		78 - 129		08/27/20 02:46	1

Client Sample Results

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

Job ID: 240-135201-1

Client Sample ID: MW-208S_081520

Lab Sample ID: 240-135201-4

Date Collected: 08/15/20 11:10

Matrix: Water

Date Received: 08/19/20 09:30

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			08/26/20 16:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		08/26/20 16:27	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	0.46	ug/L			08/27/20 02:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/27/20 02:24	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/27/20 02:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/27/20 02:24	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/27/20 02:24	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/27/20 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		08/27/20 02:24	1
4-Bromofluorobenzene (Surr)	92		47 - 134		08/27/20 02:24	1
Toluene-d8 (Surr)	104		69 - 122		08/27/20 02:24	1
Dibromofluoromethane (Surr)	105		78 - 129		08/27/20 02:24	1

Surrogate Summary

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

Job ID: 240-135201-1

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 (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-135201-1	TRIP BLANK	102	92	105	104
240-135201-2	MW-40_081520	107	93	99	107
240-135201-3	MW-31_081520	102	90	103	104
240-135201-3 MS	MW-31-MS_081520	96	106	111	99
240-135201-3 MSD	MW-31-MSD_081520	94	104	108	97
240-135201-4	MW-208S_081520	106	92	104	105
LCS 240-448872/5	Lab Control Sample	96	106	110	98
MB 240-448872/8	Method Blank	104	88	101	103

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)
240-135201-2	MW-40_081520	88
240-135201-3	MW-31_081520	89
240-135201-3 MS	MW-31-MS_081520	89
240-135201-3 MSD	MW-31-MSD_081520	90
240-135201-4	MW-208S_081520	88
LCS 240-448707/5	Lab Control Sample	85
MB 240-448707/6	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-135201-1

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

Lab Sample ID: MB 240-448872/8
Matrix: Water
Analysis Batch: 448872

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	0.46	ug/L			08/26/20 18:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/26/20 18:36	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/26/20 18:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/26/20 18:36	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/26/20 18:36	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/26/20 18:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		08/26/20 18:36	1
4-Bromofluorobenzene (Surr)	88		47 - 134		08/26/20 18:36	1
Toluene-d8 (Surr)	101		69 - 122		08/26/20 18:36	1
Dibromofluoromethane (Surr)	103		78 - 129		08/26/20 18:36	1

Lab Sample ID: LCS 240-448872/5
Matrix: Water
Analysis Batch: 448872

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	20.0	19.3		ug/L		97	73 - 129
cis-1,2-Dichloroethene	20.0	19.7		ug/L		99	75 - 124
Tetrachloroethene	20.0	16.9		ug/L		84	70 - 125
trans-1,2-Dichloroethene	20.0	20.8		ug/L		104	74 - 130
Trichloroethene	20.0	17.8		ug/L		89	71 - 121
Vinyl chloride	20.0	19.8		ug/L		99	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	106		47 - 134
Toluene-d8 (Surr)	110		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129

Lab Sample ID: 240-135201-3 MS
Matrix: Water
Analysis Batch: 448872

Client Sample ID: MW-31-MS_081520
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	20.0	19.3		ug/L		97	64 - 132
cis-1,2-Dichloroethene	1.0	U	20.0	19.8		ug/L		99	68 - 121
Tetrachloroethene	1.0	U	20.0	16.4		ug/L		82	52 - 129
trans-1,2-Dichloroethene	1.0	U	20.0	20.2		ug/L		101	69 - 126
Trichloroethene	1.0	U	20.0	16.6		ug/L		83	56 - 124
Vinyl chloride	1.0	U	20.0	18.5		ug/L		93	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	106		47 - 134
Toluene-d8 (Surr)	111		69 - 122

QC Sample Results

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

Job ID: 240-135201-1

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

Lab Sample ID: 240-135201-3 MS
Matrix: Water
Analysis Batch: 448872

Client Sample ID: MW-31-MS_081520
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	99		78 - 129

Lab Sample ID: 240-135201-3 MSD
Matrix: Water
Analysis Batch: 448872

Client Sample ID: MW-31-MSD_081520
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	20.0	19.5		ug/L		98	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	20.0	19.8		ug/L		99	68 - 121	0	35
Tetrachloroethene	1.0	U	20.0	16.2		ug/L		81	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	20.0	20.4		ug/L		102	69 - 126	1	35
Trichloroethene	1.0	U	20.0	17.4		ug/L		87	56 - 124	5	35
Vinyl chloride	1.0	U	20.0	19.8		ug/L		99	49 - 136	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	108		69 - 122
Dibromofluoromethane (Surr)	97		78 - 129

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

Lab Sample ID: MB 240-448707/6
Matrix: Water
Analysis Batch: 448707

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			08/26/20 06:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		08/26/20 06:59	1

Lab Sample ID: LCS 240-448707/5
Matrix: Water
Analysis Batch: 448707

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	10.6		ug/L		106	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		70 - 133

Lab Sample ID: 240-135201-3 MS
Matrix: Water
Analysis Batch: 448707

Client Sample ID: MW-31-MS_081520
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	9.85		ug/L		98	46 - 170

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QC Sample Results

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

Job ID: 240-135201-1

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

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

Lab Sample ID: 240-135201-3 MSD
Matrix: Water
Analysis Batch: 448707

Client Sample ID: MW-31-MSD_081520
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	10.0		ug/L		100	46 - 170	2	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	90		70 - 133

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QC Association Summary

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

Job ID: 240-135201-1

GC/MS VOA

Analysis Batch: 448707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135201-2	MW-40_081520	Total/NA	Water	8260B SIM	
240-135201-3	MW-31_081520	Total/NA	Water	8260B SIM	
240-135201-4	MW-208S_081520	Total/NA	Water	8260B SIM	
MB 240-448707/6	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-448707/5	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135201-3 MS	MW-31-MS_081520	Total/NA	Water	8260B SIM	
240-135201-3 MSD	MW-31-MSD_081520	Total/NA	Water	8260B SIM	

Analysis Batch: 448872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135201-1	TRIP BLANK	Total/NA	Water	8260B	
240-135201-2	MW-40_081520	Total/NA	Water	8260B	
240-135201-3	MW-31_081520	Total/NA	Water	8260B	
240-135201-4	MW-208S_081520	Total/NA	Water	8260B	
MB 240-448872/8	Method Blank	Total/NA	Water	8260B	
LCS 240-448872/5	Lab Control Sample	Total/NA	Water	8260B	
240-135201-3 MS	MW-31-MS_081520	Total/NA	Water	8260B	
240-135201-3 MSD	MW-31-MSD_081520	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-135201-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135201-1

Date Collected: 08/15/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448872	08/27/20 01:39	TJL1	TAL CAN

Client Sample ID: MW-40_081520

Lab Sample ID: 240-135201-2

Date Collected: 08/15/20 08:45

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448872	08/27/20 02:01	TJL1	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 14:49	TJL2	TAL CAN

Client Sample ID: MW-31_081520

Lab Sample ID: 240-135201-3

Date Collected: 08/15/20 09:45

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448872	08/27/20 02:46	TJL1	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 15:14	TJL2	TAL CAN

Client Sample ID: MW-208S_081520

Lab Sample ID: 240-135201-4

Date Collected: 08/15/20 11:10

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448872	08/27/20 02:24	TJL1	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 16:27	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: 240-135201-1

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	07-31-20 *
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	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



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 Hinskey Telephone: 248-994-2240 Email: krisoffier-hinskey@arcadis.com		Site Contact: Julia McClafferty Telephone: 734-644-5131	
Project Name: Ford LTP On-Site Project Number: 30050315.401.03 PO # 30050315.401.03		Lab Contact: Mike DelMonico Telephone: 330-497-9396	
Sampler Name: Emma Witherspoon		Analyses	
Method of Shipment/Carrier:		Walk-in client Lab sampling Job/SDG No:	
Shipping/Tracking No:		For lab use only	
Sample Identification		Sample Specific Notes / Special Instructions:	
Sample Date 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Sample Time - 845 945 950 955 1110	Matrix Air Aqueous Sediment Solid Other:	Containers & Preservatives HCl NaOH ZnAc NaOH Other:
Sample Date 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Sample Time - 845 945 950 955 1110	Filtered Sample (Y/N) NG NG NG NG NG NG	Composite C/Grab-G 1,1-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TCE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM
Sample Date 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Sample Time - 845 945 950 955 1110	Date/Time 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Date/Time 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20
Company: Arcadis Company: Arcadis Company: Arcadis Company: Arcadis Company: Arcadis Company: Arcadis	Date/Time 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Date/Time 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20	Date/Time 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20 8/15/20
Retinquished by: Witherspoon Retinquished by: [Signature] Retinquished by: [Signature]	Received by: [Signature] Received by: NOW COLO STORAGE Received in Laboratory by: [Signature]	Company: ARCADIS Company: ARCADIS Company: ETA	Date/Time: 8/15/20 / 1210 Date/Time: 8/15/20 / 1230 Date/Time: 8/15/20 / 1200



Received by: [Signature] 8/19/20
 Received by: [Signature] 8/19/20
 Received in Laboratory by: [Signature] 8/19/20
 Company: ETA
 Date/Time: 8-19-20 930

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login #: 135201

Canton Facility

Client Arcadis

Site Name

Cooler unpacked by:

Cooler Received on 8-19-20

Opened on 8-19-20

Jamy Page

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
IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN #IR-11 (CF +0.9 °C) Observed Cooler Temp. 14 °C Corrected Cooler Temp. 23 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
-Were the seals on the outside of the cooler(s) signed & dated?
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?
-Were tamper/custody seals intact and uncompromised?

3. Shippers' packing slip attached to the cooler(s)?
4. Did custody papers accompany the sample(s)?
5. Were the custody papers relinquished & signed in the appropriate place?
6. Was/were the person(s) who collected the samples clearly identified on the COC?
7. Did all bottles arrive in good condition (Unbroken)?
8. Could all bottle labels be reconciled with the COC?
9. Were correct bottle(s) used for the test(s) indicated?
10. Sufficient quantity received to perform indicated analyses?
11. Are these work share samples?

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt?
13. Were VOAs on the COC?
14. Were air bubbles >6 mm in any VOA vials?
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #
16. Was a LL Hg or Me Hg trip blank present?

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

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

18. 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)

19. 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: