

ANALYTICAL REPORT

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Laboratory Job ID: 240-119550-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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



Authorized for release by:
10/11/2019 1:58:13 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 Livonia MI - E203728

Job ID: 240-119550-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance 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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Job ID: 240-119550-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-119550-1

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 9/27/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-46_092519 (240-119550-1), MW-47_092519 (240-119550-2) and TRIP BLANK (240-119550-3) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/06/2019 and 10/07/2019.

1,1-Dichloroethane, 1,2-Dichloropropane, Cyclohexane, Diethyl ether and Tetrachloroethene failed the recovery criteria high for LCS 240-404390/4. Refer to the QC report for details.

1,1-Dichloroethane failed the recovery criteria high for the MS of sample 240-119529-25 in batch 240-404390.

1,2-Dichloropropane failed the recovery criteria high for the MSD of sample 240-119529-25 in batch 240-404390.

Vinyl chloride failed the recovery criteria low for the MSD of sample 240-119529-22 in batch 240-404298.

Refer to the QC report for details.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Job ID: 240-119550-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

Sample MW-47_092519 (240-119550-2)[2.5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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 MW-46_092519 (240-119550-1) and MW-47_092519 (240-119550-2) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 10/02/2019.

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 Livonia MI - E203728

Job ID: 240-119550-1

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 Livonia MI - E203728

Job ID: 240-119550-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-119550-1	MW-46_092519	Water	09/25/19 15:25	09/27/19 08:40	
240-119550-2	MW-47_092519	Water	09/25/19 16:55	09/27/19 08:40	
240-119550-3	TRIP BLANK	Water	09/25/19 00:00	09/27/19 08:40	

- 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 Livonia MI - E203728

Job ID: 240-119550-1

Client Sample ID: MW-46_092519

Lab Sample ID: 240-119550-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	5.0		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.53	J	1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	20		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-47_092519

Lab Sample ID: 240-119550-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.59	J	1.0	0.19	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	32		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	5.6		1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	94		2.5	0.50	ug/L	2.5		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119550-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Client Sample ID: MW-46_092519

Lab Sample ID: 240-119550-1

Date Collected: 09/25/19 15:25

Matrix: Water

Date Received: 09/27/19 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.8		2.0	0.86	ug/L			10/02/19 18:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		63 - 125					10/02/19 18:02	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			10/06/19 21:04	1
cis-1,2-Dichloroethene	5.0		1.0	0.16	ug/L			10/06/19 21:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/06/19 21:04	1
trans-1,2-Dichloroethene	0.53	J	1.0	0.19	ug/L			10/06/19 21:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/06/19 21:04	1
Vinyl chloride	20		1.0	0.20	ug/L			10/06/19 21:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					10/06/19 21:04	1
Dibromofluoromethane (Surr)	111		75 - 128					10/06/19 21:04	1
1,2-Dichloroethane-d4 (Surr)	94		70 - 121					10/06/19 21:04	1
Toluene-d8 (Surr)	93		70 - 123					10/06/19 21:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Client Sample ID: MW-47_092519

Lab Sample ID: 240-119550-2

Date Collected: 09/25/19 16:55

Matrix: Water

Date Received: 09/27/19 08:40

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			10/02/19 18:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		63 - 125					10/02/19 18:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.59	J	1.0	0.19	ug/L			10/06/19 21:28	1
cis-1,2-Dichloroethene	32		1.0	0.16	ug/L			10/06/19 21:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/06/19 21:28	1
trans-1,2-Dichloroethene	5.6		1.0	0.19	ug/L			10/06/19 21:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/06/19 21:28	1
Vinyl chloride	94		2.5	0.50	ug/L			10/07/19 17:08	2.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		59 - 120					10/06/19 21:28	1
4-Bromofluorobenzene (Surr)	71		59 - 120					10/07/19 17:08	2.5
Dibromofluoromethane (Surr)	115		75 - 128					10/06/19 21:28	1
Dibromofluoromethane (Surr)	99		75 - 128					10/07/19 17:08	2.5
1,2-Dichloroethane-d4 (Surr)	95		70 - 121					10/06/19 21:28	1
1,2-Dichloroethane-d4 (Surr)	109		70 - 121					10/07/19 17:08	2.5
Toluene-d8 (Surr)	91		70 - 123					10/06/19 21:28	1
Toluene-d8 (Surr)	99		70 - 123					10/07/19 17:08	2.5

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119550-3

Date Collected: 09/25/19 00:00

Matrix: Water

Date Received: 09/27/19 08:40

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			10/06/19 21:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/06/19 21:51	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/06/19 21:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/06/19 21:51	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/06/19 21:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/06/19 21:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120		10/06/19 21:51	1
Dibromofluoromethane (Surr)	113		75 - 128		10/06/19 21:51	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 121		10/06/19 21:51	1
Toluene-d8 (Surr)	91		70 - 123		10/06/19 21:51	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(59-120)	(75-128)	(70-121)	(70-123)
240-119529-B-25 MS	Matrix Spike	78	96	101	101
240-119529-B-25 MSD	Matrix Spike Duplicate	81	102	102	102
240-119529-C-22 MS	Matrix Spike	97	102	83	100
240-119529-C-22 MSD	Matrix Spike Duplicate	98	101	84	101
240-119550-1	MW-46_092519	76	111	94	93
240-119550-2	MW-47_092519	72	115	95	91
240-119550-2	MW-47_092519	71	99	109	99
240-119550-3	TRIP BLANK	77	113	90	91
LCS 240-404298/4	Lab Control Sample	96	97	77	98
LCS 240-404390/4	Lab Control Sample	84	98	103	96
MB 240-404298/7	Method Blank	74	112	91	91
MB 240-404390/7	Method Blank	75	98	105	93

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

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

TOL = Toluene-d8 (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
		(63-125)
240-119520-F-2 MS	Matrix Spike	77
240-119520-F-2 MSD	Matrix Spike Duplicate	76
240-119550-1	MW-46_092519	77
240-119550-2	MW-47_092519	79
LCS 240-403698/4	Lab Control Sample	75
MB 240-403698/5	Method Blank	75

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: MB 240-404298/7
Matrix: Water
Analysis Batch: 404298

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			10/06/19 15:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/06/19 15:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/06/19 15:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/06/19 15:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/06/19 15:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/06/19 15:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		59 - 120		10/06/19 15:30	1
Dibromofluoromethane (Surr)	112		75 - 128		10/06/19 15:30	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 121		10/06/19 15:30	1
Toluene-d8 (Surr)	91		70 - 123		10/06/19 15:30	1

Lab Sample ID: LCS 240-404298/4
Matrix: Water
Analysis Batch: 404298

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.64		ug/L		96	69 - 134
1,1,1,2-Tetrachloroethane	10.0	9.87		ug/L		99	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.9		ug/L		119	50 - 156
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	78 - 133
1,1-Dichloroethane	10.0	9.36		ug/L		94	75 - 133
1,1-Dichloroethene	10.0	10.1		ug/L		101	65 - 139
1,2,4-Trichlorobenzene	10.0	9.45		ug/L		95	42 - 133
1,2,4-Trimethylbenzene	10.0	8.90		ug/L		89	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	10.8		ug/L		108	46 - 132
1,2-Dibromoethane	10.0	10.8		ug/L		108	77 - 123
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	78 - 120
1,2-Dichloroethane	10.0	8.82		ug/L		88	71 - 135
1,2-Dichloropropane	10.0	9.82		ug/L		98	78 - 133
1,3,5-Trimethylbenzene	10.0	8.98		ug/L		90	75 - 121
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	78 - 120
1,4-Dichlorobenzene	10.0	9.68		ug/L		97	78 - 120
2-Butanone (MEK)	20.0	20.7		ug/L		103	39 - 163
2-Hexanone	20.0	21.5		ug/L		107	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	20.5		ug/L		103	49 - 143
Acetone	20.0	19.3		ug/L		96	21 - 162
Benzene	10.0	10.1		ug/L		101	80 - 123
Bromodichloromethane	10.0	9.86		ug/L		99	77 - 125
Bromoform	10.0	11.1		ug/L		111	49 - 141
Bromomethane	10.0	6.37		ug/L		64	41 - 175
Carbon disulfide	10.0	10.2		ug/L		102	60 - 138
Carbon tetrachloride	10.0	10.6		ug/L		106	63 - 140
Chlorobenzene	10.0	10.5		ug/L		105	80 - 121
Chloroethane	10.0	5.07		ug/L		51	33 - 173
Chloroform	10.0	9.36		ug/L		94	79 - 127

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: LCS 240-404298/4
Matrix: Water
Analysis Batch: 404298

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	10.0	6.86		ug/L		69	54 - 143
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	76 - 128
cis-1,3-Dichloropropene	10.0	10.7		ug/L		107	64 - 132
Cyclohexane	10.0	10.2		ug/L		102	58 - 145
Dibromochloromethane	10.0	11.2		ug/L		112	70 - 132
Dichlorodifluoromethane	10.0	8.83		ug/L		88	29 - 148
Diethyl ether	10.0	9.80		ug/L		98	70 - 146
Ethylbenzene	10.0	10.6		ug/L		106	80 - 120
Isopropylbenzene	10.0	10.6		ug/L		106	74 - 120
Methyl acetate	20.0	18.7		ug/L		93	52 - 145
Methyl tert-butyl ether	10.0	9.68		ug/L		97	51 - 133
Methylcyclohexane	10.0	10.4		ug/L		104	60 - 125
Methylene Chloride	10.0	10.5		ug/L		105	70 - 134
Styrene	10.0	11.2		ug/L		112	79 - 120
Tetrachloroethene	10.0	10.6		ug/L		106	74 - 130
Toluene	10.0	10.6		ug/L		106	78 - 129
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	78 - 133
trans-1,3-Dichloropropene	10.0	9.30		ug/L		93	55 - 128
Trichloroethene	10.0	11.0		ug/L		110	76 - 125
Trichlorofluoromethane	10.0	8.56		ug/L		86	51 - 164
Vinyl chloride	10.0	6.89		ug/L		69	58 - 143
Xylenes, Total	20.0	22.3		ug/L		112	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		59 - 120
Dibromofluoromethane (Surr)	97		75 - 128
1,2-Dichloroethane-d4 (Surr)	77		70 - 121
Toluene-d8 (Surr)	98		70 - 123

Lab Sample ID: 240-119529-C-22 MS
Matrix: Water
Analysis Batch: 404298

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	250	U	2500	2330		ug/L		93	51 - 138
1,1,2,2-Tetrachloroethane	250	U	2500	2530		ug/L		101	60 - 137
1,1,2-Trichloroethane	250	U	2500	2760		ug/L		110	76 - 132
1,1-Dichloroethane	250	U	2500	2400		ug/L		96	63 - 136
1,1-Dichloroethene	250	U	2500	2540		ug/L		102	53 - 140
1,2-Dichlorobenzene	250	U	2500	2340		ug/L		94	64 - 120
1,2-Dichloroethane	250	U	2500	2300		ug/L		92	65 - 135
1,2-Dichloropropane	250	U	2500	2430		ug/L		97	70 - 132
2-Butanone (MEK)	2500	U	5000	5310		ug/L		106	37 - 156
2-Hexanone	2500	U	5000	5690		ug/L		114	42 - 150
4-Methyl-2-pentanone (MIBK)	2500	U	5000	5650		ug/L		113	44 - 143
Acetone	2500	U	5000	4750		ug/L		95	10 - 168
Benzene	250	U	2500	2460		ug/L		98	71 - 122
Bromodichloromethane	250	U	2500	2420		ug/L		97	64 - 125

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: 240-119529-C-22 MS

Matrix: Water

Analysis Batch: 404298

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Bromoform	250	U	2500	2930		ug/L		117	44 - 129	
Bromomethane	250	U	2500	1500		ug/L		60	19 - 187	
Carbon disulfide	1300	U	2500	2460		ug/L		98	43 - 144	
Carbon tetrachloride	250	U	2500	2600		ug/L		104	41 - 143	
Chlorobenzene	250	U	2500	2470		ug/L		99	70 - 123	
Chloroethane	250	U	2500	1230		ug/L		49	11 - 189	
Chloroform	250	U	2500	2390		ug/L		96	68 - 130	
Chloromethane	250	U	2500	1560		ug/L		62	31 - 154	
cis-1,2-Dichloroethene	6200		2500	8040		ug/L		74	64 - 130	
cis-1,3-Dichloropropene	250	U	2500	2440		ug/L		98	48 - 127	
Dibromochloromethane	250	U	2500	2730		ug/L		109	60 - 129	
Ethylbenzene	250	U	2500	2560		ug/L		102	66 - 120	
Methylene Chloride	1300	U	2500	2640		ug/L		106	61 - 130	
Styrene	250	U	2500	2700		ug/L		108	68 - 120	
Tetrachloroethene	250	U	2500	2530		ug/L		101	51 - 136	
Toluene	250	U	2500	2500		ug/L		100	62 - 132	
trans-1,2-Dichloroethene	250	U	2500	2720		ug/L		109	68 - 133	
trans-1,3-Dichloropropene	250	U	2500	2210		ug/L		88	40 - 125	
Trichloroethene	250	U	2500	2600		ug/L		104	55 - 131	
Vinyl chloride	2300	F1	2500	3330		ug/L		43	43 - 154	
Xylenes, Total	500	U	5000	5160		ug/L		103	67 - 120	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	97		59 - 120
Dibromofluoromethane (Surr)	102		75 - 128
1,2-Dichloroethane-d4 (Surr)	83		70 - 121
Toluene-d8 (Surr)	100		70 - 123

Lab Sample ID: 240-119529-C-22 MSD

Matrix: Water

Analysis Batch: 404298

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD	Limit
	Result	Qualifier		Result	Qualifier								
1,1,1-Trichloroethane	250	U	2500	2270		ug/L		91	51 - 138	3		27	
1,1,2,2-Tetrachloroethane	250	U	2500	2550		ug/L		102	60 - 137	1		31	
1,1,2-Trichloroethane	250	U	2500	2570		ug/L		103	76 - 132	7		25	
1,1-Dichloroethane	250	U	2500	2290		ug/L		92	63 - 136	5		23	
1,1-Dichloroethene	250	U	2500	2510		ug/L		101	53 - 140	1		35	
1,2-Dichlorobenzene	250	U	2500	2340		ug/L		93	64 - 120	0		30	
1,2-Dichloroethane	250	U	2500	2290		ug/L		92	65 - 135	0		24	
1,2-Dichloropropane	250	U	2500	2380		ug/L		95	70 - 132	2		26	
2-Butanone (MEK)	2500	U	5000	5420		ug/L		108	37 - 156	2		35	
2-Hexanone	2500	U	5000	5050		ug/L		101	42 - 150	12		35	
4-Methyl-2-pentanone (MIBK)	2500	U	5000	5690		ug/L		114	44 - 143	1		35	
Acetone	2500	U	5000	4610		ug/L		92	10 - 168	3		35	
Benzene	250	U	2500	2430		ug/L		97	71 - 122	1		22	
Bromodichloromethane	250	U	2500	2380		ug/L		95	64 - 125	2		27	
Bromoform	250	U	2500	2790		ug/L		112	44 - 129	5		28	

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: 240-119529-C-22 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404298

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits		Limit
Bromomethane	250	U	2500	1550		ug/L		62	19 - 187	3	35
Carbon disulfide	1300	U	2500	2410		ug/L		96	43 - 144	2	33
Carbon tetrachloride	250	U	2500	2500		ug/L		100	41 - 143	4	30
Chlorobenzene	250	U	2500	2430		ug/L		97	70 - 123	2	23
Chloroethane	250	U	2500	1340		ug/L		54	11 - 189	9	35
Chloroform	250	U	2500	2390		ug/L		96	68 - 130	0	23
Chloromethane	250	U	2500	1520		ug/L		61	31 - 154	3	35
cis-1,2-Dichloroethene	6200		2500	7960		ug/L		71	64 - 130	1	21
cis-1,3-Dichloropropene	250	U	2500	2400		ug/L		96	48 - 127	2	30
Dibromochloromethane	250	U	2500	2680		ug/L		107	60 - 129	2	26
Ethylbenzene	250	U	2500	2510		ug/L		100	66 - 120	2	24
Methylene Chloride	1300	U	2500	2600		ug/L		104	61 - 130	2	29
Styrene	250	U	2500	2590		ug/L		104	68 - 120	4	26
Tetrachloroethene	250	U	2500	2470		ug/L		99	51 - 136	2	23
Toluene	250	U	2500	2430		ug/L		97	62 - 132	3	23
trans-1,2-Dichloroethene	250	U	2500	2630		ug/L		105	68 - 133	3	24
trans-1,3-Dichloropropene	250	U	2500	2210		ug/L		89	40 - 125	0	27
Trichloroethene	250	U	2500	2570		ug/L		103	55 - 131	1	23
Vinyl chloride	2300	F1	2500	3270	F1	ug/L		40	43 - 154	2	29
Xylenes, Total	500	U	5000	5090		ug/L		102	67 - 120	1	25

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		59 - 120
Dibromofluoromethane (Surr)	101		75 - 128
1,2-Dichloroethane-d4 (Surr)	84		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: MB 240-404390/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404390

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			10/07/19 15:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/07/19 15:02	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/07/19 15:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/07/19 15:02	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/07/19 15:02	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/07/19 15:02	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	75		59 - 120		10/07/19 15:02	1
Dibromofluoromethane (Surr)	98		75 - 128		10/07/19 15:02	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 121		10/07/19 15:02	1
Toluene-d8 (Surr)	93		70 - 123		10/07/19 15:02	1

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: LCS 240-404390/4

Matrix: Water

Analysis Batch: 404390

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.40		ug/L		94	69 - 134
1,1,2,2-Tetrachloroethane	10.0	7.37		ug/L		74	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.5		ug/L		105	50 - 156
1,1,2-Trichloroethane	10.0	8.97		ug/L		90	78 - 133
1,1-Dichloroethane	10.0	13.5	*	ug/L		135	75 - 133
1,1-Dichloroethene	10.0	10.3		ug/L		103	65 - 139
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	42 - 133
1,2,4-Trimethylbenzene	10.0	9.22		ug/L		92	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.15		ug/L		92	46 - 132
1,2-Dibromoethane	10.0	9.37		ug/L		94	77 - 123
1,2-Dichlorobenzene	10.0	10.5		ug/L		105	78 - 120
1,2-Dichloroethane	10.0	12.8		ug/L		128	71 - 135
1,2-Dichloropropane	10.0	13.8	*	ug/L		138	78 - 133
1,3,5-Trimethylbenzene	10.0	8.89		ug/L		89	75 - 121
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	78 - 120
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	78 - 120
2-Butanone (MEK)	20.0	25.1		ug/L		126	39 - 163
2-Hexanone	20.0	21.9		ug/L		110	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	23.9		ug/L		119	49 - 143
Acetone	20.0	26.3		ug/L		132	21 - 162
Benzene	10.0	10.4		ug/L		104	80 - 123
Bromodichloromethane	10.0	8.72		ug/L		87	77 - 125
Bromoform	10.0	8.33		ug/L		83	49 - 141
Bromomethane	10.0	8.25		ug/L		82	41 - 175
Carbon disulfide	10.0	9.22		ug/L		92	60 - 138
Carbon tetrachloride	10.0	10.4		ug/L		104	63 - 140
Chlorobenzene	10.0	10.2		ug/L		102	80 - 121
Chloroethane	10.0	11.1		ug/L		111	33 - 173
Chloroform	10.0	9.43		ug/L		94	79 - 127
Chloromethane	10.0	12.3		ug/L		123	54 - 143
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	76 - 128
cis-1,3-Dichloropropene	10.0	9.24		ug/L		92	64 - 132
Cyclohexane	10.0	14.6	*	ug/L		146	58 - 145
Dibromochloromethane	10.0	9.85		ug/L		98	70 - 132
Dichlorodifluoromethane	10.0	6.07		ug/L		61	29 - 148
Diethyl ether	10.0	16.3	*	ug/L		163	70 - 146
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
Isopropylbenzene	10.0	9.77		ug/L		98	74 - 120
Methyl acetate	20.0	27.6		ug/L		138	52 - 145
Methyl tert-butyl ether	10.0	8.35		ug/L		84	51 - 133
Methylcyclohexane	10.0	9.10		ug/L		91	60 - 125
Methylene Chloride	10.0	9.17		ug/L		92	70 - 134
Styrene	10.0	9.95		ug/L		100	79 - 120
Tetrachloroethene	10.0	13.5	*	ug/L		135	74 - 130
Toluene	10.0	10.0		ug/L		100	78 - 129
trans-1,2-Dichloroethene	10.0	9.98		ug/L		100	78 - 133
trans-1,3-Dichloropropene	10.0	7.42		ug/L		74	55 - 128
Trichloroethene	10.0	11.7		ug/L		117	76 - 125

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: LCS 240-404390/4
Matrix: Water
Analysis Batch: 404390

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	10.0	9.22		ug/L		92	51 - 164
Vinyl chloride	10.0	10.8		ug/L		108	58 - 143
Xylenes, Total	20.0	19.8		ug/L		99	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		59 - 120
Dibromofluoromethane (Surr)	98		75 - 128
1,2-Dichloroethane-d4 (Surr)	103		70 - 121
Toluene-d8 (Surr)	96		70 - 123

Lab Sample ID: 240-119529-B-25 MS
Matrix: Water
Analysis Batch: 404390

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40	U	400	426		ug/L		107	51 - 138
1,1,1,2-Tetrachloroethane	40	U	400	278		ug/L		69	60 - 137
1,1,1,2-Trichloroethane	40	U	400	338		ug/L		85	76 - 132
1,1-Dichloroethane	40	U F1 *	400	550	F1	ug/L		137	63 - 136
1,1-Dichloroethene	40	U	400	385		ug/L		96	53 - 140
1,2-Dichlorobenzene	40	U	400	384		ug/L		96	64 - 120
1,2-Dichloroethane	40	U	400	512		ug/L		128	65 - 135
1,2-Dichloropropane	40	U F1 *	400	527		ug/L		132	70 - 132
2-Butanone (MEK)	400	U	800	923		ug/L		115	37 - 156
2-Hexanone	400	U	800	785		ug/L		98	42 - 150
4-Methyl-2-pentanone (MIBK)	400	U	800	870		ug/L		109	44 - 143
Acetone	400	U	800	969		ug/L		121	10 - 168
Benzene	40	U	400	401		ug/L		100	71 - 122
Bromodichloromethane	40	U	400	354		ug/L		89	64 - 125
Bromoform	40	U	400	349		ug/L		87	44 - 129
Bromomethane	40	U	400	286		ug/L		71	19 - 187
Carbon disulfide	200	U	400	418		ug/L		104	43 - 144
Carbon tetrachloride	40	U	400	424		ug/L		106	41 - 143
Chlorobenzene	40	U	400	400		ug/L		100	70 - 123
Chloroethane	40	U	400	458		ug/L		115	11 - 189
Chloroform	40	U	400	381		ug/L		95	68 - 130
Chloromethane	40	U	400	288		ug/L		72	31 - 154
cis-1,2-Dichloroethene	990		400	1370		ug/L		93	64 - 130
cis-1,3-Dichloropropene	40	U	400	340		ug/L		85	48 - 127
Dibromochloromethane	40	U	400	338		ug/L		84	60 - 129
Ethylbenzene	40	U	400	377		ug/L		94	66 - 120
Methylene Chloride	200	U	400	342		ug/L		86	61 - 130
Styrene	40	U	400	370		ug/L		93	68 - 120
Tetrachloroethene	40	U *	400	485		ug/L		121	51 - 136
Toluene	40	U	400	388		ug/L		97	62 - 132
trans-1,2-Dichloroethene	40	U	400	382		ug/L		96	68 - 133
trans-1,3-Dichloropropene	40	U	400	273		ug/L		68	40 - 125
Trichloroethene	40	U	400	476		ug/L		119	55 - 131

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: 240-119529-B-25 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404390

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	270		400	778		ug/L		128	43 - 154
Xylenes, Total	80	U	800	756		ug/L		95	67 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	78		59 - 120
Dibromofluoromethane (Surr)	96		75 - 128
1,2-Dichloroethane-d4 (Surr)	101		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-119529-B-25 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404390

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	40	U	400	375		ug/L		94	51 - 138	13	27
1,1,2,2-Tetrachloroethane	40	U	400	240		ug/L		60	60 - 137	14	31
1,1,2-Trichloroethane	40	U	400	332		ug/L		83	76 - 132	2	25
1,1-Dichloroethane	40	U F1 *	400	520		ug/L		130	63 - 136	6	23
1,1-Dichloroethene	40	U	400	374		ug/L		94	53 - 140	3	35
1,2-Dichlorobenzene	40	U	400	371		ug/L		93	64 - 120	3	30
1,2-Dichloroethane	40	U	400	484		ug/L		121	65 - 135	6	24
1,2-Dichloropropane	40	U F1 *	400	535	F1	ug/L		134	70 - 132	2	26
2-Butanone (MEK)	400	U	800	911		ug/L		114	37 - 156	1	35
2-Hexanone	400	U	800	724		ug/L		91	42 - 150	8	35
4-Methyl-2-pentanone (MIBK)	400	U	800	805		ug/L		101	44 - 143	8	35
Acetone	400	U	800	957		ug/L		120	10 - 168	1	35
Benzene	40	U	400	399		ug/L		100	71 - 122	1	22
Bromodichloromethane	40	U	400	350		ug/L		87	64 - 125	1	27
Bromoform	40	U	400	295		ug/L		74	44 - 129	17	28
Bromomethane	40	U	400	279		ug/L		70	19 - 187	2	35
Carbon disulfide	200	U	400	406		ug/L		102	43 - 144	3	33
Carbon tetrachloride	40	U	400	380		ug/L		95	41 - 143	11	30
Chlorobenzene	40	U	400	373		ug/L		93	70 - 123	7	23
Chloroethane	40	U	400	410		ug/L		103	11 - 189	11	35
Chloroform	40	U	400	370		ug/L		93	68 - 130	3	23
Chloromethane	40	U	400	265		ug/L		66	31 - 154	9	35
cis-1,2-Dichloroethene	990		400	1440		ug/L		112	64 - 130	5	21
cis-1,3-Dichloropropene	40	U	400	320		ug/L		80	48 - 127	6	30
Dibromochloromethane	40	U	400	337		ug/L		84	60 - 129	0	26
Ethylbenzene	40	U	400	361		ug/L		90	66 - 120	4	24
Methylene Chloride	200	U	400	346		ug/L		87	61 - 130	1	29
Styrene	40	U	400	342		ug/L		86	68 - 120	8	26
Tetrachloroethene	40	U *	400	452		ug/L		113	51 - 136	7	23
Toluene	40	U	400	368		ug/L		92	62 - 132	5	23
trans-1,2-Dichloroethene	40	U	400	381		ug/L		95	68 - 133	0	24
trans-1,3-Dichloropropene	40	U	400	253		ug/L		63	40 - 125	8	27
Trichloroethene	40	U	400	458		ug/L		114	55 - 131	4	23
Vinyl chloride	270		400	784		ug/L		129	43 - 154	1	29

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: 240-119529-B-25 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404390

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total	80	U	800	728		ug/L		91	67 - 120	4	25
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	81		59 - 120								
Dibromofluoromethane (Surr)	102		75 - 128								
1,2-Dichloroethane-d4 (Surr)	102		70 - 121								
Toluene-d8 (Surr)	102		70 - 123								

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

Lab Sample ID: MB 240-403698/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 403698

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			10/02/19 13:50	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		63 - 125					10/02/19 13:50	1

Lab Sample ID: LCS 240-403698/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 403698

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	11.8		ug/L		118	59 - 131
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	75		63 - 125				

Lab Sample ID: 240-119520-F-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 403698

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.93	J	10.0	11.7		ug/L		108	52 - 129
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	77		63 - 125						

Lab Sample ID: 240-119520-F-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 403698

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	0.93	J	10.0	11.7		ug/L		108	52 - 129	0	13

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

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

Lab Sample ID: 240-119520-F-2 MSD
Matrix: Water
Analysis Batch: 403698

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

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	76		63 - 125

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QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

GC/MS VOA

Analysis Batch: 403698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119550-1	MW-46_092519	Total/NA	Water	8260B SIM	
240-119550-2	MW-47_092519	Total/NA	Water	8260B SIM	
MB 240-403698/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-403698/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-119520-F-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-119520-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 404298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119550-1	MW-46_092519	Total/NA	Water	8260B	
240-119550-2	MW-47_092519	Total/NA	Water	8260B	
240-119550-3	TRIP BLANK	Total/NA	Water	8260B	
MB 240-404298/7	Method Blank	Total/NA	Water	8260B	
LCS 240-404298/4	Lab Control Sample	Total/NA	Water	8260B	
240-119529-C-22 MS	Matrix Spike	Total/NA	Water	8260B	
240-119529-C-22 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 404390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119550-2	MW-47_092519	Total/NA	Water	8260B	
MB 240-404390/7	Method Blank	Total/NA	Water	8260B	
LCS 240-404390/4	Lab Control Sample	Total/NA	Water	8260B	
240-119529-B-25 MS	Matrix Spike	Total/NA	Water	8260B	
240-119529-B-25 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-119550-1

Client Sample ID: MW-46_092519

Lab Sample ID: 240-119550-1

Date Collected: 09/25/19 15:25

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404298	10/06/19 21:04	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 18:02	SAM	TAL CAN

Client Sample ID: MW-47_092519

Lab Sample ID: 240-119550-2

Date Collected: 09/25/19 16:55

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	404390	10/07/19 17:08	LRW	TAL CAN
Total/NA	Analysis	8260B		1	404298	10/06/19 21:28	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 18:27	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119550-3

Date Collected: 09/25/19 00:00

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404298	10/06/19 21:51	LRW	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 Livonia MI - E203728

Job ID: 240-119550-1

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	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 119550
Canton Facility

Client Accadi's Site Name _____ Cooler unpacked by: _____
Cooler Received on 9-27-19 Opened on 9-27-19
FedEx: 1st 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

See Multiple Cooler Form

- Cooler temperature upon receipt
IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 1.3 °C
IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
- Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels be reconciled with the COC? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Are these work share samples? Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.
- Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC991818
- Were VOAs on the COC? Yes No
- Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- Was a LL Hg or Me Hg trip blank present? Yes No

Tested for: **VOAs, Oil and Grease, TOC**

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

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: GB

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: _____