## PREPARED FOR

Attn: Ms. Megan Meckley Arcadis US Inc. 28550 Cabot Drive Suite 500 Novi, Michigan 48377

Generated 12/9/2024 8:00:27 AM

# **JOB DESCRIPTION**

Ford LTP

### **JOB NUMBER**

240-215661-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203

# **Eurofins Cleveland**

#### **Job Notes**

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# Authorization

Generated 12/9/2024 8:00:27 AM

Authorized for release by Michael DelMonico, Project Manager I Michael.DelMonico@et.eurofinsus.com (330)497-9396

Client: Arcadis US Inc. Project/Site: Ford LTP

Laboratory Job ID: 240-215661-1

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#### **Definitions/Glossary**

Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

Qualifiers
GC/MS VOA

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.

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

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#### **Case Narrative**

Client: Arcadis US Inc. Project: Ford LTP

Job ID: 240-215661-1 Eurofins Cleveland

Job Narrative 240-215661-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these
  situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise
  specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/26/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

#### GC/MS VOA

Method 8260D: The matrix spike/matrix spike duplicate (MS/MSD) for samples MW-24\_112224 (240-215661-2) and MW-18\_112224 (240-215661-3) was not reported, because the analyte list for these samples did not match the analyte list for the MS/MSD parent sample.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-637621 recovered above the upper control limit for Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: TRIP BLANK\_76 (240-215661-1).

Method 8260D: No MS/MSD reported with tune as sample analysis resulted in internal standard failure which requires re analysis of the sample.

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

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Job ID: 240-215661-1

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#### **Method Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-215661-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

#### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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#### **Sample Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-215661-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-215661-1	TRIP BLANK_76	Water	11/22/24 00:00	11/26/24 08:00
240-215661-2	MW-24_112224	Water	11/22/24 09:15	11/26/24 08:00
240-215661-3	MW-18_112224	Water	11/22/24 12:25	11/26/24 08:00
240-215661-4	MW-62 112224	Water	11/22/24 10:55	11/26/24 08:00

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#### **Detection Summary**

Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_76 Lab Sample ID: 240-215661-1

No Detections.

No Detections.

Client Sample ID: MW-18\_112224 Lab Sample ID: 240-215661-3

No Detections.

Client Sample ID: MW-62\_112224 Lab Sample ID: 240-215661-4

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
1,4-Dioxane	1.2 J	2.0	0.86 ug/L		8260D SIM	Total/NA
Vinvl chloride	1.9	1.0	0.45 ua/L	1	8260D	Total/NA

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Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

Date Received: 11/26/24 08:00

Client Sample ID: TRIP BLANK\_76

Lab Sample ID: 240-215661-1 Date Collected: 11/22/24 00:00

**Matrix: Water** 

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac 1.0 1,1-Dichloroethene 1.0 U 0.49 ug/L 12/04/24 16:32 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 12/04/24 16:32 Tetrachloroethene 1.0 U 1.0 0.44 ug/L 12/04/24 16:32 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 12/04/24 16:32 Trichloroethene 1.0 U 1.0 0.44 ug/L 12/04/24 16:32 Vinyl chloride 1.0 U 1.0 0.45 ug/L 12/04/24 16:32 %Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 108 62 - 137 12/04/24 16:32 4-Bromofluorobenzene (Surr) 78 12/04/24 16:32 56 - 136 93 78 - 122 12/04/24 16:32 Toluene-d8 (Surr) Dibromofluoromethane (Surr) 96 73 - 120 12/04/24 16:32

Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Client Sample ID: MW-24\_112224

Date Collected: 11/22/24 09:15 Date Received: 11/26/24 08:00 Lab Sample ID: 240-215661-2

11/29/24 17:26

11/29/24 17:26

11/29/24 17:26

11/29/24 17:26

**Matrix: Water** 

Method: SW846 8260D SIM -	Volatile Organic C	ompounds	(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			12/04/24 02:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		68 - 127			-		12/04/24 02:40	1
- Method: SW846 8260D - Vola	tile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/24 17:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/24 17:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 17:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/24 17:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 17:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/24 17:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

62 - 137

56 - 136

78 - 122

73 - 120

124

91

101

110

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Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

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Client Sample ID: MW-18\_112224

Lab Sample ID: 240-215661-3 Date Collected: 11/22/24 12:25

**Matrix: Water** 

11/29/24 18:03

Date Received: 11/26/24 08:00

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			12/04/24 03:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		68 - 127			-		12/04/24 03:04	1
Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/24 18:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/24 18:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 18:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/24 18:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 18:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/24 18:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			62 - 137			-		11/29/24 18:03	1
4-Bromofluorobenzene (Surr)	77		56 <sub>-</sub> 136					11/29/24 18:03	1
Toluene-d8 (Surr)	92		78 <sub>-</sub> 122					11/29/24 18:03	1

73 - 120

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Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

Client Sample ID: MW-62\_112224

Lab Sample ID: 240-215661-4 Date Collected: 11/22/24 10:55

Matrix: Water

Date Received: 11/26/24 08:00

Method: SW846 8260D SIM - V	olatile Organic C	ompounds	(GC/MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.86	ug/L			12/04/24 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		68 - 127					12/04/24 03:27	1
- Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			12/05/24 15:44	1
cis-1.2-Dichloroethene	1.0	U	1.0	0.46	ua/l			12/05/24 15:44	1

Tetrachloroethene	1.0	U	1.0	0.44	ug/L		12/05/24 15:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		12/05/24 15:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L		12/05/24 15:44	1
Vinyl chloride	1.9		1.0	0.45	ug/L		12/05/24 15:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			62 - 137				12/05/24 15:44	1
4-Bromofluorobenzene (Surr)	75		56 <sub>-</sub> 136				12/05/24 15:44	1

#### **Surrogate Summary**

Client: Arcadis US Inc. Job ID: 240-215661-1 Project/Site: Ford LTP

#### Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water Prep Type: Total/NA

				Percent Sui	rrogate Rec
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-215661-1	TRIP BLANK_76	108	78	93	96
240-215661-2	MW-24_112224	124	91	101	110
240-215661-3	MW-18_112224	113	77	92	102
240-215661-4	MW-62_112224	111	75	93	100
240-215663-E-2 MS	Matrix Spike	99	89	92	92
240-215663-E-2 MSD	Matrix Spike Duplicate	94	89	90	90
LCS 240-637086/25	Lab Control Sample	111	99	101	103
LCS 240-637621/5	Lab Control Sample	97	88	95	90
LCS 240-637744/5	Lab Control Sample	93	89	99	91
MB 240-637086/10	Method Blank	115	86	98	102
MB 240-637621/10	Method Blank	106	78	94	93
MB 240-637744/10	Method Blank	104	76	95	94

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

**Matrix: Water** Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(68-127)	
240-215659-C-3 MS	Matrix Spike	111	
240-215659-F-3 MSD	Matrix Spike Duplicate	108	
240-215661-2	MW-24_112224	97	
240-215661-3	MW-18_112224	109	
240-215661-4	MW-62_112224	103	
LCS 240-637453/5	Lab Control Sample	110	
MB 240-637453/7	Method Blank	108	

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

Client: Arcadis US Inc. Job ID: 240-215661-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-637086/10

**Matrix: Water** 

Project/Site: Ford LTP

Analysis Batch: 637086

Client Sample ID: Method Blank	
Prep Type: Total/NA	

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/24 12:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/24 12:05	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 12:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/24 12:05	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/24 12:05	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/24 12:05	1

MB MB

Surrogate	%Recovery Qualifi	ier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115	62 - 137		11/29/24 12:05	1
4-Bromofluorobenzene (Surr)	86	56 <sub>-</sub> 136		11/29/24 12:05	1
Toluene-d8 (Surr)	98	78 - 122		11/29/24 12:05	1
Dibromofluoromethane (Surr)	102	73 - 120		11/29/24 12:05	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 637086

**Matrix: Water** 

Lab Sample ID: LCS 240-637086/25

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 1,1-Dichloroethene 25.0 97 63 - 134 24.4 ug/L 25.0 25.0 cis-1,2-Dichloroethene ug/L 100 77 - 123 Tetrachloroethene 25.0 26.7 107 76 - 123 ug/L trans-1,2-Dichloroethene 25.0 24.8 ug/L 99 75 - 124 Trichloroethene 25.0 24.9 ug/L 100 70 - 122 Vinyl chloride 12.5 14.6 ug/L 117 60 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)			62 - 137
4-Bromofluorobenzene (Surr)	99		56 <sub>-</sub> 136
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: MB 240-637621/10 Client Sample ID: Method Blank

**Matrix: Water** 

Analysis Batch: 637621

	Prep Type: Total/NA

	МВ	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			12/04/24 16:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			12/04/24 16:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			12/04/24 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			12/04/24 16:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			12/04/24 16:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			12/04/24 16:12	1

		МВ	MB				
Su	ırrogate	%Recovery	Qualifier	Limits	Prepare	d Analyzed	Dil Fac
1,2	2-Dichloroethane-d4 (Surr)	106	·	62 - 137		12/04/24 16:12	1
4-1	Bromofluorobenzene (Surr)	78		56 - 136		12/04/24 16:12	1
То	luene-d8 (Surr)	94		78 - 122		12/04/24 16:12	1

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Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

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

Lab Sample ID: MB 240-637621/10

**Matrix: Water** 

Analysis Batch: 637621

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Dibromofluoromethane (Surr) 93 73 - 120 12/04/24 16:12

Lab Sample ID: LCS 240-637621/5

**Matrix: Water** 

Analysis Batch: 637621

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 1,1-Dichloroethene 25.0 26.4 ug/L 106 63 - 134 cis-1,2-Dichloroethene 25.0 24.6 98 77 - 123 ug/L Tetrachloroethene 25.0 28.2 ug/L 113 76 - 123 75 - 124 trans-1,2-Dichloroethene 25.0 25.5 ug/L 102 Trichloroethene 25.0 24.8 ug/L 99 70 - 122 Vinyl chloride 12.5 16.1 ug/L 129 60 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Batch: 637744

**Matrix: Water** 

Lab Sample ID: MB 240-637744/10

	INID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			12/05/24 14:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			12/05/24 14:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			12/05/24 14:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			12/05/24 14:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			12/05/24 14:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			12/05/24 14:07	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		12/05/24 14:07	1
4-Bromofluorobenzene (Surr)	76		56 - 136		12/05/24 14:07	1
Toluene-d8 (Surr)	95		78 - 122		12/05/24 14:07	1
Dibromofluoromethane (Surr)	94		73 - 120		12/05/24 14:07	1

Lab Sample ID: LCS 240-637744/5

**Matrix: Water** 

Analysis Batch: 637744

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

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	24.2		ug/L		97	63 - 134	
cis-1,2-Dichloroethene	25.0	23.9		ug/L		96	77 - 123	
Tetrachloroethene	25.0	28.1		ug/L		112	76 - 123	
trans-1,2-Dichloroethene	25.0	23.4		ug/L		94	75 - 124	
Trichloroethene	25.0	22.8		ug/L		91	70 - 122	

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Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

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

Lab Sample ID: LCS 240-637744/5

**Matrix: Water** 

Analysis Batch: 637744

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 12.5 Vinyl chloride 11.9 95 60 - 144 ug/L

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	89		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

Lab Sample ID: 240-215663-E-2 MS

**Matrix: Water** 

Prep Type: Total/NA Analysis Batch: 637744 Sample Sample Spike MS MS %Rec Result Qualifier Result Qualifier babbA %Rec Limits Unit

Analyte 1,1-Dichloroethene 5.0 U 125 111 ug/L 89 56 - 135 5.3 125 121 cis-1,2-Dichloroethene ug/L 92 66 - 128 Tetrachloroethene 5.0 U 125 120 96 62 - 131 ug/L trans-1,2-Dichloroethene 5.0 U 125 56 - 136 112 ug/L 89 Trichloroethene 125 5.0 U 112 ug/L 90 61 - 124 Vinyl chloride 81 62.5 113 ug/L 43 - 157

MS MS %Recovery Qualifier Limits Surrogate 62 - 137 1,2-Dichloroethane-d4 (Surr) 99 4-Bromofluorobenzene (Surr) 89 56 - 136 78 - 122 Toluene-d8 (Surr) 92 Dibromofluoromethane (Surr) 92 73 - 120

Lab Sample ID: 240-215663-E-2 MSD

**Matrix: Water** 

Analysis Batch: 637744

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

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	5.0	U	125	115		ug/L		92	56 - 135	4	26
cis-1,2-Dichloroethene	5.3		125	120		ug/L		92	66 - 128	0	14
Tetrachloroethene	5.0	U	125	118		ug/L		95	62 - 131	1	20
trans-1,2-Dichloroethene	5.0	U	125	112		ug/L		90	56 - 136	0	15
Trichloroethene	5.0	U	125	112		ug/L		90	61 - 124	0	15
Vinyl chloride	81		62.5	121		ug/L		65	43 - 157	7	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	89		56 - 136
Toluene-d8 (Surr)	90		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

**Eurofins Cleveland** 

12/9/2024

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Matrix Spike

10

Prep Type: Total/NA

%Rec

Client: Arcadis US Inc. Job ID: 240-215661-1 Project/Site: Ford LTP

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

Lab Sample ID: MB 240-637453/7 Client Sample ID: Method Blank

**Matrix: Water** Prep Type: Total/NA

Analysis Batch: 637453

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			12/03/24 23:56	1

MB MB

Surrogate		%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroe	thane-d4 (Surr)	108		68 - 127		12/03/24 23:56	1

Lab Sample ID: LCS 240-637453/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 637453 Spike LCS LCS

Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	10.0	9.42	ug/L		94	75 - 121	 

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110	68 - 127

Client Sample ID: Matrix Spike Lab Sample ID: 240-215659-C-3 MS

**Matrix: Water** Prep Type: Total/NA

Analysis Batch: 637453

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	2.0	U	10.0	8.46		ug/L		85	20 - 180	 
	MS	MS								

Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 111 68 - 127

Lab Sample ID: 240-215659-F-3 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 637453

MSD MSD RPD Sample Sample Spike %Rec Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits **RPD** Limit

1,4-Dioxane 2.0 U 10.0 7.56 20 - 180 MSD MSD

%Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 68 - 127 108

12/9/2024

#### **QC Association Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-215661-1

#### **GC/MS VOA**

#### Analysis Batch: 637086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215661-2	MW-24_112224	Total/NA	Water	8260D	
240-215661-3	MW-18_112224	Total/NA	Water	8260D	
MB 240-637086/10	Method Blank	Total/NA	Water	8260D	
LCS 240-637086/25	Lab Control Sample	Total/NA	Water	8260D	

#### Analysis Batch: 637453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215661-2	MW-24_112224	Total/NA	Water	8260D SIM	
240-215661-3	MW-18_112224	Total/NA	Water	8260D SIM	
240-215661-4	MW-62_112224	Total/NA	Water	8260D SIM	
MB 240-637453/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-637453/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-215659-C-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-215659-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

#### Analysis Batch: 637621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215661-1	TRIP BLANK_76	Total/NA	Water	8260D	
MB 240-637621/10	Method Blank	Total/NA	Water	8260D	
LCS 240-637621/5	Lab Control Sample	Total/NA	Water	8260D	

#### Analysis Batch: 637744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Pr	rep Batch
240-215661-4	MW-62_112224	Total/NA	Water	8260D	
MB 240-637744/10	Method Blank	Total/NA	Water	8260D	
LCS 240-637744/5	Lab Control Sample	Total/NA	Water	8260D	
240-215663-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-215663-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

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#### Lab Chronicle

Client: Arcadis US Inc. Job ID: 240-215661-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_76

Lab Sample ID: 240-215661-1 Date Collected: 11/22/24 00:00 **Matrix: Water** 

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed 8260D 12/04/24 16:32 Total/NA Analysis 637621 MS EET CLE

Client Sample ID: MW-24\_112224 Lab Sample ID: 240-215661-2

**Matrix: Water** 

Date Collected: 11/22/24 09:15 Date Received: 11/26/24 08:00

Date Received: 11/26/24 08:00

Batch Batch Dilution Batch Prepared Prep Type Method Run Factor Number Analyst or Analyzed Туре Lab Total/NA 8260D MS EET CLE 11/29/24 17:26 Analysis 637086 Total/NA 8260D SIM **EET CLE** 12/04/24 02:40 Analysis 1 637453 R5XG

Client Sample ID: MW-18\_112224 Lab Sample ID: 240-215661-3

Date Collected: 11/22/24 12:25 **Matrix: Water** 

Date Received: 11/26/24 08:00

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor **Number Analyst** or Analyzed Lab 11/29/24 18:03 Total/NA 8260D Analysis 637086 MS **EET CLE** 12/04/24 03:04 Total/NA Analysis 8260D SIM 637453 R5XG **EET CLE** 1

Client Sample ID: MW-62\_112224 Lab Sample ID: 240-215661-4

Date Collected: 11/22/24 10:55 **Matrix: Water** 

Date Received: 11/26/24 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	637744	MS	EET CLE	12/05/24 15:44
Total/NA	Analysis	8260D SIM		1	637453	R5XG	EET CLE	12/04/24 03:27

**Laboratory References:** 

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

**Eurofins Cleveland** 

12/9/2024

#### **Accreditation/Certification Summary**

Client: Arcadis US Inc. Job ID: 240-215661-1 Project/Site: Ford LTP

#### **Laboratory: Eurofins Cleveland**

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	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
lowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

#### **Chain of Custody Record**

MICHIGAN 190

TestAmerico

Client Contact	merica Labora Regulat	tory program:	Drigitio		DW			NPDE			RC		- C								_						
Company Name: Arcadis			٠												í	1.6		34'1	D 13	4					TestAmerica Laboratories, In		
Address: 28550 Cabot Drive, Suite 500	Client Project	Client Project Manager: Kris Hinskey							Site Contact: Christina Weaver Telephone: 248-994-2240									Lab Contact: Mike DelMonico							COC No:		
City/State/Zip: Novi, MI, 48377	Telephone: 248	-994-2240					Telep	phone	: 248-	-994-	-2240				T	Telephone: 330-497-9396  Analyses							1 of 1 COCs				
	Email: kristoff	er.hinskey@arc	adis.co	m			7	Analy	sis Tu	rnar	ound 1	ıme	II	Ţ									For lab use only				
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O # US3410018772	Shipping/Track	cing No:								1	days day		3/2	Grab		200	8260D			260D	S 009						
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Sample Identification	Sample Date	Sample Time	Air	Sediment	Solid	Other:	H2SO4	HNO3	HCI	NBOH ZnAd	NaOH Unpres	Other:	Filtered Sample (Y / N)	Composite=C/ Grab=G	1.1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM				Sample Specific Notes / Special Instructions:		
TRIP BLANK_ 7 /a			1	$\neg$					1				N	=	_	_	7	_	X	Х			1		1 Trip Blank		
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mw-24-112224	11/22/24		- (		$\vdash$				0	+	-			Т	~	\	+	^	Λ	^	^	_	+		3 VOAS IOI 8200D SIWI		
MW-18_112224	11/22/24	1225	ζ	_	Ш		Ш	4	6	$\perp$		<u> </u>	N	3	<u> </u>	ι	λ	<b>X</b>	γ	λ	χ	_		Ш			
mw-18_112224 mw-62_112224	11/22/24	1055	(	٠				6	0				NI	3	$\gamma$	<b>x</b> .	χ	Y	Y.	x	Y				T@		
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Possible Hazard Identification		<u> </u>							Diam		1 (			Life			a de mise	d lan		1-	anth)						
Non-Hazard Cantilication Sammable Sin Irritant	Poiso	on B	Jnkno	wn			Sa		eturn.				assessed Disposal			are r		hive f		anın	Mor	iths					
pecial Instructions/QC Requirements & Comments:	Site					-																					
ubmit all results through Cadena at jtomalia@cadenaco. evel IV Reporting requested.	com. Cadena #E	203728																									
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12/9/2024

Chent Receipt After-hours Drop-off Date/Time Cooler Received on\_ **Barberton Facility** Eurofins - Cleveland Sample Receipt Form/Narrative FedEx. 1st Grd Exp Accad S M2/92/ UPS FAS Foam Box Waypoint Chent Drop Off Client Cooler Site Name Opened on Вох 11126/24 **Eurofins Courier** Storage Location Other Login# Other Cooler unpacked by Martin

Eurofins Cooler # Packing material used. COOLANT ALT DE Bubble Waap Blue Ice Foam Dry Ice Plastic Bag Water None None Other

Cooler temperature upon receipt See Multiple Cooler Form
Temp. 23 °C Co

IR GUN# <u>ਬ</u>੍ਹੇ 10 S Observed Cooler Temp. °C Corrected Cooler Temp.

Ņ Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity -Were the seals on the outside of the cooler(s) signed & dated? ΑN Tests that are not checked for pH by

-Were tamper/custody seals intact and uncompromised? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? X

Shippers' packing slip attached to the cooler(s)?

Did custody papers accompany the sample(s)?

S Were the custody papers relinquished & signed in the appropriate place?

Was/were the person(s) who collected the samples clearly identified on the COC?

7.5 Did all bottles arrive in good condition (Unbroken)?

Could all bottle labels (ID/Date/Time) be reconciled with the COC?

KO KO

Oil and Grease TOC

VOAs

Receiving:

ď ď

9 For each sample, does the COC specify preservatives (ON), # of containers (N), and sample type of grab/comp(Y)N)? 8 % % % @ (§)

Were correct bottle(s) used for the test(s) indicated?

Sufficient quantity received to perform indicated analyses? Are these work share samples and all listed on the COC?

Were all preserved sample(s) at the correct pH upon receipt? If yes, Questions 13-17 have been checked at the originating laboratory

13 Were VOAs on the COC?

15 Were air bubbles >6 mm in any VOA vials?

16 17 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Larger than this.

**3**23

Z

No (X)

pH Strip Lot# HC448976

Was a LL Hg or Me Hg trip blank present?

Date à via Verbal Voice Mail Other

Contacted PM

Concerning

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

SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired

Time preserved.

VOA Sample Preservation -

Date/Time VOAs Frozen

Sample(s) Sample(s) Sample(s) 20. SAMPLE PRESERVATION Preservative(s) added/Lot number(s) were received with bubble >6 mm in diameter (Notify PM) were received in a broken container were further preserved in the laboratory

WI-NC-099-110524 Cooler Receipt Form.doc

# **Login Container Summary Report**

11/26/2024 Temperature readings	Logir	Login Container Summary Report	Ā	240-215661	12/9/2024	12/9/2024
Client Sample ID	<u>Lab ID</u>	Container Type	Container pH Temp	Preservation Added	Preservation Lot Number	
TRIP BLANK_76	240-215661-A-1	Voa Vial 40ml - Hydrochloric Acid	Para Para Para Para Para Para Para Para		THE PROPERTY OF THE PROPERTY O	
MW-24_112224	240-215661-A-2	Voa Vial 40ml - Hydrochloric Acid	This was the same of the same			
MW-24_112224	240-215661-B-2	Voa Vial 40ml - Hydrochloric Acid			- Lister Control	
MW-24_112224	240-215661-C-2	Voa Vial 40ml - Hydrochloric Acid			H-PH-PH-PH-PH-PH-PH-PH-PH-PH-PH-PH-PH-PH	
MW-24_112224	240-215661-D-2	Voa Vial 40ml - Hydrochloric Acid				
MW-24_112224	240-215661-E-2	Voa Vial 40ml - Hydrochloric Acid				
MW-24_112224	240-215661-G-2	Voa Vial 40ml - Hydrochloric Acid				
MW-18_112224	240-215661-A-3	Voa Vial 40ml - Hydrochloric Acid				
MW-18_112224	240-215661-B-3	Voa Vial 40ml - Hydrochloric Acid			and and the analysis of the an	
MW-18_112224	240-215661-C-3	Voa Vial 40ml - Hydrochloric Acid				
MW-18_112224	240-215661-D-3	Voa Vial 40ml - Hydrochloric Acid			The state of the s	
MW-18_112224	240-215661-E-3	Voa Vial 40ml - Hydrochloric Acid		Hamiltonian Andrews		
MW-18_112224	240-215661-F-3	Voa Vial 40ml - Hydrochloric Acid				
MW-62_112224	240-215661-A-4	Voa Vial 40ml - Hydrochloric Acid				
MW-62_112224	240-215661-B-4	Voa Vial 40ml - Hydrochloric Acid			faa	ı 23
MW-62_112224	240-215661-C-4	Voa Vial 40ml - Hydrochloric Acid				23 o
MW-62_112224	240-215661-D-4	Voa Vial 40ml - Hydrochloric Acid				ige 4
MW-62_112224	240-215661-E-4	Voa Vial 40ml - Hydrochloric Acid	**************************************			P8
MW-62_112224	240-215661-F-4	Voa Vial 40ml - Hydrochloric Acid				

#### DATA VERIFICATION REPORT



December 09, 2024

Megan Meckley Arcadis 28550 Cabot Drive Suite 500 Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil

Project number: 30206169.0401.04\_WA-03

Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 215661-1 Sample date: 2024-11-22

Report received by CADENA: 2024-12-09

Initial Data Verification completed by CADENA: 2024-12-09

Number of Samples:4 Sample Matrices:Water Test Categories:GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch CCV response outliers and MS/MSD issues as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

#### Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

# **CADENA Valid Qualifiers**

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
В	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
Е	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

# **Analytical Results Summary**

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 215661-1

	Sample Name:			ANK_76		MW-24	_112224			MW-18	_112224			MW-62_112224				
		Lab Sample ID:	240215	6611			2402156612				240215	6613			240215			
		Sample Date:	11/22/2	2024			11/22/2	2024			11/22/2	2024			11/22/2	2024		
				Report		Valid		Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC																		
OSW-	8260D																	
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		1.9	1.0	ug/l	
OSW-	8260DSIM																	
	1,4-Dioxane	123-91-1					ND	2.0	ug/l		ND	2.0	ug/l		1.2	2.0	ug/l	J