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ANALYTICAL REPORT

PREPARED FOR

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

Generated 8/16/2024 8:10:29 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-208977-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

myEOL

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

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.
¤	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

Job Narrative
240-208977-1

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 8/7/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2°C and 1.3°C.

GC/MS VOA
Method 8260D: The following sample(s) was unable to be prepared and/or analyzed due to instrument failure : MS/MSD.

No additional 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

Job ID: 240-208977-1

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

Sample Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-208977-1	TRIP BLANK_118	Water	08/01/24 00:00	08/07/24 08:00
240-208977-2	MW-200_080124	Water	08/01/24 09:50	08/07/24 08:00
240-208977-3	MW-200S_080124	Water	08/01/24 11:05	08/07/24 08:00
240-208977-4	MW-196_080124	Water	08/01/24 12:15	08/07/24 08:00
240-208977-5	MW-196S_080124	Water	08/01/24 13:30	08/07/24 08:00
240-208977-6	PW-16-01_080124	Water	08/01/24 14:40	08/07/24 08:00
240-208977-7	MW-23_080124	Water	08/01/24 15:35	08/07/24 08:00
240-208977-8	DUP-06	Water	08/01/24 00:00	08/07/24 08:00

Detection Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: TRIP BLANK_118 — Lab Sample ID: 240-208977-1

No Detections.

Client Sample ID: MW-200_080124 — Lab Sample ID: 240-208977-2

No Detections.

Client Sample ID: MW-200S_080124 — Lab Sample ID: 240-208977-3

No Detections.

Client Sample ID: MW-196_080124 — Lab Sample ID: 240-208977-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	250		17	7.7	ug/L	16.667		8260D	Total/NA
trans-1,2-Dichloroethene	100		17	8.5	ug/L	16.667		8260D	Total/NA
Trichloroethene	450		17	7.3	ug/L	16.667		8260D	Total/NA

Client Sample ID: MW-196S_080124 — Lab Sample ID: 240-208977-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	38		2.0	0.92	ug/L	2		8260D	Total/NA
trans-1,2-Dichloroethene	1.1	J	2.0	1.0	ug/L	2		8260D	Total/NA
Trichloroethene	130		2.0	0.88	ug/L	2		8260D	Total/NA

Client Sample ID: PW-16-01_080124 — Lab Sample ID: 240-208977-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	51		20	9.2	ug/L	20		8260D	Total/NA
Vinyl chloride	1200		20	9.0	ug/L	20		8260D	Total/NA

Client Sample ID: MW-23_080124 — Lab Sample ID: 240-208977-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5200		200	92	ug/L	200		8260D	Total/NA
trans-1,2-Dichloroethene	260		200	100	ug/L	200		8260D	Total/NA
Trichloroethene	410		200	88	ug/L	200		8260D	Total/NA
Vinyl chloride	190	J	200	90	ug/L	200		8260D	Total/NA

Client Sample ID: DUP-06 — Lab Sample ID: 240-208977-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	270		17	7.7	ug/L	16.667		8260D	Total/NA
trans-1,2-Dichloroethene	110		17	8.5	ug/L	16.667		8260D	Total/NA
Trichloroethene	470		17	7.3	ug/L	16.667		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: TRIP BLANK_118
Date Collected: 08/01/24 00:00
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/14/24 14:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 14:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 14:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 14:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 14:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*126*		*62 - 137*		*08/14/24 14:13*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*08/14/24 14:13*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*08/14/24 14:13*	*1*
Dibromofluoromethane (Surr)	*106*		*73 - 120*		*08/14/24 14:13*	*1*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-200_080124
Date Collected: 08/01/24 09:50
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-2
Matrix: Water

Method: SW846 8260D 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			08/13/24 12:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 127*		*08/13/24 12:10*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/13/24 15:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/13/24 15:36	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 15:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/13/24 15:36	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 15:36	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/13/24 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*122*		*62 - 137*		*08/13/24 15:36*	*1*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*		*08/13/24 15:36*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*08/13/24 15:36*	*1*
Dibromofluoromethane (Surr)	*112*		*73 - 120*		*08/13/24 15:36*	*1*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-200S_080124
Date Collected: 08/01/24 11:05
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-3
Matrix: Water

Method: SW846 8260D 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			08/13/24 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*68 - 127*		*08/13/24 13:44*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/13/24 16:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/13/24 16:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 16:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/13/24 16:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 16:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/13/24 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*121*		*62 - 137*		*08/13/24 16:01*	*1*
4-Bromofluorobenzene (Surr)	*81*		*56 - 136*		*08/13/24 16:01*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*08/13/24 16:01*	*1*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*08/13/24 16:01*	*1*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-196_080124
Date Collected: 08/01/24 12:15
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-4
Matrix: Water

Method: SW846 8260D 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			08/13/24 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*68 - 127*		*08/13/24 14:08*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	17	U	17	8.2	ug/L			08/13/24 16:52	16.667
cis-1,2-Dichloroethene	**250**		17	7.7	ug/L			08/13/24 16:52	16.667
Tetrachloroethene	17	U	17	7.3	ug/L			08/13/24 16:52	16.667
trans-1,2-Dichloroethene	**100**		17	8.5	ug/L			08/13/24 16:52	16.667
Trichloroethene	**450**		17	7.3	ug/L			08/13/24 16:52	16.667
Vinyl chloride	17	U	17	7.5	ug/L			08/13/24 16:52	16.667

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*62 - 137*		*08/13/24 16:52*	*16.667*
4-Bromofluorobenzene (Surr)	*83*		*56 - 136*		*08/13/24 16:52*	*16.667*
Toluene-d8 (Surr)	*96*		*78 - 122*		*08/13/24 16:52*	*16.667*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*08/13/24 16:52*	*16.667*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-196S_080124

Lab Sample ID: 240-208977-5

Date Collected: 08/01/24 13:30

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D 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			08/13/24 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 127*		*08/13/24 14:31*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.98	ug/L			08/14/24 12:58	2
cis-1,2-Dichloroethene	**38**		2.0	0.92	ug/L			08/14/24 12:58	2
Tetrachloroethene	2.0	U	2.0	0.88	ug/L			08/14/24 12:58	2
trans-1,2-Dichloroethene	**1.1**	**J**	2.0	1.0	ug/L			08/14/24 12:58	2
Trichloroethene	**130**		2.0	0.88	ug/L			08/14/24 12:58	2
Vinyl chloride	2.0	U	2.0	0.90	ug/L			08/14/24 12:58	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*08/14/24 12:58*	*2*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*08/14/24 12:58*	*2*
Toluene-d8 (Surr)	*103*		*78 - 122*		*08/14/24 12:58*	*2*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*08/14/24 12:58*	*2*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: PW-16-01_080124
Date Collected: 08/01/24 14:40
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-6
Matrix: Water

Method: SW846 8260D 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			08/13/24 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 127*		*08/13/24 14:55*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	20	U	20	9.8	ug/L			08/14/24 13:17	20
cis-1,2-Dichloroethene	**51**		20	9.2	ug/L			08/14/24 13:17	20
Tetrachloroethene	20	U	20	8.8	ug/L			08/14/24 13:17	20
trans-1,2-Dichloroethene	20	U	20	10	ug/L			08/14/24 13:17	20
Trichloroethene	20	U	20	8.8	ug/L			08/14/24 13:17	20
Vinyl chloride	**1200**		20	9.0	ug/L			08/14/24 13:17	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*08/14/24 13:17*	*20*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*08/14/24 13:17*	*20*
Toluene-d8 (Surr)	*94*		*78 - 122*		*08/14/24 13:17*	*20*
Dibromofluoromethane (Surr)	*84*		*73 - 120*		*08/14/24 13:17*	*20*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-23_080124

Date Collected: 08/01/24 15:35
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-7

Matrix: Water

Method: SW846 8260D 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			08/13/24 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*68 - 127*		*08/13/24 15:18*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	200	U	200	98	ug/L			08/13/24 18:08	200
cis-1,2-Dichloroethene	**5200**		200	92	ug/L			08/13/24 18:08	200
Tetrachloroethene	200	U	200	88	ug/L			08/13/24 18:08	200
trans-1,2-Dichloroethene	**260**		200	100	ug/L			08/13/24 18:08	200
Trichloroethene	**410**		200	88	ug/L			08/13/24 18:08	200
Vinyl chloride	**190**	**J**	200	90	ug/L			08/13/24 18:08	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*62 - 137*		*08/13/24 18:08*	*200*
4-Bromofluorobenzene (Surr)	*82*		*56 - 136*		*08/13/24 18:08*	*200*
Toluene-d8 (Surr)	*94*		*78 - 122*		*08/13/24 18:08*	*200*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*08/13/24 18:08*	*200*

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: DUP-06

Date Collected: 08/01/24 00:00
Date Received: 08/07/24 08:00

Lab Sample ID: 240-208977-8

Matrix: Water

Method: SW846 8260D 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			08/13/24 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*68 - 127*		*08/13/24 15:42*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	17	U	17	8.2	ug/L			08/13/24 17:17	16.667
cis-1,2-Dichloroethene	**270**		17	7.7	ug/L			08/13/24 17:17	16.667
Tetrachloroethene	17	U	17	7.3	ug/L			08/13/24 17:17	16.667
trans-1,2-Dichloroethene	**110**		17	8.5	ug/L			08/13/24 17:17	16.667
Trichloroethene	**470**		17	7.3	ug/L			08/13/24 17:17	16.667
Vinyl chloride	17	U	17	7.5	ug/L			08/13/24 17:17	16.667

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*62 - 137*		*08/13/24 17:17*	*16.667*
4-Bromofluorobenzene (Surr)	*81*		*56 - 136*		*08/13/24 17:17*	*16.667*
Toluene-d8 (Surr)	*96*		*78 - 122*		*08/13/24 17:17*	*16.667*
Dibromofluoromethane (Surr)	*107*		*73 - 120*		*08/13/24 17:17*	*16.667*

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-208976-F-2 MS	Matrix Spike	99	86	91	92
240-208976-F-2 MSD	Matrix Spike Duplicate	107	106	97	102
240-208977-1	TRIP BLANK_118	126	89	100	106
240-208977-2	MW-200_080124	122	90	100	112
240-208977-3	MW-200S_080124	121	81	96	108
240-208977-4	MW-196_080124	120	83	96	108
240-208977-5	MW-196S_080124	113	101	103	93
240-208977-6	PW-16-01_080124	106	95	94	84
240-208977-7	MW-23_080124	119	82	94	108
240-208977-8	DUP-06	119	81	96	107
240-209185-B-1 MS	Matrix Spike	110	110	100	98
240-209185-B-1 MSD	Matrix Spike Duplicate	104	101	93	92
LCS 240-623180/6	Lab Control Sample	102	103	98	96
LCS 240-623282/5	Lab Control Sample	103	107	97	93
LCS 240-623297/6	Lab Control Sample	105	109	105	95
MB 240-623180/10	Method Blank	113	89	98	105
MB 240-623282/10	Method Blank	112	102	103	91
MB 240-623297/10	Method Blank	126	91	103	107

Surrogate Legend

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)
240-208977-2	MW-200_080124	106
240-208977-3	MW-200S_080124	107
240-208977-4	MW-196_080124	104
240-208977-5	MW-196S_080124	106
240-208977-6	PW-16-01_080124	106
240-208977-7	MW-23_080124	110
240-208977-8	DUP-06	101
240-209082-E-2 MS	Matrix Spike	109
240-209082-E-2 MSD	Matrix Spike Duplicate	99
LCS 240-623167/4	Lab Control Sample	97
MB 240-623167/6	Method Blank	105

Surrogate Legend

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

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

Lab Sample ID: MB 240-623180/10
Matrix: Water
Analysis Batch: 623180

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	0.49	ug/L			08/13/24 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/13/24 12:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/13/24 12:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 12:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/13/24 12:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*08/13/24 12:38*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*08/13/24 12:38*	*1*
Toluene-d8 (Surr)	*98*		*78 - 122*		*08/13/24 12:38*	*1*
Dibromofluoromethane (Surr)	*105*		*73 - 120*		*08/13/24 12:38*	*1*

Lab Sample ID: LCS 240-623180/6
Matrix: Water
Analysis Batch: 623180

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	17.4		ug/L		87	63 - 134		
cis-1,2-Dichloroethene			20.0	18.0		ug/L		90	77 - 123		
Tetrachloroethene			20.0	19.8		ug/L		99	76 - 123		
trans-1,2-Dichloroethene			20.0	17.7		ug/L		89	75 - 124		
Trichloroethene			20.0	19.0		ug/L		95	70 - 122		
Vinyl chloride			20.0	17.9		ug/L		90	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*
Toluene-d8 (Surr)	*98*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

Lab Sample ID: 240-208976-F-2 MS
Matrix: Water
Analysis Batch: 623180

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-Dichloroethene	400	U	8000	6800		ug/L		85	56 - 135		
cis-1,2-Dichloroethene	400	U	8000	7160		ug/L		90	66 - 128		
Tetrachloroethene	400	U	8000	6930		ug/L		87	62 - 131		
trans-1,2-Dichloroethene	400	U	8000	6810		ug/L		85	56 - 136		
Trichloroethene	400	U	8000	7340		ug/L		92	61 - 124		
Vinyl chloride	8700		8000	12400		ug/L		46	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*
Toluene-d8 (Surr)	*91*		*78 - 122*

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

Lab Sample ID: 240-208976-F-2 MS
Matrix: Water
Analysis Batch: 623180

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*92*		*73 - 120*

Lab Sample ID: 240-208976-F-2 MSD
Matrix: Water
Analysis Batch: 623180

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	400	U	8000	6920		ug/L		86	56 - 135	2	26
cis-1,2-Dichloroethene	400	U	8000	7480		ug/L		93	66 - 128	4	14
Tetrachloroethene	400	U	8000	7230		ug/L		90	62 - 131	4	20
trans-1,2-Dichloroethene	400	U	8000	7040		ug/L		88	56 - 136	3	15
Trichloroethene	400	U	8000	7590		ug/L		95	61 - 124	3	15
Vinyl chloride	8700		8000	13200		ug/L		56	43 - 157	6	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*107*		*62 - 137*
4-Bromofluorobenzene (Surr)	*106*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*102*		*73 - 120*

Lab Sample ID: MB 240-623282/10
Matrix: Water
Analysis Batch: 623282

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	0.49	ug/L			08/14/24 07:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 07:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 07:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 07:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 07:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 07:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*112*		*62 - 137*		*08/14/24 07:02*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*08/14/24 07:02*	*1*
Toluene-d8 (Surr)	*103*		*78 - 122*		*08/14/24 07:02*	*1*
Dibromofluoromethane (Surr)	*91*		*73 - 120*		*08/14/24 07:02*	*1*

Lab Sample ID: LCS 240-623282/5
Matrix: Water
Analysis Batch: 623282

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	50.0	37.7		ug/L		75	63 - 134
cis-1,2-Dichloroethene	50.0	44.6		ug/L		89	77 - 123
Tetrachloroethene	50.0	46.2		ug/L		92	76 - 123
trans-1,2-Dichloroethene	50.0	40.4		ug/L		81	75 - 124
Trichloroethene	50.0	43.9		ug/L		88	70 - 122

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

Lab Sample ID: LCS 240-623282/5
Matrix: Water
Analysis Batch: 623282

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride			50.0	46.1		ug/L		92	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*
4-Bromofluorobenzene (Surr)	*107*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

Lab Sample ID: 240-209185-B-1 MS
Matrix: Water
Analysis Batch: 623282

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-Dichloroethene	1.0	U	50.0	33.4		ug/L		67	56 - 135		
cis-1,2-Dichloroethene	1.0	U	50.0	42.6		ug/L		85	66 - 128		
Tetrachloroethene	1.0	U	50.0	40.2		ug/L		80	62 - 131		
trans-1,2-Dichloroethene	1.0	U	50.0	38.0		ug/L		76	56 - 136		
Trichloroethene	1.0	U	50.0	41.3		ug/L		83	61 - 124		
Vinyl chloride	1.0	U	50.0	43.1		ug/L		86	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*
4-Bromofluorobenzene (Surr)	*110*		*56 - 136*
Toluene-d8 (Surr)	*100*		*78 - 122*
Dibromofluoromethane (Surr)	*98*		*73 - 120*

Lab Sample ID: 240-209185-B-1 MSD
Matrix: Water
Analysis Batch: 623282

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	50.0	32.5		ug/L		65	56 - 135	3	26
cis-1,2-Dichloroethene	1.0	U	50.0	41.4		ug/L		83	66 - 128	3	14
Tetrachloroethene	1.0	U	50.0	38.9		ug/L		78	62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	50.0	37.1		ug/L		74	56 - 136	2	15
Trichloroethene	1.0	U	50.0	40.2		ug/L		80	61 - 124	3	15
Vinyl chloride	1.0	U	50.0	42.6		ug/L		85	43 - 157	1	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*92*		*73 - 120*

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

Lab Sample ID: MB 240-623297/10
Matrix: Water
Analysis Batch: 623297

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	0.49	ug/L			08/14/24 13:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 13:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 13:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*126*		*62 - 137*		*08/14/24 13:23*	*1*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*		*08/14/24 13:23*	*1*
Toluene-d8 (Surr)	*103*		*78 - 122*		*08/14/24 13:23*	*1*
Dibromofluoromethane (Surr)	*107*		*73 - 120*		*08/14/24 13:23*	*1*

Lab Sample ID: LCS 240-623297/6
Matrix: Water
Analysis Batch: 623297

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	18.7		ug/L		93	63 - 134
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	77 - 123
Tetrachloroethene	20.0	18.5		ug/L		92	76 - 123
trans-1,2-Dichloroethene	20.0	17.9		ug/L		89	75 - 124
Trichloroethene	20.0	17.2		ug/L		86	70 - 122
Vinyl chloride	20.0	18.2		ug/L		91	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*
4-Bromofluorobenzene (Surr)	*109*		*56 - 136*
Toluene-d8 (Surr)	*105*		*78 - 122*
Dibromofluoromethane (Surr)	*95*		*73 - 120*

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

Lab Sample ID: MB 240-623167/6
Matrix: Water
Analysis Batch: 623167

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			08/13/24 11:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*68 - 127*		*08/13/24 11:00*	*1*

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

Lab Sample ID: LCS 240-623167/4
Matrix: Water
Analysis Batch: 623167

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	9.32		ug/L		93	75 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*68 - 127*

Lab Sample ID: 240-209082-E-2 MS
Matrix: Water
Analysis Batch: 623167

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		
1,4-Dioxane	2.0	U	10.0	11.5		ug/L		115	20 - 180		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*68 - 127*

Lab Sample ID: 240-209082-E-2 MSD
Matrix: Water
Analysis Batch: 623167

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	11.0		ug/L		110	20 - 180	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 127*

GC/MS VOA

Analysis Batch: 623167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208977-2	MW-200_080124	Total/NA	Water	8260D SIM	
240-208977-3	MW-200S_080124	Total/NA	Water	8260D SIM	
240-208977-4	MW-196_080124	Total/NA	Water	8260D SIM	
240-208977-5	MW-196S_080124	Total/NA	Water	8260D SIM	
240-208977-6	PW-16-01_080124	Total/NA	Water	8260D SIM	
240-208977-7	MW-23_080124	Total/NA	Water	8260D SIM	
240-208977-8	DUP-06	Total/NA	Water	8260D SIM	
MB 240-623167/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-623167/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-209082-E-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-209082-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 623180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208977-2	MW-200_080124	Total/NA	Water	8260D	
240-208977-3	MW-200S_080124	Total/NA	Water	8260D	
240-208977-4	MW-196_080124	Total/NA	Water	8260D	
240-208977-7	MW-23_080124	Total/NA	Water	8260D	
240-208977-8	DUP-06	Total/NA	Water	8260D	
MB 240-623180/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623180/6	Lab Control Sample	Total/NA	Water	8260D	
240-208976-F-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-208976-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 623282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208977-5	MW-196S_080124	Total/NA	Water	8260D	
240-208977-6	PW-16-01_080124	Total/NA	Water	8260D	
MB 240-623282/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623282/5	Lab Control Sample	Total/NA	Water	8260D	
240-209185-B-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-209185-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 623297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208977-1	TRIP BLANK_118	Total/NA	Water	8260D	
MB 240-623297/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623297/6	Lab Control Sample	Total/NA	Water	8260D	

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: TRIP BLANK_118

Lab Sample ID: 240-208977-1
Matrix: Water
Date Collected: 08/01/24 00:00
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623297	MDH	EET CLE	08/14/24 14:13

Client Sample ID: MW-200_080124

Lab Sample ID: 240-208977-2
Matrix: Water
Date Collected: 08/01/24 09:50
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623180	MDH	EET CLE	08/13/24 15:36
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 12:10

Client Sample ID: MW-200S_080124

Lab Sample ID: 240-208977-3
Matrix: Water
Date Collected: 08/01/24 11:05
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623180	MDH	EET CLE	08/13/24 16:01
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 13:44

Client Sample ID: MW-196_080124

Lab Sample ID: 240-208977-4
Matrix: Water
Date Collected: 08/01/24 12:15
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		16.667	623180	MDH	EET CLE	08/13/24 16:52
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 14:08

Client Sample ID: MW-196S_080124

Lab Sample ID: 240-208977-5
Matrix: Water
Date Collected: 08/01/24 13:30
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	623282	TJL2	EET CLE	08/14/24 12:58
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 14:31

Client Sample ID: PW-16-01_080124

Lab Sample ID: 240-208977-6
Matrix: Water
Date Collected: 08/01/24 14:40
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		20	623282	TJL2	EET CLE	08/14/24 13:17
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 14:55

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

Client Sample ID: MW-23_080124

Lab Sample ID: 240-208977-7

Date Collected: 08/01/24 15:35
Matrix: Water
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		200	623180	MDH	EET CLE	08/13/24 18:08
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 15:18

Client Sample ID: DUP-06

Lab Sample ID: 240-208977-8

Date Collected: 08/01/24 00:00
Matrix: Water
Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		16.667	623180	MDH	EET CLE	08/13/24 17:17
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 15:42

Laboratory References:

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

Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208977-1

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
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	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 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	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

MICHIGAN 190

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	1 of 1 COCs
Address: 28550 Cabot Drive, Suite 500	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time		For lab use only
City/State/Zip: Novi, MI, 48377	Sampler Name: Garrett Link	TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day; 10 day		Walk-in client: Lab sampling:
Phone: 248-994-2240	Method of Shipment/Carrier:			Job/SDG No:
Project Name: Ford LTP	Shipping/Tracking No:			
Project Number: 30206169.0401.03				
PO # US3410018772				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	Analyses: 1,1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK_118	---	~~0950~~ ---		1						1					N	G	X	X	X	X	X	X		Trip Blank
MW-200_080124	08/01/24	~~1105~~ EL		6						6					N	G	X	X	X	X	X	X	X	VOAs for 8260D
MW-200S_080124	8/1/24	1105		6						6					N	G	X	X	X	X	X	X	X	VOAs for 8260D SIM
MW-196_080124	8/1/24	1215		6						6					N	G	X	X	X	X	X	X	X	
MW-196S_080124	8/1/24	1330		6						6					N	G	X	X	X	X	X	X	X	
PW-16-01_080124	8/1/24	1440		6						6					N	G	X	X	X	X	X	X	X	
MW-23_080124	8/1/24	1535		6						6					N	G	X	X	X	X	X	X	X	
DUP-06	8/1/24	—		6						6					N	G	X	X	X	X	X	X	X	

240-208977 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☑ Disposal By Lab ☐ Archive For ☐ Months

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Garrett Link	ARCADIS	8/1/24 1630	Novi cold Storage	ARCADIS	8/1/24 1630
NOVI COLD STORAGE	ARCADIS	8/2/24 1600		ARCADIS	8/2/24 1600
	ARCADIS	8/2/24 1700		EETA	8/2/24
	EETA	8/2/24 1700	JMORosico	EETA	08/07/24 0800

Eurofins = Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Arcadis Site Name

Cooler unpacked by:

Cooler Received on 8-7-24 Opened on 8-7-24

FedEx 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☑ See Multiple Cooler Form

IR GUN # 22 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC442471
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this	Yes	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved. Preservative(s) added/Lot number(s).

VOA Sample Preservation - Date/Time VOAs Frozen

Login # . ____________

Eurofins - Cleveland Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
EC Client Box Other	IR GUN #: 22	1.9	1.3	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:	1.3	1.2	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

8/7/2024

Login Container Summary Report

240-208977

8/16/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
TRIP BLANK_118	240-208977-A-1	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-A-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-B-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-C-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-D-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-E-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200_080124	240-208977-F-2	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-A-3	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-B-3	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-C-3	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-D-3	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-E-3	Voa Vial 40ml - Hydrochloric Acid				
MW-200S_080124	240-208977-F-3	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-A-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-B-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-C-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-D-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-E-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196_080124	240-208977-F-4	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-A-5	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-B-5	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-C-5	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-D-5	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-E-5	Voa Vial 40ml - Hydrochloric Acid				
MW-196S_080124	240-208977-F-5	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-A-6	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-B-6	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-C-6	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-D-6	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-E-6	Voa Vial 40ml - Hydrochloric Acid				
PW-16-01_080124	240-208977-F-6	Voa Vial 40ml - Hydrochloric Acid				
MW-23_080124	240-208977-A-7	Voa Vial 40ml - Hydrochloric Acid				
MW-23_080124	240-208977-B-7	Voa Vial 40ml - Hydrochloric Acid				
MW-23_080124	240-208977-C-7	Voa Vial 40ml - Hydrochloric Acid				
MW-23_080124	240-208977-D-7	Voa Vial 40ml - Hydrochloric Acid				

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
MW-23_080124	240-208977-E-7	Voa Vial 40ml - Hydrochloric Acid				
MW-23_080124	240-208977-F-7	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-A-8	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-B-8	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-C-8	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-D-8	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-E-8	Voa Vial 40ml - Hydrochloric Acid				
DUP-06	240-208977-F-8	Voa Vial 40ml - Hydrochloric Acid				

DATA VERIFICATION REPORT

August 21, 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-02
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 208977-1
Sample date: 2024-08-01
Report received by CADENA: 2024-08-21
Initial Data Verification completed by CADENA: 2024-08-21
Number of Samples:8
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.

There were no significant QC anomalies or exceptions to report.

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.
B	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.
E	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: 208977-1

		Sample Name:	TRIP BLANK_118				MW-200_080124				MW-200S_080124				MW-196_080124				MW-196S_080124				PW-16-01_080124				MW-23_080124				DUP-06			
		Lab Sample ID:	2402089771				2402089772				2402089773				2402089774				2402089775				2402089776				2402089777				2402089778			
		Sample Date:	8/1/2024				8/1/2024				8/1/2024				8/1/2024				8/1/2024				8/1/2024				8/1/2024				8/1/2024			
Analyte	Cas No.		Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid 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	17	ug/l	---	ND	2.0	ug/l	---	ND	20	ug/l	---	ND	200	ug/l	---	ND	17	ug/l	---
cis-1,2-Dichloroethene	156-59-2		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	250	17	ug/l	---	38	2.0	ug/l	---	51	20	ug/l	---	5200	200	ug/l	---	270	17	ug/l	---
Tetrachloroethene	127-18-4		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	17	ug/l	---	ND	2.0	ug/l	---	ND	20	ug/l	---	ND	200	ug/l	---	ND	17	ug/l	---
trans-1,2-Dichloroethene	156-60-5		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	100	17	ug/l	---	1.1	2.0	ug/l	J	ND	20	ug/l	---	260	200	ug/l	---	110	17	ug/l	---
Trichloroethene	79-01-6		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	450	17	ug/l	---	130	2.0	ug/l	---	ND	20	ug/l	---	410	200	ug/l	---	470	17	ug/l	---
Vinyl chloride	75-01-4		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	17	ug/l	---	ND	2.0	ug/l	---	1200	20	ug/l	---	190	200	ug/l	J	ND	17	ug/l	---
OSW-8260DSIM																																		
1,4-Dioxane	123-91-1						ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---