FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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August 29, 2022

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 1, 2022 from the Port of Friday Harbor Jensen's Marina RI, F&BI 208001 project. There are 86 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Jamie Stevens, Peter Leon (peter@leon-environmental.com)
CTC0829R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 1, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina RI, F&BI 208001 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
208001 -01	BLWA-13 0-2'
208001 -02	BLWA-13 3-5 '
208001 -03	BLWA-13 5-8'
208001 -04	BLWA-13 8-9'
208001 -05	BLWA-13
208001 -06	MW-9 0-2.5'
208001 -07	MW-9 2.5-5'
208001 -08	MW-9 5-7'
208001 -09	MW-7 2-3'
208001 -10	MW-7 3-5'
208001 -11	MW-7 10-11'
208001 -12	SYC-7 0-1'
208001 -13	SYC-6 0-1'
208001 -14	SYC-5 0-1'
208001 -15	BLWA-10 0-1'
208001 -16	BLWA-10 1-3'
208001 -17	BLWA-10 3-5'
208001 -18	BLWA-10 5-6'
208001 -19	MW-8 2-3'
208001 -20	MW-8 4-5'
208001 -21	MW-8 5-7'
208001 -22	AST-3 2-4'
208001 -23	AST-3 5-7'
208001 -24	AST-3 8-10'
208001 -25	AST-3
208001 -26	SRWA-12 0-1'
208001 -27	SRWA-12 2-3'
208001 -28	SRWA-12 4-5'
208001 -29	SRWA-10 3-5'
208001 -30	SRWA-10 5-7.5'
208001 -31	SRWA-10 7.5-10'
208001 -32	SRWA-10
208001 -33	AST-4 1-2'
208001 -34	AST-4 2.5-3'
208001 -35	AST-4 4-5'

CASE NARRATIVE (continued)

Sampes MW-9 0-2.5' and SRWA-10 3-5' were sent to Frontier Analytical for dioxin and furan analysis and to ARL for tributytin analysis. The reports are enclosed.

Mercury in the 1631E matrix spike and matrix spike duplicate failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

The 8081B matrix spike and matrix spike duplicate failed the relative percent difference for several pesticides. The analytes were not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/03/22, 08/05/22, 08/08/22 and 08/11/22
Date Analyzed: 08/04/22, 08/08/22, 08/09/22 and 08/11/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
BLWA-13 0-2' 208001-01	<5	113
MW-9 0-2.5' 208001-06	<5	103
MW-7 3-5' 208001-10	<5	102
BLWA-10 3-5' 208001-17	7.0	96
MW-8 4-5' 208001-20	<5	109
AST-3 5-7' 208001-23	<5	98
SRWA-10 3-5' 208001-29	<5	115
AST-4 1-2' 208001-33	37	108
AST-4 4-5' 208001-35	<5	101
Method Blank 02-1719 MB	<5	111
Method Blank 02-1723 MB2	<5	93

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/03/22, 08/05/22, 08/08/22 and 08/11/22
Date Analyzed: 08/04/22, 08/08/22, 08/09/22 and 08/11/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
Method Blank 02-1725 MB	<5	102
Method Blank 02-1730 MB	<5	91

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/09/22
Date Analyzed: 08/09/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
BLWA-13 208001-05	<100	101
AST-3 208001-25	<100	101
Method Blank 02-1724 MB	<100	107

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/03/22, 08/05/22, 08/08/22 and 08/12/22
Date Analyzed: 08/03/22, 08/05/22, 08/08/22 and 08/12/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
BLWA-13 0-2' 208001-01	<50	<250	108
MW-9 0-2.5' 208001-06	<50	<250	110
MW-7 3-5' 208001-10	<50	<250	113
BLWA-10 3-5' 208001-17	<50	<250	113
MW-8 4-5' 208001-20	61 x	440	109
AST-3 5-7' 208001-23	<50	<250	111
SRWA-10 3-5' 208001-29	<50	<250	112
AST-4 1-2' 208001-33	5,300	2,200	118
AST-4 4-5' 208001-35	<50	<250	106
Method Blank 02-1879 MB	<50	<250	108

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/03/22, 08/05/22, 08/08/22 and 08/12/22
Date Analyzed: 08/03/22, 08/05/22, 08/08/22 and 08/12/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
Method Blank 02-1898 MB	<50	<250	109
Method Blank 02-1905 MB	<50	<250	111
Method Blank 02-1986 MB	<50	<250	103

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/04/22
Date Analyzed: 08/04/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
BLWA-13 208001-05	<50	<250	89
AST-3 208001-25	<50	<250	95
Method Blank 02-1884 MB	<50	<250	103

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/03/22
Date Analyzed: 08/03/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
BLWA-13 208001-05	<50	<250	85
AST-3 208001-25	290 x	<250	97
Method Blank 02-1884 MB	<50	<250	105

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-13 0-2'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-01
Date Analyzed:	08/02/22	Data File:	208001-01.160
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.48
Cadmium	<1
Chromium	9.97
Lead	57.8
Zinc	140

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-13 0-2'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-01 x5
Date Analyzed:	08/03/22	Data File:	208001-01 x5.211
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	295

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-13 3-5 ‘	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen’s Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-02
Date Analyzed:	08/11/22	Data File:	208001-02.076
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.85
Cadmium	<1
Chromium	8.82
Copper	20.9
Lead	1.79
Zinc	17.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9 0-2.5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-06
Date Analyzed:	08/02/22	Data File:	208001-06.188
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.59
Cadmium	<1
Chromium	8.69
Copper	173
Lead	35.0
Zinc	83.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9 2.5-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-07
Date Analyzed:	08/11/22	Data File:	208001-07.077
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.21
Cadmium	<1
Chromium	4.60
Copper	24.1
Lead	5.17
Zinc	32.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9 5-7'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/22/22	Lab ID:	208001-08
Date Analyzed:	08/22/22	Data File:	208001-08.069
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.29
Cadmium	<1
Chromium	7.63
Copper	80.7
Lead	165
Nickel	7.33
Zinc	67.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7 2-3'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-09
Date Analyzed:	08/02/22	Data File:	208001-09.189
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.59
Cadmium	<1
Chromium	8.50
Copper	15.9
Lead	1.84
Zinc	18.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-10
Date Analyzed:	08/02/22	Data File:	208001-10.190
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.98
Cadmium	<1
Chromium	8.82
Copper	18.5
Lead	5.45
Zinc	54.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7 10-11'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/22/22	Lab ID:	208001-11
Date Analyzed:	08/22/22	Data File:	208001-11.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.01
Cadmium	<1
Chromium	10.3
Copper	39.3
Lead	70.8
Nickel	13.7
Zinc	61.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-7 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-12
Date Analyzed:	08/02/22	Data File:	208001-12.191
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.75
Cadmium	<1
Chromium	11.4
Copper	143
Lead	56.0
Zinc	91.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-6 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-13
Date Analyzed:	08/02/22	Data File:	208001-13.192
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.21
Cadmium	<1
Chromium	10.5
Copper	60.7
Lead	22.2
Zinc	68.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-5 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-14
Date Analyzed:	08/02/22	Data File:	208001-14.193
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.98
Cadmium	<1
Chromium	9.92
Copper	32.2
Lead	4.62
Zinc	24.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-10 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-15
Date Analyzed:	08/03/22	Data File:	208001-15.196
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.70
Cadmium	<1
Chromium	11.4
Lead	73.3
Zinc	92.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-10 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	208001-15 x5
Date Analyzed:	08/03/22	Data File:	208001-15 x5.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	350

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-10 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	208001-17
Date Analyzed:	08/08/22	Data File:	208001-17.108
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<5
Cadmium	<1
Chromium	16.3
Copper	54.2
Lead	98.1
Zinc	58.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-10 5-6'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-18
Date Analyzed:	08/11/22	Data File:	208001-18.078
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.41
Cadmium	<1
Lead	94.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-10 5-6'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-18 x5
Date Analyzed:	08/11/22	Data File:	208001-18 x5.102
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	8.90
Copper	112
Zinc	65.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8 4-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-20
Date Analyzed:	08/03/22	Data File:	208001-20.197
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.08
Cadmium	<1
Chromium	10.4
Copper	58.3
Lead	64.9
Zinc	156

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8 5-7'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-21
Date Analyzed:	08/11/22	Data File:	208001-21.081
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.44
Cadmium	<1
Lead	2.47

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8 5-7'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-21 x5
Date Analyzed:	08/11/22	Data File:	208001-21 x5.103
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	9.43
Copper	43.6
Zinc	31.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-3 5-7'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-23
Date Analyzed:	08/03/22	Data File:	208001-23.198
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.56
Cadmium	2.01
Chromium	17.1
Copper	110
Lead	73.9
Zinc	47.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-3 8-10'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-24
Date Analyzed:	08/11/22	Data File:	208001-24.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.84
Cadmium	<1
Chromium	9.30
Copper	8.66
Lead	1.67
Zinc	22.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-10 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-29
Date Analyzed:	08/03/22	Data File:	208001-29.199
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.30
Cadmium	<1
Lead	16.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-10 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	208001-29 x2
Date Analyzed:	08/03/22	Data File:	208001-29 x2.071
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	12.1
Copper	34.1
Zinc	51.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-10 5-7.5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-30
Date Analyzed:	08/11/22	Data File:	208001-30.083
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.71
Cadmium	<1
Chromium	12.2
Copper	14.3
Lead	2.68
Zinc	35.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-4 1-2'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-33
Date Analyzed:	08/03/22	Data File:	208001-33.200
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.05
Cadmium	<1
Chromium	9.27
Copper	53.3
Lead	95.4
Zinc	91.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-4 4-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	208001-35
Date Analyzed:	08/11/22	Data File:	208001-35.084
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.62
Cadmium	<1
Chromium	7.15
Copper	17.8
Lead	3.02
Zinc	20.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	I2-523 mb
Date Analyzed:	08/02/22	Data File:	I2-523 mb.117
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	I2-538 mb
Date Analyzed:	08/08/22	Data File:	I2-538 mb.053
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<5
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/11/22	Lab ID:	I2-547 mb
Date Analyzed:	08/11/22	Data File:	I2-547 mb.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/22/22	Lab ID:	I2-569 mb
Date Analyzed:	08/22/22	Data File:	I2-569 mb.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Nickel	<1
Zinc	<5

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/04/22, 08/11/22, and 08/22/22
Date Analyzed: 08/04/22, 08/15/22, 08/16/22,and 08/23/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
BLWA-13 0-2' 208001-01	0.28
BLWA-13 3-5 ' 208001-02	<0.1
MW-9 0-2.5' 208001-06	0.12
MW-9 2.5-5' 208001-07	<0.1
MW-9 5-7' 208001-08	0.22
MW-7 2-3' 208001-09	<0.1
MW-7 3-5' 208001-10	<0.1
MW-7 10-11' 208001-11	<0.1
SYC-7 0-1' 208001-12	0.40
SYC-6 0-1' 208001-13	0.68
SYC-5 0-1' 208001-14	0.14

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/04/22, 08/11/22, and 08/22/22
Date Analyzed: 08/04/22, 08/15/22, 08/16/22,and 08/23/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
BLWA-10 0-1' 208001-15	<0.1
BLWA-10 3-5' 208001-17	<0.1
BLWA-10 5-6' 208001-18	<0.1
MW-8 4-5' 208001-20	0.23
MW-8 5-7' 208001-21	<0.1
AST-3 5-7' 208001-23	0.20
AST-3 8-10' 208001-24	<0.1
SRWA-10 3-5' 208001-29	<0.1
SRWA-10 5-7.5' 208001-30	<0.1
AST-4 1-2' 208001-33	0.16
AST-4 4-5' 208001-35	<0.1

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001
Date Extracted: 08/04/22, 08/11/22, and 08/22/22
Date Analyzed: 08/04/22, 08/15/22, 08/16/22,and 08/23/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
Method Blank i2-531 MB	<0.1
Method Blank i2-538 MB	<0.1
Method Blank i2-547 MB	<0.1
Method Blank i2-569 MB	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	BLWA-13 0-2'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-01 1/25
Date Analyzed:	08/03/22	Data File:	080310.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	79 d	24	111
Phenol-d6	91 d	37	116
Nitrobenzene-d5	89 d	38	117
2-Fluorobiphenyl	108 d	45	117
2,4,6-Tribromophenol	100 d	11	158
Terphenyl-d14	116 d	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.094
Chrysene	0.17
Benzo(a)pyrene	0.10
Benzo(b)fluoranthene	0.23
Benzo(k)fluoranthene	0.075
Indeno(1,2,3-cd)pyrene	0.089
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9 0-2.5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	208001-06 1/5
Date Analyzed:	08/09/22	Data File:	080910.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	52	39	103
Phenol-d6	64	48	109
Nitrobenzene-d5	58	23	138
2-Fluorobiphenyl	72	50	150
2,4,6-Tribromophenol	82	40	127
Terphenyl-d14	85	50	150

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.013
Chrysene	0.032
Benzo(a)pyrene	0.034
Benzo(b)fluoranthene	0.067
Benzo(k)fluoranthene	0.017
Indeno(1,2,3-cd)pyrene	0.015
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-7 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	208001-10 1/5
Date Analyzed:	08/09/22	Data File:	080911.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	54	39	103
Phenol-d6	69	48	109
Nitrobenzene-d5	62	23	138
2-Fluorobiphenyl	75	50	150
2,4,6-Tribromophenol	86	40	127
Terphenyl-d14	84	50	150

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	BLWA-10 0-1'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-15 1/5
Date Analyzed:	08/03/22	Data File:	080308.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	82	24	111
Phenol-d6	92	37	116
Nitrobenzene-d5	91	38	117
2-Fluorobiphenyl	97	45	117
2,4,6-Tribromophenol	103	11	158
Terphenyl-d14	107	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.048
Chrysene	0.12
Benzo(a)pyrene	0.050
Benzo(b)fluoranthene	0.14
Benzo(k)fluoranthene	0.039
Indeno(1,2,3-cd)pyrene	0.047
Dibenz(a,h)anthracene	0.011

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8 4-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	208001-20 1/25
Date Analyzed:	08/09/22	Data File:	080913.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	57 d	39	103
Phenol-d6	68 d	48	109
Nitrobenzene-d5	65 d	23	138
2-Fluorobiphenyl	76d	50	150
2,4,6-Tribromophenol	82 d	40	127
Terphenyl-d14	90 d	50	150

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-10 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	208001-29 1/5
Date Analyzed:	08/03/22	Data File:	080309.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	84	24	111
Phenol-d6	100	37	116
Nitrobenzene-d5	90	38	117
2-Fluorobiphenyl	102	45	117
2,4,6-Tribromophenol	115	11	158
Terphenyl-d14	110	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.024
Chrysene	0.034
Benzo(a)pyrene	0.036
Benzo(b)fluoranthene	0.053
Benzo(k)fluoranthene	0.017
Indeno(1,2,3-cd)pyrene	0.026
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/02/22	Lab ID:	02-1877 mb 1/5
Date Analyzed:	08/02/22	Data File:	080209.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	88	24	111
Phenol-d6	99	37	116
Nitrobenzene-d5	85	38	117
2-Fluorobiphenyl	110	45	117
2,4,6-Tribromophenol	110	11	158
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/08/22	Lab ID:	02-1903 mb 1/5
Date Analyzed:	08/08/22	Data File:	080807.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	85	24	111
Phenol-d6	96	37	116
Nitrobenzene-d5	84	38	117
2-Fluorobiphenyl	94	45	117
2,4,6-Tribromophenol	89	11	158
Terphenyl-d14	94	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	BLWA-13	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	208001-05
Date Analyzed:	08/03/22	Data File:	080321.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	10	60
Phenol-d6	36	10	49
Nitrobenzene-d5	83	15	144
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	94	10	142
Terphenyl-d14	100	41	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	0.068
Chrysene	0.069
Benzo(a)pyrene	0.080
Benzo(b)fluoranthene	0.13
Benzo(k)fluoranthene	0.043
Indeno(1,2,3-cd)pyrene	0.074
Dibenz(a,h)anthracene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	02-1866 mb2
Date Analyzed:	08/03/22	Data File:	080319.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45	10	60
Phenol-d6	31	10	49
Nitrobenzene-d5	92	15	144
2-Fluorobiphenyl	89	25	128
2,4,6-Tribromophenol	91	10	142
Terphenyl-d14	98	41	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-9 0-2.5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/10/22	Lab ID:	208001-06 1/6
Date Analyzed:	08/10/22	Data File:	081015.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.022
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-7 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/10/22	Lab ID:	208001-10 1/6
Date Analyzed:	08/10/22	Data File:	081016.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-8 4-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/10/22	Lab ID:	208001-20 1/6
Date Analyzed:	08/10/22	Data File:	081017.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	101	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.14
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/10/22	Lab ID:	02-1911 mb 1/6
Date Analyzed:	08/10/22	Data File:	081004.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	99	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	MW-9 0-2.5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	208001-06 1/6
Date Analyzed:	08/03/22	Data File:	080320.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	41	106
DBC	90	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-10 3-5'	Client:	Crete Consulting
Date Received:	08/01/22	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	208001-29 1/6
Date Analyzed:	08/03/22	Data File:	080321.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	58	41	106
DBC	84	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina RI, F&BI 208001
Date Extracted:	08/03/22	Lab ID:	02-1880 mb 1/6
Date Analyzed:	08/03/22	Data File:	080314.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	89	41	106
DBC	103	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208016-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	110	71-131

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208052-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	200	160	22 hr

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	71-131

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208068-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	110	61-153

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208001-35 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	120	61-153

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208053-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	107	69-134

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 208032-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	108	108	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	106	74-139

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 207201-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	106	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	114	79-144

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 208102-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	110	112	73-135	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	114	74-139

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 208001-35 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	120	113	114	73-135	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	116	74-139

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	116	61-133	15

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	116	63-142	0

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208001-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.30	95	95	75-125	0
Cadmium	mg/kg (ppm)	10	<1	97	93	75-125	4
Chromium	mg/kg (ppm)	50	9.47	78	78	75-125	0
Copper	mg/kg (ppm)	50	214	18 b	113	75-125	145 b
Lead	mg/kg (ppm)	50	54.9	70 b	117	75-125	50 b
Zinc	mg/kg (ppm)	50	133	54 b	115	75-125	72 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Cadmium	mg/kg (ppm)	10	93	80-120
Chromium	mg/kg (ppm)	50	100	80-120
Copper	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	100	80-120
Zinc	mg/kg (ppm)	50	99	80-120

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208068-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	35.6	70 b	166 b	75-125	81 b
Cadmium	mg/kg (ppm)	10	82.0	0 b	383 b	75-125	200 b
Chromium	mg/kg (ppm)	50	98.9	15 b	93	75-125	144 b
Copper	mg/kg (ppm)	50	15,900	0 b	0 b	75-125	0 b
Lead	mg/kg (ppm)	50	33,700	0 b	0 b	75-125	0 b
Zinc	mg/kg (ppm)	50	31,200	0 b	0 b	75-125	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	100	80-120
Cadmium	mg/kg (ppm)	10	95	80-120
Chromium	mg/kg (ppm)	50	100	80-120
Copper	mg/kg (ppm)	50	99	80-120
Lead	mg/kg (ppm)	50	103	80-120
Zinc	mg/kg (ppm)	50	100	80-120

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208153-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.47	92	95	75-125	3
Cadmium	mg/kg (ppm)	10	<1	104	105	75-125	1
Chromium	mg/kg (ppm)	50	13.2	88	87	75-125	1
Copper	mg/kg (ppm)	50	10.1	87	86	75-125	1
Lead	mg/kg (ppm)	50	2.50	103	103	75-125	0
Zinc	mg/kg (ppm)	50	19.5	83	84	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	102	80-120
Copper	mg/kg (ppm)	50	104	80-120
Lead	mg/kg (ppm)	50	102	80-120
Zinc	mg/kg (ppm)	50	102	80-120

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208306-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	106	99	75-125	7
Cadmium	mg/kg (ppm)	10	<5	102	97	75-125	5
Chromium	mg/kg (ppm)	50	10.4	108	98	75-125	10
Copper	mg/kg (ppm)	50	<25	110	97	75-125	13
Lead	mg/kg (ppm)	50	<5	111	103	75-125	7
Nickel	mg/kg (ppm)	25	10.1	118	96	75-125	21 b
Zinc	mg/kg (ppm)	50	30.7	110	94	75-125	16

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	80-120
Cadmium	mg/kg (ppm)	10	95	80-120
Chromium	mg/kg (ppm)	50	102	80-120
Copper	mg/kg (ppm)	50	103	80-120
Lead	mg/kg (ppm)	50	102	80-120
Nickel	mg/kg (ppm)	25	102	80-120
Zinc	mg/kg (ppm)	50	103	80-120

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208001-01(Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.282	77	91	71-125	17

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	122	68-125

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208153-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	5	0.11	136 vo	133 vo	71-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	5	123	68-125

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208068-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	5	0.38	173 vo	132 vo	71-125	27 vo

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	5	113	68-125

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208306-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	6.4	114	33 b	71-125	110 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	69	68-125

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 208007-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	101	91	50-150	10
Chrysene	mg/kg (ppm)	0.83	<0.01	100	89	50-150	12
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	103	92	50-150	11
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	102	88	50-150	15
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	105	91	50-150	14
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	117	113	41-134	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	114	111	44-130	3

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.83	99	70-130
Chrysene	mg/kg (ppm)	0.83	99	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	99	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	106	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	110	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	109	67-128

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 208090-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	94	99	50-150	5
Chrysene	mg/kg (ppm)	0.83	<0.01	92	97	50-150	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	95	98	50-150	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	91	94	50-150	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	96	99	50-150	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	111	117	41-134	5
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	112	119	44-130	6

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.83	101	70-130
Chrysene	mg/kg (ppm)	0.83	99	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	102	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	101	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	100	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	119	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	122	67-128

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	95	93	70-130	2
Chrysene	ug/L (ppb)	5	96	94	70-130	2
Benzo(a)pyrene	ug/L (ppb)	5	96	96	70-130	0
Benzo(b)fluoranthene	ug/L (ppb)	5	98	99	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	93	94	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	105	102	70-130	3
Dibenz(a,h)anthracene	ug/L (ppb)	5	106	101	70-130	5

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 208130-03 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	104	98	29-125	6
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	106	100	25-137	6

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	104	55-137
Aroclor 1260	mg/kg (ppm)	0.25	108	51-150

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: 208007-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
alpha-BHC	mg/kg (ppm)	0.1	<0.01	47	77	45-111	48 vo
gamma-BHC (Lindane)	mg/kg (ppm)	0.1	<0.01	53	81	50-117	42 vo
beta-BHC	mg/kg (ppm)	0.1	<0.01	64	83	49-109	26 vo
delta-BHC	mg/kg (ppm)	0.1	<0.01	64	80	39-114	22 vo
Heptachlor	mg/kg (ppm)	0.1	<0.01	52	79	40-131	41 vo
Aldrin	mg/kg (ppm)	0.1	<0.01	55	82	44-121	39 vo
Heptachlor Epoxide	mg/kg (ppm)	0.1	<0.01	66	83	46-122	23 vo
trans-Chlordane	mg/kg (ppm)	0.1	<0.01	70	84	41-129	18
cis-Chlordane	mg/kg (ppm)	0.1	<0.01	71	83	44-120	16
4,4'-DDE	mg/kg (ppm)	0.1	<0.01	76	85	41-118	11
Endosulfan I	mg/kg (ppm)	0.1	<0.01	69	83	45-124	18
Dieldrin	mg/kg (ppm)	0.1	<0.01	75	89	45-130	17
Endrin	mg/kg (ppm)	0.1	<0.01	80	94	50-140	16
4,4'-DDD	mg/kg (ppm)	0.1	<0.01	96	99	26-155	3
Endosulfan II	mg/kg (ppm)	0.1	<0.01	78	86	40-135	10
4,4'-DDT	mg/kg (ppm)	0.1	<0.01	59	73	39-123	21 vo
Endrin Aldehyde	mg/kg (ppm)	0.1	<0.01	51	74	35-139	37 vo
Methoxychlor	mg/kg (ppm)	0.1	<0.01	75	87	28-162	15
Endosulfan Sulfate	mg/kg (ppm)	0.1	<0.01	78	85	40-141	9
Endrin Ketone	mg/kg (ppm)	0.1	<0.05	78	83	41-147	6
Toxaphene	mg/kg (ppm)	4	<1	92	83	36-133	10

Date of Report: 08/29/22
Date Received: 08/01/22
Project: Port of Friday Harbor Jensen's Marina RI, F&BI 208001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
alpha-BHC	mg/kg (ppm)	0.1	86	58-117
gamma-BHC (Lindane)	mg/kg (ppm)	0.1	89	60-121
beta-BHC	mg/kg (ppm)	0.1	91	66-120
delta-BHC	mg/kg (ppm)	0.1	89	67-124
Heptachlor	mg/kg (ppm)	0.1	90	58-131
Aldrin	mg/kg (ppm)	0.1	90	63-124
Heptachlor Epoxide	mg/kg (ppm)	0.1	89	67-123
trans-Chlordane	mg/kg (ppm)	0.1	91	60-123
cis-Chlordane	mg/kg (ppm)	0.1	93	70-130
4,4'-DDE	mg/kg (ppm)	0.1	95	70-130
Endosulfan I	mg/kg (ppm)	0.1	92	62-124
Dieldrin	mg/kg (ppm)	0.1	96	70-130
Endrin	mg/kg (ppm)	0.1	112	56-147
4,4'-DDD	mg/kg (ppm)	0.1	105	54-137
Endosulfan II	mg/kg (ppm)	0.1	94	42-140
4,4'-DDT	mg/kg (ppm)	0.1	103	25-169
Endrin Aldehyde	mg/kg (ppm)	0.1	75	21-135
Methoxychlor	mg/kg (ppm)	0.1	116	44-160
Endosulfan Sulfate	mg/kg (ppm)	0.1	95	39-148
Endrin Ketone	mg/kg (ppm)	0.1	95	46-134
Toxaphene	mg/kg (ppm)	4	118	56-145

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation

SAMPLE CHAIN OF CUSTODY

8/1/22 CI3/130th/BI2/E03/VW5

Page # 1 of 4

208001

Report To Jones, Hainsworth, Stevens, P. Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) R Jones Rusty Jones

PROJECT NAME: Port of Friday Harbor Jensen's Marina R.I.

PO #: Leon Environmental

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: Leon Environmental

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Metals *(3 see list)	TBT	D/F	Pesticides	Notes
BLWA-13 0-2'	01 A-F	7.27.22	0740	Soil	6	X	X				X		X				per RJ 8/3/22 ME
BLWA-13 3-5'	02		0750		1								■				◆ per RJ 8/8/22
BLWA-13 5-8'	03		0800		1												ME
BLWA-13 8-9'	04		0810	↓	1												
BLWA-13	05 A-G		0810	Water	7	●	●	RJ			●	RJ	·				Hold w/o silicase!
MW-9 0-2.5'	06		0900	Soil	7	X	X				◆	◆	X	X	X	X	■ per RJ 8/10/22 ME
MW-9 2.5-5'	07 A-B		0910		2								■				
MW-9 5-7'	08		0915	↓	1								☒				☒ per RJ 8/16/22 ME
MW-7 2-3'	09		1250	Soil	1								X				
MW-7 3-5'	10 A-F	↓	1305	↓	6	◆	◆				◆	◆	X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R Jones	Rusty Jones	CRETE	8/1/22	0947
Received by: W. Madden	W. Madden	F+BT	8/1/22	0947
Relinquished by:		Samples received at 0 °C		
Received by:				

Friedman & Bruya, Inc.
Ph (206) 285-8282

SAMPLE CHAIN OF CUSTODY

~~2080001~~ 8/1/22 CI 3/BFI/E031/VW5

~~Report To~~ Crete + Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R Jones

PROJECT NAME Port of Friday Harbor Jensen's Marina RI

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO Leon Env.

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Metals ✗ (see list)	TBT	D/F	Pesticides	Notes
MW-7 10-11'	11	7.27.22	1315	Soil	1								☒				
SYC-7 0-1'	12	↓	1530	Soil	1								✓				
SYC-6 0-1'	13		1540	↓	1								✓				
SYC-5 0-1'	14	↓	1550	↓	1								✓				
BLWA-10 0-1'	15	7.28.22	0740	Soil	1						✓		✓				
BLWA-10 1-3'	16	↓	0745	↓	1												
BLWA-10 3-5'	17A-E		0750		5	⊗	⊗						⊗				⊗ per RJ 8/4/22 AS
BLWA-10 5-6'	18		0755	↓	1								■				
MW-8 2-3'	19		0855	Soil	1								✓				
MW-8 4-5'	20A-E	↓	0900	↓	4	✓	✓			◆	◆		✓				HOLD

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R Jones	Rusty Jones	CRETE	8/1/2022	0947
Received by: W. Madden	W. Madden	FBI	8/1/22	0947
Relinquished by:				
Received by:		Samples received at 12°C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY

8/1/22 CI3/BI2/E03/V4/5

Page # 3 of 4

208001 Report To: CRETE & LEON

Company: Crete Consulting / Leon Environmental

Address:

City, State, ZIP:

Phone: Email:

SAMPLERS (signature): Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor

PO #:

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: Leon Environmental

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Metals* (5 CUL)	TBT	D/F	Pesticides	Notes
MW-8 5-7'	21	7.28.22	0905	SOIL	1								■				● per RS 8/3/22 ME
AST-3 2-4'	22	"	1110	SOIL	1								■				
AST-3 5-7'	23A-E	"	1115	"	5	✓	✓						✓				
AST-3 8-10'	24	"	1120	"	5								■				
AST-3	25	"	1130	WATER	5	●	●										w&w/o silicagel
SRWA-12 0-1'	26	"	1310	SOIL	1												
SRWA-12 2-3'	27	"	1315	"	1												
SRWA-12 4-5'	28	"	1320	"	1												
SRWA-10 3-5'	29A-G	"	1410	SOIL	7	✓	✓				✓		✓	✓	✓	✓	✓
SRWA-10 5-7.5'	30A-E	"	1415	"	4								■				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	8/1/2022	0947
Received by: W. Madden	W. Madden	F+BJ	8/1/22	0947
Relinquished by:				
Received by:		Samples received at 0 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

L2080001

SAMPLE CHAIN OF CUSTODY 8/1/22

CI3/BI2/E03/VW6

Page # 4 of 4

Report To CRETE + LEON

Company Crete Consulting, Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R Jones

PROJECT NAME Port of Friday Harbor Jensen's Marina RI

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO Leon Environmental

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Metals (5 RCRA + Mn)	TBT	D/F	Pesticides	Notes
SZWA-10 7.5-10'	31	7.28.22	1420	SOIL	1												
~~AST #5~~ SZWA-10	32 A-F	↓	1440	WATER	7	✓	✓	✓						✓	✓	✓	Hold
AST-4 1-2'	33 A-E	7.29.22	0745	SOIL	5	✓	✓						✓				
AST-4 2.5-3'	34 A-E	↓	0750	↓	5												
AST-4 4-5'	35 A-E	↓	0755	↓	5												w & w/o silica gel

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R Jones	Rusty Jones	CRETE	8/1/2022	0947
Received by: W. Madden	W. Madden	F+BI	8/1/22	0947
Relinquished by:				
Received by:		Samples received at 2 °C		

Analytical Resources, LLC
Analytical Chemists and Consultants

22 August 2022

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 208001 (208001)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22H0038	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2022.08.22 14:28:09 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Susan Dunnihoo, Director, Client Services

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22H0038

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER ~~Frontier~~ ARI

PROJECT NAME/NO.	PO #
208001	C-287

REMARKS

Page # 1 of 1

TURNAROUND TIME

☒ Standard TAT

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TBT							Notes
MW-9 0-2.5'		7-27-22	0900	Soil	1				✓							
SRWA-10 3-5'		7-28-22	1410	1	1				✓							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/2/22	0745
Received by:		Hannah Neuberger	ARI	8/2/22	10:30
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-9 0-2.5'	22H0038-01	Solid	27-Jul-2022 09:00	02-Aug-2022 10:30
SRWA-10 3-5'	22H0038-02	Solid	28-Jul-2022 14:10	02-Aug-2022 10:30

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 208001
Work Order: 22H0038

Sample receipt

Samples as listed on the preceding page were received 02-Aug-2022 10:30 under ARI work order 22H0038. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The batch BKH0105 matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within limits. The relative percent difference (RPD) was outside advisory control limits for the butyl tin ion and has been flagged on the summary sheet, reported under work order 22H0039.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya

Project Name: _____

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22H0038

Tracking No: 5909 4343 5553 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1030 6.8 ___ ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 9705

Cooler Accepted by: HN Date: 08/02/22 Time: 10:30

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		_____

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: HN Date: 08/02/22 Time: 13:48 Labels checked by: _____

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 22H0038

Cooler#: _____ Temperature(°C): 6.8°C

Sample ID	Bottle Count	Bottle Type
Samples received @ above 6°C		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by: HW Date: 08/02/22 Time: 10:30

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

MW-9 0-2.5'

22H0038-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM
Instrument: NT12 Analyst: JZ

Sampled: 07/27/2022 09:00
Analyzed: 08/08/2022 14:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BKH0105
Prepared: 08/05/2022

Sample Size: 5.24 g (wet)
Final Volume: 0.5 mL

Extract ID: 22H0038-01 A 01
Dry Weight:5.01 g
% Solids: 95.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.449	3.85	38.5	ug/kg	
Dibutyltin Ion	14488-53-0	1	1.73	5.76	62.7	ug/kg	
Butyltin Ion	78763-54-9	1	1.88	4.07	86.8	ug/kg	
Tetrabutyltin	1461-25-2	1	4.99	4.99	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*84.1*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*69.0*	*%*	

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

SRWA-10 3-5'

22H0038-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM
Instrument: NT12 Analyst: JZ

Sampled: 07/28/2022 14:10
Analyzed: 08/08/2022 14:51

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BKH0105
Prepared: 08/05/2022
Sample Size: 5.37 g (wet)
Final Volume: 0.5 mL

Extract ID: 22H0038-02 A 01
Dry Weight:5.04 g
% Solids: 93.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.447	3.83	9.86	ug/kg	
Dibutyltin Ion	14488-53-0	1	1.72	5.74	5.30	ug/kg	J
Butyltin Ion	78763-54-9	1	1.88	4.05	3.76	ug/kg	J
Tetrabutyltin	1461-25-2	1	4.96	4.96	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*90.4*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*71.6*	*%*	

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BKH0105 - EPA 3546 (Microwave)

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKH0105-BLK1)				Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 13:59							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Dibutyltin Ion	ND	1.73	5.78	ug/kg							U
Butyltin Ion	ND	1.89	4.08	ug/kg							U
Tetrabutyltin	ND	5.00	5.00	ug/kg							U
Surrogate: Tripentyltin	40.6			ug/kg	*45.2*		*90.0*	*30-160*			
Surrogate: Tripropyltin	33.8			ug/kg	*43.7*		*77.3*	*30-160*			
LCS (BKH0105-BS1)				Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 14:16							
Tributyltin Ion	32.9	0.450	3.86	ug/kg	44.6		73.8	30-160			
Dibutyltin Ion	35.7	1.73	5.78	ug/kg	38.4		93.1	30-160			
Butyltin Ion	22.9	1.89	4.08	ug/kg	31.2		73.4	30-160			
Surrogate: Tripentyltin	42.2			ug/kg	*45.2*		*93.4*	*30-160*			
Surrogate: Tripropyltin	31.1			ug/kg	*43.7*		*71.0*	*30-160*			

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP,NELAP
Dibutyltin Ion	WADOE,DoD-ELAP,NELAP
Butyltin Ion	WADOE,NELAP
Tetrabutyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

Friedman & Bruya Inc.	Project: 208001	
3012 16th Avenue West	Project Number: 208001	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:53

Notes and Definitions

D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 8, 2022

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 29, 2022 from the Port of Friday Harbor Jensen's Harbor RI, F&BI 207511 project. There are 87 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Jamie Stevens, Peter Leon (peter@leon-environmental.com)
CTC0908R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 29, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Harbor RI, F&BI 207511 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
207511 -01	DUP-220726-2
207511 -02	DUP-220726
207511 -03	AST-2 5-7.5'
207511 -04	AST-2 7.5-10'
207511 -05	AST-2 10-12'
207511 -06	AST-2
207511 -07	SRWA-13 0-0.5'
207511 -08	SRWA-13 0.5-1'
207511 -09	SRWA-13 3-5'
207511 -10	SRWA-14 0-1'
207511 -11	SRWA-14 1-2'
207511 -12	SRWA-14 3-5'
207511 -13	SRWA-15 0-0.5'
207511 -14	SRWA-15 0.5-1'
207511 -15	SRWA-15 2-3'
207511 -16	SRWA-8 0-1'
207511 -17	SRWA-8 2-3'
207511 -18	SRWA-8 4-5'
207511 -19	SRWA-11 0-2.5'
207511 -20	SRWA-11 2.5-5'
207511 -21	SRWA-11 5-6'
207511 -22	SRWA-9 0-2.5'
207511 -23	SRWA-9 2.5-5'
207511 -24	SRWA-9 5-6'
207511 -25	SRWA-9

Sampes SRWA-13 0-0.5', SRWA-14 0-1', SRWA-15 0-0.5', SRWA-8 0-1', SRWA-9 2.5-5', and SRWA-9 were sent to Frontier Analytical for dioxin and furan analysis and to ARL for tributyltin analysis. Sample SRWA-11 0-2.5' was sent to ARL for tributyltin analysis. The first reports are enclosed. The additional report from ARL for tributyltin for sample SRWA-11 0-2.5' and the additional report from Frontier Analytical for sample SRWA-9 for dioxins and furans will be forwarded upon receipt.

The NWTPH-Gx sample SRWA-9 2.5-5' was taken from a four ounce glass jar. The data were flagged accordingly.

CASE NARRATIVE (continued)

The 8270E sample SRWA-11 0-2.5' was requested to be analyzed outside of the holding time. The data were flagged accordingly.

The 8081B calibration standard failed the acceptance criteria for several pesticides. The data were flagged accordingly.

Mercury in the 1631E matrix spike exceeded the control limit. The laboratory control samples passed the acceptance criteria, therefore the results were due to matrix effect.

The 8081B matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The laboratory control samples passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/03/22
Date Analyzed: 08/04/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DUP-220726 207511-02	<5	105
AST-2 7.5-10' 207511-04	<5	106
SRWA-13 0-0.5' 207511-07	<5	108
SRWA-14 0-1' 207511-10	<5	109
SRWA-15 0-0.5' 207511-13	<5	99
SRWA-8 0-1' 207511-16	<5	117
SRWA-9 2.5-5' pc 207511-23	<5	104
Method Blank 02-1719 MB	<5	111

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/05/22
Date Analyzed: 08/05/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
DUP-220726-2 207511-01	290	123
AST-2 207511-06	290	117
SRWA-9 207511-25	<100	104
Method Blank 02-1721 MB	<100	99

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/03/22
Date Analyzed: 08/03/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
AST-2 7.5-10' 207511-04	<50	<250	108
SRWA-13 0-0.5' 207511-07	<50	<250	106
SRWA-14 0-1' 207511-10	<50	<250	119
SRWA-15 0-0.5' 207511-13	<50	<250	117
SRWA-8 0-1' 207511-16	<50	360	108
SRWA-9 2.5-5' 207511-23	<50	<250	109
Method Blank 02-1874 MB2	<50	<250	105

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/02/22
Date Analyzed: 08/02/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
DUP-220726-2 207511-01	290 x	<250	79
AST-2 207511-06	290 x	<250	75
SRWA-9 207511-25 1/1.3	130 x	<320	ip
Method Blank 02-1867 MB2	<50	<250	77

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-2 7.5-10'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-04
Date Analyzed:	08/03/22	Data File:	207511-04.201
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.21
Cadmium	<1
Chromium	9.49
Copper	18.1
Lead	2.72
Zinc	17.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	AST-2 10-12'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/22/22	Lab ID:	207511-05
Date Analyzed:	08/22/22	Data File:	207511-05.064
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.30
Cadmium	<1
Chromium	10.8
Copper	18.8
Lead	3.79
Zinc	20.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-13 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-07
Date Analyzed:	08/03/22	Data File:	207511-07.202
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	11.9
Cadmium	<1
Chromium	11.7
Lead	170

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-13 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-07 x5
Date Analyzed:	08/03/22	Data File:	207511-07 x5.064
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	2,140
Zinc	519

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-13 0.5-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	207511-08
Date Analyzed:	08/11/22	Data File:	207511-08.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	10.6
Cadmium	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-13 0.5-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	207511-08 x5
Date Analyzed:	08/11/22	Data File:	207511-08 x5.104
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	12.7
Copper	919
Lead	389
Zinc	317

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-13 3-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/22/22	Lab ID:	207511-09
Date Analyzed:	08/22/22	Data File:	207511-09.065
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.56
Cadmium	<1
Chromium	8.71
Copper	20.8
Lead	11.6
Zinc	31.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-14 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-10
Date Analyzed:	08/03/22	Data File:	207511-10.203
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.91
Cadmium	<1
Chromium	5.13
Copper	59.1
Lead	115
Zinc	52.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-14 1-2'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	207511-11
Date Analyzed:	08/11/22	Data File:	207511-11.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.30
Cadmium	<1
Chromium	6.96
Copper	14.3
Lead	2.58
Zinc	28.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-15 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-13
Date Analyzed:	08/03/22	Data File:	207511-13.205
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.80
Cadmium	<1
Chromium	7.68
Copper	12.5
Lead	35.1
Zinc	26.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-8 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-16
Date Analyzed:	08/03/22	Data File:	207511-16.208
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.14
Cadmium	<1
Chromium	10.4
Copper	87.3
Lead	49.9
Zinc	79.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-8 2-3'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	207511-17
Date Analyzed:	08/11/22	Data File:	207511-17.087
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.62
Cadmium	<1
Lead	3.04

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-8 2-3'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	207511-17 x2
Date Analyzed:	08/11/22	Data File:	207511-17 x2.105
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	20.4
Copper	12.6
Zinc	20.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-8 4-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/22/22	Lab ID:	207511-18
Date Analyzed:	08/22/22	Data File:	207511-18.066
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.93
Cadmium	<1
Lead	3.24

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-8 4-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/22/22	Lab ID:	207511-18 x2
Date Analyzed:	08/23/22	Data File:	207511-18 x2.108
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	21.1
Copper	26.8
Zinc	36.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-11 0-2.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/26/22	Lab ID:	207511-19
Date Analyzed:	08/26/22	Data File:	207511-19.067
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.24
Cadmium	<1
Chromium	16.8
Copper	69.3
Lead	75.0
Zinc	105

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-9 2.5-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-23
Date Analyzed:	08/03/22	Data File:	207511-23.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.94
Cadmium	<1
Chromium	7.78
Copper	8.32
Lead	2.18
Zinc	18.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	I2-523 mb
Date Analyzed:	08/02/22	Data File:	I2-523 mb.117
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Port of Friday Harbor
Date Extracted:	08/11/22	Lab ID:	I2-547 mb
Date Analyzed:	08/11/22	Data File:	I2-547 mb.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Port of Friday Harbor
Date Extracted:	08/26/22	Lab ID:	I2-589 mb
Date Analyzed:	08/26/22	Data File:	I2-589 mb.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Port of Friday Harbor
Date Extracted:	08/22/22	Lab ID:	I2-569 mb
Date Analyzed:	08/22/22	Data File:	I2-569 mb.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-9	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-25
Date Analyzed:	08/08/22	Data File:	207511-25.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Cadmium	<1
Chromium	2.85
Copper	5.37
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	SRWA-9	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-25 x5
Date Analyzed:	08/08/22	Data File:	207511-25 x5.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	I2-526 mb
Date Analyzed:	08/03/22	Data File:	I2-526 mb.116
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/04/22, 08/11/22, 08/22/22, and 08/26/22
Date Analyzed: 08/04/22, 08/15/22, 08/16/22, 08/23/22, and 09/02/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
AST-2 7.5-10' 207511-04	<0.1
AST-2 10-12' 207511-05	<0.1
SRWA-13 0-0.5' 207511-07 x5	1.5
SRWA-13 0.5-1' 207511-08 x10	3.5
SRWA-13 3-5' 207511-09	<0.1
SRWA-14 0-1' 207511-10	0.30
SRWA-14 1-2' 207511-11	<0.1
SRWA-15 0-0.5' 207511-13	<0.1
SRWA-8 0-1' 207511-16	0.30
SRWA-8 2-3' 207511-17	<0.1
SRWA-8 4-5' 207511-18	<0.1

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/04/22, 08/11/22, 08/22/22, and 08/26/22
Date Analyzed: 08/04/22, 08/15/22, 08/16/22, 08/23/22, and 09/02/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
SRWA-11 0-2.5' ht 207511-19	0.15
SRWA-9 2.5-5' 207511-23	<0.1
Method Blank i2-531 MB	<0.1
Method Blank i2-547 MB	<0.1
Method Blank i2-569 MB	<0.1
Method Blank i2-589 MB	<0.1

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511
Date Extracted: 08/02/22
Date Analyzed: 08/03/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Total Mercury
SRWA-9 207511-25	0.022
Method Blank i2-525 MB	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-13 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-07 1/25
Date Analyzed:	08/03/22	Data File:	080325.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	60 d	24	111
Phenol-d6	68 d	37	116
Nitrobenzene-d5	61 d	38	117
2-Fluorobiphenyl	74 d	45	117
2,4,6-Tribromophenol	80 d	11	158
Terphenyl-d14	89 d	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.35
Chrysene	0.54
Benzo(a)pyrene	0.43
Benzo(b)fluoranthene	0.76
Benzo(k)fluoranthene	0.24
Indeno(1,2,3-cd)pyrene	0.34
Dibenz(a,h)anthracene	0.074

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-14 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-10 1/5
Date Analyzed:	08/03/22	Data File:	080312.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	83	24	111
Phenol-d6	92	37	116
Nitrobenzene-d5	82	38	117
2-Fluorobiphenyl	91	45	117
2,4,6-Tribromophenol	100	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.048
Chrysene	0.054
Benzo(a)pyrene	0.055
Benzo(b)fluoranthene	0.060
Benzo(k)fluoranthene	0.024
Indeno(1,2,3-cd)pyrene	0.032
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-15 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-13 1/5
Date Analyzed:	08/03/22	Data File:	080324.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	74	24	111
Phenol-d6	86	37	116
Nitrobenzene-d5	74	38	117
2-Fluorobiphenyl	90	45	117
2,4,6-Tribromophenol	98	11	158
Terphenyl-d14	104	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-8 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-16 1/25
Date Analyzed:	08/03/22	Data File:	080326.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	60 d	24	111
Phenol-d6	76 d	37	116
Nitrobenzene-d5	72 d	38	117
2-Fluorobiphenyl	90 d	45	117
2,4,6-Tribromophenol	88 d	11	158
Terphenyl-d14	96 d	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.051
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-11 0-2.5' ht	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/29/22	Lab ID:	207511-19 1/50
Date Analyzed:	08/29/22	Data File:	082913.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	86 d	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	0.087 j
Benzo(b)fluoranthene	0.12
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-9 2.5-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-23 1/5
Date Analyzed:	08/03/22	Data File:	080314.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	85	24	111
Phenol-d6	95	37	116
Nitrobenzene-d5	90	38	117
2-Fluorobiphenyl	96	45	117
2,4,6-Tribromophenol	99	11	158
Terphenyl-d14	104	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	02-1877 mb 1/5
Date Analyzed:	08/02/22	Data File:	080209.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	88	24	111
Phenol-d6	99	37	116
Nitrobenzene-d5	85	38	117
2-Fluorobiphenyl	110	45	117
2,4,6-Tribromophenol	110	11	158
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/26/22	Lab ID:	02-2048 mb 1/5
Date Analyzed:	08/29/22	Data File:	082913.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.005 j
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SRWA-9	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-25
Date Analyzed:	08/03/22	Data File:	080317.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	6 vo	10	60
Phenol-d6	16	10	49
Nitrobenzene-d5	79	15	144
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	4 vo	10	142
Terphenyl-d14	101	41	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	02-1866 mb
Date Analyzed:	08/03/22	Data File:	080308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	20	11	65
Phenol-d6	13	11	65
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	88	44	108
2,4,6-Tribromophenol	84	10	140
Terphenyl-d14	107	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-13 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-07 1/6
Date Analyzed:	08/03/22	Data File:	080327.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88 ca	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	0.76
Aroclor 1254	0.65
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-13 0.5-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/12/22	Lab ID:	207511-08 1/6
Date Analyzed:	08/12/22	Data File:	081207.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	0.30
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-14 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-10 1/6
Date Analyzed:	08/03/22	Data File:	080328.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71 ca	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	0.19
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-15 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-13 1/6
Date Analyzed:	08/03/22	Data File:	080330.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	65 ca	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-8 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-16 1/6
Date Analyzed:	08/03/22	Data File:	080331.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	86 ca	23	127

Compounds:	Concentrtion mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.081
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-9 2.5-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-23 1/6
Date Analyzed:	08/03/22	Data File:	080332.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83 ca	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	02-1880 mb 1/6
Date Analyzed:	08/03/22	Data File:	080314.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	111	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/12/22	Lab ID:	02-1983 mb 1/6
Date Analyzed:	08/12/22	Data File:	081204.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	50	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SRWA-9	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-25
Date Analyzed:	08/02/22	Data File:	080215.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	42	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	02-1875 mb2
Date Analyzed:	08/02/22	Data File:	080210.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-13 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-07 1/6
Date Analyzed:	08/03/22	Data File:	080327.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	76	41	106
DBC	84	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	0.038 ca
Endosulfan II	<0.01
4,4'-DDT	0.063 ca
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-14 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-10 1/6
Date Analyzed:	08/03/22	Data File:	080328.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	58	41	106
DBC	81	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	0.023 ca
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-15 0-0.5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-13 1/6
Date Analyzed:	08/03/22	Data File:	080330.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	54	41	106
DBC	88	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01 ca
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-8 0-1'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-16 1/6
Date Analyzed:	08/03/22	Data File:	080331.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	41	106
DBC	74	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01 ca
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-9 2.5-5'	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	207511-23 1/6
Date Analyzed:	08/03/22	Data File:	080332.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	41	106
DBC	75	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01 ca
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/03/22	Lab ID:	02-1880 mb 1/6
Date Analyzed:	08/03/22	Data File:	080314.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	89	41	106
DBC	103	32	150

Compounds:	Concentration mg/kg (ppm)
alpha-BHC	<0.01
gamma-BHC (Lindane)	<0.01
beta-BHC	<0.01
delta-BHC	<0.01
Heptachlor	<0.01
Aldrin	<0.01
Heptachlor Epoxide	<0.01
trans-Chlordane	<0.01
cis-Chlordane	<0.01
4,4'-DDE	<0.01
Endosulfan I	<0.01
Dieldrin	<0.01
Endrin	<0.01
4,4'-DDD	<0.01
Endosulfan II	<0.01
4,4'-DDT	<0.01
Endrin Aldehyde	<0.01
Methoxychlor	<0.01
Endosulfan Sulfate	<0.01
Endrin Ketone	<0.05
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	SRWA-9	Client:	Crete Consulting
Date Received:	07/29/22	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	207511-25
Date Analyzed:	08/02/22	Data File:	080215.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	40	20	121
DBC	60	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	08/02/22	Lab ID:	02-1875 mb2
Date Analyzed:	08/02/22	Data File:	080210.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	67	20	121
DBC	105	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208016-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	110	71-131

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 208011-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	114	69-134

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 208010-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	640	117 b	95 b	63-146	21 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	79-144

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	112	63-142	4

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208306-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	106	99	75-125	7
Cadmium	mg/kg (ppm)	10	<5	102	97	75-125	5
Chromium	mg/kg (ppm)	50	10.4	108	98	75-125	10
Copper	mg/kg (ppm)	50	<25	110	97	75-125	13
Lead	mg/kg (ppm)	50	<5	111	103	75-125	7
Zinc	mg/kg (ppm)	50	30.7	110	94	75-125	16

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	80-120
Cadmium	mg/kg (ppm)	10	95	80-120
Chromium	mg/kg (ppm)	50	102	80-120
Copper	mg/kg (ppm)	50	103	80-120
Lead	mg/kg (ppm)	50	102	80-120
Zinc	mg/kg (ppm)	50	103	80-120

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 207511-19 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	95	90	75-125	5
Cadmium	mg/kg (ppm)	10	<5	100	101	75-125	1
Chromium	mg/kg (ppm)	50	14.9	81	78	75-125	4
Copper	mg/kg (ppm)	50	67.2	74 b	80	75-125	8
Lead	mg/kg (ppm)	50	67.4	78	70 b	75-125	11
Zinc	mg/kg (ppm)	50	103	72 b	72 b	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	88	80-120
Cadmium	mg/kg (ppm)	10	95	80-120
Chromium	mg/kg (ppm)	50	92	80-120
Copper	mg/kg (ppm)	50	92	80-120
Lead	mg/kg (ppm)	50	94	80-120
Zinc	mg/kg (ppm)	50	93	80-120

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208001-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.30	95	95	75-125	0
Cadmium	mg/kg (ppm)	10	<1	97	93	75-125	4
Chromium	mg/kg (ppm)	50	9.47	78	78	75-125	0
Copper	mg/kg (ppm)	50	214	18 b	113	75-125	145 b
Lead	mg/kg (ppm)	50	54.9	70 b	117	75-125	50 b
Zinc	mg/kg (ppm)	50	133	54 b	115	75-125	72 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Cadmium	mg/kg (ppm)	10	93	80-120
Chromium	mg/kg (ppm)	50	100	80-120
Copper	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	100	80-120
Zinc	mg/kg (ppm)	50	99	80-120

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 208153-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.47	92	95	75-125	3
Cadmium	mg/kg (ppm)	10	<1	104	105	75-125	1
Chromium	mg/kg (ppm)	50	13.2	88	87	75-125	1
Copper	mg/kg (ppm)	50	10.1	87	86	75-125	1
Lead	mg/kg (ppm)	50	2.50	103	103	75-125	0
Zinc	mg/kg (ppm)	50	19.5	83	84	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	102	80-120
Copper	mg/kg (ppm)	50	104	80-120
Lead	mg/kg (ppm)	50	102	80-120
Zinc	mg/kg (ppm)	50	102	80-120

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 207468-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	98	102	75-125	4
Cadmium	ug/L (ppb)	5	<1	99	100	75-125	1
Chromium	ug/L (ppb)	20	1.85	85	85	75-125	0
Copper	ug/L (ppb)	20	8.72	80	75	75-125	6
Lead	ug/L (ppb)	10	<1	84	86	75-125	2
Zinc	ug/L (ppb)	50	<5	86	87	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120
Cadmium	ug/L (ppb)	5	95	80-120
Chromium	ug/L (ppb)	20	94	80-120
Copper	ug/L (ppb)	20	102	80-120
Lead	ug/L (ppb)	10	99	80-120
Zinc	ug/L (ppb)	50	98	80-120

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208153-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.11	136 b	133 b	71-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	123	68-125

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208001-01(Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.282	77	91	71-125	17

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	122	68-125

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 208306-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	6.4	114	33 b	71-125	110 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	69	68-125

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 207511-19 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	<0.1	139 vo	123	71-125	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	125	68-125

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 207483-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	<0.0008	116	104	71-125	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	96	78-125

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 208007-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	101	91	50-150	10
Chrysene	mg/kg (ppm)	0.83	<0.01	100	89	50-150	12
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	103	92	50-150	11
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	102	88	50-150	15
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	105	91	50-150	14
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	117	113	41-134	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	114	111	44-130	3

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.83	99	70-130
Chrysene	mg/kg (ppm)	0.83	99	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	99	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	106	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	110	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	109	67-128

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 208363-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	0.032	99	100	50-150	1
Chrysene	mg/kg (ppm)	0.83	0.049	92	92	50-150	0
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.075	104	102	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.081	108	108	50-150	0
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.022	106	101	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.070	98	96	41-134	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	97	92	44-130	5

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.83	96	70-130
Chrysene	mg/kg (ppm)	0.83	94	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	96	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	97	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	97	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	92	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	94	67-128

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	95	93	70-130	2
Chrysene	ug/L (ppb)	5	96	94	70-130	2
Benzo(a)pyrene	ug/L (ppb)	5	96	96	70-130	0
Benzo(b)fluoranthene	ug/L (ppb)	5	98	99	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	93	94	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	105	102	70-130	3
Dibenz(a,h)anthracene	ug/L (ppb)	5	106	101	70-130	5

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 208007-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	96	86	29-125	11
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	92	88	25-137	4

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	108	55-137
Aroclor 1260	mg/kg (ppm)	0.25	115	51-150

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 208155-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	64	62	29-125	3
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	55	52	25-137	6

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	120	55-137
Aroclor 1260	mg/kg (ppm)	0.25	126	51-150

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	69	68	25-111	1
Aroclor 1260	ug/L (ppb)	0.25	78	74	23-123	5

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: 208007-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
alpha-BHC	mg/kg (ppm)	0.1	<0.01	47	77	45-111	48 vo
gamma-BHC (Lindane)	mg/kg (ppm)	0.1	<0.01	53	81	50-117	42 vo
beta-BHC	mg/kg (ppm)	0.1	<0.01	64	83	49-109	26 vo
delta-BHC	mg/kg (ppm)	0.1	<0.01	64	80	39-114	22 vo
Heptachlor	mg/kg (ppm)	0.1	<0.01	52	79	40-131	41 vo
Aldrin	mg/kg (ppm)	0.1	<0.01	55	82	44-121	39 vo
Heptachlor Epoxide	mg/kg (ppm)	0.1	<0.01	66	83	46-122	23 vo
trans-Chlordane	mg/kg (ppm)	0.1	<0.01	70	84	41-129	18
cis-Chlordane	mg/kg (ppm)	0.1	<0.01	71	83	44-120	16
4,4'-DDE	mg/kg (ppm)	0.1	<0.01	76	85	41-118	11
Endosulfan I	mg/kg (ppm)	0.1	<0.01	69	83	45-124	18
Dieldrin	mg/kg (ppm)	0.1	<0.01	75	89	45-130	17
Endrin	mg/kg (ppm)	0.1	<0.01	80	94	50-140	16
4,4'-DDD	mg/kg (ppm)	0.1	<0.01	96	99	26-155	3
Endosulfan II	mg/kg (ppm)	0.1	<0.01	78	86	40-135	10
4,4'-DDT	mg/kg (ppm)	0.1	<0.01	59	73	39-123	21 vo
Endrin Aldehyde	mg/kg (ppm)	0.1	<0.01	51	74	35-139	37 vo
Methoxychlor	mg/kg (ppm)	0.1	<0.01	75	87	28-162	15
Endosulfan Sulfate	mg/kg (ppm)	0.1	<0.01	78	85	40-141	9
Endrin Ketone	mg/kg (ppm)	0.1	<0.05	78	83	41-147	6
Toxaphene	mg/kg (ppm)	4	<1	92	83	36-133	10

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
alpha-BHC	mg/kg (ppm)	0.1	86	58-117
gamma-BHC (Lindane)	mg/kg (ppm)	0.1	89	60-121
beta-BHC	mg/kg (ppm)	0.1	91	66-120
delta-BHC	mg/kg (ppm)	0.1	89	67-124
Heptachlor	mg/kg (ppm)	0.1	90	58-131
Aldrin	mg/kg (ppm)	0.1	90	63-124
Heptachlor Epoxide	mg/kg (ppm)	0.1	89	67-123
trans-Chlordane	mg/kg (ppm)	0.1	91	60-123
cis-Chlordane	mg/kg (ppm)	0.1	93	70-130
4,4'-DDE	mg/kg (ppm)	0.1	95	70-130
Endosulfan I	mg/kg (ppm)	0.1	92	62-124
Dieldrin	mg/kg (ppm)	0.1	96	70-130
Endrin	mg/kg (ppm)	0.1	112	56-147
4,4'-DDD	mg/kg (ppm)	0.1	105	54-137
Endosulfan II	mg/kg (ppm)	0.1	94	42-140
4,4'-DDT	mg/kg (ppm)	0.1	103	25-169
Endrin Aldehyde	mg/kg (ppm)	0.1	75	21-135
Methoxychlor	mg/kg (ppm)	0.1	116	44-160
Endosulfan Sulfate	mg/kg (ppm)	0.1	95	39-148
Endrin Ketone	mg/kg (ppm)	0.1	95	46-134
Toxaphene	mg/kg (ppm)	4	118	56-145

Date of Report: 09/08/22
Date Received: 07/29/22
Project: Port of Friday Harbor Jensen's Harbor RI, F&BI 207511

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
alpha-BHC	ug/L (ppb)	0.25	72	72	41-101	0
gamma-BHC (Lindane)	ug/L (ppb)	0.25	77	77	43-105	0
beta-BHC	ug/L (ppb)	0.25	83	85	49-104	2
delta-BHC	ug/L (ppb)	0.25	82	85	45-108	4
Heptachlor	ug/L (ppb)	0.25	69	71	39-104	3
Aldrin	ug/L (ppb)	0.25	71	71	43-98	0
Heptachlor Epoxide	ug/L (ppb)	0.25	80	82	52-110	2
trans-Chlordane	ug/L (ppb)	0.25	82	85	39-119	4
cis-Chlordane	ug/L (ppb)	0.25	83	85	47-106	2
4,4'-DDE	ug/L (ppb)	0.25	85	87	48-114	2
Endosulfan I	ug/L (ppb)	0.25	82	83	10-140	1
Dieldrin	ug/L (ppb)	0.25	88	90	54-115	2
Endrin	ug/L (ppb)	0.25	103	104	39-136	1
4,4'-DDD	ug/L (ppb)	0.25	98	101	31-161	3
Endosulfan II	ug/L (ppb)	0.25	89	91	10-144	2
4,4'-DDT	ug/L (ppb)	0.25	94	97	50-121	3
Endrin Aldehyde	ug/L (ppb)	0.25	81	83	47-113	2
Methoxychlor	ug/L (ppb)	0.25	109	112	51-126	3
Endosulfan Sulfate	ug/L (ppb)	0.25	92	95	58-110	3
Endrin Ketone	ug/L (ppb)	0.25	92	94	57-120	2
Toxaphene	ug/L (ppb)	4	107	118	56-123	10

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

207511

SAMPLE CHAIN OF CUSTODY

Report To Jones, Hainsworth, Stevens, P. Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R. Jones 07-29-22

PROJECT NAME: Port of Friday Harbor Jensen's Harbor RI

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

Page # 1 of 2 or 3 SW3

TURNAROUND TIME
- [x] Standard turnaround BI4
- [ ] RUSH
- Rush charges authorized by: CB

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Metals*	TBT	Diuron/Fluridone	Pesticides	Notes
DUP-220726-2	01 A-D	7.26.2022	0730	WATER	4	✓	✓										● per RJ
DUP-B-20726	02		0800	SOIL	4		✓										8/10/22 ME
AST-2 ~~2-2.5~~ RJ 5-7.5'	03 A-F		0805		6												(X) per RJ
AST-2 7.5-10'	04 A-E		0810		5	✓	✓						✓				8/18/22 ME
AST-2 10-12'	05 A-F		0815	↓	6								(X)				■ per GH
AST-2	06		0830	WATER	~~9~~ 10 BS	✓	✓										8/25/22 ME
SRWA-13 0-0.5'	07 A-G		0940	SOIL	7	✓	✓			✓	✓	✓	✓	✓	✓	✓	Extra bottles
SRWA-13 0.5-1'	08		0950		7							●	●				
SRWA-13 3-5'	09		1000	↓	7								(X)				
SRWA-14 0-1'	10	↓	1020	SOIL	7 EVAB 8	✓	✓			✓	✓	✓	✓	✓	✓	✓	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	7.27.22	1100
Received by: D. Wik	liz Webber-Bruya	F:B	7/29/22	1509
Relinquished by:		Samples received at 5 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

207511

SAMPLE CHAIN OF CUSTODY

Report To Jones, Hainsworth, Stevens, P. Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R. Jones 07-29-22

PROJECT NAME Port of Friday Harbor Jensen's Marina RI

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME TW3

☒ Standard turnaround

☐ RUSH BI4

Rush charges authorized by: CF3

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Metals*	TBT	Dioxins/Furans	Pesticides	Notes
					EDD												✓ HOLD
SRWA-14 1-2'	11 A-H	7.26.22	1030	SOIL	8	✓	✓				✓	✓	●	○	✓	✓	HOLD per RJ 8/2/22 ME
SRWA-14 3-5'	12		1040	↓	8												
SRWA-15 0-0.5'	13		1230	SOIL	8	✓	✓				✓	✓	✓	✓	✓	✓	
SRWA-15 0.5-1'	14		1240		8												
SRWA-15 2-3'	15A-B		1250	↓	2												
SRWA-8 0-1'	16 A-H		1330	SOIL	8	✓	✓				✓	✓	✓	✓	✓	✓	
SRWA-8 2-3'	17 A-B		1340		2								●				
SRWA-8 4-5'	18		1350	↓	2								⊗				
SRWA-11 0-2.5'	19		1425	SOIL	1						■	✗	■	■	Hold per RS 7/28 ME	time on 402 jar: 1435 EDD	
SRWA-11 2.5-5'	20	↓	1430	↓	1												✗ - HOLD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	7.27.22	1100
Received by: [signature]	Liz Wickham Bruya	FMB	7/29/22	1509
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

207511

SAMPLE CHAIN OF CUSTODY

Report To Jones, Hainsworth, Stevens, P. Lean

Company Crete Consulting | Lean Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R. Jones 07-29-22

PROJECT NAME Port of Friday Harbor Jensen's Marina RI

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround EOZ 1W3
- [ ] RUSH
- Rush charges authorized by BSH

SAMPLE DISPOSAL CB3
- [ ] Archive samples HSB
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Metals*	TBT	Dioxins/Furans	Pesticides	Notes
SRWA-11 5-6'	21	7.26.22	1435	SOIL	1												
SRWA-9 0-2.5'	22A-H		1520	SOIL	8												Time on 402 jar 14:25 EWB
SRWA-9 2.5-5'	23A-B		1530		2	✓	✓				✓	✓	✓	✓	✓	✓	
SRWA-9 5-6'	24		1540		1												
SRWA-9	25A-F		1545	WATER	6	✓	✓				✓	✓	✓	✓	✓	✓	✓ Hold O/F
																	pg RJ 8/18/22 MC
																	analyze per RJ 9/2/22 MC

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R Jones	Rusty Jones	CRETE	7.27.22	1100
Received by: M.D. Mr-K	Liz Webster-Bruya	FIB	7/29/22	1509
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Analytical Resources, LLC
Analytical Chemists and Consultants

22 August 2022

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 207511

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22H0039	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2022.08.22 14:31:55 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Susan Dunnihoo, Director, Client Services

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22H0039

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: ARI

PROJECT NAME/NO.	PO #
207511	C-287

REMARKS

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TBT							Notes
SRWA-13 0.0-5'		7-26-22	0940	Soil	1				✓							
SRWA-14 0-1'			1020		1				✓							
SRWA-14 1-2'			1030		1				✓							
SRWA-15 0-0.5'			1230		1				✓							
SRWA-8 0-1'			1330		1				✓							
SRWA-9 2.5-5'			1530		1				✓							
SRWA-9			1545	Water	1				✓							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/2/22	0745
Received by:		Hannah Neuberger	ARI	8/2/22	10:30
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SRWA-13 0-0.5'	22H0039-01	Solid	26-Jul-2022 09:40	02-Aug-2022 10:30
SRWA-14 0-1'	22H0039-02	Solid	26-Jul-2022 10:20	02-Aug-2022 10:30
SRWA-14 1-2'	22H0039-03	Solid	26-Jul-2022 10:30	02-Aug-2022 10:30
SRWA-15 0-0.5'	22H0039-04	Solid	26-Jul-2022 12:30	02-Aug-2022 10:30
SRWA-8 0-1'	22H0039-05	Solid	26-Jul-2022 13:30	02-Aug-2022 10:30
SRWA-9 2.5-5'	22H0039-06	Solid	26-Jul-2022 15:30	02-Aug-2022 10:30
SRWA-9	22H0039-07	Water	26-Jul-2022 15:45	02-Aug-2022 10:30

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 207511
Work Order: 22H0039

Sample receipt

Samples as listed on the preceding page were received 02-Aug-2022 10:30 under ARI work order 22H0039. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The batch BKH0105 matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within limits. The relative percent difference (RPD) was outside advisory control limits for the butyl tin ion and has been flagged on the summary sheet.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya

Project Name: _____

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22H0039

Tracking No: 5909 4343 5553 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 6.8

Time 1030

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 9705

Cooler Accepted by: HN Date: 08/02/22 Time: 10:30

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?			(NO)
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		YES	(NO)
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: HN Date: 08/02/22 Time: 14:01 Labels checked by: _____

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
SRWA 0-1'	SRWA-8 0-1'		

Additional Notes, Discrepancies, & Resolutions:

By: HN Date: 08/02/22

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 22H0039

Cooler#: _____ Temperature(°C): 6.8°C

Sample ID	Bottle Count	Bottle Type
Samples received @ above 6°C		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by: HW Date: 08/02/22 Time: 10:30

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-13 0-0.5'

22H0039-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 09:40

Instrument: NT12 Analyst: JZ — Analyzed: 08/08/2022 15:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 22H0039-01 A 01

Preparation Batch: BKH0105 — Sample Size: 6.86 g (wet) — Dry Weight:5.00 g

Prepared: 08/05/2022 — Final Volume: 0.5 mL — % Solids: 72.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.450	3.86	486	ug/kg	E
Dibutyltin Ion	14488-53-0	1	1.73	5.78	79.7	ug/kg	
Butyltin Ion	78763-54-9	1	1.89	4.08	759	ug/kg	E
Tetrabutyltin	1461-25-2	1	5.00	5.00	5.07	ug/kg	
Surrogate: Tripentyltin				*30-160 %*	*111*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*63.3*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-13 0-0.5'

22H0039-01RE1 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 09:40

Instrument: NT12 Analyst: JZ — Analyzed: 08/08/2022 17:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 22H0039-01RE1 A 01

Preparation Batch: BKH0105 — Sample Size: 6.86 g (wet) — Dry Weight:5.00 g

Prepared: 08/05/2022 — Final Volume: 0.5 mL — % Solids: 72.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	5	2.25	19.3	508	ug/kg	D
Dibutyltin Ion	14488-53-0	5	8.64	28.9	85.6	ug/kg	D
Butyltin Ion	78763-54-9	5	9.44	20.4	921	ug/kg	D
Tetrabutyltin	1461-25-2	5	25.0	25.0	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*107*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*64.0*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-14 0-1'

22H0039-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 10:20

Instrument: NT12 Analyst: JZ — Analyzed: 08/08/2022 15:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 22H0039-02 A 01

Preparation Batch: BKH0105 — Sample Size: 5.67 g (wet) — Dry Weight:5.05 g

Prepared: 08/05/2022 — Final Volume: 0.5 mL — % Solids: 89.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.82	2.18	ug/kg	J
Dibutyltin Ion	14488-53-0	1	1.71	5.72	7.67	ug/kg	
Butyltin Ion	78763-54-9	1	1.87	4.04	11.7	ug/kg	
Tetrabutyltin	1461-25-2	1	4.95	4.95	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*115*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*76.2*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-15 0-0.5'

22H0039-04 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 12:30

Instrument: NT12 Analyst: JZ — Analyzed: 08/08/2022 15:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 22H0039-04 A 01

Preparation Batch: BKH0105 — Sample Size: 5.96 g (wet) — Dry Weight:5.03 g

Prepared: 08/05/2022 — Final Volume: 0.5 mL — % Solids: 84.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.448	3.84	0.624	ug/kg	J
Dibutyltin Ion	14488-53-0	1	1.72	5.75	2.21	ug/kg	J
Butyltin Ion	78763-54-9	1	1.88	4.06	2.83	ug/kg	J
Tetrabutyltin	1461-25-2	1	4.97	4.97	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*98.4*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*60.4*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-8 0-1'

22H0039-05 (Solid)

Butyl Tins

Method: EPA 8270E-SIM
Instrument: NT12 Analyst: JZ

Sampled: 07/26/2022 13:30
Analyzed: 08/08/2022 16:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BKH0105
Prepared: 08/05/2022

Sample Size: 5.98 g (wet)
Final Volume: 0.5 mL

Extract ID: 22H0039-05 A 01
Dry Weight:5.00 g
% Solids: 83.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.450	3.86	7.22	ug/kg	
Dibutyltin Ion	14488-53-0	1	1.73	5.78	6.40	ug/kg	
Butyltin Ion	78763-54-9	1	1.89	4.08	2.59	ug/kg	J
Tetrabutyltin	1461-25-2	1	5.00	5.00	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*84.5*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*61.1*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-9 2.5-5'

22H0039-06 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 15:30

Instrument: NT12 Analyst: JZ — Analyzed: 08/08/2022 16:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 22H0039-06 A 01

Preparation Batch: BKH0105 — Sample Size: 5.42 g (wet) — Dry Weight:5.01 g

Prepared: 08/05/2022 — Final Volume: 0.5 mL — % Solids: 92.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.449	3.86	ND	ug/kg	U
Dibutyltin Ion	14488-53-0	1	1.73	5.77	ND	ug/kg	U
Butyltin Ion	78763-54-9	1	1.89	4.08	ND	ug/kg	U
Tetrabutyltin	1461-25-2	1	4.99	4.99	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*105*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*68.5*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

SRWA-9

22H0039-07 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 07/26/2022 15:45

Instrument: NT14 Analyst: VTS — Analyzed: 08/09/2022 09:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22H0039-07 A 01

Preparation Batch: BKH0047 — Sample Size: 150 mL

Prepared: 08/02/2022 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0215	ug/L	B
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*71.7*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*47.2*	*%*	

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BKH0047 - EPA 3510C SepF

Instrument: NT14 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKH0047-BLK1)			Prepared: 02-Aug-2022 Analyzed: 09-Aug-2022 08:25							
Tributyltin Ion	ND	0.0052	ug/L							U
Dibutyltin Ion	ND	0.0077	ug/L							U
Butyltin Ion	0.0068	0.0060	ug/L							
Tetrabutyltin	ND	0.0300	ug/L							U
Surrogate: Tripentyltin	0.0655		ug/L	*0.0753*		*87.0*	*30-160*			
Surrogate: Tripropyltin	0.0390		ug/L	*0.0729*		*53.4*	*30-160*			
LCS (BKH0047-BS1)			Prepared: 02-Aug-2022 Analyzed: 09-Aug-2022 08:50							
Tributyltin Ion	0.0984	0.0052	ug/L	0.149		66.3	30-160			
Dibutyltin Ion	0.118	0.0077	ug/L	0.128		92.0	30-160			
Butyltin Ion	0.0597	0.0060	ug/L	0.104		57.5	30-160			B
Surrogate: Tripentyltin	0.0695		ug/L	*0.0753*		*92.3*	*30-160*			
Surrogate: Tripropyltin	0.0446		ug/L	*0.0729*		*61.1*	*30-160*			
Matrix Spike (BKH0047-MS1)	**Source: 22H0039-07**		Prepared: 02-Aug-2022 Analyzed: 09-Aug-2022 09:18							
Tributyltin Ion	0.0978	0.0057	ug/L	0.163	ND	60.1	30-160			
Dibutyltin Ion	0.120	0.0084	ug/L	0.140	ND	85.4	30-160			
Butyltin Ion	0.0956	0.0066	ug/L	0.114	0.0215	65.2	30-160			B
Surrogate: Tripentyltin	0.0693		ug/L	*0.0824*	*0.0540*	*84.1*	*30-160*			
Surrogate: Tripropyltin	0.0419		ug/L	*0.0798*	*0.0344*	*52.5*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BKH0047-MSD1)	**Source: 22H0039-07**		Prepared: 02-Aug-2022 Analyzed: 09-Aug-2022 09:32							
Tributyltin Ion	0.0891	0.0057	ug/L	0.163	ND	54.8	30-160	9.32	30	
Dibutyltin Ion	0.111	0.0084	ug/L	0.140	ND	79.2	30-160	7.53	30	
Butyltin Ion	0.0868	0.0066	ug/L	0.114	0.0215	57.5	30-160	9.59	30	B
Surrogate: Tripentyltin	0.0622		ug/L	*0.0824*	*0.0540*	*75.4*	*30-160*			
Surrogate: Tripropyltin	0.0371		ug/L	*0.0798*	*0.0344*	*46.5*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BKH0105 - EPA 3546 (Microwave)

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKH0105-BLK1)				Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 13:59							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Dibutyltin Ion	ND	1.73	5.78	ug/kg							U
Butyltin Ion	ND	1.89	4.08	ug/kg							U
Tetrabutyltin	ND	5.00	5.00	ug/kg							U
Surrogate: Tripentyltin	40.6			ug/kg	*45.2*		*90.0*	*30-160*			
Surrogate: Tripropyltin	33.8			ug/kg	*43.7*		*77.3*	*30-160*			
LCS (BKH0105-BS1)				Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 14:16							
Tributyltin Ion	32.9	0.450	3.86	ug/kg	44.6		73.8	30-160			
Dibutyltin Ion	35.7	1.73	5.78	ug/kg	38.4		93.1	30-160			
Butyltin Ion	22.9	1.89	4.08	ug/kg	31.2		73.4	30-160			
Surrogate: Tripentyltin	42.2			ug/kg	*45.2*		*93.4*	*30-160*			
Surrogate: Tripropyltin	31.1			ug/kg	*43.7*		*71.0*	*30-160*			
Matrix Spike (BKH0105-MS1)		**Source: 22H0039-06**		Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 16:37							
Tributyltin Ion	29.7	0.449	3.86	ug/kg	44.5	ND	66.7	30-160			
Dibutyltin Ion	36.5	1.73	5.77	ug/kg	38.3	ND	95.3	30-160			
Butyltin Ion	22.6	1.89	4.08	ug/kg	31.1	ND	72.6	30-160			
Surrogate: Tripentyltin	47.4			ug/kg	*45.1*	*47.5*	*105*	*30-160*			
Surrogate: Tripropyltin	27.5			ug/kg	*43.7*	*29.9*	*62.9*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BKH0105-MSD1)		**Source: 22H0039-06**		Prepared: 05-Aug-2022 Analyzed: 08-Aug-2022 16:54							
Tributyltin Ion	29.3	0.449	3.86	ug/kg	44.5	ND	65.9	30-160	1.22	30	
Dibutyltin Ion	33.1	1.73	5.77	ug/kg	38.3	ND	86.4	30-160	9.78	30	
Butyltin Ion	11.9	1.89	4.08	ug/kg	31.1	ND	38.4	30-160	61.70	30	*
Surrogate: Tripentyltin	44.5			ug/kg	*45.1*	*47.5*	*98.5*	*30-160*			
Surrogate: Tripropyltin	23.1			ug/kg	*43.7*	*29.9*	*52.9*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP,NELAP
Dibutyltin Ion	WADOE,DoD-ELAP,NELAP
Butyltin Ion	WADOE,NELAP
Tetrabutyltin	NELAP
EPA 8270E-SIM in Water	
Tributyltin Ion	NELAP,WADOE,DoD-ELAP
Dibutyltin Ion	NELAP,WADOE,DoD-ELAP
Butyltin Ion	NELAP,WADOE,DoD-ELAP
Tetrapentyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

Friedman & Bruya Inc.	Project: 207511	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	22-Aug-2022 11:47

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Test Report

August 19, 2022

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14540**. This corresponds to your project number **207511** and purchase order number **C-264**. Six soil samples and one aqueous sample were received on 8/3/2022 in good condition. Per your instructions, samples 14540-003-SA and 14540-007-SA (Friedman and Bruya Inc., sample IDs: SRWA-14 1-2 & SRWA-9 respectively) were placed on hold. The remaining samples were extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). Freidman and Bruya, Inc. requested a turnaround time of fifteen business days for project **14540**.

Please note sample 14540-001-SA (Friedman and Bruya Inc., sample ID: SRWA-13 0-0.5) had to be diluted and reanalyzed due to high levels of hepta chlorinated dibenzo dioxins (HpCDD) and octa chlorinated dibenzo dioxin (OCDD). Results taken from the dilution and reanalysis have been noted with the "*" qualifier.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, your email dated 8/3/22 placing sample 14540-003-SA (Friedman and Bruya Inc., sample ID: SRWA-14 1-2) on hold, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14540**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Thomas C. Crabtree

Thomas C. Crabtree
Director

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14540**

Received on: **08/03/2022** Project Due: **08/25/2022** Storage: **R-4**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14540-001-SA	0	207511	SRWA-13 0-0.5	EPA 1613 D/F	Soil	07/26/2022	09:40 am	07/26/2023
14540-002-SA	0	207511	SRWA-14 0-1	EPA 1613 D/F	Soil	07/26/2022	10:20 am	07/26/2023
14540-003-SA	0	207511	SRWA-14 1-2	EPA 1613 D/F	Soil	07/26/2022	10:30 am	07/26/2023
14540-004-SA	0	207511	SRWA-15 0-0.5	EPA 1613 D/F	Soil	07/26/2022	12:30 pm	07/26/2023
14540-005-SA	0	207511	SRWA-8 0-1	EPA 1613 D/F	Soil	07/26/2022	01:30 pm	07/26/2023
14540-006-SA	0	207511	SRWA-9 2.5-5	EPA 1613 D/F	Soil	07/26/2022	03:30 pm	07/26/2023
14540-007-SA	0	207511	SRWA-9	EPA 1613 D/F	Aqueous	07/26/2022	03:45 pm	07/26/2023

FAL Sample ID	Notes
14540-003-SA	'HOLD'
14540-007-SA	Sample placed on hold via email dated 8/18/2022. BS

EPA Method 1613
PCDD/F

FAL ID: 14540-001-MB
Client ID: Method Blank
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: NA
Amount: 10.0 g

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 0.0
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.0945		-	0.0286				
1,2,3,7,8-PeCDD	ND	0.211		-	0.0515				
1,2,3,4,7,8-HxCDD	ND	0.216		-	0.0555				
1,2,3,6,7,8-HxCDD	ND	0.232		-	0.0558	Total TCDD	ND	0.0945	
1,2,3,7,8,9-HxCDD	ND	0.207		-	0.0528	Total PeCDD	ND	0.211	
1,2,3,4,6,7,8-HpCDD	ND	0.255		-	0.0712	Total HxCDD	ND	0.232	
OCDD	ND	0.487		-	0.195	Total HpCDD	ND	0.255	
2,3,7,8-TCDF	ND	0.0706		-	0.0231				
1,2,3,7,8-PeCDF	ND	0.100		-	0.0324				
2,3,4,7,8-PeCDF	ND	0.105		-	0.0322				
1,2,3,4,7,8-HxCDF	ND	0.0861		-	0.0339				
1,2,3,6,7,8-HxCDF	ND	0.0845		-	0.0340				
2,3,4,6,7,8-HxCDF	ND	0.0959		-	0.0353				
1,2,3,7,8,9-HxCDF	ND	0.119		-	0.0451	Total TCDF	ND	0.0706	
1,2,3,4,6,7,8-HpCDF	ND	0.158		-	0.0350	Total PeCDF	ND	0.105	
1,2,3,4,7,8,9-HpCDF	ND	0.202		-	0.0421	Total HxCDF	ND	0.119	
OCDF	ND	0.371		-	0.0820	Total HpCDF	ND	0.202	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	46.5	25.0 - 164	
13C-1,2,3,7,8-PeCDD	57.5	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	66.4	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	66.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	58.4	23.0 - 140	
13C-OCDD	51.3	17.0 - 157	
13C-2,3,7,8-TCDF	62.4	24.0 - 169	
13C-1,2,3,7,8-PeCDF	67.6	24.0 - 185	
13C-2,3,4,7,8-PeCDF	65.5	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	71.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	68.4	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	63.5	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	60.5	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	63.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	55.0	26.0 - 138	
13C-OCDF	48.3	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	67.9	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC

Date: 8/15/2022

Reviewed By: BNB

Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-001-OPR
Client ID: OPR
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: NA
Amount: 10.00 g

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: ng/ml

Acquired: 08-12-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	10.3	6.70 - 15.8	
1,2,3,7,8-PeCDD	49.4	35.0 - 71.0	
1,2,3,4,7,8-HxCDD	50.0	35.0 - 82.0	
1,2,3,6,7,8-HxCDD	51.0	38.0 - 67.0	
1,2,3,7,8,9-HxCDD	50.1	32.0 - 81.0	
1,2,3,4,6,7,8-HpCDD	52.5	35.0 - 70.0	
OCDD	106	78.0 - 144	
2,3,7,8-TCDF	8.92	7.50 - 15.8	
1,2,3,7,8-PeCDF	52.2	40.0 - 67.0	
2,3,4,7,8-PeCDF	52.2	34.0 - 80.0	
1,2,3,4,7,8-HxCDF	52.6	36.0 - 67.0	
1,2,3,6,7,8-HxCDF	52.9	42.0 - 65.0	
2,3,4,6,7,8-HxCDF	53.9	35.0 - 78.0	
1,2,3,7,8,9-HxCDF	53.7	39.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	52.8	41.0 - 61.0	
1,2,3,4,7,8,9-HpCDF	52.3	39.0 - 69.0	
OCDF	108	63.0 - 170	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	54.6	20.0 - 175	
13C-1,2,3,7,8-PeCDD	79.4	21.0 - 227	
13C-1,2,3,4,7,8-HxCDD	85.7	21.0 - 193	
13C-1,2,3,6,7,8-HxCDD	84.6	25.0 - 163	
13C-1,2,3,4,6,7,8-HpCDD	72.9	26.0 - 166	
13C-OCDD	62.6	13.0 - 198	
13C-2,3,7,8-TCDF	84.7	22.0 - 152	
13C-1,2,3,7,8-PeCDF	86.7	21.0 - 192	
13C-2,3,4,7,8-PeCDF	86.1	13.0 - 328	
13C-1,2,3,4,7,8-HxCDF	88.6	19.0 - 202	
13C-1,2,3,6,7,8-HxCDF	84.1	21.0 - 159	
13C-2,3,4,6,7,8-HxCDF	82.3	22.0 - 176	
13C-1,2,3,7,8,9-HxCDF	78.0	17.0 - 205	
13C-1,2,3,4,6,7,8-HpCDF	78.1	21.0 - 158	
13C-1,2,3,4,7,8,9-HpCDF	72.4	20.0 - 186	
13C-OCDF	63.5	13.0 - 198	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	91.4	31.0 - 191

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 8/15/2022

Reviewed By: BNB

Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-001-SA
Client ID: SRWA-13 0-0.5
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: 08-03-2022
Amount: 10.1 g
% Solids: 64.37

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 103
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	1.88	-		1.88	0.0286				
1,2,3,7,8-PeCDD	20.7	-		20.7	0.0515				
1,2,3,4,7,8-HxCDD	35.0	-		3.50	0.0555				
1,2,3,6,7,8-HxCDD	122	-		12.2	0.0558	Total TCDD	18.4	-	
1,2,3,7,8,9-HxCDD	76.6	-		7.66	0.0528	Total PeCDD	104	-	
1,2,3,4,6,7,8-HpCDD	3350	-	*	33.5	0.0712	Total HxCDD	851	-	
OCDD	35600	-	*	10.7	0.195	Total HpCDD	6970	-	*
2,3,7,8-TCDF	3.20	-	F	0.320	0.0231				
1,2,3,7,8-PeCDF	2.30	-		0.0690	0.0324				
2,3,4,7,8-PeCDF	6.66	-		2.00	0.0322				
1,2,3,4,7,8-HxCDF	11.0	-		1.10	0.0339				
1,2,3,6,7,8-HxCDF	9.34	-		0.934	0.0340				
2,3,4,6,7,8-HxCDF	13.3	-		1.33	0.0353				
1,2,3,7,8,9-HxCDF	2.46	-		0.246	0.0451	Total TCDF	56.6	-	D,M
1,2,3,4,6,7,8-HpCDF	553	-		5.53	0.0350	Total PeCDF	114	-	D,M
1,2,3,4,7,8,9-HpCDF	20.0	-		0.200	0.0421	Total HxCDF	499	-	D,M
OCDF	2300	-		0.690	0.0820	Total HpCDF	2050	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.1	25.0 - 164	
13C-1,2,3,7,8-PeCDD	85.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	88.4	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	84.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	107	23.0 - 140	*
13C-OCDD	100	17.0 - 157	*
13C-2,3,7,8-TCDF	87.3	24.0 - 169	
13C-1,2,3,7,8-PeCDF	104	24.0 - 185	
13C-2,3,4,7,8-PeCDF	106	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	102	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	96.7	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	96.3	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	98.8	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	108	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	103	26.0 - 138	
13C-OCDF	117	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	79.7	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC
Date: 8/15/2022

Reviewed By: BNB
Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-002-SA
Client ID: SRWA-14 0-1
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: 08-03-2022
Amount: 10.1 g
% Solids: 41.43

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 13.4
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	0.174	-	J	0.174	0.0286				
1,2,3,7,8-PeCDD	2.04	-	J	2.04	0.0515				
1,2,3,4,7,8-HxCDD	4.05	-		0.405	0.0555				
1,2,3,6,7,8-HxCDD	20.9	-		2.09	0.0558	Total TCDD	0.794	-	
1,2,3,7,8,9-HxCDD	9.78	-		0.978	0.0528	Total PeCDD	6.88	-	
1,2,3,4,6,7,8-HpCDD	468	-		4.68	0.0712	Total HxCDD	92.5	-	
OCDD	3390	-		1.02	0.195	Total HpCDD	804	-	
2,3,7,8-TCDF	0.921	-		0.0921	0.0231				
1,2,3,7,8-PeCDF	1.68	-	J	0.0504	0.0324				
2,3,4,7,8-PeCDF	2.31	-	J	0.693	0.0322				
1,2,3,4,7,8-HxCDF	2.74	-		0.274	0.0339				
1,2,3,6,7,8-HxCDF	1.31	-	J	0.131	0.0340				
2,3,4,6,7,8-HxCDF	1.92	-	J	0.192	0.0353				
1,2,3,7,8,9-HxCDF	1.49	-	J	0.149	0.0451	Total TCDF	11.5	-	D,M
1,2,3,4,6,7,8-HpCDF	39.4	-		0.394	0.0350	Total PeCDF	28.3	-	D,M
1,2,3,4,7,8,9-HpCDF	1.46	-	J	0.0146	0.0421	Total HxCDF	89.3	-	D,M
OCDF	62.9	-		0.0189	0.0820	Total HpCDF	127	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.9	25.0 - 164	
13C-1,2,3,7,8-PeCDD	80.8	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	93.7	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	93.1	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	102	23.0 - 140	
13C-OCDD	94.9	17.0 - 157	
13C-2,3,7,8-TCDF	90.8	24.0 - 169	
13C-1,2,3,7,8-PeCDF	103	24.0 - 185	
13C-2,3,4,7,8-PeCDF	107	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	110	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	103	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	102	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	100	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	101	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	96.4	26.0 - 138	
13C-OCDF	94.2	17.0 - 157	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	83.9	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC
Date: 8/15/2022

Reviewed By: BNB
Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-004-SA
Client ID: SRWA-15 0-0.5
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: 08-03-2022
Amount: 10.1 g
% Solids: 88.83

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 0.362
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.0553		-	0.0286				
1,2,3,7,8-PeCDD	ND	0.0915		-	0.0515				
1,2,3,4,7,8-HxCDD	0.323	-	J	0.0323	0.0555				
1,2,3,6,7,8-HxCDD	0.522	-	J	0.0522	0.0558	Total TCDD	0.108	-	J
1,2,3,7,8,9-HxCDD	0.318	-	J	0.0318	0.0528	Total PeCDD	0.523	-	J,M
1,2,3,4,6,7,8-HpCDD	11.6	-		0.116	0.0712	Total HxCDD	4.29	-	
OCDD	97.8	-		0.0293	0.195	Total HpCDD	26.4	-	
2,3,7,8-TCDF	ND	0.0546		-	0.0231				
1,2,3,7,8-PeCDF	ND	0.0814		-	0.0324				
2,3,4,7,8-PeCDF	ND	0.0853		-	0.0322				
1,2,3,4,7,8-HxCDF	0.156	-	J	0.0156	0.0339				
1,2,3,6,7,8-HxCDF	0.137	-	J	0.0137	0.0340				
2,3,4,6,7,8-HxCDF	0.158	-	J	0.0158	0.0353				
1,2,3,7,8,9-HxCDF	0.122	-	J	0.0122	0.0451	Total TCDF	0.973	-	
1,2,3,4,6,7,8-HpCDF	3.82	-		0.0382	0.0350	Total PeCDF	1.33	-	J,M
1,2,3,4,7,8,9-HpCDF	0.219	-	J	0.00219	0.0421	Total HxCDF	3.53	-	
OCDF	7.31	-		0.00219	0.0820	Total HpCDF	8.91	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.4	25.0 - 164	
13C-1,2,3,7,8-PeCDD	82.7	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	101	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	97.1	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	95.7	23.0 - 140	
13C-OCDD	80.8	17.0 - 157	
13C-2,3,7,8-TCDF	91.4	24.0 - 169	
13C-1,2,3,7,8-PeCDF	104	24.0 - 185	
13C-2,3,4,7,8-PeCDF	104	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	113	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	104	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	114	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	97.6	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	99.1	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	92.9	26.0 - 138	
13C-OCDF	86.6	17.0 - 157	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.9	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC
Date: 8/15/2022

Reviewed By: BNB
Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-005-SA
Client ID: SRWA-8 0-1
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: 08-03-2022
Amount: 10.3 g
% Solids: 54.89

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 25.4
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	0.567	-		0.567	0.0286				
1,2,3,7,8-PeCDD	4.34	-		4.34	0.0515				
1,2,3,4,7,8-HxCDD	7.76	-		0.776	0.0555				
1,2,3,6,7,8-HxCDD	24.9	-		2.49	0.0558	Total TCDD	3.20	-	
1,2,3,7,8,9-HxCDD	18.9	-		1.89	0.0528	Total PeCDD	18.2	-	
1,2,3,4,6,7,8-HpCDD	934	-		9.34	0.0712	Total HxCDD	146	-	
OCDD	10300	-		3.09	0.195	Total HpCDD	1530	-	
2,3,7,8-TCDF	0.503	-		0.0503	0.0231				
1,2,3,7,8-PeCDF	0.821	-	J	0.0246	0.0324				
2,3,4,7,8-PeCDF	1.59	-	J	0.477	0.0322				
1,2,3,4,7,8-HxCDF	5.09	-		0.509	0.0339				
1,2,3,6,7,8-HxCDF	2.70	-		0.270	0.0340				
2,3,4,6,7,8-HxCDF	3.59	-		0.359	0.0353				
1,2,3,7,8,9-HxCDF	1.58	-	J	0.158	0.0451	Total TCDF	11.9	-	D,M
1,2,3,4,6,7,8-HpCDF	91.9	-		0.919	0.0350	Total PeCDF	29.3	-	
1,2,3,4,7,8,9-HpCDF	3.71	-		0.0371	0.0421	Total HxCDF	105	-	D,M
OCDF	294	-		0.0882	0.0820	Total HpCDF	293	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	86.6	25.0 - 164	
13C-1,2,3,7,8-PeCDD	87.8	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	83.9	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	83.0	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	93.7	23.0 - 140	
13C-OCDD	101	17.0 - 157	
13C-2,3,7,8-TCDF	86.0	24.0 - 169	
13C-1,2,3,7,8-PeCDF	98.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	102	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	95.2	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	88.3	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	89.0	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	87.3	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	89.8	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	91.3	26.0 - 138	
13C-OCDF	95.2	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	79.6	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC
Date: 8/15/2022

Reviewed By: BNB
Date: 8/18/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-006-SA
Client ID: SRWA-9 2.5-5
Matrix: Soil
Batch No: X6163

Date Extracted: 08-10-2022
Date Received: 08-03-2022
Amount: 10.2 g
% Solids: 92.66

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/g

Acquired: 08-12-2022
2005 WHO TEQ: 0.00616
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.0550		-	0.0286				
1,2,3,7,8-PeCDD	ND	0.123		-	0.0515				
1,2,3,4,7,8-HxCDD	ND	0.144		-	0.0555				
1,2,3,6,7,8-HxCDD	ND	0.147		-	0.0558	Total TCDD	ND	0.0550	
1,2,3,7,8,9-HxCDD	ND	0.135		-	0.0528	Total PeCDD	ND	0.123	
1,2,3,4,6,7,8-HpCDD	0.506	-	J	0.00506	0.0712	Total HxCDD	ND	0.147	
OCDD	3.66	-	J	0.00110	0.195	Total HpCDD	0.950	-	J
2,3,7,8-TCDF	ND	0.0586		-	0.0231				
1,2,3,7,8-PeCDF	ND	0.0804		-	0.0324				
2,3,4,7,8-PeCDF	ND	0.0852		-	0.0322				
1,2,3,4,7,8-HxCDF	ND	0.111		-	0.0339				
1,2,3,6,7,8-HxCDF	ND	0.112		-	0.0340				
2,3,4,6,7,8-HxCDF	ND	0.112		-	0.0353				
1,2,3,7,8,9-HxCDF	ND	0.151		-	0.0451	Total TCDF	ND	0.0586	
1,2,3,4,6,7,8-HpCDF	ND	0.127		-	0.0350	Total PeCDF	ND	0.0852	
1,2,3,4,7,8,9-HpCDF	ND	0.168		-	0.0421	Total HxCDF	ND	0.151	
OCDF	ND	0.231		-	0.0820	Total HpCDF	ND	0.168	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	98.1	25.0 - 164	
13C-1,2,3,7,8-PeCDD	93.4	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	99.8	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	100	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	92.7	23.0 - 140	
13C-OCDD	77.6	17.0 - 157	
13C-2,3,7,8-TCDF	97.7	24.0 - 169	
13C-1,2,3,7,8-PeCDF	107	24.0 - 185	
13C-2,3,4,7,8-PeCDF	105	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	108	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	101	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	106	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	93.6	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	94.9	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	85.5	26.0 - 138	
13C-OCDF	79.2	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	90.8	35.0 - 197

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: JC
Date: 8/15/2022

Reviewed By: BNB
Date: 8/18/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Frontier

PROJECT NAME/NO.	PO #
207511	C-264

REMARKS 14540 COC

Page # 1 of 1

TURNAROUND TIME
- [x] Standard TAT
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: 8290 Dioxins/Furans	EPH	VPH							Notes
SRWA-13 0-0.5'		7-26-22	0940	Soil	1	✓									
SRWA-14 0-1'		"	1020	"	1	✓									
* SRWA-14 1-2'		"	1030	"	1	✓									HOLD.
SRWA-15 0-0.5'		"	1230	"	1	✓									
SRWA-8 0-1'		"	1330	"	1	✓									
SRWA-9 2.5-5'		"	1530	"	1	✓									
SRWA-9		"	1545	Water	1	✓		Aqueous sample placed on hold							VIO/mar 8/12/22 on 8/12/22 ✓
-Michael to Kathy- use EPA method 1613. KZ 8/04/22.															
- Okay to leave the (1) sign off Sample IDs KZ 8/8/22															

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	8/2/22	0745
Received by:	Kathy Zipp	Frontier	8/03/22	945
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

Kathy Zipp

From: Michael Erdahl <merdahl@friedmanandbruya.com>
Sent: Wednesday, August 03, 2022 9:55 AM
To: Kathy Zipp; Rusty Jones
Subject: 207511 D/F samples

Hello Kathy,

You will be receiving a cooler from me, today. One sample for project 207511 has been marked for testing, SRWA-14 1-2'. Can you please place that sample on hold?

Thank you,

Michael Erdahl
Senior Project Manager
Friedman and Bruya
(206) 285-8282 x 247
(206) 446-5926 (cell)
This message is private or privileged. If you are not the person or party for whom this message is intended, we apologize for the mistake and please forward us a note that this message was received in error. Do not copy or forward this message to any other party and please delete it from your records.

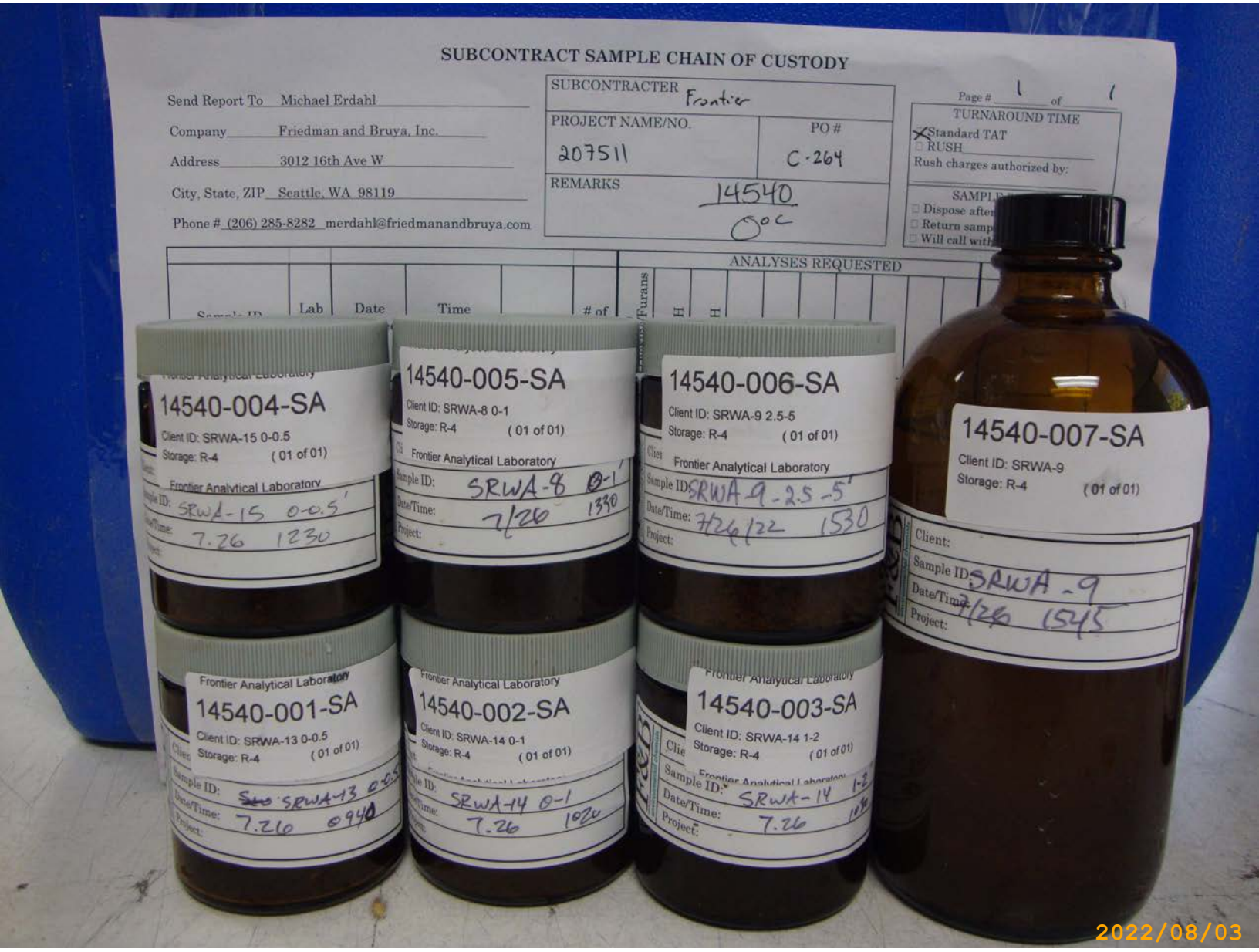
Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14540**

Client:	Friedman & Bruya, Inc.
Client Project ID:	207511
Date Received:	08/03/2022
Time Received:	09:45 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	7
Duplicates:	0
Storage Location:	R-4

Method of Delivery:	Fed-Ex
Tracking Number:	816717801817
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


SUBCONTRACT SAMPLE CHAIN OF CUSTODY
Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 merdahl@friedmanandbruya.com
SUBCONTRACTER Frontier
PROJECT NAME/NO. 207511
PO # C-264
REMARKS 14540
TURNAROUND TIME
Standard TAT
RUSH
Rush charges authorized by:
ANALYSES REQUESTED
14540-004-SA
Client ID: SRWA-15 0-0.5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-005-SA
Client ID: SRWA-8 0-1
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-006-SA
Client ID: SRWA-9 2.5-5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-007-SA
Client ID: SRWA-9
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-001-SA
Client ID: SRWA-13 0-0.5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-002-SA
Client ID: SRWA-14 0-1
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-003-SA
Client ID: SRWA-14 1-2
Storage: R-4 (01 of 01)
2022/08/03

BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

September 13, 2022

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Marina

Rusty Jones,

On August 1, 2022, Brooks Applied Labs (BAL) received eight (8) aqueous samples in a sealed cooler at a temperature of -0.1°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation. Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The copper result for sample 2208006-01 was greater than the value of the associated high calibration standard in sequence S220818. A high calibration verification (S220818-HCV1) standard was analyzed at 200.0 µg/L and the copper recovery was acceptable at 102%, demonstrating that the linear range of the analytical platform extended to 200.0 µg/L for copper. All reported copper results were less than 200.0 µg/L at the instrument and thus within the linear range demonstrated by the HCV. No corrective actions were deemed necessary, and no data were qualified.

In batch B221756, the method blank samples B221756-BLK1 and B221756-BLK3 yielded lead [*Pb*] results greater than the associated reporting limit. Associated samples with lead results less than 10x the B221756-BLK1 method blank value were re-digested and lead results are reported from a separate sequence with clean method blanks. Samples in batch B221756 with results greater than 10x the method blank outlier, or samples that produced results less than the MRL are reported from batch B221756. For these samples, the potential impact demonstrated by the elevated lead results in the method blanks

should not impact data quality. No data were qualified, and no additional corrective actions were necessary.

The lead result for sample 2208006-09 was greater than the value of the associated high calibration standard in sequence S220828. A high calibration verification (S220828-HCV1) standard was analyzed at 20.00 µg/L and the lead recovery was acceptable at 97%, demonstrating that the linear range of the analytical platform extended to 20.00 µg/L for lead. All reported lead results were less than 20.00 µg/L at the instrument and thus within the linear range demonstrated by the HCV. No corrective actions were deemed necessary, and no data were qualified.

In instances where the analyte concentration of a standard reference material (SRM) is not certified but instead has been listed only as an informational value by the certifying agency, the recovery limits have been set as not applicable (N/A). In such cases the measured concentrations have been provided for informational purposes, but the laboratory fortified blank and/or matrix spike recoveries may be more reflective of the performance of the applied methods.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

All data was reported without qualification, aside from concentration qualifiers. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Brooks Applied Labs
Jeremy@brooksapplied.com

Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received
BAL	Brooks Applied Labs
BLK	method blank
BS	blank spike
CAL	calibration standard
CCB	continuing calibration blank
CCV	continuing calibration verification
COC	chain of custody record
D	dissolved fraction
DUP	duplicate
IBL	instrument blank
ICV	initial calibration verification
MDL	method detection limit
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
ND	non-detect
NR	non-reportable
N/C	not calculated
PS	post preparation spike
REC	percent recovery
RPD	relative percent difference
SCV	secondary calibration verification
SOP	standard operating procedure
SRM	reference material
T	total fraction
TR	total recoverable fraction

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.

Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI

Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness

Accreditation Information

Table 2. Accredited method/matrix/analytes for ISO (1), Non-Governmental TNI (2)

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Tl, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters	Inorganic Arsenic (ISO Only)
	Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
SWP-1	2208006-01	Water	Sample	07/25/2022	08/01/2022
SWP-1	2208006-02	Water	Sample	07/25/2022	08/01/2022
SFD-4	2208006-03	Water	Sample	07/25/2022	08/01/2022
SFD-4	2208006-04	Water	Sample	07/25/2022	08/01/2022
BLWA-11	2208006-05	Water	Sample	07/25/2022	08/01/2022
BLWA-11	2208006-06	Water	Sample	07/25/2022	08/01/2022
AST-2	2208006-07	Water	Sample	07/26/2022	08/01/2022
AST-2	2208006-08	Water	Sample	07/26/2022	08/01/2022
SRWA-9	2208006-09	Water	Sample	07/26/2022	08/01/2022
SRWA-9	2208006-10	Water	Sample	07/26/2022	08/01/2022
BLWA-13	2208006-11	Water	Sample	07/27/2022	08/01/2022
BLWA-13	2208006-12	Water	Sample	07/27/2022	08/01/2022
AST-3	2208006-13	Water	Sample	07/28/2022	08/01/2022
AST-3	2208006-14	Water	Sample	07/28/2022	08/01/2022
SRWA-10	2208006-15	Water	Sample	07/28/2022	08/01/2022
SRWA-10	2208006-16	Water	Sample	07/28/2022	08/01/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818
Cd	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818
Cr	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818
Cu	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818
Hg	Water	EPA 1631 E	08/03/2022	08/04/2022	B221723	S220810
Hg	Water	EPA 1631 E	08/03/2022	08/11/2022	B221723	S220845
Pb	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818
Pb	Water	EPA 1638 Mod	08/05/2022	08/12/2022	B221756	S220828
Pb	Water	EPA 1638 Mod	08/15/2022	08/18/2022	B221792	S220866
Zn	Water	EPA 1638 Mod	08/05/2022	08/08/2022	B221756	S220818

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
SWP-1										
2208006-01	As	Water	TR	52.7		0.091	0.727	µg/L	B221756	S220818
2208006-01	Cd	Water	TR	0.781		0.061	0.182	µg/L	B221756	S220818
2208006-01	Cr	Water	TR	357		1.72	6.06	µg/L	B221756	S220818
2208006-01	Cu	Water	TR	1110		0.404	1.01	µg/L	B221756	S220818
2208006-01	Hg	Water	TR	253		0.14	0.42	ng/L	B221723	S220810
2208006-01	Pb	Water	TR	89.2		0.040	0.121	µg/L	B221756	S220818
2208006-01	Zn	Water	TR	511		7.07	22.2	µg/L	B221756	S220818
SWP-1										
2208006-02	As	Water	D	0.241	J	0.091	0.727	µg/L	B221756	S220818
2208006-02	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-02	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B221756	S220818
2208006-02	Cu	Water	D	1.91		0.404	1.01	µg/L	B221756	S220818
2208006-02	Hg	Water	D	0.63		0.13	0.41	ng/L	B221723	S220810
2208006-02	Pb	Water	D	≤ 0.040	U	0.040	0.121	µg/L	B221756	S220818
2208006-02	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B221756	S220818
SFD-4										
2208006-03	As	Water	TR	39.6		0.091	0.727	µg/L	B221756	S220818
2208006-03	Cd	Water	TR	1.79		0.061	0.182	µg/L	B221756	S220818
2208006-03	Cr	Water	TR	67.8		1.72	6.06	µg/L	B221756	S220818
2208006-03	Cu	Water	TR	520		0.404	1.01	µg/L	B221756	S220818
2208006-03	Hg	Water	TR	376		0.14	0.42	ng/L	B221723	S220810
2208006-03	Pb	Water	TR	115		0.040	0.121	µg/L	B221756	S220818
2208006-03	Zn	Water	TR	199		7.07	22.2	µg/L	B221756	S220818
SFD-4										
2208006-04	As	Water	D	11.5		0.091	0.727	µg/L	B221756	S220818
2208006-04	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-04	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B221756	S220818
2208006-04	Cu	Water	D	8.46		0.404	1.01	µg/L	B221756	S220818
2208006-04	Hg	Water	D	0.68		0.13	0.41	ng/L	B221723	S220810
2208006-04	Pb	Water	D	0.376		0.040	0.121	µg/L	B221792	S220866
2208006-04	Zn	Water	D	7.48	J	7.07	22.2	µg/L	B221756	S220818

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
BLWA-11										
2208006-05	As	Water	TR	12.3		0.227	1.82	µg/L	B221756	S220818
2208006-05	Cd	Water	TR	0.477		0.152	0.455	µg/L	B221756	S220818
2208006-05	Cr	Water	TR	28.4		4.29	15.2	µg/L	B221756	S220818
2208006-05	Cu	Water	TR	238		1.01	2.53	µg/L	B221756	S220818
2208006-05	Hg	Water	TR	22.7		0.14	0.42	ng/L	B221723	S220810
2208006-05	Pb	Water	TR	50.9		0.101	0.303	µg/L	B221756	S220818
2208006-05	Zn	Water	TR	134		17.7	55.6	µg/L	B221756	S220818
BLWA-11										
2208006-06	As	Water	D	4.25		0.227	1.82	µg/L	B221756	S220818
2208006-06	Cd	Water	D	0.247	J	0.152	0.455	µg/L	B221756	S220818
2208006-06	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B221756	S220818
2208006-06	Cu	Water	D	2.63		1.01	2.53	µg/L	B221756	S220818
2208006-06	Hg	Water	D	0.88		0.13	0.41	ng/L	B221723	S220810
2208006-06	Pb	Water	D	0.102	J	0.101	0.303	µg/L	B221756	S220818
2208006-06	Zn	Water	D	21.2	J	17.7	55.6	µg/L	B221756	S220818
AST-2										
2208006-07	As	Water	TR	6.37		0.091	0.727	µg/L	B221756	S220818
2208006-07	Cd	Water	TR	0.195		0.061	0.182	µg/L	B221756	S220818
2208006-07	Cr	Water	TR	13.5		1.72	6.06	µg/L	B221756	S220818
2208006-07	Cu	Water	TR	74.5		0.404	1.01	µg/L	B221756	S220818
2208006-07	Hg	Water	TR	78.3		0.13	0.41	ng/L	B221723	S220810
2208006-07	Pb	Water	TR	12.9		0.040	0.121	µg/L	B221756	S220818
2208006-07	Zn	Water	TR	12.3	J	7.07	22.2	µg/L	B221756	S220818
AST-2										
2208006-08	As	Water	D	2.28		0.091	0.727	µg/L	B221756	S220818
2208006-08	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-08	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B221756	S220818
2208006-08	Cu	Water	D	0.698	J	0.404	1.01	µg/L	B221756	S220818
2208006-08	Hg	Water	D	0.32	J	0.13	0.41	ng/L	B221723	S220810
2208006-08	Pb	Water	D	0.262		0.040	0.121	µg/L	B221792	S220866
2208006-08	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B221756	S220818

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
SRWA-9										
2208006-09	As	Water	TR	39.7		0.091	0.727	µg/L	B221756	S220818
2208006-09	Cd	Water	TR	1.55		0.061	0.182	µg/L	B221756	S220818
2208006-09	Cr	Water	TR	631		1.72	6.06	µg/L	B221756	S220818
2208006-09	Cu	Water	TR	617		0.404	1.01	µg/L	B221756	S220818
2208006-09	Hg	Water	TR	2880		3.42	10.5	ng/L	B221723	S220845
2208006-09	Pb	Water	TR	324		0.101	0.303	µg/L	B221756	S220828
2208006-09	Zn	Water	TR	719		7.07	22.2	µg/L	B221756	S220818
SRWA-9										
2208006-10	As	Water	D	0.366	J	0.091	0.727	µg/L	B221756	S220818
2208006-10	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-10	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B221756	S220818
2208006-10	Cu	Water	D	4.68		0.404	1.01	µg/L	B221756	S220818
2208006-10	Hg	Water	D	2.65		0.13	0.41	ng/L	B221723	S220845
2208006-10	Pb	Water	D	0.108	J	0.040	0.121	µg/L	B221792	S220866
2208006-10	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B221756	S220818
BLWA-13										
2208006-11	As	Water	TR	6.51		0.227	1.82	µg/L	B221756	S220818
2208006-11	Cd	Water	TR	1.02		0.152	0.455	µg/L	B221756	S220818
2208006-11	Cr	Water	TR	13.5	J	4.29	15.2	µg/L	B221756	S220818
2208006-11	Cu	Water	TR	171		1.01	2.53	µg/L	B221756	S220818
2208006-11	Hg	Water	TR	155		0.13	0.41	ng/L	B221723	S220845
2208006-11	Pb	Water	TR	70.6		0.101	0.303	µg/L	B221756	S220818
2208006-11	Zn	Water	TR	502		17.7	55.6	µg/L	B221756	S220818
BLWA-13										
2208006-12	As	Water	D	2.88		0.227	1.82	µg/L	B221756	S220818
2208006-12	Cd	Water	D	0.811		0.152	0.455	µg/L	B221756	S220818
2208006-12	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B221756	S220818
2208006-12	Cu	Water	D	76.9		1.01	2.53	µg/L	B221756	S220818
2208006-12	Hg	Water	D	60.0		0.13	0.41	ng/L	B221723	S220810
2208006-12	Pb	Water	D	24.5		0.101	0.303	µg/L	B221792	S220866
2208006-12	Zn	Water	D	433		17.7	55.6	µg/L	B221756	S220818

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AST-3										
2208006-13	As	Water	TR	5.22		0.091	0.727	µg/L	B221756	S220818
2208006-13	Cd	Water	TR	0.378		0.061	0.182	µg/L	B221756	S220818
2208006-13	Cr	Water	TR	24.1		1.72	6.06	µg/L	B221756	S220818
2208006-13	Cu	Water	TR	139		0.404	1.01	µg/L	B221756	S220818
2208006-13	Hg	Water	TR	28.2		0.14	0.42	ng/L	B221723	S220810
2208006-13	Pb	Water	TR	27.1		0.040	0.121	µg/L	B221792	S220866
2208006-13	Zn	Water	TR	64.3		7.07	22.2	µg/L	B221756	S220818
AST-3										
2208006-14	As	Water	D	0.694	J	0.091	0.727	µg/L	B221756	S220818
2208006-14	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-14	Cr	Water	D	5.03	J	1.72	6.06	µg/L	B221756	S220818
2208006-14	Cu	Water	D	2.03		0.404	1.01	µg/L	B221756	S220818
2208006-14	Hg	Water	D	0.98		0.13	0.41	ng/L	B221723	S220810
2208006-14	Pb	Water	D	0.586		0.040	0.121	µg/L	B221792	S220866
2208006-14	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B221756	S220818
SRWA-10										
2208006-15	As	Water	TR	4.28		0.091	0.727	µg/L	B221756	S220818
2208006-15	Cd	Water	TR	0.186		0.061	0.182	µg/L	B221756	S220818
2208006-15	Cr	Water	TR	21.9		1.72	6.06	µg/L	B221756	S220818
2208006-15	Cu	Water	TR	63.7		0.404	1.01	µg/L	B221756	S220818
2208006-15	Hg	Water	TR	53.5		0.14	0.42	ng/L	B221723	S220810
2208006-15	Pb	Water	TR	26.0		0.040	0.121	µg/L	B221792	S220866
2208006-15	Zn	Water	TR	76.4		7.07	22.2	µg/L	B221756	S220818
SRWA-10										
2208006-16	As	Water	D	0.237	J	0.091	0.727	µg/L	B221756	S220818
2208006-16	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B221756	S220818
2208006-16	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B221756	S220818
2208006-16	Cu	Water	D	3.47		0.404	1.01	µg/L	B221756	S220818
2208006-16	Hg	Water	D	2.69		0.13	0.41	ng/L	B221723	S220810
2208006-16	Pb	Water	D	0.087	J	0.040	0.121	µg/L	B221756	S220818
2208006-16	Zn	Water	D	8.89	J	7.07	22.2	µg/L	B221756	S220818

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Accuracy & Precision Summary

Batch: B221723
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221723-MS3	**Matrix Spike (2208006-04)**						
	Hg	0.68	40.82	39.92	ng/L	96% 71-125	
B221723-MSD3	**Matrix Spike Duplicate (2208006-04)**						
	Hg	0.68	40.82	38.88	ng/L	94% 71-125	3% 24
B221723-MS4	**Matrix Spike (2208006-12)**						
	Hg	60.01	40.82	90.63	ng/L	75% 71-125	
B221723-MSD4	**Matrix Spike Duplicate (2208006-12)**						
	Hg	60.01	40.82	90.90	ng/L	76% 71-125	0.3% 24

Accuracy & Precision Summary

Batch: B221756
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221756-BS1	**Blank Spike, (2137004)**						
	As		22.22	18.78	µg/L	84% 75-125	
	Cd		2.222	1.965	µg/L	88% 75-125	
	Cr		22.22	21.74	µg/L	98% 75-125	
	Cu		22.22	21.57	µg/L	97% 75-125	
	Pb		2.222	1.990	µg/L	90% 75-125	
	Zn		22.22	19.80	µg/L	89% 75-125	
B221756-BS2	**Blank Spike, (2137004)**						
	As		55.56	49.64	µg/L	89% 75-125	
	Cd		5.556	5.400	µg/L	97% 75-125	
	Cr		55.56	53.83	µg/L	97% 75-125	
	Cu		55.56	53.45	µg/L	96% 75-125	
	Pb		5.556	5.357	µg/L	96% 75-125	
	Zn		55.56	53.58	µg/L	96% 75-125	
B221756-BS3	**Blank Spike, (2152008)**						
	As		277.8	241.4	µg/L	87% 75-125	
	Cd		27.78	25.77	µg/L	93% 75-125	
	Cr		277.8	269.0	µg/L	97% 75-125	
	Cu		277.8	273.2	µg/L	98% 75-125	
	Pb		27.78	25.28	µg/L	91% 75-125	
	Zn		277.8	265.7	µg/L	96% 75-125	
B221756-SRM1	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	Cd		25.70	24.88	µg/L	97% 75-125	
	Cu		77.40	76.76	µg/L	99% 75-125	
	Pb		63.70	61.90	µg/L	97% 75-125	
B221756-SRM2	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	Cd		25.70	25.42	µg/L	99% 75-125	
	Cu		77.40	77.27	µg/L	100% 75-125	
	Pb		63.70	62.63	µg/L	98% 75-125	

Accuracy & Precision Summary

Batch: B221756
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221756-SRM3	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	Cd		25.70	23.49	µg/L	91% 75-125	
	Cu		77.40	77.20	µg/L	100% 75-125	
	Pb		63.70	58.58	µg/L	92% 75-125	
B221756-SRM4	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	As		16.70	14.14	µg/L	85% 75-125	
	Cr		65.10	69.53	µg/L	107% 75-125	
B221756-SRM5	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	As		16.70	13.55	µg/L	81% 75-125	
	Cr		65.10	67.66	µg/L	104% 75-125	
B221756-SRM6	**Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM)**						
	As		16.70	13.76	µg/L	82% 75-125	
	Cr		65.10	65.83	µg/L	101% 75-125	
B221756-DUP3	**Duplicate, (2207376-01)**						
	As	42.85		43.22	µg/L		0.8% 20
	Cd	0.403		0.352	µg/L		14% 20
	Cr	17.86		18.72	µg/L		5% 20
	Cu	475.8		488.1	µg/L		3% 20
	Pb	8.179		8.133	µg/L		0.6% 20
	Zn	70.89		70.35	µg/L		0.8% 20
B221756-MS3	**Matrix Spike, (2207376-01)**						
	As	42.85	56.69	88.76	µg/L	81% 75-125	
	Cd	0.403	5.669	5.205	µg/L	85% 75-125	
	Cr	17.86	56.69	83.70	µg/L	116% 75-125	
	Cu	475.8	56.69	577.3	µg/L	NR 75-125	
	Pb	8.179	5.669	12.68	µg/L	79% 75-125	
	Zn	70.89	56.69	117.9	µg/L	83% 75-125	

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Accuracy & Precision Summary

Batch: B221756
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221756-MSD3	**Matrix Spike Duplicate, (2207376-01)**						
	As	42.85	56.69	92.70	µg/L	88% 75-125	4% 20
	Cd	0.403	5.669	5.557	µg/L	91% 75-125	7% 20
	Cr	17.86	56.69	77.05	µg/L	104% 75-125	8% 20
	Cu	475.8	56.69	540.0	µg/L	NR 75-125	N/C 20
	Pb	8.179	5.669	13.12	µg/L	87% 75-125	3% 20
	Zn	70.89	56.69	120.6	µg/L	88% 75-125	2% 20
B221756-DUP4	**Duplicate, (2208006-03)**						
	As	39.57		38.05	µg/L		4% 20
	Cd	1.786		1.866	µg/L		4% 20
	Cr	67.77		64.15	µg/L		5% 20
	Cu	520.2		500.6	µg/L		4% 20
	Pb	114.8		116.6	µg/L		2% 20
	Zn	198.5		191.6	µg/L		4% 20
B221756-MS4	**Matrix Spike, (2208006-03)**						
	As	39.57	280.6	279.2	µg/L	85% 75-125	
	Cd	1.786	28.06	29.19	µg/L	98% 75-125	
	Cr	67.77	280.6	344.0	µg/L	98% 75-125	
	Cu	520.2	280.6	779.5	µg/L	92% 75-125	
	Pb	114.8	28.06	144.7	µg/L	NR 75-125	
	Zn	198.5	280.6	459.0	µg/L	93% 75-125	
B221756-MSD4	**Matrix Spike Duplicate, (2208006-03)**						
	As	39.57	280.6	269.2	µg/L	82% 75-125	4% 20
	Cd	1.786	28.06	27.81	µg/L	93% 75-125	5% 20
	Cr	67.77	280.6	348.5	µg/L	100% 75-125	1% 20
	Cu	520.2	280.6	788.0	µg/L	95% 75-125	1% 20
	Pb	114.8	28.06	139.0	µg/L	NR 75-125	N/C 20
	Zn	198.5	280.6	447.2	µg/L	89% 75-125	3% 20

Accuracy & Precision Summary

Batch: B221792
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221792-BS1	**Blank Spike, (2152008)**						
	Pb		27.78	24.20	µg/L	87% 75-125	
B221792-SRM1	**Reference Material (2214018, TMDA 51.5 Reference Standard - Bottle 10 - SRM)**						
	Pb		63.70	62.49	µg/L	98% 75-125	
B221792-DUP1	**Duplicate, (2208006-13)**						
	Pb	27.15		26.71	µg/L		2% 20
B221792-MS1	**Matrix Spike, (2208006-13)**						
	Pb	27.15	28.06	53.30	µg/L	93% 75-125	
B221792-MSD1	**Matrix Spike Duplicate, (2208006-13)**						
	Pb	27.15	28.06	52.90	µg/L	92% 75-125	0.8% 20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Method Blanks & Reporting Limits

Batch: B221723
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B221723-BLK1	0.34	ng/L
B221723-BLK2	0.29	ng/L
B221723-BLK3	0.28	ng/L
B221723-BLK4	0.28	ng/L

Average: 0.30
Limit: 0.50

Standard Deviation: 0.03
Limit: 0.13

MDL: 0.13
MRL: 0.40

Method Blanks & Reporting Limits

Batch: B221756
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B221756-BLK1	0.003	µg/L
B221756-BLK2	0.002	µg/L
B221756-BLK3	0.003	µg/L
B221756-BLK4	0.002	µg/L

Average: 0.003
Limit: 0.072
MDL: 0.009
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B221756-BLK1	-0.00007	µg/L
B221756-BLK2	0.0001	µg/L
B221756-BLK3	0.0005	µg/L
B221756-BLK4	0.00009	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B221756-BLK1	0.019	µg/L
B221756-BLK2	0.015	µg/L
B221756-BLK3	0.014	µg/L
B221756-BLK4	0.013	µg/L

Average: 0.015
Limit: 0.600
MDL: 0.170
MRL: 0.600

Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B221756-BLK1	0.009	µg/L
B221756-BLK2	0.002	µg/L
B221756-BLK3	0.027	µg/L
B221756-BLK4	-0.0002	µg/L

Average: 0.009
Limit: 0.100

MDL: 0.040
MRL: 0.100

Analyte: Pb

Sample	Result	Units
B221756-BLK1	*0.125*	µg/L
B221756-BLK2	0.004	µg/L
B221756-BLK3	*0.078*	µg/L
B221756-BLK4	0.003	µg/L

Average: *0.053*
Limit: 0.012

MDL: 0.004
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B221756-BLK1	1.27	µg/L
B221756-BLK2	0.139	µg/L
B221756-BLK3	0.510	µg/L
B221756-BLK4	0.695	µg/L

Average: 0.653
Limit: 2.200

MDL: 0.700
MRL: 2.20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Method Blanks & Reporting Limits

Batch: B221792
Matrix: Water
Method: EPA 1638 Mod
Analyte: Pb

Sample	Result	Units
B221792-BLK1	0.0006	µg/L
B221792-BLK2	-0.00004	µg/L
B221792-BLK3	0.0008	µg/L
B221792-BLK4	0.0002	µg/L

Average: 0.000
Limit: 0.012

MDL: 0.004
MRL: 0.012

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2208006-01 **Report Matrix:** Water **Collected:** 07/25/2022
Sample: SWP-1 **Sample Type:** Sample **Received:** 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-02 **Report Matrix:** Water **Collected:** 07/25/2022
Sample: SWP-1 **Sample Type:** Sample **Received:** 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-03 **Report Matrix:** Water **Collected:** 07/25/2022
Sample: SFD-4 **Sample Type:** Sample **Received:** 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-04 **Report Matrix:** Water **Collected:** 07/25/2022
Sample: SFD-4 **Sample Type:** Sample **Received:** 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2208006-05
Sample: BLWA-11
Report Matrix: Water
Sample Type: Sample
Collected: 07/25/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-06
Sample: BLWA-11
Report Matrix: Water
Sample Type: Sample
Collected: 07/25/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-07
Sample: AST-2
Report Matrix: Water
Sample Type: Sample
Collected: 07/26/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-08
Sample: AST-2
Report Matrix: Water
Sample Type: Sample
Collected: 07/26/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2208006-09
Sample: SRWA-9
Report Matrix: Water
Sample Type: Sample
Collected: 07/26/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-10
Sample: SRWA-9
Report Matrix: Water
Sample Type: Sample
Collected: 07/26/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-11
Sample: BLWA-13
Report Matrix: Water
Sample Type: Sample
Collected: 07/27/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-12
Sample: BLWA-13
Report Matrix: Water
Sample Type: Sample
Collected: 07/27/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2208006-13
Sample: AST-3
Report Matrix: Water
Sample Type: Sample
Collected: 07/28/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-14
Sample: AST-3
Report Matrix: Water
Sample Type: Sample
Collected: 07/28/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-15
Sample: SRWA-10
Report Matrix: Water
Sample Type: Sample
Collected: 07/28/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Lab ID: 2208006-16
Sample: SRWA-10
Report Matrix: Water
Sample Type: Sample
Collected: 07/28/2022
Received: 08/01/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	FLPE - 125mL Bottle - Hg-T	125 mL	22-0018	none	n/a	n/a	Cooler - 2208006
B	HDPE - 250mL Bottle - Hg-T	250 mL	21-0126	1% HNO3 (BAL)	2218038	<2	Cooler - 2208006

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Shipping Containers

Cooler - 2208006

Received: August 1, 2022 13:17
Tracking No: Client drop off via Courier
Coolant Type: Ice
Temperature: -0.1 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2208006
Received by: ATT Date: 8/1/22
Work Order ID: Time: 13:17
Project ID:

Client: CRETE Consulting / Leon Environmental
Contact: R. Jones (CRETE)
Client Project ID: PoFH Jensen's Marina
Samples Collected By: Rusty Jones R. Jones

PO Number: Leon Environmental
Phone: 832.330.1359
Email:

Mailing Address:

Email Receipt Confirmation? (Yes/No)
BAL PM: Maute/Leadbeater

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO_3/Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 Mod. As, Cd, Cr, Cu, Ni, Pb, Zn	Other (specify)	Comments: Specify Here
1	SWP-1	7.25.22	1140	WATER	4	Y+N	NONE							X		Total + Dissolved
2	SFD-4	↓	1335	↓	4	↓	↓							X		↓
3	BLWA-11	↓	1515		4									X		
4	AST-2	7.26.22	0830		4									X		
5	SRWA-9	↓	1545		4									X		
6	BLWA-13	7.27.22	0810		4									X		
7	AST-3	7.28.22	1130		4									X		
8	SRWA-10	7.28.22	1440	↓	4	↓	↓							X		↓
9																
10																
	Trip Blank															

Relinquished By: R. Jones	Date: 8/1/2022	Time: 1031	Relinquished By: / Date: / Time:
Received By:	Date: 8/1/22	Time: 13:17	Total Number of Packages:

Page 1 of 1 List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

Sample Receipt Checklist:

Container Type:

- [x] Cooler
- [ ] Cardboard box
- [ ] Styrofoam cooler
- [ ] Other (Specify):

- [ ] Custody Seal Present?
  Custody Seal Intact? Y / N
- [x] Chain of Custody Present?

Coolant and Temperature

Coolant Type IR#: 33

- [ ] None
- [ ] Blue Ice: °C
- [x] Ice: -1.1 °C
- [ ] Dry Ice: °C

Corrected Temp: °C

- [ ] Temp Blank: -0.1 °C

Record temp blank as a corrected temp

Coolant Note:

Bottle Type:

- [ ] Client Provided
- [x] Class : THg
  Size / Type: 250mL HDPE
  Lot: 21-0126
  Preservation: N/A
  Preservative Lot: N/A
- [x] Class : ~~125mL FLPE~~ (1) THg
  Size / Type: 125mL FLPE
  Lot: 22-0018
  Preservation: N/A
  Preservative Lot: N/A
- [ ] Class :
  Size / Type:
  Lot:
  Preservation:
  Preservative Lot:

All information accurate

Initial/date: ATT 8/1/22

(1) EE ATT 8/1/22

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 6, 2022

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on September 9, 2022 from the Port of Friday Harbor Jensen's Marina R.I, F&BI 209098 project. There are 61 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Jamie Stevens, Peter Leon (peter@leon-environmental.com)
CTC1006R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 9, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina R.I project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
209098 -01	MW-9
209098 -02	MW-2
209098 -03	MW-6
209098 -04	MW-5
209098 -05	MW-7
209098 -06	MW-3
209098 -07	Dup-220907
209098 -08	Dup-220908
209098 -09	MW-8
209098 -10	MW-4
209098 -11	MW-1

Phenanthrene was detected in the 8270E method blank at a level greater than one tenth the concentration detected in sample MW-8. The data were flagged accordingly.

Dissolved lead in the 6020B matrix spike failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

Samples MW-9, MW-7, Dup-220908, and MW-8 were sent to Frontier Analytical for dioxin and furan analysis and to ARL for tributyltin analysis. The reports are enclosed.

All other quality control requirements were acceptable.

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098
Date Extracted: 09/14/22
Date Analyzed: 09/14/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-9 209098-01	<100	94
MW-2 209098-02	<100	95
MW-6 209098-03	<100	95
MW-7 209098-05	<100	97
Dup-220908 209098-08	<100	96
MW-8 209098-09	<100	94
MW-1 209098-11	<100	97
Method Blank 02-2083 MB	<100	96

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098
Date Extracted: 09/12/22
Date Analyzed: 09/12/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-9 209098-01	<50	<250	115
MW-2 209098-02	220 x	<250	103
MW-6 209098-03	<50	<250	107
MW-7 209098-05	<50	<250	118
Dup-220908 209098-08	<50	<250	109
MW-8 209098-09	<50	<250	109
MW-1 209098-11	77 x	<250	108
Method Blank 02-2185 MB	<50	<250	123

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-01 x10
Date Analyzed:	09/14/22	Data File:	209098-01 x10.177
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	53.6
Cadmium	<10
Lead	<10

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-01 x20
Date Analyzed:	09/15/22	Data File:	209098-01 x20.140
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	20.1
Copper	<100
Zinc	131

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-02
Date Analyzed:	09/14/22	Data File:	209098-02.263
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.76
Cadmium	<1
Chromium	5.25
Copper	<5
Lead	<1
Zinc	<5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-03
Date Analyzed:	09/14/22	Data File:	209098-03.264
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	1.30
Copper	<5
Lead	<1
Zinc	<5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-04
Date Analyzed:	09/14/22	Data File:	209098-04.265
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	1.67
Zinc	<5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-7	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-05 x10
Date Analyzed:	09/14/22	Data File:	209098-05 x10.178
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	47.0
Cadmium	<10
Chromium	105
Copper	<50
Lead	<10
Zinc	310

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-06
Date Analyzed:	09/14/22	Data File:	209098-06.267
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	3.72
Copper	6.08
Zinc	100

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-06 x10
Date Analyzed:	09/14/22	Data File:	209098-06 x10.175
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	16.8
Cadmium	<10
Lead	<10

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Dup-220907	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-07 x10
Date Analyzed:	09/15/22	Data File:	209098-07 x10.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	45.8
Cadmium	<10
Chromium	109
Copper	<50
Lead	<10
Zinc	316

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-09 x10
Date Analyzed:	09/15/22	Data File:	209098-09 x10.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	46.7
Cadmium	<10
Chromium	46.7
Copper	<50
Lead	<10
Zinc	190

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-10
Date Analyzed:	09/14/22	Data File:	209098-10.276
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.03
Cadmium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-10 x10
Date Analyzed:	09/14/22	Data File:	209098-10 x10.163
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-11
Date Analyzed:	09/14/22	Data File:	209098-11.277
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.1
Cadmium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-11 x10
Date Analyzed:	09/14/22	Data File:	209098-11 x10.164
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	I2-632 mb
Date Analyzed:	09/13/22	Data File:	I2-632 mb.059
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-01 x10
Date Analyzed:	09/14/22	Data File:	209098-01 x10.179
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	53.6
Cadmium	<10
Chromium	<10
Copper	<50
Lead	<10
Zinc	114

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-02
Date Analyzed:	09/14/22	Data File:	209098-02.287
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.92
Cadmium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-02 x10
Date Analyzed:	09/14/22	Data File:	209098-02 x10.148
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-03
Date Analyzed:	09/14/22	Data File:	209098-03.290
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-03 x10
Date Analyzed:	09/14/22	Data File:	209098-03 x10.161
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-04
Date Analyzed:	09/14/22	Data File:	209098-04.291
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-05 x10
Date Analyzed:	09/14/22	Data File:	209098-05 x10.180
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	49.5
Cadmium	<10
Chromium	176
Copper	<50
Lead	<10
Zinc	323

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-06
Date Analyzed:	09/14/22	Data File:	209098-06.298
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	20.0
Zinc	135

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-06 x10
Date Analyzed:	09/14/22	Data File:	209098-06 x10.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	21.0
Cadmium	<10
Chromium	56.3
Lead	<10

Analysis For Total Metals By EPA Method 6020B

Client ID:	Dup-220907	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-07 x10
Date Analyzed:	09/15/22	Data File:	209098-07 x10.190
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	46.6
Cadmium	<10
Chromium	180
Copper	<50
Lead	<10
Zinc	323

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-09 x10
Date Analyzed:	09/15/22	Data File:	209098-09 x10.191
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	43.4
Cadmium	<10
Chromium	65.4
Copper	<50
Lead	<10
Zinc	196

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-10
Date Analyzed:	09/14/22	Data File:	209098-10.301
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.72
Cadmium	<1
Copper	11.5
Lead	<1
Zinc	5.41

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-10 x10
Date Analyzed:	09/14/22	Data File:	209098-10 x10.165
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-11
Date Analyzed:	09/14/22	Data File:	209098-11.302
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12.6
Cadmium	<1
Copper	7.33
Lead	<1
Zinc	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-11 x10
Date Analyzed:	09/14/22	Data File:	209098-11 x10.166
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<10

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	NA	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	I2-631 mb
Date Analyzed:	09/13/22	Data File:	I2-631 mb.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098
Date Extracted: 09/14/22
Date Analyzed: 09/15/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Total Mercury
MW-9 209098-01	<0.2
MW-2 209098-02	<0.2
MW-6 209098-03	<0.2
MW-5 209098-04	<0.2
MW-7 209098-05	<0.2
MW-3 209098-06	<0.2
Dup-220907 209098-07	<0.2
MW-8 209098-09	<0.2
MW-4 209098-10	<0.2
MW-1 209098-11	<0.2
Method Blank	<0.2

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098
Date Extracted: 09/12/22
Date Analyzed: 09/14/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Dissolved Mercury
MW-9 209098-01	<0.2
MW-2 209098-02	<0.2
MW-6 209098-03	<0.2
MW-5 209098-04	<0.2
MW-7 209098-05	<0.2
MW-3 209098-06	<0.2
Dup-220907 209098-07	<0.2
MW-8 209098-09	<0.2
MW-4 209098-10	<0.2
MW-1 209098-11	<0.2
Method Blank i2-634 MB	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-01
Date Analyzed:	09/13/22	Data File:	091317.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	92	15	144
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	97	10	142
Terphenyl-d14	107	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-7	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-05
Date Analyzed:	09/13/22	Data File:	091318.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	87	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Dup-220908	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-08
Date Analyzed:	09/13/22	Data File:	091319.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86	15	144
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	83	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	209098-09
Date Analyzed:	09/13/22	Data File:	091320.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	91	10	142
Terphenyl-d14	101	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.026 fb
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/12/22	Lab ID:	02-2184 mb
Date Analyzed:	09/12/22	Data File:	091216.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	15	144
2-Fluorobiphenyl	85	25	128
2,4,6-Tribromophenol	99	10	142
Terphenyl-d14	100	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-01
Date Analyzed:	09/15/22	Data File:	091515.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-7	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-05
Date Analyzed:	09/15/22	Data File:	091517.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Dup-220908	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-08
Date Analyzed:	09/15/22	Data File:	091518.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	65	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	MW-8	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-09
Date Analyzed:	09/15/22	Data File:	091519.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	02-2200 mb
Date Analyzed:	09/15/22	Data File:	091513.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	61	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	MW-9	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-01
Date Analyzed:	09/15/22	Data File:	091515.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	20	121
DBC	94	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	MW-7	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-05
Date Analyzed:	09/15/22	Data File:	091517.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	20	121
DBC	88	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Dup-220908	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-08
Date Analyzed:	09/15/22	Data File:	091518.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	20	121
DBC	89	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	MW-8	Client:	Crete Consulting
Date Received:	09/09/22	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	209098-09
Date Analyzed:	09/15/22	Data File:	091519.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	20	121
DBC	96	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina R.I, F&BI 209098
Date Extracted:	09/14/22	Lab ID:	02-2200 mb
Date Analyzed:	09/15/22	Data File:	091513.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	60	20	121
DBC	83	18	174

Compounds:	Concentration ug/L (ppb)
alpha-BHC	<0.1
gamma-BHC (Lindane)	<0.1
beta-BHC	<0.1
delta-BHC	<0.1
Heptachlor	<0.1
Aldrin	<0.1
Heptachlor Epoxide	<0.1
trans-Chlordane	<0.1
cis-Chlordane	<0.1
4,4'-DDE	<0.1
Endosulfan I	<0.1
Dieldrin	<0.1
Endrin	<0.1
4,4'-DDD	<0.1
Endosulfan II	<0.1
4,4'-DDT	<0.1
Endrin Aldehyde	<0.1
Methoxychlor	<0.1
Endosulfan Sulfate	<0.1
Endrin Ketone	<0.1
Toxaphene	<1

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 209087-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	109	69-134

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	76	88	63-142	15

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 209120-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.19	96	98	75-125	2
Cadmium	ug/L (ppb)	5	<1	94	97	75-125	3
Chromium	ug/L (ppb)	20	<1	101	104	75-125	3
Copper	ug/L (ppb)	20	<5	88	93	75-125	6
Lead	ug/L (ppb)	10	<1	74 vo	75	75-125	1
Zinc	ug/L (ppb)	50	<5	91	93	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Cadmium	ug/L (ppb)	5	102	80-120
Chromium	ug/L (ppb)	20	98	80-120
Copper	ug/L (ppb)	20	101	80-120
Lead	ug/L (ppb)	10	100	80-120
Zinc	ug/L (ppb)	50	104	80-120

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 209098-02 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	92	96	75-125	4
Cadmium	ug/L (ppb)	5	<10	96	96	75-125	0
Chromium	ug/L (ppb)	20	<10	98	100	75-125	2
Copper	ug/L (ppb)	20	<50	89	91	75-125	2
Lead	ug/L (ppb)	10	<10	82	83	75-125	1
Zinc	ug/L (ppb)	50	<50	89	90	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120
Cadmium	ug/L (ppb)	5	99	80-120
Chromium	ug/L (ppb)	20	96	80-120
Copper	ug/L (ppb)	20	99	80-120
Lead	ug/L (ppb)	10	98	80-120
Zinc	ug/L (ppb)	50	101	80-120

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 209098-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	<0.01	125	118	71-125	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	86	68-125

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

Laboratory Code: 209135-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	<0.0008	86	75	71-125	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	92	68-125

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	82	89	50-104	8
2-Methylnaphthalene	ug/L (ppb)	5	89	95	54-109	7
1-Methylnaphthalene	ug/L (ppb)	5	89	95	55-108	7
Acenaphthylene	ug/L (ppb)	5	93	99	60-114	6
Acenaphthene	ug/L (ppb)	5	90	95	57-110	5
Fluorene	ug/L (ppb)	5	97	102	61-115	5
Phenanthrene	ug/L (ppb)	5	94	97	63-113	3
Anthracene	ug/L (ppb)	5	97	99	65-117	2
Fluoranthene	ug/L (ppb)	5	101	104	68-121	3
Pyrene	ug/L (ppb)	5	98	99	66-125	1
Benz(a)anthracene	ug/L (ppb)	5	102	107	70-130	5
Chrysene	ug/L (ppb)	5	99	102	67-119	3
Benzo(a)pyrene	ug/L (ppb)	5	104	105	68-126	1
Benzo(b)fluoranthene	ug/L (ppb)	5	102	107	62-130	5
Benzo(k)fluoranthene	ug/L (ppb)	5	107	105	67-125	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	101	104	63-131	3
Dibenz(a,h)anthracene	ug/L (ppb)	5	102	106	62-133	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	103	106	57-133	3

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	67	72	25-165	7
Aroclor 1260	ug/L (ppb)	0.25	79	78	25-163	1

Date of Report: 10/06/22
Date Received: 09/09/22
Project: Port of Friday Harbor Jensen's Marina R.I, F&BI 209098

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR ORGANOCHLORINE PESTICIDES BY EPA METHOD 8081B

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
alpha-BHC	ug/L (ppb)	0.25	68	70	41-103	3
gamma-BHC (Lindane)	ug/L (ppb)	0.25	69	70	43-105	1
beta-BHC	ug/L (ppb)	0.25	75	77	45-108	3
delta-BHC	ug/L (ppb)	0.25	76	73	47-104	4
Heptachlor	ug/L (ppb)	0.25	65	63	35-109	3
Aldrin	ug/L (ppb)	0.25	65	62	43-98	5
Heptachlor Epoxide	ug/L (ppb)	0.25	72	73	48-106	1
trans-Chlordane	ug/L (ppb)	0.25	76	77	53-102	1
cis-Chlordane	ug/L (ppb)	0.25	77	75	50-101	3
4,4'-DDE	ug/L (ppb)	0.25	86	86	52-108	0
Endosulfan I	ug/L (ppb)	0.25	75	76	13-134	1
Dieldrin	ug/L (ppb)	0.25	81	82	52-112	1
Endrin	ug/L (ppb)	0.25	92	94	47-127	2
4,4'-DDD	ug/L (ppb)	0.25	83	83	41-134	0
Endosulfan II	ug/L (ppb)	0.25	80	80	20-132	0
4,4'-DDT	ug/L (ppb)	0.25	85	84	19-154	1
Endrin Aldehyde	ug/L (ppb)	0.25	65	61	56-109	6
Methoxychlor	ug/L (ppb)	0.25	92	90	10-179	2
Endosulfan Sulfate	ug/L (ppb)	0.25	82	83	56-112	1
Endrin Ketone	ug/L (ppb)	0.25	82	82	40-124	0
Toxaphene	ug/L (ppb)	4	95	94	61-120	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation

SAMPLE CHAIN OF CUSTODY

209098 — 09/09/22 — MW2/AI4/EO4 — Page # 1 of 2

Report To R. Jones | P. Lean (L-E) | Hainsworth | Stevens

Company CRETE CONSULTING, Lean Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (signature): Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Marina R.I.

PO #

REMARKS: *See select metals list (email)*

Project specific RLs? - Yes / No

INVOICE TO: Lean Environmental

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Metals*	Dissolved Metals*	Pesticides	D/Fs, TBT	Notes: All -Dx w/ & w/out SGC
MW-9	01A-K	9.6.2022	1224	WATER	11	X	X				X	X	X	X	X	X	Cond.= 37987 uS/cm
MW-2	02A-F	↓	1336	↓	6	X	X						X	X			Cond.= 2634 uS/cm
MW-6	03A-F	↓	(1433) 1435 RS	↓	(6) 3 RS	X	X						X	X			Cond.= 153.6 uS/cm
~~FILTER BLANK~~		~~9.7.2022~~	~~1150~~	~~WATER~~													RS
MW-5	04AB	9.7.2022	1233	WATER	2								X	X			Cond.= 402.8 uS/cm
~~MW-8~~ MW-7	05A-K	↓	1348	↓	11	X	X				X	X	X	X	X	X	Cond.= 34935 uS/cm
MW-3	06AB	↓	1521	↓	2								X	X			Cond.= 13176 uS/cm
DUP-220907	07AB	9.7.2022	1100	WATER	2								X	X			Cond.= ~~>10000~~ >30000 uS/cm
DUP-220908	08A-I	9.8.2022	1200	WATER	9	X	X				X	X			X	X	Cond. > 30000 uS/cm
MW-8	09A-K	9.8.2022	1351	↓	11	X	X				X	X	X	X	X	X	Cond.= 34705 uS/cm

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	9.9.22	0827
Received by:	ANH PHAN	ESB	9/9/22	08:27
Relinquished by:				
Received by:		Samples received at 0 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

NP 209099 209098

SAMPLE CHAIN OF CUSTODY

09/09/22

VW2 / AIY / EQ4

Page # 2 of 2

Report To Jones, Hainsworth, Stevens, Peter Leon

Company CRETE CONSULTING, Leon Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME Port of Friday Harbor Jensen's Marina R.I.

PO #

REMARKS *See select metals list (email) *

Project specific RLs? - Yes / No

INVOICE TO Leon Environmental

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

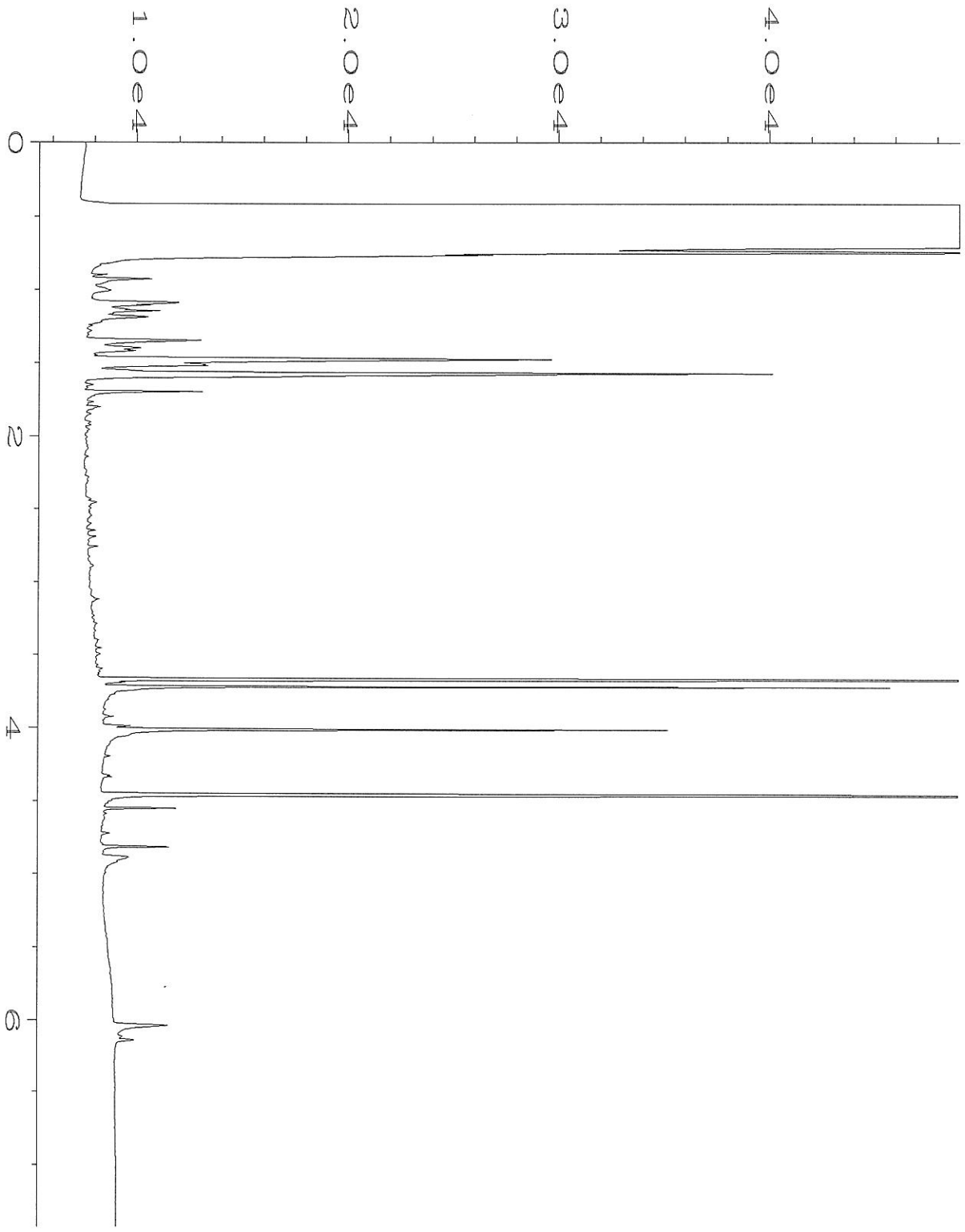
☐ Other

Default: Dispose after 30 days

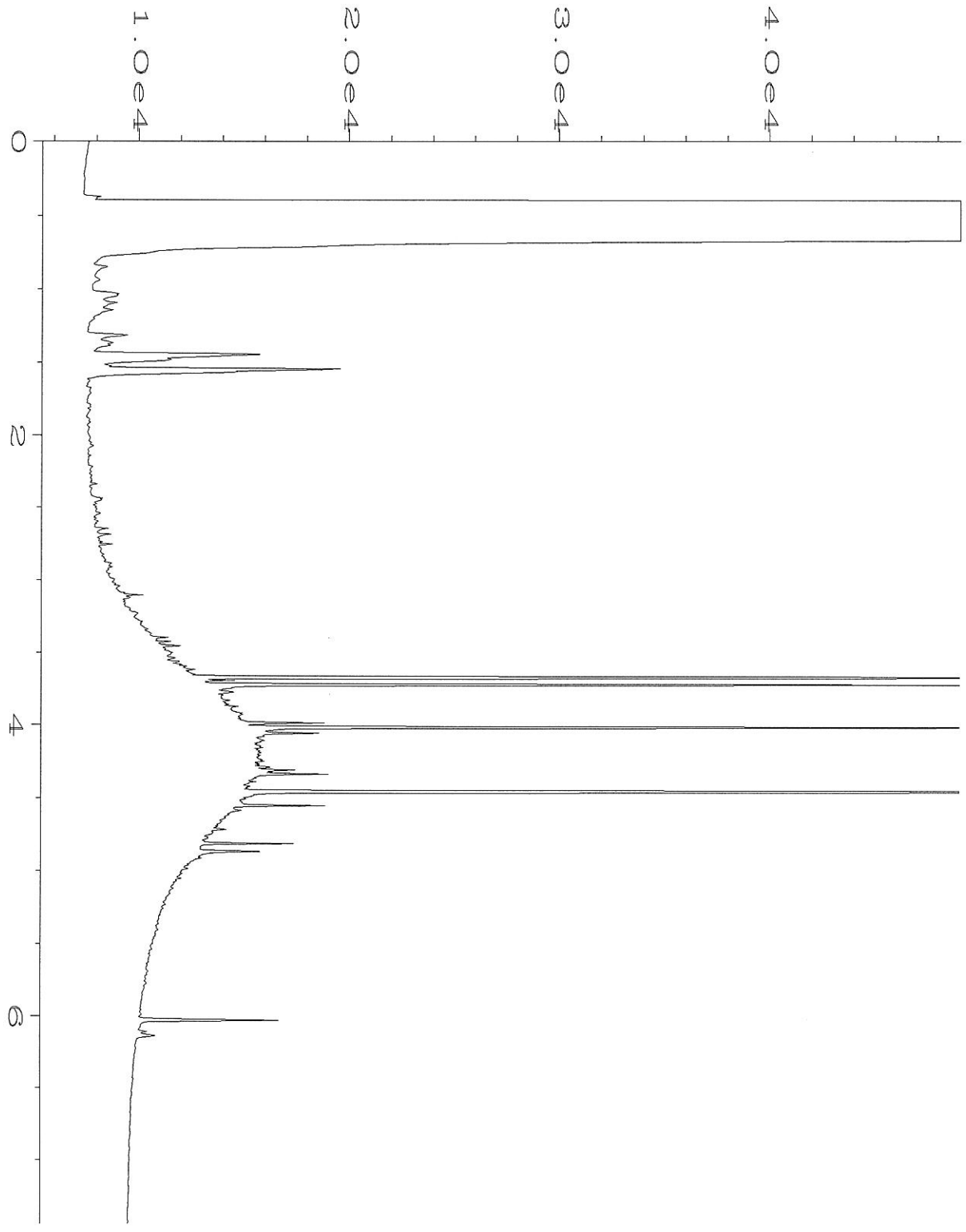
						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	*Total Metals*	*Dissolved Metals*			Notes
MW-4	10A B	9.8.2022	1523	WATER	2								X	X			*All TPH-Dx with and without SGC.* Cond. 287 µS/cm
MW-1	11 A-F	↓	1604	↓	6	X	X						X	X			Cond. 364 µS/cm

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	9.9.22	0827
Received by:	ANTHPHAN	FSB	9/9/22	08:27
Relinquished by:				
Received by:		Samples received at 0 °C		

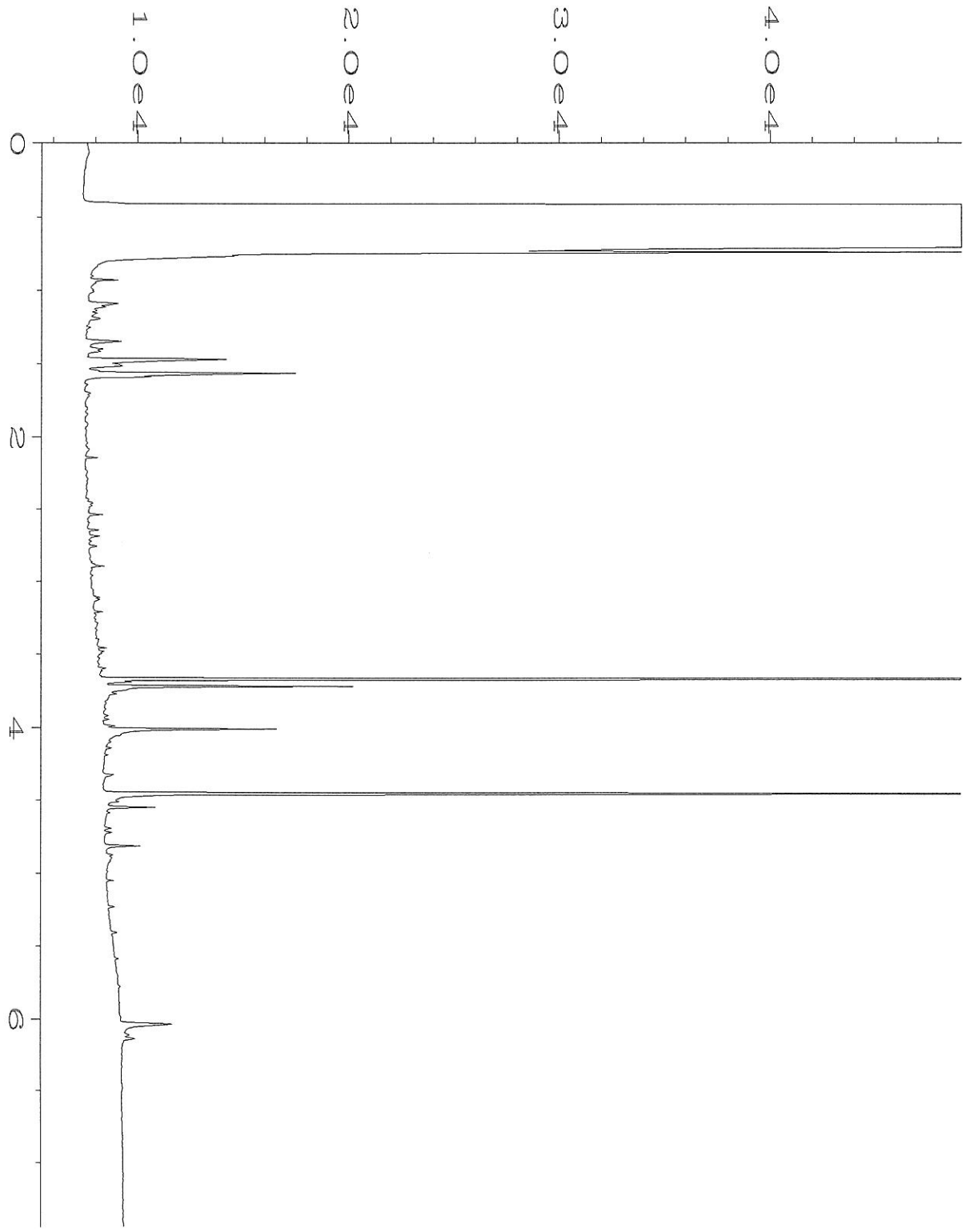
Friedman & Bruya, Inc.
Ph. (206) 285-8282



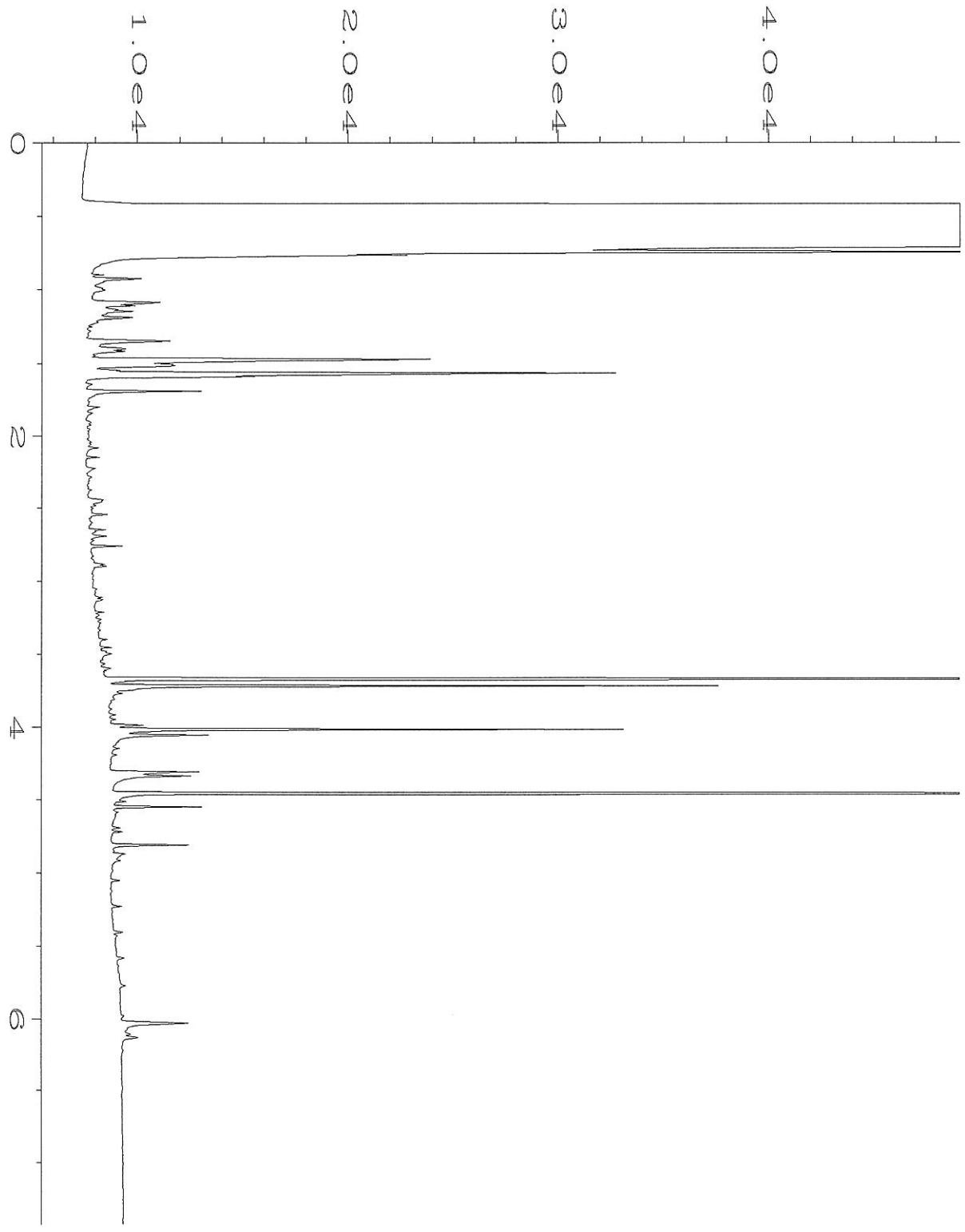
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Acquired on	: 12 Sep 22 07:11 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Sep 22 09:56 AM	Analysis Method	: DEFAULT.MTH



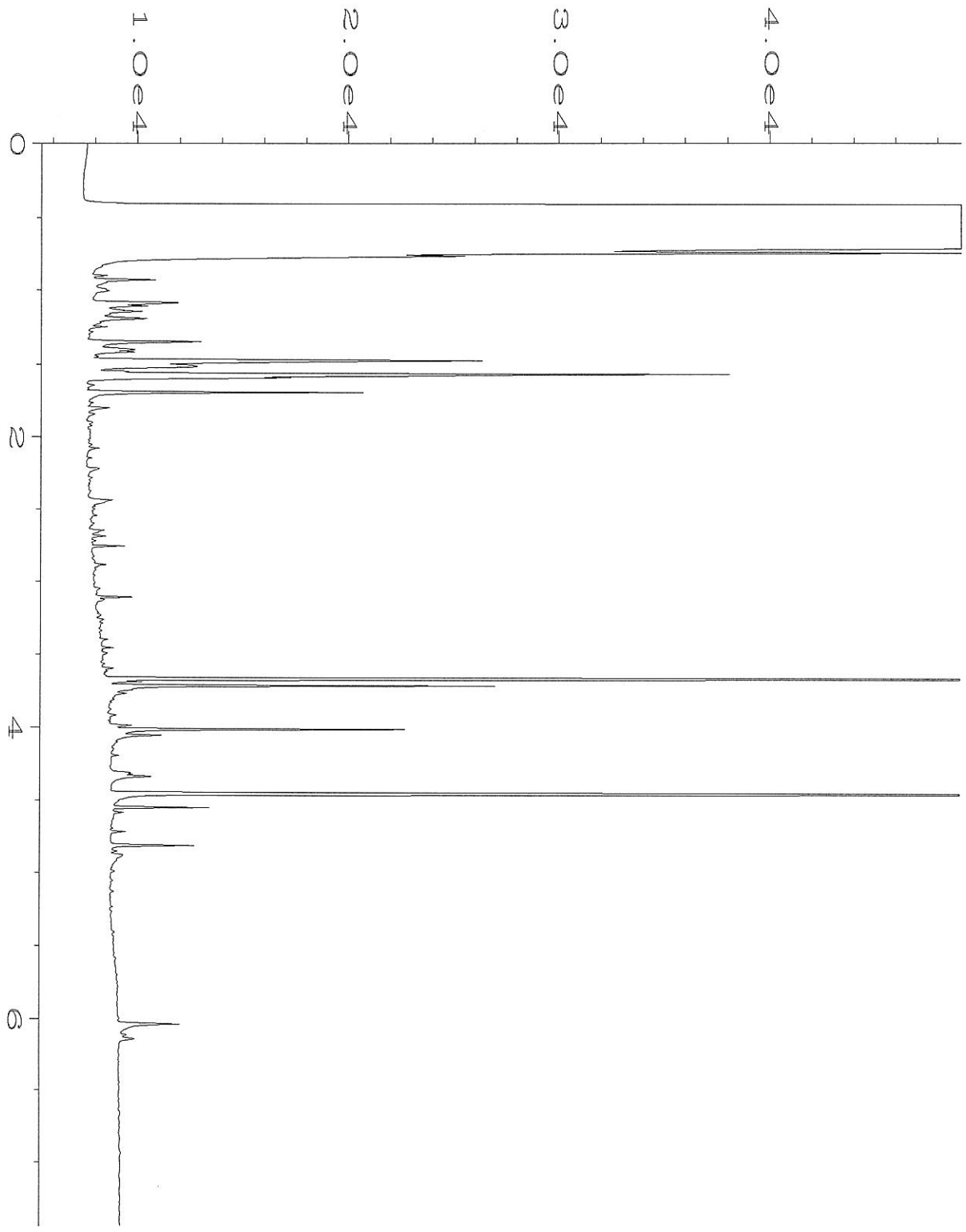
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Sample Name	: 209098-02	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 14
Acquired on	: 12 Sep 22 07:25 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Sep 22 09:56 AM	Analysis Method	: DEFAULT.MTH



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Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 29
Sample Name	: 209098-03	Injection Number	: 1
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Acquired on	: 12 Sep 22 07:40 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Sep 22 09:56 AM	Analysis Method	: DEFAULT.MTH

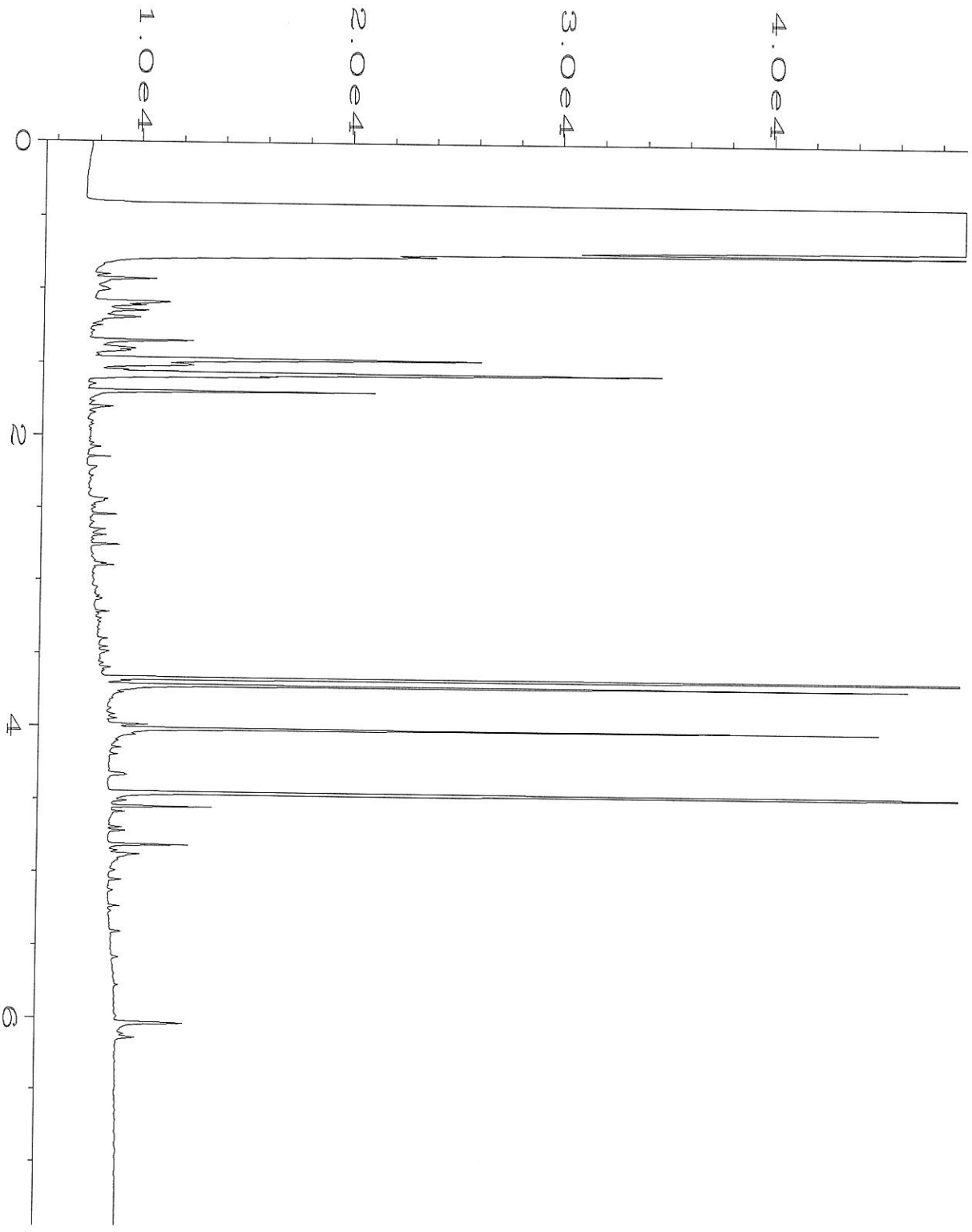


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Sample Name	: 209098-05	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 14
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Report Created on	: 13 Sep 22 09:56 AM	Analysis Method	: DEFAULT.MTH



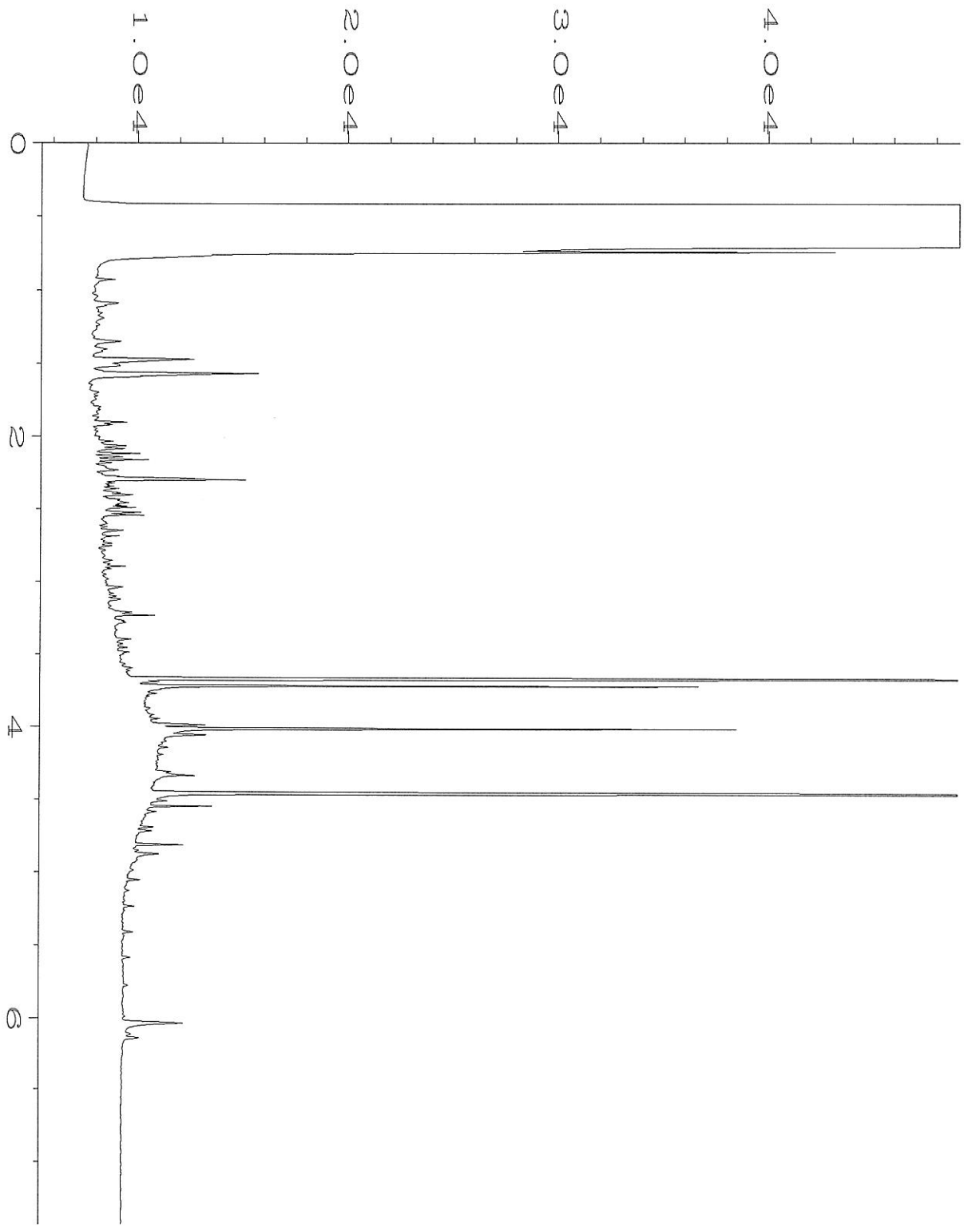
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Instrument : GC1
Sample Name : 209098-08
Run Time Bar Code:
Acquired on : 12 Sep 22 08:10 PM
Report Created on: 13 Sep 22 09:56 AM

Page Number : 1
Vial Number : 31
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Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

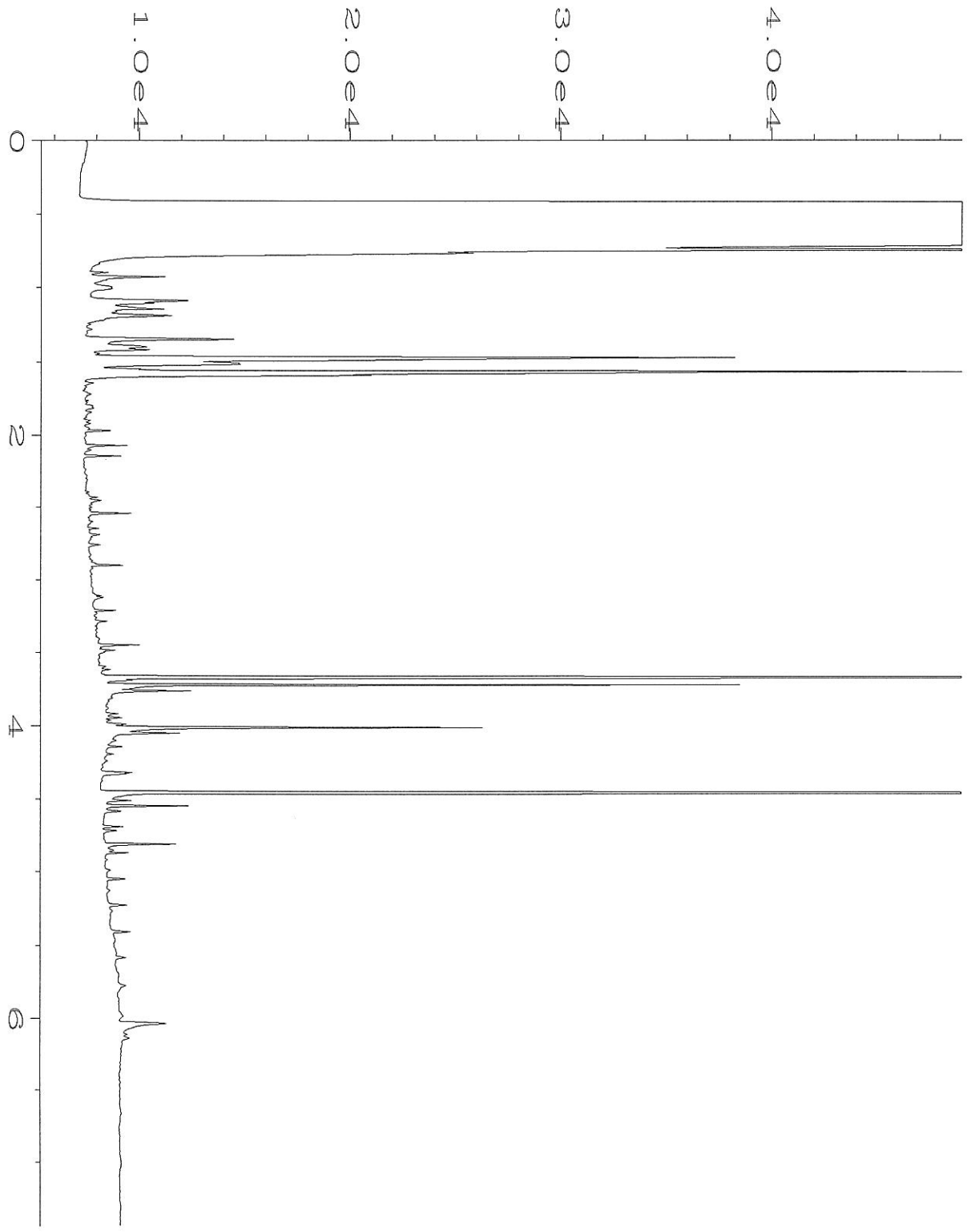


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Instrument : GC1
Sample Name : 209098-09
Run Time Bar Code:
Acquired on : 12 Sep 22 08:25 PM
Report Created on: 13 Sep 22 09:56 AM

Page Number : 1
Vial Number : 32
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Sequence Line : 14
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Analysis Method : DEFAULT.MTH

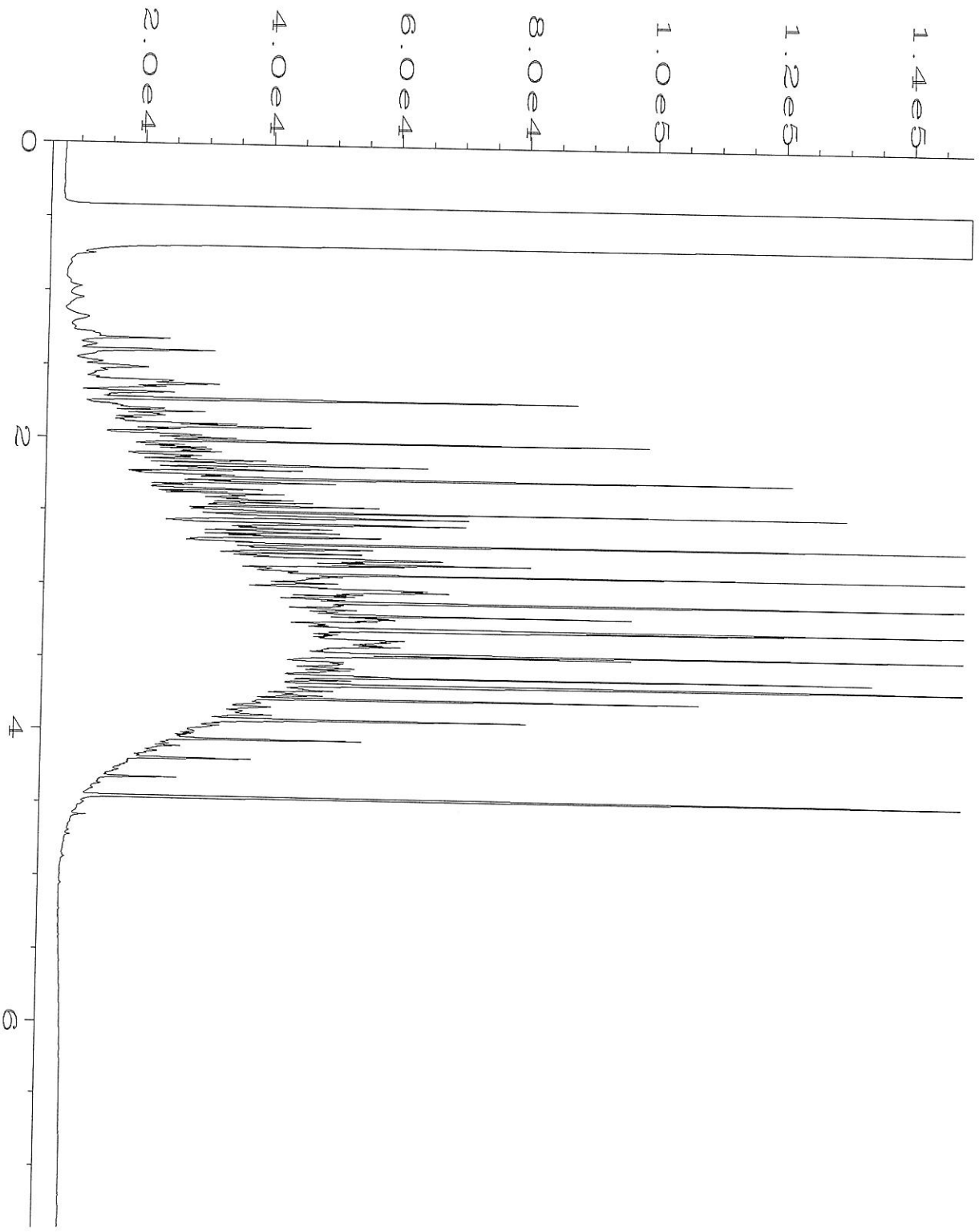


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Report Created on	: 13 Sep 22 09:57 AM	Analysis Method	: DEFAULT.MTH



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Operator : TL
Instrument : GC1
Sample Name : 02-2185 mb
Run Time Bar Code:
Acquired on : 12 Sep 22 06:26 PM
Report Created on: 13 Sep 22 09:57 AM

Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 14
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\09-12-22\003F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 Dx 66-186F
Run Time Bar Code:
Acquired on : 12 Sep 22 06:40 AM
Report Created on: 13 Sep 22 09:55 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

Test Report

October 5, 2022

Frontier Analytical Laboratory Project: 14643

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14643**. This corresponds to your project number **209098** and purchase order number **C-356**. Four aqueous samples were received on 9/13/2022 in good condition. These samples were extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). Freidman and Bruya, Inc. requested a turnaround time of fifteen business days for project **14643**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14643**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Laboratory Director

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle * El Dorado Hills, CA 95762
Tel (916) 934-0900 * Fax (916) 934-0999
www.frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14643**

Received on: **09/13/2022** Project Due: **10/05/2022** Storage: **R-3**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14643-001-SA	0	209098	MW-9	EPA 8290 D/F	Aqueous	09/06/2022	12:24 pm	10/06/2022
14643-002-SA	0	209098	MW-7	EPA 8290 D/F	Aqueous	09/07/2022	01:48 pm	10/07/2022
14643-003-SA	0	209098	DUP-220908	EPA 8290 D/F	Aqueous	09/08/2022	12:00 pm	10/08/2022
14643-004-SA	0	209098	MW-8	EPA 8290 D/F	Aqueous	09/08/2022	01:51 pm	10/08/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.634		-	0.426				
1,2,3,7,8-PeCDD	ND	1.60		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.84		-	0.654				
1,2,3,6,7,8-HxCDD	ND	2.05		-	0.605	Total TCDD	ND	0.634	
1,2,3,7,8,9-HxCDD	ND	1.83		-	0.577	Total PeCDD	ND	1.60	
1,2,3,4,6,7,8-HpCDD	ND	2.43		-	0.643	Total HxCDD	ND	2.05	
OCDD	ND	9.68		-	1.92	Total HpCDD	ND	2.43	
2,3,7,8-TCDF	ND	0.479		-	0.281				
1,2,3,7,8-PeCDF	ND	1.25		-	0.391				
2,3,4,7,8-PeCDF	ND	1.35		-	0.422				
1,2,3,4,7,8-HxCDF	ND	1.85		-	0.449				
1,2,3,6,7,8-HxCDF	ND	2.13		-	0.442				
2,3,4,6,7,8-HxCDF	ND	2.20		-	0.486				
1,2,3,7,8,9-HxCDF	ND	3.18		-	0.753	Total TCDF	ND	0.479	
1,2,3,4,6,7,8-HpCDF	ND	2.22		-	0.470	Total PeCDF	ND	1.35	
1,2,3,4,7,8,9-HpCDF	ND	3.28		-	0.758	Total HxCDF	ND	3.18	
OCDF	ND	5.78		-	0.988	Total HpCDF	ND	3.28	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	84.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	92.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	98.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	85.5	40.0 - 135	
13C-OCDD	65.9	40.0 - 135	
13C-2,3,7,8-TCDF	96.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	98.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	97.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	108	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	106	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	86.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.8	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	86.4	40.0 - 135	
13C-OCDF	69.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	78.0	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: ng/ml

Acquired: 10-04-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	9.53	7.00 - 13.0	
1,2,3,7,8-PeCDD	48.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	51.0	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	49.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	48.8	35.0 - 65.0	
OCDD	101	70.0 - 130	
2,3,7,8-TCDF	9.19	7.00 - 13.0	
1,2,3,7,8-PeCDF	51.5	35.0 - 65.0	
2,3,4,7,8-PeCDF	51.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	49.4	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	51.2	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	50.3	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	51.3	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	52.4	35.0 - 65.0	
OCDF	105	70.0 - 130	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	94.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	91.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	91.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	77.9	40.0 - 135	
13C-OCDD	67.5	40.0 - 135	
13C-2,3,7,8-TCDF	91.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	95.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	93.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	98.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.7	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	91.5	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	87.5	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	82.6	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	76.7	40.0 - 135	
13C-OCDF	71.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.0	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-SA
Client ID: MW-9
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.968 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.00513

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.709		-	0.426				
1,2,3,7,8-PeCDD	ND	1.19		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.58		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.70		-	0.605	Total TCDD	ND	0.709	
1,2,3,7,8,9-HxCDD	ND	1.55		-	0.577	Total PeCDD	ND	1.19	
1,2,3,4,6,7,8-HpCDD	ND	2.90		-	0.643	Total HxCDD	ND	1.70	
OCDD	17.1	-	J	0.00513	1.92	Total HpCDD	ND	2.90	
2,3,7,8-TCDF	ND	0.543		-	0.281				
1,2,3,7,8-PeCDF	ND	0.733		-	0.391				
2,3,4,7,8-PeCDF	ND	0.778		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.847		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.970		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.961		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.43		-	0.753	Total TCDF	ND	0.543	
1,2,3,4,6,7,8-HpCDF	ND	1.69		-	0.470	Total PeCDF	ND	0.778	
1,2,3,4,7,8,9-HpCDF	ND	2.15		-	0.758	Total HxCDF	ND	1.43	
OCDF	ND	3.82		-	0.988	Total HpCDF	ND	2.15	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	84.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	78.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	97.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	99.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	87.7	40.0 - 135	
13C-OCDD	88.5	40.0 - 135	
13C-2,3,7,8-TCDF	91.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	90.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	111	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	103	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	90.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	85.1	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	92.9	40.0 - 135	
13C-OCDF	91.2	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	76.3	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-002-SA
Client ID: MW-7
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.998 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.781		-	0.426				
1,2,3,7,8-PeCDD	ND	1.28		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.43		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.33		-	0.605	Total TCDD	ND	0.781	
1,2,3,7,8,9-HxCDD	ND	1.29		-	0.577	Total PeCDD	ND	1.28	
1,2,3,4,6,7,8-HpCDD	ND	2.04		-	0.643	Total HxCDD	ND	1.43	
OCDD	ND	4.02		-	1.92	Total HpCDD	ND	2.04	
2,3,7,8-TCDF	ND	0.656		-	0.281				
1,2,3,7,8-PeCDF	ND	0.727		-	0.391				
2,3,4,7,8-PeCDF	ND	0.919		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.797		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.816		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.874		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.07		-	0.753	Total TCDF	ND	0.656	
1,2,3,4,6,7,8-HpCDF	ND	0.823		-	0.470	Total PeCDF	ND	0.919	
1,2,3,4,7,8,9-HpCDF	ND	1.19		-	0.758	Total HxCDF	ND	1.07	
OCDF	ND	2.23		-	0.988	Total HpCDF	ND	1.19	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	70.4	40.0 - 135	
13C-1,2,3,7,8-PeCDD	58.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	76.2	40.0 - 135	
13C-OCDD	79.3	40.0 - 135	
13C-2,3,7,8-TCDF	69.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	78.2	40.0 - 135	
13C-2,3,4,7,8-PeCDF	64.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	90.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	91.3	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	87.8	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	94.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	80.3	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	74.9	40.0 - 135	
13C-OCDF	82.0	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	59.5	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 10/5/2022

Reviewed By: _____
Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-003-SA
Client ID: DUP-220908
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.978 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.699		-	0.426				
1,2,3,7,8-PeCDD	ND	0.883		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.42		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.39		-	0.605	Total TCDD	ND	0.699	
1,2,3,7,8,9-HxCDD	ND	1.31		-	0.577	Total PeCDD	ND	0.883	
1,2,3,4,6,7,8-HpCDD	ND	2.18		-	0.643	Total HxCDD	ND	1.42	
OCDD	ND	4.05		-	1.92	Total HpCDD	ND	2.18	
2,3,7,8-TCDF	ND	0.657		-	0.281				
1,2,3,7,8-PeCDF	ND	0.674		-	0.391				
2,3,4,7,8-PeCDF	ND	0.720		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.889		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.902		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.979		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.37		-	0.753	Total TCDF	ND	0.657	
1,2,3,4,6,7,8-HpCDF	ND	0.863		-	0.470	Total PeCDF	ND	0.720	
1,2,3,4,7,8,9-HpCDF	ND	1.11		-	0.758	Total HxCDF	ND	1.37	
OCDF	ND	2.30		-	0.988	Total HpCDF	ND	1.11	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	87.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	82.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	85.4	40.0 - 135	
13C-OCDD	71.1	40.0 - 135	
13C-2,3,7,8-TCDF	86.8	40.0 - 135	
13C-1,2,3,7,8-PeCDF	79.3	40.0 - 135	
13C-2,3,4,7,8-PeCDF	81.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	104	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	105	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	98.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	92.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	85.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	83.5	40.0 - 135	
13C-OCDF	72.3	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	75.6	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-004-SA
Client ID: MW-8
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.00390

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.601		-	0.426				
1,2,3,7,8-PeCDD	ND	1.15		-	0.584				
1,2,3,4,7,8-HxCDD	ND	2.12		-	0.654				
1,2,3,6,7,8-HxCDD	ND	2.19		-	0.605	Total TCDD	ND	0.601	
1,2,3,7,8,9-HxCDD	ND	2.03		-	0.577	Total PeCDD	ND	1.15	
1,2,3,4,6,7,8-HpCDD	ND	4.71		-	0.643	Total HxCDD	ND	2.19	
OCDD	13.0	-	J	0.00390	1.92	Total HpCDD	ND	4.71	
2,3,7,8-TCDF	ND	0.687		-	0.281				
1,2,3,7,8-PeCDF	ND	0.766		-	0.391				
2,3,4,7,8-PeCDF	ND	0.819		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.905		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.00		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.07		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.44		-	0.753	Total TCDF	ND	0.687	
1,2,3,4,6,7,8-HpCDF	ND	1.04		-	0.470	Total PeCDF	ND	0.819	
1,2,3,4,7,8,9-HpCDF	ND	1.45		-	0.758	Total HxCDF	ND	1.44	
OCDF	ND	2.08		-	0.988	Total HpCDF	ND	1.45	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.4	40.0 - 135	
13C-1,2,3,7,8-PeCDD	83.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	95.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	95.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	89.1	40.0 - 135	
13C-OCDD	85.1	40.0 - 135	
13C-2,3,7,8-TCDF	92.8	40.0 - 135	
13C-1,2,3,7,8-PeCDF	87.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	89.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	108	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	104	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	97.2	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	93.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	94.2	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.6	40.0 - 135	
13C-OCDF	90.2	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	80.7	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 10/5/2022

Reviewed By: _____
Date: 10/5/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Frontier

PROJECT NAME/NO.: 209098

PO #: C-356

REMARKS: 14643

cc

Page # 1 of 1

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Dioxin / 8290 Furan						Notes
MW-9		9/6/22	1224	H_2O					X						
MW-7		9/7/22	1348	"					X						
DUP-220908		"	1200	"					X						
MW-8		↓	1351	↓					X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	9	
Received by:		Kathy Zipp	Frontier	9/13/22	9:55
Relinquished by:					
Received by:					

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14643**

Client:	Friedman & Bruya, Inc.
Client Project ID:	209098
Date Received:	09/13/2022
Time Received:	09:55 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	4
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Fed-Ex
Tracking Number:	816717802103
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


IGLOO
CT SAMPLE CHAIN OF CUSTO
SUBCONTRACTER
Frontier
PROJECT NAME/NO.
209098
Send Report To Michael Erdahl
Company Friedman and Bruya
Frontier Analytical Laboratory
14643-001-SA
Client ID:MW-9
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-9
Date/Time: 9.6.2022 1204
Project:
Frontier Analytical Laboratory
14643-002-SA
Client ID:MW-7
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-7
Date/Time: 9.7.22 1348
Project:
Frontier Analytical Laboratory
14643-003-SA
Client ID:DUP-220908
Storage: R-3
(01 of 01)
Client:
Sample ID: DUP-220908
Date/Time: 9.8.22
Project:
Frontier Analytical Laboratory
14643-004-SA
Client ID:MW-8
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-8
Date/Time: 9.8.22 1351
Project:
F&B
2022/09/13

Analytical Resources, LLC
Analytical Chemists and Consultants

26 September 2022

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 209098

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22I0145	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2022.09.26 17:09:49 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Susan Dunnihoo, Director, Client Services

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac Cert# 100006-012

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: ARL

PROJECT NAME/NO.: 209098

PO #: C-355

REMARKS: 5.5 — 22I0145

Page # 1 of 1

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TBT							Notes
MW-9		9/6/22	1224	H_2O					X							
MW-7		9/7/22	1348	↓					X							
DUP-220908		9/8/22	1200	↓					X							
MW-8		↓	1351	↓												

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	9/9/22	
Received by:		Orlo Amos	ARI	9/9/22	1133
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-9	22I0145-01	Water	06-Sep-2022 12:24	09-Sep-2022 11:33
MW-7	22I0145-02	Water	07-Sep-2022 13:48	09-Sep-2022 11:33
DUP-220908	22I0145-03	Water	08-Sep-2022 12:00	09-Sep-2022 11:33
MW-8	22I0145-04	Water	08-Sep-2022 13:51	09-Sep-2022 11:33

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 209098
Work Order: 22I0145

Sample receipt

Samples as listed on the preceding page were received 09-Sep-2022 11:33 under ARI work order 22I0145. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Tributyl Tin - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman and Bruya Project Name: _____

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22I0145 Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1153 5.5 ___ ___ ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 97085

Cooler Accepted by: Chloe Ames Date: 9/9/22 Time: 1735

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SD Date: 09/10/22 Time: 815 Labels checked by: _____

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

MW-9

22I0145-01 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/06/2022 12:24

Instrument: NT14 Analyst: VTS — Analyzed: 09/22/2022 11:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22I0145-01 A 01

Preparation Batch: BKI0194 — Sample Size: 150 mL

Prepared: 09/13/2022 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*79.0*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*53.9*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

MW-7

22I0145-02 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/07/2022 13:48

Instrument: NT14 Analyst: VTS — Analyzed: 09/22/2022 12:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22I0145-02 A 01

Preparation Batch: BKI0194 — Sample Size: 150 mL

Prepared: 09/13/2022 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*80.4*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*51.4*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

DUP-220908

22I0145-03 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/08/2022 12:00

Instrument: NT14 Analyst: VTS — Analyzed: 09/22/2022 12:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22I0145-03 A 01

Preparation Batch: BKI0194 — Sample Size: 150 mL

Prepared: 09/13/2022 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0085	ug/L	
Surrogate: Tripentyltin			*30-160 %*	*88.6*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*52.8*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

MW-8

22I0145-04 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/08/2022 13:51

Instrument: NT14 Analyst: VTS — Analyzed: 09/22/2022 12:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22I0145-04 A 01

Preparation Batch: BKI0194 — Sample Size: 150 mL

Prepared: 09/13/2022 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0098	ug/L	
Surrogate: Tripentyltin			*30-160 %*	*96.6*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*57.4*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BKI0194 - EPA 3510C SepF

Instrument: NT14 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKI0194-BLK1)				Prepared: 13-Sep-2022 Analyzed: 22-Sep-2022 11:19						
Tributyltin Ion	ND	0.0052	ug/L							U
Surrogate: Tripentyltin	0.0671		ug/L	*0.0753*		*89.1*	*30-160*			
Surrogate: Tripropyltin	0.0411		ug/L	*0.0729*		*56.4*	*30-160*			
LCS (BKI0194-BS1)				Prepared: 13-Sep-2022 Analyzed: 22-Sep-2022 11:32						
Tributyltin Ion	0.0967	0.0052	ug/L	0.149		65.1	30-160			
Surrogate: Tripentyltin	0.0729		ug/L	*0.0753*		*96.8*	*30-160*			
Surrogate: Tripropyltin	0.0427		ug/L	*0.0729*		*58.6*	*30-160*			

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	Reported:
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Water	
Tributyltin Ion	NELAP,WADOE,DoD-ELAP
Dibutyltin Ion	NELAP,WADOE,DoD-ELAP
Butyltin Ion	NELAP,WADOE,DoD-ELAP
Tetrapentyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: [none]	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	26-Sep-2022 17:05

Notes and Definitions

U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Test Report

October 3, 2022

Frontier Analytical Laboratory Project: 14540

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14540**. This corresponds to your project number **207511** and purchase order number **C-264**. The original results were reported to you on 8/19/22. On 9/6/22 we received an email from you asking us to proceed with sample 14540-007-SA (Friedman and Bruya Inc., Sample ID: SRWA-9). We reported the sample had greater than one percent solids and, per the method, is not considered an aqueous sample. After lengthy discussion with you and your client we were instructed to proceed and report the sample as an aqueous sample with some adjustments to the extraction procedure. The aqueous portion of the sample was decanted from the solid portion and extracted via liquid/liquid extraction. The remaining solid portion was extracted using a SDS soxhlet extraction. The extract from the aqueous portion was then combined with the extract from the solid portion and the sample continued through the preparatory lab and was analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs).

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the sample referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14540**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Laboratory Director

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14540**

Received on: **08/03/2022** Project Due: **08/25/2022** Storage: **R-4**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14540-001-SA	0	207511	SRWA-13 0-0.5	EPA 1613 D/F	Soil	07/26/2022	09:40 am	07/26/2023
14540-002-SA	0	207511	SRWA-14 0-1	EPA 1613 D/F	Soil	07/26/2022	10:20 am	07/26/2023
14540-003-SA	0	207511	SRWA-14 1-2	EPA 1613 D/F	Soil	07/26/2022	10:30 am	07/26/2023
14540-004-SA	0	207511	SRWA-15 0-0.5	EPA 1613 D/F	Soil	07/26/2022	12:30 pm	07/26/2023
14540-005-SA	0	207511	SRWA-8 0-1	EPA 1613 D/F	Soil	07/26/2022	01:30 pm	07/26/2023
14540-006-SA	0	207511	SRWA-9 2.5-5	EPA 1613 D/F	Soil	07/26/2022	03:30 pm	07/26/2023
14540-007-SA	0	207511	SRWA-9	EPA 1613 D/F	Aqueous	07/26/2022	03:45 pm	07/26/2023

FAL Sample ID	Notes
14540-003-SA	'HOLD'
14540-007-SA	Sample placed on hold via email dated 8/18/2022. Sample Taken off hold 9/6/22. BS

EPA Method 1613
PCDD/F

FAL ID: 14540-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6208

Date Extracted: 09-23-2022
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 09-23-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.598		-	0.350				
1,2,3,7,8-PeCDD	ND	1.03		-	0.552				
1,2,3,4,7,8-HxCDD	ND	2.00		-	0.601				
1,2,3,6,7,8-HxCDD	ND	1.94		-	0.597	Total TCDD	ND	0.598	
1,2,3,7,8,9-HxCDD	ND	1.85		-	0.551	Total PeCDD	ND	1.03	
1,2,3,4,6,7,8-HpCDD	ND	3.82		-	0.726	Total HxCDD	ND	2.00	
OCDD	ND	9.96		-	0.993	Total HpCDD	ND	3.82	
2,3,7,8-TCDF	ND	0.635		-	0.237				
1,2,3,7,8-PeCDF	ND	0.771		-	0.346				
2,3,4,7,8-PeCDF	ND	0.747		-	0.351				
1,2,3,4,7,8-HxCDF	ND	1.31		-	0.318				
1,2,3,6,7,8-HxCDF	ND	1.53		-	0.326				
2,3,4,6,7,8-HxCDF	ND	1.75		-	0.356				
1,2,3,7,8,9-HxCDF	ND	2.36		-	0.491	Total TCDF	ND	0.635	
1,2,3,4,6,7,8-HpCDF	ND	3.10		-	0.337	Total PeCDF	ND	0.771	
1,2,3,4,7,8,9-HpCDF	ND	4.14		-	0.479	Total HxCDF	ND	2.36	
OCDF	ND	5.34		-	0.918	Total HpCDF	ND	4.14	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	87.8	25.0 - 164	
13C-1,2,3,7,8-PeCDD	73.4	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	92.3	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	92.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	94.2	23.0 - 140	
13C-OCDD	89.5	17.0 - 157	
13C-2,3,7,8-TCDF	72.5	24.0 - 169	
13C-1,2,3,7,8-PeCDF	74.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	77.1	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	127	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	109	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	104	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	91.7	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	93.7	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	90.9	26.0 - 138	
13C-OCDF	92.3	17.0 - 157	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.0	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/3/2022

Reviewed By: _____

Date: 10/3/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6208

Date Extracted: 09-23-2022
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: ng/ml

Acquired: 09-23-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	8.18	6.70 - 15.8	
1,2,3,7,8-PeCDD	47.1	35.0 - 71.0	
1,2,3,4,7,8-HxCDD	51.4	35.0 - 82.0	
1,2,3,6,7,8-HxCDD	52.8	38.0 - 67.0	
1,2,3,7,8,9-HxCDD	52.4	32.0 - 81.0	
1,2,3,4,6,7,8-HpCDD	50.3	35.0 - 70.0	
OCDD	98.0	78.0 - 144	
2,3,7,8-TCDF	8.42	7.50 - 15.8	
1,2,3,7,8-PeCDF	44.1	40.0 - 67.0	
2,3,4,7,8-PeCDF	44.6	34.0 - 80.0	
1,2,3,4,7,8-HxCDF	47.2	36.0 - 67.0	
1,2,3,6,7,8-HxCDF	47.6	42.0 - 65.0	
2,3,4,6,7,8-HxCDF	50.3	35.0 - 78.0	
1,2,3,7,8,9-HxCDF	49.2	39.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	50.3	41.0 - 61.0	
1,2,3,4,7,8,9-HpCDF	50.7	39.0 - 69.0	
OCDF	93.9	63.0 - 170	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.8	20.0 - 175	
13C-1,2,3,7,8-PeCDD	77.2	21.0 - 227	
13C-1,2,3,4,7,8-HxCDD	95.1	21.0 - 193	
13C-1,2,3,6,7,8-HxCDD	94.8	25.0 - 163	
13C-1,2,3,4,6,7,8-HpCDD	94.5	26.0 - 166	
13C-OCDD	90.5	13.0 - 198	
13C-2,3,7,8-TCDF	91.9	22.0 - 152	
13C-1,2,3,7,8-PeCDF	85.4	21.0 - 192	
13C-2,3,4,7,8-PeCDF	94.1	13.0 - 328	
13C-1,2,3,4,7,8-HxCDF	133	19.0 - 202	
13C-1,2,3,6,7,8-HxCDF	108	21.0 - 159	
13C-2,3,4,6,7,8-HxCDF	101	22.0 - 176	
13C-1,2,3,7,8,9-HxCDF	94.6	17.0 - 205	
13C-1,2,3,4,6,7,8-HpCDF	96.4	21.0 - 158	
13C-1,2,3,4,7,8,9-HpCDF	89.6	20.0 - 186	
13C-OCDF	96.8	13.0 - 198	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	84.9	31.0 - 191	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/3/2022

Reviewed By: _____

Date: 10/3/2022

EPA Method 1613
PCDD/F

FAL ID: 14540-007-SA
Client ID: SRWA-9
Matrix: Aqueous
Batch No: X6208

Date Extracted: 09-23-2022
Date Received: 08-03-2022
Amount: 0.296 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 09-23-2022
2005 WHO TEQ: 361

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	10.1	-	J	10.1	0.350				
1,2,3,7,8-PeCDD	26.3	-	J	26.3	0.552				
1,2,3,4,7,8-HxCDD	77.6	-	J	7.76	0.601				
1,2,3,6,7,8-HxCDD	468	-		46.8	0.597	Total TCDD	145	-	
1,2,3,7,8,9-HxCDD	107	-		10.7	0.551	Total PeCDD	272	-	
1,2,3,4,6,7,8-HpCDD	11500	-		115	0.726	Total HxCDD	2120	-	
OCDD	125000	-		37.5	0.993	Total HpCDD	20100	-	
2,3,7,8-TCDF	27.8	-		2.78	0.237				
1,2,3,7,8-PeCDF	49.5	-	J	1.49	0.346				
2,3,4,7,8-PeCDF	97.5	-		29.3	0.351				
1,2,3,4,7,8-HxCDF	149	-		14.9	0.318				
1,2,3,6,7,8-HxCDF	130	-		13.0	0.326				
2,3,4,6,7,8-HxCDF	114	-		11.4	0.356				
1,2,3,7,8,9-HxCDF	66.1	-	J	6.61	0.491	Total TCDF	1370	-	D,M
1,2,3,4,6,7,8-HpCDF	2340	-		23.4	0.337	Total PeCDF	2150	-	D,M
1,2,3,4,7,8,9-HpCDF	120	-		1.20	0.479	Total HxCDF	4310	-	D,M
OCDF	9720	-		2.92	0.918	Total HpCDF	8310	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	81.8	25.0 - 164	
13C-1,2,3,7,8-PeCDD	67.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	81.0	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	81.2	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	89.8	23.0 - 140	
13C-OCDD	68.5	17.0 - 157	
13C-2,3,7,8-TCDF	83.2	24.0 - 169	
13C-1,2,3,7,8-PeCDF	83.9	24.0 - 185	
13C-2,3,4,7,8-PeCDF	86.7	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	104	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	91.5	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	90.2	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	82.9	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	83.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	74.1	26.0 - 138	
13C-OCDF	67.5	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	90.8	35.0 - 197	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 10/3/2022

Reviewed By: _____
Date: 10/3/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Frontier

PROJECT NAME/NO.	PO #
207511	C-264

REMARKS 14540 OOC

TURNAROUND TIME
- [x] Standard TAT
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: 8290 Dioxins/Furans	EPH	VPH							Notes
SRWA-13 0-0.5'		7-26-22	0940	Soil	1	✓									
SRWA-14 0-1'		"	1020	"	1	✓									
* SRWA-14 1-2'		"	1030	"	1	✓									HOLD.
SRWA-15 0-0.5'		"	1230	"	1	✓									
SRWA-8 0-1'		"	1330	"	1	✓									
SRWA-9 2.5-5'		"	1530	"	1	✓									
SRWA-9		"	1545	Water	1	✓		Aqueous sample placed on hold							VIO/Mar 8/12/22 on 8/12/22
-Michael to Kathy- use EPA method 1613. KZ 8/04/22.															
- Okay to leave the (1) sign off Sample IDs KZ 8/8/22															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/2/22	0745
Received by:	Kathy Zipp	Kathy Zipp	Frontier	8/03/22	945
Relinquished by:					
Received by:					

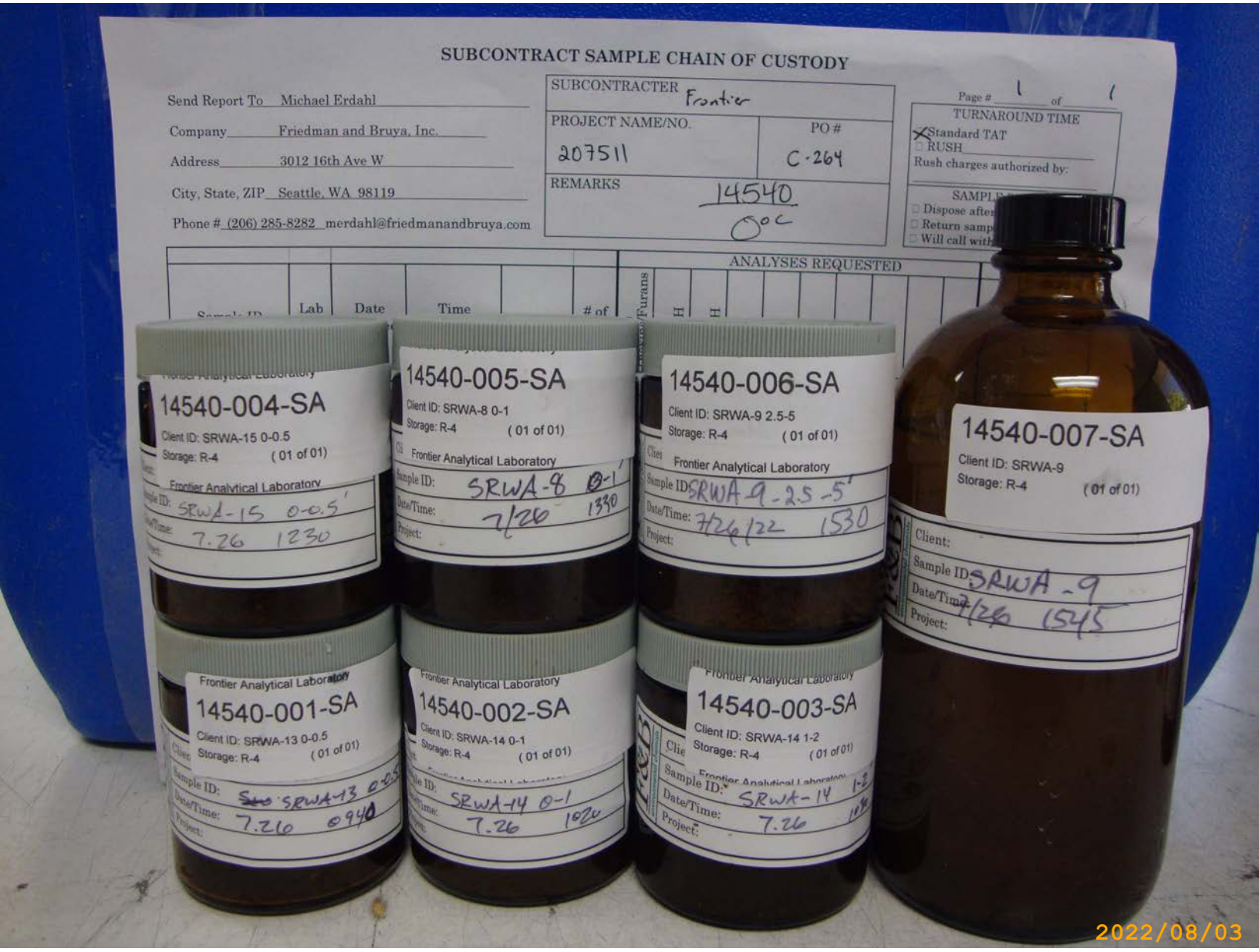
Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14540**

Client:	Friedman & Bruya, Inc.
Client Project ID:	207511
Date Received:	08/03/2022
Time Received:	09:45 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	7
Duplicates:	0
Storage Location:	R-4

Method of Delivery:	Fed-Ex
Tracking Number:	816717801817
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


SUBCONTRACT SAMPLE CHAIN OF CUSTODY
Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 merdahl@friedmanandbruya.com
SUBCONTRACTER Frontier
PROJECT NAME/NO. 207511
PO # C-264
REMARKS 14540
TURNAROUND TIME
Standard TAT
RUSH
Rush charges authorized by:
ANALYSES REQUESTED
14540-004-SA
Client ID: SRWA-15 0-0.5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-005-SA
Client ID: SRWA-8 0-1
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-006-SA
Client ID: SRWA-9 2.5-5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-007-SA
Client ID: SRWA-9
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-001-SA
Client ID: SRWA-13 0-0.5
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-002-SA
Client ID: SRWA-14 0-1
Storage: R-4 (01 of 01)
Frontier Analytical Laboratory
14540-003-SA
Client ID: SRWA-14 1-2
Storage: R-4 (01 of 01)
2022/08/03

Test Report

October 5, 2022

Frontier Analytical Laboratory Project: 14643

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14643**. This corresponds to your project number **209098** and purchase order number **C-356**. Four aqueous samples were received on 9/13/2022 in good condition. These samples were extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). Freidman and Bruya, Inc. requested a turnaround time of fifteen business days for project **14643**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14643**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Laboratory Director

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle * El Dorado Hills, CA 95762
Tel (916) 934-0900 * Fax (916) 934-0999
www.frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14643**

Received on: **09/13/2022** Project Due: **10/05/2022** Storage: **R-3**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14643-001-SA	0	209098	MW-9	EPA 8290 D/F	Aqueous	09/06/2022	12:24 pm	10/06/2022
14643-002-SA	0	209098	MW-7	EPA 8290 D/F	Aqueous	09/07/2022	01:48 pm	10/07/2022
14643-003-SA	0	209098	DUP-220908	EPA 8290 D/F	Aqueous	09/08/2022	12:00 pm	10/08/2022
14643-004-SA	0	209098	MW-8	EPA 8290 D/F	Aqueous	09/08/2022	01:51 pm	10/08/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.634		-	0.426				
1,2,3,7,8-PeCDD	ND	1.60		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.84		-	0.654				
1,2,3,6,7,8-HxCDD	ND	2.05		-	0.605	Total TCDD	ND	0.634	
1,2,3,7,8,9-HxCDD	ND	1.83		-	0.577	Total PeCDD	ND	1.60	
1,2,3,4,6,7,8-HpCDD	ND	2.43		-	0.643	Total HxCDD	ND	2.05	
OCDD	ND	9.68		-	1.92	Total HpCDD	ND	2.43	
2,3,7,8-TCDF	ND	0.479		-	0.281				
1,2,3,7,8-PeCDF	ND	1.25		-	0.391				
2,3,4,7,8-PeCDF	ND	1.35		-	0.422				
1,2,3,4,7,8-HxCDF	ND	1.85		-	0.449				
1,2,3,6,7,8-HxCDF	ND	2.13		-	0.442				
2,3,4,6,7,8-HxCDF	ND	2.20		-	0.486				
1,2,3,7,8,9-HxCDF	ND	3.18		-	0.753	Total TCDF	ND	0.479	
1,2,3,4,6,7,8-HpCDF	ND	2.22		-	0.470	Total PeCDF	ND	1.35	
1,2,3,4,7,8,9-HpCDF	ND	3.28		-	0.758	Total HxCDF	ND	3.18	
OCDF	ND	5.78		-	0.988	Total HpCDF	ND	3.28	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	84.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	92.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	98.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	85.5	40.0 - 135	
13C-OCDD	65.9	40.0 - 135	
13C-2,3,7,8-TCDF	96.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	98.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	97.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	108	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	106	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	86.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.8	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	86.4	40.0 - 135	
13C-OCDF	69.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	78.0	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: ng/ml

Acquired: 10-04-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	9.53	7.00 - 13.0	
1,2,3,7,8-PeCDD	48.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	51.0	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	49.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	48.8	35.0 - 65.0	
OCDD	101	70.0 - 130	
2,3,7,8-TCDF	9.19	7.00 - 13.0	
1,2,3,7,8-PeCDF	51.5	35.0 - 65.0	
2,3,4,7,8-PeCDF	51.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	49.4	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	51.2	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	50.3	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	51.3	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	52.4	35.0 - 65.0	
OCDF	105	70.0 - 130	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	94.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	91.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	91.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	77.9	40.0 - 135	
13C-OCDD	67.5	40.0 - 135	
13C-2,3,7,8-TCDF	91.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	95.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	93.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	98.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.7	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	91.5	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	87.5	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	82.6	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	76.7	40.0 - 135	
13C-OCDF	71.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.0	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-001-SA
Client ID: MW-9
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.968 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.00513

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.709		-	0.426				
1,2,3,7,8-PeCDD	ND	1.19		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.58		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.70		-	0.605	Total TCDD	ND	0.709	
1,2,3,7,8,9-HxCDD	ND	1.55		-	0.577	Total PeCDD	ND	1.19	
1,2,3,4,6,7,8-HpCDD	ND	2.90		-	0.643	Total HxCDD	ND	1.70	
OCDD	17.1	-	J	0.00513	1.92	Total HpCDD	ND	2.90	
2,3,7,8-TCDF	ND	0.543		-	0.281				
1,2,3,7,8-PeCDF	ND	0.733		-	0.391				
2,3,4,7,8-PeCDF	ND	0.778		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.847		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.970		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.961		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.43		-	0.753	Total TCDF	ND	0.543	
1,2,3,4,6,7,8-HpCDF	ND	1.69		-	0.470	Total PeCDF	ND	0.778	
1,2,3,4,7,8,9-HpCDF	ND	2.15		-	0.758	Total HxCDF	ND	1.43	
OCDF	ND	3.82		-	0.988	Total HpCDF	ND	2.15	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	84.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	78.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	97.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	99.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	87.7	40.0 - 135	
13C-OCDD	88.5	40.0 - 135	
13C-2,3,7,8-TCDF	91.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	90.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	111	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	103	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	90.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	85.1	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	92.9	40.0 - 135	
13C-OCDF	91.2	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	76.3	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-002-SA
Client ID: MW-7
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.998 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.781		-	0.426				
1,2,3,7,8-PeCDD	ND	1.28		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.43		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.33		-	0.605	Total TCDD	ND	0.781	
1,2,3,7,8,9-HxCDD	ND	1.29		-	0.577	Total PeCDD	ND	1.28	
1,2,3,4,6,7,8-HpCDD	ND	2.04		-	0.643	Total HxCDD	ND	1.43	
OCDD	ND	4.02		-	1.92	Total HpCDD	ND	2.04	
2,3,7,8-TCDF	ND	0.656		-	0.281				
1,2,3,7,8-PeCDF	ND	0.727		-	0.391				
2,3,4,7,8-PeCDF	ND	0.919		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.797		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.816		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.874		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.07		-	0.753	Total TCDF	ND	0.656	
1,2,3,4,6,7,8-HpCDF	ND	0.823		-	0.470	Total PeCDF	ND	0.919	
1,2,3,4,7,8,9-HpCDF	ND	1.19		-	0.758	Total HxCDF	ND	1.07	
OCDF	ND	2.23		-	0.988	Total HpCDF	ND	1.19	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	70.4	40.0 - 135	
13C-1,2,3,7,8-PeCDD	58.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	76.2	40.0 - 135	
13C-OCDD	79.3	40.0 - 135	
13C-2,3,7,8-TCDF	69.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	78.2	40.0 - 135	
13C-2,3,4,7,8-PeCDF	64.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	90.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	91.3	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	87.8	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	94.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	80.3	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	74.9	40.0 - 135	
13C-OCDF	82.0	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	59.5	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 10/5/2022

Reviewed By: _____
Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-003-SA
Client ID: DUP-220908
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 0.978 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.699		-	0.426				
1,2,3,7,8-PeCDD	ND	0.883		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.42		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.39		-	0.605	Total TCDD	ND	0.699	
1,2,3,7,8,9-HxCDD	ND	1.31		-	0.577	Total PeCDD	ND	0.883	
1,2,3,4,6,7,8-HpCDD	ND	2.18		-	0.643	Total HxCDD	ND	1.42	
OCDD	ND	4.05		-	1.92	Total HpCDD	ND	2.18	
2,3,7,8-TCDF	ND	0.657		-	0.281				
1,2,3,7,8-PeCDF	ND	0.674		-	0.391				
2,3,4,7,8-PeCDF	ND	0.720		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.889		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.902		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.979		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.37		-	0.753	Total TCDF	ND	0.657	
1,2,3,4,6,7,8-HpCDF	ND	0.863		-	0.470	Total PeCDF	ND	0.720	
1,2,3,4,7,8,9-HpCDF	ND	1.11		-	0.758	Total HxCDF	ND	1.37	
OCDF	ND	2.30		-	0.988	Total HpCDF	ND	1.11	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	87.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	82.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	85.4	40.0 - 135	
13C-OCDD	71.1	40.0 - 135	
13C-2,3,7,8-TCDF	86.8	40.0 - 135	
13C-1,2,3,7,8-PeCDF	79.3	40.0 - 135	
13C-2,3,4,7,8-PeCDF	81.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	104	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	105	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	98.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	92.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	85.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	83.5	40.0 - 135	
13C-OCDF	72.3	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	75.6	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 10/5/2022

Reviewed By: _____

Date: 10/5/2022

EPA Method 8290
PCDD/F

FAL ID: 14643-004-SA
Client ID: MW-8
Matrix: Aqueous
Batch No: X6216

Date Extracted: 10-03-2022
Date Received: 09-13-2022
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 10-04-2022
2005 WHO TEQ: 0.00390

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.601		-	0.426				
1,2,3,7,8-PeCDD	ND	1.15		-	0.584				
1,2,3,4,7,8-HxCDD	ND	2.12		-	0.654				
1,2,3,6,7,8-HxCDD	ND	2.19		-	0.605	Total TCDD	ND	0.601	
1,2,3,7,8,9-HxCDD	ND	2.03		-	0.577	Total PeCDD	ND	1.15	
1,2,3,4,6,7,8-HpCDD	ND	4.71		-	0.643	Total HxCDD	ND	2.19	
OCDD	13.0	-	J	0.00390	1.92	Total HpCDD	ND	4.71	
2,3,7,8-TCDF	ND	0.687		-	0.281				
1,2,3,7,8-PeCDF	ND	0.766		-	0.391				
2,3,4,7,8-PeCDF	ND	0.819		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.905		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.00		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.07		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.44		-	0.753	Total TCDF	ND	0.687	
1,2,3,4,6,7,8-HpCDF	ND	1.04		-	0.470	Total PeCDF	ND	0.819	
1,2,3,4,7,8,9-HpCDF	ND	1.45		-	0.758	Total HxCDF	ND	1.44	
OCDF	ND	2.08		-	0.988	Total HpCDF	ND	1.45	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.4	40.0 - 135	
13C-1,2,3,7,8-PeCDD	83.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	95.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	95.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	89.1	40.0 - 135	
13C-OCDD	85.1	40.0 - 135	
13C-2,3,7,8-TCDF	92.8	40.0 - 135	
13C-1,2,3,7,8-PeCDF	87.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	89.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	108	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	104	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	97.2	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	93.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	94.2	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.6	40.0 - 135	
13C-OCDF	90.2	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	80.7	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 10/5/2022

Reviewed By: _____
Date: 10/5/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Frontier

PROJECT NAME/NO.: 209098

PO #: C-356

REMARKS: 14643

cc

Page # 1 of 1

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Dioxin / 8290 Furan						Notes
MW-9		9/6/22	1224	H_2O					X						
MW-7		9/7/22	1348	"					X						
DUP-220908		"	1200	"					X						
MW-8		↓	1351	↓					X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	9	
Received by:		Kathy Zipp	Frontier	9/13/22	9:55
Relinquished by:					
Received by:					

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14643**

Client:	Friedman & Bruya, Inc.
Client Project ID:	209098
Date Received:	09/13/2022
Time Received:	09:55 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	4
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Fed-Ex
Tracking Number:	816717802103
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


IGLOO
CT SAMPLE CHAIN OF CUSTO
SUBCONTRACTER
Frontier
PROJECT NAME/NO.
209098
Send Report To Michael Erdahl
Company Friedman and Bruya
Frontier Analytical Laboratory
14643-001-SA
Client ID:MW-9
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-9
Date/Time: 9.6.2022 1204
Project:
Frontier Analytical Laboratory
14643-002-SA
Client ID:MW-7
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-7
Date/Time: 9.7.22 1348
Project:
Frontier Analytical Laboratory
14643-003-SA
Client ID:DUP-220908
Storage: R-3
(01 of 01)
Client:
Sample ID: DUP-220908
Date/Time: 9.8.22
Project:
Frontier Analytical Laboratory
14643-004-SA
Client ID:MW-8
Storage: R-3
(01 of 01)
Client:
Sample ID: MW-8
Date/Time: 9.8.22 1351
Project:
F&B
2022/09/13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 7, 2022

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the additional results from the testing of material submitted on July 28, 2022 from the Port of Friday Harbor Jensen's Marina R.I., F&BI 207490 project. There are 6 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Jamie Stevens, Peter Leon
CTC1007R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 28, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina R.I., F&BI 207490 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
207490 -01	SWP-1 1-3'
207490 -02	SWP-1 3-5'
207490 -03	SWP-1 5-10'
207490 -04	SWP-1 10-12'
207490 -05	SFD-4 0-1.5'
207490 -06	SFD-4 1.5-3'
207490 -07	SFD-4 3-5'
207490 -08	SFD-4 5-6.5'
207490 -09	SFD-4
207490 -10	BLWA-12 0-2'
207490 -11	BLWA-12 3-5'
207490 -12	BLWA-12 5-7'
207490 -13	BLWA-11 0-2.5'
207490 -14	BLWA-11 2.5-5'
207490 -15	BLWA-11 5-7'
207490 -16	BLWA-11

The 6020B matrix spike and matrix spike duplicate failed the relative percent difference for arsenic. The laboratory control sample passed the acceptance criteria, therefore the results are due to matrix effect.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-11 5-7'	Client:	Crete Consulting
Date Received:	07/28/22	Project:	Jensen's Marina R.I., F&BI 207490
Date Extracted:	09/30/22	Lab ID:	207490-15
Date Analyzed:	10/03/22	Data File:	207490-15.087
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.99
Cadmium	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BLWA-11 5-7'	Client:	Crete Consulting
Date Received:	07/28/22	Project:	Jensen's Marina R.I., F&BI 207490
Date Extracted:	09/30/22	Lab ID:	207490-15 x5
Date Analyzed:	10/04/22	Data File:	207490-15 x5.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	15.8
Copper	150
Lead	181
Zinc	67.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	Jensen's Marina R.I., F&BI 207490
Date Extracted:	09/30/22	Lab ID:	I2-701 mb
Date Analyzed:	09/30/22	Data File:	I2-701 mb.115
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Copper	<5
Lead	<1
Zinc	<5

Date of Report: 10/07/22
Date Received: 07/28/22
Project: Port of Friday Harbor Jensen's Marina R.I., F&BI 207490

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 209526-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	90	121	75-125	29 vo
Cadmium	mg/kg (ppm)	10	<5	92	96	75-125	4
Chromium	mg/kg (ppm)	50	13.9	90	101	75-125	12
Copper	mg/kg (ppm)	50	<25	90	97	75-125	7
Lead	mg/kg (ppm)	50	9.04	92	101	75-125	9
Zinc	mg/kg (ppm)	50	33.2	91	99	75-125	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	103	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	99	80-120
Copper	mg/kg (ppm)	50	100	80-120
Lead	mg/kg (ppm)	50	105	80-120
Zinc	mg/kg (ppm)	50	99	80-120

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

207490

SAMPLE CHAIN OF CUSTODY 07-28-22

EDB | BIH | CTI | 2
Page # 1 VW# 1 ES

Report To Jones, Hollsworth, Steven, P. Leon
Company Crete Consulting, LE
Address
City, State, ZIP
Phone Email

SAMPLERS (signature): Rusty Jones RC Jones
PROJECT NAME: Port of Friday Harbor Jensen's Marina R.I.
PO #
REMARKS: *As, Cd, Cr, Cu, Pb, Hg, Zn
Project specific RLs? Yes / No (per RJ 7/22)
INVOICE TO: Leon Environmental

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Metals *				Notes
SWP-1 1-3'	01	7.25.22	1105	Soil	1								✓				(X) per RJ
SWP-1 3-5'	02	"	1110	"	1								●				8/4/22 ME
SWP-1 5-10'	03	"	1115	"	1												● per RJ
SWP-1 10-12'	04	"	1125	"	1												8/10/22 ME
SFD-4 0-1.5'	05 A-E	"	1310	Soil	5	✓	✓						✓				☒ per RJ
SFD-4 1.5-3'	06	"	1315	"	5	✓							●				8/18/22
SFD-4 3-5'	07	"	1320	"	5												MG
SFD-4 5-6.5'	08	"	1325	"	5												
SFD-4	09 A-D	"	1335	WATER	4	✓	✓										with & without SGC
BLWA-12 0-2'	10 A-E	"	1425	Soil	5	✓	✓				(X)		✓				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: RC Jones	Rusty Jones	CRETE	7.28.22	1125
Received by:	James Bruya	F&B	7/28/22	1410
Relinquished by:				
Received by:				

Samples received at 4 °C

Friedman & Bruya, Inc.
Ph. (206) 285-8282

207940

SAMPLE CHAIN OF CUSTODY

07-28-22

EDB/BIY/CII/VM

Page # 2 of 2

Report To Jones, Harbaugh, Stevens, P. Leon

Company CreteConsulting / Leon Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones RJones

PROJECT NAME Port of Friday Harbor Jensen's Marina P.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO Leon Environmental

TURNAROUND TIME

- [x] Standard turnaround
- [ ] RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

- [ ] Archive samples
- [ ] Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260 (CHK)	PAHs EPA 8270	PCBs EPA 8082	Metals				Notes
BLWA-12 3-5'	11 A-F	7.25.2022	1430	Soil	6								●				# per RS
BLWA-12 5-7'	12		1435	↓	6								☒				9/23/22 mE
BLWA-11 0-2.5'	13		1525	Soil	6	✓	✓				✓	✓	●				(No Hg)
BLWA-11 2.5-5'	14		1530		6								☒				
BLWA-11 5-7'	15		1535	↓	6								◆				
BLWA-11	16	↓	1550	WATER	6	✓	✓				✓	✓					with twin heat SGC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: RJones	Rusty Jones	CRETE	7.26.22	1125
Received by:	JGarcia Bruya	F&B	7/28	1410
Relinquished by:				
Received by:				

Samples received at 4 °C

Friedman & Bruya, Inc.
Ph. (206) 285-8282

BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

October 18, 2022

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Marina

Rusty Jones,

On September 12, 2022, Brooks Applied Labs (BAL) received seven (7) aqueous samples in a sealed cooler at an acceptable temperature of 2.1°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

The **Sample ID** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values listed on container labels for samples in 2209121-06 and 2209121-07. The discrepancies are described in the table below.

Sample ID Agreement Issues

Laboratory ID	Sample ID *(From COC)*	Sample ID (*From Container Label*)	Date/Time Collected (From Container Label)
2209121-06	MW-7	MW-8	09/07/2022 13:48
2209121-07	MW-7	MW-8	09/07/2022 13:48
2209121-12	MW-8	MW-8	09/08/2022 13:51
2209121-13	MW-8	MW-8	09/08/2022 13:51

All four fractions (2209121-06, 2209121-07, 2209121-12, and 2209121-13) were received in containers with labels listing a **Sample ID** value of *MW-8*. At the same time, there were no containers were received with a **Sample ID** of *MW-7*. Per client request, the fractions in 2209121-12 and 2209121-13 were assigned the **Sample ID** value of *MW-8* since the containers included **Date/Time Collected** values that matched *MW-8* on the COC form. The fractions in 2209121-06 and 2209121-07 were assigned the **Sample ID** value of *MW-7* since the containers included **Date/Time Collected** values that matched *MW-7* on the COC form.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS

Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B222129

Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The dissolved copper result (2209121-13) was greater than the corresponding total recoverable copper result (2209121-12) for the *MW-8* sample. Re-analyses confirmed the results. Container labels were checked and there was no indication of samples mis-labeled. Consequently, no additional corrective actions are necessary. The reported results are deemed representative of the submitted containers.

In instances where the analyte concentration of a standard reference material (SRM) is not certified but instead has been listed only as an informational value by the certifying agency, the recovery limits have been set as not applicable (N/A). In such cases the measured concentrations have been provided for informational purposes, but the laboratory fortified blank and/or matrix spike recoveries may be more reflective of the performance of the applied methods.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B222095

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

All data was reported without qualification, aside from concentration qualifiers. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page in your report.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Brooks Applied Labs
Jeremy@brooksapplied.com

Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received
BAL	Brooks Applied Labs
BLK	method blank
BS	blank spike
CAL	calibration standard
CCB	continuing calibration blank
CCV	continuing calibration verification
COC	chain of custody record
D	dissolved fraction
DUP	duplicate
IBL	instrument blank
ICV	initial calibration verification
MDL	method detection limit
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
ND	non-detect
NR	non-reportable
N/C	not calculated
PS	post preparation spike
REC	percent recovery
RPD	relative percent difference
SCV	secondary calibration verification
SOP	standard operating procedure
SRM	reference material
T	total fraction
TR	total recoverable fraction

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.

Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI

Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness

Accreditation Information

Table 2. Accredited method/matrix/analytes for ISO (1), Non-Governmental TNI (2)

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Tl, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters	Inorganic Arsenic (ISO Only)
	Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW-9	2209121-01	Water	Sample	09/06/2022	09/12/2022
MW-9	2209121-02	Water	Sample	09/06/2022	09/12/2022
MW-2	2209121-03	Water	Sample	09/06/2022	09/12/2022
MW-2	2209121-04	Water	Sample	09/06/2022	09/12/2022
Filter Blank	2209121-05	Water	Filter Blank	09/07/2022	09/12/2022
MW-7	2209121-06	Water	Sample	09/07/2022	09/12/2022
MW-7	2209121-07	Water	Sample	09/07/2022	09/12/2022
MW-3	2209121-08	Water	Sample	09/07/2022	09/12/2022
MW-3	2209121-09	Water	Sample	09/07/2022	09/12/2022
DUP-220907	2209121-10	Water	Field Duplicate	09/07/2022	09/12/2022
DUP-220907	2209121-11	Water	Field Duplicate	09/07/2022	09/12/2022
MW-8	2209121-12	Water	Sample	09/08/2022	09/12/2022
MW-8	2209121-13	Water	Sample	09/08/2022	09/12/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972
Cd	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972
Cr	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972
Cu	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972
Hg	Water	EPA 1631 E	09/14/2022	09/15/2022	B222095	S220962
Hg	Water	EPA 1631 E	09/14/2022	09/20/2022	B222095	S220975
Pb	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972
Zn	Water	EPA 1638 Mod	09/19/2022	09/20/2022	B222129	S220972

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW-9										
2209121-01	As	Water	TR	1.79		0.162	0.727	µg/L	B222129	S220972
2209121-01	Cd	Water	TR	0.485		0.061	0.182	µg/L	B222129	S220972
2209121-01	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B222129	S220972
2209121-01	Cu	Water	TR	15.1		0.505	1.01	µg/L	B222129	S220972
2209121-01	Hg	Water	TR	155		0.13	0.41	ng/L	B222095	S220962
2209121-01	Pb	Water	TR	1.59		0.061	0.121	µg/L	B222129	S220972
2209121-01	Zn	Water	TR	137		7.07	22.2	µg/L	B222129	S220972
MW-9										
2209121-02	As	Water	D	1.88		0.162	0.727	µg/L	B222129	S220972
2209121-02	Cd	Water	D	0.438		0.061	0.182	µg/L	B222129	S220972
2209121-02	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B222129	S220972
2209121-02	Cu	Water	D	14.5		0.505	1.01	µg/L	B222129	S220972
2209121-02	Hg	Water	D	138		0.13	0.41	ng/L	B222095	S220962
2209121-02	Pb	Water	D	1.28		0.061	0.121	µg/L	B222129	S220972
2209121-02	Zn	Water	D	137		7.07	22.2	µg/L	B222129	S220972
MW-2										
2209121-03	As	Water	TR	0.382	J	0.162	0.727	µg/L	B222129	S220972
2209121-03	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B222129	S220972
2209121-03	Cr	Water	TR	5.06	J	1.72	6.06	µg/L	B222129	S220972
2209121-03	Cu	Water	TR	1.56		0.505	1.01	µg/L	B222129	S220972
2209121-03	Hg	Water	TR	1.65		0.13	0.41	ng/L	B222095	S220962
2209121-03	Pb	Water	TR	0.156		0.061	0.121	µg/L	B222129	S220972
2209121-03	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B222129	S220972
MW-2										
2209121-04	As	Water	D	0.308	J	0.162	0.727	µg/L	B222129	S220972
2209121-04	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B222129	S220972
2209121-04	Cr	Water	D	3.37	J	1.72	6.06	µg/L	B222129	S220972
2209121-04	Cu	Water	D	1.03		0.505	1.01	µg/L	B222129	S220972
2209121-04	Hg	Water	D	1.20		0.13	0.41	ng/L	B222095	S220962
2209121-04	Pb	Water	D	0.095	J	0.061	0.121	µg/L	B222129	S220972
2209121-04	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B222129	S220972

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
Filter Blank										
2209121-05	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B222129	S220972
2209121-05	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B222129	S220972
2209121-05	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B222129	S220972
2209121-05	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B222129	S220972
2209121-05	Hg	Water	D	≤ 0.13	U	0.13	0.40	ng/L	B222095	S220962
2209121-05	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B222129	S220972
2209121-05	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B222129	S220972
MW-7										
2209121-06	As	Water	TR	1.27		0.162	0.727	µg/L	B222129	S220972
2209121-06	Cd	Water	TR	1.24		0.061	0.182	µg/L	B222129	S220972
2209121-06	Cr	Water	TR	188		1.72	6.06	µg/L	B222129	S220972
2209121-06	Cu	Water	TR	11.7		0.505	1.01	µg/L	B222129	S220972
2209121-06	Hg	Water	TR	114		0.13	0.41	ng/L	B222095	S220962
2209121-06	Pb	Water	TR	0.933		0.061	0.121	µg/L	B222129	S220972
2209121-06	Zn	Water	TR	408		7.07	22.2	µg/L	B222129	S220972
MW-7										
2209121-07	As	Water	D	1.18		0.162	0.727	µg/L	B222129	S220972
2209121-07	Cd	Water	D	1.25		0.061	0.182	µg/L	B222129	S220972
2209121-07	Cr	Water	D	119		1.72	6.06	µg/L	B222129	S220972
2209121-07	Cu	Water	D	11.0		0.505	1.01	µg/L	B222129	S220972
2209121-07	Hg	Water	D	18.0		0.13	0.41	ng/L	B222095	S220962
2209121-07	Pb	Water	D	0.359		0.061	0.121	µg/L	B222129	S220972
2209121-07	Zn	Water	D	409		7.07	22.2	µg/L	B222129	S220972
MW-3										
2209121-08	As	Water	TR	1.43		0.162	0.727	µg/L	B222129	S220972
2209121-08	Cd	Water	TR	1.10		0.061	0.182	µg/L	B222129	S220972
2209121-08	Cr	Water	TR	53.2		1.72	6.06	µg/L	B222129	S220972
2209121-08	Cu	Water	TR	15.5		0.505	1.01	µg/L	B222129	S220972
2209121-08	Hg	Water	TR	25.4		0.66	2.04	ng/L	B222095	S220975
2209121-08	Pb	Water	TR	5.89		0.061	0.121	µg/L	B222129	S220972
2209121-08	Zn	Water	TR	250		7.07	22.2	µg/L	B222129	S220972

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW-3										
2209121-09	As	Water	D	0.680	J	0.162	0.727	µg/L	B222129	S220972
2209121-09	Cd	Water	D	1.06		0.061	0.182	µg/L	B222129	S220972
2209121-09	Cr	Water	D	3.82	J	1.72	6.06	µg/L	B222129	S220972
2209121-09	Cu	Water	D	7.73		0.505	1.01	µg/L	B222129	S220972
2209121-09	Hg	Water	D	6.07		0.13	0.41	ng/L	B222095	S220962
2209121-09	Pb	Water	D	0.193		0.061	0.121	µg/L	B222129	S220972
2209121-09	Zn	Water	D	239		7.07	22.2	µg/L	B222129	S220972
DUP-220907										
2209121-10	As	Water	TR	1.11		0.162	0.727	µg/L	B222129	S220972
2209121-10	Cd	Water	TR	1.26		0.061	0.182	µg/L	B222129	S220972
2209121-10	Cr	Water	TR	185		1.72	6.06	µg/L	B222129	S220972
2209121-10	Cu	Water	TR	11.9		0.505	1.01	µg/L	B222129	S220972
2209121-10	Hg	Water	TR	125		0.13	0.41	ng/L	B222095	S220962
2209121-10	Pb	Water	TR	0.829		0.061	0.121	µg/L	B222129	S220972
2209121-10	Zn	Water	TR	395		7.07	22.2	µg/L	B222129	S220972
DUP-220907										
2209121-11	As	Water	D	0.895		0.162	0.727	µg/L	B222129	S220972
2209121-11	Cd	Water	D	1.27		0.061	0.182	µg/L	B222129	S220972
2209121-11	Cr	Water	D	120		1.72	6.06	µg/L	B222129	S220972
2209121-11	Cu	Water	D	10.6		0.505	1.01	µg/L	B222129	S220972
2209121-11	Hg	Water	D	19.2		0.13	0.41	ng/L	B222095	S220962
2209121-11	Pb	Water	D	0.298		0.061	0.121	µg/L	B222129	S220972
2209121-11	Zn	Water	D	388		7.07	22.2	µg/L	B222129	S220972
MW-8										
2209121-12	As	Water	TR	1.49		0.162	0.727	µg/L	B222129	S220972
2209121-12	Cd	Water	TR	2.28		0.061	0.182	µg/L	B222129	S220972
2209121-12	Cr	Water	TR	64.4		1.72	6.06	µg/L	B222129	S220972
2209121-12	Cu	Water	TR	44.2		0.505	1.01	µg/L	B222129	S220972
2209121-12	Hg	Water	TR	10.2		0.13	0.41	ng/L	B222095	S220962
2209121-12	Pb	Water	TR	0.466		0.061	0.121	µg/L	B222129	S220972
2209121-12	Zn	Water	TR	233		7.07	22.2	µg/L	B222129	S220972

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW-8										
2209121-13	As	Water	D	1.54		0.162	0.727	µg/L	B222129	S220972
2209121-13	Cd	Water	D	2.30		0.061	0.182	µg/L	B222129	S220972
2209121-13	Cr	Water	D	48.5		1.72	6.06	µg/L	B222129	S220972
2209121-13	Cu	Water	D	57.1		0.505	1.01	µg/L	B222129	S220972
2209121-13	Hg	Water	D	8.78		0.13	0.41	ng/L	B222095	S220962
2209121-13	Pb	Water	D	0.434		0.061	0.121	µg/L	B222129	S220972
2209121-13	Zn	Water	D	242		7.07	22.2	µg/L	B222129	S220972

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Accuracy & Precision Summary

Batch: B222095
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222095-MS1	**Matrix Spike (2209121-03)**						
	Hg	1.65	20.41	22.48	ng/L	102% 71-125	
B222095-MSD1	**Matrix Spike Duplicate (2209121-03)**						
	Hg	1.65	20.41	21.79	ng/L	99% 71-125	3% 24
B222095-MS3	**Matrix Spike (2209121-08)**						
	Hg	25.42	102.0	124.9	ng/L	98% 71-125	
B222095-MSD3	**Matrix Spike Duplicate (2209121-08)**						
	Hg	25.42	102.0	129.9	ng/L	102% 71-125	4% 24

Accuracy & Precision Summary

Batch: B222129
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222129-BS1	**Blank Spike, (2128023)**						
	As		166.7	160.2	µg/L	96% 75-125	
	Cd		16.67	16.09	µg/L	97% 75-125	
	Cr		166.7	158.4	µg/L	95% 75-125	
	Cu		166.7	163.5	µg/L	98% 75-125	
	Pb		16.67	17.08	µg/L	102% 75-125	
	Zn		166.7	196.0	µg/L	118% 75-125	
B222129-BS2	**Blank Spike, (2152010)**						
	As		277.8	280.5	µg/L	101% 75-125	
	Cd		27.78	28.04	µg/L	101% 75-125	
	Cr		277.8	276.0	µg/L	99% 75-125	
	Cu		277.8	276.2	µg/L	99% 75-125	
	Pb		27.78	28.63	µg/L	103% 75-125	
	Zn		277.8	259.2	µg/L	93% 75-125	
B222129-SRM1	**Reference Material (2214014, TMDA 51.5 Reference Standard - Bottle 6 - SRM)**						
	Cd		25.70	25.85	µg/L	101% 75-125	
	Pb		63.70	66.96	µg/L	105% 75-125	
B222129-SRM2	**Reference Material (2214014, TMDA 51.5 Reference Standard - Bottle 6 - SRM)**						
	Cd		25.70	26.08	µg/L	101% 75-125	
	Pb		63.70	67.99	µg/L	107% 75-125	
B222129-SRM3	**Reference Material (2214014, TMDA 51.5 Reference Standard - Bottle 6 - SRM)**						
	As		16.70	16.46	µg/L	99% 75-125	
	Cr		65.10	60.52	µg/L	93% 75-125	
	Cu		77.40	72.61	µg/L	94% 75-125	
B222129-SRM4	**Reference Material (2214014, TMDA 51.5 Reference Standard - Bottle 6 - SRM)**						
	As		16.70	16.27	µg/L	97% 75-125	
	Cr		65.10	61.01	µg/L	94% 75-125	
	Cu		77.40	73.25	µg/L	95% 75-125	

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Accuracy & Precision Summary

Batch: B222129
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222129-DUP1	**Duplicate, (2209121-01)**						
	As	1.786		1.813	µg/L		1% 20
	Cd	0.485		0.462	µg/L		5% 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	15.10		16.50	µg/L		9% 20
	Pb	1.594		1.563	µg/L		2% 20
	Zn	137.4		140.4	µg/L		2% 20
B222129-MS1	**Matrix Spike, (2209121-01)**						
	As	1.786	280.6	327.0	µg/L	116% 75-125	
	Cd	0.485	28.06	28.21	µg/L	99% 75-125	
	Cr	ND	280.6	312.1	µg/L	111% 75-125	
	Cu	15.10	280.6	305.2	µg/L	103% 75-125	
	Pb	1.594	28.06	27.61	µg/L	93% 75-125	
	Zn	137.4	280.6	423.5	µg/L	102% 75-125	
B222129-MSD1	**Matrix Spike Duplicate, (2209121-01)**						
	As	1.786	280.6	329.8	µg/L	117% 75-125	0.8% 20
	Cd	0.485	28.06	28.22	µg/L	99% 75-125	0.03% 20
	Cr	ND	280.6	312.6	µg/L	111% 75-125	0.1% 20
	Cu	15.10	280.6	302.9	µg/L	103% 75-125	0.8% 20
	Pb	1.594	28.06	27.11	µg/L	91% 75-125	2% 20
	Zn	137.4	280.6	423.7	µg/L	102% 75-125	0.04% 20
B222129-DUP2	**Duplicate, (2209121-06)**						
	As	1.267		1.186	µg/L		7% 20
	Cd	1.239		1.368	µg/L		10% 20
	Cr	188.3		185.8	µg/L		1% 20
	Cu	11.66		12.01	µg/L		3% 20
	Pb	0.933		0.988	µg/L		6% 20
	Zn	407.8		398.9	µg/L		2% 20

Accuracy & Precision Summary

Batch: B222129
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222129-MS2	**Matrix Spike, (2209121-06)**						
	As	1.267	280.6	317.6	µg/L	113% 75-125	
	Cd	1.239	28.06	28.93	µg/L	99% 75-125	
	Cr	188.3	280.6	490.9	µg/L	108% 75-125	
	Cu	11.66	280.6	295.1	µg/L	101% 75-125	
	Pb	0.933	28.06	26.02	µg/L	89% 75-125	
	Zn	407.8	280.6	692.9	µg/L	102% 75-125	
B222129-MSD2	**Matrix Spike Duplicate, (2209121-06)**						
	As	1.267	280.6	314.9	µg/L	112% 75-125	0.9% 20
	Cd	1.239	28.06	28.55	µg/L	97% 75-125	1% 20
	Cr	188.3	280.6	489.9	µg/L	108% 75-125	0.2% 20
	Cu	11.66	280.6	292.3	µg/L	100% 75-125	1% 20
	Pb	0.933	28.06	25.50	µg/L	88% 75-125	2% 20
	Zn	407.8	280.6	668.6	µg/L	93% 75-125	4% 20
B222129-DUP3	**Duplicate, (2209121-12)**						
	As	1.486		1.492	µg/L		0.4% 20
	Cd	2.277		2.331	µg/L		2% 20
	Cr	64.37		65.18	µg/L		1% 20
	Cu	44.24		45.18	µg/L		2% 20
	Pb	0.466		0.498	µg/L		7% 20
	Zn	232.6		236.0	µg/L		1% 20
B222129-MS3	**Matrix Spike, (2209121-12)**						
	As	1.486	280.6	313.4	µg/L	111% 75-125	
	Cd	2.277	28.06	29.14	µg/L	96% 75-125	
	Cr	64.37	280.6	368.4	µg/L	108% 75-125	
	Cu	44.24	280.6	322.4	µg/L	99% 75-125	
	Pb	0.466	28.06	24.26	µg/L	85% 75-125	
	Zn	232.6	280.6	503.1	µg/L	96% 75-125	

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Accuracy & Precision Summary

Batch: B222129
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222129-MSD3	**Matrix Spike Duplicate, (2209121-12)**						
	As	1.486	280.6	320.4	µg/L	114% 75-125	2% 20
	Cd	2.277	28.06	29.02	µg/L	95% 75-125	0.4% 20
	Cr	64.37	280.6	363.8	µg/L	107% 75-125	1% 20
	Cu	44.24	280.6	323.4	µg/L	100% 75-125	0.3% 20
	Pb	0.466	28.06	24.08	µg/L	84% 75-125	0.8% 20
	Zn	232.6	280.6	519.2	µg/L	102% 75-125	3% 20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Method Blanks & Reporting Limits

Batch: B222095
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B222095-BLK1	0.16	ng/L
B222095-BLK2	0.13	ng/L
B222095-BLK3	0.20	ng/L
B222095-BLK4	0.13	ng/L

Average: 0.16
Limit: 0.50

MDL: 0.13
MRL: 0.40

Method Blanks & Reporting Limits

Batch: B222129
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B222129-BLK1	-0.001	µg/L
B222129-BLK2	-0.003	µg/L
B222129-BLK3	-0.001	µg/L
B222129-BLK4	-0.001	µg/L

Average: -0.002
Limit: 0.072

MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B222129-BLK1	0.00005	µg/L
B222129-BLK2	-0.0001	µg/L
B222129-BLK3	-0.0004	µg/L
B222129-BLK4	-0.0004	µg/L

Average: 0.000
Limit: 0.018

MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B222129-BLK1	0.059	µg/L
B222129-BLK2	0.066	µg/L
B222129-BLK3	0.057	µg/L
B222129-BLK4	0.038	µg/L

Average: 0.055
Limit: 0.600

MDL: 0.170
MRL: 0.600

Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B222129-BLK1	0.004	µg/L
B222129-BLK2	-0.002	µg/L
B222129-BLK3	-0.007	µg/L
B222129-BLK4	-0.009	µg/L

Average: -0.004
Limit: 0.100

MDL: 0.050
MRL: 0.100

Analyte: Pb

Sample	Result	Units
B222129-BLK1	0.0006	µg/L
B222129-BLK2	-0.0002	µg/L
B222129-BLK3	-0.0002	µg/L
B222129-BLK4	0.0001	µg/L

Average: 0.000
Limit: 0.012

MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B222129-BLK1	-0.033	µg/L
B222129-BLK2	-0.070	µg/L
B222129-BLK3	-0.089	µg/L
B222129-BLK4	-0.088	µg/L

Average: -0.070
Limit: 2.200

MDL: 0.700
MRL: 2.20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2209121-01 **Report Matrix:** Water **Collected:** 09/06/2022
Sample: MW-9 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-02 **Report Matrix:** Water **Collected:** 09/06/2022
Sample: MW-9 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-03 **Report Matrix:** Water **Collected:** 09/06/2022
Sample: MW-2 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-04 **Report Matrix:** Water **Collected:** 09/06/2022
Sample: MW-2 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2209121-05
Sample: Filter Blank
Report Matrix: Water
Sample Type: Filter Blank
Collected: 09/07/2022
Received: 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-06
Sample: MW-7
Report Matrix: Water
Sample Type: Sample
Collected: 09/07/2022
Received: 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-07
Sample: MW-7
Report Matrix: Water
Sample Type: Sample
Collected: 09/07/2022
Received: 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-08
Sample: MW-3
Report Matrix: Water
Sample Type: Sample
Collected: 09/07/2022
Received: 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Sample Containers

Lab ID: 2209121-09 **Report Matrix:** Water **Collected:** 09/07/2022
Sample: MW-3 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-10 **Report Matrix:** Water **Collected:** 09/07/2022
Sample: DUP-220907 **Sample Type:** Field Duplicate **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2230023	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-11 **Report Matrix:** Water **Collected:** 09/07/2022
Sample: DUP-220907 **Sample Type:** Field Duplicate **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2218038	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Lab ID: 2209121-12 **Report Matrix:** Water **Collected:** 09/08/2022
Sample: MW-8 **Sample Type:** Sample **Received:** 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2218038	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Marina

Sample Containers

Lab ID: 2209121-13
Sample: MW-8

Report Matrix: Water
Sample Type: Sample

Collected: 09/08/2022
Received: 09/12/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0031	1% HNO3 (BAL)	2218038	1	Cooler - 2209121
B	FLPE - 125mL Bottle - Hg-T	125mL	22-0026	none	n/a	n/a	Cooler - 2209121

Shipping Containers

Cooler - 2209121

Received: September 12, 2022 13:10
Tracking No: N/A via Courier
Coolant Type: Ice
Temperature: 2.1 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR #1

Custody seals present? No
Custody seals intact? No
COC present? Yes

BAL Report 2209121

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only
Received by: VW Date: 9/12/22
Work Order ID: Time: 13:10
Project ID:

Client: CRETE Consulting Leon Environmental PO Number: Leon Environmental
Contact: R. Jones (CRETE) Phone: 832.330.1359
Client Project ID: Poth Jensen's Marina Email:
Samples Collected By: Rusty Jones R. Jones
Mailing Address:
Email Receipt Confirmation? (Yes/No)
BAL PM: Jeremy Mautte

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection Date	Collection Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Dissolved Hg Filtration	Other (specify) Mod. Total Metals Method 1638	Other (specify) Mod. Dissolved Metals Method 1638	Comments
1	MW-9	9.6.2022	1224	WATER	4	Y+N	NONE	X					X	X	X	Metals List: As, Cd, Cr, Cu, Pb, ~~Ni~~, Zn, Hg (Total & Dissolved) Cond.= 37987 uS/cm
2	MW-2	↓	1330	↓	4	↓	↓	X					X	X	X	Cond.= 2634 ↓
3	FILTER BLANK	9.7.2022	1150		2	Y							X		X	DIW
4	MW-7	↓	1348		4	Y+N		X					X	X	X	Cond.= 34935 uS/cm
5	MW-3	↓	1521		4	↓		X					X	X	X	Cond.= 13176
6	DUP-220907	9.7.2022	1100		4	↓		X					X	X	X	Cond.> 30000
7	MW-8	9.8.2022	1351	↓	4	↓	↓	X					X	X	X	Cond.= 34705 ↓
8																
9																
10																
	Trip Blank															

Comments — Specify Here

Relinquished By: R. Jones	Date: 9.12.2022	Time: 1310	Relinquished By:	Date: Time:
Received By: [signature]	Date: 9/12/22	Time: 13:10	Total Number of Packages:	

Page 1 of 4 List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

DATE: 25JUL22
WT: 11.40 LB
6987184/SSFO2321
: 19x11x13 IN
CREDIT CARD

Courier

B-10

F

Sample Receipt Checklist:

Container Type:

- [x] Cooler
- [ ] Cardboard box
- [ ] Styrofoam cooler
- [ ] Other (Specify):

- [ ] Custody Seal Present?
- Custody Seal Intact? Y / N
- [x] Chain of Custody Present?

Coolant and Temperature

Coolant Type ____ IR#: 1

- [ ] None
- [ ] Blue Ice: ____ °C
- [x] Ice: 2.1 °C
- [ ] Dry Ice: ____ °C

Corrected Temp: 2.1 °C

- [ ] Temp Blank: ____ °C

Record temp blank as a corrected temp

Coolant Note:

Bottle Type:

- [ ] Client Provided
- [x] Class : Trace Metals
  Size / Type: 125 mL HDPE
  Lot: 21-0031
  Preservation: None
  Preservative Lot: n/a
- [x] Class : THg
  Size / Type: 125 mL FLPE
  Lot: 22-0026
  Preservation: None
  Preservative Lot: n/a
- [ ] Class :
  Size / Type:
  Lot:
  Preservation:
  Preservative Lot:

All information accurate

Initial/date: MW 9/12/22

From: Rusty Jones
To: Jeremy Maute
Cc: peter@leon-environmental.com; Lindy Wellenbrock; Ethan Upp; Grant Hainsworth
Subject: Re: Samples Received at Brooks Applied Labs (BAL)
Date: Wednesday, September 14, 2022 1:50:47 PM

The chain of custody is correct.
The 9/7 sample labels needed changed from MW-8 to MW-7.
MW-7 sample date and time is 9/7/22 at 1348
MW-8 sample date and time is 9/8/22 at 1351.

I made this correction on sample container labels going to a separate laboratory, but failed to get the change made on these container labels to your laboratory.

Thanks,
Rusty Jones

On Sep 14, 2022, at 12:29, Jeremy Maute <Jeremy@brooksapplied.com> wrote:

On Monday, 9/12/2022, seven water samples were received and logged into work order 2209121. The samples were received in acceptable condition. A copy of the COC form is attached.

The samples were logged in for total Recoverable and Dissolved (*As, Cd, Cr, Cu, Pb, & Zn by ICP-QQQ-MS, EPA 1638, Mod. with Closed-Vessel Hotblock Digestion*). The samples were also logged in for total Hg and dissolved Hg analyses (1631E). The attached quote describes these analyses.

See attached COC form,as there were some labeling issues. The **Sample ID** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values listed on container labels for samples in 2209121-06 and 2209121-07. The discrepancies are described in the table below.

Sample ID Agreement Issues

Laboratory ID	Sample ID *(From COC)*	Sample ID (*From Container Label*)	Date/Time Collected (From Container Label)
2209121-06	MW-7	MW-8	09/07/2022 13:48
2209121-07	MW-7	MW-8	09/07/2022 13:48
2209121-12	MW-8	MW-8	09/08/2022 13:51
2209121-13	MW-8	MW-8	09/08/2022 13:51

All four fractions (2209121-06, 2209121-07, 2209121-12, and 2209121-13) were received in containers with labels listing a **Sample ID** value of *MW-8*. At the same time, there were no containers were received with a **Sample ID** value of *MW-7*. The fractions in 2209121-12 and 2209121-13 were assigned the **Sample ID** value of *MW-8*

since the containers included **Date/Time Collected** values that matched *MW-8* on the COC form. The fractions in 2209121-06 and 2209121-07 were assigned the **Sample ID** value of *MW-7* since the containers included **Date/Time Collected** values that matched *MW-7* on the COC form. Let us know if this login approach is acceptable.

Thanks, and let me know if you have any questions.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA**

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: *13751 Lake City Way NE, Suite 108, Seattle, WA 98125*.

This electronic message transmission (including any attachments) is intended only for use by the addressee(s) named herein; it contains legally privileged and confidential information. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, printing, or copying is strictly prohibited. If you have received this e-mail in error, please notify the sender and permanently delete any copies thereof.

<2209121_COC.pdf>
<BAL Quotation CRC-SE2201-C1.pdf>

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 4, 2023

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on December 8, 2022 from the Port of Friday Harbor Jensen's Marina RI Leon/PoFH, F&BI 212138 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hasinworth, Peter Leon
CTC0104R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 8, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina RI Leon/PoFH, F&BI 212138 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
212138 -01	DUP01-1222
212138 -02	MW9-1222
212138 -03	MW7-1222
212138 -04	DUP02-1222
212138 -05	MW8-1222

Samples DUP01-1222, MW9-1222, MW7-1222, and MW8-1222 were sent to Frontier Analytical for dioxin and furan analysis. In addition, samples DUP02-1222 and MW8-1222 were sent to ARI for tributyltin analysis. The reports are enclosed.

SAMPLE CHAIN OF CUSTODY 12/08/22 G4

Page # 1 of 1

212138

Report To R. Jones | G. Hainsworth, P. Leon

Company CRETE Consulting | Leon Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor Jensen's Marina R.I

PO #: LEON / PoFH

REMARKS: Hold additional volumes in case centrifuge needed. Project specific RLs? - Yes / No

INVOICE TO: LEON Environmental

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins/Furans	TBT			Notes
DUP01-1222	01A-B	12/6/2022	0001	WATER	2								X				
MW9-1222	02	↓	0153		2								X				
MW7-1222	03	12/7/2022	0157		2								X				
DUP02-1222	04	12/8/2022	0001		2									X			
MW8-1222	05A-D	↓	0342	↓	4								X	X			

Received by: mlaw	Nhan Phan	FedEx	12/8/22	1403
Relinquished by:				
Received by:		Samples received at 0 °C		

Test Report

December 30, 2022

Frontier Analytical Laboratory Project: 14822

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14822**. This corresponds to your project number **212138** and purchase order number **D-57**. Four aqueous samples were received on 12/13/2022 in good condition. These samples were extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs).

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14822**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Laboratory Director

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle * El Dorado Hills, CA 95762
Tel (916) 934-0900 * Fax (916) 934-0999
www.frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14822**

Received on: **12/13/2022** Project Due: **01/06/2023** Storage: **R-3**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14822-001-SA	0	212138	DUP01-1222	EPA 8290 D/F	Aqueous	12/06/2022	12:01 am	01/05/2023
14822-002-SA	0	212138	MW9-1222	EPA 8290 D/F	Aqueous	12/06/2022	01:53 am	01/05/2023
14822-003-SA	0	212138	MW7-1222	EPA 8290 D/F	Aqueous	12/07/2022	01:57 am	01/06/2023
14822-004-SA	0	212138	MW8-1222	EPA 8290 D/F	Aqueous	12/08/2022	03:42 am	01/07/2023

FAL Sample ID	Notes
14822-004-SA	Sampling time from COC per Michael to Kathy.

EPA Method 8290
PCDD/F

FAL ID: 14822-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-29-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.642		-	0.426				
1,2,3,7,8-PeCDD	ND	0.872		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.53		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.52		-	0.605	Total TCDD	ND	0.642	
1,2,3,7,8,9-HxCDD	ND	1.43		-	0.577	Total PeCDD	ND	0.872	
1,2,3,4,6,7,8-HpCDD	ND	1.63		-	0.643	Total HxCDD	ND	1.53	
OCDD	ND	4.38		-	1.92	Total HpCDD	ND	1.63	
2,3,7,8-TCDF	ND	0.448		-	0.281				
1,2,3,7,8-PeCDF	ND	0.540		-	0.391				
2,3,4,7,8-PeCDF	ND	0.544		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.979		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.03		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.03		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.17		-	0.753	Total TCDF	ND	0.448	
1,2,3,4,6,7,8-HpCDF	ND	0.880		-	0.470	Total PeCDF	ND	0.544	
1,2,3,4,7,8,9-HpCDF	ND	1.13		-	0.758	Total HxCDF	ND	1.17	
OCDF	ND	1.85		-	0.988	Total HpCDF	ND	1.13	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	81.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	81.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	84.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	87.4	40.0 - 135	
13C-OCDD	91.6	40.0 - 135	
13C-2,3,7,8-TCDF	88.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	90.6	40.0 - 135	
13C-2,3,4,7,8-PeCDF	91.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	85.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	85.2	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	84.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	91.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	91.8	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	94.5	40.0 - 135	
13C-OCDF	93.7	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	105	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: ng/ml

Acquired: 12-29-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	8.77	7.00 - 13.0	
1,2,3,7,8-PeCDD	43.4	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	46.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	48.0	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	48.5	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	47.2	35.0 - 65.0	
OCDD	92.0	70.0 - 130	
2,3,7,8-TCDF	9.13	7.00 - 13.0	
1,2,3,7,8-PeCDF	48.3	35.0 - 65.0	
2,3,4,7,8-PeCDF	48.2	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	47.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	47.8	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	47.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	48.9	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	48.7	35.0 - 65.0	
OCDF	96.0	70.0 - 130	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	87.9	40.0 - 135	
13C-1,2,3,7,8-PeCDD	83.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	84.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	83.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	88.1	40.0 - 135	
13C-OCDD	88.9	40.0 - 135	
13C-2,3,7,8-TCDF	90.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	89.9	40.0 - 135	
13C-2,3,4,7,8-PeCDF	92.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	81.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	81.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	87.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	86.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	91.5	40.0 - 135	
13C-OCDF	89.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	100	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-001-SA
Client ID: DUP01-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.940 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0588

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.996		-	0.426				
1,2,3,7,8-PeCDD	ND	1.29		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.58		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.68		-	0.605	Total TCDD	ND	0.996	
1,2,3,7,8,9-HxCDD	ND	1.53		-	0.577	Total PeCDD	ND	1.29	
1,2,3,4,6,7,8-HpCDD	3.68	-	J	0.0368	0.643	Total HxCDD	ND	1.68	
OCDD	31.1	-	J	0.00933	1.92	Total HpCDD	8.62	-	J
2,3,7,8-TCDF	ND	0.555		-	0.281				
1,2,3,7,8-PeCDF	ND	0.619		-	0.391				
2,3,4,7,8-PeCDF	ND	0.665		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.784		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.869		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.917		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.05		-	0.753	Total TCDF	1.31	-	J
1,2,3,4,6,7,8-HpCDF	1.16	-	J	0.0116	0.470	Total PeCDF	ND	0.665	
1,2,3,4,7,8,9-HpCDF	ND	0.428		-	0.758	Total HxCDF	ND	1.05	
OCDF	3.54	-	J	0.00106	0.988	Total HpCDF	3.23	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	94.5	40.0 - 135	
13C-1,2,3,7,8-PeCDD	85.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	92.4	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	94.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	97.1	40.0 - 135	
13C-OCDD	98.7	40.0 - 135	
13C-2,3,7,8-TCDF	93.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	93.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	95.0	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	109	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	105	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	107	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	107	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	103	40.0 - 135	
13C-OCDF	102	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	103	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
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NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-002-SA
Client ID: MW9-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.928 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0488

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.712		-	0.426				
1,2,3,7,8-PeCDD	ND	1.07		-	0.584				
1,2,3,4,7,8-HxCDD	ND	2.03		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.93		-	0.605	Total TCDD	ND	0.712	
1,2,3,7,8,9-HxCDD	ND	1.86		-	0.577	Total PeCDD	ND	1.07	
1,2,3,4,6,7,8-HpCDD	3.07	-	J	0.0307	0.643	Total HxCDD	ND	2.03	
OCDD	23.1	-	J	0.00693	1.92	Total HpCDD	6.91	-	J
2,3,7,8-TCDF	ND	0.514		-	0.281				
1,2,3,7,8-PeCDF	ND	0.770		-	0.391				
2,3,4,7,8-PeCDF	ND	0.748		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.994		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.08		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.15		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.46		-	0.753	Total TCDF	ND	0.514	
1,2,3,4,6,7,8-HpCDF	1.01	-	J	0.0101	0.470	Total PeCDF	ND	0.770	
1,2,3,4,7,8,9-HpCDF	ND	0.636		-	0.758	Total HxCDF	ND	1.46	
OCDF	3.49	0.958	J	0.00105	0.988	Total HpCDF	2.53	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	79.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	98.0	40.0 - 135	
13C-OCDD	101	40.0 - 135	
13C-2,3,7,8-TCDF	88.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	87.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	110	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	102	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	98.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	104	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	106	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	106	40.0 - 135	
13C-OCDF	105	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	99.1	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-003-SA
Client ID: MW7-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0802

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.673		-	0.426				
1,2,3,7,8-PeCDD	ND	1.03		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.64		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.57		-	0.605	Total TCDD	ND	0.673	
1,2,3,7,8,9-HxCDD	ND	1.50		-	0.577	Total PeCDD	ND	1.03	
1,2,3,4,6,7,8-HpCDD	4.91	-	J	0.0491	0.643	Total HxCDD	ND	1.64	
OCDD	41.5	-	J	0.0125	1.92	Total HpCDD	11.7	-	J
2,3,7,8-TCDF	ND	0.521		-	0.281				
1,2,3,7,8-PeCDF	ND	0.747		-	0.391				
2,3,4,7,8-PeCDF	ND	0.746		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.835		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.968		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.03		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.30		-	0.753	Total TCDF	1.43	-	D,J,M
1,2,3,4,6,7,8-HpCDF	1.75	-	J	0.0175	0.470	Total PeCDF	ND	1.50	
1,2,3,4,7,8,9-HpCDF	ND	1.71		-	0.758	Total HxCDF	2.79	-	J
OCDF	3.68	-	J	0.00110	0.988	Total HpCDF	3.73	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	86.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	79.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	97.3	40.0 - 135	
13C-OCDD	96.5	40.0 - 135	
13C-2,3,7,8-TCDF	82.9	40.0 - 135	
13C-1,2,3,7,8-PeCDF	82.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	82.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	106	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	100	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	96.3	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	102	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	107	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	105	40.0 - 135	
13C-OCDF	102	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	100	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-004-SA
Client ID: MW8-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.928 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.00233

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.651		-	0.426				
1,2,3,7,8-PeCDD	ND	1.10		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.64		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.70		-	0.605	Total TCDD	ND	0.651	
1,2,3,7,8,9-HxCDD	ND	1.57		-	0.577	Total PeCDD	ND	1.10	
1,2,3,4,6,7,8-HpCDD	ND	1.89		-	0.643	Total HxCDD	ND	1.70	
OCDD	7.78	-	J	0.00233	1.92	Total HpCDD	ND	1.89	
2,3,7,8-TCDF	ND	0.528		-	0.281				
1,2,3,7,8-PeCDF	ND	0.534		-	0.391				
2,3,4,7,8-PeCDF	ND	0.542		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.965		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.12		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.14		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.37		-	0.753	Total TCDF	ND	0.528	
1,2,3,4,6,7,8-HpCDF	ND	0.535		-	0.470	Total PeCDF	ND	0.542	
1,2,3,4,7,8,9-HpCDF	ND	0.698		-	0.758	Total HxCDF	ND	1.37	
OCDF	ND	1.65		-	0.988	Total HpCDF	ND	0.698	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	91.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	81.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	88.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	92.3	40.0 - 135	
13C-OCDD	96.0	40.0 - 135	
13C-2,3,7,8-TCDF	90.7	40.0 - 135	
13C-1,2,3,7,8-PeCDF	88.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	105	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	98.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	95.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	101	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	103	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	102	40.0 - 135	
13C-OCDF	99.1	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	103	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Frontier

PROJECT NAME/NO.	PO #
212138	D-57

REMARKS 14822

Please Email Results 0°C

Page # 1 of 1

TURNAROUND TIME

X Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Dioxins/Furans						Notes
DUP01-1222		12/6/22	0001	H_2O	1				●						
MW9-1222		12/6/22	0153		1				●						
MW7-1222		12/7/22	0157		1				●						
MW8-1222		12/8/22	0342		1				●						.352
EPA method 8290 per michael to kathy.															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	12/12/22	0800 AM
Received by:		Kathy Zipp	Frontier	12/13/22	940
Relinquished by:					
Received by:					

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14822**

Client:	Friedman & Bruya, Inc.
Client Project ID:	212138
Date Received:	12/13/2022
Time Received:	09:40 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	4
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Fed-Ex
Tracking Number:	816717802228
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


SUBCONTRACT SAMPLE CHAIN OF CUSTODY
Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282
SUBCONTRACTER Frontier
PROJECT NAME/NO. 212138
PO # D-57
REMARKS 14822
Please Email Results
TURNAROUND TIME
Standard TAT
RUSH
Rush charges authorized by:
SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions
Sample ID
Lab ID
Matrix
# of jars
Dioxins/Furans
EPH
VPH
Notes
Frontier Analytical Laboratory
14822-001-SA
Client ID: DUP01-1222
Storage: R-3
(01 of 01)
F&B
Client: 12138-018
Sample ID: DUP-1222
Date/Time:
Project:
Frontier Analytical Laboratory
14822-002-SA
Client ID: MW9-1222
Storage: R-3
(01 of 01)
Client: 12138-02A
Sample ID: MW9-1222
Date/Time: 12.6.22 0935 0153
Project:
Frontier Analytical Laboratory
14822-003-SA
Client ID: MW7-1222
Storage: R-3
(01 of 01)
Client: 12138
Sample ID: MW7-1222
Date/Time: 12.7.22 0157
Project: 03A
Frontier Analytical Laboratory
14822-004-SA
Client ID: MW8-1222
Storage: R-3
(01 of 01)
Client: 12138-05A
Sample ID: MW8-1222
Date/Time: 12.7.22 0352
Project:
2022/12/13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 4, 2023

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on December 8, 2022 from the Port of Friday Harbor Jensen's Marina RI Leon/PoFH, F&BI 212138 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hasinworth, Peter Leon
CTC0104R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 8, 2022 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina RI Leon/PoFH, F&BI 212138 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
212138 -01	DUP01-1222
212138 -02	MW9-1222
212138 -03	MW7-1222
212138 -04	DUP02-1222
212138 -05	MW8-1222

Samples DUP01-1222, MW9-1222, MW7-1222, and MW8-1222 were sent to Frontier Analytical for dioxin and furan analysis. In addition, samples DUP02-1222 and MW8-1222 were sent to ARI for tributyltin analysis. The reports are enclosed.

SAMPLE CHAIN OF CUSTODY 12/08/22 G4

Page # 1 of 1

212138

Report To R. Jones | G. Hainsworth, P. Leon

Company CRETE Consulting | Leon Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor Jensen's Marina R.I

PO #: LEON / PoFH

REMARKS: Hold additional volumes in case centrifuge needed. Project specific RLs? - Yes / No

INVOICE TO: LEON Environmental

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins/Furans	TBT			Notes
DUP01-1222	01A-B	12/6/2022	0001	WATER	2								X				
MW9-1222	02	↓	0153		2								X				
MW7-1222	03	12/7/2022	0157		2								X				
DUP02-1222	04	12/8/2022	0001		2									X			
MW8-1222	05A-D	↓	0342	↓	4								X	X			

Received by: mlaw	Nhan Phan	FedEx	12/8/22	1403
Relinquished by:				
Received by:		Samples received at 0 °C		

Test Report

December 30, 2022

Frontier Analytical Laboratory Project: 14822

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14822**. This corresponds to your project number **212138** and purchase order number **D-57**. Four aqueous samples were received on 12/13/2022 in good condition. These samples were extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs).

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14822**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Laboratory Director

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle * El Dorado Hills, CA 95762
Tel (916) 934-0900 * Fax (916) 934-0999
www.frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14822**

Received on: **12/13/2022** Project Due: **01/06/2023** Storage: **R-3**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14822-001-SA	0	212138	DUP01-1222	EPA 8290 D/F	Aqueous	12/06/2022	12:01 am	01/05/2023
14822-002-SA	0	212138	MW9-1222	EPA 8290 D/F	Aqueous	12/06/2022	01:53 am	01/05/2023
14822-003-SA	0	212138	MW7-1222	EPA 8290 D/F	Aqueous	12/07/2022	01:57 am	01/06/2023
14822-004-SA	0	212138	MW8-1222	EPA 8290 D/F	Aqueous	12/08/2022	03:42 am	01/07/2023

FAL Sample ID	Notes
14822-004-SA	Sampling time from COC per Michael to Kathy.

EPA Method 8290
PCDD/F

FAL ID: 14822-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-29-2022
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.642		-	0.426				
1,2,3,7,8-PeCDD	ND	0.872		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.53		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.52		-	0.605	Total TCDD	ND	0.642	
1,2,3,7,8,9-HxCDD	ND	1.43		-	0.577	Total PeCDD	ND	0.872	
1,2,3,4,6,7,8-HpCDD	ND	1.63		-	0.643	Total HxCDD	ND	1.53	
OCDD	ND	4.38		-	1.92	Total HpCDD	ND	1.63	
2,3,7,8-TCDF	ND	0.448		-	0.281				
1,2,3,7,8-PeCDF	ND	0.540		-	0.391				
2,3,4,7,8-PeCDF	ND	0.544		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.979		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.03		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.03		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.17		-	0.753	Total TCDF	ND	0.448	
1,2,3,4,6,7,8-HpCDF	ND	0.880		-	0.470	Total PeCDF	ND	0.544	
1,2,3,4,7,8,9-HpCDF	ND	1.13		-	0.758	Total HxCDF	ND	1.17	
OCDF	ND	1.85		-	0.988	Total HpCDF	ND	1.13	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	81.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	81.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	84.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	87.4	40.0 - 135	
13C-OCDD	91.6	40.0 - 135	
13C-2,3,7,8-TCDF	88.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	90.6	40.0 - 135	
13C-2,3,4,7,8-PeCDF	91.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	85.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	85.2	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	84.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	91.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	91.8	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	94.5	40.0 - 135	
13C-OCDF	93.7	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	105	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: ng/ml

Acquired: 12-29-2022
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	8.77	7.00 - 13.0	
1,2,3,7,8-PeCDD	43.4	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	46.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	48.0	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	48.5	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	47.2	35.0 - 65.0	
OCDD	92.0	70.0 - 130	
2,3,7,8-TCDF	9.13	7.00 - 13.0	
1,2,3,7,8-PeCDF	48.3	35.0 - 65.0	
2,3,4,7,8-PeCDF	48.2	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	47.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	47.8	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	47.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	48.4	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	48.9	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	48.7	35.0 - 65.0	
OCDF	96.0	70.0 - 130	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	87.9	40.0 - 135	
13C-1,2,3,7,8-PeCDD	83.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	84.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	83.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	88.1	40.0 - 135	
13C-OCDD	88.9	40.0 - 135	
13C-2,3,7,8-TCDF	90.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	89.9	40.0 - 135	
13C-2,3,4,7,8-PeCDF	92.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	81.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	81.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	87.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	86.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	91.5	40.0 - 135	
13C-OCDF	89.6	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	100	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-001-SA
Client ID: DUP01-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.940 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0588

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.996		-	0.426				
1,2,3,7,8-PeCDD	ND	1.29		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.58		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.68		-	0.605	Total TCDD	ND	0.996	
1,2,3,7,8,9-HxCDD	ND	1.53		-	0.577	Total PeCDD	ND	1.29	
1,2,3,4,6,7,8-HpCDD	3.68	-	J	0.0368	0.643	Total HxCDD	ND	1.68	
OCDD	31.1	-	J	0.00933	1.92	Total HpCDD	8.62	-	J
2,3,7,8-TCDF	ND	0.555		-	0.281				
1,2,3,7,8-PeCDF	ND	0.619		-	0.391				
2,3,4,7,8-PeCDF	ND	0.665		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.784		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.869		-	0.442				
2,3,4,6,7,8-HxCDF	ND	0.917		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.05		-	0.753	Total TCDF	1.31	-	J
1,2,3,4,6,7,8-HpCDF	1.16	-	J	0.0116	0.470	Total PeCDF	ND	0.665	
1,2,3,4,7,8,9-HpCDF	ND	0.428		-	0.758	Total HxCDF	ND	1.05	
OCDF	3.54	-	J	0.00106	0.988	Total HpCDF	3.23	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	94.5	40.0 - 135	
13C-1,2,3,7,8-PeCDD	85.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	92.4	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	94.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	97.1	40.0 - 135	
13C-OCDD	98.7	40.0 - 135	
13C-2,3,7,8-TCDF	93.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	93.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	95.0	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	109	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	105	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	107	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	107	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	103	40.0 - 135	
13C-OCDF	102	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	103	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-002-SA
Client ID: MW9-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.928 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0488

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.712		-	0.426				
1,2,3,7,8-PeCDD	ND	1.07		-	0.584				
1,2,3,4,7,8-HxCDD	ND	2.03		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.93		-	0.605	Total TCDD	ND	0.712	
1,2,3,7,8,9-HxCDD	ND	1.86		-	0.577	Total PeCDD	ND	1.07	
1,2,3,4,6,7,8-HpCDD	3.07	-	J	0.0307	0.643	Total HxCDD	ND	2.03	
OCDD	23.1	-	J	0.00693	1.92	Total HpCDD	6.91	-	J
2,3,7,8-TCDF	ND	0.514		-	0.281				
1,2,3,7,8-PeCDF	ND	0.770		-	0.391				
2,3,4,7,8-PeCDF	ND	0.748		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.994		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.08		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.15		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.46		-	0.753	Total TCDF	ND	0.514	
1,2,3,4,6,7,8-HpCDF	1.01	-	J	0.0101	0.470	Total PeCDF	ND	0.770	
1,2,3,4,7,8,9-HpCDF	ND	0.636		-	0.758	Total HxCDF	ND	1.46	
OCDF	3.49	0.958	J	0.00105	0.988	Total HpCDF	2.53	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	79.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	98.0	40.0 - 135	
13C-OCDD	101	40.0 - 135	
13C-2,3,7,8-TCDF	88.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	87.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	110	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	102	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	98.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	104	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	106	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	106	40.0 - 135	
13C-OCDF	105	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	99.1	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-003-SA
Client ID: MW7-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 1.00 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.0802

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.673		-	0.426				
1,2,3,7,8-PeCDD	ND	1.03		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.64		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.57		-	0.605	Total TCDD	ND	0.673	
1,2,3,7,8,9-HxCDD	ND	1.50		-	0.577	Total PeCDD	ND	1.03	
1,2,3,4,6,7,8-HpCDD	4.91	-	J	0.0491	0.643	Total HxCDD	ND	1.64	
OCDD	41.5	-	J	0.0125	1.92	Total HpCDD	11.7	-	J
2,3,7,8-TCDF	ND	0.521		-	0.281				
1,2,3,7,8-PeCDF	ND	0.747		-	0.391				
2,3,4,7,8-PeCDF	ND	0.746		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.835		-	0.449				
1,2,3,6,7,8-HxCDF	ND	0.968		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.03		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.30		-	0.753	Total TCDF	1.43	-	D,J,M
1,2,3,4,6,7,8-HpCDF	1.75	-	J	0.0175	0.470	Total PeCDF	ND	1.50	
1,2,3,4,7,8,9-HpCDF	ND	1.71		-	0.758	Total HxCDF	2.79	-	J
OCDF	3.68	-	J	0.00110	0.988	Total HpCDF	3.73	-	J

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	86.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	79.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	86.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	97.3	40.0 - 135	
13C-OCDD	96.5	40.0 - 135	
13C-2,3,7,8-TCDF	82.9	40.0 - 135	
13C-1,2,3,7,8-PeCDF	82.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	82.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	106	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	100	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	96.3	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	102	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	107	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	105	40.0 - 135	
13C-OCDF	102	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	100	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____
Date: 12/30/2022

Reviewed By: _____
Date: 12/30/2022

EPA Method 8290
PCDD/F

FAL ID: 14822-004-SA
Client ID: MW8-1222
Matrix: Aqueous
Batch No: X6316

Date Extracted: 12-21-2022
Date Received: 12-13-2022
Amount: 0.928 L

ICal: PCDDFAL4-4-22-22
GC Column: DB5MS
Units: pg/L

Acquired: 12-30-2022
2005 WHO TEQ: 0.00233

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.651		-	0.426				
1,2,3,7,8-PeCDD	ND	1.10		-	0.584				
1,2,3,4,7,8-HxCDD	ND	1.64		-	0.654				
1,2,3,6,7,8-HxCDD	ND	1.70		-	0.605	Total TCDD	ND	0.651	
1,2,3,7,8,9-HxCDD	ND	1.57		-	0.577	Total PeCDD	ND	1.10	
1,2,3,4,6,7,8-HpCDD	ND	1.89		-	0.643	Total HxCDD	ND	1.70	
OCDD	7.78	-	J	0.00233	1.92	Total HpCDD	ND	1.89	
2,3,7,8-TCDF	ND	0.528		-	0.281				
1,2,3,7,8-PeCDF	ND	0.534		-	0.391				
2,3,4,7,8-PeCDF	ND	0.542		-	0.422				
1,2,3,4,7,8-HxCDF	ND	0.965		-	0.449				
1,2,3,6,7,8-HxCDF	ND	1.12		-	0.442				
2,3,4,6,7,8-HxCDF	ND	1.14		-	0.486				
1,2,3,7,8,9-HxCDF	ND	1.37		-	0.753	Total TCDF	ND	0.528	
1,2,3,4,6,7,8-HpCDF	ND	0.535		-	0.470	Total PeCDF	ND	0.542	
1,2,3,4,7,8,9-HpCDF	ND	0.698		-	0.758	Total HxCDF	ND	1.37	
OCDF	ND	1.65		-	0.988	Total HpCDF	ND	0.698	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	91.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	81.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	88.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	92.3	40.0 - 135	
13C-OCDD	96.0	40.0 - 135	
13C-2,3,7,8-TCDF	90.7	40.0 - 135	
13C-1,2,3,7,8-PeCDF	88.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	105	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	98.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	95.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	101	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	103	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	102	40.0 - 135	
13C-OCDF	99.1	40.0 - 135	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	103	50.0 - 150	

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
DNQ	Analyte concentration is below calibration range
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J	Analyte concentration is below calibration range
M	Maximum possible concentration
ND	Analyte Not Detected at Detection Limit Level
NP	Not Provided
P	Pre-filtered through a Whatman 0.7um GF/F filter
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection

Analyst: _____

Date: 12/30/2022

Reviewed By: _____

Date: 12/30/2022

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Frontier

PROJECT NAME/NO.	PO #
212138	D-57

REMARKS 14822

Please Email Results 0°C

Page # 1 of 1

TURNAROUND TIME

X Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Dioxins/Furans						Notes
DUP01-1222		12/6/22	0001	H_2O	1				●						
MW9-1222		12/6/22	0153		1				●						
MW7-1222		12/7/22	0157		1				●						
MW8-1222		12/8/22	0342		1				●						.352
EPA method 8290 per michael to kathy.															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	12/12/22	0800 AM
Received by:		Kathy Zipp	Frontier	12/13/22	940
Relinquished by:					
Received by:					

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14822**

Client:	Friedman & Bruya, Inc.
Client Project ID:	212138
Date Received:	12/13/2022
Time Received:	09:40 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	4
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Fed-Ex
Tracking Number:	816717802228
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	


SUBCONTRACT SAMPLE CHAIN OF CUSTODY
Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282
SUBCONTRACTER Frontier
PROJECT NAME/NO. 212138
PO # D-57
REMARKS 14822
Please Email Results
TURNAROUND TIME
Standard TAT
RUSH
Rush charges authorized by:
SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions
Sample ID
Lab ID
Matrix
# of jars
Dioxins/Furans
EPH
VPH
Notes
Frontier Analytical Laboratory
14822-001-SA
Client ID: DUP01-1222
Storage: R-3
(01 of 01)
F&B
Client: 12138-018
Sample ID: DUP-1222
Date/Time:
Project:
Frontier Analytical Laboratory
14822-002-SA
Client ID: MW9-1222
Storage: R-3
(01 of 01)
Client: 12138-02A
Sample ID: MW9-1222
Date/Time: 12.6.22 0935 0153
Project:
Frontier Analytical Laboratory
14822-003-SA
Client ID: MW7-1222
Storage: R-3
(01 of 01)
Client: 12138
Sample ID: MW7-1222
Date/Time: 12.7.22 0157
Project: 03A
Frontier Analytical Laboratory
14822-004-SA
Client ID: MW8-1222
Storage: R-3
(01 of 01)
Client: 12138-05A
Sample ID: MW8-1222
Date/Time: 12.7.22 0352
Project:
2022/12/13

Analytical Resources, LLC
Analytical Chemists and Consultants

28 December 2022

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 209098 (212138)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22L0236	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC



Susan Dunnihoo, Director, Client Services

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22L&236

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER ARI

PROJECT NAME/NO.	PO #
212138	D-54

REMARKS

Please Email Results

TURNAROUND TIME

(X) Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TBT							Notes
DUP02-1222		12/8/22	0001	water	1				X							
MW8-1222		↓	0342	↓	1				X							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
~~Relinquished by:~~		Michael Erdahl	Friedman & Bruya	12/9/22	0630 AM
Received by:		Jacob Hafter	ARI LLC	12/9/22	1417
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DUP02-1222	22L0236-01	Water	08-Dec-2022 00:01	09-Dec-2022 14:17
MW8-1222	22L0236-02	Water	08-Dec-2022 03:42	09-Dec-2022 14:17

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 209098
Work Order: 22L0236

Sample receipt

Samples as listed on the preceding page were received 09-Dec-2022 14:17 under ARI work order 22L0236. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements, with an acceptable excursion for tripentyl tin high in the initial calibration verification (second source). Associated positive results have been "Q"-flagged.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya — Project Name: 212138

COC No(s): NA — Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 22L0236 — Tracking No: 6117 5664 8892 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1417 — 3.2

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: IR 97018

Cooler Accepted by: JS — Date: 12/09/22 — Time: 1417

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS — Date: 12/09/22 — Time: 1612 — Labels checked by: JS

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

DUP02-1222

22L0236-01 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 12/08/2022 00:01

Instrument: NT14 Analyst: VTS — Analyzed: 12/28/2022 10:12

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 22L0236-01 A 01
	Preparation Batch: BKL0294	Sample Size: 150 mL	
	Prepared: 12/14/2022	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 22L0236-01 A 01
	Cleanup Batch: CKL0179	Initial Volume: 0.5 uL	
	Cleaned: 15-Dec-2022	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0175	ug/L	
Surrogate: Tripentyltin			*30-160 %*	*79.9*	*%*	Q
Surrogate: Tripropyltin			*30-160 %*	*58.9*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

MW8-1222

22L0236-02 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 12/08/2022 03:42

Instrument: NT14 Analyst: VTS — Analyzed: 12/28/2022 10:26

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 22L0236-02 A 01
	Preparation Batch: BKL0294	Sample Size: 150 mL	
	Prepared: 12/14/2022	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 22L0236-02 A 01
	Cleanup Batch: CKL0179	Initial Volume: 0.5 uL	
	Cleaned: 15-Dec-2022	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0193	ug/L	
Surrogate: Tripentyltin			*30-160 %*	*80.2*	*%*	Q
Surrogate: Tripropyltin			*30-160 %*	*59.4*	*%*	

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BKL0294 - EPA 8270E-SIM

Instrument: NT14 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKL0294-BLK1)				Prepared: 14-Dec-2022 Analyzed: 28-Dec-2022 09:45						
Tributyltin Ion	ND	0.0052	ug/L							U
Surrogate: Tripentyltin	0.0645		ug/L	*0.0753*		*85.6*	*30-160*			*Q*
Surrogate: Tripropyltin	0.0433		ug/L	*0.0729*		*59.4*	*30-160*			
LCS (BKL0294-BS1)				Prepared: 14-Dec-2022 Analyzed: 28-Dec-2022 09:58						
Tributyltin Ion	0.0951	0.0052	ug/L	0.149		64.1	30-160			
Surrogate: Tripentyltin	0.0632		ug/L	*0.0753*		*83.9*	*30-160*			*Q*
Surrogate: Tripropyltin	0.0431		ug/L	*0.0729*		*59.2*	*30-160*			

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Water	
Tributyltin Ion	NELAP,WADOE,DoD-ELAP
Dibutyltin Ion	NELAP,WADOE,DoD-ELAP
Butyltin Ion	NELAP,WADOE,DoD-ELAP
Tetrapentyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

Friedman & Bruya Inc.	Project: 209098	
3012 16th Avenue West	Project Number: 212138	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	28-Dec-2022 16:21

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

January 20, 2023

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's R.I.

Rusty Jones,

On December 8, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples in a sealed cooler at an acceptable temperature of 2.3°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

Date/Time Collected values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Date/Time Collected** values on the container labels for 2212150-01, 2212150-03, 2212150-29, 2212150-30, 2212150-31, and 2212150-32. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (*on COC form*)	Date/Time Collected (*on container label*)	Analytical Parameter
2212150-01	MW9-1222	12/06/2022 01:53	12/06/2022 13:53	Total Hg
2212150-03	MW9-1222	12/06/2022 01:53	12/06/2022 13:53	Total Recoverable Metals
2212150-29	MW8-1222	12/08/2022 03:42	12/08/2022 03:52	Total Hg
2212150-30	MW8-1222	12/08/2022 03:42	12/08/2022 03:52	Dissolved Hg
2212150-31	MW8-1222	12/08/2022 03:42	12/08/2022 03:52	Total Recoverable Metals
2212150-32	MW8-1222	12/08/2022 03:42	12/08/2022 03:52	Dissolved Metals

(2212150-01, 2212150-03, 2212150-29, 2212150-30, 2212150-31, and 2212150-32) were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

A field filtered fraction in an HDPE container was received with no field ID listed on the container label. There was one sample fraction (*MW2-1222, 12/06/2022 02:57*) missing from the group, as all other fractions had been accounted for with adequately labeled containers. Since the dissolved metals (*As, Cd, Cr, Cu, Ni, Pb, & Zn by ICP-QQQ-MS, EPA 1638, Mod. with Closed-Vessel Hotblock Digestion*) entry for (*MW2-1222, 12/06/2022 02:57*) was the only item missing, the field filtered fraction in an HDPE container received with no field ID was assigned to 2212150-08 (*MW2-1222, 12/06/2022 02:57*). It should be noted that this **Sample ID** designation was assigned to 2212150-08 by default; the container label did not contain any information on the **Sample ID** or **Date/Time Collected**.

Upon receiving the shipment at Brooks Applied Labs (BAL), laboratory staff observed some water in the inner bag housing the container for the following samples.

Double Bagged for Shipping. Samples with Water Observed in the Inner Bag

Laboratory ID	Sample ID	Date/Time Collected (*on COC form*)	Analytical Parameter
2212150-10	MW3-1222	12/06/2022 03:55	Dissolved Hg
2212150-13	MW5-1222	12/07/2022 01:14	Total Hg
2212150-18	MW7-1222	12/07/2022 01:57	Dissolved Hg

Since it is unknown if contamination occurred during shipping for these samples, the mercury results for 2212150-10, 2212150-13, and 2212150-18 are qualified as potentially estimated (**J-1**).

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B223035

Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Client samples (*B223035-BLK1, B223035-BLK2, B223035-BLK3, B223035-BLK4, B223035-BS1, B223035-SRM1, 2212150-03, and B223035 Batch QC set 1*) were bracketed by a continuous calibration blank (S221300-CCBC) with a chromium value (0.564 µg/L) greater than the associated reporting limit

(*chromium MRL = 0.564 µg/*L). All samples bracketed by S221300-CCBC yielded chromium results that were less than the MRL or were greater than ten times the value of CCB outlier; the potential impact of the chromium hit in S221300-CCBC is negligible for these samples. No qualification of data is required due to the CCB outlier.

The dissolved copper result (2212150-20) was greater than the corresponding total recoverable copper result (2212150-19) for the MW7-1222 sample. Re-analyses confirmed the results. Container labels were checked and there was no indication of samples mis-labeled. Consequently, no additional corrective actions are necessary. The reported results are deemed representative of the submitted containers.

In instances where the analyte concentration of a standard reference material (SRM) is not certified but instead has been listed only as an informational value by the certifying agency, the recovery limits have been set as not applicable (N/A). In such cases the measured concentrations have been provided for informational purposes, but the laboratory fortified blank and/or matrix spike recoveries may be more reflective of the performance of the applied methods.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B223044

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

The mercury results for 2212150-10, 2212150-13, and 2212150-18 are qualified as potentially estimated (**J-1**) for water present in the containment bags during shipping.

Aside from concentration qualifiers and items noted above, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Brooks Applied Labs
Jeremy@brooksapplied.com

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW9-1222	2212150-01	Water	Sample	12/06/2022	12/08/2022
MW9-1222	2212150-02	Water	Sample	12/06/2022	12/08/2022
MW9-1222	2212150-03	Water	Sample	12/06/2022	12/08/2022
MW9-1222	2212150-04	Water	Sample	12/06/2022	12/08/2022
MW2-1222	2212150-05	Water	Sample	12/06/2022	12/08/2022
MW2-1222	2212150-06	Water	Sample	12/06/2022	12/08/2022
MW2-1222	2212150-07	Water	Sample	12/06/2022	12/08/2022
MW2-1222	2212150-08	Water	Sample	12/06/2022	12/08/2022
MW3-1222	2212150-09	Water	Sample	12/06/2022	12/08/2022
MW3-1222	2212150-10	Water	Sample	12/06/2022	12/08/2022
MW3-1222	2212150-11	Water	Sample	12/06/2022	12/08/2022
MW3-1222	2212150-12	Water	Sample	12/06/2022	12/08/2022
MW5-1222	2212150-13	Water	Sample	12/07/2022	12/08/2022
MW5-1222	2212150-14	Water	Sample	12/07/2022	12/08/2022
MW5-1222	2212150-15	Water	Sample	12/07/2022	12/08/2022
MW5-1222	2212150-16	Water	Sample	12/07/2022	12/08/2022
MW7-1222	2212150-17	Water	Sample	12/07/2022	12/08/2022
MW7-1222	2212150-18	Water	Sample	12/07/2022	12/08/2022
MW7-1222	2212150-19	Water	Sample	12/07/2022	12/08/2022
MW7-1222	2212150-20	Water	Sample	12/07/2022	12/08/2022
MW6-1222	2212150-21	Water	Sample	12/07/2022	12/08/2022
MW6-1222	2212150-22	Water	Sample	12/07/2022	12/08/2022
MW6-1222	2212150-23	Water	Sample	12/07/2022	12/08/2022
MW6-1222	2212150-24	Water	Sample	12/07/2022	12/08/2022
DUP03-1222	2212150-25	Water	Sample	12/08/2022	12/08/2022
DUP03-1222	2212150-26	Water	Sample	12/08/2022	12/08/2022
DUP03-1222	2212150-27	Water	Sample	12/08/2022	12/08/2022
DUP03-1222	2212150-28	Water	Sample	12/08/2022	12/08/2022
MW8-1222	2212150-29	Water	Sample	12/08/2022	12/08/2022
MW8-1222	2212150-30	Water	Sample	12/08/2022	12/08/2022
MW8-1222	2212150-31	Water	Sample	12/08/2022	12/08/2022
MW8-1222	2212150-32	Water	Sample	12/08/2022	12/08/2022
MW4-1222	2212150-33	Water	Sample	12/08/2022	12/08/2022
MW4-1222	2212150-34	Water	Sample	12/08/2022	12/08/2022
MW4-1222	2212150-35	Water	Sample	12/08/2022	12/08/2022
MW4-1222	2212150-36	Water	Sample	12/08/2022	12/08/2022
MW1-1222	2212150-37	Water	Sample	12/08/2022	12/08/2022
MW1-1222	2212150-38	Water	Sample	12/08/2022	12/08/2022
MW1-1222	2212150-39	Water	Sample	12/08/2022	12/08/2022
MW1-1222	2212150-40	Water	Sample	12/08/2022	12/08/2022

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300
Cd	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300
Cr	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300
Cu	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300
Hg	Water	EPA 1631 E	ISO,TNI	12/13/22	12/14/22	B223044	S221306
Hg	Water	EPA 1631 E	ISO,TNI	12/13/22	12/16/22	B223044	S221318
Pb	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300
Zn	Water	House	ISO,TNI	12/12/22	12/13/22	B223035	S221300

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9-1222										
2212150-01	Hg	Water	TR	42.0		0.13	0.41	ng/L	B223044	S221306
MW9-1222										
2212150-02	Hg	Water	D	39.4		0.13	0.41	ng/L	B223044	S221306
MW9-1222										
2212150-03	As	Water	TR	1.77		0.162	0.727	µg/L	B223035	S221300
2212150-03	Cd	Water	TR	0.343		0.061	0.182	µg/L	B223035	S221300
2212150-03	Cr	Water	TR	2.37	J	1.72	6.06	µg/L	B223035	S221300
2212150-03	Cu	Water	TR	14.1		0.505	1.01	µg/L	B223035	S221300
2212150-03	Pb	Water	TR	2.97		0.061	0.121	µg/L	B223035	S221300
2212150-03	Zn	Water	TR	137		7.07	22.2	µg/L	B223035	S221300
MW9-1222										
2212150-04	As	Water	D	1.48		0.162	0.727	µg/L	B223035	S221300
2212150-04	Cd	Water	D	0.324		0.061	0.182	µg/L	B223035	S221300
2212150-04	Cr	Water	D	4.38	J	1.72	6.06	µg/L	B223035	S221300
2212150-04	Cu	Water	D	11.4		0.505	1.01	µg/L	B223035	S221300
2212150-04	Pb	Water	D	1.13		0.061	0.121	µg/L	B223035	S221300
2212150-04	Zn	Water	D	130		7.07	22.2	µg/L	B223035	S221300
MW2-1222										
2212150-05	Hg	Water	TR	3.99		0.13	0.41	ng/L	B223044	S221306
MW2-1222										
2212150-06	Hg	Water	D	1.91		0.13	0.41	ng/L	B223044	S221318
MW2-1222										
2212150-07	As	Water	TR	0.483	J	0.162	0.727	µg/L	B223035	S221300
2212150-07	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-07	Cr	Water	TR	5.72	J	1.72	6.06	µg/L	B223035	S221300
2212150-07	Cu	Water	TR	9.60		0.505	1.01	µg/L	B223035	S221300
2212150-07	Pb	Water	TR	0.304		0.061	0.121	µg/L	B223035	S221300
2212150-07	Zn	Water	TR	8.12	J	7.07	22.2	µg/L	B223035	S221300

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW2-1222										
2212150-08	As	Water	D	0.455	J	0.162	0.727	µg/L	B223035	S221300
2212150-08	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-08	Cr	Water	D	4.29	J	1.72	6.06	µg/L	B223035	S221300
2212150-08	Cu	Water	D	4.21		0.505	1.01	µg/L	B223035	S221300
2212150-08	Pb	Water	D	0.265		0.061	0.121	µg/L	B223035	S221300
2212150-08	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW3-1222										
2212150-09	Hg	Water	TR	14.5		0.13	0.41	ng/L	B223044	S221318
MW3-1222										
2212150-10	Hg	Water	D	7.87	J-1	0.13	0.41	ng/L	B223044	S221318
MW3-1222										
2212150-11	As	Water	TR	0.809		0.162	0.727	µg/L	B223035	S221300
2212150-11	Cd	Water	TR	1.55		0.061	0.182	µg/L	B223035	S221300
2212150-11	Cr	Water	TR	17.0		1.72	6.06	µg/L	B223035	S221300
2212150-11	Cu	Water	TR	9.37		0.505	1.01	µg/L	B223035	S221300
2212150-11	Pb	Water	TR	2.30		0.061	0.121	µg/L	B223035	S221300
2212150-11	Zn	Water	TR	336		7.07	22.2	µg/L	B223035	S221300
MW3-1222										
2212150-12	As	Water	D	0.653	J	0.162	0.727	µg/L	B223035	S221300
2212150-12	Cd	Water	D	1.52		0.061	0.182	µg/L	B223035	S221300
2212150-12	Cr	Water	D	3.88	J	1.72	6.06	µg/L	B223035	S221300
2212150-12	Cu	Water	D	7.47		0.505	1.01	µg/L	B223035	S221300
2212150-12	Pb	Water	D	0.444		0.061	0.121	µg/L	B223035	S221300
2212150-12	Zn	Water	D	322		7.07	22.2	µg/L	B223035	S221300
MW5-1222										
2212150-13	Hg	Water	TR	6.94	J-1	0.14	0.42	ng/L	B223044	S221318
MW5-1222										
2212150-14	Hg	Water	D	3.13		0.13	0.41	ng/L	B223044	S221318

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW5-1222										
2212150-15	As	Water	TR	1.07		0.162	0.727	µg/L	B223035	S221300
2212150-15	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-15	Cr	Water	TR	3.38	J	1.72	6.06	µg/L	B223035	S221300
2212150-15	Cu	Water	TR	19.8		0.505	1.01	µg/L	B223035	S221300
2212150-15	Pb	Water	TR	1.14		0.061	0.121	µg/L	B223035	S221300
2212150-15	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW5-1222										
2212150-16	As	Water	D	0.686	J	0.162	0.727	µg/L	B223035	S221300
2212150-16	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-16	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-16	Cu	Water	D	13.5		0.505	1.01	µg/L	B223035	S221300
2212150-16	Pb	Water	D	0.201		0.061	0.121	µg/L	B223035	S221300
2212150-16	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW7-1222										
2212150-17	Hg	Water	TR	18.0		0.13	0.41	ng/L	B223044	S221318
MW7-1222										
2212150-18	Hg	Water	D	11.7	J-1	0.13	0.41	ng/L	B223044	S221318
MW7-1222										
2212150-19	As	Water	TR	0.961		0.162	0.727	µg/L	B223035	S221300
2212150-19	Cd	Water	TR	0.921		0.061	0.182	µg/L	B223035	S221300
2212150-19	Cr	Water	TR	119		1.72	6.06	µg/L	B223035	S221300
2212150-19	Cu	Water	TR	13.5		0.505	1.01	µg/L	B223035	S221300
2212150-19	Pb	Water	TR	3.42		0.061	0.121	µg/L	B223035	S221300
2212150-19	Zn	Water	TR	478		7.07	22.2	µg/L	B223035	S221300
MW7-1222										
2212150-20	As	Water	D	0.735		0.162	0.727	µg/L	B223035	S221300
2212150-20	Cd	Water	D	0.959		0.061	0.182	µg/L	B223035	S221300
2212150-20	Cr	Water	D	7.31		1.72	6.06	µg/L	B223035	S221300
2212150-20	Cu	Water	D	19.2		0.505	1.01	µg/L	B223035	S221300
2212150-20	Pb	Water	D	0.856		0.061	0.121	µg/L	B223035	S221300
2212150-20	Zn	Water	D	449		7.07	22.2	µg/L	B223035	S221300
MW6-1222										
2212150-21	Hg	Water	TR	0.46		0.13	0.41	ng/L	B223044	S221318

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6-1222										
2212150-22	Hg	Water	D	0.31	J	0.13	0.41	ng/L	B223044	S221318
MW6-1222										
2212150-23	As	Water	TR	0.181	J	0.162	0.727	µg/L	B223035	S221300
2212150-23	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-23	Cr	Water	TR	3.93	J	1.72	6.06	µg/L	B223035	S221300
2212150-23	Cu	Water	TR	1.91		0.505	1.01	µg/L	B223035	S221300
2212150-23	Pb	Water	TR	0.237		0.061	0.121	µg/L	B223035	S221300
2212150-23	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW6-1222										
2212150-24	As	Water	D	0.190	J	0.162	0.727	µg/L	B223035	S221300
2212150-24	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-24	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-24	Cu	Water	D	2.13		0.505	1.01	µg/L	B223035	S221300
2212150-24	Pb	Water	D	0.172		0.061	0.121	µg/L	B223035	S221300
2212150-24	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
DUP03-1222										
2212150-25	Hg	Water	TR	3.13		0.13	0.41	ng/L	B223044	S221318
DUP03-1222										
2212150-26	Hg	Water	D	0.69		0.13	0.41	ng/L	B223044	S221318
DUP03-1222										
2212150-27	As	Water	TR	6.74		0.162	0.727	µg/L	B223035	S221300
2212150-27	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-27	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-27	Cu	Water	TR	5.06		0.505	1.01	µg/L	B223035	S221300
2212150-27	Pb	Water	TR	0.706		0.061	0.121	µg/L	B223035	S221300
2212150-27	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP03-1222										
2212150-28	As	Water	D	6.52		0.162	0.727	µg/L	B223035	S221300
2212150-28	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-28	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-28	Cu	Water	D	2.04		0.505	1.01	µg/L	B223035	S221300
2212150-28	Pb	Water	D	0.256		0.061	0.121	µg/L	B223035	S221300
2212150-28	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW8-1222										
2212150-29	Hg	Water	TR	9.91		0.13	0.41	ng/L	B223044	S221318
MW8-1222										
2212150-30	Hg	Water	D	8.75		0.13	0.41	ng/L	B223044	S221318
MW8-1222										
2212150-31	As	Water	TR	1.13		0.162	0.727	µg/L	B223035	S221300
2212150-31	Cd	Water	TR	1.16		0.061	0.182	µg/L	B223035	S221300
2212150-31	Cr	Water	TR	98.1		1.72	6.06	µg/L	B223035	S221300
2212150-31	Cu	Water	TR	18.9		0.505	1.01	µg/L	B223035	S221300
2212150-31	Pb	Water	TR	1.06		0.061	0.121	µg/L	B223035	S221300
2212150-31	Zn	Water	TR	197		7.07	22.2	µg/L	B223035	S221300
MW8-1222										
2212150-32	As	Water	D	0.973		0.162	0.727	µg/L	B223035	S221300
2212150-32	Cd	Water	D	1.15		0.061	0.182	µg/L	B223035	S221300
2212150-32	Cr	Water	D	17.7		1.72	6.06	µg/L	B223035	S221300
2212150-32	Cu	Water	D	18.5		0.505	1.01	µg/L	B223035	S221300
2212150-32	Pb	Water	D	0.745		0.061	0.121	µg/L	B223035	S221300
2212150-32	Zn	Water	D	208		7.07	22.2	µg/L	B223035	S221300
MW4-1222										
2212150-33	Hg	Water	TR	1.08		0.13	0.41	ng/L	B223044	S221318
MW4-1222										
2212150-34	Hg	Water	D	0.53		0.13	0.41	ng/L	B223044	S221318

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-1222										
2212150-35	As	Water	TR	0.840		0.162	0.727	µg/L	B223035	S221300
2212150-35	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-35	Cr	Water	TR	2.43	J	1.72	6.06	µg/L	B223035	S221300
2212150-35	Cu	Water	TR	4.92		0.505	1.01	µg/L	B223035	S221300
2212150-35	Pb	Water	TR	0.678		0.061	0.121	µg/L	B223035	S221300
2212150-35	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW4-1222										
2212150-36	As	Water	D	0.760		0.162	0.727	µg/L	B223035	S221300
2212150-36	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-36	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-36	Cu	Water	D	4.67		0.505	1.01	µg/L	B223035	S221300
2212150-36	Pb	Water	D	0.429		0.061	0.121	µg/L	B223035	S221300
2212150-36	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300
MW1-1222										
2212150-37	Hg	Water	TR	2.29		0.13	0.41	ng/L	B223044	S221318
MW1-1222										
2212150-38	Hg	Water	D	0.59		0.13	0.41	ng/L	B223044	S221318
MW1-1222										
2212150-39	As	Water	TR	6.99		0.162	0.727	µg/L	B223035	S221300
2212150-39	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-39	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-39	Cu	Water	TR	14.3		0.505	1.01	µg/L	B223035	S221300
2212150-39	Pb	Water	TR	1.83		0.061	0.121	µg/L	B223035	S221300
2212150-39	Zn	Water	TR	8.91	J	7.07	22.2	µg/L	B223035	S221300
MW1-1222										
2212150-40	As	Water	D	6.88		0.162	0.727	µg/L	B223035	S221300
2212150-40	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B223035	S221300
2212150-40	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B223035	S221300
2212150-40	Cu	Water	D	2.25		0.505	1.01	µg/L	B223035	S221300
2212150-40	Pb	Water	D	0.282		0.061	0.121	µg/L	B223035	S221300
2212150-40	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B223035	S221300

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Accuracy & Precision Summary

Batch: B223035
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223035-BS1	**Blank Spike, (2240063)**						
	As		277.8	264.0	µg/L	95% 75-125	
	Cd		27.78	30.03	µg/L	108% 75-125	
	Cr		277.8	283.3	µg/L	102% 75-125	
	Cu		277.8	272.7	µg/L	98% 75-125	
	Pb		27.78	30.79	µg/L	111% 75-125	
	Zn		277.8	280.6	µg/L	101% 75-125	
B223035-SRM1	**Reference Material (2128019, T221)**						
	As		17.70	16.90	µg/L	96% 75-125	
	Cd		0.03800	0.038	µg/L	99% 75-125	
	Cr		1.710	1.894	µg/L	111% 75-125	
	Cu		3.780	3.639	µg/L	96% 75-125	
	Pb		0.4900	0.502	µg/L	102% 75-125	
	Zn		25.20	25.50	µg/L	101% 75-125	
B223035-DUP1	**Duplicate, (2212150-03)**						
	As	1.769		1.670	µg/L		6% 20
	Cd	0.343		0.350	µg/L		2% 20
	Cr	2.375		3.472	µg/L		*38%* 20
	Cu	14.06		14.00	µg/L		0.4% 20
	Pb	2.973		2.823	µg/L		5% 20
	Zn	137.4		135.7	µg/L		1% 20
B223035-MS1	**Matrix Spike, (2212150-03)**						
	As	1.769	280.6	273.4	µg/L	97% 75-125	
	Cd	0.343	28.06	29.75	µg/L	105% 75-125	
	Cr	2.375	280.6	318.7	µg/L	113% 75-125	
	Cu	14.06	280.6	291.3	µg/L	99% 75-125	
	Pb	2.973	28.06	33.13	µg/L	107% 75-125	
	Zn	137.4	280.6	433.0	µg/L	105% 75-125	

Accuracy & Precision Summary

Batch: B223035
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223035-MSD1	**Matrix Spike Duplicate, (2212150-03)**						
	As	1.769	280.6	266.3	µg/L	94% 75-125	3% 20
	Cd	0.343	28.06	29.34	µg/L	103% 75-125	1% 20
	Cr	2.375	280.6	312.5	µg/L	111% 75-125	2% 20
	Cu	14.06	280.6	287.9	µg/L	98% 75-125	1% 20
	Pb	2.973	28.06	33.45	µg/L	109% 75-125	1% 20
	Zn	137.4	280.6	418.4	µg/L	100% 75-125	3% 20
B223035-DUP2	**Duplicate, (2212150-23)**						
	As	0.181		0.186	µg/L		3% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	3.931		2.881	µg/L		*31%* 20
	Cu	1.911		1.959	µg/L		2% 20
	Pb	0.237		0.230	µg/L		3% 20
	Zn	ND		ND	µg/L		N/C 20
B223035-MS2	**Matrix Spike, (2212150-23)**						
	As	0.181	280.6	254.9	µg/L	91% 75-125	
	Cd	ND	28.06	29.96	µg/L	107% 75-125	
	Cr	3.931	280.6	279.8	µg/L	98% 75-125	
	Cu	1.911	280.6	272.1	µg/L	96% 75-125	
	Pb	0.237	28.06	30.27	µg/L	107% 75-125	
	Zn	ND	280.6	283.2	µg/L	101% 75-125	
B223035-MSD2	**Matrix Spike Duplicate, (2212150-23)**						
	As	0.181	280.6	258.6	µg/L	92% 75-125	1% 20
	Cd	ND	28.06	29.85	µg/L	106% 75-125	0.4% 20
	Cr	3.931	280.6	273.9	µg/L	96% 75-125	2% 20
	Cu	1.911	280.6	264.3	µg/L	94% 75-125	3% 20
	Pb	0.237	28.06	30.92	µg/L	109% 75-125	2% 20
	Zn	ND	280.6	277.4	µg/L	99% 75-125	2% 20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Accuracy & Precision Summary

Batch: B223044
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223044-MS2	**Matrix Spike (2212150-06)**						
	Hg	1.91	40.82	42.35	ng/L	99% 71-125	
B223044-MSD2	**Matrix Spike Duplicate (2212150-06)**						
	Hg	1.91	40.82	40.99	ng/L	96% 71-125	3% 24
B223044-MS3	**Matrix Spike (2212150-38)**						
	Hg	0.59	20.41	15.65	ng/L	74% 71-125	
B223044-MSD3	**Matrix Spike Duplicate (2212150-38)**						
	Hg	0.59	20.41	17.91	ng/L	85% 71-125	13% 24
B223044-MS1	**Matrix Spike (2212205-01)**						
	Hg	5.70	20.41	23.69	ng/L	88% 71-125	
B223044-MSD1	**Matrix Spike Duplicate (2212205-01)**						
	Hg	5.70	20.41	24.15	ng/L	90% 71-125	2% 24

Method Blanks & Reporting Limits

Batch: B223035
Matrix: Water
Method: House
Analyte: As

Sample	Result	Units
B223035-BLK1	0.001	µg/L
B223035-BLK2	0.002	µg/L
B223035-BLK3	0.002	µg/L
B223035-BLK4	0.001	µg/L

Average: 0.002
Limit: 0.072
MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B223035-BLK1	-0.0005	µg/L
B223035-BLK2	-0.0008	µg/L
B223035-BLK3	-0.0001	µg/L
B223035-BLK4	0.0001	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B223035-BLK1	0.477	µg/L
B223035-BLK2	0.363	µg/L
B223035-BLK3	0.306	µg/L
B223035-BLK4	0.223	µg/L

Average: 0.342
Limit: 0.600
MDL: 0.170
MRL: 0.600

Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B223035-BLK1	-0.017	µg/L
B223035-BLK2	-0.020	µg/L
B223035-BLK3	-0.028	µg/L
B223035-BLK4	-0.041	µg/L

Average: -0.026
Limit: 0.100

MDL: 0.050
MRL: 0.100

Analyte: Pb

Sample	Result	Units
B223035-BLK1	0.00008	µg/L
B223035-BLK2	-0.0001	µg/L
B223035-BLK3	-0.000005	µg/L
B223035-BLK4	0.002	µg/L

Average: 0.000
Limit: 0.012

MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B223035-BLK1	-0.024	µg/L
B223035-BLK2	-0.021	µg/L
B223035-BLK3	-0.045	µg/L
B223035-BLK4	-0.013	µg/L

Average: -0.026
Limit: 2.200

MDL: 0.700
MRL: 2.20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Method Blanks & Reporting Limits

Batch: B223044
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B223044-BLK1	0.19	ng/L
B223044-BLK2	0.21	ng/L
B223044-BLK3	0.19	ng/L
B223044-BLK4	0.19	ng/L

Average: 0.20
Limit: 0.50

MDL: 0.13
MRL: 0.40

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-01 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW9-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-02 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW9-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-03 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW9-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-04 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW9-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-05 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW2-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-06 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW2-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-07 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW2-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-08 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW2-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-09 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW3-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-10 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW3-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-11 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW3-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-12 **Report Matrix:** Water **Collected:** 12/06/2022
Sample: MW3-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-13 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW5-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-14 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW5-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-15 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW5-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-16 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW5-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-17 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW7-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-18 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW7-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-19 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW7-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-20 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW7-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-21 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW6-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-22 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW6-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-23 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW6-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-24 **Report Matrix:** Water **Collected:** 12/07/2022
Sample: MW6-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-25 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: DUP03-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-26 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: DUP03-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-27 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: DUP03-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3(BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-28 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: DUP03-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3(BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-29 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW8-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-30 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW8-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-31 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW8-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-32 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW8-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-33 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW4-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-34 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW4-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-35 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW4-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-36 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW4-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens R.I.

Sample Containers

Lab ID: 2212150-37 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW1-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-38 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW1-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	na	na	Cooler - 2212150

Lab ID: 2212150-39 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW1-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Lab ID: 2212150-40 **Report Matrix:** Water **Collected:** 12/08/2022
Sample: MW1-1222 **Sample Type:** Sample **Received:** 12/08/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	21-0070	1% HNO3 (BAL)	2238023	<2	Cooler - 2212150

Shipping Containers

Cooler - 2212150

Received: December 8, 2022 11:23
Tracking No: na via Courier
Coolant Type: None
Temperature: 2.3 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-1

Custody seals present? No
Custody seals intact? No
COC present? Yes

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

BAL Report 2212150

For BAL use only
Received by: AJW Date: 12/8/22
Work Order ID: Time: 1123
Project ID:

Client: CRETE / LEON ENV. PO Number: PoFH Jensen's Mailing Address:
Contact: R. Jones, P. Leon Phone:
Client Project ID: PoFH Jensen's R.I. Email:
Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones BAL PM: Jeremy Mantz

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) 1638 Total	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 ICP-MS Metals Dissolved	Other (specify) Dissolved Hg	Comments: Specify Here
1	~~DUP01~~ MW9-1222	12/6/2022	0153	WATER	4	Y&N	NONE	X		X				X	X	
2	MW2-1222		0257		4			X		X				X	X	
3	MW3-1222		0355		4			X		X				X	X	
4	MW5-1222	12/7/2022	0114		4			X		X				X	X	
5	MW7-1222		0157		4			X		X				X	X	
6	MW10-1222		0251		4			X		X				X	X	
7	DUP03-1222	12/8/2022	0002		4			X		X				X	X	
8	MW8-1222		0342		4			X		X				X	X	
9	MW4-1222		0446		4			X		X				X	X	
10	MW1-1222		0528		4			X		X				X	X	
	Trip Blank															

Relinquished By: R. Jones	Date: 12/8/22	Time: 1123	Relinquished By:	Date:	Time:
Received By: Andrew Mittelhauser	Date: 12/8/22	Time: 1123	Total Number of Packages:		

Page 1 of 1 List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

Sample Receipt Checklist:

Container Type: Container 1 of 1

- [x] Cooler
- [ ] Cardboard box
- [ ] Styrofoam cooler
- [ ] Other (Specify):

- [ ] Custody Seal Present?
  Custody Seal Intact? Y / N
- [x] Chain of Custody Present?

Coolant and Temperature

Coolant Type:

- [ ] None [ ] Blue Ice
- [x] Ice: [ ] Dry Ice

IR# R-IR-1

Measured Temp[1]: 2.3 °C

Corrected Temp: 2.3 °C

- [ ] Temp Blank[2]: ____ °C

1) n of samples >3, observe three measurements, record average

2) Record temp blank as a corrected temp

Coolant Note:

Bottle Type:

- [ ] Client Provided
- [x] Class : T Hg
  Size / Type: 125mL FLPE
  Lot: 22-0026
  Preservation: n/a
  Preservative Lot: n/a
- [x] Class : Trace Metals
  Size / Type: 125mL HDPE
  Lot: 21-0070
  Preservation: n/a
  Preservative Lot: n/a
- [ ] Class :
  Size / Type:
  Lot:
  Preservation:
  Preservative Lot:

All information accurate

Initial/date: ATW 12/8/22

Courier

11:23

Revised: 10/20/2022

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 20, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the results from the testing of material submitted on April 13, 2023 from the Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Rusty Jones
NAA0420R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 13, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
304192 -01	SYC-8 0-1'
304192 -02	SYC-8 1-2'
304192 -03	SYC-9 0-1'
304192 -04	SYC-9 1-2'
304192 -05	SYC-10 0-1'
304192 -06	SYC-10 1-2'
304192 -07	SYC-11 0-1'
304192 -08	SYC-11 1-2'
304192 -09	SYC-11 2-3'
304192 -10	SYC-12 0-1'
304192 -11	SYC-12 1-2'
304192 -12	SYC-13 0-1'
304192 -13	SYC-13 1-2'
304192 -14	SYC-14 0-1'
304192 -15	AST-5 0-1'
304192 -16	AST-5 1-2'
304192 -17	AST-5 2-3'
304192 -18	AST-5 3-4'
304192 -19	AST-6 0-1'
304192 -20	AST-6 1-2'
304192 -21	AST-6 2-3'
304192 -22	AST-6 3-4'
304192 -23	AST-7 0-1'
304192 -24	AST-7 1-2'
304192 -25	AST-7 2-3'
304192 -26	AST-7 3-4'

All quality control requirements were acceptable.

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192
Date Extracted: 04/14/23
Date Analyzed: 04/14/23

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
AST-5 0-1' 304192-15	<50	<250	99
AST-5 1-2' 304192-16	<50	<250	101
AST-5 3-4' 304192-18	<50	<250	99
AST-6 0-1' 304192-19	<50	<250	100
AST-6 1-2' 304192-20	<50	<250	99
AST-6 3-4' 304192-22	<50	<250	101
AST-7 0-1' 304192-23	<50	<250	99
AST-7 1-2' 304192-24	<50	<250	101
AST-7 3-4' 304192-26	<50	<250	100
Method Blank 03-904 MB2	<50	<250	103

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-8 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-01
Date Analyzed:	04/14/23	Data File:	304192-01.057
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	128

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-9 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-03
Date Analyzed:	04/14/23	Data File:	304192-03.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	23.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-10 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-05
Date Analyzed:	04/14/23	Data File:	304192-05.059
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	126

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-11 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-07
Date Analyzed:	04/14/23	Data File:	304192-07.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	59.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-11 1-2'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-08
Date Analyzed:	04/14/23	Data File:	304192-08.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	32.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Leon Environmental
Date Received:	NA	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	I3-292 mb2
Date Analyzed:	04/14/23	Data File:	I3-292 mb2.094
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	<5

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192
Date Extracted: 04/14/23
Date Analyzed: 04/14/23

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
SYC-8 0-1' 304192-01	0.35
SYC-9 0-1' 304192-03	<0.025
SYC-10 0-1' 304192-05	0.12
SYC-11 0-1' 304192-07	0.13
SYC-11 1-2' 304192-08	0.028
Method Blank I3-292 MB2	<0.025

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SYC-11 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-07 1/5
Date Analyzed:	04/14/23	Data File:	041413.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	91 d	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.016
Chrysene	0.026
Benzo(a)pyrene	0.020
Benzo(b)fluoranthene	0.033
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SYC-11 1-2'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-08
Date Analyzed:	04/14/23	Data File:	041415.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	97	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.0058
Chrysene	0.011
Benzo(a)pyrene	0.0080
Benzo(b)fluoranthene	0.016
Benzo(k)fluoranthene	0.0056
Indeno(1,2,3-cd)pyrene	0.0033
Dibenz(a,h)anthracene	<0.002

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SYC-11 2-3'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	304192-09
Date Analyzed:	04/14/23	Data File:	041416.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	101	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.0046
Chrysene	0.011
Benzo(a)pyrene	0.0068
Benzo(b)fluoranthene	0.017
Benzo(k)fluoranthene	0.0048
Indeno(1,2,3-cd)pyrene	0.0037
Dibenz(a,h)anthracene	<0.002

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Leon Environmental
Date Received:	Not Applicable	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/14/23	Lab ID:	03-905 mb2
Date Analyzed:	04/14/23	Data File:	041410.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	91	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.002
Chrysene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Dibenz(a,h)anthracene	<0.002

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 304189-39 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	160	102	105	70-130	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	70-130

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 304195-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	mg/kg (ppm)	50	10.9	85 b	85 b	75-125	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	mg/kg (ppm)	50	98	80-120

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 304195-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	<0.025	119	117	71-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	125	68-125

Date of Report: 04/20/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	95	101	70-130	6
Chrysene	mg/kg (ppm)	0.83	100	106	70-130	6
Benzo(a)pyrene	mg/kg (ppm)	0.83	90	93	68-120	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	92	95	69-125	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	93	93	70-130	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	90	93	67-129	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	90	94	67-128	4

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 04/13/23 M4

304192

Report To Jones / Hainsworth / Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) R. Jones Rusty Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Boatyard R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

Page # 1 of 3

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260 (cPAHs) PAHs EPA 8270	PCBs EPA 8082	Cu, Hg				Notes
SYC-8 0-1'	01	4/11/2023	1000	SOIL	1							X				
SYC-8 1-2'	02		1005		1											HOLD
SYC-9 0-1'	03		1030		1							X				
SYC-9 1-2'	04		1035		1											HOLD
SYC-10 0-1'	05		1055		1							X				
SYC-10 1-2'	06		1100		1											HOLD
SYC-11 0-1'	07		1125		1					X		X				
SYC-11 1-2'	08		1130		1					X		X				
SYC-11 2-3'	09		1135		1					X						HOLD METALS
SYC-12 0-1'	10	↓	1230	↓	1											HOLD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
Received by:	Michael Ehll	FBR	4/13/23	1205
Relinquished by:		Samples received at 0 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 04/13/23 M4

304192

Report To Jones/Hainsworth/Leon

Company CRETE/LEON

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) R. Jones Rusty Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Boatyard R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
SYC-12 1-2'	11	4/11/2023	1235	SOIL	1												HOLD FOR METALS
SYC-13 0-1'	12		1255		1												
SYC-13 1-2'	13		1300		1												
SYC-14 0-1'	14		1325		1												
AST-5 0-1'	15	4/12/2023	1055	SOIL	1	X											
AST-5 1-2'	16		1100		1	X											
AST-5 2-3'	17		1105		1												HOLD FOR TPH-Dx
AST-5 3-4'	18		1110		1	X											
AST-6 0-1'	19		1135		1	X											
AST-6 1-2'	20		1140		1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
Received by:	Michael Erdlen	FCBA	4/13/23	12:05
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 04/13/23

M4

304192

Report To Jones / Hainsworth / Leon

Company CRETE / LEON

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Boatyard R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
AST-6 2-3'	21	4/12/2023	1145	SOIL	1												HOLD FOR TPH-Dx
AST-6 3-4'	22		1150		1	X											
AST-7 0-1'	23		1215		1	X											
AST-7 1-2'	24		1220		1	X											
AST-7 2-3'	25		1225		1												HOLD FOR TPH-Dx
AST-7 3-4'	26	↓	1230	↓	1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
~~Received by:~~	Michael Erdahl	FIBA	4/13/23	1241
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 28, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the additional results from the testing of material submitted on April 13, 2023 from the Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192 project. There are 13 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Rusty Jones
NAA0428R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 13, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
304192 -01	SYC-8 0-1'
304192 -02	SYC-8 1-2'
304192 -03	SYC-9 0-1'
304192 -04	SYC-9 1-2'
304192 -05	SYC-10 0-1'
304192 -06	SYC-10 1-2'
304192 -07	SYC-11 0-1'
304192 -08	SYC-11 1-2'
304192 -09	SYC-11 2-3'
304192 -10	SYC-12 0-1'
304192 -11	SYC-12 1-2'
304192 -12	SYC-13 0-1'
304192 -13	SYC-13 1-2'
304192 -14	SYC-14 0-1'
304192 -15	AST-5 0-1'
304192 -16	AST-5 1-2'
304192 -17	AST-5 2-3'
304192 -18	AST-5 3-4'
304192 -19	AST-6 0-1'
304192 -20	AST-6 1-2'
304192 -21	AST-6 2-3'
304192 -22	AST-6 3-4'
304192 -23	AST-7 0-1'
304192 -24	AST-7 1-2'
304192 -25	AST-7 2-3'
304192 -26	AST-7 3-4'

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-8 1-2'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	304192-02
Date Analyzed:	04/21/23	Data File:	304192-02.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	51.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-10 1-2'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	304192-06
Date Analyzed:	04/21/23	Data File:	304192-06.101
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	65.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	SYC-12 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	304192-10
Date Analyzed:	04/21/23	Data File:	304192-10.102
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	154

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Leon Environmental
Date Received:	Not Applicable	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	I3-313 mb
Date Analyzed:	04/21/23	Data File:	I3-313 mb.081
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Copper	<5

Date of Report: 04/28/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192
Date Extracted: 04/21/23
Date Analyzed: 04/21/23

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
SYC-8 1-2' 304192-02	0.36
Method Blank i3-313 MB	<0.025

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SYC-10 0-1'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	304192-05 1/5
Date Analyzed:	04/25/23	Data File:	042510.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	95 d	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.062
Chrysene	0.20
Benzo(a)pyrene	0.057
Benzo(b)fluoranthene	0.17
Benzo(k)fluoranthene	0.049
Indeno(1,2,3-cd)pyrene	0.033
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SYC-10 1-2'	Client:	Leon Environmental
Date Received:	04/13/23	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	304192-06
Date Analyzed:	04/21/23	Data File:	042114.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	98	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.028
Chrysene	0.058
Benzo(a)pyrene	0.035
Benzo(b)fluoranthene	0.066
Benzo(k)fluoranthene	0.022
Indeno(1,2,3-cd)pyrene	0.013
Dibenz(a,h)anthracene	0.0035

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Leon Environmental
Date Received:	Not Applicable	Project:	Port of Friday Harbor Jensen's Boatyard
Date Extracted:	04/21/23	Lab ID:	03-1017 mb2
Date Analyzed:	04/21/23	Data File:	042110.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Terphenyl-d14	101	31	167

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.002
Chrysene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Dibenz(a,h)anthracene	<0.002

Date of Report: 04/28/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 304292-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	mg/kg (ppm)	50	95.5	104 b	421 b	75-125	121 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	mg/kg (ppm)	50	107	80-120

Date of Report: 04/28/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 304292-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	0.55	107 b	68 b	71-125	45 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	108	68-125

Date of Report: 04/28/23
Date Received: 04/13/23
Project: Port of Friday Harbor Jensen's Boatyard R.I., F&BI 304192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 304292-12 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	0.074	93	88	37-146	6
Chrysene	mg/kg (ppm)	0.83	0.087	95	90	36-144	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.083	86	80	40-150	7
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.091	85	80	45-157	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.033	85	86	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.055	81	77	24-145	5
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	0.014	80	82	31-137	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.83	102	64-116
Chrysene	mg/kg (ppm)	0.83	107	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	94	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	96	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	95	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	103	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	106	67-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 04/13/23 ~~M4~~ M4

304192

Report To Jones / Hainsworth / Leon

Company Crete Consulting / Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) C. Jones Rusty Jones

PROJECT NAME Port of Friday Harbor, Jensen's ~~Boatyard~~ R.I.

PO #

REMARKS

(X) Logged in by RJ 04/21/23 ME

Project specific RLs? - Yes / No

INVOICE TO L-E

Page # 1 of 3

TURNAROUND TIME

(X) Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	~~cPAHs~~ PAHs EPA 8270	PCBs EPA 8082	Cu, Hg	Cu			Notes
SYC-8 0-1'	01	4/11/2023	1000	SOIL	1								X				
SYC-8 1-2'	02		1005		1								(X)				~~HOLD~~
SYC-9 0-1'	03		1030		1								X				
SYC-9 1-2'	04		1035		1												HOLD
SYC-10 0-1'	05		1055		1						(X)		X				
SYC-10 1-2'	06		1100		1						(X)			(X)			~~HOLD~~
SYC-11 0-1'	07		1125		1						X		X				
SYC-11 1-2'	08		1130		1						X		X				
SYC-11 2-3'	09		1135		1						X						HOLD METALS
SYC-12 0-1'	10	↓	1230	↓	1									(X)			~~HOLD~~

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
~~Received by:~~	Michael Cahill	FBR	4/13/23	1205
Relinquished by:		Samples received at 0 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 04/13/23 M4

304192

Report To: Jones/Hainsworth/Leon

Company: CRETE/LEON

Address:

City, State, ZIP:

Phone: Email:

SAMPLERS (*signature*): R. Jones Rusty Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Boatyard R.I.

PO #:

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
SYC-12 1-2'	11	4/11/2023	1235	SOIL	1												HOLD FOR METALS
SYC-13 0-1'	12		1255		1												
SYC-13 1-2'	13		1300		1												
SYC-14 0-1'	14		1325		1												
AST-5 0-1'	15	4/12/2023	1055	SOIL	1	X											
AST-5 1-2'	16		1100		1	X											
AST-5 2-3'	17		1105		1												HOLD FOR TPH-Dx
AST-5 3-4'	18		1110		1	X											
AST-6 0-1'	19		1135		1	X											
AST-6 1-2'	20		1140		1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
Received by:	Michael Erdahl	FCBA	4/13/23	12:05
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 04/13/23

M4

304192

Report To Jones/Hainsworth/Leon

Company CRETE/LEON

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME: Part of Friday Harbor, Jensen's Boatyard R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
						ANALYSES REQUESTED											
AST-6 2-3'	21	4/12/2023	1145	SOIL	1												HOLD FOR TPH-Dx
AST-6 3-4'	22		1150		1	X											
AST-7 0-1'	23		1215		1	X											
AST-7 1-2'	24		1220		1	X											
AST-7 2-3'	25		1225		1												HOLD FOR TPH-Dx
AST-7 3-4'	26	↓	1230	↓	1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/2023	1205
~~Received by:~~	Michael Ecklund	FIBa	4/13/23	12:01
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 15, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the results from the testing of material submitted on March 21, 2023 from the Port of Friday Harbor Jensen's Marina, F&BI 303333 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Rusty Jones, Grant Hainsworth
NAA0515R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 21, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor Jensen's Marina, F&BI 303333 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
303333 -01	SED-07G:0-10
303333 -02	SED-11G:0-10
303333 -03	SED-14G:0-10
303333 -04	SED-15G:0-10
303333 -05	SED-24G:0-10
303333 -06	SED-23G:0-10
303333 -07	SED-22G:0-10
303333 -08	SED-21G:0-10
303333 -09	SED-03G:0-10
303333 -10	SED-20G:0-10
303333 -11	SED-18G:0-10
303333 -12	SED-19G:0-10
303333 -13	SED-01G:0-10

Samples SED-07G:0-10, SED-11G:0-10, SED-14G:0-10, SED-15G:0-10, and SED-03G:0-10 were sent to Analytical Resources, LLC for total sulfides and ammonia analyses. In addition, samples SED-24G:0-10, SED-23G:0-10, SED-22G:0-10, SED-21G:0-10, and SED-20G:0-10 were sent to ARL for total organic carbon and total solids analyses. The report is enclosed.

SAMPLE CHAIN OF CUSTODY 03/21/23 M3

303333

Report To T. Leon | R. Jones | G. Hainsworth

Company Leon Environmental, CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (signature) Rusty Jones R. Jones

PROJECT NAME Port of Friday Harbor Jensen's Marina

PO #

REMARKS SMS SVOCs PCB Aroclors, SMS Pesticides

Project specific RLs? - Yes / No

INVOICE TO LEON ENV.

Page # 1 of 2

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	SMS SVOCs PAHs EPA 8270	SMS PCBs EPA 8082	Total Sulfides	Ammonia	TOC, Total Solids	Grain Size	Hold Amounts per RS and Appendix A Notes for SED186→SED216 ME 3/22/23
SED-07G:0-10	01 A-B	3.20.23	~~0810~~ 1002	solids	2								X	X			Remaining sample
SED-11G:0-10	02		0924		2								X	X			jars to be
SED-14G:0-10	03		1011		2								X	X			delivered
SED-15G:0-10	04		1042		2						X	X	X	X		X	separately
SED-24G:0-10	05		1106		1						X	X			X	X	
SED-23G:0-10	06		1142		1						X	X			X	X	
SED-22G:0-10	07		1158		1						X	X			X	X	
SED-21G:0-10	08		1216		1						X	X			X	X	
SED-03G:0-10	09 A-D		1315		2								X	X			
SED-20G:0-10	10	↓	1338	↓	1										X		↓ ↓

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3.21.23	1130
Received by:	NHUT TRUONG	F B	3/21/23	1500
Relinquished by:		Samples received at -1.8°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY

303333 M3

Report To P. Leon / R. Jones / G. Hainsworth

Company Leon Environmental, CRETE

Address

City, State, ZIP

Phone 932.330.859 Email

SAMPLERS (signature) Rusty Jones R Jones 03/21/23

PROJECT NAME Port of Friday Harbor Jensen's Marina

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO LEON ENV.

Page # 2 of 2

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- X Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Sulfides	Ammonia	TOC, Total Solids, Ammonia		Notes
SED-18G:0-10	11	3.20.23	1408	SOLIDS	1										X		Remaining sample volumes to be delivered separately
SED-19G:0-10	12	↓	1427	↓	1										X		
SED-01G:0-10	13 A-B	↓	1445	↓	2								X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R Jones	Rusty Jones	CRETE	3.21.23	1130
Received by:	NHUT TRUONG	F B	3/21/23	1500
Relinquished by:		Samples received at -1.8°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

06 May 2023

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: Port of Friday Harbor (303333)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23C0538	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC



Shelly Fishel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

23C0538

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER ARI	
PROJECT NAME/NO. 303333	PO # D-221
REMARKS EIM EDD	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Total Sulfides	Ammonia	Total Organic Carbon	Total Solids							Notes
SED-07G:0-10		3/20/2023	810	solids	2	x	x									
SED-11G:0-10		3/20/2023	924	solids	2	x	x									
SED-14G:0-10		3/20/2023	1011	solids	2	x	x									
SED-15G:0-10		3/20/2023	1042	solids	2	x	x									
SED-24G:0-10		3/20/2023	1106	solids	1		x	x	x							hold ammonia MS 3/22/23
SED-23G:0-10		3/20/2023	1142	solids	1		x	x	x							↓
SED-22G:0-10		3/20/2023	1158	solids	1		x	x	x							↓
SED-21G:0-10		3/20/2023	1216	solids	1		x	x	x							↓
SED-03G:0-10		3/20/2023	1315	solids	2	x	x									
SED-20G:0-10		3/20/2023	1338	solids	1		x	x	x							Hold ammonia MS 3/22/23
SED-18G:0-10		3/20/2023	1408	solids	1		x	x	x							↓
SED-19G:0-10		3/20/2023	1427	solids	1		x	x	x							↓
SED-01G:0-10		3/20/2023	1445	solids	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	03/22/23	08:20
Received by:	Phillip Bates	Phillip Bates	AR	3/22/23	16:08
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SED-07G:0-10	23C0538-01	Solid	20-Mar-2023 08:10	22-Mar-2023 16:08
SED-11G:0-10	23C0538-02	Solid	20-Mar-2023 09:24	22-Mar-2023 16:08
SED-14G:0-10	23C0538-03	Solid	20-Mar-2023 10:11	22-Mar-2023 16:08
SED-15G:0-10	23C0538-04	Solid	20-Mar-2023 10:42	22-Mar-2023 16:08
SED-03G:0-10	23C0538-08	Solid	20-Mar-2023 13:15	22-Mar-2023 16:08
SED-01G:0-10	23C0538-12	Solid	20-Mar-2023 14:45	22-Mar-2023 16:08

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: Port of Friday Harbor
Project Number: 303333
Work Order: 23C0538

Sample receipt

Samples as listed on the preceding page were received 22-Mar-2023 16:08 under ARI work order 23C0538. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times except as follows. Sulfide methodology was not a standardly analyzed method by ARI. Once method preference was confirmed only the supervisor could analyze. The samples were analyzed as soon as possible but were out of hold. Total Organic Carbon instrument PC fried and ARI was unable to process the samples. The samples were submitted to Fremont Analytical. However the hold time had been exceeded as samples were not frozen to extend holding time. The client opted to cancel TOC from this work order and supply frozen volume. The TOC analysis was logged under work order 23E0156. The deviations have been flagged.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits except Sulfide. Due to the exceedence, the sample and duplicate were retitrated with similiar results all data reported.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya
Project Name: 303333
COC No(s): NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 23C0538
Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 5.1
Time 16:08
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 10097708
Cooler Accepted by: PIB Date: 3/22/23 Time: 16:08

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: PIB Date: 3/23/23 Time: 9:34 Labels checked by: PIB

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-07G:0-10
23C0538-01 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 08:10
Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-01 B
Preparation Batch: BLC0751 — Sample Size: 5.183 g (wet) — Dry Weight:3.79 g
Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 73.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	26.4	26.4	100	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-07G:0-10

23C0538-01 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 08:10

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-01

Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:3.08 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 61.59

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	73.11	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-07G:0-10

23C0538-01 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 08:10

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-01

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:3.08 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 61.59

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	61.59	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-07G:0-10

23C0538-01 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 08:10

Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-01 A

Preparation Batch: BLC0709 — Sample Size: 4.23 g (wet) — Dry Weight:2.61 g

Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 61.59

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.61	0.61	10.4	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-07G:0-10

23C0538-01RE1 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 08:10

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-01RE1 B

Preparation Batch: BLC0751 — Sample Size: 5.183 g (wet) — Dry Weight:3.79 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 73.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	26.4	26.4	89.7	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-11G:0-10

23C0538-02 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 09:24

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-02 B

Preparation Batch: BLC0751 — Sample Size: 5.149 g (wet) — Dry Weight:3.28 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 63.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	30.5	30.5	204	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-11G:0-10

23C0538-02 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 09:24

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-02

Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:3.19 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 63.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	63.76	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-11G:0-10

23C0538-02 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 09:24

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-02

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:3.19 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 63.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	63.80	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-11G:0-10

23C0538-02 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 09:24
Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-02 A
Preparation Batch: BLC0709 — Sample Size: 4.2 g (wet) — Dry Weight:2.68 g
Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 63.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.60	0.60	13.5	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-14G:0-10

23C0538-03 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 10:11

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-03 B

Preparation Batch: BLC0751 — Sample Size: 5.114 g (wet) — Dry Weight:2.58 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 50.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	38.7	38.7	170	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-14G:0-10

23C0538-03 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 10:11
Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-03
Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:2.78 g
Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 55.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	50.52	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-14G:0-10

23C0538-03 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 10:11

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-03

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:2.78 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 55.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	55.62	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-14G:0-10

23C0538-03 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 10:11

Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-03 A

Preparation Batch: BLC0709 — Sample Size: 4.41 g (wet) — Dry Weight:2.45 g

Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 55.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.65	0.65	12.7	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-15G:0-10

23C0538-04 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 10:42

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-04 B

Preparation Batch: BLC0751 — Sample Size: 5.015 g (wet) — Dry Weight:2.88 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 57.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	34.7	34.7	146	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-15G:0-10

23C0538-04 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 10:42

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-04

Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:2.99 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 59.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	57.52	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-15G:0-10

23C0538-04 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 10:42

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-04

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:2.99 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 59.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	59.75	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-15G:0-10

23C0538-04 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 10:42

Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-04 A

Preparation Batch: BLC0709 — Sample Size: 4.46 g (wet) — Dry Weight:2.66 g

Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 59.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.60	0.60	4.65	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-03G:0-10

23C0538-08 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 13:15

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-08 B

Preparation Batch: BLC0751 — Sample Size: 5.054 g (wet) — Dry Weight:2.63 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 51.96

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	38.1	38.1	259	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-03G:0-10

23C0538-08 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 13:15

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-08

Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:2.64 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 52.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	51.96	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-03G:0-10

23C0538-08 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 13:15

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-08

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:2.64 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 52.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	52.75	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-03G:0-10

23C0538-08 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 13:15

Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-08 A

Preparation Batch: BLC0709 — Sample Size: 4.27 g (wet) — Dry Weight:2.25 g

Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 52.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.71	0.71	4.51	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-01G:0-10

23C0538-12 (Solid)

Wet Chemistry

Method: EPA 9034 — Sampled: 03/20/2023 14:45

Instrument: S2 Buret Analyst: CDE — Analyzed: 04/04/2023 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-12 B

Preparation Batch: BLC0751 — Sample Size: 5.541 g (wet) — Dry Weight:3.03 g

Prepared: 03/28/2023 — Final Volume: 100 g — % Solids: 54.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	33.0	33.0	304	mg/kg	H

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-01G:0-10

23C0538-12 (Solid)

Wet Chemistry

Method: PSEP 1986 — Sampled: 03/20/2023 14:45

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-12

Preparation Batch: BLC0674 — Sample Size: 5 g (wet) — Dry Weight:2.76 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 55.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids, Sulfide		1	0.04	0.04	54.68	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-01G:0-10

23C0538-12 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 14:45

Instrument: BAL2 Analyst: UW — Analyzed: 03/24/2023 15:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-12

Preparation Batch: BLC0673 — Sample Size: 5 g (wet) — Dry Weight:2.76 g

Prepared: 03/24/2023 — Final Volume: 5 g — % Solids: 55.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	55.11	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

SED-01G:0-10

23C0538-12 (Solid)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/20/2023 14:45
Instrument: LACHAT1 Analyst: RMS — Analyzed: 03/28/2023 13:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23C0538-12 A
Preparation Batch: BLC0709 — Sample Size: 4.16 g (wet) — Dry Weight:2.29 g
Prepared: 03/27/2023 — Final Volume: 40 g — % Solids: 55.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.70	0.70	8.74	mg/kg NH3-N	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLC0673 - SM 2540 G-97

Instrument: BAL2 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0673-BLK1)					Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 15:47						
Total Solids	ND	0.04	0.04	%							U
Duplicate (BLC0673-DUP1)		**Source: 23C0538-01**			Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 15:47						
Total Solids	62.17	0.04	0.04	%		61.59			0.94	20	
Duplicate (BLC0673-DUP2)		**Source: 23C0538-01**			Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 15:47						
Total Solids	68.50	0.04	0.04	%		61.59			10.60	20	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLC0674 - PSEP 1986

Instrument: BAL2 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0674-BLK1)				Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 15:47							
Total Solids, Sulfide	ND	0.04	0.04	%							U
Duplicate (BLC0674-DUP1)	**Source: 23C0538-01**			Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 15:47							
Total Solids, Sulfide	71.25	0.04	0.04	%		73.11			2.58	20	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLC0709 - SM 4500-NH3 H-97

Instrument: LACHAT1 Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0709-BLK1)				Prepared: 27-Mar-2023 Analyzed: 28-Mar-2023 13:08							
Ammonia-N	ND	0.40	0.40	mg/kg NH3-N							U
LCS (BLC0709-BS1)				Prepared: 27-Mar-2023 Analyzed: 28-Mar-2023 13:09							
Ammonia-N	97.2	8.00	8.00	mg/kg NH3-N	100		97.2	90-110			D
Duplicate (BLC0709-DUP1)		**Source: 23C0538-01**		Prepared: 27-Mar-2023 Analyzed: 28-Mar-2023 13:12							
Ammonia-N	14.0	0.64	0.64	mg/kg NH3-N		10.4			29.80	20	*
Matrix Spike (BLC0709-MS1)		**Source: 23C0538-01**		Prepared: 27-Mar-2023 Analyzed: 28-Mar-2023 13:13							
Ammonia-N	196	13.0	13.0	mg/kg NH3-N	162	10.4	121	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BLC0709-MSD1)		**Source: 23C0538-01**		Prepared: 27-Mar-2023 Analyzed: 28-Mar-2023 13:14							
Ammonia-N	167	11.8	11.8	mg/kg NH3-N	147	10.4	114	75-125	15.80	200	D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLC0751 - EPA 9034

Instrument: S2 Buret Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0751-BLK1)				Prepared: 28-Mar-2023 Analyzed: 04-Apr-2023 15:00							
Sulfide	ND	20.0	20.0	mg/kg							U
LCS (BLC0751-BS1)				Prepared: 28-Mar-2023 Analyzed: 04-Apr-2023 15:00							
Sulfide	168	20.0	20.0	mg/kg	211		79.6	75-125			
Duplicate (BLC0751-DUP1)		**Source: 23C0538-01**		Prepared: 28-Mar-2023 Analyzed: 04-Apr-2023 15:00							
Sulfide	42.6	26.7	26.7	mg/kg		100			80.70	20	*, H, L
DL (BLC0751-DUP2)		**Source: 23C0538-01RE1**		Prepared: 28-Mar-2023 Analyzed: 04-Apr-2023 15:00							
Sulfide	34.6	26.7	26.7	mg/kg		89.7			88.60	20	*, H, L
Matrix Spike (BLC0751-MS1)		**Source: 23C0538-01**		Prepared: 28-Mar-2023 Analyzed: 04-Apr-2023 15:00							
Sulfide	316	27.0	27.0	mg/kg	285	100	75.7	75-125			H

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Certified Analyses included in this Report

Analyte	Certifications
EPA 9034 in Solid	
Sulfide	NELAP
SM 4500-NH3 H-97 in Solid	
Ammonia-N	WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-May-2023 10:44

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
H	Hold time violation - Hold time was exceeded.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

11 May 2023

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: Port of Friday Harbor (303333)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23E0156	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC



Shelly Fishel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

23E0156

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER ARI	
PROJECT NAME/NO. 303333	PO # D-221
REMARKS Replacement volume for TOC. Frozen prior to subcontract	

TURNAROUND TIME
Standard TAT
☒ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Total Organic Carbon										Notes
SED-24G:0-10		3/20/2023	1106	sediment	1	x										
SED-23G:0-10		3/20/2023	1142	sediment	1	x										
SED-22G:0-10		3/20/2023	1158	sediment	1	x										
SED-21G:0-10		3/20/2023	1216	sediment	1	x										
SED-20G:0-10		3/20/2023	1338	sediment	1	x										
SED-18G:0-10		3/20/2023	1408	sediment	1	x										
SED-19G:0-10		3/20/2023	1427	sediment	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	5/5/23	
Received by:		Matthew Daniel	ARI LLC	5/5/23	1420
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SED-24G:0-10	23E0156-01	Solid	20-Mar-2023 11:06	05-May-2023 14:20
SED-23G:0-10	23E0156-02	Solid	20-Mar-2023 11:42	05-May-2023 14:20
SED-22G:0-10	23E0156-03	Solid	20-Mar-2023 11:58	05-May-2023 14:20
SED-21G:0-10	23E0156-04	Solid	20-Mar-2023 12:16	05-May-2023 14:20
SED-20G:0-10	23E0156-05	Solid	20-Mar-2023 13:38	05-May-2023 14:20
SED-18G:0-10	23E0156-06	Solid	20-Mar-2023 14:08	05-May-2023 14:20
SED-19G:0-10	23E0156-07	Solid	20-Mar-2023 14:27	05-May-2023 14:20

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: Port of Friday Harbor
Work Order: 23E0156

Sample receipt

Samples as listed on the preceding page(s) were pulled from Friedman & Bruya frozen archive and logged under ARI work order 23E0156. For details regarding sample receipt, please refer to the original Cooler Receipt Forms.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman and Bruya

Project Name: 303333

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 23E0156

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1420 — 3.6 °C

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 5009208

Cooler Accepted by: MP Date: 05/05/23 Time: 1420

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: MP Date: 05/05/23 Time: 1710 Labels checked by: PJB

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-24G:0-10
23E0156-01 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 11:06
Instrument: TOC Cube Analyst: CDE — Analyzed: 05/07/2023 21:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-01 A
Preparation Batch: BLE0201 — Sample Size: 0.5618 g (wet) — Dry Weight:0.24 g
Prepared: 05/06/2023 — Final Volume: 0.5618 g — % Solids: 43.07

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	1.61	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-24G:0-10

23E0156-01 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 11:06

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-01

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.15 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 43.07

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	43.07	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-23G:0-10

23E0156-02 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 11:42

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/07/2023 22:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-02 A

Preparation Batch: BLE0201 — Sample Size: 0.5944 g (wet) — Dry Weight:0.24 g

Prepared: 05/06/2023 — Final Volume: 0.5944 g — % Solids: 40.27

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	1.79	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-23G:0-10

23E0156-02 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 11:42

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-02

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.01 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 40.27

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	40.27	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-22G:0-10

23E0156-03 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 11:58

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/07/2023 23:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-03 A

Preparation Batch: BLE0201 — Sample Size: 0.5159 g (wet) — Dry Weight:0.25 g

Prepared: 05/06/2023 — Final Volume: 0.5159 g — % Solids: 49.09

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	1.55	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-22G:0-10

23E0156-03 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 11:58

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-03

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.45 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 49.09

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	49.09	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-21G:0-10

23E0156-04 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 12:16

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/08/2023 00:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-04 A

Preparation Batch: BLE0201 — Sample Size: 0.5292 g (wet) — Dry Weight:0.24 g

Prepared: 05/06/2023 — Final Volume: 0.5292 g — % Solids: 44.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	1.33	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-21G:0-10

23E0156-04 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 12:16

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-04

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.24 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 44.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	44.90	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-20G:0-10

23E0156-05 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 13:38

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/08/2023 00:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-05 A

Preparation Batch: BLE0201 — Sample Size: 0.5874 g (wet) — Dry Weight:0.37 g

Prepared: 05/06/2023 — Final Volume: 0.5874 g — % Solids: 63.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.63	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-20G:0-10

23E0156-05 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 13:38

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-05

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:3.18 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 63.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	63.62	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-18G:0-10

23E0156-06 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 14:08

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/08/2023 01:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-06 A

Preparation Batch: BLE0201 — Sample Size: 0.5918 g (wet) — Dry Weight:0.33 g

Prepared: 05/06/2023 — Final Volume: 0.5918 g — % Solids: 55.22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.93	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-18G:0-10

23E0156-06 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 14:08

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-06

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.76 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 55.22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	55.22	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-19G:0-10

23E0156-07 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 03/20/2023 14:27

Instrument: TOC Cube Analyst: CDE — Analyzed: 05/08/2023 01:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-07 A

Preparation Batch: BLE0201 — Sample Size: 0.6267 g (wet) — Dry Weight:0.31 g

Prepared: 05/06/2023 — Final Volume: 0.6267 g — % Solids: 49.60

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.61	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

SED-19G:0-10

23E0156-07 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 03/20/2023 14:27

Instrument: BAL2 Analyst: UW — Analyzed: 05/08/2023 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 23E0156-07

Preparation Batch: BLE0230 — Sample Size: 5 g (wet) — Dry Weight:2.48 g

Prepared: 05/08/2023 — Final Volume: 5 g — % Solids: 49.60

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	49.60	%	

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLE0201 - EPA 9060A m

Instrument: TOC Cube Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLE0201-BLK1)				Prepared: 06-May-2023 Analyzed: 06-May-2023 18:47							
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BLE0201-BS1)				Prepared: 06-May-2023 Analyzed: 06-May-2023 19:48							
Total Organic Carbon	43.5	0.02	0.02	%	44.4		98.0	80-120			
Reference (BLE0201-SRM1)				Prepared: 06-May-2023 Analyzed: 06-May-2023 20:49							
Total Organic Carbon	2.98	0.02	0.02	%	2.99		99.8	80-120			

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BLE0230 - SM 2540 G-97

Instrument: BAL2 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLE0230-BLK1)				Prepared: 08-May-2023 Analyzed: 08-May-2023 13:08							
Total Solids	ND	0.04	0.04	%							U

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

Certified Analyses included in this Report

Analyte	Certifications
EPA 9060A m in Solid	
Total Organic Carbon	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

Friedman & Bruya Inc.	Project: Port of Friday Harbor	
3012 16th Avenue West	Project Number: 303333	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	11-May-2023 18:22

Notes and Definitions

*	Flagged value is not within established control limits.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 19, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included is the amended report from the testing of material submitted on March 23, 2023 from the Port of Friday Harbor (PoFH) Jensen's Marina, F&BI 303373 project. To reach the total organic carbon normalized SMS criteria, 1,2,4-trichlorobenzene, hexachlorobenzene, and butyl benzyl phthalate were lowered to the method detection limit.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainworth (Crete), Rusty Jones (Crete)
NAA0508R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 8, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the additional results from the testing of material submitted on March 23, 2023 from the Port of Friday Harbor (PoFH) Jensen's Marina, F&BI 303373 project. There are 22 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainworth (Crete), Rusty Jones (Crete)
NAA0508R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 23, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor (PoFH) Jensen's Marina, F&BI 303373 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
303373 -01	SED-07G:0-10
303373 -02	SED-11G:0-10
303373 -03	SED-14G:0-10
303373 -04	SED-15G:0-10
303373 -05	SED-24G:0-10
303373 -06	SED-23G:0-10
303373 -07	SED-22G:0-10
303373 -08	SED-21G:0-10
303373 -09	SED-03G:0-10
303373 -10	SED-20G:0-10
303373 -11	SED-18G:0-10
303373 -12	SED-19G:0-10
303373 -13	SED-01G:0-10
303373 -14	SED-01C:0-1
303373 -15	SED-01C:1-3
303373 -16	SED-01C:3-5
303373 -17	SED-01C:5-7
303373 -18	SED-05C:0-1
303373 -19	SED-05C:1-3
303373 -20	SED-05C:3-5
303373 -21	SED-05C:5-7
303373 -22	SED-05G:0-10
303373 -23	SED-03C:0-1
303373 -24	SED-03C:1-3
303373 -25	SED-03C:3-5
303373 -26	SED-03C:5-7
303373 -27	SED-14C:0-1
303373 -28	SED-14C:1-3
303373 -29	SED-14C:3-5
303373 -30	SED-14C:5-7
303373 -31	SED-DUPC
303373 -32	SED-07C:0-1
303373 -33	SED-07C:1-3
303373 -34	SED-07C:3-5
303373 -35	SED-07C:5-7
303373 -36	SED-DUP2C:0-1

CASE NARRATIVE (continued)

The 8270 samples were reanalyzed without dilution and several compounds were lowered to the project criteria.

Several 8270E compounds failed the calibration standard acceptance criteria. The affected data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for samples SED-11G:0-10, SED-05C:0-1, SED-05G:0-10, SED-03C:0-1 and SED-DUPC. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

Bis(2-ethylhexyl) phthalate was detected in sample SED-14G:0-10. The result was qualified as a common laboratory and field contaminant.

An 8270E surrogate in the method blank did not pass the acceptance criteria. The affected compounds were qualified accordingly.

All other quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-07G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-01
Date Analyzed:	04/26/23	Data File:	042617.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	39	22	119
Phenol-d6	62	38	124
Nitrobenzene-d5	47	10	198
2-Fluorobiphenyl	69	45	117
2,4,6-Tribromophenol	82	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.039
2-Methylphenol	<0.063 j	Anthracene	0.015
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.21
2,4-Dimethylphenol	<0.029 j	Pyrene	0.20
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.071
Naphthalene	0.0021	Chrysene	0.17
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0035	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.065 J
Acenaphthylene	0.0029	Benzo(b)fluoranthene	0.18 J
Acenaphthene	0.0025	Benzo(k)fluoranthene	0.066 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.018 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0043 J
Fluorene	0.0045	Benzo(g,h,i)perylene	0.013 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-07G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-01 1/5
Date Analyzed:	03/28/23	Data File:	032817.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	35 d	14	115
Phenol-d6	62 d	29	121
Nitrobenzene-d5	47 d	16	137
2-Fluorobiphenyl	71 d	46	122
2,4,6-Tribromophenol	99 d	17	154
Terphenyl-d14	85 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.065
Benzo(b)fluoranthene	0.15
Benzo(k)fluoranthene	0.051
Indeno(1,2,3-cd)pyrene	0.034
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.027

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-11G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-02
Date Analyzed:	04/26/23	Data File:	042618.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	22	119
Phenol-d6	59	38	124
Nitrobenzene-d5	53	10	198
2-Fluorobiphenyl	65	45	117
2,4,6-Tribromophenol	76	11	158
Terphenyl-d14	97	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.14
2-Methylphenol	<0.063 j	Anthracene	0.033
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.55
2,4-Dimethylphenol	<0.029 j	Pyrene	0.52
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.17
Naphthalene	0.0035	Chrysene	0.32
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0038	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.18 J
Acenaphthylene	0.0055	Benzo(b)fluoranthene	0.46 J
Acenaphthene	0.0069	Benzo(k)fluoranthene	0.15 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.051 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.012 J
Fluorene	0.0091	Benzo(g,h,i)perylene	0.040 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-11G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-02 1/5
Date Analyzed:	03/28/23	Data File:	032818.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41 d	14	115
Phenol-d6	64 d	29	121
Nitrobenzene-d5	56 d	16	137
2-Fluorobiphenyl	68 d	46	122
2,4,6-Tribromophenol	94 d	17	154
Terphenyl-d14	80 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.19
Benzo(b)fluoranthene	0.35
Benzo(k)fluoranthene	0.12
Indeno(1,2,3-cd)pyrene	0.10
Dibenz(a,h)anthracene	0.023
Benzo(g,h,i)perylene	0.087

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-14G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-03
Date Analyzed:	03/29/23	Data File:	032921.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	31	14	115
Phenol-d6	45	29	121
Nitrobenzene-d5	40	16	137
2-Fluorobiphenyl	55	46	122
2,4,6-Tribromophenol	81	17	154
Terphenyl-d14	92	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.093
2-Methylphenol	<0.063 j	Anthracene	0.033
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.26
2,4-Dimethylphenol	<0.029 j	Pyrene	0.29
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.16
Naphthalene	0.0043	Chrysene	0.28
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	0.26 fc
2-Methylnaphthalene	0.0069	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.16
Acenaphthylene	0.0051	Benzo(b)fluoranthene	0.35
Acenaphthene	0.0054	Benzo(k)fluoranthene	0.13
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.054
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.014
Fluorene	0.013	Benzo(g,h,i)perylene	0.046

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-03G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-09
Date Analyzed:	05/05/23	Data File:	050516.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	56	22	119
Phenol-d6	70	38	124
Nitrobenzene-d5	54	10	198
2-Fluorobiphenyl	65	45	117
2,4,6-Tribromophenol	77	11	158
Terphenyl-d14	103	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	0.014	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.050
2-Methylphenol	<0.063 j	Anthracene	0.020
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.15
2,4-Dimethylphenol	<0.029 j	Pyrene	0.35
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.087
Naphthalene	0.0050	Chrysene	0.19
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	0.18
2-Methylnaphthalene	0.0073	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.12
Acenaphthylene	0.0053	Benzo(b)fluoranthene	0.24
Acenaphthene	0.0046	Benzo(k)fluoranthene	0.081
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.035
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0088
Fluorene	0.0083	Benzo(g,h,i)perylene	0.025

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-05C:0-1	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-18
Date Analyzed:	04/26/23	Data File:	042619.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	59	22	119
Phenol-d6	71	38	124
Nitrobenzene-d5	63	10	198
2-Fluorobiphenyl	71	45	117
2,4,6-Tribromophenol	80	11	158
Terphenyl-d14	99	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.033
2-Methylphenol	<0.063 j	Anthracene	0.014
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.12
2,4-Dimethylphenol	<0.029 j	Pyrene	0.20
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.059
Naphthalene	0.0037	Chrysene	0.13
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0076	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.066 J
Acenaphthylene	0.0033	Benzo(b)fluoranthene	0.18 J
Acenaphthene	0.0026	Benzo(k)fluoranthene	0.069 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.016 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0041 J
Fluorene	0.0065	Benzo(g,h,i)perylene	0.012 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-05C:0-1	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-18 1/5
Date Analyzed:	03/28/23	Data File:	032821.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	72 d	14	115
Phenol-d6	90 d	29	121
Nitrobenzene-d5	83 d	16	137
2-Fluorobiphenyl	98 d	46	122
2,4,6-Tribromophenol	109 d	17	154
Terphenyl-d14	107 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.084
Benzo(b)fluoranthene	0.17
Benzo(k)fluoranthene	0.056
Indeno(1,2,3-cd)pyrene	0.039
Dibenz(a,h)anthracene	0.010
Benzo(g,h,i)perylene	0.032

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-05G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-22
Date Analyzed:	04/26/23	Data File:	042620.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37	22	119
Phenol-d6	52	38	124
Nitrobenzene-d5	44	10	198
2-Fluorobiphenyl	54	45	117
2,4,6-Tribromophenol	67	11	158
Terphenyl-d14	84	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.063
2-Methylphenol	<0.063 j	Anthracene	0.017
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.24
2,4-Dimethylphenol	<0.029 j	Pyrene	0.31
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.076
Naphthalene	0.0038	Chrysene	0.16
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0061	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.082 J
Acenaphthylene	0.0050	Benzo(b)fluoranthene	0.26 J
Acenaphthene	0.0034	Benzo(k)fluoranthene	0.084 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.021 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0050 J
Fluorene	0.0073	Benzo(g,h,i)perylene	0.016 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-05G:0-10	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-22 1/5
Date Analyzed:	03/28/23	Data File:	032822.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	33 d	14	115
Phenol-d6	50 d	29	121
Nitrobenzene-d5	44 d	16	137
2-Fluorobiphenyl	56 d	46	122
2,4,6-Tribromophenol	77 d	17	154
Terphenyl-d14	67 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.082
Benzo(b)fluoranthene	0.19
Benzo(k)fluoranthene	0.069
Indeno(1,2,3-cd)pyrene	0.033
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.026

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-03C:0-1	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-23
Date Analyzed:	04/26/23	Data File:	042621.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	22	119
Phenol-d6	60	38	124
Nitrobenzene-d5	53	10	198
2-Fluorobiphenyl	60	45	117
2,4,6-Tribromophenol	70	11	158
Terphenyl-d14	88	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.052
2-Methylphenol	<0.063 j	Anthracene	0.028
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.21
2,4-Dimethylphenol	<0.029 j	Pyrene	0.60
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.11
Naphthalene	0.0062	Chrysene	0.20
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0081	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.16 J
Acenaphthylene	0.0061	Benzo(b)fluoranthene	0.42 J
Acenaphthene	0.0051	Benzo(k)fluoranthene	0.16 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.030 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0082 J
Fluorene	0.010	Benzo(g,h,i)perylene	0.022 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-03C:0-1	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-23 1/5
Date Analyzed:	03/28/23	Data File:	032819.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45 d	14	115
Phenol-d6	58 d	29	121
Nitrobenzene-d5	53 d	16	137
2-Fluorobiphenyl	64 d	46	122
2,4,6-Tribromophenol	81 d	17	154
Terphenyl-d14	71 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.30
Benzo(k)fluoranthene	0.12
Indeno(1,2,3-cd)pyrene	0.057
Dibenz(a,h)anthracene	0.016
Benzo(g,h,i)perylene	0.045

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-14C:0-1	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-27
Date Analyzed:	03/29/23	Data File:	032922.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	42	14	115
Phenol-d6	55	29	121
Nitrobenzene-d5	50	16	137
2-Fluorobiphenyl	60	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	77	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.087
2-Methylphenol	<0.063 j	Anthracene	0.018
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.22
2,4-Dimethylphenol	<0.029 j	Pyrene	0.22
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.065
Naphthalene	0.0029	Chrysene	0.13
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0045	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.073
Acenaphthylene	0.0029	Benzo(b)fluoranthene	0.17
Acenaphthene	0.0051	Benzo(k)fluoranthene	0.053
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.024
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0060
Fluorene	0.0076	Benzo(g,h,i)perylene	0.021

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-14C:1-3	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-28
Date Analyzed:	03/29/23	Data File:	032923.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38	14	115
Phenol-d6	51	29	121
Nitrobenzene-d5	38	16	137
2-Fluorobiphenyl	51	46	122
2,4,6-Tribromophenol	72	17	154
Terphenyl-d14	76	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.017
2-Methylphenol	<0.063 j	Anthracene	0.0045
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.038
2,4-Dimethylphenol	<0.029 j	Pyrene	0.052
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.015
Naphthalene	0.0028	Chrysene	0.019
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0045	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.017
Acenaphthylene	<0.002	Benzo(b)fluoranthene	0.038
Acenaphthene	0.0027	Benzo(k)fluoranthene	0.014
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.0047
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.002
Fluorene	0.0035	Benzo(g,h,i)perylene	0.0040

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-DUPC	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-31
Date Analyzed:	03/29/23	Data File:	032924.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	42	14	115
Phenol-d6	58	29	121
Nitrobenzene-d5	52	16	137
2-Fluorobiphenyl	65	46	122
2,4,6-Tribromophenol	80	17	154
Terphenyl-d14	100	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.049
2-Methylphenol	<0.063 j	Anthracene	0.015
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.15
2,4-Dimethylphenol	<0.029 j	Pyrene	0.22
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.057
Naphthalene	0.0069	Chrysene	0.095
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0078	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.068 J
Acenaphthylene	0.0033	Benzo(b)fluoranthene	0.17 J
Acenaphthene	0.019	Benzo(k)fluoranthene	0.051 J
Dibenzofuran	0.014	Indeno(1,2,3-cd)pyrene	0.022 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0055 J
Fluorene	0.016	Benzo(g,h,i)perylene	0.018 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-DUPC	Client:	Leon Environmental
Date Received:	03/23/23	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	303373-31 1/5
Date Analyzed:	03/30/23	Data File:	033008.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41 d	14	115
Phenol-d6	59 d	29	121
Nitrobenzene-d5	52 d	16	137
2-Fluorobiphenyl	66 d	46	122
2,4,6-Tribromophenol	81 d	17	154
Terphenyl-d14	84 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.062
Benzo(b)fluoranthene	0.11
Benzo(k)fluoranthene	0.040
Indeno(1,2,3-cd)pyrene	0.034
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.031

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Leon Environmental
Date Received:	Not Applicable	Project:	Port of Friday Harbor, F&BI 303373
Date Extracted:	03/27/23	Lab ID:	03-803 mb2
Date Analyzed:	03/28/23	Data File:	032816.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	4 vo	14	115
Phenol-d6	36	29	121
Nitrobenzene-d5	21	16	137
2-Fluorobiphenyl	82	46	122
2,4,6-Tribromophenol	107	17	154
Terphenyl-d14	107	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1 js	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01 js	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01 js	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j js	Phenanthrene	<0.002
2-Methylphenol	<0.063 j js	Anthracene	<0.002
Hexachloroethane	<0.01 js	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2 js	Fluoranthene	<0.002
2,4-Dimethylphenol	<0.029 j	Pyrene	<0.002
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	<0.002
Naphthalene	<0.002	Chrysene	<0.002
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	<0.002	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	<0.002
Acenaphthylene	<0.002	Benzo(b)fluoranthene	<0.002
Acenaphthene	<0.002	Benzo(k)fluoranthene	<0.002
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	<0.002
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.002
Fluorene	<0.002	Benzo(g,h,i)perylene	<0.002

Date of Report: 05/08/23
Date Received: 03/23/23
Project: Port of Friday Harbor (PoFH) Jensen's Marina, F&BI 303373

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 303406-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	0.83	<0.5	82	86	39-127	5
1,4-Dichlorobenzene	mg/kg (ppm)	0.83	<0.05	77	75	30-113	3
1,2-Dichlorobenzene	mg/kg (ppm)	0.83	<0.05	76	76	34-114	0
Benzyl alcohol	mg/kg (ppm)	4.2	<0.5	80	87	36-121	8
2-Methylphenol	mg/kg (ppm)	0.83	<0.5	80	86	38-120	7
Hexachloroethane	mg/kg (ppm)	0.83	<0.05	77	78	10-207	1
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.83	<1	82	87	39-121	6
2,4-Dimethylphenol	mg/kg (ppm)	0.83	<0.5	73	79	30-127	8
Benzoic acid	mg/kg (ppm)	2.5	<2.5	40	48	10-101	18
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.83	<0.05	78	80	41-112	3
Naphthalene	mg/kg (ppm)	0.83	<0.01	78	81	28-125	4
Hexachlorobutadiene	mg/kg (ppm)	0.83	<0.05	90	92	39-112	2
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	86	89	10-192	3
Dimethyl phthalate	mg/kg (ppm)	0.83	<0.5	81	87	50-150	7
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	86	90	45-128	5
Acenaphthene	mg/kg (ppm)	0.83	<0.01	82	86	36-125	5
Dibenzofuran	mg/kg (ppm)	0.83	<0.05	86	89	44-125	3
Diethyl phthalate	mg/kg (ppm)	0.83	<0.5	77	81	48-126	5
Fluorene	mg/kg (ppm)	0.83	<0.01	84	88	48-121	5
N-Nitrosodiphenylamine	mg/kg (ppm)	0.83	<0.05	81	85	10-190	5
Hexachlorobenzene	mg/kg (ppm)	0.83	<0.05	82	86	50-150	5
Pentachlorophenol	mg/kg (ppm)	0.83	<0.25	79	86	18-159	8
Phenanthrene	mg/kg (ppm)	0.83	<0.01	80	84	50-150	5
Anthracene	mg/kg (ppm)	0.83	<0.01	78	81	50-150	4
Di-n-butyl phthalate	mg/kg (ppm)	0.83	<0.5	73	79	43-124	8
Fluoranthene	mg/kg (ppm)	0.83	<0.01	78	81	50-150	4
Pyrene	mg/kg (ppm)	0.83	<0.01	91	93	40-134	2
Benzyl butyl phthalate	mg/kg (ppm)	0.83	<0.5	92	96	50-150	4
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	88	92	50-150	4
Chrysene	mg/kg (ppm)	0.83	<0.01	91	95	50-150	4
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.83	<0.8	73	81	45-130	10
Di-n-octyl phthalate	mg/kg (ppm)	0.83	<0.5	72	77	25-161	7
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	76	81	50-150	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	75	80	50-150	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	76	80	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	82	93	41-134	13
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	79	85	44-130	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	89	95	33-131	7

Date of Report: 05/08/23
Date Received: 03/23/23
Project: Port of Friday Harbor (PoFH) Jensen's Marina, F&BI 303373

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Phenol	mg/kg (ppm)	0.83	88	47-128
1,4-Dichlorobenzene	mg/kg (ppm)	0.83	81	49-108
1,2-Dichlorobenzene	mg/kg (ppm)	0.83	84	50-110
Benzyl alcohol	mg/kg (ppm)	4.2	88	36-147
2-Methylphenol	mg/kg (ppm)	0.83	88	63-112
Hexachloroethane	mg/kg (ppm)	0.83	83	46-112
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.83	89	67-111
2,4-Dimethylphenol	mg/kg (ppm)	0.83	80	53-119
Benzoic acid	mg/kg (ppm)	2.5	59	13-223
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.83	84	58-109
Naphthalene	mg/kg (ppm)	0.83	83	58-108
Hexachlorobutadiene	mg/kg (ppm)	0.83	93	55-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	90	67-109
Dimethyl phthalate	mg/kg (ppm)	0.83	84	70-130
Acenaphthylene	mg/kg (ppm)	0.83	92	70-130
Acenaphthene	mg/kg (ppm)	0.83	87	66-112
Dibenzofuran	mg/kg (ppm)	0.83	92	63-117
Diethyl phthalate	mg/kg (ppm)	0.83	79	64-120
Fluorene	mg/kg (ppm)	0.83	91	67-117
N-Nitrosodiphenylamine	mg/kg (ppm)	0.83	86	70-130
Hexachlorobenzene	mg/kg (ppm)	0.83	89	70-130
Pentachlorophenol	mg/kg (ppm)	0.83	85	60-133
Phenanthrene	mg/kg (ppm)	0.83	87	70-130
Anthracene	mg/kg (ppm)	0.83	85	70-130
Di-n-butyl phthalate	mg/kg (ppm)	0.83	79	54-127
Fluoranthene	mg/kg (ppm)	0.83	86	70-130
Pyrene	mg/kg (ppm)	0.83	94	70-130
Benzyl butyl phthalate	mg/kg (ppm)	0.83	92	65-132
Benz(a)anthracene	mg/kg (ppm)	0.83	95	70-130
Chrysene	mg/kg (ppm)	0.83	99	70-130
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.83	76	59-116
Di-n-octyl phthalate	mg/kg (ppm)	0.83	73	46-129
Benzo(a)pyrene	mg/kg (ppm)	0.83	83	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	81	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	83	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	90	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	64-127

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

303373

SAMPLE CHAIN OF CUSTODY 03/23/23 H5

Page # 1 of 4

Report To P. Leon / R. Jones / G. Hainsworth

Company Leon Environmental / CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (*signature*): Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor (Port) Jensen's Marina

PO #

REMARKS: Archive for DIF; Archive for SMS Pesticides (699); Project specific RLs? - Yes / No

INVOICE TO: Leon Environmental (L-E)

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	Ammonia NWTPH-Dx RS	Total Sulfides NWTPH-Gx RS	TBT	BTEX EPA 8021 RS	Dioxins/Furans NWTPH-HCID RS	VOCs EPA 8260	PAHs EPA 8270	TBT PCBs EPA 8082	Grain Size	TOC, Total Solids	SMS Metals, Hg	SMS SVOCs SMS PCBs + Pest.	* logged in under SDG 303333 NE Notes
SED-07G:0-10	01 A-F	3/20/23	1002	SOLIDS	8 (6)								X	X	X		X	SVOCs only +1 bioassay bag
SED-11G:0-10	02		0924		8 (6)									X	X	X	X	All SVOC, Pest, PCB +1 bioassay bag
SED-14G:0-10	03 A-I		1011		8 (6)								X	X	X	X	X	All SVOC, Pest, PCB +1 bioassay bag
SED-15G:0-10	04 A-C		1042		3								X	X	X	X		+1 bioassay bag
SED-24G:0-10	05		1106		3 (4)									X	X		X	SMS PCBs +Pest. only
SED-23G:0-10	06		1147		3 (4)									X	X		X	SMS PCBs +Pest only
SED-22G:0-10	07		1158		3 (4)									X	X		X	No SMS SVOCs, PCBs
SED-21G:0-10	08		1210		3 (4)									X	X		X	No SMS, SVOCs, PCBs
SED-03G:0-10	09 A-D		1315		4 (6)									X	X		X	SVOCs+Pest +1 bioassay bag
SED-20G:0-10	10 A-C	↓	1338	↓	4 (6)										X		X	No SMS SVOCs, PCBs

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/22/23	2100
Received by:	Preston Martin	NewFields	3/23/23	0500
Relinquished by:	Preston Martin	NewFields	3/23/23	1200
Received by: DeeDee Webber	DeeDee Webber	F+BI	3/23/23	1200

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Samples received at 2 °C

303373

SAMPLE CHAIN OF CUSTODY 03/23/23

H5

Page # 2 of 4

Report To Leon Jones Hainsworth

Company L-E CRETE

Address

City, State, ZIP

Phone 857.330.1359 Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME: PoFH Jensen's Marina

PO #

REMARKS: Archive for D/F, SMS Pest. (1699), others

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	Ammonia	Total Sulfides	NWTPH-Dx	BTEX EPA 8021	Dioxins/Furans NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Grain Size	TOC, Total Solids	SMS Metals Hg	SMS SVOCs, PCBs + Pests	Notes
SED-18G:0-10	11 A-C	3/20/23	1408	SOLIDS	3 (4)									X	X		X	No SVOCs ORDCBs
SED-19G:0-10	12 A-D		1427		5 (4)									X	X		X	No SVOCs ORDCBs
SED-01G:0-10	13 A-F		1445		8 (6)	X	X							(X)	(X)		(X)	Pest only +1 biossay bag
SED-01C:0-1	14	3/21/23	1151	SOLIDS	6									X	X		X	SMS Pest. only
SED-01C:1-3	15 A-B		1151		2													ARCHIVE ALL
SED-01C:3-5	16		1151		2													
SED-01C:5-7	17		1151		2													
SED-05C:0-1	18 A-F		1244		6									X	X		X	No PCBs
SED-05C:1-3	19 A-B		1244		2													ARCHIVE ALL
SED-05C:3-5	20		1244		2													

Samples received at 2oC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/22/23	2100
Received by:	Preston Martin	NewFields	3/23/23	0500
Relinquished by:	Preston Martin	NewFields	3/23/23	1200
Received by: DeeDee Hoh	DeeDee Webster	F+BI	3/23/23	1200

Friedman & Bruya, Inc.
Ph. (206) 285-8282

303373

SAMPLE CHAIN OF CUSTODY 03/23/23

H5

Page # 3 of 4

Report To Leon/Jones/Hainsworth

Company L-E/CRETE

Address

City, State, ZIP

Phone 952.330.1359 Email

SAMPLERS (signature) Rusty Jones / K. Jones	
PROJECT NAME PoFH Jensen's Marina	PO #
REMARKS Archive for DF SMS Pest/UBM, others Project specific RLs? - Yes / No	INVOICE TO L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: SMS Solids NWTPH Dx	SMS Solids NWTPH-Gx	SMS Solids BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	Amended Sulfides PAHs EPA 8270	SMS Metals, Hg PCBs EPA 8082	Grain Size	Toc Total Solids	Dioxins/Furans	TBT	Notes
SED-05C:5-7	21 A-B	3/21/23	1244	SOLIDS	2												ARCHIVE ALL
SED-05G:0-10	22 A-H		1310		8	X		X			X		X	X			+1 bioassay bag
SED-03C:0-1	23 A-F		1442		6	X		X					X	X			
SED-03C:1-3	24 A-B		1442		2												ARCHIVE ALL
SED-03C:3-5	25		1442		2												↓ ↓
SED-03C:5-7	26 ↓		1442		2												↓ ↓
SED-14C:0-1	27 A-I		1553		10	X	X	X				X	X	X	X	X	No D/F (Archive)
SED-14C:1-3	28 A B		1553		2	X	X	X					X	X	X	X	No D/F (Archive)
SED-14C:3-5	29		1553		2												ARCHIVE ALL
SED-14C:5-7	30 A B	↓	1533	↓	2												↓ ↓

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/22/23	2100
Received by:	Preston Martin	NewFields	3/23/23	0500
Relinquished by:	Preston Martin	NewFields	3/23/23	12.00
Received by: DeeDee Webber	DeeDee Webber	F&BI	3/23/23	1200

Friedman & Bruya, Inc.
Ph. (206) 285-8282

303373

SAMPLE CHAIN OF CUSTODY

03/23/23 ~~HS~~ HS

Page # 4 of 4

Report To Leon | Jones | Hainsworth

Company L-E | CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (signature) Rusty Jones

PROJECT NAME: Pt Jensen's Marina

PO #

REMARKS: Archive for D/F, SMS Pest (1668), other

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: SMS SVOCs NWTPH-Dx SIM	SMS PCBs NWTPH-Gx SIM	SMS Pesticides BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	SMS Metals Hg PCBs EPA 8082	Grain Size	TOC, Total Solids	Dioxins/Furans	TBT	Notes
SED-DUP C	~~35~~ 31 A-I	3.21.2023	1200	SOLIDS	8	X	X	X				X	X	X		X	Archive others
SED-07C:0-1	32 A-B	3.22.2023	0729		2												Archive
SED-07C:1-3	33		0729		2												Archive
SED-07C:3-5	34 A-D		0729		4												Archive all
SED-07C:5-7	35 A-D		0729		4												Archive all
~~SED-DUP2C+0-1F1~~	~~36~~	~~3/22/23~~	1200										X				~~Added at lab.~~ (NP) 3/23/23 moved to
																	SDG 303808MG
										Samples received at 2 °C							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Rusty Jones	CRETE	3/22/23	2100
Received by:	Preston Martin	NewFields	3/23/23	0500
Relinquished by:	Preston Martin	NewFields	3/23/23	1200
Received by:	DeeDee Webber	F+BT	3/23/23	1200

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 19, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included is the amended report from the testing of material submitted on March 24, 2023 from the Port of Friday Harbor Jensen's Marina, F&BI 303388 project. To reach the total organic carbon normalized SMS criteria, 1,2,4-trichlorobenzene, hexachlorobenzene, and butyl benzyl phthalate were lowered to the method detection limit.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Rusty Jones, Grant Hainsworth
NAA0508R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 8, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the additional results from the testing of material submitted on March 24, 2023 from the Port of Friday Harbor Jensen's Marina, F&BI 303388 project. There are 19 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Rusty Jones, Grant Hainsworth
NAA0508R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 24, 2023 by Friedman & Bruya, Inc. from the Crete Consulting Port of Friday Harbor Jensen's Marina, F&BI 303388 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Crete Consulting
303388 -01	SED-07C:0-1
303388 -02	SED-07C:1-3
303388 -03	SED-08C:0-1
303388 -04	SED-08C:1-3
303388 -05	SED-08C:3-5
303388 -06	SED-08C:5-7
303388 -07	SED-09C:0-1
303388 -08	SED-09C:1-3
303388 -09	SED-09C:3-5
303388 -10	SED-09C:5-7
303388 -11	SED-12C:0-1
303388 -12	SED-12C:1-3
303388 -13	SED-26C:0-1
303388 -14	SED-26C:1-3
303388 -15	SED-26C:3-5
303388 -16	SED-26C:5-7
303388 -17	SED-25C:0-1
303388 -18	SED-25C:1-3
303388 -19	SED-25C:3-5
303388 -20	SED-25C:5-7
303388 -21	SED-27C:0-1
303388 -22	SED-27C:1-3
303388 -23	SED-27C:3-5
303388 -24	SED-27C:5-7
303388 -25	SED-DUP2C
303388 -26	SED-10C:0-1
303388 -27	SED-10C:1-3
303388 -28	SED-10C:3-5
303388 -29	SED-10C:5-6
303388 -30	SED-11C:0-1
303388 -31	SED-11C:1-3
303388 -32	SED-11C:3-5
303388 -33	SED-27G:0-10
303388 -34	SED-DUP3C

Several 8270E compounds failed the calibration standard acceptance criteria. The affected data were flagged accordingly.

CASE NARRATIVE (continued)

The 8270 samples were reanalyzed without dilution and several compounds were lowered to the project criteria.

Bis(2-ethylhexyl)phthalate exceeded the acceptance criteria in the 8270E laboratory control sample. The compound was not detected, therefore the data were acceptable.

An 8270E internal standard failed the acceptance criteria for sample SED-26C:0-1. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-07C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-01
Date Analyzed:	03/29/23	Data File:	032906.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	46	14	115
Phenol-d6	56	29	121
Nitrobenzene-d5	49	16	137
2-Fluorobiphenyl	60	46	122
2,4,6-Tribromophenol	82	17	154
Terphenyl-d14	92	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.020
2-Methylphenol	<0.063 j	Anthracene	0.0075
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.050
2,4-Dimethylphenol	<0.029 j	Pyrene	0.079
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.028
Naphthalene	0.0028	Chrysene	0.070
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0024	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.12
Acenaphthylene	<0.002	Benzo(b)fluoranthene	0.23
Acenaphthene	<0.002	Benzo(k)fluoranthene	0.079
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.059
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.015
Fluorene	0.0026	Benzo(g,h,i)perylene	0.050

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-08C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-03
Date Analyzed:	04/26/23	Data File:	042615.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	64	22	119
Phenol-d6	74	38	124
Nitrobenzene-d5	63	10	198
2-Fluorobiphenyl	77	45	117
2,4,6-Tribromophenol	80	11	158
Terphenyl-d14	98	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.36
2-Methylphenol	<0.063 j	Anthracene	0.050
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	1.4
2,4-Dimethylphenol	<0.029 j	Pyrene	1.3
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.25
Naphthalene	0.010	Chrysene	0.58
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.012	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.28
Acenaphthylene	0.012	Benzo(b)fluoranthene	0.64
Acenaphthene	0.019	Benzo(k)fluoranthene	0.25
Dibenzofuran	0.013	Indeno(1,2,3-cd)pyrene	0.067
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.015
Fluorene	0.026	Benzo(g,h,i)perylene	0.048

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-09C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-07
Date Analyzed:	03/29/23	Data File:	032910.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	56	14	115
Phenol-d6	73	29	121
Nitrobenzene-d5	65	16	137
2-Fluorobiphenyl	79	46	122
2,4,6-Tribromophenol	90	17	154
Terphenyl-d14	104	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	0.0049 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.11
2-Methylphenol	<0.063 j	Anthracene	0.035
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.41
2,4-Dimethylphenol	<0.029 j	Pyrene	0.48
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.005 j	Benz(a)anthracene	0.14
Naphthalene	0.036	Chrysene	0.30
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.016	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.14
Acenaphthylene	0.0069	Benzo(b)fluoranthene	0.31
Acenaphthene	0.015	Benzo(k)fluoranthene	0.10
Dibenzofuran	0.011	Indeno(1,2,3-cd)pyrene	0.047
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.013
Fluorene	0.022	Benzo(g,h,i)perylene	0.034

Note: The 1,2,4-trichlorobenzene reporting limit was raised. The compound was observed in the blank.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-09C:1-3	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-08
Date Analyzed:	03/29/23	Data File:	032908.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	64	14	115
Phenol-d6	78	29	121
Nitrobenzene-d5	71	16	137
2-Fluorobiphenyl	79	46	122
2,4,6-Tribromophenol	86	17	154
Terphenyl-d14	89	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.0041
2-Methylphenol	<0.063 j	Anthracene	<0.002
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.0025
2,4-Dimethylphenol	<0.029 j	Pyrene	0.0029
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	<0.002
Naphthalene	<0.002	Chrysene	<0.002
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	<0.002	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	<0.002
Acenaphthylene	<0.002	Benzo(b)fluoranthene	<0.002
Acenaphthene	<0.002	Benzo(k)fluoranthene	<0.002
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	<0.002
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.002
Fluorene	0.0021	Benzo(g,h,i)perylene	<0.002

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-26C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-13
Date Analyzed:	04/26/23	Data File:	042616.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	60	22	119
Phenol-d6	71	38	124
Nitrobenzene-d5	60	10	198
2-Fluorobiphenyl	71	45	117
2,4,6-Tribromophenol	82	11	158
Terphenyl-d14	106	50	124

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.091
2-Methylphenol	<0.063 j	Anthracene	0.028
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1 ca
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.47
2,4-Dimethylphenol	<0.029 j	Pyrene	0.81
Benzoic acid	<0.5	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.16
Naphthalene	0.015	Chrysene	0.31
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0099	Di-n-octyl phthalate	<0.1 J
Dimethyl phthalate	0.071 j	Benzo(a)pyrene	0.26 J
Acenaphthylene	0.011	Benzo(b)fluoranthene	0.56 J
Acenaphthene	0.0083	Benzo(k)fluoranthene	0.20 J
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.067 J
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.016 J
Fluorene	0.012	Benzo(g,h,i)perylene	0.051 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-26C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-13 1/5
Date Analyzed:	03/29/23	Data File:	032909.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	54 d	14	115
Phenol-d6	68 d	29	121
Nitrobenzene-d5	62 d	16	137
2-Fluorobiphenyl	72 d	46	122
2,4,6-Tribromophenol	88 d	17	154
Terphenyl-d14	88 d	31	167

Compounds:	Concentration mg/kg (ppm)
Di-n-octyl phthalate	<0.5
Benzo(a)pyrene	0.26
Benzo(b)fluoranthene	0.46
Benzo(k)fluoranthene	0.17
Indeno(1,2,3-cd)pyrene	0.12
Dibenz(a,h)anthracene	0.030
Benzo(g,h,i)perylene	0.094

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-26C:1-3	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-14
Date Analyzed:	03/29/23	Data File:	032911.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	68	14	115
Phenol-d6	81	29	121
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	90	17	154
Terphenyl-d14	95	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.011
2-Methylphenol	<0.063 j	Anthracene	0.0029
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.049
2,4-Dimethylphenol	<0.029 j	Pyrene	0.071
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.014
Naphthalene	<0.002	Chrysene	0.030
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0021	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.031
Acenaphthylene	<0.002	Benzo(b)fluoranthene	0.058
Acenaphthene	<0.002	Benzo(k)fluoranthene	0.019
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.011
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0028
Fluorene	<0.002	Benzo(g,h,i)perylene	0.0083

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-25C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-17
Date Analyzed:	03/29/23	Data File:	032920.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	14	115
Phenol-d6	59	29	121
Nitrobenzene-d5	51	16	137
2-Fluorobiphenyl	60	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	85	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.22
2-Methylphenol	<0.063 j	Anthracene	0.051
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.36
2,4-Dimethylphenol	<0.029 j	Pyrene	0.45
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.15
Naphthalene	0.011	Chrysene	0.19
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.012	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.20
Acenaphthylene	0.0075	Benzo(b)fluoranthene	0.29
Acenaphthene	0.0041	Benzo(k)fluoranthene	0.099
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.046
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0089
Fluorene	0.020	Benzo(g,h,i)perylene	0.040

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-25C:1-3	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-18
Date Analyzed:	03/29/23	Data File:	032912.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	66	14	115
Phenol-d6	80	29	121
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	89	17	154
Terphenyl-d14	97	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.0041
2-Methylphenol	<0.063 j	Anthracene	<0.002
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.011
2,4-Dimethylphenol	<0.029 j	Pyrene	0.013
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.0051
Naphthalene	<0.002	Chrysene	0.0068
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	<0.002	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.0047
Acenaphthylene	<0.002	Benzo(b)fluoranthene	0.011
Acenaphthene	<0.002	Benzo(k)fluoranthene	0.0033
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	<0.002
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.002
Fluorene	<0.002	Benzo(g,h,i)perylene	<0.002

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-10C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-26 1/20
Date Analyzed:	03/29/23	Data File:	032918.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	48 d	14	115
Phenol-d6	69 d	29	121
Nitrobenzene-d5	58 d	16	137
2-Fluorobiphenyl	72 d	46	122
2,4,6-Tribromophenol	100 d	17	154
Terphenyl-d14	88 d	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2	N-Nitrosodiphenylamine	<0.2
1,4-Dichlorobenzene	<0.2	Hexachlorobenzene	<0.2
1,2-Dichlorobenzene	<0.2	Pentachlorophenol	<1
Benzyl alcohol	<1.1 j	Phenanthrene	0.25
2-Methylphenol	<1.3 j	Anthracene	0.067
Hexachloroethane	<0.2	Di-n-butyl phthalate	<2
3-Methylphenol + 4-Methylphenol	<4	Fluoranthene	0.54
2,4-Dimethylphenol	<0.58 j	Pyrene	0.57
Benzoic acid	<10 ca	Benzyl butyl phthalate	<1.3 j
1,2,4-Trichlorobenzene	<0.2	Benz(a)anthracene	0.22
Naphthalene	<0.04	Chrysene	0.30
Hexachlorobutadiene	<0.2	Bis(2-ethylhexyl) phthalate	<3.2
2-Methylnaphthalene	<0.04	Di-n-octyl phthalate	<2
Dimethyl phthalate	<1.4 j	Benzo(a)pyrene	0.26
Acenaphthylene	<0.04	Benzo(b)fluoranthene	0.43
Acenaphthene	<0.04	Benzo(k)fluoranthene	0.14
Dibenzofuran	<0.2	Indeno(1,2,3-cd)pyrene	0.069
Diethyl phthalate	<2	Dibenz(a,h)anthracene	<0.04
Fluorene	<0.04	Benzo(g,h,i)perylene	0.055

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-10C:1-3	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-27
Date Analyzed:	03/29/23	Data File:	032913.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	61	14	115
Phenol-d6	78	29	121
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	83	46	122
2,4,6-Tribromophenol	93	17	154
Terphenyl-d14	109	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.040
2-Methylphenol	<0.063 j	Anthracene	0.0081
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.11
2,4-Dimethylphenol	<0.029 j	Pyrene	0.14
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.050
Naphthalene	0.0043	Chrysene	0.059
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0028	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.067
Acenaphthylene	0.0036	Benzo(b)fluoranthene	0.084
Acenaphthene	<0.002	Benzo(k)fluoranthene	0.032
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.021
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0048
Fluorene	0.0038	Benzo(g,h,i)perylene	0.018

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-11C:0-1	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-30
Date Analyzed:	03/29/23	Data File:	032919.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	14	115
Phenol-d6	57	29	121
Nitrobenzene-d5	48	16	137
2-Fluorobiphenyl	59	46	122
2,4,6-Tribromophenol	83	17	154
Terphenyl-d14	99	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.13
2-Methylphenol	<0.063 j	Anthracene	0.045
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.36
2,4-Dimethylphenol	<0.029 j	Pyrene	0.44
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	0.18
Naphthalene	0.0061	Chrysene	0.27
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0074	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.22
Acenaphthylene	0.0054	Benzo(b)fluoranthene	0.46
Acenaphthene	0.013	Benzo(k)fluoranthene	0.15
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.072
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.018
Fluorene	0.013	Benzo(g,h,i)perylene	0.060

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SED-11C:1-3	Client:	Leon Environmental
Date Received:	03/24/23	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	303388-31
Date Analyzed:	03/29/23	Data File:	032914.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	60	14	115
Phenol-d6	77	29	121
Nitrobenzene-d5	69	16	137
2-Fluorobiphenyl	78	46	122
2,4,6-Tribromophenol	82	17	154
Terphenyl-d14	100	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	0.044
2-Methylphenol	<0.063 j	Anthracene	0.013
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	0.12
2,4-Dimethylphenol	<0.029 j	Pyrene	0.16
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	0.023 j
1,2,4-Trichlorobenzene	<0.005 j	Benz(a)anthracene	0.048
Naphthalene	0.0044	Chrysene	0.058
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	0.0036	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	0.058
Acenaphthylene	0.0033	Benzo(b)fluoranthene	0.096
Acenaphthene	0.0067	Benzo(k)fluoranthene	0.033
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	0.018
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	0.0039
Fluorene	0.0067	Benzo(g,h,i)perylene	0.015

Note: The 1,2,4-trichlorobenzene reporting limit was raised. The compound was observed in the blank.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Leon Environmental
Date Received:	Not Applicable	Project:	Port of Friday Harbor
Date Extracted:	03/28/23	Lab ID:	03-809 mb2
Date Analyzed:	03/29/23	Data File:	032905.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	14	115
Phenol-d6	80	29	121
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	84	46	122
2,4,6-Tribromophenol	88	17	154
Terphenyl-d14	92	31	167

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	N-Nitrosodiphenylamine	<0.01
1,4-Dichlorobenzene	<0.01	Hexachlorobenzene	<0.0021 j
1,2-Dichlorobenzene	<0.01	Pentachlorophenol	<0.05
Benzyl alcohol	<0.057 j	Phenanthrene	<0.002
2-Methylphenol	<0.063 j	Anthracene	<0.002
Hexachloroethane	<0.01	Di-n-butyl phthalate	<0.1
3-Methylphenol + 4-Methylphenol	<0.2	Fluoranthene	<0.002
2,4-Dimethylphenol	<0.029 j	Pyrene	<0.002
Benzoic acid	<0.5 ca	Benzyl butyl phthalate	<0.02 j
1,2,4-Trichlorobenzene	<0.004 j	Benz(a)anthracene	<0.002
Naphthalene	<0.002	Chrysene	<0.002
Hexachlorobutadiene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
2-Methylnaphthalene	<0.002	Di-n-octyl phthalate	<0.1
Dimethyl phthalate	<0.071 j	Benzo(a)pyrene	<0.002
Acenaphthylene	<0.002	Benzo(b)fluoranthene	<0.002
Acenaphthene	<0.002	Benzo(k)fluoranthene	<0.002
Dibenzofuran	<0.01	Indeno(1,2,3-cd)pyrene	<0.002
Diethyl phthalate	<0.1	Dibenz(a,h)anthracene	<0.002

Date of Report: 05/08/23
Date Received: 03/24/23
Project: Port of Friday Harbor Jensen's Marina, F&BI 303388

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 303433-04 1/25 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	4.2	<2.5	90	98	50-150	9
1,4-Dichlorobenzene	mg/kg (ppm)	4.2	<0.25	83	84	50-150	1
1,2-Dichlorobenzene	mg/kg (ppm)	4.2	<0.25	83	85	50-150	2
Benzyl alcohol	mg/kg (ppm)	21	<2.5	88	89	50-150	1
2-Methylphenol	mg/kg (ppm)	4.2	<2.5	91	93	50-150	2
Hexachloroethane	mg/kg (ppm)	4.2	<0.25	83	85	50-150	2
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	4.2	<5	94	95	50-150	1
2,4-Dimethylphenol	mg/kg (ppm)	4.2	<2.5	88	92	35-117	4
Benzoic acid	mg/kg (ppm)	13	<12	36	32	10-105	12
1,2,4-Trichlorobenzene	mg/kg (ppm)	4.2	<0.25	87	91	50-150	4
Naphthalene	mg/kg (ppm)	4.2	<0.05	85	87	50-150	2
Hexachlorobutadiene	mg/kg (ppm)	4.2	<0.25	85	92	50-150	8
2-Methylnaphthalene	mg/kg (ppm)	4.2	<0.05	91	88	50-150	3
Dimethyl phthalate	mg/kg (ppm)	4.2	<2.5	97	99	50-150	2
Acenaphthylene	mg/kg (ppm)	4.2	<0.05	98	98	50-150	0
Acenaphthene	mg/kg (ppm)	4.2	<0.05	94	95	50-150	1
Dibenzofuran	mg/kg (ppm)	4.2	<0.25	89	88	50-150	1
Diethyl phthalate	mg/kg (ppm)	4.2	<2.5	100	97	50-150	3
Fluorene	mg/kg (ppm)	4.2	<0.05	98	96	50-150	2
N-Nitrosodiphenylamine	mg/kg (ppm)	4.2	<0.25	96	97	50-150	1
Hexachlorobenzene	mg/kg (ppm)	4.2	<0.25	91	94	50-150	3
Pentachlorophenol	mg/kg (ppm)	4.2	<1.2	105	99	15-159	6
Phenanthrene	mg/kg (ppm)	4.2	<0.05	94	94	10-170	0
Anthracene	mg/kg (ppm)	4.2	<0.05	95	94	50-150	1
Di-n-butyl phthalate	mg/kg (ppm)	4.2	<2.5	105	102	50-150	3
Fluoranthene	mg/kg (ppm)	4.2	<0.05	99	97	10-203	2
Pyrene	mg/kg (ppm)	4.2	<0.05	96	98	10-208	2
Benzyl butyl phthalate	mg/kg (ppm)	4.2	<2.5	90	90	50-150	0
Benz(a)anthracene	mg/kg (ppm)	4.2	<0.05	98	98	37-146	0
Chrysene	mg/kg (ppm)	4.2	<0.05	97	98	36-144	1
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	4.2	<4	94	94	50-150	0
Di-n-octyl phthalate	mg/kg (ppm)	4.2	<2.5	81	76	10-243	6
Benzo(a)pyrene	mg/kg (ppm)	4.2	<0.05	96	95	40-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	4.2	<0.05	93	92	45-157	1
Benzo(k)fluoranthene	mg/kg (ppm)	4.2	<0.05	97	94	50-150	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	4.2	<0.05	97	100	24-145	3
Dibenz(a,h)anthracene	mg/kg (ppm)	4.2	<0.05	97	100	31-137	3
Benzo(g,h,i)perylene	mg/kg (ppm)	4.2	<0.05	96	99	14-141	3

Date of Report: 05/08/23
Date Received: 03/24/23
Project: Port of Friday Harbor Jensen's Marina, F&BI 303388

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Phenol	mg/kg (ppm)	0.83	91	64-106
1,4-Dichlorobenzene	mg/kg (ppm)	0.83	84	49-108
1,2-Dichlorobenzene	mg/kg (ppm)	0.83	85	50-110
Benzyl alcohol	mg/kg (ppm)	4.2	88	36-147
2-Methylphenol	mg/kg (ppm)	0.83	91	63-112
Hexachloroethane	mg/kg (ppm)	0.83	83	46-112
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.83	94	67-111
2,4-Dimethylphenol	mg/kg (ppm)	0.83	90	53-119
Benzoic acid	mg/kg (ppm)	2.5	60	13-223
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.83	89	58-109
Naphthalene	mg/kg (ppm)	0.83	85	58-108
Hexachlorobutadiene	mg/kg (ppm)	0.83	88	55-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	90	67-109
Dimethyl phthalate	mg/kg (ppm)	0.83	92	70-130
Acenaphthylene	mg/kg (ppm)	0.83	95	70-130
Acenaphthene	mg/kg (ppm)	0.83	91	66-112
Dibenzofuran	mg/kg (ppm)	0.83	85	63-117
Diethyl phthalate	mg/kg (ppm)	0.83	91	64-120
Fluorene	mg/kg (ppm)	0.83	93	67-117
N-Nitrosodiphenylamine	mg/kg (ppm)	0.83	96	70-130
Hexachlorobenzene	mg/kg (ppm)	0.83	91	70-130
Pentachlorophenol	mg/kg (ppm)	0.83	106	60-133
Phenanthrene	mg/kg (ppm)	0.83	95	70-130
Anthracene	mg/kg (ppm)	0.83	96	70-130
Di-n-butyl phthalate	mg/kg (ppm)	0.83	90	54-127
Fluoranthene	mg/kg (ppm)	0.83	97	70-130
Pyrene	mg/kg (ppm)	0.83	101	70-130
Benzyl butyl phthalate	mg/kg (ppm)	0.83	90	65-132
Benz(a)anthracene	mg/kg (ppm)	0.83	98	70-130
Chrysene	mg/kg (ppm)	0.83	97	70-130
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.83	241 vo	59-116
Di-n-octyl phthalate	mg/kg (ppm)	0.83	75	46-129
Benzo(a)pyrene	mg/kg (ppm)	0.83	96	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	92	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	91	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	99	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	96	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	67-127

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

303388

SAMPLE CHAIN OF CUSTODY 03/24/23 #3/#4

Page # 1 of 4

Report To Leon Jones Hainsworth

Company LE CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (signature): Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor Jensen's Marina

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: Dioxins/Furans NWTPH-Dx SGC	NWTPH-Dx TBT	Total Sulfides BTEX EPA 8021B	Ammonia NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Grain Size	TOC, Total Solids	SMS Metals, Hg	SMS SVOCs, PCBs, SMS Pest.	Notes
SED-07C:0-1	01 A-F	3/22/2023	0729	SOLIDS	7		X						X	X		X	SMS SVOCs only D/F Archive
SED-07C:1-3	02 A-C		0729		3		X						X	X			
SED-08C:0-1	03 A-I		0807		9	X	X						X	X		(X)	per Appendix ME
SED-08C:1-3	04 A-G		0807		7		X						X	X		X	Hold SMS SVOCs, PCBs, SMS Pest. D/F Archive
SED-08C:3-5	05 A-D		0807		4												Archive All D/F Archive
SED-08C:5-7	06 A-D		0807		4												Archive All D/F Archive
SED-09C:0-1	07 A-H		0833		8	X	X						X	X	X	X	
SED-09C:1-3	08 A-J		0833		8	X	X						X	X	X	X	
SED-09C:3-5	09 A-D		0833		4												Archive All D/F Archive
SED-09C:5-7	10 A-D	↓	0833	↓	4												Archive All D/F Archive

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/24/23	0809
Received by: [signature]	Nhan Phan	FedEx	3/24/23	0808
Relinquished by:		Samples received at 0 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

303388

SAMPLE CHAIN OF CUSTODY 03/24/23

H3/H4

Page # 2 of 4

Report To Leon Jones Hainsworth

Company L-E/CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (signature) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Marina

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	Dioxins/Furans NWTPH-Dx	TBT NWTPH-Dx	Total Sulfides BTEX EPA 8021B	SMS SVOCs NWTPH-HCID	PCB Aroclors VOCs EPA 8000	SMS Pesticides EAHs EPA 8270	PCBs EPA 8082	Grain Size	TOC, Total Solids	SMS Metals, Hg	D/F Archive	Notes
SED-12C:0-1	11 A-H	3/22/2023	0925	SOLIDS	8	X				X			X	X			
SED-12C:1-3	12 A-D		0925		4											X	Archive All
SED-26C:0-1	13 A-H		1038		8	X	X		X	X	X		X	X	X	X	
SED-26C:1-3	14 A-I		1038		10		X		X	X			X	X	X	X	
SED-26C:3-5	15 A-D		1038		4											X	Archive All
SED-26C:5-7	16 A-D		1038		4											X	Archive All
SED-25C:0-1	17 A-H		1119		8	X	X		X	X	X		X	X	X		
SED-25C:1-3	18 A-I		1119		10		X		X	X			X	X	X		D/F Archive
SED-25C:3-5	19 A-D		1119		4											X	Archive All
SED-25C:5-7	20 A-D	↓	1119	↓	4											X	Archive All

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/24/23	0805
Received by:	Nhan Phan	FEBI	3/24/23	0808
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

303384

SAMPLE CHAIN OF CUSTODY 03/24/23 #3/#4

Page # 3 of 4

Report To Leon/Jones/Hainsworth

Company L-E/CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (signature) R. Jones Rusty Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Marina

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: Dioxins/Furans EPA 8290A/1613B (HOLD)	Dioxins/Furans EPA 8290A/1613B (TEF)	NWTPH-Gx/BTEX EPA 8021B (Total Surface Sed)	NWTPH-Dx (HOLD)	SVOCs EPA 8270E SIM (HOLD)	VOCs EPA 8260	SVOCs EPA 8270E SIM (Polars)	PCBs EPA 8082	Grain Size	TOC, Total Solids	SVOCs, Metals, Hg	D/F Archive	Notes
SED-27C:0-1	21 A-E	3/22/2023	1324	SOLIDS	5													Archive All
SED-27C:1-3	22 A-F		1324		6													Archive All
SED-27C:3-5	23 A-D		1324		4													Archive All
SED-27C:5-7	24 A-D	↓	1324	↓	4													Archive All
~~DS~~ SED-DUP2C	25	3/22/2023	1200	SOLIDS	1									X				
SED-10C:0-1	26 A-H	3/23/23	0817	SOLIDS	(8)	X	X		X		X		X	X	X	X	X	
SED-10C:1-3	27 A-I		0817		9	X	X		X		X		X	X	X	X	X	
SED-10C:3-5	28 A-D		0817		4													Archive All D/F Archive
SED-10C:5-6	29 A-D		0817		4													Archive All D/F Archive
SED-11C:0-1	30 A-G	↓	0842	↓	7	X			X			X	X	X	X	X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/24/23	0808
Received by:	Nham Pham	FCBI	3/24/23	0808
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 03/24/23 #3/#4

303388

Report To Leon Jones Hainsworth

Company L-E/CRETE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (*signature*) Rusty Jones R Jones

PROJECT NAME: Port of Friday Harbor

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: Biaxins/Furans NWTPH-DX HCID	TBT NWTPH-Gx/BTEX	Total Sulfides BTEX EPA 8021B	Ammonia NWTPH-HCID	SMS SVOCs EPA 8270D	SMS Pesticides, PAHs EPA 8270	PCBs EPA 8082	Grain Size	TOC, Total Solids	SMS Metals Hg	DIF Archive	Notes
SED-11C: 1-3	31 A-I	3/23/2023	0842	SOLIDS	9	X				X	X	X	X	X	X		Hg Metal only
SED-11C: 3-5	32 A-D	↓	0842	↓	4											X	Archive All
SED-27G: 0-10	33 A-H	↓	1017	↓	8			X	X								+1 biossay bag
SED-DUP3C	34 A-B	↓	1200	↓	2						X		X	X			SMS Pesticides if volume permit

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	3/24/23	0805
Received by:	Nhan Phan	FCBI	3/24/23	0808
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 23, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the results from the testing of material submitted on April 13, 2023 from the Port of Friday Harbor, Jensen's Boatyard R.I., F&BI 304191 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Rusty Jones
NAA0523R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 13, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor, Jensen's Boatyard R.I., F&BI 304191 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
304191 -01	DUP01-0423
304191 -02	MW9-0423
304191 -03	MW8-0423
304191 -04	MW3-0423
304191 -05	MW4-0423
304191 -06	MW7-0423
304191 -07	MW1-0423
304191 -08	DUP03-0423
304191 -09	MW6-0423
304191 -10	MW2-0423
304191 -11	MW5-0423

The samples were sent to ARI for dioxin and furan and tributyltins analyses. The report is enclosed.

SAMPLE CHAIN OF CUSTODY 04/13/23 C4

304191

Report To Jones/Hainsworth/Leon

Company Crete Consulting, Leon Environmental

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Boatyard R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

Page # 1 of 2

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins/Furans	TBT			Notes
DUP01-0423	01	4/10/2023	1200	WATER	1								X				
MW9-0423	02 A-B		1755		2								X	X			
MW8-0423	03		1857		2								X	X			
MW3-0423	04		2010		2								X	X			
MW4-0423	05	4/11/2023	1912		2								X	X			
~~DUP02-0423~~			1200														RJ
MW7-0423	06 A-B	4/11/2023	1824	WATER	2								X	X			
MW1-0423	07		2011		2								X	X			
DUP03-0423	08	4/12/2023	1916		1									X			
MW6-0423	09 A-B		1716		2								X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/23	1205
~~Received by:~~	Michael Eachl	FLBA	4/13/23	1205
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CHAIN OF CUSTODY 04/13/23 C4

304191

Report To Jones/Hainsworth/Leon

Company Crete Consult./Leon Env.

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor, Jensen's Marina R.I.

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins/Furans	TBT			Notes
MW2-0423	10 A-B	4/12/2023	1916	WATER	2								X	X			
MW5-0423	11 ↓	↓	1815	↓	2								X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	4/13/23	1205
~~Received by:~~	Michael Erdahl	F1 Bn	4/13/23	1205
Relinquished by:		Samples received at 0°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

17 May 2023

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 304191 (Port of Friday Harbor)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23D0359	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC



Shelly Fishel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

23D0359

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
ARI

PROJECT NAME/NO.	PO #
304191	D-262

REMARKS

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	1613B Dioxins/Furans	TBT									Notes
DUP01-0423		4/10/2023	1200	water	1	x										
MW9-0423		4/10/2023	1755	water	2	x	x									
MW8-0423		4/10/2023	1857	water	2	x	x									
MW3-0423		4/10/2023	2010	water	2	x	x									
MW4-0423		4/11/2023	1912	water	2	x	x									
MW7-0423		4/11/2023	1824	water	2	x	x									
MW1-0423		4/11/2023	2011	water	2	x	x									
DUP03-0423		4/12/2023	1916	water	1		x									
MW6-0423		4/12/2023	1716	water	2	x	x									
MW2-0423		4/12/2023	1916	water	2	x	x									
MW5-0423		4/12/2023	1815	water	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	4/14/23	0930
Received by:			ARI LLC	4/14/23	1439
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DUP01-0423	23D0359-01	Water	10-Apr-2023 12:00	14-Apr-2023 10:39
MW9-0423	23D0359-02	Water	10-Apr-2023 17:55	14-Apr-2023 10:39
MW8-0423	23D0359-03	Water	10-Apr-2023 18:57	14-Apr-2023 10:39
MW3-0423	23D0359-04	Water	10-Apr-2023 20:10	14-Apr-2023 10:39
MW4-0423	23D0359-05	Water	11-Apr-2023 19:12	14-Apr-2023 10:39
MW7-0423	23D0359-06	Water	11-Apr-2023 18:24	14-Apr-2023 10:39
MW1-0423	23D0359-07	Water	11-Apr-2023 20:11	14-Apr-2023 10:39
DUP03-0423	23D0359-08	Water	12-Apr-2023 19:16	14-Apr-2023 10:39
MW6-0423	23D0359-09	Water	12-Apr-2023 17:16	14-Apr-2023 10:39
MW2-0423	23D0359-10	Water	12-Apr-2023 19:16	14-Apr-2023 10:39
MW5-0423	23D0359-11	Water	12-Apr-2023 18:15	14-Apr-2023 10:39

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 304191
Project Number: Port of Friday Harbor
Work Order: 23D0359

Sample receipt

Sample(s) as listed on the preceding page were received 14-Apr-2023 10:39 under ARI work order 23D0359. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dioxin/Furans - EPA Method 1613

The sample(s) were extracted and analyzed within the recommended holding times. Analysis was performed using an application specific column developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Initial and continuing calibrations were within method requirements.

Labeled internal standard areas were within limits.

The cleanup surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits except as follows. In preparation batch BLD0507 1234678-HpCDD, 234678-HpCDF, OCDD and OCDF were detected above the method detection limits (MDL). In preparation batch BLD0547 OCDD was detected above the MDL. All associated samples which contain these analytes have been flagged with a "B" qualifier.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Butyl Tin(s) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya
Project Name: TST/Dioxins
COC No(s): NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 23D0359
Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1039 — 2.6 3.5 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 74a972a8

Cooler Accepted by: ZB Date: 04/14/23 Time: 1039

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: ____ Equipment: ____ Split by: ____

Samples Logged by: PIB Date: 4/14/23 Time: 15:40 Labels checked by: PCB

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

DUP01-0423

23D0359-01 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 12:00

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/15/2023 23:55

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-01 A 01
	Preparation Batch: BLD0547	Sample Size: 950 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-01 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-01 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	1.16	10.5	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.83	10.5	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.38	10.5	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.23	10.5	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.49	10.5	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.71	10.5	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.71	10.5	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.77	10.5	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.89	10.5	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.96	10.5	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.90	10.5	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.02	10.5	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	0.97	21.1	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.35	10.5	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.586	0.893-1.208	1.27	10.5	**1.93**	pg/L	EMPC, J
OCDF			0.757-1.024	2.02	21.1	ND	pg/L	U
OCDD		0.674	0.757-1.024	1.83	52.6	**8.80**	pg/L	EMPC, J, B
Homologue groups								
Total TCDF					10.5	ND	pg/L	U
Total TCDD					10.5	ND	pg/L	U
Total PeCDF					10.5	**ND**	pg/L	U
Total PeCDD					10.5	ND	pg/L	U
Total HxCDF					10.5	ND	pg/L	U
Total HxCDD					10.5	ND	pg/L	U
Total HpCDF					10.5	ND	pg/L	U
Total HpCDD					10.5	ND	pg/L	U

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

DUP01-0423

23D0359-01 (Water)

Dioxins/Furans

Method: EPA 1613B
Instrument: AUTOSPEC01 Analyst: pk

Sampled: 04/10/2023 12:00
Analyzed: 05/15/2023 23:55

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):					1.76		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):					0.02		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):					1.74		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):					0.00		

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

DUP01-0423

23D0359-01 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 12:00

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/15/2023 23:55

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.765*	*0.655-0.886*	*24-169 %*	*99.8*	*%*	
13C12-2,3,7,8-TCDD		*0.783*	*0.655-0.886*	*25-164 %*	*108*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.487*	*1.318-1.783*	*24-185 %*	*98.3*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.505*	*1.318-1.783*	*21-178 %*	*105*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.612*	*1.318-1.783*	*25-181 %*	*106*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.511*	*0.434-0.587*	*26-152 %*	*89.5*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.467*	*0.434-0.587*	*26-123 %*	*89.8*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.529*	*0.434-0.587*	*28-136 %*	*94.0*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.516*	*0.434-0.587*	*29-147 %*	*96.4*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.258*	*1.054-1.426*	*32-141 %*	*97.2*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.228*	*1.054-1.426*	*28-130 %*	*95.7*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.447*	*0.374-0.506*	*28-143 %*	*97.9*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.431*	*0.374-0.506*	*26-138 %*	*98.8*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.123*	*0.893-1.208*	*23-140 %*	*95.1*	*%*	
13C12-OCDD		*0.839*	*0.757-1.024*	*17-157 %*	*107*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*100*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW9-0423

23D0359-02 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/10/2023 17:55
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 15:05

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-02 B 01
	Preparation Batch: BLD0408	Sample Size: 150 mL	
	Prepared: 04/17/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-02 B 01
	Cleanup Batch: CLD0133	Initial Volume: 0.5 uL	
	Cleaned: 20-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0107	ug/L	M
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0556	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*70.3*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*46.0*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW9-0423

23D0359-02 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 17:55
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 00:45

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-02 A 01
	Preparation Batch: BLD0547	Sample Size: 965 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-02 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-02 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.91	10.4	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.78	10.4	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.16	10.4	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.05	10.4	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	0.97	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.73	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.77	10.4	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.80	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.84	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.16	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	1.10	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.24	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	0.91	20.7	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.20	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.094	0.893-1.208	1.37	10.4	**2.16**	pg/L	J
OCDF			0.757-1.024	1.99	20.7	ND	pg/L	U
OCDD			0.757-1.024	1.80	51.8	ND	pg/L	U
Homologue groups								
Total TCDF					10.4	ND	pg/L	U
Total TCDD					10.4	ND	pg/L	U
Total PeCDF					10.4	**ND**	pg/L	U
Total PeCDD					10.4	ND	pg/L	U
Total HxCDF					10.4	ND	pg/L	U
Total HxCDD					10.4	ND	pg/L	U
Total HpCDF					10.4	ND	pg/L	U
Total HpCDD					10.4	**2.16**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.46
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.02
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.46
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.02

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW9-0423

23D0359-02 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 17:55
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 00:45

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.779*	*0.655-0.886*	*24-169 %*	*100*	*%*	
13C12-2,3,7,8-TCDD		*0.776*	*0.655-0.886*	*25-164 %*	*106*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.508*	*1.318-1.783*	*24-185 %*	*99.1*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.510*	*1.318-1.783*	*21-178 %*	*104*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.577*	*1.318-1.783*	*25-181 %*	*105*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.509*	*0.434-0.587*	*26-152 %*	*92.3*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.514*	*0.434-0.587*	*26-123 %*	*84.6*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.515*	*0.434-0.587*	*28-136 %*	*93.8*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.507*	*0.434-0.587*	*29-147 %*	*109*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.273*	*1.054-1.426*	*32-141 %*	*98.3*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.252*	*1.054-1.426*	*28-130 %*	*95.1*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.449*	*0.374-0.506*	*28-143 %*	*98.1*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.419*	*0.374-0.506*	*26-138 %*	*108*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.056*	*0.893-1.208*	*23-140 %*	*99.6*	*%*	
13C12-OCDD		*0.883*	*0.757-1.024*	*17-157 %*	*102*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*96.8*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW8-0423

23D0359-03 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/10/2023 18:57
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 15:18

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-03 B 01
	Preparation Batch: BLD0408	Sample Size: 150 mL	
	Prepared: 04/17/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-03 B 01
	Cleanup Batch: CLD0133	Initial Volume: 0.5 uL	
	Cleaned: 20-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0547	ug/L	
Dibutyltin Ion	14488-53-0	1	0.0077	0.0093	ug/L	
Butyltin Ion	78763-54-9	1	0.0060	0.0750	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*75.4*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*50.7*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW8-0423

23D0359-03 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 18:57
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 01:34

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-03 A 01
	Preparation Batch: BLD0547	Sample Size: 890 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-03 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-03 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.89	11.2	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.74	11.2	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.34	11.2	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.21	11.2	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.03	11.2	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.80	11.2	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.73	11.2	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.81	11.2	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.85	11.2	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.05	11.2	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.97	11.2	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.11	11.2	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	1.07	22.5	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.53	11.2	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		2.200	0.893-1.208	1.87	11.2	**3.37**	pg/L	EMPC, J
OCDF			0.757-1.024	2.06	22.5	ND	pg/L	U
OCDD		0.803	0.757-1.024	2.37	56.2	**19.3**	pg/L	J, B
Homologue groups								
Total TCDF					11.2	ND	pg/L	U
Total TCDD					11.2	ND	pg/L	U
Total PeCDF					11.2	**ND**	pg/L	U
Total PeCDD					11.2	**0.75**	pg/L	J
Total HxCDF					11.2	ND	pg/L	U
Total HxCDD					11.2	ND	pg/L	U
Total HpCDF					11.2	ND	pg/L	U
Total HpCDD					11.2	**4.40**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.50
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.04
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.48
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.01

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW8-0423

23D0359-03 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 18:57

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 01:34

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.775*	*0.655-0.886*	*24-169 %*	*97.3*	*%*	
13C12-2,3,7,8-TCDD		*0.773*	*0.655-0.886*	*25-164 %*	*102*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.499*	*1.318-1.783*	*24-185 %*	*96.5*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.512*	*1.318-1.783*	*21-178 %*	*101*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.591*	*1.318-1.783*	*25-181 %*	*102*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.508*	*0.434-0.587*	*26-152 %*	*85.7*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.475*	*0.434-0.587*	*26-123 %*	*85.4*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.519*	*0.434-0.587*	*28-136 %*	*88.3*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.510*	*0.434-0.587*	*29-147 %*	*102*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.268*	*1.054-1.426*	*32-141 %*	*93.6*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.217*	*1.054-1.426*	*28-130 %*	*89.6*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.438*	*0.374-0.506*	*28-143 %*	*91.9*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.437*	*0.374-0.506*	*26-138 %*	*93.1*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.060*	*0.893-1.208*	*23-140 %*	*88.1*	*%*	
13C12-OCDD		*0.961*	*0.757-1.024*	*17-157 %*	*100*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*96.8*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW3-0423

23D0359-04 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/10/2023 20:10
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 15:32

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-04 B 01
	Preparation Batch: BLD0408	Sample Size: 150 mL	
	Prepared: 04/17/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-04 B 01
	Cleanup Batch: CLD0133	Initial Volume: 0.5 uL	
	Cleaned: 20-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.117	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*67.5*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*44.1*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW3-0423

23D0359-04 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 20:10

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 02:23

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-04 A 01
	Preparation Batch: BLD0547	Sample Size: 970 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-04 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-04 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.90	10.3	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.73	10.3	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.18	10.3	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.07	10.3	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.11	10.3	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.78	10.3	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.82	10.3	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.83	10.3	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.91	10.3	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.97	10.3	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.95	10.3	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.05	10.3	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	0.84	20.6	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.19	10.3	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.000	0.893-1.208	1.19	10.3	**3.03**	pg/L	J
OCDF		2.046	0.757-1.024	2.03	20.6	1.57	pg/L	EMPC, J
OCDD		0.823	0.757-1.024	1.36	51.5	**23.5**	pg/L	B, J
Homologue groups								
Total TCDF					10.3	ND	pg/L	U
Total TCDD					10.3	ND	pg/L	U
Total PeCDF					10.3	**ND**	pg/L	U
Total PeCDD					10.3	ND	pg/L	U
Total HxCDF					10.3	ND	pg/L	U
Total HxCDD					10.3	ND	pg/L	U
Total HpCDF					10.3	ND	pg/L	U
Total HpCDD					10.3	**5.97**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.51
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.04
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.51
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.04

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW3-0423

23D0359-04 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/10/2023 20:10

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 02:23

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.766*	*0.655-0.886*	*24-169 %*	*98.3*	*%*	
13C12-2,3,7,8-TCDD		*0.775*	*0.655-0.886*	*25-164 %*	*106*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.523*	*1.318-1.783*	*24-185 %*	*97.4*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.506*	*1.318-1.783*	*21-178 %*	*103*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.622*	*1.318-1.783*	*25-181 %*	*106*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.514*	*0.434-0.587*	*26-152 %*	*86.2*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.500*	*0.434-0.587*	*26-123 %*	*81.6*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.520*	*0.434-0.587*	*28-136 %*	*89.4*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.507*	*0.434-0.587*	*29-147 %*	*103*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.268*	*1.054-1.426*	*32-141 %*	*95.6*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.234*	*1.054-1.426*	*28-130 %*	*90.1*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.433*	*0.374-0.506*	*28-143 %*	*92.4*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.477*	*0.374-0.506*	*26-138 %*	*97.2*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.023*	*0.893-1.208*	*23-140 %*	*90.2*	*%*	
13C12-OCDD		*0.909*	*0.757-1.024*	*17-157 %*	*97.5*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*101*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW4-0423

23D0359-05 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/11/2023 19:12
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 15:46

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-05 B 01
	Preparation Batch: BLD0408	Sample Size: 150 mL	
	Prepared: 04/17/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-05 B 01
	Cleanup Batch: CLD0133	Initial Volume: 0.5 uL	
	Cleaned: 20-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0137	ug/L	
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0686	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*68.0*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*43.2*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW4-0423

23D0359-05 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 19:12
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 03:11

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-05 A 01
	Preparation Batch: BLD0547	Sample Size: 950 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-05 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-05 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	1.11	10.5	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.70	10.5	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.22	10.5	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.11	10.5	ND	pg/L	U
1,2,3,7,8-PeCDD		1.044	1.318-1.783	1.02	10.5	0.91	pg/L	EMPC, J
1,2,3,4,7,8-HxCDF			1.054-1.426	0.78	10.5	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.73	10.5	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.79	10.5	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.89	10.5	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.85	10.5	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.82	10.5	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	0.92	10.5	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	1.18	21.1	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.69	10.5	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.028	0.893-1.208	1.28	10.5	**4.30**	pg/L	J
OCDF		0.913	0.757-1.024	2.41	21.1	**3.15**	pg/L	J
OCDD		1.008	0.757-1.024	2.30	52.6	**34.7**	pg/L	B, J
Homologue groups								
Total TCDF					10.5	ND	pg/L	U
Total TCDD					10.5	ND	pg/L	U
Total PeCDF					10.5	**ND**	pg/L	U
Total PeCDD					10.5	ND	pg/L	U
Total HxCDF					10.5	ND	pg/L	U
Total HxCDD					10.5	ND	pg/L	U
Total HpCDF					10.5	**1.42**	pg/L	J
Total HpCDD					10.5	**4.30**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.46
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.05
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	0.95
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.05

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW4-0423

23D0359-05 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 19:12
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 03:11

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.767*	*0.655-0.886*	*24-169 %*	*99.2*	*%*	
13C12-2,3,7,8-TCDD		*0.772*	*0.655-0.886*	*25-164 %*	*104*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.496*	*1.318-1.783*	*24-185 %*	*98.2*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.517*	*1.318-1.783*	*21-178 %*	*104*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.604*	*1.318-1.783*	*25-181 %*	*103*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.509*	*0.434-0.587*	*26-152 %*	*89.1*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.471*	*0.434-0.587*	*26-123 %*	*88.5*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.519*	*0.434-0.587*	*28-136 %*	*93.6*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.515*	*0.434-0.587*	*29-147 %*	*107*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.296*	*1.054-1.426*	*32-141 %*	*98.4*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.292*	*1.054-1.426*	*28-130 %*	*90.5*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.445*	*0.374-0.506*	*28-143 %*	*93.7*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.445*	*0.374-0.506*	*26-138 %*	*92.6*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.012*	*0.893-1.208*	*23-140 %*	*87.9*	*%*	
13C12-OCDD		*0.925*	*0.757-1.024*	*17-157 %*	*90.9*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*99.1*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW7-0423

23D0359-06 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/11/2023 18:24
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 16:00

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-06 B 01
	Preparation Batch: BLD0408	Sample Size: 150 mL	
	Prepared: 04/17/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-06 B 01
	Cleanup Batch: CLD0133	Initial Volume: 0.5 uL	
	Cleaned: 20-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0261	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*59.5*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*40.2*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW7-0423

23D0359-06 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 18:24

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 04:01

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-06 A 01
	Preparation Batch: BLD0547	Sample Size: 940 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-06 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-06 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	1.03	10.6	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.77	10.6	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.21	10.6	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.06	10.6	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.14	10.6	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.78	10.6	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.76	10.6	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.82	10.6	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.89	10.6	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.05	10.6	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	1.00	10.6	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.13	10.6	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	0.95	21.3	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.43	10.6	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	1.30	10.6	ND	pg/L	U
OCDF			0.757-1.024	1.99	21.3	ND	pg/L	U
OCDD		1.121	0.757-1.024	1.61	53.2	**5.81**	pg/L	EMPC, J, B
Homologue groups								
Total TCDF					10.6	ND	pg/L	U
Total TCDD					10.6	ND	pg/L	U
Total PeCDF					10.6	**ND**	pg/L	U
Total PeCDD					10.6	ND	pg/L	U
Total HxCDF					10.6	ND	pg/L	U
Total HxCDD					10.6	ND	pg/L	U
Total HpCDF					10.6	ND	pg/L	U
Total HpCDD					10.6	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.53
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.52
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.00

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW7-0423

23D0359-06 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 18:24
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 04:01

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.761*	*0.655-0.886*	*24-169 %*	*93.2*	*%*	
13C12-2,3,7,8-TCDD		*0.786*	*0.655-0.886*	*25-164 %*	*101*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.514*	*1.318-1.783*	*24-185 %*	*94.5*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.519*	*1.318-1.783*	*21-178 %*	*101*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.638*	*1.318-1.783*	*25-181 %*	*101*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.504*	*0.434-0.587*	*26-152 %*	*83.5*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.463*	*0.434-0.587*	*26-123 %*	*83.7*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.518*	*0.434-0.587*	*28-136 %*	*86.4*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.518*	*0.434-0.587*	*29-147 %*	*97.7*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.259*	*1.054-1.426*	*32-141 %*	*92.6*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.222*	*1.054-1.426*	*28-130 %*	*86.2*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.443*	*0.374-0.506*	*28-143 %*	*88.9*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.451*	*0.374-0.506*	*26-138 %*	*89.1*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.087*	*0.893-1.208*	*23-140 %*	*86.5*	*%*	
13C12-OCDD		*0.829*	*0.757-1.024*	*17-157 %*	*97.0*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*93.6*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW1-0423

23D0359-07 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/11/2023 20:11
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 16:56

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-07 B 01
	Preparation Batch: BLD0409	Sample Size: 150 mL	
	Prepared: 04/18/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-07 B 01
	Cleanup Batch: CLD0157	Initial Volume: 0.5 uL	
	Cleaned: 24-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	0.0066	ug/L	
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0866	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*80.3*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*43.8*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW1-0423

23D0359-07 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 20:11

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 04:49

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-07 A 01
	Preparation Batch: BLD0547	Sample Size: 910 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-07 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-07 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.97	11.0	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.80	11.0	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.34	11.0	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.21	11.0	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.16	11.0	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.82	11.0	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.83	11.0	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.83	11.0	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.91	11.0	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.21	11.0	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	1.13	11.0	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.29	11.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	0.97	22.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.34	11.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	1.28	11.0	ND	pg/L	U
OCDF			0.757-1.024	2.15	22.0	ND	pg/L	U
OCDD		0.483	0.757-1.024	2.20	54.9	**2.34**	pg/L	EMPC, J, B
Homologue groups								
Total TCDF					11.0	ND	pg/L	U
Total TCDD					11.0	ND	pg/L	U
Total PeCDF					11.0	**ND**	pg/L	U
Total PeCDD					11.0	ND	pg/L	U
Total HxCDF					11.0	ND	pg/L	U
Total HxCDD					11.0	ND	pg/L	U
Total HpCDF					11.0	ND	pg/L	U
Total HpCDD					11.0	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.60
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.60
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.00

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW1-0423

23D0359-07 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/11/2023 20:11
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 04:49

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.767*	*0.655-0.886*	*24-169 %*	*99.6*	*%*	
13C12-2,3,7,8-TCDD		*0.781*	*0.655-0.886*	*25-164 %*	*107*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.524*	*1.318-1.783*	*24-185 %*	*99.4*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.533*	*1.318-1.783*	*21-178 %*	*105*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.597*	*1.318-1.783*	*25-181 %*	*105*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.512*	*0.434-0.587*	*26-152 %*	*89.0*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.508*	*0.434-0.587*	*26-123 %*	*83.4*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.494*	*0.434-0.587*	*28-136 %*	*93.1*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.510*	*0.434-0.587*	*29-147 %*	*104*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.286*	*1.054-1.426*	*32-141 %*	*98.3*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.245*	*1.054-1.426*	*28-130 %*	*91.4*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.431*	*0.374-0.506*	*28-143 %*	*91.4*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.449*	*0.374-0.506*	*26-138 %*	*94.0*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.102*	*0.893-1.208*	*23-140 %*	*90.6*	*%*	
13C12-OCDD		*0.905*	*0.757-1.024*	*17-157 %*	*97.1*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*100*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

DUP03-0423

23D0359-08 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/12/2023 19:16

Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 17:10

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-08 A 01
	Preparation Batch: BLD0409	Sample Size: 150 mL	
	Prepared: 04/18/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-08 A 01
	Cleanup Batch: CLD0157	Initial Volume: 0.5 uL	
	Cleaned: 24-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0096	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*64.2*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*33.4*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW6-0423

23D0359-09 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/12/2023 17:16
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 17:23

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-09 B 01
	Preparation Batch: BLD0409	Sample Size: 150 mL	
	Prepared: 04/18/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-09 B 01
	Cleanup Batch: CLD0157	Initial Volume: 0.5 uL	
	Cleaned: 24-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.235	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*84.2*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*46.8*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW6-0423

23D0359-09 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 17:16

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 05:39

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-09 A 01
	Preparation Batch: BLD0547	Sample Size: 980 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-09 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-09 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.89	10.2	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.77	10.2	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.02	10.2	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	0.92	10.2	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.01	10.2	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.85	10.2	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.80	10.2	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.85	10.2	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.91	10.2	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.90	10.2	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.91	10.2	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.00	10.2	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	1.03	20.4	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.48	10.2	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	1.08	10.2	ND	pg/L	U
OCDF			0.757-1.024	1.88	20.4	ND	pg/L	U
OCDD		0.807	0.757-1.024	1.65	51.0	**4.48**	pg/L	J, B
Homologue groups								
Total TCDF					10.2	ND	pg/L	U
Total TCDD					10.2	ND	pg/L	U
Total PeCDF					10.2	**ND**	pg/L	U
Total PeCDD					10.2	ND	pg/L	U
Total HxCDF					10.2	ND	pg/L	U
Total HxCDD					10.2	ND	pg/L	U
Total HpCDF					10.2	ND	pg/L	U
Total HpCDD					10.2	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.42
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.42
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.00

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW6-0423

23D0359-09 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 17:16

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 05:39

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.774*	*0.655-0.886*	*24-169 %*	*93.5*	*%*	
13C12-2,3,7,8-TCDD		*0.786*	*0.655-0.886*	*25-164 %*	*98.3*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.509*	*1.318-1.783*	*24-185 %*	*90.1*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.535*	*1.318-1.783*	*21-178 %*	*96.2*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.609*	*1.318-1.783*	*25-181 %*	*95.0*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.499*	*0.434-0.587*	*26-152 %*	*78.4*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.477*	*0.434-0.587*	*26-123 %*	*78.2*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.500*	*0.434-0.587*	*28-136 %*	*82.1*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.516*	*0.434-0.587*	*29-147 %*	*94.2*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.259*	*1.054-1.426*	*32-141 %*	*88.1*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.334*	*1.054-1.426*	*28-130 %*	*82.4*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.435*	*0.374-0.506*	*28-143 %*	*83.5*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.456*	*0.374-0.506*	*26-138 %*	*83.5*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.010*	*0.893-1.208*	*23-140 %*	*80.9*	*%*	
13C12-OCDD		*0.916*	*0.757-1.024*	*17-157 %*	*85.3*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*97.4*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW2-0423

23D0359-10 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/12/2023 19:16
Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 17:37

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-10 B 01
	Preparation Batch: BLD0409	Sample Size: 150 mL	
	Prepared: 04/18/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-10 B 01
	Cleanup Batch: CLD0157	Initial Volume: 0.5 uL	
	Cleaned: 24-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0096	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*82.1*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*48.4*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW2-0423

23D0359-10 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 19:16
Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 06:27

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-10 A 01
	Preparation Batch: BLD0547	Sample Size: 910 mL	
	Prepared: 04/21/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-10 A 01
	Cleanup Batch: CLE0011	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-10 A 01
	Cleanup Batch: CLE0012	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.96	11.0	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.73	11.0	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.31	11.0	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.15	11.0	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.07	11.0	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.81	11.0	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.86	11.0	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.83	11.0	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.91	11.0	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.94	11.0	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.90	11.0	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.01	11.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	1.10	22.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.60	11.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.051	0.893-1.208	1.42	11.0	**3.16**	pg/L	J
OCDF			0.757-1.024	1.96	22.0	ND	pg/L	U
OCDD		0.876	0.757-1.024	1.71	54.9	**13.1**	pg/L	J, B
Homologue groups								
Total TCDF					11.0	ND	pg/L	U
Total TCDD					11.0	ND	pg/L	U
Total PeCDF					11.0	**ND**	pg/L	U
Total PeCDD					11.0	ND	pg/L	U
Total HxCDF					11.0	ND	pg/L	U
Total HxCDD					11.0	ND	pg/L	U
Total HpCDF					11.0	ND	pg/L	U
Total HpCDD					11.0	**5.69**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.50
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.04
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.50
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.04

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW2-0423

23D0359-10 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 19:16

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/16/2023 06:27

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.781*	*0.655-0.886*	*24-169 %*	*95.0*	*%*	
13C12-2,3,7,8-TCDD		*0.778*	*0.655-0.886*	*25-164 %*	*103*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.523*	*1.318-1.783*	*24-185 %*	*92.9*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.508*	*1.318-1.783*	*21-178 %*	*99.2*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.591*	*1.318-1.783*	*25-181 %*	*99.2*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.530*	*0.434-0.587*	*26-152 %*	*82.1*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.556*	*0.434-0.587*	*26-123 %*	*80.2*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.502*	*0.434-0.587*	*28-136 %*	*87.6*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.506*	*0.434-0.587*	*29-147 %*	*98.2*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.280*	*1.054-1.426*	*32-141 %*	*93.5*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.303*	*1.054-1.426*	*28-130 %*	*88.8*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.448*	*0.374-0.506*	*28-143 %*	*90.5*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.447*	*0.374-0.506*	*26-138 %*	*90.4*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.083*	*0.893-1.208*	*23-140 %*	*86.0*	*%*	
13C12-OCDD		*0.942*	*0.757-1.024*	*17-157 %*	*95.1*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*95.7*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW5-0423

23D0359-11 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 04/12/2023 18:15

Instrument: NT14 Analyst: DSD — Analyzed: 04/28/2023 17:51

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23D0359-11 B 01
	Preparation Batch: BLD0409	Sample Size: 150 mL	
	Prepared: 04/18/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-11 B 01
	Cleanup Batch: CLD0157	Initial Volume: 0.5 uL	
	Cleaned: 24-Apr-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.0052	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.0077	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.0060	0.0157	ug/L	
Tetrabutyltin	1461-25-2	1	0.0300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*80.7*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*48.7*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW5-0423

23D0359-11 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 18:15

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/15/2023 17:17

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23D0359-11 A 01
	Preparation Batch: BLD0507	Sample Size: 960 mL	
	Prepared: 04/20/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23D0359-11 A 01
	Cleanup Batch: CLE0025	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:23D0359-11 A 01
	Cleanup Batch: CLE0024	Initial Volume: 20 uL	
	Cleaned: 25-Apr-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23D0359-11 A 01
	Cleanup Batch: CLE0026	Initial Volume: 20 uL	
	Cleaned: 02-May-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	2.62	10.4	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.64	10.4	ND	pg/L	U
1,2,3,7,8-PeCDF		1.084	1.318-1.783	1.80	10.4	**2.17**	pg/L	EMPC, J
2,3,4,7,8-PeCDF			1.318-1.783	1.62	10.4	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.57	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	1.43	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	1.42	10.4	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	1.46	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	1.68	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.55	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	1.51	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.68	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF		1.072	0.893-1.208	1.66	20.8	**1.85**	pg/L	J, B
1,2,3,4,7,8,9-HpCDF			0.893-1.208	2.25	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		1.032	0.893-1.208	1.66	10.4	1.03	pg/L	J, B
OCDF		1.021	0.757-1.024	3.65	20.8	3.64	pg/L	J, B
OCDD		0.734	0.757-1.024	3.14	52.1	**14.3**	pg/L	EMPC, J, B
Homologue groups								
Total TCDF					10.4	ND	pg/L	U
Total TCDD					10.4	ND	pg/L	U
Total PeCDF					10.4	**ND**	pg/L	U
Total PeCDD					10.4	ND	pg/L	U
Total HxCDF					10.4	ND	pg/L	U
Total HxCDD					10.4	ND	pg/L	U
Total HpCDF					10.4	**2.97**	pg/L	B, J
Total HpCDD					10.4	1.03	pg/L	J, B

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW5-0423

23D0359-11 (Water)

Dioxins/Furans

Method: EPA 1613B
Instrument: AUTOSPEC01 Analyst: pk

Sampled: 04/12/2023 18:15
Analyzed: 05/15/2023 17:17

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):					2.62		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):					0.09		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):					2.59		
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):					0.00		

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

MW5-0423

23D0359-11 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 04/12/2023 18:15

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 05/15/2023 17:17

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.754*	*0.655-0.886*	*24-169 %*	*57.5*	*%*	
13C12-2,3,7,8-TCDD		*0.793*	*0.655-0.886*	*25-164 %*	*69.1*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.513*	*1.318-1.783*	*24-185 %*	*88.2*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.502*	*1.318-1.783*	*21-178 %*	*89.4*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.611*	*1.318-1.783*	*25-181 %*	*96.1*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.511*	*0.434-0.587*	*26-152 %*	*82.1*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.543*	*0.434-0.587*	*26-123 %*	*79.0*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.507*	*0.434-0.587*	*28-136 %*	*85.1*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.514*	*0.434-0.587*	*29-147 %*	*89.0*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.281*	*1.054-1.426*	*32-141 %*	*91.3*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.267*	*1.054-1.426*	*28-130 %*	*92.5*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.448*	*0.374-0.506*	*28-143 %*	*88.3*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.430*	*0.374-0.506*	*26-138 %*	*89.1*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.010*	*0.893-1.208*	*23-140 %*	*89.8*	*%*	
13C12-OCDD		*0.892*	*0.757-1.024*	*17-157 %*	*95.4*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*66.8*	*%*	

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BLD0408 - EPA 8270E-SIM

Instrument: NT14 Analyst: DSD

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0408-BLK1)				Prepared: 17-Apr-2023 Analyzed: 28-Apr-2023 14:37						
Tributyltin Ion	ND	0.0052	ug/L							U
Dibutyltin Ion	ND	0.0077	ug/L							U
Butyltin Ion	ND	0.0060	ug/L							U
Tetrabutyltin	ND	0.0300	ug/L							U
Surrogate: Tripentyltin	0.0529		ug/L	*0.0753*		*70.2*	*30-160*			
Surrogate: Tripropyltin	0.0372		ug/L	*0.0729*		*51.0*	*30-160*			
LCS (BLD0408-BS1)				Prepared: 17-Apr-2023 Analyzed: 28-Apr-2023 14:51						
Tributyltin Ion	0.0789	0.0052	ug/L	0.149		53.1	30-160			
Dibutyltin Ion	0.0649	0.0077	ug/L	0.128		50.8	30-160			
Butyltin Ion	0.0404	0.0060	ug/L	0.104		38.9	30-160			
Surrogate: Tripentyltin	0.0479		ug/L	*0.0753*		*63.7*	*30-160*			
Surrogate: Tripropyltin	0.0304		ug/L	*0.0729*		*41.7*	*30-160*			

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BLD0409 - EPA 8270E-SIM

Instrument: NT14 Analyst: DSD

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0409-BLK1)				Prepared: 17-Apr-2023 Analyzed: 28-Apr-2023 16:14						
Tributyltin Ion	ND	0.0052	ug/L							U
Dibutyltin Ion	ND	0.0077	ug/L							U
Butyltin Ion	ND	0.0060	ug/L							U
Tetrabutyltin	ND	0.0300	ug/L							U
Surrogate: Tripentyltin	0.0555		ug/L	*0.0753*		*73.8*	*30-160*			
Surrogate: Tripropyltin	0.0344		ug/L	*0.0729*		*47.2*	*30-160*			
LCS (BLD0409-BS1)				Prepared: 17-Apr-2023 Analyzed: 28-Apr-2023 16:28						
Tributyltin Ion	0.0932	0.0052	ug/L	0.149		62.7	30-160			
Dibutyltin Ion	0.0744	0.0077	ug/L	0.128		58.2	30-160			
Butyltin Ion	0.0405	0.0060	ug/L	0.104		39.0	30-160			
Surrogate: Tripentyltin	0.0610		ug/L	*0.0753*		*81.0*	*30-160*			
Surrogate: Tripropyltin	0.0315		ug/L	*0.0729*		*43.2*	*30-160*			
LCS Dup (BLD0409-BSD1)				Prepared: 17-Apr-2023 Analyzed: 28-Apr-2023 16:42						
Tributyltin Ion	0.0937	0.0052	ug/L	0.149		63.1	30-160	0.61	30	
Dibutyltin Ion	0.0833	0.0077	ug/L	0.128		65.2	30-160	11.30	30	
Butyltin Ion	0.0431	0.0060	ug/L	0.104		41.5	30-160	6.20	30	
Surrogate: Tripentyltin	0.0584		ug/L	*0.0753*		*77.6*	*30-160*			
Surrogate: Tripropyltin	0.0335		ug/L	*0.0729*		*46.0*	*30-160*			

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0507 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0507-BLK1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 14:50							
2,3,7,8-TCDF		0.655-0.886	1.31	10.0	ND	pg/L					U
2,3,7,8-TCDD		0.655-0.886	1.42	10.0	ND	pg/L					U
1,2,3,7,8-PeCDF		1.318-1.783	0.72	10.0	ND	pg/L					U
2,3,4,7,8-PeCDF		1.318-1.783	0.65	10.0	ND	pg/L					U
1,2,3,7,8-PeCDD		1.318-1.783	0.77	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDF		1.054-1.426	0.44	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDF		1.054-1.426	0.43	10.0	ND	pg/L					U
2,3,4,6,7,8-HxCDF		1.054-1.426	0.44	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDF		1.054-1.426	0.59	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDD		1.054-1.426	0.55	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDD		1.054-1.426	0.53	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDD		1.054-1.426	0.59	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDF	1.164	0.893-1.208		20.0	0.981	pg/L					J
1,2,3,4,7,8,9-HpCDF		0.893-1.208	0.72	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDD	1.402	0.893-1.208		10.0	2.65	pg/L					EMPC, J
OCDF	1.253	0.757-1.024		20.0	1.84	pg/L					EMPC, J
OCDD	0.859	0.757-1.024		50.0	24.6	pg/L					J
Homologue group											
Total TCDF				10.0	ND	pg/L					U
Total TCDD				10.0	ND	pg/L					U
Total PeCDF				10.0	ND	pg/L					U
Total PeCDD				10.0	ND	pg/L					U
Total HxCDF				10.0	ND	pg/L					U
Total HxCDD				10.0	ND	pg/L					U
Total HpCDF				10.0	1.95	pg/L					J
Total HpCDD				10.0	1.83	pg/L					J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.12
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.04
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND): 0.09
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND): 0.02

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0507 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0507-BLK1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 14:50							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.763*	*0.655-0.886*			*52.4*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.762*	*0.655-0.886*			*63.7*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.517*	*1.318-1.783*			*84.2*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.520*	*1.318-1.783*			*87.4*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.594*	*1.318-1.783*			*96.8*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.501*	*0.434-0.587*			*77.6*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.520*	*0.434-0.587*			*77.4*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.507*	*0.434-0.587*			*82.1*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.574*	*0.434-0.587*			*79.9*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.269*	*1.054-1.426*			*88.7*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.262*	*1.054-1.426*			*85.4*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.439*	*0.374-0.506*			*85.5*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.446*	*0.374-0.506*			*86.3*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.136*	*0.893-1.208*			*88.7*			*23-140 %*			
13C12-OCDD	*0.907*	*0.757-1.024*			*93.6*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*64.8*			*35-197 %*			
LCS (BLD0507-BS1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 15:38							
2,3,7,8-TCDF	0.715	0.655-0.886		10.0	227	pg/L	113	75-158 %			
2,3,7,8-TCDD	0.822	0.655-0.886		10.0	206	pg/L	103	67-158 %			
1,2,3,7,8-PeCDF	1.544	1.318-1.783		10.0	1200	pg/L	120	80-134 %			
2,3,4,7,8-PeCDF	1.544	1.318-1.783		10.0	1150	pg/L	115	68-160 %			
1,2,3,7,8-PeCDD	1.532	1.318-1.783		10.0	1030	pg/L	103	70-142 %			
1,2,3,4,7,8-HxCDF	1.259	1.054-1.426		10.0	1050	pg/L	105	72-134 %			
1,2,3,6,7,8-HxCDF	1.230	1.054-1.426		10.0	1060	pg/L	106	84-130 %			
2,3,4,6,7,8-HxCDF	1.232	1.054-1.426		10.0	1060	pg/L	106	70-156 %			
1,2,3,7,8,9-HxCDF	1.222	1.054-1.426		10.0	1110	pg/L	111	78-130 %			
1,2,3,4,7,8-HxCDD	1.236	1.054-1.426		10.0	1020	pg/L	102	70-164 %			
1,2,3,6,7,8-HxCDD	1.301	1.054-1.426		10.0	1060	pg/L	106	76-134 %			
1,2,3,7,8,9-HxCDD	1.213	1.054-1.426		10.0	1110	pg/L	111	64-162 %			
1,2,3,4,6,7,8-HpCDF	1.019	0.893-1.208		20.0	1100	pg/L	110	82-122 %			B
1,2,3,4,7,8,9-HpCDF	1.034	0.893-1.208		10.0	1130	pg/L	113	78-138 %			
1,2,3,4,6,7,8-HpCDD	1.130	0.893-1.208		10.0	1090	pg/L	109	70-140 %			B
OCDF	0.914	0.757-1.024		20.0	2230	pg/L	111	63-170 %			B
OCDD	0.874	0.757-1.024		50.0	2150	pg/L	108	78-144 %			B

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0507 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLD0507-BS1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 15:38							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.774*	*0.655-0.886*			*64.6*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.789*	*0.655-0.886*			*72.1*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.523*	*1.318-1.783*			*83.7*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.504*	*1.318-1.783*			*87.1*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.596*	*1.318-1.783*			*92.1*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.502*	*0.434-0.587*			*73.3*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.542*	*0.434-0.587*			*70.1*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.519*	*0.434-0.587*			*76.4*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.530*	*0.434-0.587*			*74.8*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.246*	*1.054-1.426*			*84.4*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.244*	*1.054-1.426*			*79.0*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.432*	*0.374-0.506*			*82.7*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.465*	*0.374-0.506*			*84.5*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.010*	*0.893-1.208*			*84.2*			*23-140 %*			
13C12-OCDD	*0.894*	*0.757-1.024*			*88.6*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*75.6*			*35-197 %*			
LCS Dup (BLD0507-BSD1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 16:28							
2,3,7,8-TCDF	0.745	0.655-0.886		10.0	219	pg/L	110	75-158 %	3.17	25	
2,3,7,8-TCDD	0.771	0.655-0.886		10.0	207	pg/L	104	67-158 %	0.67	25	
1,2,3,7,8-PeCDF	1.550	1.318-1.783		10.0	1180	pg/L	118	80-134 %	1.25	25	
2,3,4,7,8-PeCDF	1.561	1.318-1.783		10.0	1140	pg/L	114	68-160 %	1.26	25	
1,2,3,7,8-PeCDD	1.510	1.318-1.783		10.0	1010	pg/L	101	70-142 %	1.84	25	
1,2,3,4,7,8-HxCDF	1.280	1.054-1.426		10.0	1130	pg/L	113	72-134 %	6.80	25	
1,2,3,6,7,8-HxCDF	1.323	1.054-1.426		10.0	1010	pg/L	101	84-130 %	4.35	25	
2,3,4,6,7,8-HxCDF	1.257	1.054-1.426		10.0	1060	pg/L	106	70-156 %	0.32	25	
1,2,3,7,8,9-HxCDF	1.241	1.054-1.426		10.0	1120	pg/L	112	78-130 %	0.75	25	
1,2,3,4,7,8-HxCDD	1.215	1.054-1.426		10.0	998	pg/L	99.8	70-164 %	2.05	25	
1,2,3,6,7,8-HxCDD	1.208	1.054-1.426		10.0	1020	pg/L	102	76-134 %	4.26	25	
1,2,3,7,8,9-HxCDD	1.218	1.054-1.426		10.0	1100	pg/L	110	64-162 %	0.53	25	
1,2,3,4,6,7,8-HpCDF	1.019	0.893-1.208		20.0	1090	pg/L	109	82-122 %	0.87	25	B
1,2,3,4,7,8,9-HpCDF	1.001	0.893-1.208		10.0	1120	pg/L	112	78-138 %	0.88	25	
1,2,3,4,6,7,8-HpCDD	1.084	0.893-1.208		10.0	1040	pg/L	104	70-140 %	4.06	25	B
OCDF	0.845	0.757-1.024		20.0	2260	pg/L	113	63-170 %	1.36	25	B
OCDD	0.878	0.757-1.024		50.0	2100	pg/L	105	78-144 %	2.35	25	B

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0507 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLD0507-BSD1)				Prepared: 20-Apr-2023 Analyzed: 15-May-2023 16:28							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.780*	*0.655-0.886*			*68.7*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.781*	*0.655-0.886*			*76.1*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.514*	*1.318-1.783*			*95.1*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.512*	*1.318-1.783*			*97.4*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.556*	*1.318-1.783*			*106*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.569*	*0.434-0.587*			*78.1*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.498*	*0.434-0.587*			*87.6*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.508*	*0.434-0.587*			*89.1*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.524*	*0.434-0.587*			*90.9*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.293*	*1.054-1.426*			*98.6*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.299*	*1.054-1.426*			*91.6*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.445*	*0.374-0.506*			*95.4*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.444*	*0.374-0.506*			*95.3*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.015*	*0.893-1.208*			*95.2*			*23-140 %*			
13C12-OCDD	*0.902*	*0.757-1.024*			*104*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*72.0*			*35-197 %*			

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0547 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0547-BLK1)				Prepared: 21-Apr-2023 Analyzed: 15-May-2023 19:44							
2,3,7,8-TCDF		0.655-0.886	0.99	10.0	ND	pg/L					U
2,3,7,8-TCDD		0.655-0.886	0.66	10.0	ND	pg/L					U
1,2,3,7,8-PeCDF		1.318-1.783	1.39	10.0	ND	pg/L					U
2,3,4,7,8-PeCDF		1.318-1.783	1.20	10.0	ND	pg/L					U
1,2,3,7,8-PeCDD		1.318-1.783	0.90	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDF		1.054-1.426	0.63	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDF		1.054-1.426	0.64	10.0	ND	pg/L					U
2,3,4,6,7,8-HxCDF		1.054-1.426	0.64	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDF		1.054-1.426	0.73	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDD		1.054-1.426	0.85	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDD		1.054-1.426	0.84	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDD		1.054-1.426	0.93	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDF		0.893-1.208	0.68	20.0	ND	pg/L					U
1,2,3,4,7,8,9-HpCDF		0.893-1.208	0.91	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDD		0.893-1.208	0.99	10.0	ND	pg/L					U
OCDF		0.757-1.024	1.57	20.0	ND	pg/L					U
OCDD	0.477	0.757-1.024		50.0	2.49	pg/L					EMPC, J
Homologue group											
Total TCDF				10.0	ND	pg/L					U
Total TCDD				10.0	ND	pg/L					U
Total PeCDF				10.0	ND	pg/L					U
Total PeCDD				10.0	ND	pg/L					U
Total HxCDF				10.0	ND	pg/L					U
Total HxCDD				10.0	ND	pg/L					U
Total HpCDF				10.0	ND	pg/L					U
Total HpCDD				10.0	ND	pg/L					U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	0.07
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND):	0.07
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND):	0.00

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0547 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0547-BLK1)				Prepared: 21-Apr-2023 Analyzed: 15-May-2023 19:44							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.771*	*0.655-0.886*			*100*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.790*	*0.655-0.886*			*108*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.511*	*1.318-1.783*			*103*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.526*	*1.318-1.783*			*109*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.611*	*1.318-1.783*			*111*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.516*	*0.434-0.587*			*90.2*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.509*	*0.434-0.587*			*82.8*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.513*	*0.434-0.587*			*94.5*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.510*	*0.434-0.587*			*103*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.292*	*1.054-1.426*			*99.6*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.283*	*1.054-1.426*			*93.0*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.440*	*0.374-0.506*			*100*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.445*	*0.374-0.506*			*112*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.008*	*0.893-1.208*			*101*			*23-140 %*			
13C12-OCDD	*0.904*	*0.757-1.024*			*107*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*99.2*			*35-197 %*			
LCS (BLD0547-BS1)				Prepared: 21-Apr-2023 Analyzed: 15-May-2023 20:33							
2,3,7,8-TCDF	0.743	0.655-0.886		10.0	227	pg/L	113	75-158 %			
2,3,7,8-TCDD	0.789	0.655-0.886		10.0	207	pg/L	103	67-158 %			
1,2,3,7,8-PeCDF	1.543	1.318-1.783		10.0	1230	pg/L	123	80-134 %			
2,3,4,7,8-PeCDF	1.523	1.318-1.783		10.0	1170	pg/L	117	68-160 %			
1,2,3,7,8-PeCDD	1.507	1.318-1.783		10.0	1050	pg/L	105	70-142 %			
1,2,3,4,7,8-HxCDF	1.260	1.054-1.426		10.0	1080	pg/L	108	72-134 %			
1,2,3,6,7,8-HxCDF	1.285	1.054-1.426		10.0	1150	pg/L	115	84-130 %			
2,3,4,6,7,8-HxCDF	1.203	1.054-1.426		10.0	1100	pg/L	110	70-156 %			
1,2,3,7,8,9-HxCDF	1.245	1.054-1.426		10.0	1050	pg/L	105	78-130 %			
1,2,3,4,7,8-HxCDD	1.238	1.054-1.426		10.0	1020	pg/L	102	70-164 %			
1,2,3,6,7,8-HxCDD	1.234	1.054-1.426		10.0	1020	pg/L	102	76-134 %			
1,2,3,7,8,9-HxCDD	1.149	1.054-1.426		10.0	1120	pg/L	112	64-162 %			
1,2,3,4,6,7,8-HpCDF	0.985	0.893-1.208		20.0	1090	pg/L	109	82-122 %			
1,2,3,4,7,8,9-HpCDF	0.999	0.893-1.208		10.0	1130	pg/L	113	78-138 %			
1,2,3,4,6,7,8-HpCDD	1.009	0.893-1.208		10.0	1100	pg/L	110	70-140 %			
OCDF	0.911	0.757-1.024		20.0	2300	pg/L	115	63-170 %			
OCDD	0.867	0.757-1.024		50.0	2090	pg/L	104	78-144 %			B

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0547 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLD0547-BS1)				Prepared: 21-Apr-2023	Analyzed: 15-May-2023 20:33						
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.773*	*0.655-0.886*			*98.3*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.791*	*0.655-0.886*			*105*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.526*	*1.318-1.783*			*101*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.529*	*1.318-1.783*			*106*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.599*	*1.318-1.783*			*108*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.499*	*0.434-0.587*			*89.0*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.543*	*0.434-0.587*			*85.7*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.505*	*0.434-0.587*			*92.7*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.502*	*0.434-0.587*			*105*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.276*	*1.054-1.426*			*98.4*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.334*	*1.054-1.426*			*94.0*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.440*	*0.374-0.506*			*98.6*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.443*	*0.374-0.506*			*103*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.064*	*0.893-1.208*			*94.2*			*23-140 %*			
13C12-OCDD	*0.908*	*0.757-1.024*			*107*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*98.9*			*35-197 %*			
LCS Dup (BLD0547-BSD1)				Prepared: 21-Apr-2023	Analyzed: 15-May-2023 21:22						
2,3,7,8-TCDF	0.751	0.655-0.886		10.0	226	pg/L	113	75-158 %	0.33	25	
2,3,7,8-TCDD	0.811	0.655-0.886		10.0	207	pg/L	104	67-158 %	0.35	25	
1,2,3,7,8-PeCDF	1.502	1.318-1.783		10.0	1230	pg/L	123	80-134 %	0.00		
2,3,4,7,8-PeCDF	1.582	1.318-1.783		10.0	1200	pg/L	120	68-160 %	3.14	25	
1,2,3,7,8-PeCDD	1.492	1.318-1.783		10.0	1070	pg/L	107	70-142 %	2.21	25	
1,2,3,4,7,8-HxCDF	1.309	1.054-1.426		10.0	1070	pg/L	107	72-134 %	0.77	25	
1,2,3,6,7,8-HxCDF	1.320	1.054-1.426		10.0	1120	pg/L	112	84-130 %	2.44	25	
2,3,4,6,7,8-HxCDF	1.261	1.054-1.426		10.0	1100	pg/L	110	70-156 %	0.15	25	
1,2,3,7,8,9-HxCDF	1.254	1.054-1.426		10.0	1140	pg/L	114	78-130 %	8.04	25	
1,2,3,4,7,8-HxCDD	1.217	1.054-1.426		10.0	1030	pg/L	103	70-164 %	1.39	25	
1,2,3,6,7,8-HxCDD	1.205	1.054-1.426		10.0	1000	pg/L	100	76-134 %	1.59	25	
1,2,3,7,8,9-HxCDD	1.134	1.054-1.426		10.0	1140	pg/L	114	64-162 %	1.00	25	
1,2,3,4,6,7,8-HpCDF	1.029	0.893-1.208		20.0	1130	pg/L	113	82-122 %	3.50	25	
1,2,3,4,7,8,9-HpCDF	1.100	0.893-1.208		10.0	1150	pg/L	115	78-138 %	1.90	25	
1,2,3,4,6,7,8-HpCDD	1.125	0.893-1.208		10.0	1120	pg/L	112	70-140 %	1.55	25	
OCDF	0.980	0.757-1.024		20.0	2400	pg/L	120	63-170 %	4.08	25	
OCDD	0.860	0.757-1.024		50.0	2150	pg/L	107	78-144 %	2.96	25	B

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLD0547 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLD0547-BSD1)				Prepared: 21-Apr-2023 Analyzed: 15-May-2023 21:22							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.770*	*0.655-0.886*					*101*	*24-169 %*			
13C12-2,3,7,8-TCDD	*0.787*	*0.655-0.886*					*108*	*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.507*	*1.318-1.783*					*102*	*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.500*	*1.318-1.783*					*106*	*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.584*	*1.318-1.783*					*108*	*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.515*	*0.434-0.587*					*90.7*	*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.487*	*0.434-0.587*					*87.4*	*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.510*	*0.434-0.587*					*93.6*	*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.521*	*0.434-0.587*					*105*	*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.316*	*1.054-1.426*					*99.0*	*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.172*	*1.054-1.426*					*95.5*	*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.444*	*0.374-0.506*					*98.4*	*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.428*	*0.374-0.506*					*106*	*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.009*	*0.893-1.208*					*95.9*	*23-140 %*			
13C12-OCDD	*0.911*	*0.757-1.024*					*104*	*17-157 %*			
37Cl4-2,3,7,8-TCDD							*100*	*35-197 %*			

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Certified Analyses included in this Report

Analyte	Certifications
EPA 1613B in Water	
2,3,7,8-TCDF	DoD-ELAP,NELAP,WADOE
2,3,7,8-TCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
2,3,4,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
2,3,4,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8,9-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDD	DoD-ELAP,NELAP,WADOE
OCDF	DoD-ELAP,NELAP,WADOE
OCDD	DoD-ELAP,NELAP,WADOE
Total TCDF	DoD-ELAP,NELAP
Total TCDD	DoD-ELAP,NELAP
Total PeCDF	DoD-ELAP,NELAP
Total PeCDD	DoD-ELAP,NELAP
Total HxCDF	DoD-ELAP,NELAP
Total HxCDD	DoD-ELAP,NELAP
Total HpCDF	DoD-ELAP,NELAP
Total HpCDD	DoD-ELAP,NELAP
13C12-2,3,7,8-TCDF	DoD-ELAP
13C12-2,3,7,8-TCDD	DoD-ELAP
13C12-1,2,3,7,8-PeCDF	DoD-ELAP
13C12-2,3,4,7,8-PeCDF	DoD-ELAP
13C12-1,2,3,7,8-PeCDD	DoD-ELAP

Friedman & Bruya Inc.	Project: 304191	
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Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

13C12-1,2,3,4,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDF	DoD-ELAP
13C12-2,3,4,6,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,7,8,9-HxCDF	DoD-ELAP
13C12-1,2,3,4,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDF	DoD-ELAP
13C12-1,2,3,4,7,8,9-HpCDF	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDD	DoD-ELAP
13C12-OCDD	DoD-ELAP
37Cl4-2,3,7,8-TCDD	DoD-ELAP

EPA 8270E-SIM in Water

Tributyltin Ion	NELAP,WADOE,DoD-ELAP
Dibutyltin Ion	NELAP,WADOE,DoD-ELAP
Butyltin Ion	NELAP,WADOE,DoD-ELAP
Tetrapentyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

Friedman & Bruya Inc.	Project: 304191	
3012 16th Avenue West	Project Number: Port of Friday Harbor	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	17-May-2023 10:24

Notes and Definitions

B	This analyte was detected in the method blank.
EMPC	Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
J	Estimated concentration value detected below the reporting limit.
M	Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

July 21, 2023

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard R.I.

Dear Rusty Jones,

On June 9, 2023, Brooks Applied Labs (BAL) received eleven (11) aqueous samples in a sealed cooler at an acceptable temperature of 1.4°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B231416
Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The dissolved copper and lead results (2306190-12) were greater than the corresponding total recoverable copper and lead results (2306190-11) for the *MW1-0623* sample. Re-analyses confirmed the results. Container labels were checked and there was no indication of samples mis-labeled. Consequently, no additional corrective actions are necessary. The reported results are deemed representative of the submitted containers.

In instances where the analyte concentration of a standard reference material (SRM) is not certified but instead has been listed only as an informational value by the certifying agency, the recovery limits have been set as not applicable (N/A). In such cases the measured concentrations have been provided for informational purposes, but the laboratory fortified blank and/or matrix spike recoveries may be more reflective of the performance of the applied methods.

The method blanks (BLK) B231416-BLK3 and B231416-BLK4 had Zn concentrations above the acceptance limit. All sample results were either greater than 10x the concentration of these BLKs, or the sample results were less than the MRL. No further action was required.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B231413

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

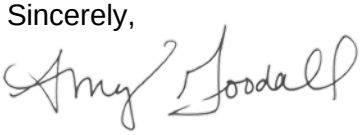
The field blank sample, (2306190-15 'Filter Blank-0623') had a Hg concentration above the MRL. This sample was reanalyzed in duplicate with confirming results. No further action could be taken.

Aside from concentration qualifiers, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02.

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW8-0623	2306190-01	Water	Sample	06/05/2023	06/09/2023
MW8-0623	2306190-02	Water	Sample	06/05/2023	06/09/2023
MW2-0623	2306190-03	Water	Sample	06/05/2023	06/09/2023
MW2-0623	2306190-04	Water	Sample	06/05/2023	06/09/2023
MW3-0623	2306190-05	Water	Sample	06/05/2023	06/09/2023
MW3-0623	2306190-06	Water	Sample	06/05/2023	06/09/2023
DUP01-0623	2306190-07	Water	Sample	06/06/2023	06/09/2023
DUP01-0623	2306190-08	Water	Sample	06/06/2023	06/09/2023
MW7-0623	2306190-09	Water	Sample	06/06/2023	06/09/2023
MW7-0623	2306190-10	Water	Sample	06/06/2023	06/09/2023
MW1-0623	2306190-11	Water	Sample	06/06/2023	06/09/2023
MW1-0623	2306190-12	Water	Sample	06/06/2023	06/09/2023
MW4-0623	2306190-13	Water	Sample	06/06/2023	06/09/2023
MW4-0623	2306190-14	Water	Sample	06/06/2023	06/09/2023
Filter Blank-0623	2306190-15	Water	Filter Blank	06/07/2023	06/09/2023
MW6-0623	2306190-16	Water	Sample	06/07/2023	06/09/2023
MW6-0623	2306190-17	Water	Sample	06/07/2023	06/09/2023
MW5-0623	2306190-18	Water	Sample	06/07/2023	06/09/2023
MW5-0623	2306190-19	Water	Sample	06/07/2023	06/09/2023
MW9-0623	2306190-20	Water	Sample	06/07/2023	06/09/2023
MW9-0623	2306190-21	Water	Sample	06/07/2023	06/09/2023

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587
Cd	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587
Cr	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587
Cu	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587
Hg	Water	EPA 1631 E	ISO,TNI	06/14/23	06/15/23	B231413	S230596
Pb	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587
Zn	Water	EPA 1638 Mod	ISO,TNI	06/14/23	06/14/23	B231416	S230587

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW8-0623										
2306190-01	As	Water	TR	1.12		0.162	0.727	µg/L	B231416	S230587
2306190-01	Cd	Water	TR	1.96		0.061	0.182	µg/L	B231416	S230587
2306190-01	Cr	Water	TR	177		1.72	6.06	µg/L	B231416	S230587
2306190-01	Cu	Water	TR	36.2		0.505	1.01	µg/L	B231416	S230587
2306190-01	Hg	Water	TR	13.7		0.13	0.41	ng/L	B231413	S230596
2306190-01	Pb	Water	TR	1.16		0.061	0.121	µg/L	B231416	S230587
2306190-01	Zn	Water	TR	261		7.07	22.2	µg/L	B231416	S230587
MW8-0623										
2306190-02	As	Water	D	0.977		0.162	0.727	µg/L	B231416	S230587
2306190-02	Cd	Water	D	1.74		0.061	0.182	µg/L	B231416	S230587
2306190-02	Cr	Water	D	6.84		1.72	6.06	µg/L	B231416	S230587
2306190-02	Cu	Water	D	25.3		0.505	1.01	µg/L	B231416	S230587
2306190-02	Hg	Water	D	10.4		0.13	0.41	ng/L	B231413	S230596
2306190-02	Pb	Water	D	0.435		0.061	0.121	µg/L	B231416	S230587
2306190-02	Zn	Water	D	240		7.07	22.2	µg/L	B231416	S230587
MW2-0623										
2306190-03	As	Water	TR	0.448	J	0.162	0.727	µg/L	B231416	S230587
2306190-03	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-03	Cr	Water	TR	2.88	J	1.72	6.06	µg/L	B231416	S230587
2306190-03	Cu	Water	TR	4.33		0.505	1.01	µg/L	B231416	S230587
2306190-03	Hg	Water	TR	4.47		0.13	0.41	ng/L	B231413	S230596
2306190-03	Pb	Water	TR	0.115	J	0.061	0.121	µg/L	B231416	S230587
2306190-03	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW2-0623										
2306190-04	As	Water	D	0.382	J	0.162	0.727	µg/L	B231416	S230587
2306190-04	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-04	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-04	Cu	Water	D	2.51		0.505	1.01	µg/L	B231416	S230587
2306190-04	Hg	Water	D	3.24		0.13	0.41	ng/L	B231413	S230596
2306190-04	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B231416	S230587
2306190-04	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW3-0623										
2306190-05	As	Water	TR	0.673	J	0.162	0.727	µg/L	B231416	S230587
2306190-05	Cd	Water	TR	0.592		0.061	0.182	µg/L	B231416	S230587
2306190-05	Cr	Water	TR	3.04	J	1.72	6.06	µg/L	B231416	S230587
2306190-05	Cu	Water	TR	4.66		0.505	1.01	µg/L	B231416	S230587
2306190-05	Hg	Water	TR	7.17		0.13	0.41	ng/L	B231413	S230596
2306190-05	Pb	Water	TR	0.700		0.061	0.121	µg/L	B231416	S230587
2306190-05	Zn	Water	TR	169		7.07	22.2	µg/L	B231416	S230587
MW3-0623										
2306190-06	As	Water	D	0.602	J	0.162	0.727	µg/L	B231416	S230587
2306190-06	Cd	Water	D	0.553		0.061	0.182	µg/L	B231416	S230587
2306190-06	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-06	Cu	Water	D	3.90		0.505	1.01	µg/L	B231416	S230587
2306190-06	Hg	Water	D	5.44		0.13	0.41	ng/L	B231413	S230596
2306190-06	Pb	Water	D	0.102	J	0.061	0.121	µg/L	B231416	S230587
2306190-06	Zn	Water	D	160		7.07	22.2	µg/L	B231416	S230587
DUP01-0623										
2306190-07	As	Water	TR	0.993		0.162	0.727	µg/L	B231416	S230587
2306190-07	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-07	Cr	Water	TR	3.03	J	1.72	6.06	µg/L	B231416	S230587
2306190-07	Cu	Water	TR	6.80		0.505	1.01	µg/L	B231416	S230587
2306190-07	Hg	Water	TR	2.39		0.13	0.41	ng/L	B231413	S230596
2306190-07	Pb	Water	TR	0.901		0.061	0.121	µg/L	B231416	S230587
2306190-07	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
DUP01-0623										
2306190-08	As	Water	D	0.932		0.162	0.727	µg/L	B231416	S230587
2306190-08	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-08	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-08	Cu	Water	D	3.65		0.505	1.01	µg/L	B231416	S230587
2306190-08	Hg	Water	D	2.54		0.13	0.41	ng/L	B231413	S230596
2306190-08	Pb	Water	D	0.109	J	0.061	0.121	µg/L	B231416	S230587
2306190-08	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW7-0623										
2306190-09	As	Water	TR	0.721	J	0.162	0.727	µg/L	B231416	S230587
2306190-09	Cd	Water	TR	1.96		0.061	0.182	µg/L	B231416	S230587
2306190-09	Cr	Water	TR	285		1.72	6.06	µg/L	B231416	S230587
2306190-09	Cu	Water	TR	20.1		0.505	1.01	µg/L	B231416	S230587
2306190-09	Hg	Water	TR	16.8		0.14	0.42	ng/L	B231413	S230596
2306190-09	Pb	Water	TR	7.26		0.061	0.121	µg/L	B231416	S230587
2306190-09	Zn	Water	TR	620		7.07	22.2	µg/L	B231416	S230587
MW7-0623										
2306190-10	As	Water	D	0.501	J	0.162	0.727	µg/L	B231416	S230587
2306190-10	Cd	Water	D	1.83		0.061	0.182	µg/L	B231416	S230587
2306190-10	Cr	Water	D	17.1		1.72	6.06	µg/L	B231416	S230587
2306190-10	Cu	Water	D	18.9		0.505	1.01	µg/L	B231416	S230587
2306190-10	Hg	Water	D	14.3		0.13	0.41	ng/L	B231413	S230596
2306190-10	Pb	Water	D	0.328		0.061	0.121	µg/L	B231416	S230587
2306190-10	Zn	Water	D	601		7.07	22.2	µg/L	B231416	S230587
MW1-0623										
2306190-11	As	Water	TR	6.06		0.162	0.727	µg/L	B231416	S230587
2306190-11	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-11	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-11	Cu	Water	TR	2.47		0.505	1.01	µg/L	B231416	S230587
2306190-11	Hg	Water	TR	2.46		0.14	0.42	ng/L	B231413	S230596
2306190-11	Pb	Water	TR	0.199		0.061	0.121	µg/L	B231416	S230587
2306190-11	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW1-0623										
2306190-12	As	Water	D	5.95		0.162	0.727	µg/L	B231416	S230587
2306190-12	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-12	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-12	Cu	Water	D	15.8		0.505	1.01	µg/L	B231416	S230587
2306190-12	Hg	Water	D	2.61		0.13	0.41	ng/L	B231413	S230596
2306190-12	Pb	Water	D	1.96		0.061	0.121	µg/L	B231416	S230587
2306190-12	Zn	Water	D	9.65	J	7.07	22.2	µg/L	B231416	S230587

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-0623										
2306190-13	As	Water	TR	1.03		0.162	0.727	µg/L	B231416	S230587
2306190-13	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-13	Cr	Water	TR	3.03	J	1.72	6.06	µg/L	B231416	S230587
2306190-13	Cu	Water	TR	5.82		0.505	1.01	µg/L	B231416	S230587
2306190-13	Hg	Water	TR	2.41		0.13	0.41	ng/L	B231413	S230596
2306190-13	Pb	Water	TR	0.780		0.061	0.121	µg/L	B231416	S230587
2306190-13	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW4-0623										
2306190-14	As	Water	D	0.954		0.162	0.727	µg/L	B231416	S230587
2306190-14	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-14	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-14	Cu	Water	D	3.78		0.505	1.01	µg/L	B231416	S230587
2306190-14	Hg	Water	D	2.29		0.13	0.41	ng/L	B231413	S230596
2306190-14	Pb	Water	D	0.102	J	0.061	0.121	µg/L	B231416	S230587
2306190-14	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
Filter Blank-0623										
2306190-15	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B231416	S230587
2306190-15	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-15	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-15	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B231416	S230587
2306190-15	Hg	Water	D	1.85		0.13	0.40	ng/L	B231413	S230596
2306190-15	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B231416	S230587
2306190-15	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW6-0623										
2306190-16	As	Water	TR	0.203	J	0.162	0.727	µg/L	B231416	S230587
2306190-16	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-16	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-16	Cu	Water	TR	1.08		0.505	1.01	µg/L	B231416	S230587
2306190-16	Hg	Water	TR	2.09		0.13	0.41	ng/L	B231413	S230596
2306190-16	Pb	Water	TR	≤ 0.061	U	0.061	0.121	µg/L	B231416	S230587
2306190-16	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6-0623										
2306190-17	As	Water	D	0.174	J	0.162	0.727	µg/L	B231416	S230587
2306190-17	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-17	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-17	Cu	Water	D	0.712	J	0.505	1.01	µg/L	B231416	S230587
2306190-17	Hg	Water	D	1.63		0.13	0.41	ng/L	B231413	S230596
2306190-17	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B231416	S230587
2306190-17	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW5-0623										
2306190-18	As	Water	TR	1.20		0.162	0.727	µg/L	B231416	S230587
2306190-18	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-18	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-18	Cu	Water	TR	5.93		0.505	1.01	µg/L	B231416	S230587
2306190-18	Hg	Water	TR	7.59		0.14	0.42	ng/L	B231413	S230596
2306190-18	Pb	Water	TR	0.575		0.061	0.121	µg/L	B231416	S230587
2306190-18	Zn	Water	TR	8.48	J	7.07	22.2	µg/L	B231416	S230587
MW5-0623										
2306190-19	As	Water	D	0.543	J	0.162	0.727	µg/L	B231416	S230587
2306190-19	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B231416	S230587
2306190-19	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B231416	S230587
2306190-19	Cu	Water	D	2.70		0.505	1.01	µg/L	B231416	S230587
2306190-19	Hg	Water	D	3.23		0.14	0.42	ng/L	B231413	S230596
2306190-19	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B231416	S230587
2306190-19	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B231416	S230587
MW9-0623										
2306190-20	As	Water	TR	1.84		0.404	1.82	µg/L	B231416	S230587
2306190-20	Cd	Water	TR	0.987		0.152	0.455	µg/L	B231416	S230587
2306190-20	Cr	Water	TR	≤ 4.29	U	4.29	15.2	µg/L	B231416	S230587
2306190-20	Cu	Water	TR	16.8		1.26	2.53	µg/L	B231416	S230587
2306190-20	Hg	Water	TR	40.4		0.13	0.41	ng/L	B231413	S230596
2306190-20	Pb	Water	TR	1.31		0.152	0.303	µg/L	B231416	S230587
2306190-20	Zn	Water	TR	217		17.7	55.6	µg/L	B231416	S230587

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9-0623										
2306190-21	As	Water	D	2.01		0.404	1.82	µg/L	B231416	S230587
2306190-21	Cd	Water	D	1.05		0.152	0.455	µg/L	B231416	S230587
2306190-21	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B231416	S230587
2306190-21	Cu	Water	D	17.2		1.26	2.53	µg/L	B231416	S230587
2306190-21	Hg	Water	D	44.5		0.13	0.41	ng/L	B231413	S230596
2306190-21	Pb	Water	D	1.44		0.152	0.303	µg/L	B231416	S230587
2306190-21	Zn	Water	D	212		17.7	55.6	µg/L	B231416	S230587

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Accuracy & Precision Summary

Batch: B231413
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B231413-MS1	**Matrix Spike (2306181-01)**						
	Hg	2.45	20.41	21.51	ng/L	93% 71-125	
B231413-MSD1	**Matrix Spike Duplicate (2306181-01)**						
	Hg	2.45	20.41	21.93	ng/L	95% 71-125	2% 24
B231413-MS3	**Matrix Spike (2306190-09)**						
	Hg	16.75	21.05	35.48	ng/L	89% 71-125	
B231413-MSD3	**Matrix Spike Duplicate (2306190-09)**						
	Hg	16.75	21.05	35.50	ng/L	89% 71-125	0.06% 24
B231413-MS2	**Matrix Spike (2306194-01)**						
	Hg	2.74	40.82	41.92	ng/L	96% 71-125	
B231413-MSD2	**Matrix Spike Duplicate (2306194-01)**						
	Hg	2.74	40.82	41.56	ng/L	95% 71-125	0.9% 24

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Accuracy & Precision Summary

Batch: B231416
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B231416-BS1	**Blank Spike, (2240063)**						
	As		277.8	271.8	µg/L	98% 75-125	
	Cd		27.78	29.84	µg/L	107% 75-125	
	Cr		277.8	290.8	µg/L	105% 75-125	
	Cu		277.8	284.1	µg/L	102% 75-125	
	Pb		27.78	30.13	µg/L	108% 75-125	
	Zn		277.8	295.0	µg/L	106% 75-125	
B231416-BS2	**Blank Spike, (2240063)**						
	As		277.8	272.6	µg/L	98% 75-125	
	Cd		27.78	30.18	µg/L	109% 75-125	
	Cr		277.8	293.9	µg/L	106% 75-125	
	Cu		277.8	290.7	µg/L	105% 75-125	
	Pb		27.78	30.14	µg/L	108% 75-125	
	Zn		277.8	297.8	µg/L	107% 75-125	
B231416-SRM1	**Reference Material (2305019, T221 - bottle 4)**						
	As		17.70	17.68	µg/L	100% 0-200	
	Cd		0.03800	0.040	µg/L	105% 0-200	
	Cr		1.710	1.790	µg/L	105% 0-200	
	Cu		3.780	3.863	µg/L	102% 0-200	
	Pb		0.4900	0.530	µg/L	108% 0-200	
	Zn		25.20	26.92	µg/L	107% 0-200	
B231416-SRM2	**Reference Material (2305019, T221 - bottle 4)**						
	As		17.70	17.89	µg/L	101% 0-200	
	Cd		0.03800	0.042	µg/L	110% 0-200	
	Cr		1.710	1.860	µg/L	109% 0-200	
	Cu		3.780	3.932	µg/L	104% 0-200	
	Pb		0.4900	0.532	µg/L	108% 0-200	
	Zn		25.20	27.78	µg/L	110% 0-200	

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Accuracy & Precision Summary

Batch: B231416
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B231416-DUP1	**Duplicate, (2306190-01)**						
	As	1.124		1.080	µg/L		4% 20
	Cd	1.959		1.896	µg/L		3% 20
	Cr	176.6		180.0	µg/L		2% 20
	Cu	36.18		37.13	µg/L		3% 20
	Pb	1.164		1.176	µg/L		1% 20
	Zn	260.5		268.9	µg/L		3% 20
B231416-MS1	**Matrix Spike, (2306190-01)**						
	As	1.124	280.6	286.6	µg/L	102% 75-125	
	Cd	1.959	28.06	30.68	µg/L	102% 75-125	
	Cr	176.6	280.6	479.6	µg/L	108% 75-125	
	Cu	36.18	280.6	316.5	µg/L	100% 75-125	
	Pb	1.164	28.06	28.59	µg/L	98% 75-125	
	Zn	260.5	280.6	548.2	µg/L	103% 75-125	
B231416-MSD1	**Matrix Spike Duplicate, (2306190-01)**						
	As	1.124	280.6	288.5	µg/L	102% 75-125	0.7% 20
	Cd	1.959	28.06	30.54	µg/L	102% 75-125	0.4% 20
	Cr	176.6	280.6	485.5	µg/L	110% 75-125	1% 20
	Cu	36.18	280.6	316.2	µg/L	100% 75-125	0.08% 20
	Pb	1.164	28.06	28.48	µg/L	97% 75-125	0.4% 20
	Zn	260.5	280.6	548.9	µg/L	103% 75-125	0.1% 20
B231416-DUP2	**Duplicate, (2306190-11)**						
	As	6.060		6.125	µg/L		1% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	2.473		2.560	µg/L		3% 20
	Pb	0.199		0.208	µg/L		4% 20
	Zn	ND		ND	µg/L		N/C 20

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Accuracy & Precision Summary

Batch: B231416
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B231416-MS2	**Matrix Spike, (2306190-11)**						
	As	6.060	280.6	285.3	µg/L	100% 75-125	
	Cd	ND	28.06	30.14	µg/L	107% 75-125	
	Cr	ND	280.6	297.0	µg/L	106% 75-125	
	Cu	2.473	280.6	289.0	µg/L	102% 75-125	
	Pb	0.199	28.06	30.09	µg/L	107% 75-125	
	Zn	ND	280.6	302.8	µg/L	108% 75-125	
B231416-MSD2	**Matrix Spike Duplicate, (2306190-11)**						
	As	6.060	280.6	289.6	µg/L	101% 75-125	1% 20
	Cd	ND	28.06	30.38	µg/L	108% 75-125	0.8% 20
	Cr	ND	280.6	298.0	µg/L	106% 75-125	0.4% 20
	Cu	2.473	280.6	293.6	µg/L	104% 75-125	2% 20
	Pb	0.199	28.06	30.55	µg/L	108% 75-125	2% 20
	Zn	ND	280.6	310.6	µg/L	111% 75-125	3% 20
B231416-DUP3	**Duplicate, (2306190-20)**						
	As	1.841		1.786	µg/L		3% 20
	Cd	0.987		0.959	µg/L		3% 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	16.82		16.62	µg/L		1% 20
	Pb	1.311		1.312	µg/L		0.07% 20
	Zn	217.3		206.7	µg/L		5% 20
B231416-MS3	**Matrix Spike, (2306190-20)**						
	As	1.841	280.6	289.9	µg/L	103% 75-125	
	Cd	0.987	28.06	30.22	µg/L	104% 75-125	
	Cr	ND	280.6	303.3	µg/L	108% 75-125	
	Cu	16.82	280.6	299.3	µg/L	101% 75-125	
	Pb	1.311	28.06	29.98	µg/L	102% 75-125	
	Zn	217.3	280.6	495.3	µg/L	99% 75-125	

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Accuracy & Precision Summary

Batch: B231416
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B231416-MSD3	**Matrix Spike Duplicate, (2306190-20)**						
	As	1.841	280.6	291.4	µg/L	103% 75-125	0.5% 20
	Cd	0.987	28.06	31.19	µg/L	108% 75-125	3% 20
	Cr	ND	280.6	306.3	µg/L	109% 75-125	1% 20
	Cu	16.82	280.6	298.3	µg/L	100% 75-125	0.3% 20
	Pb	1.311	28.06	30.32	µg/L	103% 75-125	1% 20
	Zn	217.3	280.6	493.8	µg/L	99% 75-125	0.3% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Method Blanks & Reporting Limits

Batch: B231413
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B231413-BLK1	0.16	ng/L
B231413-BLK2	0.16	ng/L
B231413-BLK3	0.16	ng/L
B231413-BLK4	0.15	ng/L

Average: 0.16 **Standard Deviation:** 0.01 **MDL:** 0.13
Limit: 0.50 **Limit:** 0.13 **MRL:** 0.40

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Method Blanks & Reporting Limits

Batch: B231416
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B231416-BLK1	0.008	µg/L
B231416-BLK2	0.008	µg/L
B231416-BLK3	0.009	µg/L
B231416-BLK4	0.011	µg/L

Average: 0.009
Limit: 0.072
MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B231416-BLK1	0.00009	µg/L
B231416-BLK2	0.0002	µg/L
B231416-BLK3	0.0008	µg/L
B231416-BLK4	0.0006	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B231416-BLK1	0.016	µg/L
B231416-BLK2	0.024	µg/L
B231416-BLK3	0.077	µg/L
B231416-BLK4	0.097	µg/L

Average: 0.053
Limit: 0.600
MDL: 0.170
MRL: 0.600

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Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B231416-BLK1	0.011	µg/L
B231416-BLK2	0.013	µg/L
B231416-BLK3	0.038	µg/L
B231416-BLK4	0.038	µg/L

Average: 0.025
Limit: 0.100

MDL: 0.050
MRL: 0.100

Analyte: Pb

Sample	Result	Units
B231416-BLK1	0.001	µg/L
B231416-BLK2	0.002	µg/L
B231416-BLK3	0.003	µg/L
B231416-BLK4	0.005	µg/L

Average: 0.003
Limit: 0.012

MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B231416-BLK1	0.106	µg/L
B231416-BLK2	0.492	µg/L
B231416-BLK3	2.45	µg/L
B231416-BLK4	3.68	µg/L

Average: 1.681
Limit: 2.200

MDL: 0.700
MRL: 2.20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2306190-01 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW8-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-02 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW8-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-03 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW2-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-04 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW2-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

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Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2306190-05 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW3-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-06 **Report Matrix:** Water **Collected:** 06/05/2023
Sample: MW3-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-07 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: DUP01-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-08 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: DUP01-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

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Sample Containers

Lab ID: 2306190-09 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW7-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-10 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW7-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-11 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW1-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-12 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW1-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

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Project ID: CRC-SE2201
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Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2306190-13 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW4-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-14 **Report Matrix:** Water **Collected:** 06/06/2023
Sample: MW4-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-15 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: Filter Blank-0623 **Sample Type:** Filter Blank **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-16 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: MW6-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

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Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2306190-17 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: MW6-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-18 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: MW5-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-19 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: MW5-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Lab ID: 2306190-20 **Report Matrix:** Water **Collected:** 06/07/2023
Sample: MW9-0623 **Sample Type:** Sample **Received:** 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2306190-21
Sample: MW9-0623

Report Matrix: Water
Sample Type: Sample

Collected: 06/07/2023
Received: 06/09/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0039	none	n/a	n/a	Cooler - 2306190
B	Bottle HDPE ICP-W	125 mL	23-0044	1% HNO3 (BAL)	2320004	<2	Cooler - 2306190

Shipping Containers

Cooler - 2306190

Received: June 9, 2023 13:59
Tracking No: N/A via Courier
Coolant Type: Ice
Temperature: 1.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-4

Custody seals present? No
Custody seals intact? No
COC present? Yes

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2306190

Received by: VF Date: 6/9/23
Work Order ID: Time: 1359
Project ID:

Client: Crete Consulting | Leon Environmental PO Number: Leon Environmental Mailing Address:
Contact: R. Jones Phone: 832.330.1359
Client Project ID: PoFH Jensen Boatyard Email: rusty.jones@creteconsulting.com Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones BAL PM: Jeremy Mackie

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO_3/Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) As, Cd, Cr, Cu, Ni, Pb, Zn Total/Dissolved	Other (specify) Total + Dissolved Hg	Comments: µS/cm Specify Here
1	MW8-0623	6.5.2023	1646	WATER	4	Y&N	NONE							X	X	Cond. 32917 µS/cm
2	MW2-0623	↓	1802	↓	4	↓	↓							X	X	Cond. 4471 µS/cm
3	MW3-0623	↓	1851	↓	4	↓	↓							X	X	Cond. 9353 µS/cm
4	DUP01-0623	6.6.2023	1200	↓	4	↓	↓							X	X	
5	MW7-0623	↓	1623	↓	4	↓	↓							X	X	Cond. 33577 µS/cm
6	MW1-0623	↓	1724	↓	4	↓	↓							X	X	Cond. 6416 µS/cm
7	MW4-0623	↓	1812	↓	4	↓	↓							X	X	Cond. 867 µS/cm
8	FILTER BLANK-0623	6.7.2023	1445	↓	2	Y	↓							X	Y	Dissolved only
9	MW6-0623	↓	1521	↓	4	Y&N	↓							X	X	Cond. 158.0 µS/cm
10	MW5-0623	↓	1622	↓	4	↓	↓							Y	X	Cond. 380.5 µS/cm
	Trip Blank															

Relinquished By: R. Jones	Date: 6/9/2023	Time: 1359	Relinquished By:	Date:	Time:
Received By:	Date: 6/9/23	Time: 1359	Total Number of Packages:		

Page 1 of 2 List Hazardous Contaminants:

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2306190

Received by: VF Date: 6/9/23

Work Order ID: Time: 1359

Project ID:

Client: Crete Consulting | Leon Environmental PO Number: Leon Environmental Mailing Address:

Contact: Rusty Jones Phone: 832.330.1359

Client Project ID: Poff Jensen Boatyard Email: rusty.jones@creteconsulting.com Email Receipt Confirmation? (Yes/No)

Samples Collected By: Rusty Jones R. Jones BAL PM: Jeremy Mantz

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO_3/Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) EPA 1633 Mod; As, Cd, Cu, Pb, Zn	Other (specify) Total Dissolved Hg	Comments
1	MW9-0623	6.7.2023	1720	WATER	4	Y&N	NONE							X	X	mS/cm Specify Here Cond. 37759 mS/cm
2																
3																
4																
5																
6																
7																
8																
9																
10																
	Trip Blank															

Relinquished By: R. Jones	Date: 6/9/2023	Time: 1359	Relinquished By:	Date:	Time:
Received By:	Date: 6/9/23	Time: 1359	Total Number of Packages:		

Page 2 of 2 List Hazardous Contaminants:

BROOKS APPLIED LABS
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June 1, 2023

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard R.I.

Rusty Jones,

On April 13, 2023, Brooks Applied Labs (BAL) received eleven (11) aqueous samples in a sealed cooler at an acceptable temperature of 1.3°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B230922
Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The dissolved copper and lead results (2304233-26) were greater than the corresponding total recoverable copper and lead results (2304233-25) for the *MW1-0423* sample. Re-analyses confirmed the results. Container labels were checked and there was no indication of samples mis-labeled. Consequently, no additional corrective actions are necessary. The reported results are deemed representative of the submitted containers.

In instances where the analyte concentration of a standard reference material (SRM) is not certified but instead has been listed only as an informational value by the certifying agency, the recovery limits have been set as not applicable (N/A). In such cases the measured concentrations have been provided for informational purposes, but the laboratory fortified blank and/or matrix spike recoveries may be more reflective of the performance of the applied methods.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B230935

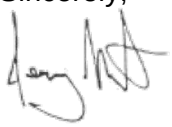
The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

Aside from concentration qualifiers, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Brooks Applied Labs
Jeremy@brooksapplied.com

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02.

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW9-0423	2304233-01	Water	Sample	04/10/2023	04/13/2023
MW9-0423	2304233-02	Water	Sample	04/10/2023	04/13/2023
MW9-0423	2304233-03	Water	Sample	04/10/2023	04/13/2023
MW9-0423	2304233-04	Water	Sample	04/10/2023	04/13/2023
MW8-0423	2304233-05	Water	Sample	04/10/2023	04/13/2023
MW8-0423	2304233-06	Water	Sample	04/10/2023	04/13/2023
MW8-0423	2304233-07	Water	Sample	04/10/2023	04/13/2023
MW8-0423	2304233-08	Water	Sample	04/10/2023	04/13/2023
MW3-0423	2304233-09	Water	Sample	04/10/2023	04/13/2023
MW3-0423	2304233-10	Water	Sample	04/10/2023	04/13/2023
MW3-0423	2304233-11	Water	Sample	04/10/2023	04/13/2023
MW3-0423	2304233-12	Water	Sample	04/10/2023	04/13/2023
DUP02-0423	2304233-13	Water	Field Duplicate	04/10/2023	04/13/2023
DUP02-0423	2304233-14	Water	Field Duplicate	04/10/2023	04/13/2023
DUP02-0423	2304233-15	Water	Field Duplicate	04/10/2023	04/13/2023
DUP02-0423	2304233-16	Water	Field Duplicate	04/10/2023	04/13/2023
MW7-0423	2304233-17	Water	Sample	04/11/2023	04/13/2023
MW7-0423	2304233-18	Water	Sample	04/11/2023	04/13/2023
MW7-0423	2304233-19	Water	Sample	04/11/2023	04/13/2023
MW7-0423	2304233-20	Water	Sample	04/11/2023	04/13/2023
MW4-0423	2304233-21	Water	Sample	04/11/2023	04/13/2023
MW4-0423	2304233-22	Water	Sample	04/11/2023	04/13/2023
MW4-0423	2304233-23	Water	Sample	04/11/2023	04/13/2023
MW4-0423	2304233-24	Water	Sample	04/11/2023	04/13/2023
MW1-0423	2304233-25	Water	Sample	04/11/2023	04/13/2023
MW1-0423	2304233-26	Water	Sample	04/11/2023	04/13/2023
MW1-0423	2304233-27	Water	Sample	04/11/2023	04/13/2023
MW1-0423	2304233-28	Water	Sample	04/11/2023	04/13/2023
FILTER BLANK	2304233-29	Water	Filter Blank	04/11/2023	04/13/2023
FILTER BLANK	2304233-30	Water	Filter Blank	04/11/2023	04/13/2023
MW6-0423	2304233-31	Water	Sample	04/12/2023	04/13/2023
MW6-0423	2304233-32	Water	Sample	04/12/2023	04/13/2023
MW6-0423	2304233-33	Water	Sample	04/12/2023	04/13/2023
MW6-0423	2304233-34	Water	Sample	04/12/2023	04/13/2023
MW5-0423	2304233-35	Water	Sample	04/12/2023	04/13/2023
MW5-0423	2304233-36	Water	Sample	04/12/2023	04/13/2023
MW5-0423	2304233-37	Water	Sample	04/12/2023	04/13/2023
MW5-0423	2304233-38	Water	Sample	04/12/2023	04/13/2023
MW2-0423	2304233-39	Water	Sample	04/12/2023	04/13/2023
MW2-0423	2304233-40	Water	Sample	04/12/2023	04/13/2023

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW2-0423	2304233-41	Water	Sample	04/12/2023	04/13/2023
MW2-0423	2304233-42	Water	Sample	04/12/2023	04/13/2023

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383
Cd	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383
Cr	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383
Cu	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383
Hg	Water	EPA 1631 E	ISO,TNI	04/19/23	04/21/23	B230935	S230390
Pb	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383
Zn	Water	House	ISO,TNI	04/18/23	04/18/23	B230922	S230383

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9-0423										
2304233-01	As	Water	TR	1.77		0.162	0.727	µg/L	B230922	S230383
2304233-01	Cd	Water	TR	0.387		0.061	0.182	µg/L	B230922	S230383
2304233-01	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-01	Cu	Water	TR	13.5		0.505	1.01	µg/L	B230922	S230383
2304233-01	Pb	Water	TR	1.37		0.061	0.121	µg/L	B230922	S230383
2304233-01	Zn	Water	TR	121		7.07	22.2	µg/L	B230922	S230383
MW9-0423										
2304233-02	As	Water	D	1.58		0.162	0.727	µg/L	B230922	S230383
2304233-02	Cd	Water	D	0.371		0.061	0.182	µg/L	B230922	S230383
2304233-02	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-02	Cu	Water	D	10.7		0.505	1.01	µg/L	B230922	S230383
2304233-02	Pb	Water	D	0.751		0.061	0.121	µg/L	B230922	S230383
2304233-02	Zn	Water	D	117		7.07	22.2	µg/L	B230922	S230383
MW9-0423										
2304233-03	Hg	Water	TR	33.4		0.13	0.41	ng/L	B230935	S230390
MW9-0423										
2304233-04	Hg	Water	D	29.0		0.13	0.41	ng/L	B230935	S230390
MW8-0423										
2304233-05	As	Water	TR	0.969		0.162	0.727	µg/L	B230922	S230383
2304233-05	Cd	Water	TR	2.26		0.061	0.182	µg/L	B230922	S230383
2304233-05	Cr	Water	TR	277		1.72	6.06	µg/L	B230922	S230383
2304233-05	Cu	Water	TR	47.2		0.505	1.01	µg/L	B230922	S230383
2304233-05	Pb	Water	TR	1.18		0.061	0.121	µg/L	B230922	S230383
2304233-05	Zn	Water	TR	261		7.07	22.2	µg/L	B230922	S230383
MW8-0423										
2304233-06	As	Water	D	0.756		0.162	0.727	µg/L	B230922	S230383
2304233-06	Cd	Water	D	2.63		0.061	0.182	µg/L	B230922	S230383
2304233-06	Cr	Water	D	2.41	J	1.72	6.06	µg/L	B230922	S230383
2304233-06	Cu	Water	D	21.2		0.505	1.01	µg/L	B230922	S230383
2304233-06	Pb	Water	D	0.344		0.061	0.121	µg/L	B230922	S230383
2304233-06	Zn	Water	D	275		7.07	22.2	µg/L	B230922	S230383
MW8-0423										
2304233-07	Hg	Water	TR	10.9		0.13	0.41	ng/L	B230935	S230390

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW8-0423										
2304233-08	Hg	Water	D	7.82		0.13	0.41	ng/L	B230935	S230390
MW3-0423										
2304233-09	As	Water	TR	1.01		0.162	0.727	µg/L	B230922	S230383
2304233-09	Cd	Water	TR	0.156	J	0.061	0.182	µg/L	B230922	S230383
2304233-09	Cr	Water	TR	4.46	J	1.72	6.06	µg/L	B230922	S230383
2304233-09	Cu	Water	TR	7.63		0.505	1.01	µg/L	B230922	S230383
2304233-09	Pb	Water	TR	0.943		0.061	0.121	µg/L	B230922	S230383
2304233-09	Zn	Water	TR	63.1		7.07	22.2	µg/L	B230922	S230383
MW3-0423										
2304233-10	As	Water	D	0.914		0.162	0.727	µg/L	B230922	S230383
2304233-10	Cd	Water	D	0.105	J	0.061	0.182	µg/L	B230922	S230383
2304233-10	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-10	Cu	Water	D	6.30		0.505	1.01	µg/L	B230922	S230383
2304233-10	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-10	Zn	Water	D	58.0		7.07	22.2	µg/L	B230922	S230383
MW3-0423										
2304233-11	Hg	Water	TR	7.30		0.13	0.41	ng/L	B230935	S230390
MW3-0423										
2304233-12	Hg	Water	D	5.51		0.13	0.41	ng/L	B230935	S230390
DUP02-0423										
2304233-13	As	Water	TR	0.952		0.162	0.727	µg/L	B230922	S230383
2304233-13	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-13	Cr	Water	TR	1.84	J	1.72	6.06	µg/L	B230922	S230383
2304233-13	Cu	Water	TR	3.85		0.505	1.01	µg/L	B230922	S230383
2304233-13	Pb	Water	TR	0.420		0.061	0.121	µg/L	B230922	S230383
2304233-13	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP02-0423										
2304233-14	As	Water	D	0.859		0.162	0.727	µg/L	B230922	S230383
2304233-14	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-14	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-14	Cu	Water	D	2.93		0.505	1.01	µg/L	B230922	S230383
2304233-14	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-14	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
DUP02-0423										
2304233-15	Hg	Water	TR	1.05		0.13	0.41	ng/L	B230935	S230390
DUP02-0423										
2304233-16	Hg	Water	D	0.68		0.13	0.41	ng/L	B230935	S230390
MW7-0423										
2304233-17	As	Water	TR	0.590	J	0.162	0.727	µg/L	B230922	S230383
2304233-17	Cd	Water	TR	1.67		0.061	0.182	µg/L	B230922	S230383
2304233-17	Cr	Water	TR	138		1.72	6.06	µg/L	B230922	S230383
2304233-17	Cu	Water	TR	36.8		0.505	1.01	µg/L	B230922	S230383
2304233-17	Pb	Water	TR	3.45		0.061	0.121	µg/L	B230922	S230383
2304233-17	Zn	Water	TR	699		7.07	22.2	µg/L	B230922	S230383
MW7-0423										
2304233-18	As	Water	D	0.538	J	0.162	0.727	µg/L	B230922	S230383
2304233-18	Cd	Water	D	1.67		0.061	0.182	µg/L	B230922	S230383
2304233-18	Cr	Water	D	8.17		1.72	6.06	µg/L	B230922	S230383
2304233-18	Cu	Water	D	33.1		0.505	1.01	µg/L	B230922	S230383
2304233-18	Pb	Water	D	0.417		0.061	0.121	µg/L	B230922	S230383
2304233-18	Zn	Water	D	664		7.07	22.2	µg/L	B230922	S230383
MW7-0423										
2304233-19	Hg	Water	TR	16.8		0.13	0.41	ng/L	B230935	S230390
MW7-0423										
2304233-20	Hg	Water	D	13.8		0.13	0.41	ng/L	B230935	S230390

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-0423										
2304233-21	As	Water	TR	0.912		0.162	0.727	µg/L	B230922	S230383
2304233-21	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-21	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-21	Cu	Water	TR	3.46		0.505	1.01	µg/L	B230922	S230383
2304233-21	Pb	Water	TR	0.383		0.061	0.121	µg/L	B230922	S230383
2304233-21	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW4-0423										
2304233-22	As	Water	D	1.01		0.162	0.727	µg/L	B230922	S230383
2304233-22	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-22	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-22	Cu	Water	D	2.78		0.505	1.01	µg/L	B230922	S230383
2304233-22	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-22	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW4-0423										
2304233-23	Hg	Water	TR	0.98		0.13	0.41	ng/L	B230935	S230390
MW4-0423										
2304233-24	Hg	Water	D	0.69		0.13	0.41	ng/L	B230935	S230390
MW1-0423										
2304233-25	As	Water	TR	5.68		0.162	0.727	µg/L	B230922	S230383
2304233-25	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-25	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-25	Cu	Water	TR	1.39		0.505	1.01	µg/L	B230922	S230383
2304233-25	Pb	Water	TR	0.082	J	0.061	0.121	µg/L	B230922	S230383
2304233-25	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW1-0423										
2304233-26	As	Water	D	5.52		0.162	0.727	µg/L	B230922	S230383
2304233-26	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-26	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-26	Cu	Water	D	5.40		0.505	1.01	µg/L	B230922	S230383
2304233-26	Pb	Water	D	0.319		0.061	0.121	µg/L	B230922	S230383
2304233-26	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW1-0423										
2304233-27	Hg	Water	TR	1.66		0.13	0.41	ng/L	B230935	S230390

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW1-0423										
2304233-28	Hg	Water	D	0.66		0.13	0.41	ng/L	B230935	S230390
FILTER BLANK										
2304233-29	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B230922	S230383
2304233-29	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-29	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-29	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B230922	S230383
2304233-29	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-29	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
FILTER BLANK										
2304233-30	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B230935	S230390
MW6-0423										
2304233-31	As	Water	TR	0.206	J	0.162	0.727	µg/L	B230922	S230383
2304233-31	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-31	Cr	Water	TR	2.04	J	1.72	6.06	µg/L	B230922	S230383
2304233-31	Cu	Water	TR	0.522	J	0.505	1.01	µg/L	B230922	S230383
2304233-31	Pb	Water	TR	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-31	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW6-0423										
2304233-32	As	Water	D	0.201	J	0.162	0.727	µg/L	B230922	S230383
2304233-32	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-32	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-32	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B230922	S230383
2304233-32	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-32	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW6-0423										
2304233-33	Hg	Water	TR	0.46		0.13	0.41	ng/L	B230935	S230390
MW6-0423										
2304233-34	Hg	Water	D	0.38	J	0.13	0.41	ng/L	B230935	S230390

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW5-0423										
2304233-35	As	Water	TR	1.90		0.162	0.727	µg/L	B230922	S230383
2304233-35	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-35	Cr	Water	TR	2.20	J	1.72	6.06	µg/L	B230922	S230383
2304233-35	Cu	Water	TR	9.59		0.505	1.01	µg/L	B230922	S230383
2304233-35	Pb	Water	TR	0.801		0.061	0.121	µg/L	B230922	S230383
2304233-35	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW5-0423										
2304233-36	As	Water	D	0.579	J	0.162	0.727	µg/L	B230922	S230383
2304233-36	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-36	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-36	Cu	Water	D	5.24		0.505	1.01	µg/L	B230922	S230383
2304233-36	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-36	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW5-0423										
2304233-37	Hg	Water	TR	9.76		0.13	0.41	ng/L	B230935	S230390
MW5-0423										
2304233-38	Hg	Water	D	3.39		0.13	0.41	ng/L	B230935	S230390
MW2-0423										
2304233-39	As	Water	TR	0.396	J	0.162	0.727	µg/L	B230922	S230383
2304233-39	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-39	Cr	Water	TR	2.36	J	1.72	6.06	µg/L	B230922	S230383
2304233-39	Cu	Water	TR	2.99		0.505	1.01	µg/L	B230922	S230383
2304233-39	Pb	Water	TR	0.070	J	0.061	0.121	µg/L	B230922	S230383
2304233-39	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW2-0423										
2304233-40	As	Water	D	0.444	J	0.162	0.727	µg/L	B230922	S230383
2304233-40	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B230922	S230383
2304233-40	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B230922	S230383
2304233-40	Cu	Water	D	1.46		0.505	1.01	µg/L	B230922	S230383
2304233-40	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B230922	S230383
2304233-40	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B230922	S230383
MW2-0423										
2304233-41	Hg	Water	TR	2.04		0.13	0.41	ng/L	B230935	S230390

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW2-0423										
2304233-42	Hg	Water	D	1.20		0.13	0.41	ng/L	B230935	S230390

Accuracy & Precision Summary

Batch: B230922
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B230922-BS1	**Blank Spike, (2240063)**						
	As		277.8	266.7	µg/L	96% 75-125	
	Cd		27.78	27.78	µg/L	100% 75-125	
	Cr		277.8	285.7	µg/L	103% 75-125	
	Cu		277.8	282.4	µg/L	102% 75-125	
	Pb		27.78	27.84	µg/L	100% 75-125	
	Zn		277.8	281.6	µg/L	101% 75-125	
B230922-BS2	**Blank Spike, (2240063)**						
	As		277.8	258.2	µg/L	93% 75-125	
	Cd		27.78	26.73	µg/L	96% 75-125	
	Cr		277.8	273.8	µg/L	99% 75-125	
	Cu		277.8	274.4	µg/L	99% 75-125	
	Pb		27.78	26.53	µg/L	96% 75-125	
	Zn		277.8	268.1	µg/L	97% 75-125	
B230922-SRM1	**Reference Material (2305017, T221 - bottle 2)**						
	As		17.70	16.35	µg/L	92% 75-125	
	Cd		0.03800	0.039	µg/L	102% 75-125	
	Cr		1.710	1.662	µg/L	97% 75-125	
	Cu		3.780	3.620	µg/L	96% 75-125	
	Pb		0.4900	0.483	µg/L	99% 75-125	
	Zn		25.20	24.86	µg/L	99% 75-125	
B230922-SRM2	**Reference Material (2305017, T221 - bottle 2)**						
	As		17.70	16.97	µg/L	96% 75-125	
	Cd		0.03800	0.040	µg/L	106% 75-125	
	Cr		1.710	1.691	µg/L	99% 75-125	
	Cu		3.780	3.700	µg/L	98% 75-125	
	Pb		0.4900	0.491	µg/L	100% 75-125	
	Zn		25.20	25.00	µg/L	99% 75-125	

Accuracy & Precision Summary

Batch: B230922
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B230922-DUP1	**Duplicate, (2304233-01)**						
	As	1.769		1.651	µg/L		7% 20
	Cd	0.387		0.409	µg/L		6% 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	13.47		12.22	µg/L		10% 20
	Pb	1.375		1.378	µg/L		0.2% 20
	Zn	120.8		117.4	µg/L		3% 20
B230922-MS1	**Matrix Spike, (2304233-01)**						
	As	1.769	280.6	269.3	µg/L	95% 75-125	
	Cd	0.387	28.06	25.32	µg/L	89% 75-125	
	Cr	ND	280.6	276.7	µg/L	99% 75-125	
	Cu	13.47	280.6	278.3	µg/L	94% 75-125	
	Pb	1.375	28.06	26.60	µg/L	90% 75-125	
	Zn	120.8	280.6	376.1	µg/L	91% 75-125	
B230922-MSD1	**Matrix Spike Duplicate, (2304233-01)**						
	As	1.769	280.6	266.0	µg/L	94% 75-125	1% 20
	Cd	0.387	28.06	25.37	µg/L	89% 75-125	0.2% 20
	Cr	ND	280.6	281.1	µg/L	100% 75-125	2% 20
	Cu	13.47	280.6	276.9	µg/L	94% 75-125	0.5% 20
	Pb	1.375	28.06	26.41	µg/L	89% 75-125	0.7% 20
	Zn	120.8	280.6	374.8	µg/L	91% 75-125	0.4% 20
B230922-DUP2	**Duplicate, (2304233-17)**						
	As	0.590		0.601	µg/L		2% 20
	Cd	1.668		1.811	µg/L		8% 20
	Cr	138.0		144.8	µg/L		5% 20
	Cu	36.83		39.71	µg/L		8% 20
	Pb	3.446		3.451	µg/L		0.1% 20
	Zn	699.3		725.3	µg/L		4% 20

Accuracy & Precision Summary

Batch: B230922
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B230922-MS2	**Matrix Spike, (2304233-17)**						
	As	0.590	280.6	264.1	µg/L	94% 75-125	
	Cd	1.668	28.06	27.20	µg/L	91% 75-125	
	Cr	138.0	280.6	424.8	µg/L	102% 75-125	
	Cu	36.83	280.6	304.1	µg/L	95% 75-125	
	Pb	3.446	28.06	28.24	µg/L	88% 75-125	
	Zn	699.3	280.6	966.7	µg/L	95% 75-125	
B230922-MSD2	**Matrix Spike Duplicate, (2304233-17)**						
	As	0.590	280.6	267.6	µg/L	95% 75-125	1% 20
	Cd	1.668	28.06	27.66	µg/L	93% 75-125	2% 20
	Cr	138.0	280.6	435.9	µg/L	106% 75-125	3% 20
	Cu	36.83	280.6	310.9	µg/L	98% 75-125	2% 20
	Pb	3.446	28.06	29.04	µg/L	91% 75-125	3% 20
	Zn	699.3	280.6	982.2	µg/L	101% 75-125	2% 20
B230922-DUP3	**Duplicate, (2304233-39)**						
	As	0.396		0.397	µg/L		0.09% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	2.356		1.868	µg/L		*23%* 20
	Cu	2.986		2.444	µg/L		20% 20
	Pb	0.070		0.062	µg/L		13% 20
	Zn	ND		ND	µg/L		N/C 20
B230922-MS3	**Matrix Spike, (2304233-39)**						
	As	0.396	280.6	260.6	µg/L	93% 75-125	
	Cd	ND	28.06	26.80	µg/L	96% 75-125	
	Cr	2.356	280.6	298.7	µg/L	106% 75-125	
	Cu	2.986	280.6	294.7	µg/L	104% 75-125	
	Pb	0.070	28.06	26.52	µg/L	94% 75-125	
	Zn	ND	280.6	274.8	µg/L	98% 75-125	

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Accuracy & Precision Summary

Batch: B230922
Lab Matrix: Water
Method: House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B230922-MSD3	**Matrix Spike Duplicate, (2304233-39)**						
	As	0.396	280.6	273.4	µg/L	97% 75-125	5% 20
	Cd	ND	28.06	27.29	µg/L	97% 75-125	2% 20
	Cr	2.356	280.6	291.7	µg/L	103% 75-125	2% 20
	Cu	2.986	280.6	288.5	µg/L	102% 75-125	2% 20
	Pb	0.070	28.06	27.33	µg/L	97% 75-125	3% 20
	Zn	ND	280.6	282.6	µg/L	101% 75-125	3% 20

Accuracy & Precision Summary

Batch: B230935
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B230935-MS1	**Matrix Spike (2304233-11)**						
	Hg	7.30	20.41	25.25	ng/L	88% 71-125	
B230935-MSD1	**Matrix Spike Duplicate (2304233-11)**						
	Hg	7.30	20.41	24.98	ng/L	87% 71-125	1% 24
B230935-MS2	**Matrix Spike (2304233-33)**						
	Hg	0.46	20.41	20.46	ng/L	98% 71-125	
B230935-MSD2	**Matrix Spike Duplicate (2304233-33)**						
	Hg	0.46	20.41	19.63	ng/L	94% 71-125	4% 24
B230935-MS3	**Matrix Spike (2304233-38)**						
	Hg	3.39	20.41	22.13	ng/L	92% 71-125	
B230935-MSD3	**Matrix Spike Duplicate (2304233-38)**						
	Hg	3.39	20.41	22.51	ng/L	94% 71-125	2% 24

Method Blanks & Reporting Limits

Batch: B230922
Matrix: Water
Method: House
Analyte: As

Sample	Result	Units
B230922-BLK1	0.004	µg/L
B230922-BLK2	0.006	µg/L
B230922-BLK3	0.005	µg/L
B230922-BLK4	0.004	µg/L

Average: 0.005
Limit: 0.072
MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B230922-BLK1	-0.0001	µg/L
B230922-BLK2	-0.0007	µg/L
B230922-BLK3	0.0008	µg/L
B230922-BLK4	-0.0004	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B230922-BLK1	0.007	µg/L
B230922-BLK2	0.024	µg/L
B230922-BLK3	-0.003	µg/L
B230922-BLK4	0.002	µg/L

Average: 0.008
Limit: 0.600
MDL: 0.170
MRL: 0.600

Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B230922-BLK1	-0.027	µg/L
B230922-BLK2	0.078	µg/L
B230922-BLK3	-0.029	µg/L
B230922-BLK4	-0.015	µg/L

Average: 0.002
Limit: 0.100

MDL: 0.050
MRL: 0.100

Analyte: Pb

Sample	Result	Units
B230922-BLK1	-0.0005	µg/L
B230922-BLK2	0.010	µg/L
B230922-BLK3	-0.0006	µg/L
B230922-BLK4	0.0003	µg/L

Average: 0.002
Limit: 0.012

MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B230922-BLK1	-0.056	µg/L
B230922-BLK2	-0.017	µg/L
B230922-BLK3	-0.005	µg/L
B230922-BLK4	0.444	µg/L

Average: 0.092
Limit: 2.200

MDL: 0.700
MRL: 2.20

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Method Blanks & Reporting Limits

Batch: B230935
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B230935-BLK1	0.19	ng/L
B230935-BLK2	0.21	ng/L
B230935-BLK3	0.17	ng/L
B230935-BLK4	0.16	ng/L

Average: 0.18 **Standard Deviation:** 0.02 **MDL:** 0.13
Limit: 0.50 **Limit:** 0.13 **MRL:** 0.40

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Sample Containers

Lab ID: 2304233-01 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW9-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-02 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW9-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-03 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW9-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-04 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW9-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-05 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW8-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-06 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW8-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Sample Containers

Lab ID: 2304233-07 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW8-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-08 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW8-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-09 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW3-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-10 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW3-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-11 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW3-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-12 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: MW3-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Sample Containers

Lab ID: 2304233-13 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: DUP02-0423 **Sample Type:** Field Duplicate **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-14 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: DUP02-0423 **Sample Type:** Field Duplicate **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-15 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: DUP02-0423 **Sample Type:** Field Duplicate **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-16 **Report Matrix:** Water **Collected:** 04/10/2023
Sample: DUP02-0423 **Sample Type:** Field Duplicate **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-17 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW7-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-18 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW7-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Sample Containers

Lab ID: 2304233-19 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW7-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-20 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW7-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-21 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW4-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-22 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW4-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-23 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW4-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-24 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW4-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Sample Containers

Lab ID: 2304233-25 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW1-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-26 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW1-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-27 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW1-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-28 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: MW1-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-29 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: FILTER BLANK **Sample Type:** Filter Blank **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-30 **Report Matrix:** Water **Collected:** 04/11/2023
Sample: FILTER BLANK **Sample Type:** Filter Blank **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Sample Containers

Lab ID: 2304233-31 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW6-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-32 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW6-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-33 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW6-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-34 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW6-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-35 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW5-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-36 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW5-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Sample Containers

Lab ID: 2304233-37 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW5-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-38 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW5-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-39 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW2-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-40 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW2-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125mL	22T-0033	1% HNO3 (BAL)	2305001	<2	Cooler - 2304233

Lab ID: 2304233-41 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW2-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Lab ID: 2304233-42 **Report Matrix:** Water **Collected:** 04/12/2023
Sample: MW2-0423 **Sample Type:** Sample **Received:** 04/13/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cooler - 2304233

Project ID: CRC-SE2201
PM: Jeremy Maute

Client PM: Rusty Jones
Client Project: PoFH Jensens Boatyard R.I.

Shipping Containers

Cooler - 2304233

Received: April 13, 2023 11:35
Tracking No: n/a via Courier
Coolant Type: Ice
Temperature: 1.3 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-3

Custody seals present? No
Custody seals intact? No
COC present? Yes

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2304233
Received by: VF — Date: 4/13/23
Work Order ID: — Time: 1135
Project ID:

Client: Crete Consulting / Leon Environmental — PO Number: L-E — Mailing Address:
Contact: Jones / Leon — Phone:
Client Project ID: PoFH Jensen's Boatyard R.I. — Email: — Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones — BAL PM: Jeremy Maute

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO_3/Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 As, Cd, Cr, Cu, Pb, Zn	Other (specify) (Total & Dissolved) Hg	Comments: Specify Here
1	MW9-0423	4.10.2023	1755	WATER	4 2	Y ~~N~~	NONE							X	X	Cond. 31475
2	MW8-0423		1857		4 2									X	X	Cond. 291664
3	MW3-0423		2010		4 2									X	X	Cond. 4273
4	DUP02-0423	~~4.12.2023~~	~~1200~~		4 2									X	X	
5	MW7-0423	4.11.2023	1824		4									X	X	Cond. 216815
6	MW4-0423		1912		4									X	X	Cond. 799
7	MW1-0423		2011		4									X	X	Cond. 566
8	FILTER BLANK		1730		2	YES								X	X	Dissolved only
9	MW6-0423	4.12.2023	1116		4	Y ~~N~~								X	X	Cond. 143.1
10	MW5-0423		1815		4									X	X	Cond. 283.8
	Trip Blank															

Comments: Analyze for both total and dissolved.
All conductivities below in µS/cm.

Relinquished By: R. Jones	Date: 4/13/2023	Time: 1135	Relinquished By:	Date:	Time:
Received By:	Date: 4/13/23	Time: 1135	Total Number of Packages:		

Page 1 of 2 — List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only
BAL Report 2304233
Received by: VF Date: 4/13/23
Work Order ID: Time: 1135
Project ID:

Client: Crete Consulting / Leon Environmental PO Number: LE Mailing Address:
Contact: Jones / Hainsworth / Leon Phone:
Client Project ID: FoFH Jensen's Boatyard RI Email: Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones BAL PM: Jeremy Maute

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 TA As, Cd, Cr, Cu, Pb, Zn	Other (specify) Hg (Total & Dissolved)	Comments: Specify Here
1	MW2-0423	4/12/2023	1916	WATER	4	Y&N	NONE							X	X	Analyze for both total & dissolved. Cond. 4463 µS/cm
2																
3																
4																
5																
6																
7																
8																
9																
10																
	Trip Blank															

Relinquished By: R. Jones	Date: 4/13/2023	Time: 1135	Relinquished By:	Date:	Time:
Received By:	Date: 4/13/23	Time: 1135	Total Number of Packages:		

Page 2 of 2 List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

Courier

1135

Sample Receipt Checklist:

Container Type: Container 1 of 1

- [x] Cooler
- [ ] Cardboard box
- [ ] Styrofoam cooler
- [ ] Other (Specify):

- [ ] Custody Seal Present?

  Custody Seal Intact? Y / N
- [x] Chain of Custody Present?

Coolant and Temperature

Coolant Type:

- [ ] None [ ] Blue Ice
- [x] Ice: [ ] Dry Ice

IR# IR-3

Measured Temp[1]: 1.3 °C

Corrected Temp: 1.3 °C

- [ ] Temp Blank[2]: ____ °C

1) n of samples >3, observe three measurements, record average

2) Record temp blank as a corrected temp

Coolant Note:

Bottle Type:

- [ ] Client Provided
- [x] Class : THg
  Size / Type: 125mL PLPE
  Lot: 22-0026
  Preservation: None
  Preservative Lot: NA
- [x] Class : Trace Metals
  Size / Type: 125mL HDPE
  Lot: 22T-0033
  Preservation:
  Preservative Lot:
- [ ] Class :
  Size / Type:
  Lot:
  Preservation:
  Preservative Lot:

All information accurate

Initial/date: VF 4/13/23

Revised: 10/20/2022

Page 1 of 1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 8, 2023

Peter Leon, Project Manager
Leon Environmental
8047 Burke Ave N
Seattle, WA 98103

Dear Mr Leon:

Included are the results from the testing of material submitted on June 9, 2023 from the Port of Friday Harbor Jensen's Boatyard, F&BI 306152 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Grant Hainsworth, Rusty Jones
CTC0808R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 9, 2023 by Friedman & Bruya, Inc. from the Leon Environmental Port of Friday Harbor Jensen's Boatyard, F&BI 306152 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Leon Environmental
306152 -01	MW8-0623
306152 -02	MW4-0623
306152 -03	DUP02-0623
306152 -04	MW9-0623

The samples were sent to Analytical Resources, Inc. for tributyltins analysis. In addition, sample MW8-0623 was sent to ARI for centrifuging and dioxin/furan analysis. The report is enclosed.

SAMPLE CHAIN OF CUSTODY

306152 R. Jones, P. Leon, G. Hainsworth

06/09/23

I3

Page # 1 of 1

Report To CRETE / LEON ENVIRONMENTAL

Company CRETE / LE

Address

City, State, ZIP

Phone 832.330.1359 Email

SAMPLERS (*signature*): Rusty Jones R. Jones

PROJECT NAME: Port of Friday Harbor Jensen's Boatyard

PO #

REMARKS: ~~Pre~~ Centrifuge D/F prior to analysis.

Project Specific RLs - Yes / No

INVOICE TO: L-E

TURNAROUND TIME
- ☑ Standard Turnaround
- ☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TBTs	Dioxins/Furans				Notes
MW8-0623	01A-C	6.5.2023	1646	W								X	X				3 bottles rec'd
MW4-0623	02	6.6.2023	1812	↓								X					1
DUP02-0623	03	6.7.2023	1200									X					1
MW9-0623	04	↓	1720	↓								X					1 4WS 6/9

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: R. Jones	Rusty Jones	CRETE	6/9/2023	0750
Received by:		F&B	6/9/23	0750
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

06 August 2023

Michael Erdahl
Friedman & Bruya Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

RE: 306152 (306152)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23F0263	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC



Shelly Fishel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

23F0263

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
ARI

PROJECT NAME/NO.	PO #
306152	D-342

REMARKS
Centrifuge D/F prior to analysis

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: TBT	Dioxins and Furans 1613B	Nitrate	Sulfate	CO2	dissolved methane					Notes
MW8-0623		6/5/2023	1646	water	3	x	x									
MW4-0623		6/6/2023	1812	water	1	x										
DUP02-0623		6/7/2023	1200	water	1	x										
MW9-0623		6/7/2023	1720	water	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	6/9/23	0840
Received by:		Matthew Reed	ARI LLC	06/09/23	10:42
Relinquished by:					
Received by:					

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW8-0623	23F0263-01	Water	05-Jun-2023 16:46	09-Jun-2023 10:42
MW4-0623	23F0263-02	Water	06-Jun-2023 18:12	09-Jun-2023 10:42
DUP02-0623	23F0263-03	Water	07-Jun-2023 12:00	09-Jun-2023 10:42
MW9-0623	23F0263-04	Water	07-Jun-2023 17:20	09-Jun-2023 10:42

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Work Order Case Narrative

Client: Friedman & Bruya Inc.
Project: 306152
Work Order: 23F0263

Sample receipt

Samples as listed on the preceding page were received 09-Jun-2023 10:42 under ARI work order 23F0263. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dioxin/Furans - EPA Method 1613

The sample was centrifuged to removed particulates prior to the analysis of the water sample. The sample(s) were extracted and analyzed within the recommended holding times. Analysis was performed using an application specific column developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Initial and continuing calibrations were within method requirements.

Labeled internal standard areas were within limits.

The cleanup surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits except 1234678-HPCDD and OCDD. All samples which contain analyte have been flagged with a "B" qualifier.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

Butyl Tin(s) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times except sample MW8-0623 due to laboratory error. The sample delivery group was received on a Friday when the Project Manager was out. Sample Receiving group was unsure what to do with the centrifuge comment for Dioxin/Furans analysis and held off logging until Monday. The samples were not delivered to the laboratory until after the hold time was exceeded The data has been flagged ..

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits except Dibutyl Tin ion. All samples which contain analyte have been flagged with a "B"qualifier.

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya Inc Project Name: 306152

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: 23F0263 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 10:42 36°C

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 50497208

Cooler Accepted by: MD Date: 06/09/23 Time: 10:42

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? … Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) …	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: MD Date: ~~06/09/23~~ 06/12/23 MD 06/12/23 Time: 10:02 Labels checked by: MD

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

MW8-0623

23F0263-01 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 06/05/2023 16:46
Instrument: NT12 Analyst: JZ — Analyzed: 06/28/2023 17:58

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23F0263-01 A 01
	Preparation Batch: BLF0353	Sample Size: 100 mL	
	Prepared: 06/13/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23F0263-01 A 01
	Cleanup Batch: CLF0221	Initial Volume: 0.5 uL	
	Cleaned: 27-Jun-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.193	ND	ug/L	H, U
Dibutyltin Ion	14488-53-0	1	0.289	ND	ug/L	H, U
Butyltin Ion	78763-54-9	1	0.204	ND	ug/L	H, U
Tetrabutyltin	1461-25-2	1	0.300	ND	ug/L	H, U
Surrogate: Tripentyltin			*30-160 %*	*88.5*	*%*	H
Surrogate: Tripropyltin			*30-160 %*	*91.1*	*%*	H

Friedman & Bruya Inc.	Project: 306152	
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Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

MW8-0623

23F0263-01 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 06/05/2023 16:46

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 08/02/2023 14:52

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 1613		Extract ID: 23F0263-01 B 01
	Preparation Batch: BLF0502	Sample Size: 940 mL	
	Prepared: 06/19/2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23F0263-01 B 01
	Cleanup Batch: CLF0168	Initial Volume: 20 uL	
	Cleaned: 19-Jun-2023	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Florisil		Extract ID:23F0263-01 B 01
	Cleanup Batch: CLF0169	Initial Volume: 20 uL	
	Cleaned: 19-Jun-2023	Final Volume: 20 uL	

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	1.07	10.6	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	0.86	10.6	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.38	10.6	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	1.32	10.6	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	1.33	10.6	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.97	10.6	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.95	10.6	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	1.00	10.6	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	1.30	10.6	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.68	10.6	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	1.52	10.6	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	1.71	10.6	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	1.10	21.3	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.57	10.6	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		0.621	0.893-1.208	1.93	10.6	**5.77**	pg/L	EMPC, J, B
OCDF			0.757-1.024	2.37	21.3	ND	pg/L	U
OCDD		0.770	0.757-1.024	2.88	53.2	**84.0**	pg/L	B
Homologue groups								
Total TCDF					10.6	ND	pg/L	U
Total TCDD					10.6	ND	pg/L	U
Total PeCDF					10.6	**ND**	pg/L	U
Total PeCDD					10.6	ND	pg/L	U
Total HxCDF					10.6	ND	pg/L	U
Total HxCDD					10.6	ND	pg/L	U
Total HpCDF					10.6	ND	pg/L	U
Total HpCDD					10.6	**6.77**	pg/L	J

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.92
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.08
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.89
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.03

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

MW8-0623

23F0263-01 (Water)

Dioxins/Furans

Method: EPA 1613B — Sampled: 06/05/2023 16:46

Instrument: AUTOSPEC01 Analyst: pk — Analyzed: 08/02/2023 14:52

Analysis by: Analytical Resources, LLC

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		*0.791*	*0.655-0.886*	*24-169 %*	*75.3*	*%*	
13C12-2,3,7,8-TCDD		*0.782*	*0.655-0.886*	*25-164 %*	*94.1*	*%*	
13C12-1,2,3,7,8-PeCDF		*1.645*	*1.318-1.783*	*24-185 %*	*79.7*	*%*	
13C12-2,3,4,7,8-PeCDF		*1.528*	*1.318-1.783*	*21-178 %*	*78.9*	*%*	
13C12-1,2,3,7,8-PeCDD		*1.721*	*1.318-1.783*	*25-181 %*	*82.2*	*%*	
13C12-1,2,3,4,7,8-HxCDF		*0.508*	*0.434-0.587*	*26-152 %*	*83.8*	*%*	
13C12-1,2,3,6,7,8-HxCDF		*0.513*	*0.434-0.587*	*26-123 %*	*79.5*	*%*	
13C12-2,3,4,6,7,8-HxCDF		*0.494*	*0.434-0.587*	*28-136 %*	*81.4*	*%*	
13C12-1,2,3,7,8,9-HxCDF		*0.488*	*0.434-0.587*	*29-147 %*	*80.0*	*%*	
13C12-1,2,3,4,7,8-HxCDD		*1.256*	*1.054-1.426*	*32-141 %*	*87.4*	*%*	
13C12-1,2,3,6,7,8-HxCDD		*1.258*	*1.054-1.426*	*28-130 %*	*87.5*	*%*	
13C12-1,2,3,4,6,7,8-HpCDF		*0.462*	*0.374-0.506*	*28-143 %*	*74.4*	*%*	
13C12-1,2,3,4,7,8,9-HpCDF		*0.450*	*0.374-0.506*	*26-138 %*	*75.4*	*%*	
13C12-1,2,3,4,6,7,8-HpCDD		*1.021*	*0.893-1.208*	*23-140 %*	*88.4*	*%*	
13C12-OCDD		*0.885*	*0.757-1.024*	*17-157 %*	*96.7*	*%*	
37Cl4-2,3,7,8-TCDD				*35-197 %*	*93.8*	*%*	

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

MW4-0623

23F0263-02 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 06/06/2023 18:12
Instrument: NT12 Analyst: JZ — Analyzed: 06/28/2023 18:16

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23F0263-02 A 01
	Preparation Batch: BLF0353	Sample Size: 100 mL	
	Prepared: 06/13/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23F0263-02 A 01
	Cleanup Batch: CLF0221	Initial Volume: 0.5 uL	
	Cleaned: 27-Jun-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.193	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.289	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.204	ND	ug/L	U
Tetrabutyltin	1461-25-2	1	0.300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*83.3*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*84.7*	*%*	

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

DUP02-0623

23F0263-03 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 06/07/2023 12:00
Instrument: NT12 Analyst: JZ — Analyzed: 06/28/2023 19:08

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23F0263-03 A 01
	Preparation Batch: BLF0353	Sample Size: 100 mL	
	Prepared: 06/13/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23F0263-03 A 01
	Cleanup Batch: CLF0221	Initial Volume: 0.5 uL	
	Cleaned: 27-Jun-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.193	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.289	1.21	ug/L	B
Butyltin Ion	78763-54-9	1	0.204	0.682	ug/L	
Tetrabutyltin	1461-25-2	1	0.300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*88.3*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*89.5*	*%*	

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

MW9-0623

23F0263-04 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 06/07/2023 17:20
Instrument: NT12 Analyst: JZ — Analyzed: 06/28/2023 19:26

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 23F0263-04 A 01
	Preparation Batch: BLF0353	Sample Size: 100 mL	
	Prepared: 06/13/2023	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 23F0263-04 A 01
	Cleanup Batch: CLF0221	Initial Volume: 0.5 uL	
	Cleaned: 27-Jun-2023	Final Volume: 0.5 uL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.193	ND	ug/L	U
Dibutyltin Ion	14488-53-0	1	0.289	ND	ug/L	U
Butyltin Ion	78763-54-9	1	0.204	ND	ug/L	U
Tetrabutyltin	1461-25-2	1	0.300	ND	ug/L	U
Surrogate: Tripentyltin			*30-160 %*	*83.7*	*%*	
Surrogate: Tripropyltin			*30-160 %*	*84.3*	*%*	

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Analysis by: Analytical Resources, LLC

Butyl Tins - Quality Control

Batch BLF0353 - EPA 8270E-SIM

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLF0353-BLK1)				Prepared: 13-Jun-2023	Analyzed: 28-Jun-2023 17:24					
Tributyltin Ion	ND	0.193	ug/L							U
Dibutyltin Ion	0.304	0.289	ug/L							
Butyltin Ion	ND	0.204	ug/L							U
Tetrabutyltin	ND	0.300	ug/L							U
Surrogate: Tripentyltin	2.12		ug/L	*2.26*		*94.0*	*30-160*			
Surrogate: Tripropyltin	2.05		ug/L	*2.19*		*93.8*	*30-160*			
LCS (BLF0353-BS1)				Prepared: 13-Jun-2023	Analyzed: 28-Jun-2023 17:41					
Tributyltin Ion	2.26	0.193	ug/L	2.23		102	30-160			
Dibutyltin Ion	1.32	0.289	ug/L	1.92		69.1	30-160			B
Butyltin Ion	0.600	0.204	ug/L	1.56		38.5	30-160			
Surrogate: Tripentyltin	2.03		ug/L	*2.26*		*89.9*	*30-160*			
Surrogate: Tripropyltin	2.00		ug/L	*2.19*		*91.6*	*30-160*			
Matrix Spike (BLF0353-MS1)	**Source: 23F0263-02**			Prepared: 13-Jun-2023	Analyzed: 28-Jun-2023 18:34					
Tributyltin Ion	1.96	0.193	ug/L	2.23	ND	87.9	30-160			
Dibutyltin Ion	1.23	0.289	ug/L	1.92	ND	64.0	30-160			B
Butyltin Ion	0.666	0.204	ug/L	1.56	ND	42.7	30-160			
Surrogate: Tripentyltin	1.94		ug/L	*2.26*	*1.88*	*85.7*	*30-160*			
Surrogate: Tripropyltin	1.84		ug/L	*2.19*	*1.85*	*84.1*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BLF0353-MSD1)	**Source: 23F0263-02**			Prepared: 13-Jun-2023	Analyzed: 28-Jun-2023 18:51					
Tributyltin Ion	1.96	0.193	ug/L	2.23	ND	88.1	30-160	0.25	30	
Dibutyltin Ion	1.23	0.289	ug/L	1.92	ND	64.1	30-160	0.16	30	B
Butyltin Ion	0.666	0.204	ug/L	1.56	ND	42.8	30-160	0.02	30	
Surrogate: Tripentyltin	1.91		ug/L	*2.26*	*1.88*	*84.3*	*30-160*			
Surrogate: Tripropyltin	1.84		ug/L	*2.19*	*1.85*	*84.2*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLF0502 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLF0502-BLK1)				Prepared: 19-Jun-2023 Analyzed: 02-Aug-2023 12:10							
2,3,7,8-TCDF		0.655-0.886	1.19	10.0	ND	pg/L					U
2,3,7,8-TCDD		0.655-0.886	0.99	10.0	ND	pg/L					U
1,2,3,7,8-PeCDF		1.318-1.783	1.86	10.0	ND	pg/L					U
2,3,4,7,8-PeCDF		1.318-1.783	1.78	10.0	ND	pg/L					U
1,2,3,7,8-PeCDD		1.318-1.783	1.59	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDF		1.054-1.426	1.41	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDF		1.054-1.426	1.48	10.0	ND	pg/L					U
2,3,4,6,7,8-HxCDF		1.054-1.426	1.55	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDF		1.054-1.426	2.02	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDD		1.054-1.426	2.17	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDD		1.054-1.426	2.02	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDD		1.054-1.426	2.24	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDF		0.893-1.208	1.68	20.0	ND	pg/L					U
1,2,3,4,7,8,9-HpCDF		0.893-1.208	2.48	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDD	0.731	0.893-1.208		10.0	7.32	pg/L					EMPC, J
OCDF		0.757-1.024	3.38	20.0	ND	pg/L					U
OCDD	0.770	0.757-1.024		50.0	85.7	pg/L					
Homologue group											
Total TCDF				10.0	ND	pg/L					U
Total TCDD				10.0	ND	pg/L					U
Total PeCDF				10.0	ND	pg/L					U
Total PeCDD				10.0	ND	pg/L					U
Total HxCDF				10.0	ND	pg/L					U
Total HxCDD				10.0	ND	pg/L					U
Total HpCDF				10.0	ND	pg/L					U
Total HpCDD				10.0	ND	pg/L					U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	0.21
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.10
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND):	0.14
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND):	0.00

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLF0502 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLF0502-BLK1)				Prepared: 19-Jun-2023	Analyzed: 02-Aug-2023 12:10						
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.794*	*0.655-0.886*			*76.6*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.815*	*0.655-0.886*			*93.9*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.543*	*1.318-1.783*			*74.6*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.472*	*1.318-1.783*			*74.6*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.591*	*1.318-1.783*			*77.6*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.524*	*0.434-0.587*			*84.9*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.505*	*0.434-0.587*			*80.6*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.522*	*0.434-0.587*			*77.6*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.501*	*0.434-0.587*			*79.1*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.294*	*1.054-1.426*			*89.5*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.247*	*1.054-1.426*			*86.1*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.451*	*0.374-0.506*			*74.6*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.449*	*0.374-0.506*			*74.0*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.066*	*0.893-1.208*			*87.5*			*23-140 %*			
13C12-OCDD	*0.922*	*0.757-1.024*			*92.1*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*93.9*			*35-197 %*			
LCS (BLF0502-BS1)				Prepared: 19-Jun-2023	Analyzed: 02-Aug-2023 12:59						
2,3,7,8-TCDF	0.782	0.655-0.886		10.0	205	pg/L	103	75-158 %			
2,3,7,8-TCDD	0.753	0.655-0.886		10.0	203	pg/L	102	67-158 %			
1,2,3,7,8-PeCDF	1.514	1.318-1.783		10.0	1060	pg/L	106	80-134 %			
2,3,4,7,8-PeCDF	1.681	1.318-1.783		10.0	1090	pg/L	109	68-160 %			
1,2,3,7,8-PeCDD	1.529	1.318-1.783		10.0	1100	pg/L	110	70-142 %			
1,2,3,4,7,8-HxCDF	1.239	1.054-1.426		10.0	1060	pg/L	106	72-134 %			
1,2,3,6,7,8-HxCDF	1.204	1.054-1.426		10.0	1020	pg/L	102	84-130 %			
2,3,4,6,7,8-HxCDF	1.227	1.054-1.426		10.0	1010	pg/L	101	70-156 %			
1,2,3,7,8,9-HxCDF	1.250	1.054-1.426		10.0	1080	pg/L	108	78-130 %			
1,2,3,4,7,8-HxCDD	1.230	1.054-1.426		10.0	1070	pg/L	107	70-164 %			
1,2,3,6,7,8-HxCDD	1.225	1.054-1.426		10.0	1000	pg/L	100	76-134 %			
1,2,3,7,8,9-HxCDD	1.261	1.054-1.426		10.0	1060	pg/L	106	64-162 %			
1,2,3,4,6,7,8-HpCDF	1.060	0.893-1.208		20.0	1020	pg/L	102	82-122 %			
1,2,3,4,7,8,9-HpCDF	1.050	0.893-1.208		10.0	1080	pg/L	108	78-138 %			
1,2,3,4,6,7,8-HpCDD	1.121	0.893-1.208		10.0	1010	pg/L	101	70-140 %			B
OCDF	0.950	0.757-1.024		20.0	1790	pg/L	89.4	63-170 %			
OCDD	0.879	0.757-1.024		50.0	1930	pg/L	96.7	78-144 %			B

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLF0502 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLF0502-BS1)				Prepared: 19-Jun-2023 Analyzed: 02-Aug-2023 12:59							
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.799*	*0.655-0.886*			*77.9*			*24-169 %*			
13C12-2,3,7,8-TCDD	*0.790*	*0.655-0.886*			*92.7*			*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.530*	*1.318-1.783*			*82.1*			*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.536*	*1.318-1.783*			*81.3*			*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.656*	*1.318-1.783*			*84.9*			*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.522*	*0.434-0.587*			*81.0*			*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.518*	*0.434-0.587*			*78.1*			*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.521*	*0.434-0.587*			*80.6*			*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.507*	*0.434-0.587*			*75.8*			*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.211*	*1.054-1.426*			*85.3*			*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.247*	*1.054-1.426*			*86.1*			*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.459*	*0.374-0.506*			*80.0*			*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.445*	*0.374-0.506*			*81.0*			*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.079*	*0.893-1.208*			*94.3*			*23-140 %*			
13C12-OCDD	*0.920*	*0.757-1.024*			*105*			*17-157 %*			
37Cl4-2,3,7,8-TCDD					*99.7*			*35-197 %*			
LCS Dup (BLF0502-BSD1)				Prepared: 19-Jun-2023 Analyzed: 02-Aug-2023 14:02							
2,3,7,8-TCDF	0.774	0.655-0.886		10.0	202	pg/L	101	75-158 %	1.67	25	
2,3,7,8-TCDD	0.759	0.655-0.886		10.0	187	pg/L	93.3	67-158 %	8.52	25	
1,2,3,7,8-PeCDF	1.616	1.318-1.783		10.0	1020	pg/L	102	80-134 %	3.63	25	
2,3,4,7,8-PeCDF	1.610	1.318-1.783		10.0	1010	pg/L	101	68-160 %	7.09	25	
1,2,3,7,8-PeCDD	1.501	1.318-1.783		10.0	1110	pg/L	111	70-142 %	0.61	25	
1,2,3,4,7,8-HxCDF	1.228	1.054-1.426		10.0	1030	pg/L	103	72-134 %	2.58	25	
1,2,3,6,7,8-HxCDF	1.215	1.054-1.426		10.0	1030	pg/L	103	84-130 %	1.09	25	
2,3,4,6,7,8-HxCDF	1.254	1.054-1.426		10.0	1100	pg/L	110	70-156 %	8.09	25	
1,2,3,7,8,9-HxCDF	1.312	1.054-1.426		10.0	1030	pg/L	103	78-130 %	4.66	25	
1,2,3,4,7,8-HxCDD	1.231	1.054-1.426		10.0	1040	pg/L	104	70-164 %	2.58	25	
1,2,3,6,7,8-HxCDD	1.238	1.054-1.426		10.0	1040	pg/L	104	76-134 %	3.90	25	
1,2,3,7,8,9-HxCDD	1.207	1.054-1.426		10.0	1080	pg/L	108	64-162 %	2.54	25	
1,2,3,4,6,7,8-HpCDF	1.054	0.893-1.208		20.0	976	pg/L	97.6	82-122 %	4.46	25	
1,2,3,4,7,8,9-HpCDF	1.020	0.893-1.208		10.0	1080	pg/L	108	78-138 %	0.09	25	
1,2,3,4,6,7,8-HpCDD	1.039	0.893-1.208		10.0	1070	pg/L	107	70-140 %	5.47	25	B
OCDF	0.918	0.757-1.024		20.0	1800	pg/L	89.8	63-170 %	0.46	25	
OCDD	0.849	0.757-1.024		50.0	2000	pg/L	100	78-144 %	3.57	25	B

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BLF0502 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLF0502-BSD1)				Prepared: 19-Jun-2023	Analyzed: 02-Aug-2023 14:02						
Labeled compounds											
13C12-2,3,7,8-TCDF	*0.787*	*0.655-0.886*					*73.8*	*24-169 %*			
13C12-2,3,7,8-TCDD	*0.766*	*0.655-0.886*					*90.7*	*25-164 %*			
13C12-1,2,3,7,8-PeCDF	*1.542*	*1.318-1.783*					*76.4*	*24-185 %*			
13C12-2,3,4,7,8-PeCDF	*1.542*	*1.318-1.783*					*76.0*	*21-178 %*			
13C12-1,2,3,7,8-PeCDD	*1.688*	*1.318-1.783*					*79.7*	*25-181 %*			
13C12-1,2,3,4,7,8-HxCDF	*0.513*	*0.434-0.587*					*78.6*	*26-152 %*			
13C12-1,2,3,6,7,8-HxCDF	*0.510*	*0.434-0.587*					*76.1*	*26-123 %*			
13C12-2,3,4,6,7,8-HxCDF	*0.502*	*0.434-0.587*					*75.2*	*28-136 %*			
13C12-1,2,3,7,8,9-HxCDF	*0.524*	*0.434-0.587*					*75.5*	*29-147 %*			
13C12-1,2,3,4,7,8-HxCDD	*1.255*	*1.054-1.426*					*85.1*	*32-141 %*			
13C12-1,2,3,6,7,8-HxCDD	*1.260*	*1.054-1.426*					*84.5*	*28-130 %*			
13C12-1,2,3,4,6,7,8-HpCDF	*0.487*	*0.374-0.506*					*73.0*	*28-143 %*			
13C12-1,2,3,4,7,8,9-HpCDF	*0.444*	*0.374-0.506*					*72.6*	*26-138 %*			
13C12-1,2,3,4,6,7,8-HpCDD	*1.076*	*0.893-1.208*					*82.9*	*23-140 %*			
13C12-OCDD	*0.915*	*0.757-1.024*					*95.4*	*17-157 %*			
37Cl4-2,3,7,8-TCDD							*92.1*	*35-197 %*			

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Certified Analyses included in this Report

Analyte	Certifications
EPA 1613B in Water	
2,3,7,8-TCDF	DoD-ELAP,NELAP,WADOE
2,3,7,8-TCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
2,3,4,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
2,3,4,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8,9-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDD	DoD-ELAP,NELAP,WADOE
OCDF	DoD-ELAP,NELAP,WADOE
OCDD	DoD-ELAP,NELAP,WADOE
Total TCDF	DoD-ELAP,NELAP
Total TCDD	DoD-ELAP,NELAP
Total PeCDF	DoD-ELAP,NELAP
Total PeCDD	DoD-ELAP,NELAP
Total HxCDF	DoD-ELAP,NELAP
Total HxCDD	DoD-ELAP,NELAP
Total HpCDF	DoD-ELAP,NELAP
Total HpCDD	DoD-ELAP,NELAP
13C12-2,3,7,8-TCDF	DoD-ELAP
13C12-2,3,7,8-TCDD	DoD-ELAP
13C12-1,2,3,7,8-PeCDF	DoD-ELAP
13C12-2,3,4,7,8-PeCDF	DoD-ELAP
13C12-1,2,3,7,8-PeCDD	DoD-ELAP

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

13C12-1,2,3,4,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDF	DoD-ELAP
13C12-2,3,4,6,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,7,8,9-HxCDF	DoD-ELAP
13C12-1,2,3,4,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDF	DoD-ELAP
13C12-1,2,3,4,7,8,9-HpCDF	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDD	DoD-ELAP
13C12-OCDD	DoD-ELAP
37Cl4-2,3,7,8-TCDD	DoD-ELAP

EPA 8270E-SIM in Water

Tributyltin Ion	NELAP
Dibutyltin Ion	NELAP
Butyltin Ion	NELAP
Tetrabutyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

Friedman & Bruya Inc.	Project: 306152	
3012 16th Avenue West	Project Number: 306152	**Reported:**
Seattle WA, 98119-2029	Project Manager: Michael Erdahl	06-Aug-2023 11:11

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
EMPC	Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

October 18, 2023

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard R.I.

Dear Rusty Jones,

On October 2, 2023, Brooks Applied Labs (BAL) received eleven (11) aqueous samples in a sealed cooler at an acceptable temperature of 1.9°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B232545
Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Some of the total results were less than the corresponding dissolved result. In all of these cases, the total and dissolved samples meet RPD, or the results met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

The duplicate (DUP) B232545-DUP1 performed on sample 2310003-09 had a relative percent difference (RPD) for Cd above the acceptance limit (21%). The DUP result and the native result met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B232539

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

Aside from concentration qualifiers, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
DUP - 0923	2310003-01	WATER	Field Duplicate	09/25/2023	10/02/2023
DUP - 0923	2310003-02	WATER	Field Duplicate	09/25/2023	10/02/2023
DUP - 0923	2310003-03	WATER	Field Duplicate	09/25/2023	10/02/2023
DUP - 0923	2310003-04	WATER	Field Duplicate	09/25/2023	10/02/2023
FILTER BLANK	2310003-05	WATER	Filter Blank	09/25/2023	10/02/2023
FILTER BLANK	2310003-06	WATER	Filter Blank	09/25/2023	10/02/2023
MW9 - 0923	2310003-07	WATER	Sample	09/25/2023	10/02/2023
MW9 - 0923	2310003-08	WATER	Sample	09/25/2023	10/02/2023
MW9 - 0923	2310003-09	WATER	Sample	09/25/2023	10/02/2023
MW9 - 0923	2310003-10	WATER	Sample	09/25/2023	10/02/2023
MW8 - 0923	2310003-11	WATER	Sample	09/25/2023	10/02/2023
MW8 - 0923	2310003-12	WATER	Sample	09/25/2023	10/02/2023
MW8 - 0923	2310003-13	WATER	Sample	09/25/2023	10/02/2023
MW8 - 0923	2310003-14	WATER	Sample	09/25/2023	10/02/2023
MW3 - 0923	2310003-15	WATER	Sample	09/25/2023	10/02/2023
MW3 - 0923	2310003-16	WATER	Sample	09/25/2023	10/02/2023
MW3 - 0923	2310003-17	WATER	Sample	09/25/2023	10/02/2023
MW3 - 0923	2310003-18	WATER	Sample	09/25/2023	10/02/2023
MW7 - 0923	2310003-19	WATER	Sample	09/26/2023	10/02/2023
MW7 - 0923	2310003-20	WATER	Sample	09/26/2023	10/02/2023
MW7 - 0923	2310003-21	WATER	Sample	09/26/2023	10/02/2023
MW7 - 0923	2310003-22	WATER	Sample	09/26/2023	10/02/2023
MW6 - 0923	2310003-23	WATER	Sample	09/26/2023	10/02/2023
MW6 - 0923	2310003-24	WATER	Sample	09/26/2023	10/02/2023
MW6 - 0923	2310003-25	WATER	Sample	09/26/2023	10/02/2023
MW6 - 0923	2310003-26	WATER	Sample	09/26/2023	10/02/2023
MW1 - 0923	2310003-27	WATER	Sample	09/26/2023	10/02/2023
MW1 - 0923	2310003-28	WATER	Sample	09/26/2023	10/02/2023
MW1 - 0923	2310003-29	WATER	Sample	09/26/2023	10/02/2023
MW1 - 0923	2310003-30	WATER	Sample	09/26/2023	10/02/2023
MW5 - 0923	2310003-31	WATER	Sample	09/27/2023	10/02/2023
MW5 - 0923	2310003-32	WATER	Sample	09/27/2023	10/02/2023
MW5 - 0923	2310003-33	WATER	Sample	09/27/2023	10/02/2023
MW5 - 0923	2310003-34	WATER	Sample	09/27/2023	10/02/2023
MW4 - 0923	2310003-35	WATER	Sample	09/27/2023	10/02/2023
MW4 - 0923	2310003-36	WATER	Sample	09/27/2023	10/02/2023
MW4 - 0923	2310003-37	WATER	Sample	09/27/2023	10/02/2023
MW4 - 0923	2310003-38	WATER	Sample	09/27/2023	10/02/2023
MW2 - 0923	2310003-39	WATER	Sample	09/27/2023	10/02/2023
MW2 - 0923	2310003-40	WATER	Sample	09/27/2023	10/02/2023
MW2 - 0923	2310003-41	WATER	Sample	09/27/2023	10/02/2023

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW2 - 0923	2310003-42	WATER	Sample	09/27/2023	10/02/2023

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Cd	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Cr	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Cu	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Hg	Water	EPA 1631 E	ISO,TNI	10/11/23	10/11/23	B232539	S231054
Ni	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Pb	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051
Zn	Water	EPA 1638 Mod	ISO,TNI	10/11/23	10/12/23	B232545	S231051

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP - 0923										
2310003-01	Hg	WATER	TR	14.0		0.13	0.41	ng/L	B232539	S231054
DUP - 0923										
2310003-02	Hg	WATER	D	3.69		0.13	0.41	ng/L	B232539	S231054
DUP - 0923										
2310003-03	As	WATER	TR	0.818		0.162	0.727	µg/L	B232545	S231051
2310003-03	Cd	WATER	TR	2.13		0.061	0.182	µg/L	B232545	S231051
2310003-03	Cr	WATER	TR	23.9		1.72	6.06	µg/L	B232545	S231051
2310003-03	Cu	WATER	TR	8.12		0.505	1.01	µg/L	B232545	S231051
2310003-03	Ni	WATER	TR	60.9		1.21	3.64	µg/L	B232545	S231051
2310003-03	Pb	WATER	TR	2.68		0.061	0.121	µg/L	B232545	S231051
2310003-03	Zn	WATER	TR	403		7.07	22.2	µg/L	B232545	S231051
DUP - 0923										
2310003-04	As	WATER	D	0.534	J	0.162	0.727	µg/L	B232545	S231051
2310003-04	Cd	WATER	D	2.00		0.061	0.182	µg/L	B232545	S231051
2310003-04	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-04	Cu	WATER	D	5.62		0.505	1.01	µg/L	B232545	S231051
2310003-04	Ni	WATER	D	55.5		1.21	3.64	µg/L	B232545	S231051
2310003-04	Pb	WATER	D	0.273		0.061	0.121	µg/L	B232545	S231051
2310003-04	Zn	WATER	D	404		7.07	22.2	µg/L	B232545	S231051
FILTER BLANK										
2310003-05	Hg	WATER	D	≤ 0.13	U	0.13	0.40	ng/L	B232539	S231054
FILTER BLANK										
2310003-06	As	WATER	D	≤ 0.162	U	0.162	0.727	µg/L	B232545	S231051
2310003-06	Cd	WATER	D	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-06	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-06	Cu	WATER	D	≤ 0.505	U	0.505	1.01	µg/L	B232545	S231051
2310003-06	Ni	WATER	D	≤ 1.21	U	1.21	3.64	µg/L	B232545	S231051
2310003-06	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-06	Zn	WATER	D	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW9 - 0923										
2310003-07	Hg	WATER	TR	206		0.13	0.41	ng/L	B232539	S231054

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9 - 0923										
2310003-08	Hg	WATER	D	182		0.13	0.41	ng/L	B232539	S231054
MW9 - 0923										
2310003-09	As	WATER	TR	2.11		0.404	1.82	µg/L	B232545	S231051
2310003-09	Cd	WATER	TR	0.524		0.152	0.455	µg/L	B232545	S231051
2310003-09	Cr	WATER	TR	≤ 4.29	U	4.29	15.2	µg/L	B232545	S231051
2310003-09	Cu	WATER	TR	18.0		1.26	2.53	µg/L	B232545	S231051
2310003-09	Ni	WATER	TR	≤ 3.03	U	3.03	9.09	µg/L	B232545	S231051
2310003-09	Pb	WATER	TR	2.60		0.152	0.303	µg/L	B232545	S231051
2310003-09	Zn	WATER	TR	148		17.7	55.6	µg/L	B232545	S231051
MW9 - 0923										
2310003-10	As	WATER	D	1.98		0.404	1.82	µg/L	B232545	S231051
2310003-10	Cd	WATER	D	0.430	J	0.152	0.455	µg/L	B232545	S231051
2310003-10	Cr	WATER	D	≤ 4.29	U	4.29	15.2	µg/L	B232545	S231051
2310003-10	Cu	WATER	D	15.4		1.26	2.53	µg/L	B232545	S231051
2310003-10	Ni	WATER	D	≤ 3.03	U	3.03	9.09	µg/L	B232545	S231051
2310003-10	Pb	WATER	D	1.33		0.152	0.303	µg/L	B232545	S231051
2310003-10	Zn	WATER	D	151		17.7	55.6	µg/L	B232545	S231051
MW8 - 0923										
2310003-11	Hg	WATER	TR	12.2		0.14	0.42	ng/L	B232539	S231054
MW8 - 0923										
2310003-12	Hg	WATER	D	8.68		0.13	0.41	ng/L	B232539	S231054
MW8 - 0923										
2310003-13	As	WATER	TR	1.19	J	0.404	1.82	µg/L	B232545	S231051
2310003-13	Cd	WATER	TR	2.70		0.152	0.455	µg/L	B232545	S231051
2310003-13	Cr	WATER	TR	2010		4.29	15.2	µg/L	B232545	S231051
2310003-13	Cu	WATER	TR	96.7		1.26	2.53	µg/L	B232545	S231051
2310003-13	Ni	WATER	TR	799		3.03	9.09	µg/L	B232545	S231051
2310003-13	Pb	WATER	TR	1.69		0.152	0.303	µg/L	B232545	S231051
2310003-13	Zn	WATER	TR	346		17.7	55.6	µg/L	B232545	S231051

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW8 - 0923										
2310003-14	As	WATER	D	0.881	J	0.404	1.82	µg/L	B232545	S231051
2310003-14	Cd	WATER	D	2.53		0.152	0.455	µg/L	B232545	S231051
2310003-14	Cr	WATER	D	12.9	J	4.29	15.2	µg/L	B232545	S231051
2310003-14	Cu	WATER	D	76.1		1.26	2.53	µg/L	B232545	S231051
2310003-14	Ni	WATER	D	689		3.03	9.09	µg/L	B232545	S231051
2310003-14	Pb	WATER	D	0.301	J	0.152	0.303	µg/L	B232545	S231051
2310003-14	Zn	WATER	D	327		17.7	55.6	µg/L	B232545	S231051
MW3 - 0923										
2310003-15	Hg	WATER	TR	12.7		0.13	0.41	ng/L	B232539	S231054
MW3 - 0923										
2310003-16	Hg	WATER	D	3.81		0.13	0.41	ng/L	B232539	S231054
MW3 - 0923										
2310003-17	As	WATER	TR	0.798		0.162	0.727	µg/L	B232545	S231051
2310003-17	Cd	WATER	TR	2.00		0.061	0.182	µg/L	B232545	S231051
2310003-17	Cr	WATER	TR	24.6		1.72	6.06	µg/L	B232545	S231051
2310003-17	Cu	WATER	TR	8.19		0.505	1.01	µg/L	B232545	S231051
2310003-17	Ni	WATER	TR	61.8		1.21	3.64	µg/L	B232545	S231051
2310003-17	Pb	WATER	TR	2.62		0.061	0.121	µg/L	B232545	S231051
2310003-17	Zn	WATER	TR	404		7.07	22.2	µg/L	B232545	S231051
MW3 - 0923										
2310003-18	As	WATER	D	0.541	J	0.162	0.727	µg/L	B232545	S231051
2310003-18	Cd	WATER	D	2.02		0.061	0.182	µg/L	B232545	S231051
2310003-18	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-18	Cu	WATER	D	5.31		0.505	1.01	µg/L	B232545	S231051
2310003-18	Ni	WATER	D	55.9		1.21	3.64	µg/L	B232545	S231051
2310003-18	Pb	WATER	D	0.251		0.061	0.121	µg/L	B232545	S231051
2310003-18	Zn	WATER	D	398		7.07	22.2	µg/L	B232545	S231051
MW7 - 0923										
2310003-19	Hg	WATER	TR	45.6		0.13	0.41	ng/L	B232539	S231054
MW7 - 0923										
2310003-20	Hg	WATER	D	20.3		0.13	0.41	ng/L	B232539	S231054

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW7 - 0923										
2310003-21	As	WATER	TR	0.907	J	0.404	1.82	µg/L	B232545	S231051
2310003-21	Cd	WATER	TR	1.83		0.152	0.455	µg/L	B232545	S231051
2310003-21	Cr	WATER	TR	612		4.29	15.2	µg/L	B232545	S231051
2310003-21	Cu	WATER	TR	33.3		1.26	2.53	µg/L	B232545	S231051
2310003-21	Ni	WATER	TR	816		3.03	9.09	µg/L	B232545	S231051
2310003-21	Pb	WATER	TR	9.13		0.152	0.303	µg/L	B232545	S231051
2310003-21	Zn	WATER	TR	637		17.7	55.6	µg/L	B232545	S231051
MW7 - 0923										
2310003-22	As	WATER	D	0.565	J	0.404	1.82	µg/L	B232545	S231051
2310003-22	Cd	WATER	D	1.89		0.152	0.455	µg/L	B232545	S231051
2310003-22	Cr	WATER	D	63.3		4.29	15.2	µg/L	B232545	S231051
2310003-22	Cu	WATER	D	23.8		1.26	2.53	µg/L	B232545	S231051
2310003-22	Ni	WATER	D	788		3.03	9.09	µg/L	B232545	S231051
2310003-22	Pb	WATER	D	0.591		0.152	0.303	µg/L	B232545	S231051
2310003-22	Zn	WATER	D	636		17.7	55.6	µg/L	B232545	S231051
MW6 - 0923										
2310003-23	Hg	WATER	TR	0.63		0.13	0.41	ng/L	B232539	S231054
MW6 - 0923										
2310003-24	Hg	WATER	D	0.32	J	0.13	0.41	ng/L	B232539	S231054
MW6 - 0923										
2310003-25	As	WATER	TR	0.208	J	0.162	0.727	µg/L	B232545	S231051
2310003-25	Cd	WATER	TR	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-25	Cr	WATER	TR	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-25	Cu	WATER	TR	0.881	J	0.505	1.01	µg/L	B232545	S231051
2310003-25	Ni	WATER	TR	≤ 1.21	U	1.21	3.64	µg/L	B232545	S231051
2310003-25	Pb	WATER	TR	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-25	Zn	WATER	TR	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6 - 0923										
2310003-26	As	WATER	D	0.192	J	0.162	0.727	µg/L	B232545	S231051
2310003-26	Cd	WATER	D	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-26	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-26	Cu	WATER	D	1.11		0.505	1.01	µg/L	B232545	S231051
2310003-26	Ni	WATER	D	≤ 1.21	U	1.21	3.64	µg/L	B232545	S231051
2310003-26	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-26	Zn	WATER	D	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW1 - 0923										
2310003-27	Hg	WATER	TR	1.85		0.13	0.41	ng/L	B232539	S231054
MW1 - 0923										
2310003-28	Hg	WATER	D	0.80		0.13	0.41	ng/L	B232539	S231054
MW1 - 0923										
2310003-29	As	WATER	TR	8.48		0.162	0.727	µg/L	B232545	S231051
2310003-29	Cd	WATER	TR	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-29	Cr	WATER	TR	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-29	Cu	WATER	TR	2.80		0.505	1.01	µg/L	B232545	S231051
2310003-29	Ni	WATER	TR	2.04	J	1.21	3.64	µg/L	B232545	S231051
2310003-29	Pb	WATER	TR	0.225		0.061	0.121	µg/L	B232545	S231051
2310003-29	Zn	WATER	TR	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW1 - 0923										
2310003-30	As	WATER	D	6.70		0.162	0.727	µg/L	B232545	S231051
2310003-30	Cd	WATER	D	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-30	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-30	Cu	WATER	D	1.69		0.505	1.01	µg/L	B232545	S231051
2310003-30	Ni	WATER	D	1.76	J	1.21	3.64	µg/L	B232545	S231051
2310003-30	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-30	Zn	WATER	D	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW5 - 0923										
2310003-31	Hg	WATER	TR	4.04		0.14	0.42	ng/L	B232539	S231054
MW5 - 0923										
2310003-32	Hg	WATER	D	1.69		0.14	0.42	ng/L	B232539	S231054

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW5 - 0923										
2310003-33	As	WATER	TR	1.37		0.162	0.727	µg/L	B232545	S231051
2310003-33	Cd	WATER	TR	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-33	Cr	WATER	TR	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-33	Cu	WATER	TR	4.26		0.505	1.01	µg/L	B232545	S231051
2310003-33	Ni	WATER	TR	2.58	J	1.21	3.64	µg/L	B232545	S231051
2310003-33	Pb	WATER	TR	0.265		0.061	0.121	µg/L	B232545	S231051
2310003-33	Zn	WATER	TR	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW5 - 0923										
2310003-34	As	WATER	D	0.794		0.162	0.727	µg/L	B232545	S231051
2310003-34	Cd	WATER	D	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-34	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-34	Cu	WATER	D	2.28		0.505	1.01	µg/L	B232545	S231051
2310003-34	Ni	WATER	D	2.35	J	1.21	3.64	µg/L	B232545	S231051
2310003-34	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-34	Zn	WATER	D	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW4 - 0923										
2310003-35	Hg	WATER	TR	1.43		0.13	0.41	ng/L	B232539	S231054
MW4 - 0923										
2310003-36	Hg	WATER	D	0.90		0.13	0.41	ng/L	B232539	S231054
MW4 - 0923										
2310003-37	As	WATER	TR	1.33		0.162	0.727	µg/L	B232545	S231051
2310003-37	Cd	WATER	TR	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-37	Cr	WATER	TR	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-37	Cu	WATER	TR	4.45		0.505	1.01	µg/L	B232545	S231051
2310003-37	Ni	WATER	TR	3.72		1.21	3.64	µg/L	B232545	S231051
2310003-37	Pb	WATER	TR	0.364		0.061	0.121	µg/L	B232545	S231051
2310003-37	Zn	WATER	TR	7.26	J	7.07	22.2	µg/L	B232545	S231051

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4 - 0923										
2310003-38	As	WATER	D	1.42		0.162	0.727	µg/L	B232545	S231051
2310003-38	Cd	WATER	D	≤ 0.061	U	0.061	0.182	µg/L	B232545	S231051
2310003-38	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-38	Cu	WATER	D	3.72		0.505	1.01	µg/L	B232545	S231051
2310003-38	Ni	WATER	D	3.58	J	1.21	3.64	µg/L	B232545	S231051
2310003-38	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-38	Zn	WATER	D	≤ 7.07	U	7.07	22.2	µg/L	B232545	S231051
MW2 - 0923										
2310003-39	Hg	WATER	TR	2.78		0.14	0.42	ng/L	B232539	S231054
MW2 - 0923										
2310003-40	Hg	WATER	D	0.87		0.14	0.42	ng/L	B232539	S231054
MW2 - 0923										
2310003-41	As	WATER	TR	0.459	J	0.162	0.727	µg/L	B232545	S231051
2310003-41	Cd	WATER	TR	0.205		0.061	0.182	µg/L	B232545	S231051
2310003-41	Cr	WATER	TR	9.71		1.72	6.06	µg/L	B232545	S231051
2310003-41	Cu	WATER	TR	16.1		0.505	1.01	µg/L	B232545	S231051
2310003-41	Ni	WATER	TR	31.1		1.21	3.64	µg/L	B232545	S231051
2310003-41	Pb	WATER	TR	0.294		0.061	0.121	µg/L	B232545	S231051
2310003-41	Zn	WATER	TR	14.5	J	7.07	22.2	µg/L	B232545	S231051
MW2 - 0923										
2310003-42	As	WATER	D	0.343	J	0.162	0.727	µg/L	B232545	S231051
2310003-42	Cd	WATER	D	0.192		0.061	0.182	µg/L	B232545	S231051
2310003-42	Cr	WATER	D	≤ 1.72	U	1.72	6.06	µg/L	B232545	S231051
2310003-42	Cu	WATER	D	3.04		0.505	1.01	µg/L	B232545	S231051
2310003-42	Ni	WATER	D	28.9		1.21	3.64	µg/L	B232545	S231051
2310003-42	Pb	WATER	D	≤ 0.061	U	0.061	0.121	µg/L	B232545	S231051
2310003-42	Zn	WATER	D	12.4	J	7.07	22.2	µg/L	B232545	S231051

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Accuracy & Precision Summary

Batch: B232539
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B232539-MS1	**Matrix Spike (2310003-12)**						
	Hg	8.68	20.41	27.55	ng/L	92% 71-125	
B232539-MSD1	**Matrix Spike Duplicate (2310003-12)**						
	Hg	8.68	20.41	28.94	ng/L	99% 71-125	5% 24
B232539-MS2	**Matrix Spike (2310006-01)**						
	Hg	0.17	20.41	21.69	ng/L	105% 71-125	
B232539-MSD2	**Matrix Spike Duplicate (2310006-01)**						
	Hg	0.17	20.41	21.69	ng/L	105% 71-125	0.007% 24
B232539-MS3	**Matrix Spike (2310117-01)**						
	Hg	4.64	20.41	25.77	ng/L	104% 71-125	
B232539-MSD3	**Matrix Spike Duplicate (2310117-01)**						
	Hg	4.64	20.41	26.42	ng/L	107% 71-125	2% 24

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Accuracy & Precision Summary

Batch: B232545
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B232545-BS1	**Blank Spike, (2248032)**						
	As		55.56	52.99	µg/L	95% 75-125	
	Cd		5.556	5.802	µg/L	104% 75-125	
	Cr		55.56	55.22	µg/L	99% 75-125	
	Cu		55.56	57.35	µg/L	103% 75-125	
	Ni		55.56	55.55	µg/L	100% 75-125	
	Pb		5.556	5.316	µg/L	96% 75-125	
	Zn		55.56	59.81	µg/L	108% 75-125	
B232545-BS2	**Blank Spike, (2248032)**						
	As		55.56	52.97	µg/L	95% 75-125	
	Cd		5.556	6.010	µg/L	108% 75-125	
	Cr		55.56	54.67	µg/L	98% 75-125	
	Cu		55.56	56.31	µg/L	101% 75-125	
	Ni		55.56	56.03	µg/L	101% 75-125	
	Pb		5.556	5.303	µg/L	95% 75-125	
	Zn		55.56	64.98	µg/L	117% 75-125	
B232545-SRM1	**Reference Material (2305022, T221 - bottle 7)**						
	As		17.70	18.05	µg/L	102% 75-125	
	Cd		0.03800	0.036	µg/L	94% 75-125	
	Cr		1.710	1.745	µg/L	102% 75-125	
	Cu		3.780	3.948	µg/L	104% 75-125	
	Ni		0.6000	0.538	µg/L	90% 75-125	
	Pb		0.4900	0.480	µg/L	98% 75-125	
	Zn		25.20	28.57	µg/L	113% 75-125	
B232545-SRM2	**Reference Material (2305022, T221 - bottle 7)**						
	As		17.70	17.44	µg/L	99% 75-125	
	Cd		0.03800	0.038	µg/L	100% 75-125	
	Cr		1.710	1.741	µg/L	102% 75-125	
	Cu		3.780	3.754	µg/L	99% 75-125	
	Ni		0.6000	0.470	µg/L	78% 75-125	
	Pb		0.4900	0.460	µg/L	94% 75-125	
	Zn		25.20	26.57	µg/L	105% 75-125	

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Accuracy & Precision Summary

Batch: B232545
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B232545-DUP1	**Duplicate, (2310003-09)**						
	As	2.105		2.151	µg/L		2% 20
	Cd	0.524		0.423	µg/L		*21%* 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	18.01		18.32	µg/L		2% 20
	Ni	ND		ND	µg/L		N/C 20
	Pb	2.601		2.662	µg/L		2% 20
	Zn	147.9		155.1	µg/L		5% 20
B232545-MS1	**Matrix Spike, (2310003-09)**						
	As	2.105	56.12	58.85	µg/L	101% 75-125	
	Cd	0.524	5.612	6.387	µg/L	104% 75-125	
	Cr	ND	56.12	59.56	µg/L	106% 75-125	
	Cu	18.01	56.12	73.58	µg/L	99% 75-125	
	Ni	ND	56.12	61.09	µg/L	109% 75-125	
	Pb	2.601	5.612	7.797	µg/L	93% 75-125	
	Zn	147.9	56.12	208.2	µg/L	107% 75-125	
B232545-MSD1	**Matrix Spike Duplicate, (2310003-09)**						
	As	2.105	56.12	56.29	µg/L	97% 75-125	4% 20
	Cd	0.524	5.612	5.925	µg/L	96% 75-125	8% 20
	Cr	ND	56.12	58.76	µg/L	105% 75-125	1% 20
	Cu	18.01	56.12	73.36	µg/L	99% 75-125	0.3% 20
	Ni	ND	56.12	60.79	µg/L	108% 75-125	0.5% 20
	Pb	2.601	5.612	7.526	µg/L	88% 75-125	4% 20
	Zn	147.9	56.12	199.4	µg/L	92% 75-125	4% 20
B232545-DUP2	**Duplicate, (2310003-17)**						
	As	0.798		0.801	µg/L		0.3% 20
	Cd	1.996		1.885	µg/L		6% 20
	Cr	24.63		24.06	µg/L		2% 20
	Cu	8.188		8.125	µg/L		0.8% 20
	Ni	61.78		61.63	µg/L		0.2% 20
	Pb	2.617		2.494	µg/L		5% 20
	Zn	404.3		393.1	µg/L		3% 20

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Accuracy & Precision Summary

Batch: B232545
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B232545-MS2	**Matrix Spike, (2310003-17)**						
	As	0.798	56.12	56.34	µg/L	99% 75-125	
	Cd	1.996	5.612	7.499	µg/L	98% 75-125	
	Cr	24.63	56.12	82.96	µg/L	104% 75-125	
	Cu	8.188	56.12	66.13	µg/L	103% 75-125	
	Ni	61.78	56.12	121.4	µg/L	106% 75-125	
	Pb	2.617	5.612	7.555	µg/L	88% 75-125	
	Zn	404.3	56.12	439.8	µg/L	NR 75-125	
B232545-MSD2	**Matrix Spike Duplicate, (2310003-17)**						
	As	0.798	56.12	54.98	µg/L	97% 75-125	2% 20
	Cd	1.996	5.612	7.647	µg/L	101% 75-125	2% 20
	Cr	24.63	56.12	81.95	µg/L	102% 75-125	1% 20
	Cu	8.188	56.12	63.06	µg/L	98% 75-125	5% 20
	Ni	61.78	56.12	115.4	µg/L	95% 75-125	5% 20
	Pb	2.617	5.612	7.401	µg/L	85% 75-125	2% 20
	Zn	404.3	56.12	433.9	µg/L	NR 75-125	N/C 20
B232545-DUP3	**Duplicate, (2310003-25)**						
	As	0.208		0.199	µg/L		4% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	0.881		0.836	µg/L		5% 20
	Ni	ND		ND	µg/L		N/C 20
	Pb	ND		ND	µg/L		N/C 20
	Zn	ND		ND	µg/L		N/C 20
B232545-MS3	**Matrix Spike, (2310003-25)**						
	As	0.208	56.12	54.11	µg/L	96% 75-125	
	Cd	ND	5.612	5.681	µg/L	101% 75-125	
	Cr	ND	56.12	56.45	µg/L	101% 75-125	
	Cu	0.881	56.12	57.01	µg/L	100% 75-125	
	Ni	ND	56.12	59.53	µg/L	106% 75-125	
	Pb	ND	5.612	5.354	µg/L	95% 75-125	
	Zn	ND	56.12	60.32	µg/L	107% 75-125	

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Accuracy & Precision Summary

Batch: B232545
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B232545-MSD3	**Matrix Spike Duplicate, (2310003-25)**						
	As	0.208	56.12	53.41	µg/L	95% 75-125	1% 20
	Cd	ND	5.612	5.445	µg/L	97% 75-125	4% 20
	Cr	ND	56.12	55.80	µg/L	99% 75-125	1% 20
	Cu	0.881	56.12	56.93	µg/L	100% 75-125	0.2% 20
	Ni	ND	56.12	55.63	µg/L	99% 75-125	7% 20
	Pb	ND	5.612	5.152	µg/L	92% 75-125	4% 20
	Zn	ND	56.12	58.26	µg/L	104% 75-125	3% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Method Blanks & Reporting Limits

Batch: B232539
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B232539-BLK1	0.15	ng/L
B232539-BLK2	0.14	ng/L
B232539-BLK3	0.18	ng/L
B232539-BLK4	0.15	ng/L

Average: 0.16 **Standard Deviation:** 0.02 **MDL:** 0.13
Limit: 0.50 **Limit:** 0.13 **MRL:** 0.40

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Method Blanks & Reporting Limits

Batch: B232545
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B232545-BLK1	0.007	µg/L
B232545-BLK2	0.016	µg/L
B232545-BLK3	0.032	µg/L
B232545-BLK4	0.028	µg/L

Average: 0.021
Limit: 0.072

MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B232545-BLK1	-0.0009	µg/L
B232545-BLK2	0.001	µg/L
B232545-BLK3	0.003	µg/L
B232545-BLK4	0.002	µg/L

Average: 0.001
Limit: 0.018

MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B232545-BLK1	0.013	µg/L
B232545-BLK2	0.013	µg/L
B232545-BLK3	0.013	µg/L
B232545-BLK4	0.013	µg/L

Average: 0.013
Limit: 0.600

MDL: 0.170
MRL: 0.600

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Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B232545-BLK1	0.040	µg/L
B232545-BLK2	0.046	µg/L
B232545-BLK3	0.070	µg/L
B232545-BLK4	0.062	µg/L

Average: 0.055
Limit: 0.100
MDL: 0.050
MRL: 0.100

Analyte: Ni

Sample	Result	Units
B232545-BLK1	0.048	µg/L
B232545-BLK2	0.025	µg/L
B232545-BLK3	0.041	µg/L
B232545-BLK4	0.041	µg/L

Average: 0.039
Limit: 0.360
MDL: 0.120
MRL: 0.360

Analyte: Pb

Sample	Result	Units
B232545-BLK1	0.002	µg/L
B232545-BLK2	0.002	µg/L
B232545-BLK3	0.004	µg/L
B232545-BLK4	0.006	µg/L

Average: 0.004
Limit: 0.012
MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B232545-BLK1	1.84	µg/L
B232545-BLK2	0.433	µg/L
B232545-BLK3	0.854	µg/L
B232545-BLK4	1.07	µg/L

Average: 1.049
Limit: 2.200
MDL: 0.700
MRL: 2.20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-01 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: DUP - 0923 **Sample Type:** Field Duplicate **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-02 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: DUP - 0923 **Sample Type:** Field Duplicate **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-03 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: DUP - 0923 **Sample Type:** Field Duplicate **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-04 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: DUP - 0923 **Sample Type:** Field Duplicate **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-05 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: FILTER BLANK **Sample Type:** Filter Blank **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-06 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: FILTER BLANK **Sample Type:** Filter Blank **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-07 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW9 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-08 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW9 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-09 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW9 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-10 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW9 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-11 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW8 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-12 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW8 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-13 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW8 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-14 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW8 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-15 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW3 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-16 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW3 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-17 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW3 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-18 **Report Matrix:** WATER **Collected:** 09/25/2023
Sample: MW3 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-19 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW7 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-20 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW7 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-21 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW7 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-22 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW7 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-23 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW6 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-24 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW6 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-25 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW6 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-26 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW6 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-27 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW1 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-28 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW1 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-29 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW1 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-30 **Report Matrix:** WATER **Collected:** 09/26/2023
Sample: MW1 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-31 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW5 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-32 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW5 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-33 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW5 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-34 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW5 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-35 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW4 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-36 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW4 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Sample Containers

Lab ID: 2310003-37 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW4 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-38 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW4 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-39 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW2 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-40 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW2 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0063	None	N/A	N/A	Cooler - 2310003

Lab ID: 2310003-41 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW2 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

Lab ID: 2310003-42 **Report Matrix:** WATER **Collected:** 09/27/2023
Sample: MW2 - 0923 **Sample Type:** Sample **Received:** 10/02/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	250 mL	22T-0032	1% HNO3 (BAL)	2329045	<2	Cooler - 2310003

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen Boatyard

Shipping Containers

Cooler - 2310003

Received: October 2, 2023 11:00
Tracking No: N/A via Customer Drop-Off
Coolant Type: Ice
Temperature: 1.9 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-1, cooler had lots of dirt or seemingly woodchips al

Custody seals present? No
Custody seals intact? No
COC present? Yes

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2310003
Received by: ERL Date: 10/2/23
Work Order ID: Time: 11:00
Project ID:

Client: Crete Consulting / Leon Environmental
Contact: Rusty Jones, P. Leon
Client Project ID: PoFH Jensen's Boatyard RI
Samples Collected By: Rusty Jones RJones
PO Number: Leon Env.
Phone:
Email:
Mailing Address:
Email Receipt Confirmation? (Yes/No)
BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631 AND DISSOLVED Hg	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 Mod. As, Cd, Cr, Cu, Ni, Pb, Zn	Other DISSOLVED (specify) 1638 Mod. As, Cd, Cu, Cr, Ni, Pb, Zn	Comments: Conductivity (uS/cm) Specify Here
1	DUP-0923	9.25.2023	0001	WATER	4	Y&N	NONE	X						X	X	
2	FILTER BLANK		0930		2	YES		X							X	DISSOLVED ONLY
3	MW9-0923		1100		4	Y&N		X						X	X	35,930 uS/cm
4	MW8-0923		1213		4			X						X	X	35,223 uS/cm
5	MW3-0923		1309		4			X						X	X	16,825 uS/cm
6	MW7-0923	9.26.2023	1151		4			X						X	X	31,973 uS/cm
7	MW6-0923		1248		4			X						X	X	136.6 uS/cm
8	MW1-0923		1352		4			X						X	X	502 uS/cm
9	MW5-0923	9.27.2023	1147		4			X						X	X	314.9 uS/cm
10	MW4-0923		1250		4			X						X	X	496.1 uS/cm
	Trip Blank							RS								

Relinquished By: R. Jones	Date: 10/2/2023	Time: 1100	Relinquished By:	Date:	Time:
Received By:	Date:	Time:	Total Number of Packages:		

Page 1 of 2 List Hazardous Contaminants:

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2310003

Received by: ERH Date: 10/2/23
Work Order ID: Time: 11:00
Project ID:

Client: Crete Consulting / Leon Environmental PO Number: Leon Env. Mailing Address:
Contact: Rusty Jones, P. Leon Phone:
Client Project ID: 20th Jensen's Boatyard R.I. Email: Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones BAL PM: Amy Goodall

Requested TAT (business days)
- [X] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631 AND DISSOLVED Hg	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration TOTAL	Other (specify) As, Cd, Cr, Cu, Ni, Pb, Zn	Other (specify) DISSOLVED As, Cd, Cr, Cu, Ni, Pb, Zn	Comments: Specify Here
1	MW2-0923	9.27.2023	1414	WATER	4	Y&N	NONE	X						X	X	Conductivity (uS/cm) 8444 uS/cm
2																
3																
4																
5																
6																
7																
8																
9																
10																
	Trip Blank															

Relinquished By: RJones	Date: 10/2/2023	Time: 11a	Relinquished By:	Date:	Time:
Received By:	Date:	Time:	Total Number of Packages:		

Page 2 of 2 List Hazardous Contaminants:

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BROOKS APPLIED LABS
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January 15, 2024

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard R.I.

Dear Rusty Jones,

On December 14, 2023, Brooks Applied Labs (BAL) received eleven (11) aqueous samples in a sealed cooler at an acceptable temperature of 1.9°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B233186
Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

Some of the total results were less than the corresponding dissolved result. With the exception of the lead results for samples 2312216-12 and 2312216-13, all of these cases, the total and dissolved samples meet RPD, or the results met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

The dissolved lead result (2312216-13) was greater than the corresponding total recoverable lead result (2312216-12) in sample MW4-1223. Both samples were reanalyzed with confirming results, and no further action could be taken.

Batch B240092

All samples were digested in batch B233186 and analyzed in sequence S231294. Due to suspected contamination, the Zn result for sample 2312216-09 was not reported from the original analysis. This sample was redigested in batch B240092 and analyzed in sequence S240032. The reported Zn result for this sample 2312216-09 was from this reanalysis.

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B233204

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

Aside from concentration qualifiers, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02.

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW5-1223	2312216-01	Water	Sample	12/12/2023	12/14/2023
MW5-1223	2312216-02	Water	Sample	12/12/2023	12/14/2023
FB-1223	2312216-03	Water	Filter Blank	12/12/2023	12/14/2023
MW6-1223	2312216-04	Water	Sample	12/12/2023	12/14/2023
MW6-1223	2312216-05	Water	Sample	12/12/2023	12/14/2023
MW2-1223	2312216-06	Water	Sample	12/12/2023	12/14/2023
MW2-1223	2312216-07	Water	Sample	12/12/2023	12/14/2023
DUP-1223	2312216-08	Water	Sample	12/13/2023	12/14/2023
DUP-1223	2312216-09	Water	Sample	12/13/2023	12/14/2023
MW7-1223	2312216-10	Water	Sample	12/13/2023	12/14/2023
MW7-1223	2312216-11	Water	Sample	12/13/2023	12/14/2023
MW4-1223	2312216-12	Water	Sample	12/13/2023	12/14/2023
MW4-1223	2312216-13	Water	Sample	12/13/2023	12/14/2023
MW1-1223	2312216-14	Water	Sample	12/13/2023	12/14/2023
MW1-1223	2312216-15	Water	Sample	12/13/2023	12/14/2023
MW9-1223	2312216-16	Water	Sample	12/14/2023	12/14/2023
MW9-1223	2312216-17	Water	Sample	12/14/2023	12/14/2023
MW8-1223	2312216-18	Water	Sample	12/14/2023	12/14/2023
MW8-1223	2312216-19	Water	Sample	12/14/2023	12/14/2023
MW3-1223	2312216-20	Water	Sample	12/14/2023	12/14/2023
MW3-1223	2312216-21	Water	Sample	12/14/2023	12/14/2023

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Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Cd	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Cr	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Cu	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Hg	Water	EPA 1631 E	ISO,TNI	12/19/23	12/20/23	B233204	S231301
Ni	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Pb	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Zn	Water	EPA 1638 Mod	ISO,TNI	12/18/23	12/19/23	B233186	S231294
Zn	Water	EPA 1638 Mod	ISO,TNI	01/10/24	01/11/24	B240092	S240032

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW5-1223										
2312216-01	As	Water	TR	1.38		0.162	0.727	µg/L	B233186	S231294
2312216-01	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-01	Cr	Water	TR	4.44	J	1.72	6.06	µg/L	B233186	S231294
2312216-01	Cu	Water	TR	25.2		0.505	1.01	µg/L	B233186	S231294
2312216-01	Hg	Water	TR	11.7		0.13	0.41	ng/L	B233204	S231301
2312216-01	Ni	Water	TR	5.89		1.21	3.64	µg/L	B233186	S231294
2312216-01	Pb	Water	TR	1.30		0.061	0.121	µg/L	B233186	S231294
2312216-01	Zn	Water	TR	9.64	J	7.07	22.2	µg/L	B233186	S231294
MW5-1223										
2312216-02	As	Water	D	0.930		0.162	0.727	µg/L	B233186	S231294
2312216-02	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-02	Cr	Water	D	2.07	J	1.72	6.06	µg/L	B233186	S231294
2312216-02	Cu	Water	D	22.3		0.505	1.01	µg/L	B233186	S231294
2312216-02	Hg	Water	D	8.46		0.13	0.41	ng/L	B233204	S231301
2312216-02	Ni	Water	D	4.08		1.21	3.64	µg/L	B233186	S231294
2312216-02	Pb	Water	D	0.086	J	0.061	0.121	µg/L	B233186	S231294
2312216-02	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
FB-1223										
2312216-03	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B233186	S231294
2312216-03	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-03	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B233186	S231294
2312216-03	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B233186	S231294
2312216-03	Hg	Water	D	0.22	J	0.13	0.40	ng/L	B233204	S231301
2312216-03	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B233186	S231294
2312216-03	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-03	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
MW6-1223										
2312216-04	As	Water	TR	0.203	J	0.162	0.727	µg/L	B233186	S231294
2312216-04	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-04	Cr	Water	TR	1.81	J	1.72	6.06	µg/L	B233186	S231294
2312216-04	Cu	Water	TR	≤ 0.505	U	0.505	1.01	µg/L	B233186	S231294
2312216-04	Hg	Water	TR	0.72		0.13	0.41	ng/L	B233204	S231301
2312216-04	Ni	Water	TR	≤ 1.21	U	1.21	3.64	µg/L	B233186	S231294
2312216-04	Pb	Water	TR	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-04	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6-1223										
2312216-05	As	Water	D	0.212	J	0.162	0.727	µg/L	B233186	S231294
2312216-05	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-05	Cr	Water	D	1.77	J	1.72	6.06	µg/L	B233186	S231294
2312216-05	Cu	Water	D	0.841	J	0.505	1.01	µg/L	B233186	S231294
2312216-05	Hg	Water	D	0.30	J	0.13	0.41	ng/L	B233204	S231301
2312216-05	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B233186	S231294
2312216-05	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-05	Zn	Water	D	10.7	J	7.07	22.2	µg/L	B233186	S231294
MW2-1223										
2312216-06	As	Water	TR	0.562	J	0.162	0.727	µg/L	B233186	S231294
2312216-06	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-06	Cr	Water	TR	18.2		1.72	6.06	µg/L	B233186	S231294
2312216-06	Cu	Water	TR	6.31		0.505	1.01	µg/L	B233186	S231294
2312216-06	Hg	Water	TR	3.36		0.13	0.41	ng/L	B233204	S231301
2312216-06	Ni	Water	TR	5.59		1.21	3.64	µg/L	B233186	S231294
2312216-06	Pb	Water	TR	0.228		0.061	0.121	µg/L	B233186	S231294
2312216-06	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
MW2-1223										
2312216-07	As	Water	D	0.460	J	0.162	0.727	µg/L	B233186	S231294
2312216-07	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-07	Cr	Water	D	2.81	J	1.72	6.06	µg/L	B233186	S231294
2312216-07	Cu	Water	D	3.45		0.505	1.01	µg/L	B233186	S231294
2312216-07	Hg	Water	D	1.95		0.13	0.41	ng/L	B233204	S231301
2312216-07	Ni	Water	D	5.11		1.21	3.64	µg/L	B233186	S231294
2312216-07	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-07	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
DUP-1223										
2312216-08	As	Water	TR	0.674	J	0.162	0.727	µg/L	B233186	S231294
2312216-08	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-08	Cr	Water	TR	10.7		1.72	6.06	µg/L	B233186	S231294
2312216-08	Cu	Water	TR	3.48		0.505	1.01	µg/L	B233186	S231294
2312216-08	Hg	Water	TR	0.89		0.13	0.41	ng/L	B233204	S231301
2312216-08	Ni	Water	TR	18.6		1.21	3.64	µg/L	B233186	S231294
2312216-08	Pb	Water	TR	0.516		0.061	0.121	µg/L	B233186	S231294
2312216-08	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP-1223										
2312216-09	As	Water	D	0.725	J	0.162	0.727	µg/L	B233186	S231294
2312216-09	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-09	Cr	Water	D	3.67	J	1.72	6.06	µg/L	B233186	S231294
2312216-09	Cu	Water	D	2.48		0.505	1.01	µg/L	B233186	S231294
2312216-09	Hg	Water	D	0.58		0.13	0.41	ng/L	B233204	S231301
2312216-09	Ni	Water	D	17.7		1.21	3.64	µg/L	B233186	S231294
2312216-09	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-09	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240092	S240032
MW7-1223										
2312216-10	As	Water	TR	0.969		0.162	0.727	µg/L	B233186	S231294
2312216-10	Cd	Water	TR	1.37		0.061	0.182	µg/L	B233186	S231294
2312216-10	Cr	Water	TR	262		1.72	6.06	µg/L	B233186	S231294
2312216-10	Cu	Water	TR	19.1		0.505	1.01	µg/L	B233186	S231294
2312216-10	Hg	Water	TR	17.2		0.13	0.41	ng/L	B233204	S231301
2312216-10	Ni	Water	TR	121		1.21	3.64	µg/L	B233186	S231294
2312216-10	Pb	Water	TR	7.24		0.061	0.121	µg/L	B233186	S231294
2312216-10	Zn	Water	TR	537		7.07	22.2	µg/L	B233186	S231294
MW7-1223										
2312216-11	As	Water	D	0.563	J	0.162	0.727	µg/L	B233186	S231294
2312216-11	Cd	Water	D	1.35		0.061	0.182	µg/L	B233186	S231294
2312216-11	Cr	Water	D	17.9		1.72	6.06	µg/L	B233186	S231294
2312216-11	Cu	Water	D	9.71		0.505	1.01	µg/L	B233186	S231294
2312216-11	Hg	Water	D	7.14		0.13	0.41	ng/L	B233204	S231301
2312216-11	Ni	Water	D	120		1.21	3.64	µg/L	B233186	S231294
2312216-11	Pb	Water	D	0.172		0.061	0.121	µg/L	B233186	S231294
2312216-11	Zn	Water	D	542		7.07	22.2	µg/L	B233186	S231294
MW4-1223										
2312216-12	As	Water	TR	0.691	J	0.162	0.727	µg/L	B233186	S231294
2312216-12	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-12	Cr	Water	TR	11.0		1.72	6.06	µg/L	B233186	S231294
2312216-12	Cu	Water	TR	3.60		0.505	1.01	µg/L	B233186	S231294
2312216-12	Hg	Water	TR	0.93		0.13	0.41	ng/L	B233204	S231301
2312216-12	Ni	Water	TR	18.0		1.21	3.64	µg/L	B233186	S231294
2312216-12	Pb	Water	TR	0.511		0.061	0.121	µg/L	B233186	S231294
2312216-12	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-1223										
2312216-13	As	Water	D	0.641	J	0.162	0.727	µg/L	B233186	S231294
2312216-13	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-13	Cr	Water	D	3.41	J	1.72	6.06	µg/L	B233186	S231294
2312216-13	Cu	Water	D	3.21		0.505	1.01	µg/L	B233186	S231294
2312216-13	Hg	Water	D	0.48		0.13	0.41	ng/L	B233204	S231301
2312216-13	Ni	Water	D	17.4		1.21	3.64	µg/L	B233186	S231294
2312216-13	Pb	Water	D	1.47		0.061	0.121	µg/L	B233186	S231294
2312216-13	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
MW1-1223										
2312216-14	As	Water	TR	6.72		0.162	0.727	µg/L	B233186	S231294
2312216-14	Cd	Water	TR	0.066	J	0.061	0.182	µg/L	B233186	S231294
2312216-14	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B233186	S231294
2312216-14	Cu	Water	TR	3.37		0.505	1.01	µg/L	B233186	S231294
2312216-14	Hg	Water	TR	2.07		0.13	0.41	ng/L	B233204	S231301
2312216-14	Ni	Water	TR	4.91		1.21	3.64	µg/L	B233186	S231294
2312216-14	Pb	Water	TR	0.484		0.061	0.121	µg/L	B233186	S231294
2312216-14	Zn	Water	TR	10.3	J	7.07	22.2	µg/L	B233186	S231294
MW1-1223										
2312216-15	As	Water	D	4.82		0.162	0.727	µg/L	B233186	S231294
2312216-15	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B233186	S231294
2312216-15	Cr	Water	D	1.82	J	1.72	6.06	µg/L	B233186	S231294
2312216-15	Cu	Water	D	1.45		0.505	1.01	µg/L	B233186	S231294
2312216-15	Hg	Water	D	0.35	J	0.13	0.41	ng/L	B233204	S231301
2312216-15	Ni	Water	D	4.80		1.21	3.64	µg/L	B233186	S231294
2312216-15	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B233186	S231294
2312216-15	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B233186	S231294
MW9-1223										
2312216-16	As	Water	TR	1.97		0.404	1.82	µg/L	B233186	S231294
2312216-16	Cd	Water	TR	0.862		0.152	0.455	µg/L	B233186	S231294
2312216-16	Cr	Water	TR	5.46	J	4.29	15.2	µg/L	B233186	S231294
2312216-16	Cu	Water	TR	17.5		1.26	2.53	µg/L	B233186	S231294
2312216-16	Hg	Water	TR	43.2		0.13	0.41	ng/L	B233204	S231301
2312216-16	Ni	Water	TR	6.70	J	3.03	9.09	µg/L	B233186	S231294
2312216-16	Pb	Water	TR	3.74		0.152	0.303	µg/L	B233186	S231294
2312216-16	Zn	Water	TR	496		17.7	55.6	µg/L	B233186	S231294

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9-1223										
2312216-17	As	Water	D	1.73	J	0.404	1.82	µg/L	B233186	S231294
2312216-17	Cd	Water	D	0.826		0.152	0.455	µg/L	B233186	S231294
2312216-17	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B233186	S231294
2312216-17	Cu	Water	D	13.1		1.26	2.53	µg/L	B233186	S231294
2312216-17	Hg	Water	D	38.5		0.13	0.41	ng/L	B233204	S231301
2312216-17	Ni	Water	D	4.07	J	3.03	9.09	µg/L	B233186	S231294
2312216-17	Pb	Water	D	0.988		0.152	0.303	µg/L	B233186	S231294
2312216-17	Zn	Water	D	240		17.7	55.6	µg/L	B233186	S231294
MW8-1223										
2312216-18	As	Water	TR	1.18	J	0.404	1.82	µg/L	B233186	S231294
2312216-18	Cd	Water	TR	1.42		0.152	0.455	µg/L	B233186	S231294
2312216-18	Cr	Water	TR	936		4.29	15.2	µg/L	B233186	S231294
2312216-18	Cu	Water	TR	82.7		1.26	2.53	µg/L	B233186	S231294
2312216-18	Hg	Water	TR	12.1		0.13	0.41	ng/L	B233204	S231301
2312216-18	Ni	Water	TR	547		3.03	9.09	µg/L	B233186	S231294
2312216-18	Pb	Water	TR	1.09		0.152	0.303	µg/L	B233186	S231294
2312216-18	Zn	Water	TR	303		17.7	55.6	µg/L	B233186	S231294
MW8-1223										
2312216-19	As	Water	D	0.945	J	0.404	1.82	µg/L	B233186	S231294
2312216-19	Cd	Water	D	1.38		0.152	0.455	µg/L	B233186	S231294
2312216-19	Cr	Water	D	6.39	J	4.29	15.2	µg/L	B233186	S231294
2312216-19	Cu	Water	D	28.2		1.26	2.53	µg/L	B233186	S231294
2312216-19	Hg	Water	D	7.65		0.13	0.41	ng/L	B233204	S231301
2312216-19	Ni	Water	D	521		3.03	9.09	µg/L	B233186	S231294
2312216-19	Pb	Water	D	≤ 0.152	U	0.152	0.303	µg/L	B233186	S231294
2312216-19	Zn	Water	D	219		17.7	55.6	µg/L	B233186	S231294
MW3-1223										
2312216-20	As	Water	TR	3.06		0.404	1.82	µg/L	B233186	S231294
2312216-20	Cd	Water	TR	4.12		0.152	0.455	µg/L	B233186	S231294
2312216-20	Cr	Water	TR	99.9		4.29	15.2	µg/L	B233186	S231294
2312216-20	Cu	Water	TR	41.5		1.26	2.53	µg/L	B233186	S231294
2312216-20	Hg	Water	TR	98.1		0.13	0.41	ng/L	B233204	S231301
2312216-20	Ni	Water	TR	21.3		3.03	9.09	µg/L	B233186	S231294
2312216-20	Pb	Water	TR	16.7		0.152	0.303	µg/L	B233186	S231294
2312216-20	Zn	Water	TR	728		17.7	55.6	µg/L	B233186	S231294

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW3-1223										
2312216-21	As	Water	D	0.711	J	0.404	1.82	µg/L	B233186	S231294
2312216-21	Cd	Water	D	4.14		0.152	0.455	µg/L	B233186	S231294
2312216-21	Cr	Water	D	4.81	J	4.29	15.2	µg/L	B233186	S231294
2312216-21	Cu	Water	D	12.0		1.26	2.53	µg/L	B233186	S231294
2312216-21	Hg	Water	D	7.14		0.13	0.41	ng/L	B233204	S231301
2312216-21	Ni	Water	D	17.7		3.03	9.09	µg/L	B233186	S231294
2312216-21	Pb	Water	D	0.595		0.152	0.303	µg/L	B233186	S231294
2312216-21	Zn	Water	D	738		17.7	55.6	µg/L	B233186	S231294

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Accuracy & Precision Summary

Batch: B233186
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B233186-BS1	**Blank Spike, (2336005)**						
	As		277.8	276.1	µg/L	99% 75-125	
	Cd		27.78	30.26	µg/L	109% 75-125	
	Cr		277.8	304.0	µg/L	109% 75-125	
	Cu		277.8	298.6	µg/L	107% 75-125	
	Ni		277.8	269.6	µg/L	97% 75-125	
	Pb		27.78	32.43	µg/L	117% 75-125	
	Zn		277.8	297.4	µg/L	107% 75-125	
B233186-BS2	**Blank Spike, (2336005)**						
	As		277.8	289.7	µg/L	104% 75-125	
	Cd		27.78	31.70	µg/L	114% 75-125	
	Cr		277.8	313.2	µg/L	113% 75-125	
	Cu		277.8	306.2	µg/L	110% 75-125	
	Ni		277.8	280.0	µg/L	101% 75-125	
	Pb		27.78	32.82	µg/L	118% 75-125	
	Zn		277.8	308.9	µg/L	111% 75-125	
B233186-SRM1	**Reference Material (2302012, NIST 1643f)**						
	As		57.42	59.05	µg/L	103% 75-125	
	Cd		5.890	6.136	µg/L	104% 75-125	
	Cr		18.50	20.70	µg/L	112% 75-125	
	Cu		21.66	22.76	µg/L	105% 75-125	
	Ni		59.80	57.50	µg/L	96% 75-125	
	Pb		18.49	20.84	µg/L	113% 75-125	
	Zn		74.40	80.29	µg/L	108% 75-125	
B233186-SRM2	**Reference Material (2302012, NIST 1643f)**						
	As		57.42	61.65	µg/L	107% 75-125	
	Cd		5.890	6.254	µg/L	106% 75-125	
	Cr		18.50	21.11	µg/L	114% 75-125	
	Cu		21.66	23.54	µg/L	109% 75-125	
	Ni		59.80	59.68	µg/L	100% 75-125	
	Pb		18.49	21.80	µg/L	118% 75-125	
	Zn		74.40	82.93	µg/L	111% 75-125	

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Accuracy & Precision Summary

Batch: B233186
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B233186-DUP1	**Duplicate, (2312216-01)**						
	As	1.377		1.239	µg/L		11% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	4.442		4.347	µg/L		2% 20
	Cu	25.17		24.05	µg/L		5% 20
	Ni	5.894		5.629	µg/L		5% 20
	Pb	1.299		1.199	µg/L		8% 20
	Zn	9.638		8.586	µg/L		12% 20
B233186-MS1	**Matrix Spike, (2312216-01)**						
	As	1.377	280.6	288.0	µg/L	102% 75-125	
	Cd	ND	28.06	29.76	µg/L	106% 75-125	
	Cr	4.442	280.6	307.7	µg/L	108% 75-125	
	Cu	25.17	280.6	314.5	µg/L	103% 75-125	
	Ni	5.894	280.6	280.4	µg/L	98% 75-125	
	Pb	1.299	28.06	33.36	µg/L	114% 75-125	
	Zn	9.638	280.6	317.0	µg/L	110% 75-125	
B233186-MSD1	**Matrix Spike Duplicate, (2312216-01)**						
	As	1.377	280.6	289.4	µg/L	103% 75-125	0.5% 20
	Cd	ND	28.06	30.73	µg/L	110% 75-125	3% 20
	Cr	4.442	280.6	313.1	µg/L	110% 75-125	2% 20
	Cu	25.17	280.6	321.2	µg/L	105% 75-125	2% 20
	Ni	5.894	280.6	286.4	µg/L	100% 75-125	2% 20
	Pb	1.299	28.06	34.08	µg/L	117% 75-125	2% 20
	Zn	9.638	280.6	319.2	µg/L	110% 75-125	0.7% 20
B233186-DUP2	**Duplicate, (2312216-08)**						
	As	0.674		0.662	µg/L		2% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	10.67		10.95	µg/L		3% 20
	Cu	3.478		3.373	µg/L		3% 20
	Ni	18.60		19.20	µg/L		3% 20
	Pb	0.516		0.483	µg/L		7% 20
	Zn	ND		ND	µg/L		N/C 20

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Accuracy & Precision Summary

Batch: B233186
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B233186-MS2	**Matrix Spike, (2312216-08)**						
	As	0.674	280.6	300.0	µg/L	107% 75-125	
	Cd	ND	28.06	31.48	µg/L	112% 75-125	
	Cr	10.67	280.6	318.9	µg/L	110% 75-125	
	Cu	3.478	280.6	305.6	µg/L	108% 75-125	
	Ni	18.60	280.6	312.6	µg/L	105% 75-125	
	Pb	0.516	28.06	35.18	µg/L	124% 75-125	
	Zn	ND	280.6	335.3	µg/L	120% 75-125	
B233186-MSD2	**Matrix Spike Duplicate, (2312216-08)**						
	As	0.674	280.6	293.8	µg/L	104% 75-125	2% 20
	Cd	ND	28.06	30.87	µg/L	110% 75-125	2% 20
	Cr	10.67	280.6	320.7	µg/L	110% 75-125	0.6% 20
	Cu	3.478	280.6	304.5	µg/L	107% 75-125	0.4% 20
	Ni	18.60	280.6	293.3	µg/L	98% 75-125	6% 20
	Pb	0.516	28.06	34.14	µg/L	120% 75-125	3% 20
	Zn	ND	280.6	319.4	µg/L	114% 75-125	5% 20
B233186-DUP3	**Duplicate, (2312216-14)**						
	As	6.721		6.526	µg/L		3% 20
	Cd	0.066		ND	µg/L		N/C 20
	Cr	ND		2.466	µg/L		N/C 20
	Cu	3.368		3.504	µg/L		4% 20
	Ni	4.912		5.520	µg/L		12% 20
	Pb	0.484		0.463	µg/L		4% 20
	Zn	10.25		9.816	µg/L		4% 20
B233186-MS3	**Matrix Spike, (2312216-14)**						
	As	6.721	280.6	303.5	µg/L	106% 75-125	
	Cd	0.066	28.06	31.86	µg/L	113% 75-125	
	Cr	ND	280.6	313.2	µg/L	112% 75-125	
	Cu	3.368	280.6	308.8	µg/L	109% 75-125	
	Ni	4.912	280.6	291.2	µg/L	102% 75-125	
	Pb	0.484	28.06	35.03	µg/L	123% 75-125	
	Zn	10.25	280.6	337.6	µg/L	117% 75-125	

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PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Accuracy & Precision Summary

Batch: B233186
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B233186-MSD3	**Matrix Spike Duplicate, (2312216-14)**						
	As	6.721	280.6	302.4	µg/L	105% 75-125	0.4% 20
	Cd	0.066	28.06	31.27	µg/L	111% 75-125	2% 20
	Cr	ND	280.6	307.8	µg/L	110% 75-125	2% 20
	Cu	3.368	280.6	303.7	µg/L	107% 75-125	2% 20
	Ni	4.912	280.6	283.4	µg/L	99% 75-125	3% 20
	Pb	0.484	28.06	35.07	µg/L	123% 75-125	0.1% 20
	Zn	10.25	280.6	329.7	µg/L	114% 75-125	2% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Accuracy & Precision Summary

Batch: B233204
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B233204-MS1	**Matrix Spike (2312216-04)**						
	Hg	0.72	20.41	18.95	ng/L	89% 71-125	
B233204-MSD1	**Matrix Spike Duplicate (2312216-04)**						
	Hg	0.72	20.41	19.34	ng/L	91% 71-125	2% 24
B233204-MS2	**Matrix Spike (2312216-15)**						
	Hg	0.35	20.41	16.16	ng/L	77% 71-125	
B233204-MSD2	**Matrix Spike Duplicate (2312216-15)**						
	Hg	0.35	20.41	16.07	ng/L	77% 71-125	0.6% 24
B233204-MS3	**Matrix Spike (2312248-02)**						
	Hg	2.80	20.41	23.65	ng/L	102% 71-125	
B233204-MSD3	**Matrix Spike Duplicate (2312248-02)**						
	Hg	2.80	20.41	23.61	ng/L	102% 71-125	0.2% 24

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Accuracy & Precision Summary

Batch: B240092
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B240092-BS1	**Blank Spike, (2248034)**						
	Zn		55.56	53.32	µg/L	96% 75-125	
B240092-BS2	**Blank Spike, (2248034)**						
	Zn		55.56	52.92	µg/L	95% 75-125	
B240092-SRM1	**Reference Material (2350019, NIST 1643f)**						
	Zn		74.40	71.81	µg/L	97% 75-125	
B240092-SRM2	**Reference Material (2350019, NIST 1643f)**						
	Zn		74.40	72.46	µg/L	97% 75-125	
B240092-DUP1	**Duplicate, (2401055-07)**						
	Zn	11.20		12.55	µg/L		11% 20
B240092-MS1	**Matrix Spike, (2401055-07)**						
	Zn	11.20	56.12	65.86	µg/L	97% 75-125	
B240092-MSD1	**Matrix Spike Duplicate, (2401055-07)**						
	Zn	11.20	56.12	65.04	µg/L	96% 75-125	1% 20

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Method Blanks & Reporting Limits

Batch: B233186
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B233186-BLK1	0.017	µg/L
B233186-BLK2	0.012	µg/L
B233186-BLK3	0.015	µg/L
B233186-BLK4	0.014	µg/L

Average: 0.015
Limit: 0.072
MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B233186-BLK1	0.001	µg/L
B233186-BLK2	-0.0001	µg/L
B233186-BLK3	0.002	µg/L
B233186-BLK4	0.002	µg/L

Average: 0.001
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B233186-BLK1	0.023	µg/L
B233186-BLK2	0.022	µg/L
B233186-BLK3	0.038	µg/L
B233186-BLK4	0.022	µg/L

Average: 0.026
Limit: 0.600
MDL: 0.170
MRL: 0.600

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Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B233186-BLK1	0.026	µg/L
B233186-BLK2	0.022	µg/L
B233186-BLK3	0.026	µg/L
B233186-BLK4	0.032	µg/L

Average: 0.026
Limit: 0.100
MDL: 0.050
MRL: 0.100

Analyte: Ni

Sample	Result	Units
B233186-BLK1	0.009	µg/L
B233186-BLK2	0.006	µg/L
B233186-BLK3	0.012	µg/L
B233186-BLK4	0.009	µg/L

Average: 0.009
Limit: 0.360
MDL: 0.120
MRL: 0.360

Analyte: Pb

Sample	Result	Units
B233186-BLK1	0.009	µg/L
B233186-BLK2	0.011	µg/L
B233186-BLK3	0.007	µg/L
B233186-BLK4	0.010	µg/L

Average: 0.009
Limit: 0.012
MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B233186-BLK1	0.206	µg/L
B233186-BLK2	0.606	µg/L
B233186-BLK3	0.121	µg/L
B233186-BLK4	0.295	µg/L

Average: 0.307
Limit: 2.200
MDL: 0.700
MRL: 2.20

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Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Method Blanks & Reporting Limits

Batch: B233204
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B233204-BLK1	0.09	ng/L
B233204-BLK2	0.08	ng/L
B233204-BLK3	0.07	ng/L
B233204-BLK4	0.06	ng/L

Average: 0.08
Limit: 0.50

Standard Deviation: 0.01
Limit: 0.13

MDL: 0.13
MRL: 0.40

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Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Method Blanks & Reporting Limits

Batch: B240092
Matrix: Water
Method: EPA 1638 Mod
Analyte: Zn

Sample	Result	Units
B240092-BLK1	-0.014	µg/L
B240092-BLK2	-0.029	µg/L
B240092-BLK3	-0.019	µg/L
B240092-BLK4	-0.026	µg/L

Average: -0.022
Limit: 2.200

MDL: 0.700
MRL: 2.20

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Client Project: POFH Jensens Boatyard

Sample Containers

Lab ID: 2312216-01 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW5-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-02 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW5-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-03 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: FB-1223 **Sample Type:** Filter Blank **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-04 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW6-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

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Sample Containers

Lab ID: 2312216-05 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW6-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-06 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW2-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-07 **Report Matrix:** Water **Collected:** 12/12/2023
Sample: MW2-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-08 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: DUP-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

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Client Project: POFH Jensens Boatyard

Sample Containers

Lab ID: 2312216-09 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: DUP-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-10 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW7-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-11 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW7-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-12 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW4-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

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Client Project: POFH Jensens Boatyard

Sample Containers

Lab ID: 2312216-13 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW4-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-14 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW1-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-15 **Report Matrix:** Water **Collected:** 12/13/2023
Sample: MW1-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-16 **Report Matrix:** Water **Collected:** 12/14/2023
Sample: MW9-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Sample Containers

Lab ID: 2312216-17 **Report Matrix:** Water **Collected:** 12/14/2023
Sample: MW9-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-18 **Report Matrix:** Water **Collected:** 12/14/2023
Sample: MW8-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-19 **Report Matrix:** Water **Collected:** 12/14/2023
Sample: MW8-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Lab ID: 2312216-20 **Report Matrix:** Water **Collected:** 12/14/2023
Sample: MW3-1223 **Sample Type:** Sample **Received:** 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: POFH Jensens Boatyard

Sample Containers

Lab ID: 2312216-21
Sample: MW3-1223

Report Matrix: Water
Sample Type: Sample

Collected: 12/14/2023
Received: 12/14/2023

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2338046	<2	Cooler - 2312216
B	Bottle FLPE Hg	125 mL	23-0112	none	n/a	<2	Cooler - 2312216

Shipping Containers

Cooler - 2312216

Received: December 14, 2023 12:45
Tracking No: N/A via Customer Drop-Off
Coolant Type: Ice
Temperature: 2.0 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-1

Custody seals present? No
Custody seals intact? No
COC present? Yes

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2312216
Received by: _____ Date: 12/14/23
Work Order ID: _____ Time: 1245
Project ID: _____

Client: Leon/CRETE | PO Number: PoFH | Mailing Address: _____
Contact: R. Jones / P. Leon | Phone: 832.330.1359
Client Project ID: PoFH Jensen's Boatyard | Email: rusty.jones@creteconsulting.com | Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones | BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) Total Metals	Other (specify) Dissolved Metals	Comments: Specify Here
1	MW5-1223	12.12.23	0103	WATER	4	Y+N	NONE							X	X	200.1 uS/cm
2	FB-1223	↓	0135	↓	2	Y	↓								X	filter blank
3	MW6-1223		0219		4	Y+N								X	X	109.7 uS/cm
4	MW2-1223	↓	0310		4	↓								X	X	5864 uS/cm
5	DUP-1223	12.13.23	0001		4									X	X	
6	MW7-1223	12.13.23	0208		4									X	X	19600 uS/cm
7	MW4-1223	↓	0256		4									X	X	487.7 uS/cm
8	MW1-1223	↓	0357		4									X	X	914 uS/cm
9	MW9-1223	12.14.23	0312		4									X	X	30053 uS/cm
10	MW3-1223	↓	0352	↓	4	↓	↓							Y	Y	29554 uS/cm
	Trip Blank															

See Project Metals list
Field filtered indicated on bottles
Conductivities

Relinquished By: R. Jones	Date: 12/14/2023	Time: 1235	Relinquished By:
Received By: CCC	Date: 12/14/2023	Time: 1244	Total Number of Packages:

Date: | Time:

Page 1 of 2 List Hazardous Contaminants: _____

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only — BAL Report 2312216

Received by: [illegible] Date: 12/14/23
Work Order ID: _____ Time: 12:45
Project ID: _____

Client: Leon Env. / CRETE
Contact: R. Jones / P. Leon
Client Project ID: PoFH Jensen's Boatyard
Samples Collected By: Rusty Jones

PO Number: PoFH
Phone: 832.330.1359
Email: rusty.jones@creteconsulting.com

Mailing Address: _____
Email Receipt Confirmation? (Yes/No)
BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) Total Metals	Other (specify) Dissolved Metals	Comments: Specify Here
1	MW3-1223	12.14.2023	0438	WATER	4	Y+N	NONE							X	X	See Project Metals list. Field-filtered indicated on bottles. Conductivity: 25300 uS/cm
2																
3																
4																
5																
6																
7																
8																
9																
10																
	Trip Blank															

Relinquished By: R. Jones	Date: 12/14/2023	Time: 1235	Relinquished By:	Date:	Time:
Received By: ECC	Date: 12/14/23	Time: 1244	Total Number of Packages:		

Page 2 of 2 List Hazardous Contaminants: _____

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May 3, 2024

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard R.I.

Dear Rusty Jones,

On April 12, 2024, Brooks Applied Labs (BAL) received ten (10) aqueous samples in a sealed cooler at an acceptable temperature of 0.1°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], nickel (Ni), and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Ni, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Ni, Pb, and Zn) Quantitation by ICP-QQQ-MS
Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for (*As, Cd, Cr, Cu, Ni, Pb, and Zn*) content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

Batch B240851
Sample results were *not* method blank corrected, as described in the calculations section of the relevant BAL SOPs. All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL, the relative percent difference (RPD) was not calculated (**N/C**).

The duplicate (DUP) B240851-DUP1 performed on sample 2404189-01 had a relative percent difference (RPD) for As above the acceptance limit (47%). The DUP result and the native result met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

Some of the total results were less than the corresponding dissolved result. In all of these cases, the total and dissolved samples meet RPD, or the results met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Batch B240826

The Hg results were method blank corrected as described in the calculations section of the relevant BAL SOP and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDLs), method reporting limits (MRLs), and other details.

Aside from concentration qualifiers, all data was reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MW9-0424	2404189-01	Water	Sample	04/09/2024	04/12/2024
MW9-0424	2404189-02	Water	Sample	04/09/2024	04/12/2024
MW8-0424	2404189-03	Water	Sample	04/09/2024	04/12/2024
MW8-0424	2404189-04	Water	Sample	04/09/2024	04/12/2024
MW6-0424	2404189-05	Water	Sample	04/10/2024	04/12/2024
MW6-0424	2404189-06	Water	Sample	04/10/2024	04/12/2024
MW5-0424	2404189-07	Water	Sample	04/10/2024	04/12/2024
MW5-0424	2404189-08	Water	Sample	04/10/2024	04/12/2024
MW1-0424	2404189-09	Water	Sample	04/10/2024	04/12/2024
MW1-0424	2404189-10	Water	Sample	04/10/2024	04/12/2024
DUP-0424	2404189-11	Water	Field Duplicate	04/11/2024	04/12/2024
DUP-0424	2404189-12	Water	Field Duplicate	04/11/2024	04/12/2024
MW7-0424	2404189-13	Water	Sample	04/11/2024	04/12/2024
MW7-0424	2404189-14	Water	Sample	04/11/2024	04/12/2024
FB-0424	2404189-15	Water	Field Blank	04/11/2024	04/12/2024
MW4-0424	2404189-16	Water	Sample	04/11/2024	04/12/2024
MW4-0424	2404189-17	Water	Sample	04/11/2024	04/12/2024
MW2-0424	2404189-18	Water	Sample	04/11/2024	04/12/2024
MW2-0424	2404189-19	Water	Sample	04/11/2024	04/12/2024

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Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Cd	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Cr	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Cu	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Hg	Water	EPA 1631 E	ISO,TNI	04/15/24	04/16/24	B240826	S240358
Ni	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Pb	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363
Zn	Water	EPA 1638 Mod	ISO,TNI	04/16/24	04/17/24	B240851	S240363

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW9-0424										
2404189-01	As	Water	TR	1.34	J	0.404	1.82	µg/L	B240851	S240363
2404189-01	Cd	Water	TR	0.373	J	0.152	0.455	µg/L	B240851	S240363
2404189-01	Cr	Water	TR	≤ 4.29	U	4.29	15.2	µg/L	B240851	S240363
2404189-01	Cu	Water	TR	13.4		1.26	2.53	µg/L	B240851	S240363
2404189-01	Hg	Water	TR	37.9		0.13	0.41	ng/L	B240826	S240358
2404189-01	Ni	Water	TR	≤ 3.03	U	3.03	9.09	µg/L	B240851	S240363
2404189-01	Pb	Water	TR	2.99		0.152	0.303	µg/L	B240851	S240363
2404189-01	Zn	Water	TR	152		17.7	55.6	µg/L	B240851	S240363
MW9-0424										
2404189-02	As	Water	D	1.84		0.404	1.82	µg/L	B240851	S240363
2404189-02	Cd	Water	D	0.380	J	0.152	0.455	µg/L	B240851	S240363
2404189-02	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B240851	S240363
2404189-02	Cu	Water	D	10.9		1.26	2.53	µg/L	B240851	S240363
2404189-02	Hg	Water	D	28.8		0.13	0.41	ng/L	B240826	S240358
2404189-02	Ni	Water	D	≤ 3.03	U	3.03	9.09	µg/L	B240851	S240363
2404189-02	Pb	Water	D	0.849		0.152	0.303	µg/L	B240851	S240363
2404189-02	Zn	Water	D	141		17.7	55.6	µg/L	B240851	S240363
MW8-0424										
2404189-03	As	Water	TR	1.08	J	0.404	1.82	µg/L	B240851	S240363
2404189-03	Cd	Water	TR	1.38		0.152	0.455	µg/L	B240851	S240363
2404189-03	Cr	Water	TR	588		4.29	15.2	µg/L	B240851	S240363
2404189-03	Cu	Water	TR	101		1.26	2.53	µg/L	B240851	S240363
2404189-03	Hg	Water	TR	10.9		0.13	0.41	ng/L	B240826	S240358
2404189-03	Ni	Water	TR	328		3.03	9.09	µg/L	B240851	S240363
2404189-03	Pb	Water	TR	8.38		0.152	0.303	µg/L	B240851	S240363
2404189-03	Zn	Water	TR	257		17.7	55.6	µg/L	B240851	S240363
MW8-0424										
2404189-04	As	Water	D	0.743	J	0.404	1.82	µg/L	B240851	S240363
2404189-04	Cd	Water	D	1.37		0.152	0.455	µg/L	B240851	S240363
2404189-04	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B240851	S240363
2404189-04	Cu	Water	D	43.4		1.26	2.53	µg/L	B240851	S240363
2404189-04	Hg	Water	D	5.31		0.13	0.41	ng/L	B240826	S240358
2404189-04	Ni	Water	D	294		3.03	9.09	µg/L	B240851	S240363
2404189-04	Pb	Water	D	0.180	J	0.152	0.303	µg/L	B240851	S240363
2404189-04	Zn	Water	D	233		17.7	55.6	µg/L	B240851	S240363

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6-0424										
2404189-05	As	Water	TR	0.284	J	0.162	0.727	µg/L	B240851	S240363
2404189-05	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-05	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-05	Cu	Water	TR	0.627	J	0.505	1.01	µg/L	B240851	S240363
2404189-05	Hg	Water	TR	0.30	J	0.13	0.41	ng/L	B240826	S240358
2404189-05	Ni	Water	TR	≤ 1.21	U	1.21	3.64	µg/L	B240851	S240363
2404189-05	Pb	Water	TR	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-05	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
MW6-0424										
2404189-06	As	Water	D	0.218	J	0.162	0.727	µg/L	B240851	S240363
2404189-06	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-06	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-06	Cu	Water	D	0.659	J	0.505	1.01	µg/L	B240851	S240363
2404189-06	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B240826	S240358
2404189-06	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B240851	S240363
2404189-06	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-06	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
MW5-0424										
2404189-07	As	Water	TR	2.63		0.162	0.727	µg/L	B240851	S240363
2404189-07	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-07	Cr	Water	TR	8.55		1.72	6.06	µg/L	B240851	S240363
2404189-07	Cu	Water	TR	21.4		0.505	1.01	µg/L	B240851	S240363
2404189-07	Hg	Water	TR	17.3		0.13	0.41	ng/L	B240826	S240358
2404189-07	Ni	Water	TR	10.9		1.21	3.64	µg/L	B240851	S240363
2404189-07	Pb	Water	TR	5.09		0.061	0.121	µg/L	B240851	S240363
2404189-07	Zn	Water	TR	19.1	J	7.07	22.2	µg/L	B240851	S240363
MW5-0424										
2404189-08	As	Water	D	0.615	J	0.162	0.727	µg/L	B240851	S240363
2404189-08	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-08	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-08	Cu	Water	D	10.1		0.505	1.01	µg/L	B240851	S240363
2404189-08	Hg	Water	D	1.74		0.13	0.41	ng/L	B240826	S240358
2404189-08	Ni	Water	D	3.41	J	1.21	3.64	µg/L	B240851	S240363
2404189-08	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-08	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW1-0424										
2404189-09	As	Water	TR	11.8		0.162	0.727	µg/L	B240851	S240363
2404189-09	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-09	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-09	Cu	Water	TR	3.63		0.505	1.01	µg/L	B240851	S240363
2404189-09	Hg	Water	TR	5.40		0.13	0.41	ng/L	B240826	S240358
2404189-09	Ni	Water	TR	2.91	J	1.21	3.64	µg/L	B240851	S240363
2404189-09	Pb	Water	TR	0.422		0.061	0.121	µg/L	B240851	S240363
2404189-09	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
MW1-0424										
2404189-10	As	Water	D	5.80		0.162	0.727	µg/L	B240851	S240363
2404189-10	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-10	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-10	Cu	Water	D	0.659	J	0.505	1.01	µg/L	B240851	S240363
2404189-10	Hg	Water	D	0.52		0.13	0.41	ng/L	B240826	S240358
2404189-10	Ni	Water	D	2.39	J	1.21	3.64	µg/L	B240851	S240363
2404189-10	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-10	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
DUP-0424										
2404189-11	As	Water	TR	≤ 0.162	U	0.162	0.727	µg/L	B240851	S240363
2404189-11	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-11	Cr	Water	TR	5.68	J	1.72	6.06	µg/L	B240851	S240363
2404189-11	Cu	Water	TR	2.38		0.505	1.01	µg/L	B240851	S240363
2404189-11	Hg	Water	TR	0.55		0.13	0.41	ng/L	B240826	S240358
2404189-11	Ni	Water	TR	1.23	J	1.21	3.64	µg/L	B240851	S240363
2404189-11	Pb	Water	TR	0.169		0.061	0.121	µg/L	B240851	S240363
2404189-11	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
DUP-0424										
2404189-12	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B240851	S240363
2404189-12	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-12	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-12	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B240851	S240363
2404189-12	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B240826	S240358
2404189-12	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B240851	S240363
2404189-12	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-12	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW7-0424										
2404189-13	As	Water	TR	1.88		0.404	1.82	µg/L	B240851	S240363
2404189-13	Cd	Water	TR	1.11		0.152	0.455	µg/L	B240851	S240363
2404189-13	Cr	Water	TR	1030		4.29	15.2	µg/L	B240851	S240363
2404189-13	Cu	Water	TR	29.9		1.26	2.53	µg/L	B240851	S240363
2404189-13	Hg	Water	TR	37.9		0.13	0.41	ng/L	B240826	S240358
2404189-13	Ni	Water	TR	60.1		3.03	9.09	µg/L	B240851	S240363
2404189-13	Pb	Water	TR	22.4		0.152	0.303	µg/L	B240851	S240363
2404189-13	Zn	Water	TR	562		17.7	55.6	µg/L	B240851	S240363
MW7-0424										
2404189-14	As	Water	D	0.599	J	0.404	1.82	µg/L	B240851	S240363
2404189-14	Cd	Water	D	1.16		0.152	0.455	µg/L	B240851	S240363
2404189-14	Cr	Water	D	12.4	J	4.29	15.2	µg/L	B240851	S240363
2404189-14	Cu	Water	D	6.82		1.26	2.53	µg/L	B240851	S240363
2404189-14	Hg	Water	D	6.15		0.13	0.41	ng/L	B240826	S240358
2404189-14	Ni	Water	D	51.9		3.03	9.09	µg/L	B240851	S240363
2404189-14	Pb	Water	D	0.332		0.152	0.303	µg/L	B240851	S240363
2404189-14	Zn	Water	D	520		17.7	55.6	µg/L	B240851	S240363
FB-0424										
2404189-15	As	Water	D	≤ 0.016	U	0.016	0.073	µg/L	B240851	S240363
2404189-15	Cd	Water	D	≤ 0.006	U	0.006	0.018	µg/L	B240851	S240363
2404189-15	Cr	Water	D	≤ 0.172	U	0.172	0.606	µg/L	B240851	S240363
2404189-15	Cu	Water	D	0.105		0.051	0.101	µg/L	B240851	S240363
2404189-15	Hg	Water	D	≤ 0.13	U	0.13	0.40	ng/L	B240826	S240358
2404189-15	Ni	Water	D	≤ 0.121	U	0.121	0.364	µg/L	B240851	S240363
2404189-15	Pb	Water	D	≤ 0.006	U	0.006	0.012	µg/L	B240851	S240363
2404189-15	Zn	Water	D	≤ 0.707	U	0.707	2.22	µg/L	B240851	S240363
MW4-0424										
2404189-16	As	Water	TR	1.00		0.162	0.727	µg/L	B240851	S240363
2404189-16	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-16	Cr	Water	TR	6.16		1.72	6.06	µg/L	B240851	S240363
2404189-16	Cu	Water	TR	4.90		0.505	1.01	µg/L	B240851	S240363
2404189-16	Hg	Water	TR	1.02		0.13	0.41	ng/L	B240826	S240358
2404189-16	Ni	Water	TR	5.05		1.21	3.64	µg/L	B240851	S240363
2404189-16	Pb	Water	TR	1.28		0.061	0.121	µg/L	B240851	S240363
2404189-16	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-0424										
2404189-17	As	Water	D	0.920		0.162	0.727	µg/L	B240851	S240363
2404189-17	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-17	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-17	Cu	Water	D	1.92		0.505	1.01	µg/L	B240851	S240363
2404189-17	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B240826	S240358
2404189-17	Ni	Water	D	2.71	J	1.21	3.64	µg/L	B240851	S240363
2404189-17	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-17	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
MW2-0424										
2404189-18	As	Water	TR	0.222	J	0.162	0.727	µg/L	B240851	S240363
2404189-18	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-18	Cr	Water	TR	4.56	J	1.72	6.06	µg/L	B240851	S240363
2404189-18	Cu	Water	TR	2.07		0.505	1.01	µg/L	B240851	S240363
2404189-18	Hg	Water	TR	0.58		0.13	0.41	ng/L	B240826	S240358
2404189-18	Ni	Water	TR	≤ 1.21	U	1.21	3.64	µg/L	B240851	S240363
2404189-18	Pb	Water	TR	0.189		0.061	0.121	µg/L	B240851	S240363
2404189-18	Zn	Water	TR	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363
MW2-0424										
2404189-19	As	Water	D	≤ 0.162	U	0.162	0.727	µg/L	B240851	S240363
2404189-19	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B240851	S240363
2404189-19	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B240851	S240363
2404189-19	Cu	Water	D	≤ 0.505	U	0.505	1.01	µg/L	B240851	S240363
2404189-19	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B240826	S240358
2404189-19	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B240851	S240363
2404189-19	Pb	Water	D	≤ 0.061	U	0.061	0.121	µg/L	B240851	S240363
2404189-19	Zn	Water	D	≤ 7.07	U	7.07	22.2	µg/L	B240851	S240363

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Accuracy & Precision Summary

Batch: B240826
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B240826-MS3	**Matrix Spike (2404168-01)**						
	Hg	0.87	42.11	41.11	ng/L	96% 71-125	
B240826-MSD3	**Matrix Spike Duplicate (2404168-01)**						
	Hg	0.87	42.11	39.18	ng/L	91% 71-125	5% 24
B240826-MS4	**Matrix Spike (2404189-08)**						
	Hg	1.74	40.82	40.65	ng/L	95% 71-125	
B240826-MSD4	**Matrix Spike Duplicate (2404189-08)**						
	Hg	1.74	40.82	40.50	ng/L	95% 71-125	0.4% 24

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Accuracy & Precision Summary

Batch: B240851
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B240851-BS1	**Blank Spike, (2336005)**						
	As		277.8	268.5	µg/L	97% 75-125	
	Cd		27.78	25.25	µg/L	91% 75-125	
	Cr		277.8	273.3	µg/L	98% 75-125	
	Cu		277.8	257.0	µg/L	93% 75-125	
	Ni		277.8	267.6	µg/L	96% 75-125	
	Pb		27.78	30.21	µg/L	109% 75-125	
	Zn		277.8	272.3	µg/L	98% 75-125	
B240851-BS2	**Blank Spike, (2401032)**						
	As		22.22	21.08	µg/L	95% 75-125	
	Cd		2.222	1.970	µg/L	89% 75-125	
	Cr		22.22	21.91	µg/L	99% 75-125	
	Cu		22.22	19.78	µg/L	89% 75-125	
	Ni		22.22	20.34	µg/L	92% 75-125	
	Pb		2.222	2.303	µg/L	104% 75-125	
	Zn		22.22	21.15	µg/L	95% 75-125	
B240851-SRM1	**Reference Material (2408019, NIST 1643f)**						
	As		57.42	59.29	µg/L	103% 75-125	
	Cd		5.890	5.593	µg/L	95% 75-125	
	Cr		18.50	19.53	µg/L	106% 75-125	
	Cu		21.66	20.37	µg/L	94% 75-125	
	Ni		59.80	58.89	µg/L	98% 75-125	
	Pb		18.49	20.51	µg/L	111% 75-125	
	Zn		74.40	77.38	µg/L	104% 75-125	
B240851-SRM2	**Reference Material (2408019, NIST 1643f)**						
	As		57.42	59.18	µg/L	103% 75-125	
	Cd		5.890	5.583	µg/L	95% 75-125	
	Cr		18.50	19.59	µg/L	106% 75-125	
	Cu		21.66	20.31	µg/L	94% 75-125	
	Ni		59.80	59.30	µg/L	99% 75-125	
	Pb		18.49	20.21	µg/L	109% 75-125	
	Zn		74.40	77.21	µg/L	104% 75-125	

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Accuracy & Precision Summary

Batch: B240851
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B240851-DUP1	**Duplicate, (2404189-01)**						
	As	1.338		2.169	µg/L		*47%* 20
	Cd	0.373		0.382	µg/L		2% 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	13.36		14.27	µg/L		7% 20
	Ni	ND		ND	µg/L		N/C 20
	Pb	2.986		3.004	µg/L		0.6% 20
	Zn	151.5		150.2	µg/L		0.9% 20
B240851-MS1	**Matrix Spike, (2404189-01)**						
	As	1.338	280.6	294.8	µg/L	105% 75-125	
	Cd	0.373	28.06	25.94	µg/L	91% 75-125	
	Cr	ND	280.6	293.1	µg/L	104% 75-125	
	Cu	13.36	280.6	273.9	µg/L	93% 75-125	
	Ni	ND	280.6	270.0	µg/L	96% 75-125	
	Pb	2.986	28.06	31.66	µg/L	102% 75-125	
	Zn	151.5	280.6	420.5	µg/L	96% 75-125	
B240851-MSD1	**Matrix Spike Duplicate, (2404189-01)**						
	As	1.338	280.6	305.8	µg/L	109% 75-125	4% 20
	Cd	0.373	28.06	26.85	µg/L	94% 75-125	3% 20
	Cr	ND	280.6	300.4	µg/L	107% 75-125	2% 20
	Cu	13.36	280.6	280.7	µg/L	95% 75-125	2% 20
	Ni	ND	280.6	274.9	µg/L	98% 75-125	2% 20
	Pb	2.986	28.06	32.91	µg/L	107% 75-125	4% 20
	Zn	151.5	280.6	436.8	µg/L	102% 75-125	4% 20
B240851-DUP2	**Duplicate, (2404189-13)**						
	As	1.879		2.034	µg/L		8% 20
	Cd	1.108		1.150	µg/L		4% 20
	Cr	1028		1036	µg/L		0.8% 20
	Cu	29.88		31.10	µg/L		4% 20
	Ni	60.10		62.00	µg/L		3% 20
	Pb	22.36		23.64	µg/L		6% 20
	Zn	562.4		578.8	µg/L		3% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Accuracy & Precision Summary

Batch: B240851
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B240851-MS2	**Matrix Spike, (2404189-13)**						
	As	1.879	280.6	300.9	µg/L	107% 75-125	
	Cd	1.108	28.06	28.22	µg/L	97% 75-125	
	Cr	1028	280.6	1326	µg/L	106% 75-125	
	Cu	29.88	280.6	297.9	µg/L	96% 75-125	
	Ni	60.10	280.6	330.9	µg/L	97% 75-125	
	Pb	22.36	28.06	53.14	µg/L	110% 75-125	
	Zn	562.4	280.6	860.1	µg/L	106% 75-125	
B240851-MSD2	**Matrix Spike Duplicate, (2404189-13)**						
	As	1.879	280.6	290.0	µg/L	103% 75-125	4% 20
	Cd	1.108	28.06	27.79	µg/L	95% 75-125	2% 20
	Cr	1028	280.6	1306	µg/L	99% 75-125	2% 20
	Cu	29.88	280.6	295.9	µg/L	95% 75-125	0.7% 20
	Ni	60.10	280.6	330.0	µg/L	96% 75-125	0.3% 20
	Pb	22.36	28.06	52.14	µg/L	106% 75-125	2% 20
	Zn	562.4	280.6	853.1	µg/L	104% 75-125	0.8% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Method Blanks & Reporting Limits

Batch: B240826
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B240826-BLK1	0.49	ng/L
B240826-BLK2	0.48	ng/L
B240826-BLK3	0.36	ng/L
B240826-BLK4	0.43	ng/L

Average: 0.44
Limit: 0.50

Standard Deviation: 0.06
Limit: 0.13

MDL: 0.13
MRL: 0.40

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Method Blanks & Reporting Limits

Batch: B240851
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B240851-BLK1	0.006	µg/L
B240851-BLK2	-0.001	µg/L
B240851-BLK3	0.005	µg/L
B240851-BLK4	-0.004	µg/L

Average: 0.002
Limit: 0.072

MDL: 0.016
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B240851-BLK1	-0.00007	µg/L
B240851-BLK2	0.00009	µg/L
B240851-BLK3	0.00009	µg/L
B240851-BLK4	-0.0003	µg/L

Average: 0.000
Limit: 0.018

MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B240851-BLK1	-0.003	µg/L
B240851-BLK2	-0.063	µg/L
B240851-BLK3	-0.071	µg/L
B240851-BLK4	-0.067	µg/L

Average: -0.051
Limit: 0.600

MDL: 0.170
MRL: 0.600

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Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B240851-BLK1	0.018	µg/L
B240851-BLK2	0.010	µg/L
B240851-BLK3	0.007	µg/L
B240851-BLK4	0.002	µg/L

Average: 0.009
Limit: 0.100
MDL: 0.050
MRL: 0.100

Analyte: Ni

Sample	Result	Units
B240851-BLK1	-0.001	µg/L
B240851-BLK2	-0.008	µg/L
B240851-BLK3	-0.007	µg/L
B240851-BLK4	-0.007	µg/L

Average: -0.006
Limit: 0.360
MDL: 0.120
MRL: 0.360

Analyte: Pb

Sample	Result	Units
B240851-BLK1	0.0003	µg/L
B240851-BLK2	-0.0002	µg/L
B240851-BLK3	-0.0003	µg/L
B240851-BLK4	0.0002	µg/L

Average: 0.000
Limit: 0.012
MDL: 0.006
MRL: 0.012

Analyte: Zn

Sample	Result	Units
B240851-BLK1	0.089	µg/L
B240851-BLK2	0.075	µg/L
B240851-BLK3	-0.006	µg/L
B240851-BLK4	-0.024	µg/L

Average: 0.034
Limit: 2.200
MDL: 0.700
MRL: 2.20

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Method Blanks & Reporting Limits

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2404189-01 **Report Matrix:** Water **Collected:** 04/09/2024
Sample: MW9-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-02 **Report Matrix:** Water **Collected:** 04/09/2024
Sample: MW9-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-03 **Report Matrix:** Water **Collected:** 04/09/2024
Sample: MW8-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-04 **Report Matrix:** Water **Collected:** 04/09/2024
Sample: MW8-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2404189-05 **Report Matrix:** Water **Collected:** 04/10/2024
Sample: MW6-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-06 **Report Matrix:** Water **Collected:** 04/10/2024
Sample: MW6-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-07 **Report Matrix:** Water **Collected:** 04/10/2024
Sample: MW5-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-08 **Report Matrix:** Water **Collected:** 04/10/2024
Sample: MW5-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2404189-09
Sample: MW1-0424
Report Matrix: Water
Sample Type: Sample
Collected: 04/10/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-10
Sample: MW1-0424
Report Matrix: Water
Sample Type: Sample
Collected: 04/10/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-11
Sample: DUP-0424
Report Matrix: Water
Sample Type: Field Duplicate
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-12
Sample: DUP-0424
Report Matrix: Water
Sample Type: Field Duplicate
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2404189-13
Sample: MW7-0424
Report Matrix: Water
Sample Type: Sample
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-14
Sample: MW7-0424
Report Matrix: Water
Sample Type: Sample
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-15
Sample: FB-0424
Report Matrix: Water
Sample Type: Field Blank
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-16
Sample: MW4-0424
Report Matrix: Water
Sample Type: Sample
Collected: 04/11/2024
Received: 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2404189-17 **Report Matrix:** Water **Collected:** 04/11/2024
Sample: MW4-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-18 **Report Matrix:** Water **Collected:** 04/11/2024
Sample: MW2-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Lab ID: 2404189-19 **Report Matrix:** Water **Collected:** 04/11/2024
Sample: MW2-0424 **Sample Type:** Sample **Received:** 04/12/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0112	None	N/A	N/A	Cooler - 2404189
B	Bottle HDPE ICP-W	125 mL	23-0099	1% HNO3 (BAL)	2351006	<2	Cooler - 2404189

Shipping Containers

Cooler - 2404189

Received: April 12, 2024 14:13
Tracking No: - via Customer Drop-Off
Coolant Type: Ice
Temperature: 0.1 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-3

Custody seals present? No
Custody seals intact? No
COC present? Yes

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Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only
Received by: GHS Date: 4/12/24
Work Order ID: Time: 14:13
Project ID:

Client: CRETE Consulting Inc. PO Number: Leon Environmental PoFH ~~10.2024~~ RS Mailing Address:
Contact: Rusty Jones Phone: 832.330.1359
Client Project ID: PoFH Jensen's Boatyard Email: rusty.jones@creteconsulting.com Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R Jones BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) ~~10 PAL~~ As, Cd, Cr, Cu, Ni, Pb, Zn	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) Dissolved Hg 1631	Other (specify) Dissolved As, Cd, Cr, Cu, Ni, Pb, Zn	Comments: Conductivities (uS/cm)
																Specify Here
1	MW9-0424	4.9.2024	1601	WATER	4	Y+N	NONE	X		X				X	X	29,253 uS/cm
2	MW8-0424	↓	1700		4			X		X				X	X	25,851 uS/cm
3	MW6-0424	4.10.2024	1354		4			X		X				X	X	153.3 uS/cm
4	MW5-0424	↓	1445		4			X		X				X	X	254.6 uS/cm
5	MW1-0424	↓	1816		4			X		X				X	X	722 uS/cm
6	DUP-0424	4.11.2024	0001		4	↓		X		X				X	X	N/A
7	MW7-0424		1623		4	Y+N		X		X				X	X	24149 uS/cm
8	FB-0424		1535		2	Y								X	X	N/A
9	MW4-0424		1717		4	Y+N		X		X				X	X	648 uS/cm
10	MW2-0424	↓	1801	↓	4	↓		X		X				X	X	4172 uS/cm
	Trip Blank															

Relinquished By: R Jones	Date: 4/12/2024	Time: 1413	Relinquished By:	Date:	Time:
Received By:	Date: 4/12/24	Time: 1413	Total Number of Packages:		

Page 1 of 1 List Hazardous Contaminants:

samples@brooksapplied.com | brooksapplied.com

BROOKS APPLIED LABS
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July 22, 2024

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH uplands R.I.

Dear Rusty Jones,

On June 28, 2024, Brooks Applied Labs (BAL) received ten (10) aqueous samples in a sealed cooler at an acceptable temperature of -0.4°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], nickel (Ni), and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Ni, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Ni, Pb, and Zn) Quantitation by ICP-QQQ-MS
All aqueous samples were digested on a hotblock via modified EPA Method 1638 with nitric and hydrochloric acids. Trace metals were analyzed using inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website,www.brooksapplied.com.

Some of the total results were less than the corresponding dissolved result. In all of these cases, the total and dissolved samples meet RPD, or the results met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL the RPD was not calculated (**N/C**).

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample, the recoveries are not considered valid indicators of data quality. However, these results are reported as a demonstration of precision. When the spiking levels were ≤ 25% of the native sample concentrations, the recoveries were not reported **(NR)**. No sample results were qualified on the basis of the MS or MSD recoveries.

The duplicate (DUP) B241575-DUP2 performed on sample 2406405-01 had a relative percent difference (RPD) for Cd above the acceptance limit (24%). The DUP result and the native result met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

The method blank (BLK) B241575-BLK1 had a Pb concentration above the acceptance limit. Samples 2406405-06, 2406405-08, 2406405-09, 2406405-10, 2406405-12, 2406405-13, 2406405-14, 2406405-16, 2406405-18, and 2406405-20 had Pb results that were less than the MRL and no further action was required. Sample 2406405-13 had a Pb result that was greater than 10x the concentration of the BLK and no further action was required. Samples 2406405-01, 2406405-02, 2406405-03, 2406405-04, 2406405-05, 2406405-11, 2406405-15, 2406405-17, and 2406405-19 had Pb concentrations above the MRL but less than 10x the concentration of this BLK and could not be reported from the original analysis. These samples were redigested in batch B241602.

Samples 2406405-01, 2406405-02, 2406405-03, 2406405-04, 2406405-05, 2406405-11, 2406405-15, 2406405-17, and 2406405-19 were redigested for Pb in batch B241602 due to a failing method blank in the original digestion. This batch was analyzed in sequence S240644. The Pb results for samples 2406405-01, 2406405-02, 2406405-03, 2406405-04 did not confirm the original results, and were not reported from this reanalysis. These samples were redigested for the 3rd time in batch B241642. The other samples in batch B241602 had confirming results with the original analysis and were reported from the reanalysis in sequence S240644.

Total and Dissolved Hg Analysis by EPA Method 1631E

Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Some of the total Hg results were less than the corresponding dissolved Hg result. In all of these cases, the total and dissolved samples meet RPD, or the results met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

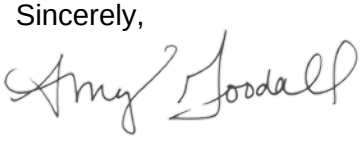
Sample results reported for mercury were method blank corrected, while all other results were not method blank corrected, as described in the calculations section of the relevant BAL SOP(s). All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
DUP01-0624	2406405-01	Water	Field Duplicate	06/24/2024	06/28/2024
DUP01-0624	2406405-02	Water	Field Duplicate	06/24/2024	06/28/2024
MW9-0624	2406405-03	Water	Sample	06/24/2024	06/28/2024
MW9-0624	2406405-04	Water	Sample	06/24/2024	06/28/2024
MW8-0624	2406405-05	Water	Sample	06/24/2024	06/28/2024
MW8-0624	2406405-06	Water	Sample	06/24/2024	06/28/2024
SPZI-0624	2406405-07	Water	Sample	06/25/2024	06/28/2024
SPZI-0624	2406405-08	Water	Sample	06/25/2024	06/28/2024
MW6-0624	2406405-09	Water	Sample	06/25/2024	06/28/2024
MW6-0624	2406405-10	Water	Sample	06/25/2024	06/28/2024
MW5-0624	2406405-11	Water	Sample	06/25/2024	06/28/2024
MW5-0624	2406405-12	Water	Sample	06/25/2024	06/28/2024
MW1-0624	2406405-13	Water	Sample	06/25/2024	06/28/2024
MW1-0624	2406405-14	Water	Sample	06/25/2024	06/28/2024
MW7-0624	2406405-15	Water	Sample	06/26/2024	06/28/2024
MW7-0624	2406405-16	Water	Sample	06/26/2024	06/28/2024
MW4-0624	2406405-17	Water	Sample	06/26/2024	06/28/2024
MW4-0624	2406405-18	Water	Sample	06/26/2024	06/28/2024
MW2-0624	2406405-19	Water	Sample	06/26/2024	06/28/2024
MW2-0624	2406405-20	Water	Sample	06/26/2024	06/28/2024

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Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Cd	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Cr	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Cu	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Hg	Water	EPA 1631 E	ISO,TNI	07/11/24	07/12/24	B241636	S240671
Ni	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Pb	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634
Pb	Water	EPA 1638 Mod	ISO,TNI	07/03/24	07/05/24	B241602	S240644
Pb	Water	EPA 1638 Mod	ISO,TNI	07/09/24	07/10/24	B241642	S240659
Zn	Water	EPA 1638 Mod	ISO,TNI	07/02/24	07/02/24	B241575	S240634

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP01-0624										
2406405-01	As	Water	TR	2.13		0.556	1.82	µg/L	B241575	S240634
2406405-01	Cd	Water	TR	0.267	J	0.152	0.455	µg/L	B241575	S240634
2406405-01	Cr	Water	TR	≤ 4.29	U	4.29	15.2	µg/L	B241575	S240634
2406405-01	Cu	Water	TR	16.1		2.27	4.55	µg/L	B241575	S240634
2406405-01	Hg	Water	TR	52.2		0.13	0.41	ng/L	B241636	S240671
2406405-01	Ni	Water	TR	≤ 3.03	U	3.03	9.09	µg/L	B241575	S240634
2406405-01	Pb	Water	TR	1.77		0.227	0.455	µg/L	B241642	S240659
2406405-01	Zn	Water	TR	130		30.3	60.6	µg/L	B241575	S240634
DUP01-0624										
2406405-02	As	Water	D	1.84		0.556	1.82	µg/L	B241575	S240634
2406405-02	Cd	Water	D	0.312	J	0.152	0.455	µg/L	B241575	S240634
2406405-02	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B241575	S240634
2406405-02	Cu	Water	D	15.9		2.27	4.55	µg/L	B241575	S240634
2406405-02	Hg	Water	D	42.3		0.13	0.41	ng/L	B241636	S240671
2406405-02	Ni	Water	D	≤ 3.03	U	3.03	9.09	µg/L	B241575	S240634
2406405-02	Pb	Water	D	0.992		0.227	0.455	µg/L	B241642	S240659
2406405-02	Zn	Water	D	131		30.3	60.6	µg/L	B241575	S240634
MW9-0624										
2406405-03	As	Water	TR	1.89		0.556	1.82	µg/L	B241575	S240634
2406405-03	Cd	Water	TR	0.334	J	0.152	0.455	µg/L	B241575	S240634
2406405-03	Cr	Water	TR	≤ 4.29	U	4.29	15.2	µg/L	B241575	S240634
2406405-03	Cu	Water	TR	19.3		2.27	4.55	µg/L	B241575	S240634
2406405-03	Hg	Water	TR	51.3		0.13	0.41	ng/L	B241636	S240671
2406405-03	Ni	Water	TR	≤ 3.03	U	3.03	9.09	µg/L	B241575	S240634
2406405-03	Pb	Water	TR	1.57		0.227	0.455	µg/L	B241642	S240659
2406405-03	Zn	Water	TR	133		30.3	60.6	µg/L	B241575	S240634
MW9-0624										
2406405-04	As	Water	D	2.08		0.556	1.82	µg/L	B241575	S240634
2406405-04	Cd	Water	D	0.317	J	0.152	0.455	µg/L	B241575	S240634
2406405-04	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B241575	S240634
2406405-04	Cu	Water	D	15.9		2.27	4.55	µg/L	B241575	S240634
2406405-04	Hg	Water	D	41.5		0.13	0.41	ng/L	B241636	S240671
2406405-04	Ni	Water	D	≤ 3.03	U	3.03	9.09	µg/L	B241575	S240634
2406405-04	Pb	Water	D	0.985		0.227	0.455	µg/L	B241642	S240659
2406405-04	Zn	Water	D	135		30.3	60.6	µg/L	B241575	S240634

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW8-0624										
2406405-05	As	Water	TR	1.73	J	0.556	1.82	µg/L	B241575	S240634
2406405-05	Cd	Water	TR	1.46		0.152	0.455	µg/L	B241575	S240634
2406405-05	Cr	Water	TR	917		4.29	15.2	µg/L	B241575	S240634
2406405-05	Cu	Water	TR	78.0		2.27	4.55	µg/L	B241575	S240634
2406405-05	Hg	Water	TR	14.0		0.14	0.42	ng/L	B241636	S240671
2406405-05	Ni	Water	TR	386		3.03	9.09	µg/L	B241575	S240634
2406405-05	Pb	Water	TR	5.47		0.227	0.455	µg/L	B241602	S240644
2406405-05	Zn	Water	TR	232		30.3	60.6	µg/L	B241575	S240634
MW8-0624										
2406405-06	As	Water	D	0.892	J	0.556	1.82	µg/L	B241575	S240634
2406405-06	Cd	Water	D	1.46		0.152	0.455	µg/L	B241575	S240634
2406405-06	Cr	Water	D	28.8		4.29	15.2	µg/L	B241575	S240634
2406405-06	Cu	Water	D	45.6		2.27	4.55	µg/L	B241575	S240634
2406405-06	Hg	Water	D	6.66		0.13	0.41	ng/L	B241636	S240671
2406405-06	Ni	Water	D	381		3.03	9.09	µg/L	B241575	S240634
2406405-06	Pb	Water	D	≤ 0.227	U	0.227	0.455	µg/L	B241575	S240634
2406405-06	Zn	Water	D	227		30.3	60.6	µg/L	B241575	S240634
SPZI-0624										
2406405-07	As	Water	TR	5.03		0.556	1.82	µg/L	B241575	S240634
2406405-07	Cd	Water	TR	≤ 0.152	U	0.152	0.455	µg/L	B241575	S240634
2406405-07	Cr	Water	TR	5.98	J	4.29	15.2	µg/L	B241575	S240634
2406405-07	Cu	Water	TR	15.2		2.27	4.55	µg/L	B241575	S240634
2406405-07	Hg	Water	TR	43.2		0.13	0.41	ng/L	B241636	S240671
2406405-07	Ni	Water	TR	6.97	J	3.03	9.09	µg/L	B241575	S240634
2406405-07	Pb	Water	TR	13.4		0.227	0.455	µg/L	B241575	S240634
2406405-07	Zn	Water	TR	≤ 30.3	U	30.3	60.6	µg/L	B241575	S240634
SPZI-0624										
2406405-08	As	Water	D	3.19		0.556	1.82	µg/L	B241575	S240634
2406405-08	Cd	Water	D	≤ 0.152	U	0.152	0.455	µg/L	B241575	S240634
2406405-08	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B241575	S240634
2406405-08	Cu	Water	D	≤ 2.27	U	2.27	4.55	µg/L	B241575	S240634
2406405-08	Hg	Water	D	0.43		0.13	0.41	ng/L	B241636	S240671
2406405-08	Ni	Water	D	6.45	J	3.03	9.09	µg/L	B241575	S240634
2406405-08	Pb	Water	D	0.235	J	0.227	0.455	µg/L	B241575	S240634
2406405-08	Zn	Water	D	≤ 30.3	U	30.3	60.6	µg/L	B241575	S240634

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW6-0624										
2406405-09	As	Water	TR	≤ 0.222	U	0.222	0.727	µg/L	B241575	S240634
2406405-09	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-09	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-09	Cu	Water	TR	1.25	J	0.909	1.82	µg/L	B241575	S240634
2406405-09	Hg	Water	TR	0.53		0.13	0.41	ng/L	B241636	S240671
2406405-09	Ni	Water	TR	≤ 1.21	U	1.21	3.64	µg/L	B241575	S240634
2406405-09	Pb	Water	TR	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-09	Zn	Water	TR	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW6-0624										
2406405-10	As	Water	D	0.248	J	0.222	0.727	µg/L	B241575	S240634
2406405-10	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-10	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-10	Cu	Water	D	1.20	J	0.909	1.82	µg/L	B241575	S240634
2406405-10	Hg	Water	D	0.58		0.13	0.41	ng/L	B241636	S240671
2406405-10	Ni	Water	D	≤ 1.21	U	1.21	3.64	µg/L	B241575	S240634
2406405-10	Pb	Water	D	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-10	Zn	Water	D	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW5-0624										
2406405-11	As	Water	TR	2.02		0.222	0.727	µg/L	B241575	S240634
2406405-11	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-11	Cr	Water	TR	4.93	J	1.72	6.06	µg/L	B241575	S240634
2406405-11	Cu	Water	TR	18.4		0.909	1.82	µg/L	B241575	S240634
2406405-11	Hg	Water	TR	12.1		0.14	0.42	ng/L	B241636	S240671
2406405-11	Ni	Water	TR	7.32		1.21	3.64	µg/L	B241575	S240634
2406405-11	Pb	Water	TR	3.09		0.091	0.182	µg/L	B241602	S240644
2406405-11	Zn	Water	TR	16.1	J	12.1	24.2	µg/L	B241575	S240634
MW5-0624										
2406405-12	As	Water	D	0.560	J	0.222	0.727	µg/L	B241575	S240634
2406405-12	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-12	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-12	Cu	Water	D	8.60		0.909	1.82	µg/L	B241575	S240634
2406405-12	Hg	Water	D	1.54		0.14	0.42	ng/L	B241636	S240671
2406405-12	Ni	Water	D	3.68		1.21	3.64	µg/L	B241575	S240634
2406405-12	Pb	Water	D	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-12	Zn	Water	D	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW1-0624										
2406405-13	As	Water	TR	3.99		0.222	0.727	µg/L	B241575	S240634
2406405-13	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-13	Cr	Water	TR	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-13	Cu	Water	TR	1.87		0.909	1.82	µg/L	B241575	S240634
2406405-13	Hg	Water	TR	1.37		0.14	0.42	ng/L	B241636	S240671
2406405-13	Ni	Water	TR	6.77		1.21	3.64	µg/L	B241575	S240634
2406405-13	Pb	Water	TR	0.167	J	0.091	0.182	µg/L	B241575	S240634
2406405-13	Zn	Water	TR	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW1-0624										
2406405-14	As	Water	D	2.31		0.222	0.727	µg/L	B241575	S240634
2406405-14	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-14	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-14	Cu	Water	D	1.05	J	0.909	1.82	µg/L	B241575	S240634
2406405-14	Hg	Water	D	0.93		0.13	0.41	ng/L	B241636	S240671
2406405-14	Ni	Water	D	6.57		1.21	3.64	µg/L	B241575	S240634
2406405-14	Pb	Water	D	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-14	Zn	Water	D	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW7-0624										
2406405-15	As	Water	TR	1.02	J	0.556	1.82	µg/L	B241575	S240634
2406405-15	Cd	Water	TR	1.01		0.152	0.455	µg/L	B241575	S240634
2406405-15	Cr	Water	TR	150		4.29	15.2	µg/L	B241575	S240634
2406405-15	Cu	Water	TR	13.1		2.27	4.55	µg/L	B241575	S240634
2406405-15	Hg	Water	TR	23.5		0.13	0.41	ng/L	B241636	S240671
2406405-15	Ni	Water	TR	60.3		3.03	9.09	µg/L	B241575	S240634
2406405-15	Pb	Water	TR	5.72		0.227	0.455	µg/L	B241602	S240644
2406405-15	Zn	Water	TR	464		30.3	60.6	µg/L	B241575	S240634
MW7-0624										
2406405-16	As	Water	D	0.710	J	0.556	1.82	µg/L	B241575	S240634
2406405-16	Cd	Water	D	1.12		0.152	0.455	µg/L	B241575	S240634
2406405-16	Cr	Water	D	10.8	J	4.29	15.2	µg/L	B241575	S240634
2406405-16	Cu	Water	D	9.54		2.27	4.55	µg/L	B241575	S240634
2406405-16	Hg	Water	D	10.3		0.13	0.41	ng/L	B241636	S240671
2406405-16	Ni	Water	D	59.1		3.03	9.09	µg/L	B241575	S240634
2406405-16	Pb	Water	D	0.340	J	0.227	0.455	µg/L	B241575	S240634
2406405-16	Zn	Water	D	466		30.3	60.6	µg/L	B241575	S240634

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MW4-0624										
2406405-17	As	Water	TR	0.975		0.222	0.727	µg/L	B241575	S240634
2406405-17	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-17	Cr	Water	TR	2.85	J	1.72	6.06	µg/L	B241575	S240634
2406405-17	Cu	Water	TR	4.14		0.909	1.82	µg/L	B241575	S240634
2406405-17	Hg	Water	TR	1.10		0.13	0.41	ng/L	B241636	S240671
2406405-17	Ni	Water	TR	4.07		1.21	3.64	µg/L	B241575	S240634
2406405-17	Pb	Water	TR	0.756		0.091	0.182	µg/L	B241602	S240644
2406405-17	Zn	Water	TR	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW4-0624										
2406405-18	As	Water	D	0.920		0.222	0.727	µg/L	B241575	S240634
2406405-18	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-18	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-18	Cu	Water	D	2.14		0.909	1.82	µg/L	B241575	S240634
2406405-18	Hg	Water	D	0.66		0.13	0.41	ng/L	B241636	S240671
2406405-18	Ni	Water	D	2.64	J	1.21	3.64	µg/L	B241575	S240634
2406405-18	Pb	Water	D	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-18	Zn	Water	D	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW2-0624										
2406405-19	As	Water	TR	0.269	J	0.222	0.727	µg/L	B241575	S240634
2406405-19	Cd	Water	TR	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-19	Cr	Water	TR	4.27	J	1.72	6.06	µg/L	B241575	S240634
2406405-19	Cu	Water	TR	5.87		0.909	1.82	µg/L	B241575	S240634
2406405-19	Hg	Water	TR	2.16		0.14	0.42	ng/L	B241636	S240671
2406405-19	Ni	Water	TR	2.31	J	1.21	3.64	µg/L	B241575	S240634
2406405-19	Pb	Water	TR	0.200		0.091	0.182	µg/L	B241602	S240644
2406405-19	Zn	Water	TR	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634
MW2-0624										
2406405-20	As	Water	D	0.299	J	0.222	0.727	µg/L	B241575	S240634
2406405-20	Cd	Water	D	≤ 0.061	U	0.061	0.182	µg/L	B241575	S240634
2406405-20	Cr	Water	D	≤ 1.72	U	1.72	6.06	µg/L	B241575	S240634
2406405-20	Cu	Water	D	2.56		0.909	1.82	µg/L	B241575	S240634
2406405-20	Hg	Water	D	0.92		0.13	0.41	ng/L	B241636	S240671
2406405-20	Ni	Water	D	2.34	J	1.21	3.64	µg/L	B241575	S240634
2406405-20	Pb	Water	D	≤ 0.091	U	0.091	0.182	µg/L	B241575	S240634
2406405-20	Zn	Water	D	≤ 12.1	U	12.1	24.2	µg/L	B241575	S240634

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Accuracy & Precision Summary

Batch: B241575
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241575-BS1	**Blank Spike, (2401033)**						
	As		55.56	50.90	µg/L	92% 75-125	
	Cd		5.556	5.124	µg/L	92% 75-125	
	Cr		55.56	54.29	µg/L	98% 75-125	
	Cu		55.56	55.48	µg/L	100% 75-125	
	Ni		55.56	52.31	µg/L	94% 75-125	
	Pb		5.556	5.062	µg/L	91% 75-125	
	Zn		55.56	53.54	µg/L	96% 75-125	
B241575-BS2	**Blank Spike, (2401033)**						
	As		55.56	49.50	µg/L	89% 75-125	
	Cd		5.556	4.955	µg/L	89% 75-125	
	Cr		55.56	52.83	µg/L	95% 75-125	
	Cu		55.56	54.09	µg/L	97% 75-125	
	Ni		55.56	49.59	µg/L	89% 75-125	
	Pb		5.556	4.911	µg/L	88% 75-125	
	Zn		55.56	50.53	µg/L	91% 75-125	
B241575-SRM1	**Reference Material (2415027, NIST 1643f)**						
	As		57.42	55.49	µg/L	97% 75-125	
	Cd		5.890	5.521	µg/L	94% 75-125	
	Cr		18.50	17.54	µg/L	95% 75-125	
	Cu		21.66	20.28	µg/L	94% 75-125	
	Ni		59.80	55.75	µg/L	93% 75-125	
	Pb		18.49	17.37	µg/L	94% 75-125	
	Zn		74.40	72.64	µg/L	98% 75-125	
B241575-SRM2	**Reference Material (2415027, NIST 1643f)**						
	As		57.42	56.77	µg/L	99% 75-125	
	Cd		5.890	5.523	µg/L	94% 75-125	
	Cr		18.50	18.56	µg/L	100% 75-125	
	Cu		21.66	21.31	µg/L	98% 75-125	
	Ni		59.80	56.26	µg/L	94% 75-125	
	Pb		18.49	17.26	µg/L	93% 75-125	
	Zn		74.40	73.72	µg/L	99% 75-125	

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Accuracy & Precision Summary

Batch: B241575
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241575-DUP2	**Duplicate, (2406405-01)**						
	As	2.133		2.068	µg/L		3% 20
	Cd	0.267		0.341	µg/L		*24%* 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	16.11		16.64	µg/L		3% 20
	Ni	ND		ND	µg/L		N/C 20
	Zn	129.6		131.4	µg/L		1% 20
B241575-MS2	**Matrix Spike, (2406405-01)**						
	As	2.133	56.12	56.67	µg/L	97% 75-125	
	Cd	0.267	5.612	5.308	µg/L	90% 75-125	
	Cr	ND	56.12	54.68	µg/L	97% 75-125	
	Cu	16.11	56.12	67.22	µg/L	91% 75-125	
	Ni	ND	56.12	52.98	µg/L	94% 75-125	
	Zn	129.6	56.12	179.8	µg/L	89% 75-125	
B241575-MSD2	**Matrix Spike Duplicate, (2406405-01)**						
	As	2.133	56.12	57.04	µg/L	98% 75-125	0.7% 20
	Cd	0.267	5.612	5.413	µg/L	92% 75-125	2% 20
	Cr	ND	56.12	51.81	µg/L	92% 75-125	5% 20
	Cu	16.11	56.12	65.21	µg/L	88% 75-125	3% 20
	Ni	ND	56.12	53.70	µg/L	96% 75-125	1% 20
	Zn	129.6	56.12	183.8	µg/L	97% 75-125	2% 20
B241575-DUP3	**Duplicate, (2406405-19)**						
	As	0.269		0.302	µg/L		11% 20
	Cd	ND		ND	µg/L		N/C 20
	Cr	4.273		4.423	µg/L		3% 20
	Cu	5.869		5.941	µg/L		1% 20
	Ni	2.309		2.581	µg/L		11% 20
	Zn	ND		ND	µg/L		N/C 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Accuracy & Precision Summary

Batch: B241575
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241575-MS3	**Matrix Spike, (2406405-19)**						
	As	0.269	56.12	58.33	µg/L	103% 75-125	
	Cd	ND	5.612	5.515	µg/L	98% 75-125	
	Cr	4.273	56.12	61.59	µg/L	102% 75-125	
	Cu	5.869	56.12	60.52	µg/L	97% 75-125	
	Ni	2.309	56.12	59.15	µg/L	101% 75-125	
	Zn	ND	56.12	63.32	µg/L	113% 75-125	
B241575-MSD3	**Matrix Spike Duplicate, (2406405-19)**						
	As	0.269	56.12	52.12	µg/L	92% 75-125	11% 20
	Cd	ND	5.612	4.965	µg/L	88% 75-125	11% 20
	Cr	4.273	56.12	59.31	µg/L	98% 75-125	4% 20
	Cu	5.869	56.12	60.60	µg/L	98% 75-125	0.1% 20
	Ni	2.309	56.12	57.66	µg/L	99% 75-125	3% 20
	Zn	ND	56.12	62.17	µg/L	111% 75-125	2% 20

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Accuracy & Precision Summary

Batch: B241602
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241602-BS1	**Blank Spike, (2401033)**						
	Pb		5.556	5.194	µg/L	93% 75-125	
B241602-SRM1	**Reference Material (2415027, NIST 1643f)**						
	Pb		18.49	16.38	µg/L	89% 75-125	
B241602-DUP1	**Duplicate, (2406405-19)**						
	Pb	0.200		0.201	µg/L		0.6% 20
B241602-MS1	**Matrix Spike, (2406405-19)**						
	Pb	0.200	5.612	5.621	µg/L	97% 75-125	
B241602-MSD1	**Matrix Spike Duplicate, (2406405-19)**						
	Pb	0.200	5.612	5.656	µg/L	97% 75-125	0.6% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Accuracy & Precision Summary

Batch: B241636
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241636-MS4	**Matrix Spike (2406405-18)**						
	Hg	0.66	81.63	77.77	ng/L	94% 71-125	
B241636-MSD4	**Matrix Spike Duplicate (2406405-18)**						
	Hg	0.66	81.63	75.34	ng/L	91% 71-125	3% 24
B241636-MS1	**Matrix Spike (2407082-08)**						
	Hg	1.36	20.41	18.68	ng/L	85% 71-125	
B241636-MSD1	**Matrix Spike Duplicate (2407082-08)**						
	Hg	1.36	20.41	20.52	ng/L	94% 71-125	9% 24

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Accuracy & Precision Summary

Batch: B241642
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241642-BS1	**Blank Spike, (2428022)**						
	Pb		5.556	5.846	µg/L	105% 75-125	
B241642-SRM2	**Reference Material (2415027, NIST 1643f)**						
	Pb		18.49	17.87	µg/L	97% 75-125	
B241642-DUP1	**Duplicate, (2407097-05)**						
	Pb	ND		ND	µg/L		N/C 20
B241642-MS1	**Matrix Spike, (2407097-05)**						
	Pb	ND	5.612	ND	µg/L	NR 75-125	N/C
B241642-MSD1	**Matrix Spike Duplicate, (2407097-05)**						
	Pb	ND	5.612	ND	µg/L	NR 75-125	N/C 20

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Method Blanks & Reporting Limits

Batch: B241575
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B241575-BLK1	0.001	µg/L
B241575-BLK2	0.004	µg/L
B241575-BLK3	0.003	µg/L
B241575-BLK4	0.018	µg/L

Average: 0.007
Limit: 0.072
MDL: 0.022
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B241575-BLK1	-0.0004	µg/L
B241575-BLK2	-0.0004	µg/L
B241575-BLK3	-0.0009	µg/L
B241575-BLK4	-0.00005	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B241575-BLK1	0.002	µg/L
B241575-BLK2	0.005	µg/L
B241575-BLK3	0.003	µg/L
B241575-BLK4	0.032	µg/L

Average: 0.011
Limit: 0.600
MDL: 0.170
MRL: 0.600

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Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B241575-BLK1	0.099	µg/L
B241575-BLK2	0.010	µg/L
B241575-BLK3	0.042	µg/L
B241575-BLK4	0.033	µg/L
Average:	0.046	
Limit:	0.180	

MDL: 0.090
MRL: 0.180

Analyte: Ni

Sample	Result	Units
B241575-BLK1	0.002	µg/L
B241575-BLK2	-0.006	µg/L
B241575-BLK3	-0.0002	µg/L
B241575-BLK4	0.011	µg/L
Average:	0.002	
Limit:	0.360	

MDL: 0.120
MRL: 0.360

Analyte: Pb

Sample	Result	Units
B241575-BLK1	0.041	µg/L
B241575-BLK2	0.0003	µg/L
B241575-BLK3	0.0009	µg/L
B241575-BLK4	0.002	µg/L
Average:	0.011	
Limit:	0.018	

MDL: 0.009
MRL: 0.018

Analyte: Zn

Sample	Result	Units
B241575-BLK1	0.133	µg/L
B241575-BLK2	0.064	µg/L
B241575-BLK3	1.39	µg/L
B241575-BLK4	0.299	µg/L
Average:	0.473	
Limit:	2.400	

MDL: 1.20
MRL: 2.40

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Method Blanks & Reporting Limits

Batch: B241602
Matrix: Water
Method: EPA 1638 Mod
Analyte: Pb

Sample	Result	Units
B241602-BLK1	-0.004	µg/L
B241602-BLK2	-0.004	µg/L
B241602-BLK3	-0.004	µg/L
B241602-BLK4	-0.006	µg/L

Average: -0.005
Limit: 0.018

MDL: 0.009
MRL: 0.018

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Method Blanks & Reporting Limits

Batch: B241636
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B241636-BLK1	0.19	ng/L
B241636-BLK2	0.17	ng/L
B241636-BLK3	0.15	ng/L
B241636-BLK4	0.15	ng/L

Average: 0.17
Limit: 0.50

Standard Deviation: 0.02
Limit: 0.13

MDL: 0.13
MRL: 0.40

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Method Blanks & Reporting Limits

Batch: B241642
Matrix: Water
Method: EPA 1638 Mod
Analyte: Pb

Sample	Result	Units
B241642-BLK1	0.002	µg/L
B241642-BLK2	0.00006	µg/L
B241642-BLK3	-0.0002	µg/L
B241642-BLK4	-0.0003	µg/L

Average: 0.000
Limit: 0.018

MDL: 0.009
MRL: 0.018

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Sample Containers

Lab ID: 2406405-01 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: DUP01-0624 **Sample Type:** Field Duplicate **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-02 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: DUP01-0624 **Sample Type:** Field Duplicate **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-03 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: MW9-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-04 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: MW9-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

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Sample Containers

Lab ID: 2406405-05 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: MW8-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-06 **Report Matrix:** Water **Collected:** 06/24/2024
Sample: MW8-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-07 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: SPZI-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-08 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: SPZI-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

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Sample Containers

Lab ID: 2406405-09 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW6-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-10 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW6-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-11 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW5-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-12 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW5-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

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Sample Containers

Lab ID: 2406405-13 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW1-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-14 **Report Matrix:** Water **Collected:** 06/25/2024
Sample: MW1-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-15 **Report Matrix:** Water **Collected:** 06/26/2024
Sample: MW7-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-16 **Report Matrix:** Water **Collected:** 06/26/2024
Sample: MW7-0624 **Sample Type:** Sample **Received:** 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Sample Containers

Lab ID: 2406405-17
Sample: MW4-0624
Report Matrix: Water
Sample Type: Sample
Collected: 06/26/2024
Received: 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-18
Sample: MW4-0624
Report Matrix: Water
Sample Type: Sample
Collected: 06/26/2024
Received: 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-19
Sample: MW2-0624
Report Matrix: Water
Sample Type: Sample
Collected: 06/26/2024
Received: 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

Lab ID: 2406405-20
Sample: MW2-0624
Report Matrix: Water
Sample Type: Sample
Collected: 06/26/2024
Received: 06/28/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	N/A	Cooler - 2406405
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2406405

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Uplands R.I.

Shipping Containers

Cooler - 2406405

Received: June 28, 2024 11:46
Tracking No: - via Customer Drop-Off
Coolant Type: Ice
Temperature: -0.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-3

Custody seals present? No
Custody seals intact? No
COC present? Yes

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BAL Report 2406405

Chain-of-Custody Form

BROOKS APPLIED LABS

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only
Received by: AV Date: 6.28.24
Work Order ID: Time: 11:46
Project ID:

Client: Crete Consulting / Leon Env. PO Number: PoFH Mailing Address:
Contact: Rusty Jones / P. Leon Phone:
Client Project ID: PoFH Uplands R.T. Email: rusty.jones@creteconsulting.com Email Receipt Confirmation? (Yes/No)
Samples Collected By: Rusty Jones R. Jones BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl / HNO_3 / Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) 1638 Mod. TOTAL	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 Mod. Total & Dissolved Metals	Other (specify) 1631 Dissolved Hg	Comments
1	DUP01-0624	6.24.2024	0001	WATER	4 3PP	Y+N	NONE	X		X				X	X	Filter field bottles provided. *See project metals list w/ A. Goodall.* Conductivities below Specify Here
2	MW9-0624	↓	1635	↓	4 3P	↓	↓	X		X				X	X	>30000 uS/cm
3	MW8-0624	↓	1743	↓	4 3P	↓	↓	X		X				X	X	36063 uS/cm
4	SPE1-0624	6.25.2024	1121	↓	4	↓	↓	X		X				X	X	31539
5	MW6-0624	↓	1556	↓	4	↓	↓	X		X				X	X	43097
6	MW5-0624	↓	1644	↓	4	↓	↓	X		X				X	X	195.0
7	MW1-0624	↓	1727	↓	4	↓	↓	X		X				X	X	334.3
8	MW7-0624	6.26.2024	1736	↓	4	↓	↓	X		X				X	X	1034
9	MW4-0624	↓	1817	↓	4	↓	↓	X		X				X	X	31256
10	MW2-0624	↓	1905	↓	4	↓	↓	X		X				X	X	628
	Trip Blank															6011

Relinquished By: R. Jones	Date: 6/28/2024	Time: 1141	Relinquished By:	Date:	Time:
Received By:	Date:	Time:	Total Number of Packages:		

Page 1 of 1 List Hazardous Contaminants:

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BROOKS APPLIED LABS
13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

August 21, 2024

Crete Consulting
ATTN: Rusty Jones
108 S. Washington Street, Suite 300
Seattle, WA 98104
832-330-1359
rusty.jones@creteconsulting.com

RE: Project CRC-SE2201 Client Project: PoFH Jensen's Boatyard

Dear Rusty Jones,

On July 30, 2024, Brooks Applied Labs (BAL) received two (2) aqueous samples in a sealed cooler at an acceptable temperature of 8.4°C. The samples were logged-in for total recoverable and dissolved (*arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], mercury [Hg], nickel (Ni), and zinc [Zn]*) analyses, according to the issued quotation.

Samples for dissolved analyses were 0.45µm filtered prior to receipt. All sample fractions for (*As, Cd, Cr, Cu, Ni, Pb, and Zn*) were preserved to a pH <2 upon receipt at BAL.

Total Recoverable and Dissolved (As, Cd, Cr, Cu, Ni, Pb, and Zn) Quantitation by ICP-QQQ-MS
All aqueous samples were digested on a hotblock via modified EPA Method 1638 with nitric and hydrochloric acids. Trace metals were analyzed using inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website,www.brooksapplied.com.

The matrix spike duplicate (MSD) B241892-MSD1 performed on sample 2407500-01 did not get spiked with the trace metals standard during the digestion and was rejected from the batch. This QC sample was not included in this report.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL the RPD was not calculated (**N/C**).

The duplicate (DUP) B241892-DUP1 performed on sample 2407500-01 had a relative percent difference (RPD) for As above the acceptance limit (21%). The DUP result and the native result met secondary criteria (within 5x the MRL and within the MRL of each other) and no further action was required.

Total and Dissolved Hg Analysis by EPA Method 1631E
Each aqueous fraction submitted for Hg analysis was prepared and analyzed in accordance with EPA Method 1631. Samples were oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride ($SnCl_2$) reduction, dual gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a Brooks Rand Instrument's MERX-T CVAFS Mercury Automated-Analyzer.

Sample results reported for mercury were method blank corrected, while all other results were not method blank corrected, as described in the calculations section of the relevant BAL SOP(s). All results were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com

Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received . This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	**MS**	matrix spike
BAL	Brooks Applied Labs	**MSD**	matrix spike duplicate
BLK	method blank	**ND**	non-detect
BS	blank spike	**NR**	non-reportable
CAL	calibration standard	**N/C**	not calculated
CCB	continuing calibration blank	**PS**	post preparation spike
CCV	continuing calibration verification	**REC**	percent recovery
COC	chain of custody record	**RPD**	relative percent difference
D	dissolved fraction	**SCV**	secondary calibration verification
DUP	duplicate	**SOP**	standard operating procedure
IBL	instrument blank	**SRM**	reference material
ICV	initial calibration verification	**T**	total fraction
MDL	method detection limit	**TR**	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MP-1	2407500-01	Water	Sample	07/30/2024	07/30/2024
MP-1	2407500-02	Water	Sample	07/30/2024	07/30/2024
SPZ-1	2407500-03	Water	Sample	07/30/2024	07/30/2024
SPZ-1	2407500-04	Water	Sample	07/30/2024	07/30/2024

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Cd	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Cr	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Cu	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Hg	Water	EPA 1631 E	ISO,TNI	08/09/24	08/12/24	B241901	S240777
Ni	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Pb	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741
Zn	Water	EPA 1638 Mod	ISO,TNI	08/01/24	08/02/24	B241892	S240741

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Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MP-1										
2407500-01	As	Water	TR	3.36		0.556	1.82	µg/L	B241892	S240741
2407500-01	Cd	Water	TR	0.223	J	0.152	0.455	µg/L	B241892	S240741
2407500-01	Cr	Water	TR	≤ 4.29	U	4.29	15.2	µg/L	B241892	S240741
2407500-01	Cu	Water	TR	23.6		2.27	4.55	µg/L	B241892	S240741
2407500-01	Hg	Water	TR	17.2		0.13	0.41	ng/L	B241901	S240777
2407500-01	Ni	Water	TR	4.56	J	3.03	9.09	µg/L	B241892	S240741
2407500-01	Pb	Water	TR	7.24		0.227	0.455	µg/L	B241892	S240741
2407500-01	Zn	Water	TR	183		30.3	60.6	µg/L	B241892	S240741
MP-1										
2407500-02	As	Water	D	2.01		0.556	1.82	µg/L	B241892	S240741
2407500-02	Cd	Water	D	0.168	J	0.152	0.455	µg/L	B241892	S240741
2407500-02	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B241892	S240741
2407500-02	Cu	Water	D	9.69		2.27	4.55	µg/L	B241892	S240741
2407500-02	Hg	Water	D	0.71		0.13	0.41	ng/L	B241901	S240777
2407500-02	Ni	Water	D	≤ 3.03	U	3.03	9.09	µg/L	B241892	S240741
2407500-02	Pb	Water	D	0.630		0.227	0.455	µg/L	B241892	S240741
2407500-02	Zn	Water	D	162		30.3	60.6	µg/L	B241892	S240741
SPZ-1										
2407500-03	As	Water	TR	2.49		0.556	1.82	µg/L	B241892	S240741
2407500-03	Cd	Water	TR	0.171	J	0.152	0.455	µg/L	B241892	S240741
2407500-03	Cr	Water	TR	29.9		4.29	15.2	µg/L	B241892	S240741
2407500-03	Cu	Water	TR	40.6		2.27	4.55	µg/L	B241892	S240741
2407500-03	Hg	Water	TR	117		0.13	0.41	ng/L	B241901	S240777
2407500-03	Ni	Water	TR	20.2		3.03	9.09	µg/L	B241892	S240741
2407500-03	Pb	Water	TR	54.6		0.227	0.455	µg/L	B241892	S240741
2407500-03	Zn	Water	TR	35.8	J	30.3	60.6	µg/L	B241892	S240741
SPZ-1										
2407500-04	As	Water	D	1.46	J	0.556	1.82	µg/L	B241892	S240741
2407500-04	Cd	Water	D	≤ 0.152	U	0.152	0.455	µg/L	B241892	S240741
2407500-04	Cr	Water	D	≤ 4.29	U	4.29	15.2	µg/L	B241892	S240741
2407500-04	Cu	Water	D	≤ 2.27	U	2.27	4.55	µg/L	B241892	S240741
2407500-04	Hg	Water	D	≤ 0.13	U	0.13	0.41	ng/L	B241901	S240777
2407500-04	Ni	Water	D	9.28		3.03	9.09	µg/L	B241892	S240741
2407500-04	Pb	Water	D	0.398	J	0.227	0.455	µg/L	B241892	S240741
2407500-04	Zn	Water	D	≤ 30.3	U	30.3	60.6	µg/L	B241892	S240741

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Accuracy & Precision Summary

Batch: B241892
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241892-BS1	**Blank Spike, (2431034)**						
	As		55.56	58.88	µg/L	106% 75-125	
	Cd		5.556	6.081	µg/L	109% 75-125	
	Cr		55.56	58.40	µg/L	105% 75-125	
	Cu		55.56	58.78	µg/L	106% 75-125	
	Ni		55.56	61.29	µg/L	110% 75-125	
	Pb		5.556	6.416	µg/L	115% 75-125	
	Zn		55.56	61.39	µg/L	110% 75-125	
B241892-SRM2	**Reference Material (2415029, NIST 1643f)**						
	As		57.42	56.87	µg/L	99% 75-125	
	Cd		5.890	5.805	µg/L	99% 75-125	
	Cr		18.50	19.20	µg/L	104% 75-125	
	Cu		21.66	21.72	µg/L	100% 75-125	
	Ni		59.80	61.16	µg/L	102% 75-125	
	Pb		18.49	18.97	µg/L	103% 75-125	
	Zn		74.40	75.16	µg/L	101% 75-125	
B241892-DUP1	**Duplicate, (2407500-01)**						
	As	3.359		2.729	µg/L		*21%* 20
	Cd	0.223		0.229	µg/L		3% 20
	Cr	ND		ND	µg/L		N/C 20
	Cu	23.58		25.05	µg/L		6% 20
	Ni	4.556		4.106	µg/L		10% 20
	Pb	7.238		7.832	µg/L		8% 20
	Zn	183.1		177.2	µg/L		3% 20
B241892-MS1	**Matrix Spike, (2407500-01)**						
	As	3.359	56.12	63.74	µg/L	108% 75-125	
	Cd	0.223	5.612	6.548	µg/L	113% 75-125	
	Cr	ND	56.12	64.90	µg/L	116% 75-125	
	Cu	23.58	56.12	84.87	µg/L	109% 75-125	
	Ni	4.556	56.12	65.75	µg/L	109% 75-125	
	Pb	7.238	5.612	13.32	µg/L	108% 75-125	
	Zn	183.1	56.12	236.6	µg/L	95% 75-125	

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Accuracy & Precision Summary

Batch: B241892
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241892-DUP2	**Duplicate, (2407503-01)**						
	As	0.411		0.432	µg/L		5% 20
	Cd	ND		0.007	µg/L		N/C 20
	Cr	0.207		0.224	µg/L		8% 20
	Cu	1.312		1.314	µg/L		0.2% 20
	Ni	0.207		0.224	µg/L		8% 20
	Pb	0.476		0.475	µg/L		0.2% 20
	Zn	ND		ND	µg/L		N/C 20
B241892-MS2	**Matrix Spike, (2407503-01)**						
	As	0.411	56.12	60.85	µg/L	108% 75-125	
	Cd	ND	5.612	6.087	µg/L	108% 75-125	
	Cr	0.207	56.12	60.31	µg/L	107% 75-125	
	Cu	1.312	56.12	60.93	µg/L	106% 75-125	
	Ni	0.207	56.12	62.36	µg/L	111% 75-125	
	Pb	0.476	5.612	6.842	µg/L	113% 75-125	
	Zn	ND	56.12	63.07	µg/L	112% 75-125	
B241892-MSD2	**Matrix Spike Duplicate, (2407503-01)**						
	As	0.411	56.12	60.79	µg/L	108% 75-125	0.1% 20
	Cd	ND	5.612	6.175	µg/L	110% 75-125	1% 20
	Cr	0.207	56.12	61.38	µg/L	109% 75-125	2% 20
	Cu	1.312	56.12	61.74	µg/L	108% 75-125	1% 20
	Ni	0.207	56.12	62.87	µg/L	112% 75-125	0.8% 20
	Pb	0.476	5.612	6.780	µg/L	112% 75-125	0.9% 20
	Zn	ND	56.12	63.09	µg/L	112% 75-125	0.03% 20

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Accuracy & Precision Summary

Batch: B241901
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B241901-DUP1	**Duplicate (2407476-01)**						
	Hg	17.11		16.95	ng/L		0.9% 24
B241901-MS2	**Matrix Spike (2407500-04)**						
	Hg	ND	40.82	39.48	ng/L	97% 71-125	
B241901-MSD2	**Matrix Spike Duplicate (2407500-04)**						
	Hg	ND	40.82	39.66	ng/L	97% 71-125	0.4% 24

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Method Blanks & Reporting Limits

Batch: B241892
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B241892-BLK1	0.009	µg/L
B241892-BLK2	0.004	µg/L
B241892-BLK3	0.004	µg/L
B241892-BLK4	0.007	µg/L

Average: 0.006
Limit: 0.072
MDL: 0.022
MRL: 0.072

Analyte: Cd

Sample	Result	Units
B241892-BLK1	0.0006	µg/L
B241892-BLK2	-0.0001	µg/L
B241892-BLK3	0.00004	µg/L
B241892-BLK4	-0.0007	µg/L

Average: 0.000
Limit: 0.018
MDL: 0.006
MRL: 0.018

Analyte: Cr

Sample	Result	Units
B241892-BLK1	0.070	µg/L
B241892-BLK2	0.076	µg/L
B241892-BLK3	0.038	µg/L
B241892-BLK4	0.192	µg/L

Average: 0.094
Limit: 0.600
MDL: 0.170
MRL: 0.600

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Method Blanks & Reporting Limits

Analyte: Cu

Sample	Result	Units
B241892-BLK1	0.083	µg/L
B241892-BLK2	0.007	µg/L
B241892-BLK3	0.017	µg/L
B241892-BLK4	0.013	µg/L

Average: 0.030
Limit: 0.180
MDL: 0.090
MRL: 0.180

Analyte: Ni

Sample	Result	Units
B241892-BLK1	0.008	µg/L
B241892-BLK2	0.004	µg/L
B241892-BLK3	0.007	µg/L
B241892-BLK4	0.010	µg/L

Average: 0.007
Limit: 0.360
MDL: 0.120
MRL: 0.360

Analyte: Pb

Sample	Result	Units
B241892-BLK1	0.003	µg/L
B241892-BLK2	0.001	µg/L
B241892-BLK3	0.001	µg/L
B241892-BLK4	0.001	µg/L

Average: 0.002
Limit: 0.018
MDL: 0.009
MRL: 0.018

Analyte: Zn

Sample	Result	Units
B241892-BLK1	0.015	µg/L
B241892-BLK2	-0.105	µg/L
B241892-BLK3	0.214	µg/L
B241892-BLK4	-0.100	µg/L

Average: 0.006
Limit: 2.400
MDL: 1.20
MRL: 2.40

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Method Blanks & Reporting Limits

Batch: B241901
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units
B241901-BLK1	0.39	ng/L
B241901-BLK2	0.37	ng/L
B241901-BLK3	0.33	ng/L
B241901-BLK4	0.28	ng/L

Average: 0.34 **Standard Deviation:** 0.05 **MDL:** 0.13
Limit: 0.50 **Limit:** 0.13 **MRL:** 0.40

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Sample Containers

Lab ID: 2407500-01 **Report Matrix:** Water **Collected:** 07/30/2024
Sample: MP-1 **Sample Type:** Sample **Received:** 07/30/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	<2	Cooler - 2407500
B	Bottle HDPE ICP-W	125 mL	Unknown	1% HNO3 (BAL)	2413035	<2	Cooler - 2407500

Lab ID: 2407500-02 **Report Matrix:** Water **Collected:** 07/30/2024
Sample: MP-1 **Sample Type:** Sample **Received:** 07/30/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	<2	Cooler - 2407500
B	Bottle HDPE ICP-W	125 mL	Unknown	1% HNO3 (BAL)	2413035	<2	Cooler - 2407500

Lab ID: 2407500-03 **Report Matrix:** Water **Collected:** 07/30/2024
Sample: SPZ-1 **Sample Type:** Sample **Received:** 07/30/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	<2	Cooler - 2407500
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2407500

Lab ID: 2407500-04 **Report Matrix:** Water **Collected:** 07/30/2024
Sample: SPZ-1 **Sample Type:** Sample **Received:** 07/30/2024

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125 mL	23-0120	None	N/A	<2	Cooler - 2407500
B	Bottle HDPE ICP-W	125 mL	24-0017	1% HNO3 (BAL)	2413035	<2	Cooler - 2407500

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Project ID: CRC-SE2201
PM: Amy Goodall

Client PM: Rusty Jones
Client Project: PoFH Jensen's Boatyard R.I.

Shipping Containers

Cooler - 2407500

Received: July 30, 2024 14:57
Tracking No: - via Customer Drop-Off
Coolant Type: Ice
Temperature: 8.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-3

Custody seals present? No
Custody seals intact? No
COC present? Yes

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BROOKS APPLIED LABS

Chain-of-Custody Form

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

For BAL use only
Received by: GHS Date: 7/30/24
Work Order ID: _____ Time: 14:57
Project ID: _____

Client: CRETE/Leon Env. PO Number: _____ Mailing Address: _____
Contact: Rusty Jones, Peter Leon Phone: 832.330.1359
Client Project ID: PoFH' Jensens Boatyard Email: rusty.jones@creteconsulting.com Email Receipt Confirmation? (Yes/No)
Samples Collected By: R. Jones Rusty Jones BAL PM: Amy Goodall

Requested TAT (business days)
- [x] 20 (standard)
- [ ] 15*
- [ ] 10*
- [ ] 5*
- [ ] Other ____

*Surcharges may apply to expedited TATs

	Sample ID	Collection: Date	Collection: Time	Client Sample Info: Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO3/Other	BAL Analyses Required: Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) Total Metals 1638 Med. Project Metals	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Uknown	Filtration	Other (specify) 1638 Med. Dissolved Project Metals	Other (specify) Dissolved Hg EPA 1637	Comments
1	MP-1	7/30/2024	0650	WATER	4	Y+N	NONE	X								Standard Project (PoFH) Metals List
2	SPZ-1	↓	0735	↓	4	Y+N	↓									Sp. Conductivities: Specify Here
3																31,302 uS/cm
4																32,797 uS/cm
5																
6																
7																
8																
9																
10																
	Trip Blank															

Relinquished By: R. Jones	Date: 7/30/2024	Time: 1457	Relinquished By:	Date:	Time:
Received By: GHS	Date: 7/30/24	Time: 1457	Total Number of Packages:		

Page 1 of 1 List Hazardous Contaminants: _____

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