

MEMORANDUM

Project No.: 200631-02

May 12, 2022

To: Janet Buttenwieser



5/12/2022

CARLA E. BROCK



From: **Carla Brock, LHG**
Sr. Associate Geologist
cbrock@aspectconsulting.com

Hannah Cohen, GIT
Project Geologist
hcohen@aspectconsulting.com

Re: **Environmental Sampling Results**
Buttenwieser/Wiley Residence, 6838 96th Ave SE, Mercer Island, Washington

Aspect Consulting, LLC (Aspect) prepared this memorandum to present the results of the shallow soil sampling and analysis completed on the property located at 6838 96th Avenue SE in Mercer Island, Washington (King County Parcel No. 302405-9010; Subject Property). In a letter dated March 11, 2022, the Washington State Department of Ecology (Ecology) recommended soil sampling and analysis at the Subject Property because it is located in an area that may have been contaminated by historical emissions from the former Asarco smelter in north Tacoma (also known as the Tacoma Smelter Plume [TSP]). Environmental soil sampling was performed in accordance with Ecology's 2019 *Tacoma Smelter Plume Model Remedies Guidance* (TSP Guidance). This memo describes the sampling and analysis and provides a discussion of the results.

Soil Sampling and Analysis

Based on the size of the Subject Property (0.95 acres) and residential use, the TSP Guidance recommends collection and analysis of soil samples from a total of 16 sample locations. The investigation work consisted of the following work elements:

- Conducting a site visit to mark sampling locations for public utility locating.
- Collecting soil samples from 16 locations (Figure 1):
 - ♦ At every location, one soil sample was collected from the top 6 inches of surface soil after clearing away grass, leaves, gravel, or debris on the surface (16 samples)

- ♦ At a frequency of 25 percent (every fourth surface sample location), one soil sample was collected from a depth of 6 to 12 inches below ground surface (4 samples).
- Submitting the 20 soil samples to an Ecology-accredited laboratory for chemical testing of lead and arsenic by EPA Method 6020.

Prior to soil sampling, Aspect marked the sampling locations with white paint and requested public utility locate services. The sample locations are depicted on Figure 1. The soil samples were collected by removing surface vegetation and advancing a stainless-steel hand auger to the sampling depth (6 inches and 12 inches below ground surface). The soil samples were placed into laboratory-provided glass jars and stored in a cooler on ice. The sampling equipment was decontaminated between sample locations to minimize the possibility of cross-contamination. After sampling was completed, the samples were submitted to Friedman & Bruya Inc., an Ecology-accredited analytical laboratory, for chemical testing of total lead and total arsenic by EPA Method 6020 on a standard turnaround time.

Results

The chemical analytical results for samples collected at the Subject Property are compared to the Washington State Model Toxics Control Act (MTCA) Method A soil cleanup levels for unrestricted land use (Table 1). The Method A soil cleanup levels are the most conservative for evaluating potential risk associated with direct contact with soil, which is an appropriate exposure scenario for residential use. The analytical results are summarized in Table 1. The laboratory analytical report is provided as Appendix A.

The reported concentrations of lead and arsenic are all below the MTCA Method A cleanup levels with one exception each:

- Arsenic was detected at a concentration of 20.2 milligrams per kilogram (mg/kg), which only slightly exceeds the MTCA Method A cleanup level of 20 mg/kg, at sample location AS-06 (Table 1; Figure 1).
- Lead was detected at a concentration of 288 mg/kg, which exceeds the MTCA Method A cleanup level of 250 mg/kg, at sample location AS-13 (Table 1; Figure 1).

In accordance with the data evaluation procedures outlined in the TSP Guidance, the arithmetic mean concentration was calculated for each depth interval for comparison to the MTCA Method A cleanup level. For purposes of this evaluation, the Subject Property is considered to be a single decision unit.

The calculated average concentrations of both lead and arsenic are well below MTCA Method A cleanup levels for each sample depth (6 inches and 12 inches) (Table 1). Based on these results, no additional work or cleanup is required at the Subject Property.

Limitations

Work for this project was performed for Janet Buttenwieser (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Please refer to Appendix B titled “Report Limitations and Guidelines for Use” for additional information governing the use of this report.

Attachments: Table 1 – Soil Data Summary
 Figure 1 – Sampling Locations
 Appendix A – Laboratory Analytical Report
 Appendix B – Report Limitations and Guidelines for Use

TABLE

Table 1. Soil Data Summary

Project No. 20063, Bittenwieser/Wiley Residence, Mercer Island, Washington

Analyte Group Analyte MTCA Method A Cleanup Level ¹		Metals	
		Arsenic 20	Lead 250
Location	Sample Identification		
6 inches²			
AS-01	AS-01-0.5	6.71	29.3
AS-02	AS-02-0.5	18.2	34
AS-03	AS-03-0.5	4.31	25.8
AS-04	AS-04-0.5	11.8	20.9
AS-05	AS-05-0.5	5.8	18
AS-06	AS-06-0.5	20.2	32.2
AS-07	AS-07-0.5	3.29	12.8
AS-08	AS-08-0.5	5.72	20.4
AS-09	AS-09-0.5	6.45	14.2
AS-10	AS-10-0.5	6.35	16.1
AS-11	AS-11-0.5	4.8	48.1
AS-12	AS-12-0.5	6.27	17.5
AS-13	AS-13-0.5	7.86	288
AS-14	AS-14-0.5	5.37	31.2
AS-15	AS-15-0.5	3.04	29.7
AS-16	AS-16-0.5	3.02	10.7
Average ³		7.4	41
12 inches²			
AS-03	AS-03-1	4.5	25.5
AS-05	AS-05-1	10.5	24.2
AS-09	AS-09-1	2	2.6
AS-15	AS-15-1	5.29	34.8
Average ³		6	22

Notes:

Bold - denotes a detected concentration

Blue - denotes a reported concentration that exceeds the MTCA Method A cleanup level

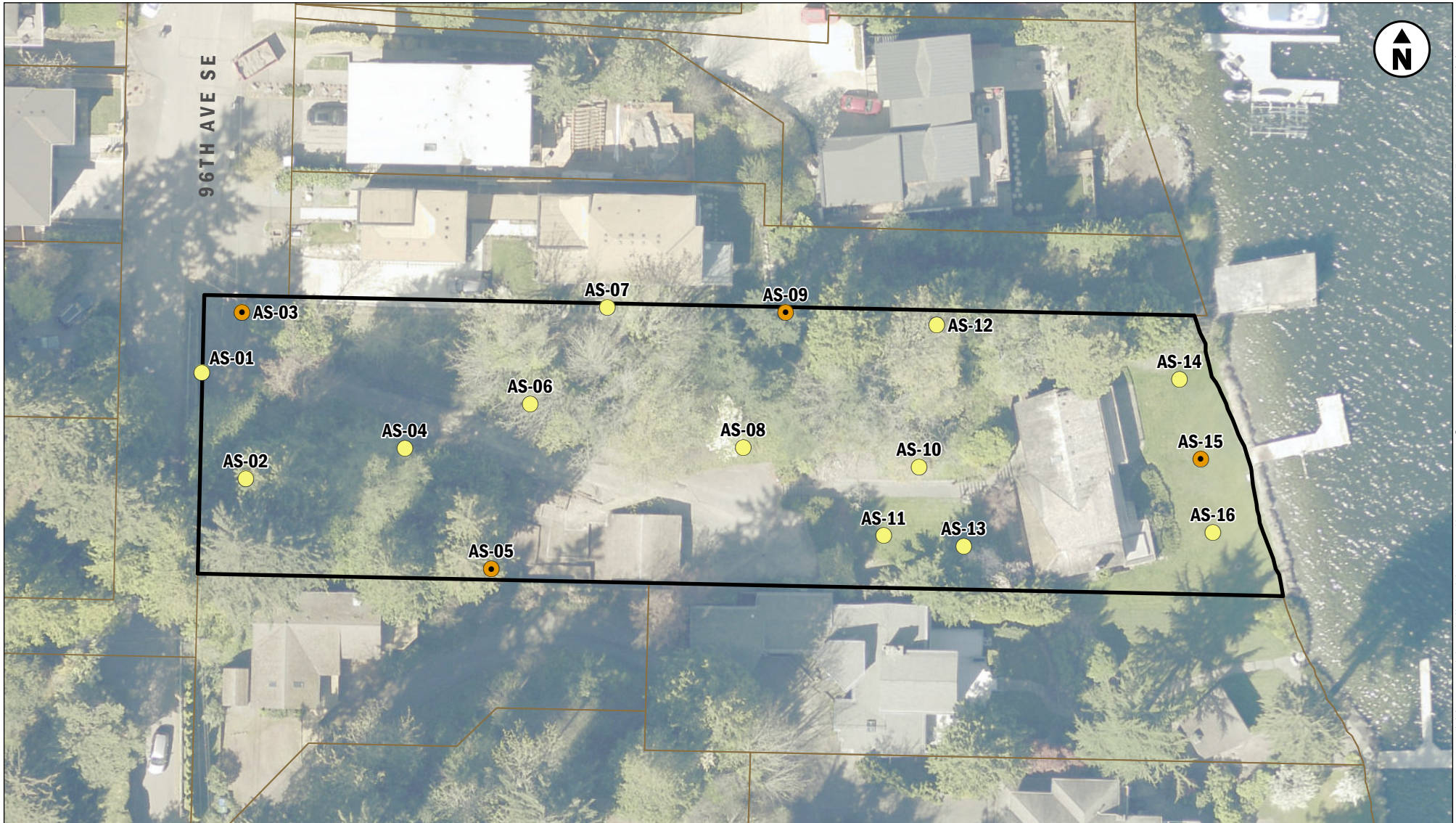
All results in milligrams per kilogram

¹Washington State Model Toxics Control Act (MTCA) cleanup regulation Method A Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340).

²Depth of soil sample collected below ground surface





³Average is the arithmetic mean of sampling results

FIGURE



96TH AVE SE


AS-01 AS-02 AS-03 AS-04 AS-05 AS-06 AS-07 AS-08 AS-09 AS-10 AS-11 AS-12 AS-13 AS-14 AS-15 AS-16

-  Sampling Location (6 inches bgs)
-  Sampling Location (6 inches and 12 inches bgs)
-  Site Parcel
-  King County Tax Parcel

0 50 100
Feet

Sampling Locations

Environmental Sampling Memo
Buttenwieser/Wiley Residence
Mercer Island, Washington

	MAY-2022	BY: HC / RAP	FIGURE NO. 1
	PROJECT NO. 200631-B-05	REVISED BY: - / -	

APPENDIX A

Laboratory Analytical Report

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

April 27, 2022

Hannah Cohen, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Ms Cohen:

Included are the results from the testing of material submitted on April 21, 2022 from the Bутtenweiser Residence 200631, F&BI 204356 project. There are 25 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Aspect Data, HCohen@AspectConsulting.com
ASP0427R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 21, 2022 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Bittenweiser Residence 200631, F&BI 204356 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Aspect Consulting, LLC</u>
204356 -01	AS-11-0.5
204356 -02	AS-03-0.5
204356 -03	AS-03-1
204356 -04	AS-13-0.5
204356 -05	AS-16-0.5
204356 -06	AS-06-0.5
204356 -07	AS-15-0.5
204356 -08	AS-15-1
204356 -09	AS-08-0.5
204356 -10	AS-14-0.5
204356 -11	AS-05-0.5
204356 -12	AS-05-1
204356 -13	AS-09-0.5
204356 -14	AS-09-1
204356 -15	AS-04-0.5
204356 -16	AS-10-0.5
204356 -17	AS-01-0.5
204356 -18	AS-12-0.5
204356 -19	AS-02-0.5
204356 -20	AS-07-0.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-11-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-01
Date Analyzed:	04/22/22	Data File:	204356-01.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.80
Lead	48.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-03-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-02
Date Analyzed:	04/22/22	Data File:	204356-02.123
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.31
Lead	25.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-03-1	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-03
Date Analyzed:	04/22/22	Data File:	204356-03.124
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.50
Lead	25.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-13-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-04
Date Analyzed:	04/22/22	Data File:	204356-04.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	7.86
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-13-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-04 x5
Date Analyzed:	04/25/22	Data File:	204356-04 x5.050
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	288
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-16-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-05
Date Analyzed:	04/22/22	Data File:	204356-05.126
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.02
Lead	10.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-06-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-06
Date Analyzed:	04/22/22	Data File:	204356-06.127
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	20.2
Lead	32.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-15-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-07
Date Analyzed:	04/22/22	Data File:	204356-07.128
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.04
Lead	29.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-15-1	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-08
Date Analyzed:	04/22/22	Data File:	204356-08.129
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.29
Lead	34.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-08-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-09
Date Analyzed:	04/22/22	Data File:	204356-09.130
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.72
Lead	20.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-14-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-10
Date Analyzed:	04/22/22	Data File:	204356-10.131
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.37
Lead	31.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-05-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-11
Date Analyzed:	04/22/22	Data File:	204356-11.132
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.80
Lead	18.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-05-1	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-12
Date Analyzed:	04/22/22	Data File:	204356-12.139
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	10.5
Lead	24.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-09-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-13
Date Analyzed:	04/22/22	Data File:	204356-13.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.45
Lead	14.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-09-1	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-14
Date Analyzed:	04/22/22	Data File:	204356-14.141
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.00
Lead	2.60

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-04-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-15
Date Analyzed:	04/22/22	Data File:	204356-15.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	11.8
Lead	20.9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-10-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-16
Date Analyzed:	04/22/22	Data File:	204356-16.143
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.35
Lead	16.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-01-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-17
Date Analyzed:	04/22/22	Data File:	204356-17.144
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.71
Lead	29.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-12-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-18
Date Analyzed:	04/22/22	Data File:	204356-18.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.27
Lead	17.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-02-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-19
Date Analyzed:	04/22/22	Data File:	204356-19.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	18.2
Lead	34.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AS-07-0.5	Client:	Aspect Consulting, LLC
Date Received:	04/21/22	Project:	Buttenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	204356-20
Date Analyzed:	04/22/22	Data File:	204356-20.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.29
Lead	12.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Butenweiser Residence 200631
Date Extracted:	04/22/22	Lab ID:	I2-306 mb
Date Analyzed:	04/22/22	Data File:	I2-306 mb.084
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/27/22

Date Received: 04/21/22

Project: Bittenweiser Residence 200631, F&BI 204356

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

Laboratory Code: 204356-01 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	83	80	75-125	4
Lead	mg/kg (ppm)	50	41.4	87	77	75-125	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	80-120
Lead	mg/kg (ppm)	50	94	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

204356

Report To Hannah Cohen

SAMPLE CHAIN OF CUSTODY

64-21-22

SAMPLERS (signature) Hannah Cohen

Page # 1 of 2 BT

Company Aspect Consulting

Address 710 2nd Ave #550

City, State, ZIP Seattle, WA 98104

Phone 8182240892 Email hannah@aspectconsulting.com

PROJECT NAME

Buttrick's residence

PO #

200631

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

Aspect

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							Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				
AS-11-0.5	01	4/21/22	855	soil	1											
AS-03-0.5	02		900													
AS-03-1	03		905													
AS-13-0.5	04		915													
AS-16-0.5	05		930													
AS-06-0.5	06		945													
AS-15-0.5	07		945													
AS-15-1	08		950													
AS-08-0.5	09		1010													
AS-14-0.5	10		1010													

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

SIGNATURE		PRINT NAME		COMPANY		DATE		TIME	
Relinquished by:	<u>Hannah Cohen</u>	Hannah Cohen		Aspect		4/21/22		1425	
Received by:	<u>Ann W Bryga</u>	Ann W Bryga		F&B		4/21/22		1425	
Relinquished by:									
Received by:									

Ann

204356

Report To Hannah Cohen

Company Aspect Consulting

Address SEE PG 1

City, State, ZIP SEE PG 1

Phone SEE PG 1

Email SEE PG 1

SAMPLE CHAIN OF CUSTODY

04-21-22

SAMPLERS (signature) Hannah Cohen

Hannah Cohen

PROJECT NAME Buttrick's Residence

PO # 200631

REMARKS Aspect

INVOICE TO Aspect

Project specific RIs? - Yes / No

Page # 2 of 2

TURNAROUND TIME 6H

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										Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Lead					
AS-05-0.5	11	4/21/22	1030	SOIL	1												X	X	(X) Per HC
AS-05-1	12		1035														X	X	4/25/22 MB
AS-09-0.5	13		1035														X	X	
AS-09-1	14		1040														X	X	
AS-04-0.5	15		1050														X	X	
AS-10-0.5	16		1100														X	X	
AS-01-0.5	17		1115														X	X	
AS-12-0.5	18		1120														X	X	
AS-02-0.5	19		1150														X	X	
AS-07-0.5	20	4/21/22	0925														(X)	(X)	Added in Lab

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by: Hannah Cohen

Hannah Cohen

Aspect

4/21/22

1425

Received by: Mueller

Mueller

FRB

4/21/22

1425

Relinquished by:

Received by:

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

APPENDIX B

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect's services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect's services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect's services do not include an evaluation of radon or lead in drinking water, unless specifically requested.