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Supplemental Remedial Investigation Report

Brookdale Golf Course
1802 Brookdale Road East
Tacoma, Washington
VCP Site No. SW 1672

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ABBREVIATIONS AND ACRONYMS

Abbreviation/ Acronym	Definition
AOI	Area of Interest
bgs	Below ground surface
CAP	Cleanup Action Plan
CAR	Cleanup Action Report
CLARC	Cleanup Levels and Risk Calculations
COC	Contaminant of Concern
COPC	Contaminant of potential concern
CSM	Conceptual Site Model
CUL	Cleanup level
DPT	Direct Push Technology
Ecology	Washington State Department of Ecology
EDB	1,2-Dibromoethane
EPI	Environmental Partners, Inc.
EPA	U.S. Environmental Protection Agency
FFS	Focused Feasibility Study
Ichijo	Ichijo USA Co., Ltd.
MDL	Method detection limit
µg/L	Micrograms per liter
mg/kg	Milligrams per Kilogram
MTCA	Model Toxics Control Act (70.105D) and its implementing regulations (Washington Administrative Code [WAC] 173-340)
NTU	Nephelometric Turbidity Units
NVE	No Value Established
PQL	Practical Quantitation Limit
RI	Remedial Investigation
SIM	Selected Ion Measurement
SRI	Supplemental Remedial Investigation
TEE	Terrestrial Ecological Evaluation
TRC	TRC Environmental Corporation
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code

1.0 INTRODUCTION

TRC Environmental Corporation (TRC)[1] is pleased to submit this *Supplemental Remedial Investigation Report* (SRI Report) for the former Brookdale Golf Course Site located at 1802 Brookdale Road East, Tacoma, Washington (subject property). The general location of the subject property is indicated on Figure 1. The Site, as defined below, is currently enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) as Site No. SW1672 and Mr. Adam Harris is the Site Manager. A site representation is depicted on Figure 2.

This SRI Report has been prepared on behalf of the current property owner, Ichijo USA Co., LTD (Ichijo), that purchased the subject property from Brookdale PDD, LLC. This SRI Report was prepared for Ichijo in support of its ongoing efforts to comply with the requirements of the Model Toxics Control Act (70.105D RCW) and its implementing regulations (Washington Administrative Code [WAC] 173-340; collectively "MTCA"). As defined in MTCA, the "Site" shall mean all areas where contaminants from the general maintenance of the Brookdale Golf Course have come to be located. The former Brookdale Golf Course contains multiple areas of impacts which are collectively referred to as the "Site." All areas of the Site are located within the subject property boundary.

TRC (as EPI) previously completed a *Remedial Investigation and Focused Feasibility Study* (RI/FFS), dated March 18, 2019, which was submitted to Ecology for review and comment under the Voluntary Cleanup Program (VCP). TRC also prepared a Cleanup Action Plan (CAP), dated March 18, 2019, documenting the planned implementation of the remedy selected in the FFS. The CAP was also submitted for review under the VCP.

Significant remedial actions, as planned in the CAP, had been completed throughout the Site by November 2019. All remedial actions will be addressed under separate cover in a *Cleanup Action Report* (CAR) for the Site.

In a letter dated December 10, 2019, Ecology issued an opinion stating the RI/FFS as incomplete, with several comments and questions. Ecology declined to review or provide comments on the CAP. The Site is currently in the permitting process for redevelopment as a residential subdivision with single-family detached homes. Future residential land uses were considered during the preparation of the RI/FFS, CAP, and this SRI Report.

The SRI documented herein was performed after successful implementation of the CAP and in response to the comments provided by Ecology in its December 10, 2019 letter. The scope of work presented herein addresses, through direct investigation, the concerns expressed in that opinion. The SRI focused on the northern portion of the Site, north of Clover Creek. This was done to allow the work to proceed more expeditiously and because that is the portion of the Site that will be redeveloped first. Ichijo acknowledges that additional assessment, consistent with what is documented herein, will be required on the portion of the Site south of Clover Creek.

[1] Prior work on the Site was performed by Environmental Partners, Inc. (EPI). EPI was acquired by TRC on December 27, 2019. For the purposes of this document, EPI and TRC may be used interchangeably.

Additionally, TRC has provided as a cover to this SRI Report a formal Response to Comments (RTC) to Ecology's December 10, 2019 opinion letter.

2.0 BACKGROUND

The RI/FFS provides a detailed description of the Site background. In its opinion letter Ecology requested additional historical documentation confirming that the orientation and layout of the former Brookdale Golf Course had not changed substantially since its construction in 1941.

Attachment A provides available historical aerial photographs of the golf course starting in 1941 and ending in 2017. These photographs confirm that the layout of the golf course has not changed significantly since its original construction.

Between 2016 and 2018, multiple environmental investigations were conducted by TRC and others at the subject property. These investigations have assessed the condition of soil, groundwater, and surface water beneath the subject property and characterized the nature and extent of the hazardous substances at the Site. The cumulative results of these investigations constitute the RI. The investigations indicate the subject property contains 15 small and distinct areas impacted by the same compounds from the same historical activities, which together constitute a "Site" under MTCA as defined in WAC 173-340-200. The findings of the environmental investigations conducted at the Site were presented in the RI/FFS referenced above.

An FFS was also completed to develop and evaluate cleanup alternatives for the Site and select a final cleanup action in accordance with WAC 173-340-350(8). The objective of the selected cleanup action is to protect human health and the environment and to meet the requirements of MTCA. The FFS selected direct excavation of contaminated soils as the most effective alternative for addressing the Site impacts. This selected remedy was based on the findings of the prior environmental investigations and the FFS determined that direct excavation and off-site disposal addressed all current and future exposure pathways for all potential receptors.

Following the submittal of the RI/FFS, TRC prepared and submitted the CAP to Ecology. The CAP presented a brief summary of the existing environmental conditions at the subject property and the process that would be followed during remediation to comply with the requirements of the MTCA (70.105D RCW) and its associated Cleanup Regulations, WAC 173-340. The cleanup action was successfully implemented according to the technical approach outlined in the CAP. Remedial excavation areas are depicted on Figure 2. A typical cross-section of the remedial excavations is depicted on Figure 3.

A CAR will be prepared and will present additional detailed descriptions of each remedial excavation and the result of both performance samples used to guide the excavation and confirmation samples from the limits of the remedial excavations confirming compliance with the selected cleanup levels. The completion of the CAR has been deferred until after completion of this SRI Report and confirmation that the approach used therein is sufficient to address Ecology's concerns. A similar SRI would then be performed on the

southern portion of the Site. If additional areas of contamination are identified during the SRI, additional remediation would be performed. At the completion of all remedial actions and attainment of all cleanup levels for all analytes the CAR can be completed and submitted to Ecology.

3.0 SUPPLEMENTAL REMEDIAL INVESTIGATION

This SRI was developed to address the comments and concerns outlined in Ecology's opinion letter dated December 10, 2019. Ecology requested additional investigation of soil, groundwater, surface water, and sediment at the Site. Ecology also requested the evaluation of the potential presence of additional analytes at the Site. The additional analytes were:

- Nitrates and phosphates
- Arsenic
- 1,2-Dibromoethane
- Diazinon

The objective of the SRI was to assess the potential presence of these additional analytes in soil, groundwater, surface water, and sediment at the Site. Between January 13 and February 13, 2020, TRC performed the additional elements of the SRI as requested by Ecology. The details of the SRI are presented below.

3.1 Soil

Ecology requested that shallow soil be assessed for the additional analytes mentioned above. TRC collected a total of 33 soil samples at the Site during the SRI. Soil sample locations are depicted on Figure 4. Soil sampling was initially performed at 27 locations. As detailed further below, arsenic was detected in five locations at a concentration exceeding the MTCA Method A Soil Cleanup Level (CUL) for Unrestricted Land Uses of 20 milligrams per kilogram (mg/kg). An additional four soil samples were collected from areas surrounding this initial result to fully characterize the vertical and lateral extent of the apparent area of affected soil.

The soil samples were collected in remediation areas distributed across the subject property located north of Clover Creek. The samples were collected in locations that included tees, fairways, and greens where remedial excavation has been performed. The samples were collected from near-surface soils at depths ranging from 6 inches to 3 feet below ground surface (bgs). At the completion of sampling, each sample location was backfilled with excess soil generated from the soil borings.

Each soil sample was collected and submitted for the following analysis:

- Arsenic analyzed by U.S. Environmental Protection Agency (EPA) Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Diazinon analyzed by EPA Method 8270 Selected Ion Measurement (SIM)
- Nitrate and phosphate analyzed by EPA Method 300.0

3.2 Groundwater

Ecology requested that groundwater conditions be assessed in areas where concentrations of Site contaminants of concern (COCs) exceeded an applicable cleanup level prior to the performance of remedial excavation. TRC collected a total of 10 groundwater samples at the Site during the SRI at locations representative of overall Site conditions. Groundwater sample locations are depicted on Figure 5.

Groundwater sampling consisted of nine reconnaissance sampling locations. As detailed further below, the sample from one of the reconnaissance samples contained dieldrin at a concentration exceeding the cleanup level. Because reconnaissance samples are often affected by high turbidity and potential drag-down during sampling, the result from this location was further assessed through the installation and sampling of a monitoring well.

All groundwater samples were collected from locations north of Clover Creek. The samples were collected in locations that included tees, fairways, and greens where remedial excavation has been performed. The samples were collected from temporary wells ranging in depth from 10 feet to 20 feet bgs. One groundwater sample was collected from a monitoring well installed at the Site.

Each groundwater sample was collected and submitted for the following analysis:

- Total and dissolved arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

3.3 Surface Water

Ecology requested that surface water conditions be assessed in Clover Creek and the North Fork Clover Creek tributary for the presence of all Site COCs and the additional analytes outlined above. TRC collected a total of five surface water samples at the Site during the SRI. Surface water sample locations are depicted on Figure 6.

Two surface water samples were collected from the North Fork Clover Creek tributary. Two surface water samples were collected from Clover Creek and one surface water sample was collected from the pond located adjacent to the east of Clover Creek.

Each surface water sample was collected and submitted for the following analysis:

- Total and dissolved arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM

- Nitrate and phosphate analyzed by EPA Method 300.0

3.4 Sediment

Ecology requested that sediment conditions be assessed in the North Fork Clover Creek tributary, Clover Creek, and the pond east-adjacent to Clover Creek for the presence of all Site COCs and the additional analytes. Ecology specified that the sediment samples should be collected at or below the ordinary high-water level where the water is present for a minimal of six consecutive weeks where exposure risks are present. TRC collected a total of nine sediment samples at the Site during the SRI. Sediment sample locations are depicted on Figure 7.

Three sediment samples were collected from the North Fork Clover Creek tributary. Three sediment samples were collected from Clover Creek and three sediment samples were collected from the pond located adjacent to the east of Clover Creek.

Each sediment sample was collected and submitted for the following analysis:

- Arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

4.0 METHODOLOGY

The methods used to conduct the Ecology-requested additional investigation of soil, groundwater, surface water, and sediment at the Site are described in the following sections.

4.1 Soil Sampling

Samples were collected from soil borings, test pits, and surface soil sample locations as described below.

4.1.1 Soil Borings

A total of 10 soil borings with temporary wells were advanced using direct-push technology (DPT) drilling and sampling methods. All drilling was performed by a Washington-state licensed driller under the supervision and direction of an experienced environmental professional from TRC. Soil boring locations are depicted on Figure 4. Soil boring logs are included in Attachment B.

Prior to drilling, TRC notified Washington One-Call Service to identify publicly-owned subsurface utilities at the subject properties. The notification was initiated a minimum of 3 business days prior to scheduled field activities.

At each soil boring location, soil samples were collected and placed directly into laboratory-supplied glass sample containers and submitted for laboratory analysis.

Soil conditions encountered at each location were logged using the Unified Soil Classification System with visual-manual procedures (ASTM Method 2488D).

The 10 soil borings (B-1 through B-10) were advanced to depths ranging from 10 feet bgs to 20 feet bgs. Two soil samples were collected from each boring. A total of 10 soil samples were submitted for the following analysis:

- Arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

4.1.2 Test Pits

A total of four test pits were advanced at the subject property using single-use hand tool methods. The test pits (TP-1 through TP-4) were advanced to a depth of two feet bgs. Test pit locations are depicted on Figure 4.

At each test pit location, soil samples were collected with single-use disposable equipment and placed directly into laboratory-supplied sample containers. A total of nine soil samples were submitted for the following analysis:

Test pit soil samples were submitted for the following analysis:

- Arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

4.1.3 Surface Soil Sampling

Surface soil samples were collected in 14 remediation areas distributed across the northern portion of the Site. Samples were collected using single-use hand tool methods. The surface soil samples were collected from near-surface soils at depths ranging from 6 inches to 3 feet bgs. Surface soil sample locations are depicted on Figure 4.

At each surface soil sample location, samples were collected with single-use disposable equipment and placed directly into 4-ounce laboratory-supplied glass sample containers. A total of 19 surface soil samples were submitted for arsenic analyzed by EPA Method 6020.

4.2 Groundwater

A total of 10 soil borings (B-1 through B-10) were advanced with temporary wells using DPT drilling and sampling methods. Temporary wells were installed at depths ranging from 10 feet bgs to 20 feet bgs. Temporary well locations are depicted on Figure 5.

At each soil boring location, reconnaissance groundwater samples were collected and placed directly into laboratory-supplied sample containers and submitted for laboratory analysis. Groundwater was not encountered in soil boring B-9 and no reconnaissance groundwater sample was collected at that location. A total of nine reconnaissance groundwater samples were submitted for the following analysis:

- Total and dissolved arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

Groundwater samples for dissolved arsenic were filtered using a single-use 0.45-micron filter and placed directly into sample containers preserved with nitric acid to a pH of 2.

Additionally, one monitoring well (MW-1) was advanced using hollow-stem auger (HSA) drilling and sampling methods. MW-1 was advanced to further assess groundwater conditions at to soil boring B-4 after analysis of the initial sample contained dieldrin. The location of MW-1 is depicted on Figure 5.

Following the installation of MW-1, well development was performed by continuous pumping at a steady flow rate using a submersible pump. Well development was terminated when the turbidity of the discharge water decreased to less than 10 nephelometric turbidity units (NTU) or to the satisfaction of the on-site TRC personnel.

Following well development, the well was allowed to stabilize for about 24 hours before collection of a groundwater sample. One groundwater sample was collected from MW-1 and analyzed for dieldrin using EPA Method 8081.

4.3 Surface Water

A total of five surface water samples were collected at three locations at the subject property. Two surface water samples were collected from the North Fork Clover Creek tributary. Two surface water samples were collected from Clover Creek, and one surface water sample was collected from the pond. Surface water sample locations are depicted on Figure 6.

At each surface water sampling location, samples were collected directly into laboratory-supplied sample containers and submitted for laboratory analysis. A total of five surface water samples were submitted for the following analysis:

- Total and dissolved arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

4.4 Sediment

A total of nine sediment samples were collected. Three sediment samples were collected from the North Fork Clover Creek tributary. Three sediment samples were collected from Clover Creek, and three sediment samples were collected from the pond. Sediment sample locations are indicated on Figure 7.

At each sediment sampling location, samples were collected with single-use disposable equipment and placed directly into laboratory-supplied sample containers. A total of nine sediment samples were submitted for the following analysis:

- Arsenic analyzed by EPA Method 6020
- 1,2-Dibromoethane analyzed by EPA Method 8260
- Dieldrin analyzed by EPA Method 8081
- Diazinon analyzed by EPA Method 8270 SIM
- Nitrate and phosphate analyzed by EPA Method 300.0

Immediately upon collection all samples collected at the subject property were labeled and placed in an iced cooler pending submittal to the analytical laboratory. Samples were transported to Friedman & Bruya Laboratory, Inc, in Seattle, Washington, under standard chain-of-custody protocols.

5.0 FINDINGS

5.1 Soil

Soil sample analytical results are summarized in Table 1. Laboratory analytical reports are included in Attachment C. The soil sample locations and are depicted on Figure 4. The analytical results are described below:

- Thirty-three soil samples were submitted for analysis of arsenic. Arsenic was detected in all 33 samples at concentrations ranging from 1.71 mg/kg to 111 mg/kg. Five of the 33 soil samples contained arsenic at a concentration exceeding the MTCA Method A Soil CUL of 20 mg/kg.

- Thirteen soil samples were submitted for analysis of 1,2-dibromoethane (commonly referred to as ethylene dibromide [EDB]). EDB was not detected in any sample at a concentration exceeding the laboratory method detection limit (MDL).

- Thirteen soil samples were submitted for analysis of diazinon. Diazinon was not detected in any sample at a concentration exceeding the MDL of 0.449 mg/kg

- Thirteen soil samples were submitted for analysis of nitrate. Nitrate was detected in four samples at concentrations ranging from 1.34 mg/kg to 3.97 mg/kg. None of the detected concentrations exceeded the MTCA Method B CUL of 130,000 mg/kg for nitrate.

- Thirteen soil samples were submitted for analysis of Phosphate. Phosphate was not detected in any sample at a concentration exceeding the MDL of 2.06 mg/kg

In all cases the MDL for individual analyses was less than the applicable CUL or was the lowest available detection or reporting limit available.

5.2 Groundwater

A total of 10 groundwater samples were submitted for the range of analyses described in Section 4.2. Table 2 summarizes the laboratory analytical results for all groundwater samples. Laboratory analytical reports are included in Attachment C. The groundwater sample locations and are depicted on Figure 5. The analytical results are described below:

- Nine reconnaissance groundwater samples were submitted for analysis of total and dissolved arsenic. Total arsenic was detected in seven of the groundwater samples exceeding a MTCA Method A Groundwater CUL of 5 micrograms per liter (µg/L) for total arsenic. Dissolved arsenic was not detected in any sample at a concentration exceeding the MDL of 1 µg/L.

- Nine reconnaissance groundwater samples were submitted for analysis of EDB. EDB was not detected in any sample at a concentration exceeding the MDL of 0.01 µg/L.

- Nine reconnaissance groundwater samples were submitted for analysis of dieldrin. Dieldrin was detected in one sample (B-4:GW) at a concentration of 0.032 µg/L, which exceeds the MTCA Method B CUL of 0.0055 µg/L for dieldrin.

- One groundwater sample from monitoring well MW-1, installed at the location of B-4, was submitted for analysis of dieldrin. Dieldrin was not detected in that sample at a concentration exceeding the MDL of 0.02 µg/L.

- Nine reconnaissance groundwater samples were submitted for analysis of diazinon. Diazinon was not detected in any sample at a concentration exceeding the MDL of 0.199 µg/L.

- Nine reconnaissance groundwater samples were submitted for analysis of nitrate. Nitrate was detected in all nine samples. None of the detected concentrations exceeded the MTCA Method B CUL of 26,000 µg/L for nitrate.

- Nine reconnaissance groundwater samples were submitted for analysis of phosphate. Phosphate was not detected in any sample at a concentration exceeding the MDL of 200 µg/L

5.3 Surface Water

A total of five surface water samples were submitted for the range of analyses described in Section 4.3. Table 3 summarizes the laboratory analytical results for all surface water samples. Laboratory analytical reports are included in Attachment C. The surface water sample locations and are depicted on Figure 6. The analytical results are described below:

- Five surface water samples were submitted for analysis of total arsenic and dissolved arsenic. Neither total nor dissolved arsenic was detected in any sample at a concentration exceeding the MDL of 1 µg/L for total and dissolved arsenic.

- Five surface water samples were submitted for analysis of EDB. EDB was not detected in any sample at a concentration exceeding the MDL of 0.01 µg/L.

- Five surface water samples were submitted for analysis of dieldrin. Dieldrin was not detected in any sample at a concentration exceeding the MDL of 0.02 µg/L for dieldrin. It should be noted that the freshwater cleanup objective for dieldrin is 0.0000061 µg/L. This cleanup objective is significantly less than any MDL achievable. As stated in WAC 173-340-707, where the practical quantitation limit (PQL) is greater than a cleanup objective, the cleanup level shall be considered to be the PQL.

- Five surface water samples were submitted for analysis of diazinon. Diazinon was not detected in any sample at a concentration exceeding the MDL of 0.199 µg/L.

- Five surface water samples were submitted for analysis of nitrate. Nitrate was detected in all five samples. Detected nitrate concentrations ranged from 993 µg/L to 2,840 µg/L. None of the detected concentrations exceeded an applicable CUL. The lowest available CUL for nitrate is 10,000 µg/L.

- Five surface water samples were submitted for analysis of phosphate. Phosphate was not detected in any sample at a concentration exceeding the MDL of 200 µg/L.

5.4 Sediment

A total of nine sediment samples were submitted for the range of analyses described in Section 4.4. Table 4 summarizes the laboratory analytical results for all sediment samples. Laboratory analytical reports are included in Attachment C. The sediment sample locations and are depicted on Figure 7. The analytical results are described below:

- Nine sediment samples were submitted for analysis of arsenic. Arsenic was detected in all nine samples at concentrations ranging from 3.08 mg/kg to 10.4 mg/kg. None of the detected concentrations exceeded Ecology's Freshwater Sediment Cleanup Objectives and Cleanup Screening Level Criteria for arsenic of 14 mg/kg as defined in WAC 173-204-563.

- Nine sediment samples were submitted for analysis of EDB. EDB was not detected in any sample at a concentration exceeding the MDL of 0.005 mg/kg. There is no established freshwater sediment cleanup objective for EDB.

- Nine sediment samples were submitted for analysis of dieldrin. Dieldrin was not detected in any sample at a concentration exceeding the MDL of 0.006 mg/kg. The freshwater sediment cleanup objective is for dieldrin is 0.0049 mg/kg. As stated in WAC 173-340-707, where the PQL is greater than a cleanup objective, the cleanup level shall be considered to be the PQL.

- Nine sediment samples were submitted for analysis of diazinon. Diazinon was not detected in any sample at a concentration exceeding the MDL of 0.0852 mg/kg.

- Nine sediment samples were submitted for analysis of nitrate. Nitrate was detected in four samples at concentrations ranging from 1.84 mg/kg to 4.32 mg/kg. There is no established freshwater sediment cleanup objective for nitrate.

- Nine sediment samples were submitted for analysis of phosphate. Phosphate was not detected in any sample at a concentration exceeding the MDL of 3.53 mg/kg. There is no established freshwater sediment cleanup objective for phosphate.

6.0 CONTAMINANTS OF POTENTIAL CONCERN

Based on the opinion issued by Ecology the contaminants of potential concern (COPCs) for this SRI are:

- Arsenic
- 1,2-Dibromoethane
- Dieldrin
- Diazinon
- Nitrates and phosphates

The potential presence of these compounds was evaluated in soils, groundwater, surface water, and sediment during the SRI. Ecology requested the additional investigation to evaluate whether the compounds listed above were used during the time the subject property operated as a golf course. A summary of detections in soil, sediment, groundwater, and surface water by analyte, is presented in Tables 5 and 6, below.

Table 5
COPCs Detected in Soil and Sediment

COPC	Number of Samples Collected	Number of Detections	Frequency of Detections (percent)	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)
Arsenic	42	42	100	1.71	111
1,2-Dibromoethane	22	0	0	--	--
Dieldrin	9	0	0	--	--
Diazinon	22	0	0	--	--
Nitrate	22	8	36	1.34	4.32
Phosphate	22	0	0	--	--

Note:
-- Compound not detected.

Table 6
COPCs Detected in Groundwater and Surface Water

COPC	Number of Samples Collected	Number of Detections	Frequency of Detections (percent)	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)
Total Arsenic	14	8	57	1.22	73.1
Dissolved Arsenic	14	0	0	--	--
1,2-Dibromoethane	14	0	0	--	--
Dieldrin	15	1	7	0.032	0.032
Diazinon	14	0	0	--	--
Nitrate	14	14	100	638	4,230
Phosphate	14	0	0	--	--

Note:
-- Compound not detected.

6.1 Affected Media

Based on geological and hydrogeological conditions and future land uses at the subject property, the media of potential concern evaluated during the SRI are soil, groundwater, surface water, and sediment. Indoor air was not evaluated during the SRI because the detected COPCs are not volatile.

6.2 Terrestrial Ecological Evaluation Cleanup Levels

Ecology's opinion letter indicated that the Terrestrial Ecological Evaluation (TEE) CULs for the RI should be revised. The final TEE CULs for the Non-Excluded Sites consist of values established in Table 749-3 and CULs provided by Ecology's TEE specialist. This evaluation was reportedly performed at Mr. Harris' request in support of Ecology's comments to the RI. TEE CULs provided by Ecology's TEE specialist are included as Attachment D.

For comparison purposes, TRC reviewed the readily available CULs for vascular plants, soil biota, and wildlife for the other compounds detected at the Site. The following concentrations were identified in Table 749-3, WAC 173-340-900 or were provided by Ecology's TEE specialist.

TEE CULs were re-evaluated for each of the three potential receptors of concern for the subject property. The TEE CULs applicable to the COPCs identified in the RI are listed below for each of the ecological receptors:

Table 7
Summary of TEE CULs

Compound	Vascular Plants	Soil Biota	Wildlife
4,4-DDT	NVE	NVE	0.75
B-BHC	NVE	29	6
D-BHC	NVE	29	6
Aldrin	NVE	NVE	0.1
Dieldrin	NVE	NVE	0.07
Endosulfan I	NVE	NVE	NVE
Endrin	NVE	NVE	0.2
Endrin Aldehyde	NVE	NVE	0.01

Note:
NVE No value established for this compound.

TRC reviewed the RI data and confirmed that the only compound detected to exceed a TEE CUL was dieldrin.

7.0 CLEANUP LEVELS

Site CULs for affected media were evaluated in accordance with MTCA and take into consideration exposure pathways and receptors based on current and likely future uses of the Site. Based on current and expected future use of the Site, exposure pathways for human and ecological receptors were considered for the development of applicable CULs. The CULs for the applicable COPCs are documented in Table 8 below. In each case, the lowest applicable CUL is applied to each medium or receptor.

Table 8
Summary of Established CULs

Compound	Soil [a] (mg/kg)	Groundwater [b] (µg/L)	Surface Water [c] (µg/L)	Sediment [d] (mg/kg)
Arsenic	20[e]	5	10	14
1,2-Dibromoethane	0.005	0.01	NVE	NVE
Dieldrin	0.0625[f]	<0.02[g]	<0.02[g]	<0.06[g]
Diazinon	56	11	NVE	NVE
Nitrate	130,000	26,000	NVE	NVE
Phosphate	NVE	NVE	NVE	NVE

Notes:

a MTCA Method A Soil Cleanup Level (Table 740-1). Where no MTCA Method A Cleanup Level established, MTCA Method B Soil Cleanup Levels (from Cleanup Levels and Risk Calculations [CLARC]) used.
b MTCA Method A Groundwater Cleanup Level (Table 740-1). Where no MTCA Method A Cleanup Level established, MTCA Method B Groundwater Cleanup Levels (from CLARC) used.
c Based on CLARC Database.
d Based on Washington State Department of Ecology Sediment Management Standards, WAC 173-204-563 Table VI, Freshwater Sediment Cleanup Objectives and Cleanup Screening Levels Chemical Criteria.
e MTCA Method A value is considered protective of terrestrial receptors and considers background concentrations in Washington State.
f MTCA Method B Value that is protective of terrestrial receptors.
g CUL is less that listed CUL. Listed CUL for groundwater is 0.0055 ug/L, for surface water is 0.0000061 ug/L and for sediment is 0.0049 mg/kg.
NVE No value established.

As noted above, where a CUL is less than the technically achievable MDL for a specific compound, the CUL shall be the PQL or MDL (WAC 173-340-707). This is the case for the dieldrin CULs for groundwater, surface water, and sediment. For each of those media, the CUL for dieldrin shall be the MDL.

8.0 CONTAMINANTS OF CONCERN

The COCs for the Site are those COPCs that have been detected in either soil, groundwater, surface water, or sediment at concentrations exceeding an applicable CUL. Based on the results of this SRI, dieldrin remains the only compound to exceed a CUL for the original RI. This SRI has identified arsenic as an additional COC.

Dieldrin was detected in groundwater at a concentration exceeding the MTCA Method B CUL for groundwater in one reconnaissance groundwater sample in soil boring B-4. This result was obtained from a reconnaissance groundwater sample. Reconnaissance groundwater samples are considered reliable for site screening but can be prone to high bias due to turbidity. Dieldrin is also generally insoluble in water with an organic carbon-to-water partitioning coefficient (Koc) of 25,546. This sample was collected in an area of prior dieldrin soil remediation during CAP implementation, and the result was therefore

considered potentially attributable to turbidity within the sample. It is standard practice to confirm elevated results from reconnaissance groundwater samples by confirmation using a properly constructed and sampled monitoring well.

Accordingly, TRC installed a monitoring well (MW-1) in the location of soil boring B-4 to allow sampling and analysis using standard repeatable and defensible methods. The well was installed and constructed by a Washington State licensed driller in accordance with WAC 173-160. The well was developed until the turbidity of the discharge water decreased to less than 10 NTU or to the satisfaction of the on-site TRC personnel. Following development, a groundwater sample was collected using low-flow sampling techniques.

Dieldrin was not detected in the groundwater sample collected from MW-1. This sample from well MW-1 is considered fully quantitative and of a higher data quality than the original reconnaissance sample. Because dieldrin was not detected in the water sample from MW-1 dieldrin is not considered a COC for groundwater.

No other COPCs were detected in any other medium at a concentration exceeding the respective CULs. Therefore, there are no COCs for surface water or sediment.

9.0 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) was developed for the Site based on the data collected at the subject property. The CSM identifies current and potential future exposure pathways for human and ecological receptors. The CSM is presented as Attachment E and is discussed below.

- The environmental medium of concern at the Site is soil. Potential current exposure pathways include dermal and ingestion exposure by construction workers, residential/recreational users, and TEE receptors. Potential future exposure pathways to COPC impacts include dermal and ingestion exposure by construction workers, residential receptors, and TEE receptors.

- The subject property and surrounding land are currently zoned for residential use by Pierce County and are expected to continue as such in the future.

- Site geology consists of a mixture of well-graded sands with gravel, silts with gravel, and silts with sand.

- Groundwater has been reportedly encountered as shallow as 2.5 feet bgs, depending on Site surface elevation.

- Arsenic and dieldrin are COCs in Site soils.

- There are no COCs for Site groundwater, surface water, or sediment.

- There are not, or will not be, any potential dermal or ingestion exposure pathways for soil at the Site. All dieldrin-impacted soil has been removed during implementation of the CAP. The limited amount of arsenic-impacted soil in AOI-28 will be removed during additional remedial action prior to redevelopment.

- No volatile compounds have been detected in soil at the Site. Therefore, indoor air is not a medium of concern for future buildings being constructed at the Site.

10.0 CONCLUSIONS

The following conclusions are based on the observations and findings from the SRI:

- There are no impacts to groundwater, surface water, and sediment at the Site. It is necessary to confirm the findings of the SRI for the southern half of the Site south of Clover Creek. However, based on the consistency of historical operations between the northern and southern portions of the Site and the findings of this SRI, it is reasonable to conclude that assessment of the southern half of the property will have similar findings as in the northern portion.

- Arsenic is an additional COC for Site soils. A limited amount of arsenic-impacted soil remains at the subject property in AOI-28 and will be removed by direct excavation and off-Site disposal to an appropriately designated landfill. This additional remedial action will utilize the means and methods used during the prior CAP implementation.

- The source of the observed arsenic is not known. Arsenic at concentrations exceeding an applicable CUL was not widespread at the Site. It also did not correlate to any other areas of impact other than in AOI-28.

- The assessment of the southern portion of the Site should include a Site-wide screening for arsenic using similar method and sampling frequency as on the northern portion of the Site. Arsenic identified in soil at a concentration exceeding a CUL should be remediated prior to redevelopment.

- The CAR will present detailed descriptions of each remedial excavation and the result of both performance samples used to guide the excavation and conformational samples from the limits of the remedial excavations.

- Potential current or future exposure pathways for Site COCs have been resolved. Impacts to soil have been or will be remediated by direct excavation and off-Site disposal prior to any future use of the property. The CULs developed in the RI and within this SRI are fully protective of all current and potential future receptors.

11.0 LIMITATIONS

To the extent that preparation of this report has required the application of best professional judgment and the application of established scientific and engineering principles, certain results of this work were based on subjective interpretation. TRC makes no warranties, express or implied, including and without limitation warranties as to merchantability or fitness for a particular purpose. The information provided in this report is not to be construed as legal advice.

This SRI Report was prepared solely for Ichijo and the contents herein may not be used or relied upon by any other person without the express written consent and authorization of TRC.

Tables

Table 1
Soil Analytical Results – January 2020
Supplemental Remedial Investigation Report
Former Brookdale Golf Course
1802 Brookdale Road East, Tacoma, Washington

Sample Location	Sample Date	Arsenic[a]	1,2-Dibromoethane (EDB)[b]	Diazinon[c]	Nitrate (as N)[d]	Ortho-Phosphate (as P)[d]
B-1:Surface	1/15/2020	**1.90**	<0.005	<0.484	<1.05	<2.10
B-2:Surface	1/15/2020	**2.06**	<0.005	<0.537	<1.11	<2.23
B-3:Surface	1/15/2020	**3.11**	<0.005	<0.516	<1.04	<2.08
B-4:Surface	1/15/2020	**3.94**	<0.005	<0.451	<1.05	<2.09
B-5:Surface	1/15/2020	**2.59**	<0.005	<0.449	<1.06	<2.11
B-6:Surface	1/16/2020	**3.97**	<0.005	<0.537	<1.07	<2.14
B-7:Surface	1/16/2020	**55.0**	<0.005	<0.503	<1.07	<2.14
B-7:2	1/16/2020	**111**	--	--	--	--
B-8:Surface	1/16/2020	**2.12**	<0.005	<0.510	<1.03	<2.06
B-9:Surface	1/16/2020	**2.57**	<0.005 J	<0.488	**1.34**	<2.12
TP-1:Surface	1/17/2020	**3.11**	<0.005 J	<0.642	**3.97**	<2.75
TP-2:Surface	1/17/2020	**3.42**	<0.005	<0.639	<1.39	<2.78
TP-3:Surface	1/17/2020	**5.66**	<0.005 J	<0.831	**2.48**	<3.47
TP-4:Surface	1/17/2020	**3.89**	<0.005 J	<0.647	**2.43**	<3.04
AOI-1:Surface	1/23/2020	**4.09**	--	--	--	--
AOI-2:Surface	1/23/2020	**2.22**	--	--	--	--
AOI-3:Surface	1/23/2020	**5.12**	--	--	--	--
AOI-5:Surface	1/23/2020	**3.06**	--	--	--	--
AOI-7:Surface	1/23/2020	**1.71**	--	--	--	--
AOI-9:Surface	1/23/2020	**2.91**	--	--	--	--
AOI-10:Surface	1/23/2020	**3.69**	--	--	--	--
AOI-12:Surface	1/24/2020	**3.91**	--	--	--	--
AOI-13:Surface	1/24/2020	**3.92**	--	--	--	--
AOI-14:Surface	1/24/2020	**3.63**	--	--	--	--
AOI-16:Surface	1/24/2020	**4.38**	--	--	--	--
AOI-21:Surface	1/24/2020	**9.77**	--	--	--	--
AOI-23:Surface	1/24/2020	**2.54**	--	--	--	--
AOI-20-1:3	1/23/2020	**95.4**	--	--	--	--
AOI-20-2:S	1/23/2020	**14.4**	--	--	--	--
AOI-20-3:S	1/23/2020	**11.8**	--	--	--	--
AOI-20-4:S	1/23/2020	**26.5**	--	--	--	--
AOI-20-4:2	1/23/2020	**34.6**	--	--	--	--
AOI-20-5:S	1/24/2020	**10.4**	--	--	--	--
Soil Cleanup Level		**20[e]**	**0.005[e]**	**56[f]**	**130,000[f]**	**NVE**

Notes:
All results presented in milligrams per kilogram (mg/kg).
Bold Bold results indicate that the compound was detected.
Shaded cells indicate that the compound was detected at a concentration greater than cleanup level.
a Analyzed by EPA Method EPA 6020B.
b Analyzed by EPA Method EPA 8260D Direct Sparge.
c Analyzed by EPA Method EPA 8270-SIM.
d Analyzed by EPA Method EPA 300.0.
e Model Toxics Control Act (MTCA) Method A Soil Cleanup Level for Unrestricted Land Uses taken from Table 740-1 of Washington Administrative Code Chapter 170-340-900.
f When no MTCA Method A established, MTCA Method B Soil Cleanup Levels (from Cleanup Levels and Risk Calculations [CLARC] spreadsheet) used.
-- Sample was not analyzed for this compound.
< Less than laboratory method detection limit.
NVE No value established.

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

Table 2
Groundwater Analytical Results – January 2020
Supplemental Remedial Investigation Report
Former Brookdale Golf Course
1802 Brookdale Road East, Tacoma, Washington

Sample Location	Sample Date	Arsenic[a]		1,2-Dibromoethane (EDB)[b]	Dieldrin[c]	Diazinon[d]	Nitrate (as N)[e]	Ortho-Phosphate (as P)[e]
		Total	Dissolved					
B-1:GW	1/15/2020	**9.68**	<1*	<0.01	<0.02	<0.197	**1,200**	<200
B-2:GW	1/15/2020	**1.22**	<1*	<0.01	<0.02	<0.197	**1,180**	<200
B-3:GW	1/15/2020	**73.1**	<1*	<0.01	<0.02	<0.199	**638**	<200
B-4:GW	1/15/2020	**33.5**	<1*	<0.01	**0.032**	<0.197	**2,260**	<200
B-5:GW	1/15/2020	**53.4**	<1*	<0.01	<0.02	<0.198	**2,560 D**	<200
B-6:GW	1/16/2020	**6.37**	<1*	<0.01	<0.02	<0.198	**2,050**	<200
B-7:GW	1/16/2020	<1	<1*	<0.01	<0.02	<0.199	**3,180**	<200
B-8:GW	1/16/2020	**9.08**	<1*	<0.01	<0.02	<0.197	**4,070 DH / 4,230 E**	<200
B-10:GW	1/16/2020	**39.7**	<1*	<0.01	<0.02	<0.198	**2,640 DH / 2,740 E**	<200
MW-1	2/17/2020	--	--	--	<0.02	--	--	--
Groundwater Cleanup Level		**5[f]**		**0.01[f]**	**0.0055[g]**	**11[g]**	**26,000[g]**	**NVE**

Notes:
All results presented in micrograms per liter (µg/L).
Bold Bold results indicate that the compound was detected.
Shaded cells indicate that the compound was detected at a concentration greater than cleanup level.
a Analyzed by EPA Method EPA 6020B.
b Analyzed by EPA Method EPA 8011 Modified.
c Analyzed by EPA Method EPA 8081B.
d Analyzed by EPA Method EPA 8270-SIM.
e Analyzed by EPA Method EPA 300.0.
f Model Toxics Control Act (MTCA) Method A Groundwater Cleanup Levels, WAC 173-340-900, Table 720-1.
g When no MTCA Method A established, MTCA Method B Groundwater Cleanup Levels (from Cleanup Levels and Risk Calculations [CLARC] spreadsheet) used. Where cleanup levels based on carcinogenic and non-carcinogenic risk were available, the lower value is listed.
* The dissolved metals samples were filtered at Friedman and Bruya on January 15,2020 at 09:42.
-- Sample was not analyzed for this compound.
< Less than laboratory method detection limit.
NVE No value established.

Qualifiers:
D Dilution was required.
E Estimated value. The amount exceeds the linear working range of the instrument.
H Holding times for preparation or analysis exceeded.

Table 3
Surface Water Analytical Results – January 2020
Supplemental Remedial Investigation Report
Former Brookdale Golf Course
1802 Brookdale Road East, Tacoma, Washington

Sample Location	Sample Date	Arsenic[a]		1,2-Dibromoethane (EDB)[b]	Dieldrin[c]	Diazinon[d]	Nitrate (as N)[e]	Ortho-Phosphate (as P)[e]
		Total	Dissolved					
NFCC-SW-1	1/13/2020	<1	<1*	<0.01	<0.02	<0.197	**1,130**	<200
NFCC-SW-2	1/13/2020	<1	<1*	<0.01	<0.02	<0.197	**1,140**	<200
CC-SW-1	1/13/2020	<1	<1*	<0.01	<0.02	<0.199	**2,690 D**	<200
CC-SW-2	1/14/2020	<1	<1*	<0.01	<0.02	<0.198	**2,840 D**	<200
Pond-SW	1/14/2020	<1	<1*	<0.01	<0.02	<0.199	**993**	<200
CLARC Surface Water Human Health Fresh Water[f]	**173-201A WAC (µg/L)**	**10**		**NVE**	**0.0000061**	**NVE**	**NVE**	**NVE**
	40 CFR 131.45 (µg/L)	**0.018**		**NVE**	**0.00000007**	**NVE**	**NVE**	**NVE**
	CWA §304 (µg/L)	**0.018**		**NVE**	**0.0000012**	**NVE**	**10,000**	**NVE**

Notes:
All results presented in micrograms per liter (µg/L).
Bold Bold results indicate that the compound was detected.
a Analyzed by EPA Method EPA 6020B.
b Analyzed by EPA Method EPA 8011 Modified.
c Analyzed by EPA Method EPA 8081B.
d Analyzed by EPA Method EPA 8270-SIM.
e Analyzed by EPA Method EPA 300.0.
f Based on Cleanup Levels and Risk Calculations (CLARC) database.
* The dissolved metals samples were filtered at Friedman and Bruya.
< Less than laboratory method detection limit
NVE No value established.
WAC Washington Administrative Code.
CFR Code of Federal Regulations.
CWA Clean Water Act.

Qualifier:
D Dilution was required.

Table 4
Sediment Analytical Results
Supplemental Remedial Investigation Report
Former Brookdale Golf Course
1802 Brookdale Road East, Tacoma, Washington

Sample Location	Sample Date	Arsenic[a]	1,2-Dibromoethane (EDB)[b]	Dieldrin[c]	Diazinon[d]	Nitrate (as N)[e]	Ortho-Phosphate (as P)[e]
NFCC-Sed-1	1/13/2020	**3.08**	<0.005	<0.006	<0.0820	**2.51**	<3.53
NFCC-Sed-2	1/13/2020	**3.33**	<0.005	<0.006	<0.696 D	**4.32**	<3.09
NFCC-Sed-3	1/13/2020	**4.62**	<0.005	<0.006	<0.0657	**2.88**	<3.04
CC-Sed-1	1/13/2020	**4.10**	<0.005	<0.006	<0.0852	<1.96	<3.91
CC-Sed-2	1/14/2020	**3.19**	<0.005	<0.006	<0.838 D	<1.76	<3.52
CC-Sed-3	1/14/2020	**8.88**	<0.005	<0.006	<0.592 D	<1.30	<2.59
Pond-Sed-1	1/14/2020	**8.25**	<0.005 J	<0.006	<0.703 D	<1.47	<2.95
Pond-Sed-2	1/14/2020	**10.4**	<0.005	<0.006	<0.567 D	**1.84**	<2.32
Pond-Sed-3	1/14/2020	**5.77**	<0.005	<0.006	<0.517 D	<1.17	<2.34
Freshwater Sediment Cleanup Objective[f]		**14**	**NVE**	**0.0049**	**NVE**	**NVE**	**NVE**

Notes:

All results presented in milligrams per kilogram (mg/kg).

Bold Bold results indicate that the compound was detected.

a Analyzed by EPA Method EPA 6020.

b Analyzed by EPA Method EPA 8260D Direct Sparge.

c Analyzed by EPA Method EPA 8081B.

d Analyzed by EPA Method EPA 8270-SIM.

e Analyzed by EPA Method EPA 300.0.

f Based on Washington State Department of Ecology Sediment Management Standards, WAC 173-204-563 Table VI, Freshwater Sediment Cleanup Objectives and Cleanup Screening Levels Chemical Criteria. ,

< Less than laboratory method detection limit.

NVE No value established.

Qualifier:

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

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Figures

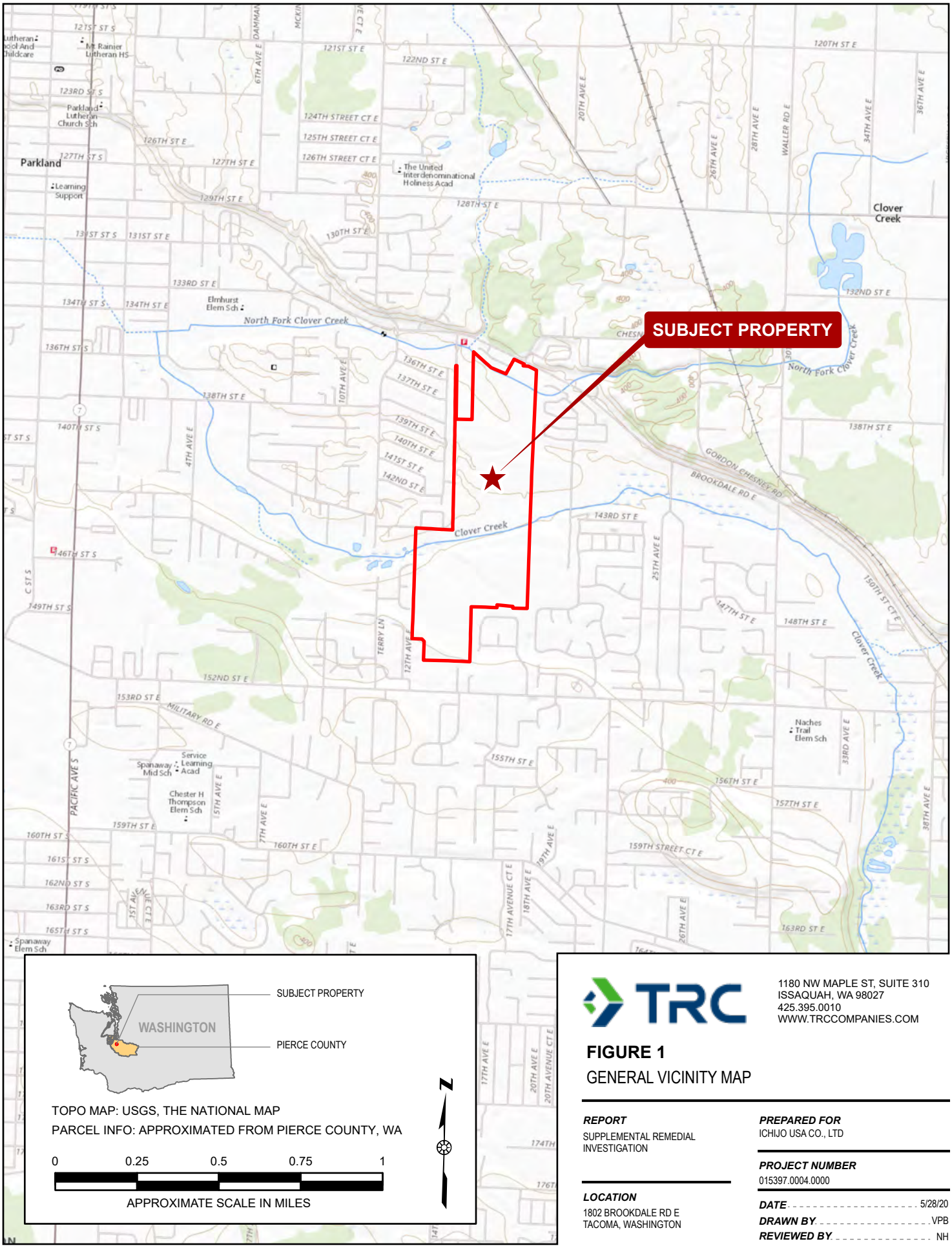

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FIGURE 1

GENERAL VICINITY MAP

REPORT
SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION
1802 BROOKDALE RD E
TACOMA, WASHINGTON

PREPARED FOR
ICHIJO USA CO., LTD

PROJECT NUMBER
015397.0004.0000

DATE 5/28/20
DRAWN BY VPB
REVIEWED BY NH

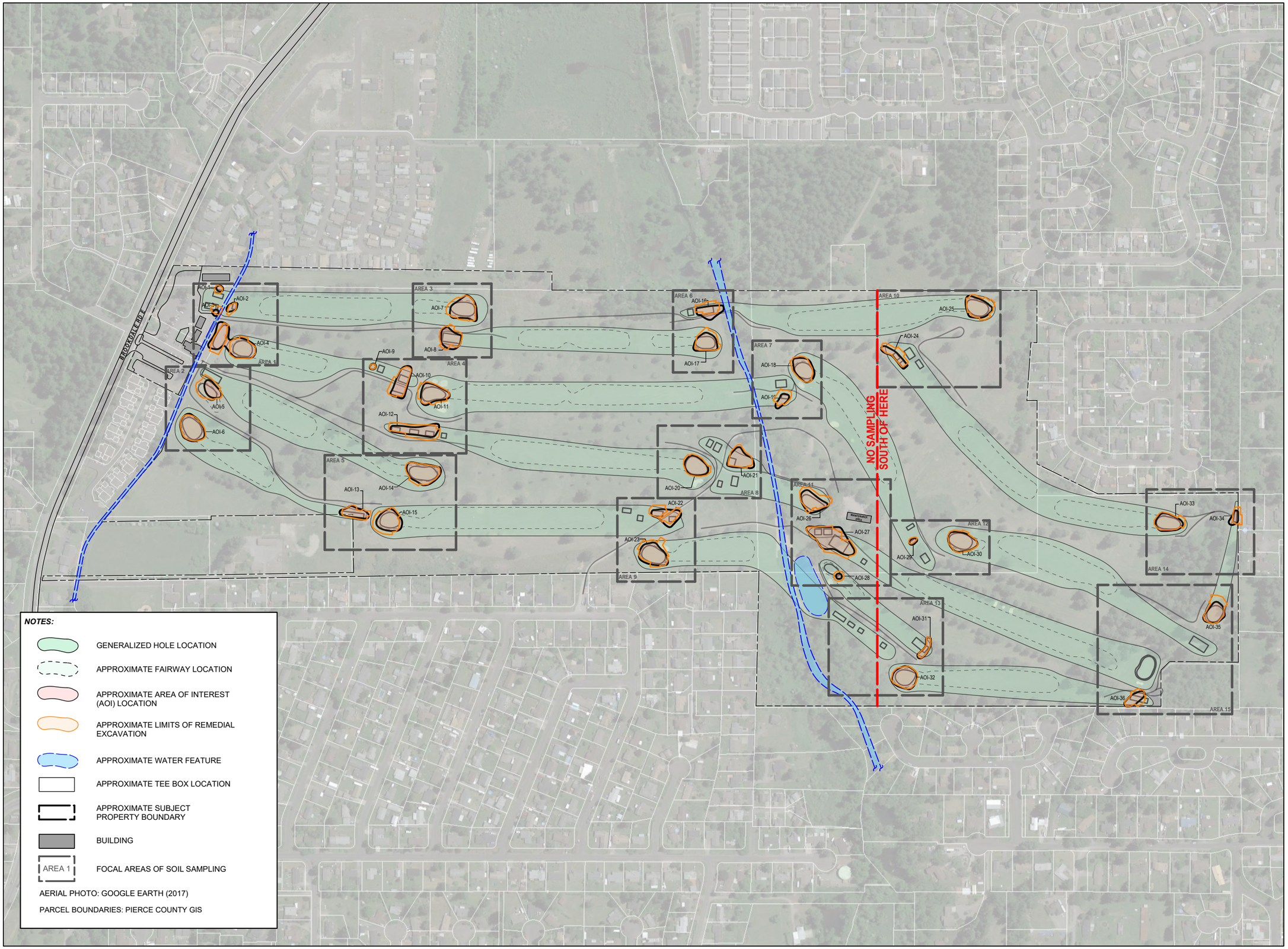

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FIGURE 2

SITE REPRESENTATION SHOWING REMEDIAL EXCAVATION AREAS

REPORT

SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION

1802 BROOKDALE RD E
TACOMA, WASHINGTON

PREPARED FOR

ICHIJO USA CO., LTD

PROJECT NUMBER

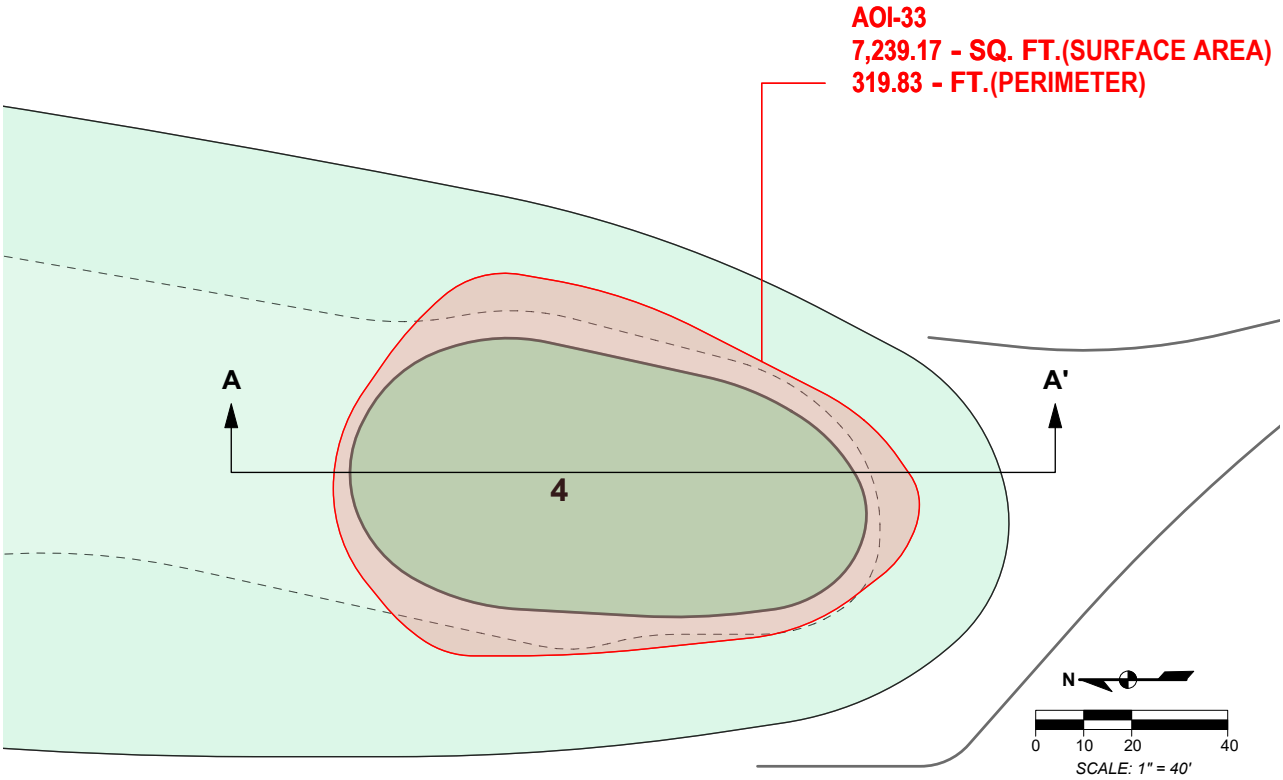
015397.0004.0000

N

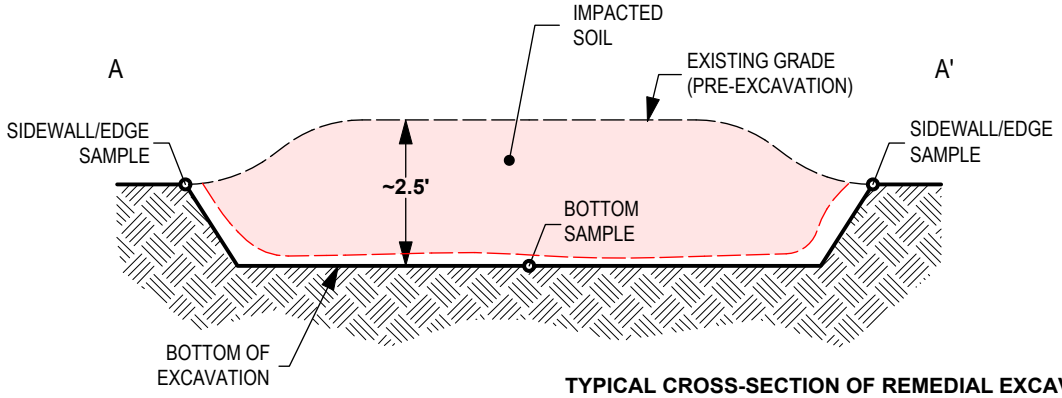
0 100 200 400

HORIZONTAL SCALE: 1" = 200'

DATE 5/28/20
DRAWN BY ..... VPB
REVIEWED BY ..... NH



TYPICAL AREA OF IMPACT (PLAN VIEW)



TYPICAL CROSS-SECTION OF REMEDIAL EXCAVATION

NOT TO SCALE

NOTES:

A — A' CROSS-SECTION INDICATOR

INFERRED AREA OF SOIL WITH DIELDRIN CONCENTRATIONS EXCEEDING THE CLEANUP LEVEL

AOI-33 — AREA OF IMPACT (AOI) AND DESIGNATION NUMBER

7,239.17 - SQ. FT. — APPROXIMATE SURFACE AREA IN SQUARE FEET (SQ. FT.)

319.83 - FT. — APPROXIMATE PERIMETER LENGTH IN LINEAR FEET (FT.)

GENERALIZED HOLE LOCATION

APPROXIMATE FAIRWAY LOCATION

4 — APPROXIMATE GREEN LOCATION WITH HOLE NUMBER

CART PATH

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FIGURE 3

TYPICAL CROSS-SECTION OF REMEDIAL EXCAVATION

REPORT
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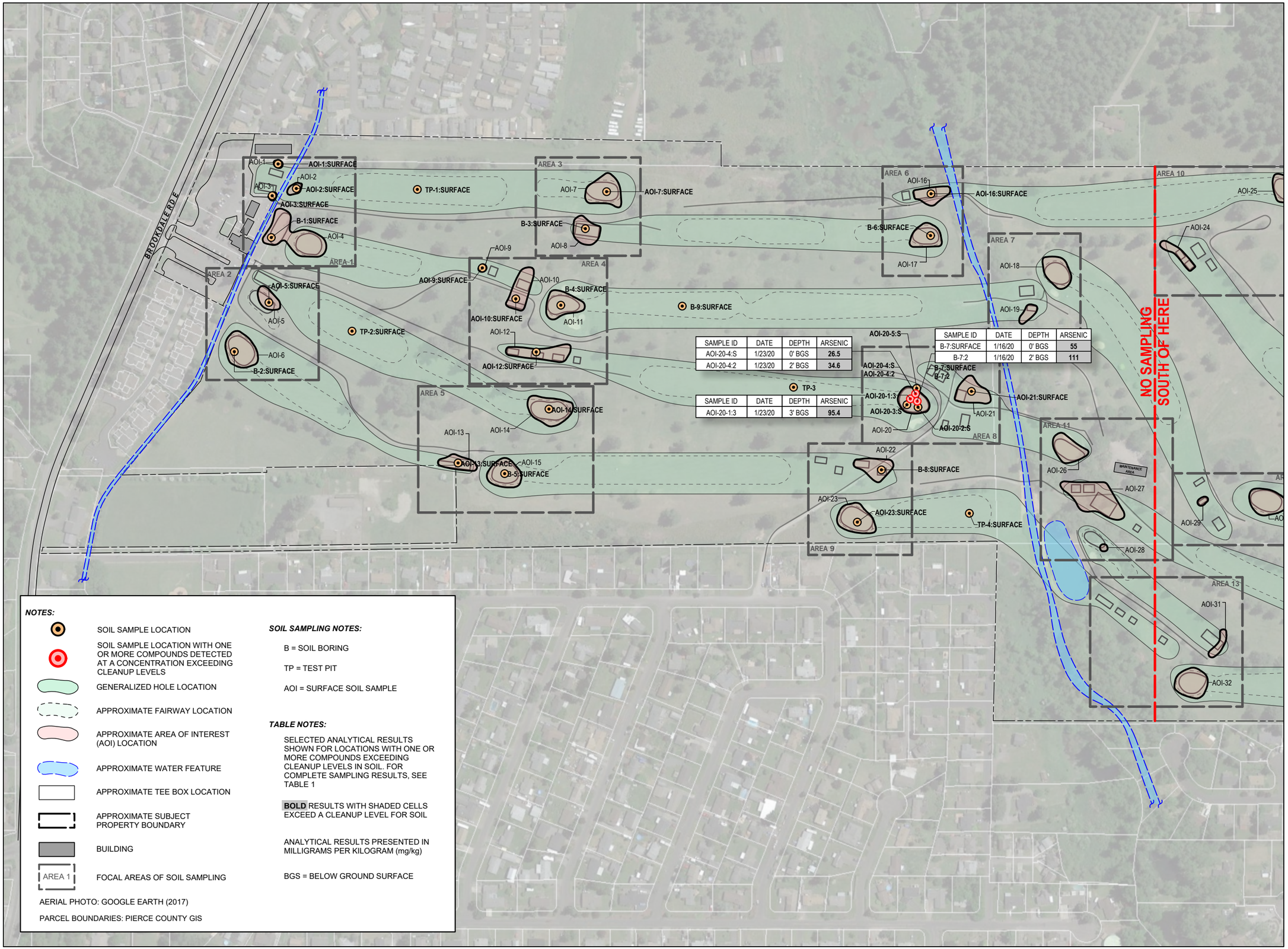

SAMPLE ID	DATE	DEPTH	ARSENIC
AOI-20-4:S	1/23/20	0' BGS	**26.5**
AOI-20-4:2	1/23/20	2' BGS	**34.6**

SAMPLE ID	DATE	DEPTH	ARSENIC
AOI-20-1:3	1/23/20	3' BGS	**95.4**

SAMPLE ID	DATE	DEPTH	ARSENIC
B-7:SURFACE	1/16/20	0' BGS	**55**
B-7:2	1/16/20	2' BGS	**111**

NOTES:

- SOIL SAMPLE LOCATION
- SOIL SAMPLE LOCATION WITH ONE OR MORE COMPOUNDS DETECTED AT A CONCENTRATION EXCEEDING CLEANUP LEVELS
- GENERALIZED HOLE LOCATION
- APPROXIMATE FAIRWAY LOCATION
- APPROXIMATE AREA OF INTEREST (AOI) LOCATION
- APPROXIMATE WATER FEATURE
- APPROXIMATE TEE BOX LOCATION
- APPROXIMATE SUBJECT PROPERTY BOUNDARY
- BUILDING
- AREA 1 — FOCAL AREAS OF SOIL SAMPLING

AERIAL PHOTO: GOOGLE EARTH (2017)

PARCEL BOUNDARIES: PIERCE COUNTY GIS

SOIL SAMPLING NOTES:

B = SOIL BORING

TP = TEST PIT

AOI = SURFACE SOIL SAMPLE

TABLE NOTES:

SELECTED ANALYTICAL RESULTS SHOWN FOR LOCATIONS WITH ONE OR MORE COMPOUNDS EXCEEDING CLEANUP LEVELS IN SOIL. FOR COMPLETE SAMPLING RESULTS, SEE TABLE 1

BOLD RESULTS WITH SHADED CELLS EXCEED A CLEANUP LEVEL FOR SOIL

ANALYTICAL RESULTS PRESENTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

BGS = BELOW GROUND SURFACE

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FIGURE 4

SOIL SAMPLE LOCATIONS WITH SELECTED ANALYTICAL RESULTS

REPORT

SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION

1802 BROOKDALE RD E
TACOMA, WASHINGTON

PREPARED FOR

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PROJECT NUMBER

015397.0004.0000

N

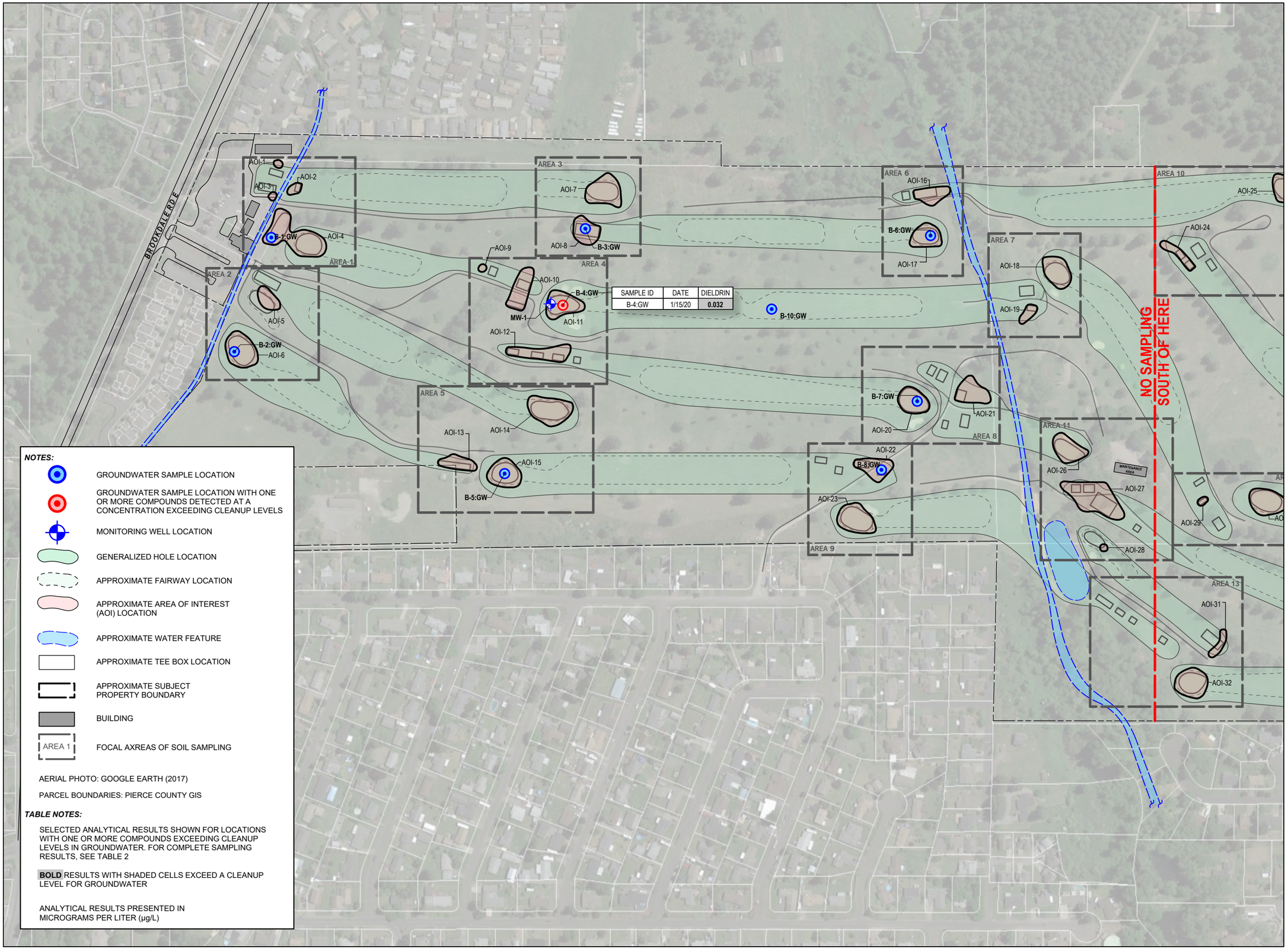
0 75 150 300

HORIZONTAL SCALE: 1" = 300'

DATE 5/28/20

DRAWN BY ..... VPB

REVIEWED BY ..... NH



SAMPLE ID	DATE	DIELDRIN
B-4:GW	1/15/20	**0.032**

NOTES:

- GROUNDWATER SAMPLE LOCATION
- GROUNDWATER SAMPLE LOCATION WITH ONE OR MORE COMPOUNDS DETECTED AT A CONCENTRATION EXCEEDING CLEANUP LEVELS
- MONITORING WELL LOCATION
- GENERALIZED HOLE LOCATION
- APPROXIMATE FAIRWAY LOCATION
- APPROXIMATE AREA OF INTEREST (AOI) LOCATION
- APPROXIMATE WATER FEATURE
- APPROXIMATE TEE BOX LOCATION
- APPROXIMATE SUBJECT PROPERTY BOUNDARY
- BUILDING
- AREA 1 — FOCAL AXREAS OF SOIL SAMPLING

AERIAL PHOTO: GOOGLE EARTH (2017)

PARCEL BOUNDARIES: PIERCE COUNTY GIS

TABLE NOTES:

SELECTED ANALYTICAL RESULTS SHOWN FOR LOCATIONS WITH ONE OR MORE COMPOUNDS EXCEEDING CLEANUP LEVELS IN GROUNDWATER. FOR COMPLETE SAMPLING RESULTS, SEE TABLE 2

BOLD RESULTS WITH SHADED CELLS EXCEED A CLEANUP LEVEL FOR GROUNDWATER

ANALYTICAL RESULTS PRESENTED IN MICROGRAMS PER LITER (µg/L)

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FIGURE 5

GROUNDWATER SAMPLE LOCATIONS WITH SELECTED ANALYTICAL RESULTS

REPORT

SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION

1802 BROOKDALE RD E
TACOMA, WASHINGTON

PREPARED FOR

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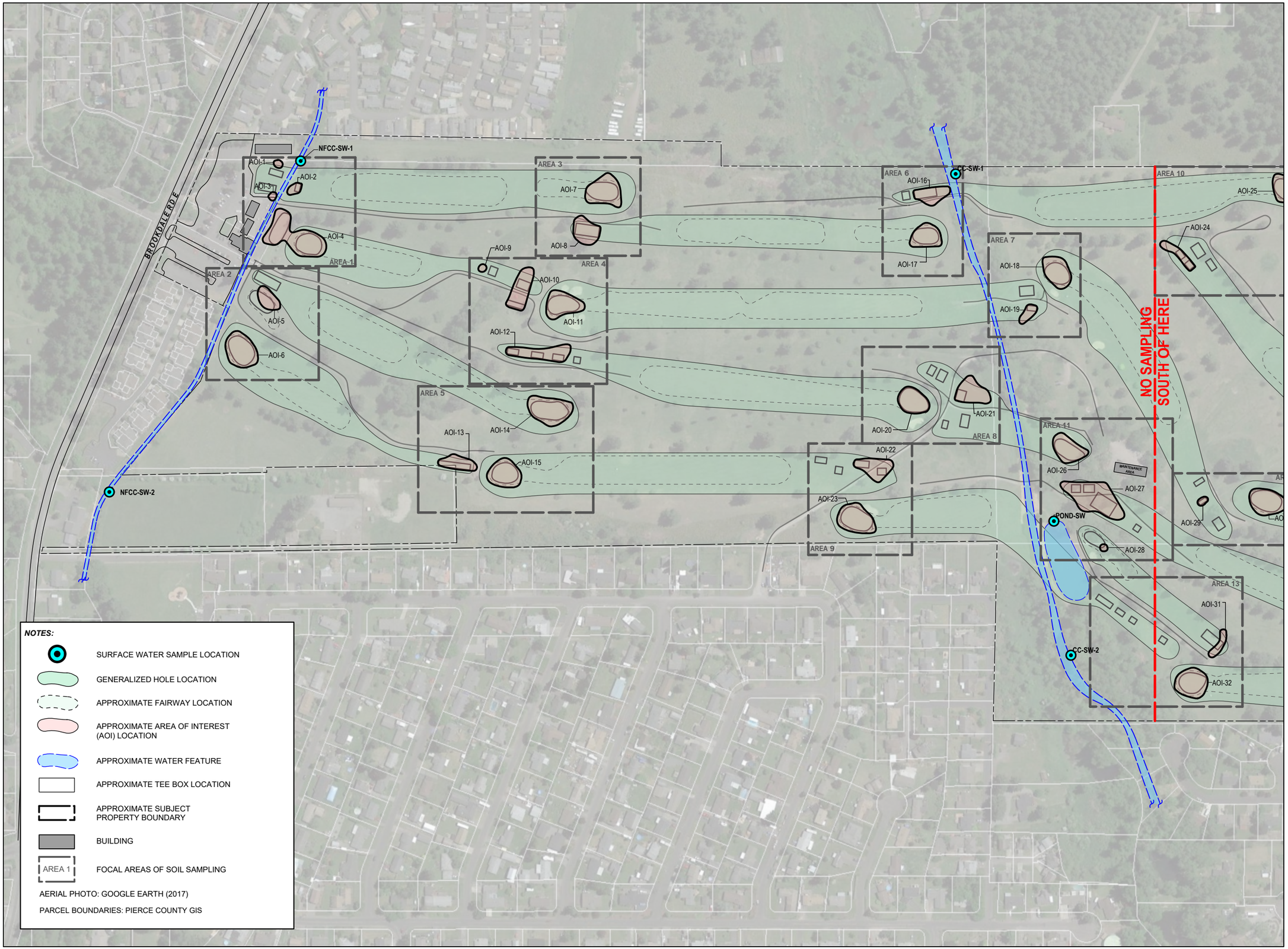
PROJECT NUMBER

015397.0004.0000

DATE 5/28/20
DRAWN BY ..... VPB
REVIEWED BY ..... NH



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425.395.0010

FIGURE 6

SURFACE WATER SAMPLE LOCATIONS WITH SELECTED ANALYTICAL RESULTS

REPORT

SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION

1802 BROOKDALE RD E
TACOMA, WASHINGTON

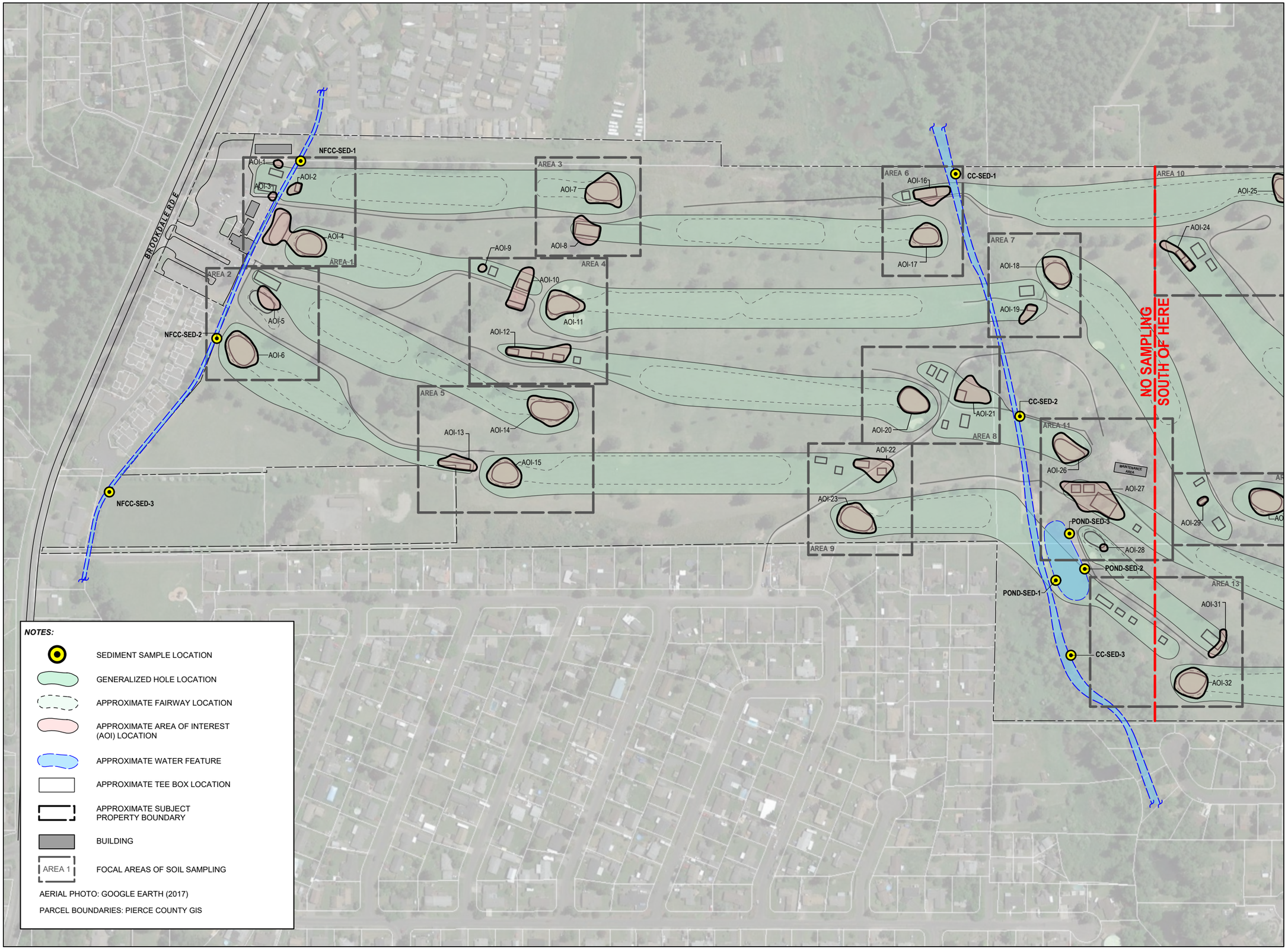
PREPARED FOR

ICHIJO USA CO., LTD

PROJECT NUMBER

015397.0004.0000

DATE 5/28/20
DRAWN BY ..... VPB
REVIEWED BY ..... NH



TRC
1180 NW MAPLE ST, SUITE 310
ISSAQUAH, WA 98027
425.395.0010

FIGURE 7

SEDIMENT SAMPLE LOCATIONS WITH SELECTED ANALYTICAL RESULTS

REPORT

SUPPLEMENTAL REMEDIAL INVESTIGATION

LOCATION

1802 BROOKDALE RD E
TACOMA, WASHINGTON

PREPARED FOR

ICHIJO USA CO., LTD

PROJECT NUMBER

015397.0004.0000

DATE 5/28/20
DRAWN BY ..... VPB
REVIEWED BY ..... NH

Attachment A
Historical Aerial Maps

Brookdale GC

1802 BROOKDALE RD E

Tacoma, WA 98445

Inquiry Number: 6046090.1

April 22, 2020

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/22/20

Site Name:

Brookdale GC
1802 BROOKDALE RD E
Tacoma, WA 98445
EDR Inquiry # 6046090.1

Client Name:

TRC Environmental Corporation
1180 NW Maple St Suite 310
Issaquah, WA 98027
Contact: Nate Hinsperger

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	***Scale***	***Details***	***Source***
2017	1"=750'	Flight Year: 2017	USDA/NAIP
2013	1"=750'	Flight Year: 2013	USDA/NAIP
2009	1"=750'	Flight Year: 2009	USDA/NAIP
2006	1"=750'	Flight Year: 2006	USDA/NAIP
1990	1"=750'	Acquisition Date: July 10, 1990	USGS/DOQQ
1980	1"=750'	Flight Date: July 01, 1980	USDA
1972	1"=750'	Flight Date: September 04, 1972	USGS
1968	1"=750'	Flight Date: September 02, 1968	USGS
1957	1"=750'	Flight Date: May 28, 1957	USGS
1941	1"=750'	Flight Date: July 10, 1941	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.


INQUIRY #: 6046090.1
YEAR: 2017
= 750'
N
EDR

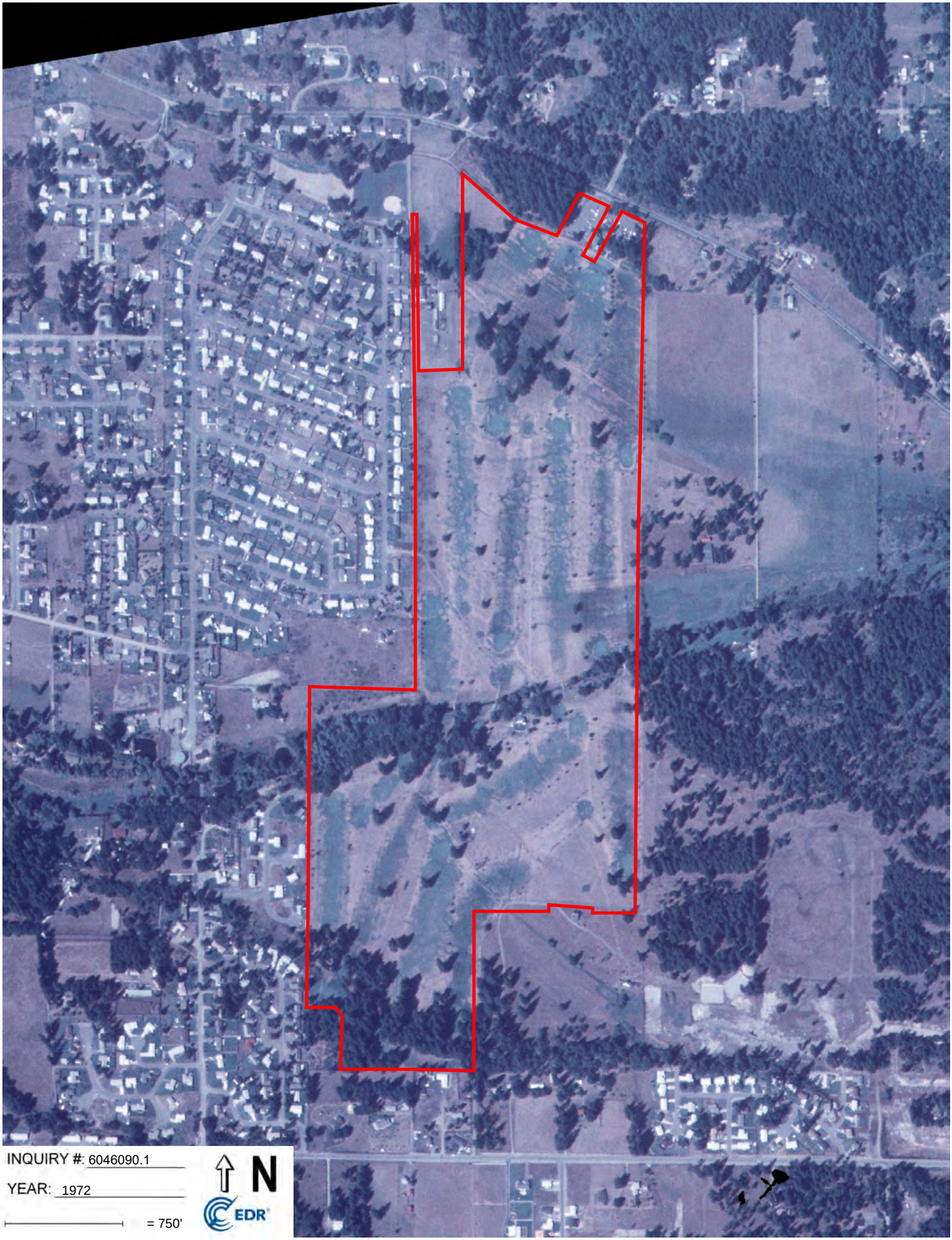

INQUIRY #: 6046090.1
YEAR: 2013
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 2009
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 2006
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1990
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1980
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1972
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1968
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1957
= 750'
N
EDR


INQUIRY #: 6046090.1
YEAR: 1941
= 750'
N
EDR

Attachment B
Boring Logs

ENVIRONMENTAL PARTNERS INC

BORING ID: B-1

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/15/20**	SCREEN INTERVAL: **10'-15' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden/J. Sherrod** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **15' bgs**	FILTER PACK INTERVAL: **0'-15' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL; brown; dry; mostly gravel with few sand; no odor			B-1:Surface	
1						
2			70		B-1:2	
3						
4						
5						Temp. Well Casing
6						
7			80			
8						
9						
10		10' Wet				
11		11' Decreased gravel size; wet; color change to gray				
12			80			Temp. Well Screen
13						
14		14' Rusting			B-1:GW	
15		End of Borehole				

NOTES: Boring begins 2' bgs in AOI-4. Tagged DTW = 10.20' bgs. 3 gallons removed.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-10

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/16/20**	SCREEN INTERVAL: **10'-15' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **15' bgs**	FILTER PACK INTERVAL: **0'-15' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL WITH SAND; brownish gray; damp; mostly fine to coarse gravel with minor sand	30			Temp. Well Casing
1						
2						
3						
4						
5			60			
6						
7						
8						
9						
10			100			Temp. Well Screen
11						
12						
13						
14					B-10:GW	
15		End of Borehole				

NOTES: Boring in fairway. Tagged DTW = 8.20' bgs. 3.5 gallons removed prior to GW sample collection. Water shows no signs of clearing in a timely manner.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-2

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/15/20**	SCREEN INTERVAL: **10'-15' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **15' bgs**	FILTER PACK INTERVAL: **0'-15' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0		WELL-GRADED GRAVEL; brown; dry; mostly fine to coarse gravel with few sand			B-2:Surface	
1						
2					B-2:2	
3			50			
4						
5						Temp. Well Casing
6						
7	GW		65			
8						
9						
10		10' Wet; decreased gravel size; increase sand content to minor; color change to gray				
11						
12			65			Temp. Well Screen
13						
14		14' Rusting			B-2:GW	
15		End of Borehole				

NOTES: Boring begins 2' bgs in AOI-6. DTW = 9.90' bgs. 2.5 gallons removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-3

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/15/20**	SCREEN INTERVAL: **10'-15' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **17.5' bgs**	FILTER PACK INTERVAL: **0'-17.5' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL; brown; dry; mostly fine to coarse gravel with few sand			B-3:Surface	
1						
2					B-3:2	
3			50			
4						
5						Temp. Well Casing
6						
7			100			
8						
9						
10						
11		11.5' Wet; rusting; decreased gravel size				
12	ML	SANDY SILT; bluish gray; damp; mostly silt with some fine sand and trace fine gravel; low plasticity	100			Temp. Well Screen
13						
14						
15			100		B-3:GW	

NOTES: Boring begins 2' bgs in AOI-8. 3 gallons removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-4

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/15/20**	SCREEN INTERVAL: **11'-16' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **19.5' bgs**	FILTER PACK INTERVAL: **0'-19.5' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL; brown; dry; mostly fine to coarse gravel with few sand			B-4:Surface	
1						
2					B-4:2	
3			60			
4						
5						Temp. Well Casing
6						
7			75			
8						
9						
10						
11						
12			75			
13						Temp. Well Screen
14						
15			90		B-4:GW	

NOTES: DTW = 11.10' bgs. Boring begins 2' bgs in AOI-11. 2.5 gallons removed prior to GW sampling.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-5

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/15/20**	SCREEN INTERVAL: **15'-20' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **20' bgs**	FILTER PACK INTERVAL: **0'-20' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0		WELL-GRADED GRAVEL WITH SAND; brown; dry; mostly fine to coarse gravel with minor sand			B-5:Surface	
1						
2					B-5:2	
3			60			
4						
5						
6						
7			30			Temp. Well Casing
8						
9						
10	GW					
11						
12			80			
13						
14						
15			100		B-5:GW	Temp. Well

NOTES: Boring approximately 2' bgs in AOI-15. 3 gallons removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-6

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/16/20**	SCREEN INTERVAL: **0'-7' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **10' bgs**	FILTER PACK INTERVAL: **0'-10' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL; grayish brown; moist; mostly fine to coarse gravel with few sand			B-6:Surface	Temp. Well Screen
1						
2			30		B-6:2	
3		3.5' Wet				
4						
5		5' Decreased gravel size; increased coarse sand content; wet				
6						
7			50		B-6:GW	
8						
9						
10		End of Borehole				
11						
12						
13						
14						
15						

NOTES: Boring begins 1' bgs in AOI-17. Tagged DTW = 1.10' bgs. 2 gallons of water removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-7

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/16/20**	SCREEN INTERVAL: **0'-7' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **10' bgs**	FILTER PACK INTERVAL: **0'-10' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL; brown; moist; mostly fine to coarse gravel with few sand	50		B-7:Surface	Temp. Well Screen
1						
2					B-7:2	
3						
4		4' Wet; rusting				
5		5' Color change to grayish brown	50			
6						
7					B-7:GW	
8						
9						
10		End of Borehole				
11						
12						
13						
14						
15						

NOTES: Boring begins 2' bgs in AOI-20. Tagged DTW = 3.50' bgs. 2.5 gallons removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-8

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/16/20**	SCREEN INTERVAL: **8'-18' bgs**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Native Soil**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **18' bgs**	FILTER PACK INTERVAL: **0'-18' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0	GW	WELL-GRADED GRAVEL WITH SAND; grayish brown; damp; mostly fine to coarse gravel with minor sand			B-8:Surface	
1						
2			50		B-8:2	
3						
4						Temp. Well Casing
5						
6						
7			80			
8						
9						
10						
11						Temp. Well Screen
12						
13			0			
14						
15						

NOTES: Boring begins 1' bgs in AOI-22. Tagged DTW = 8.50' bgs. 2.5 gallons of GW removed prior to GW sample collection.

ENVIRONMENTAL PARTNERS INC

BORING ID: B-9

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **0.75" Temporary Well**
DRILLING CONTRACTOR: **ESN Northwest**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Truck-Mount Geoprobe 7800**	DATE: **1/16/20**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Direct-Push Technology (DPT)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **N/A**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **2.25" Diameter**	TOTAL DEPTH: **20' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0		Grass Surface with Topsoil			B-9:Surface	
1	GW	WELL-GRADED GRAVEL WITH SAND; dry; mostly fine to coarse gravel with minor sand				
2			40		B-9:2	
3						
4						
5						No Temporary Well Installed
6						
7			80			
8						
9						
10						
11						
12			100			
13						
14						
15			0			

NOTES: Boring in fairway. No groundwater sample.

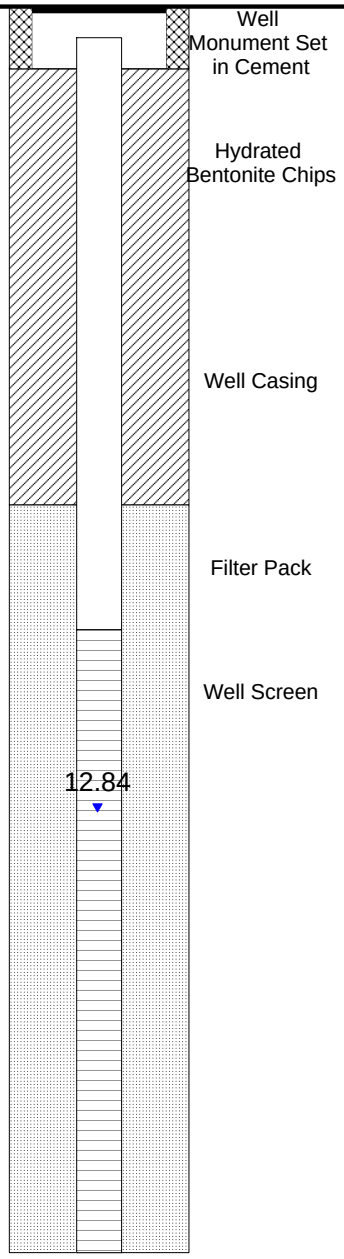
ENVIRONMENTAL PARTNERS INC

BORING ID: MW-1

SITE ADDRESS **1802 Brookdale Rd E, Tacoma, WA**	CLIENT: **Ichijo USA**	CASING MATERIAL AND SIZE: **2" Sch. 40 PVC**
DRILLING CONTRACTOR: **Holocene Drilling**	PROJECT #: **15397**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Limited-Access Rig**	DATE: **2/13/20**	SCREEN INTERVAL: **10'-20' bgs**
DRILLING METHOD: **Hollow-Stem Auger (HSA)**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Silica Sand**
LOGGED BY: **C. McFadden** / BOREHOLE SIZE: **6" Diameter**	TOTAL DEPTH: **20' bgs**	FILTER PACK INTERVAL: **8'-20' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)
0		WELL-GRADED GRAVEL WITH SAND; brown; damp; mostly fine to coarse gravel with minor sand				
1						
2						
3						
4						
5						0.0
6			33	16,50/6		
7						
8						
9						
10	GW					0.0
11			66	22,29,50/6		
12						
13						
14						
15		15' Wet; rusting; addition of few silt				0.0
16			66	32,24,35		
17						
18						
19						
20		20' NO RECOVERY; wet End of Borehole				
21			0	50/3		
22						

Well Construction



NOTES: DTW = 12.84' bgs with stick-up monument.

Attachment C
Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001156

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 13, 2020 from the 015397, F&BI 001156 project. Per your request, the dieldrin results were reported to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 17, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001156

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 13, 2020 from the 015397, F&BI 001156 project. There are 20 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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 13, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001156 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001156-01	NFCC-Sed-1
001156-02	NFCC-Sed-1:1
001156-03	NFCC-Sed-2
001156-04	NFCC-Sed-2:1
001156-05	NFCC-Sed-3
001156-06	NFCC-Sed-3:1
001156-07	CC-Sed-1
001156-08	CC-Sed-1:1

Samples NFCC-Sed-1, NFCC-Sed-2, NFCC-Sed-3, and CC-Sed-1 were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	NFCC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-01
Date Analyzed:	01/14/20	Data File:	001156-01.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.08

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	NFCC-Sed-2	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-03
Date Analyzed:	01/14/20	Data File:	001156-03.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.33

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	NFCC-Sed-3	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-05
Date Analyzed:	01/14/20	Data File:	001156-05.050
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.62

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-07
Date Analyzed:	01/14/20	Data File:	001156-07.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	I0-028 mb
Date Analyzed:	01/14/20	Data File:	I0-028 mb.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	NFCC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-01
Date Analyzed:	01/14/20	Data File:	011421.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	91	50	150
4-Bromofluorobenzene	126	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	NFCC-Sed-2	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-03
Date Analyzed:	01/15/20	Data File:	011509.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	118	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	NFCC-Sed-3	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-05
Date Analyzed:	01/14/20	Data File:	011424.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	CC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-07
Date Analyzed:	01/14/20	Data File:	011425.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	120	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	00-090 mb
Date Analyzed:	01/14/20	Data File:	011420.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	NFCC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-01 1/6
Date Analyzed:	01/14/20	Data File:	011407.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	50	150
DBC	70	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	NFCC-Sed-2	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-03 1/6
Date Analyzed:	01/14/20	Data File:	011410.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	50	150
DBC	66	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	NFCC-Sed-3	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-05 1/6
Date Analyzed:	01/14/20	Data File:	011411.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	64	50	150
DBC	66	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-Sed-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	001156-07 1/6
Date Analyzed:	01/14/20	Data File:	011412.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	60	50	150
DBC	66	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001156
Date Extracted:	01/14/20	Lab ID:	00-122 mb 1/6
Date Analyzed:	01/14/20	Data File:	011405.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001156

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

Laboratory Code: 001156-03 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	84	85	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	80-120

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001156

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001156-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005	<0.005	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	113	111	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001156

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

Laboratory Code: 001156-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dieldrin	mg/kg (ppm)	0.1	<0.01	66	64	50-150	3

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dieldrin	mg/kg (ppm)	0.1	82	70-130

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.

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F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001156
Work Order Number: 2001205

January 15, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 8 sample(s) on 1/13/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Eric Young

DoD/ELAP Certification #L17-135, ISO/IEC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)

Date: *01/15/2020*

CLIENT: Friedman & Bruya
Project: 001156
Work Order: 2001205

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001205-001	NFCC-Sed-1	01/13/2020 8:30 AM	01/13/2020 4:33 PM
2001205-002	NFCC-Sed-1:1	01/13/2020 9:00 AM	01/13/2020 4:33 PM
2001205-003	NFCC-Sed-2	01/13/2020 9:30 AM	01/13/2020 4:33 PM
2001205-004	NFCC-Sed-2:1	01/13/2020 9:35 AM	01/13/2020 4:33 PM
2001205-005	NFCC-Sed-3	01/13/2020 10:25 AM	01/13/2020 4:33 PM
2001205-006	NFCC-Sed-3:1	01/13/2020 10:35 AM	01/13/2020 4:33 PM
2001205-007	CC-Sed-1	01/13/2020 11:55 AM	01/13/2020 4:33 PM
2001205-008	CC-Sed-1:1	01/13/2020 12:05 PM	01/13/2020 4:33 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001205**

Date: **1/15/2020**

CLIENT: Friedman & Bruya

Project: 001156

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001205**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/13/2020 8:30:00 AM
Project: 001156
Lab ID: 2001205-001
Matrix: Soil
Client Sample ID: NFCC-Sed-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	82.0		µg/Kg-dry	1	1/14/2020 10:05:40 PM
Surr: Triphenylphosphate	68.0	10.7 - 154		%Rec	1	1/14/2020 10:05:40 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	2.51	1.77		mg/Kg-dry	1	1/15/2020 12:20:00 PM
Orthophosphate (as P)	ND	3.53		mg/Kg-dry	1	1/15/2020 12:20:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56603		Analyst: MM
Percent Moisture	43.5	0.500		wt%	1	1/14/2020 8:22:08 AM

Analytical Report

Work Order: **2001205**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/13/2020 9:30:00 AM
Project: 001156
Lab ID: 2001205-003
Matrix: Soil
Client Sample ID: NFCC-Sed-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	696	D	µg/Kg-dry	10	1/15/2020 2:24:19 PM
Surr: Triphenylphosphate	77.1	10.7 - 154	D	%Rec	10	1/15/2020 2:24:19 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	4.32	1.54		mg/Kg-dry	1	1/15/2020 12:43:00 PM
Orthophosphate (as P)	ND	3.09		mg/Kg-dry	1	1/15/2020 12:43:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56603		Analyst: MM
Percent Moisture	35.3	0.500		wt%	1	1/14/2020 8:22:08 AM

Analytical Report

Work Order: **2001205**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/13/2020 10:25:00 AM
Project: 001156
Lab ID: 2001205-005
Matrix: Soil
Client Sample ID: NFCC-Sed-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	65.7		µg/Kg-dry	1	1/14/2020 11:57:37 PM
Surr: Triphenylphosphate	67.1	10.7 - 154		%Rec	1	1/14/2020 11:57:37 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	2.88	1.52		mg/Kg-dry	1	1/15/2020 1:06:00 PM
Orthophosphate (as P)	ND	3.04		mg/Kg-dry	1	1/15/2020 1:06:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56603		Analyst: MM
Percent Moisture	34.2	0.500		wt%	1	1/14/2020 8:22:08 AM

Analytical Report

Work Order: **2001205**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/13/2020 11:55:00 AM
Project: 001156
Lab ID: 2001205-007
Matrix: Soil
Client Sample ID: CC-Sed-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	85.2		µg/Kg-dry	1	1/15/2020 12:20:05 AM
Surr: Triphenylphosphate	40.8	10.7 - 154		%Rec	1	1/15/2020 12:20:05 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.96		mg/Kg-dry	1	1/15/2020 1:29:00 PM
Orthophosphate (as P)	ND	3.91		mg/Kg-dry	1	1/15/2020 1:29:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56603		Analyst: MM
Percent Moisture	49.5	0.500		wt%	1	1/14/2020 8:22:08 AM

Date: *1/15/2020*

Work Order: 2001205
CLIENT: Friedman & Bruya
Project: 001156

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27121** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **MBLKS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128921**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27121** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **LCSS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128922**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.33	1.00	7.500	0	97.7	90	110				
Orthophosphate (as P)	12.2	2.00	12.50	0	98.0	90	110				

Date: *1/15/2020*

Work Order: 2001205
CLIENT: Friedman & Bruya
Project: 001156

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27114** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **MBLKS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128470**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	50.0									
Surr: Triphenylphosphate	21.4		20.00		107	10.7	154				

Sample ID: **LCS-27114** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **LCSS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128471**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.4	50.0	20.00	0	77.2	37.1	132				
Surr: Triphenylphosphate	21.6		20.00		108	10.7	154				

Sample ID: **2001205-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **NFCC-Sed-1** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128473**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	80.5						0	0	30	
Surr: Triphenylphosphate	21.1		32.22		65.6	10.7	154		0		

Sample ID: **2001205-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **NFCC-Sed-1** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128474**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.5	82.5	33.00	0	47.1	9.74	142				
Surr: Triphenylphosphate	26.0		33.00		78.7	10.7	154				

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **NFCC-Sed-1** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	13.1	755	30.18	0	0	9.74	142	15.54	200	30	DS

Date: *1/15/2020*

Work Order: 2001205
CLIENT: Friedman & Bruya
Project: 001156

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **NFCC-Sed-1** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Triphenylphosphate	22.5		30.18		74.5	10.7	154		0		D

NOTES:
S - Outlying spike recovery(ies) observed.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001205**
Logged by:	**Carissa True**	Date Received:	**1/13/2020 4:33:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	5.6
Sample 1	5.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2001205

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001156

PO # A-526

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24hr

Rush charges authorized by: MC

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Phosphate	Diazinon					Notes
NFCC-Sed-1		1/13/20	0830	Sol	1				x	x	x					
NFCC-Sed-1:1			0900		1											Hold
NFCC-Sed-2			0930		1				x	x	x					
NFCC-Sed-2:1			0935		1											Hold
NFCC-Sed-3			1025		1				x	x	x					
NFCC-Sed-3:1			1035		1											Hold
CC-Sed-1			1155		1				x	x	x					
CC-Sed-1:1			1255		1											Hold
~~CC-S~~																

ANALYSES REQUESTED

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/13/20	1447
Received by:		Eva Reiner-Mayer	FM	1/13/20	1633
Relinquished by:					
Received by:					

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

001156

SAMPLE CHAIN OF CUSTODY

ME 01-13-20

VS2/A03

Page # 1 of 1

Report To Charles McFadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email CMcfadden@trecompanies.com

SAMPLERS (signature)

PROJECT NAME: Brookdale 015397

PO #: 015397

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: TRC

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 Hr

Rush charges authorized by: Thom Morin

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	Nitrates/ Phosphates	As	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
NFCC-Sed-1	01 A-F	1/13/20	0830	Sediment	6								X	X	X	X	
NFCC-Sed-1:1	02		0900										~~X~~	~~X~~	~~X~~	~~X~~	Hold
NFCC-Sed-2	03		0930										X	X	X	X	
NFCC-Sed-2:1	04		0935										~~X~~	~~X~~	~~X~~	~~X~~	Hold
NFCC-Sed-3	05		1025										X	X	X	X	
NFCC-Sed-3:1	06		1035										~~X~~	~~X~~	~~X~~	~~X~~	Hold
CC-sed-1	07		1155										X	X	X	X	
CC-Sed-1:1	08		1205										~~X~~	~~X~~	~~X~~	~~X~~	Hold

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherrod	TRC	1/13/20	1427
Received by:		Khan Phan	FEBJ	1/13/20	1427
Relinquished by:					
Received by:			Samples received at 4 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001157

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 13, 2020 from the 015397, F&BI 001157 project. Per your request, the results were reported down to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 17, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001157

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 13, 2020 from the 015397, F&BI 001157 project. There are 19 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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 13, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001157 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001157 -01	NFCC-SW-1
001157 -02	NFCC-SW-2
001157 -03	CC-SW-1

The samples were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The dissolved metals samples were filtered at Friedman and Bruya on January 14, 2020 at 15:05. The data were flagged accordingly.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	NFCC-SW-1 f	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-01
Date Analyzed:	01/14/20	Data File:	001157-01.083
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	NFCC-SW-2 f	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-02
Date Analyzed:	01/14/20	Data File:	001157-02.084
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CC-SW-1 f	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-03
Date Analyzed:	01/14/20	Data File:	001157-03.085
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	I0-030 mb
Date Analyzed:	01/14/20	Data File:	I0-030 mb.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	NFCC-SW-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-01
Date Analyzed:	01/14/20	Data File:	001157-01.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	NFCC-SW-2	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-02
Date Analyzed:	01/14/20	Data File:	001157-02.059
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-SW-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-03
Date Analyzed:	01/14/20	Data File:	001157-03.060
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	I0-029 mb
Date Analyzed:	01/14/20	Data File:	I0-029 mb.054
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	NFCC-SW-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-01
Date Analyzed:	01/14/20	Data File:	011417.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	51	50	150
DBC	77	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	NFCC-SW-2	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-02
Date Analyzed:	01/14/20	Data File:	011418.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	50	50	150
DBC	75	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-SW-1	Client:	Environmental Partners
Date Received:	01/13/20	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	001157-03
Date Analyzed:	01/14/20	Data File:	011419.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	48 ip	50	150
DBC	64	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001157
Date Extracted:	01/14/20	Lab ID:	00-123 mb
Date Analyzed:	01/14/20	Data File:	011414.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49 ip	50	150
DBC	74	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001157
Date Extracted: 01/14/20
Date Analyzed: 01/14/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
NFCC-SW-1 001157-01	<0.01
NFCC-SW-2 001157-02	<0.01
CC-SW-1 001157-03	<0.01
Method Blank	<0.01

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001157

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	99	99	80-120	0

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001157

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

Laboratory Code: 001157-01 (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	<1	105	105	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	101	80-120

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001157

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)
Dieldrin	ug/L (ppb)	0.5	75	77	70-130	3

Date of Report: 01/17/20
Date Received: 01/13/20
Project: 015397, F&BI 001157

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	90	98	70-130	9

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001157
Work Order Number: 2001204

January 15, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 1/13/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0

Organophosphorus Pesticides by EPA Method 8270-SIM

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Eric Young

Date: *01/15/2020*

CLIENT: Friedman & Bruya
Project: 001157
Work Order: 2001204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001204-001	NFCC-SW-1	01/13/2020 8:17 AM	01/13/2020 4:34 PM
2001204-002	NFCC-SW-2	01/13/2020 10:15 AM	01/13/2020 4:34 PM
2001204-003	CC-SW-1	01/13/2020 11:45 AM	01/13/2020 4:34 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001204**

Date: **1/15/2020**

CLIENT: Friedman & Bruya

Project: 001157

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001204**
Date Reported: **1/15/2020**

CLIENT: Friedman & Bruya
Project: 001157

Lab ID: 2001204-001 **Collection Date:** 1/13/2020 8:17:00 AM
Client Sample ID: **NFCC-SW-1** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/15/2020 11:46:30 AM
Surr: Triphenylphosphate	88.3	10 - 132		%Rec	1	1/15/2020 11:46:30 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27109		Analyst: SS
Nitrate (as N)	1.13	0.100		mg/L	1	1/13/2020 7:22:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/13/2020 7:22:00 PM

Lab ID: 2001204-002 **Collection Date:** 1/13/2020 10:15:00 AM
Client Sample ID: **NFCC-SW-2** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/15/2020 12:31:32 PM
Surr: Triphenylphosphate	102	10 - 132		%Rec	1	1/15/2020 12:31:32 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27109		Analyst: SS
Nitrate (as N)	1.14	0.100		mg/L	1	1/13/2020 8:08:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/13/2020 8:08:00 PM

Analytical Report

Work Order: **2001204**
Date Reported: **1/15/2020**

CLIENT: Friedman & Bruya
Project: 001157

Lab ID: 2001204-003 **Collection Date:** 1/13/2020 11:45:00 AM
Client Sample ID: **CC-SW-1** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.199		µg/L	1	1/15/2020 12:54:02 PM
Surr: Triphenylphosphate	87.9	10 - 132		%Rec	1	1/15/2020 12:54:02 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27109		Analyst: SS
Nitrate (as N)	2.69	0.200	D	mg/L	2	1/14/2020 10:46:00 AM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/13/2020 9:17:00 PM

Date: *1/15/2020*

Work Order: 2001204
CLIENT: Friedman & Bruya
Project: 001157

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27109** SampType: **MBLK** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **MBLKW** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128564**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Ortho-Phosphate (as P)	ND	0.200									

Sample ID: **LCS-27109** SampType: **LCS** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **LCSW** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128565**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.729	0.100	0.7500	0	97.2	90	110				
Ortho-Phosphate (as P)	1.29	0.200	1.250	0	103	90	110				

Sample ID: **2001204-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **NFCC-SW-1** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128567**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.08	0.100						1.133	4.98	20	
Ortho-Phosphate (as P)	ND	0.200						0		20	

Sample ID: **2001204-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **NFCC-SW-2** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128569**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.93	0.100	0.7500	1.136	106	80	120				
Ortho-Phosphate (as P)	1.07	0.200	1.250	0	85.7	80	120				

Sample ID: **2001204-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **NFCC-SW-2** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128570**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.98	0.100	0.7500	1.136	112	80	120	1.930	2.30	20	

Date: *1/15/2020*

Work Order: 2001204
CLIENT: Friedman & Bruya
Project: 001157

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001204-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/13/2020** RunNo: **56652**
Client ID: **NFCC-SW-2** Batch ID: **27109** Analysis Date: **1/13/2020** SeqNo: **1128570**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ortho-Phosphate (as P)	1.19	0.200	1.250	0	95.4	80	120	1.071	10.8	20	

Date: *1/15/2020*

Work Order: 2001204
CLIENT: Friedman & Bruya
Project: 001157

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27125** SampType: **MBLK** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **MBLKW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.199									
Surr: Triphenylphosphate	0.334		0.3987		83.7	10	132				

Sample ID: **LCS-27125** SampType: **LCS** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128789**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.49	0.199	1.994	0	75.0	26.5	127				
Surr: Triphenylphosphate	0.334		0.3989		83.7	10	132				

Sample ID: **LCSD-27125** SampType: **LCSD** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW02** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128790**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.56	0.199	1.987	0	78.4	26.5	127	1.495	4.18	30	
Surr: Triphenylphosphate	0.341		0.3974		85.8	10	132		0		

Sample ID: **2001204-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **NFCC-SW-1** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128792**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.231						0		30	
Surr: Triphenylphosphate	0.440		0.4611		95.3	10	132		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001204**
Logged by:	**Carissa True**	Date Received:	**1/13/2020 4:34:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	5.6
Sample 1	5.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2001204

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001157

PO # A-526

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☑ RUSH 24 hr

Rush charges authorized by: MG

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Phosphate Sulfate	Diazinon					Notes
NFCC-SW-1		1/13/20	0817	H_2O					x	x	x					
NFCC-SW-2			1015						x	x	x					
CC-SW-1			1145						x	x	x					

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	Relinquished by:	Michael Erdahl	Friedman & Bruya	1/13/20	1447
	Received by:	Sara Becker-Mayer	FAI	1/13/20	1654
	Relinquished by:				
	Received by:				

001157

SAMPLE CHAIN OF CUSTODY

ME 01-13-20 VWA/AOS/AOS

Page # 1 of 1

Report To C. McFadden cc T. Morin

Company TRC

Address 1180 NW Maple St Ste B10

City, State, ZIP Issaquah, Wa, 98027

Phone 425-395-0010 Email ~~Email~~ CMcFadden@TRCcompanies.com

SAMPLERS (*signature*)

PROJECT NAME: 015397 Brookdale

PO #: 015397

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: Ichijo USA Co., LTD

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 TAT
- 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	Nitrates/Phosphates	As (Total + Dissolved)	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
NFCC-SW-1	01 A-H	1/13/20	0817	Water	8								X	X	X	X	
NFCC-SW-2	02	1/13/20	1015	Water	8								X	X	X	X	
CC-SW-1	03	1/13/20	1145	Water	8								X	X	X	X	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Joe Stewart	TRC	1/13/20	1427
Received by:	Nhan Phan	FEBI	1/13/20	1427
Relinquished by:				
Received by:		Samples received at 4 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001178

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001178 project. Per your request, the samples were reported down to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 17, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001178

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001178 project. There are 16 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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015379, F&BI 001178 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001178 -01	CC-SW-2
001178 -02	Pond-SW

The samples were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The dissolved metals samples were filtered at Friedman and Bruya on January 15, 2020 at 09:42. The data were flagged accordingly.

The 8081 method blank surrogate failed below the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-SW-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	001178-01.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-SW	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	001178-02.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	I0-029 mb2
Date Analyzed:	01/15/20	Data File:	I0-029 mb2.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CC-SW-2 f	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	001178-01.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Pond-SW f	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	001178-02.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	I0-030 mb2
Date Analyzed:	01/15/20	Data File:	I0-030 mb2.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-SW-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	011505.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	47 ip	50	150
DBC	82	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-SW	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	011506.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49 ip	50	150
DBC	62	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	00-123 mb
Date Analyzed:	01/14/20	Data File:	011414.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49 vo	50	150
DBC	74	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02 js

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178
Date Extracted: 01/15/20
Date Analyzed: 01/15/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
CC-SW-2 001178-01	<0.01
Pond-SW 001178-02	<0.01
Method Blank	<0.01

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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

Laboratory Code: 001157-01 (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	<1	105	105	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	101	80-120

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	99	99	80-120	0

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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)
Dieldrin	ug/L (ppb)	0.5	75	77	70-130	3

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	90	98	70-130	9

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001178
Work Order Number: 2001223

January 16, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 1/14/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0

Organophosphorus Pesticides by EPA Method 8270-SIM

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/16/2020*

CLIENT: Friedman & Bruya
Project: 001178
Work Order: 2001223

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001223-001	CC-SW-2	01/14/2020 10:25 AM	01/14/2020 3:35 PM
2001223-002	Pond-SW	01/14/2020 11:50 AM	01/14/2020 3:35 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001223**

Date: **1/16/2020**

CLIENT: Friedman & Bruya

Project: 001178

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001223**
Date Reported: **1/16/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 10:25:00 AM
Project: 001178
Lab ID: 2001223-001
Matrix: Water
Client Sample ID: CC-SW-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.198		µg/L	1	1/15/2020 1:16:36 PM
Surr: Triphenylphosphate	80.8	10 - 132		%Rec	1	1/15/2020 1:16:36 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27141		Analyst: SS
Nitrate (as N)	2.84	0.200	D	mg/L	2	1/16/2020 10:53:00 AM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/15/2020 8:02:00 PM

Analytical Report

Work Order: **2001223**
Date Reported: **1/16/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 11:50:00 AM
Project: 001178
Lab ID: 2001223-002
Matrix: Water
Client Sample ID: Pond-SW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.199		µg/L	1	1/15/2020 1:39:14 PM
Surr: Triphenylphosphate	99.9	10 - 132		%Rec	1	1/15/2020 1:39:14 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27141		Analyst: SS
Nitrate (as N)	0.993	0.100		mg/L	1	1/15/2020 8:48:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/15/2020 8:48:00 PM

Date: *1/16/2020*

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27141** SampType: **MBLK** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **MBLKW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129132**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Ortho-Phosphate (as P)	ND	0.200									

Sample ID: **LCS-27141** SampType: **LCS** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **LCSW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129133**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Ortho-Phosphate (as P)	1.24	0.200	1.250	0	98.9	90	110				

Sample ID: **2001223-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **CC-SW-2** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.97	0.100						2.974	0.101	20	E
Ortho-Phosphate (as P)	ND	0.200						0		20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2001223-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **Pond-SW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.80	0.100	0.7500	0.9930	108	80	120				
Ortho-Phosphate (as P)	1.06	0.200	1.250	0	85.2	80	120				

Date: *1/16/2020*

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001223-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **Pond-SW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129141**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.80	0.100	0.7500	0.9930	108	80	120	1.802	0.166	20	
Ortho-Phosphate (as P)	1.10	0.200	1.250	0	87.9	80	120	1.065	3.14	20	

Date: *1/16/2020*

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27125** SampType: **MBLK** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **MBLKW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.199									
Surr: Triphenylphosphate	0.334		0.3987		83.7	10	132				

Sample ID: **LCS-27125** SampType: **LCS** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128789**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.49	0.199	1.994	0	75.0	26.5	127				
Surr: Triphenylphosphate	0.334		0.3989		83.7	10	132				

Sample ID: **LCSD-27125** SampType: **LCSD** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW02** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128790**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.56	0.199	1.987	0	78.4	26.5	127	1.495	4.18	30	
Surr: Triphenylphosphate	0.341		0.3974		85.8	10	132		0		

Sample ID: **2001204-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **BATCH** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128792**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.231						0		30	
Surr: Triphenylphosphate	0.440		0.4611		95.3	10	132		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001223**
Logged by:	**Carissa True**	Date Received:	**1/14/2020 3:35:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.4
Sample 1	0.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001223

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001178

PO # A-530

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24 hour

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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
CC-SW-2		1/14	1025	W	2				✓	✓	✓					
POND-SW		1/14	1150	W	2				✓	✓	✓					

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/14/20	1435
Received by:	Molli KO	Makenzie Minnart	FAI	1/14/20	1533
Relinquished by:					
Received by:					

001178

SAMPLE CHAIN OF CUSTODY

ME 01-14-20

UW1 / A05 / AI4

Page # ____ of ____

Report To Charles Mcfadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmcfadden@trcompanies.com

SAMPLERS (signature)

PROJECT NAME: 015379 (Brookdale)

PO #: 015379

REMARKS: Rush TAT (24hr)

INVOICE TO: TRC

Project specific RLs? - Yes / No

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24-hr TAT

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	Nitrates + Phosphates	As	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
CC-SW-2	01 A-H	1/14/20	1025	H_2O	8								X	X	X	X	
Pond-SW	02 A-H	1/14/20	1150	H_2O	8								X	X	X	X	

Samples received at 4 °C (NP)

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherrod	TRC	1/14/20	1435
Received by:		Khoi Hoang	FBI	1/14/20	1435
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 17, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001178

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001178 project. There are 16 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: Cynthia Moon, Thom Morin
TRC0117R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015379, F&BI 001178 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001178 -01	CC-SW-2
001178 -02	Pond-SW

The samples were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The dissolved metals samples were filtered at Friedman and Bruya on January 15, 2020 at 09:42. The data were flagged accordingly.

The 8081 method blank surrogate failed below the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-SW-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	001178-01.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-SW	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	001178-02.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	I0-029 mb2
Date Analyzed:	01/15/20	Data File:	I0-029 mb2.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CC-SW-2 f	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	001178-01.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Pond-SW f	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	001178-02.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/15/20	Lab ID:	I0-030 mb2
Date Analyzed:	01/15/20	Data File:	I0-030 mb2.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-SW-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	001178-01
Date Analyzed:	01/15/20	Data File:	011505.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	47 ip	50	150
DBC	82	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-SW	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	001178-02
Date Analyzed:	01/15/20	Data File:	011506.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49 ip	50	150
DBC	62	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001178
Date Extracted:	01/14/20	Lab ID:	00-123 mb
Date Analyzed:	01/14/20	Data File:	011414.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49 vo	50	150
DBC	74	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.1 js

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178
Date Extracted: 01/15/20
Date Analyzed: 01/15/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
CC-SW-2 001178-01	<0.01
Pond-SW 001178-02	<0.01
Method Blank	<0.01

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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

Laboratory Code: 001157-01 (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	<1	105	105	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	101	80-120

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	99	99	80-120	0

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

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)
Dieldrin	ug/L (ppb)	0.5	75	77	70-130	3

Date of Report: 01/17/20
Date Received: 01/14/20
Project: 015379, F&BI 001178

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	90	98	70-130	9

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001178
Work Order Number: 2001223

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 1/14/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0

Organophosphorus Pesticides by EPA Method 8270-SIM

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

PRELIMINARY

Date: *01/16/2020*

CLIENT: Friedman & Bruya
Project: 001178
Work Order: 2001223

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001223-001	CC-SW-2	01/14/2020 10:25 AM	01/14/2020 3:35 PM
2001223-002	Pond-SW	01/14/2020 11:50 AM	01/14/2020 3:35 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001223**

Date:

CLIENT: Friedman & Bruya

Project: 001178

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001223**

Date Reported:

Client: Friedman & Bruya

Collection Date: 1/14/2020 10:25:00 AM

Project: 001178

Lab ID: 2001223-001

Matrix: Water

Client Sample ID: CC-SW-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.198		µg/L	1	1/15/2020 1:16:36 PM
Surr: Triphenylphosphate	80.8	10 - 132		%Rec	1	1/15/2020 1:16:36 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27141		Analyst: SS
Nitrate (as N)	2.84	0.200	D	mg/L	2	1/16/2020 10:53:00 AM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/15/2020 8:02:00 PM

Analytical Report

Work Order: **2001223**

Date Reported:

Client: Friedman & Bruya

Collection Date: 1/14/2020 11:50:00 AM

Project: 001178

Lab ID: 2001223-002

Matrix: Water

Client Sample ID: Pond-SW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27125		Analyst: SB
Diazinon	ND	0.199		µg/L	1	1/15/2020 1:39:14 PM
Surr: Triphenylphosphate	99.9	10 - 132		%Rec	1	1/15/2020 1:39:14 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27141		Analyst: SS
Nitrate (as N)	0.993	0.100		mg/L	1	1/15/2020 8:48:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/15/2020 8:48:00 PM

Date:

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27141** SampType: **MBLK** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **MBLKW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129132**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Ortho-Phosphate (as P)	ND	0.200									

Sample ID: **LCS-27141** SampType: **LCS** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **LCSW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129133**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Ortho-Phosphate (as P)	1.24	0.200	1.250	0	98.9	90	110				

Sample ID: **2001223-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **CC-SW-2** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.97	0.100						2.974	0.101	20	E
Ortho-Phosphate (as P)	ND	0.200						0		20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2001223-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **Pond-SW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.80	0.100	0.7500	0.9930	108	80	120				
Ortho-Phosphate (as P)	1.06	0.200	1.250	0	85.2	80	120				

Date:

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001223-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/15/2020** RunNo: **56687**
Client ID: **Pond-SW** Batch ID: **27141** Analysis Date: **1/15/2020** SeqNo: **1129141**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.80	0.100	0.7500	0.9930	108	80	120	1.802	0.166	20	
Ortho-Phosphate (as P)	1.10	0.200	1.250	0	87.9	80	120	1.065	3.14	20	

Date:

Work Order: 2001223
CLIENT: Friedman & Bruya
Project: 001178

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27125** SampType: **MBLK** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **MBLKW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.199									
Surr: Triphenylphosphate	0.334		0.3987		83.7	10	132				

Sample ID: **LCS-27125** SampType: **LCS** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128789**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.49	0.199	1.994	0	75.0	26.5	127				
Surr: Triphenylphosphate	0.334		0.3989		83.7	10	132				

Sample ID: **LCSD-27125** SampType: **LCSD** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **LCSW02** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128790**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	1.56	0.199	1.987	0	78.4	26.5	127	1.495	4.18	30	
Surr: Triphenylphosphate	0.341		0.3974		85.8	10	132		0		

Sample ID: **2001204-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/14/2020** RunNo: **56666**
Client ID: **BATCH** Batch ID: **27125** Analysis Date: **1/15/2020** SeqNo: **1128792**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.231						0		30	
Surr: Triphenylphosphate	0.440		0.4611		95.3	10	132		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001223**
Logged by:	**Carissa True**	Date Received:	**1/14/2020 3:35:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.4
Sample 1	0.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001223

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001178

PO # A-530

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24 hour

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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
CC-SW-2		1/14	1025	W	2				✓	✓	✓					
POND-SW		1/14	1150	W	2				✓	✓	✓					

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/14/20	1435
Received by:	Molli KO	Makenzie Minnart	FAI	1/14/20	1533
Relinquished by:					
Received by:					

001178

SAMPLE CHAIN OF CUSTODY

ME 01-14-20

UW1 / A05 / AI4

Page # ____ of ____

Report To Charles Mcfadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmcfadden@trcompanies.com

SAMPLERS (signature)

PROJECT NAME: 015379 (Brookdale)

PO #: 015379

REMARKS: Rush TAT (24hr)

INVOICE TO: TRC

Project specific RLs? - Yes / No

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24-hr TAT

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	Nitrates + Phosphates	As	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
CC-SW-2	01 A-H	1/14/20	1025	H_2O	8								X	X	X	X	
Pond-SW	02 A-H	1/14/20	1150	H_2O	8								X	X	X	X	

Samples received at 4 °C (NP)

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherrod	TRC	1/14/20	1435
Received by:		Khoi Hoang	FBI	1/14/20	1435
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001179

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001179 project. Per your request, the dieldrin results have been lowered to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0120R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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fbi@isomedia.com
www.friedmanandbruya.com

January 20, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001179

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001179 project. There are 23 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: Cynthia Moon, Thom Morin
TRC0120R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015379, F&BI 001179 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001179 -01	CC-Sed-2
001179 -02	CC-Sed-2:1
001179 -03	CC-Sed-3
001179 -04	CC-Sed-3:1
001179 -05	Pond-Sed-1
001179 -06	Pond-Sed-1:1
001179 -07	Pond-Sed-2
001179 -08	Pond-Sed-2:1
001179 -09	Pond-Sed-3
001179 -10	Pond-Sed-3:1

Samples CC-Sed-2, CC-Sed-3, Pond-Sed-2, and Pond-Sed-3 were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

A 8260D internal standard failed the acceptance criteria for sample Pond-Sed-1. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-01
Date Analyzed:	01/15/20	Data File:	001179-01.079
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.19

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-03
Date Analyzed:	01/15/20	Data File:	001179-03.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-05
Date Analyzed:	01/15/20	Data File:	001179-05.083
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-07
Date Analyzed:	01/15/20	Data File:	001179-07.084
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	10.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-09
Date Analyzed:	01/15/20	Data File:	001179-09.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.77

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	I0-032 mb
Date Analyzed:	01/15/20	Data File:	I0-032 mb.077
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-01
Date Analyzed:	01/15/20	Data File:	011515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	119	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-03
Date Analyzed:	01/15/20	Data File:	011511.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	130	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-05
Date Analyzed:	01/16/20	Data File:	011615.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104 J	50	150
Toluene-d8	92 J	50	150
4-Bromofluorobenzene	115 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-07
Date Analyzed:	01/15/20	Data File:	011513A.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	129	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-09
Date Analyzed:	01/15/20	Data File:	011514.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	111	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	00-090 mb2
Date Analyzed:	01/15/20	Data File:	011508.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-01 1/6
Date Analyzed:	01/15/20	Data File:	011507.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	62	50	150
DBC	68	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-03 1/6
Date Analyzed:	01/15/20	Data File:	011508.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	64	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-05 1/6
Date Analyzed:	01/15/20	Data File:	011509.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	58	50	150
DBC	66	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-07 1/6
Date Analyzed:	01/15/20	Data File:	011514.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	61	50	150
DBC	60	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-09 1/6
Date Analyzed:	01/15/20	Data File:	011510.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	00-122 mb 1/6
Date Analyzed:	01/14/20	Data File:	011405.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.006

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

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

Laboratory Code: 001179-01 (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	1.94	81	83	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	86	80-120

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001156-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005	<0.005	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	113	111	70-130	2

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

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

Laboratory Code: 001156-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dieldrin	mg/kg (ppm)	0.1	<0.01	66	64	50-150	3

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dieldrin	mg/kg (ppm)	0.1	82	70-130

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.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001179
Work Order Number: 2001222

January 15, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 1/14/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/16/2020*

CLIENT: Friedman & Bruya
Project: 001179
Work Order: 2001222

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001222-001	CC-Sed-2	01/14/2020 9:00 AM	01/14/2020 3:35 PM
2001222-002	CC-Sed-2:1	01/14/2020 9:10 AM	01/14/2020 3:35 PM
2001222-003	CC-Sed-3	01/14/2020 10:30 AM	01/14/2020 3:35 PM
2001222-004	CC-Sed-3:1	01/14/2020 10:40 AM	01/14/2020 3:35 PM
2001222-005	Pond-Sed-1	01/14/2020 11:40 AM	01/14/2020 3:35 PM
2001222-006	Pond-Sed-1:1	01/14/2020 11:45 AM	01/14/2020 3:35 PM
2001222-007	Pond-Sed-2	01/14/2020 12:20 PM	01/14/2020 3:35 PM
2001222-008	Pond-Sed-2:1	01/14/2020 12:25 PM	01/14/2020 3:35 PM
2001222-009	Pond-Sed-3	01/14/2020 12:45 PM	01/14/2020 3:35 PM
2001222-010	Pond-Sed-3:1	01/14/2020 12:50 PM	01/14/2020 3:35 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001222**

Date: **1/15/2020**

CLIENT: Friedman & Bruya

Project: 001179

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 9:00:00 AM
Project: 001179
Lab ID: 2001222-001
Matrix: Soil
Client Sample ID: **CC-Sed-2**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	838	D	µg/Kg-dry	10	1/15/2020 2:46:55 PM
Surr: Triphenylphosphate	72.6	10.7 - 154	D	%Rec	10	1/15/2020 2:46:55 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.76		mg/Kg-dry	1	1/15/2020 1:52:00 PM
Orthophosphate (as P)	ND	3.52		mg/Kg-dry	1	1/15/2020 1:52:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	44.9	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 10:30:00 AM
Project: 001179
Lab ID: 2001222-003
Matrix: Soil
Client Sample ID: **CC-Sed-3**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	592	D	µg/Kg-dry	10	1/15/2020 3:08:57 PM
Surr: Triphenylphosphate	80.2	10.7 - 154	D	%Rec	10	1/15/2020 3:08:57 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.30		mg/Kg-dry	1	1/15/2020 2:15:00 PM
Orthophosphate (as P)	ND	2.59		mg/Kg-dry	1	1/15/2020 2:15:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	23.0	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 11:40:00 AM
Project: 001179
Lab ID: 2001222-005
Matrix: Soil
Client Sample ID: **Pond-Sed-1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	703	D	µg/Kg-dry	10	1/15/2020 3:31:24 PM
Surr: Triphenylphosphate	74.4	10.7 - 154	D	%Rec	10	1/15/2020 3:31:24 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.47		mg/Kg-dry	1	1/15/2020 2:38:00 PM
Orthophosphate (as P)	ND	2.95		mg/Kg-dry	1	1/15/2020 2:38:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	33.3	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 12:20:00 PM
Project: 001179
Lab ID: 2001222-007
Matrix: Soil
Client Sample ID: **Pond-Sed-2**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	567	D	µg/Kg-dry	10	1/15/2020 3:53:58 PM
Surr: Triphenylphosphate	75.3	10.7 - 154	D	%Rec	10	1/15/2020 3:53:58 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	1.84	1.16		mg/Kg-dry	1	1/15/2020 3:01:00 PM
Orthophosphate (as P)	ND	2.32		mg/Kg-dry	1	1/15/2020 3:01:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	15.2	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 12:45:00 PM
Project: 001179
Lab ID: 2001222-009
Matrix: Soil
Client Sample ID: **Pond-Sed-3**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	517	D	µg/Kg-dry	10	1/15/2020 4:16:27 PM
Surr: Triphenylphosphate	127	10.7 - 154	D	%Rec	10	1/15/2020 4:16:27 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.17		mg/Kg-dry	1	1/15/2020 4:11:00 PM
Orthophosphate (as P)	ND	2.34		mg/Kg-dry	1	1/15/2020 4:11:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	13.0	0.500		wt%	1	1/14/2020 5:05:41 PM

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27121** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **MBLKS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128921**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27121** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **LCSS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128922**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.33	1.00	7.500	0	97.7	90	110				
Orthophosphate (as P)	12.2	2.00	12.50	0	98.0	90	110				

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27114** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **MBLKS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128470**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	50.0									
Surr: Triphenylphosphate	21.4		20.00		107	10.7	154				

Sample ID: **LCS-27114** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **LCSS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128471**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.4	50.0	20.00	0	77.2	37.1	132				
Surr: Triphenylphosphate	21.6		20.00		108	10.7	154				

Sample ID: **2001205-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128473**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	80.5						0		30	
Surr: Triphenylphosphate	21.1		32.22		65.6	10.7	154		0		

Sample ID: **2001205-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128474**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.5	82.5	33.00	0	47.1	9.74	142				
Surr: Triphenylphosphate	26.0		33.00		78.7	10.7	154				

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	13.1	755	30.18	0	0	9.74	142	0		30	DS

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Triphenylphosphate	22.5		30.18		74.5	10.7	154		0		D

NOTES:
S - Outlying spike recovery(ies) observed.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001222**
Logged by:	**Carissa True**	Date Received:	**1/14/2020 3:35:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.4
Sample 1	0.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001222

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont
PROJECT NAME/NO. 001179
PO # A-530
REMARKS
Please Email Results

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 24 hour
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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
CC-Sed-2		1/14/20	0900	SOIL	1				✓	✓	✓					
CC-Sed-2:1			0910		1											
CC-Sed-3			1030		1				✓	✓	✓					HOLD
CC-Sed-3:1			1040		1											
Pond-Sed-1			1140		1				✓	✓	✓					HOLD
Pond-Sed-1:1			1145		1											
Pond-Sed-2			1220		1				✓	✓	✓					HOLD
Pond-Sed-2:1			1225		1											
Pond-Sed-3			1245		1				✓	✓	✓					HOLD
Pond-Sed-3:1			1250		1											
																HOLD

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/14/20	1532
Received by:	[signature]	[signature]	FAI	1/14/20	1535
Relinquished by:					
Received by:					

001179

SAMPLE CHAIN OF CUSTODY

ME 01-14-20 VS4 / AO4 1

Report To Charles McFadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmcfadden@trcompanies.com

SAMPLERS (*signature*)

PROJECT NAME 015379 (Brookdale)

PO # 015379

REMARKS Rush (24hr) TAT

Project specific RLs? - Yes / No

INVOICE TO TRC

Page # ____ of ____

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 HR TAT

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	Nitrates + Phosphates	As	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
CC-Sed-2	01 A-E	1/14/20	0900	Sediment	5								X	X	X	X	
CC-Sed-2:1	02		0910														
CC-Sed-3	03		1030										X	X	X	X	
CC-Sed-3:1	04		1040														
Pond-Sed-1	05		1140										X	X	X	X	
Pond-Sed-1:1	06		1145														
Pond-Sed-2	07		1220										X	X	X	X	
Pond-Sed-2:1	08		1225														
Pond-Sed-3	09		1245										X	X	X	X	
Pond-Sed-3:1	10		1250														

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherod	TRC	1/14/20	1435
Received by:		Khoi Hoang	FBI	1/14/20	1435
Relinquished by:			Samples received at 4 °C		
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 20, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015379, F&BI 001179

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 14, 2020 from the 015379, F&BI 001179 project. There are 23 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: Cynthia Moon, Thom Morin
TRC0120R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015379, F&BI 001179 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001179 -01	CC-Sed-2
001179 -02	CC-Sed-2:1
001179 -03	CC-Sed-3
001179 -04	CC-Sed-3:1
001179 -05	Pond-Sed-1
001179 -06	Pond-Sed-1:1
001179 -07	Pond-Sed-2
001179 -08	Pond-Sed-2:1
001179 -09	Pond-Sed-3
001179 -10	Pond-Sed-3:1

Samples CC-Sed-2, CC-Sed-3, Pond-Sed-2, and Pond-Sed-3 were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

A 8260D internal standard failed the acceptance criteria for sample Pond-Sed-1. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-01
Date Analyzed:	01/15/20	Data File:	001179-01.079
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.19

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-03
Date Analyzed:	01/15/20	Data File:	001179-03.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-05
Date Analyzed:	01/15/20	Data File:	001179-05.083
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-07
Date Analyzed:	01/15/20	Data File:	001179-07.084
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	10.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-09
Date Analyzed:	01/15/20	Data File:	001179-09.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.77

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	I0-032 mb
Date Analyzed:	01/15/20	Data File:	I0-032 mb.077
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-01
Date Analyzed:	01/15/20	Data File:	011515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	119	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-03
Date Analyzed:	01/15/20	Data File:	011511.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	130	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-05
Date Analyzed:	01/16/20	Data File:	011615.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104 J	50	150
Toluene-d8	92 J	50	150
4-Bromofluorobenzene	115 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-07
Date Analyzed:	01/15/20	Data File:	011513A.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	129	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	001179-09
Date Analyzed:	01/15/20	Data File:	011514.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	111	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/15/20	Lab ID:	00-090 mb2
Date Analyzed:	01/15/20	Data File:	011508.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-01 1/6
Date Analyzed:	01/15/20	Data File:	011507.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	62	50	150
DBC	68	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	CC-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-03 1/6
Date Analyzed:	01/15/20	Data File:	011508.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	64	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-1	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-05 1/6
Date Analyzed:	01/15/20	Data File:	011509.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	58	50	150
DBC	66	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-2	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-07 1/6
Date Analyzed:	01/15/20	Data File:	011514.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	61	50	150
DBC	60	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Pond-Sed-3	Client:	Environmental Partners
Date Received:	01/14/20	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	001179-09 1/6
Date Analyzed:	01/15/20	Data File:	011510.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015379, F&BI 001179
Date Extracted:	01/14/20	Lab ID:	00-122 mb 1/6
Date Analyzed:	01/14/20	Data File:	011405.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	50	150
DBC	71	50	150

Compounds:	Concentration mg/kg (ppm)
Dieldrin	<0.01

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

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

Laboratory Code: 001179-01 (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	1.94	81	83	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	86	80-120

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001156-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005	<0.005	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	113	111	70-130	2

Date of Report: 01/20/20
Date Received: 01/14/20
Project: 015379, F&BI 001179

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

Laboratory Code: 001156-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dieldrin	mg/kg (ppm)	0.1	<0.01	66	64	50-150	3

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dieldrin	mg/kg (ppm)	0.1	82	70-130

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001179
Work Order Number: 2001222

January 15, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 1/14/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/16/2020*

CLIENT: Friedman & Bruya
Project: 001179
Work Order: 2001222

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001222-001	CC-Sed-2	01/14/2020 9:00 AM	01/14/2020 3:35 PM
2001222-002	CC-Sed-2:1	01/14/2020 9:10 AM	01/14/2020 3:35 PM
2001222-003	CC-Sed-3	01/14/2020 10:30 AM	01/14/2020 3:35 PM
2001222-004	CC-Sed-3:1	01/14/2020 10:40 AM	01/14/2020 3:35 PM
2001222-005	Pond-Sed-1	01/14/2020 11:40 AM	01/14/2020 3:35 PM
2001222-006	Pond-Sed-1:1	01/14/2020 11:45 AM	01/14/2020 3:35 PM
2001222-007	Pond-Sed-2	01/14/2020 12:20 PM	01/14/2020 3:35 PM
2001222-008	Pond-Sed-2:1	01/14/2020 12:25 PM	01/14/2020 3:35 PM
2001222-009	Pond-Sed-3	01/14/2020 12:45 PM	01/14/2020 3:35 PM
2001222-010	Pond-Sed-3:1	01/14/2020 12:50 PM	01/14/2020 3:35 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001222**

Date: **1/15/2020**

CLIENT: Friedman & Bruya

Project: 001179

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 9:00:00 AM
Project: 001179
Lab ID: 2001222-001
Matrix: Soil
Client Sample ID: **CC-Sed-2**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	838	D	µg/Kg-dry	10	1/15/2020 2:46:55 PM
Surr: Triphenylphosphate	72.6	10.7 - 154	D	%Rec	10	1/15/2020 2:46:55 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.76		mg/Kg-dry	1	1/15/2020 1:52:00 PM
Orthophosphate (as P)	ND	3.52		mg/Kg-dry	1	1/15/2020 1:52:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	44.9	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 10:30:00 AM
Project: 001179
Lab ID: 2001222-003
Matrix: Soil
Client Sample ID: **CC-Sed-3**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	592	D	µg/Kg-dry	10	1/15/2020 3:08:57 PM
Surr: Triphenylphosphate	80.2	10.7 - 154	D	%Rec	10	1/15/2020 3:08:57 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.30		mg/Kg-dry	1	1/15/2020 2:15:00 PM
Orthophosphate (as P)	ND	2.59		mg/Kg-dry	1	1/15/2020 2:15:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	23.0	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 11:40:00 AM
Project: 001179
Lab ID: 2001222-005
Matrix: Soil
Client Sample ID: **Pond-Sed-1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	703	D	µg/Kg-dry	10	1/15/2020 3:31:24 PM
Surr: Triphenylphosphate	74.4	10.7 - 154	D	%Rec	10	1/15/2020 3:31:24 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.47		mg/Kg-dry	1	1/15/2020 2:38:00 PM
Orthophosphate (as P)	ND	2.95		mg/Kg-dry	1	1/15/2020 2:38:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	33.3	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 12:20:00 PM
Project: 001179
Lab ID: 2001222-007
Matrix: Soil
Client Sample ID: **Pond-Sed-2**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	567	D	µg/Kg-dry	10	1/15/2020 3:53:58 PM
Surr: Triphenylphosphate	75.3	10.7 - 154	D	%Rec	10	1/15/2020 3:53:58 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	1.84	1.16		mg/Kg-dry	1	1/15/2020 3:01:00 PM
Orthophosphate (as P)	ND	2.32		mg/Kg-dry	1	1/15/2020 3:01:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	15.2	0.500		wt%	1	1/14/2020 5:05:41 PM

Analytical Report

Work Order: **2001222**
Date Reported: **1/15/2020**

Client: Friedman & Bruya
Collection Date: 1/14/2020 12:45:00 PM
Project: 001179
Lab ID: 2001222-009
Matrix: Soil
Client Sample ID: **Pond-Sed-3**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27114		Analyst: SB
Diazinon	ND	517	D	µg/Kg-dry	10	1/15/2020 4:16:27 PM
Surr: Triphenylphosphate	127	10.7 - 154	D	%Rec	10	1/15/2020 4:16:27 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27121		Analyst: SS
Nitrate (as N)	ND	1.17		mg/Kg-dry	1	1/15/2020 4:11:00 PM
Orthophosphate (as P)	ND	2.34		mg/Kg-dry	1	1/15/2020 4:11:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56636		Analyst: CJ
Percent Moisture	13.0	0.500		wt%	1	1/14/2020 5:05:41 PM

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27121** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **MBLKS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128921**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27121** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/14/2020** RunNo: **56674**
Client ID: **LCSS** Batch ID: **27121** Analysis Date: **1/15/2020** SeqNo: **1128922**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.33	1.00	7.500	0	97.7	90	110				
Orthophosphate (as P)	12.2	2.00	12.50	0	98.0	90	110				

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27114** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **MBLKS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128470**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	50.0									
Surr: Triphenylphosphate	21.4		20.00		107	10.7	154				

Sample ID: **LCS-27114** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **LCSS** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128471**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.4	50.0	20.00	0	77.2	37.1	132				
Surr: Triphenylphosphate	21.6		20.00		108	10.7	154				

Sample ID: **2001205-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128473**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	80.5						0		30	
Surr: Triphenylphosphate	21.1		32.22		65.6	10.7	154		0		

Sample ID: **2001205-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/14/2020** SeqNo: **1128474**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.5	82.5	33.00	0	47.1	9.74	142				
Surr: Triphenylphosphate	26.0		33.00		78.7	10.7	154				

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	13.1	755	30.18	0	0	9.74	142	0		30	DS

Date: *1/15/2020*

Work Order: 2001222
CLIENT: Friedman & Bruya
Project: 001179

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **2001205-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/14/2020** RunNo: **56650**
Client ID: **BATCH** Batch ID: **27114** Analysis Date: **1/15/2020** SeqNo: **1128883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Triphenylphosphate	22.5		30.18		74.5	10.7	154		0		D

NOTES:
S - Outlying spike recovery(ies) observed.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001222**
Logged by:	**Carissa True**	Date Received:	**1/14/2020 3:35:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.4
Sample 1	0.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001222

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont
PROJECT NAME/NO. 001179
PO # A-530
REMARKS
Please Email Results

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 24 hour
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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
CC-Sed-2		1/14/20	0900	SOIL	1				✓	✓	✓					
CC-Sed-2:1			0910		1											
CC-Sed-3			1030		1				✓	✓	✓					HOLD
CC-Sed-3:1			1040		1											
Pond-Sed-1			1140		1				✓	✓	✓					HOLD
Pond-Sed-1:1			1145		1											
Pond-Sed-2			1220		1				✓	✓	✓					HOLD
Pond-Sed-2:1			1225		1											
Pond-Sed-3			1245		1				✓	✓	✓					HOLD
Pond-Sed-3:1			1250		1											
																HOLD

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/14/20	1532
Received by:	[signature]	[signature]	FAI	1/14/20	1535
Relinquished by:					
Received by:					

001179

SAMPLE CHAIN OF CUSTODY

ME 01-14-20 VS4 / AO4 1

Report To Charles McFadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmcfadden@trcompanies.com

SAMPLERS (*signature*)

PROJECT NAME 015379 (Brookdale)

PO # 015379

REMARKS Rush (24hr) TAT

Project specific RLs? - Yes / No

INVOICE TO TRC

Page # ____ of ____

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 HR TAT

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	Nitrates + Phosphates	As	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
CC-Sed-2	01 A-E	1/14/20	0900	Sediment	5								X	X	X	X	
CC-Sed-2:1	02		0910														
CC-Sed-3	03		1030										X	X	X	X	
CC-Sed-3:1	04		1040														
Pond-Sed-1	05		1140										X	X	X	X	
Pond-Sed-1:1	06		1145														
Pond-Sed-2	07		1220										X	X	X	X	
Pond-Sed-2:1	08		1225														
Pond-Sed-3	09		1245										X	X	X	X	
Pond-Sed-3:1	10		1250														

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherod	TRC	1/14/20	1435
Received by:		Khoi Hoang	FBI	1/14/20	1435
Relinquished by:			Samples received at 4 °C		
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 21, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001189

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 15, 2020 from the 015397, F&BI 001189 project. There are 16 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: Cynthia Moon, Thom Morin
TRC0121R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001189 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001189-01	B-1:Surface
001189-02	B-1:2
001189-03	B-2:Surface
001189-04	B-2:2
001189-05	B-3:Surface
001189-06	B-3:2
001189-07	B-4:Surface
001189-08	B-4:2
001189-09	B-5:Surface
001189-10	B-5:2

Samples B-1:Surface, B-2:Surface, B-3:Surface, B-4:Surface, and B-5:Surface were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-01
Date Analyzed:	01/16/20	Data File:	001189-01.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-03
Date Analyzed:	01/16/20	Data File:	001189-03.052
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-3:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-05
Date Analyzed:	01/16/20	Data File:	001189-05.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-07
Date Analyzed:	01/16/20	Data File:	001189-07.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.94

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-09
Date Analyzed:	01/16/20	Data File:	001189-09.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.59

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	I0-032 mb2
Date Analyzed:	01/16/20	Data File:	I0-032 mb2.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-1:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-01
Date Analyzed:	01/16/20	Data File:	011616.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-2:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-03
Date Analyzed:	01/16/20	Data File:	011617.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	87	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-3:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-05
Date Analyzed:	01/16/20	Data File:	011618.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	92	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-4:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-07
Date Analyzed:	01/16/20	Data File:	011619.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	89	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-5:Surface	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	001189-09
Date Analyzed:	01/16/20	Data File:	011620.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	110	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001189
Date Extracted:	01/16/20	Lab ID:	00-0134 mb
Date Analyzed:	01/16/20	Data File:	011611.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	88	50	150
4-Bromofluorobenzene	92	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001189

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

Laboratory Code: 001179-01 (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	1.94	81	83	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	86	80-120

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001189-07 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005	<0.005	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	107	117	70-130	9

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.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001189
Work Order Number: 2001240

January 17, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 1/16/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/17/2020*

CLIENT: Friedman & Bruya
Project: 001189
Work Order: 2001240

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001240-001	B-1:Surface	01/15/2020 8:30 AM	01/16/2020 10:15 AM
2001240-002	B-1:2	01/15/2020 8:40 AM	01/16/2020 10:15 AM
2001240-003	B-2:Surface	01/15/2020 9:40 AM	01/16/2020 10:15 AM
2001240-004	B-2:2	01/15/2020 9:50 AM	01/16/2020 10:15 AM
2001240-005	B-3:Surface	01/15/2020 10:40 AM	01/16/2020 10:15 AM
2001240-006	B-3:2	01/15/2020 10:45 AM	01/16/2020 10:15 AM
2001240-007	B-4:Surface	01/15/2020 11:50 AM	01/16/2020 10:15 AM
2001240-008	B-4:2	01/15/2020 11:55 AM	01/16/2020 10:15 AM
2001240-009	B-5:Surface	01/15/2020 12:55 PM	01/16/2020 10:15 AM
2001240-010	B-5:2	01/15/2020 1:00 PM	01/16/2020 10:15 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001240**

Date: **1/17/2020**

CLIENT: Friedman & Bruya

Project: 001189

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001240**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001189

Lab ID: 2001240-001 **Collection Date:** 1/15/2020 8:30:00 AM
Client Sample ID: **B-1:Surface** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27152		Analyst: SB
Diazinon	ND	484		µg/Kg-dry	1	1/17/2020 10:43:33 AM
Surr: Triphenylphosphate	90.0	10.7 - 154		%Rec	1	1/17/2020 10:43:33 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27156		Analyst: SS
Nitrate (as N)	ND	1.05		mg/Kg-dry	1	1/16/2020 9:48:00 PM
Orthophosphate (as P)	ND	2.10		mg/Kg-dry	1	1/16/2020 9:48:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56689		Analyst: CJ
Percent Moisture	4.75	0.500		wt%	1	1/16/2020 11:32:46 AM

Lab ID: 2001240-003 **Collection Date:** 1/15/2020 9:40:00 AM
Client Sample ID: **B-2:Surface** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27152		Analyst: SB
Diazinon	ND	537		µg/Kg-dry	1	1/17/2020 11:05:54 AM
Surr: Triphenylphosphate	73.2	10.7 - 154		%Rec	1	1/17/2020 11:05:54 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27156		Analyst: SS
Nitrate (as N)	ND	1.11		mg/Kg-dry	1	1/16/2020 10:34:00 PM
Orthophosphate (as P)	ND	2.23		mg/Kg-dry	1	1/16/2020 10:34:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56689		Analyst: CJ
Percent Moisture	10.3	0.500		wt%	1	1/16/2020 11:32:46 AM

Analytical Report

Work Order: **2001240**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001189

Lab ID: 2001240-005 **Collection Date:** 1/15/2020 10:40:00 AM
Client Sample ID: **B-3:Surface** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27152		Analyst: SB
Diazinon	ND	516		µg/Kg-dry	1	1/17/2020 11:28:07 AM
Surr: Triphenylphosphate	80.5	10.7 - 154		%Rec	1	1/17/2020 11:28:07 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27156		Analyst: SS
Nitrate (as N)	ND	1.04		mg/Kg-dry	1	1/16/2020 10:57:00 PM
Orthophosphate (as P)	ND	2.08		mg/Kg-dry	1	1/16/2020 10:57:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56689		Analyst: CJ
Percent Moisture	5.01	0.500		wt%	1	1/16/2020 11:32:46 AM

Lab ID: 2001240-007 **Collection Date:** 1/15/2020 11:50:00 AM
Client Sample ID: **B-4:Surface** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27152		Analyst: SB
Diazinon	ND	451		µg/Kg-dry	1	1/17/2020 11:50:31 AM
Surr: Triphenylphosphate	85.9	10.7 - 154		%Rec	1	1/17/2020 11:50:31 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27156		Analyst: SS
Nitrate (as N)	ND	1.05		mg/Kg-dry	1	1/16/2020 11:20:00 PM
Orthophosphate (as P)	ND	2.09		mg/Kg-dry	1	1/16/2020 11:20:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56689		Analyst: CJ
Percent Moisture	4.41	0.500		wt%	1	1/16/2020 11:32:46 AM

Analytical Report

Work Order: **2001240**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001189

Lab ID: 2001240-009 **Collection Date:** 1/15/2020 12:55:00 PM
Client Sample ID: **B-5:Surface** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27152		Analyst: SB
Diazinon	ND	449		µg/Kg-dry	1	1/17/2020 12:12:57 PM
Surr: Triphenylphosphate	80.7	10.7 - 154		%Rec	1	1/17/2020 12:12:57 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27156		Analyst: SS
Nitrate (as N)	ND	1.06		mg/Kg-dry	1	1/17/2020 12:30:00 AM
Orthophosphate (as P)	ND	2.11		mg/Kg-dry	1	1/17/2020 12:30:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56689		Analyst: CJ
Percent Moisture	5.90	0.500		wt%	1	1/16/2020 11:32:46 AM

Date: *1/17/2020*

Work Order: 2001240
CLIENT: Friedman & Bruya
Project: 001189

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27156** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/16/2020** RunNo: **56716**
Client ID: **MBLKS** Batch ID: **27156** Analysis Date: **1/16/2020** SeqNo: **1129894**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27156** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/16/2020** RunNo: **56716**
Client ID: **LCSS** Batch ID: **27156** Analysis Date: **1/16/2020** SeqNo: **1129895**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.94	1.00	7.500	0	106	90	110				
Orthophosphate (as P)	12.7	2.00	12.50	0	102	90	110				

Sample ID: **2001240-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/16/2020** RunNo: **56716**
Client ID: **B-1:Surface** Batch ID: **27156** Analysis Date: **1/16/2020** SeqNo: **1129897**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.04						0		30	
Orthophosphate (as P)	ND	2.09						0		30	

Sample ID: **2001240-007AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/16/2020** RunNo: **56716**
Client ID: **B-4:Surface** Batch ID: **27156** Analysis Date: **1/16/2020** SeqNo: **1129901**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	8.20	1.04	7.831	0	105	80	120				
Orthophosphate (as P)	2.28	2.09	13.05	0	17.4	80	120				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/17/2020*

Work Order: 2001240
CLIENT: Friedman & Bruya
Project: 001189

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001240-007AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/16/2020** RunNo: **56716**
Client ID: **B-4:Surface** Batch ID: **27156** Analysis Date: **1/17/2020** SeqNo: **1129902**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	8.16	1.04	7.774	0	105	80	120	8.196	0.471	30	
Orthophosphate (as P)	ND	2.07	12.96	0	14.6	80	120	2.276	18.7	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/17/2020*

Work Order: 2001240
CLIENT: Friedman & Bruya
Project: 001189

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27152** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/16/2020** RunNo: **56725**
Client ID: **MBLKS** Batch ID: **27152** Analysis Date: **1/17/2020** SeqNo: **1130103**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	500									
Surr: Triphenylphosphate	219		200.0		109	10.7	154				

Sample ID: **LCS-27152** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/16/2020** RunNo: **56725**
Client ID: **LCSS** Batch ID: **27152** Analysis Date: **1/17/2020** SeqNo: **1130104**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	198	500	200.0	0	99.1	37.1	132				
Surr: Triphenylphosphate	227		200.0		114	10.7	154				

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001240**
Logged by:	**Carissa True**	Date Received:	**1/16/2020 10:15:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	4.8
Sample 1	4.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2001240

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont
PROJECT NAME/NO. 001189
PO # A-531
REMARKS
Please Email Results

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 24 hour
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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
B-1:Surface		1/15/20	0830	Soil	1											
B-1:2			0840		1				x	x	x					
B-2:Surface			0940		1											Hold
B-2:2			0950		1				x	x	x					
B-3:Surface			1040		1											Hold
B-3:2			1045		1				x	x	x					
B-4:Surface			1150		1											Hold
B-4:2			1155		1				x	x	x					
B-5:Surface			1255		1											Hold
B-5:2			1300		1				x	x	x					
																Hold.

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/16/20	0730AM
Received by:	[signature]	Carter Johnson	FAI	1/16/20	1015
Relinquished by:					
Received by:					

001189

SAMPLE CHAIN OF CUSTODY

ME 01-15-20

Page # 1 of 1 VS3 A05

Report To Charles Mefadden / Thom Marin

Company TRC

Address 1180 NW Maple st.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmefadden@trcompanies.com

SAMPLERS (signature) Charles Mefadden / Joe Sherrod

PROJECT NAME 015397 (Brookdale)

PO # 015397

REMARKS Rush TAT (24hr)

INVOICE TO TRC

Project specific RLs? - Yes / No

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 Hr TAT
- 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	Nitrates + Phosphates	As	Ethylene Dibromide (EDB)	Diazinon	Notes
B-1: Surface	01 A-F	1/15/20	0830	Soil	6								X	X	X	X	
B-1: 2	02		0840														
B-2: Surface	03		0940										X	X	X	X	
B-2: 2	04		950														
B-3: Surface	05		1040										X	X	X	X	
B-3: 2	06		1045														
B-4: Surface	07		1150										X	X	X	X	
B-4: 2	08		1155														
B-5: surface	09		1255										X	X	X	X	
B-5: 2	10		1300														

ANALYSES REQUESTED

Samples received at 5 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherrod	TRC	1/15/20	1558
Received by:		Isaac Lessig	FBI	1/15/20	15:58
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001190

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 15, 2020 from the 015397, F&BI 001190 project. Per your request, the dieldrin results were reported down to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0121R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 21, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001190

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 15, 2020 from the 015397, F&BI 001190 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: Cynthia Moon, Thom Morin
TRC0121R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001190 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001190 -01	B-1:GW
001190 -02	B-2:GW
001190 -03	B-3:GW
001190 -04	B-4:GW
001190 -05	B-5:GW

The dissolved metals samples were filtered at Friedman and Bruya on January 16, 2020 at 13:32. The data were flagged accordingly.

The 8081 surrogate TCMX failed below the acceptance criteria in the method blank. The data were flagged accordingly.

Sediment was present in the total metals 6020B samples B-1:GW, B-3:GW, B-4:GW, and B-5:GW. The total arsenic concentration is likely biased high due to interference from the sediment.

The samples were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-1:GW f	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-01
Date Analyzed:	01/16/20	Data File:	001190-01.101
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-2:GW f	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-02
Date Analyzed:	01/16/20	Data File:	001190-02.102
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-3:GW f	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-03
Date Analyzed:	01/16/20	Data File:	001190-03.103
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-4:GW f	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-04
Date Analyzed:	01/16/20	Data File:	001190-04.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-5:GW f	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-05
Date Analyzed:	01/16/20	Data File:	001190-05.108
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	I0-034 mb
Date Analyzed:	01/16/20	Data File:	I0-034 mb.093
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-01
Date Analyzed:	01/16/20	Data File:	001190-01.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	9.68

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-02
Date Analyzed:	01/16/20	Data File:	001190-02.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.22

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-3:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-03
Date Analyzed:	01/16/20	Data File:	001190-03.058
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	73.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-04
Date Analyzed:	01/16/20	Data File:	001190-04.059
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	33.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-05
Date Analyzed:	01/16/20	Data File:	001190-05.060
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	53.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	I0-033 mb
Date Analyzed:	01/16/20	Data File:	I0-033 mb.040
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-1:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-01
Date Analyzed:	01/16/20	Data File:	011619.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	53	50	150
DBC	76	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-2:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-02
Date Analyzed:	01/16/20	Data File:	011620.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	57	50	150
DBC	78	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-3:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-03
Date Analyzed:	01/16/20	Data File:	011621.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	39 ip	50	150
DBC	63	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-4:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-04
Date Analyzed:	01/16/20	Data File:	011622.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	52	50	150
DBC	63	50	150

Compounds:	Concentration ug/L
Dieldrin	0.032

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-5:GW	Client:	Environmental Partners
Date Received:	01/15/20	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	001190-05
Date Analyzed:	01/16/20	Data File:	011623.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	54	50	150
DBC	59	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001190
Date Extracted:	01/16/20	Lab ID:	00-156 mb2
Date Analyzed:	01/16/20	Data File:	011618.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	48 vo	50	150
DBC	75	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02 js

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001190
Date Extracted: 01/16/20
Date Analyzed: 01/16/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
B-1:GW 001190-01	<0.01
B-2:GW 001190-02	<0.01
B-3:GW 001190-03	<0.01
B-4:GW 001190-04	<0.01
B-5:GW 001190-05	<0.01
Method Blank	<0.01

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001190

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	94	95	80-120	1

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001190

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

Laboratory Code: 001037-28 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	37.9	108	118	75-125	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001190

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)
Dieldrin	ug/L (ppb)	0.25	83	78	70-130	6

Date of Report: 01/21/20
Date Received: 01/15/20
Project: 015397, F&BI 001190

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	98	103	70-130	6

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001190
Work Order Number: 2001241

January 17, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 1/16/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/17/2020*

CLIENT: Friedman & Bruya
Project: 001190
Work Order: 2001241

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001241-001	B-1:GW	01/15/2020 9:10 AM	01/16/2020 10:15 AM
2001241-002	B-2:GW	01/15/2020 10:05 AM	01/16/2020 10:15 AM
2001241-003	B-3:GW	01/15/2020 11:15 AM	01/16/2020 10:15 AM
2001241-004	B-4:GW	01/15/2020 12:20 PM	01/16/2020 10:15 AM
2001241-005	B-5:GW	01/15/2020 1:30 PM	01/16/2020 10:15 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001241**

Date: **1/17/2020**

CLIENT: Friedman & Bruya

Project: 001190

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001241**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001190

Lab ID: 2001241-001 **Collection Date:** 1/15/2020 9:10:00 AM
Client Sample ID: **B-1:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/17/2020 1:42:58 PM
Surr: Triphenylphosphate	104	10 - 132		%Rec	1	1/17/2020 1:42:58 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27155		Analyst: SS
Nitrate (as N)	1.20	0.100		mg/L	1	1/16/2020 5:11:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/16/2020 5:11:00 PM

Lab ID: 2001241-002 **Collection Date:** 1/15/2020 10:05:00 AM
Client Sample ID: **B-2:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/17/2020 2:27:38 PM
Surr: Triphenylphosphate	113	10 - 132		%Rec	1	1/17/2020 2:27:38 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27155		Analyst: SS
Nitrate (as N)	1.18	0.100		mg/L	1	1/16/2020 5:57:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/16/2020 5:57:00 PM

Analytical Report

Work Order: **2001241**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001190

Lab ID: 2001241-003 **Collection Date:** 1/15/2020 11:15:00 AM
Client Sample ID: **B-3:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.199		µg/L	1	1/17/2020 2:49:31 PM
Surr: Triphenylphosphate	121	10 - 132		%Rec	1	1/17/2020 2:49:31 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27155		Analyst: SS
Nitrate (as N)	0.638	0.100		mg/L	1	1/16/2020 7:06:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/16/2020 7:06:00 PM

Lab ID: 2001241-004 **Collection Date:** 1/15/2020 12:20:00 PM
Client Sample ID: **B-4:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/17/2020 3:11:50 PM
Surr: Triphenylphosphate	86.4	10 - 132		%Rec	1	1/17/2020 3:11:50 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27155		Analyst: SS
Nitrate (as N)	2.26	0.100		mg/L	1	1/16/2020 7:29:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/16/2020 7:29:00 PM

Analytical Report

Work Order: **2001241**
Date Reported: **1/17/2020**

CLIENT: Friedman & Bruya
Project: 001190

Lab ID: 2001241-005 **Collection Date:** 1/15/2020 1:30:00 PM
Client Sample ID: **B-5:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.198		µg/L	1	1/17/2020 3:34:15 PM
Surr: Triphenylphosphate	129	10 - 132		%Rec	1	1/17/2020 3:34:15 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27155		Analyst: SS
Nitrate (as N)	2.56	0.200	D	mg/L	2	1/17/2020 11:01:00 AM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/16/2020 7:52:00 PM

Date: *1/17/2020*

Work Order: 2001241
CLIENT: Friedman & Bruya
Project: 001190

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27155** SampType: **MBLK** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **MBLKW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129908**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Ortho-Phosphate (as P)	ND	0.200									

Sample ID: **LCS-27155** SampType: **LCS** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **LCSW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129909**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.740	0.100	0.7500	0	98.7	90	110				
Ortho-Phosphate (as P)	1.21	0.200	1.250	0	97.0	90	110				

Sample ID: **2001241-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **B-1:GW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129911**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.20	0.100						1.197	0.417	20	
Ortho-Phosphate (as P)	ND	0.200						0		20	

Sample ID: **2001241-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **B-2:GW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129913**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.00	0.100	0.7500	1.179	109	80	120				
Ortho-Phosphate (as P)	1.12	0.200	1.250	0	89.8	80	120				

Sample ID: **2001241-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **B-2:GW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129914**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.99	0.100	0.7500	1.179	108	80	120	1.997	0.251	20	

Date: *1/17/2020*

Work Order: 2001241
CLIENT: Friedman & Bruya
Project: 001190

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001241-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/16/2020** RunNo: **56717**
Client ID: **B-2:GW** Batch ID: **27155** Analysis Date: **1/16/2020** SeqNo: **1129914**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ortho-Phosphate (as P)	1.16	0.200	1.250	0	92.7	80	120	1.123	3.16	20	

Date: *1/17/2020*

Work Order: 2001241
CLIENT: Friedman & Bruya
Project: 001190

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27157** SampType: **MBLK** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **MBLKW** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130114**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.198									
Surr: Triphenylphosphate	0.540		0.3959		136	10	132				S

NOTES:
S - Outlying surrogate recovery(ies) observed (high bias). Sample is non-detect; no further action required.

Sample ID: **LCS-27157** SampType: **LCS** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **LCSW** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130115**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	2.00	0.198	1.975	0	101	26.5	127				
Surr: Triphenylphosphate	0.458		0.3951		116	10	132				

Sample ID: **LCSD-27157** SampType: **LCSD** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **LCSW02** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130116**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	2.13	0.198	1.980	0	108	26.5	127	2.000	6.42	30	
Surr: Triphenylphosphate	0.440		0.3961		111	10	132		0		

Sample ID: **2001241-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **B-1:GW** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130118**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.234						0		30	
Surr: Triphenylphosphate	0.448		0.4686		95.5	10	132		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001241**
Logged by:	**Brianna Barnes**	Date Received:	**1/16/2020 10:15:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	4.8
Sample 1	4.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2001241

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001190

PO # A-531

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24 hour

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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
B-1:GW		1/15/20	0910	H_2O	2				x	x	x					
B2:GW			1005						x	x	x					
B-3:GW			1115						x	x	x					
B-4:GW			1220						x	x	x					
B-5:GW			1330						x	x	x					

ANALYSES REQUESTED

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Michael Erdahl	Friedman & Bruya	1/16/20	07:30AM.
Received by:	[signature]	Carter Johnson	FAI	1/16/20	1015
Relinquished by:					
Received by:					

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

001190 **SAMPLE CHAIN OF CUSTODY** 1.15.20 ME VW/AOS/AIS

Page # 1 of 1

Report To: Charles McFadden / Thom Marsh
Company: TRC
Address: 1180 NW Maple St.
City, State, ZIP: Issaquah, WA 98027
Phone: 425-395-0010 Email: cmcfadden@trcompanies.com

SAMPLERS (signature): Charles McFadden / Joe Sherrod
PROJECT NAME: 015397 (Brooklyn)
PO #: 015397
REMARKS: Rush 24hr TAT
INVOICE TO: TRC
Project specific RLs? - Yes / No

TURNAROUND TIME
☐ Standard turnaround
☑ RUSH 24hr TAT
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	Nitrates + Phosphates	As (Total + Dissolved)	Ethylene Dibromide (EDB)	Dieldrin + Dieldrin	Notes
B-1: GW	01A-H	1/15/20	0910	H_2O	8								X	X	X	X	
B-2: GW	02A-H	↓	1005	↓	↓								X	X	X	X	
B-3: GW	03A-H	↓	1115	↓	↓								X	X	X	X	
B-4: GW	04A-H	↓	1220	↓	↓								X	X	X	X	
B-5: GW	05A-H	↓	1330	↓	↓								X	X	X	X	

Samples received at 5 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Joe Sherrod	TRC	1/15/20	1558
Received by:		Isaac Lessig	FBI	1/15/20	15:58
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 27, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397 (Brookdale), F&BI 001212

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 16, 2020 from the 015397 (Brookdale), F&BI 001212 project. There are 17 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: Cynthia Moon, Thom Morin
TRC0127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 16, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397 (Brookdale), F&BI 001212 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001212 -01	B-6:Surface
001212 -02	B-6:2
001212 -03	B-7:Surface
001212 -04	B-7:2
001212 -05	B-8:Surface
001212 -06	B-8:2
001212 -07	B-9:Surface
001212 -08	B-9:2

Samples B-6:Surface, B-7:Surface, B-8:Surface, and B-9:Surface were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The 8260D internal standard in sample B-9:Surface did not pass the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-6:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-01
Date Analyzed:	01/17/20	Data File:	011716.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-7:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-03
Date Analyzed:	01/20/20	Data File:	012015.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-8:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-05
Date Analyzed:	01/20/20	Data File:	012016.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	B-9:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-07
Date Analyzed:	01/20/20	Data File:	012017.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	92 J	50	150
4-Bromofluorobenzene	108 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	00-0144 mb
Date Analyzed:	01/17/20	Data File:	011713.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91 J	50	150
Toluene-d8	99 J	50	150
4-Bromofluorobenzene	92 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-01
Date Analyzed:	01/17/20	Data File:	001212-01.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.97

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-03
Date Analyzed:	01/17/20	Data File:	001212-03.101
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	55.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7:2	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/21/20	Lab ID:	001212-04
Date Analyzed:	01/21/20	Data File:	001212-04.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	111

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-8:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-05
Date Analyzed:	01/17/20	Data File:	001212-05.102
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.12

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9:Surface	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	001212-07
Date Analyzed:	01/17/20	Data File:	001212-07.103
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.57

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/17/20	Lab ID:	I0-036 mb
Date Analyzed:	01/17/20	Data File:	I0-036 mb.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001212
Date Extracted:	01/21/20	Lab ID:	I0-043 mb
Date Analyzed:	01/21/20	Data File:	I0-043 mb.040
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Date of Report: 01/27/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001212

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001237-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005 J	<0.005 J	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	113	104	70-130	8

Date of Report: 01/27/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001212

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

Laboratory Code: 001257-08 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	93	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	106	80-120

Date of Report: 01/27/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001212

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

Laboratory Code: 001202-02 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	6.05	79	89	75-125	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	84	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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001212
Work Order Number: 2001255

January 20, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 8 sample(s) on 1/16/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/20/2020*

CLIENT: Friedman & Bruya
Project: 001212
Work Order: 2001255

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001255-001	B-6: Surface	01/16/2020 8:25 AM	01/16/2020 5:25 PM
2001255-002	B-6:2	01/16/2020 8:30 AM	01/16/2020 5:25 PM
2001255-003	B-7: Surface	01/16/2020 9:25 AM	01/16/2020 5:25 PM
2001255-004	B-7:2	01/16/2020 9:30 AM	01/16/2020 5:25 PM
2001255-005	B-8: Surface	01/16/2020 10:05 AM	01/16/2020 5:25 PM
2001255-006	B-8:2	01/16/2020 10:10 AM	01/16/2020 5:25 PM
2001255-007	B-9: Surface	01/16/2020 11:05 AM	01/16/2020 5:25 PM
2001255-008	B-9:2	01/16/2020 11:10 AM	01/16/2020 5:25 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001255**

Date: **1/20/2020**

CLIENT: Friedman & Bruya

Project: 001212

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001255**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/16/2020 8:25:00 AM
Project: 001212
Lab ID: 2001255-001
Matrix: Soil
Client Sample ID: B-6: Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	537		µg/Kg-dry	1	1/17/2020 8:49:10 PM
Surr: Triphenylphosphate	96.9	10.7 - 154		%Rec	1	1/17/2020 8:49:10 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	ND	1.07		mg/Kg-dry	1	1/17/2020 11:13:00 PM
Orthophosphate (as P)	ND	2.14		mg/Kg-dry	1	1/17/2020 11:13:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	7.12	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001255**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/16/2020 9:25:00 AM
Project: 001212
Lab ID: 2001255-003
Matrix: Soil
Client Sample ID: B-7: Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	503		µg/Kg-dry	1	1/17/2020 10:19:10 PM
Surr: Triphenylphosphate	104	10.7 - 154		%Rec	1	1/17/2020 10:19:10 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	ND	1.07		mg/Kg-dry	1	1/17/2020 11:36:00 PM
Orthophosphate (as P)	ND	2.14		mg/Kg-dry	1	1/17/2020 11:36:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	7.10	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001255**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/16/2020 10:05:00 AM
Project: 001212
Lab ID: 2001255-005
Matrix: Soil
Client Sample ID: B-8: Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	510		µg/Kg-dry	1	1/17/2020 10:41:36 PM
Surr: Triphenylphosphate	107	10.7 - 154		%Rec	1	1/17/2020 10:41:36 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	ND	1.03		mg/Kg-dry	1	1/17/2020 11:59:00 PM
Orthophosphate (as P)	ND	2.06		mg/Kg-dry	1	1/17/2020 11:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	3.70	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001255**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/16/2020 11:05:00 AM
Project: 001212
Lab ID: 2001255-007
Matrix: Soil
Client Sample ID: B-9: Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	488		µg/Kg-dry	1	1/17/2020 11:04:05 PM
Surr: Triphenylphosphate	94.9	10.7 - 154		%Rec	1	1/17/2020 11:04:05 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	1.34	1.06		mg/Kg-dry	1	1/18/2020 12:22:00 AM
Orthophosphate (as P)	ND	2.12		mg/Kg-dry	1	1/18/2020 12:22:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	5.81	0.500		wt%	1	1/17/2020 2:53:20 PM

Date: *1/20/2020*

Work Order: 2001255
CLIENT: Friedman & Bruya
Project: 001212

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27177** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **MBLKS** Batch ID: **27177** Analysis Date: **1/17/2020** SeqNo: **1130449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27177** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **LCSS** Batch ID: **27177** Analysis Date: **1/17/2020** SeqNo: **1130450**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.71	1.00	7.500	0	103	90	110				
Orthophosphate (as P)	12.6	2.00	12.50	0	101	90	110				

Sample ID: **2001273-007ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **BATCH** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.01	1.51						2.429	18.6	30	
Orthophosphate (as P)	ND	3.03						0		30	

Sample ID: **2001273-007AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **BATCH** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130462**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	13.1	1.51	11.35	2.429	93.9	80	120				
Orthophosphate (as P)	ND	3.03	18.92	0	0	80	120				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/20/2020*

Work Order: 2001255
CLIENT: Friedman & Bruya
Project: 001212

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001273-007AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **BATCH** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130463**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	13.4	1.53	11.44	2.429	95.7	80	120	13.09	2.15	30	
Orthophosphate (as P)	ND	3.05	19.06	0	14.7	80	120	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/20/2020*

Work Order: 2001255
CLIENT: Friedman & Bruya
Project: 001212

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27162** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **MBLKS** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130426**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	500									
Surr: Triphenylphosphate	21.3		20.00		107	10.7	154				

Sample ID: **LCS-27162** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **LCSS** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130427**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	10.3	500	20.00	0	51.4	37.1	132				
Surr: Triphenylphosphate	21.0		20.00		105	10.7	154				

Sample ID: **2001255-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **B-6: Surface** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130429**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.4	513	20.53	0	75.0	9.74	142				
Surr: Triphenylphosphate	21.8		20.53		106	10.7	154				

Sample ID: **2001255-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **B-6: Surface** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130430**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	16.4	493	19.70	0	83.2	9.74	142	0		30	
Surr: Triphenylphosphate	19.4		19.70		98.6	10.7	154		0		

Sample ID: **2001255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **B-6: Surface** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130431**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	469						0		30	

Date: *1/20/2020*

Work Order: 2001255
CLIENT: Friedman & Bruya
Project: 001212

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **2001255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **B-6: Surface** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130431**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Triphenylphosphate	16.4		18.76		87.7	10.7	154		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001255**
Logged by:	**Clare Griggs**	Date Received:	**1/16/2020 5:25:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	3.2
Sample	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001255

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001212

PO # A-531

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24 hour

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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
B-6: Surface		1/16/20	925	Soil	1				x	x	x					
B-6: 2			830													Hold
B-7: Surface			925						x	x	x					
B-7: 2			930													Hold
B-8: Surface			1005						x	x	x					
B-8: 2			1010													Hold
B-9: Surface			1105						x	x	x					
B-9: 2			1110													Hold

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:	[signature]	Michael Erdahl	Friedman & Bruya	1/16/20	1510
Received by:	[signature]	Carter Johnson	FAI	1/16/20	1725
Relinquished by:					
Received by:					

SAMPLE CHAIN OF CUSTODY

ME 01-16-20

001212

Page # 1 of 1 VS3

Report To Charles McFadden / Thom Morin

Company TRC

Address 1180 NW Maple St.

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email cmcfadden@epi-wa.com

SAMPLERS (signature) Nate Dorfner

Charles McFadden + ~~Joe Sherrod~~

PROJECT NAME: 015397 (Brookdale)

PO #: 015397

REMARKS: Rush TAT (24hr)

Project specific RLs? - Yes / No

INVOICE TO: ~~TRC~~ Ichijo USA

TURNAROUND TIME

☐ Standard turnaround

☑ RUSH 24 Hr TAT

Rush charges authorized by:

BI2

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	Nitrates + Phosphates	Ethylene Dibromide (EDB)	As	Diazinon	Notes
B-6: Surface	01A-F	1/16/20	~~0830~~ 825	Soil	6								X	X	X	X	(X) per CM 1/20/20
B-6: 2	02		830														
B-7: Surface	03		925										X	X	X	X	ME
B-7: 2	04		930												(X)		
B-8: Surface	05		1005										X	X	X	X	
B-8: 2	06		1010														
B-9: Surface	07		1105										X	X	X	X	
B-9: 2	08		1110														

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		NATE DORFNER	TRC	1/16/20	1515
Received by:		Khoi Hoang	FBE	1/16/20	1515
Relinquished by:					
Received by:					

Samples received at 4 °C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 4, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397 (Brookdale), F&BI 001213

Dear Mr McFadden:

Included is the amended report from the testing of material submitted on January 16, 2020 from the 015397 (Brookdale), F&BI 001213 project. Per your request, the dieldrin results have been reported down to the method detection limit.

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: Cynthia Moon, Thom Morin
TRC0122R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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www.friedmanandbruya.com

January 22, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397 (Brookdale), F&BI 001213

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 16, 2020 from the 015397 (Brookdale), F&BI 001213 project. There are 22 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: Cynthia Moon, Thom Morin
TRC0122R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 16, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397 (Brookdale), F&BI 001213 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001213 -01	B-6:GW
001213 -02	B-7:GW
001213 -03	B-8:GW
001213 -04	B-10:GW

The samples were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The 6020 dissolved metals were filtered at Friedman and Bruya on January 17, 2020 at 11:22. The data were flagged accordingly.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-6:GW f	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-01
Date Analyzed:	01/17/20	Data File:	001213-01.110
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-7:GW f	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-02
Date Analyzed:	01/17/20	Data File:	001213-02.111
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-8:GW f	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-03
Date Analyzed:	01/17/20	Data File:	001213-03.112
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B-10:GW f	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-04
Date Analyzed:	01/17/20	Data File:	001213-04.113
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	I0-034 mb2
Date Analyzed:	01/17/20	Data File:	I0-034 mb2.109
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-01
Date Analyzed:	01/17/20	Data File:	001213-01.124
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	6.37

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-02
Date Analyzed:	01/17/20	Data File:	001213-02.125
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-8:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-03
Date Analyzed:	01/17/20	Data File:	001213-03.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	9.08

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-10:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	001213-04
Date Analyzed:	01/17/20	Data File:	001213-04.127
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	39.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/17/20	Lab ID:	I0-033 mb2
Date Analyzed:	01/17/20	Data File:	I0-033 mb2.115
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-6:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/16/20	Lab ID:	001213-01
Date Analyzed:	01/17/20	Data File:	011716.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	30 ip	50	150
DBC	44 ip	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-7:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/16/20	Lab ID:	001213-02
Date Analyzed:	01/17/20	Data File:	011717.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	51	50	150
DBC	62	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-8:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/16/20	Lab ID:	001213-03
Date Analyzed:	01/17/20	Data File:	011718.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	50	50	150
DBC	63	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	B-10:GW	Client:	Environmental Partners
Date Received:	01/16/20	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/16/20	Lab ID:	001213-04
Date Analyzed:	01/17/20	Data File:	011719.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	53	50	150
DBC	51	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397 (Brookdale), F&BI 001213
Date Extracted:	01/16/20	Lab ID:	00-156 mb2
Date Analyzed:	01/16/20	Data File:	011618.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	48 vo	50	150
DBC	75	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

Date of Report: 01/22/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001213
Date Extracted: 01/17/20
Date Analyzed: 01/17/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
B-6:GW 001213-01	<0.01
B-7:GW 001213-02	<0.01
B-8:GW 001190-03	<0.01
B-10:GW 001213-04	<0.01
Method Blank	<0.01

Date of Report: 01/22/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001213

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	94	95	80-120	1

Date of Report: 01/22/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001213

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

Laboratory Code: 001037-28 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	37.9	108	118	75-125	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

Date of Report: 01/22/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001213

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)
Dieldrin	ug/L (ppb)	0.25	83	78	70-130	6

Date of Report: 01/22/20
Date Received: 01/16/20
Project: 015397 (Brookdale), F&BI 001213

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	98	103	70-130	6

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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001213
Work Order Number: 2001254

January 20, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 1/16/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0

Organophosphorus Pesticides by EPA Method 8270-SIM

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Eric Young

Date: *01/20/2020*

CLIENT: Friedman & Bruya
Project: 001213
Work Order: 2001254

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001254-001	B-6:GW	01/16/2020 8:55 AM	01/16/2020 5:25 PM
2001254-002	B-7:GW	01/16/2020 9:35 AM	01/16/2020 5:25 PM
2001254-003	B-8:GW	01/16/2020 10:35 AM	01/16/2020 5:25 PM
2001254-004	B-10:GW	01/16/2020 1:25 PM	01/16/2020 5:25 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001254**

Date: **1/20/2020**

CLIENT: Friedman & Bruya

Project: 001213

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001254**
Date Reported: **1/20/2020**

CLIENT: Friedman & Bruya
Project: 001213

Lab ID: 2001254-001 **Collection Date:** 1/16/2020 8:55:00 AM
Client Sample ID: **B-6:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.198		µg/L	1	1/17/2020 5:04:06 PM
Surr: Triphenylphosphate	121	10 - 132		%Rec	1	1/17/2020 5:04:06 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27176		Analyst: SS
Nitrate (as N)	2.05	0.100		mg/L	1	1/17/2020 5:04:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/17/2020 5:04:00 PM

Lab ID: 2001254-002 **Collection Date:** 1/16/2020 9:35:00 AM
Client Sample ID: **B-7:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.199		µg/L	1	1/17/2020 5:26:39 PM
Surr: Triphenylphosphate	124	10 - 132		%Rec	1	1/17/2020 5:26:39 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27176		Analyst: SS
Nitrate (as N)	3.18	0.200	D	mg/L	2	1/17/2020 9:18:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/17/2020 5:27:00 PM

Analytical Report

Work Order: **2001254**
Date Reported: **1/20/2020**

CLIENT: Friedman & Bruya
Project: 001213

Lab ID: 2001254-003 **Collection Date:** 1/16/2020 10:35:00 AM
Client Sample ID: **B-8:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.197		µg/L	1	1/17/2020 5:49:12 PM
Surr: Triphenylphosphate	93.2	10 - 132		%Rec	1	1/17/2020 5:49:12 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27176		Analyst: SS
Nitrate (as N)	4.07	0.200	DH	mg/L	2	1/20/2020 10:46:00 AM
Nitrate (as N)	4.23	0.100	E	mg/L	1	1/17/2020 6:59:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/17/2020 6:59:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Lab ID: 2001254-004 **Collection Date:** 1/16/2020 1:25:00 PM
Client Sample ID: **B-10:GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27157		Analyst: SB
Diazinon	ND	0.198		µg/L	1	1/17/2020 6:11:40 PM
Surr: Triphenylphosphate	92.1	10 - 132		%Rec	1	1/17/2020 6:11:40 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27176		Analyst: SS
Nitrate (as N)	2.64	0.200	DH	mg/L	2	1/20/2020 11:09:00 AM
Nitrate (as N)	2.74	0.100	E	mg/L	1	1/17/2020 7:22:00 PM
Ortho-Phosphate (as P)	ND	0.200		mg/L	1	1/17/2020 7:22:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Date: *1/20/2020*

Work Order: 2001254
CLIENT: Friedman & Bruya
Project: 001213

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27176** SampType: **MBLK** Units: **mg/L** Prep Date: **1/17/2020** RunNo: **56744**
Client ID: **MBLKW** Batch ID: **27176** Analysis Date: **1/17/2020** SeqNo: **1130675**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Ortho-Phosphate (as P)	ND	0.200									

Sample ID: **LCS-27176** SampType: **LCS** Units: **mg/L** Prep Date: **1/17/2020** RunNo: **56744**
Client ID: **LCSW** Batch ID: **27176** Analysis Date: **1/17/2020** SeqNo: **1130676**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.700	0.100	0.7500	0	93.3	90	110				
Ortho-Phosphate (as P)	1.16	0.200	1.250	0	92.5	90	110				

Sample ID: **2001254-002BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/17/2020** RunNo: **56744**
Client ID: **B-7:GW** Batch ID: **27176** Analysis Date: **1/17/2020** SeqNo: **1130679**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	3.34	0.100						3.338	0.0300	20	E
Ortho-Phosphate (as P)	ND	0.200						0		20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2001254-002BMS** SampType: **MS** Units: **mg/L** Prep Date: **1/17/2020** RunNo: **56744**
Client ID: **B-7:GW** Batch ID: **27176** Analysis Date: **1/17/2020** SeqNo: **1130680**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	4.17	0.100	0.7500	3.338	111	80	120				E
Ortho-Phosphate (as P)	1.15	0.200	1.250	0	92.0	80	120				

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Date: *1/20/2020*

Work Order: 2001254
CLIENT: Friedman & Bruya
Project: 001213

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001254-002BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/17/2020** RunNo: **56744**
Client ID: **B-7:GW** Batch ID: **27176** Analysis Date: **1/17/2020** SeqNo: **1130681**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	4.18	0.100	0.7500	3.338	113	80	120	4.170	0.311	20	E
Ortho-Phosphate (as P)	1.21	0.200	1.250	0	96.8	80	120	1.150	5.08	20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Date: *1/20/2020*

Work Order: 2001254
CLIENT: Friedman & Bruya
Project: 001213

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27157** SampType: **MBLK** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **MBLKW** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130114**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.198									
Surr: Triphenylphosphate	0.540		0.3959		136	10	132				S

NOTES:
S - Outlying surrogate recovery(ies) observed (high bias). Sample is non-detect; no further action required.

Sample ID: **LCS-27157** SampType: **LCS** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **LCSW** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130115**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	2.00	0.198	1.975	0	101	26.5	127				
Surr: Triphenylphosphate	0.458		0.3951		116	10	132				

Sample ID: **LCSD-27157** SampType: **LCSD** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **LCSW02** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130116**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	2.13	0.198	1.980	0	108	26.5	127	2.000	6.42	30	
Surr: Triphenylphosphate	0.440		0.3961		111	10	132		0		

Sample ID: **2001241-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/16/2020** RunNo: **56726**
Client ID: **BATCH** Batch ID: **27157** Analysis Date: **1/17/2020** SeqNo: **1130118**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	0.234						0		30	
Surr: Triphenylphosphate	0.448		0.4686		95.5	10	132		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001254**
Logged by:	**Clare Griggs**	Date Received:	**1/16/2020 5:25:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	3.2
Sample	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2001254

Page # 1 of 1

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 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 001213

PO # A-531

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☒ RUSH 24 hour

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	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
B-6:GW		1/16/20	0855	H_2O	2				x	x	x					
B-7:GW			0935		2				x	x	x					
B-8:GW			1035		2				x	x	x					
B-10:GW			1325		2				x	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	1/16/20	1520
	Received by:	Carter Johnson	FAI	1/16/20	1725
	Relinquished by:				
	Received by:				

SAMPLE CHAIN OF CUSTODY

ME 01-16-20

Page 1 of 1 Bo4

Report To: Charles McFadden / Thom Morin

Company: TRC

Address: 1180 NW Maple St.

City, State, ZIP: Issaquah, WA 98027

Phone: 425-395-0010 Email: mcfadden@trccompanies.com

SAMPLERS (signature): Nate Dorfner, Charles McFadden + ~~Joe Sherrod~~

PROJECT NAME: 015397 (Brookdale)

PO #: 015397

REMARKS: Rush TAT (24hr)

Project specific RLs? - Yes / No

INVOICE TO: ~~TRC~~ Ichijo USA

TURNAROUND TIME: VW3 AI5

☐ Standard turnaround

☑ RUSH 24 HR TAT

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	Nitrates + Phosphates	As (Total + Dissolved)	Ethylene Dibromide (EDB)	Diazinon + Dieldrin	Notes
B-6: GW	01A-G	1/16/20	855	H_2O	8								X	X	X	X	
B-7: GW	02	↓	935	↓	↓								X	X	X	X	
B-8: GW	03	↓	1035	↓	↓								X	X	X	X	
B-10: GW	04	↓	1325	↓	↓								X	X	X	X	

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	NH	NATE DORFNER	TRC	1/16/20	1515
Received by:	[illegible]	Khoi Hoang	FBI	1/16/20	1515
Relinquished by:					
Received by:					

Samples received at 4 °C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 27, 2020

Charles McFadden, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001237

Dear Mr McFadden:

Included are the results from the testing of material submitted on January 17, 2020 from the 015397, F&BI 001237 project. There are 14 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: Cynthia Moon
TRC0127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 17, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001237 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001237-01	TP-1:Surface
001237-02	TP-1:2
001237-03	TP-2:Surface
001237-04	TP-2:2
001237-05	TP-3:Surface
001237-06	TP-3:2
001237-07	TP-4:Surface
001237-08	TP-4:2

Samples TP-1:Surface, TP-2:Surface, TP-3:Surface, and TP-4:Surface were sent to Fremont Analytical for nitrate, phosphate, and organophosphorus pesticide diazinon analyses. The report is enclosed.

The 8260D internal standard for samples TP-1:Surface, TP-3:Surface, and TP-4:Surface did not pass the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	TP-1:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-01
Date Analyzed:	01/20/20	Data File:	012019.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	50	150
Toluene-d8	87 J	50	150
4-Bromofluorobenzene	120 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	TP-2:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-03
Date Analyzed:	01/20/20	Data File:	012020.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	50	150
Toluene-d8	89 J	50	150
4-Bromofluorobenzene	125 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	TP-3:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-05
Date Analyzed:	01/20/20	Data File:	012021.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99 J	50	150
Toluene-d8	87 J	50	150
4-Bromofluorobenzene	111 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	TP-4:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-07
Date Analyzed:	01/20/20	Data File:	012022.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	87 J	50	150
4-Bromofluorobenzene	126 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	00-0144 mb
Date Analyzed:	01/17/20	Data File:	011713.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91 J	50	150
Toluene-d8	99 J	50	150
4-Bromofluorobenzene	92 J	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP-1:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-01
Date Analyzed:	01/17/20	Data File:	001237-01.105
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.11

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP-2:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-03
Date Analyzed:	01/17/20	Data File:	001237-03.106
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.42

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP-3:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-05
Date Analyzed:	01/17/20	Data File:	001237-05.118
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.66

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP-4:Surface	Client:	Environmental Partners
Date Received:	01/17/20	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	001237-07
Date Analyzed:	01/17/20	Data File:	001237-07.119
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.89

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001237
Date Extracted:	01/17/20	Lab ID:	I0-036 mb
Date Analyzed:	01/17/20	Data File:	I0-036 mb.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Date of Report: 01/27/20
Date Received: 01/17/20
Project: 015397, F&BI 001237

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE

Laboratory Code: 001237-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.005 J	<0.005 J	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	113	104	70-130	8

Date of Report: 01/27/20
Date Received: 01/17/20
Project: 015397, F&BI 001237

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

Laboratory Code: 001202-02 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	6.05	79	89	75-125	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	84	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.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 001237
Work Order Number: 2001273

January 20, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 8 sample(s) on 1/17/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Organophosphorus Pesticides by EPA Method 8270-SIM
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/20/2020*

CLIENT: Friedman & Bruya
Project: 001237
Work Order: 2001273

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2001273-001	TP-1:Surface	01/17/2020 9:20 AM	01/17/2020 1:30 PM
2001273-002	TP-1:2	01/17/2020 9:30 AM	01/17/2020 1:30 PM
2001273-003	TP-2:Surface	01/17/2020 9:45 AM	01/17/2020 1:30 PM
2001273-004	TP-2:2	01/17/2020 9:50 AM	01/17/2020 1:30 PM
2001273-005	TP-3:Surface	01/17/2020 10:15 AM	01/17/2020 1:30 PM
2001273-006	TP-3:2	01/17/2020 10:20 AM	01/17/2020 1:30 PM
2001273-007	TP-4:Surface	01/17/2020 11:00 AM	01/17/2020 1:30 PM
2001273-008	TP-4:2	01/17/2020 11:10 AM	01/17/2020 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2001273**

Date: **1/20/2020**

CLIENT: Friedman & Bruya

Project: 001237

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2001273**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/17/2020 9:20:00 AM
Project: 001237
Lab ID: 2001273-001
Matrix: Soil
Client Sample ID: TP-1:Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	642		µg/Kg-dry	1	1/17/2020 11:26:36 PM
Surr: Triphenylphosphate	102	10.7 - 154		%Rec	1	1/17/2020 11:26:36 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	3.97	1.38		mg/Kg-dry	1	1/18/2020 1:32:00 AM
Orthophosphate (as P)	ND	2.75		mg/Kg-dry	1	1/18/2020 1:32:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	27.4	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001273**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/17/2020 9:45:00 AM
Project: 001237
Lab ID: 2001273-003
Matrix: Soil
Client Sample ID: TP-2:Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	639		µg/Kg-dry	1	1/17/2020 11:49:07 PM
Surr: Triphenylphosphate	84.3	10.7 - 154		%Rec	1	1/17/2020 11:49:07 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	ND	1.39		mg/Kg-dry	1	1/18/2020 1:55:00 AM
Orthophosphate (as P)	ND	2.78		mg/Kg-dry	1	1/18/2020 1:55:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	28.4	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001273**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/17/2020 10:15:00 AM
Project: 001237
Lab ID: 2001273-005
Matrix: Soil
Client Sample ID: TP-3:Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	831		µg/Kg-dry	1	1/18/2020 12:11:36 AM
Surr: Triphenylphosphate	82.8	10.7 - 154		%Rec	1	1/18/2020 12:11:36 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	2.48	1.74		mg/Kg-dry	1	1/18/2020 2:18:00 AM
Orthophosphate (as P)	ND	3.47		mg/Kg-dry	1	1/18/2020 2:18:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	42.4	0.500		wt%	1	1/17/2020 2:53:20 PM

Analytical Report

Work Order: **2001273**
Date Reported: **1/20/2020**

Client: Friedman & Bruya
Collection Date: 1/17/2020 11:00:00 AM
Project: 001237
Lab ID: 2001273-007
Matrix: Soil
Client Sample ID: TP-4:Surface

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organophosphorus Pesticides by EPA Method 8270-SIM				Batch ID: 27162		Analyst: SB
Diazinon	ND	647		µg/Kg-dry	1	1/18/2020 12:34:07 AM
Surr: Triphenylphosphate	61.9	10.7 - 154		%Rec	1	1/18/2020 12:34:07 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 27177		Analyst: SS
Nitrate (as N)	2.43	1.52		mg/Kg-dry	1	1/18/2020 2:41:00 AM
Orthophosphate (as P)	ND	3.04		mg/Kg-dry	1	1/18/2020 2:41:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R56723		Analyst: CJ
Percent Moisture	34.3	0.500		wt%	1	1/17/2020 2:53:20 PM

Date: *1/20/2020*

Work Order: 2001273
CLIENT: Friedman & Bruya
Project: 001237

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27177** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **MBLKS** Batch ID: **27177** Analysis Date: **1/17/2020** SeqNo: **1130449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	1.00									
Orthophosphate (as P)	ND	2.00									

Sample ID: **LCS-27177** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **LCSS** Batch ID: **27177** Analysis Date: **1/17/2020** SeqNo: **1130450**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	7.71	1.00	7.500	0	103	90	110				
Orthophosphate (as P)	12.6	2.00	12.50	0	101	90	110				

Sample ID: **2001273-007ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **TP-4:Surface** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.01	1.51						2.429	18.6	30	
Orthophosphate (as P)	ND	3.03						0		30	

Sample ID: **2001273-007AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **TP-4:Surface** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130462**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	13.1	1.51	11.35	2.429	93.9	80	120				
Orthophosphate (as P)	ND	3.03	18.92	0	0	80	120				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/20/2020*

Work Order: 2001273
CLIENT: Friedman & Bruya
Project: 001237

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2001273-007AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56738**
Client ID: **TP-4:Surface** Batch ID: **27177** Analysis Date: **1/18/2020** SeqNo: **1130463**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	13.4	1.53	11.44	2.429	95.7	80	120	13.09	2.15	30	
Orthophosphate (as P)	ND	3.05	19.06	0	14.7	80	120	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Date: *1/20/2020*

Work Order: 2001273
CLIENT: Friedman & Bruya
Project: 001237

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **MB-27162** SampType: **MBLK** Units: **µg/Kg** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **MBLKS** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130426**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	500									
Surr: Triphenylphosphate	21.3		20.00		107	10.7	154				

Sample ID: **LCS-27162** SampType: **LCS** Units: **µg/Kg** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **LCSS** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130427**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	10.3	500	20.00	0	51.4	37.1	132				
Surr: Triphenylphosphate	21.0		20.00		105	10.7	154				

Sample ID: **2001255-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **BATCH** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130429**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	15.4	513	20.53	0	75.0	9.74	142				
Surr: Triphenylphosphate	21.8		20.53		106	10.7	154				

Sample ID: **2001255-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **BATCH** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130430**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	16.4	493	19.70	0	83.2	9.74	142	0		30	
Surr: Triphenylphosphate	19.4		19.70		98.6	10.7	154		0		

Sample ID: **2001255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **BATCH** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130431**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diazinon	ND	469						0		30	

Date: *1/20/2020*

Work Order: 2001273
CLIENT: Friedman & Bruya
Project: 001237

QC SUMMARY REPORT

Organophosphorus Pesticides by EPA Method 8270-SIM

Sample ID: **2001255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **1/17/2020** RunNo: **56737**
Client ID: **BATCH** Batch ID: **27162** Analysis Date: **1/17/2020** SeqNo: **1130431**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Triphenylphosphate	16.4		18.76		87.7	10.7	154		0		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2001273**
Logged by:	**Carissa True**	Date Received:	**1/17/2020 1:30:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	4.2
Sample 1	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2001273 CRT 1/17
~~2001272~~

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 Fax # (206) 283-5044

SUBCONTRACTER

PROJECT NAME/NO.	PO #
001237	A-530

REMARKS
Please Email Results

Page # _____ of _____

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 24 hr
Rush charges authorized by: MB

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Diazinon	Nitrate	Phosphate					Notes
TP-1:Surface		1/17/20	920	Soil	1				X	X	X					
TP-1:2			930		1											
TP-2:Surface			945		1				X	X	X					
TP-2:2			950		1											
TP-3:Surface			1015		1				X	X	X					
~~TAP-3~~ EWB TP-3:2			1020		1											
TP-4:Surface			1100		1				X	X	X					
EWB ~~PP~~ TP-4:2			1110		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:	D. M-B	~~Michael Erdahl~~ Liz Webber-Bye	Friedman & Bruya	12/17/20	1305
Received by:	[illegible]	Makenzie Meinhart	FAT	1/17/20	1330
Relinquished by:					
Received by:					

001237

SAMPLE CHAIN OF CUSTODY

ME 01/17/20 VS3/B03

Page # 1 of 1

Report To Charles McFadden / Thon Morin

Company TRC

Address 1180 NW Maple St Ste 310

City, State, ZIP Issaquah, WA 98027

Phone 425-395-0010 Email CMcFadden@TRCcompanies.com / TMorin@TRCcompanies.com

SAMPLERS (signature)

PROJECT NAME: 015397

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: Ichiro USA

TURNAROUND TIME
- ☐ Standard turnaround
- ☑ RUSH 24 hr
- 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	Nitrates / Phosphates	As	Ethylene Dibromide (EDB)	Diazinon	Notes
TP-1: Surface	01 A-F	1/17/20	920	Soil	6								X	X	X	X	
TP-1: 2	02		930														
TP-2: Surface	03		945										X	X	X	X	
TP-2: 2	04		950														
TP-3: Surface	05		1015										X	X	X	X	
TP-3: 2	06		1020														
TP-4: Surface	07		1100										X	X	X	X	
TP-4: 2	08		1110														

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Eric Krueger	TRC	1/17/20	1252
Received by:		DOVO	F&BI	1-17-20	12:52
Relinquished by:					
Received by:			Samples received at 1 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 28, 2020

Thom Morin, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 001355

Dear Mr Morin:

Included are the results from the testing of material submitted on January 24, 2020 from the 015397, F&BI 001355 project. There are 11 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: Cynthia Moon, Charles McFadden
TRC0128R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 24, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 001355 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
001355 -01	AOI-12:Surface
001355 -02	AOI-12:2
001355 -03	AOI-13:Surface
001355 -04	AOI-13:2
001355 -05	AOI-14:Surface
001355 -06	AOI-14:2
001355 -07	AOI-16:Surface
001355 -08	AOI-16:1.5
001355 -09	AOI-21:Surface
001355 -10	AOI-21:2
001355 -11	AOI-23:Surface
001355 -12	AOI-23:2
001355 -13	AOI-20-5:s
001355 -14	AOI-20-5:2

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-12:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-01
Date Analyzed:	01/27/20	Data File:	001355-01.032
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-13:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-03
Date Analyzed:	01/27/20	Data File:	001355-03.033
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-14:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-05
Date Analyzed:	01/27/20	Data File:	001355-05.034
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.63

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-16:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-07
Date Analyzed:	01/27/20	Data File:	001355-07.037
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-21:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-09
Date Analyzed:	01/27/20	Data File:	001355-09.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.77

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-23:Surface	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-11
Date Analyzed:	01/27/20	Data File:	001355-11.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.54

Analysis For Total Metals By EPA Method 6020B

Client ID:	AOI-20-5:s	Client:	Environmental Partners
Date Received:	01/24/20	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	001355-13
Date Analyzed:	01/27/20	Data File:	001355-13.042
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	10.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 001355
Date Extracted:	01/27/20	Lab ID:	I0-054 mb
Date Analyzed:	01/27/20	Data File:	I0-054 mb.030
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

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

Date of Report: 01/28/20
Date Received: 01/24/20
Project: 015397, F&BI 001355

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

Laboratory Code: 001355-11 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	108	75-125	13

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	110	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.

001355

SAMPLE CHAIN OF CUSTODY 01-24-20

BI41 Page # 1 of 2

Report To: Thom Morin & Charles McFadden
Company: TRC
Address: 1180 NW Maple St
City, State, ZIP: Issaquah, WA 98027
Phone: _____ Email: TMorin@trccompanies.com

SAMPLERS (*signature*): [signature]

PROJECT NAME	PO #
015397	015397
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
☐ Standard turnaround
☒ RUSH 24 hr
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	As				Notes
AOI-12: Surface	01	1/24/20	0900	Soil	1								X				
AOI-12: 2	02		0905														
AOI-13: Surface	03		0930										X				
AOI-13: 2	04		0935														
AOI-14: Surface	05		0950										X				
AOI-14: 2	06		0955														
AOI-16: Surface	07		1005										X				
AOI-16: 1.5	08		1010														
AOI-21: Surface	09		1035										X				
AOI-21: 2	10		1040														

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Eric Krueger	TRC	1/24/20	1421
Received by: [signature]	Do Vo	F&BI	1-24-20	14:21
Relinquished by:				
Received by:				

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

001355

SAMPLE CHAIN OF CUSTODY

01-24-20

BEY

Page # 2 of 2

Report To Thom Morin & Charles McFadden

Company TRC

Address 1180 NW Maple St

City, State, ZIP Issaquah, WA 98027

Phone _____ Email TMorin@trccompanies.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
015397	015397
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
- ☐ Standard turnaround
- X RUSH 24 hr
- 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	As				Notes
AOI-23: Surface	11	1/24/20	1100	Soil	1								X				
AOI-23:2	12	1/24/20	1105	Soil	1												
AOI-20-5:S	13	1/24/20	1220	Soil	1								X				
AOI-20-5:2	14	1/24/20	1225	Soil	1												

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Eric Krueger	TRC	1/24/20	1421
Received by:	DO VO	F&BI	1-24-20	14.21
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 19, 2020

Thom Morin, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015397, F&BI 002224

Dear Mr Morin:

Included are the results from the testing of material submitted on February 17, 2020 from the 015397, F&BI 002224 project. There are 5 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: Cynthia Moon, Charles McFadden
TRC0219R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 17, 2020 by Friedman & Bruya, Inc. from the Environmental Partners 015397, F&BI 002224 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
002224 -01	MW-1

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	02/17/20	Project:	015397, F&BI 002224
Date Extracted:	02/17/20	Lab ID:	002224-01
Date Analyzed:	02/17/20	Data File:	021720.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	59	50	150
DBC	59	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Organochlorine Pesticides By EPA Method 8081B

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	015397, F&BI 002224
Date Extracted:	02/17/20	Lab ID:	00-436 mb
Date Analyzed:	02/17/20	Data File:	021718.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	50	150
DBC	116	50	150

Compounds:	Concentration ug/L
Dieldrin	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/19/20
Date Received: 02/17/20
Project: 015397, F&BI 002224

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)
Dieldrin	ug/L (ppb)	0.25	91	90	70-130	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.

002224

SAMPLE CHAIN OF CUSTODY

ME 02/~~2~~17/20

DOY

Page # 1 of 1

Report To Thom Morin & Charles McFadden

Company TRC

Address 1180 NW Maple St

City, State, ZIP Issaquah, WA 98027

Phone _____ Email TMorin@trccompanies.com

SAMPLERS (*signature*)

PROJECT NAME: 015397 TRC Ichijo USA CO., LTD

PO #

REMARKS: 74001 EPI

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME

[ ] Standard turnaround

[X] RUSH 24 hr

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	Dieldrin				Notes
MW-1	01	2/17/20	1025	GW	1								X				

ANALYSES REQUESTED

Samples received at 4 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Eric Krueger	TRC	2/17/20	1236
Received by:		Nhan Phan	FEBI	2/17/20	1236
Relinquished by:					
Received by:					

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

Attachment D
TEE Cleanup Levels

Brookdale Golf Course VCP Site

cas lookup	Analyte	CAS	MTCA Soil Method A - Unrestricted (mg/kg)	Method B Direct Contact (noncancer) (mg/kg)	Method B Direct Contact (cancer) (mg/kg)	Selected Human Health Screening Level (mg/kg)	Target Potable Groundwater Level (ug/L)	Basis	Soil Protective of Groundwater Unsat (mg/kg)	Soil Protective of Groundwater Sat (mg/kg)	TEE Value (mg/kg) (plants)	TEE Value (mg/kg) (soil biota)	TEE Value (mg/kg) (wildlife)	TEE Value (mg/kg) (final)	Notes
	Pesticides														
72-55-9	4,4-DDE	72-55-9		24	2.9	2.9	0.26	c	0.45	0.022	x	x	0.75	0.75	0.75 mg/kg for total DDD, DDE, DDT
50-29-3	4,4-DDT	50-29-3	3	40	2.9	2.9	0.26	c	3.5	0.17	x	x	0.75	0.75	0.75 mg/kg for total DDD, DDE, DDT
319-85-7	Beta-BHC	319-85-7		NTV	0.56	0.56	0.049	c	0.0023	0.00012	x	29	6	6	6 mg/kg for total BHC (including lindane)
319-86-8	Delta-BHC	319-86-8		NTV	NTV	NTV					x	29	6	6	6 mg/kg for total BHC (including lindane)
309-00-2	Aldrin	309-00-2		2.4	0.059	0.059	0.0026	c	0.0025	0.00013	x	x	0.1	0.1	
959-98-8	Endosulfan I	959-98-8		NTV	NTV	NTV					x	x	x	4	
60-57-1	Dieldrin	60-57-1		4	0.063	0.063	0.0055	c	0.0028	0.00014	x	x	0.07	0.07	
72-20-8	Endrin	72-20-8		24	NTV	24	2	MCL	0.44	0.022	x	x	0.2	0.2	
7421-93-4	Endrin Aldehyde	7421-93-4		NTV	NTV	NTV					x	x	0.01	0.01	

Notes:

c = Carcinogen, Method B calculation using MTCA Equation 720-2.

MCL = Federal drinking water maximum contaminant level or maximum contaminant level goal.

NTV = No Toxicity Value

Attachment E
Conceptual Site Model

Primary Sources	Contaminants of Potential Concern	Media of Concern	Transport Mechanisms
Lawful application of pesticides	Arsenic, 1,2-Dibromoethane, Dieldrin, Diazinon, Nitrate, Phosphate [X] Adsorbed onto soil [ ] Dissolved in water [ ] Non-aqueous phase	[ ] Surface Soil (0–2 feet bgs)	[ ] Direct release to soil [ ] Migration to subsurface soil [ ] Migration to groundwater [ ] Volatilization [ ] Runoff or erosion [ ] Utake by plant or animal [ ] Other (list) _____
		[X] Soil (> 2 feet bgs)	[X] Direct release to soil [X] Migration to groundwater [ ] Volatilization [ ] Other (list) _____
		[X] Groundwater	[X] Release to groundwater [ ] Volatilization [ ] Future migration to surface water [ ] Future migration to sediment [ ] Uptake by plant or animal [ ] Other (list) _____
		[ ] Surface Water	[ ] Release to surface water [ ] Volatilization [ ] Sedimentation [ ] Uptake by plant or animal [ ] Other (list) _____
		[ ] Sediment	[ ] Release to surface water [ ] Resuspension or erosion [ ] Uptake by plant or animal [ ] Other (list) _____

Exposure Media	Exposure Pathway	Commercial Industrial	Construction Worker	Residential/ Recreational	TEE Receptors
		Current (C) and Potential Future (F) Receptors			
[X] Soil	[X] Ingestion	[ ]	C/F	C/F	C/F
	[X] Dermal Exposure	[ ]	C/F	C/F	C/F
[X] Groundwater	[X] Ingestion	[ ]	C/F	C/F	C/F
	[X] Dermal Exposure	[ ]	C/F	C/F	C/F
[ ] Air	[ ] Inhalation	[ ]	[ ]	[ ]	[ ]
[ ] Surface Water	[ ] Ingestion	[ ]	[ ]	[ ]	[ ]
	[ ] Dermal Contact	[ ]	[ ]	[ ]	[ ]
[ ] Sediment	[ ] Ingestion	[ ]	[ ]	[ ]	[ ]
	[ ] Dermal Contact	[ ]	[ ]	[ ]	[ ]
[ ] Indoor Air	[ ] Inhalation	[ ]	[ ]	[ ]	[ ]

NOTES:
bgs = below ground surface

ATTACHMENT E
CONCEPTUAL SITE MODEL

PREPARED BY	TRC		
REPORT	SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT		
LOCATION	1802 BROOKDALE ROAD EAST, TACOMA, WA		
PREPARED FOR	ICHIJO USA CO., LTD.		
05/20/20	***DRAWN BY*** NDH	***REVIEWED BY*** TCM	***PROJECT NUMBER*** 015397.0004.0000