

# Remedial Excavation and Soil Stockpile Sampling Report

Calder Limestone Mine

Prince of Wales Island, Alaska

HydroCon Project Number: 2015-010

Prepared for:

Columbia River Carbonates

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## 1.0 INTRODUCTION

### 1.1 *Scope of Services*

This report details the remedial excavation and soil stockpile sampling activities completed at the subject site (the Site, Figure 1) in August 2015. The objective of the scope of services was to perform remedial excavation of petroleum contaminated soil (PCS) from the Camp Generator and Fueling Station areas of the site (Figure 2) where historical releases of diesel fuel impacted soil quality. In addition, HydroCon performed soil sampling at three stockpiles that contain PCS that has been treated using enhanced biodegradation methods to assess current soil quality. HydroCon performed the work following the procedures described in the Cleanup Action and Sampling Plan dated June 26, 2015. Details of the work are provided below.

### 1.2 *Site History*

In July 2004, Carson Dorn, Inc. (CDI) conducted a site assessment of the subject site. During the assessment, diesel-contaminated soils were observed adjacent to the Camp Generator, downhill from the two 18,000-gallon diesel aboveground storage tanks (ASTs), also known as the Fueling Station, and in an existing stockpile of soil. CDI also noted the presence of a drum storage area west of the Fueling Station. These and other site features are shown on Figure 2.

CDI collected five soil samples during the site assessment. Soil analytical results indicated that the existing 15 cubic yard stockpile (Sample C-1) had a diesel-range organics (DRO) concentration of 4,780 mg/kg. The two soil samples collected from Camp Generator area had a DRO concentration of 9,750 mg/kg near the 500-gallon diesel AST used to supply the generator (Sample G-2) and 485,000 mg/kg at the door of the Camp Generator (Sample G-1). In the Fueling Station area, a sample collected from the end of the westerly 18,000 AST had a DRO concentration of 16,400 mg/kg. The Method Two Alaska Department of Environmental Conservation (ADEC) cleanup level for DRO is 230 mg/kg.

In August 2004, CDI performed a drum inventory at the site. A total of 93 drums were present. Eighty of the drums were located in the drum storage area next to the Fueling Station and remainder of the drums was located in the Shop area. The contents of the drums included new and used gasoline, diesel, oil, grease, antifreeze, and water. The contents were consolidated into 51 drums and shipped off the island for recycling.

In September 2004, CDI provided oversight for the removal of contaminated soil by excavation from the two areas above. An estimated total of 100 cubic yards of soil was generated from the two excavations and from the 15 cubic yard stockpile and placed into an approximately 22'W x 60'L x 2'H (~100 cubic yards) bioremediation cell constructed on the site. This stockpile is referred to as the CDI Stockpile in this document.

In 2012, CRC performed a remedial excavation near the Camp Generators. Visibly stained soil was removed from the area south of the generator. The excavation measured approximately 50' x 30'. The depth of the excavation was approximately 6 feet below ground surface (bgs). No confirmation samples were collected at that time. The contaminated soil was transported to the onsite bioremediation cell staging area. The soil was placed on and covered with heavy gauge plastic sheeting. Two stockpiles were created: 35'L x 16'W x 3.5'H (approximately 135 cubic yards) and 30'L x 10'W x 1.5'H (approximately 16 cubic yards). These stockpiles are referred to as the CRC1 and CRC2 Stockpiles, respectively, in this document.

## 2.0 PRE-FIELD ACTIVITIES

### 2.1 *Preparation of Cleanup Action and Sampling Plan*

On June 26, 2015, HydroCon published the final version of the Cleanup Action and Sampling Plan<sup>1</sup> after it was reviewed and accepted by ADEC's assigned project manager, Mr. Bruce Wanstall.

The intent of this plan was to remove as much diesel contaminated soil with concentrations in excess of the Method 2 Cleanup Level as practical at the Camp Generator and the Fueling Station and thereby eliminating or minimizing complete exposure pathways to petroleum contamination. The amount and areas of soil contamination to be removed will be based on field screening techniques that include visual and olfactory observations, water sheen testing, and use of a photo-ionization detector as described in detail in Standard Operating Procedures. Once field screening results indicate that the majority of the PCS has been removed, confirmation soil samples will be collected from the sidewalls and excavation floor for laboratory analysis. Exploratory work and soil removal will be conducted with an excavator.

This document accompanied HydroCon field personnel and was used to guide field protocols. A discussion of fieldwork is provided in Section 3.0 of this report.

### 2.2 *Preparation of Site-Specific Health and Safety Plan*

HydroCon prepared a site specific health and safety plan (HASP) to govern health and safety protocols used during this investigation. Work was performed using Occupational Safety and Health Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots.

### 2.3 *Field Screening Methods*

Field screening was performed during excavation to assess the nature and extent of petroleum contamination. Field screening consisted of volatile organic vapor measurements using a

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<sup>1</sup> HydroCon, 2015. *Cleanup Action and Sampling Plan. Calder Limestone Mine. Calder Bay, Prince of Wales Island. Prepared for Columbia River Carbonates. June 26.*

photoionization detector (PID), sheen testing, visual observations (staining, etc.), and olfactory observations. A portion of each soil sample was placed in a sealed Zip-Lock baggie. The tip of the PID was inserted into the Zip-Lock bag in the airspace above the soil sample and the PID measurement was recorded. The PID was calibrated before use each day to a test gas standard consisting of 100 ppmv isobutylene. Because several factors can affect PID readings (e.g. moisture, temperature, and background conditions), HydroCon determined that a value of 1 ppm or greater may indicate the presence of organic vapors originating from contaminants at the site. Sheen testing consisted of placing a small portion of soil in clear water and observing the water for the presence of hydrocarbon sheen

All field observations, field measurements, soil sampling locations, site sketches, etc. were recorded on field forms. The data on these field forms was used to prepare this report and graphics herein.

## 2.4 **Soil Cleanup Levels**

The proposed cleanup levels for this project are Method Two of ADEC's Oil Pollution and Hazardous Substances Pollution Control Regulations (Table B2, 18 AAC 75). The cleanup levels (based on over 40 inches of rainfall, migration to groundwater) are:

- 230 mg/kg for DRO
- 0.025 mg/kg for benzene
- 6.5 mg/kg for toluene
- 6.9 mg/kg for ethylbenzene
- 63 mg/kg total xylenes

## 3.0 **SOIL SAMPLING AND ANALYSIS**

The source of contamination at both the Fueling Station (Figure 3) and Camp Generator (Figure 4) are spills from the ASTs used to store diesel, therefore all samples were analyzed for DRO using Alaska's Method AK102. Field duplicate samples were also collected for quality control purposes. At the request of ADEC, the analysis for benzene, toluene, ethylbenzene, and total xylenes (BETX) by EPA Method 8260B was also analyzed in confirmation samples at an approximate rate of one per ten samples.

All soil samples were placed in laboratory-prepared glass jars and uniquely labeled with the sample identification number, date and time of sample collection, and site name. The sample jars were placed in a chilled cooler along with chain-of-custody documentation and transported to Friedman & Bruya laboratory in Seattle, Washington via air freight.

## 4.0 REMEDIAL EXCAVATION

From August 25 to August 27, HydroCon directed remedial excavation of PCS at two areas of the site (Camp Generator and Fueling Station). Southeast Road Builders Construction Company (subcontractor for CRC) performed the excavation using a Cat 336E trackhoe. All PCS was placed into a dump truck and hauled to the newly constructed biotreatment cell area referred to as the HydroCon Stockpile (Figure 2). The PCS was placed on top of new 30-mil plastic geomembrane, as described in the approved work plan. A discussion for each remedial excavation is provided below. Photographs of the remedial activities are provided in Appendix A.

### 4.1 *Camp Generator Remedial Excavation*

The remedial excavation began immediately south of the generator and as close to the drainage ditch (western limit) as practical. The excavation proceeded as far east as practical until physical constraints (proximity to the drainage ditch to the northwest, large generator to the northeast, and a large portable generator and Mess Hall to the east) prevented any further excavation. Approximately 180 cubic yards of PCS was removed from this area of the site. The extent of remedial excavation is illustrated on Figure 3.

Soil exhibiting strong diesel odor, visible staining and PID readings up to 250 ppm was observed in the excavation. The soil within the excavation was fill consisting of gravel and cobbles in the upper 2 feet. The soil underlying the fill consisted of fine sand and low to medium plastic fines and abundant organic material, wood debris, and logs. Water seeping in from the drainage ditch was observed when the excavation reached a depth of approximately 6 feet bgs. Minimal accumulation of water occurred on the excavation floor and was left in place. The excavation was advanced to a depth of 7 feet bgs.

HydroCon collected confirmation soil samples from the sidewalls (samples S1 through S8 at an approximate depth of 5 feet bgs) and floor of the excavation (samples F1-7 through F3-7). No further excavation was attempted due to physical constraints. Since this area of the site is used as living quarters and power generation, further remedial action will have to wait until the mining season is over so that the generator and other obstructions can be moved to gain more access to PCS.

### 4.2 *Fueling Station Remedial Excavation*

Stained soil was present on the north side of the western-most AST and extended north towards the road used to haul limestone to the crushing area and loading dock. Heavily stained soil that exhibited strong diesel odor, high PID readings (over 500 ppm) were observed in soil down to the maximum depth excavated (7 feet bgs). The composition of the soil in this area of the site was a mixture of sand and fine grained soil and decomposed limestone bedrock. There was no wood, logs, or other organic material observed in this soil. Perched water was encountered at a depth of approximately 7 feet bgs. The extent of the remedial excavation is shown on Figure 4.

Approximately 200 cubic yards of PCS was removed from this area of the site. The remedial excavation was terminated when the following constraints were encountered:

- The western most AST prevented further excavation towards the south.
- Diesel product line and control panel prevented further excavation towards the east.
- The presence of the haul road to the north. This road is vital to site operations during the mining season.
- The eastern boundary of the excavation appeared to have cleaned up based on field screening results.
- The vertical extent of contamination was terminated at 7 feet bgs. Perched water appeared at this depth and had a heavy sheen on the surface.

HydroCon collected confirmation soil samples from the sidewalls (samples FS-S1 through FS-S12 at an approximate depth of 4 to 6 feet bgs) and floor of the excavation (samples FS-F1-7 through FS-F4-7). It was apparent that further remedial excavation will be required to remove PCS from this area. After consultation with CRC's representative (Mr. Zachary Twist), it was decided that no further remedial excavation can occur at this area until after mining season when the haul road will not be in use and some of the obstructions (product line, control panel, etc.) can be temporarily moved to allow more access to PCS.

#### 4.3 ***Soil Treatment***

All PCS removed from the remedial excavations was transported to the newly constructed Bio Cell area (referred to as the "HydroCon Stockpile") shown on Figure 2. This soil stockpile is located on relatively flat ground with no surface water bodies within 100 feet. Approximately 380 cubic yards of PCS was placed on top of 30-mil geomembrane liners in approximate 3-foot lifts.

Once the soil was placed in the cell, it was fertilized at a rate of 400 pounds urea and 100 pounds of phosphorus potassium fertilizer mix per 100 cubic yards of soil. The soil was mixed using the excavator bucket. After mixing, 10 mm polyethylene liners were placed over the stockpiled soil.

HydroCon will prepare a Bioremediation Management Plan for ADEC approval with sampling and reporting schedules. This document will be attached to the Environmental Site Activity Report that will be submitted following the field work described herein. CRC will implement the Plan and till the piles on a monthly basis as weather allows using on-site equipment and labor.



## 5.0 SOIL STOCKPILE SAMPLING

HydroCon sampled the existing stockpiles (CDI, CRC1, and CRC2) following ADEC guidance documents that recommend collection of 1 soil sample for every 10 cubic yards of stockpiled soil. HydroCon removed the plastic sheeting covering each stockpile prior to sampling. Samples were collected by using a clean shovel to dig down to a depth of 1.5 to 2 feet bgs. A new pair of nitrile gloves was used to transfer soil from each sampling location into laboratory-prepared glass sample jars. The plastic sheeting was placed back over the stockpiles at the conclusion of sampling activity.

The shovel was cleaned prior to use at each location using potable water and alconox wash followed by potable water rinse. The rinse water was placed on top of the CRC1 Stockpile plastic sheeting at the conclusion of sampling activities and allowed to evaporate.

All soil samples were analyzed for DRO. One sample from each stockpile was analyzed for BTEX. One field duplicate sample was collected from each stockpile and analyzed for DRO and BTEX. The stockpile soil sampling locations are shown on Figure 5.

A summary of soil sampling at each stockpile is provided below.

### 5.1 *CDI Stockpile*

The composition of this stockpile is predominantly coarse and fine grained soils with some cobbles. Some grass has taken root on the surface of this stockpile. HydroCon collected ten soil samples (CDI Stock-1 through CDI Stock-10) from the stockpile. One duplicate sample (CDI Stock-X) was collected from the CDI Stock-10 sample location.

### 5.2 *CRC1 Stockpile*

This stockpile has limited vegetation growing on it. The composition of the soil includes a mixture of cobbles and boulders along with granular and fine grained soil. HydroCon collected thirteen soil samples (CRC1 Stock-1 through CRC1 Stock-13) from this stockpile. One duplicate sample (CRC1 Stock-X) was collected from the CRC1 Stock-13 sample location.

### 5.3 *CRC2 Stockpile*

The composition of this stockpile is similar to the CRC1 Stockpile. HydroCon collected two soil samples (CRC2 Stock-1 and CRC2 Stock-2) from the stockpile. One duplicate sample (CRC2 Stock-X) was collected from the CRC2 Stock-2 sample location.

## 6.0 SOIL ANALYTICAL RESULTS

All sample analyses were performed by Friedman & Bruya, Inc. of Seattle, Washington. Laboratory Reports are included in Appendix B. Analytical results are summarized in Table 1.

### 6.1 *Camp Generator Remedial Excavation*

Due to the abundant amount of wood and organic material in the soil in this area of the site, HydroCon requested that the laboratory perform silica gel cleanup on the sample prior to running the DRO analysis.

A total of eleven confirmation soil samples were collected from the remedial excavation (eight sidewall and three floor samples). Five samples had DRO concentrations that exceeded ADEC's cleanup level (CUL) of 230 mg/kg (S2-5, S3-5, S4-5, S5-5, and S8-5). All floor samples were below the CUL indicating that the vertical extent of contamination has removed from this area of the site. With the exception of sample location S8-5, the sampling locations that did not pass the cleanup criteria are located in areas that are next to obstructions that prevented further excavation.

Two samples were analyzed for BTEX. Ethylbenzene (0.16 mg/kg) and total xylenes (1 mg/kg) were detected in the S4-5 sample but at concentrations well below their respective ADEC CUL. Benzene and toluene were not detected above the laboratory's MRL.

### 6.1 *Fueling Station Remedial Excavation*

A total of sixteen confirmation soil samples (twelve from the sidewalls and four floor samples) were collected from the remedial excavation. Five sidewall samples (FS-S4-4, FS-S6-4, FS-S8-5, FS-S10-6, and FS-S11-6) had DRO concentrations below the CUL of 230 mg/kg. The other seven sidewall samples and all floor samples had DRO concentrations that exceed ADEC's CUL.

Two samples were analyzed for BTEX (FS-F1-7 and FS-S1-6). Benzene, toluene, and xylenes were not detected in either sample above their respective MRL. Ethylbenzene (up to 0.44 mg/kg) was detected in both samples at a concentration well below ADEC's CUL of 6.9 mg/kg.

### 6.2 *CDI Stockpile*

Soil analytical results indicated that all samples were below ADEC's CUL for DRO. Additionally, the sample analyzed for BTEX analysis (CDI Stock-1) had no detection of any of the constituents above their respective MRLs.

### 6.3 **CRC1 Stockpile**

Soil analytical results indicated that ten of the thirteen stockpile samples exceeded the CUL for DRO. It should be noted that the concentration of DRO in those samples ranged from 240 to 490 mg/kg which is very close to the 230 mg/kg cleanup level.

One sample (CRC2-Stock-1) was analyzed for BTEX. Results of that analysis indicated that there was no detection of BTEX above the laboratory's respective MRLs.

### 6.4 **CRC2 Stockpile**

Soil analytical results indicated that the two samples were below ADEC's CUL for DRO. Additionally, the sample analyzed for BTEX analysis (CRC2 Stock-1) had no detection of any of the constituents above their respective MRLs.

## 7.0 **CONCLUSIONS AND RECOMMENDATIONS**

Conclusions and recommendations for each area of the site where remedial action has taken place are provided below.

### 7.1 **Camp Generator Area**

Approximately 180 cubic yards of PCS was removed from the Camp Generator area. The majority of accessible PCS was removed from this area of the site.

HydroCon suggests performing additional remedial excavation to remove as much of the remaining PCS in this area of the site as practical:

- Perform limited remedial excavation near sample locations S2-5 and S8-5.
- Temporarily move the large and small generators to gain access to PCS north and east of the remedial excavation.
- Collect confirmation soil samples to demonstrate removal of PCS above the respective CULs.

### 7.2 **Fueling Station**

Approximately 200 cubic yards of PCS was removed from the Fueling Station area. Soil analytical results indicate that most of the confirmation soil sampling locations still had DRO concentrations above the 230 mg/kg CUL for diesel.

HydroCon suggests performing additional remedial excavation to remove as much of the remaining PCS in this area of the site as practical:

- Temporarily disconnect the product line that runs from the ASTs to the dispenser to access the PCS to the east.
- Temporarily close the haul road to gain access to the remaining PCS to the south.
- Perform additional remedial excavation to remove the PCS to the west.
- Collect confirmation soil samples from the sidewalls and floor of the remedial excavation to demonstrate removal of PCS below the respective CULs.
- A small pocket of PCS appears to extend under the western-most AST. Moving this tank is not practical. HydroCon recommends leaving this contamination in place.

### 7.3 ***CDI Stockpile***

Soil analytical results indicate that enhanced bioremediation of soil in this stockpile has been successful at reducing DRO and constituents below ADEC's respective CULs.

HydroCon recommends the following actions:

- Remove the plastic liner and geomembrane from this area of the site and dispose of at a permitted disposal facility.
- Use the treated soil as fill at the site in areas away from any water body or remedial excavation.

### 7.4 ***CRC1 Stockpile***

The concentration of DRO in this stockpile still remains above ADEC's CUL. Based on the stockpile sampling results, the highest concentration of DRO remaining the stockpile is approximately twice the CUL.

HydroCon recommends the following actions:

- Augment this stockpile with fertilizer (550 pounds of Urea and 135 pounds of phosphorus potassium mix).
- Perform monthly tilling using the backhoe bucket as weather allows.
- Place the plastic liner over the stockpile after the conclusion of each tilling event.
- Perform confirmation soil sampling next summer.

### 7.5 **CRC2 Stockpile**

Soil analytical results indicate that enhanced bioremediation of soil in this stockpile has been successful at reducing DRO and constituents below ADEC's respective CULs.

HydroCon recommends the following actions:

- Remove the plastic liner and geomembrane from this area of the site and dispose of at a permitted disposal facility.
- Use the treated soil as fill at the site in areas away from any water body or remedial excavation.

### 7.6 **HydroCon Stockpile**

At the completion of remedial excavation the stockpile was fertilized using 1,600 pounds of urea and 400 pounds of phosphorus potassium fertilizer mix. The fertilizer was mixed into the stockpiled soil pile using an excavator bucket.

HydroCon recommends the following actions:

- Perform monthly tilling using the backhoe bucket as weather allows.
- Place the plastic liner over the stockpile after the conclusion of each tilling event.
- Perform supplemental fertilizer application at the beginning of next summer using the same volume and fertilizer mix as was applied in the first batch.
- Perform confirmation soil sampling next summer.

## 8.0 **DATA QUALITY REVIEW**

HydroCon performed a quality assurance/quality control (QA/QC) review of the analytical results, which is presented below.

### **Laboratory Report 508508**

The surrogate percent recovery for DRO samples results FS-S1-6, FS-S2-6, FS-S3-5, FS-S12-6, FS-F1-7, FS-F2-7, FS-F3-7, FS-F4-7, FS-FX, and FS-SX were given the lab qualifier "ip" meaning "Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte." Samples qualified with "ip" have a validation qualifier added "J" to mean the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample."

The relative percent difference (RPD) was calculated for the field duplicates FS-FX and FS-SX, from the source samples collected by HydroCon at FS-F1-7 and FS-S1-6 respectively. The RPD for the

sample FS-S1-6 and its duplicate, FS-SX, were outside acceptance criteria of 35% for ethylbenzene (179%). The RPD for all other analytes present above the laboratory reporting limit were within acceptable limits. The RPD cannot be calculated if the results are below the laboratory reporting limit.

Benzene result for sample FS-FX was given the qualifier "j" meaning "The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate."

All quality control criteria are acceptable for the soil samples; therefore, no action is required and analytical results are usable to meet the project objectives.

### **Laboratory Report 508509**

Soil samples F1-7 and S4-5, had <25% solids resulting in the corresponding reporting limits being elevated accordingly. Per laboratory methodology the Benzene results were reported below the action level with a "j" flag meaning "The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate"

The Diesel Range Organic (DRO) results for samples F1-7, S6-5, and S7-5 were given the lab qualifier "x" meaning "The sample chromatographic pattern does not resemble the fuel standard used for quantitation."

The surrogate percent recovery for the DRO result on sample S4-5 was given the lab qualifier "ip" meaning "Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte." Samples qualified by the "ip" have a validation qualifier added "J" meaning the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample."

The RPD was calculated for the field duplicates FS-FX, FS-SX, CDI Stock X, CRC1 Stock-X, CRC2-Stock-X, from the source samples collected by HydroCon at FS-F1-7, FS-S1-6, CDI Stock-10, CDI Stock, CRC1 Stock-13, CRC2 Stock-2 respectively. The RPD for the sample FS-S1-6 and its duplicate, FS-SX, were outside acceptance criteria of 35% for ethylbenzene (179%). The RPD for all other analytes present above the laboratory reporting limit were within acceptable limits. The RPD cannot be calculated if the results are below the laboratory reporting limit.

All quality control criteria are acceptable for the soil samples; therefore, no action is required and analytical results are usable to meet the project objectives.

## **9.0 QUALIFICATIONS**

HydroCon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. HydroCon makes no warranties, either expressed or implied, regarding the findings, conclusions or recommendations. Please note that HydroCon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report.

Findings and conclusions resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this monitoring. Subsurface conditions may vary from those encountered at specific sampling locations or during other surveys, tests, assessments, investigations, or exploratory services; the data, interpretations and findings are based solely upon data obtained at the time and within the scope of these services.

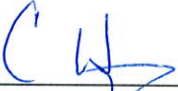
This report is intended for the sole use of **Columbia River Carbonates**. This report may not be used or relied upon by any other party without the written consent of HydroCon. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

The conclusions presented in this report are, in part, based upon subsurface sampling performed at selected locations and depths. There may be conditions between borings or samples that differ significantly from those presented in this report and which cannot be predicted by this study.

**Signature:**

Report Prepared By:

Report Reviewed By:

A handwritten signature in blue ink, appearing to be "CH", written over a horizontal line.

Craig Hultgren, LHG  
Senior Geologist/Project Manager

A handwritten signature in black ink, appearing to be "Nick Varnum", written over a horizontal line.

Nick Varnum, LHG  
Senior Geologist

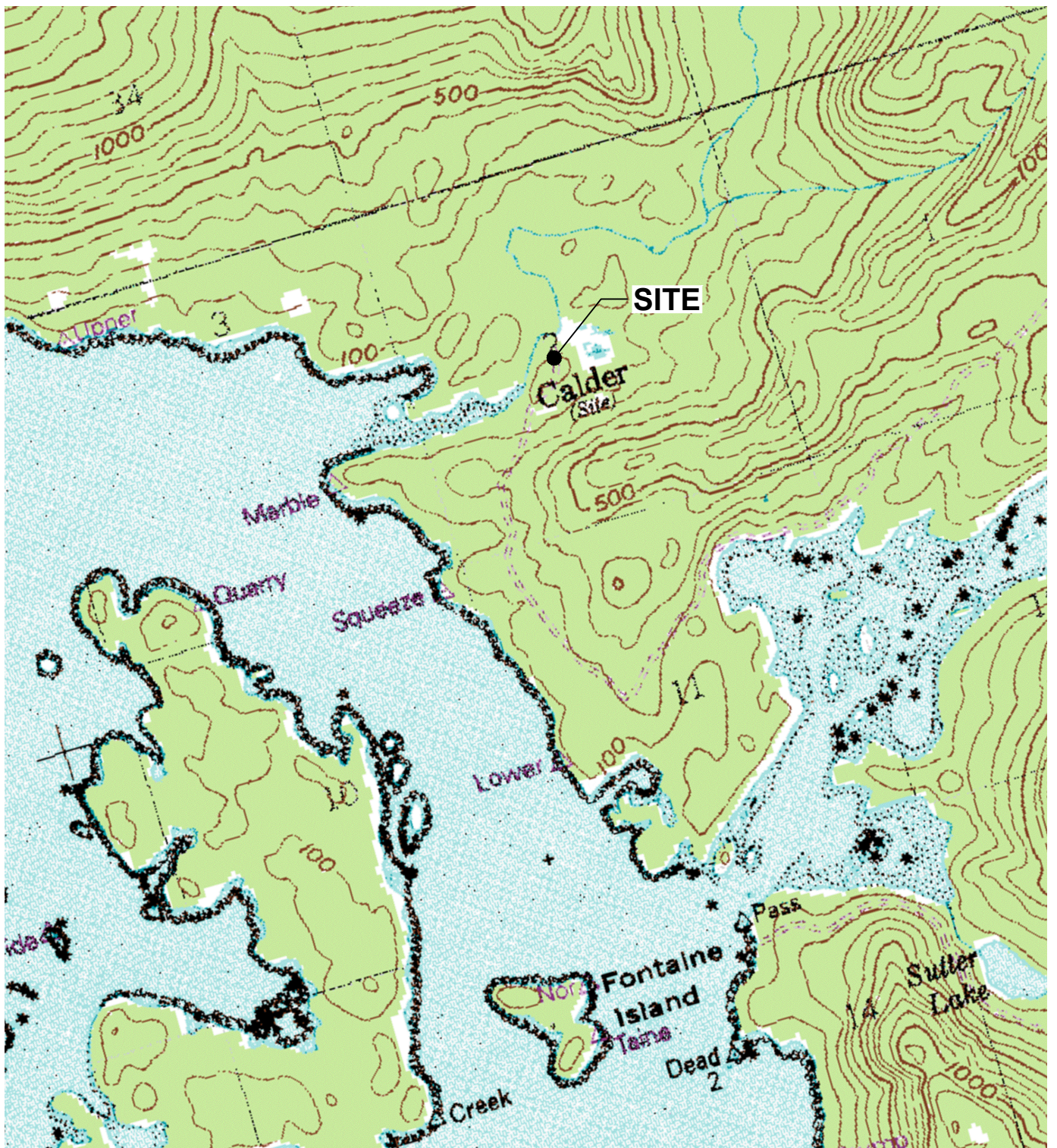


CRAIG HULTGREN

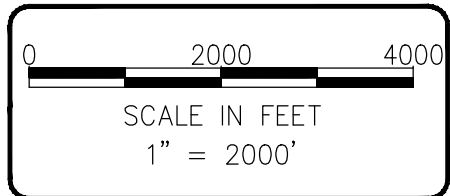


## FIGURES

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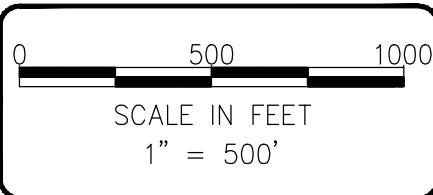
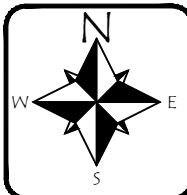
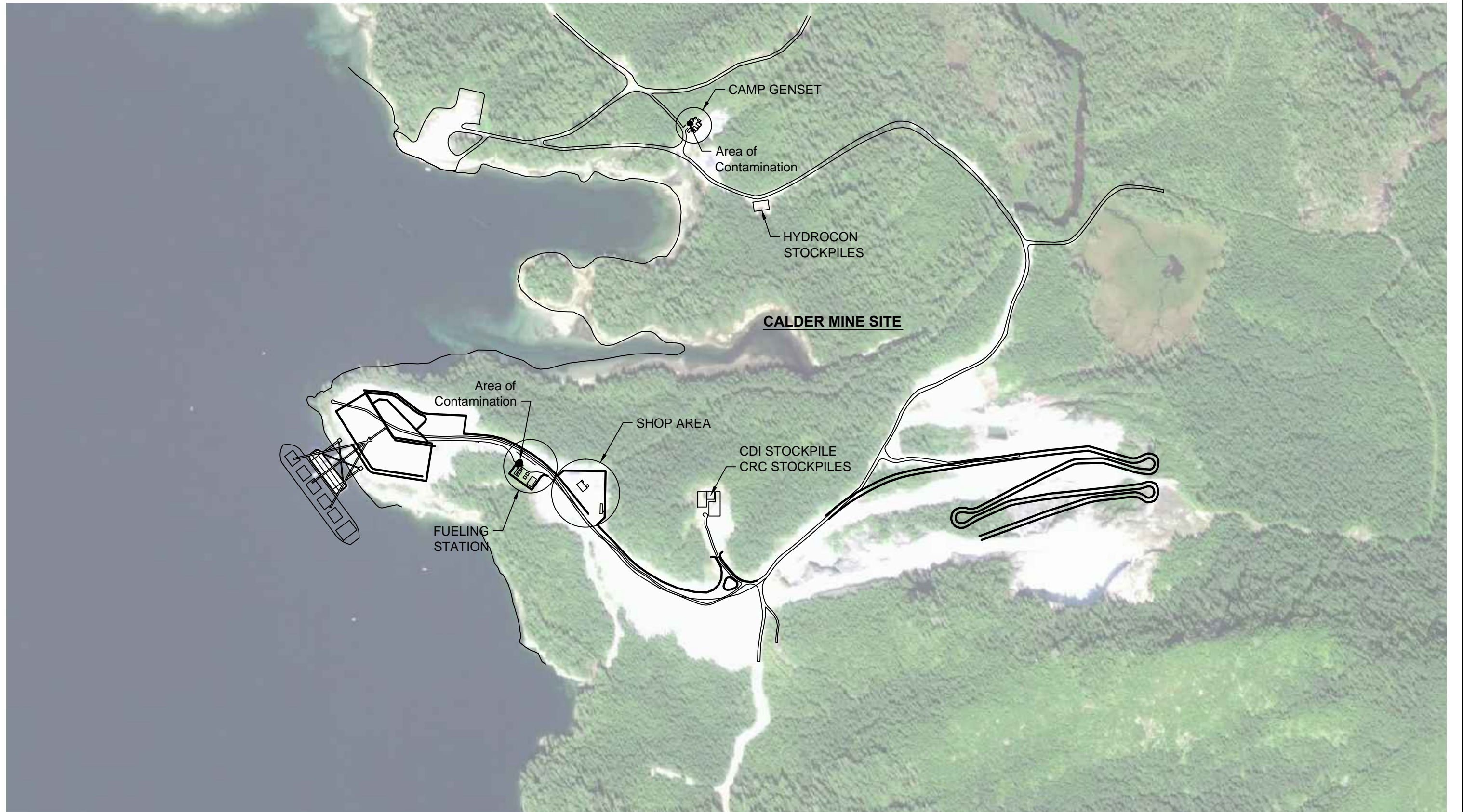
**NOTE(S):**  
 USGS, PETERSBURG (A-5) QUADRANGLE  
 ALASKA  
 1:63 360 SERIES (TOPOGRAPHIC)



DATE: 5-5-15  
 DWN: JJT  
 CHK: CH  
 APPROVED: CH  
 PRJ. MGR: CH  
 PROJECT NO:  
 2015-010

FIGURE 1  
 SITE LOCATION MAP  
  
 CALDER MINE  
 PRINCE WALES ISLAND  
 ALASKA

C:\Users\Josh\Desktop\Autocad Backup\Hydrocon-Autocad\2015-010 Calder Mine\2015-010 Calder Mine\2015-010\_BM-CMS-092315.dwg 2.17.2014



DATE: 9-24-15  
DWN: JJT  
CHK: CH  
APPROVED:  
PRJ. MGR: CH  
PROJECT NO:  
2015-010

FIGURE 2  
SITE FEATURES  
  
CALDER MINE  
PRINCE OF WALES ISLAND  
ALASKA

Field ID	Analytical Results (mg/kg)					
	DRPH	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total
ADEC Method 2 OPHSPCR Site Specific	230	230	0.025	6.9	6.5	63
<b>Camp Generator Remedial Excavation</b>						
F1-7	-	39 x	<0.02 j	<0.08	<0.08	<0.24
F2-7	-	10	-	-	-	-
F3-7	-	<5	-	-	-	-
S1-5	-	59	-	-	-	-
S2-5	-	1,200	-	-	-	-
S3-5	-	1,700	-	-	-	-
S4-5	-	37,000 J	<0.02 j	0.16	<0.08	1
S5-5	-	690	-	-	-	-
S6-5	-	52 x	-	-	-	-
S7-5	-	50 x	-	-	-	-
S8-5	-	710	-	-	-	-

**Notes:**

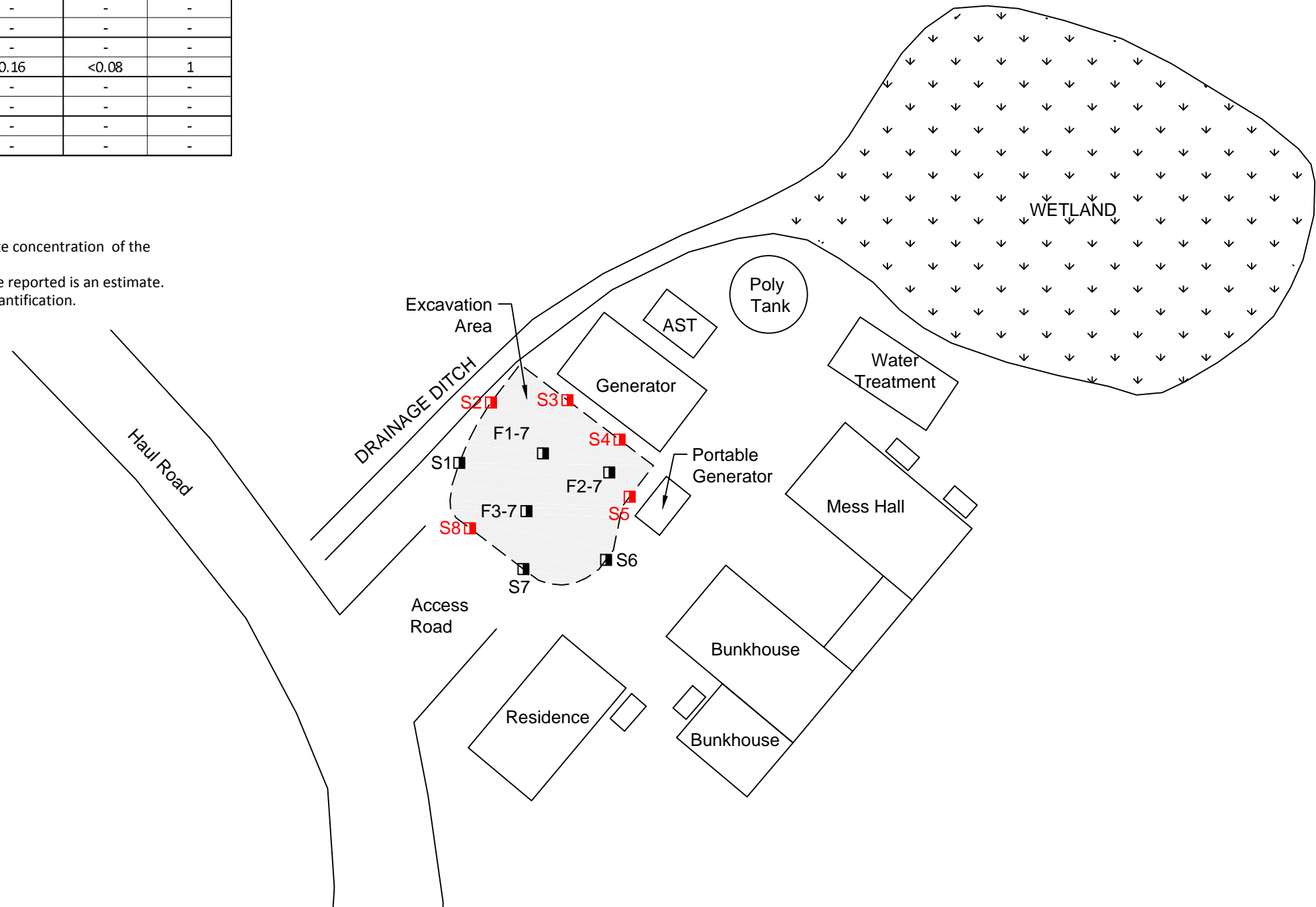
Red denotes concentration exceeds ADEC Cleanup Level.

**Lab Qualifiers:**

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

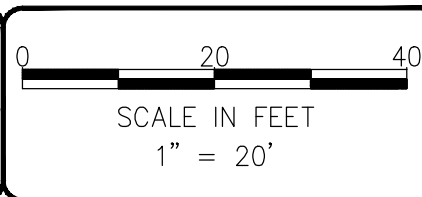
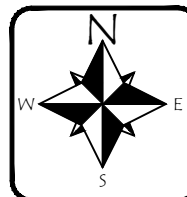
j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

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



**LEGEND**

- SITE BOUNDARY
- EXISTING ACCESS ROAD
- EXISTING STRUCTURES
- EXCAVATION SOIL SAMPLE
- EXCAVATION LOCATION
- \*RED INDICATES IMPACTED SOIL**



DATE: 10-5-15  
DWN: JJT  
CHK: CH  
APPROVED:  
PRJ. MGR: CH  
PROJECT NO:  
2015-010

**FIGURE 3**  
**CAMP GENSET LAYOUT AND EXCAVATION**  
**SAMPLE LOCATIONS AND ANALYTICAL RESULTS (8/25/15)**  
**CALDER MINE**  
**PRINCE OF WALES ISLAND**  
**ALASKA**

Field ID	Analytical Results (mg/kg)											
	DRPH	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total						
ADEC Method 2 OPHSPCR Site Specific	230	230	0.025	6.9	6.5	63						
<b>Fueling Station Remediation Excavation</b>												
FS-F1-7	1,700 J	-	<0.02	0.44	<0.02	0.39						
FS-F2-7	5,800 J	-	-	-	-	-						
FS-F3-7	4,000 J	-	-	-	-	-						
FS-F4-7	2,500 J	-	-	-	-	-						
FS-S1-6	7,100 J	-	<0.02	0.37	<0.02	0.35						
FS-S2-6	4,600 J	-	-	-	-	-						
FS-S3-5	7,700 J	-	-	-	-	-						
FS-S4-4	43	-	-	-	-	-						
FS-S5-4	1,500	-	-	-	-	-						
FS-S6-4	49	-	-	-	-	-						
FS-S7-4	1,600	-	-	-	-	-						
FS-S8-5	12	-	-	-	-	-						
FS-S9-6	540	-	-	-	-	-						
FS-S10-6	24	-	-	-	-	-						
FS-S11-6	35	-	-	-	- </tr <tr> <td>FS-S12-6</td> <td>2,000 J</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr>	FS-S12-6	2,000 J	-	-	-	-	-
FS-S12-6	2,000 J	-	-	-	-	-						

**Notes:**

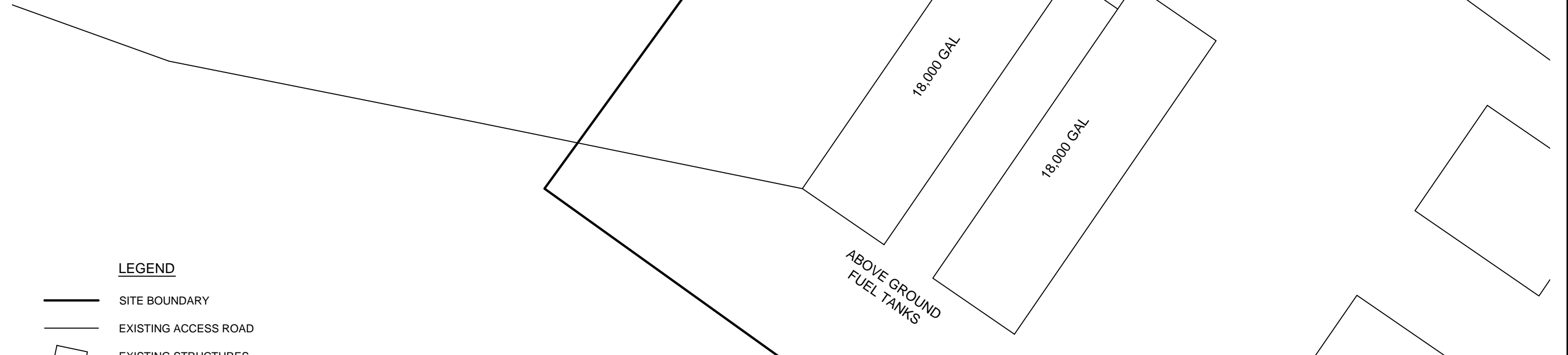
Red denotes concentration exceeds ADEC Cleanup Level.

**Lab Qualifiers:**

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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

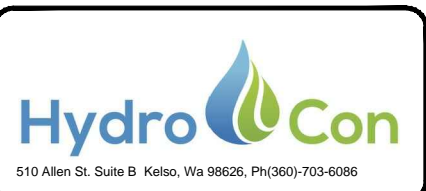
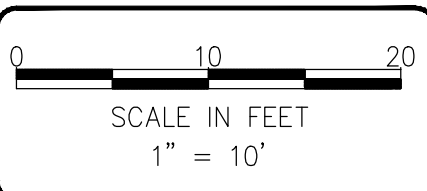
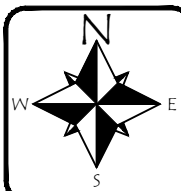
x - The sample chromatographic pattern does not resemble the fuel standard used for quantification.



**LEGEND**

- SITE BOUNDARY
- EXISTING ACCESS ROAD
- EXISTING STRUCTURES
- EXCAVATION SOIL SAMPLE
- EXCAVATION LOCATION

\*RED INDICATES IMPACTED SOIL



DATE: 10-5-15  
 DWN: JJT  
 CHK: NV  
 APPROVED:  
 PRJ. MGR: CH  
 PROJECT NO:  
 2015-010

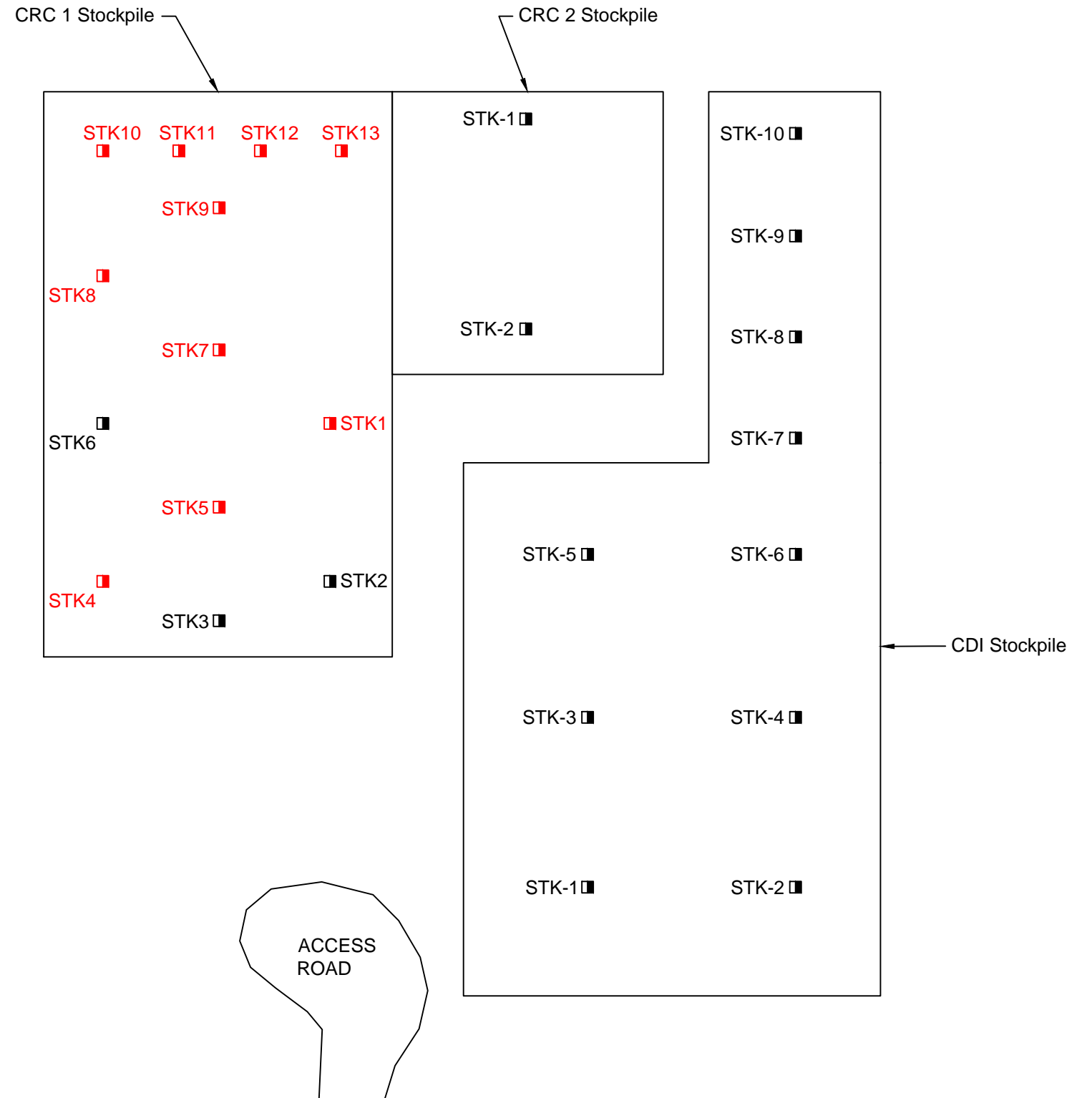
**FIGURE 4**  
 FUELING STATION LAYOUT AND EXCAVATION  
 SAMPLE LOCATIONS AND ANALYTICAL RESULTS (8/26/15)  
 CALDER MINE  
 PRINCE OF WALES ISLAND  
 ALASKA

C:\Users\Nosh\Desktop\Autocad Backup\Hydrocon-Autocad\2015-010 Calder Mine\2015-010\_BM-CMS-092315.dwg 2.17.2014



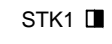
Field ID	Analytical Results (mg/kg)					
	DRPH	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total
<b>ADEC Method 2 OPHSPCR Site Specific</b>	<b>230</b>	<b>230</b>	<b>0.025</b>	<b>6.9</b>	<b>6.5</b>	<b>63</b>
<b>CDI Stockpile</b>						
CDI Stock-1	-	24	<0.02	<0.02	<0.02	<0.06
CDI Stock-2	-	31	-	-	-	-
CDI Stock-3	-	36	-	-	-	-
CDI Stock-4	-	40	-	-	-	-
CDI Stock-5	-	30	-	-	-	-
CDI Stock-6	-	9.7	-	-	-	-
CDI Stock-7	-	54	-	-	-	-
CDI Stock-8	-	37	-	-	-	-
CDI Stock-9	-	51	-	-	-	-
CDI Stock-10	-	48	-	-	-	-
<b>CRC1 Stockpile</b>						
CRC1 Stock-1	-	<b>420</b>	<0.02	<0.02	<0.02	<0.06
CRC1 Stock-2	-	200	-	-	-	-
CRC1 Stock-3	-	81	-	-	-	-
CRC1 Stock-4	-	<b>490</b>	-	-	-	-
CRC1 Stock-5	-	<b>380</b>	-	-	-	-
CRC1 Stock-6	-	120	-	-	-	-
CRC1 Stock-7	-	<b>270</b>	-	-	-	-
CRC1 Stock-8	-	<b>240</b>	-	-	-	-
CRC1 Stock-9	-	<b>260</b>	-	-	-	-
CRC1 Stock-10	-	<b>410</b>	-	-	-	-
CRC1 Stock-11	-	<b>310</b>	-	-	-	-
CRC1 Stock-12	-	<b>420</b>	-	-	-	-
CRC1 Stock-13	-	<b>280</b>	-	-	-	-
<b>CRC2 Stockpile</b>						
CRC2 Stock-1	-	37	<0.02	<0.02	<0.02	<0.06
CRC2 Stock-2	-	21	-	-	-	-

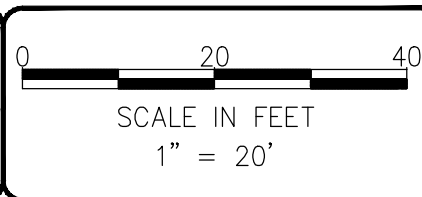
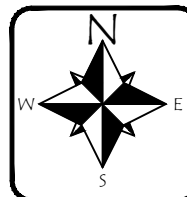
**Notes:**  
**Red** denotes concentration exceeds ADEC Cleanup Level.

**Lab Qualifiers:**  
 J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.  
 j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.  
 x - The sample chromatographic pattern does not resemble the fuel standard used for quantification.



**LEGEND**

-  EXISTING ACCESS ROAD
-  STOCKPILE
-  EXCAVATION STOCKPILE SOIL SAMPLE LOCATIONS
- \*RED INDICATES IMPACTED SOIL



DATE: 10-5-15  
 DWN: JJT  
 CHK: CH  
 APPROVED:  
 PRJ. MGR: CH  
 PROJECT NO:  
 2015-010

**FIGURE 5**  
 EXCAVATION SAMPLING LOCATIONS AND ANALYTICAL RESULTS AT BIOREMEDIATION CELLS (8/25/15)  
 CALDER MINE  
 PRINCE OF WALES ISLAND  
 ALASKA

## TABLES



Soil Analytical Results  
Calder Mine  
Alaska

	AK 102		SW8021B			
	Diesel Range Organics	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ADEC Method 2 OPHSPCR Site Specific	230	230	0.025	6.9	6.5	63

Field ID	Date						
<b>Fueling Station Remediation Excavation</b>							
FS-F1-7	8/26/2015	1,700 ip	-	<0.02	0.44	<0.02	0.39
FS-F2-7	8/26/2015	5,800 ip	-	-	-	-	-
FS-F3-7	8/26/2015	4,000 ip	-	-	-	-	-
FS-F4-7	8/26/2015	2,500 ip	-	-	-	-	-
FS-S1-6	8/26/2015	7,100 ip	-	<0.02	0.37	<0.02	0.35
FS-S2-6	8/26/2015	4,600 ip	-	-	-	-	-
FS-S3-5	8/26/2015	7,700 ip	-	-	-	-	-
FS-S4-4	8/26/2015	43	-	-	-	-	-
FS-S5-4	8/26/2015	1,500	-	-	-	-	-
FS-S6-4	8/26/2015	49	-	-	-	-	-
FS-S7-4	8/26/2015	1,600	-	-	-	-	-
FS-S8-5	8/26/2015	12	-	-	-	-	-
FS-S9-6	8/26/2015	540	-	-	-	-	-
FS-S10-6	8/26/2015	24	-	-	-	-	-
FS-S11-6	8/26/2015	35	-	-	-	-	-
FS-S12-6	8/26/2015	2,000 ip	-	-	-	-	-
<b>Camp Generator Remedial Excavation</b>							
F1-7	8/25/2015	-	39 x	<0.08 ec	<0.08	<0.08	<0.24
F2-7	8/25/2015	-	10	-	-	-	-
F3-7	8/25/2015	-	<5	-	-	-	-
S1-5	8/25/2015	-	59	-	-	-	-
S2-5	8/25/2015	-	1,200	-	-	-	-
S3-5	8/25/2015	-	1,700	-	-	-	-
S4-5	8/25/2015	-	37,000 ip	<0.08 ec	0.16	<0.08	1
S5-5	8/25/2015	-	690	-	-	-	-
S6-5	8/25/2015	-	52 x	-	-	-	-
S7-5	8/25/2015	-	50 x	-	-	-	-
S8-5	8/25/2015	-	710	-	-	-	-





Soil Analytical Results  
Calder Mine  
Alaska

	AK 102		SW8021B			
	Diesel Range Organics	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ADEC Method 2 OPHSPCR Site Specific	230	230	0.025	6.9	6.5	63

Field ID	Date						
<b>CDI Stockpile</b>							
CDI Stock-1	8/25/2015	-	24	<0.02	<0.02	<0.02	<0.06
CDI Stock-2	8/25/2015	-	31	-	-	-	-
CDI Stock-3	8/25/2015	-	36	-	-	-	-
CDI Stock-4	8/25/2015	-	40	-	-	-	-
CDI Stock-5	8/25/2015	-	30	-	-	-	-
CDI Stock-6	8/25/2015	-	9.7	-	-	-	-
CDI Stock-7	8/25/2015	-	54	-	-	-	-
CDI Stock-8	8/25/2015	-	37	-	-	-	-
CDI Stock-9	8/25/2015	-	51	-	-	-	-
CDI Stock-10	8/25/2015	-	48	-	-	-	-
<b>CRC1 Stockpile</b>							
CRC1 Stock-1	8/25/2015	-	420	<0.02	<0.02	<0.02	<0.06
CRC1 Stock-2	8/25/2015	-	200	-	-	-	-
CRC1 Stock-3	8/25/2015	-	81	-	-	-	-
CRC1 Stock-4	8/25/2015	-	490	-	-	-	-
CRC1 Stock-5	8/25/2015	-	380	-	-	-	-
CRC1 Stock-6	8/25/2015	-	120	-	-	-	-
CRC1 Stock-7	8/25/2015	-	270	-	-	-	-
CRC1 Stock-8	8/25/2015	-	240	-	-	-	-
CRC1 Stock-9	8/25/2015	-	260	-	-	-	-
CRC1 Stock-10	8/25/2015	-	410	-	-	-	-
CRC1 Stock-11	8/25/2015	-	310	-	-	-	-
CRC1 Stock-12	8/25/2015	-	420	-	-	-	-
CRC1 Stock-13	8/25/2015	-	280	-	-	-	-
<b>CRC2 Stockpile</b>							
CRC2 Stock-1	8/25/2015	-	37	<0.02	<0.02	<0.02	<0.06
CRC2 Stock-2	8/25/2015	-	21	-	-	-	-

**Notes**

Red denotes concentration exceeds ADEC Method 2 cleanup level.  
 Samples analyzed by Friedman & Bruya, Inc., of Seattle, Washington.  
 Alaska Dept of Conservation Method 2 Oil Pollution & Hazardous Substances Pollution Control Regulations,  
 Table B2, 18 AAC75, based on >40 inches of rainfall migration to groundwater.

< = not detected at a concentration exceeding the laboratory MRL shown

mg/kg = milligrams per kilogram

ADEC - Alaska Dept of Conservation

**Qualifiers**

ec - Method reporting limit exceeds Clean Up Level.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.



Soil Analytical Results  
Calder Mine  
Alaska

	AK 102		SW8021B			
	Diesel Range Organics	Diesel Range TPH+SG	Benzene	Ethylbenzene	Toluene	Xylene Total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ADEC Method 2 OPHSPCR Site Specific	230	230	0.025	6.9	6.5	63

**Field ID**                      **Date**

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

## **APPENDIX A**

### **PHOTOGRAPHIC DOCUMENTATION**



Photo 1  
Camp Generator Remedial Excavation soil conditions.



Photo 2  
Calder Stockpile Sampling.



Photo 3  
HydroCon Stockpile Fertilizer Application.



DATE: 10-8-15  
DWN: JJT  
CHK: CH  
APPROVED: CH  
PRJ. MGR: CH  
PROJECT NO:  
2015-010

PHOTOPLATE 1  
SITE PHOTOGRAPHS  
  
CALDER MINE  
PRINCE OF WALES ISLAND  
ALASKA



Photo 4  
Fueling Station Remediation Excavation.

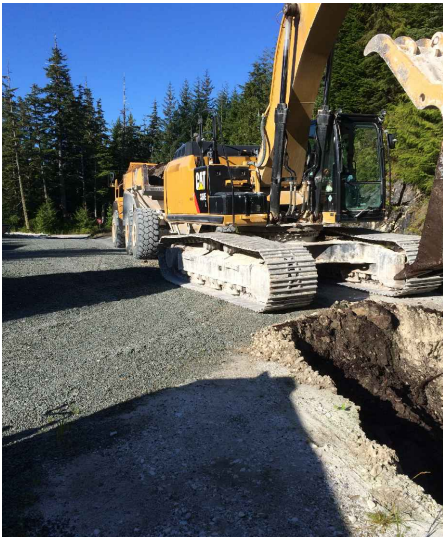


Photo 5  
Camp Generator Remedial Excavation.



Photo 6  
HydroCon Stockpile.

## **APPENDIX B**

### **LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION**

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

September 15, 2015

Craig Hultgren, Project Manager  
HydroCon  
510 Allen St, Suite B  
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on August 27, 2015 from the Calder, F&BI 508508 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
HDC0915R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 27, 2015 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the HydroCon Calder, F&BI 508508 project. The samples were received at 24 °C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>	<u>Date Sampled</u>
508508 -01	FS-S1-6	08/26/15
508508 -02	FS-S2-6	08/26/15
508508 -03	FS-S3-5	08/26/15
508508 -04	FS-S4-4	08/26/15
508508 -05	FS-S5-4	08/26/15
508508 -06	FS-S6-4	08/26/15
508508 -07	FS-S7-4	08/26/15
508508 -08	FS-S8-5	08/26/15
508508 -09	FS-S9-6	08/26/15
508508 -10	FS-S10-6	08/26/15
508508 -11	FS-S11-6	08/26/15
508508 -12	FS-S12-6	08/26/15
508508 -13	FS-F1-7	08/26/15
508508 -14	FS-F2-7	08/26/15
508508 -15	FS-F3-7	08/26/15
508508 -16	FS-F4-7	08/26/15
508508 -17	FS-FX	08/26/15
508508 -18	FS-SX	08/26/15

The samples were analyzed as follows.

BTEX (soil) - Analysis Method 8021B, Extraction Method 5035

All quality control requirements were acceptable.

DRO (soil) - Analysis Method AK 102, Extraction Method 3550B

All quality control requirements were acceptable.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508508  
Date Extracted: 08/28/15  
Date Analyzed: 08/28/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

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

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> (Limit 50-132)
FS-S1-6 508508-01	<0.02	<0.02	0.37	0.35	119
FS-F1-7 508508-13	<0.02	<0.02	0.44	0.39	117
FS-FX 508508-17 1/5	<0.02 j	<0.1	0.42	0.36	96
FS-SX 508508-18	<0.02	<0.02	<0.02	0.34	118
Method Blank 05-1745 MB2	<0.02	<0.02	<0.02	<0.06	75

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/15

Date Received: 08/27/15

Project: Calder, F&BI 508508

Date Extracted: 08/28/15

Date Analyzed: 09/01/15, 09/02/15, and 09/03/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 60-120)
FS-S1-6 508508-01 1/10	7,100	ip
FS-S2-6 508508-02	4,600	ip
FS-S3-5 508508-03 1/10	7,700	ip
FS-S4-4 508508-04	43	116
FS-S5-4 508508-05	1,500	103
FS-S6-4 508508-06	49	109
FS-S7-4 508508-07	1,600	91
FS-S8-5 508508-08	12	107
FS-S9-6 508508-09	540	97
FS-S10-6 508508-10	24	99
FS-S11-6 508508-11	35	112

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508508  
Date Extracted: 08/28/15  
Date Analyzed: 09/01/15, 09/02/15, and 09/03/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

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

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 60-120)
FS-S12-6 508508-12	2,000	ip
FS-F1-7 508508-13	1,700	ip
FS-F2-7 508508-14	5,800	ip
FS-F3-7 508508-15	4,000	ip
FS-F4-7 508508-16	2,500	ip
FS-FX 508508-17	2,100	ip
FS-SX 508508-18 1/10	9,200	ip
Method Blank 05-1768 MB	<5	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/15

Date Received: 08/27/15

Project: Calder, F&BI 508508

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 508504-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	0.5	86	88	66-121	2
Toluene	mg/kg (ppm)	0.5	86	96	72-128	11
Ethylbenzene	mg/kg (ppm)	0.5	87	98	69-132	12
Xylenes	mg/kg (ppm)	1.5	88	94	69-131	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/15

Date Received: 08/27/15

Project: Calder, F&BI 508508

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL  
SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	mg/kg (ppm)	500	121	117	75-125	3

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

**SAMPLE CHAIN OF CUSTODY** ME 8/27/15 C13

508508

Send Report to HydroGen Hultgen

Company HydroGen

Address \_\_\_\_\_

City, State, ZIP Kelso, WA 98626

Phone # (360) 705-6086 Fax # \_\_\_\_\_

SAMPLERS (signature) CHV  
 PROJECT NAME/NO. CALE  
 PO# 2015-010

REMARKS

TURNAROUND TIME  
 Standard (2 Weeks)  
 RUSH  
 Rush charges authorized by \_\_\_\_\_  
 SAMPLE DISPOSAL  
 Dispose after 30 days  
 Return samples  
 Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes		
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS			
FS-51-6	01A88/26/15	8/26/15	1115	Soil	2	X		X						
FS-52-6	02		1120		1	X								
FS-53-5	03		1125		1	X								
FS-54-4	04		1133		1	X								
FS-55-4	05		1135		1	X								
FS-56-4	06		1140		1	X								
FS-57-4	07		1145		1	X								
FS-58-5	08		1150		1	X								
FS-59-6	09		1155		1	X								
FS-510-6	10		1200		1	X								

Sample reported at 24°C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>Carl Hultgen</u>	<u>HydroGen</u>	<u>8/26/15</u>	<u>1500</u>
Received by: <u>[Signature]</u>	<u>James Blyden</u>	<u>FE B</u>	<u>8/27</u>	<u>1815</u>
Relinquished by:				
Received by:				

**SAMPLE CHAIN OF CUSTODY** ME 8/22/15 253

Send Report to 508688 Hu (Hydro)  
 Company Hydro Con  
 Address \_\_\_\_\_  
 City, State, ZIP Kelso, WA 98626  
 Phone # (360) 707-6086 Fax # \_\_\_\_\_

SAMPLERS (signature) <u>CB</u>	PO# <u>2015-010</u>
PROJECT NAME/NO. <u>Colder</u>	
REMARKS	

Turnaround Time:  Standard (2 Weeks)  RUSH  
 Rush charges authorized by \_\_\_\_\_  
 SAMPLE DISPOSAL:  Dispose after 30 days  Return samples  Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED					Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270		HFS
ES-511-6	11	8/26/15	1205	Soil	1	X						
ES-512-6	12		1210		1	X						
ES-FE1-7	13		1215		2	X	X					
ES-FE2-7	14		1220		1	X						
ES-FE3-7	15		1225		1	X						
ES-FE4-7	16		1230		1	X						
ES-FX	17		1105		2	X	X					
ES-5X	18		1100		2	X	X					

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

SIGNATURE		PRINT NAME		COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>		<u>Craig Huittner</u>		<u>Hydro Con</u>	<u>8/26/15</u>	<u>1500</u>
Received by: <u>[Signature]</u>		<u>James Bryna</u>		<u>FE&amp;B</u>	<u>8/27</u>	<u>1815</u>
Relinquished by:						
Received by:						



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

September 30, 2015

Craig Hultgren, Project Manager  
HydroCon  
510 Allen St, Suite B  
Kelso, WA 98626

Dear Mr. Hultgren:

Included is the amended report from the testing of material submitted on August 27, 2015 from the Calder, F&BI 508509 project. Per your request, the benzene reporting limit was lowered and flagged as an estimate.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
HDC0916R.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

September 16, 2015

Craig Hultgren, Project Manager  
HydroCon  
510 Allen St, Suite B  
Kelso, WA 98626

Dear Mr. Hultgren:

Included are the results from the testing of material submitted on August 27, 2015 from the Calder, F&BI 508509 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
HDC0916R.DOC

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on August 27, 2015 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the HydroCon Calder, F&BI 508509 project. The samples were received at 24 °C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>HydroCon</u>	<u>Date Sampled</u>
508509 -01	F1-7	08/25/15
508509 -02	F2-7	08/25/15
508509 -03	F3-7	08/25/15
508509 -04	S1-5	08/25/15
508509 -05	S2-5	08/25/15
508509 -06	S3-5	08/25/15
508509 -07	S4-5	08/25/15
508509 -08	S5-5	08/25/15
508509 -09	S6-5	08/25/15
508509 -10	S7-5	08/25/15
508509 -11	S8-5	08/25/15
508509 -12	CDI Stock-1	08/25/15
508509 -13	CDI Stock-2	08/25/15
508509 -14	CDI Stock-3	08/25/15
508509 -15	CDI Stock-4	08/25/15
508509 -16	CDI Stock-5	08/25/15
508509 -17	CDI Stock-6	08/25/15
508509 -18	CDI Stock-7	08/25/15
508509 -19	CDI Stock-8	08/25/15
508509 -20	CDI Stock-9	08/25/15
508509 -21	CDI Stock-10	08/25/15
508509 -22	CDI Stock-X	08/25/15
508509 -23	CRC2 Stock-1	08/25/15
508509 -24	CRC2 Stock-2	08/25/15
508509 -25	CRC1 Stock-1	08/25/15
508509 -26	CRC1 Stock-2	08/25/15
508509 -27	CRC1 Stock-3	08/25/15
508509 -28	CRC1 Stock-4	08/25/15
508509 -29	CRC1 Stock-5	08/25/15
508509 -30	CRC1 Stock-6	08/25/15
508509 -31	CRC1 Stock-7	08/25/15
508509 -32	CRC1 Stock-8	08/25/15
508509 -33	CRC1 Stock-9	08/25/15
508509 -34	CRC1 Stock-10	08/25/15
508509 -35	CRC1 Stock-11	08/25/15

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	<u>HydroCon</u>	<u>Date Sampled</u>
508509 -36	CRC1 Stock-12	08/25/15
508509 -37	CRC1 Stock-13	08/25/15
508509 -38	CRC1 Stock-X	08/25/15
508509 -39	CRC2-Stock-X	08/25/15

The samples were analyzed as follows.

BTEX (soil) - Analysis Method 8021B, Extraction Method 5035

All quality control requirements were acceptable.

DRO (soil) - Analysis Method AK 102, Extraction Method 3550B

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
 Date Received: 08/27/15  
 Project: Calder, F&BI 508509  
 Date Extracted: 08/28/15  
 Date Analyzed: 08/28/15 and 09/02/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
 USING METHOD 8021B**

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

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> (Limit 50-132)
F1-7 508509-01	<0.02 j	<0.08	<0.08	<0.24	92
S4-5 508509-07	<0.02 j	<0.08	0.16	1.0	94
CDI Stock-1 508509-12	<0.02	<0.02	<0.02	<0.06	74
CRC2 Stock-1 508509-23	<0.02	<0.02	<0.02	<0.06	75
CRC1 Stock-1 508509-25	<0.02	<0.02	<0.02	<0.06	92
Method Blank 05-1745 MB2	<0.02	<0.02	<0.02	<0.06	75

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508509  
Date Extracted: 09/01/15  
Date Analyzed: 09/10/15 and 09/11/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> (% Recovery) (Limit 60-120)
F1-7 508509-01	39 x	82
F2-7 508509-02	10	96
F3-7 508509-03	<5	102
S1-5 508509-04	59	106
S2-5 508509-05	1,200	96
S3-5 508509-06	1,700	111
S4-5 508509-07 1/10	37,000	ip
S5-5 508509-08	690	86
S6-5 508509-09	52 x	85
S7-5 508509-10	50 x	86

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508509  
Date Extracted: 09/01/15  
Date Analyzed: 09/10/15 and 09/11/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis**  
Results Reported on a Dry Weight Basis  
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> (% Recovery) (Limit 60-120)
S8-5 508509-11	710	93
CDI Stock-1 508509-12	24	93
CDI Stock-2 508509-13	31	91
CDI Stock-3 508509-14	36	101
CDI Stock-4 508509-15	40	88
CDI Stock-5 508509-16	30	91
CDI Stock-6 508509-17	9.7	96
CDI Stock-7 508509-18	54	101
CDI Stock-8 508509-19	37	106
CDI Stock-9 508509-20	51	111

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508509  
Date Extracted: 09/01/15  
Date Analyzed: 09/10/15 and 09/11/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> (% Recovery) (Limit 60-120)
CDI Stock-10 508509-21	48	96
CDI Stock-X 508509-22	34	92
CRC2 Stock-1 508509-23	37	110
CRC2 Stock-2 508509-24	21	98
CRC1 Stock-1 508509-25	420	100
CRC1 Stock-2 508509-26	200	88
CRC1 Stock-3 508509-27	81	91
CRC1 Stock-4 508509-28	490	96
CRC1 Stock-5 508509-29	380	99
CRC1 Stock-6 508509-30	120	100



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508509  
Date Extracted: 09/01/15  
Date Analyzed: 09/10/15 and 09/11/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> (% Recovery) (Limit 60-120)
CRC1 Stock-7 508509-31	270	91
CRC1 Stock-8 508509-32	240	95
CRC1 Stock-9 508509-33	260	87
CRC1 Stock-10 508509-34	410	97
CRC1 Stock-11 508509-35	310	97
CRC1 Stock-12 508509-36	420	94
CRC1 Stock-13 508509-37	280	101
CRC1 Stock-X 508509-38	240	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15  
Date Received: 08/27/15  
Project: Calder, F&BI 508509  
Date Extracted: 09/01/15  
Date Analyzed: 09/10/15 and 09/11/15

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 60-120)
CRC2-Stock-X 508509-39	17	99
Method Blank 05-1782 MB	<5	104
Method Blank 05-1783 MB	<5	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15

Date Received: 08/27/15

Project: Calder, F&BI 508509

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING METHOD 8021B**

Laboratory Code: 508504-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	0.5	86	88	66-121	2
Toluene	mg/kg (ppm)	0.5	86	96	72-128	11
Ethylbenzene	mg/kg (ppm)	0.5	87	98	69-132	12
Xylenes	mg/kg (ppm)	1.5	88	94	69-131	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15

Date Received: 08/27/15

Project: Calder, F&BI 508509

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL  
SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	mg/kg (ppm)	500	122	121	75-125	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/16/15

Date Received: 08/27/15

Project: Calder, F&BI 508509

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL  
SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	mg/kg (ppm)	500	121	116	75-125	4

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.
- 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.

508509

SAMPLE CHAIN OF CUSTODY

ME

8/27/15

C13

Send Report to CRAY Hutchins

Company Hydrex

Address \_\_\_\_\_

City, State, ZIP Kelso, WA 98626

Phone # (360) 703-6079 Fax # \_\_\_\_\_

SAMPLERS (signature) CH

PROJECT NAME/NO. Caden

PO# 2015-010

REMARKS

\*-silica gel per CH 8/21/15 M.

TURNAROUND TIME / 1 of 4

Standard (2 Weeks)  
 RUSH  
Rush charges authorized by \_\_\_\_\_

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes	
						AK102 TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS		
F1-7	01AR	8/25/15	1000	Soil	2	X	X						
F2-7	02		1005		1	X							
F3-7	03		1010		1	X							
F4-5	04		1025		1	X							
F5-5	05		1030		1	X							
F6-5	06		1035		1	X							
F7-5	07AB		1040		2	X	X						
F8-5	08V		1205		2	X							
F9-5	09		1210		1	X							
F10-5	10AB		1215		2	X							

Samples received at 24

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

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS/COC/COC.DOC

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>[Signature]</u>		<u>Carig Hutchins</u>		<u>Hydrex</u>		<u>8/25/15</u>	<u>1530</u>
Received by: <u>[Signature]</u>		<u>Jaymes Briza</u>		<u>Hydrex</u>		<u>8/27</u>	<u>1815</u>
Relinquished by:							
Received by:							

5085509

SAMPLE CHAIN OF CUSTODY

ME . 8/27/15 CI 3

Send Report To Hydrocon

Company Hydrocon

Address \_\_\_\_\_

City, State, ZIP Kelso, WA 98626

Phone # (360) 703-6079 Fax # \_\_\_\_\_

SAMPLERS (signature) CH

PROJECT NAME/NO. Carles

PO# 2015-010

REMARKS Silica gel per CH 9/2/15 m4

TURNAROUND TIME  
 Standard (2 Weeks)  
 RUSH  
Rush charges authorized by \_\_\_\_\_

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED							Notes		
						AK102 TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS				
S8-5	11	8/25/15	1220	Soil	1	X	CH	X							
CDI Stock-1	RAB		1500		2	X		X							
CDI Stock-2	B		1505		1	X									
CDI Stock-3	14		1510		1	X									
CDI Stock-4	15		1515		1	X									
CDI Stock-5	16		1520		1	X									
CDI Stock-6	17		1525		1	X									
CDI Stock-7	18		1530		1	X									
CDI Stock-8	19		1535		1	X									
CDI Stock-9	20		1540		1	X									

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

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>[Signature]</u>		<u>Camr. Hutterer</u>		<u>Hydrocon</u>		<u>8/26/15</u>	<u>1530</u>
Received by: <u>[Signature]</u>		<u>TAMES BRYNA</u>		<u>FFB</u>		<u>8/27</u>	<u>1815</u>
Relinquished by:							
Received by:							



508509

SAMPLE CHAIN OF CUSTODY ME 8/27/15 CI 3 of 4

Send Report to Cheryll Hultgren

Company Hydrocon

Address \_\_\_\_\_

City, State, ZIP Ellis WA 98626

Phone # (360) 703-6079 Fax # \_\_\_\_\_

SAMPLERS (signature) CH

PROJECT NAME/NO. Calds

PO# 2015-010

REMARKS

Silica gel pouch 8/27/15

TURNAROUND TIME  
 Standard (2 Weeks)  
 RUSH  
Rush charges authorized by \_\_\_\_\_

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS		
CDI Stock-10	21	8/25/15	1545	50 L	1	X							
CDI Stock-X	22		1550		1	X	CH						
CNC2 Stock-1	23AB		1610		2	X	CH	X					
CNC2 Stock-2	24		1615		1	X	CH						
CNC1 + Stock-1	25AB		1620		2	X		X					
CNC1 + Stock-2	26		1605		1	X							
CNC1 + Stock-3	27		1630		1	X							
CNC1 Stock-4	28		1635		1	X							
CNC1 Stock-5	29		1640		1	X							
CNC1 Stock-6	30		1645		1	X							

Samples received at 27 °C

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by: CH

Cheryll Hultgren

Hydrocon

8/26/15

1530

Received by: James Bryes

James Bryes

F&B

8/27

1815

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

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

588529

SAMPLE CHAIN OF CUSTODY

ME 8/27/15 4 of 4 C13

Send Report To: Hydro Co

Company Hydro Co

Address \_\_\_\_\_

City, State, ZIP Kelso, WA 98626

Phone # (360) 703-6077 Fax # \_\_\_\_\_

SAMPLERS (signature) [Signature]

PROJECT NAME/NO. Calder

Calder

PO# 2015-010

REMARKS

Silica gel with 9/2/15

Page # \_\_\_\_\_ of \_\_\_\_\_

TURNAROUND TIME

Standard (2 Weeks)

RUSH

Rush charges authorized by \_\_\_\_\_

Dispose after 30 days

Return samples

Will call with instructions

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes	
						AK102 TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS		
CNCL 4 Stock-7	31	8/25/15	1650	Soil	1	X							
CNCL Stock-8	32		1655		1	X							
CNCL Stock-9	33		1700		1	X							
CNCL Stock-10	34		1705		1	X							
CNCL Stock-11	35		1710		1	X							
CNCL Stock-12	36		1715		1	X							
CNCL Stock-13	37		1720		1	X							
CNCL Stock-X	38		1725		1	X							
CNCL 2-Stock-X	39		1735										

Samples received at 2:45 PM 8/27/15

Added 11/12/15

SIGNATURE

Relinquished by: [Signature]

Received by: [Signature]

Relinquished by: [Signature]

Received by: \_\_\_\_\_

PRINT NAME

Cory HORTNER

TAVES BROYG

COMPANY

Hydro Co

HCB

DATE

8-26-15

8/27

TIME

1570

1815

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