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Alaska Department of Environmental Conservation
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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ACM	Asbestos-Containing Materials
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
AST	Aboveground Storage Tank
bgs	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CBC	Community Basketball Court
CFR	Code of Federal Regulations
City	Pitkas Point Community
COC	Contaminant of Concern
CSM	Conceptual Site Model
CW	Community Washeteria
DBAC	DEC Brownfield Assessment and Cleanup
DEED	Department of Education and Early Development
DCCED	Department of Commerce, Community, and Economic Development
DQO	Data Quality Objective
DRO	Diesel Range Organics
EHS	EHS-Alaska, Inc.
EPA	Environmental Protection Agency
FH	Fire House
GB	Generator Building
GPS	Global Positioning System
GRO	Gasoline Range Organics
HID	High-intensity Discharge
HMA	Hazardous Materials Assessment
IDW	Investigation Derived Waste
LBP	Lead-Based Paint
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicates
LDRC	Laboratory Data Review Checklist
LYSD	Lower Yukon School District
mg/cm ²	Milligram per centimeter squared
mg/kg	Milligram per kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MTG	Migration to Groundwater
PCBs	Polychlorinated bi-phenyls
PID	Photoionization detector
ppm	Parts per million
Property	Pitkas Point Elementary School Complex

ACRONYMS AND ABBREVIATIONS (CONTINUED)

ROM	Rough Order of Magnitude
RPD	Relative Percent Difference
SB	Pitkas Point Elementary School Building
SIA	Structural Integrity Assessment
RSE	Restoration Science and Engineering, LLC
SCA	Secondary Containment Area
SGS	SGS Environmental Services, Inc.
SSB	School Shop Building
TF	Tank Farm
TH1	Teacher Housing Building #1
TH2	Teacher Housing Building #2
VOC	Volatile Organic Compounds
XRF	X-Ray Fluorescence

**SITE ASSESSMENT
PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
ADEC FILE ID: 2444.57.001**

1.0 INTRODUCTION

This report presents the results of Shannon & Wilson's site assessment conducted at the Pitkas Point Elementary School Complex (Property) in Pitkas Point, Alaska. The Department of Commerce, Community, and Economic Development (DCCED) requested assistance from the Alaska Department of Environmental Conservation (ADEC) through the DEC Brownfield Assessment and Cleanup (DBAC) Program to assess what portions of the Property can be safely used by the Pitkas Point Community (City). The specific objectives of this site characterization are to assess the integrity of on-site structures and determine how much (if any) contamination is present in the Property's soil.

This project was conducted under Shannon & Wilson's ADEC Hazardous Substance Spill Prevention and Cleanup Term Contract 18-8036-03. ADEC authorization to proceed was received on August 10, 2015 with Notice to Proceed Number 18-8036-03-032. The work was conducted in scope with our September 3, 2015 ADEC-approved work plan.

2.0 SITE AND PROJECT DESCRIPTION

The Property can be found near the confluence of the Yukon and Andreafsky Rivers, 5 miles southwest of St. Mary's on the Yukon-Kuskokwim Delta, and 3 miles by road from the St. Mary's airport. The Property is located at 61°01'54" N and 163°17'13" W (WGS84) in USGS Quadrangle "Kwiguk (A-3)," Alaska, Township 22 North, Range 76 West, Seward Meridian. A vicinity map is provided as Figure 1.

The Property comprises multiple structures as shown on Figure 2, including the Pitkas Point Elementary School Building (SB), five teacher housing units (TH), the School Shop Building (SSB), the Community Basketball Court (CBC), the Community Washeteria (CW), the Firehouse (FH), the Generator Building (GB), and a Tank Farm (TF). The structures are vacant and in various states of deterioration. The CW is partially demolished and building debris is stored within and around the building foundation walls. The TF is not operational and the chain-link fence around the TF area is in a state of disrepair.

The site assessment included structural integrity assessments (SIA) and hazardous materials assessments (HMA) of Teacher Housing Building #1 (TH1), Teacher Housing Building #2 (TH2), and the SB; characterizing residual contamination at a diesel spill site that was not addressed during the 2004 cleanup activities; conducting a visual assessment of the former school tank farm; attempting to locate and characterize stockpiled soil and super-sacks generated

during the 2000 and 2004 site assessment efforts; and performing a debris inventory and property-wide assessment of speculated contamination and debris.

EHS-Alaska, Inc. (EHS) of Eagle River, Alaska provided the HMA. Coffman Engineers (Coffman) provided the SIA. SGS North America, Inc. (SGS) of Anchorage, Alaska performed the laboratory testing of analytical soil samples. EHS, SGS, and Coffman were subcontracted to Shannon & Wilson.

Mr. Elia, Lower Yukon School District (LYSD) representative, identified and provided access to the locked SB, TH1, and TH2 to allow for EHS and Coffman to perform the HMA and SIA of the buildings on September 16, 2015.

3.0 BACKGROUND

In 1984 the state issued a 55-year lease to the Department of Education & Early Development (DEED) to construct, operate, and maintain a school. DEED subsequently issued a permit to the LYSD to use the land for the school. The school closed in 2013 but will remain under the jurisdiction of DEED and the LYSD until it is determined that the site does not pose an unacceptable risk to human health and the environment.

Two previous environmental assessments were conducted on the Property in 2000 and 2004. Results of the first study are documented in the Restoration Science & Engineering, LLC (RSE) report, *Diesel Spill Site Assessment and Water Quality Sampling, Pitkas Point, Alaska, 2000*. According to the report, an approximate 55-gallon spill of diesel fuel released from a flexible coupling on a fuel transfer pipe occurred in 2000. The spill was located approximately 25 feet north of the northeast corner of the SB. Approximately 8 cubic yards of diesel fuel-impacted soil were excavated from the spill site and stockpiled near the school TF. Confirmation soil samples collected from beneath the spill site identified concentrations of diesel range organics (DRO) up to 223,000 milligrams per kilograms (mg/kg) which exceeds the ADEC's Method 2 migration to groundwater (MTG) and human health ingestion/inhalation cleanup levels. Additional soil samples collected along aboveground water and fuel piping at the areas identified as PPS1/PPS11, PPS10, PPS12, and PPS13 also contained DRO concentrations greater than the ADEC's MTG and/or human health ingestion/inhalation cleanup levels but were not further investigated.

The second report, *Corrective Action Report, Pitkas Point Alaska*, by RSE documents the 2004 excavation of 102 cubic yards of DRO-impacted soil at the diesel fuel release near the flexible coupling identified in 2000. Excavated soil was placed in super-sacks and temporarily stored adjacent to the excavation. Confirmation soil samples collected from the excavation base beneath the failed flexible coupling did not contain target analyte concentrations greater than ADEC Method 2 cleanup levels. However, RSE reported that based upon photoionization

detector (PID) screening, soil above the ADEC Method 2 cleanup level may remain in the excavation sidewalls.

4.0 SHANNON AND WILSON SITE CHARACTERIZATION ACTIVITIES

A Shannon & Wilson representative visited the Property on September 15 through 19, 2015 to further delineate soil contamination along the fuel and water supply lines at the diesel spill site, the former school tank farm, soil stockpiles and supersacks, and speculated contamination and debris. Field work was conducted by an ADEC-Qualified Environmental Professional as defined by 18 Alaska Administrative Code (AAC) 75.330, who collected field screening and analytical soil samples, and coordinated with the project laboratory for sample testing.

Project sample locations, screening results, and soil descriptions are summarized in Table 1. Field notes taken during the site activities are included in Appendix A. Swing-tie measurements and global position system (GPS) coordinates of soil sample locations are included in the field notes. However, the swing-tie measurements are considered to be more accurate than the GPS coordinates due to the GPS accuracy reported range of 12 to 30 feet. Photographs of the sampling activities are included in Appendix B.

4.1 Scope Modifications

The following change to the scope presented in the work plan was implemented due to conditions encountered in the field:

- The work plan included a visual assessment of the former school TF for indications of contamination. During the visual assessment, a sheen was observed on the surface water ponded within the containment area near the southeast corner. Therefore, after receiving ADEC approval, two soil samples were collected outside the TF containment area, targeting areas where fluids would likely flow given a breach of the containment area. The soil samples were collected from an area downgradient of the south side of the TF.
- The work plan included a task to identify and locate the stockpiled soil and super-sacks generated during the 2000 and 2004 site assessment activities and collect soil samples. An interview of an LYSD representative regarding the location of the removed soil and locations shown in the RSE reports was conducted, but the stockpiled soil and super-sacks could not be located.

4.2 Impacted Soil Delineation

On September 15 through 19, 2015, 17 test pits were advanced in the vicinity of the former RSE sample locations PPS1/PPS11, PPS10, PPS12, and PPS13 to evaluate the vertical and horizontal extent of soil contamination. In general, one test pit was advanced near the original RSE sample

at each location, with three or four additional test pits positioned radially outward to delineate the lateral extent of impacted soil. Four test pits were advanced in the area of PPS1/PPS11, five test pits in the area of PPS10, five test pits in the area of PPS12, and four test pits in the area of PPS13. The approximate locations of the test pits are shown on Figures 3 through 6, and Photos 2 through 6. Each test pit was advanced by hand using a 3-inch diameter steel bucket auger to a depth of 2 feet below ground surface (bgs). Plastic sheeting was placed on the surface at each test pit location and soil removed from the test pit was placed on the plastic sheeting. Field screening and analytical soil samples were collected with a clean stainless steel spoon from undisturbed soil at the base of the test pit at depths of 0.5, 1.0, 1.5, and 2.0 feet bgs. The sampling equipment and hand auger were decontaminated between each sample location. At the completion of the test pits, soil placed on the plastic sheeting was used to backfill the corresponding test pit.

Each sample was “screened” for volatile organic compounds (VOCs) using a PID and ADEC-approved headspace screening techniques. Screening samples were placed in a resealable plastic bag to approximately one-half capacity using a clean stainless steel spoon. The samples were then warmed for at least 10 minutes, but not more than one hour. The temperature of the samples were at least 40 degrees Fahrenheit prior to screening. To screen, the sample was agitated for about 15 seconds, the seal of the bag was opened slightly, the instrument probe was inserted into the air space above the soil, and the bag held closed around the probe. The maximum ionization response as the PID draws vapor from the sample bag was recorded. The PID was calibrated before use daily with 100 parts per million (ppm) isobutylene in air standard gas.

Sixteen field screening samples were collected from four test pits in the vicinity of Area PPS1/PPS11. Based on the highest headspace screening results and selection of one sample in the original RSE sample area (2.1 ppm and 4.6 ppm), two analytical soil samples (Samples PPS1/PP11-B and PPS1/PP11-3-A) were collected from the test pits.

Twenty field screening samples were collected from five test pits in the vicinity of Area PPS10. Based on the highest headspace screening results ranging from 5.3 ppm to 260 ppm, one sample in the original RSE sample area, and spatial representation, six analytical soil samples, including one field duplicate (Samples PPS10-D, PPS10-1-B, PPS10-2-D, PPS10-3-D, PPS10-3-DX [duplicate of PPS10-3-D], and PPS10-4-B) were collected from the test pits.

Twenty field screening samples were collected from five test pits in the vicinity of Area PPS12. Based on the highest headspace from each test pit, screening results ranging from 1.9 ppm to 270 ppm, selection of one sample in the original RSE sample area, and spatial representation, four analytical soil samples, including a field duplicate (Samples PPS12-C, PPS12-2-A, PPS12-3-C, and PPS12-3-CX [duplicate of PPS12-3-C]) were collected from the test pits.

Twelve field screening samples were collected from four test pits in the vicinity of Area PPS13. Based on the highest headspace screening results from each test pit ranging from 2.7 ppm to 8.1 ppm, selection of one sample in the original RSE sample area, and spatial representation, three analytical soil samples (Samples PPS13-C, PPS13-1-A, and PPS13-2-B) were collected from the test pits.

Fifteen analytical soil samples, including 2 duplicates, were collected at the Property near the former RSE sample locations of PPS1/PPS11, PPS10, PPS12, and PPS13 areas.

Analytical soil samples were collected by quickly and completely filling the laboratory-provided jars. Soil samples for laboratory analysis were collected in laboratory-supplied jars in decreasing order of volatility. For each volatile sample, at least 25 grams of soil, but no more than what could be completely submerged with 25 milliliters of methanol, were placed into a pre-weighted, 4-ounce jar with a septa lid. A 25-milliliter aliquot of methanol containing laboratory-added surrogates was added to the sample jar to submerge the soil sample. For each non-volatile sample, the laboratory-supplied jar was completely filled with soil taking care to remove gravel and debris. Sample jars were filled using decontaminated stainless steel spoons, placed in coolers with ice packs, and transferred to the laboratory using chain-of-custody procedures.

4.3 Visual Inspection of Former School Tank Farm

Shannon & Wilson's field representative visually assessed the former school tank farm to document the presence or absence of fuel storage tanks, stockpiled soil, vegetation, sheen(s), stained soil, or other indications of potential contamination.

Five out-of-service tanks (three horizontal and two vertical) with estimated capacities ranging from 2,000 to 6,000 gallons were observed at the tank farm. In addition, nine 55-gallon drums were stored within the tank farm's bermed containment area. There was no evidence of stockpiled soils or stressed vegetation (i.e., localized areas of small grasses and moss were observed) within or adjacent to the tank farm. The two former school's tanks identified in the RSE 2000/2004 reports were removed from the wood support structure, and removed from the site (Photo 7). The secondary containment area (SCA) liner appeared to be mostly intact (small tears were noted at several locations) and functioning to contain water inside the SCA. A sheen was observed (Photo 8) on the surface water near the southeast corner of the containment area. Although the SCA appears appropriately constructed for its containment function, if sufficient water accumulates in the SCA, the lowest point where water would exit is at two locations on the southern berm (Photo 9). Other debris observed in the SCA included wood pallets, steel piping and flex couplers, and flex hosing.

4.4 Soil Stockpiles and Super-sacks

Shannon & Wilson's field representative attempted to locate the stockpiled soil and super-sacks generated during the 2000 and 2004 site assessment activities that were removed or disposed off-site. The soil stockpile and super-sacks were not observed during our visual assessment.

Shannon & Wilson's field representative, Trevor Crosby, interviewed Mr. Elia, LYSD representative, on September 16, 2015 about the locations of the soil stockpiles and super-sacks. Mr. Elia was aware of the 2000 and 2004 site assessment activities, but unable to provide details on the current location of the soil stockpile or super-sacks.

4.5 Debris Inventory and Property-Wide Contamination Assessment

Shannon & Wilson's field representative created an inventory of the debris and conducted a visual assessment of aboveground piping and associated debris to document the nature, quantity, and location of the abandoned/unused debris, and its potential impact to soil and groundwater. In general, field screening and analytical soil samples were collected at low-lying areas, along drainage pathways where contaminants would likely accumulate, beneath and around the various debris and abandoned piping, or at representative debris storage locations.

Sixteen field screening samples were collected near or beneath aboveground storage tanks (ASTs), aboveground piping runs, 55-gallon drums, and miscellaneous debris (Photos 10 through 14) at various locations throughout the site, as shown on Figure 7. The soil samples were collected from approximately 0.4 to 1.0 foot bgs using a 3-inch diameter steel bucket auger. Each soil sample was "screened" for VOCs using the method described above. Based on the highest headspace screening results (ranging from 0.8 ppm to 114 ppm) eight analytical soil samples, including one field duplicate (Samples TF1, TF2, AST4, AST4X [duplicate of AST4], AST8, AST9, AST10, and PR3), were collected. Two of the analytical soil samples, Samples TF1 and TF2, were collected south of the former school tank farm beyond the bermed area, where a large spill would likely flow at the approximate locations shown in Figure 7.

4.6 Investigation Derived Waste

Investigation derived waste (IDW) generated during the site assessment included the excavated soil, plastic liners, and gloves. At the completion of the test pits, soil placed on the plastic sheeting was used to backfill the corresponding test pits. The disposable sampling materials were disposed as unregulated solid waste in a refuse dumpster.

5.0 SUBSURFACE CONDITIONS

The site was generally consisted of low to high grasses and medium sized trees (alders) on eastern side of the property. The surface soil in the top 2 feet bgs at the site generally consisted

of light to dark brown silt with organics, and/or Peat with silt. Groundwater was not observed in the test pits during the September 2015 site characterization activities.

6.0 LABORATORY ANALYSIS

The project soil samples were submitted to SGS in chilled coolers using chain-of-custody procedures. The 23 soil samples, including three field duplicates, were analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101; DRO by AK 102; RRO by AK 103; and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B. In addition, due to high organic content of many of the samples, five samples were also analyzed for DRO/RRO using a silica gel extraction. For quality control purposes, two trip blanks were included in the sampling program and analyzed for GRO by AK 101 and BTEX by EPA Method 8021B. The analytical sample results are summarized in Table 2 and the laboratory reports are included in Appendix C.

A typical sample identification, as delivered to the laboratory, is “17741-PPS1/PPS11-1-A”. The sample identification includes the Shannon & Wilson job number “17741” as a prefix, “-PPS1/PPS11” indicates the former RSE sample area, “-1” is the uniquely numbered test pit, and “A” represents the depth of the sample collected (0.5-foot). The samples were identified with “A”, “B”, “C”, or “D” following the sample location (“PPS1/PPS11-1”) which corresponds to depths of 0.5, 1.0, 1.5, and 2.0 feet bgs, respectively. The job number prefix “17741” has been left out in the body of this report for brevity.

7.0 DISCUSSION OF RESULTS

The reported analyte concentrations in the project soil samples are compared to the cleanup levels listed in the Oil and Other Hazardous Substances Pollution Control Regulations (18 AAC 75, Section 341). The soil cleanup criteria are based on the most stringent ADEC Method 2 exposure pathway listed in Tables B1 and B2 for the “under 40-inch (precipitation) zone”. The summary analytical results and applicable cleanup levels are listed in Table 2.

7.1 Soil Samples

Multiple samples contained DRO concentrations above the ADEC’s MTG cleanup level, as detailed below. The remaining analytes were either not detected, or were measured at concentrations of less than ADEC Method 2 cleanup levels in the test pit samples.

Based on screening and analytical samples, the soil at Areas PPS1/PPS11 and PPS13 is not impacted above ADEC Method 2 cleanup levels.

DRO-impacted soil with concentrations above ADEC Method 2 MTG cleanup level, is present in four of the five test pits in Area PPS10. The concentrations are less than the human health

cleanup levels for direct contact and outdoor air inhalation. The extent of DRO-impacted soil is not defined laterally or vertically.

Based on field screening and analytical samples, DRO-impacted soil above ADEC Method 2 cleanup levels is present in one of the five test pits advanced in Area PPS12. The samples are less than the human health cleanup levels for direct contact and outdoor air inhalation. These results suggest the extent of DRO-impacted soil at Area PPS12 is limited to shallow soil adjacent to the northeast side of the FH.

DRO silica gel extraction for Samples PPS12-3-C and PPS13-C were detected at concentrations less than the ADEC Method 2 cleanup level of 250 mg/kg. By inspection of Table 2, DRO results before and after silica gel extraction, the high ratio of non-polar DRO to total DRO suggests the presence of anthropogenic (fuel) hydrocarbons.

DRO-impacted soil with concentrations above ADEC Method 2 MTG cleanup level, is present at Areas TF2, AST4, AST9, and AST10. The samples are less than the human health cleanup levels for direct contact and outdoor air inhalation. The lateral and vertical extent of impacted soil is not defined in these areas.

7.2 Quality Assurance Summary

The project laboratory implements on-going quality assurance/quality control procedures to evaluate conformance to applicable ADEC and EPA data quality objectives (DQOs). Internal laboratory quality controls for this project included surrogates, method blanks, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), and matrix spike/matrix spike duplicates (MS/MSD). If a DQO for one of the controls is not met, the laboratory provides a brief explanation in the case narrative of their report (See Appendix C).

External quality controls include two trip blanks and three field duplicate samples. Field logs and records were checked for completeness and accuracy. The relative percent difference (RPD) between the project sample and associated duplicate results is a measure of precision affected by matrix heterogeneity, sampling technique, and laboratory analyses. The ADEC recommends an RPD of less than 50 percent for field duplicates. The RPD for total xylenes is greater than 50 percent (104 percent) in Samples AST4 and AST4X; however, the contaminant concentrations in both samples are below cleanup levels therefore the RPD non-conformance does not impact data usability for the objectives of this project. The RPDs for DRO Silica Gel and RRO Silica Gel is greater than 50 percent (64 percent) in Samples PPS12-3-C and PPS12-3-CX. Because the RRO Silica Gel concentration in both samples are less than the most stringent ADEC cleanup level, the RRO data are considered usable. However, the DRO Silica Gel concentration in the primary sample (PPS12-3-C; 155 mg/kg) is less than the ADEC Method 2 cleanup level while the duplicate sample (PPS12-3-CX; 301 mg/kg) is above than the ADEC Method 2 cleanup level potentially impacting the use of the data to determine if DRO Silica Gel concentrations in soils at

PPS12-3-C are above cleanup levels. Since the primary sample (PPS12-3-C) result is potentially biased low due to hold time exceedance the duplicate sample DRO Silica Gel result will be used to characterize the soil at this location.

Laboratory-prepared trip blank samples accompanied the project sample jars from the laboratory to the site during sampling activities and back again to SGS. The trip blanks did not contain detectable GRO or BTEX concentrations.

GRO, toluene, and total xylenes were detected at estimated concentrations in laboratory method blanks. Affected project samples are qualified with a B-flag in Table 2 (see Laboratory Data Review Checklist (LDRC) in Appendix C for details). There is no adverse impact to data usability, as the B-flagged data are at least an order of magnitude less than ADEC cleanup levels.

Shannon & Wilson reviewed the SGS data deliverables and completed an ADEC LDRC for the work orders for this project. The laboratory reports and data review checklists are included in Appendix C.

8.0 HAZARDOUS MATERIALS ASSESSMENT

On September 16 and 17, 2015, EHS-Alaska, Inc. performed an HMA of the SB, TH1, and TH2 structures. Findings are presented in the November 16, 2015 draft report titled *Hazardous Materials Assessment, Pitkas Point School Site Hazmat Survey, Pitkas Point, Alaska*, which is included as Appendix D. In addition to the November 16, 2016 draft report, EHS provided asbestos sampling results and a brief summary from a previous HMA survey conducted at the SB in July 2011. Potential hazardous materials were identified in each of the three structures surveyed. Those materials include asbestos-containing materials (ACM), lead, polychlorinated bi-phenyls (PCBs), mercury, and radioactive materials. In addition, these materials may be found in other buildings that are present on the subject Property. The key findings are summarized below. Note these are subject to the limitations in the EHS report (Appendix D).

8.1 Asbestos-Containing Materials

Eighteen, 23, and 15 discrete samples were collected from the SB, TH1, and TH2 during the September 2015 HMA, respectively. In addition, 55 discrete samples were collected from the SB in July 2011. The samples were analyzed using polarized light microscopy by Environmental Protection Agency (EPA) Method 600/M4-82-020. The 18 discrete samples collected from SB in September 2015 did not detect ACM. Nine of the samples collected from the SB (July 2011), two of the samples from the TH1 (2015), and two samples from the TH2 (2015) were found to contain asbestos (defined as having over 1 percent asbestos content) and included the following materials:

- Sink undercoating (white) in the SB;

- Sheet vinyl and mastic, SV-2 grey pebble mosaic in the SB;
- Floor tile and mastic, FT1 12x12 white with/ grey streaks in the SB;
- Window glazing, grey in the SB;
- Floor tile and mastic, FT-1 in the SB;
- Stair tread, tan vinyl in the SB;
- Black undercoating for stainless steel sink in the TH1 and TH2; and,
- Grey gummy window glazing compound in the TH1 and TH2.

A comprehensive list of ACM identified in the September 2015 and July 2011 HMAs, along with additional materials that were/are assumed to contain asbestos, is included in the Appendix D report. Tables 1A, 1B, 1C, and 1D of the report contains a summary of the ACMs and their locations in the building.

According to EHS, ACM in the SB, TH1, and TH2, including floor tiles, sheet vinyl, flange gaskets and valve packing, boiler gaskets and sealants, are not considered friable in present condition, but may become friable if damaged. ACM present in the floor tile mastics, stair tread, window glazing, sink undercoating, high temperature wire insulation is classified as non-friable, but are typically in poor condition. The EPA requires that a trained asbestos worker remove all ACM that would be disturbed by the proposed demolition. Additionally, the owner's (or owner's contractor) may need to develop a pre-demolition work plan.

Settled and concealed dusts were examined by EHS's field inspector but analytical sampling of the dust was not conducted. Based on visual inspection and experience from similar buildings, the inspector opined that the settled and concealed dusts likely contain less than 1 percent asbestos and are not ACM.

8.2 Lead-Containing Materials

Forty-six, 15, and 14 discrete sample locations were tested in SB, TH1, and TH2 structures during the September 2015 HMA, respectively for lead-based paint (LBP). In addition, 35 discrete samples were collected from the SB in July 2011. The discrete locations were tested in-place using an x-ray fluorescence (XRF) lead paint analyzer. A lead analysis summary and sampling locations are provided in Appendix D of the EHS report.

EHS did not identify LBP in TH1 and TH2 during the September 2015 HMA. EHS identified LBP (paint containing more than 1.0 mg/cm² of lead) in the SB on painted metal piping in the kitchen and mechanical room. It is anticipated that other metal piping or equipment may be painted with LBP. Concentrations of lead were found in the glazing of ceramic plumbing fixtures, glazing of older ceramic sinks, and hand dryers. However, EHS noted that the concentrations of lead in ceramic glazing compounds should not be compared to LBP criteria, as the glazing is inherently less likely to cause lead to be present in dusts or on surfaces, where it can be ingested. Concentrations of lead were found in plastic components at the SB, such as

“Formica” plastic laminate panels. However, EHS noted the concentrations of lead in plastic compounds should not be compared to lead-based paint criteria. Although EHS concludes that LBP likely does not present a hazard to demolition workers in accordance with safe work practices, Federal and the State of Alaska regulations (29 Code of Federal Regulations [CFR] 1926.62 and 8 Alaska Administrative Code [AAC] Chapter 61) require lead-trained personnel, personal protective procedures, and air monitoring at work sites where employees may be exposed to lead until exposure levels can be verified and site-specific safe work practices are established.

8.3 PCB- and Mercury- Containing Materials

A limited visual inspection of light fixture ballasts was conducted by the EHS field inspector to identify PCB ballasts. According to the EHS report, fluorescent light fixtures with PCB-containing ballasts were found in TH2. Only fluorescent light fixtures marked “No PCBs” were found in the SB and TH1. EHS notes that all ballasts, including those associated with high-intensity discharge lights, should be inspected during removal. If they are not marked “No PCBs,” either the manufacturer should be contacted to determine the presence of PCBs or it should be assumed the ballasts contain PCBs. If any PCB-materials are discovered, they must be handled in accordance with regulation 40 CFR Part 761 by personnel trained and certified as outlined in regulations 29 CFR 1910.120 and 8 AAC 61.

The only mercury-containing materials identified by the EHS survey are fluorescent lamps, thermostats, and high-intensity discharge (HID) lights in the SB, TH1, and TH2. The HID fixtures on the exterior of the SB were broken. EHS recommends all mercury-containing items removed from the SB be disposed of as hazardous waste or recycled.

8.4 Other Hazardous Materials

Additional hazardous materials including smoke detectors containing radioactive materials, and ozone-depleting refrigerants (air conditioning unit found in the server room in the SB). EHS’s field representative assumed that the existing heating system is assumed to contain glycol. EHS recommended that glycol removed from the heating system be removed and properly disposed of or recycled. All construction workers who are required to handle the above materials must be properly trained and certified as required by regulations 29 CFR 1910.120 and 8 AAC 61.

8.5 Fungal Growth

EHS’s field inspector performed a visual examination of the buildings for suspected fungal growth. TH1 and TH2 were both in disrepair, with strong moldy and musky odors and visible fungal growth on nearly all surfaces and materials interior to the units. EHS was able to access the interior of the TH1 and TH2 with the use of a respirator. The SB was generally in fair condition with visible areas of water damage. Roof leaks in the mechanical room have resulted

in damage to the mechanical room, the kitchen, and an adjacent classroom. Multiple trash cans or buckets were placed in the mechanical room to catch the water but have overflowed. There was also water damage in the gym where daylight was visible through cracks in the gypsum board wall and ceiling. The cracks appear to have been caused by building settling and a lack of exterior siding or other protection. In several areas in the SB, water infiltration has damaged a variety of building components including ceilings, walls, floors, and light fixtures, resulting in suspected fungal growth, although no visible fungal growth was observed.

9.0 STRUCTURAL INTEGRITY ASSESSMENT

On September 16 and 17, 2015, Coffman performed a SIA of the SB, TH1, and TH2 structures. Findings are presented in a November 16, 2015 draft report titled *Pitka's Point School – Structural Integrity Assessment – Draft*, which is included as Appendix E. The overall purpose of the SIA is to determine if the buildings are safe for re-use in their existing condition, can be repaired, and/or should be demolished. The key findings are summarized below, but are subject to the limitations in Appendix E.

9.1 TH1 and TH2 Structures

TH1 and TH2 are one story wood framed buildings with footprints of 24 feet by 38 feet (approximately 912 square feet). The buildings were only observed from the exterior due to the presence of extreme mold growth on the interior. Per EHS's direction, the buildings were not to be entered without the use of a respirator, therefore Coffman's representative was unable to enter the buildings for interior observation. The buildings were only observed from the exterior by Coffman's representative, and based on the interior observations according to EHS, there were no major areas of water damage along the walls, ceiling, or floor. Coffman noted that TH1 and TH2 appear to be structurally sound. Coffman recommended to bring the building up to a livable condition the entire interior of the unit would need to be remediated due to the presence of extreme mold infestation, and re-constructed using new interior architectural finishes. New windows and exterior doors are also recommended.

Coffman recommends that based on the estimated cost of repair, and considering the additional cost of remediation (refer to EHS-Alaska's findings), that TH1 and TH2 be demolished. In the interim period, the buildings should remain condemned from occupation.

9.2 SB Structure

According to Coffman, the SB consists of an original high school building designed and built around 1979-1980; a major addition around 1984, and two smaller additions. During the September 2015 site visit, the building was observed from the exterior and interior. Based on

observation, the building appears to be in good overall structural condition, with a few areas of local damage and settlement.

Based on their visual observations, Coffman concludes the main school building appears to be in good overall structural condition and re-use of the building is an option. However, Coffman recommends deficiencies noted in the Appendix E report be addressed to convert the building for re-purposing. Coffman also recommends the cold storage room be removed/demolished or releveled and strengthened with new piles/girders.

10.0 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) was prepared to identify known and potential exposure pathways at the Property. The CSM was developed in general accordance with the ADEC's *Policy Guidance on Developing Conceptual Site Models* (October 2010), using the ADEC's CSM Human Health Graphic and Scoping Forms. The ADEC forms are included in Appendix F, with discussions of the potential exposure pathways provided below. The narrative includes descriptions of site-specific considerations that increase or decrease the viability of each pathway at this site.

Petroleum hydrocarbon-impacted soil is present on the Property. The contamination is a result of a known diesel spill identified in 2000, as well as probable undocumented and/or incidental spills, leaks, and drips from the former school's heating oil tanks and piping systems.

10.1 Soil – Direct Contact

Direct contact with impacted soil comprises the incidental ingestion and dermal absorption exposure routes. Due to the presence of petroleum hydrocarbon constituents, the direct contact exposure pathway is complete for current and/or future on-site commercial workers, site visitors, trespassers, residents, and construction workers. There is no documentation of compounds that permeate the skin (listed in Appendix B of the ADEC CSM guidance), therefore, the dermal absorption pathway is incomplete. All present soil concentrations are below ingestion and direct contact cleanup levels.

10.2 Groundwater

ADEC guidance stipulates that ingestion of groundwater be considered a potentially complete exposure pathway unless a groundwater use determination is conducted in accordance with 18 AAC 75.350, and that determination finds that the groundwater is not "currently of reasonable expected future source of drinking water." Therefore, ingestion of contaminants in groundwater is considered a potentially complete pathway for future on-site commercial workers, site visitors,

trespassers, residents, and construction workers. We have no knowledge of any on-site wells on the Property.

10.3 Air

Volatile contaminants of concern (COCs) have the potential to impact receptors through outdoor and indoor air inhalation. Volatile COCs including DRO, GRO, RRO, benzene, ethylbenzene, toluene, and total xylenes have been documented in the site surface soil. Due to these compounds, coupled with the presence of ACM in TH1, TH2, and SB, and the presence of visible fungal growth in TH1 and TH2, indoor air inhalation is considered a potentially complete exposure pathway. Inhalation of both outdoor air and indoor air are considered potentially complete pathways for current and/or future residents, commercial workers, site visitors, trespassers, and construction workers. Note that the buildings are elevated above the ground surface. Based on the construction of the buildings, the exposure pathway for inhalation of indoor air is likely mitigated based on the airflow between the building and ground surface. All present soil concentrations are below outdoor air cleanup levels and vapor intrusion is typically not considered an unacceptable risk for petroleum hydrocarbons if DRO is the only COC present at concentrations greater than ADEC MTG levels.

10.4 Surface Water

The former school's drinking water source is from a surface water source (pond), located on the southeastern corner of the Property (Figure 2). In addition, the Property is located adjacent to the Yukon River, approximately 200 feet south. While no surface water analytical samples were collected, ingestion of contaminants in surface water is considered a potentially complete exposure pathway for current and/or future residents, commercial workers, site visitors, trespassers, construction workers, and ecological receptors.

10.5 Other

Other impacted media, including biota, were not identified at the site.

10.6 CSM Summary

Currently complete or potentially complete exposure pathways have been identified at the site. Based on exposure scenarios and COC concentrations, the migration to surface water, possibly direct contact, and outdoor air and indoor air inhalation due to mold and ACM exposure pathways likely are the primary risk drivers. It is also recognized that changes in the site use or other site conditions may affect the viability of potential exposure pathways. In particular, the CSM will need to be re-evaluated and revised as necessary if new buildings are constructed at the site or if a change in land use occurs.

11.0 ROM COSTS

11.1 Hazardous Materials Abatement ROM Cost Summary

EHS prepared a ROM cost to remove and dispose of the hazardous building materials from TH1, TH2, and the SB of \$304,413 (Appendix D) combined for all three units. EHS noted that replacement costs are not included, only abatement of hazards. Further assumptions included in the cost estimate are included in the Appendix D report.

EHS also noted that TH1 and TH2 are in disrepair and should not be entered by unprotected workers. EHS observed extensive fungal growth within TH1 and TH2 caused by various forms of water intrusion noted in the HMA. Due to the extensive fungal growth EHS proposed two options for the TH:

1. Demolish the unit(s); or
2. Renovate the unit(s) by removing all existing equipment, finishes, plywood subfloor, plywood ceiling, roofing, etc.

EHS noted that the SB is generally in fair condition with only a few areas of water damage and a few areas of damaged ACMs noted. EHS recommended that, prior to building re-occupancy, the following minimum actions should be addressed:

- Repair sources of water intrusion from various locations on the roof, exterior siding, and leaking piping; and,
- Abate damaged asbestos-containing materials.

11.2 Structural Repair ROM Cost Summary

Coffman prepared ROM costs to structurally repair TH1 and TH2 which are estimated to be approximately \$267,000 for each building including a 25 percent contingency. However, Coffman recommended that based on the estimated cost of repair, and additional cost of remediation/abatement (refer to EHS's findings), that TH1 and TH2 be demolished. Coffman estimated the repair ROM cost for the SB to be approximately \$773,000. Coffman noted in the Appendix E report that the SB cost estimate includes a 50 percent contingency based on unknown conditions that may have not been observed during the September 2015 SIA. Coffman recommended that based on their visual observations, the SB appears to be in good overall structural condition and suitable for re-use. Additional recommendations for the building repairs are included in Appendix E.

11.3 Soil Remediation ROM Cost

We did not provide costs for soil remediation, due to the continued data gaps regarding delineation of impacted soil, and uncertainties in intended future use. These considerations drive

the level of mitigation that may be required to protect human health or the environment, and therefore dictate the cost of remedial action, if any.

12.0 CONCLUSIONS

Our conclusions and recommendations based on the 2015 assessment activities are presented below.

12.1 Site Assessment/Characterization

Shannon and Wilson's site assessment activities conducted at the Property consisted of advancing and sampling test pits, visually assessing the former school tank farm, and attempting to locate and sample the soil stockpiles and super-sacks. The current and historical site characterization data were used to continue to delineate soil contamination at the Property.

Seven soil samples collected from test pits in the PPS10 and PPS12 areas contained DRO concentrations greater than ADEC Method 2 MTG cleanup levels but less than human health cleanup levels. The lateral and vertical extent of DRO-impacted soil at these locations is not known. The soil samples collected from the PPS1/PPS11 and PPS13 areas did not contain concentrations of target analytes above the most stringent ADEC Method 2 cleanup levels. In addition to these areas, soil impacted with DRO concentrations greater than the most stringent ADEC cleanup level for MTG was identified in sample locations TF2, AST4, AST9, and AST10. The lateral and vertical extent of DRO-impacted soil at these locations is not known.

Horizontal and vertical tanks, 55-gallon drums, and various piping were observed within the former school tank farm bermed containment area. The former school aboveground dual storage tanks were removed from the tank farm area prior to our site assessment activities. The liner appeared to be mostly intact (small tears were noted in various locations) and functioning to contain water inside the secondary containment area. A sheen was observed on the surface water near the southeast corner of the containment area.

The stockpiled soil and supersacks generated during the 2000 and 2004 site assessment activities were not located during the 2015 site assessment.

12.2 HMA

On September 16 and 17, 2015, EHS performed a HMA of the SB, TH1, and TH2. Multiple hazardous building materials including ACM, LBP, PCB- and mercury-containing materials, radioactive materials, and ozone-depleting refrigerants, glycol, and fungal growths were identified in one or more of the structures. In addition, these materials may be found in other buildings that are present on the subject Property. These materials will require special handling practices prior to building repair and/or during demolition.

12.3 SIA

On September 16 and 17, 2015, Coffman performed a SIA of the SB, TH1, and TH2 to determine if the structures could be used as residential buildings in their current state. According to Coffman, based on the estimated cost of repair, and additional cost of remediation (refer to HMA), it is recommend that TH1 and TH2 be demolished. In the interim period, the buildings should remain condemned from occupation. The SB appears to be in comparatively good overall structural condition and re-use of the building. However, it is recommended that deficiencies noted in the SIA be addressed to convert the building re-purposing. In addition, these repairs may be needed in other buildings that are present on the subject Property.

12.4 Data Gaps

Based on current and historical data, the following data gaps may require additional investigation to evaluate the lateral and vertical extent of DRO-impacted soil:

- The PPS10 Area, southeast and northwest of the SB and CW (partially demolished), respectively;
- The PPS12 Area, northeast of the FH;
- Southeast of the former school tank farm bermed containment area; and,
- Near or beneath AST4, AST9, and AST10.

The vertical extent of DRO-impacted soil was not included in the assessment. The nearby surface drinking water source was not included in the assessment in order to determine if the surface water has been impacted by the petroleum releases.

When the impacted areas are delineated and data gaps addressed, the Property may be eligible for Cleanup Complete with Institutional Controls status.

13.0 CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our client and their representatives in the study of this site. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. They should not be construed as definite conclusions regarding the site's soil quality, and it is possible that our soil tests missed higher levels of petroleum hydrocarbon constituents. As a result, the analysis and sampling performed can only provide you with our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore will not disclose the results of this study, except with your permission or as required by law.

Shannon & Wilson has prepared the attachment in Appendix G "Important Information About Your Geotechnical/Environmental Report" to assist you and others in understanding the use and limitations of our report.

Copies of documents that may be relied upon by our client are limited to the printed copies (also known as hard copies) that are signed or sealed by Shannon & Wilson with a wet, blue ink signature. Files provided in electronic media format are furnished solely for the convenience of the client. Any conclusion or information obtained or derived from such electronic files shall be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, or you question the authenticity of the report please contact the undersigned.

We appreciate this opportunity to be of service and your continued confidence in our firm. If you have questions or comments concerning this report, please call the undersigned at (907) 561-2120.

Sincerely,

SHANNON & WILSON, INC.

Prepared by:



Trevor Crosby
Environmental Scientist

Approved by:



Matthew S. Hemry, P.E.
Vice President

TABLE 1
SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Number^^	Date	Sample Location (See Figures 2 through 7)	Depth (feet**)	Headspace (ppm) ^	Sample Description
Former RSE Sample PPS1/PPS11 Area					
PPS1/PPS11-A	9/16/2015	As close as practicable to RSE Sample PPS1/PPS11	0.5	2.0	Light to dark brown, <i>Silt with organics</i> ; moist
* PPS1/PPS11-B	9/16/2015	As close as practicable to RSE Sample PPS1/PPS11	1.0	2.1	Dark brown, <i>Peat trace silt</i> ; moist
PPS1/PPS11-C	9/16/2015	As close as practicable to RSE Sample PPS1/PPS11	1.5	2.0	Dark brown, <i>Peat trace silt</i> ; moist
PPS1/PPS11-D	9/16/2015	As close as practicable to RSE Sample PPS1/PPS11	2.0	1.6	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-1-A	9/16/2015	Approximately 10 feet northeast of PPS1/PPS11	0.5	1.6	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-1-B	9/16/2015	Approximately 10 feet northeast of PPS1/PPS11	1.0	1.2	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-1-C	9/16/2015	Approximately 10 feet northeast of PPS1/PPS11	1.5	1.3	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-1-D	9/16/2015	Approximately 10 feet northeast of PPS1/PPS11	2.0	1.5	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-2-A	9/16/2015	Approximately 6 feet east of PPS1/PPS11	0.5	1.5	Dark brown, <i>Peat with silt</i> ; moist
PPS1/PPS11-2-B	9/16/2015	Approximately 6 feet east of PPS1/PPS11	1.0	2.2	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-2-C	9/16/2015	Approximately 6 feet east of PPS1/PPS11	1.5	2.5	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-2-D	9/16/2015	Approximately 6 feet east of PPS1/PPS11	2.0	2.8	Brown, <i>Silt with organics</i> ; moist
* PPS1/PPS11-3-A	9/16/2015	Approximately 9 feet northwest of PPS1/PPS11	0.5	4.6	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-3-B	9/16/2015	Approximately 9 feet northwest of PPS1/PPS11	1.0	2.7	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-3-C	9/16/2015	Approximately 9 feet northwest of PPS1/PPS11	1.5	2.9	Brown, <i>Silt with organics</i> ; moist
PPS1/PPS11-3-D	9/16/2015	Approximately 9 feet northwest of PPS1/PPS11	2.0	2.5	Brown, <i>Silt with organics</i> ; moist

Notes:

- * = Sample analyzed by the project laboratory (See Table 2 and Appendix C)
- ** = Feet below ground surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- = Measurement not recorded or not applicable
- ppm = Parts per million
- ^^ = Sample numbers preceded by "17747-" on the chain-of-custody
- RSE = Restoration Science and Engineering

TABLE 1
SAMPLE LOCATIONS AND DESCRIPTIONS

SHANNON & WILSON, INC.

Sample Number^^	Date	Sample Location (See Figures 2 through 7)	Depth (feet**)	Headspace (ppm) ^	Sample Description
Former RSE Sample PPS10 Area					
PPS10-A	9/15/2015	As close as practicable to RSE Sample PPS10	0.5	1.0	Dark brown, <i>Peat with silt and gravel</i> ; moist
PPS10-B	9/15/2015	As close as practicable to RSE Sample PPS10	1.0	1.5	Dark brown, <i>Peat with silt and gravel</i> ; moist
PPS10-C	9/15/2015	As close as practicable to RSE Sample PPS10	1.5	2.3	Dark brown, <i>Peat with silt and gravel</i> ; moist
* PPS10-D	9/15/2015	As close as practicable to RSE Sample PPS10	2.0	170	Brown to gray, <i>Silt with organics</i> ; moist; hydrocarbon odor
PPS10-1-A	9/16/2015	Approximately 8.5 feet north of PPS10	0.5	3.1	Dark brown, <i>Peat with silt</i> ; moist; organic odor
* PPS10-1-B	9/16/2015	Approximately 8.5 feet north of PPS10	1.0	24	Dark brown, <i>Peat with silt</i> ; moist; organic odor
PPS10-1-C	9/16/2015	Approximately 8.5 feet north of PPS10	1.5	10	Dark brown, <i>Peat with silt and sand</i> ; moist
PPS10-1-D	9/16/2015	Approximately 8.5 feet north of PPS10	2.0	12	Dark brown to gray, <i>Silt with organics</i> ; moist
PPS10-2-A	9/16/2015	Approximately 9 feet east of PPS10	0.5	2.4	Dark brown, <i>Peat with silt</i> ; moist
PPS10-2-B	9/16/2015	Approximately 9 feet east of PPS10	1.0	1.9	Dark brown, <i>Peat with silt</i> ; moist
PPS10-2-C	9/16/2015	Approximately 9 feet east of PPS10	1.5	8.1	Dark brown, <i>Peat with silt</i> ; moist
* PPS10-2-D	9/16/2015	Approximately 9 feet east of PPS10	2.0	160	Brown, <i>Silt with organics</i> ; moist; hydrocarbon odor
PPS10-3-A	9/16/2015	Approximately 7 feet southwest of PPS10	0.5	12	Brown to light brown, <i>Silt with organics</i> ; moist
PPS10-3-B	9/16/2015	Approximately 7 feet southwest of PPS10	1.0	5.0	Brown to light brown, <i>Silt with organics</i> ; moist
PPS10-3-C	9/16/2015	Approximately 7 feet southwest of PPS10	1.5	200	Brown to light brown, <i>Silt with organics</i> ; moist; hydrocarbon odor
* PPS10-3-D	9/16/2015	Approximately 7 feet southwest of PPS10	2.0	260	Brown to light brown, <i>Silt with organics</i> ; moist; hydrocarbon odor
* PPS10-3-DX	9/16/2015	Duplicate of Sample PPS10-3-D	2.0	260	Brown to light brown, <i>Silt with organics</i> ; moist; hydrocarbon odor
PPS10-4-A	9/16/2015	Approximately 6 feet west of PPS10	0.5	3.9	Light brown, <i>Silt with organics</i> ; moist
* PPS10-4-B	9/16/2015	Approximately 6 feet west of PPS10	1.0	5.3	Light brown, <i>Silt with organics</i> ; moist
PPS10-4-C	9/16/2015	Approximately 6 feet west of PPS10	1.5	2.8	Light brown, <i>Silt with organics</i> ; moist
PPS10-4-D	9/16/2015	Approximately 6 feet west of PPS10	2.0	4.2	Light brown, <i>Silt</i> ; moist

Notes:

- * = Sample analyzed by the project laboratory (See Table 2 and Appendix C)
- ** = Feet below ground surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- = Measurement not recorded or not applicable
- ppm = Parts per million
- ^^ = Sample numbers preceded by "17747-" on the chain-of-custody
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TABLE 1
SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Number^^	Date	Sample Location (See Figures 2 through 7)	Depth (feet**)	Headspace (ppm) ^	Sample Description
Former RSE Sample PPS12 Area					
PPS12-A	9/16/2015	As close as practicable to RSE Sample PPS12	0.5	1.8	Brown, <i>Silt with sand and organics</i> ; moist
PPS12-B	9/16/2015	As close as practicable to RSE Sample PPS12	1.0	1.8	Dark brown, <i>Peat</i> ; moist
* PPS12-C	9/16/2015	As close as practicable to RSE Sample PPS12	1.5	1.9	Dark brown, <i>Peat</i> ; moist
PPS12-D	9/16/2015	As close as practicable to RSE Sample PPS12	2.0	1.9	Brown, <i>Silt with organics</i> ; 3/4-inch rounded gravels; moist
PPS12-1-A	9/16/2015	Approximately 11 feet northeast of PPS12	0.5	1.8	Brown, <i>Silt with organics</i> ; 1/2 to 3/4-inch rounded gravels; moist
PPS12-1-B	9/16/2015	Approximately 11 feet northeast of PPS12	1.0	2.6	Brown, <i>Silt with organics</i> ; 1/2 to 3/4-inch rounded gravels; moist
PPS12-1-C	9/16/2015	Approximately 11 feet northeast of PPS12	1.5	3.2	Brown, <i>Peat with silt</i> ; moist
PPS12-1-D	9/16/2015	Approximately 11 feet northeast of PPS12	2.0	2.6	Brown, <i>Peat with silt</i> ; moist
* PPS12-2-A	9/16/2015	Approximately 8 feet southeast of PPS12	0.5	4.9	Brown, <i>Silt with organics</i> ; 1/2-inch rounded gravels; moist
PPS12-2-B	9/16/2015	Approximately 8 feet southeast of PPS12	1.0	3.8	Brown, <i>Silt with organics</i> ; 1/2-inch rounded gravels; moist
PPS12-2-C	9/16/2015	Approximately 8 feet southeast of PPS12	1.5	2.8	Brown, <i>Silt with Sand</i> ; moist
PPS12-2-D	9/16/2015	Approximately 8 feet southeast of PPS12	2.0	2.2	Brown, <i>Silt with Sand</i> ; moist
PPS12-3-A	9/16/2015	Approximately 9 feet southwest of PPS12	0.5	2.3	Dark brown, <i>Peat with silt</i> ; moist
PPS12-3-B	9/16/2015	Approximately 9 feet southwest of PPS12	1.0	5.7	Dark brown, <i>Peat with silt and sand</i> ; moist; hydrocarbon odor
* PPS12-3-C	9/16/2015	Approximately 9 feet southwest of PPS12	1.5	270	Dark brown, <i>Peat with silt and sand</i> ; moist; hydrocarbon odor
* PPS12-3-CX	9/16/2015	Duplicate of Sample PPS12-3-C	1.5	270	Dark brown, <i>Peat with silt and sand</i> ; moist; hydrocarbon odor
PPS12-3-D	9/16/2015	Approximately 9 feet southwest of PPS12	2.0	54	Dark brown, <i>Peat</i> ; moist; hydrocarbon odor
PPS12-4-A	9/16/2015	Approximately 9 feet northwest of PPS12	0.5	3.5	Brown, <i>Peat with silt</i> ; moist
PPS12-4-B	9/16/2015	Approximately 9 feet northwest of PPS12	1.0	1.3	Brown, <i>Peat with silt</i> ; moist
PPS12-4-C	9/16/2015	Approximately 9 feet northwest of PPS12	1.5	1.8	Brown, <i>Silt with organics</i> ; moist
PPS12-4-D	9/16/2015	Approximately 9 feet northwest of PPS12	2.0	2.4	Brown, <i>Silt with organics</i> ; moist

Notes:

- * = Sample analyzed by the project laboratory (See Table 2 and Appendix C)
- ** = Feet below ground surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- = Measurement not recorded or not applicable
- ppm = Parts per million
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TABLE 1
SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Number^^	Date	Sample Location (See Figures 2 through 7)	Depth (feet**)	Headspace (ppm) ^	Sample Description
Former RSE Sample PPS13 Area					
PPS13-A	9/16/2015	As close as practicable to RSE Sample PPS13	0.5	2.0	Dark brown, <i>Peat</i> ; moist
PPS13-B	9/16/2015	As close as practicable to RSE Sample PPS13	1.0	1.6	Brown, <i>Peat with silt</i> ; moist
* PPS13-C	9/16/2015	As close as practicable to RSE Sample PPS13	1.5	2.7	Brown, <i>Silt with peat</i> ; moist
PPS13-D	9/16/2015	As close as practicable to RSE Sample PPS13	2.0	1.5	Brown, <i>Silt with peat</i> ; moist
* PPS13-1-A	9/16/2015	Approximately 25 feet northeast of PPS13	0.5	3.8	Brown, <i>Silt with gravel and organics</i> ; 3/4 to 1.5-inch gravels; moist
PPS13-1-B	9/16/2015	Approximately 25 feet northeast of PPS13	1.0	2.0	Brown, <i>Silt with gravel and organics</i> ; 3/4 to 1-inch gravels; moist
PPS13-1-C	9/16/2015	Approximately 25 feet northeast of PPS13	1.5	2.4	Brown, <i>Silt with gravel and organics</i> ; 3/4 to 1-inch gravels; moist
PPS13-2-A	9/16/2015	Approximately 24 feet east of PPS13	0.5	4.2	Brown, <i>Silt with gravel and organics</i> ; 3/4 to 1-inch gravels; moist
* PPS13-2-B	9/16/2015	Approximately 24 feet east of PPS13	1.0	8.1	Brown, <i>Silt with organics and gravel</i> ; moist; hydrocarbon odor
PPS13-3-A	9/16/2015	Approximately 20 feet southeast of PPS13	0.5	1.6	Brown, <i>Silt with organics and gravel</i> ; moist
PPS13-3-B	9/16/2015	Approximately 20 feet southeast of PPS13	1.0	1.9	Brown, <i>Silt with organics and gravel</i> ; moist
PPS13-3-C	9/16/2015	Approximately 20 feet southeast of PPS13	1.5	1.3	Brown, <i>Silt with organics and gravel</i> ; moist

Notes:

- * = Sample analyzed by the project laboratory (See Table 2 and Appendix C)
- ** = Feet below ground surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- = Measurement not recorded or not applicable
- ppm = Parts per million
- ^^ = Sample numbers preceded by "17747-" on the chain-of-custody
- RSE = Restoration Science and Engineering

TABLE 1

SHANNON & WILSON, INC.

SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Number^^	Date	Sample Location (See Figures 2 through 7)	Depth (feet**)	Headspace (ppm) ^	Sample Description
Debris Inventory and Property-Wide Assessment					
* TF1	9/17/2015	Downgradient of the southeast corner of the existing tank farm	0.8	3.8	Dark brown, <i>Peat with silt</i> ; moist
* TF2	9/17/2015	Downgradient of the middle portion of the existing tank farm	0.9	2.2	Dark brown, <i>Peat with silt</i> ; moist
AST2	9/17/2015	Beneath fill valve	0.7	1.4	Dark brown, <i>Organics with silt and gravel</i> ; moist
* AST4	9/17/2015	Beneath 90 degree joints of 3 pipes adjacent to the AST	0.6	110	Brown to gray; <i>Silt with organics and gravel</i> , moist; hydrocarbon odor
* AST4X	9/17/2015	Duplicate of Sample AST4	0.6	110	Brown to gray; <i>Silt with organics and gravel</i> , moist; hydrocarbon odor
* AST8	9/17/2015	Adjacent to an AST northeast of Teacher Housing Building 1	1.0	17	Brown to gray; <i>Silt with organics and gravel</i> , moist; hydrocarbon odor
* AST9	9/17/2015	Adjacent to an AST northeast of Teacher Housing Building 2	0.7	95	Brown, <i>Silt with organics</i> ; wet; hydrocarbon odor
AST5	9/17/2015	Adjacent to an AST north of the School Complex	0.5	4.4	Brown, <i>Silt with gravel</i> ; wet
* AST10	9/17/2015	Adjacent to an AST west of the Former Teacher Housing	0.7	6.2	Brown, <i>Organics with silt</i> ; moist
AST11	9/17/2015	Adjacent to an AST west of the Former Teacher Housing	1.0	3.1	Gray, <i>Gravel with sand and organics</i> ; wet
AST7	9/17/2015	Adjacent to an AST east of the Former School Shop Building	0.4	1.7	Brown, <i>Organics with silt and gravel</i> ; moist
DR1	9/18/2015	Near a 55-gallon drum in the northwest corner of the property	0.4	0.8	Dark brown, <i>Peat</i> ; moist
DR2	9/18/2015	Near a 55-gallon drum in the northwest corner of the property	0.7	1.0	Dark brown, <i>Peat</i> ; moist
PR1	9/18/2015	Beneath a flex coupler near the northwest corner of the property	0.6	0.8	Brown, <i>Organics with silt</i> ; moist
PR2	9/18/2015	East of the Old School Building near the middle of the property	1.0	0.9	Brown, <i>Organics with silt</i> ; moist
* PR3	9/18/2015	East of the Generator Building near the eastern edge of the property	0.8	1.2	Gray; <i>Sand</i> ; moist
Quality Control					
* TB1	9/17/2015	Trip Blank	-	-	Ottawa sand with methanol added in the laboratory
* TB2	9/18/2015	Trip Blank	-	-	Ottawa sand with methanol added in the laboratory

Notes:

- * = Sample analyzed by the project laboratory (See Table 2 and Appendix C)
- ** = Feet below ground surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- = Measurement not recorded or not applicable
- ppm = Parts per million
- ^^ = Sample numbers preceded by "17747-" on the chain-of-custody
- RSE = Restoration Science and Engineering

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/kg)**	Sample ID Number^ and Collection Depth in Feet bgs (See Table 1 and Figures 3 and 4)						
			Impacted Soil Delineation						
			PPS1/PPS11-B 1.0	PPS1/PPS11-3-A 0.5	PPS10-D 2.0	PPS10-1-B 1.0	PPS10-2-D 2.0	PPS10-3-D 2.0	PPS10-3-DX~ 2.0
PID Headspace Reading - ppm	580B OVM	-	2.1	4.6	170	24	160	260	260
Gasoline Range Organics (GRO) - mg/kg	AK 101	300	<4.94 B	<3.85 B	64.3 J+	<5.93 B	<4.53 B	20.5 J+	10.2 J+B
Diesel Range Organics (DRO) - mg/kg	AK 102	250	50.6	11.4 J	9,430	1,800	2,500	888	1,180
DRO Silica Gel (non-polar) - mg/kg	AK 102	250	-	-	-	-	-	795	1,100
Residual Range Organics (RRO) - mg/kg	AK 103	10,000	316	123	61.1	1,560	110	63.7	35.9 J
RRO Silica Gel (non-polar) - mg/kg	AK 103	10,000	-	-	-	-	-	30.3 J	35.4 J
Aromatic Volatile Organics (BTEX)									
Benzene - mg/kg	EPA 8021B	0.025	<0.0124	<0.00965	<0.00800	<0.0149	<0.00850	<0.00665	<0.00585
Toluene - mg/kg	EPA 8021B	6.5	<0.0247	<0.0385 B	0.255	<0.0296	<0.0171	<0.0133	<0.0118
Ethylbenzene - mg/kg	EPA 8021B	6.9	0.0237 J	<0.0193	0.117	<0.0296	<0.0171	0.0536	0.0277
Xylenes - mg/kg	EPA 8021B	63	0.0326 J	0.0258 J	5.55	0.122 J	0.0900	0.643	0.314

Notes:

- * = See Appendix C for compounds tested, methods, and laboratory reporting limits.
- ** = Soil cleanup level is the most stringent Method 2 standard listed in Table B1 or B2, 18 AAC 75, for the "under 40-inch (precipitation) zone" (June 2015)
- ^ = Sample ID No. preceded by "17747-" on the chain-of-custody form
- ppm = Parts per million
- mg/kg = Milligrams per kilogram
- bgs = Below ground surface
- = Not tested or not applicable
- <4.94 = Analyte not detected; laboratory reporting limit is 4.94 mg/kg
- 50.6** = Analyte detected at a concentration less than the applicable ADEC cleanup level
- 9,430** = Analyte detected at a concentration above the applicable ADEC cleanup level
- B = Reported concentration potentially affected by method blank detection. See ADEC Laboratory Data Review Checklist (LDRC) in Appendix C for details.
- J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report in Appendix C for more details.
- J+ = Analytical result is potentially biased high. See ADEC LDRC in Appendix C for details.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/kg)**	Sample ID Number^ and Collection Depth in Feet bgs (See Table 1 and Figures 4 and 5)					
			Impacted Soil Delineation					
			PPS10-4-B 1.0	PPS12-C 1.5	PPS12-2-A 0.5	PPS12-3-C 1.0	PPS12-3-CX~ 1.0	PPS13-C 1.5
PID Headspace Reading - ppm	580B OVM	-	5.3	1.9	4.9	270	270	2.7
Gasoline Range Organics (GRO) - mg/kg	AK 101	300	<3.38 B	<4.46 B	<3.79 B	<2.27	<4.20 B	<2.36
Diesel Range Organics (DRO) - mg/kg	AK 102	250	<11.9	27.1	19.0 J	317 J-	510	27.3 J
DRO Silica Gel (non-polar) - mg/kg	AK 102	250	-	-	-	155 J-	301	18.7 J
Residual Range Organics (RRO) - mg/kg	AK 103	10,000	64.5	230	155	488 J-	631	232
RRO Silica Gel (non-polar) - mg/kg	AK 103	10,000	-	-	-	86.5 J-	167	81.7
Aromatic Volatile Organics (BTEX)								
Benzene - mg/kg	EPA 8021B	0.025	<0.00845	<0.0112	<0.00950	<0.0114	<0.0105	<0.0118
Toluene - mg/kg	EPA 8021B	6.5	<0.0169	<0.0223	<0.0189	<0.0226	<0.0210	<0.0236
Ethylbenzene - mg/kg	EPA 8021B	6.9	<0.0169	<0.0223	<0.0189	<0.0226	<0.0210	<0.0236
Xylenes - mg/kg	EPA 8021B	63	<0.0507	<0.0669	<0.0569	<0.0679	<0.0630	<0.0706

Notes:

- * = See Appendix C for compounds tested, methods, and laboratory reporting limits.
- ** = Soil cleanup level is the most stringent Method 2 standard listed in Table B1 or B2, 18 AAC 75, for the "under 40-inch (precipitation) zone" (June 2015)
- ^ = Sample ID No. preceded by "17747-" on the chain-of-custody form
- ppm = Parts per million
- mg/kg = Milligrams per kilogram
- bgs = Below ground surface
- ~ = Duplicate of preceding sample
- = Not tested or not applicable
- <0.00585 = Analyte not detected; laboratory reporting limit is 0.00585 mg/kg
- 10.2** = Analyte detected at a concentration less than the applicable ADEC cleanup level
- 317** = Analyte detected at a concentration above the applicable ADEC cleanup level
- B = Reported concentration potentially affected by method blank detection. See ADEC Laboratory Data Review Checklist (LDRC) in Appendix C for details.
- J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report in Appendix C for more details.
- J- = Analytical result is potentially biased low due to hold time exceedance. See ADEC LDRC in Appendix C for details.
- J+ = Analytical result is potentially biased high. See ADEC LDRC in Appendix C for details.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/kg)**	Sample ID Number^ and Collection Depth in Feet bgs (See Table 1 and Figures 6 and 7)					
			Impacted Soil Delineation			Debris Inventory and Property-Wide Assessment		
			PPS13-1-A 0.5	PPS13-2-B 1.0	TF1 0.8	TF2 0.9	AST4 0.6	AST4X~ 0.6
PID Headspace Reading - ppm	580B OVM	-	3.8	8.1	3.8	2.2	110	110
Gasoline Range Organics (GRO) - mg/kg	AK 101	300	<6.15 B	<3.12 B	<6.51 B	<4.57 B	30.6	20.8
Diesel Range Organics (DRO) - mg/kg	AK 102	250	18.7 J	<12.8	19.5 J	849	6,300	6,740
DRO Silica Gel (non-polar) - mg/kg	AK 102	250	-	-	-	-	-	-
Residual Range Organics (RRO) - mg/kg	AK 103	10,000	189	67.8	141	164	3,560 J+	3,630 J+
RRO Silica Gel (non-polar) - mg/kg	AK 103	10,000	-	-	-	-	-	-
Aromatic Volatile Organics (BTEX)								
Benzene - mg/kg	EPA 8021B	0.025	<0.0154	<0.00780	<0.0163	<0.0114	<0.0201	<0.0211
Toluene - mg/kg	EPA 8021B	6.5	<0.0308	<0.0156	<0.0325	<0.0229	<0.0806 B	<0.0423
Ethylbenzene - mg/kg	EPA 8021B	6.9	<0.0308	<0.0156	<0.0325	<0.0229	0.0492 J	<0.0423
Xylenes - mg/kg	EPA 8021B	63	<0.0923	<0.0467	<0.0975	<0.0687	1.21	0.378 B

Notes:

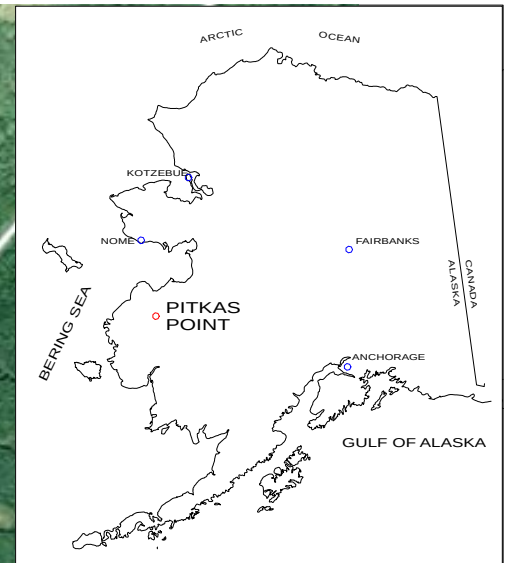
- * = See Appendix C for compounds tested, methods, and laboratory reporting limits.
- ** = Soil cleanup level is the most stringent Method 2 standard listed in Table B1 or B2, 18 AAC 75, for the "under 40-inch (precipitation) zone" (June 2015)
- ^ = Sample ID No. preceded by "17747-" on the chain-of-custody form
- ppm = Parts per million
- mg/kg = Milligrams per kilogram
- bgs = Below ground surface
- ~ = Duplicate of preceding sample
- = Not tested or not applicable
- <2.36 = Analyte not detected; laboratory reporting limit is 2.36 mg/kg
- 27.3** = Analyte detected at a concentration less than the applicable ADEC cleanup level
- B = Reported concentration potentially affected by method blank detection. See ADEC Laboratory Data Review Checklist (LDRC) in Appendix C for details.
- 849** = Analyte detected at a concentration above the applicable ADEC cleanup level
- J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report in Appendix C for more details.
- J+ = Analytical result is potentially biased high. See ADEC LDRC in Appendix C for details.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

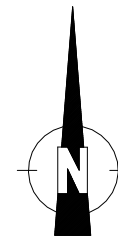
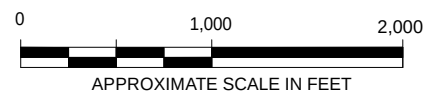
Parameter Tested	Method*	Cleanup Level (mg/kg)**	Sample ID Number^ and Collection Depth in Feet bgs (See Table 1 and Figure 7)					
			Debris Inventory and Property-Wide Assessment				Trip Blanks	
			AST8 1.0	AST9 0.7	AST10 0.7	PR3 0.8	TB1 -	TB2 -
PID Headspace Reading - ppm	580B OVM	-	17	95	6.2	1.2	-	-
Gasoline Range Organics (GRO) - mg/kg	AK 101	300	<6.30 B	<4.45 B	<6.98 B	<1.59	<1.25	<1.25
Diesel Range Organics (DRO) - mg/kg	AK 102	250	126	5,330	288	<12.2	-	-
Residual Range Organics (RRO) - mg/kg	AK 103	10,000	507	248	1,180	57.2	-	-
Aromatic Volatile Organics (BTEX)								
Benzene - mg/kg	EPA 8021B	0.025	<0.0158	<0.0112	<0.0174	<0.00795	<0.00630	<0.00625
Toluene - mg/kg	EPA 8021B	6.5	<0.0315	<0.0223	<0.0349	<0.0159	<0.0251 B	<0.0126
Ethylbenzene - mg/kg	EPA 8021B	6.9	<0.0315	<0.0223	<0.0349	<0.0159	<0.0126	<0.0126
Xylenes - mg/kg	EPA 8021B	63	<0.0945	<0.0668	<0.105	<0.0476	<0.0629 B	<0.0377

Notes:

- * = See Appendix C for compounds tested, methods, and laboratory reporting limits.
- ** = Soil cleanup level is the most stringent Method 2 standard listed in Table B1 or B2, 18 AAC 75, for the "under 40-inch (precipitation) zone" (June 2015)
- ^ = Sample ID No. preceded by "17747-" on the chain-of-custody form
- ppm = Parts per million
- mg/kg = Milligrams per kilogram
- bgs = Below ground surface
- = Not tested or not applicable
- <0.0211 = Analyte not detected; laboratory reporting limit is 0.0211 mg/kg
- 20.8** = Analyte detected at a concentration less than the applicable ADEC cleanup level
- 5,330** = Analyte detected at a concentration above the applicable ADEC cleanup level
- B = Reported concentration potentially affected by blank detection. See ADEC Laboratory Data Review Checklist (LDRC) in Appendix C for details.
- J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report in Appendix C for more details.
- J+ = Analytical result is potentially biased high. See ADEC LDRC in Appendix C for details.



Map adapted from aerial imagery provided by Google Earth Pro, reproduced by permission granted by Google Earth Mapping Service.



Pitkas Point School Site
Pitkas Point, Alaska

VICINITY MAP

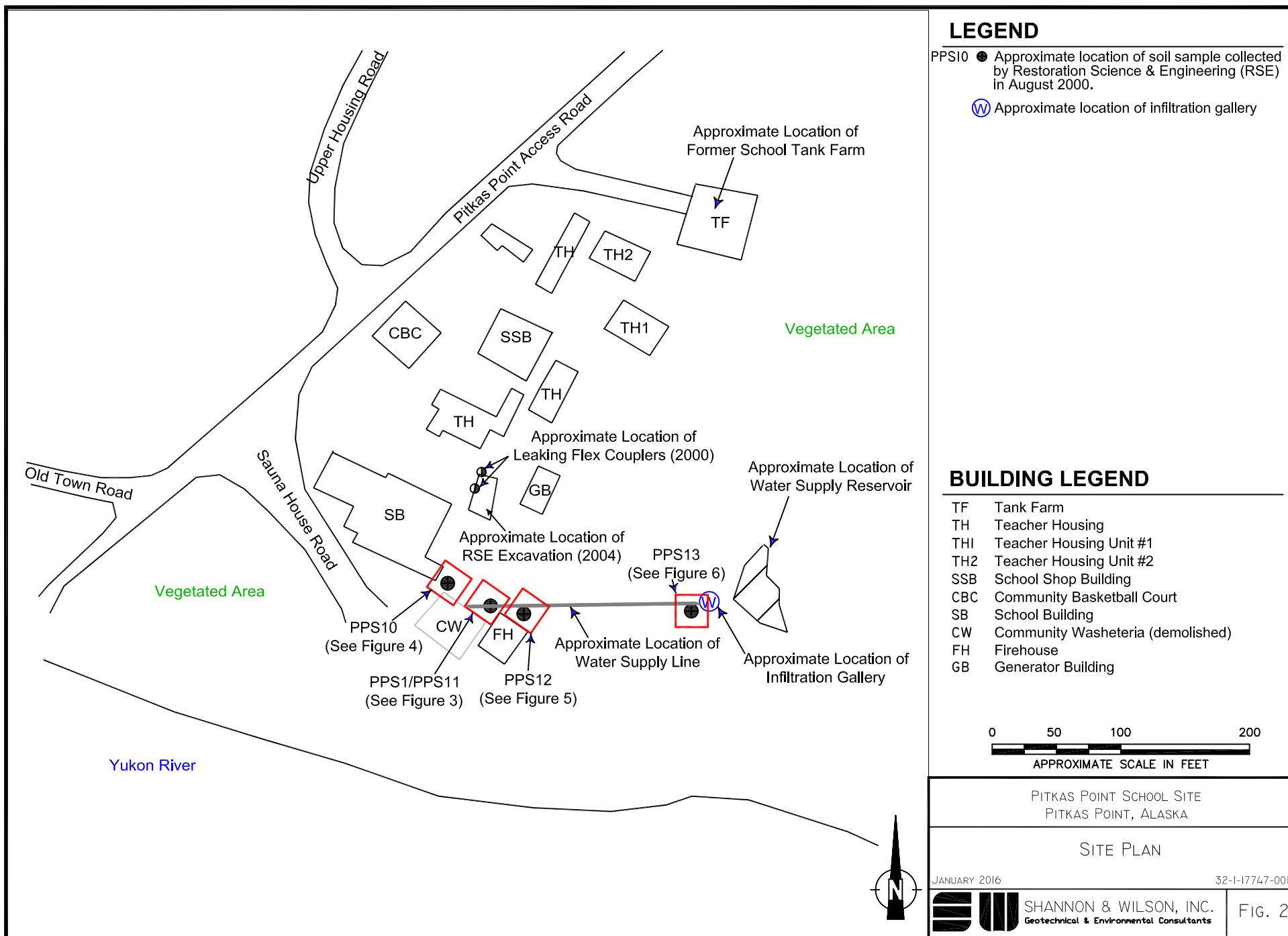
January 2016

32-1-17747-001



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Fig. 1



Sample ID	Depth (ft), bgs	GRO, mg/kg	DRO, mg/kg	RRO, mg/kg	Benzene, mg/kg	Toluene, mg/kg	Ethylbenzene, mg/kg	Total Xylenes, mg/kg
PPS1/PPS11-B	1.0	ND	50.6	316	ND	ND	0.0237 J	0.0326 J
PPS/PPS11-3-A	0.5	ND	11.4 J	123	ND	ND	ND	0.0258 J

LEGEND

⊕ Approximate location of test pit installed by Shannon & Wilson on September 15th-19th, 2015

Red = Sample with DRO concentration greater than the most stringent ADEC Method Two cleanup levels

Green = Sample with DRO concentration less than the most stringent ADEC Method Two cleanup levels

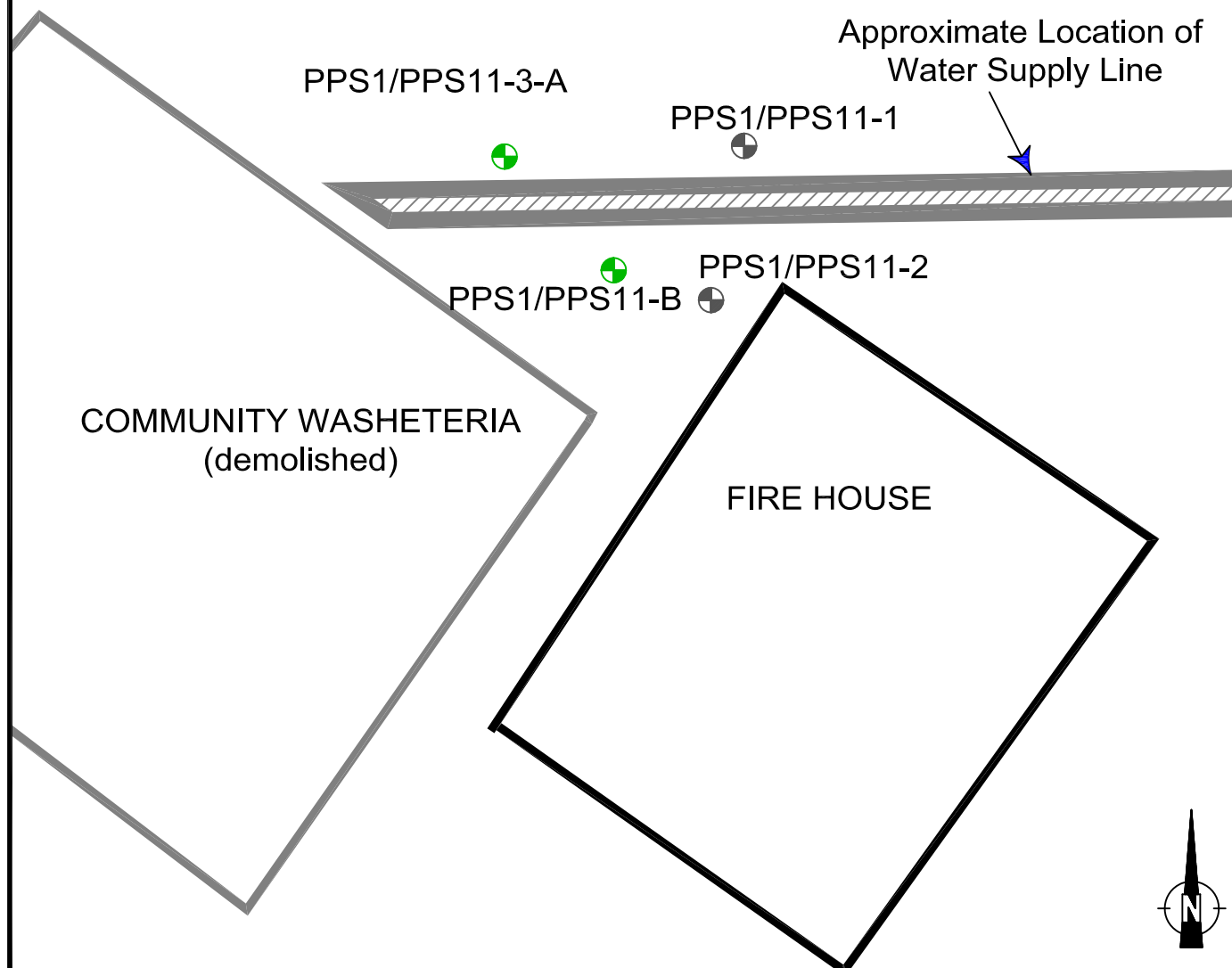
Black = No analytical sample collected at this location

bgs = below ground surface

mg/kg = milligrams per kilogram

ND = analyte not detected (see Table 2 for laboratory reporting limits)

J = Estimated concentration



0 5 10 20
APPROXIMATE SCALE IN FEET

PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA

AREA PPSI/PPSII SOIL
SAMPLE LOCATIONS

JANUARY 2016

32-I-17747-001



SHANNON & WILSON, INC.
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FIG. 3

Sample ID	Depth (ft), bgs	GRO, mg/kg	DRO, mg/kg	DRO Silica Gel, mg/kg	RRO, mg/kg	RRO Silica Gel, mg/kg	Benzene, mg/kg	Toluene, mg/kg	Ethylbenzene, mg/kg	Total Xylenes, mg/kg
PPS10-D	2.0	64.3 J	9,430	-	61.1	-	ND	0.255	0.117	5.55
PPS10-1-B	1.0	ND	1,800	-	1,560	-	ND	ND	ND	0.122 J
PPS10-2-D	2.0	ND	2,500	-	110	-	ND	ND	ND	0.0900
PPS10-3-D/P PPS10-3-DX (Highest of duplicate pair presented)	2.0	20.5 J	1,180	1,110	63.7	35.4 J	ND	ND	0.0536	0.643
PPS10-4-B	1.0	ND	ND	-	64.5	-	ND	ND	ND	ND

LEGEND

- ⊕ Approximate location of test pit installed by Shannon & Wilson on September 15th-19th, 2015
- Red** = Sample with DRO concentration greater than the most stringent ADEC Method Two cleanup levels
- Green** = Sample with DRO concentration less than the most stringent ADEC Method Two cleanup levels
- Black** = No analytical sample collected at this location
- bgs = below ground surface
- mg/kg = milligrams per kilogram
- ND = analyte not detected (See Table 2 for laboratory reporting limits)
- J = estimated concentration
- 9,430** = analyte detected at a concentration greater than the applicable ADEC cleanup level
- = Not tested for or not applicable

SCHOOL BUILDING

⊕ PPS10-1-B

PPS10-4-B ⊕

⊕ PPS10-D

PPS10-3-D
PPS10-3-DX ⊕

⊕ PPS10-2-D

Approximate Location of
Water Supply Line

COMMUNITY WASHETERIA
(demolished)

0 5 10 20
APPROXIMATE SCALE IN FEET



PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA

AREA PPS10 SOIL
SAMPLE LOCATIONS

JANUARY 2016

32-I-17747-001



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FIG. 4

Sample ID	Depth (ft), bgs	GRO, mg/kg	DRO, mg/kg	DRO Silica Gel, mg/kg	RRO, mg/kg	RRO Silica Gel, mg/kg	Benzene, mg/kg	Toluene, mg/kg	Ethylbenzene, mg/kg	Total Xylenes, mg/kg
PPS12-C	1.5	ND	27.1	-	230	-	ND	ND	ND	ND
PPS12-2-A	0.5	ND	19.0 J	-	155	-	ND	ND	ND	ND
PPS12-3-C/ PPS12-3-CX (Highest of duplicate pair presented)	1.0	ND	510	301	631	167	ND	ND	ND	ND

LEGEND

⊕ Approximate location of test pit installed by Shannon & Wilson on September 15th-19th, 2015

Red = Sample with DRO concentration greater than the most stringent ADEC Method Two cleanup levels

Green = Sample with DRO concentration less than the most stringent ADEC Method Two cleanup levels

Black = No analytical sample collected at this location

bgs = below ground surface

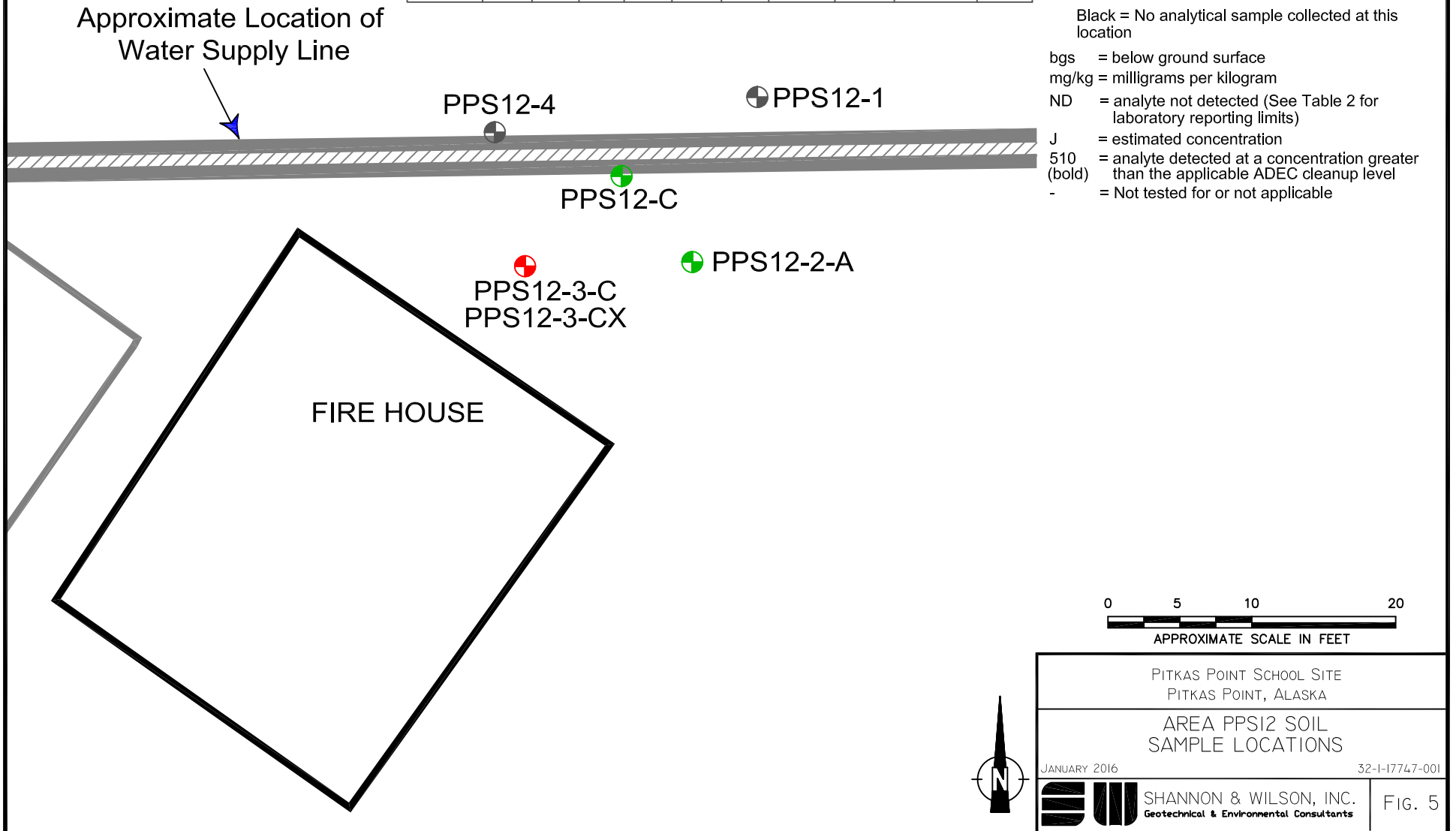
mg/kg = milligrams per kilogram

ND = analyte not detected (See Table 2 for laboratory reporting limits)

J = estimated concentration

510 (bold) = analyte detected at a concentration greater than the applicable ADEC cleanup level

- = Not tested for or not applicable



Sample ID	Depth (ft), bgs	GRO, mg/kg	DRO, mg/kg	DRO Silica Gel, mg/kg	RRO, mg/kg	RRO Silica Gel, mg/kg	Benzene, mg/kg	Toluene, mg/kg	Ethylbenzene, mg/kg	Total Xylenes, mg/kg
PPS13-C	1.5	ND	27.3 J	18.7 J	232	81.7	ND	ND	ND	ND
PPS13-1-A	0.5	ND	18.7 J	-	189	-	ND	ND	ND	ND
PPS13-2-B	1.0	ND	ND	-	67.8	-	ND	ND	ND	ND

LEGEND

⊕ Approximate location of test pit installed by Shannon & Wilson on September 15th-19th, 2015

Red = Sample with DRO concentration greater than the most stringent ADEC Method Two cleanup levels

Green = Sample with DRO concentration less than the most stringent ADEC Method Two cleanup levels

Black = No analytical sample collected at this location

Ⓜ Approximate location of infiltration gallery

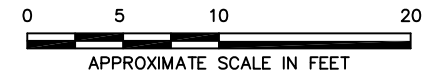
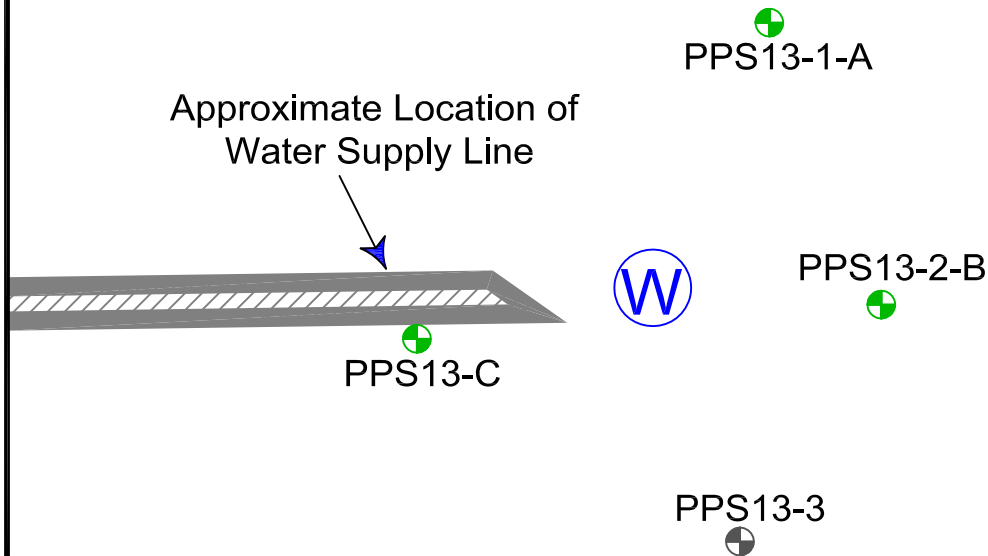
bgs = below ground surface

mg/kg = milligrams per kilogram

ND = analyte not detected (See Table 2 for laboratory reporting limits)

J = estimated concentration

- = Not tested for or not applicable



PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA

AREA PPS13 SOIL
SAMPLE LOCATIONS

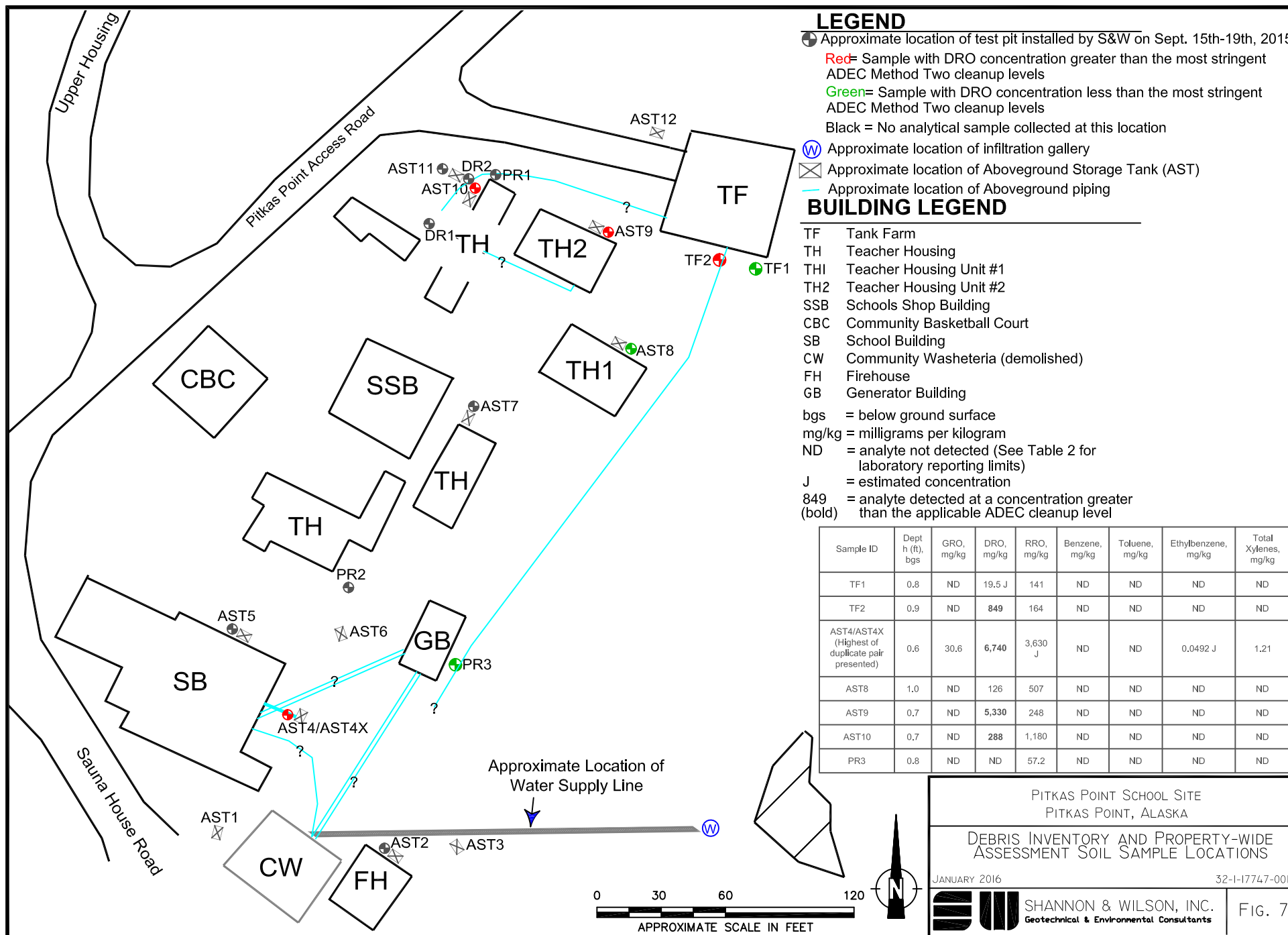
JANUARY 2016

32-I-17747-001



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FIG. 6



APPENDIX A
FIELD NOTES

FIELD ACTIVITIES DAILY LOG

Date 9/15/15
 Sheet 1 of 1
 Project No. 32-1-7247-001

Project Name: Pitkas Point

Field activity subject: -

Description of daily activities and events: -

0930 Arrive @ Anchorage Intl. Airport. check in w/ RAIN Alaska for flight to St. Marys

11300 Arrive in St. Marys; collect field gear from RAIN cargo; plus vehicle from Matty's car rental (parked at RAIN); check in @ Androfski River Lodge; stop by Pitkas School site for quick observation.

1530 Site Recon @ Pitkas school site - Attempted to contact Robert Reed, LYSD, no answer - left voicemail.

SITE OBSERVATIONS -

1) Community washateria building demolished / footing footprint still intact - good for measurement points

2) General plotter of soil sample locations from PPS1, PPS10, PPS12, PPS13

3) photos of tank farm documented - if tanks were removed?

Several tanks still in form - liner placed below tanks; some damage but still holding water in Northeast corner. No stockpile of supersacks found in near tank farm.

4) Attempted to locate supersacks - none found on near school complex or onsite

16:20 Contacted: Robert Reed, LYSD, Him and Elia will plan to be onsite. 9/16/15 @ 2 pm.

16:50 Advanced Hand dug test pit @ approximate location of PPS-10; Initially started. Hole w/ shovel - and completed hole to 2' bgs w/ hand auger - hand auger works pretty good in silt organics / silty material. collect field screening samples

PPS10 - 0.5' = 1.0 ppm; PPS10 - 1.0' = 1.5 ppm; PPS10 - 1.5' = 2.3 ppm;

PPS10 - 2.0' = 167 ppm (hydrocarbon odor) - (analytical sample collected today - will collect 9/16/15)

= Advanced "trial" test pit in other areas to determine if hand auger is best method - appears to be -

Soil profile - generally top 2" - topsoil; grasses; 2"-4" gravel with sand layer; 4"-12" organics / peaty material; 1.2' - 2.0' brown grey silt - some organics

Visitors on site: None

Changes from plans/specifications and other special orders and important decisions:

None; No stockpiles of supersacks located @ the site. the tank farm has tanks and liner/secondary containment.

Weather conditions:

Important telephone calls:

Partially Cloudy, 50°F None

Personnel on site:

TIMON COSBY

Signature:

Date: 9/15/15

FIELD ACTIVITIES DAILY LOG

Date 9/16/15
 Sheet 1 of 1
 Project No. 32-1-17747

Project Name: Pithas Point

Field activity subject: —

Description of daily activities and events: —

0815 ARRIVE @ SCHOOL SITE - CALIBRATE PID.

collected Screening Sample in PPS10 and PPS1/PPS11 area per workplan. General observations and Screening results suggest that PPS10 may have more potentially impacted soils.

11:55 LEFT school site to p/w Chris (EHS) and Sean (Coffman)

13:52 Arrive onsite w/ EHS and Coffman

14:15 ELIA (LYSD) arrived onsite - opened Tractor Housing 1, and School Complex.

Teacher Housing Unit 2 (locked) - He will open later today.

*SUPERSACKS - ELIA stated that the supersacks sacks and probably hauled to the airport and for shipped somewhere or hauled to area (unknown) and spread land spread. NOT onsite. *

17:00 Completed Test pits and screening sample areas - I will select sample locations this evening to collect analytical samples 9/17/15.

18:15 left site to get dinner @ Mc Elroy

19:15 Onsite to collect GPS points of test pit; and perform site walkthrough

V. ; observed documented AST on-site

20:45 Arrived @ lodging -

Review field notes - select analytical locations.

* 1930 - Health and Safety Note - walking around site to observe AST - stepped on walking path and a nail punctured my left boot (lacrosse) and punctured my left foot - near pinky toe - bled for about 30 seconds; stopped; cleaned wound; and bandaged wound - cleaned wound @ lodge and placed antiseptic bandage on for evening. I have had my tetanus shot w/ 7 years - observed nail after stepping on it - it did not appear to be rusty.

Visitors on site: Chris Ottosen (EHS); Sean Lamb (Coffman); Elia (LYSD)

Changes from plans/specifications and other special orders and important decisions:

Elia stated that supersacks may have been transported offsite:

Weather conditions: Clear - Rain - Hail...; 50°-60°F

Important telephone calls: n/a

Personnel on site: TREN

Signature: _____

Date: 9/16/15

SAMPLE COLLECTION LOG

SHANNON & WILSON, INC

Project Number: 32-1-17747-001

Date: 9/16/2015

Sampler: TWC

Location: Aitkas Point

Site: —

Sheet Number: 1 of 2

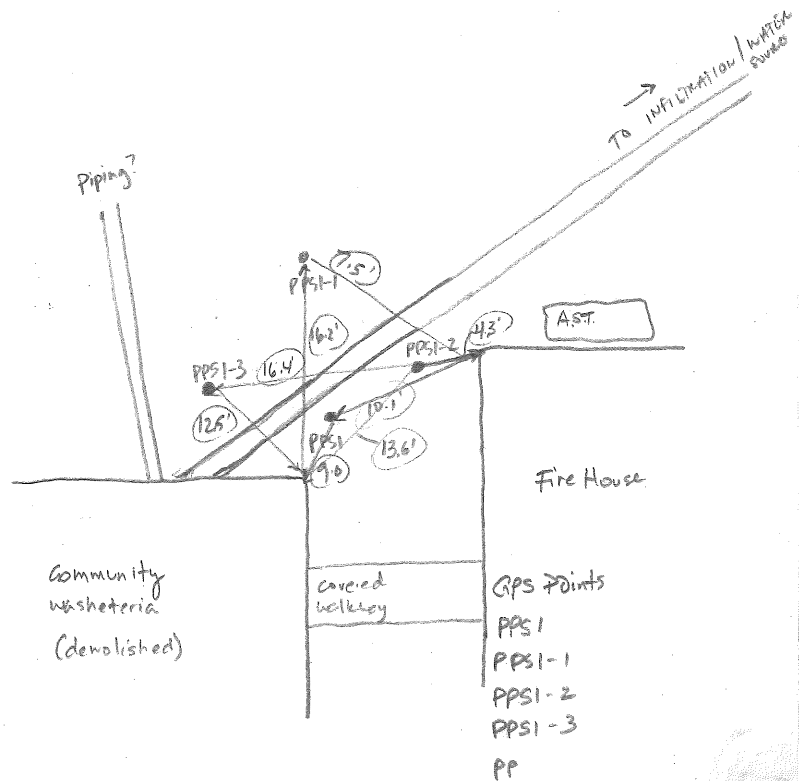
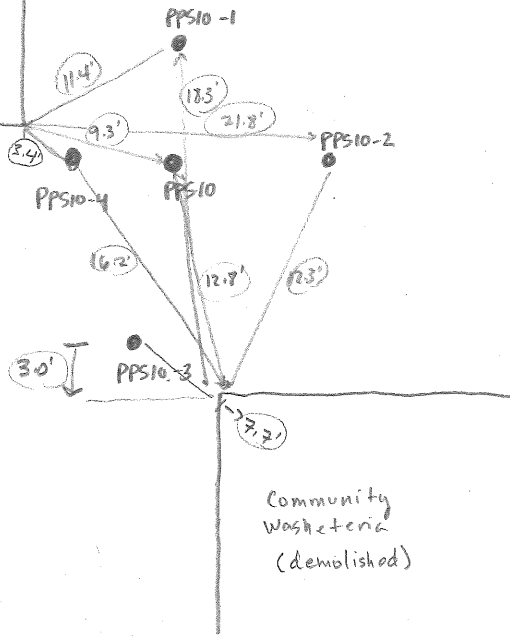
Sample Number	Location	Sample Time	Sample Depth (ft)	Sample Type	GPS ^{Natpoint} Reading*	PID Reading	Soil Classification	Analyses
PPS10-A	PPS10 = PSE LOCATION	16:50	0.5	FM	- 18	1.0	Field screened on 9/16/15 - see field notes	
PPS10-B	↓	16:52	1.0	↓	-	1.5		
PPS10-C	↓	16:54	1.5	↓	-	2.3		
PPS10-D	↓	16:56	2.0	↓	-	16.7		
PPS10-1-A	PPS10-1 = LOCATION (North)	08:59	0.5	FM	- 19	3.1	⊕ dark brown, Peat w/ silt; moist, organic odor	* DRO, RRO, GRO, BTEX
PPS10-1-B	↓ of PPS10	08:59	1.0	↓	-	24	⊕ dark brown, Peat w/ silt; moist, organic odor	* DRO, RRO, GRO, BTEX
PPS10-1-C	↓	09:03	1.5	↓	-	10	⊕ dark brown, Peat w/ silt and Sand; moist	
PPS10-1-D	↓	09:05	2.0	↓	-	12	⊕ dark brown to grey; Silt w/ organics; moist	
PPS10-2-A	PPS10-2 = LOCATION (East)	09:10	0.5	FM	- 20	2.4	⊕ dark brown; Peat w/ silt, moist	
PPS10-2-B	↓ of PPS10	09:12	1.0	↓	-	1.9	⊕ " "	
PPS10-2-C	↓	09:14	1.5	↓	-	8.1	⊕ "Same as above"	
PPS10-2-D	↓	09:16	2.0	↓	-	156	⊕ brown, Silt w/ organics; moist; hydrocarbon odor	* DRO, RRO, GRO, BTEX
PPS10-3-A	PPS10-3 = LOCATION (South)	09:23	0.5	FM	- 21	12	⊕ brown to light brown; Silt w/ organics	
PPS10-3-B	↓ of PPS10	09:24	1.0	↓	-	5.0	⊕ "Same as above"	
PPS10-3-C	↓	09:25	1.5	↓	-	202	⊕ brown to light brown, Silt w/ organics; hydrocarbon odor	
PPS10-3-D	↓	09:26	2.0	↓	-	255	⊕ "Same as above"; hydrocarbon odor	* DRO, RRO, GRO, BTEX (X)
PPS10-4-A	PPS10-4 = LOCATION (West)	09:35	0.5	FM	- 22	3.9	⊕ light brown, Silt w/ organics; moist	
PPS10-4-B	↓ of PPS10	09:36	1.0	↓	-	5.3	⊕ light brown; Silt w/ organics; moist	* DRO, RRO, GRO, BTEX
PPS10-4-C	↓	09:37	1.5	↓	-	2.8	⊕ "Same as above"	
PPS10-4-D	↓	09:38	2.0	↓	-	4.2	⊕ light brown, Silt; moist	
PPS11-A	PPS11/PPS12 = PSE LOCATION	10:19	0.5	FM	- 23	2.0	⊕ light to dark brown, Silt w/ organics; moist	
PPS11-B	↓	10:20	1.0	↓	-	2.1	⊕ dark brown; Peat w/ trace silt; moist	* DRO, RRO, GRO, BTEX
PPS11-C	↓	10:22	1.5	↓	-	2.0	⊕ "Same as above"	
PPS11-D	↓	10:24	2.0	↓	-	1.6	⊕ brown, Silt w/ organics; moist	
PPS11-1-A	PPS11-1 = Location (North)	10:30	0.5	FM	- 24	1.6	⊕ "Same as above"	
PPS11-1-B	↓ of PPS11/PPS12	10:32	1.0	↓	-	1.2	⊕ "Same as above"	
PPS11-1-C	↓	10:34	1.5	↓	-	1.3	⊕ "Same as above"	
PPS11-1-D	↓	10:36	2.0	↓	-	1.5	⊕ "Same as above"	
PPS11-2-A	PPS11-2 = Location (East)	10:47	0.5	FM	- 25	1.5	⊕ dark brown, Peat with silt, moist	
PPS11-2-B	↓ of PPS11/PPS12	10:48	1.0	↓	-	2.2	⊕ brown; Silt w/ organics; moist	
PPS11-2-C	↓	10:53	1.5	↓	-	2.5	⊕ "Same as above"	
PPS11-2-D	↓	10:55	2.0	↓	-	2.8	⊕ "Same as above"	
PPS11-3-A	PPS11-3 Location (West)	11:19	0.5	FM	- 26	4.6	⊕ "Same as above"	* DRO, RRO, GRO, BTEX
PPS11-3-B	↓ of PPS11/PPS12	11:23	1.0	↓	-	2.2	⊕ "Same as above"	

Sample Type

ES Environmental sample
 FD Field duplicate
 FM Field Screening
 TB Trip blank
 * GPS readings only collected from analytical sample locations

Notes:

⊕ Warmed in vehicle
 (X) Field duplicate also collected



SAMPLE COLLECTION LOG

SHANNON & WILSON, INC

Project Number: 32-1-17747-001							Location: Pileas Point	
Date: 9/16/15							Site: —	
Sampler: TWC							Sheet Number: 2 of 2	
Sample Number	Location	Sample Time	Sample Depth	Sample Type	GPS Waypoint Reading*	PID Reading	Soil Classification	Analyses
PPS1-3-C	PPS1-3 Location (West) of PPS1/PPS11	11:26	1.5	Fm	-	2.9 (+)	brown, silt w/ organics, moist	
PPS1-3-D		11:30	2.0	↓	-	2.5 (+)	"Same as above"	
PPS12-A	PPS12-2 Location (L)	14:16	0.5	Fm	- 27	1.8 (+)	brown; silt w/ sand and organics; moist	
PPS12-B		14:22	1.0	↓	- 27	1.8 (+)	dark brown, Peat; moist	
PPS12-C		14:26	1.5	↓	-	1.9 (+)	"Same as above"	
PPS12-D		14:30	2.0	↓	-	1.9 (+)	brown; silt w/ organics; 3/4 rounded gravel; moist	* DRO, RLO, GLO, BTEX
PPS12-1-A	PPS12-1 Location (North) of PPS12	14:35	0.5	Fm	- 28	1.9 (+)	brown; silt w/ organics; 1/2-3/4" rounded gravel; moist	
PPS12-1-B		14:37	1.0	↓	- 28	2.6 (+)	"Same as above"	
PPS12-1-C		14:40	1.5	↓	-	3.2 (+)	brown; Peat w/ silt; moist	
PPS12-1-D		14:48	2.0	↓	-	2.6 (+)	"Same as above"	
PPS12-2-A	PPS12-2 Location (East) of PPS12	15:00	0.5	Fm	- 29	4.9 (+)	brown; silt w/ organics; 1/2 rounded gravel; moist	* DRO, RLO, GLO, BTEX
PPS12-2-B		15:02	1.0	↓	- 29	3.9 (+)	"Same as above"	
PPS12-2-C		15:06	1.5	↓	-	2.8 (+)	brown; silt with sand; moist	
PPS12-2-D		15:10	2.0	↓	-	2.2 (+)	"Same as above"	
PPS12-3-A	PPS12-3 Location (South) of PPS12	15:20	0.5	Fm	- 29	2.3 (+)	dark brown, Peat w/ silt; moist	
PPS12-3-B		15:23	1.0	↓	- 30	5.7 (+)	dark brown, Peat w/ silt; some sand; moist; hydrocarbon odor	
PPS12-3-C		15:25	1.5	↓	-	2.7 (+)	"Same as above"; hydrocarbon odor	* DRO, RLO, GLO, BTEX (X)
PPS12-3-D		15:28	2.0	↓	-	5.4 (+)	dark brown, Peat; moist; hydrocarbon odor	
PPS12-4-A	PPS12-4 Location (West) of PPS12	15:34	0.5	Fm	- 31	3.5 (+)	brown; Peat with silt; moist	* DRO, RLO, GLO, BTEX
PPS12-4-B		15:36	1.0	↓	-	1.3 (+)	"Same as above"	
PPS12-4-C		15:38	1.5	↓	-	1.8 (+)	brown; silt w/ organics; moist	
PPS12-4-D		15:40	2.0	↓	-	2.4 (+)	"Same as above"	
PPS13-A	PPS13 Location	16:58	0.5	Fm	- 32	2.0 (+)	dark brown, Peat, moist	
PPS13-B		17:01	1.0	↓	-	1.0 (+)	brown, Peat w/ silt; moist	
PPS13-C		17:03	1.5	↓	-	2.7 (+)	brown, silt w/ Peat; moist	* DRO, RLO, GLO, BTEX
PPS13-D		17:06	2.0	↓	-	1.5 (+)	"Same as above"	
PPS13-1-A	PPS13-1 Location (North) of PPS13	17:12	0.5	Fm	- 33	3.8 (+)	brown; silt w/ gravel / organics; 3/4-1" gravel; moist	* DRO, RLO, GLO, BTEX
PPS13-1-B		17:16	1.0	↓	-	2.0 (+)	brown; silt, with organics / gravel 3/4-1"; moist	
PPS13-1-C		17:20	1.5	↓	-	2.4 (+)	"Same as above"	
PPS13-2-A	PPS13-2 Location (East) of PPS13	17:30	0.5	Fm	- 34	4.2 (+)	"Same as above"	
PPS13-2-B		17:35	1.0	↓	-	8.1 (+)	brown; silt w/ organics / gravel; hydrocarbon odor	* DRO, RLO, GLO, BTEX
PPS13-3-A		17:37	0.5	Fm	-	1.6 (+)	"Same as above"	
PPS13-3-B		17:40	1.0	↓	- 35	1.9 (+)		
PPS13-3-C		17:43	1.5	↓	-	1.3 (+)		

* PPS13-1 THROUGH PPS13-3 VERY DIFFICULT DIGGING / HARD ACHIEVING - LARGE GRAVELS - REBAR SOIL

Sample Type

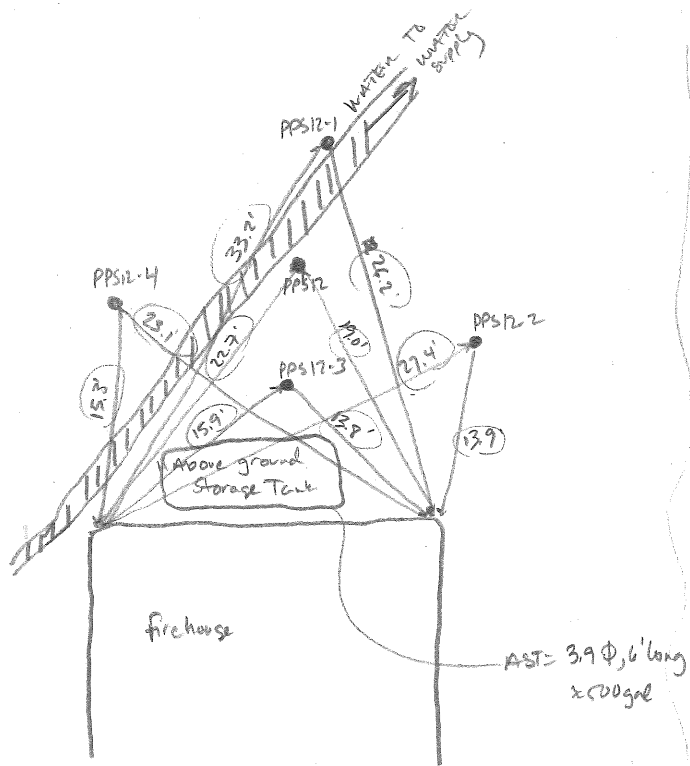
ES Environmental sample
FD Field duplicate
FM Field Screening
TB Trip blank
* GPS readings only collected from analytical sample locations

Other GPS points TH1, TH2, CW, W61 (wastewater), IP (infiltration gallery)

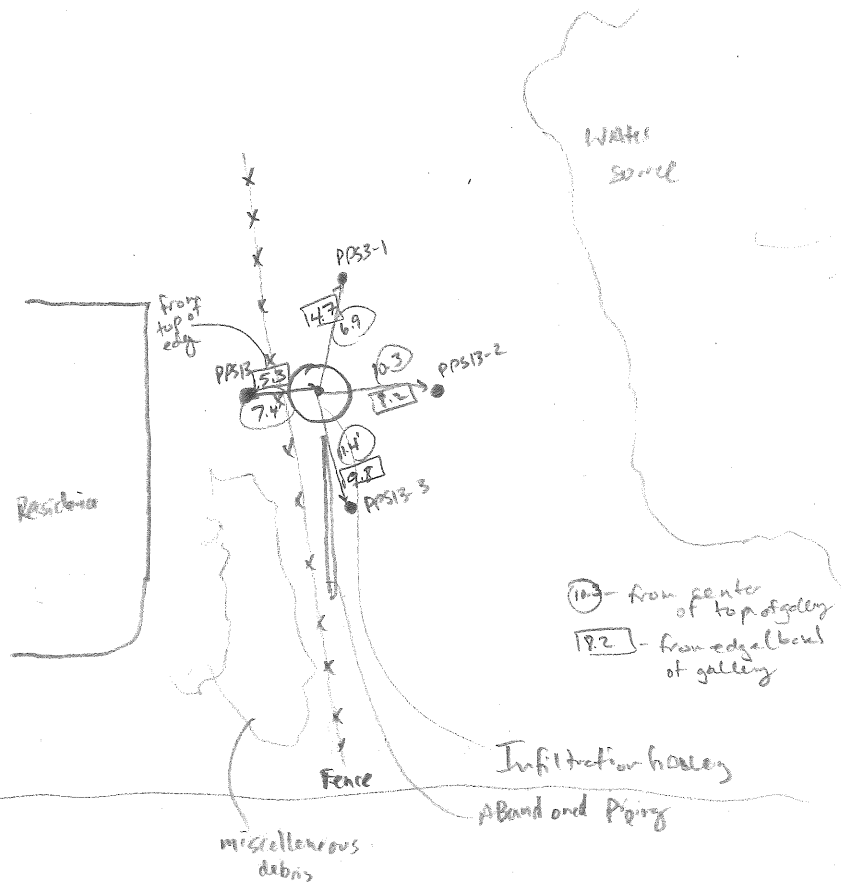
Permit 12-241, W61 84

9/16/15 @ 2:40 pm

PPS12 Test Pit Sketch



PPS13 Test Pit Sketch



FIELD ACTIVITIES DAILY LOG

Date 9/17/15
Sheet 1 of 1
Project No. 32-1-17242

Project Name: Pithas Point

Field activity subject: —

Description of daily activities and events: —

08:05 Left lodge to head to Pithas School.

12:20 collected analytical samples for test pit areas; site well through for
AST and other debris

12:20 Left site to go to clinic - Addy spoke w/ Doc about shot in November 12 -
current and up-to-date - don't need shot.

12:55 Back on site - collected analytical Tank farm samples.

13:05 -ish - offsite to take Chris and Sam to airport. ~~I~~ I looked for
any evidence of (100-ish) supersacks. I did not observe any
at the airport or nearby. Headed back to River lodge to fill out
injury form per Tim / Joe request. I cannot modify the form or
print the form. It will have to wait until Monday.

1925 off site - to lodge to label sample jars.

Visitors on site: N/A - NONE

Changes from plans/specifications and other special orders and important decisions:

NONE

Weather conditions: ~~50°F~~ 37°-48°F, Clear to cloudy; rain (on and off) - intermittent.

Important telephone calls: 11:50 spoke w/ Tim about injury update (advised to
go to clinic)

Personnel on site: Tim / Joe / Casey

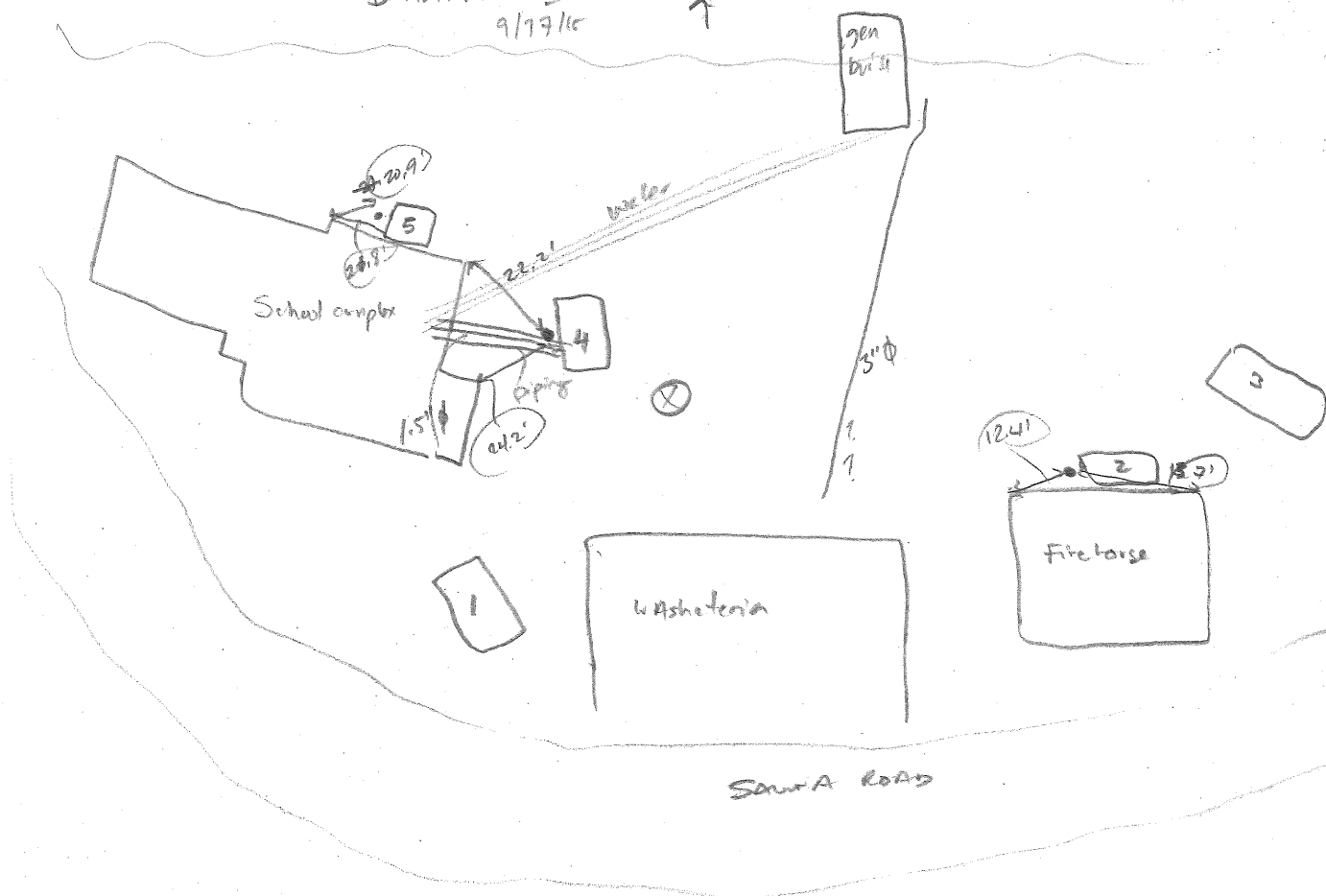
Signature: —

Date: 9/17/15

7

DRAWING 2 of 2
9/7/16

↑



SAMPLE COLLECTION LOG

SHANNON & WILSON, INC

Project Number: 32-1-17247-

Date: 9/17/15

Location: Pit has Point

Sampler: TWC

Site: _____

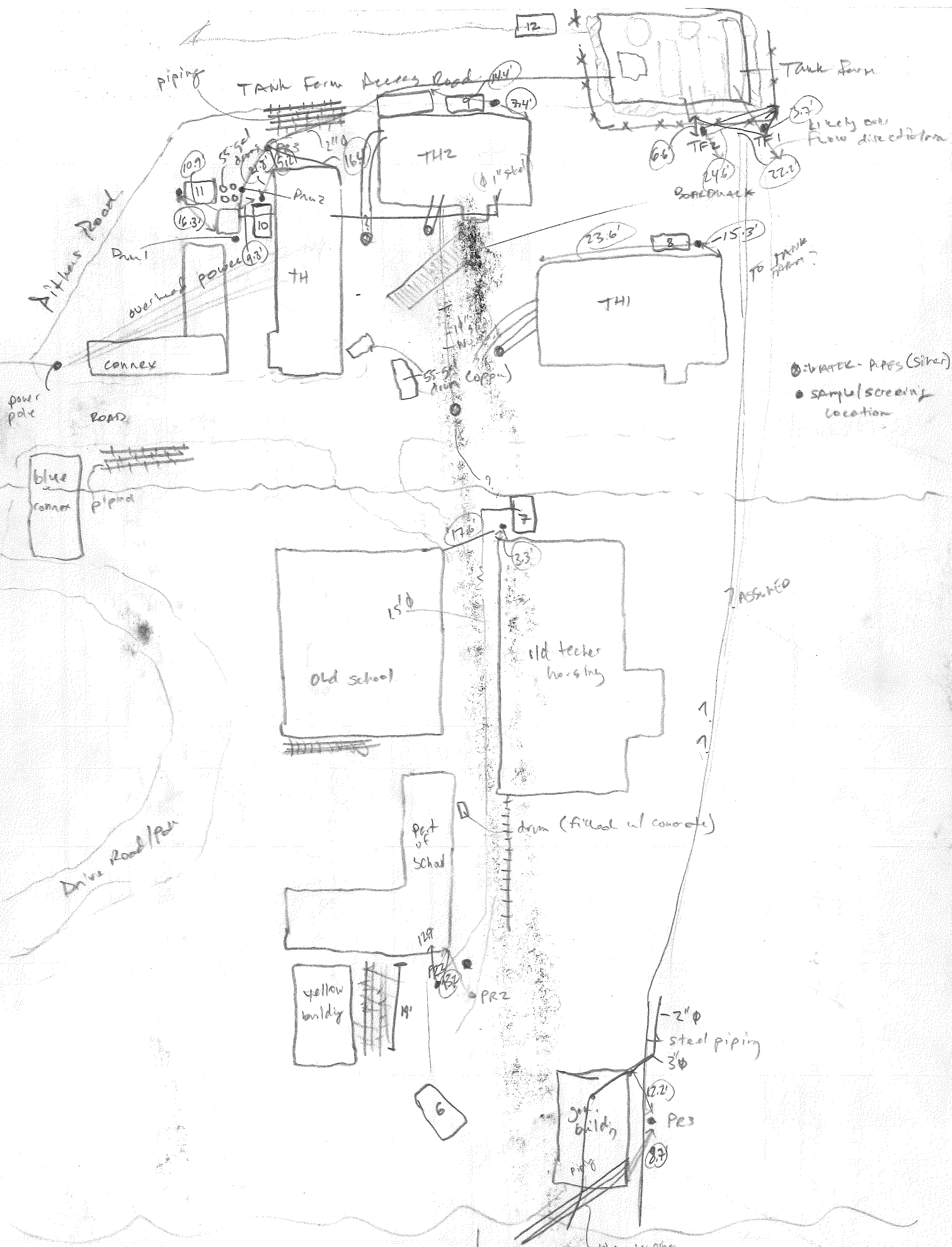
Sheet Number: /

[illegible]

Sample Type

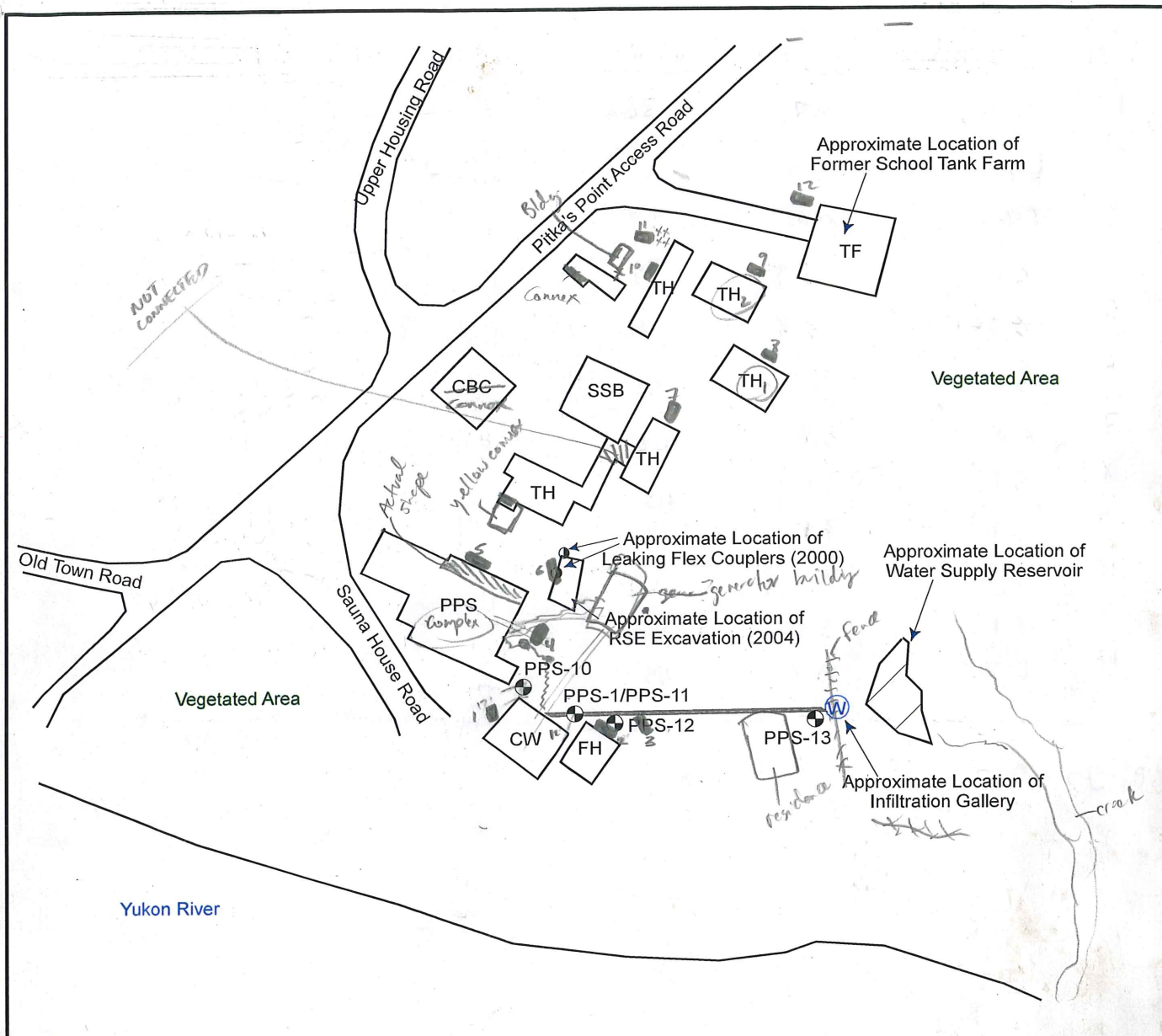
ES	Environmental sample
FD	Field duplicate
FM	Field Screening
TB	Trip blank
*	GPS readings only collected from analytical sample locations

✓ see notes on daily field activities
X = duplicate sample
- - = APS point previously recorded during AST survey



DRAWING 1 of 2
9/17/15

complex, wastewater, firehouse next page



LEGEND

⊕ Approximate location of Soil Sample location collected by PPS-1 Restoration Science & Engineering (RSE) in August 2000.

— Approximate location of water supply line

Ⓜ Approximate location of infiltration gallery

Debris Inventory - Info on Back

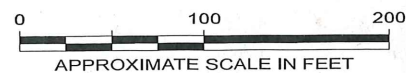
■ AST'S

♦ Whitey Poly

BUILDING LEGEND

TF Tank Farm
TH Teacher Housing
SSB Schools Shop Building
CBC Community Basketball Court
PPS Pitkas Point School
CW Community Washeteria
FH Fire House

Soil samples with DRO concentrations exceeding the ADEC Method Two migration to groundwater cleanup level		
Sample ID	Depth, feet (bgs)	DRO, mg/kg
PPS-1	1.5	57,400
PPS-10	0.66	18,100
PPS-11	1.0	3,250
PPS-12	1.0	1,990
PPS-13	1.0	9,750



Pitkas Point School Site
Pitkas Point, Alaska

SITE PLAN

September 2015

32-1-17747-001

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 2

ASTs	Length	Diameter	Grp Point	Use	Staining / Stressed vegetation
1	5.9	3.8	36	?	No! staining
2	6.1	3.8	37	Heating oil	No! staining Yes, collect soil
3	6.6	3.2	38	Water	No staining
4	6.1	3.8	39	Heating oil	No staining, soil staining
5	3.8 6.1	3.8	40	Heating oil	No! staining
6	6.0	3.8	41	?	No staining
7	6.0	3.8	42	Heater	↓
8	5.1	3.1	43	↓	↓
9	5.1	3.1	44	↓	↓
10	5.2	3.1	47	Heating oil	No staining
11	6.1	3.8	46	Heating oil	No staining
12	6.2	3.8	45	?	No staining

Piping.

FIELD ACTIVITIES DAILY LOG

Date 9/18/15
Sheet of
Project No. 32-1-1747

Project Name: Ditka's Point

Field activity subject:

Description of daily activities and events:

0735 Arrive onsite - sun almost over horizon

Completed debris coupling and Screening of contaminated debris

1040 shipped cargo @ LAMU to Anchorage

1130 13:30 Reported Ste Marge for anchorage

Visitors on site:

Changes from plans/specifications and other special orders and important decisions:

Weather conditions:

Important telephone calls:

Personnel on site:

Signature:

Date:

SAMPLE COLLECTION LOG

SHANNON & WILSON, INC

[illegible]

① Above ground piping - water/sewer
acid piping - PVC w/ insul foam

Sample Type

ES	Environmental sample
FD	Field duplicate
FM	Field Screening
TB	Trip blank
*	GPS readings only collected from analytical sample locations

NOTE: GPS accuracy today 9/18/15 - 25-30' feet.

SUMMARY OF GPS COORDINATES

Sample Location	GPS Waypoint	Latitude (N)	Longitude (W)
PPS10	18	62.03164109	-163.286761
PPS10-1	19	62.0316623	-163.2867534
PPS10-2	20	62.03162667	-163.2867292
PPS10-3	21	62.03162374	-163.286825
PPS10-4	22	62.0316493	-163.2868374
PPS1/PPS11	23	62.03155794	-163.2865984
PPS1/PPS11-1	24	62.03158091	-163.286564
PPS1/PPS11-2	25	62.03155903	-163.2865715
PPS1/PPS11-3	26	62.03157018	-163.2866375
PPS12	27	62.03158594	-163.2864174
PPS12-1	28	62.03159432	-163.2863715
PPS12-2	29	62.03156624	-163.2863874
PPS12-3	30	62.03156783	-163.2864506
PPS12-4	31	62.0315991	-163.2864772
PPS13	32	62.03166104	-163.285664
PPS13-1	33	62.03166439	-163.2855741
PPS13-2	34	62.03163405	-163.2855521
PPS13-3	35	62.03162081	-163.2855964
AST1	36	62.03159533	-163.2871031
AST2	37	62.03164537	-163.2867626
AST3	38	62.0315846	-163.2866748
AST4	39	62.03172072	-163.2868568
AST5	40	62.03189992	-163.2870502
AST6	41	62.03188827	-163.2867698
AST7	42	62.03204627	-163.2861307
AST8	43	62.03210779	-163.2860697
AST9	44	62.03220687	-163.2861116
AST12	45	62.03237694	-163.285861
AST11	46	62.03243435	-163.2866893
AST10	47	62.0324331	-163.2866193
TF1	48	62.03234743	-163.285518
TF2	49	62.03233453	-163.2853836
Above Ground Piping	50	62.03200579	-163.2866396
Above Ground Piping	51	62.03225146	-163.2864045
Above Ground Piping	52	62.03254349	-163.2862649
Piping Run #3	53	62.03187218	-163.2863061
East of Drums	54	62.03248288	-163.2862574
West of AST 10	55	62.03244173	-163.2863402
Piping Run #1	56	62.03249236	-163.2861888
Piping Run #2	57	62.0319389	-163.2866177
Washeteria	CW	62.03156683	-163.2867416
Infiltration Gallery	IF	62.03165081	-163.285593
Teacher Housing #1	TH1	62.03217435	-163.2860882
Teacher Housing #2	TH2	62.03234383	-163.2862886
Water Line	WL1	62.03156699	-163.286674

Notes: GPS Coordinate system, WGS 84. Horizontal accuracy of GPS ranged from 12-30 feet during field activities.

APPENDIX B
SITE PHOTOGRAPHS



Photo 1: Looking south at the Pitkas Point Community and Yukon River. (September 18, 2015)

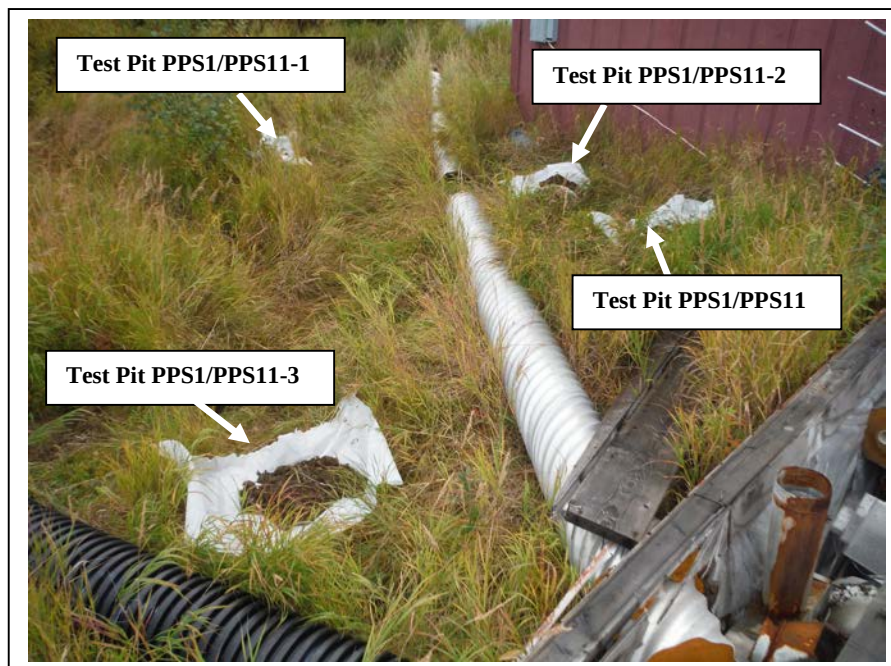


Photo 2: Looking east at the location of the PPS1/PPS11 sample area near the northwest corner of the Fire House. (September 16, 2015)

Pitkas Point School Site
Pitkas Point, Alaska

PHOTOS 1 AND 2

January 2016

32-1-17747-001



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B-1

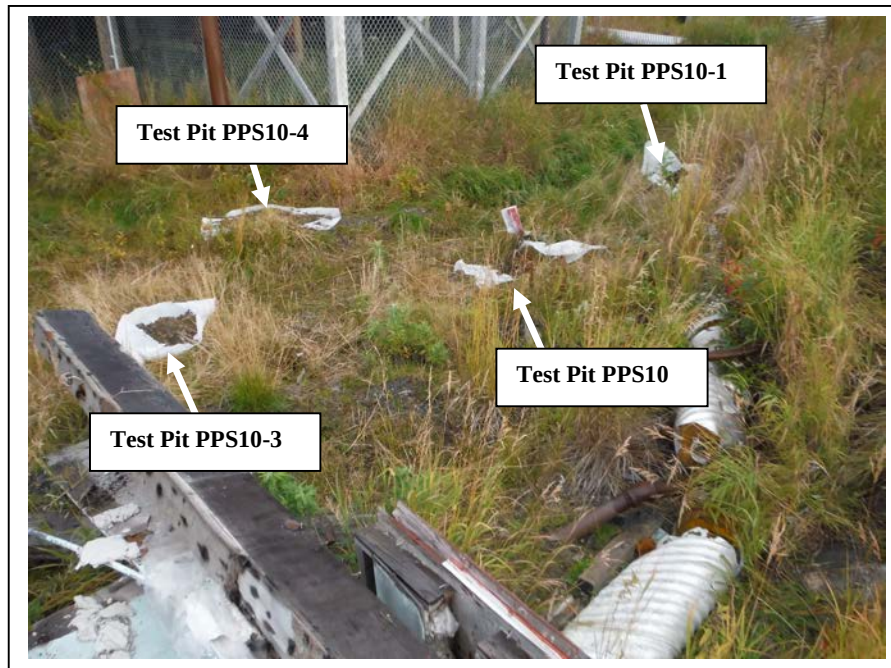


Photo 3: Looking northwest at the location of the PPS10 sample area near the southeast corner of Pitkas Point School. (September 16, 2015)

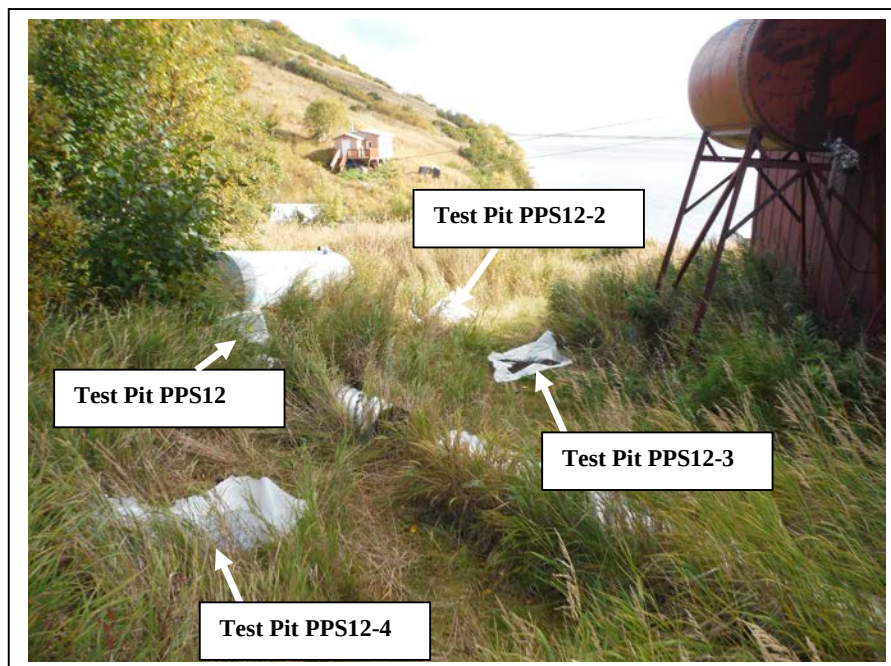


Photo 4: Looking east at the location of the PPS12 sample area near the northeast of the Fire House. (September 16, 2015)

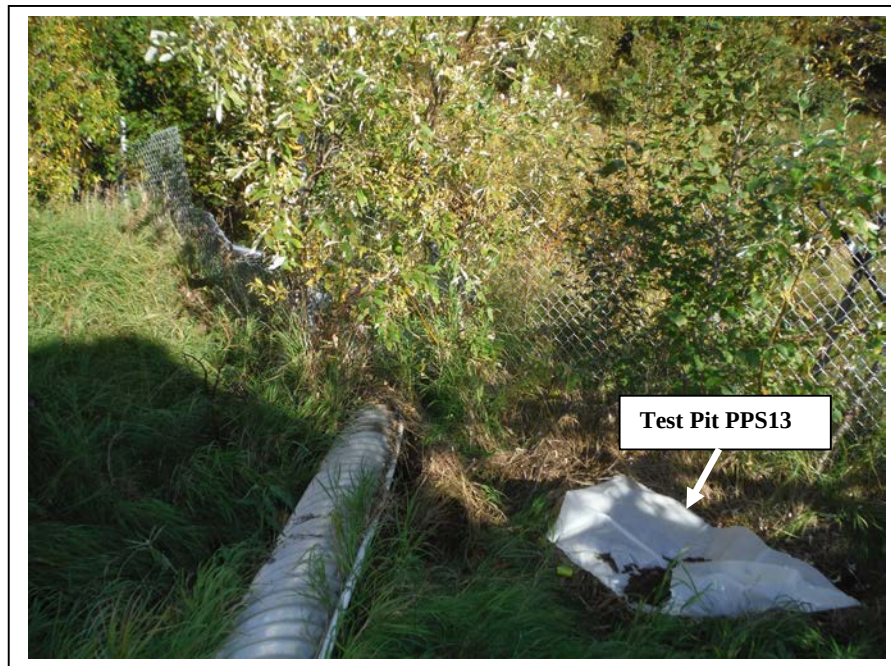


Photo 5: Looking east at the location of the PPS13 sample area west of Infiltration Gallery. (September 16, 2015)

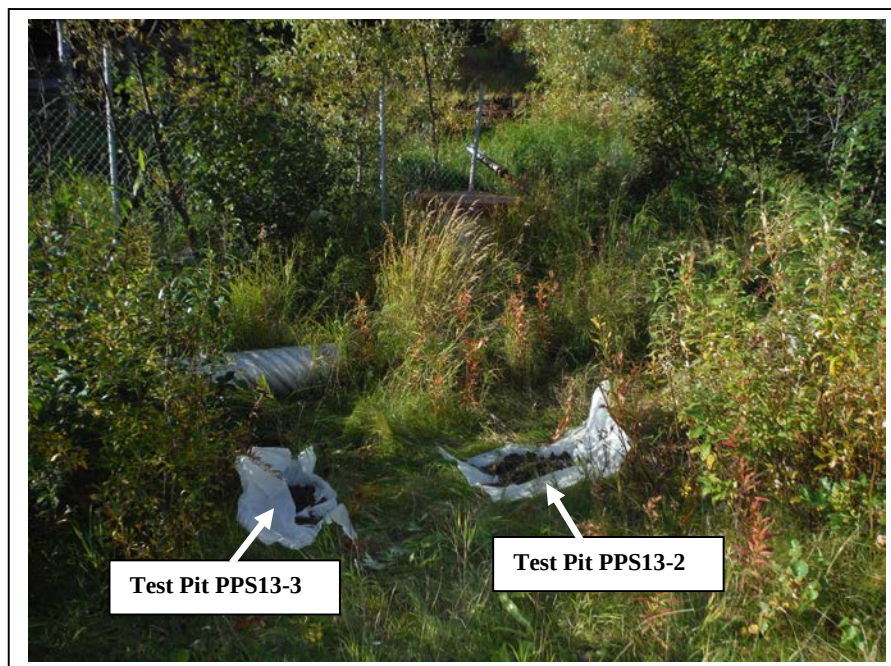


Photo 6: Looking northwest at the location of the PPS13 sample area east of Infiltration Gallery. (September 16, 2015)



Photo 7: Looking east at Tank Farm wood support of former School ASTs. (September 16, 2015)



Photo 8: Looking south at the southeast corner of the Tank Farm. A sheen was present on the surface water ponded within the lined Tank Farm. (September 16, 2015)

Pitkas Point School Site
Pitkas Point, Alaska

PHOTOS 7 AND 8

January 2016

32-1-17747-001



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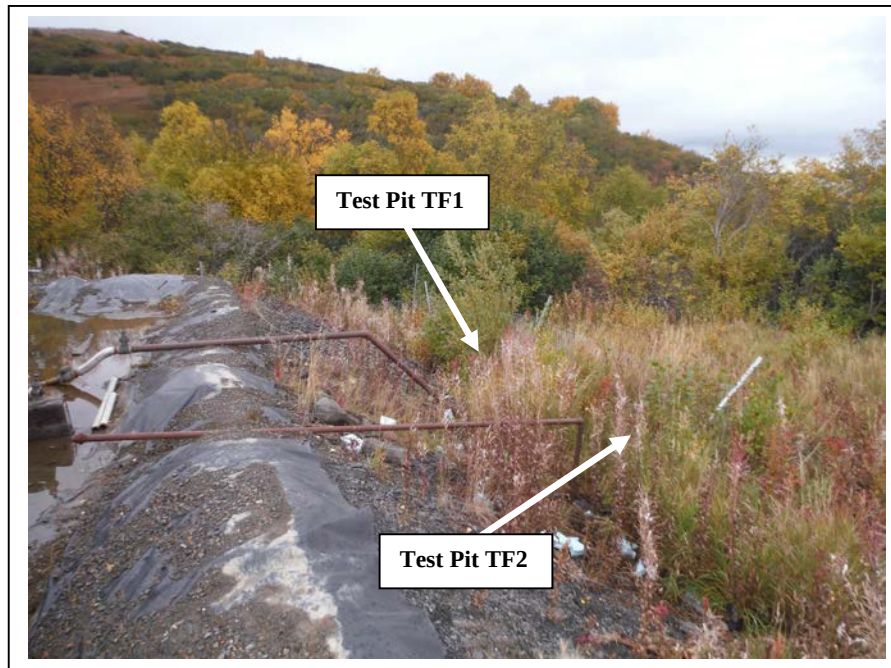


Photo 9: Looking east at the southern boundary of the Tank Farm and associated piping. The piping appeared to be placed both above and below the ground surface in a southwesterly direction and continue to the Yukon River for filling the aboveground tanks. (September 17, 2015)

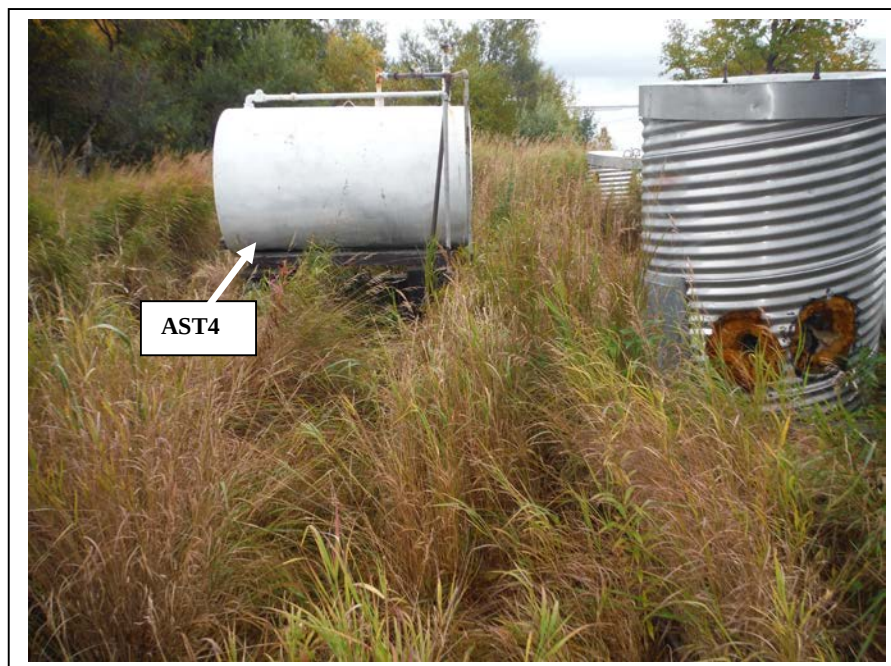


Photo 10: Looking east at AST4 positioned east of the School Complex building. (September 17, 2015)



Photo 11: Looking south AST8 located on the north side of the Teacher Housing Building #1. (September 16, 2015)



Photo 12: Looking southwest at AST9 located on the north side of Teacher Housing Building #2. (September 16, 2015)

Pitkas Point School Site
Pitkas Point, Alaska

PHOTOS 11 AND 12

January 2016

32-1-17747-001



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Photo 13: Looking east at AST10 located on the west side of a Teacher Housing Building. (September 16, 2015)

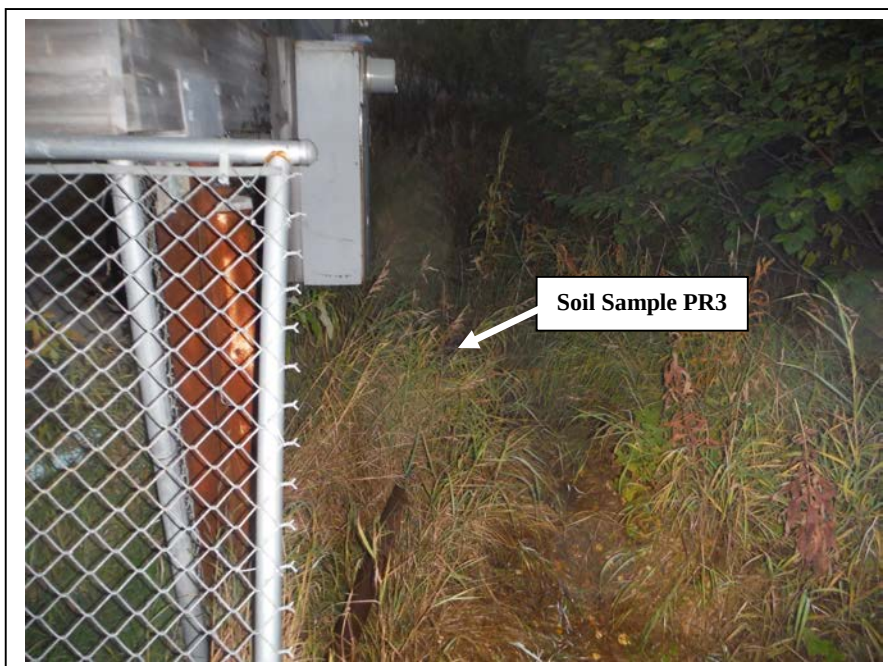


Photo 14: Looking northeast at the location of Soil Sample PR3 east of the Generator Building. (September 18, 2015)

Pitkas Point School Site
Pitkas Point, Alaska

PHOTOS 13 AND 14

January 2016

32-1-17747-001



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APPENDIX C

RESULTS OF ANALYTICAL TESTING BY

SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA

AND

ADEC LABORATORY DATA REVIEW CHECKLISTS

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Ste 3
Anchorage, AK 99518
907-561-2120

Report Number: **1155496**

Client Project: **32-1-17747 Pitkas Point**

Dear Tim Terry,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.



SGS North America Inc.
Environmental Services - Alaska Division
Project Manager

Victoria Pennick
2015.10.08
11:58:33 -08'00'

Victoria Pennick
Project Manager
Victoria.Pennick@sgs.com

Date

Print Date: 10/08/2015 11:54:01AM

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1155496**
Project Name/Site: **32-1-17747 Pitkas Point**
Project Contact: **Tim Terry**

Refer to sample receipt form for information on sample condition.

17747-AST4 (1155496001) PS

AK 103 - Surrogate recovery for n-triacontane (273%) does not meet QC criteria due to sample matrix. Prep final volume is 5mL.

17747-AST4X (1155496002) PS

AK 103 - Surrogate recovery for n-triacontane (268%) does not meet QC criteria due to sample matrix. Prep final volume is 5mL.

17747-AST9 (1155496004) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (42.9%) does not meet QC criteria. Sample was analyzed twice for confirmation.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

17747-AST9X (1155496008) PS

Sample not analyzed per client request.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/08/2015 11:54:02AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
17747-AST4	1155496001	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-AST4X	1155496002	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-AST8	1155496003	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-AST9	1155496004	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-AST10	1155496005	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PR3	1155496006	09/18/2015	09/22/2015	Soil/Solid (dry weight)
17747-TB2	1155496007	09/18/2015	09/22/2015	Soil/Solid (dry weight)
17747-AST9X	1155496008	09/17/2015	09/22/2015	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
AK101	AK101/8021 Combo. (S)
SW8021B	AK101/8021 Combo. (S)
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
SM21 2540G	Percent Solids SM2540G

Print Date: 10/08/2015 11:54:05AM

Detectable Results Summary

Client Sample ID: **17747-AST4**

Lab Sample ID: 1155496001

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	6300	mg/Kg
Residual Range Organics	3560	mg/Kg
Ethylbenzene	49.2J	ug/Kg
Gasoline Range Organics	30.6	mg/Kg
o-Xylene	898	ug/Kg
P & M -Xylene	314	ug/Kg
Toluene	54.8J	ug/Kg

Client Sample ID: **17747-AST4X**

Lab Sample ID: 1155496002

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	6740	mg/Kg
Residual Range Organics	3630	mg/Kg
Gasoline Range Organics	20.8	mg/Kg
o-Xylene	207	ug/Kg
P & M -Xylene	171	ug/Kg

Client Sample ID: **17747-AST8**

Lab Sample ID: 1155496003

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	126	mg/Kg
Residual Range Organics	507	mg/Kg
Gasoline Range Organics	2.57J	mg/Kg

Client Sample ID: **17747-AST9**

Lab Sample ID: 1155496004

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	5330	mg/Kg
Residual Range Organics	248	mg/Kg
Gasoline Range Organics	2.64J	mg/Kg

Client Sample ID: **17747-AST10**

Lab Sample ID: 1155496005

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	288	mg/Kg
Residual Range Organics	1180	mg/Kg
Gasoline Range Organics	2.65J	mg/Kg

Client Sample ID: **17747-PR3**

Lab Sample ID: 1155496006

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	57.2	mg/Kg

Results of 17747-AST4

Client Sample ID: **17747-AST4**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496001
 Lab Project ID: 1155496

Collection Date: 09/17/15 18:01
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):56.4
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	6300	700	217	mg/Kg	4		10/05/15 10:37
Surrogates							
5a Androstane (surr)	89.6	50-150		%	4		10/05/15 10:37

Batch Information

Analytical Batch: XFC12131
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 10:37
 Container ID: 1155496001-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.391 g
 Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	3560	175	54.3	mg/Kg	1		10/03/15 23:06
Surrogates							
n-Triacontane-d62 (surr)	273 *	50-150		%	1		10/03/15 23:06

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:06
 Container ID: 1155496001-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.391 g
 Prep Extract Vol: 5 mL

Results of 17747-AST4

Client Sample ID: **17747-AST4**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496001
 Lab Project ID: 1155496

Collection Date: 09/17/15 18:01
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):56.4
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	30.6	8.06	2.42	mg/Kg	1		09/26/15 20:09

Surrogates

4-Bromofluorobenzene (surr)	148	50-150		%	1		09/26/15 20:09
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 20:09
 Container ID: 1155496001-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 18:01
 Prep Initial Wt./Vol.: 52.838 g
 Prep Extract Vol: 48.0379 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	20.1 U	40.3	12.9	ug/Kg	1		09/26/15 20:09
Ethylbenzene	49.2 J	80.6	25.1	ug/Kg	1		09/26/15 20:09
o-Xylene	898	80.6	25.1	ug/Kg	1		09/26/15 20:09
P & M -Xylene	314	161	48.4	ug/Kg	1		09/26/15 20:09
Toluene	54.8 J	80.6	25.1	ug/Kg	1		09/26/15 20:09

Surrogates

1,4-Difluorobenzene (surr)	89.1	72-119		%	1		09/26/15 20:09
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 20:09
 Container ID: 1155496001-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 18:01
 Prep Initial Wt./Vol.: 52.838 g
 Prep Extract Vol: 48.0379 mL

Results of 17747-AST4X

Client Sample ID: **17747-AST4X**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496002
 Lab Project ID: 1155496

Collection Date: 09/17/15 18:04
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):58.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	6740	682	211	mg/Kg	4		10/05/15 10:46
Surrogates							
5a Androstane (surr)	97.2	50-150		%	4		10/05/15 10:46

Batch Information

Analytical Batch: XFC12131
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 10:46
 Container ID: 1155496002-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.187 g
 Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	3630	171	52.9	mg/Kg	1		10/03/15 23:16
Surrogates							
n-Triacontane-d62 (surr)	268 *	50-150		%	1		10/03/15 23:16

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:16
 Container ID: 1155496002-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.187 g
 Prep Extract Vol: 5 mL

Results of 17747-AST4X

Client Sample ID: **17747-AST4X**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496002
 Lab Project ID: 1155496

Collection Date: 09/17/15 18:04
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):58.3
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	20.8	8.45	2.53	mg/Kg	1		10/01/15 02:01

Surrogates

4-Bromofluorobenzene (surr)	107	50-150		%	1		10/01/15 02:01
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Batch Information

Analytical Batch: VFC12702
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 10/01/15 02:01
 Container ID: 1155496002-B

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 18:04
 Prep Initial Wt./Vol.: 44.088 g
 Prep Extract Vol: 43.3985 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	21.1 U	42.2	13.5	ug/Kg	1		10/01/15 02:01
Ethylbenzene	42.3 U	84.5	26.4	ug/Kg	1		10/01/15 02:01
o-Xylene	207	84.5	26.4	ug/Kg	1		10/01/15 02:01
P & M -Xylene	171	169	50.7	ug/Kg	1		10/01/15 02:01
Toluene	42.3 U	84.5	26.4	ug/Kg	1		10/01/15 02:01

Surrogates

1,4-Difluorobenzene (surr)	87.2	72-119		%	1		10/01/15 02:01
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Batch Information

Analytical Batch: VFC12702
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 10/01/15 02:01
 Container ID: 1155496002-B

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 18:04
 Prep Initial Wt./Vol.: 44.088 g
 Prep Extract Vol: 43.3985 mL

Results of 17747-AST8

Client Sample ID: **17747-AST8**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496003
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:13
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):59.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	126	74.1	23.0	mg/Kg	1		10/03/15 23:26
Surrogates							
5a Androstane (surr)	72.7	50-150		%	1		10/03/15 23:26

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:26
 Container ID: 1155496003-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 13.538 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	507	74.1	23.0	mg/Kg	1		10/03/15 23:26
Surrogates							
n-Triacontane-d62 (surr)	84.3	50-150		%	1		10/03/15 23:26

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:26
 Container ID: 1155496003-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 13.538 g
 Prep Extract Vol: 1 mL

Results of 17747-AST8

Client Sample ID: **17747-AST8**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496003
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:13
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):59.8
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.57 J	6.30	1.89	mg/Kg	1		09/26/15 20:47

Surrogates

4-Bromofluorobenzene (surr)	71.3	50-150		%	1		09/26/15 20:47
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 20:47
 Container ID: 1155496003-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:13
 Prep Initial Wt./Vol.: 71.114 g
 Prep Extract Vol: 53.6005 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	15.8 U	31.5	10.1	ug/Kg	1		09/26/15 20:47
Ethylbenzene	31.5 U	63.0	19.7	ug/Kg	1		09/26/15 20:47
o-Xylene	31.5 U	63.0	19.7	ug/Kg	1		09/26/15 20:47
P & M -Xylene	63.0 U	126	37.8	ug/Kg	1		09/26/15 20:47
Toluene	31.5 U	63.0	19.7	ug/Kg	1		09/26/15 20:47

Surrogates

1,4-Difluorobenzene (surr)	89.2	72-119		%	1		09/26/15 20:47
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 20:47
 Container ID: 1155496003-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:13
 Prep Initial Wt./Vol.: 71.114 g
 Prep Extract Vol: 53.6005 mL

Results of 17747-AST9

Client Sample ID: **17747-AST9**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496004
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:40
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):66.1
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	5330	602	187	mg/Kg	20		10/05/15 20:31
Surrogates							
5a Androstane (surr)	0 *	50-150		%	20		10/05/15 20:31

Batch Information

Analytical Batch: XFC12132
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 20:31
 Container ID: 1155496004-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.184 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	248	30.1	9.33	mg/Kg	1		10/03/15 23:36
Surrogates							
n-Triacontane-d62 (surr)	99.9	50-150		%	1		10/03/15 23:36

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:36
 Container ID: 1155496004-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.184 g
 Prep Extract Vol: 1 mL

Results of 17747-AST9

Client Sample ID: **17747-AST9**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496004
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:40
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):66.1
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.64 J	4.45	1.34	mg/Kg	1		10/01/15 02:58

Surrogates

4-Bromofluorobenzene (surr)	42.9 *	50-150		%	1		10/01/15 02:58
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Batch Information

Analytical Batch: VFC12702
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 10/01/15 02:58
 Container ID: 1155496004-B

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:40
 Prep Initial Wt./Vol.: 100.379 g
 Prep Extract Vol: 59.0631 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.2 U	22.3	7.13	ug/Kg	1		09/26/15 21:06
Ethylbenzene	22.3 U	44.5	13.9	ug/Kg	1		09/26/15 21:06
o-Xylene	22.3 U	44.5	13.9	ug/Kg	1		09/26/15 21:06
P & M -Xylene	44.5 U	89.1	26.7	ug/Kg	1		09/26/15 21:06
Toluene	22.3 U	44.5	13.9	ug/Kg	1		09/26/15 21:06

Surrogates

1,4-Difluorobenzene (surr)	88.6	72-119		%	1		09/26/15 21:06
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 21:06
 Container ID: 1155496004-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:40
 Prep Initial Wt./Vol.: 100.379 g
 Prep Extract Vol: 59.0631 mL

Results of 17747-AST10

Client Sample ID: **17747-AST10**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496005
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:05
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):54.6
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	288	36.1	11.2	mg/Kg	1		10/03/15 23:45
Surrogates							
5a Androstane (surr)	77.3	50-150		%	1		10/03/15 23:45

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:45
 Container ID: 1155496005-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.38 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1180	36.1	11.2	mg/Kg	1		10/03/15 23:45
Surrogates							
n-Triacontane-d62 (surr)	89.7	50-150		%	1		10/03/15 23:45

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:45
 Container ID: 1155496005-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.38 g
 Prep Extract Vol: 1 mL

Results of 17747-AST10

Client Sample ID: **17747-AST10**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496005
 Lab Project ID: 1155496

Collection Date: 09/17/15 17:05
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):54.6
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.65 J	6.98	2.09	mg/Kg	1		09/26/15 21:25

Surrogates

4-Bromofluorobenzene (surr)	92.2	50-150		%	1		09/26/15 21:25
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 21:25
 Container ID: 1155496005-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:05
 Prep Initial Wt./Vol.: 80.794 g
 Prep Extract Vol: 61.6423 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	17.4 U	34.9	11.2	ug/Kg	1		09/26/15 21:25
Ethylbenzene	34.9 U	69.8	21.8	ug/Kg	1		09/26/15 21:25
o-Xylene	34.9 U	69.8	21.8	ug/Kg	1		09/26/15 21:25
P & M -Xylene	70.0 U	140	41.9	ug/Kg	1		09/26/15 21:25
Toluene	34.9 U	69.8	21.8	ug/Kg	1		09/26/15 21:25

Surrogates

1,4-Difluorobenzene (surr)	88.4	72-119		%	1		09/26/15 21:25
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 21:25
 Container ID: 1155496005-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 17:05
 Prep Initial Wt./Vol.: 80.794 g
 Prep Extract Vol: 61.6423 mL

Results of 17747-PR3

Client Sample ID: **17747-PR3**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496006
 Lab Project ID: 1155496

Collection Date: 09/18/15 09:35
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):81.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	12.2 U	24.3	7.53	mg/Kg	1		10/03/15 23:55
Surrogates							
5a Androstane (surr)	74	50-150		%	1		10/03/15 23:55

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:55
 Container ID: 1155496006-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.41 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	57.2	24.3	7.53	mg/Kg	1		10/03/15 23:55
Surrogates							
n-Triacontane-d62 (surr)	83.3	50-150		%	1		10/03/15 23:55

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/03/15 23:55
 Container ID: 1155496006-A

Prep Batch: XXX34222
 Prep Method: SW3550C
 Prep Date/Time: 09/23/15 16:43
 Prep Initial Wt./Vol.: 30.41 g
 Prep Extract Vol: 1 mL

Results of 17747-PR3

Client Sample ID: **17747-PR3**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496006
 Lab Project ID: 1155496

Collection Date: 09/18/15 09:35
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):81.2
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.59 U	3.17	0.952	mg/Kg	1		09/26/15 21:44

Surrogates

4-Bromofluorobenzene (surr)	99.2	50-150		%	1		09/26/15 21:44
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 21:44
 Container ID: 1155496006-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/18/15 09:35
 Prep Initial Wt./Vol.: 76.361 g
 Prep Extract Vol: 39.3441 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	7.95 U	15.9	5.08	ug/Kg	1		09/26/15 21:44
Ethylbenzene	15.9 U	31.7	9.90	ug/Kg	1		09/26/15 21:44
o-Xylene	15.9 U	31.7	9.90	ug/Kg	1		09/26/15 21:44
P & M -Xylene	31.7 U	63.4	19.0	ug/Kg	1		09/26/15 21:44
Toluene	15.9 U	31.7	9.90	ug/Kg	1		09/26/15 21:44

Surrogates

1,4-Difluorobenzene (surr)	89	72-119		%	1		09/26/15 21:44
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 21:44
 Container ID: 1155496006-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/18/15 09:35
 Prep Initial Wt./Vol.: 76.361 g
 Prep Extract Vol: 39.3441 mL

Results of 17747-TB2

Client Sample ID: **17747-TB2**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155496007
 Lab Project ID: 1155496

Collection Date: 09/18/15 09:55
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.25 U	2.51	0.752	mg/Kg	1		09/26/15 16:02

Surrogates

4-Bromofluorobenzene (surr)	82.8	50-150		%	1		09/26/15 16:02
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 16:02
 Container ID: 1155496007-A

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/18/15 09:55
 Prep Initial Wt./Vol.: 49.896 g
 Prep Extract Vol: 25 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	6.25 U	12.5	4.01	ug/Kg	1		09/26/15 16:02
Ethylbenzene	12.6 U	25.1	7.82	ug/Kg	1		09/26/15 16:02
o-Xylene	12.6 U	25.1	7.82	ug/Kg	1		09/26/15 16:02
P & M -Xylene	25.1 U	50.1	15.0	ug/Kg	1		09/26/15 16:02
Toluene	12.6 U	25.1	7.82	ug/Kg	1		09/26/15 16:02

Surrogates

1,4-Difluorobenzene (surr)	87.4	72-119		%	1		09/26/15 16:02
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 16:02
 Container ID: 1155496007-A

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/18/15 09:55
 Prep Initial Wt./Vol.: 49.896 g
 Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1721128 [SPT/9747]
Blank Lab ID: 1292951

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006, 1155496008

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT9747
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R
Analytical Date/Time: 9/23/2015 4:50:00PM

Print Date: 10/08/2015 11:54:10AM

Duplicate Sample Summary

Original Sample ID: 1155534002

Duplicate Sample ID: 1292952

QC for Samples:

1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006, 1155496008

Analysis Date: 09/23/2015 16:50

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	95.0	94.8	%	0.30	(< 15)

Batch Information

Analytical Batch: SPT9747

Analytical Method: SM21 2540G

Instrument:

Analyst: A.R

Print Date: 10/08/2015 11:54:11AM

Method Blank

Blank ID: MB for HBN 1721443 [VXX/27969]
Blank Lab ID: 1293514

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155496001, 1155496003, 1155496004, 1155496005, 1155496006, 1155496007

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.01J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	73	50-150		%

Batch Information

Analytical Batch: VFC12695
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 1:49:00PM

Prep Batch: VXX27969
Prep Method: SW5035A
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:13AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [VXX27969]
 Blank Spike Lab ID: 1293517
 Date Analyzed: 09/26/2015 14:46

Spike Duplicate ID: LCSD for HBN 1155496
 [VXX27969]
 Spike Duplicate Lab ID: 1293518
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496001, 1155496003, 1155496004, 1155496005, 1155496006, 1155496007

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	11.6	116	10.0	11.3	113	(60-120)	2.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	76.5	77	1.25	77.4	77	(50-150)	1.10	

Batch Information

Analytical Batch: **VFC12695**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **CRD**

Prep Batch: **VXX27969**
 Prep Method: **SW5035A**
 Prep Date/Time: **09/26/2015 08:00**
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:15AM

Method Blank

Blank ID: MB for HBN 1721443 [VXX/27969]
Blank Lab ID: 1293514

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155496001, 1155496003, 1155496004, 1155496005, 1155496006, 1155496007

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	15.5J	50.0	15.0	ug/Kg
Toluene	12.5J	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	87.2	72-119		%

Batch Information

Analytical Batch: VFC12695
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 1:49:00PM

Prep Batch: VXX27969
Prep Method: SW5035A
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:17AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [VXX27969]
 Blank Spike Lab ID: 1293515
 Date Analyzed: 09/26/2015 14:08

Spike Duplicate ID: LCSD for HBN 1155496 [VXX27969]
 Spike Duplicate Lab ID: 1293516
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496001, 1155496003, 1155496004, 1155496005, 1155496006, 1155496007

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1320	106	1250	1290	103	(75-125)	2.50	(< 20)
Ethylbenzene	1250	1240	99	1250	1220	98	(75-125)	1.70	(< 20)
o-Xylene	1250	1140	91	1250	1120	90	(75-125)	1.30	(< 20)
P & M -Xylene	2500	2390	96	2500	2350	94	(80-125)	1.60	(< 20)
Toluene	1250	1230	99	1250	1210	97	(70-125)	1.60	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	91	91	1250	90.6	91	(72-119)	0.48	

Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/26/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:18AM

Matrix Spike Summary

Original Sample ID: 1155497013
MS Sample ID: 1293519 MS
MSD Sample ID: 1293520 MSD

Analysis Date: 09/26/2015 16:21
Analysis Date: 09/26/2015 16:40
Analysis Date: 09/26/2015 16:59
Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496001, 1155496003, 1155496004, 1155496005, 1155496006, 1155496007

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	11.4U	1464	1517	103	1464	1491	102	75-125	1.60	(< 20)
Ethylbenzene	22.6U	1464	1438	98	1464	1412	96	75-125	1.60	(< 20)
o-Xylene	22.6U	1464	1332	91	1464	1305	89	75-125	1.90	(< 20)
P & M -Xylene	45.3U	2929	2770	94	2929	2704	92	80-125	2.10	(< 20)
Toluene	22.6U	1464	1398	95	1464	1385	94	70-125	1.10	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	1464	1346	91	1464	1346	92	72-119	0.39
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Batch Information

Analytical Batch: VFC12695
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 4:40:00PM

Prep Batch: VXX27969
Prep Method: AK101 Extraction (S)
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 56.19g
Prep Extract Vol: 25.00mL

Print Date: 10/08/2015 11:54:19AM

Method Blank

Blank ID: MB for HBN 1721692 [VXX/27990]

Blank Lab ID: 1294495

QC for Samples:

1155496002, 1155496004

Matrix: Soil/Solid (dry weight)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.17J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	68	50-150		%

Batch Information

Analytical Batch: VFC12702
 Analytical Method: AK101
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD
 Analytical Date/Time: 9/30/2015 11:49:00PM

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 9/30/2015 8:00:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:21AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [VXX27990]
 Blank Spike Lab ID: 1294498
 Date Analyzed: 10/01/2015 00:45

Spike Duplicate ID: LCSD for HBN 1155496
 [VXX27990]
 Spike Duplicate Lab ID: 1294499
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496002, 1155496004

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	10.5	105	10.0	10.7	107	(60-120)	1.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	76.4	76	1.25	74.2	74	(50-150)	2.90	

Batch Information

Analytical Batch: **VFC12702**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **CRD**

Prep Batch: **VXX27990**
 Prep Method: **SW5035A**
 Prep Date/Time: **09/30/2015 08:00**
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:22AM

Method Blank

Blank ID: MB for HBN 1721692 [VXX/27990]

Blank Lab ID: 1294495

QC for Samples:

1155496002, 1155496004

Matrix: Soil/Solid (dry weight)

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	19.5J	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	87	72-119		%

Batch Information

Analytical Batch: VFC12702
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD
 Analytical Date/Time: 9/30/2015 11:49:00PM

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 9/30/2015 8:00:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:24AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [VXX27990]
 Blank Spike Lab ID: 1294496
 Date Analyzed: 10/01/2015 00:07

Spike Duplicate ID: LCSD for HBN 1155496 [VXX27990]
 Spike Duplicate Lab ID: 1294497
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496002, 1155496004

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1400	112	1250	1400	112	(75-125)	0.02	(< 20)
Ethylbenzene	1250	1310	105	1250	1320	106	(75-125)	0.49	(< 20)
o-Xylene	1250	1200	96	1250	1210	97	(75-125)	0.66	(< 20)
P & M -Xylene	2500	2550	102	2500	2560	102	(80-125)	0.42	(< 20)
Toluene	1250	1350	108	1250	1350	108	(70-125)	0.20	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	90.8	91	1250	90	90	(72-119)	0.88	

Batch Information

Analytical Batch: VFC12702
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD

Prep Batch: VXX27990
 Prep Method: SW5035A
 Prep Date/Time: 09/30/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Print Date: 10/08/2015 11:54:26AM

Matrix Spike Summary

Original Sample ID: 1155496002
MS Sample ID: 1294500 MS
MSD Sample ID: 1294501 MSD

Analysis Date: 10/01/2015 2:01
Analysis Date: 10/01/2015 2:20
Analysis Date: 10/01/2015 2:39
Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496002, 1155496004

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	21.1U	2436	2744	113	2436	2727	112	75-125	1.10	(< 20)
Ethylbenzene	42.3U	2436	2487	103	2436	2487	102	75-125	0.39	(< 20)
o-Xylene	207	2436	2659	101	2436	2642	100	75-125	1.10	(< 20)
P & M -Xylene	171	4871	4906	98	4871	4871	97	80-125	0.93	(< 20)
Toluene	42.3U	2436	2470	102	2436	2453	101	70-125	0.69	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	2436	2213	91	2436	2196	91	72-119	0.22
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Batch Information

Analytical Batch: VFC12702
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 10/1/2015 2:20:00AM

Prep Batch: VXX27990
Prep Method: AK101 Extraction (S)
Prep Date/Time: 9/30/2015 8:00:00AM
Prep Initial Wt./Vol.: 44.09g
Prep Extract Vol: 25.00mL

Print Date: 10/08/2015 11:54:27AM

Method Blank

Blank ID: MB for HBN 1721067 [XXX/34222]
Blank Lab ID: 1292912

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	79.1	60-120		%

Batch Information

Analytical Batch: XFC12126
Analytical Method: AK102
Instrument: HP 6890 Series II FID SV D R
Analyst: NLL
Analytical Date/Time: 10/3/2015 8:08:00PM

Prep Batch: XXX34222
Prep Method: SW3550C
Prep Date/Time: 9/23/2015 4:43:36PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 10/08/2015 11:54:29AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [XXX34222]
 Blank Spike Lab ID: 1292913
 Date Analyzed: 10/03/2015 20:17

Spike Duplicate ID: LCSD for HBN 1155496
 [XXX34222]
 Spike Duplicate Lab ID: 1292914
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	139	84	167	142	85	(75-125)	2.30	(< 20)
Surrogates									
5a Androstane (surr)	3.33	87.5	88	3.33	88	88	(60-120)	0.56	

Batch Information

Analytical Batch: **XFC12126**
 Analytical Method: **AK102**
 Instrument: **HP 6890 Series II FID SV D R**
 Analyst: **NLL**

Prep Batch: **XXX34222**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/23/2015 16:43**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 10/08/2015 11:54:31AM

Method Blank

Blank ID: MB for HBN 1721067 [XXX/34222]
Blank Lab ID: 1292912

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	89.2	60-120		%

Batch Information

Analytical Batch: XFC12126
Analytical Method: AK103
Instrument: HP 6890 Series II FID SV D R
Analyst: NLL
Analytical Date/Time: 10/3/2015 8:08:00PM

Prep Batch: XXX34222
Prep Method: SW3550C
Prep Date/Time: 9/23/2015 4:43:36PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 10/08/2015 11:54:33AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155496 [XXX34222]
 Blank Spike Lab ID: 1292913
 Date Analyzed: 10/03/2015 20:17

Spike Duplicate ID: LCSD for HBN 1155496
 [XXX34222]
 Spike Duplicate Lab ID: 1292914
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155496001, 1155496002, 1155496003, 1155496004, 1155496005, 1155496006

Results by AK103

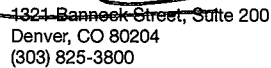
Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	167	167	100	167	168	101	(60-120)	0.71	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	3.33	83.7	84	3.33	85	85	(60-120)	1.60	

Batch Information

Analytical Batch: **XFC12126**
 Analytical Method: **AK103**
 Instrument: **HP 6890 Series II FID SV D R**
 Analyst: **NLL**

Prep Batch: **XXX34222**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/23/2015 16:43**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 10/08/2015 11:54:34AM





Review Criteria:	Yes	N/A	No	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	☐	☒	☐	<i>Exemption permitted if sampler hand carries/delivers.</i>
Temperature blank compliant* (i.e., 0-6°C after CF)? <i>If >6°C, were samples collected <8 hours ago?</i> <i>If <0°C, were all sample containers ice free?</i> Cooler ID: <u>1</u> @ <u>1.4</u> w/ Therm.ID: <u>D2</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received <u>without</u> a temperature blank, the “cooler temperature” will be documented in lieu of the temperature blank & “ COOLER TEMP ” will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note “ambient” or “chilled.”	☒	☐	☐	<i>Exemption permitted if chilled & collected <8 hrs ago.</i>
Delivery method (specify all that apply): ☒ Client (hand carried) ☐ USPS ☐ Lynden ☐ AK Air ☐ Alert Courier ☐ UPS ☐ FedEx ☐ RAVN ☐ C&D Delivery ☐ Carlile ☐ Pen Air ☐ Warp Speed ☐ Other: _____ → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	☐	☒	☐	
	Yes	N/A	No	
Were samples received within hold time? Do samples match COC * (i.e., sample IDs, dates/times collected)? Were analyses requested unambiguous?	☒	☐	☐	<i>Note: Refer to form F-083 “Sample Guide” for hold times.</i> <i>Note: If times differ <1hr, record details and login per COC.</i>
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): ☒ Bubble Wrap ☐ Separate plastic bags ☐ Vermiculite ☐ Other:	☒	☐	☐	
Were proper containers (type/mass/volume/preservative*) used? Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	☒	☐	☐	☐ <i>Exemption permitted for metals (e.g., 200.8/6020A).</i>
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant ? If pH was adjusted, were bottles flagged (i.e., stickers)?	☐	☒	☐	
For special handling (e.g., “MI” soils, foreign soils, lab filter for dissolved..., lab extract for volatiles, Ref Lab, limited volume), were bottles/paperwork flagged (e.g., sticker)?	☐	☒	☐	
For RUSH/SHORT Hold Time , were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	☐	☒	☐	
For SITE-SPECIFIC QC , e.g. BMS/BMSD/BDUP, were containers / paperwork flagged accordingly?	☐	☒	☐	
For any question answered “No,” has the PM been notified and the problem resolved (or paperwork put in their bin)?	☐	☒	☐	SRF Completed by: D.C 09/22/2015 PM notified:
Was PEER REVIEW of <i>sample numbering/labeling completed</i> ?	☒	☐	☐	Peer Reviewed by: VDL
Additional notes (if applicable):				
Sample 8 logged in for Generic per COC. Not to be analyzed, per client request. D.C 09/22/2015				
<i>Note to Client: Any “no” answer above indicates non-compliance with standard procedures and may impact data quality.</i>				

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1155496001-A	No Preservative Required	OK			
1155496001-B	Methanol field pres. 4 C	OK			
1155496002-A	No Preservative Required	OK			
1155496002-B	Methanol field pres. 4 C	OK			
1155496003-A	No Preservative Required	OK			
1155496003-B	Methanol field pres. 4 C	OK			
1155496004-A	No Preservative Required	OK			
1155496004-B	Methanol field pres. 4 C	OK			
1155496005-A	No Preservative Required	OK			
1155496005-B	Methanol field pres. 4 C	OK			
1155496006-A	No Preservative Required	OK			
1155496006-B	Methanol field pres. 4 C	OK			
1155496007-A	Methanol field pres. 4 C	OK			
1155496008-A	No Preservative Required	OK			
1155496008-B	Methanol field pres. 4 C	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates that an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

BU - The container was received with headspace greater than 6mm.

LABORATORY DATA REVIEW CHECKLIST

Completed by: Trevor Crosby

Title: Environmental Scientist

Date: October 30, 2015

CS Report Name: Site Assessment, Pitkas Point School Site, Pitkas Point, Alaska

Laboratory Report Date: October 8, 2015

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.

Laboratory Report Number: 1155496

ADEC File Number: 2444.57.001

ADEC Hazard ID Number: 26405

(NOTE: NA = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes** / No / NA

Comments: *Yes, SGS North America, Inc. (SGS) received the samples and performed submitted sample analyses.*

- b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS-approved?

Yes / No / **NA**

Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

Yes / No / NA

Comments:

- b. Correct analyses requested? **Yes** / No / NA

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes / **No** / NA

Comments: *The cooler temperature was 1.4°C upon receipt at SGS.*

- b. Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes** / No / NA
- c. Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes** / No / NA
Comments: *SGS specifies that samples were received in good condition on the Sample Receipt Form (SRF).*
- d. If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes** / No / NA
Comments: *The cooler temperature was outside the QC range at SGS.*
- e. Data quality or usability affected? Please explain.
Comments: *Although the cooler temperature was less than the QC range, the sample receipt form does not indicated that the samples were frozen. Therefore, data quality/usability is considered unaffected.*

4. Case Narrative

- a. Present and understandable? **Yes** / No / NA
Comments:
- b. Discrepancies, errors or QC failures noted by the lab? **Yes** / No / NA
Comments: *The following QC failures were noted by the lab:*
- *RRO surrogate n-triacontane recovery for Project Samples AST4 and AST4X (Duplicate Sample of AST4) is biased high due to sample matrix;*
 - *GRO surrogate 4-bromofluorobenzene (BFB) recovery for Project Sample AST9 is outside QC criteria (biased low). Sample was analyzed twice for confirmation;*
 - *DRO surrogate 5a-androstane recovery for Project Sample AST9 is outside QC criteria (biased low) due to sample dilution.*
- c. Were corrective actions documented? **Yes** / No / NA
Comments: *The case narrative notes that Sample AST9 was analyzed twice for GRO to confirm results.*
- d. What is the effect on data quality/usability, according to the case narrative?
Comments: *The case narrative does not comment on the data quality/usability.*

5. Sample Results

- a. Correct analyses performed/reported as requested on COC? **Yes** / No / NA (please explain)
Comments:

- b. All applicable holding times met? **Yes** / No / NA

Comments:

- c. All soils reported on a dry-weight basis? **Yes** / No / NA

Comments:

- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes** / No / NA

Comments: *LOQs and reporting limits are less than cleanup levels where applicable (for non-detect results)*

- e. Data quality or usability affected? **NA**

Comments:

6. QC Samples

a. Method Blank

- i. One method blank reported per matrix, analysis, and 20 samples?

Yes / No / NA

Comments:

- ii. All method blank results less than LOQ? **Yes** / No / NA

Comments: *However, GRO, P&M-xylene, and toluene were detected at estimated concentrations of 1.01 mg/kg, 0.0155 mg/kg, and 0.0125 mg/kg, respectively in the method blank for Project Samples AST4, AST8, AST9, AST10, PR3, and Trip Blank 2. GRO and P&M-xylene were detected at estimated concentrations of 1.17 mg/kg and 0.0195 mg/kg, respectively in a second method blank for Project Samples AST4X and AST9. Method blank detections of P&M xylene and GRO results for AST9 were 0.0155 mg/kg and 1.17 mg/kg, respectively.*

- iii. If above LOQ, what samples are affected?

Comments: *See above.*

- iv. Do the affected sample(s) have data flags? **Yes** / No / NA

Comments: *The estimated GRO results in Project Samples AST8, AST9, and AST10 are within 5 times the amounts found in the method blank and are considered non detect at the LOQ, flagged 'B' in Table 2 of the report. The estimated toluene result in Project Sample AST4 is within 5 times the amount found in the method blank and is considered non detect at the LOQ, flagged 'B' in Table 2 of the report. The P&M-xylene result for AST4X is within 10 times the method blank and flagged 'B' in Table 2 of the report.*

If so, are the data flags clearly defined? **Yes** / No / NA

Comments: *See above.*

- v. Data quality or usability affected? Yes / No / **NA**

Comments: *See above.*

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes** / No / NA

Comments: *One LCS/LCSD pair reported per analysis and 20 samples for GRO, DRO, RRO, and BTEX analyses.*

- ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? Yes / No / **NA**

Comments: *Inorganic analyses not performed.*

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes** / No / NA

Comments:

- iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes** / No / NA (please explain)

Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected? **NA**

Comments: *See above.*

- vi. Do the affected samples(s) have data flags? Yes / No / **NA**

Comments: *See above.*

If so, are the data flags clearly defined? Yes / No / **NA**

Comments: *See above.*

- vii. Data quality or usability affected? Explain. **NA**

Comments: *See above.*

c. Surrogates - Organics Only

- i. Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes** / No / NA

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes** / **No** / NA

Comments: *Recovery of RRO surrogate n-triacontane in Project Samples AST4 and AST4X is above QC criteria due to sample matrix. Recovery of GRO surrogate 4-bromofluorobenzene (BFB) recovery for Project Sample AST9 is outside QC criteria biased low. Recovery of DRO surrogate 5a-androstane recovery for Project Sample AST9 is outside QC criteria biased low due to sample dilution.*

- iii. Do the sample results with failed surrogate recoveries have data flags? **Yes** / **No** / NA

Comments: *RRO results for Samples AST4 and AST4X are flagged “J+”. GRO results for Sample AST9 are ‘B’ flagged due to the method blank detection. DRO results for Sample AST9 are considered unaffected because the surrogate percent recovery failure was due to sample dilution.*

If so, are the data flags clearly defined? **Yes** / **No** / NA

Comments: *See above.*

- iv. Data quality or usability affected? Explain. **Yes** / **No** / NA

Comments: *The associated RRO results are considered a biased high estimate and flagged “J+” in Table 2 of the Report. Because the reported result is less than the ADEC cleanup level, potentially high bias should not affect the data usability for this project.*

d. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.) Water

- i. One trip blank reported per matrix, analysis and cooler? **Yes** / **No** / NA

Comments:

- ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes** / **No** / **NA**

Comments: *Only one cooler was submitted to the laboratory.*

- iii. All results less than LOQ? **Yes** / **No** / NA

Comments:

- iv. If above LOQ, what samples are affected? **NA**

Comments:

- v. Data quality or usability affected? Explain. **NA**

Comments: *See above.*

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes / No / NA

Comments: *A field duplicate was submitted per 10 project samples for GRO, DRO, RRO, and BTEX analysis.*

- ii. Were the field duplicates submitted blind to the lab? **Yes** / No / NA

Comments: *Sample AST4X is a field duplicate of AST4.*

- iii. Precision – All relative percent differences (RPDs) less than specified DQOs?

(Recommended: 30% for water, 50% for soil) **Yes** / No / NA

Comments: *RPD for total xylenes is greater than 50% (105%). RPDs for GRO, DRO, and RRO were less than the DQOs. Benzene, toluene, and ethylbenzene analytes could not be calculated due to non-detect results for the primary and/or duplicate samples.*

- iv. Data quality or usability affected? Explain. **NA**

Comments: *The RPD failure is likely due to non-homogeneous distribution of contaminants in the soil. For total xylenes, both primary and duplicate concentrations are less than the most stringent ADEC Method Two cleanup level. Therefore, the results are considered usable for the purpose of this project.*

- f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)

Yes / No / **NA** *Collecting and submitting a decontamination or equipment blank was not included in the ADEC-approved project scope.*

- i. All results less than LOQ? **Yes** / No **NA**

Comments: *See above.*

- ii. If results are above LOQ, what samples are affected? **NA**

Comments: *See above.*

- iii. Data quality or usability affected? Explain. **NA**

Comments: *See above.*

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)

- a. Are they defined and appropriate? **Yes** / No / NA

Comments: *Laboratory-applied data flags are defined on page 3 of the SGS report.*

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Ste 3
Anchorage, AK 99518
907-561-2120

Report Number: **1155497**

Client Project: **32-1-17747 Pitkas Point**

Dear Tim Terry,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.



SGS North America Inc.
Environmental Services - Alaska Division
Project Manager

Victoria Pennick

2015.10.27

15:31:59 -08'00'

Victoria Pennick
Project Manager
Victoria.Pennick@sgs.com

Date

Print Date: 10/27/2015 1:51:41PM

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
 SGS Project: **1155497**
 Project Name/Site: **32-1-17747 Pitkas Point**
 Project Contact: **Tim Terry**

Refer to sample receipt form for information on sample condition.

17747-PPS10-D (1155497003) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (328%) does not meet QC criteria due to matrix interference.

17747-PPS10-1-B (1155497004) PS

AK102/103 - Surrogate recoveries for 5a androstane (0%) and n-triacontane (0%) do not meet QC criteria due to sample dilution (20X).

10/16/15: amended collection time per client request.

17747-PPS10-3-D (1155497006) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (340%) does not meet QC criteria due to matrix interference.

17747-PPS10-3-DX (1155497007) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (237%) does not meet QC criteria due to matrix interference.

17747-PPS13-C (1155497011) PS

10/16/15: Amended to correct sample ID and date/time of collection.

17747-PPS12-3-C (1155497013) PS

10/16/15: Amended to correct sample ID and date/time of collection, and add DRO/RRO + DRO/RRO SiGel..

AK102/103 - Sample was analyzed past the 14 day hold time.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/27/2015 1:51:43PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
17747-PPS1/PPS11-B	1155497001	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS1/PPS11-3-A	1155497002	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-D	1155497003	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-1-B	1155497004	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-2-D	1155497005	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-3-D	1155497006	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-3-DX	1155497007	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS10-4-B	1155497008	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS12-C	1155497009	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS12-2-A	1155497010	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS13-C	1155497011	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS12-3-CX	1155497012	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS12-3-C	1155497013	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS13-1-A	1155497014	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-PPS13-2-B	1155497015	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-TF1	1155497016	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-TF2	1155497017	09/17/2015	09/22/2015	Soil/Solid (dry weight)
17747-TB1	1155497018	09/17/2015	09/22/2015	Soil/Solid (dry weight)

Method

AK101
SW8021B
AK102
AK103
AK102
AK103
SM21 2540G

Method Description

AK101/8021 Combo. (S)
AK101/8021 Combo. (S)
Diesel/Residual Range Organics
Diesel/Residual Range Organics
Diesel/Residual Range Organics w/ Silica
Diesel/Residual Range Organics w/ Silica
Percent Solids SM2540G

Detectable Results Summary

Client Sample ID: **17747-PPS1/PPS11-B**

Lab Sample ID: 1155497001

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	50.6	mg/Kg
Residual Range Organics	316	mg/Kg
Ethylbenzene	23.7J	ug/Kg
Gasoline Range Organics	4.41J	mg/Kg
P & M -Xylene	32.6J	ug/Kg

Client Sample ID: **17747-PPS1/PPS11-3-A**

Lab Sample ID: 1155497002

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	11.4J	mg/Kg
Residual Range Organics	123	mg/Kg
Gasoline Range Organics	1.66J	mg/Kg
P & M -Xylene	25.8J	ug/Kg
Toluene	20.0J	ug/Kg

Client Sample ID: **17747-PPS10-D**

Lab Sample ID: 1155497003

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	9430	mg/Kg
Residual Range Organics	61.1	mg/Kg
Ethylbenzene	117	ug/Kg
Gasoline Range Organics	64.3	mg/Kg
o-Xylene	4100	ug/Kg
P & M -Xylene	1450	ug/Kg
Toluene	255	ug/Kg

Client Sample ID: **17747-PPS10-1-B**

Lab Sample ID: 1155497004

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1800	mg/Kg
Residual Range Organics	1560	mg/Kg
Gasoline Range Organics	5.36J	mg/Kg
o-Xylene	62.3	ug/Kg
P & M -Xylene	59.9J	ug/Kg

Client Sample ID: **17747-PPS10-2-D**

Lab Sample ID: 1155497005

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2500	mg/Kg
Residual Range Organics	110	mg/Kg
Gasoline Range Organics	4.53	mg/Kg
o-Xylene	62.4	ug/Kg
P & M -Xylene	27.6J	ug/Kg

Detectable Results Summary

Client Sample ID: **17747-PPS10-3-D**

Lab Sample ID: 1155497006

Semivolatile Organic Fuels

Semivolatile Organic Fuels Department, Silica

Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	888	mg/Kg
Residual Range Organics	63.7	mg/Kg
DRO Silica Gel	795	mg/Kg
RRO Silica Gel	30.3J	mg/Kg
Ethylbenzene	53.6	ug/Kg
Gasoline Range Organics	20.5	mg/Kg
o-Xylene	517	ug/Kg
P & M -Xylene	126	ug/Kg

Client Sample ID: **17747-PPS10-3-DX**

Lab Sample ID: 1155497007

Semivolatile Organic Fuels

Semivolatile Organic Fuels Department, Silica

Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	1180	mg/Kg
Residual Range Organics	35.9J	mg/Kg
DRO Silica Gel	1110	mg/Kg
RRO Silica Gel	35.4J	mg/Kg
Ethylbenzene	27.7	ug/Kg
Gasoline Range Organics	10.2	mg/Kg
o-Xylene	242	ug/Kg
P & M -Xylene	72.3	ug/Kg

Client Sample ID: **17747-PPS10-4-B**

Lab Sample ID: 1155497008

Semivolatile Organic Fuels

Volatile Fuels

Parameter	Result	Units
Residual Range Organics	64.5	mg/Kg
Gasoline Range Organics	1.88J	mg/Kg

Client Sample ID: **17747-PPS12-C**

Lab Sample ID: 1155497009

Semivolatile Organic Fuels

Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	27.1	mg/Kg
Residual Range Organics	230	mg/Kg
Gasoline Range Organics	2.78J	mg/Kg

Client Sample ID: **17747-PPS12-2-A**

Lab Sample ID: 1155497010

Semivolatile Organic Fuels

Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	19.0J	mg/Kg
Residual Range Organics	155	mg/Kg
Gasoline Range Organics	1.78J	mg/Kg

Client Sample ID: **17747-PPS13-C**

Lab Sample ID: 1155497011

Semivolatile Organic Fuels

Semivolatile Organic Fuels Department, Silica

Parameter	Result	Units
Diesel Range Organics	27.3J	mg/Kg
Residual Range Organics	232	mg/Kg
DRO Silica Gel	18.7J	mg/Kg
RRO Silica Gel	81.7	mg/Kg

Detectable Results Summary

Client Sample ID: **17747-PPS12-3-CX**

Lab Sample ID: 1155497012

Semivolatile Organic Fuels

Semivolatile Organic Fuels Department, Silica

Volatile Fuels

Client Sample ID: **17747-PPS12-3-C**

Lab Sample ID: 1155497013

Semivolatile Organic Fuels

Semivolatile Organic Fuels Department, Silica

Client Sample ID: **17747-PPS13-1-A**

Lab Sample ID: 1155497014

Semivolatile Organic Fuels

Volatile Fuels

Client Sample ID: **17747-PPS13-2-B**

Lab Sample ID: 1155497015

Semivolatile Organic Fuels

Volatile Fuels

Client Sample ID: **17747-TF1**

Lab Sample ID: 1155497016

Semivolatile Organic Fuels

Volatile Fuels

Client Sample ID: **17747-TF2**

Lab Sample ID: 1155497017

Semivolatile Organic Fuels

Volatile Fuels

Client Sample ID: **17747-TB1**

Lab Sample ID: 1155497018

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	510	mg/Kg
Residual Range Organics	631	mg/Kg
DRO Silica Gel	301	mg/Kg
RRO Silica Gel	167	mg/Kg
Gasoline Range Organics	2.91J	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	317	mg/Kg
Residual Range Organics	488	mg/Kg
DRO Silica Gel	155	mg/Kg
RRO Silica Gel	86.5	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	18.7J	mg/Kg
Residual Range Organics	189	mg/Kg
Gasoline Range Organics	3.30J	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	67.8	mg/Kg
Gasoline Range Organics	1.88J	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	19.5J	mg/Kg
Residual Range Organics	141	mg/Kg
Gasoline Range Organics	3.62J	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	849	mg/Kg
Residual Range Organics	164	mg/Kg
Gasoline Range Organics	2.68J	mg/Kg

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	17.1J	ug/Kg
Toluene	15.6J	ug/Kg

Results of 17747-PPS1/PPS11-B

Client Sample ID: **17747-PPS1/PPS11-B**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497001
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:32
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 72.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	50.6	27.5	8.51	mg/Kg	1		10/04/15 02:44
Surrogates							
5a Androstane (surr)	76.3	50-150		%	1		10/04/15 02:44

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 02:44
 Container ID: 1155497001-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.271 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	316	27.5	8.51	mg/Kg	1		10/04/15 02:44
Surrogates							
n-Triacontane-d62 (surr)	95.3	50-150		%	1		10/04/15 02:44

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 02:44
 Container ID: 1155497001-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.271 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS1/PPS11-B

Client Sample ID: 17747-PPS1/PPS11-B
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497001
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:32
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 72.2
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.41 J	4.94	1.48	mg/Kg	1		09/24/15 20:06

Surrogates

4-Bromofluorobenzene (surr)	85.3	50-150		%	1		09/24/15 20:06
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 20:06
 Container ID: 1155497001-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:32
 Prep Initial Wt./Vol.: 57.417 g
 Prep Extract Vol: 40.9621 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	12.4 U	24.7	7.90	ug/Kg	1		09/24/15 20:06
Ethylbenzene	23.7 J	49.4	15.4	ug/Kg	1		09/24/15 20:06
o-Xylene	24.7 U	49.4	15.4	ug/Kg	1		09/24/15 20:06
P & M -Xylene	32.6 J	98.8	29.6	ug/Kg	1		09/24/15 20:06
Toluene	24.7 U	49.4	15.4	ug/Kg	1		09/24/15 20:06

Surrogates

1,4-Difluorobenzene (surr)	85.9	72-119		%	1		09/24/15 20:06
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 20:06
 Container ID: 1155497001-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:32
 Prep Initial Wt./Vol.: 57.417 g
 Prep Extract Vol: 40.9621 mL

Results of 17747-PPS1/PPS11-3-A

Client Sample ID: 17747-PPS1/PPS11-3-A
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497002
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:42
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 74.8
 Location:

Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.4 J	26.5	8.21	mg/Kg	1		10/04/15 02:53
Surrogates							
5a Androstane (surr)	69.1	50-150		%	1		10/04/15 02:53

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 02:53
 Container ID: 1155497002-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.286 g
 Prep Extract Vol: 1 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	123	26.5	8.21	mg/Kg	1		10/04/15 02:53
Surrogates							
n-Triacontane-d62 (surr)	79.8	50-150		%	1		10/04/15 02:53

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 02:53
 Container ID: 1155497002-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.286 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS1/PPS11-3-A

Client Sample ID: 17747-PPS1/PPS11-3-A
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497002
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:42
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 74.8
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.66 J	3.85	1.16	mg/Kg	1		09/24/15 21:41
Surrogates							
4-Bromofluorobenzene (surr)	84.2	50-150		%	1		09/24/15 21:41

Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 21:41
 Container ID: 1155497002-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:42
 Prep Initial Wt./Vol.: 76.966 g
 Prep Extract Vol: 44.388 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.65 U	19.3	6.17	ug/Kg	1		09/24/15 21:41
Ethylbenzene	19.3 U	38.5	12.0	ug/Kg	1		09/24/15 21:41
o-Xylene	19.3 U	38.5	12.0	ug/Kg	1		09/24/15 21:41
P & M -Xylene	25.8 J	77.1	23.1	ug/Kg	1		09/24/15 21:41
Toluene	20.0 J	38.5	12.0	ug/Kg	1		09/24/15 21:41
Surrogates							
1,4-Difluorobenzene (surr)	85.8	72-119		%	1		09/24/15 21:41

Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 21:41
 Container ID: 1155497002-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:42
 Prep Initial Wt./Vol.: 76.966 g
 Prep Extract Vol: 44.388 mL

Results of 17747-PPS10-D

Client Sample ID: **17747-PPS10-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497003
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:52
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 82.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	9430	964	299	mg/Kg	40		10/05/15 19:52
Surrogates							
5a Androstane (surr)	84.9	50-150		%	1		10/04/15 03:03

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:03
 Container ID: 1155497003-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.255 g
 Prep Extract Vol: 1 mL

Analytical Batch: XFC12132
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 19:52
 Container ID: 1155497003-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.255 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	61.1	24.1	7.47	mg/Kg	1		10/04/15 03:03
Surrogates							
n-Triacontane-d62 (surr)	106	50-150		%	1		10/04/15 03:03

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:03
 Container ID: 1155497003-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.255 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS10-D

Client Sample ID: **17747-PPS10-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497003
 Lab Project ID: 1155497

Collection Date: 09/17/15 08:52
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.3
 Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	64.3		3.20	0.960	mg/Kg	1		09/29/15 22:56

Surrogates

4-Bromofluorobenzene (surr)	328	*	50-150		%	1		09/29/15 22:56
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Batch Information

Analytical Batch: VFC12701
 Analytical Method: AK101
 Analyst: KAS
 Analytical Date/Time: 09/29/15 22:56
 Container ID: 1155497003-B

Prep Batch: VXX27983
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:52
 Prep Initial Wt./Vol.: 71.548 g
 Prep Extract Vol: 37.6705 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.00	U	16.0	5.12	ug/Kg	1		09/29/15 22:56
Ethylbenzene	117		32.0	9.98	ug/Kg	1		09/29/15 22:56
o-Xylene	4100		32.0	9.98	ug/Kg	1		09/29/15 22:56
P & M -Xylene	1450		64.0	19.2	ug/Kg	1		09/29/15 22:56
Toluene	255		32.0	9.98	ug/Kg	1		09/29/15 22:56

Surrogates

1,4-Difluorobenzene (surr)	92		72-119		%	1		09/29/15 22:56
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Batch Information

Analytical Batch: VFC12701
 Analytical Method: SW8021B
 Analyst: KAS
 Analytical Date/Time: 09/29/15 22:56
 Container ID: 1155497003-B

Prep Batch: VXX27983
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 08:52
 Prep Initial Wt./Vol.: 71.548 g
 Prep Extract Vol: 37.6705 mL

Results of 17747-PPS10-1-B

Client Sample ID: **17747-PPS10-1-B**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497004
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:10
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):63.4
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1800		628	195	mg/Kg	20		10/05/15 11:26
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		10/05/15 11:26

Batch Information

Analytical Batch: XFC12131
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 11:26
 Container ID: 1155497004-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.157 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1560		628	195	mg/Kg	20		10/05/15 11:26
Surrogates								
n-Triacontane-d62 (surr)	0	*	50-150		%	20		10/05/15 11:26

Batch Information

Analytical Batch: XFC12131
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/05/15 11:26
 Container ID: 1155497004-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.157 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS10-1-B

Client Sample ID: 17747-PPS10-1-B
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497004
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:10
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):63.4
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	5.36 J	5.93	1.78	mg/Kg	1		09/24/15 22:19

Surrogates

4-Bromofluorobenzene (surr)	67.3	50-150		%	1		09/24/15 22:19
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:19
 Container ID: 1155497004-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:40
 Prep Initial Wt./Vol.: 64.89 g
 Prep Extract Vol: 48.778 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	14.9 U	29.7	9.49	ug/Kg	1		09/24/15 22:19
Ethylbenzene	29.6 U	59.3	18.5	ug/Kg	1		09/24/15 22:19
o-Xylene	62.3	59.3	18.5	ug/Kg	1		09/24/15 22:19
P & M -Xylene	59.9 J	119	35.6	ug/Kg	1		09/24/15 22:19
Toluene	29.6 U	59.3	18.5	ug/Kg	1		09/24/15 22:19

Surrogates

1,4-Difluorobenzene (surr)	87	72-119		%	1		09/24/15 22:19
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:19
 Container ID: 1155497004-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:40
 Prep Initial Wt./Vol.: 64.89 g
 Prep Extract Vol: 48.778 mL

Results of 17747-PPS10-2-D

Client Sample ID: **17747-PPS10-2-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497005
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:00
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):81.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	2500	97.5	30.2	mg/Kg	4		10/05/15 11:06
Surrogates							
5a Androstane (surr)	76.2	50-150		%	4		10/05/15 11:06

Batch Information

Analytical Batch: XFC12131
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/05/15 11:06
 Container ID:

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.066 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	110	24.4	7.56	mg/Kg	1		10/04/15 03:23
Surrogates							
n-Triacontane-d62 (surr)	67.1	50-150		%	1		10/04/15 03:23

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:23
 Container ID: 1155497005-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.066 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS10-2-D

Client Sample ID: 17747-PPS10-2-D
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497005
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:00
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):81.9
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.53	3.41	1.02	mg/Kg	1		09/24/15 22:38

Surrogates

4-Bromofluorobenzene (surr)	94.5	50-150		%	1		09/24/15 22:38
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:38
 Container ID: 1155497005-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:00
 Prep Initial Wt./Vol.: 66.331 g
 Prep Extract Vol: 37.0251 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.50 U	17.0	5.45	ug/Kg	1		09/24/15 22:38
Ethylbenzene	17.1 U	34.1	10.6	ug/Kg	1		09/24/15 22:38
o-Xylene	62.4	34.1	10.6	ug/Kg	1		09/24/15 22:38
P & M -Xylene	27.6 J	68.2	20.5	ug/Kg	1		09/24/15 22:38
Toluene	17.1 U	34.1	10.6	ug/Kg	1		09/24/15 22:38

Surrogates

1,4-Difluorobenzene (surr)	86.4	72-119		%	1		09/24/15 22:38
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:38
 Container ID: 1155497005-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:00
 Prep Initial Wt./Vol.: 66.331 g
 Prep Extract Vol: 37.0251 mL

Results of 17747-PPS10-3-D

Client Sample ID: **17747-PPS10-3-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497006
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:35
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	888	48.1	14.9	mg/Kg	1		10/04/15 18:27
Surrogates							
5a Androstane (surr)	88.1	50-150		%	1		10/04/15 18:27

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:27
 Container ID: 1155497006-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.098 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	63.7	48.1	14.9	mg/Kg	1		10/04/15 18:27
Surrogates							
n-Triacontane-d62 (surr)	84.3	50-150		%	1		10/04/15 18:27

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:27
 Container ID: 1155497006-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.098 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS10-3-D

Client Sample ID: **17747-PPS10-3-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497006
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:35
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.9
 Location:

Results by Semivolatile Organic Fuels Department, Silica G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
DRO Silica Gel	795	48.1	14.9	mg/Kg	1		10/05/15 00:17
Surrogates							
5a Androstane (surr)	82.7	50-150		%	1		10/05/15 00:17

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:27
 Container ID: 1155497006-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.098 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
RRO Silica Gel	30.3 J	48.1	14.9	mg/Kg	1		10/05/15 00:17
Surrogates							
n-Triacontane-d62 (surr)	78.9	50-150		%	1		10/05/15 00:17

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:27
 Container ID: 1155497006-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.098 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS10-3-D

Client Sample ID: **17747-PPS10-3-D**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497006
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:35
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.9
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	20.5	2.65	0.796	mg/Kg	1		09/24/15 22:57

Surrogates

4-Bromofluorobenzene (surr)	340 *	50-150		%	1		09/24/15 22:57
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:57
 Container ID: 1155497006-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:35
 Prep Initial Wt./Vol.: 92.977 g
 Prep Extract Vol: 40.9 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	6.65 U	13.3	4.25	ug/Kg	1		09/24/15 22:57
Ethylbenzene	53.6	26.5	8.28	ug/Kg	1		09/24/15 22:57
o-Xylene	517	26.5	8.28	ug/Kg	1		09/24/15 22:57
P & M -Xylene	126	53.1	15.9	ug/Kg	1		09/24/15 22:57
Toluene	13.3 U	26.5	8.28	ug/Kg	1		09/24/15 22:57

Surrogates

1,4-Difluorobenzene (surr)	90.6	72-119		%	1		09/24/15 22:57
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 22:57
 Container ID: 1155497006-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:35
 Prep Initial Wt./Vol.: 92.977 g
 Prep Extract Vol: 40.9 mL

Results of 17747-PPS10-3-DX

Client Sample ID: **17747-PPS10-3-DX**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497007
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:37
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):83.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1180	47.6	14.8	mg/Kg	1		10/04/15 18:48
Surrogates							
5a Androstane (surr)	91.7	50-150		%	1		10/04/15 18:48

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:48
 Container ID: 1155497007-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.266 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	35.9 J	47.6	14.8	mg/Kg	1		10/04/15 18:48
Surrogates							
n-Triacontane-d62 (surr)	86.9	50-150		%	1		10/04/15 18:48

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:48
 Container ID: 1155497007-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.266 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS10-3-DX

Client Sample ID: **17747-PPS10-3-DX**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497007
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:37
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):83.2
 Location:

Results by Semivolatile Organic Fuels Department, Silica G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
DRO Silica Gel	1110	47.6	14.8	mg/Kg	1		10/05/15 00:37
Surrogates							
5a Androstane (surr)	89.7	50-150		%	1		10/05/15 00:37

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:48
 Container ID: 1155497007-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.266 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
RRO Silica Gel	35.4 J	47.6	14.8	mg/Kg	1		10/05/15 00:37
Surrogates							
n-Triacontane-d62 (surr)	85.5	50-150		%	1		10/05/15 00:37

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 18:48
 Container ID: 1155497007-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.266 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS10-3-DX

Client Sample ID: **17747-PPS10-3-DX**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497007
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:37
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):83.2
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	10.2	2.35	0.704	mg/Kg	1		09/24/15 23:16

Surrogates

4-Bromofluorobenzene (surr)	237 *	50-150		%	1		09/24/15 23:16
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:16
 Container ID: 1155497007-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:37
 Prep Initial Wt./Vol.: 112.13 g
 Prep Extract Vol: 43.8067 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	5.85 U	11.7	3.76	ug/Kg	1		09/24/15 23:16
Ethylbenzene	27.7	23.5	7.32	ug/Kg	1		09/24/15 23:16
o-Xylene	242	23.5	7.32	ug/Kg	1		09/24/15 23:16
P & M -Xylene	72.3	46.9	14.1	ug/Kg	1		09/24/15 23:16
Toluene	11.8 U	23.5	7.32	ug/Kg	1		09/24/15 23:16

Surrogates

1,4-Difluorobenzene (surr)	90.1	72-119		%	1		09/24/15 23:16
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:16
 Container ID: 1155497007-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:37
 Prep Initial Wt./Vol.: 112.13 g
 Prep Extract Vol: 43.8067 mL

Results of 17747-PPS10-4-B

Client Sample ID: **17747-PPS10-4-B**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497008
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:18
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	11.9 U	23.9	7.42	mg/Kg	1		10/04/15 03:33
Surrogates							
5a Androstane (surr)	75.9	50-150		%	1		10/04/15 03:33

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:33
 Container ID: 1155497008-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.465 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	64.5	23.9	7.42	mg/Kg	1		10/04/15 03:33
Surrogates							
n-Triacontane-d62 (surr)	83.7	50-150		%	1		10/04/15 03:33

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:33
 Container ID: 1155497008-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.465 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS10-4-B

Client Sample ID: **17747-PPS10-4-B**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497008
 Lab Project ID: 1155497

Collection Date: 09/17/15 09:18
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.3
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.88 J	3.38	1.01	mg/Kg	1		09/24/15 23:35

Surrogates

4-Bromofluorobenzene (surr)	107	50-150		%	1		09/24/15 23:35
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:35
 Container ID: 1155497008-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:18
 Prep Initial Wt./Vol.: 65.838 g
 Prep Extract Vol: 36.6336 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	8.45 U	16.9	5.41	ug/Kg	1		09/24/15 23:35
Ethylbenzene	16.9 U	33.8	10.5	ug/Kg	1		09/24/15 23:35
o-Xylene	16.9 U	33.8	10.5	ug/Kg	1		09/24/15 23:35
P & M -Xylene	33.8 U	67.6	20.3	ug/Kg	1		09/24/15 23:35
Toluene	16.9 U	33.8	10.5	ug/Kg	1		09/24/15 23:35

Surrogates

1,4-Difluorobenzene (surr)	87.4	72-119		%	1		09/24/15 23:35
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:35
 Container ID: 1155497008-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 09:18
 Prep Initial Wt./Vol.: 65.838 g
 Prep Extract Vol: 36.6336 mL

Results of 17747-PPS12-C

Client Sample ID: **17747-PPS12-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497009
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:01
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 74.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	27.1	26.4	8.18	mg/Kg	1		10/04/15 03:43
Surrogates							
5a Androstane (surr)	74.1	50-150		%	1		10/04/15 03:43

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:43
 Container ID: 1155497009-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.391 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	230	26.4	8.18	mg/Kg	1		10/04/15 03:43
Surrogates							
n-Triacontane-d62 (surr)	95.3	50-150		%	1		10/04/15 03:43

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:43
 Container ID: 1155497009-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.391 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS12-C

Client Sample ID: **17747-PPS12-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497009
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:01
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 74.8
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.78 J	4.46	1.34	mg/Kg	1		09/24/15 23:54

Surrogates

4-Bromofluorobenzene (surr)	75.5	50-150		%	1		09/24/15 23:54
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:54
 Container ID: 1155497009-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:01
 Prep Initial Wt./Vol.: 60.111 g
 Prep Extract Vol: 40.1234 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.2 U	22.3	7.14	ug/Kg	1		09/24/15 23:54
Ethylbenzene	22.3 U	44.6	13.9	ug/Kg	1		09/24/15 23:54
o-Xylene	22.3 U	44.6	13.9	ug/Kg	1		09/24/15 23:54
P & M -Xylene	44.6 U	89.2	26.8	ug/Kg	1		09/24/15 23:54
Toluene	22.3 U	44.6	13.9	ug/Kg	1		09/24/15 23:54

Surrogates

1,4-Difluorobenzene (surr)	86.9	72-119		%	1		09/24/15 23:54
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/24/15 23:54
 Container ID: 1155497009-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:01
 Prep Initial Wt./Vol.: 60.111 g
 Prep Extract Vol: 40.1234 mL

Results of 17747-PPS12-2-A

Client Sample ID: **17747-PPS12-2-A**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497010
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:09
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%): 78.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	19.0 J	25.3	7.84	mg/Kg	1		10/04/15 03:53
Surrogates							
5a Androstane (surr)	74.7	50-150		%	1		10/04/15 03:53

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:53
 Container ID: 1155497010-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.342 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	155	25.3	7.84	mg/Kg	1		10/04/15 03:53
Surrogates							
n-Triacontane-d62 (surr)	82.3	50-150		%	1		10/04/15 03:53

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 03:53
 Container ID: 1155497010-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.342 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS12-2-A

Client Sample ID: 17747-PPS12-2-A
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497010
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:09
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):78.2
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.78 J	3.79	1.14	mg/Kg	1		09/25/15 00:13

Surrogates

4-Bromofluorobenzene (surr)	91.2	50-150		%	1		09/25/15 00:13
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:13
 Container ID: 1155497010-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:09
 Prep Initial Wt./Vol.: 66.557 g
 Prep Extract Vol: 39.5008 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.50 U	19.0	6.07	ug/Kg	1		09/25/15 00:13
Ethylbenzene	18.9 U	37.9	11.8	ug/Kg	1		09/25/15 00:13
o-Xylene	18.9 U	37.9	11.8	ug/Kg	1		09/25/15 00:13
P & M -Xylene	38.0 U	75.9	22.8	ug/Kg	1		09/25/15 00:13
Toluene	18.9 U	37.9	11.8	ug/Kg	1		09/25/15 00:13

Surrogates

1,4-Difluorobenzene (surr)	87.1	72-119		%	1		09/25/15 00:13
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:13
 Container ID: 1155497010-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:09
 Prep Initial Wt./Vol.: 66.557 g
 Prep Extract Vol: 39.5008 mL

Results of 17747-PPS13-C

Client Sample ID: **17747-PPS13-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497011
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:40
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):73.0
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	27.3 J	54.7	17.0	mg/Kg	1		10/04/15 19:08
Surrogates							
5a Androstane (surr)	98.1	50-150		%	1		10/04/15 19:08

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:08
 Container ID: 1155497011-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.037 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	232	54.7	17.0	mg/Kg	1		10/04/15 19:08
Surrogates							
n-Triacontane-d62 (surr)	93.4	50-150		%	1		10/04/15 19:08

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:08
 Container ID: 1155497011-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.037 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS13-C

Client Sample ID: **17747-PPS13-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497011
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:40
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):73.0
 Location:

Results by Semivolatile Organic Fuels Department, Silica G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
DRO Silica Gel	18.7 J	54.7	17.0	mg/Kg	1		10/05/15 00:58
Surrogates							
5a Androstane (surr)	85.6	50-150		%	1		10/05/15 00:58

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:08
 Container ID: 1155497011-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.037 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
RRO Silica Gel	81.7	54.7	17.0	mg/Kg	1		10/05/15 00:58
Surrogates							
n-Triacontane-d62 (surr)	87	50-150		%	1		10/05/15 00:58

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:08
 Container ID: 1155497011-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.037 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS13-C

Client Sample ID: **17747-PPS13-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497011
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:40
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):73.0
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.36 U	4.71	1.41	mg/Kg	1		09/25/15 00:32

Surrogates

4-Bromofluorobenzene (surr)	72	50-150		%	1		09/25/15 00:32
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:32
 Container ID: 1155497011-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:40
 Prep Initial Wt./Vol.: 59.967 g
 Prep Extract Vol: 41.1998 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.8 U	23.5	7.53	ug/Kg	1		09/25/15 00:32
Ethylbenzene	23.6 U	47.1	14.7	ug/Kg	1		09/25/15 00:32
o-Xylene	23.6 U	47.1	14.7	ug/Kg	1		09/25/15 00:32
P & M -Xylene	47.0 U	94.1	28.2	ug/Kg	1		09/25/15 00:32
Toluene	23.6 U	47.1	14.7	ug/Kg	1		09/25/15 00:32

Surrogates

1,4-Difluorobenzene (surr)	87.1	72-119		%	1		09/25/15 00:32
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:32
 Container ID: 1155497011-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:40
 Prep Initial Wt./Vol.: 59.967 g
 Prep Extract Vol: 41.1998 mL

Results of 17747-PPS12-3-CX

Client Sample ID: **17747-PPS12-3-CX**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497012
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:22
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	510	52.0	16.1	mg/Kg	1		10/04/15 19:29
Surrogates							
5a Androstane (surr)	101	50-150		%	1		10/04/15 19:29

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:29
 Container ID: 1155497012-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.46 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	631	52.0	16.1	mg/Kg	1		10/04/15 19:29
Surrogates							
n-Triacontane-d62 (surr)	96.2	50-150		%	1		10/04/15 19:29

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:29
 Container ID: 1155497012-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.46 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS12-3-CX

Client Sample ID: **17747-PPS12-3-CX**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497012
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:22
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Semivolatile Organic Fuels Department, Silica G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
DRO Silica Gel	301	52.0	16.1	mg/Kg	1		10/05/15 01:19
Surrogates							
5a Androstane (surr)	90.2	50-150		%	1		10/05/15 01:19

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:29
 Container ID: 1155497012-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.46 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
RRO Silica Gel	167	52.0	16.1	mg/Kg	1		10/05/15 01:19
Surrogates							
n-Triacontane-d62 (surr)	94.2	50-150		%	1		10/05/15 01:19

Batch Information

Analytical Batch: XFC12133
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/04/15 19:29
 Container ID: 1155497012-A

Prep Batch: XXX34275
 Prep Method: SW3550C
 Prep Date/Time: 09/30/15 08:29
 Prep Initial Wt./Vol.: 30.46 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS12-3-CX

Client Sample ID: 17747-PPS12-3-CX
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497012
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:22
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.91 J	4.20	1.26	mg/Kg	1		09/25/15 00:51

Surrogates

4-Bromofluorobenzene (surr)	82.6	50-150		%	1		09/25/15 00:51
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:51
 Container ID: 1155497012-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:22
 Prep Initial Wt./Vol.: 63.313 g
 Prep Extract Vol: 40.304 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	10.5 U	21.0	6.72	ug/Kg	1		09/25/15 00:51
Ethylbenzene	21.0 U	42.0	13.1	ug/Kg	1		09/25/15 00:51
o-Xylene	21.0 U	42.0	13.1	ug/Kg	1		09/25/15 00:51
P & M -Xylene	42.0 U	84.0	25.2	ug/Kg	1		09/25/15 00:51
Toluene	21.0 U	42.0	13.1	ug/Kg	1		09/25/15 00:51

Surrogates

1,4-Difluorobenzene (surr)	86.3	72-119		%	1		09/25/15 00:51
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Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/25/15 00:51
 Container ID: 1155497012-B

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:22
 Prep Initial Wt./Vol.: 63.313 g
 Prep Extract Vol: 40.304 mL

Results of 17747-PPS12-3-C

Client Sample ID: **17747-PPS12-3-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497013
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:20
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	317	52.5	16.3	mg/Kg	1		10/21/15 05:03
Surrogates							
5a Androstane (surr)	96.3	50-150		%	1		10/21/15 05:03

Batch Information

Analytical Batch: XFC12174
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/21/15 05:03
 Container ID: 1155497013-A

Prep Batch: XXX34453
 Prep Method: SW3550C
 Prep Date/Time: 10/19/15 12:44
 Prep Initial Wt./Vol.: 30.163 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	488	52.5	16.3	mg/Kg	1		10/21/15 05:03
Surrogates							
n-Triacontane-d62 (surr)	104	50-150		%	1		10/21/15 05:03

Batch Information

Analytical Batch: XFC12174
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/21/15 05:03
 Container ID: 1155497013-A

Prep Batch: XXX34453
 Prep Method: SW3550C
 Prep Date/Time: 10/19/15 12:44
 Prep Initial Wt./Vol.: 30.163 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS12-3-C

Client Sample ID: **17747-PPS12-3-C**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497013
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:20
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Semivolatile Organic Fuels Department, Silica G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
DRO Silica Gel	155	52.5	16.3	mg/Kg	1		10/20/15 20:11
Surrogates							
5a Androstane (surr)	86.4	50-150		%	1		10/20/15 20:11

Batch Information

Analytical Batch: XFC12174
 Analytical Method: AK102
 Analyst: KJO
 Analytical Date/Time: 10/21/15 05:03
 Container ID: 1155497013-A

Prep Batch: XXX34453
 Prep Method: SW3550C
 Prep Date/Time: 10/19/15 12:44
 Prep Initial Wt./Vol.: 30.163 g
 Prep Extract Vol: 2 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
RRO Silica Gel	86.5	52.5	16.3	mg/Kg	1		10/20/15 20:11
Surrogates							
n-Triacontane-d62 (surr)	85.7	50-150		%	1		10/20/15 20:11

Batch Information

Analytical Batch: XFC12174
 Analytical Method: AK103
 Analyst: KJO
 Analytical Date/Time: 10/21/15 05:03
 Container ID: 1155497013-A

Prep Batch: XXX34453
 Prep Method: SW3550C
 Prep Date/Time: 10/19/15 12:44
 Prep Initial Wt./Vol.: 30.163 g
 Prep Extract Vol: 2 mL

Results of 17747-PPS12-3-C

Client Sample ID: 17747-PPS12-3-C
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497013
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:20
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):75.8
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.27 U	4.53	1.36	mg/Kg	1		09/26/15 16:21

Surrogates

4-Bromofluorobenzene (surr)	80.8	50-150		%	1		09/26/15 16:21
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 16:21
 Container ID: 1155497013-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:20
 Prep Initial Wt./Vol.: 56.194 g
 Prep Extract Vol: 38.5988 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	11.4 U	22.7	7.25	ug/Kg	1		09/26/15 16:21
Ethylbenzene	22.6 U	45.3	14.1	ug/Kg	1		09/26/15 16:21
o-Xylene	22.6 U	45.3	14.1	ug/Kg	1		09/26/15 16:21
P & M -Xylene	45.3 U	90.6	27.2	ug/Kg	1		09/26/15 16:21
Toluene	22.6 U	45.3	14.1	ug/Kg	1		09/26/15 16:21

Surrogates

1,4-Difluorobenzene (surr)	86.7	72-119		%	1		09/26/15 16:21
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 16:21
 Container ID: 1155497013-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:20
 Prep Initial Wt./Vol.: 56.194 g
 Prep Extract Vol: 38.5988 mL

Results of 17747-PPS13-1-A

Client Sample ID: **17747-PPS13-1-A**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497014
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:50
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):67.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	18.7 J	29.3	9.07	mg/Kg	1		10/04/15 04:32
Surrogates							
5a Androstane (surr)	73.5	50-150		%	1		10/04/15 04:32

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:32
 Container ID: 1155497014-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.234 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	189	29.3	9.07	mg/Kg	1		10/04/15 04:32
Surrogates							
n-Triacontane-d62 (surr)	94.9	50-150		%	1		10/04/15 04:32

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:32
 Container ID: 1155497014-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.234 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS13-1-A

Client Sample ID: 17747-PPS13-1-A
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497014
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:50
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):67.8
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	3.30 J	6.15	1.85	mg/Kg	1		09/26/15 17:18

Surrogates

4-Bromofluorobenzene (surr)	74.4	50-150		%	1		09/26/15 17:18
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:18
 Container ID: 1155497014-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:50
 Prep Initial Wt./Vol.: 48.805 g
 Prep Extract Vol: 40.7087 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	15.4 U	30.8	9.84	ug/Kg	1		09/26/15 17:18
Ethylbenzene	30.8 U	61.5	19.2	ug/Kg	1		09/26/15 17:18
o-Xylene	30.8 U	61.5	19.2	ug/Kg	1		09/26/15 17:18
P & M -Xylene	61.5 U	123	36.9	ug/Kg	1		09/26/15 17:18
Toluene	30.8 U	61.5	19.2	ug/Kg	1		09/26/15 17:18

Surrogates

1,4-Difluorobenzene (surr)	87.5	72-119		%	1		09/26/15 17:18
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:18
 Container ID: 1155497014-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:50
 Prep Initial Wt./Vol.: 48.805 g
 Prep Extract Vol: 40.7087 mL

Results of 17747-PPS13-2-B

Client Sample ID: **17747-PPS13-2-B**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497015
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:59
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):78.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	12.8 U	25.5	7.91	mg/Kg	1		10/04/15 04:42
Surrogates							
5a Androstane (surr)	75.5	50-150		%	1		10/04/15 04:42

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:42
 Container ID: 1155497015-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.044 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	67.8	25.5	7.91	mg/Kg	1		10/04/15 04:42
Surrogates							
n-Triacontane-d62 (surr)	82.6	50-150		%	1		10/04/15 04:42

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:42
 Container ID: 1155497015-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.044 g
 Prep Extract Vol: 1 mL

Results of 17747-PPS13-2-B

Client Sample ID: 17747-PPS13-2-B
 Client Project ID: 32-1-17747 Pitkas Point
 Lab Sample ID: 1155497015
 Lab Project ID: 1155497

Collection Date: 09/17/15 10:59
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):78.3
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.88 J	3.12	0.935	mg/Kg	1		09/26/15 17:37

Surrogates

4-Bromofluorobenzene (surr)	86.3	50-150		%	1		09/26/15 17:37
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:37
 Container ID: 1155497015-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:59
 Prep Initial Wt./Vol.: 92.235 g
 Prep Extract Vol: 45.0145 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	7.80 U	15.6	4.99	ug/Kg	1		09/26/15 17:37
Ethylbenzene	15.6 U	31.2	9.72	ug/Kg	1		09/26/15 17:37
o-Xylene	15.6 U	31.2	9.72	ug/Kg	1		09/26/15 17:37
P & M -Xylene	31.1 U	62.3	18.7	ug/Kg	1		09/26/15 17:37
Toluene	15.6 U	31.2	9.72	ug/Kg	1		09/26/15 17:37

Surrogates

1,4-Difluorobenzene (surr)	87.4	72-119		%	1		09/26/15 17:37
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:37
 Container ID: 1155497015-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 10:59
 Prep Initial Wt./Vol.: 92.235 g
 Prep Extract Vol: 45.0145 mL

Results of 17747-TF1

Client Sample ID: **17747-TF1**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497016
 Lab Project ID: 1155497

Collection Date: 09/17/15 13:14
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):63.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	19.5 J	31.5	9.78	mg/Kg	1		10/04/15 04:52
Surrogates							
5a Androstane (surr)	67.4	50-150		%	1		10/04/15 04:52

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:52
 Container ID: 1155497016-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.102 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	141	31.5	9.78	mg/Kg	1		10/04/15 04:52
Surrogates							
n-Triacontane-d62 (surr)	82.5	50-150		%	1		10/04/15 04:52

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 04:52
 Container ID: 1155497016-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.102 g
 Prep Extract Vol: 1 mL

Results of 17747-TF1

Client Sample ID: **17747-TF1**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497016
 Lab Project ID: 1155497

Collection Date: 09/17/15 13:14
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):63.2
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	3.62 J	6.51	1.95	mg/Kg	1		09/26/15 17:56

Surrogates

4-Bromofluorobenzene (surr)	69	50-150		%	1		09/26/15 17:56
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:56
 Container ID: 1155497016-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:14
 Prep Initial Wt./Vol.: 55.069 g
 Prep Extract Vol: 45.2757 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	16.3 U	32.5	10.4	ug/Kg	1		09/26/15 17:56
Ethylbenzene	32.5 U	65.1	20.3	ug/Kg	1		09/26/15 17:56
o-Xylene	32.5 U	65.1	20.3	ug/Kg	1		09/26/15 17:56
P & M -Xylene	65.0 U	130	39.0	ug/Kg	1		09/26/15 17:56
Toluene	32.5 U	65.1	20.3	ug/Kg	1		09/26/15 17:56

Surrogates

1,4-Difluorobenzene (surr)	89.1	72-119		%	1		09/26/15 17:56
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 17:56
 Container ID: 1155497016-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:14
 Prep Initial Wt./Vol.: 55.069 g
 Prep Extract Vol: 45.2757 mL

Results of 17747-TF2

Client Sample ID: **17747-TF2**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497017
 Lab Project ID: 1155497

Collection Date: 09/17/15 13:21
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):70.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	849	28.0	8.69	mg/Kg	1		10/04/15 05:02
Surrogates							
5a Androstane (surr)	70.9	50-150		%	1		10/04/15 05:02

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK102
 Analyst: NLL
 Analytical Date/Time: 10/04/15 05:02
 Container ID: 1155497017-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.421 g
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	164	28.0	8.69	mg/Kg	1		10/04/15 05:02
Surrogates							
n-Triacontane-d62 (surr)	86.7	50-150		%	1		10/04/15 05:02

Batch Information

Analytical Batch: XFC12126
 Analytical Method: AK103
 Analyst: NLL
 Analytical Date/Time: 10/04/15 05:02
 Container ID: 1155497017-A

Prep Batch: XXX34262
 Prep Method: SW3550C
 Prep Date/Time: 09/28/15 17:31
 Prep Initial Wt./Vol.: 30.421 g
 Prep Extract Vol: 1 mL

Results of 17747-TF2

Client Sample ID: **17747-TF2**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497017
 Lab Project ID: 1155497

Collection Date: 09/17/15 13:21
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):70.3
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.68 J	4.57	1.37	mg/Kg	1		09/26/15 18:15

Surrogates

4-Bromofluorobenzene (surr)	108	50-150		%	1		09/26/15 18:15
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: AK101
 Analyst: CRD
 Analytical Date/Time: 09/26/15 18:15
 Container ID: 1155497017-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:21
 Prep Initial Wt./Vol.: 72.143 g
 Prep Extract Vol: 46.4109 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.4 U	22.9	7.32	ug/Kg	1		09/26/15 18:15
Ethylbenzene	22.9 U	45.7	14.3	ug/Kg	1		09/26/15 18:15
o-Xylene	22.9 U	45.7	14.3	ug/Kg	1		09/26/15 18:15
P & M -Xylene	45.8 U	91.5	27.4	ug/Kg	1		09/26/15 18:15
Toluene	22.9 U	45.7	14.3	ug/Kg	1		09/26/15 18:15

Surrogates

1,4-Difluorobenzene (surr)	88.5	72-119		%	1		09/26/15 18:15
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Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Analyst: CRD
 Analytical Date/Time: 09/26/15 18:15
 Container ID: 1155497017-B

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:21
 Prep Initial Wt./Vol.: 72.143 g
 Prep Extract Vol: 46.4109 mL

Results of 17747-TB1

Client Sample ID: **17747-TB1**
 Client Project ID: **32-1-17747 Pitkas Point**
 Lab Sample ID: 1155497018
 Lab Project ID: 1155497

Collection Date: 09/17/15 13:30
 Received Date: 09/22/15 10:01
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.25 U	2.51	0.754	mg/Kg	1		09/23/15 16:47

Surrogates

4-Bromofluorobenzene (surr)	82.1	50-150		%	1		09/23/15 16:47
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Batch Information

Analytical Batch: VFC12688
 Analytical Method: AK101
 Analyst: KAS
 Analytical Date/Time: 09/23/15 16:47
 Container ID: 1155497018-A

Prep Batch: VXX27953
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:30
 Prep Initial Wt./Vol.: 49.71 g
 Prep Extract Vol: 25 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	6.30 U	12.6	4.02	ug/Kg	1		09/23/15 16:47
Ethylbenzene	12.6 U	25.1	7.85	ug/Kg	1		09/23/15 16:47
o-Xylene	12.6 U	25.1	7.85	ug/Kg	1		09/23/15 16:47
P & M -Xylene	17.1 J	50.3	15.1	ug/Kg	1		09/23/15 16:47
Toluene	15.6 J	25.1	7.85	ug/Kg	1		09/23/15 16:47

Surrogates

1,4-Difluorobenzene (surr)	86.7	72-119		%	1		09/23/15 16:47
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Batch Information

Analytical Batch: VFC12688
 Analytical Method: SW8021B
 Analyst: KAS
 Analytical Date/Time: 09/23/15 16:47
 Container ID: 1155497018-A

Prep Batch: VXX27953
 Prep Method: SW5035A
 Prep Date/Time: 09/17/15 13:30
 Prep Initial Wt./Vol.: 49.71 g
 Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1721517 [SPT/9752]
Blank Lab ID: 1293873

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009,
1155497010, 1155497011, 1155497012, 1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT9752
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R
Analytical Date/Time: 9/28/2015 6:25:00PM

Print Date: 10/27/2015 1:51:52PM

Duplicate Sample Summary

Original Sample ID: 1155490031

Duplicate Sample ID: 1293874

QC for Samples:

1155497001

Analysis Date: 09/28/2015 18:25

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	83.0	82.3	%	0.86	(< 15)

Batch Information

Analytical Batch: SPT9752

Analytical Method: SM21 2540G

Instrument:

Analyst: A.R

Print Date: 10/27/2015 1:51:53PM

Duplicate Sample Summary

Original Sample ID: 1155497001

Duplicate Sample ID: 1293875

Analysis Date: 09/28/2015 18:25

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009, 1155497010, 1155497011, 1155497012, 1155497013, 1155497014, 1155497015, 1155497016,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	72.2	71.2	%	1.50	(< 15)

Batch Information

Analytical Batch: SPT9752

Analytical Method: SM21 2540G

Instrument:

Analyst: A.R

Print Date: 10/27/2015 1:51:53PM

Duplicate Sample Summary

Original Sample ID: 1158652011

Duplicate Sample ID: 1293876

Analysis Date: 09/28/2015 18:25

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497002, 1155497003, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009, 1155497010, 1155497011, 1155497012, 1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	89.7	87.3	%	2.70	(< 15)

Batch Information

Analytical Batch: SPT9752

Analytical Method: SM21 2540G

Instrument:

Analyst: A.R

Print Date: 10/27/2015 1:51:53PM

Method Blank

Blank ID: MB for HBN 1721147 [VXX/27953]
Blank Lab ID: 1293001

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497018

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.50J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	79.1	50-150		%

Batch Information

Analytical Batch: VFC12688
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: KAS
Analytical Date/Time: 9/23/2015 10:28:00AM

Prep Batch: VXX27953
Prep Method: SW5035A
Prep Date/Time: 9/23/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:51:55PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27953]
 Blank Spike Lab ID: 1293004
 Date Analyzed: 09/23/2015 11:25

Spike Duplicate ID: LCSD for HBN 1155497 [VXX27953]
 Spike Duplicate Lab ID: 1293005
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497018

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	10.9	109	10.0	10.3	103	(60-120)	5.10	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	77.5	78	1.25	78.7	79	(50-150)	1.60	

Batch Information

Analytical Batch: VFC12688
 Analytical Method: AK101
 Instrument: Agilent 7890A PID/FID
 Analyst: KAS

Prep Batch: VXX27953
 Prep Method: SW5035A
 Prep Date/Time: 09/23/2015 08:00
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:51:57PM

Method Blank

Blank ID: MB for HBN 1721147 [VXX/27953]
Blank Lab ID: 1293001

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497018

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	16.8J	50.0	15.0	ug/Kg
Toluene	13.8J	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	87.6	72-119		%

Batch Information

Analytical Batch: VFC12688
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: KAS
Analytical Date/Time: 9/23/2015 10:28:00AM

Prep Batch: VXX27953
Prep Method: SW5035A
Prep Date/Time: 9/23/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27953]
 Blank Spike Lab ID: 1293002
 Date Analyzed: 09/23/2015 10:47

Spike Duplicate ID: LCSD for HBN 1155497 [VXX27953]
 Spike Duplicate Lab ID: 1293003
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497018

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1330	107	1250	1370	110	(75-125)	2.80	(< 20)
Ethylbenzene	1250	1270	102	1250	1300	104	(75-125)	2.10	(< 20)
o-Xylene	1250	1170	94	1250	1200	96	(75-125)	2.40	(< 20)
P & M -Xylene	2500	2460	98	2500	2530	101	(80-125)	2.70	(< 20)
Toluene	1250	1300	104	1250	1330	106	(70-125)	2.30	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	91	91	1250	91.3	91	(72-119)	0.33	

Batch Information

Analytical Batch: VFC12688
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: KAS

Prep Batch: VXX27953
 Prep Method: SW5035A
 Prep Date/Time: 09/23/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:00PM

Method Blank

Blank ID: MB for HBN 1721201 [VXX/27961]
Blank Lab ID: 1293232

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009, 1155497010, 1155497011, 1155497012

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.47J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	72.4	50-150		%

Batch Information

Analytical Batch: VFC12692
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/24/2015 2:24:00PM

Prep Batch: VXX27961
Prep Method: SW5035A
Prep Date/Time: 9/24/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:01PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27961]
 Blank Spike Lab ID: 1293235
 Date Analyzed: 09/24/2015 15:21

Spike Duplicate ID: LCSD for HBN 1155497
 [VXX27961]
 Spike Duplicate Lab ID: 1293236
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497001, 1155497002, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008,
 1155497009, 1155497010, 1155497011, 1155497012

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	10.0	100	10.0	10.3	103	(60-120)	3.00	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	80.8	81	1.25	79.4	79	(50-150)	1.70	

Batch Information

Analytical Batch: **VFC12692**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **CRD**

Prep Batch: **VXX27961**
 Prep Method: **SW5035A**
 Prep Date/Time: **09/24/2015 08:00**
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:04PM

Method Blank

Blank ID: MB for HBN 1721201 [VXX/27961]
Blank Lab ID: 1293232

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009, 1155497010, 1155497011, 1155497012

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	11.3J	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	86.6	72-119		%

Batch Information

Analytical Batch: VFC12692
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/24/2015 2:24:00PM

Prep Batch: VXX27961
Prep Method: SW5035A
Prep Date/Time: 9/24/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:08PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27961]
 Blank Spike Lab ID: 1293233
 Date Analyzed: 09/24/2015 14:43

Spike Duplicate ID: LCSD for HBN 1155497
 [VXX27961]
 Spike Duplicate Lab ID: 1293234
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497001, 1155497002, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008,
 1155497009, 1155497010, 1155497011, 1155497012

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1330	106	1250	1320	106	(75-125)	0.64	(< 20)
Ethylbenzene	1250	1270	101	1250	1270	102	(75-125)	0.16	(< 20)
o-Xylene	1250	1160	93	1250	1180	94	(75-125)	1.40	(< 20)
P & M -Xylene	2500	2440	98	2500	2450	98	(80-125)	0.58	(< 20)
Toluene	1250	1260	101	1250	1250	100	(70-125)	0.32	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	89.4	89	1250	89.8	90	(72-119)	0.40	

Batch Information

Analytical Batch: VFC12692
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD

Prep Batch: VXX27961
 Prep Method: SW5035A
 Prep Date/Time: 09/24/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1155497001
MS Sample ID: 1293952 MS
MSD Sample ID: 1293953 MSD

Analysis Date: 09/24/2015 20:06
Analysis Date: 09/24/2015 20:25
Analysis Date: 09/24/2015 20:44
Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497001, 1155497002, 1155497004, 1155497005, 1155497006, 1155497007, 1155497008, 1155497009, 1155497010, 1155497011, 1155497012

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	12.4U	1510	1607	107	1510	1634	108	75-125	1.10	(< 20)
Ethylbenzene	23.7J	1510	1551	102	1510	1565	102	75-125	0.43	(< 20)
o-Xylene	24.7U	1510	1454	96	1510	1454	96	75-125	0.02	(< 20)
P & M -Xylene	32.6J	3019	3006	99	3019	3019	99	80-125	0.29	(< 20)
Toluene	24.7U	1510	1510	100	1510	1524	101	70-125	0.77	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	1510	1357	90	1510	1356	90	72-119	0.11
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Batch Information

Analytical Batch: VFC12692
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/24/2015 8:25:00PM

Prep Batch: VXX27961
Prep Method: AK101 Extraction (S)
Prep Date/Time: 9/24/2015 8:00:00AM
Prep Initial Wt./Vol.: 57.42g
Prep Extract Vol: 25.00mL

Print Date: 10/27/2015 1:52:11PM

Method Blank

Blank ID: MB for HBN 1721443 [VXX/27969]
Blank Lab ID: 1293514

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.01J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	73	50-150		%

Batch Information

Analytical Batch: VFC12695
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 1:49:00PM

Prep Batch: VXX27969
Prep Method: SW5035A
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:12PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27969]
 Blank Spike Lab ID: 1293517
 Date Analyzed: 09/26/2015 14:46

Spike Duplicate ID: LCSD for HBN 1155497
 [VXX27969]
 Spike Duplicate Lab ID: 1293518
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	11.6	116	10.0	11.3	113	(60-120)	2.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	76.5	77	1.25	77.4	77	(50-150)	1.10	

Batch Information

Analytical Batch: **VFC12695**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **CRD**

Prep Batch: **VXX27969**
 Prep Method: **SW5035A**
 Prep Date/Time: **09/26/2015 08:00**
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:15PM

Method Blank

Blank ID: MB for HBN 1721443 [VXX/27969]
Blank Lab ID: 1293514

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	15.5J	50.0	15.0	ug/Kg
Toluene	12.5J	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	87.2	72-119		%

Batch Information

Analytical Batch: VFC12695
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 1:49:00PM

Prep Batch: VXX27969
Prep Method: SW5035A
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27969]
 Blank Spike Lab ID: 1293515
 Date Analyzed: 09/26/2015 14:08

Spike Duplicate ID: LCSD for HBN 1155497 [VXX27969]
 Spike Duplicate Lab ID: 1293516
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1320	106	1250	1290	103	(75-125)	2.50	(< 20)
Ethylbenzene	1250	1240	99	1250	1220	98	(75-125)	1.70	(< 20)
o-Xylene	1250	1140	91	1250	1120	90	(75-125)	1.30	(< 20)
P & M -Xylene	2500	2390	96	2500	2350	94	(80-125)	1.60	(< 20)
Toluene	1250	1230	99	1250	1210	97	(70-125)	1.60	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	91	91	1250	90.6	91	(72-119)	0.48	

Batch Information

Analytical Batch: VFC12695
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: CRD

Prep Batch: VXX27969
 Prep Method: SW5035A
 Prep Date/Time: 09/26/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1155497013
MS Sample ID: 1293519 MS
MSD Sample ID: 1293520 MSD

Analysis Date: 09/26/2015 16:21
Analysis Date: 09/26/2015 16:40
Analysis Date: 09/26/2015 16:59
Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013, 1155497014, 1155497015, 1155497016, 1155497017

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	11.4U	1464	1517	103	1464	1491	102	75-125	1.60	(< 20)
Ethylbenzene	22.6U	1464	1438	98	1464	1412	96	75-125	1.60	(< 20)
o-Xylene	22.6U	1464	1332	91	1464	1305	89	75-125	1.90	(< 20)
P & M -Xylene	45.3U	2929	2770	94	2929	2704	92	80-125	2.10	(< 20)
Toluene	22.6U	1464	1398	95	1464	1385	94	70-125	1.10	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	1464	1346	91	1464	1346	92	72-119	0.39
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Batch Information

Analytical Batch: VFC12695
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 9/26/2015 4:40:00PM

Prep Batch: VXX27969
Prep Method: AK101 Extraction (S)
Prep Date/Time: 9/26/2015 8:00:00AM
Prep Initial Wt./Vol.: 56.19g
Prep Extract Vol: 25.00mL

Print Date: 10/27/2015 1:52:19PM

Method Blank

Blank ID: MB for HBN 1721607 [VXX/27983]
Blank Lab ID: 1294286

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497003

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.45J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	77.6	50-150		%

Batch Information

Analytical Batch: VFC12701
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: KAS
Analytical Date/Time: 9/29/2015 6:30:00PM

Prep Batch: VXX27983
Prep Method: SW5035A
Prep Date/Time: 9/29/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:20PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27983]
 Blank Spike Lab ID: 1294514
 Date Analyzed: 09/29/2015 19:27

Spike Duplicate ID: LCSD for HBN 1155497 [VXX27983]
 Spike Duplicate Lab ID: 1294515
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497003

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	10.0	11.9	119	10.0	11.9	119	(60-120)	0.17	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	79.2	79	1.25	78.8	79	(50-150)	0.58	

Batch Information

Analytical Batch: VFC12701
 Analytical Method: AK101
 Instrument: Agilent 7890A PID/FID
 Analyst: KAS

Prep Batch: VXX27983
 Prep Method: SW5035A
 Prep Date/Time: 09/29/2015 08:00
 Spike Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 10.0 mg/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:23PM

Method Blank

Blank ID: MB for HBN 1721607 [VXX/27983]
Blank Lab ID: 1294286

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497003

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	88.5	72-119		%

Batch Information

Analytical Batch: VFC12701
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: KAS
Analytical Date/Time: 9/29/2015 6:30:00PM

Prep Batch: VXX27983
Prep Method: SW5035A
Prep Date/Time: 9/29/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:26PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [VXX27983]
 Blank Spike Lab ID: 1294287
 Date Analyzed: 09/29/2015 18:49

Spike Duplicate ID: LCSD for HBN 1155497
 [VXX27983]
 Spike Duplicate Lab ID: 1294288
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497003

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1360	109	1250	1340	107	(75-125)	1.90	(< 20)
Ethylbenzene	1250	1290	103	1250	1270	102	(75-125)	1.80	(< 20)
o-Xylene	1250	1190	95	1250	1170	94	(75-125)	1.10	(< 20)
P & M -Xylene	2500	2490	99	2500	2450	98	(80-125)	1.50	(< 20)
Toluene	1250	1260	101	1250	1240	99	(70-125)	2.10	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	91.3	91	1250	91	91	(72-119)	0.37	

Batch Information

Analytical Batch: VFC12701
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: KAS

Prep Batch: VXX27983
 Prep Method: SW5035A
 Prep Date/Time: 09/29/2015 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Print Date: 10/27/2015 1:52:27PM

Matrix Spike Summary

Original Sample ID: 1158662003
MS Sample ID: 1294662 MS
MSD Sample ID: 1294663 MSD

Analysis Date: 09/29/2015 21:40
Analysis Date: 09/29/2015 21:59
Analysis Date: 09/29/2015 22:18
Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497003

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	17.0U	2751	2977	108	2751	3028	110	75-125	1.80	(< 20)
Ethylbenzene	34.0U	2751	2839	103	2751	2877	104	75-125	1.50	(< 20)
o-Xylene	34.0U	2751	2601	95	2751	2638	96	75-125	1.10	(< 20)
P & M -Xylene	68.0U	5515	5465	99	5515	5553	101	80-125	1.60	(< 20)
Toluene	34.0U	2751	2877	104	2751	2915	106	70-125	1.50	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	2751	2500	91	2751	2500	91	72-119	0.20
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Batch Information

Analytical Batch: VFC12701
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: KAS
Analytical Date/Time: 9/29/2015 9:59:00PM

Prep Batch: VXX27983
Prep Method: AK101 Extraction (S)
Prep Date/Time: 9/29/2015 8:00:00AM
Prep Initial Wt./Vol.: 28.48g
Prep Extract Vol: 25.00mL

Print Date: 10/27/2015 1:52:29PM

Method Blank

Blank ID: MB for HBN 1721488 [XXX/34262]
Blank Lab ID: 1293748

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497008, 1155497009, 1155497010, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	76.5	60-120		%

Batch Information

Analytical Batch: XFC12126
Analytical Method: AK102
Instrument: HP 6890 Series II FID SV D R
Analyst: NLL
Analytical Date/Time: 10/4/2015 1:34:00AM

Prep Batch: XXX34262
Prep Method: SW3550C
Prep Date/Time: 9/28/2015 5:31:35PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 10/27/2015 1:52:30PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34262]
 Blank Spike Lab ID: 1293749
 Date Analyzed: 10/04/2015 01:44

Spike Duplicate ID: LCSD for HBN 1155497 [XXX34262]
 Spike Duplicate Lab ID: 1293750
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497008, 1155497009, 1155497010, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	137	82	167	136	82	(75-125)	0.74	(< 20)
Surrogates									
5a Androstane (surr)	3.33	86.1	86	3.33	87.5	88	(60-120)	1.50	

Batch Information

Analytical Batch: **XFC12126**
 Analytical Method: **AK102**
 Instrument: **HP 6890 Series II FID SV D R**
 Analyst: **NLL**

Prep Batch: **XXX34262**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/28/2015 17:31**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 10/27/2015 1:52:33PM

Method Blank

Blank ID: MB for HBN 1721488 [XXX/34262]
Blank Lab ID: 1293748

Matrix: Soil/Solid (dry weight)

QC for Samples:

1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497008, 1155497009, 1155497010, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	84.2	60-120		%

Batch Information

Analytical Batch: XFC12126
Analytical Method: AK103
Instrument: HP 6890 Series II FID SV D R
Analyst: NLL
Analytical Date/Time: 10/4/2015 1:34:00AM

Prep Batch: XXX34262
Prep Method: SW3550C
Prep Date/Time: 9/28/2015 5:31:35PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 10/27/2015 1:52:35PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34262]
 Blank Spike Lab ID: 1293749
 Date Analyzed: 10/04/2015 01:44

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34262]
 Spike Duplicate Lab ID: 1293750
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497001, 1155497002, 1155497003, 1155497004, 1155497005, 1155497008, 1155497009,
 1155497010, 1155497014, 1155497015, 1155497016, 1155497017

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	167	153	92	167	157	94	(60-120)	2.60	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	3.33	77.6	78	3.33	80.1	80	(60-120)	3.20	

Batch Information

Analytical Batch: **XFC12126**
 Analytical Method: **AK103**
 Instrument: **HP 6890 Series II FID SV D R**
 Analyst: **NLL**

Prep Batch: **XXX34262**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/28/2015 17:31**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 10/27/2015 1:52:36PM

Method Blank

Blank ID: MB for HBN 1721563 [XXX/34274]
Blank Lab ID: 1294085

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497006, 1155497007, 1155497011, 1155497012

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
DRO Silica Gel	20.0U	40.0	12.4	mg/Kg
Surrogates				
5a Androstane (surr)	93.8	70-125		%

Batch Information

Analytical Batch: XFC12133
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/4/2015 11:15:00PM

Prep Batch: XXX34274
Prep Method: SW3550C w/SG Cleanup
Prep Date/Time: 9/30/2015 8:29:19AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:39PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34274]
 Blank Spike Lab ID: 1294086
 Date Analyzed: 10/04/2015 23:36

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34274]
 Spike Duplicate Lab ID: 1294087
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497006, 1155497007, 1155497011, 1155497012

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
DRO Silica Gel	333	342	103	333	335	101	(70-125)	2.00	(< 20)
Surrogates									
5a Androstane (surr)	6.67	98.4	98	6.67	99.3	99	(70-125)	0.82	

Batch Information

Analytical Batch: **XFC12133**
 Analytical Method: **AK102**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34274**
 Prep Method: **SW3550C w/SG Cleanup**
 Prep Date/Time: **09/30/2015 08:29**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:41PM

Method Blank

Blank ID: MB for HBN 1721563 [XXX/34274]
Blank Lab ID: 1294085

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497006, 1155497007, 1155497011, 1155497012

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
RRO Silica Gel	20.0U	40.0	12.4	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	94.4	70-125		%

Batch Information

Analytical Batch: XFC12133
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/4/2015 11:15:00PM

Prep Batch: XXX34274
Prep Method: SW3550C w/SG Cleanup
Prep Date/Time: 9/30/2015 8:29:19AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:43PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34274]
 Blank Spike Lab ID: 1294086
 Date Analyzed: 10/04/2015 23:36

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34274]
 Spike Duplicate Lab ID: 1294087
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497006, 1155497007, 1155497011, 1155497012

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
RRO Silica Gel	333	337	101	333	333	100	(70-125)	1.30	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	6.67	93.4	93	6.67	93.2	93	(70-125)	0.20	

Batch Information

Analytical Batch: **XFC12133**
 Analytical Method: **AK103**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34274**
 Prep Method: **SW3550C w/SG Cleanup**
 Prep Date/Time: **09/30/2015 08:29**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:46PM

Method Blank

Blank ID: MB for HBN 1721564 [XXX/34275]
Blank Lab ID: 1294088

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497006, 1155497007, 1155497011, 1155497012

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	20.0U	40.0	12.4	mg/Kg
Surrogates				
5a Androstane (surr)	103	60-120		%

Batch Information

Analytical Batch: XFC12133
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/4/2015 5:09:00PM

Prep Batch: XXX34275
Prep Method: SW3550C
Prep Date/Time: 9/30/2015 8:29:31AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:48PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34275]
 Blank Spike Lab ID: 1294089
 Date Analyzed: 10/04/2015 17:46

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34275]
 Spike Duplicate Lab ID: 1294090
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497006, 1155497007, 1155497011, 1155497012

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	333	367	110	333	350	105	(75-125)	4.80	(< 20)
Surrogates									
5a Androstane (surr)	6.67	102	102	6.67	99.1	99	(60-120)	3.10	

Batch Information

Analytical Batch: **XFC12133**
 Analytical Method: **AK102**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34275**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/30/2015 08:29**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:50PM

Method Blank

Blank ID: MB for HBN 1721564 [XXX/34275]
Blank Lab ID: 1294088

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497006, 1155497007, 1155497011, 1155497012

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	20.0U	40.0	12.4	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	102	60-120		%

Batch Information

Analytical Batch: XFC12133
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/4/2015 5:09:00PM

Prep Batch: XXX34275
Prep Method: SW3550C
Prep Date/Time: 9/30/2015 8:29:31AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:52PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34275]
 Blank Spike Lab ID: 1294089
 Date Analyzed: 10/04/2015 17:46

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34275]
 Spike Duplicate Lab ID: 1294090
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497006, 1155497007, 1155497011, 1155497012

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	333	353	106	333	336	101	(60-120)	5.00	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	6.67	103	103	6.67	99.8	100	(60-120)	3.50	

Batch Information

Analytical Batch: **XFC12133**
 Analytical Method: **AK103**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34275**
 Prep Method: **SW3550C**
 Prep Date/Time: **09/30/2015 08:29**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:54PM

Method Blank

Blank ID: MB for HBN 1723058 [XXX/34452]
Blank Lab ID: 1298665

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
DRO Silica Gel	20.0U	40.0	12.4	mg/Kg
Surrogates				
5a Androstane (surr)	76.3	70-125		%

Batch Information

Analytical Batch: XFC12174
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/20/2015 6:36:00PM

Prep Batch: XXX34452
Prep Method: SW3550C w/SG Cleanup
Prep Date/Time: 10/19/2015 12:44:56PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:56PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34452]
 Blank Spike Lab ID: 1298666
 Date Analyzed: 10/20/2015 18:56

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34452]
 Spike Duplicate Lab ID: 1298667
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
DRO Silica Gel	333	264	79	333	291	87	(70-125)	9.70	(< 20)
Surrogates									
5a Androstane (surr)	6.67	86.6	87	6.67	93.6	94	(70-125)	7.80	

Batch Information

Analytical Batch: **XFC12174**
 Analytical Method: **AK102**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34452**
 Prep Method: **SW3550C w/SG Cleanup**
 Prep Date/Time: **10/19/2015 12:44**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:52:59PM

Method Blank

Blank ID: MB for HBN 1723058 [XXX/34452]
Blank Lab ID: 1298665

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
RRO Silica Gel	20.0U	40.0	12.4	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	83	70-125		%

Batch Information

Analytical Batch: XFC12174
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/20/2015 6:36:00PM

Prep Batch: XXX34452
Prep Method: SW3550C w/SG Cleanup
Prep Date/Time: 10/19/2015 12:44:56PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:01PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34452]
 Blank Spike Lab ID: 1298666
 Date Analyzed: 10/20/2015 18:56

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34452]
 Spike Duplicate Lab ID: 1298667
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
RRO Silica Gel	333	301	90	333	306	92	(70-125)	1.60	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	6.67	84.8	85	6.67	88.1	88	(70-125)	3.80	

Batch Information

Analytical Batch: **XFC12174**
 Analytical Method: **AK103**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34452**
 Prep Method: **SW3550C w/SG Cleanup**
 Prep Date/Time: **10/19/2015 12:44**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:03PM

Method Blank

Blank ID: MB for HBN 1723077 [XXX/34453]
Blank Lab ID: 1298757

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	20.0U	40.0	12.4	mg/Kg
Surrogates				
5a Androstane (surr)	96.9	60-120		%

Batch Information

Analytical Batch: XFC12174
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/21/2015 4:01:00AM

Prep Batch: XXX34453
Prep Method: SW3550C
Prep Date/Time: 10/19/2015 12:44:17PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34453]
 Blank Spike Lab ID: 1298758
 Date Analyzed: 10/21/2015 04:21

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34453]
 Spike Duplicate Lab ID: 1298759
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	333	321	96	333	326	98	(75-125)	1.50	(< 20)
Surrogates									
5a Androstane (surr)	6.67	102	102	6.67	105	105	(60-120)	2.20	

Batch Information

Analytical Batch: **XFC12174**
 Analytical Method: **AK102**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34453**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/19/2015 12:44**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:07PM

Method Blank

Blank ID: MB for HBN 1723077 [XXX/34453]
Blank Lab ID: 1298757

Matrix: Soil/Solid (dry weight)

QC for Samples:
1155497013

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	20.0U	40.0	12.4	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	98.4	60-120		%

Batch Information

Analytical Batch: XFC12174
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: KJO
Analytical Date/Time: 10/21/2015 4:01:00AM

Prep Batch: XXX34453
Prep Method: SW3550C
Prep Date/Time: 10/19/2015 12:44:17PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:09PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1155497 [XXX34453]
 Blank Spike Lab ID: 1298758
 Date Analyzed: 10/21/2015 04:21

Spike Duplicate ID: LCSD for HBN 1155497
 [XXX34453]
 Spike Duplicate Lab ID: 1298759
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1155497013

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	333	319	96	333	320	96	(60-120)	0.37	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	6.67	97.3	97	6.67	97.3	97	(60-120)	0.02	

Batch Information

Analytical Batch: **XFC12174**
 Analytical Method: **AK103**
 Instrument: **HP 7890A** **FID SV E F**
 Analyst: **KJO**

Prep Batch: **XXX34453**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/19/2015 12:44**
 Spike Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL
 Dupe Init Wt./Vol.: 333 mg/Kg Extract Vol: 2 mL

Print Date: 10/27/2015 1:53:11PM

1155497



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CHAIN-OF-CUSTODY RECORD

Laboratory SGS
Attn: TORI

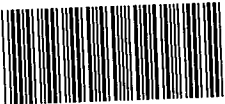
Page 1 of 2

Analysis Parameters/Sample Container Description (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRO	AK102	AK103	AK101	AK101B	AK101C	Total Number of Containers	Remarks/Matrix
17747-PPS1/PPS11-B	① A-B	08:32	9/17/15	X	X	X	X	X	X			2	SOIL
- PPS1/PPS11-3-A	② A-B	08:42											
- PPS10-D	③ A-B	08:52											
- PPS10-1-B	④ A-B	09:40											
- PPS10-2-B	⑤ A-B	09:06											
- PPS10-3-D	⑥ A-B	09:35											
- PPS10-3-DX	⑦ A-B	09:37								X			
- PPS10-4-B	⑧ A-B	09:18								X			
- PPS12-C	⑨ A-B	10:01											
- PPS12-2-A	⑩ A-B	10:09											

Project Information		Sample Receipt		Relinquished By: 1		Relinquished By: 2		Relinquished By: 3	
Project Number: <u>Pitkas Point</u>		Total Number of Containers		Signature: <u>[Signature]</u> Time: <u>10:01</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
Project Name: <u>32-1-17747-2</u>		COC Seals/Intact? Y/N/NA		Printed Name: <u>TREMON CROSSBY</u> Date: <u>9/22/15</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
Contact: <u>TMT, TWC</u>		Received Good Cond./Cold		Company: <u>SWI</u>		Company: _____		Company: _____	
Ongoing Project? Yes ☐ No ☒		Delivery Method:							
Sampler: <u>TWC</u>		(attach shipping bill, if any)							
Instructions				Received By: 1		Received By: 2		Received By: 3	
Requested Turnaround Time: <u>STANDARD</u>				Signature: _____ Time: _____		Signature: _____ Time: _____		Signature: <u>[Signature]</u> Time: <u>10:01</u>	
Special Instructions: <u>LEVEL 2</u>				Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: <u>Diana Chia</u> Date: <u>9/22/15</u>	
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - Job File				Company: _____		Company: _____		Company: <u>SGS</u> <u>Seq 1: 468 ent</u> <u>1.8/D3</u>	

1155497



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CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 2 of 2
Attn: TDR

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRD	Reo	GRD	BTEx	DRD Silica Gel.	Total Number of Containers	Remarks/Matrix
17747-PPS12-3-C-13	11A-B	10:20	9/17/15	X	X	X	X	X	X		2	SOIL
- PPS12-3-CX	12A-B	10:22							X			
- PPS13-C-11	13A-B	10:40										
- PPS13-1-A	14A-B	10:50										
- PPS13-2-B	15A-B	10:59										
- TF1	16A-B	13:14										
- TF2	17A-B	13:21										
- TB1	18A	13:30						X	X		1	TRIP BLANK

Project Information	Sample Receipt
Project Number: <u>32-1-17747</u>	Total Number of Containers
Project Name: <u>Pittkas Point</u>	COC Seals/Intact? Y/N/NA
Contact: <u>TMT, TWC</u>	Received Good Cond./Cold
Ongoing Project? Yes ☐ No ☒	Delivery Method:
Sampler: <u>TWC</u>	(attach shipping bill, if any)

Instructions
Requested Turnaround Time: <u>STANDARD</u>
Special Instructions: <u>LEVEL 2</u>

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>[Signature]</u> Time: <u>10:01</u>	Signature: _____ Time: _____	Signature: _____ Time: _____
Printed Name: <u>Theresa Crosby</u> Date: <u>9/22/15</u>	Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
Company: <u>SWI</u>	Company: _____	Company: _____
Received By: 1.	Received By: 2.	Received By: 3.
Signature: _____ Time: _____	Signature: _____ Time: _____	Signature: <u>[Signature]</u> Time: <u>10:01</u>
Printed Name: _____ Date: _____	Printed Name: _____ Date: _____	Printed Name: <u>Dana Chua</u> Date: <u>9/24/15</u>
Company: _____	Company: _____	Company: <u>SGS 1.8/03</u>



Review Criteria:	Yes	N/A	No	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	☐	☒	☐	<i>Exemption permitted if sampler hand carries/delivers.</i>
Temperature blank compliant* (i.e., 0-6°C after CF)? <i>If >6°C, were samples collected <8 hours ago?</i> <i>If <0°C, were all sample containers ice free?</i> Cooler ID: <u>1</u> @ <u>1.8</u> w/ Therm.ID: <u>D3</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received <u>without</u> a temperature blank, the “cooler temperature” will be documented in lieu of the temperature blank & “ COOLER TEMP ” will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note “ambient” or “chilled.”	☒	☐	☐	<i>Exemption permitted if chilled & collected <8 hrs ago.</i>
Delivery method (specify all that apply): ☒ Client (hand carried) ☐ USPS ☐ Lynden ☐ AK Air ☐ Alert Courier ☐ UPS ☐ FedEx ☐ RAVN ☐ C&D Delivery ☐ Carlile ☐ Pen Air ☐ Warp Speed ☐ Other: _____ → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	☐	☒	☐	
	Yes	N/A	No	
Were samples received within hold time? Do samples match COC * (i.e., sample IDs, dates/times collected)? Were analyses requested unambiguous?	☒	☐	☐	<i>Note: Refer to form F-083 “Sample Guide” for hold times. Note: If times differ <1hr, record details and login per COC.</i>
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): ☐ Bubble Wrap ☐ Separate plastic bags ☐ Vermiculite ☐ Other:	☒	☐	☐	
Were proper containers (type/mass/volume/preservative*) used? Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	☒	☐	☐	☐ <i>Exemption permitted for metals (e.g., 200.8/6020A).</i>
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant ? If pH was adjusted, were bottles flagged (i.e., stickers)?	☐	☒	☐	
For special handling (e.g., “MI” soils, foreign soils, lab filter for dissolved..., lab extract for volatiles, Ref Lab, limited volume), were bottles/paperwork flagged (e.g., sticker)?	☐	☒	☐	
For RUSH/SHORT Hold Time , were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	☐	☒	☐	
For SITE-SPECIFIC QC , e.g. BMS/BMSD/BDUP, were containers / paperwork flagged accordingly?	☐	☒	☐	
For any question answered “No,” has the PM been notified and the problem resolved (or paperwork put in their bin)?	☐	☒	☐	SRF Completed by: D.C 09/22/2015 PM notified:
Was PEER REVIEW of <i>sample numbering/labeling completed</i> ?	☒	☐	☐	Peer Reviewed by: VDL
Additional notes (if applicable):				
<i>Note to Client: Any “no” answer above indicates non-compliance with standard procedures and may impact data quality.</i>				

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1155497001-A	No Preservative Required	OK			
1155497001-B	Methanol field pres. 4 C	OK			
1155497002-A	No Preservative Required	OK			
1155497002-B	Methanol field pres. 4 C	OK			
1155497003-A	No Preservative Required	OK			
1155497003-B	Methanol field pres. 4 C	OK			
1155497004-A	No Preservative Required	OK			
1155497004-B	Methanol field pres. 4 C	OK			
1155497005-A	No Preservative Required	OK			
1155497005-B	Methanol field pres. 4 C	OK			
1155497006-A	No Preservative Required	OK			
1155497006-B	Methanol field pres. 4 C	OK			
1155497007-A	No Preservative Required	OK			
1155497007-B	Methanol field pres. 4 C	OK			
1155497008-A	No Preservative Required	OK			
1155497008-B	Methanol field pres. 4 C	OK			
1155497009-A	No Preservative Required	OK			
1155497009-B	Methanol field pres. 4 C	OK			
1155497010-A	No Preservative Required	OK			
1155497010-B	Methanol field pres. 4 C	OK			
1155497011-A	No Preservative Required	OK			
1155497011-B	Methanol field pres. 4 C	OK			
1155497012-A	No Preservative Required	OK			
1155497012-B	Methanol field pres. 4 C	OK			
1155497013-A	No Preservative Required	OK			
1155497013-B	Methanol field pres. 4 C	OK			
1155497014-A	No Preservative Required	OK			
1155497014-B	Methanol field pres. 4 C	OK			
1155497015-A	No Preservative Required	OK			
1155497015-B	Methanol field pres. 4 C	OK			
1155497016-A	No Preservative Required	OK			
1155497016-B	Methanol field pres. 4 C	OK			
1155497017-A	No Preservative Required	OK			
1155497017-B	Methanol field pres. 4 C	OK			
1155497018-A	Methanol field pres. 4 C	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

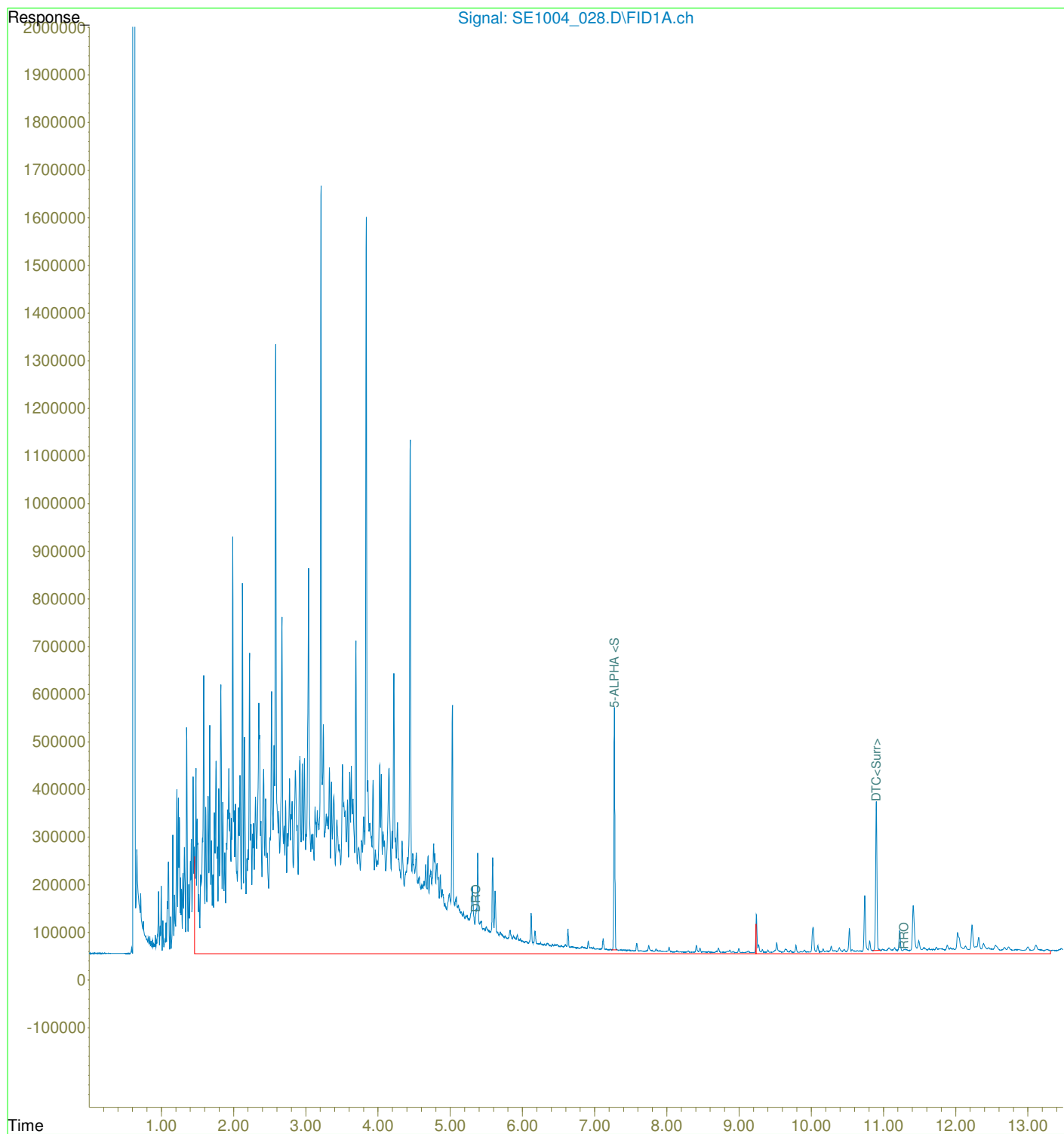
BU - The container was received with headspace greater than 6mm.

CHROMATOGRAMS

Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_028.D
Signal(s) : FID1A.ch
Acq On : 4 Oct 2015 6:27 pm
Operator : KJO
Sample : 1155497006
Misc :
ALS Vial : 67 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:07:55 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

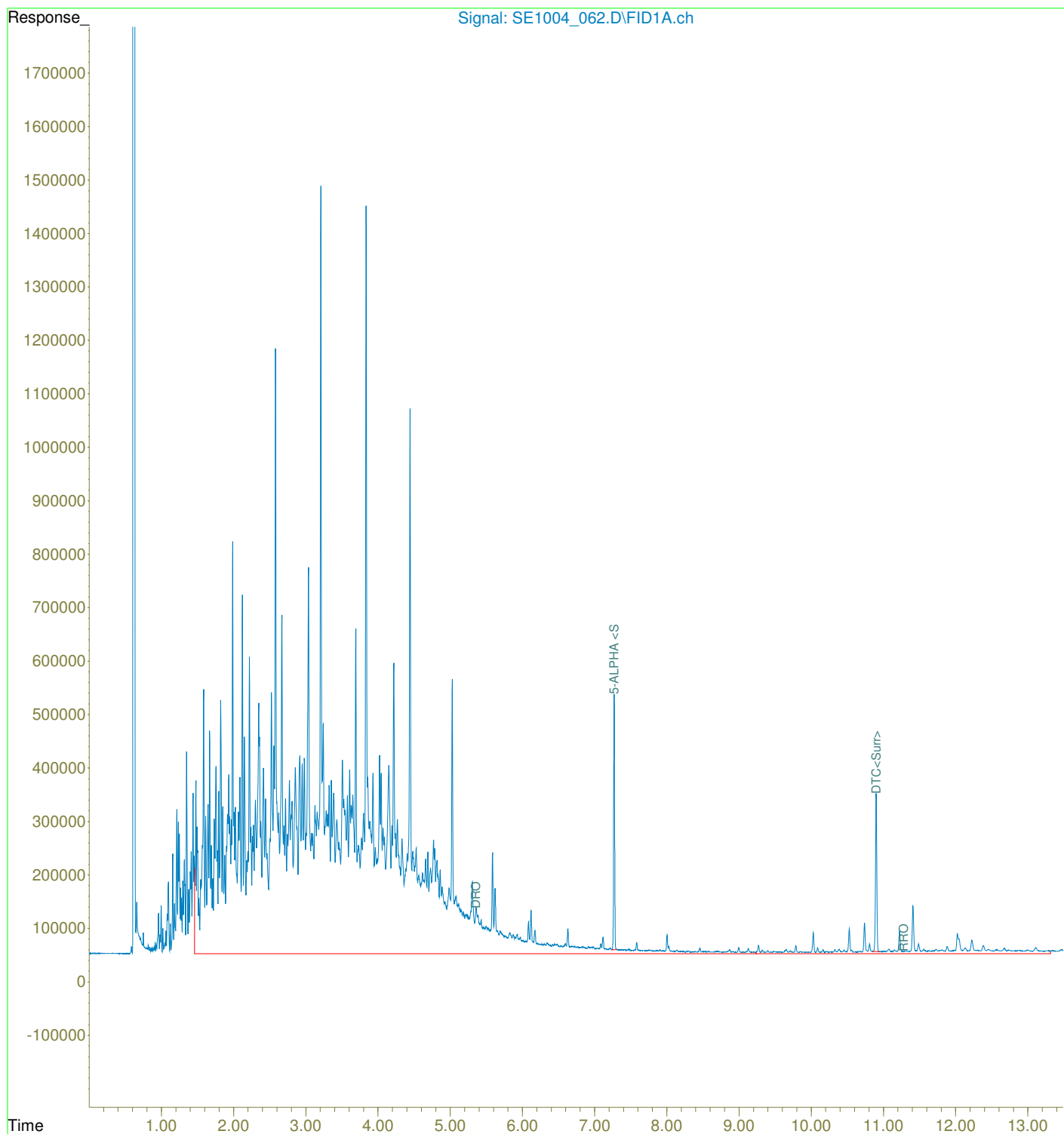
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_062.D
Signal(s) : FID1A.ch
Acq On : 5 Oct 2015 12:17 am
Operator : KJO
Sample : 1155497006 SG
Misc :
ALS Vial : 82 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:19:19 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

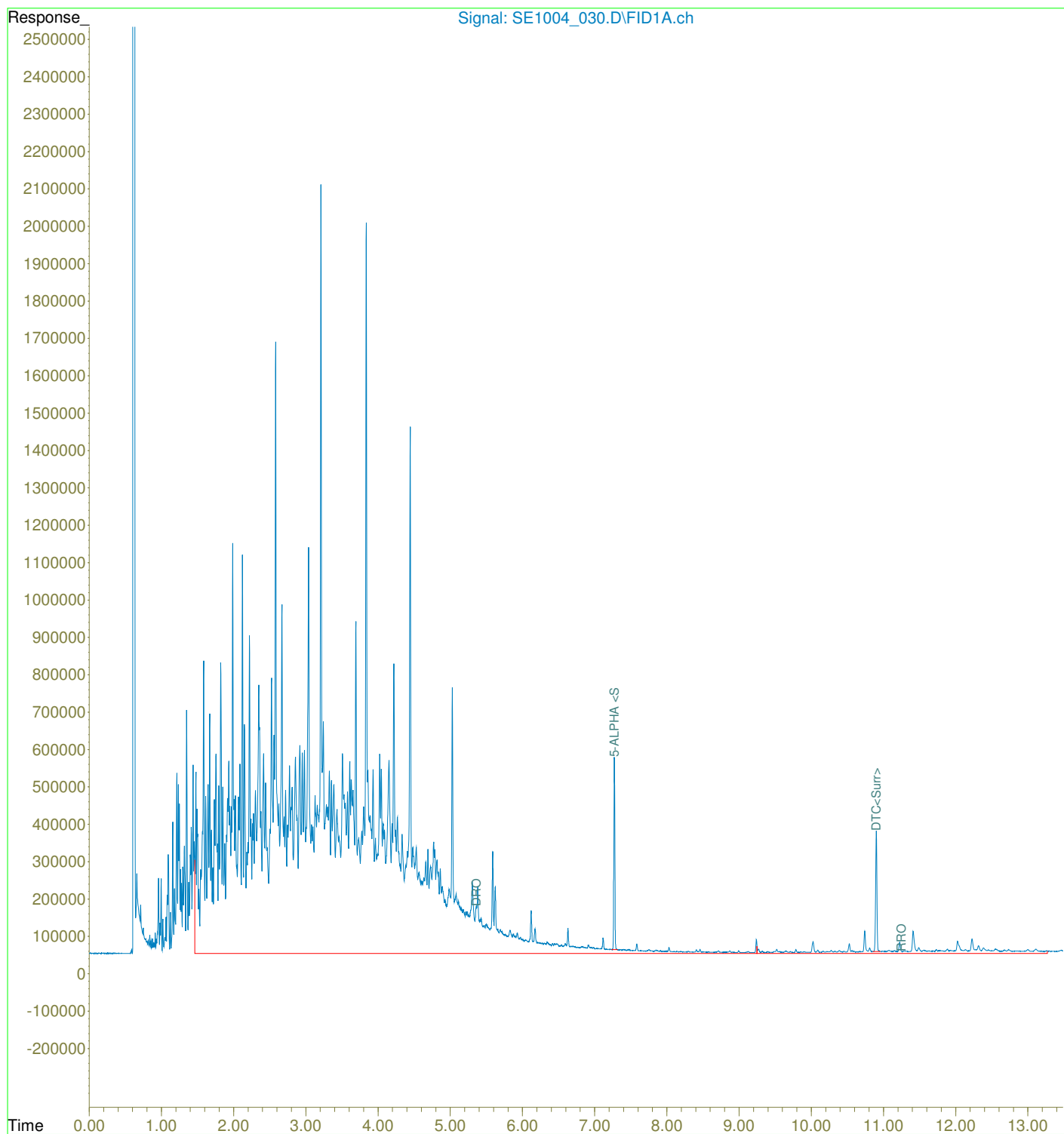
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_030.D
Signal(s) : FID1A.ch
Acq On : 4 Oct 2015 6:48 pm
Operator : KJO
Sample : 1155497007
Misc :
ALS Vial : 68 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 05 10:23:59 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

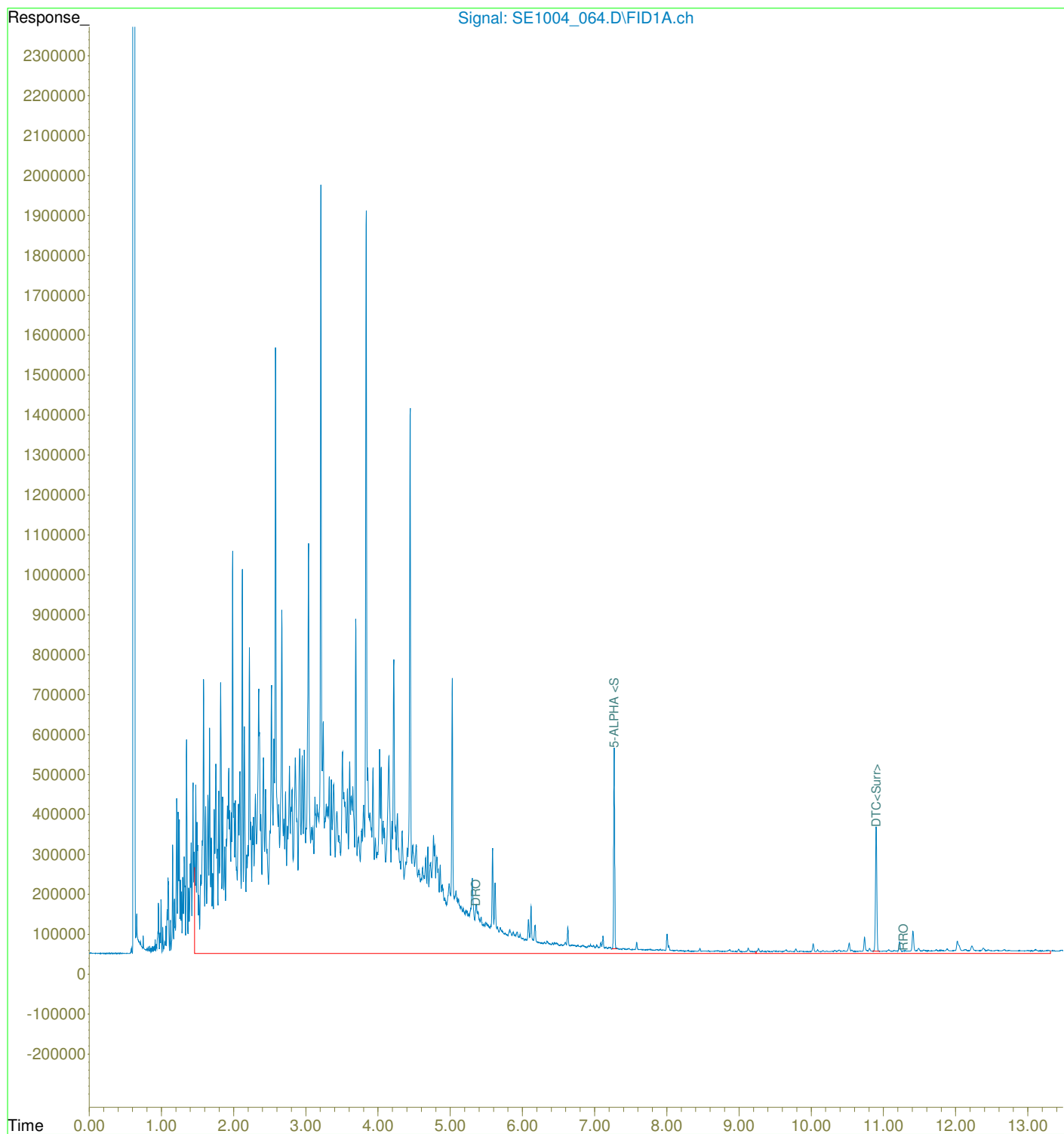
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_064.D
Signal(s) : FID1A.ch
Acq On : 5 Oct 2015 12:37 am
Operator : KJO
Sample : 1155497007 SG
Misc :
ALS Vial : 83 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:21:22 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

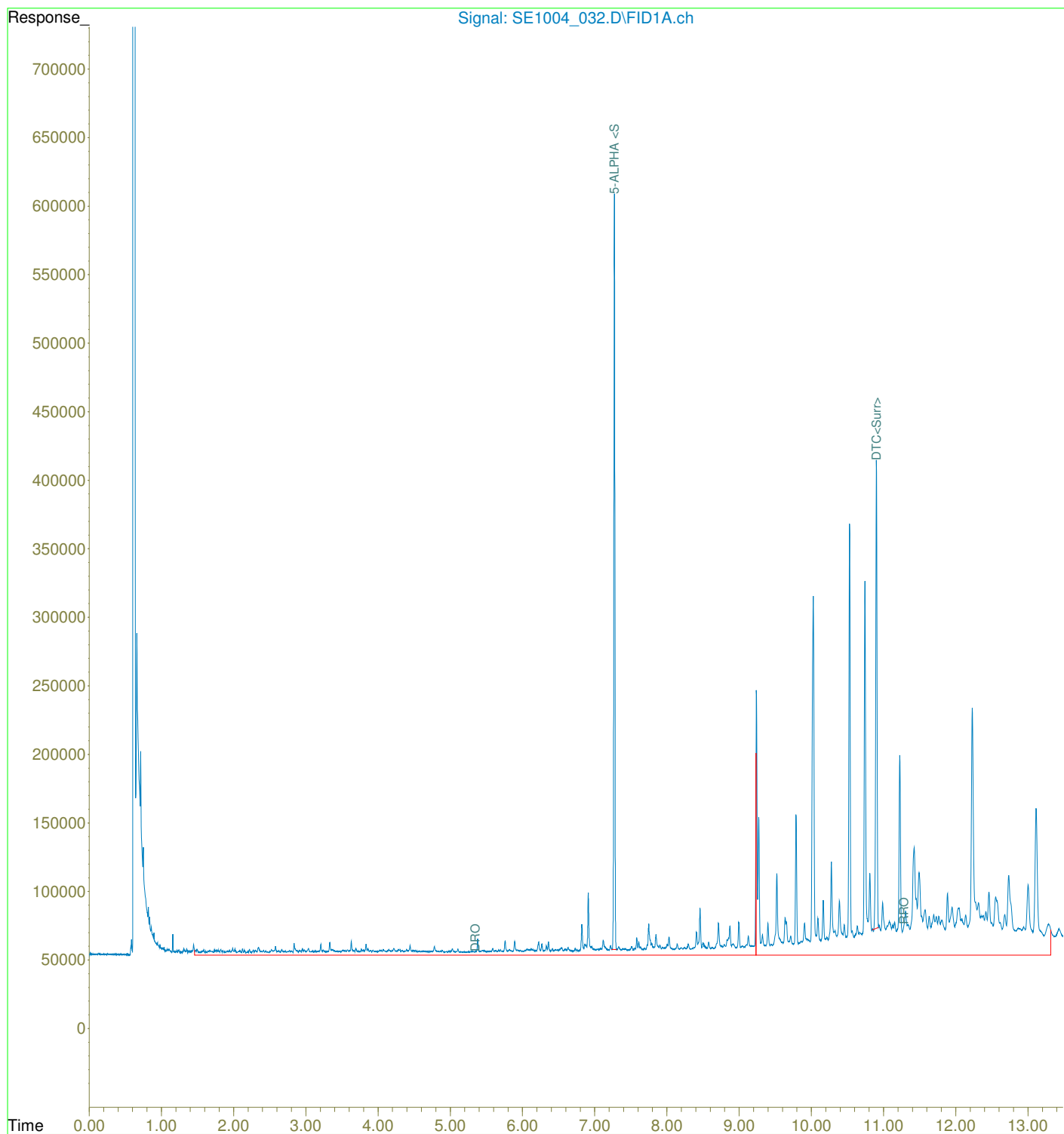
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_032.D
Signal(s) : FID1A.ch
Acq On : 4 Oct 2015 7:08 pm
Operator : KJO
Sample : 1155497011
Misc :
ALS Vial : 69 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:09:34 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

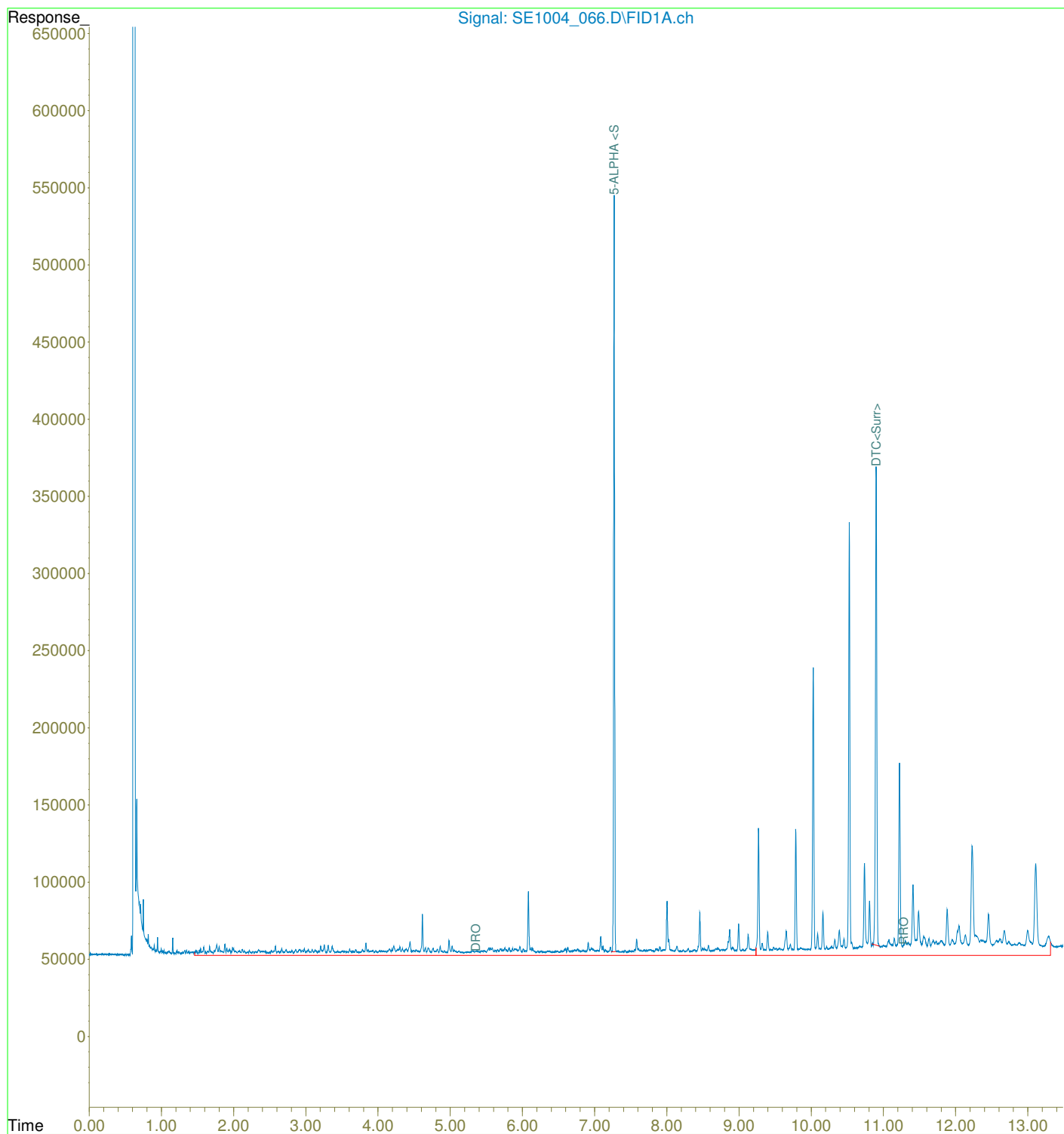
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_066.D
Signal(s) : FID1A.ch
Acq On : 5 Oct 2015 12:58 am
Operator : KJO
Sample : 1155497011 SG
Misc :
ALS Vial : 84 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:21:52 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

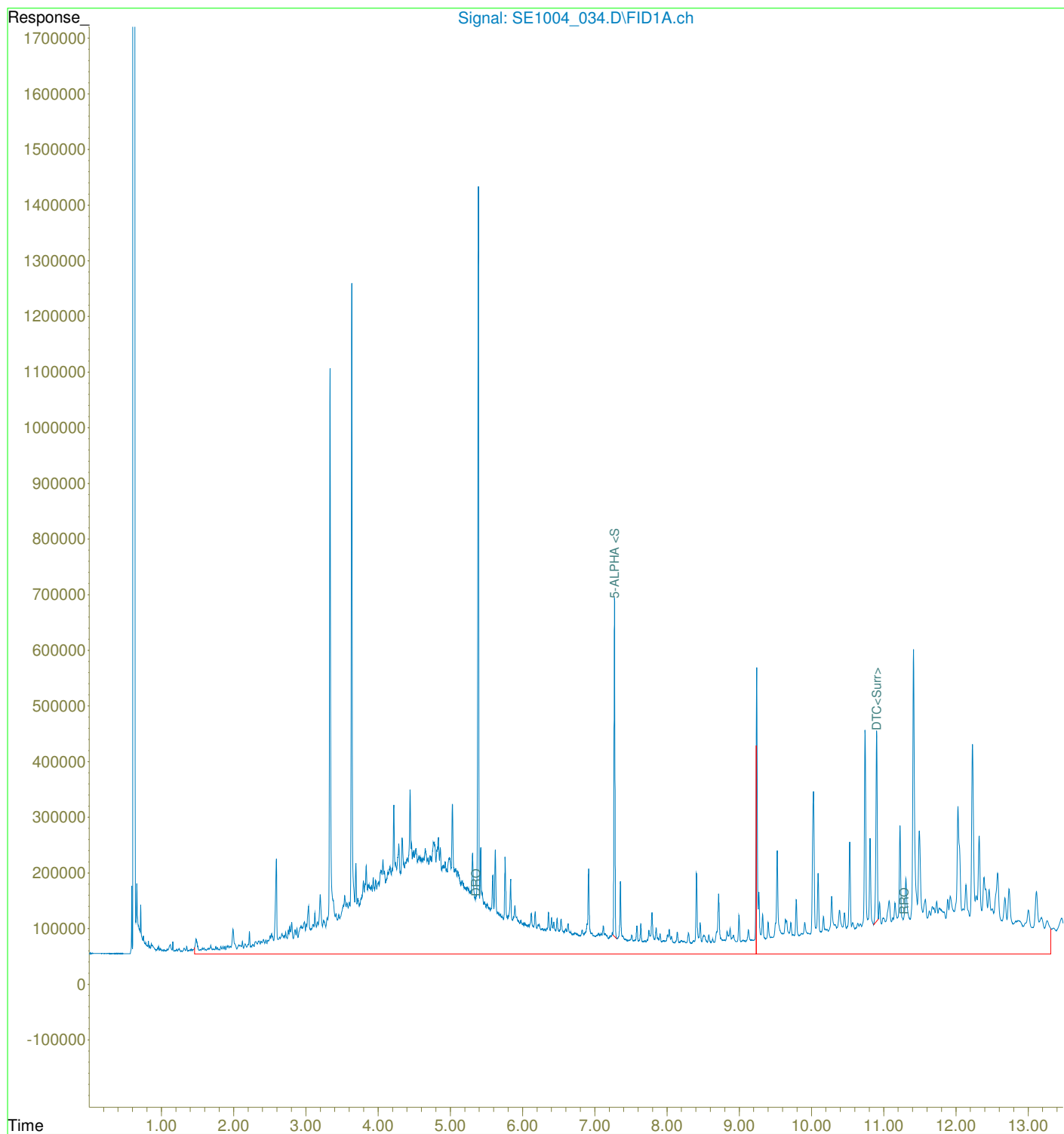
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_034.D
Signal(s) : FID1A.ch
Acq On : 4 Oct 2015 7:29 pm
Operator : KJO
Sample : 1155497012
Misc :
ALS Vial : 70 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:10:05 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

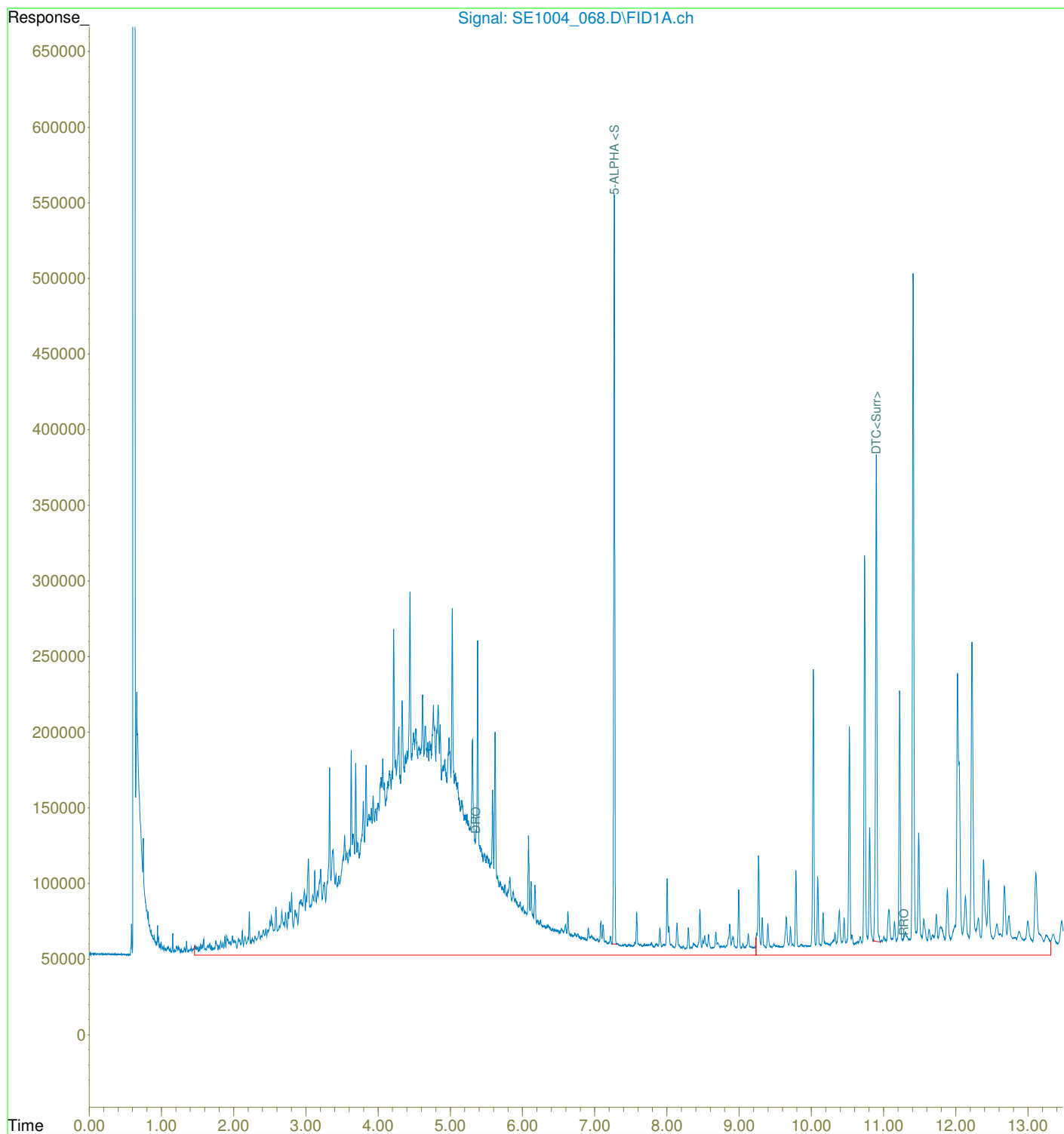
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\100415\
Data File : SE1004_068.D
Signal(s) : FID1A.ch
Acq On : 5 Oct 2015 1:19 am
Operator : KJO
Sample : 1155497012 SG
Misc :
ALS Vial : 85 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 06 11:22:28 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

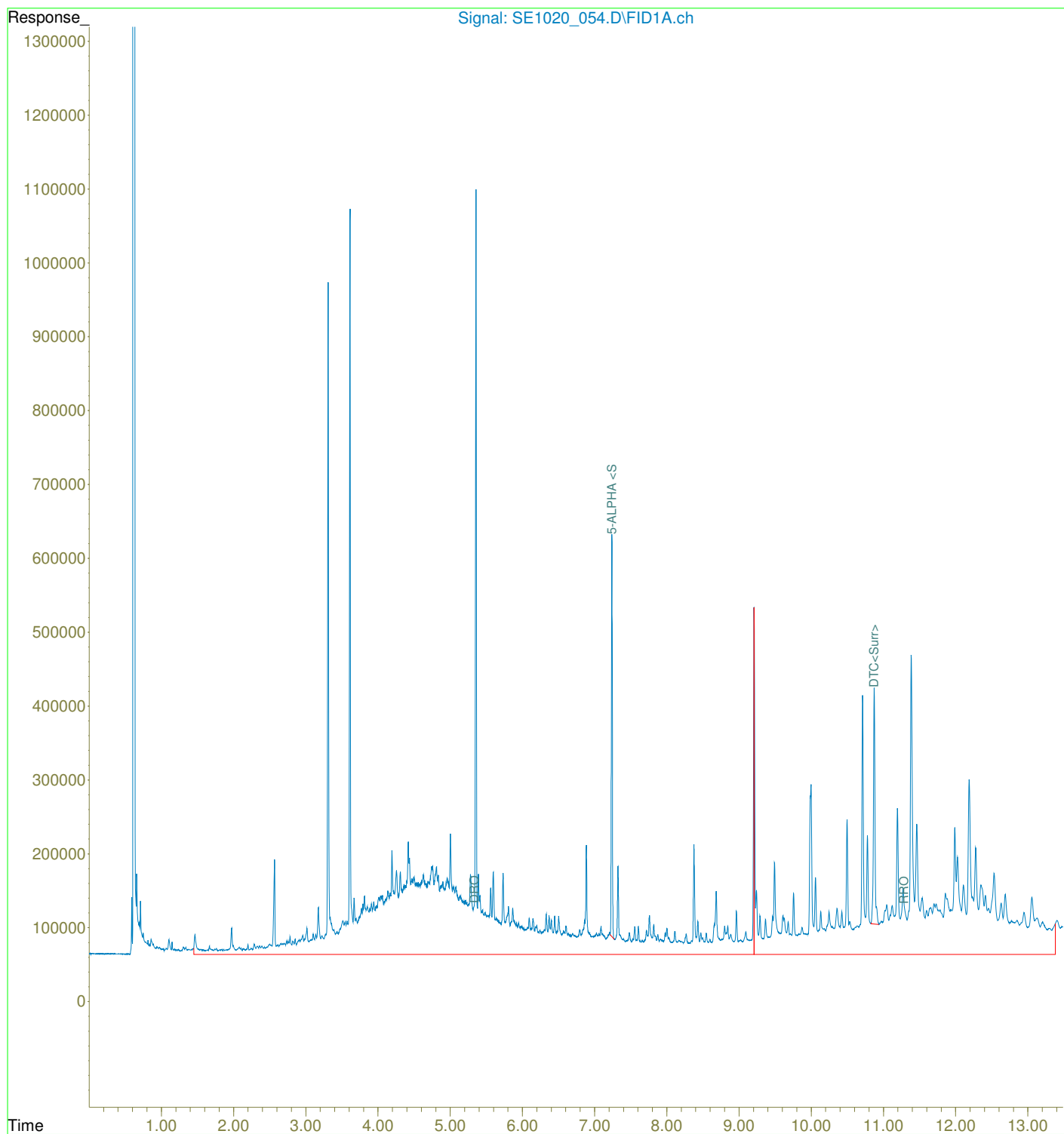
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\102015\
Data File : SE1020_054.D
Signal(s) : FID1A.ch
Acq On : 21 Oct 2015 5:03 am
Operator : KJO
Sample : 1155497013
Misc :
ALS Vial : 38 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 21 14:21:16 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002D.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

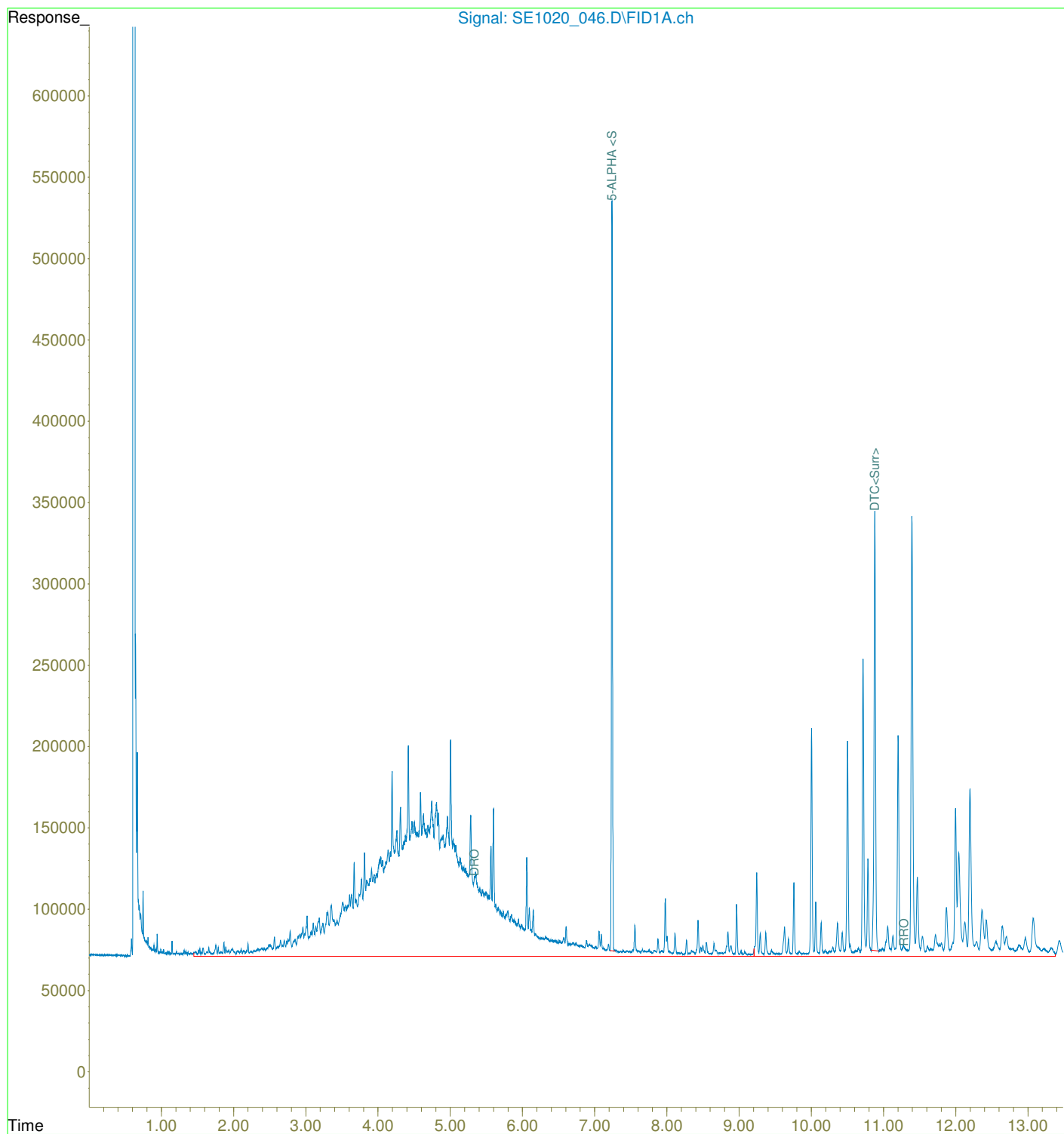
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : Y:\10\SE\DATA\102015\
Data File : SE1020_046.D
Signal(s) : FID1A.ch
Acq On : 20 Oct 2015 8:11 pm
Operator : KJO
Sample : 1155497013 SG
Misc :
ALS Vial : 34 Sample Multiplier: 1

Integration File: events.e
Quant Time: Oct 21 14:20:10 2015
Quant Method : Y:\10\SE\METHOD\SEF2015-1002D.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Sat Oct 03 14:49:07 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

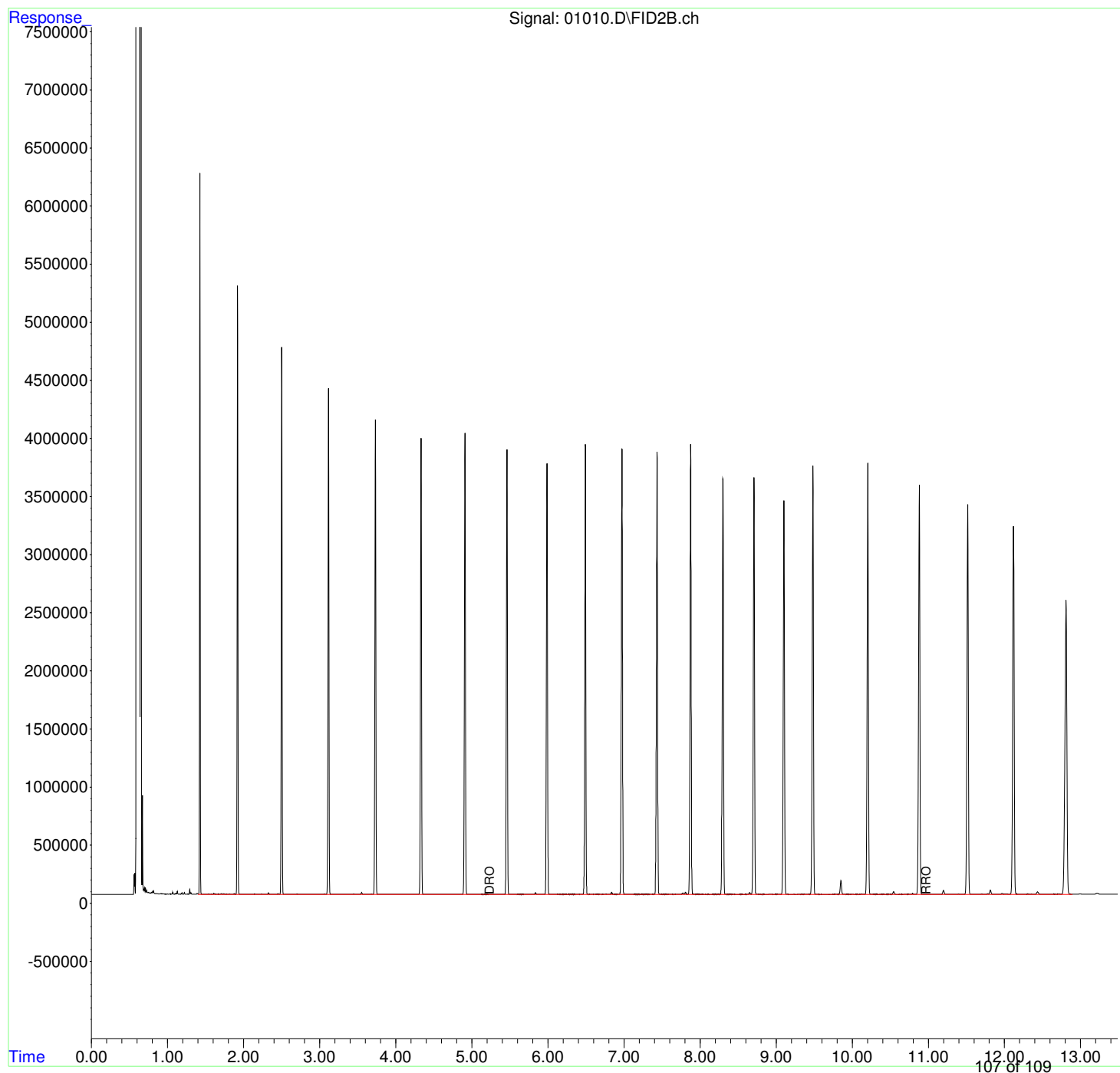


Data Path : Z:\10\SE\DATA\100114.SEC\
Data File : 01010.D
Signal(s) : FID2B.ch
Acq On : 1 Oct 2014 12:24 pm
Operator : MCM
Sample : NAS
Misc :
ALS Vial : 2 Sample Multiplier: 1

Alkane markers

Integration File: events.e
Quant Time: Oct 02 09:20:42 2014
Quant Method : Z:\09\SE\METHOD\SER2014-092914.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Tue Sep 30 07:30:38 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

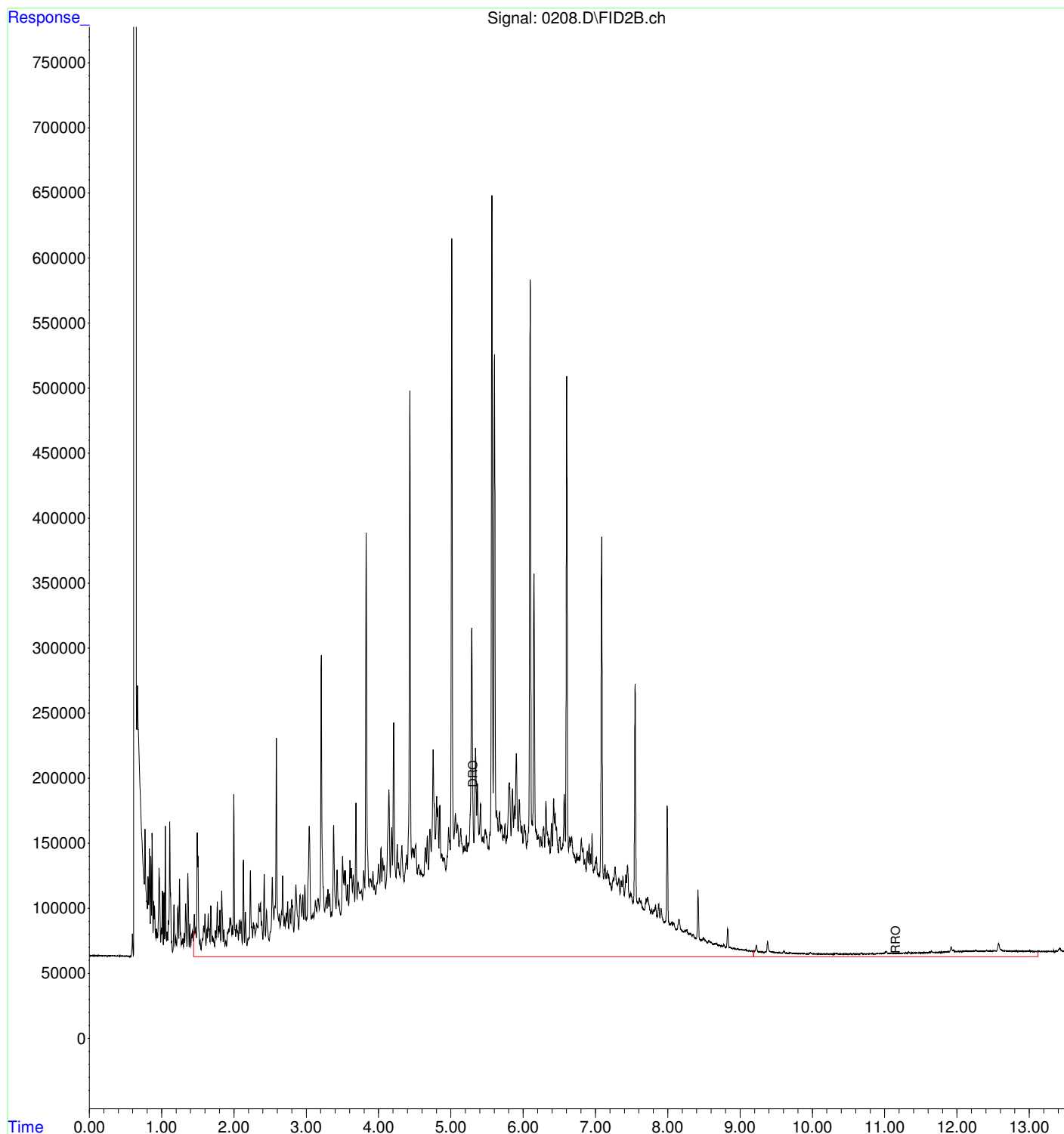


Data Path : Z:\08\SE\DATA\SE080214\
Data File : 0208.D
Signal(s) : FID2B.ch
Acq On : 3 Aug 2014 1:18 am
Operator : EAB
Sample : CCVB
Misc :
ALS Vial : 3 Sample Multiplier: 1

DRO Standard - long run

Integration File: events.e
Quant Time: Aug 04 08:43:05 2014
Quant Method : Z:\08\SE\METHOD\SER 2014-0729A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Wed Jul 30 10:02:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

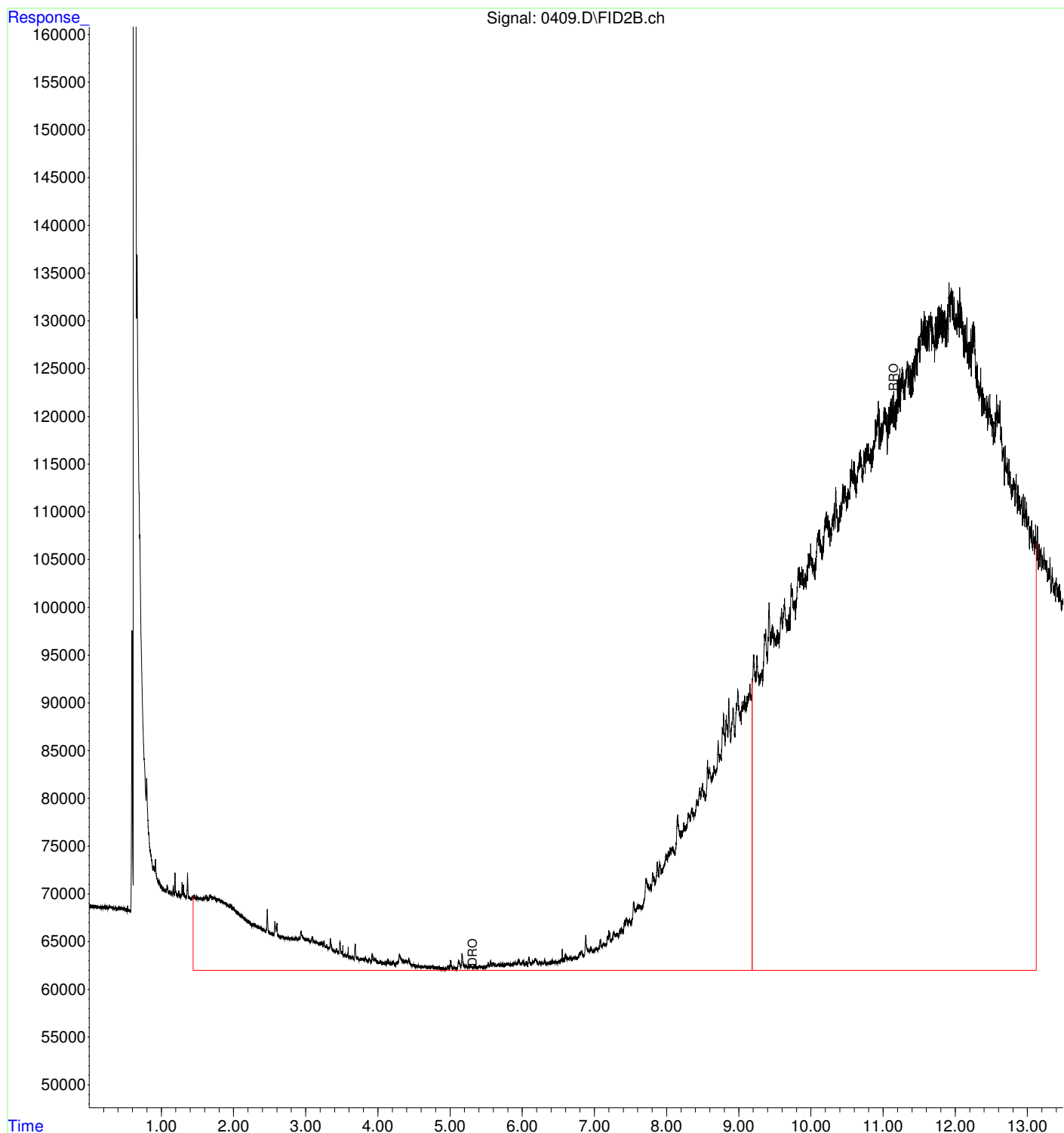


Data Path : Z:\08\SE\DATA\SE080414\
Data File : 0409.D
Signal(s) : FID2B.ch
Acq On : 4 Aug 2014 10:05 am
Operator : EAB
Sample : CCVR
Misc :
ALS Vial : 4 Sample Multiplier: 1

RRO standard - long run

Integration File: events.e
Quant Time: Aug 04 10:29:44 2014
Quant Method : Z:\08\SE\METHOD\SER 2014-0729A.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Wed Jul 30 10:02:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



LABORATORY DATA REVIEW CHECKLIST

Completed by: Trevor Crosby

Title: Environmental Scientist

Date: October 30, 2015

CS Report Name: Site Assessment, Pitkas Point School Site, Pitkas Point, Alaska

Laboratory Report Date: October 27, 2015

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.

Laboratory Report Number: 1155497

ADEC File Number: 2444.57.001

ADEC Hazard ID Number: 26405

(NOTE: NA = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes** / No / NA

Comments: *Yes, SGS North America, Inc. (SGS) received the samples and performed submitted sample analyses.*

- b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS-approved?

Yes / No / **NA**

Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

Yes / No / NA

Comments:

- b. Correct analyses requested? **Yes** / No / NA

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes / **No** / NA

Comments: *The cooler temperature was 1.8°C upon receipt at SGS.*

- b. Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes** / No / NA
- c. Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes** / No / NA
Comments: *SGS specifies that samples were received in good condition on the Sample Receipt Form (SRF).*
- d. If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes** / No / NA
Comments: *The cooler temp was outside the QC range at SGS. The laboratory noted that the sample time for one sample did not match the COC. The sample was logged in under the ID listed on the sample jar.*
- e. Data quality or usability affected? Please explain.
Comments: *Although the cooler temperature was less than the QC range, the sample receipt form does not indicate that the samples were frozen. Therefore, data quality/usability is considered unaffected.*

4. Case Narrative

- a. Present and understandable? **Yes** / No / NA
Comments:
- b. Discrepancies, errors or QC failures noted by the lab? **Yes** / No / NA
Comments: *The following QC failures were noted by the lab:*
- *GRO surrogate 4-bromofluorobenzene (BFB) recovery for Project Samples PPS10-D, PPS10-3-D, and PPS10-3-DX (Duplicate sample of PPS10-D) are biased high due to sample matrix.*
 - *DRO surrogate 5 α -androsterone recovery for Project Sample PPS10-1-B is outside QC criteria (biased low) due to sample dilution (20 times).*
 - *RRO surrogate n-triacontane recovery for Project Sample PPS10-1-B is outside QC criteria (biased low) due to sample dilution (20 times).*
 - *Amended sampled ID/Times for Project Samples PPS10-1-B, PPS13-C, and PPS12-3-C*
 - *Project Sample PPS12-3-C analyzed outside hold time*
 - *Added DRO/RRO and DRO/RRO Silica Gel for Project Sample PPS12-3-C.*
- c. Were corrective actions documented? Yes / **No** / NA
Comments:
- d. What is the effect on data quality/usability, according to the case narrative?
Comments: *The case narrative does not comment on the data quality/usability.*

5. Sample Results

- a. Correct analyses performed/reported as requested on COC? **Yes** / **No** / NA (please explain)
Comments: *DRO/RRO and DRO/RRO Silica Gel analysis for Sample PPS12-3-C was indicated on the COC but was not conducted by the laboratory. A revised laboratory report including the results for this sample was issued on October 27, 2015.*
- b. All applicable holding times met? **Yes** / **No** / NA
Comments: *DRO/RRO and DRO/RRO Silica Gel analysis for Sample PPS12-3-C was conducted outside hold time due to a laboratory error.*
- c. All soils reported on a dry-weight basis? **Yes** / **No** / NA
Comments:
- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes** / **No** / NA
Comments: *LOQs and reporting limits are less than cleanup levels where applicable (for non-detect results)*
- e. Data quality or usability affected? **NA**
Comments: *DRO/RRO and DRO/RRO Silica Gel results for Sample PPS12-3-C may be biased low due to the hold time exceedance.*

6. QC Samples

a. Method Blank

- i. One method blank reported per matrix, analysis, and 20 samples?
Yes / **No** / NA
Comments:
- ii. All method blank results less than LOQ? **Yes** / **No** / NA
Comments:
- *GRO, P & M xylene, and toluene were detected at estimated concentrations of 1.50 mg/kg, 0.0168 mg/kg, and 0.0138 mg/kg, respectively in the method blank for Trip Blank TB1.*
 - *GRO and toluene were detected at estimated concentrations of 1.47 mg/k and 0.0113 mg/kg, respectively in the method blank for Project Samples PPS1/PPS11-B, PPS1/PPS11-3-A, PPS10-1-B, PPS10-2-D, PPS10-3-D, PPS10-3-DX, PPS10-4-B, PPS12-C, PPS12-2-A, PPS13-C, and PPS12-3-CX.*
 - *GRO, P & M xylene, and toluene were detected at estimated concentrations of 1.01 mg/kg, 0.0155 mg/kg, and 0.0125 mg/kg, respectively in the method blank for Project Samples PPS12-3-C, PPS13-1-A, PPS13-2-B, TF1, and TF2.*
 - *GRO was detected at 1.45 J in the method blank for Project Sample PPS10-D.*

- iii. If above LOQ, what samples are affected?

Comments: *See above.*

- iv. Do the affected sample(s) have data flags? **Yes** / No / NA

Comments: *Although the reported concentrations in the above soil method blanks are less than their respective LOQs, the samples associated with these method blanks are "B" flagged when the reported sample concentration is within 10x the reported method blank concentration. If both the sample and method blank concentrations are reported at levels less than the LOQ, the sample concentration is reported as non-detect at the LOQ. If the reported sample concentration is greater than the LOQ and less than 5x the method blank concentration, the sample concentration is reported as non-detect at the detected sample concentration. If the sample concentration is greater than 5x the method blank concentration and less than or equal to 10x the method blank concentration, the sample concentration is reported at the detected sample concentration. See Table 2 of the report.*

- If so, are the data flags clearly defined? **Yes** / No / NA

Comments: *See above.*

- v. Data quality or usability affected? Yes / No / **NA**

Comments: *See above.*

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes** / No / NA

Comments: *One LCS/LCSD pair reported per analysis and 20 samples for GRO, DRO, RRO, and BTEX analyses.*

- ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? Yes / No / **NA**

Comments: *Inorganic analyses not performed.*

- iii. Accuracy – All percent recoveries (%R) reported *and* within method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes** / No / NA

Comments:

- iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes** / No / NA (please explain)

Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected? **NA**
Comments: *See above.*

- vi. Do the affected samples(s) have data flags? **Yes / No / NA**
Comments: *See above.*

If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *See above.*

- vii. Data quality or usability affected? Explain. **NA**
Comments: *See above.*

c. Surrogates - Organics Only

- i. Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes / No / NA**
Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA**
Comments: *Recovery of DRO and RRO surrogates 5 α -androstane and n-triacontane in Project Sample PPS10-1-B are below QC criteria due to sample dilution. The project samples are considered unaffected. Recovery of GRO surrogate 4-bromofluorobenzene (BFB) recovery for Project Samples PPS10-D, PPS10-3-D, and PPS10-3-DX are above QC criteria due to matrix interference.*

- iii. Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA**
Comments: *See above.*

If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *See above.*

- iv. Data quality or usability affected? Explain. **Yes / No / NA**
Comments: *The associated GRO results are considered a biased high estimate and flagged “J+” in Table 2 of the Report. Because the reported results are less than the ADEC cleanup level, potential high bias should not affect the data usability for this project.*

d. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.) Soil

- i. One trip blank reported per matrix, analysis and cooler? **Yes / No / NA**
Comments:

- ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA**

Comments: *Only one cooler was submitted to the laboratory.*

- iii. All results less than LOQ? **Yes** / No / NA

Comments:

- iv. If above LOQ, what samples are affected? **NA**

Comments:

- v. Data quality or usability affected? Explain. **NA**

Comments: *See above.*

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes / No / NA

Comments: *A field duplicate was submitted per 10 project samples for GRO, DRO, RRO, and BTEX analysis.*

- ii. Were the field duplicates submitted blind to the lab? **Yes** / No / NA

Comments: *Sample PPS12-3-C is a field duplicate of PPS12-3-CX.*

- iii. Precision – All relative percent differences (RPDs) less than specified DQOs?

(Recommended: 30% for water, 50% for soil) **Yes** / No / NA

Comments: *RPDs for DRO and RRO Silica Gel is greater than 50% (64%). RPDs for DRO and RRO were less than the DQOs. GRO, Benzene, toluene, ethylbenzene, total xylene analytes could not be calculated due to non-detect results for the primary and duplicate samples.*

- iv. Data quality or usability affected? Explain. **NA**

Comments: *The DRO concentrations in the primary (PPS12-3-C) and field duplicate (PPS12-3-CX) soil samples are both greater than the ADEC Method 2 cleanup level and the results are considered usable. However, the DRO Silica Gel concentration in the primary sample (PPS12-3-C; 155 mg/kg) is less than the ADEC Method 2 cleanup level while the duplicate sample (PPS12-3-CX; 301 mg/kg) is above than the ADEC Method 2 cleanup level potentially impacting the use of the data to determine if DRO Silica Gel concentrations in soils at PPS12-3-C are above cleanup levels. In addition, the duplicate sample (PPS12-3-CX) result is potentially biased low due to hold time exceedance which may have impacted the RPD between the samples. Therefore, in our opinion, no non-conformances that would adversely affect the quality or usability of the data were noted.*

- f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)

Yes / No / **NA** *Collecting and submitting a decontamination or equipment blank was not included in the ADEC-approved project scope.*

i. All results less than LOQ? Yes / No **NA**
Comments: *See above.*

ii. If results are above LOQ, what samples are affected? **NA**
Comments: *See above.*

iii. Data quality or usability affected? Explain. **NA**
Comments: *See above.*

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)

a. Are they defined and appropriate? **Yes** / No / NA
Comments: *Laboratory-applied data flags are defined on page 3 of the SGS report.*

APPENDIX D

**EHS-ALASKA, INC., HAZARDOUS MATERIALS ASSESSMENT – PITKAS POINT
SCHOOL SITE HAZMAT SURVEY**

HAZARDOUS MATERIALS ASSESSMENT

PITKAS POINT SCHOOL SITE HAZMAT SURVEY

PITKAS POINT, ALASKA

**Surveyed
September 16, 2015**

**Report Date
January 20, 2016**

EHS, ALASKA, INC.
ENGINEERING, HEALTH & SAFETY CONSULTANTS
11901 BUSINESS BLVD., SUITE 208
EAGLE RIVER, ALASKA 99577-7701

HAZARDOUS MATERIALS ASSESSMENT

PITKAS POINT SCHOOL SITE HAZMAT SURVEY

PITKAS POINT, ALASKA

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APPENDICES

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HAZARDOUS MATERIALS ASSESSMENT PITKAS POINT SCHOOL SITE HAZMAT SURVEY

PITKAS POINT, ALASKA

OVERVIEW

At the request of the Alaska Department of Environmental Conservation (ADEC), EHS-Alaska, Inc. (EHS-Alaska) conducted limited investigations of the Main School Building and two other structures known as Teacher Housing Unit 1 and Teacher Housing Unit 2 at the Pitkas Point school site, located in Pitkas Point, Alaska. The investigation consisted of limited surveys of each building to determine the presence of asbestos-containing materials (ACM), and other potentially hazardous materials, including suspect fungal growth, for the purpose of determining which buildings were safe for use by the Pitkas Point community. The limited investigation did not meet the requirements of NESHAP which is required prior to building renovation or demolition. Mr. Chris T. Ottosen of EHS-Alaska conducted the inspections in September 2015.

A. GENERALIZED REQUIREMENTS FOR HAZARDOUS MATERIALS

Potentially hazardous materials have been identified in each of the three structures surveyed. Those materials include asbestos, lead, polychlorinated bi-phenyls (PCBs), mercury, and radioactive materials. Not all materials were tested for potentially hazardous components, other potentially hazardous materials, including those exterior to the building, such as contamination from underground fuel tanks may be present, but are not part of this report.

Buildings or portions of buildings that were constructed prior to 1978 which are residences, or contain day care facilities, kindergarten classes or other activities frequently visited by children under 6 years of age are classified as *child occupied facilities*. All work classified as “renovations” or disturbing more than 6 square feet of lead-based painted surfaces per room for interior activities or more than 20 square feet for exterior activities in child occupied facilities must comply with the requirements of 40 CFR 745. None of these structures are classified as a *child occupied facility* and therefore the requirements of 40 CFR 745 are not applicable.

Only the materials that will be directly affected by future projects are required to be removed. The removal and disposal of potentially hazardous materials are highly regulated, and it is anticipated that removal and disposal of asbestos, lead and chemical hazards would be conducted by a subcontractor to the general contractor who is qualified for such removal. It is anticipated that the general contractor and other trades would be able to conduct their work using engineering controls and work practices to control worker exposure and to keep airborne contaminants out of other areas of the building and the school site.

Settled and concealed dusts in areas not subject to routine cleaning are present throughout the buildings, including the roof, and inside and on top of architectural, mechanical, electrical, and structural elements, and those dusts are assumed to contain regulated air contaminants. This should not be read to imply that there is an existing hazard to persons entering the buildings (persons entering the building as opposed to construction workers working in the affected areas). However, depending on the specific work items involved and on the means and methods employed when working in the affected areas, construction workers could be exposed to regulated air contaminants from those dusts in excess of the OSHA Permissible Exposure Limits (PELs).

The settled and concealed dusts were examined by an EPA Certified Building Inspector but were not sampled. The inspector determined that the dusts are not “asbestos debris” from an asbestos-containing building material (ACBM). The inspector also determined that the dusts are unlikely to contain more than one percent (1%) asbestos by weight, and therefore are not an asbestos-containing material (ACM). Reference 40 CFR 763.83.

“Awareness training” (typically 2 hours) and possibly respiratory protection would be required for all Contractor Personnel who would be disturbing the dusts. The extent of the training and protective measures would depend upon the airborne concentrations measured during air monitoring of the contractors work force, which would depend on the means and methods employed to control the dusts. The air monitoring may be discontinued following a “negative exposure assessment” showing that worker exposures are below the OSHA permissible exposure limits for the type of work and means and methods employed. Previous air monitoring from similar jobs with similar conditions may be used as historical data to establish a “negative exposure assessment”.

B. BUILDING DESCRIPTION

Main School Building

The Main School Building was originally constructed in 1980, with an addition to the northwest in 1984. The building is currently unoccupied and without utilities, with the exception of the Server Room which still has electricity.

The building is elevated above grade and supported by pilings. The pilings are connected to various structural members below the building which provide a foundation for the remainder of the structure. The floor structure consists of a plywood base covered by a poly vapor barrier with another layer of plywood on top of an insulated joist space. Walls were typically of wood framed construction, with various other structural members supporting the second floor. The exterior was clad with a T1-11 wood siding, and the roofs were of either a corrugated metal or metal “zip-rib” style.

Interior floor finishes were typically of carpet in classroom and office areas, with the bathrooms having sheet vinyl, the main entrance vestibule and hallway had a brick type decorative ceramic floor tile, and the remainder of the building having 12” x 12” decorative vinyl floor tiles. In some areas, older floor finishes were left in place and covered over by newer floor finishes.

Walls were typically of gypsum wall board, with bathroom areas having either a decorative wall tile or “Marlite” finish directly on top of the gypsum wall board. One classroom area had a wooden wainscot, and the Gym had a carpeted wall panel covering the bottom eight feet of the wall. Ceilings throughout were of gypsum wall board.

The building was heated by a hydronic heating system, with each era having its own boiler. The building did not appear to have any form of mechanical ventilation with the exception of bathroom exhaust fans and the fume hood in the Kitchen.

The building was generally in fair condition with only minor areas of water damage noted. Roof leaks in the Mechanical Room above the Kitchen have resulted in damage to the Mechanical Room, the Kitchen, and an adjacent classroom to the south. Multiple trash cans or buckets were placed in the Mechanical Room to catch the water but have overflowed causing more damage. There was also water damage noted in the Gym where daylight was visible through cracks in the gypsum board wall and ceiling. This appears to have been caused by building settling and a lack of exterior siding or other protection. In both areas, water has damaged a variety of building components including ceilings, walls, floors, light fixtures, etc. Suspect fungal growth was noted in both of these locations.

Teacher Housing Units 1 & 2

The Teacher Housing Units appear to have been built at the same time considering they have nearly identical floor plan configurations and building materials. According to aerial photography of the site, the units appear to have been built around 1979 or 1980. It appeared that additional information on these structures was present in the AHERA documentation found at the site, but this information was not provided to EHS after multiple requests.

The units were elevated above grade and supported by wood piers. The piers connected to wood girders under the buildings which provided a foundation for the remainder of the structures. The floor structures

appeared to have been made of one layer of plywood over an insulated joist space. Walls were of wood framed construction, and roofs were of a corrugated metal.

Interior floor finishes were mainly of carpet, with sheet vinyl in the Arctic Entry, Kitchen, Bathroom, and Boiler Room. In some areas, older floor finishes were left in place and covered by newer floor finishes.

Walls were typically of an 1/8" prefabricated decorative wood panel nailed directly to wood framing, with the east side of the Kitchen/Living Room areas having a vinyl covered gypsum wall board glued to a plywood underlayment, the Bathroom having "Marlite" panels glued to a plywood underlayment, and the Boiler Room having all gypsum board.

Ceilings throughout consisted of a 12" x 12" acoustic ceiling tile. In Teacher Housing Unit 1 the tiles used a combination of staples and "puck" mastic to secure the tiles directly to the plywood ceiling. No mastic was noted on the tiles in Teacher Housing Unit 2. In both units, the Boiler Room had a gypsum board ceiling.

The units were heated by a hydronic heating system, with each unit having its own boiler.

Both Teacher Housing Units were in disrepair and should not be entered by unprotected workers. There was no access to the Attic, but it appears that a combination of roof leaks, lack of ventilation, and environmental conditions have trapped moisture in the units resulting in extensive fungal growth due to the various forms of water damage and intrusion. All surfaces and materials interior to the units have visible fungal growth and are moisture laden.

C. SAMPLING AND ANALYSIS

1. Asbestos-Containing Materials

The surveys included sampling of suspect ACM materials that had not been sampled in prior asbestos surveys, or samples of materials where previous sampling had been inconsistent. Refer to the AHERA asbestos management plans available for review in the Lower Yukon School District offices for information on previous sampling which is not included in this report. Additional testing of materials pertinent to the project, including asbestos and lead samples was conducted and is included in this report.

The samples were analyzed for the presence of asbestos by polarized light microscopy (PLM), the method of analysis recommended by the U.S. Environmental Protection Agency (EPA) to determine the composition of suspected asbestos-containing materials (EPA method 600/M4-82-020). Only materials containing more than 1% total asbestos were classified as "asbestos-containing" based on EPA and the Occupational Safety and Health Administration (OSHA) criteria. Samples that were analyzed to have less than 10% asbestos were "point-counted" by the laboratory for more accuracy. Samples that are listed as having a "Trace by Point Count" had asbestos fibers found in the material, but the fibers were not present at the counting grids. Table 1 in Part D below contains a summary list of the asbestos bulk samples and the applicable results.

The Bulk Asbestos samples were analyzed for asbestos content by International Asbestos Testing Laboratories (IATL), Mt. Laurel, New Jersey a National Voluntary Laboratory Accreditation Program - (NVLAP) accredited laboratory.

EPA regulations under 40 CFR 763 requires the use of Polarized Light Microscopy (PLM) to determine whether or not a material contains asbestos. While PLM analysis does a good job for most materials, it does have some limitations, both in the size of the fibers that are visible under a standard optical microscope, and because the organic matrix that the fibers are bound within can obscure the fibers. At the discretion of the building inspector and the client, some types of samples may be analyzed or re-analyzed by what is called TEM NOB, or Transmission Electron Microscopy for Non-Friable Organically

Bound materials. TEM NOB is the definitive method for determining if asbestos is present, but TEM NOB use is not required by the EPA. TEM NOB analysis was not done for this project.

Field survey data sheets and laboratory reports of the bulk samples are included in Appendix A. Drawings showing sample locations are included as Appendix D.

2. Lead-Containing Materials

Nearly all surfaces in the buildings were coated with paint and most surfaces had been repainted. EHS-Alaska tested paint throughout the buildings using an XLp300A X-Ray Fluorescence (XRF) lead paint analyzer (Serial # 81530 with software version 5.2F). EHS-Alaska had also previously tested paint throughout portions of the Main School Building using an XLi303AW X-Ray Fluorescence (XRF) lead paint analyzer (Serial # 14311 with software version 5.2C). Refer to the Lead Paint Screening Table in Appendix C that identifies the surfaces tested, and the results. All surfaces may not have been tested and therefore additional sampling may be required to refute the presence of lead-based paints. The Paint Test Locations are shown in Appendix D.

EPA and the Department of Housing and Urban Development (HUD) have defined lead-based paint as any paint or other surface coating that contains lead equal to or in excess of 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent by weight. XRF results are classified as positive (lead is present at 1.0 mg/cm² or greater), negative (less than 1.0 mg/cm² of lead was present) or inconclusive (the XRF could not make a conclusive positive or negative determination). Tests that were invalid due to operator error are shown as void tests.

A Performance Characteristic Sheet (PCS) for the NITON XLi303AW and NITON XLp300A is available upon request. This PCS data provides supplemental information to be used in conjunction with Chapter 7 of the "HUD Guidelines". Performance parameters provided in the PCS are applicable when operating the instrument using the manufacturer's instructions and the procedures described in Chapter 7 of the "HUD Guidelines". The instrument was operated in accordance with manufacturer's instructions and Chapter 7 of the HUD Guidelines. No substrate correction is required for this instrument. There is no inconclusive classification for this instrument when using the 1.0 mg/cm² threshold.

3. Suspect Fungal Growth

The investigation included a visual examination of the buildings for suspect fungal growth. Many different types of fungal growth were noted throughout both units, but no samples were authorized for this project, and therefore identification of these fungi is unknown. Moisture readings were not taken from the Teacher Housing Units since most building materials were water saturated with visible condensation on the interior sides of the windows and other surfaces.

D. SURVEY RESULTS

1. Asbestos-Containing Materials

Asbestos field survey data sheets and laboratory reports are included as Appendix A. Refer to Appendix D for sample locations. The following Table 1A lists the samples taken in September 2015 in the Main School Building, and the results of the laboratory analysis.

TABLE 1A – Main School Building

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP0915-A01	(SV1) Sheet vinyl, tan with brown swirl pattern; with yellow mastic; with white mastic	From southeast corner of Bathroom – Photo 311	None Detected All Layers
PKP0915-A02	Yellow mastic for ceramic wall tile	At damaged area of north wall behind urinal in Bathroom – Photo 312	None Detected
PKP0915-A03	White gypsum wall board	From behind ceramic wall tile at penetration for heat piping on south wall in Bathroom – Photo 313	None Detected
PKP0915-A04	Brown mastic for ceramic floor tile	At damaged area of flooring at entrance into school – Photo 314	None Detected
PKP0915-A05	Yellow mastic for “Marlite” wall panel (do not analyze “Marlite” wall panel)	At stub wall next to showers in Girl’s Bathroom – Photo 374	None Detected
PKP0915-A06	Yellow mastic for carpet	At entrance to first floor Classroom at southwest corner of building – Photo 376	None Detected
PKP0915-A07	Brown gypsum wall board	At damaged area of north wall next to entrance into Kitchen in large Classroom on first floor – Photo 420	None Detected
PKP0915-A08	(FT3) Floor tile, 12”x12” tan with brown and white streaks	From damaged area of flooring near center of Kitchen – Photo 421	None Detected
PKP0915-A09	(FT2) Floor tile, 12”x12” tan with light and dark streaks; with tan mastic	From damaged area of flooring near door at southeast corner of Gym – Photo 431	None Detected Both Layers
PKP0915-A10	White gypsum wall board	At base of west wall at damaged area in Gym – Photo 448	None Detected
PKP0915-A11	Yellow mastic for wall carpet	At base of west wall at damaged area in Gym – Photo 448	None Detected
PKP0915-A12	White wall texture	At area of peeling paint on south side of second floor Office across the hall from the Server Room – Photo 522	None Detected
PKP0915-A13	White wall texture	Under window on south side of second floor hallway near Server Room – Photo 523	None Detected
PKP0915-A14	Black putty	On wood support for A/C unit on south side of Server Room – Photo 524	None Detected
PKP0915-A15	Floor tile, 12”x12” pink with white and black streaks; with tan mastic	Near door on west side of second floor Storage Room – Photo 525	None Detected Both Layers

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP0915-A16	Floor tile, 12"x12" pink with white and black streaks; with tan mastic	On east side of second floor Storage Room – Photo 526	None Detected Both Layers
PKP0915-A17	Yellow mastic for carpet	Near center of Library – Photo 562	None Detected
PKP0915-A18	White wall texture	At damaged area of wall above door at northeast corner of Library – Photo 612	None Detected
The testing method used (polarized light microscopy [PLM]) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation should be made by quantitative transmission electron microscopy (TEM).			

The sampling and results of the laboratory analysis in Table 1B below was performed by EHS in July 2011 at the Main School Building as part of the design services for a school upgrades project. The school was shut down shortly after that survey, and the design was never finished. The materials that were sampled during that survey are still present at the school and are included here to supplement the sampling performed in September 2015. That survey also included an inspection of the School Shop to the north of the Main School Building and a Tank Farm at the northeast corner of the school site, but the sampling information for those buildings are not included here. Asbestos field survey data sheets and laboratory reports are included in Appendix A. Refer to Appendix D for sample locations.

TABLE 1B – Main School Building

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP-0711-A01	Carpet mastic, brown	Special Ed classroom, northeast ceiling section	None Detected
PKP-0711-A02	Joint compound, white	Special Ed Classroom, west wall, mid span	None Detected
PKP-0711-A03	Sink undercoating, white	Special Ed classroom, south wall sink	4.1% Chrysotile
PKP-0711-A04	Cove base mastic, tan	Behind entry open door from corridor	None Detected
PKP-0711-A05	Gypsum wall board, white	Corridor wall outside special education classroom	None Detected
PKP-0711-A06	Carpet mastic, tan	Northeast classroom, center of floor	None Detected
PKP-0711-A07	Joint compound, white	Northeast classroom, North wall, below window	None Detected
PKP-0711-A08	Joint compound, white	Inside wall of classroom at doorway from corridor	None Detected
PKP-0711-A09	Joint compound, white	Northwest vestibule above bench	None Detected
PKP-0711-A10	Sink undercoating, white	Northeast wing of building, south classroom, sink at west wall	3.8% Chrysotile
PKP-0711-A11	Cove base mastic, yellow and joint compound, white	Partition wall at end of counter in northeast section, south classroom.	Mastic: ND JC: ND

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP-0711-A12	Cove base, brown	Partition wall at end of counter in northeast section, south classroom	None Detected
PKP-0711-A13	Joint compound, white	south wall in north east section of building, south classroom	None Detected
PKP-0711-A14	Sheet vinyl and mastic, SV-1 tan with brown swirls	Faculty bathroom	SV: ND Mastic: ND
PKP-0711-A15	Tile grout, tan granular	Faculty bathroom, east wall	None Detected
PKP-0711-A16	Door frame sealant, brown	Doorway frame in faculty bathroom	None Detected
PKP-0711-A17	Joint compound, white	Corridor wall at base of stairs to library	None Detected
PKP-0711-A18	Carpet mastic, yellow	Edge of carpet at doorway to gymnasium	Cement: ND Mastic: ND
PKP-0711-A19	Joint compound, white	Corridor wall outside janitor closet	None Detected
PKP-0711-A20	Sheet vinyl and mastic, SV-2 grey pebble mosaic	Edge of floor in janitor closet	SV: 40% Chrysotile Mastic: ND
PKP-0711-A21	Floor tile and mastic, FT-1 12x12 white w/ grey streaks	Edge of corridor flooring at doorway to janitor closet	Tile: 1.6% Chrysotile Black: 3.2% Chrysotile Yellow: ND
PKP-0711-A22	Joint compound white	Corridor wall outside storage area, south west section of building, north end, north wall of corridor	None Detected
PKP-0711-A23	Joint compound, white	Soffit across from principal's office door, entry area to south west classroom	None Detected
PKP-0711-A24	Cove base, brown	South wall of south west classroom, under radiator	None Detected
PKP-0711-A25	Cove base mastic, brown and yellow	South wall of south west classroom, under radiator	Brown: ND Yellow: ND
PKP-0711-A26	Joint compound white	North wall of south west classroom below light switch	None Detected
PKP-0711-A27	Window glazing, grey	West wall of south west classroom	8.9% Chrysotile
PKP-0711-A28	Floor tile and mastic, FT-1	Floor tile section in classroom outside kitchen area.	Tile: 1.7% Chrysotile Mastic: 1.9% Chrysotile
PKP-0711-A29	Sink undercoating white	Kitchen area in south west classroom	3.9% Chrysotile

HAZARDOUS MATERIALS ASSESSMENT

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP-0711-A30	Marlite mastic, janitor's closet	South wall of janitor closet	None Detected
PKP-0711-A31	Floor tile, 12x12 tan w/ light and dark streaks, with tan mastic	Gymnasium floor	Tile: ND Mastic: ND
PKP-0711-A32	Floor tile and mastic, FT-3 tan with light and dark streaks	Kitchen area under deep sink	Tile: ND Mastic: ND
PKP-0711-A33	Cove base, black and mastic, brown	Kitchen area at base of cabinet under deep sink	CB: ND Mastic: ND
PKP-0711-A34	Marlite mastic, yellow	Back wall of kitchen area at doorway to classroom	None Detected
PKP-0711-A35	Wall carpet mastic, tan	Gymnasium wall under basketball net outside kitchen	Mastic: ND JC: ND
PKP-0711-A36	Sheet vinyl and mastic, 8" square, cream and grey (SV-3)	Boys locker room entry floor.	SV: ND Mastic: ND
PKP-0711-A37	Sheet vinyl and mastic (SV-2)	Boys locker room entry floor, under SV-3	30% Chrysotile
PKP-0711-A38	Cove Base mastic, brown	Gymnasium storage closet, back wall	None Detected
PKP-0711-A39	Joint compound, white	Storage closet at diagonal ceiling corner	None Detected
PKP-0711-A40	Sheet vinyl and mastic, pink white and grey confetti (SV-4)	Girls locker room floor	SV: ND Mastic: ND
PKP-0711-A41	Joint compound, white	South west section of school, north room (storage area) at corner wall inside doorway	None Detected
PKP-0711-A42	Marlite mastic, yellow	Add on storage area at north end of south west section of building, west wall at damage area	None Detected
PKP-0711-A43	Gypsum wall board, white	Add on storage area at north end of south west section of building, west wall at damage area	None Detected
PKP-0711-A44	Wall texture, white	First floor stair way landing next to faculty bathroom, east wall	None Detected
PKP-0711-A45	Wall texture, white	Second floor, wall along second level stairway to library	None Detected
PKP-0711-A46	Joint compound, white	Second floor, Corner wall at top of stairs in library	None Detected
PKP-0711-A47	Carpet mastic, yellow	Second floor, floor at top of stairs from first floor in library	None Detected
PKP-0711-A48	Wall texture, white	Second floor, Wall outside mechanical room in library	None Detected

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKP-0711-A49	Joint compound and wall texture	Second floor, corner wall outside mechanical room in library	None Detected
PKP-0711-A50	Stair tread, tan vinyl	First floor steps from kitchen to mechanical room	1.7% Chrysotile
PKP-0711-A51	Stair tread mastic	First floor steps from kitchen to mechanical room	None Detected
PKP-0711-A52	Joint compound, white with tan paint	Second level, south wall of storage area at top of stairs from kitchen	None Detected
PKP-0711-A53	Joint compound, tan	Second level mechanical room at top of stairs from kitchen, above boiler	None Detected
PKP-0711-A54	Joint compound and wall texture, white	Second floor, inside office at north end of library, east wall	None Detected
PKP-0711-A54a	Joint compound and Wall texture, white	Second floor, outside wall of center office	None Detected
The testing method used (polarized light microscopy [PLM]) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation should be made by quantitative transmission electron microscopy (TEM).			

Table 1C includes samples taken in September 2015 in Teacher Housing Unit 1, and the results of the laboratory analysis. Asbestos field survey data sheets and laboratory reports are included in Appendix A. Refer to Appendix D for sample locations.

TABLE 1C – Teacher Housing Unit 1

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKPTH0915-A01	(HSV3) Hidden sheet vinyl, beige with brown flower pattern	Teacher Housing Unit #1 – Hidden under newer sheet vinyl in Entryway – Photo 108	None Detected
PKPTH0915-A02	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #1 – In Entryway in – Photo 108	None Detected
PKPTH0915-A03	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #1 – At carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	None Detected
PKPTH0915-A04	(HSV2) Hidden sheet vinyl, brown 1/8" chip pattern	Teacher Housing Unit #1 – Hidden under newer sheet vinyl at carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	None Detected
PKPTH0915-A05	(HSV1) Hidden sheet vinyl, yellow/brown "alligator" pattern	Teacher Housing Unit #1 – Hidden under newer sheet vinyl at carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	None Detected

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKPTH0915-A06	(HSV1) Hidden sheet vinyl, yellow/brown "alligator" pattern	Teacher Housing Unit #1 – Hidden under carpet in Hallway at entrance to Bathroom – Photo 111	None Detected
PKPTH0915-A07	(SV2) Sheet vinyl, white with blue 4"x4" square pattern and decorative blue and red flowers pattern	Teacher Housing Unit #1 – At entrance into Bathroom – Photo 111	None Detected
PKPTH0915-A08	(SV2) Sheet vinyl, white with blue 4"x4" square pattern and decorative blue and red flowers pattern	Teacher Housing Unit #1 – At entrance into Boiler Room – Photo 112	None Detected
PKPTH0915-A09	Off-white vinyl covered gypsum wall board; with yellow mastic; with off-white wallpaper	Teacher Housing Unit #1 – On east wall of Kitchen – Photo 114	None Detected All Layers
PKPTH0915-A10	Off-white vinyl covered gypsum wall board; with yellow mastic	Teacher Housing Unit #1 – On east wall of Living Room – Photo 113	None Detected Both Layers
PKPTH0915-A11	Dark brown mastic for glued-on ceiling tile (do not analyze cellulose board ceiling tile)	Teacher Housing Unit #1 – Loose on glued-on ceiling tile laying on floor near entrance in Bedroom 01 – Photo 115	None Detected
PKPTH0915-A12	Dark brown mastic for glued-on ceiling tile (do not analyze cellulose board ceiling tile)	Teacher Housing Unit #1 – From ceiling near south wall in Bedroom 03 – Photo 116	None Detected
PKPTH0915-A13	Dark brown mastic for glued-on ceiling tile (do not analyze cellulose board ceiling tile)	Teacher Housing Unit #1 – From ceiling near north wall in Bathroom – Photo 126	None Detected
PKPTH0915-A14	White gypsum wall board	Teacher Housing Unit #1 – From damaged area of east wall in Boiler Room – Photo 121	None Detected
PKPTH0915-A15	White joint compound	Teacher Housing Unit #1 – From damaged area of east wall in Boiler Room – Photo 117	None Detected
PKPTH0915-A16	White joint compound	Teacher Housing Unit #1 – From damaged area of north wall in Boiler Room – Photo 118	None Detected
PKPTH0915-A17	White joint compound	Teacher Housing Unit #1 – From damaged area of wall at northwest corner of Boiler Room – Photo 119	None Detected
PKPTH0915-A18	Yellow mastic for "Marlite" wall panel	Teacher Housing Unit #1 – From north wall of Bathroom – Photo 127	None Detected

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKPTH0915-A19	Dark brown 6" cove base; with off-white mastic	Teacher Housing Unit #1 – From base of shower enclosure in Bathroom – Photo 128	None Detected Both Layers
PKPTH0915-A20	Black undercoating for stainless steel sink	Teacher Housing Unit #1 – On bottom of stainless steel sink in Kitchen – Photo 129	1.9% Chrysotile
PKPTH0915-A21	Black 4" cove base; with off-white mastic	Teacher Housing Unit #1 – From base of cabinetry in Kitchen – Photo 130	None Detected Both Layers
PKPTH0915-A22	Grey gummy window glazing compound	Teacher Housing Unit #1 – From wood framed window on east wall of Living Room – Photo 156	10% Chrysotile
PKPTH0915-A23	Hard white window glazing compound	Teacher Housing Unit #1 – From wood framed window on north wall of Bedroom 03 – Photo 157	None Detected
The testing method used (polarized light microscopy [PLM]) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation should be made by quantitative transmission electron microscopy (TEM).			

Table 1D includes samples taken in September 2015 in Teacher Housing Unit 2, and the results of the laboratory analysis. Asbestos field survey data sheets and laboratory reports are included in Appendix A. Refer to Appendix D for sample locations.

TABLE 1D – Teacher Housing Unit 2

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKPTH0915-A24	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #2 – From north side of Kitchen – Photo 221	None Detected
PKPTH0915-A25	(SV3) Yellow with square and rectangles pattern	Teacher Housing Unit #2 – From entrance to Restroom – Photo 222	None Detected
PKPTH0915-A26	(SV3) Yellow with square and rectangles pattern	Teacher Housing Unit #2 – At damaged area of floor near center of Boiler Room – Photo 224	None Detected
PKPTH0915-A27	Hard white window glazing compound	Teacher Housing Unit #2 – From wood framed window on south side of Living Room – Photo 227	None Detected
PKPTH0915-A28	Grey gummy window glazing compound	Teacher Housing Unit #2 – From wood framed window on east side of Living Room – Photo 229	10% Chrysotile
PKPTH0915-A29	Black undercoating for stainless steel sink	Teacher Housing Unit #2 – On bottom of stainless steel sink in Kitchen – Photo 230	1.5% Chrysotile

SAMPLE NUMBER	MATERIAL	LOCATION	ASBESTOS CONTENT
PKPTH0915-A30	Black 4" cove base; with off-white mastic	Teacher Housing Unit #2 – From base of cabinetry in Kitchen – Photo 231	None Detected Both Layers
PKPTH0915-A31	Dark brown 4" cove base; with brown mastic	Teacher Housing Unit #2 – From base of wall next to door on south side of Bathroom – Photo 232	None Detected Both Layers
PKPTH0915-A32	White joint compound	Teacher Housing Unit #2 – From damaged area of wall on east side of Boiler Room – Photo 233	None Detected
PKPTH0915-A33	White joint compound	Teacher Housing Unit #2 – From damaged area of wall at northeast corner of Boiler Room – Photo 234	None Detected
PKPTH0915-A34	White joint compound	Teacher Housing Unit #2 – From damaged area of wall at northwest corner of Boiler Room – Photo 235	None Detected
PKPTH0915-A35	White gypsum wall board	Teacher Housing Unit #2 – From damaged area of wall on east side of Boiler Room – Photo 236	None Detected
PKPTH0915-A36	Yellow mastic for "Marlite" wall panel (do not analyze "Marlite")	Teacher Housing Unit #2 – From west wall of Bathroom – Photo 238	None Detected
PKPTH0915-A37	Off-white vinyl covered gypsum wall board; with yellow mastic	Teacher Housing Unit #2 – From east wall of Living Room – Photo 239	None Detected Both Layers
PKPTH0915-A38	Off-white vinyl covered gypsum wall board; with yellow mastic	Teacher Housing Unit #2 – From east wall of Kitchen – Photo 240	None Detected Both Layers
The testing method used (polarized light microscopy [PLM]) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation should be made by quantitative transmission electron microscopy (TEM).			

The following materials have been found to contain asbestos in this or previous surveys, or were assumed to contain asbestos.

Main School Building

1. Various colors and patterns of 12" x 12" floor tiles and associated asbestos-containing black mastic.
2. Various colors and patterns of sheet vinyl.
3. Tan stair tread on stairs leading to Mechanical Room from Kitchen.
4. Grey putty-like window glazing compounds at older windows.
5. White undercoatings on stainless steel sinks.
6. High temperature wiring insulation at incandescent and fluorescent light fixtures.
7. Flange gaskets and valve packings on piping (assumed).
8. Boiler gaskets and sealants (assumed).
9. Sealants on "zip-rib" roofing seams (assumed).
10. Patch tars and other sealants used on roofing components (assumed).

Teacher Housing Units 1 & 2

1. Black undercoating on stainless steel sink in Kitchen.

2. Grey putty-like window glazing compounds.
3. Boiler gaskets and sealants (assumed).
4. Vermiculite insulation at flue enclosure in Attic, and hidden in floor space (assumed).
5. Patch tars and other sealants used on roofing components (assumed).

The following materials have been found to be asbestos-free in this or previous surveys, but is not to be considered a complete list of asbestos-free materials.

Main School Building

- “Marlite” mastics.
- Joint compound and gypsum board throughout all eras.
- Cove base mastics throughout all eras.
- Wall texture compounds throughout all eras.
- Wall carpet mastic in the Gym.

Teacher Housing Units 1 & 2

- Joint compound and gypsum board, including the vinyl covered gypsum wall board.
- Glued-on ceiling tile mastic (Teacher Housing Unit 1 only).
- “Marlite” mastic.
- All sheet vinyls that are not concealed under a plywood subfloor (if present).

The asbestos-containing materials discovered during this or previous surveys are discussed below.

Main School Building

Floor Tile and Mastic

Various colors and patterns of 12" x 12" asbestos-containing floor tiles and associated black mastic were located in the 1980 portion of the school. Some of the tiles and mastic were concealed under newer floor finishes, and not all tiles contained asbestos. The floor tiles were generally in good condition. One exception was in the large classroom on the southeast side of the building where the asbestos-containing floor tiles have lost adhesion due to water intrusion and become damaged due to doors being opened and foot traffic. The other two areas noted were in the Gym along the east wall where the tiles had again lost adhesion due to water intrusion and become damaged. Floor tiles are not considered friable unless damaged, and the floor tile mastic is not considered friable. Any loose tiles should be abated by properly trained workers prior to building re-occupancy.

Sheet Vinyl

Various colors and patterns of sheet vinyl exist throughout the school. Only one pattern was found to be asbestos-containing and was located the Girl's Bathroom, the Boy's Bathroom, and the adjacent Janitor's Closet. This sheet vinyl was hidden under newer non-asbestos sheet vinyl in both the Girl's and Boy's Bathrooms. The sheet vinyl was generally in good condition and is not considered friable unless damaged. The sheet vinyl does not require any corrective action prior to building re-occupancy.

Tan Stair Tread

An asbestos-containing tan stair tread was used on the stairs leading from the Kitchen to the upstairs Mechanical Room. The stair tread was in poor condition, and although not considered friable, should be abated by properly trained workers prior to building re-occupancy.

Window Glazing Compounds

Older windows at the building have a grey putty-like asbestos-containing window glazing compound. This material is used between the window glazing and retainers that hold the glazing in place. This material was in good condition and is not considered friable and does not require any corrective action prior to building re-occupancy.

Sink Undercoating

An asbestos-containing white undercoating was used on the bottom of stainless steel sinks throughout the building. This material was in good condition and is not considered friable and does not require any corrective action prior to building re-occupancy.

High Temperature Wire Insulation

Wires were visually inspected at various locations throughout the school. Asbestos-containing wire insulation was noted at a heat detector that was most likely used as an incandescent light fixture in the past, and inside of a fluorescent light fixture where it was used to connect fixtures together. The wire insulation was in good condition and is typically not considered friable and does not require any corrective action prior to building re-occupancy.

Flange Gaskets and Valve Packing

Due to the difficulty of sampling flange gaskets and valve packing, and the variability between gaskets that are original vs. replacement gaskets, etc., gaskets and valve packing on mechanical equipment and piping throughout the building are assumed to be asbestos-containing. These materials were in good condition but may become friable during removal for replacement. The gaskets and packings do not require any corrective action prior to building re-occupancy.

Boiler Gaskets and Sealants

Gaskets and sealants on the boilers are assumed to be asbestos-containing. These materials were in good condition but may become friable during removal for replacement. The gaskets and sealants do not require any corrective action prior to building re-occupancy.

“Zip-rib” Sealants

The roof was constructed of a “Zip-rib” style roof which commonly uses asbestos-containing sealants on the seams of the “eyes”. The roof was not accessed during the site visit but is assumed to have used the asbestos-containing sealants on the seams of the “eyes”. This material is not friable and does not require any corrective action prior to building re-occupancy.

Patch Tars and Other Sealants on Roofing Components

Roofs commonly have various types of sealants and/or tars from either original construction or repairs made over time, and these materials commonly contain asbestos. The roof was not accessed during the site visit but is assumed to have asbestos-containing tars and sealants. These materials are not considered friable and do not require any corrective action prior to building re-occupancy.

Teacher Housing Units 1 & 2**Sink Undercoating**

An asbestos-containing black undercoating was used on the bottom of the stainless steel sink in the Kitchen. This material was in good condition and is not considered friable. However, due to the extensive fungal growth at the units, it is presumed the sink would be removed during any mold remediation activities by properly trained workers.

Window Glazing Compounds

Older windows in the units have a grey putty-like asbestos-containing window glazing compound. This material is used between the window glazing and retainers that hold the glazing in place. This material was in good condition and is not considered friable. However, due to the extensive fungal growth at the units, it is presumed the windows would be removed during any mold remediation activities by properly trained workers.

Boiler Gaskets and Sealants

Gaskets and sealants on the boilers are assumed to be asbestos-containing. These materials were in good condition but may become friable during removal for replacement. However, due to the extensive fungal growth at the units, it is presumed the boiler would be removed during any mold remediation activities by properly trained workers.

Vermiculite

There was no way to access the attic or floor spaces in either unit to inspect for the presence of Vermiculite insulation. The boiler enclosure and floor spaces are assumed to have an asbestos-containing loose fill Vermiculite insulation. Vermiculite is considered friable and is assumed to be in good condition. However, due to the extensive fungal growth at the units, it is presumed this material would be removed during any mold remediation activities by properly trained workers.

Patch Tars and Other Sealants on Roofing Components

Roofs commonly have various types of sealants and/or tars from either original construction or repairs made over time, and these materials commonly contain asbestos. The roof was not accessed during the site visit but is assumed to have asbestos-containing tars and sealants. These materials are not considered friable and do not require any corrective action prior to building re-occupancy. However, due to the extensive fungal growth at the units which, in part, is likely caused by roof leaks, this material would likely require disturbance during roof repair or replacement activities.

2. Asbestos in Dusts

The settled and concealed dusts were examined by an EPA Certified Building Inspector but no samples for asbestos in dusts were authorized for this project. Based on their visual inspection and experience from similar buildings, the inspector determined that the typical settled and concealed dusts are not "asbestos debris" from an asbestos-containing building material (ACBM). Based on similar sampling from similar buildings, the inspector also determined that the dusts are unlikely to contain more than one percent (1%) asbestos by weight, and therefore are not an asbestos-containing material (ACM).

3. Lead-Containing Materials**Lead-Testing**

EHS-Alaska tested paint and other materials throughout the buildings using a NITON XRF lead paint analyzer. At the Main School Building, lead in paints tested varied from a trace amount to 3.3 mg/cm². Lead in other materials tested varied from a trace amount to 38.1 mg/cm². At Teacher Housing Units 1 & 2, lead in paints tested varied from a trace amount to 0.04 mg/cm². Only trace amounts of lead were found in other materials tested at Teacher Housing Units 1 & 2. Refer to the Lead Paint Screening Table in Appendix C that identifies the surfaces tested, and the results. The Paint Test Locations are shown in the Drawings in Appendix D.

Paints

There were varying lead contents found in the paints, based on what surfaces they are on, with most surfaces containing little lead (but are still classified as lead-containing materials by OSHA). In the Main School Building, the highest levels of lead were found on painted metal piping, with lower levels on walls and other painted surfaces, and lowest levels on pre-finished materials. In Teacher Housing Units 1 & 2, low levels of lead were found on all painted surfaces tested.

Lead based paints (paint containing more than 1.0 mg/cm² of lead) were identified in the Main School Building on painted metal piping in the Kitchen and Mechanical Room above. It is anticipated that other painted metal piping or equipment may be painted with lead-based paint. Lead was detected at very low levels in most of the painted floor, wall and ceiling surfaces. Low levels of lead found by XRF testing does not mean that the paints are free of lead, the paints may contain lead. However, these paints may not present a hazard to occupants or workers performing renovation or demolition if lead-safe work practices are followed.

Ceramic Wall Tile and Glazing

Relatively high concentrations of lead were found in the glazing of ceramic plumbing fixtures. The glazing of older ceramic sinks and hand dryers contained high lead levels. The concentrations of lead in ceramic glazing compounds should not be compared to lead-based paint criteria, as the glazing is inherently less likely to cause lead to be present in dusts or on surfaces, where it can be ingested. Lead in ceramic tile

glazing may not pose a hazard to occupants, or workers performing renovation or demolition if lead-safe work practices are followed. All ceramic fixtures in the facility should be assumed to contain lead.

Plastic Components

Relatively high concentrations of lead were found in plastic components at the Main School Building, such as “Formica” plastic laminate panels. The concentrations of lead in plastic compounds should not be compared to lead-based paint criteria. Lead in plastic compounds may have surface deterioration and if not cleaned regularly, lead may be present in dusts or on surfaces, where it can be ingested. Lead in plastic compounds may not pose a hazard to occupants, or workers performing renovation or demolition if good work practices are followed.

Metallic Lead in Batteries, Pipe Solder and Flashing

Metallic lead items identified in the Main School Building included assumed lead solder at copper piping, poured lead sealants at bell and spigot joints of waste and vent piping, and lead acid batteries in emergency lights and other battery backup equipment. In Teacher Housing Units 1 & 2, only assumed lead solder at copper piping was identified. If any of these lead-containing items are removed from the buildings they should be recycled or disposed of as hazardous waste.

4. PCB-Containing Materials

Light Ballasts

Older fluorescent lights typically have PCB-containing ballasts. PCB-containing ballasts in fluorescent lights were banned in 1978, but manufacturers were allowed to use up existing stocks, and lights may have been reused from other facilities. The survey included examination of what were considered to be representative light fixtures, but not all fixtures were able to be accessed. All lights shall be inspected if removed or relocated. Unless ballasts were marked “No PCBs,” they must be assumed to contain PCBs and must be disposed of as a hazardous waste when removed for disposal. Fluorescent light fixtures with PCB-containing ballasts were found in Teacher Housing Unit 2. In the Main School Building and in Teacher Housing Unit 1, only fluorescent light fixtures marked “No PCBs” were found.

Older HID lights may have PCB-containing ballasts. Due to height restrictions and sealed ballast enclosures, the HID fixtures were not able to be accessed. All HID lights shall be inspected during removal or relocation. If ballasts are not marked “No PCBs,” we suggest contacting the manufacturer of the lights to determine if the ballasts contain PCB's, or assume that they contain PCB's and be disposed of as a hazardous waste.

5. Mercury-Containing Materials

Fluorescent Lamps

Fluorescent lamps use mercury to excite the phosphor crystals that coat the inside of the lamp. These lamps contain from 15 to 48 milligrams of mercury depending on their age and manufacturer.

Thermostats

Older thermostats or other electrical switches that contain mercury were noted in the Main School Building and Teacher Housing Units 1 & 2.

High Intensity Discharge Lamps

High Intensity Discharge (HID) lamps use mercury and sodium vapors in the lamp, and also typically have lead-containing solders at the bases. These lamps contain varying amounts of mercury depending on their age and manufacturer. Several HID fixtures and lamps on the exterior of the Main School Building were broken.

If any mercury-containing items are removed, they are required to be disposed of as hazardous waste or recycled.

6. Other Hazardous Materials

Smoke detectors

Several smoke detectors that may contain radioactive materials were noted in the Main School Building and in Teacher Housing Units 1 & 2. If any radioactive items are removed from the buildings, they are required be disposed of as hazardous waste or recycled.

Soil Contamination

The scope of work for EHS-Alaska, Inc. did not include investigation of soils for petroleum or other contaminations.

Refrigerants

A refrigeration system labeled "R404A" was noted in on the exterior of a cooler that was in an area that was deemed unsafe to access at the Main School Building. An air conditioning unit was found in the Server Room of the Main School Building that may contain ozone depleting refrigerants. Ozone depleting substances (ODS) are regulated by the EPA and must be removed by certified technicians prior to equipment disposal.

Glycol

The existing heating system is assumed to contain heating system glycol. Any glycol removed from the heating system shall be recovered and properly disposed of or recycled.

7. Suspect Fungal Growth

The investigation included a visual examination of the buildings for suspect fungal growth. Teacher Housing Units 1 and 2 were both in disrepair, with strong moldy and musky odors and visible fungal growth on nearly all surfaces and materials interior to the units. Many different types of fungal growth were noted throughout both units, but no samples were authorized for this project, and therefore identification of these fungi is unknown. Moisture readings were not taken from the Teacher Housing Units since most building materials were water saturated with visible condensation on the interior sides of the windows and other surfaces. The source of water intrusion appears to be from a combination of roof leaks, lack of ventilation, and environmental conditions.

The Main School Building was generally in fair condition with relatively small visible areas of water damage noted. Roof leaks in the Mechanical Room above the Kitchen have resulted in damage to the Mechanical Room, the Kitchen, and an adjacent classroom to the south. Multiple trash cans or buckets were placed in the Mechanical Room to catch the water but have overflowed causing more damage. There was also water damage noted in the Gym where daylight was visible through cracks in the gypsum board wall and ceiling. This appears to have been caused by building settling and a lack of exterior siding or other protection. In both areas, water has damaged a variety of building components including ceilings, walls, floors, light fixtures, etc. Suspect fungal growth was noted in both of these locations.

E. REGULATORY CONSTRAINTS

1. Asbestos-Containing Materials

The Federal Occupational Safety and Health Administration (29 CFR 1926.1101) and the State of Alaska Department of Labor (8 AAC 61) have promulgated regulations requiring testing for airborne asbestos fibers; setting allowable exposure limits for workers potentially exposed to airborne asbestos fibers; establishing contamination controls, work practices, and medical surveillance; and setting worker certification and protection requirements. These regulations apply to all workplace activities involving asbestos-containing materials.

The EPA regulations, issued as Title 40 of the Code of Federal Regulations, Part 61 (40 CFR 61) under the National Emission Standards for Hazardous Air Pollutants (NESHAP) established procedures for

handling ACM during asbestos removal and waste disposal. These regulations required an owner (or the owner's contractor) to notify the EPA of asbestos removal operations and to establish responsibility for the removal, transportation, and disposal of asbestos. It is recommended that clearance sampling which complies with the EPA's Asbestos Hazard Emergency Response Act (AHERA) protocol be required following removal of asbestos-containing materials to document that the asbestos has been properly removed.

Additionally, the NESHAP regulations address three categories of ACM in a building being demolished:

1. Friable, or regulated ACM (RACM) which must be removed from a building before the building is demolished
2. Category I non-friable ACM (resilient flooring, asphalt roofing products, packing and gaskets)
3. Category II non-friable ACM (non-friable ACM other than Category I ACM).

If allowed by the disposal site, the EPA allows Category I and II non-friable ACM to remain in a building during demolition if: (1) Category I ACM is not in poor condition and is not friable and (2) the probability is low that Category II ACM will become crumbled, pulverized or reduced to powder during demolition. The condition of the ACM and method of demolition will generally determine if Category I and II non-friable ACM may be left in the building during demolition. This EPA standard also requires that no visible emissions be generated from the ACM during removal and transportation and does not allow intentional burning of any building containing ACM.

The EPA regulations require an owner (or the owner's contractor) to notify the EPA of asbestos removal operations and to establish responsibility for the removal, transportation, and disposal of asbestos-containing materials.

The disposal of asbestos waste is regulated by the EPA, the Alaska Department of Environmental Conservation, and the disposal site operator. Wastes being transported to the disposal site must be sealed in leak tight containers prior to disposal and must be accompanied by disposal permits and waste manifests.

2. Dusts with Asbestos

Settled and concealed dusts above ceilings, and at other areas that are not routinely cleaned (such as inside ducts and at roofs, etc.) are assumed to have measurable concentrations of asbestos. Based on sampling of similar settled and concealed dusts at similar buildings, those dusts are assumed to contain less than 1 percent asbestos. Normal settled and concealed dusts are distinct and treated differently from debris resulting from damaged asbestos-containing materials.

Background levels of asbestos in dusts for a particular location will depend on many factors, including whether or not asbestos occurs naturally in soils in the area.

Likely sources of asbestos in dusts include natural occurrences of asbestos

The types of asbestos found in settled and concealed dusts often contain actinolite, anthophyllite, and tremolite forms of asbestos which are not commonly found in bulk samples taken of materials from buildings. Those forms of asbestos may come from natural occurrences of asbestos in an outside source, such as rock or ore deposits, which appear to be common in Alaska.

Because the type of disturbance, concentration of asbestos in the dusts, cohesiveness of the dusts and room sizes will change, the airborne asbestos levels expected during any future project will depend on the contractor's means and methods of conducting the work. The mere presence of asbestos in the dusts does not necessarily imply that a "hazard" exists which would require the use of specially trained workers to "abate" the "hazard". All dusts will likely be required to be removed from the areas where asbestos-containing materials are being removed (abatement areas) in order to achieve clearances. The dusts in the other areas would need to be controlled so as to limit worker exposures and prevent contamination of

other areas of the building.

There is no established correlation between settled or adhered dusts with measureable concentrations of asbestos and airborne concentrations. The definition in the OSHA regulations of asbestos-containing materials as those materials that contain 1 percent or more asbestos by weight, apply to cohesive materials and not to dusts. The OSHA regulations are essentially "performance based", if workers are exposed above the permissible exposure limits, then all of the requirements in the regulations become effective.

3. Lead-Containing Materials

The EPA Standard 40 CFR 745, Lead-Based Paint Poisoning Prevention in Certain Residential Structures, defines lead-based paint hazards and regulates lead based paint activities in target housing and child-occupied facilities. The requirements of this regulation include training certification, pre-work notifications, work practice standards and record keeping. Areas typically classified as child occupied facilities may include but are not limited to: day care facilities, preschools, kindergarten classrooms, restrooms, multipurpose rooms, cafeterias, gyms, libraries and other areas routinely used by children under 6 years of age. New training requirements for Firms (Contractors) and Renovators (Workers) became effective on April 22, 2010. The buildings are not classified as a child occupied facility, therefore the requirements of 40 CFR 745 do not apply.

Federal OSHA (29 CFR 1926.62) and the State of Alaska (8 AAC Chapter 61) have promulgated regulations that apply to all construction work where employees may be exposed to lead. The disturbance of any surfaces painted with lead-containing paint requires lead-trained personnel, personnel protective procedures, and air monitoring until exposure levels can be determined. If initial monitoring verifies that the work practices being used are not exposing workers, monitoring and protection procedures may be relaxed. Experience has shown that some paints in most buildings will contain low concentrations of lead and disturbance of those paints are still regulated under the OSHA lead standard, 29 CFR 1926.62. Low levels of lead found by XRF testing does not mean that the paints are free of lead, the paints may contain lead, and OSHA regulations apply anytime measurable amounts of lead are present in paints.

Settled and concealed dust above ceilings, and at other areas that are not routinely cleaned are assumed to have measurable concentrations of lead. Background levels of lead in dusts for a particular location will depend on many factors, including whether or not engines utilizing leaded gasoline were run in or near a building, and upon the age of the building, and thus the age of the dusts. Because the type of disturbance, quantity of lead dusts, cohesiveness of the dusts and room sizes will change, the airborne lead levels expected during any future project will depend on the contractor's means and methods of conducting the work. The mere presence of lead in the dusts does not necessarily imply that a "hazard" exists which would require the use of specially trained workers to "abate" the "hazard".

There is no established correlation between settled or adhered lead dust concentrations and airborne concentrations. The OSHA regulations are essentially "performance based", if workers are exposed above the permissible exposure limits, then all of the requirements in the regulations become effective.

The EPA requires that actual construction or demolition debris that contains lead or lead-containing paint or other heavy metals be tested using the TCLP test to determine if the waste must be treated as hazardous waste. All federal, state and local standards regulating lead and lead-containing wastes are required to be followed during any future renovation or demolition at the buildings.

There are no hazardous waste landfills in Alaska and the lead-containing wastes (if shown to be hazardous waste) would have to be packaged for shipping and disposal. This report assumes that disposal would take place in Seattle or elsewhere in the Pacific Northwest.

4. PCB-Containing Materials

The EPA has promulgated regulations (40 CFR Part 761) that cover the proper handling and disposal of PCB-containing materials. PCB-containing equipment was found by this survey in Teacher Housing Unit 2, and any removed PCB-containing equipment is required to be disposed of at fully permitted hazardous waste facilities. If any PCB-containing equipment is discovered at the Main School Building or Teacher Housing Unit 1, and if they will be removed, those materials are required to be disposed of at fully permitted hazardous waste facilities. The EPA regulates liquid PCBs differently from non-liquid materials. Workers who remove or handle PCB-containing or PCB-contaminated materials or who transport or dispose of PCB wastes must be trained and certified in hazardous waste operations and emergency response (HAZWOPER) as required by 29 CFR 1910.120 and the State of Alaska Department of Labor (8 AAC 61). The Department of Transportation under 49 CFR Parts 100-199 regulates the marking, packaging, handling and transportation of hazardous materials. All federal, state and local standards regulating PCBs and PCB waste must be followed during this project.

5. Mercury-Containing Materials

Thermostats and mercury-containing lamps are classified by the EPA as Universal Wastes. The EPA encourages that all Universal Wastes be recycled in accordance with 40 CFR 273. Mercury and mercury-containing products are considered hazardous waste if TCLP testing of the waste for mercury confirms the mercury content to be greater than the EPA criteria of 0.2 mg/l.

6. Other Hazardous Materials

Refrigerants

A cooler labeled "R404A" and an air conditioning unit were noted at the Main School Building. Typically, refrigeration and air conditioning systems with ODS shall be maintained in order to prevent discharge of ODS. Systems that are to be removed, or dismantled shall have refrigerants containing ODS recovered and disposed of or recycled in accordance with 40 CFR 82.

Chemical Hazards

The EPA has promulgated regulations (40 CFR Parts 260 to 299 amongst others) that cover the proper handling and disposal of waste chemicals, including listed wastes, which are ignitable, corrosive, reactive, toxic, or an acute hazardous waste or wastes that exhibit the characteristics of toxicity. All construction workers who are required to remove or handle chemical hazards or to transport or dispose of chemical wastes shall be trained and certified as required by the U.S. Department of Labor (29 CFR 1910.120) and the State of Alaska Department of Labor (8 AAC 61). Transportation of chemical hazards are regulated by Department of Transportation regulations under 49 CFR Parts 171 to 178 amongst others.

Radioactive Materials

Smoke detectors were present in the project area that may contain a radioactive material. If the detectors are of the ionization type they typically contain a small amount of Americium. If removed, the detectors should be returned to the owner for reuse or returned to the manufacturer for disposal or recycling. There are no licensed disposal facilities for radioactive wastes in Alaska.

7. Suspect Fungal Growth

Molds are found in virtually every environment and can be detected, indoors and outdoors, year round. Molds reproduce by means of tiny spores, which are extremely small and usually not visible to the naked eye. Mold spores spread by floating through outdoor and indoor air. Outdoors, molds play a part in nature by breaking down organic matter such as fallen leaves and dead trees. Mold may begin growing indoors when mold spores land on surfaces that are wet. Although there are thousands of types (genus-species) of molds, a relatively small number account for most indoor and water damage situations. Some mold are considered worse (more allergenic or toxic) than others. The most "common" mold *Cladosporium* is widespread inside and outside and is typically not considered as bad as some other molds. The wet "black" molds *Chaetomium* and *Stachybotrys* often occur on sheetrock and are

considered problem molds. They have large spores and tend not to occur at high levels in the air unless disturbed. They require very damp conditions for growth. The most common “problem” molds are *Aspergillus-Penicillium*. They are considered “opportunistic” molds and require only moderately damp conditions for growth. They have very small spores which easily become airborne.

Currently, there are no federal standards or recommendations for acceptable exposures to airborne concentrations of mold or mold spores. Research on the health effects of mold exposure is ongoing. According to the Occupational Safety and Health Administration (OSHA), most typical indoor air exposures to mold do not present a risk of adverse health effects. Molds can cause adverse effects by producing allergens (substances that can cause allergic reactions). For those people who are sensitive to molds, exposure can cause symptoms such as nasal stuffiness, eye irritation, wheezing, or skin irritation. Severe reactions may occur among workers exposed to large amounts of molds in occupational settings, such as farmers working around moldy hay. Severe reactions may include fever and shortness of breath. Potential health concerns as well as building damage are important reasons to prevent mold growth and to remediate existing problem areas. The advice of a medical professional should always be sought if there are any emerging health issues.

Since mold spores are ever-present in the environment, it is virtually impossible to make a building mold-free. The goal of any remediation efforts is to remove the mold “growth” after ensuring all moisture intrusion problems have been corrected. Workers who may disturb mold spores should use good work practices and follow the guidelines in IICRC S520, Standard and Reference Guide for Professional Mold Remediation.

F. RECOMMENDATIONS

1. Asbestos-Containing Materials

The asbestos-containing materials identified in the buildings are typically in intact condition and are classified as non-friable ACM. All asbestos-containing materials that will be disturbed by any renovation or demolition work are required to be removed by trained asbestos workers.

2. Dusts with Asbestos

Dusts with measurable concentrations of asbestos are assumed to be present, but are not classified as asbestos-containing materials, or as debris from asbestos-containing materials. Workers disturbing dusts are required to have hazard communication training in accordance with OSHA regulations, but are not required to receive 40 hours of training, which is required for asbestos workers. At least an initial exposure assessment or data from previous air monitoring is required to show that the contractor's chosen means and methods of controlling worker exposure to airborne contaminants below the OSHA permissible exposure limits (PELs) is required.

3. Lead-Containing Materials

Federal OSHA (29 CFR 1926.62) and the State of Alaska (8 AAC Chapter 61) have promulgated regulations that apply to all construction work where employees may be exposed to lead, including disturbance of paints with low concentrations of lead.

The EPA Standard 40 CFR 745, Lead-Based Paint Poisoning Prevention in Certain Residential Structures, defines lead-based paint hazards and regulates lead based paint activities in target housing and child-occupied facilities. Contractors disturbing lead-based paints in target housing and child occupied facilities must comply with 40 CFR 745.

Worker exposure to lead may be able to be controlled below the OSHA permissible exposure limit if proper engineering controls and procedures are used during renovation. Lead is a potentially hazardous waste and the EPA requires that all wastes that contains lead be tested to determine if they must be

treated as hazardous waste. A TCLP test of the waste stream(s) produced by the Contractor's means and methods are required to be performed to determine if those wastes will be hazardous or non-hazardous.

4. PCB-Containing Materials

If any PCB-containing ballasts are removed or replaced, they will need to be removed, handled, packaged and disposed of in accordance with all regulations.

5. Mercury-Containing Materials

If any mercury-containing materials are removed or replaced, they will need to be removed, handled, packaged and disposed of in accordance with all regulations. If mercury-containing lamps and thermostats are handled and disposed of in accordance with the Universal Waste Regulations, no TCLP test is required. If the Contractor chooses to perform a TCLP test of fluorescent lamps, the test shall be conducted in accordance with the requirements of ANSI/NEMA Standard Procedure for Fluorescent Lamp Sample Preparation and Toxicity Characteristic Leaching Procedure, C78.LL 1256-2003 or latest version.

6. Other Hazardous Materials

If any radioactive materials are removed or replaced, they will need to be removed, handled, packaged and disposed of in accordance with all regulations.

If the cooler labeled "R404A" or the air conditioning unit with ODS are removed or replaced, they will need to be handled, packaged and disposed of in accordance with all regulations.

7. Suspect Fungal Growth

EPA guide EPA 402-K-01-001, Mold Remediation in Schools and Commercial Buildings, sets forth recommendations regarding mold remediation and worker protection. It is recommended that an experienced, qualified contractor be hired to perform the work at the site in accordance with this guide, amongst other publications regarding mold remediation.

G. LIMITATIONS

The conclusions and recommendations contained in this report are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted environmental consulting and engineering standards and practices and are subject to the following inherent limitations:

1. Accuracy of Information

The laboratory reports utilized in this assessment were provided by the accredited laboratories cited in this report. Although the conclusions, opinions, and recommendations are based in part, on such information, our services did not include the verification of accuracy or authenticity of such reports. Should such information provided be found to be inaccurate or unreliable, EHS-Alaska, Inc. reserves the right to amend or revise its conclusions, opinions, and/or recommendations.

2. Site Conditions

This limited survey did not include investigation of the entire site and may not be valid outside the survey area. The intent of this survey was to identify and verify present conditions of common hazardous materials that may be present at the site. This survey is not intended to be utilized as the sole design document for abatement. This survey was conducted while the site was unoccupied and without utilities.

All inspections were performed with furniture, equipment and/or stored items in place. The scope of work for this survey did not include identification of all potentially hazardous materials that may be present at this site, and was limited to the scope of work agreed upon with our client. Although a concerted effort was made to identify those common hazardous materials likely to be affected by any future project, some hazardous materials may have been hidden by furniture, equipment or stored items and may not have been identified. The survey investigated representative materials and items, such as lights and mechanical components. Variations may occur between materials and items that appear to be the same, but are actually of different construction or materials. Other asbestos-containing or potentially hazardous materials may be present in the facilities that were concealed by structural members, walls, ceilings or floor coverings, or in materials where testing was not conducted.

Additionally, the limited mold assessment included only visual evaluation of the Main School Building and Teacher Housing Units 1 & 2, and no other structures were included in the assessment. No air sampling was conducted to assess potential mold exposures to potential occupants or workers.

The findings we have presented within this report were based on limited research and on the visual inspection that was conducted at this site at the time and date specified. They should not be construed as a definite conclusion regarding the microbiological materials at this site. The data presented in this report should be considered representative of the time of our site inspection. Changes in site conditions can occur with time, because of natural variations in airborne concentrations, seasonal variations, differing airflow patterns through the buildings, and human activity. Actual conditions in areas not investigated may differ from those in this report.

Different people have highly variable reactions to microbial agents. None of the information contained herein should be construed as medical advice or a call to action for evacuation. Any decision relative to medical significance should be made by a qualified physician. The results given throughout this study are valid only for the locations and dates indicated. EHS-Alaska, Inc. is not responsible for any action, legal or otherwise, or lack of action resulting from the interpretation of data during this assessment.

EHS-Alaska, Inc. followed currently accepted industrial hygiene practices, including professional opinions based on observations. The recommendations were derived in part from the "Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings," published in 2004 by the American Industrial Hygiene Association (AIHA), the New York City Department of Health "Guidelines on Assessment and Remediation of Fungi in Indoor Environments" updated in 2002 and "Bioaerosols: Assessment and Control", by the American Conference of Governmental Industrial Hygienists (ACGIH), published in 1999. These guidelines are generally accepted as "industry standard" for microbial remediation protocols. Other than this, no warranty is implied or intended.

3. Changing Regulatory Constraints

The regulations concerning hazardous materials are constantly changing, including the interpretations of the regulations by the local and national regulating agencies. Should the regulations or their interpretation be changed from our current understanding, EHS-Alaska, Inc. reserves the right to amend or revise its conclusions, opinions, and/or recommendations.

APPENDIX A

Asbestos Bulk Sample Field Survey Data Sheets and Laboratory Reports



EHS ALASKA
INCORPORATED

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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Main School Building	COLLECTION DATE: 09/16/2015
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CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED:	☒ PLM BULK ☐ LEAD DUST ☐ TEM MICROVAC DUST (ASTM 5756)	☐ PLM DUST ☐ LEAD TCLP ☐ TEM BULK ☐ LEAD PPM	TYPE: ☒ ASBESTOS ☐ LEAD	TURNAROUND: 5 DAY	DISPOSAL: NORMAL	QUANTITY: 18
SPECIAL INSTRUCTIONS / COMMENTS:						
COLLECTED BY (signature) Christopher Ottosen PRINTED NAME		SELECTED LABORATORY SEP 22 2015		LAB: RETURN A SIGNED COPY OF THIS FORM WITH THE FINAL REPORT TO EHS-ALASKA, INC.		
20110972/TBI24-11-146		SAMPLES ACCEPTED BY <i>[Signature]</i>		**DO NOT ANALYZE FOAM, PAINTS, OR WOOD**		
COURIER (signature) Fed Ex		ANALYST'S SIGNATURE <i>[Signature]</i>		See sample location drawing for more detailed explanation of exact locations.		
DATE/TIME 9-21-15 11:00am		DATE 9/24/15		9-29-15		

FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP0915-A01 5746675	(SV1) Sheet vinyl, tan with brown swirl pattern; with yellow mastic; <i>with white mastic</i>	From southeast corner of Bathroom – Photo 311	ND All Layers
PKP0915-A02 5746676	Yellow mastic for ceramic wall tile	At damaged area of north wall behind urinal in Bathroom – Photo 312	ND
PKP0915-A03 5746677	White gypsum wall board	From behind ceramic wall tile at penetration for heat piping on south wall in Bathroom – Photo 313	ND
PKP0915-A04 5746678	Brown mastic for ceramic floor tile	At damaged area of flooring at entrance into school – Photo 314	ND
PKP0915-A05 5746679	Yellow mastic for “Marlite” wall panel (do not analyze “Marlite” wall panel)	At stub wall next to showers in Girl’s Bathroom – Photo 374	ND
PKP0915-A06 5746680	Yellow mastic for carpet	At entrance to first floor Classroom at southwest corner of building – Photo 376	ND
PKP0915-A07 5746681	Brown gypsum wall board	At damaged area of north wall next to entrance into Kitchen in large Classroom on first floor – Photo 420	ND
PKP0915-A08 5746682	(FT3) Floor tile, 12”x12” tan with brown and white streaks	From damaged area of flooring near center of Kitchen – Photo 421	ND
PKP0915-A09 5746683	(FT2) Floor tile, 12”x12” tan with light and dark streaks; with tan mastic	From damaged area of flooring near door at southeast corner of Gym – Photo 431	ND Both Layers

RECEIVED

OCT 09 2015


EHS ALASKA
INCORPORATED

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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Main School Building	COLLECTION DATE: 09/16/2015
FIELD SURVEY DATA			
EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP0915-A10 5746684	White gypsum wall board	At base of west wall at damaged area in Gym – Photo 448	ND
PKP0915-A11 5746685	Yellow mastic for wall carpet	At base of west wall at damaged area in Gym – Photo 448	ND
PKP0915-A12 5746686	White wall texture	At area of peeling paint on south side of second floor Office across the hall from the Server Room – Photo 522	ND
PKP0915-A13 5746687	White wall texture	Under window on south side of second floor hallway near Server Room – Photo 523	ND
PKP0915-A14 5746688	Black putty	On wood support for A/C unit on south side of Server Room – Photo 524	ND
PKP0915-A15 5746689	Floor tile, 12"x12" pink with white and black streaks; with tan mastic	Near door on west side of second floor Storage Room – Photo 525	ND B+L Layers
PKP0915-A16 5746690	Floor tile, 12"x12" pink with white and black streaks; with tan mastic	On ^{east} side of second floor Storage Room – Photo 526	ND B+L Layers
PKP0915-A17 5746691	Yellow mastic for carpet	Near center of Library – Photo 562	ND
PKP0915-A18 5746692	White gypsum wall board, with white wall texture	At damaged area of wall above door at northeast corner of Library – Photo 612	ND
--END--	--END--	--END--	

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746675	Description / Location:	White Floor Tile	
Client No.:	PKP0915-A01		From SE Corner Of Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746675	Description / Location:	White Mastic		Layer No.:	2
Client No.:	PKP0915-A01		From SE Corner Of Bathrm			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	5746675	Description / Location:	Yellow Mastic		Layer No.:	3
Client No.:	PKP0915-A01		From SE Corner Of Bathrm			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	5746676	Description / Location:	Yellow Mastic			
Client No.:	PKP0915-A02		At DamagedAreaNWWallBehindUrinalBathrm			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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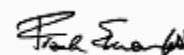
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

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Analysis Performed By: R. McQuiggan

Approved By:



Date: 9/28/2015

Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746677	Description / Location:	White Sheetrock
Client No.:	PKP0915-A03		Behind Ceramic Wall Tile Heat Pipe SW Wall Bathrm
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	Trace	Cellulose
		5	Fibrous Glass
			95

Lab No.:	5746678	Description / Location:	Brown Mastic
Client No.:	PKP0915-A04		Damaged Area Off Floor At Entrance Into School
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.:	5746679	Description / Location:	Yellow Mastic
Client No.:	PKP0915-A05		Stub Wall Next To Showers In Girls Bathrm
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.:	5746680	Description / Location:	Yellow Mastic
Client No.:	PKP0915-A06		Entrance To First Floor Classroom SW Corner Bldg
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: R. McQuiggan

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746681	Description / Location:	Lt Tan Sheetrock	
Client No.:	PKP0915-A07		DamagedAreaNWallNextToKitEntrance1st Flr	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Cellulose	95
		5	Fibrous Glass	

Lab No.:	5746682	Description / Location:	Tan/Brown Floor Tile 12x12	
Client No.:	PKP0915-A08		Damaged AreaOffFlooringNearCenterKitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746683	Description / Location:	Brown Floor Tile 12x12	
Client No.:	PKP0915-A09		DamagedAreaNearDoorSECornerGym	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

Lab No.:	5746683	Description / Location:	Tan Mastic	Layer No.: 2
Client No.:	PKP0915-A09		DamagedAreaNearDoorSECornerGym	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: R. McQuiggan

Date: 9/28/2015



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Local: 856-231-9449
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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746684	Description / Location:	White Sheetrock	
Client No.:	PKP0915-A10		Base Of W Wall Damaged Area Gym	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Fibrous Glass	98

Lab No.:	5746685	Description / Location:	Yellow/Brown Mastic	
Client No.:	PKP0915-A11		Base Of W Wall Damaged Area Gym	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746686	Description / Location:	White Texture Peeling Paint	
Client No.:	PKP0915-A12		SSide2ndFlrOfficeAcrossHallServerRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746687	Description / Location:	White Texture	
Client No.:	PKP0915-A13		UnderWindowSSide2ndFlrHallwayServerRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)
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Analysis Performed By: R. McQuiggan

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746688	Description / Location:	Grey Putty
Client No.:	PKP0915-A14		WoodSupport For A/C UnitS SideServer Rm
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
			95

Lab No.:	5746689	Description / Location:	Pink/Grey Floor Tile 12x12
Client No.:	PKP0915-A15		Near Door W Side2nd Floor Storage Rm
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.:	5746689	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP0915-A15		Near Door W Side2nd Floor Storage Rm		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374723
	Eagle River AK 99577-7701	Project:	Pitka's Point School Site
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746690	Description / Location:	Pink/Grey Floor Tile	
Client No.:	PKP0915-A16		E Side 2nd Floor Storage Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746690	Description / Location:	Yellow Mastic		Layer No.:	2
Client No.:	PKP0915-A16		E Side 2nd Floor Storage Rm			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	5746691	Description / Location:	Yellow Mastic			
Client No.:	PKP0915-A17		Near Center Of Library			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	5	Synthetic	95		

Lab No.:	5746692	Description / Location:	White Texture			
Client No.:	PKP0915-A18		Damaged AreaWallAboveDoorNECornerLibrary			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: R. McQuiggan

Date: 9/28/2015



EHS ALASKA
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EHS-Alaska, Inc.

11901 Business Blvd., Suite 208, Eagle River, AK 99577

(907) 694-1383 • (907) 694-1382 fax

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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Teacher Housing Units 1 & 2	COLLECTION DATE: 09/16/2015
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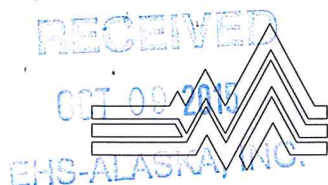
CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED:	☒ PLM BULK ☐ LEAD DUST ☐ TEM MICROVAC DUST (ASTM 5756)	☐ PLM DUST ☐ LEAD TCLP ☐ LEAD PPM	☐ TEM BULK ☐ LEAD PPM	TYPE:	TURNAROUND:	DISPOSAL:	QUANTITY
				☒ ASBESTOS ☐ LEAD	5 DAY	NORMAL	38

COLLECTED BY (signature) Christopher Ottosen PRINTED NAME 20110972/TBI24-11-146 CERT# / AHERA# Fed Ex SHIPPING METHOD 37455670 7571 COURIER (signature) 9-21-15 11:00am DATE/TIME		SELECTED LABORATORY SEP 22 2015 SAMPLES ACCEPTED BY [Signature] DATE/TIME 9/22/15 ANALYST'S SIGNATURE [Signature] DATE 9/22/15	SPECIAL INSTRUCTIONS / COMMENTS: LAB: RETURN A SIGNED COPY OF THIS FORM WITH THE FINAL REPORT TO EHS-ALASKA, INC. **DO NOT ANALYZE FOAM, PAINTS, OR WOOD** See sample location drawing for more detailed explanation of exact locations. Lab 9-22-15 PLM 9/22/15
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKPTH0915-A01 5746693	(HSV3) Hidden sheet vinyl, beige with brown flower pattern	Teacher Housing Unit #1 – Hidden under newer sheet vinyl in Entryway – Photo 108	ND
PKPTH0915-A02 5746694	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #1 – In Entryway in – Photo 108	ND
PKPTH0915-A03 5746695	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #1 – At carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	ND
PKPTH0915-A04 5746696	(HSV2) Hidden sheet vinyl, brown 1/8" chip pattern; with tan mastic	Teacher Housing Unit #1 – Hidden under newer sheet vinyl at carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	ND
PKPTH0915-A05 5746697	(HSV1) Hidden sheet vinyl, yellow/brown "alligator" pattern	Teacher Housing Unit #1 – Hidden under newer sheet vinyl at carpet to sheet vinyl transition between Kitchen and Hallway – Photo 109	ND
PKPTH0915-A06 5746698	(HSV1) Hidden sheet vinyl, yellow/brown "alligator" pattern	Teacher Housing Unit #1 – Hidden under carpet in Hallway at entrance to Bathroom – Photo 111	ND
PKPTH0915-A07 5746699	(SV2) Sheet vinyl, white with blue 4"x4" square pattern and decorative blue and red flowers pattern	Teacher Housing Unit #1 – At entrance into Bathroom – Photo 111	ND
PKPTH0915-A08 5746700	(SV2) Sheet vinyl, white with blue 4"x4" square pattern and decorative blue and red flowers pattern	Teacher Housing Unit #1 – At entrance into Boiler Room – Photo 112	ND



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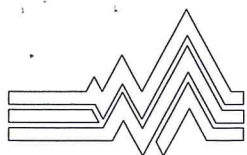
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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Teacher Housing Units 1 & 2	COLLECTION DATE: 09/16/2015
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKPTH0915-A09 5746701	Off-white vinyl covered gypsum wall board; with yellow mastic; <i>with off-white wallpaper</i>	Teacher Housing Unit #1 – On east wall of Kitchen – Photo 114	<i>ND All Layers</i>
PKPTH0915-A10 5746702	Off-white vinyl covered gypsum wall board; with yellow mastic	Teacher Housing Unit #1 – On east wall of Living Room – Photo 113	<i>ND Both Layers</i>
PKPTH0915-A11 5746703	Dark brown mastic for glued-on ceiling tile (do not analyze particle board ceiling tile)	Teacher Housing Unit #1 – Loose on glued-on ceiling tile laying on floor near entrance in Bedroom 01 – Photo 115	<i>ND</i>
PKPTH0915-A12 5746704	Dark brown mastic for glued-on ceiling tile (do not analyze particle board ceiling tile)	Teacher Housing Unit #1 – From ceiling near south wall in Bedroom 03 – Photo 116	<i>ND</i>
PKPTH0915-A13 5746705	Dark brown mastic for glued-on ceiling tile (do not analyze particle board ceiling tile)	Teacher Housing Unit #1 – From ceiling near north wall in Bathroom – Photo 126	<i>ND</i>
PKPTH0915-A14 5746706	White gypsum wall board	Teacher Housing Unit #1 – From damaged area of east wall in Boiler Room – Photo 121	<i>ND</i>
PKPTH0915-A15 5746707	White joint compound	Teacher Housing Unit #1 – From damaged area of east wall in Boiler Room – Photo 117	<i>ND</i>
PKPTH0915-A16 5746708	White joint compound	Teacher Housing Unit #1 – From damaged area of north wall in Boiler Room – Photo 118	<i>ND</i>
PKPTH0915-A17 5746709	White joint compound	Teacher Housing Unit #1 – From damaged area of wall at northwest corner of Boiler Room – Photo 119	<i>ND</i>
PKPTH0915-A18 5746710	Yellow mastic for “Marlite” wall panel	Teacher Housing Unit #1 – From north wall of Bathroom – Photo 127	<i>ND</i>
PKPTH0915-A19 5746711	Dark brown 6” cove base; with off-white mastic	Teacher Housing Unit #1 – From base of shower enclosure in Bathroom – Photo 128	<i>ND</i>
PKPTH0915-A20 5746712	Black undercoating for stainless steel sink	Teacher Housing Unit #1 – On bottom of stainless steel sink in Kitchen – Photo 129	<i>1.9% Chrysotile</i>
PKPTH0915-A21 5746713	Black 4” cove base; with off-white mastic	Teacher Housing Unit #1 – From base of cabinetry in Kitchen – Photo 130	<i>ND Both Layers</i>
PKPTH0915-A22 5746714	Grey gummy window glazing compound	Teacher Housing Unit #1 – From wood framed window on east wall of Living Room – Photo 156	<i>10% Chrysotile</i>



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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Teacher Housing Units 1 & 2	COLLECTION DATE: 09/16/2015
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKPTH0915-A23 5746715	Hard white window glazing compound	Teacher Housing Unit #1 – From wood framed window on north wall of Bedroom 03 – Photo 157	ND
PKPTH0915-A24 5746716	(SV1) Sheet vinyl, white with blue specks and diamond/block pattern	Teacher Housing Unit #2 – From north side of Kitchen – Photo 221	ND
PKPTH0915-A25 5746717	(SV3) Yellow with square and rectangles pattern	Teacher Housing Unit #2 – From entrance to Restroom – Photo 222	ND
PKPTH0915-A26 5746718	(SV3) Yellow with square and rectangles pattern	Teacher Housing Unit #2 – At damaged area of floor near center of Boiler Room – Photo 224	ND
PKPTH0915-A27 5746719	Hard white window glazing compound	Teacher Housing Unit #2 – From wood framed window on south side of Living Room – Photo 227	ND
PKPTH0915-A28 5746720	Grey gummy window glazing compound	Teacher Housing Unit #2 – From wood framed window on east side of Living Room – Photo 229	10% Chrysotile
PKPTH0915-A29 5746721	Black undercoating for stainless steel sink	Teacher Housing Unit #2 – On bottom of stainless steel sink in Kitchen – Photo 230	1.5% Chrysotile
PKPTH0915-A30 5746722	Black 4" cove base; with off-white mastic	Teacher Housing Unit #2 – From base of cabinetry in Kitchen – Photo 231	ND Bulk Layers
PKPTH0915-A31 5746723	Dark brown 4" cove base; with brown mastic	Teacher Housing Unit #2 – From base of wall next to door on south side of Bathroom – Photo 232	ND Bulk Layers
PKPTH0915-A32 5746724	White joint compound	Teacher Housing Unit #2 – From damaged area of wall on east side of Boiler Room – Photo 233	ND
PKPTH0915-A33 5746725	White joint compound	Teacher Housing Unit #2 – From damaged area of wall at northeast corner of Boiler Room – Photo 234	ND
PKPTH0915-A34 5746726	White joint compound	Teacher Housing Unit #2 – From damaged area of wall at northwest corner of Boiler Room – Photo 235	ND
PKPTH0915-A35 5746727	White gypsum wall board	Teacher Housing Unit #2 – From damaged area of wall on east side of Boiler Room – Photo 236	ND
PKPTH0915-A36 5746728	Yellow mastic for "Marlite" wall panel (do not analyze "Marlite")	Teacher Housing Unit #2 – From west wall of Bathroom – Photo 238	ND



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PROJECT NO: 7395-01	PROJECT NAME: Pitka's Point School Site Hazmat Survey	FACILITY: Teacher Housing Units 1 & 2	COLLECTION DATE: 09/16/2015
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FIELD SURVEY DATA

[illegible]

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746693	Description / Location:	White Vinyl Sheet Flooring; Unit #1	
Client No.:	PKPTH0915-A01		HiddenUnderNewerSheetVinylInEntryway	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746695	Description / Location:	Off-White Vinyl Sheet Flooring	
Client No.:	PKPTH0915-A02		Unit #1 In Entryway In	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	70
		10	Fibrous Glass	

Lab No.:	5746695	Description / Location:	Off-White Vinyl Sheet Flooring;Unit#1At	
Client No.:	PKPTH0915-A03		CarpetToSheetVinylTransitionBtwnKit&Hall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	70
		10	Fibrous Glass	

Lab No.:	5746696	Description / Location:	Off-White Vinyl Sheet Flooring;Unit#1	
Client No.:	PKPTH0915-A04		HiddenUnderNewerSheetVinylAtCarpet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	70
		10	Fibrous Glass	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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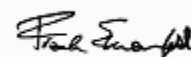
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

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Analysis Performed By: S. Cone

Approved By:



Date: 9/28/2015

Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746697	Description / Location:	Tan Vinyl Sheet Flooring;Unit#1	
Client No.:	PKPTH0915-A05		HiddenUnderNewerSheetVinylAtCarpet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746698	Description / Location:	Tan Vinyl Sheet Flooring;Unit#1	
Client No.:	PKPTH0915-A06		HiddenUnderCarpetInHallwayAtEntToBathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746699	Description / Location:	Off-White Vinyl Sheet Flooring	
Client No.:	PKPTH0915-A07		Unit#1 At Entrance Into Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	70
		10	Fibrous Glass	

Lab No.:	5746700	Description / Location:	Off-White Vinyl Sheet Flooring	
Client No.:	PKPTH0915-A08		Unit#1 At Entrance Into Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	70
		10	Fibrous Glass	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: S. Cone

Date: 9/28/2015



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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746701	Description / Location:	Off-White Sheetrock	
Client No.:	PKPTH0915-A09		Unit#1 On East Wall Of Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Lab No.:	5746701	Description / Location:	Off-White Wallpaper	Layer No.:	2
Client No.:	PKPTH0915-A09		Unit#1 On East Wall Of Kitchen		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	90	Cellulose	10	

Lab No.:	5746701	Description / Location:	Yellow Mastic	Layer No.:	3
Client No.:	PKPTH0915-A09		Unit#1 On East Wall Of Kitchen		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746702	Description / Location:	Off-White Sheetrock
Client No.:	PKPTH0915-A10		Unit#1 On East Wall Of Living Rm
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
		5	Fibrous Glass

Lab No.:	5746702	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKPTH0915-A10		Unit#1 On East Wall Of Living Rm		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	5746703	Description / Location:	Brown Mastic
Client No.:	PKPTH0915-A11		Unit#1 LooseOnGlued-OnCeilingTile
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.:	5746704	Description / Location:	Brown Mastic
Client No.:	PKPTH0915-A12		Unit#1 FromCeilingNear S Wall In Bedrm03
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

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Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746705	Description / Location:	Brown Mastic	
Client No.:	PKPTH0915-A13		Unit#1 From Ceiling Near N Wall In Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746706	Description / Location:	White Sheetrock	
Client No.:	PKPTH0915-A14		Unit#1 From Damaged Area Of E Wall In Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	90
		5	Fibrous Glass	

Lab No.:	5746707	Description / Location:	White Joint Compound	
Client No.:	PKPTH0915-A15		Unit#1 From Damaged Area Of E Wall In Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746708	Description / Location:	White Joint Compound	
Client No.:	PKPTH0915-A16		Unit#1 From Damaged Area Of N Wall In Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746709	Description / Location:	White Joint Compound; Unit#1 From	
Client No.:	PKPTH0915-A17		DamagedAreaOfWall At NWCornerOfBoilerRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746710	Description / Location:	Yellow Mastic	
Client No.:	PKPTH0915-A18		Unit #1 From N Wall Of Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746711	Description / Location:	Brown Cove Base;6"; Unit #1 From	
Client No.:	PKPTH0915-A19		Base Of Shower Enclosure In Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746711	Description / Location:	Yellow Mastic	Layer No.: 2
Client No.:	PKPTH0915-A19		Base Of Shower Enclosure In Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746712	Description / Location:	Black Mastic;SinkUndercoating	
Client No.:	PKPTH0915-A20		Unit#1;BottomOfStainlessSteelSinkInKit	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.9	Chrysotile	None Detected	None Detected	PC 98.1

Lab No.:	5746713	Description / Location:	Black Cove Base;4"	
Client No.:	PKPTH0915-A21		Unit#1;Base Of Cabinetry In Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746713	Description / Location:	Yellow Mastic	Layer No.: 2
Client No.:	PKPTH0915-A21		Unit#1;Base Of Cabinetry In Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746714	Description / Location:	Grey Caulk; Unit #1	
Client No.:	PKPTH0915-A22		WoodFramed WindowOnEWallOfLivingRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
10	Chrysotile	None Detected	None Detected	90

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746715	Description / Location:	White Caulk; Unit #1	
Client No.:	PKPTH0915-A23		WoodFramed WindowOnNWallofBedrm03	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746716	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	PKPTH0915-A24		Unit #2 N Side Of Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	60
		10	Fibrous Glass	

Lab No.:	5746717	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	PKPTH0915-A25		Unit #2 From Entrance To Restroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746718	Description / Location:	Tan Vinyl Sheet Flooring; Unit #2 At	
Client No.:	PKPTH0915-A26		Damaged AreaOffFloorNearCenterOfBoilerRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746719	Description / Location:	White Glazing; Unit #2	
Client No.:	PKPTH0915-A27		WoodFramedWindowOnSSideOfLivingRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746720	Description / Location:	Grey Caulk; Unit #2, Wood Framed	
Client No.:	PKPTH0915-A28		WindowOnESideOfLivingRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
10	Chrysotile	None Detected	None Detected	90

Lab No.:	5746721	Description / Location:	Black Mastic; Unit #2, Bottom Of	
Client No.:	PKPTH0915-A29		Stainless Steel Sink In Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.5	Chrysotile	None Detected	None Detected	PC 98.5

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746722	Description / Location:	Black Cove Base	
Client No.:	PKPTH0915-A30		Unit #2, Base Of Cabinetry In Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746722	Description / Location:	Off-White Mastic		Layer No.:	2
Client No.:	PKPTH0915-A30		Unit #2, Base Of Cabinetry In Kitchen			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	5746723	Description / Location:	Brown Cove Base; Unit #2, Base	
Client No.:	PKPTH0915-A31		Of WallNextToDoorOnSSideOfBathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746723	Description / Location:	Brown Mastic		Layer No.:	2
Client No.:	PKPTH0915-A31		Of WallNextToDoorOnSSideOfBathrm			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746724	Description / Location:	White Joint Compound; Unit #2,Damaged	
Client No.:	PKPTH0915-A32		Area Of Wall On E Side Of Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746725	Description / Location:	White Joint Compound; Unit #2,Damaged	
Client No.:	PKPTH0915-A33		Area Of Wall On NE Corner Of Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746726	Description / Location:	White Joint Compound; Unit #2,Damaged	
Client No.:	PKPTH0915-A34		Area Of Wall On NW Corner Of Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746727	Description / Location:	White Sheetrock; Unit #2,Damaged	
Client No.:	PKPTH0915-A35		Area Of Wall On E Side Of Boiler Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	90
		5	Fibrous Glass	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: S. Cone

Date: 9/28/2015



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Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746728	Description / Location:	Yellow Mastic	
Client No.:	PKPTH0915-A36		Unit #2 W Wall Of Bathrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	5746729	Description / Location:	White Sheetrock	
Client No.:	PKPTH0915-A37		Unit #2 E Wall Of Living Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	90
		5	Fibrous Glass	

Lab No.:	5746729	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKPTH0915-A37		Unit #2 E Wall Of Living Rm		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)
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Analysis Performed By: S. Cone

Date: 9/28/2015

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	9/28/2015
	11901 Business Blvd., Ste 208	Report No:	374724
	Eagle River AK 99577-7701	Project:	Teacher Housing Units 1&2
		Project No.:	7395-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	5746730	Description / Location:	White Sheetrock
Client No.:	PKPTH0915-A38		Unit #2 E Wall Of Kitchen
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
		5	Fibrous Glass
			90

Lab No.:	5746730	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKPTH0915-A38		Unit #2 E Wall Of Kitchen		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

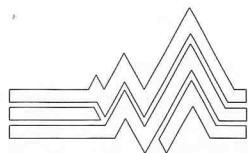
Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: S. Cone

Date: 9/28/2015

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PROJECT NO: 7032-01	PROJECT NAME: Pitkas Point School Renovation	FACILITY: Pitkas Point School	COLLECTION DATE: 07/18/11
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CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED:	☒ PLM BULK ☐ LEAD DUST ☐ TEM MICROVAC DUST (ASTM 5756)	☐ PLM DUST ☐ LEAD TCLP ☐ TEM BULK ☐ LEAD PPM	TYPE: ☒ ASBESTOS ☐ LEAD	TURNAROUND: 2 DAYS	DISPOSAL: NORMAL	QUANTITY: 69
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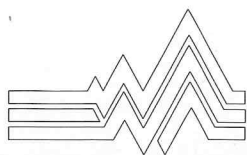
COLLECTED BY (signature) Martin J. Lindeke PRINTED NAME 10164.01.17 CERT# / AHERA# FedEx SHIPPING METHOD 7950 1007 5899 COURIER (signature) 7-26-11 12:00pm DATE/TIME	IATL SELECTED LABORATORY JUL 27 2011 SAMPLES ACCEPTED BY IATL - By DATE/TIME 7/2/11 ANALYST'S SIGNATURE LS DATE 7/2/11	SPECIAL INSTRUCTIONS / COMMENTS: LAB: RETURN A SIGNED COPY OF THIS FORM WITH THE FINAL REPORT TO EHS-ALASKA, INC. See sample location drawing for more detailed explanation of exact locations. ND = NONE DETECTED. Pw. CTD 8/15/11 AND 7/28/11
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP-0711-A01 4375884	Carpet mastic, brown	Special Ed classroom, northeast ceiling section	ND
PKP-0711-A02 4375885	Joint compound, white	Special Ed Classroom, west wall, mid span	ND
PKP-0711-A03 4375886	Sink undercoating, white	Special Ed classroom, south wall sink	4.1 % chrysotile
PKP-0711-A04 4375887	Cove base mastic, tan	Behind entry open door from corridor	ND
PKP-0711-A05 4375888	Gypsum wall board, white	Corridor wall outside special education classroom	ND
PKP-0711-A06 4375889	Carpet mastic, tan	Northeast classroom, center of floor	ND
PKP-0711-A07 4375890	Joint compound, white	Northeast classroom, North wall, below window	ND
PKP-0711-A08 4375891	Joint compound, white	Inside wall of classroom at doorway from corridor	ND
PKP-0711-A09 4375892	Joint compound, white	Northwest vestibule above bench	ND

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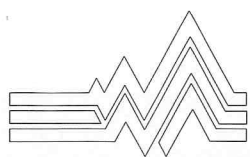
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PROJECT NO:	PROJECT NAME:	FACILITY:	COLLECTION DATE:
7032-01	Pitkas Point School Renovation	Pitkas Point School	07/18/11
FIELD SURVEY DATA			
EHS SAMPLE NO.	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
LAB ID NO			
PKP-0711-A10 4375893	Sink undercoating, white	Northeast wing of building, south classroom, sink at west wall	3.8 % chrysotile
PKP-0711-A11 4375894	Cove base mastic, yellow and joint compound, white	Partition wall at end of counter in northeast section, south classroom.	Mastic: ND JC: ND
PKP-0711-A12 4375895	Cove base, brown	Partition wall at end of counter in northeast section, south classroom	ND
PKP-0711-A13 4375896	Joint compound, white	south wall in north east section of building, south classroom	ND
PKP-0711-A14 4375897	Sheet vinyl and mastic, SV-1 tan with brown swirls	Faculty bathroom	SV: ND MASTIC: ND
PKP-0711-A15 4375898	Tile grout, tan granular	Faculty bathroom, east wall	ND
PKP-0711-A16 4375899	Door frame sealant, brown	Doorway frame in faculty bathroom	ND
PKP-0711-A17 4375900	Joint compound, white	Corridor wall at base of stairs to library	ND
PKP-0711-A18 4375901	Carpet mastic, yellow	Edge of carpet at doorway to gymnasium	Cement: ND Mastic: ND
PKP-0711-A19 4375902	Joint compound, white	Corridor wall outside janitor closet	ND
PKP-0711-A20 4375903	Sheet vinyl and mastic, SV-2 grey pebble mosaic	Edge of floor in janitor closet	SV: 40 % MASTIC: ND
PKP-0711-A21 4375904	Floor tile and mastic, FT-1 12x12 white w/ grey streaks	Edge of corridor flooring at doorway to janitor closet	TILE: 1.6 % BLK: 3.2 % YELLOW: ND
PKP-0711-A22 4375905	Joint compound white	Corridor wall outside storage area, south west section of building, north end, north wall of corridor	ND
PKP-0711-A23 4375906	Joint compound, white	Soffit across from principal's office door, entry area to south west classroom	ND

LS 7/30/11



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PROJECT NO: 7032-01	PROJECT NAME: Pitkas Point School Renovation	FACILITY: Pitkas Point School	COLLECTION DATE: 07/18/11
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP-0711-A24 4375907	Cove base, brown	South wall of south west classroom, under radiator	ND
PKP-0711-A25 4375908	Cove base mastic, brown and yellow	South wall of south west classroom, under radiator	Br: ND Yellow: ND
PKP-0711-A26 4375909	Joint compound white	North wall of south west classroom below light switch	ND
PKP-0711-A27 4375910	Window glazing, grey	West wall of south west classroom	8.9 % chrysotile
PKP-0711-A28 4375911	Floor tile and mastic, FT-1	Floor tile section in classroom outside kitchen area.	Tile: 1.7 % Mastic: 1.9 %
PKP-0711-A29 4375912	Sink undercoating white	Kitchen area in south west classroom	3.9 % chrysotile
PKP-0711-A30 4375913	Marlite mastic, janitor's closet	South wall of janitor closet	ND
PKP-0711-A31 4375914	Floor tile, 12x12 tan w/ light and dark streaks, with tan mastic	Gymnasium floor	Tile: ND Mastic: ND
PKP-0711-A32 4375915	Floor tile and mastic, FT-3 tan with light and dark streaks	Kitchen area under deep sink	Tile: ND Mastic: ND
PKP-0711-A33 4375916	Cove base, black and mastic, brown	Kitchen area at base of cabinet under deep sink	CB: ND Mastic: ND
PKP-0711-A34 4375917	Marlite mastic, yellow	Back wall of kitchen area at doorway to classroom	ND
PKP-0711-A35 4375918	Wall carpet mastic, tan	Gymnasium wall under basketball net outside kitchen	Mastic: ND JC: ND
PKP-0711-A36 4375919	Sheet vinyl and mastic, 8" square, cream and grey (SV-3)	Boys locker room entry floor.	SV: ND Mastic: ND
PKP-0711-A37 4375920	Sheet vinyl and mastic (SV-2)	Boys locker room entry floor, under SV-3	30 % chrysotile.

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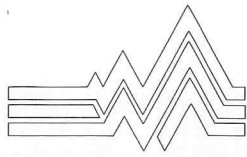
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PROJECT NO: 7032-01	PROJECT NAME: Pitkas Point School Renovation	FACILITY: Pitkas Point School	COLLECTION DATE: 07/18/11
FIELD SURVEY DATA			
EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP-0711-A38 4375921	Cove Base mastic, brown	Gymnasium storage closet, back wall	ND
PKP-0711-A39 4375922	Joint compound, white	Storage closet at diagonal ceiling corner	ND
PKP-0711-A40 4375923	Sheet vinyl and mastic, pink white and grey confetti (SV-4)	Girls locker room floor	SV: ND MASTIC: ND
PKP-0711-A41 4375924	Joint compound, white	South west section of school, north room (storage area) at corner wall inside doorway	ND
PKP-0711-A42 4375925	Marlite mastic, yellow	Add on storage area at north end of south west section of building, west wall at damage area	ND
PKP-0711-A43 4375926	Gypsum wall board, white	Add on storage area at north end of south west section of building, west wall at damage area	ND
PKP-0711-A44 4375927	Wall texture, white	First floor stair way landing next to faculty bathroom, east wall	ND
PKP-0711-A45 4375928	Wall texture, white	Second floor, wall along second level stairway to library	ND
PKP-0711-A46 4375929	Joint compound, white	Second floor, Corner wall at top of stairs in library	ND
PKP-0711-A47 4375930	Carpet mastic, yellow	Second floor, floor at top of stairs from first floor in library	ND
PKP-0711-A48 4375931	Wall texture, white	Second floor, Wall outside mechanical room in library	ND
PKP-0711-A49 4375932	Joint compound and wall texture	Second floor, corner wall outside mechanical room in library	ND
PKP-0711-A50 4375933	Stair tread, tan vinyl	First floor steps from kitchen to mechanical room	1.7 % chrysotile
PKP-0711-A51 4375934	Stair tread mastic	First floor steps from kitchen to mechanical room	ND

25 7/30/11



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PROJECT NO: 7032-01	PROJECT NAME: Pitkas Point School Renovation	FACILITY: Pitkas Point School	COLLECTION DATE: 07/18/11
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FIELD SURVEY DATA

EHS SAMPLE NO. LAB ID NO	SAMPLE DESCRIPTION, (COLOR, MATERIAL TYPE, LAYERS, FRIABILITY)	LOCATION/COMMENTS (INCLUDING PHOTO/XREF)	RESULTS FOR EHS-ALASKA USE ONLY
PKP-0711-A52 4375935	Joint compound, white with tan paint	Second level, south wall of storage area at top of stairs from kitchen	ND
PKP-0711-A53 4375936	Joint compound, tan	Second level mechanical room at top of stairs from kitchen, above boiler	ND
PKP-0711-A54 4375937	Joint compound and wall texture, white	Second floor, inside office at north end of library, east wall	ND
PKP-0711-A54a 4375938	Joint compound and Wall texture, white	Second floor, outside wall of center office	ND

Mechanical Cabin

PKP-0711-A55 4375939	Ceiling tile, 12x12, random dot and fissure, nailed on.	Shop building, north west corner room ceiling	ND
PKP-0711-A56 4375940	Joint compound, white	Shop building, north west corner room of building, at doorway	ND
PKP-0711-A57 4375941	Tarpaper, black	Edge of cabin roof at southwest corner of building	ND
PKP-0711-A58 4375942	Asphalt shingle, black with green granules	Edge of cabin roof at southwest corner of building	ND
PKP-0711-A59 4375943	Joint compound, white	Shop building, south west room, east wall	JC : ND JC : ND
PKP-0711-A60 4375944	Floor tile, 12x12 clay color with light and dark streaks, and black mastic	Shop building floor of south west classroom	TILE : ND MASTIC : 3.1%
PKP-0711-A61 4375945	Floor tile and mastic, 12x12, clay color with light and dark streaks and tan mastic	Shop building floor at ski storage room	TILE : ND MASTIC : ND.
PKP-0711-A62 4375946	Ceiling tile, 12x12 random dots and fissures, nailed on	Shop building, ski storeroom ceiling	ND
PKP-0711-A63 4375947	Furnace gasket, tan fiberboard	Shop building, boiler room at south end of building	ND
PKP-0711-A64 4375948	Gypsum wall board, white	Shop building at south end of building	ND

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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375884	Description / Location:	Brown Carpet Mastic	
Client No.:	PKP-0711-A01		Special Ed Classroom, NE Ceiling Section	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Cellulose	100

Lab No.:	4375885	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A02		Special Ed Classroom, West Wall, Mid Span	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375886	Description / Location:	Pink Mastic	
Client No.:	PKP-0711-A03		Special Ed Classroom, South Wall Sink	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 4.1	Chrysotile	None Detected	None Detected	PC 95.9

Lab No.:	4375887	Description / Location:	Yellow Cove Base Mastic	
Client No.:	PKP-0711-A04		Behind Entry Open Door From Corridor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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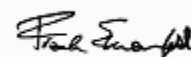
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Approved By:



Date: 7/30/2011

Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375888	Description / Location:	Lt.Pink Sheetrock	
Client No.:	PKP-0711-A05		Corridor WallOutsideSpecialEduc.Classrm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Fibrous Glass	95

Lab No.:	4375889	Description / Location:	Yellow Carpet Mastic	
Client No.:	PKP-0711-A06		NE Classroom, Center Of Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375890	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A07		NE Classroom, NorthWall,Below Window	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375891	Description / Location:	White Joint Compound; Inside Wall	
Client No.:	PKP-0711-A08		Of Classroom At Doorway From Corridor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375892	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A09		Northwest Vestibule Above Bench	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375894	Description / Location:	Pink Mastic; NE Wing Of Building	
Client No.:	PKP-0711-A10		South Classroom, Sink At West Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.8	Chrysotile	None Detected	None Detected	PC 96.2

Lab No.:	4375894	Description / Location:	Yellow Cove Mastic; Partition Wall At	
Client No.:	PKP-0711-A11		End Of Counter In NE Section,S.Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375894	Description / Location:	White Joint Compuond	Layer No.: 2
Client No.:	PKP-0711-A11		End Of Counter In NE Section,S.Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375895	Description / Location:	Brown Cove Base; Partition Wall At	
Client No.:	PKP-0711-A12		End Of Counter In NE Section,S.Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375896	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A13		S. Wall In NE SectionOf Bldg,S.Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375897	Description / Location:	Lt.Tan Vinyl Sheet Flooring	
Client No.:	PKP-0711-A14		Faculty Bathroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375897	Description / Location:	Yellow Mastic	Layer No.: 2
Client No.:	PKP-0711-A14		Faculty Bathroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011



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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375898	Description / Location:	Tan Grout	
Client No.:	PKP-0711-A15		Faculty Bathroom, East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375899	Description / Location:	Brown Caulk	
Client No.:	PKP-0711-A16		Doorway Frame In Faculty Bathroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375900	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A17		Corridor Wall At Base OfStairsToLibrary	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

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Analytical Method:

EPA 600/R-93/116

Comments:

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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375901	Description / Location:	White Cementitious	
Client No.:	PKP-0711-A18		Edge Of Carpet At Doorway To Gymnasium	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375901	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A18		Edge Of Carpet At Doorway To Gymnasium		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375902	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A19		Corridor Wall Outside Janitor Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

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Analytical Method:

EPA 600/R-93/116

Comments:

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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375903	Description / Location:	Dk.Grey Vinyl Sheet Flooring	
Client No.:	PKP-0711-A20		Edge Of Floor In Janitor Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
40	Chrysotile	Trace	Cellulose	60

Lab No.:	4375903	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A20		Edge Of Floor In Janitor Closet		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation

NIST-NVLAP No. 101165-0

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Analytical Method:

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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375904	Description / Location:	Off-White Floor Tile; 12x12; Edge Of	
Client No.:	PKP-0711-A21		CorridorFlooringAtDoorwayToJanitorCloset	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.6	Chrysotile	None Detected	None Detected	PC 98.4

Lab No.:	4375904	Description / Location:	Black Mastic	Layer No.:	2
Client No.:	PKP-0711-A21		CorridorFlooringAtDoorwayToJanitorCloset		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
PC 3.2	Chrysotile	None Detected	None Detected	PC 96.8	

Lab No.:	4375904	Description / Location:	Yellow Mastic	Layer No.:	3
Client No.:	PKP-0711-A21		CorridorFlooringAtDoorwayToJanitorCloset		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375905	Description / Location:	White Joint Compound; CorridorWall	
Client No.:	PKP-0711-A22		O/SSStorageArea,SW SectionOfBldgN.End	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375906	Description / Location:	White Joint Compound; Soffit Across From	
Client No.:	PKP-0711-A23		Principal's Office Door Entry Area To SW Class	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375907	Description / Location:	Brown Cove Base	
Client No.:	PKP-0711-A24		S. Wall Of SW Classroom, Under Radiator	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375908	Description / Location:	Brown Cove Base Mastic	
Client No.:	PKP-0711-A25		S. Wall Of SW Classroom, Under Radiator	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375908	Description / Location:	Yellow Mastic	Layer No.: 2
Client No.:	PKP-0711-A25		S. Wall Of SW Classroom, Under Radiator	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375909	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A26		N.Wall Of SW Classroom,BelowLightSwitch	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375910	Description / Location:	Grey Putty	
Client No.:	PKP-0711-A27		W.Wall Of SW Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 8.9	Chrysotile	None Detected	None Detected	PC 91.1

Lab No.:	4375911	Description / Location:	Off-White Floor Tile; FloorTileSection	
Client No.:	PKP-0711-A28		In Classroom Outside Kitchen Area	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.7	Chrysotile	None Detected	None Detected	PC 98.3

Lab No.:	4375911	Description / Location:	Black Mastic	Layer No.: 2
Client No.:	PKP-0711-A28		In Classroom Outside Kitchen Area	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.9	Chrysotile	None Detected	None Detected	PC 98.1

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375912	Description / Location:	Pink Mastic; Sink Undercoating	
Client No.:	PKP-0711-A29		Kitchen Area In SW Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.9	Chrysotile	None Detected	None Detected	PC 96.1

Lab No.:	4375913	Description / Location:	Yellow Marlite Mastic	
Client No.:	PKP-0711-A30		South Wall In Janitor Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375914	Description / Location:	Tan Floor Tile; 12x12	
Client No.:	PKP-0711-A31		Gymnasium Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375914	Description / Location:	Yellow Mastic	Layer No.: 2
Client No.:	PKP-0711-A31		Gymnasium Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011



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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375915	Description / Location:	Tan Floor Tile; 12x12	
Client No.:	PKP-0711-A32		Kitchen Area Under Deep Sink	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375915	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A32		Kitchen Area Under Deep Sink		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375916	Description / Location:	Black Cove Base; Kitchen Area		
Client No.:	PKP-0711-A33		At Base Of Cabinet Under Deep Sink		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375916	Description / Location:	Brown Mastic	Layer No.:	2
Client No.:	PKP-0711-A33		At Base Of Cabinet Under Deep Sink		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011



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CERTIFICATE OF ANALYSIS

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	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375917	Description / Location:	Yellow Marlite Mastic; Back Wall	
Client No.:	PKP-0711-A34		Of Kitchen Area At Doorway To Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375918	Description / Location:	Yellow Carpet Mastic; Gymnasium Wall	
Client No.:	PKP-0711-A35		Under Basketball Net Outside Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375918	Description / Location:	White Joint Compound	Layer No.: 2
Client No.:	PKP-0711-A35		Under Basketball Net Outside Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation**NIST-NVLAP No. 101165-0****NY-DOH No. 11021****AIHA-LAP, LLC No. 100188**

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Analytical Method:

EPA 600/R-93/116

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Analysis Performed By: L. Solebello**Date:** 7/30/2011

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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375919	Description / Location:	Lt.Tan Vinyl Sheet Flooring	
Client No.:	PKP-0711-A36		Boys Locker Room Entry Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	15	Cellulose	80
		5	Fibrous Glass	

Lab No.:	4375919	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A36		Boys Locker Room Entry Floor		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375920	Description / Location:	Dk.Grey Vinyl Sheet Flooring	
Client No.:	PKP-0711-A37		Boys Locker Room Entry Floor,UnderSV-3	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
30	Chrysotile	Trace	Cellulose	70

Lab No.:	4375921	Description / Location:	Brown Cove Base Mastic	
Client No.:	PKP-0711-A38		Gymnasium Storage Closet,Back Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375922	Description / Location:	White Joint Compound	
Client No.:	PKP-0711-A39		Storage Closet At Diagonal Ceiling Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375923	Description / Location:	Grey/Pink Vinyl Sheet Flooring	
Client No.:	PKP-0711-A40		Girls Locker Room Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	80
		5	Fibrous Glass	
		5	Synthetic	

Lab No.:	4375923	Description / Location:	Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A40		Girls Locker Room Floor		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375924	Description / Location:	Off-White Joint Compound; SW Section Of	
Client No.:	PKP-0711-A41		School, N. Room (Storage Area) At Corner Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Date: 7/30/2011

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	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375925	Description / Location:	Yellow Mastic; Add On Storage Area At	
Client No.:	PKP-0711-A42		N.EndOfSWSectionOfBldgW.WallAtDamageArea	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375926	Description / Location:	Off-White/TanSheetrockAddOnStorageAreaAt	
Client No.:	PKP-0711-A43		N.EndOfSWSectionOfBldgW.WallAtDamageArea	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Lab No.:	4375927	Description / Location:	White Wall Texture; First Floor Stairway	
Client No.:	PKP-0711-A44		Landing Next To Faculty Bathroom,E.Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375928	Description / Location:	White Wall Texture; Second Floor	
Client No.:	PKP-0711-A45		Wall Along SecondLevelStairwayToLibrary	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011

CERTIFICATE OF ANALYSIS

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	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375929	Description / Location:	White Joint Compound; Second Floor	
Client No.:	PKP-0711-A46		Corner Wall At Top Of Stairs In Library	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375930	Description / Location:	Yellow Carpet Mastic; Second Floor	
Client No.:	PKP-0711-A47		Floor At TopOfStairsFromFirstInLibrary	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375931	Description / Location:	White Wall Texture; Second Floor	
Client No.:	PKP-0711-A48		Wall Outside Mechanical Room In Library	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375932	Description / Location:	White Wall Texture; Second Floor	
Client No.:	PKP-0711-A49		CornerWallOutside MechanicalRmInLibrary	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011

CERTIFICATE OF ANALYSIS

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	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375933	Description / Location:	Tan Stair Tread; First Floor	
Client No.:	PKP-0711-A50		Steps From Kitchen To Mechanical Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.7	Chrysotile	None Detected	None Detected	PC 98.3

Lab No.:	4375934	Description / Location:	Brown Mastic; First Floor	
Client No.:	PKP-0711-A51		Steps From Kitchen To Mechanical Rm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375935	Description / Location:	Off-White Joint Compound;SecondLevelS.	
Client No.:	PKP-0711-A52		WallOfStorageAreaAtTopOfStairsFrom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375936	Description / Location:	Off-White Joint Compound;SecondLevelMech	
Client No.:	PKP-0711-A53		RmAtTopOfStairsFromKitchen,AboveBoiler	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

Date: 7/30/2011

CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375937	Description / Location:	White Joint Compound;Second Floor	
Client No.:	PKP-0711-A54		Inside Office At N.EndOfLibrary,E.Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375938	Description / Location:	White Wall Texture;Second Floor	
Client No.:	PKP-0711-A54a		Outside Wall Of Center Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375939	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	PKP-0711-A55		MechanicalCabin;ShopBldg,NWCornerRm	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	50	Cellulose	50

Lab No.:	4375940	Description / Location:	White Joint Compound;MechanicalCabin	
Client No.:	PKP-0711-A56		ShopBldg,NWCornerRm Of BldgAtDoorway	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analytical Method:	EPA 600/R-93/116
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Analysis Performed By: L. Solebello

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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375941	Description / Location:	Black Tar Paper;MechanicalCabin	
Client No.:	PKP-0711-A57		Edge Of Cabin Roof At SW Corner Of Bldg	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	60	Cellulose	40

Lab No.:	4375942	Description / Location:	Green/Black Shingle;MechanicalCabin	
Client No.:	PKP-0711-A58		Edge Of Cabin Roof At SW Corner Of Bldg	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	40	Cellulose	60

Lab No.:	4375943	Description / Location:	White Joint Compound;MechanicalCabin	
Client No.:	PKP-0711-A59		Shop Bldg, SW Room, East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375943	Description / Location:	Off-White Joint Compound	Layer No.: 2
Client No.:	PKP-0711-A59		Shop Bldg, SW Room, East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: L. Solebello

Date: 7/30/2011



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CERTIFICATE OF ANALYSIS

Client:	EHS Alaska Incorporated	Report Date:	7/30/2011
	11901 Business Blvd., Ste 208	Report No:	247780
	Eagle River AK 99577-7701	Project:	Pitkas Point School
		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375944	Description / Location:	Pink/Tan FloorTile;12x12;MechanicalCabin	
Client No.:	PKP-0711-A60		Shop Bldg Floor Of SW Classroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Cellulose	100

Lab No.:	4375944	Description / Location:	Black/Yellow Mastic	Layer No.:	2
Client No.:	PKP-0711-A60		Shop Bldg Floor Of SW Classroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
PC 3.1	Chrysotile	None Detected	None Detected	PC 96.9	

Lab No.:	4375945	Description / Location:	Pink/Tan FloorTile;12x12;MechanicalCabin	
Client No.:	PKP-0711-A61		Shop Bldg Floor At Ski Storage Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Cellulose	100

Lab No.:	4375945	Description / Location:	Yellow/Brown Mastic	Layer No.:	2
Client No.:	PKP-0711-A61		Shop Bldg Floor At Ski Storage Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Accreditation	NIST-NVLAP No. 101165-0	NY-DOH No. 11021	AIHA-LAP, LLC No. 100188
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Analysis Performed By: L. Solebello

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	11901 Business Blvd., Ste 208	Report No:	247780
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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375946	Description / Location:	White/Tan Ceiling Tile; 12x12; Mechanical Cabin; Shop Bldg, Ski Storeoom	
Client No.:	PKP-0711-A62			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	90	Cellulose	10

Lab No.:	4375947	Description / Location:	Tan Gasket; Mechanical Cabin Shop Bldg, Boiler Room At S. End Of Bldg	
Client No.:	PKP-0711-A63			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	60
		10	Fibrous Glass	

Lab No.:	4375948	Description / Location:	White/Tan Sheetrock; Mechanical Cabin Shop Bldg, At S. End Of Bldg	
Client No.:	PKP-0711-A64			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	90

Lab No.:	4375949	Description / Location:	White Joint Compound; Mechanical Cabin Shop Bldg At S. End Of Bldg	
Client No.:	PKP-0711-A65			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375950	Description / Location:	White Joint Compound; Mechanical Cabin	
Client No.:	PKP-0711-A66		Shop Bldg, East Wall Of South Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375950	Description / Location:	Off-White Joint Compound	Layer No.:	2
Client No.:	PKP-0711-A66		Shop Bldg, East Wall Of South Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4375951	Description / Location:	White Joint Compound; Mechanical Cabin	
Client No.:	PKP-0711-A67		ShopBldgPartitionWallBtwnBathrm&SkiStore	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4375951	Description / Location:	Off-White Joint Compound	Layer No.:	2
Client No.:	PKP-0711-A67		ShopBldgPartitionWallBtwnBathrm&SkiStore		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

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		Project No.:	7032-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4375952	Description / Location:	White Insulation; Mechanical Cabin	
Client No.:	PKP-0711-A68		Shop Bldg, Fire Door At Boiler Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	PC 92.8
PC Trace	Crocidolite			
PC 7.2	Amosite			

Accreditation **NIST-NVLAP No. 101165-0** **NY-DOH No. 11021** **AIHA-LAP, LLC No. 100188**

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APPENDIX B

Key Photos



Example of asbestos-containing sheet vinyl concealed under newer non-asbestos sheet vinyl and plywood in the Boy's Bathroom in the Main School Building.



Example of asbestos-containing wire insulation at a heat detector in the Janitor's Closet in the Main School Building.



Example of damaged asbestos-containing stair treads at stairway that leads from the Kitchen to the Mechanical Room in the Main School Building.



Typical stainless steel sink with asbestos-containing undercoating in the Main School Building.



Typical example of a thermostat with a mercury filled ampule in the Main School Building.



Damaged ceiling in the Main School Building Mechanical Room from active roof leaks above. Note bucket full of water that has overflowed causing more water damage.



Bucket full of water in Mechanical Room. Water has overflowed causing damage to the floor and adjacent walls. The wall to the left in the photo leads to the large classroom at the southeast corner of the Main School Building which has water damage from these leaks. The Kitchen is directly below where more water damage has occurred from these leaks.



Drip pan and white trash can in the background full of water in Mechanical Room in the Main School Building. These have overflowed and caused water damage to surrounding walls and floor. The source of the water appears to be from the roof leak above.



Close up of damaged wall above door leading to Kitchen in large classroom at southeast corner of Main School Building. Note the black mold and deteriorated gypsum board. The source of the water appears to be from the roof leak in the Mechanical Room above.



Damaged wall above door leading to Kitchen in large classroom at southeast corner of Main School Building. Note water staining and damaged gypsum board. The source of the water appears to be from the roof leak in the Mechanical Room above.



Example of damaged asbestos-containing floor tiles in the large classroom at the southeast corner of the Main School Building. Damage is caused by a combination of water damage, foot traffic, and abrasion from the doors being opened and closed.



Water damaged light fixture in Kitchen area in large classroom at the southeast corner of the Main School Building. The source of water appears to be from the leaking roof and overflowing catch buckets in the Mechanical Room above.



Standing water on countertop in Kitchen in the Main School Building. The source of the water appears to be from the roof leak in the Mechanical Room above.



Water leaking out of light fixture in Kitchen in the Main School Building. The source of the water appears to be from the roof leak in the Mechanical Room above.



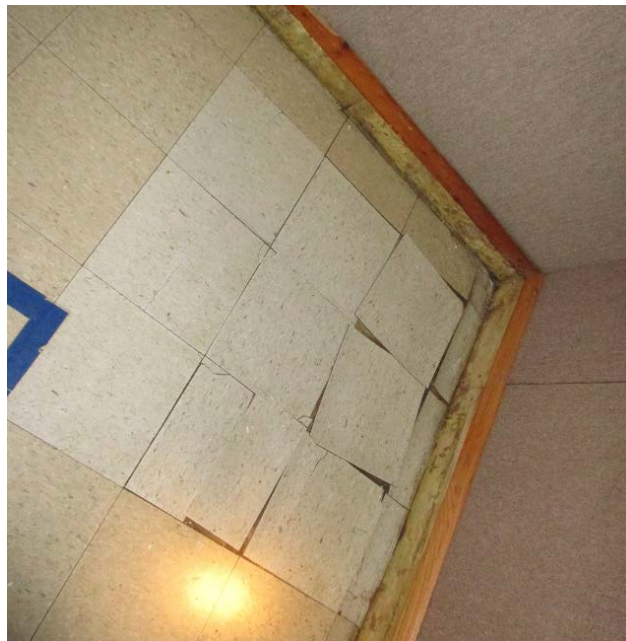
Non-asbestos floor tile damaged by water leaks from above in Kitchen. The source of the water appears to be from the roof leak in the Mechanical Room above.



Daylight is visible through cracks at the wall/ceiling connection at the northeast corner of the Gym. Water has been intruding through these cracks causing damage to the ceiling, wall, and floor below.



Water damaged wall at northeast corner of Gym. Daylight is visible through cracks at the wall/ceiling connection.



Example of damaged asbestos-containing floor tiles at the northeast corner of the Gym in the Main School Building. Damage is caused by water leak from above.



Evidence of past leaking heat piping in classroom on north side of Main School Building. Note water droplets on pipe.



Further evidence of past leaking pipes in classroom on south side of Main School Building.



Small Mechanical Room in the 1984 addition. Note water stained floor and wall, and mineral build up on boiler flue. There did not appear to be an active leak at the time of inspection.



Asbestos-containing sink undercoating on Kitchen sink in Teacher Housing Unit 1. Teacher Housing Unit 2 similar.



Asbestos-containing window glazing compound on older window in Teacher Housing Unit 1. Teacher Housing Unit 2 similar.



Thermostat with mercury filled ampule in Teacher Housing Unit 1. Note mold on wood wall finish.



View of Living Room area in Teacher Housing Unit 1. Note extensive water damage and mold on virtually all surfaces.



View of Kitchen in Teacher Housing Unit 1. Note extensive water damage and mold on virtually all surfaces.



Typical bedroom in Teacher Housing Unit 1 with water damaged and moldy ceiling tiles and other surfaces.



Mushroom growing out of floor with mold on ceiling tile in a bedroom in Teacher Housing Unit 1.



Water damaged floors, walls, and ceiling with mold in a bedroom in Teacher Housing Unit 1. Note moisture on the inside face of the window glass.



Water damaged ceiling and walls with mold at boiler flue in Teacher Housing Unit 1.



Looking under sheet vinyl in Teacher Housing Unit 1. Note plywood subfloor saturated with water.



Thermostat with mercury filled ampule in Teacher Housing Unit 2.



PCB containing ballast in a fluorescent light fixture in the Kitchen in Teacher Housing Unit 2.



At first glance, Teacher Housing Unit 2 did not appear to have as extensive of a mold problem as Teacher Housing Unit 1. Closer examination revealed nearly the same level of fungal growth even though the ceiling tiles remained mostly intact.



Fungal growth on carpet, base trim, and wood paneling of cabinetry near the Kitchen in Teacher Housing Unit 2.



Fungal growth on plywood subfloor in Teacher Housing Unit 2. Note water saturated flooring materials and subfloor.



Fungal growth on cabinetry in Kitchen in Teacher Housing Unit 2.



Water damaged ceiling in a bedroom in Teacher Housing Unit 2. Note mold growth on ceiling tiles and walls.



Water damage and fungal growth on loose furniture in Teacher Housing Unit 2.



Condensation on boiler flue in Teacher Housing Unit 2. Note water damaged walls and ceiling and mold.



Boiler in Teacher Housing Unit 2. Note boiler drip pan is full of water, water damage to floors, walls, and ceiling, and the extensive mold growth.

APPENDIX C

Lead Analyzer Test Results

LEAD BASED PAINT SCREENING SUMMARY

NITON XLp-300A, Serial No. 81530

No.	SITE	INSPECTOR	FLOOR	ROOM	COMPONENT	SUBSTRATE	CONDITION	COLOR	Duration	Time	Depth Index	Results		
												LBP	mg/cm ²	+/- ERROR
1	PITKAS POINT SCHOOL SITE	OTTOSEN	-	-	SHUTTER CAL	-	-	-	46.28	9/16/2015 19:18	-	-	5.8	0
2	TEACHER HOUSING UNIT #2	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.12	9/16/2015 19:19	1.11	Positive	1.1	0.1
3	TEACHER HOUSING UNIT #2	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.09	9/16/2015 19:20	2.77	Positive	1.2	0.1
4	TEACHER HOUSING UNIT #2	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.1	9/16/2015 19:20	1.06	Positive	1	0.1
5	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	LIVING ROOM	WALL	WOOD	INTACT	WHITE	3.63	9/16/2015 19:21	1	Negative	0	0.02
6	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	KITCHEN	WALL	DRYWALL	INTACT	WHITE	3.6	9/16/2015 19:22	1	Negative	0.01	0.02
7	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	KITCHEN	COUNTERTOP	FORMICA	INTACT	YELLOW	3.63	9/16/2015 19:22	1	Negative	0.01	0.02
8	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	KITCHEN	CABINET	WOOD	INTACT	VARNISH	3.62	9/16/2015 19:23	1	Negative	0	0.02
9	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	HALLWAY	WALL	WOOD	INTACT	WHITE	4.22	9/16/2015 19:24	1	Negative	0	0.02
10	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BATHROOM	FLOOR	VINYL	INTACT	YELLOW	6.02	9/16/2015 19:24	1	Negative	0	0.02
11	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BATHROOM	WALL	MARLITE	INTACT	WHITE	4.81	9/16/2015 19:25	1	Negative	0	0.02
12	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BATHROOM	COUNTERTOP	FORMICA	INTACT	WHITE	4.22	9/16/2015 19:25	1	Negative	0	0.02
13	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BOILER ROOM	DOOR	METAL	INTACT	WHITE	3.64	9/16/2015 19:26	1	Negative	0	0.02
14	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BOILER ROOM	BOILER	METAL	POOR	BLUE	7.86	9/16/2015 19:27	3.32	Negative	0.02	0.03
15	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	BEDROOM 03	BASEBOARD HEATER	METAL	INTACT	WHITE	5.43	9/16/2015 19:27	1	Negative	0	0.02
16	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	EXTERIOR	HANDRAIL	WOOD	POOR	BROWN	4.25	9/16/2015 19:29	1	Negative	0	0.02
17	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	EXTERIOR	SIDING	WOOD	POOR	BEIGE	3.63	9/16/2015 19:30	1	Negative	0	0.02
18	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	EXTERIOR	TRIM	WOOD	POOR	BROWN	4.23	9/16/2015 19:30	1	Negative	0	0.02
19	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	EXTERIOR	WINDOW TRIM	WOOD	POOR	BROWN	1.81	9/16/2015 19:31	1	Negative	0	0.02
20	TEACHER HOUSING UNIT #2	OTTOSEN	FIRST	EXTERIOR	SIDING	WOOD	POOR	BEIGE	3.62	9/16/2015 19:32	1	Negative	0	0.02
21	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	EXTERIOR	SIDING	WOOD	POOR	BEIGE	3.6	9/16/2015 19:34	1	Negative	0	0.02
22	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	EXTERIOR	TRIM	WOOD	POOR	BROWN	10.86	9/16/2015 19:35	1	Negative	0	0.02
23	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	EXTERIOR	HANDRAIL	WOOD	POOR	BROWN	3.59	9/16/2015 19:35	1	Negative	0	0.02
24	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	EXTERIOR	SIDING	WOOD	POOR	BEIGE	4.24	9/16/2015 19:36	1	Negative	0	0.02
25	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	ENTRY	DOOR	METAL	INTACT	WHITE	6.66	9/16/2015 19:37	1	Negative	0	0.02
26	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	ENTRY	DOOR TRIM	WOOD	INTACT	WHITE	4.22	9/16/2015 19:37	1	Negative	0	0.02
27	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	ENTRY	DOOR TRIM	WOOD	INTACT	WHITE	3.64	9/16/2015 19:37	1.2	Negative	0	0.02
28	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	LIVING ROOM	WALL	WOOD	INTACT	WHITE	3.02	9/16/2015 19:38	1	Negative	0	0.02
29	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	KITCHEN	WALL	DRYWALL	POOR	WHITE	3.03	9/16/2015 19:38	2.09	Negative	0.04	0.06
30	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	KITCHEN	WALL	DRYWALL	POOR	WHITE	3	9/16/2015 19:39	1	Negative	0	0.02
31	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	BATHROOM	COUNTERTOP	FORMICA	INTACT	YELLOW	3.61	9/16/2015 19:40	1	Negative	0	0.02
32	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	BATHROOM	SINK	CERAMIC	INTACT	WHITE	4.83	9/16/2015 19:41	1	Negative	0	0.02
33	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	BEDROOM 02	WALL	WOOD	INTACT	BROWN	2.41	9/16/2015 19:42	1	Negative	0	0.02
34	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	BEDROOM 03	WINDOW TRIM	WOOD	INTACT	VARNISH	4.82	9/16/2015 19:43	1	Negative	0	0.02
35	TEACHER HOUSING UNIT #1	OTTOSEN	FIRST	HALLWAY	WALL	WOOD	INTACT	WHITE	3.02	9/16/2015 19:43	1	Negative	0	0.02
36	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	26.51	9/16/2015 19:48	1.11	Positive	1.1	0.1
37	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.07	9/16/2015 19:48	2.74	Positive	1.2	0.1
38	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.06	9/16/2015 19:49	1.09	Positive	1.1	0.1
39	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	SHUTTER CAL	-	-	-	48.2	9/17/2015 12:07	-	-	6.45	0
40	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.1	9/17/2015 12:09	1.09	Positive	1.1	0.1
41	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.07	9/17/2015 12:09	2.48	Positive	1	0.1
42	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.07	9/17/2015 12:10	1.08	Positive	1.1	0.1
43	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	OFFICE	WALL	DRYWALL	INTACT	BLUE	3.6	9/17/2015 12:11	1	Negative	0	0.02
44	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	HALLWAY	WALL	DRYWALL	INTACT	BEIGE	3.6	9/17/2015 12:12	1	Negative	0	0.02
45	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	HALLWAY	WINDOW TRIM	WOOD	INTACT	BROWN	3.62	9/17/2015 12:12	1	Negative	0	0.02
46	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	HALLWAY	WINDOW SILL	WOOD	INTACT	BROWN	3.6	9/17/2015 12:12	1	Negative	0	0.02
47	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	HALLWAY	WINDOW CASING	WOOD	INTACT	BROWN	3.6	9/17/2015 12:13	1	Negative	0	0.02
48	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	SERVER	WINDOW TRIM	WOOD	INTACT	WHITE	3.02	9/17/2015 12:14	1	Negative	0	0.02
49	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	SERVER	WALL	DRYWALL	INTACT	WHITE	4.84	9/17/2015 12:14	1	Negative	0	0.02
50	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	SERVER	DOOR	WOOD	INTACT	WHITE	2.99	9/17/2015 12:14	1	Negative	0	0.02
51	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	SERVER	DOOR TRIM	WOOD	INTACT	WHITE	3.6	9/17/2015 12:15	1	Negative	0	0.02
52	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	LIBRARY	WALL	DRYWALL	INTACT	WHITE	5.4	9/17/2015 12:15	1	Negative	0	0.02
53	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	LIBRARY	DOOR	METAL	INTACT	BROWN	6.01	9/17/2015 12:16	1.31	Negative	0.01	0.02
54	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	LIBRARY	DOOR TRIM	METAL	INTACT	BROWN	4.21	9/17/2015 12:16	1.3	Negative	0	0.02
55	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	MECHANICAL	TANK	METAL	INTACT	BROWN	3.61	9/17/2015 12:17	3.73	Negative	0.01	0.03
56	PITKAS POINT MAIN SCHOOL	OTTOSEN	SECOND	STORAGE	WALL	DRYWALL	INTACT	BLUE	4.21	9/17/2015 12:23	1	Negative	0	0.02
57	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	DOOR	METAL	INTACT	ORANGE	4.22	9/17/2015 12:24	1.69	Negative	0.4	0.1

LEAD BASED PAINT SCREENING SUMMARY

No.	SITE	INSPECTOR	FLOOR	ROOM	COMPONENT	SUBSTRATE	CONDITION	COLOR	Duration	Time	Depth Index	Results		
												LBP	mg/cm ²	+/- ERROR
58	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	DOOR TRIM	METAL	INTACT	BROWN	3.6	9/17/2015 12:24	1	Negative	0	0.02
59	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	BOY'S BATHROOM	HAND DRYER	CERAMIC	INTACT	RED	3.63	9/17/2015 12:25	1.97	Positive	14.6	2.5
60	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	DOOR TRIM	METAL	INTACT	BROWN	3	9/17/2015 12:26	1	Negative	0	0.02
61	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	DOOR	METAL	INTACT	ORANGE	2.99	9/17/2015 12:27	1.93	Negative	0.6	0.2
62	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	VESTIBULE	DOOR	METAL	INTACT	BLUE	3.61	9/17/2015 12:27	1	Negative	0	0.02
63	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	DOOR TRIM	METAL	INTACT	BROWN	3.58	9/17/2015 12:27	1	Negative	0	0.02
64	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WALL	MARLITE	INTACT	YELLOW	3.02	9/17/2015 12:28	3.21	Negative	0.02	0.06
65	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WALL	DRYWALL	INTACT	WHITE	3	9/17/2015 12:28	3.21	Negative	0.01	0.04
66	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	KITCHEN	CABINET	FORMICA	INTACT	ORANGE	9.03	9/17/2015 12:30	1.14	Positive	1.2	0.1
67	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	HALLWAY	STAIR RISER	WOOD	INTACT	BROWN	3.03	9/17/2015 12:31	1	Negative	0	0.02
68	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	ROLLUP DOOR	METAL	INTACT	BROWN	3.6	9/17/2015 12:31	1	Negative	0	0.02
69	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	DOOR	METAL	INTACT	BROWN	4.21	9/17/2015 12:31	1	Negative	0	0.02
70	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	DOOR TRIM	METAL	INTACT	BROWN	3.62	9/17/2015 12:32	1.06	Negative	0	0.02
71	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	FLOD-UP TABLE	FORMICA	INTACT	ORANGE	3.62	9/17/2015 12:32	5.96	Negative	0.04	0.14
72	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	GYM	TRIM	WOOD	INTACT	BROWN	3.64	9/17/2015 12:33	3.6	Negative	0.02	0.05
73	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	HALLWAY	LOCKER	METAL	INTACT	BLUE	3.6	9/17/2015 12:34	10	Negative	-0.37	1.04
74	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WALL	MARLITE	INTACT	WHITE	3.6	9/17/2015 12:34	1	Negative	0	0.02
75	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WAINSCOT	WOOD	INTACT	WHITE	3.01	9/17/2015 12:35	1	Negative	0	0.02
76	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WINDOW TRIM	WOOD	INTACT	BROWN	3.61	9/17/2015 12:35	1	Negative	0	0.02
77	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WINDOW SILL	WOOD	POOR	WHITE	4.21	9/17/2015 12:36	1.72	Negative	0	0.02
78	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	CLASSROOM	WINDOW CASING	WOOD	POOR	WHITE	3.61	9/17/2015 12:36	1	Negative	0	0.02
79	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	HANDRAIL	WOOD	POOR	BROWN	4.22	9/17/2015 12:38	1.39	Negative	0.3	0.08
80	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	SIDING	WOOD	FAIR	GREY	3.61	9/17/2015 12:38	1	Negative	0	0.02
81	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	TRIM	WOOD	FAIR	GREY	3.62	9/17/2015 12:39	1	Negative	0	0.02
82	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	BEAM	METAL	FAIR	BROWN	3.6	9/17/2015 12:40	1	Negative	0	0.02
83	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	SUPPORT	METAL	INTACT	BROWN	4.23	9/17/2015 12:41	1.18	Negative	0	0.02
84	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	THERMOSIPHON	METAL	POOR	WHITE	3.03	9/17/2015 12:48	5.08	Negative	0.02	0.07
85	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	PILING	METAL	POOR	WHITE	3.61	9/17/2015 12:50	1	Negative	0	0.02
86	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	TRIM	WOOD	POOR	WHITE	3.02	9/17/2015 12:51	1	Negative	0	0.02
87	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	TANK	METAL	POOR	GREY	3.61	9/17/2015 12:51	2.93	Negative	0.07	0.1
88	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	STAIR RISER	METAL	POOR	RED	3.6	9/17/2015 12:52	1.17	Negative	0.03	0.04
89	PITKAS POINT MAIN SCHOOL	OTTOSEN	FIRST	EXTERIOR	HANDRAIL	METAL	POOR	RED	3.62	9/17/2015 12:52	1.32	Negative	0.03	0.04
90	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.02	9/17/2015 12:56	1.05	Positive	1	0.1
91	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.08	9/17/2015 12:57	2.74	Positive	1.2	0.1
92	PITKAS POINT MAIN SCHOOL	OTTOSEN	-	-	CALIBRATION CK	-	-	RED	21.11	9/17/2015 12:57	1.04	Positive	1	0.1

Table Heading Descriptions:

Duration: This is the nominal time in seconds that each sample was analyzed.

Depth Index: Indicates the relative depth of the lead. A Depth Index (DI) of less than 1.5 indicates lead very near the surface layer of paint. A DI between 1.5 and 4.0 indicates moderately covered lead. A DI greater than 4.0 indicates the lead paint is deeply buried beneath multiple layers of paint.

LBP: Results are shown as positive (POS $\geq$ 1.0 mg/cm²), inconclusive (INC) or negative (NEG < 1.0 mg/cm²). The results are based on the combined results of the K and L shell readings. L shell and K shell readings are not provided, but are available. Positive results are shown in bold print.

mg/cm²: This is the testing results produced by the NITON XLP-300A instrument in milligrams of lead per square centimeter (mg/cm²). The EPA defines lead based paint as paint containing lead at 1.0 mg/cm² or greater. A negative number is a result of an internal computation made by the instrument and should be interpreted as zero. Even though paint may be termed negative (less than 1.0 mg/cm²) by EPA definition, disturbance of the paint may still be regulated by OSHA under 29 CFR 1926.62. Where lead is present at any level, appropriate engineering controls, work practices and personal protective equipment should be used until a negative exposure assessment can be determined. <LOD indicates that the lead present was less than the limits of detection of the instrument (very little or no lead present).

VOID: This indicates that the test was intentionally terminated by the operator due to operator error (e.g. - operator moved analyzer while testing).

Substrate: Where ceramic is shown as a substrate, lead content is typically from the glazing on the tile unless the tile is painted.

PITKAS POINT SCHOOL
LEAD SCREENING SUMMARY

No.	SITE	INSPECTOR	FLOOR	ROOM	COMPONENT	SUBSTRATE	CONDITION	COLOR	Duration	Time	Depth Index	Results		
												LBP	mg/cm ²	+/-Error
1	PITKAS SCHOOL	LINDEKE							106.46	7/18/2011 7:15			4.23	0
2	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				20.76	7/18/2011 7:17	1.06	Positive	1	0.1
3	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				20.45	7/18/2011 7:18	1.01	Positive	1	0.1
4	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				22.3	7/18/2011 7:19	1.05	Positive	1	0.1
5	PITKAS SCHOOL	LINDEKE	FIRST	ENTRY	DOOR	METAL	INTACT	BROWN	20.46	7/18/2011 7:22	2.49	Negative	0	0.02
6	PITKAS SCHOOL	LINDEKE	FIRST	ENTRY	WALL	DRYWALL	INTACT	WHITE	20.41	7/18/2011 7:23	2.07	Negative	0	0.02
7	PITKAS SCHOOL	LINDEKE	FIRST	ENTRY	DOOR	METAL	INTACT	BLUE	20.42	7/18/2011 7:24	3.56	Negative	0.01	0.02
8	PITKAS SCHOOL	LINDEKE	FIRST	HALL	LOCKER	METAL	INTACT	BLUE	20.09	7/18/2011 7:26	10	Negative	0.04	0.36
9	PITKAS SCHOOL	LINDEKE	FIRST	HALL	WALL	DRYWALL	INTACT	WHITE	20.72	7/18/2011 7:27	3.07	Negative	0.01	0.02
10	PITKAS SCHOOL	LINDEKE	FIRST	HALL	FLOOR	CERAMIC	INTACT	BEIGE	21.33	7/18/2011 7:29	2.98	Negative	0.01	0.02
11	PITKAS SCHOOL	LINDEKE	FIRST	BATHROOM	WALL	CERAMIC	INTACT	BEIGE	20.38	7/18/2011 7:30	2.14	Negative	0.01	0.02
12	PITKAS SCHOOL	LINDEKE	FIRST	HALL	DOOR TRIM	METAL	INTACT	BROWN	20.35	7/18/2011 7:32	1	Negative	0	0.02
13	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	WINDOW CASING	WOOD	INTACT	BROWN	20.39	7/18/2011 7:34	2.15	Negative	0	0.02
14	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	CABINET	PLASTIC	INTACT	BROWN	20.42	7/18/2011 7:35	1.07	Negative	0.08	0.02
15	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	WALL	DRYWALL	INTACT	WHITE	8.04	7/18/2011 7:37	2.02	Negative	0	0.02
16	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	WALL	DRYWALL	INTACT	WHITE	20.36	7/18/2011 7:38	2.83	Negative	0	0.02
17	PITKAS SCHOOL	LINDEKE	FIRST	GYM	DOOR	METAL	INTACT	ORANGE	20.73	7/18/2011 7:40	1.77	Negative	0.5	0.1
18	PITKAS SCHOOL	LINDEKE	FIRST	BATHROOM	WALL	WOOD	INTACT	WHITE	20.74	7/18/2011 7:41	3.34	Negative	0.01	0.02
19	PITKAS SCHOOL	LINDEKE	FIRST	BATHROOM	WALL	METAL	INTACT	ORANGE	21.03	7/18/2011 7:42	1.07	Negative	0.29	0.03
20	PITKAS SCHOOL	LINDEKE	FIRST	BATHROOM	SINK	CERAMIC	INTACT	WHITE	20.38	7/18/2011 7:44	2.97	Negative	0.05	0.03
21	PITKAS SCHOOL	LINDEKE	FIRST	JANITOR CLOSET	SINK	CERAMIC	INTACT	WHITE	21.04	7/18/2011 7:46	1.97	Positive	38.1	1.2
22	PITKAS SCHOOL	LINDEKE	FIRST	HALL	DOOR	METAL	INTACT	GRAY	20.44	7/18/2011 7:47	5.78	Negative	0.01	0.02
23	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	RADIATOR	METAL	INTACT	WHITE	20.34	7/18/2011 7:50	1.58	Negative	0.06	0.02
24	PITKAS SCHOOL	LINDEKE	FIRST	CLASSROOM	DOOR	METAL	INTACT	ORANGE	20.69	7/18/2011 7:52	1.62	Negative	0.4	0.1
25	PITKAS SCHOOL	LINDEKE	FIRST	KITCHEN	CABINET	PLASTIC	INTACT	ORANGE	20.68	7/18/2011 7:54	1.19	Positive	1.2	0.1
26	PITKAS SCHOOL	LINDEKE	FIRST	KITCHEN	PIPE	METAL	INTACT	BROWN	20.44	7/18/2011 7:56	1.4	Positive	3.3	0.4
27	PITKAS SCHOOL	LINDEKE	SECOND	ATTIC	DOOR	WOOD	INTACT	ORANGE	20.75	7/18/2011 7:58	1.14	Negative	0.4	0.1
28	PITKAS SCHOOL	LINDEKE	SECOND	ATTIC	PIPE	METAL	INTACT	BROWN	20.72	7/18/2011 7:59	1.5	Positive	3.2	0.4
29	PITKAS SCHOOL	LINDEKE	FIRST	EXTERIOR	EXT. WALL	WOOD	INTACT	GRAY	21.03	7/18/2011 8:02	4.03	Negative	0.01	0.02
30	PITKAS SCHOOL	LINDEKE	FIRST	EXTERIOR	HAND RAIL	WOOD	INTACT	BROWN	20.76	7/18/2011 8:04	1.72	Negative	0.6	0.1
31	PITKAS SCHOOL	LINDEKE	TANK FARM	EXTERIOR	TANK	METAL	INTACT	WHITE	20.43	7/18/2011 8:14	4.42	Negative	0.07	0.04
32	PITKAS SCHOOL	LINDEKE	TANK FARM	EXTERIOR	TANK	METAL	INTACT	WHITE	25.11	7/18/2011 8:15	6.47	Negative	0.12	0.06
33	PITKAS SCHOOL	LINDEKE	TANK FARM	EXTERIOR	TANK	METAL	INTACT	WHITE	20.75	7/18/2011 8:16	2.15	Negative	0.01	0.02
34	PITKAS SCHOOL	LINDEKE	TANK FARM	EXTERIOR	TANK	METAL	INTACT	BLUE	20.44	7/18/2011 8:17	1.77	Negative	0.07	0.02
35	PITKAS SCHOOL	LINDEKE	TANK FARM	EXTERIOR	TANK	METAL	INTACT	BLUE	20.42	7/18/2011 8:19	1.36	Negative	0.01	0.02
36	PITKAS SCHOOL	LINDEKE	MAINT CABIN	UTILITY	WALL	WOOD	INTACT	BROWN	11.13	7/18/2011 9:26	1.19	Negative	0.11	0.03
37	PITKAS SCHOOL	LINDEKE	MAINT CABIN	UTILITY	WALL	WOOD	INTACT	BLUE	11.41	7/18/2011 9:27	2.49	Negative	0	0.02
38	PITKAS SCHOOL	LINDEKE	MAINT CABIN	UTILITY	WALL	DRYWALL	INTACT	WHITE	11.13	7/18/2011 10:01	1.64	Negative	0	0.02
39	PITKAS SCHOOL	LINDEKE	MAINT CABIN	UTILITY	DOOR	WOOD	INTACT	BROWN	10.81	7/18/2011 10:01	2.19	Negative	0	0.02
40	PITKAS SCHOOL	LINDEKE	MAINT CABIN	UTILITY	WALL	DRYWALL	INTACT	BLUE	13.55	7/18/2011 10:02	5.5	Negative	0.01	0.03
41	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				20.69	7/18/2011 10:23	1.07	Positive	1	0.1
42	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				20.39	7/18/2011 10:23	1.06	Positive	1	0.1
43	PITKAS SCHOOL	LINDEKE			CALIBRATION CK				21.63	7/18/2011 10:24	1.01	Positive	1	0.1

Table Heading Descriptions:

Duration: This is the nominal time in seconds that each sample was analyzed.

Depth Index: Indicates the relative depth of the lead. A Depth Index (DI) of less than 1.5 indicates lead very near the surface layer of paint. A DI between 1.5 and 4.0 indicates moderately covered lead. A DI greater than 4.0 indicates the lead paint is deeply buried beneath multiple layers of paint.

LBP: Results are shown as positive (POS > 1.0 mg/cm²), inconclusive (INC) or negative (NEG < 1.0 mg/cm²). The results are based on the combined results of the K and L shell readings. L shell and K shell readings are not provided, but are available upon request. Positive results are in bold print.

PITKAS POINT SCHOOL
LEAD SCREENING SUMMARY

mg/cm²: This is the testing results produced by the NITON XLi-303AW instrument in milligrams of lead per square centimeter (mg/cm²). The EPA defines lead based paint as paint containing lead at 1.0 mg/cm² or greater. A negative number is a result of an internal computation made by the instrument and should be interpreted as zero. Even though paint may be termed negative (less than 1.0 mg/cm²) by EPA definition, disturbance of the paint may still be regulated by OSHA under 29 CFR 1926.62. Where lead is present at any level, appropriate engineering controls, work practices and personal protective equipment should be used until a negative exposure assessment can be determined.

VOID: This indicates that the test was intentionally terminated by the operator due to operator error (e.g. - operator moved analyzer while testing).

Substrate: Where ceramic is shown as a substrate, lead content is typically from the glazing on the tile unless the tile is painted.

APPENDIX D

Drawings of Sample Locations

- SCOPE OF WORK NOTES:**
1. CONCEPT PLAN FOR THE MAIN SCHOOL BUILDING
 2. CONCEPT PLAN FOR THE TEACHER HOUSING UNIT #1
 3. CONCEPT PLAN FOR THE TEACHER HOUSING UNIT #2
 4. CONCEPT PLAN FOR THE PLAYGROUND
 5. CONCEPT PLAN FOR THE GYMNASIUM
 6. CONCEPT PLAN FOR THE GYMNASIUM
 7. CONCEPT PLAN FOR THE GYMNASIUM
 8. CONCEPT PLAN FOR THE GYMNASIUM
 9. CONCEPT PLAN FOR THE GYMNASIUM
 10. CONCEPT PLAN FOR THE GYMNASIUM

MAIN
SCHOOL
BUILDING

TEACHER
HOUSING
UNIT #2

TEACHER
HOUSING
UNIT #1

1
C-1

SITE PLAN
NTS

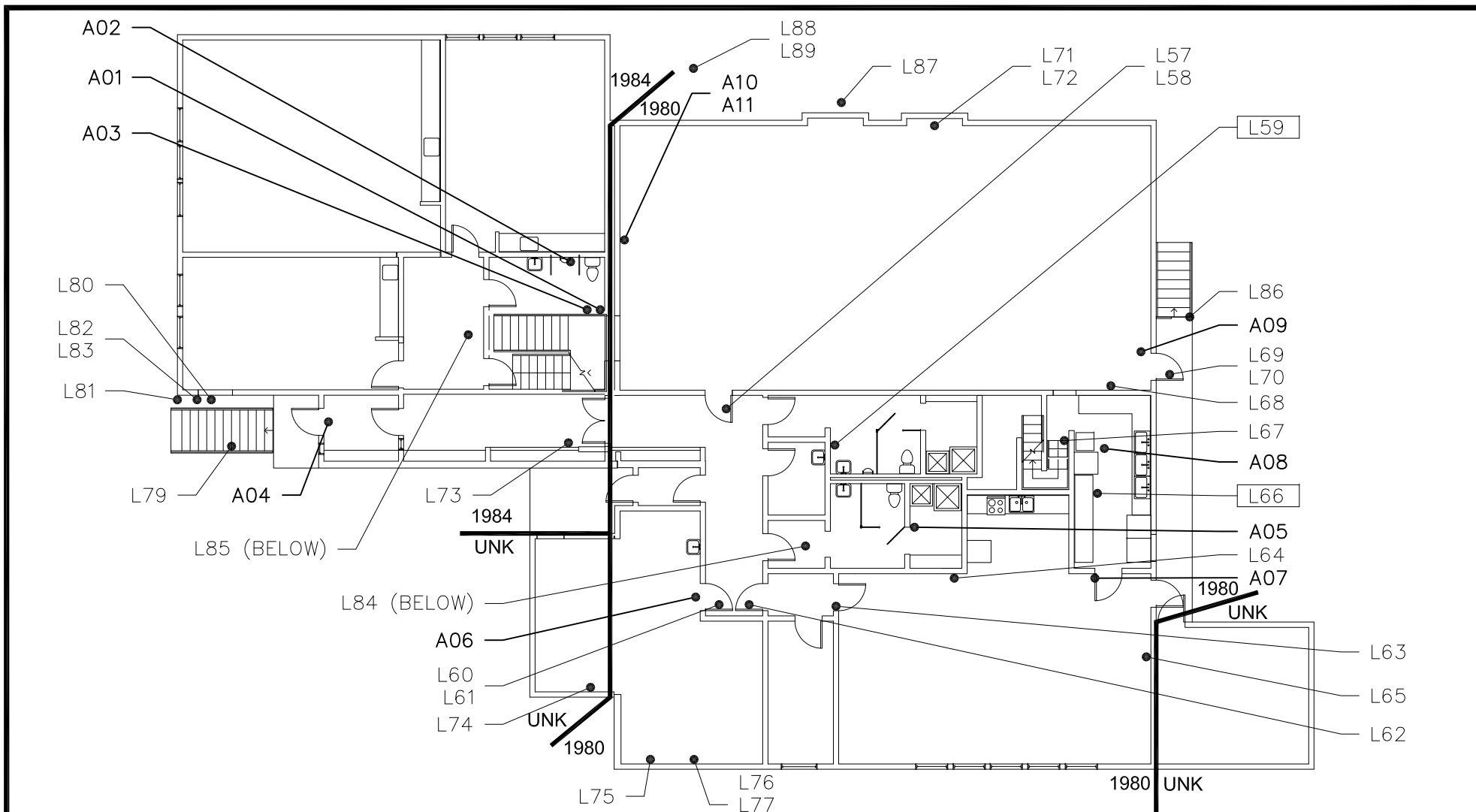


LOWER YUKON
SCHOOL
DISTRICT

PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
SITE PLAN



DRAWN: CTO	DATE: 09/16/2015
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FILE #: 7395-SL	



LEGEND

- LXX LEAD TEST LOCATION
- LXX LEAD TEST CLASSIFIED AS LEAD BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

1
C-2

MAIN SCHOOL - 1ST FLOOR
NTS



LEGEND

- AXX ASBESTOS TEST LOCATION
- AXX LAB TEST RESULTS POSITIVE FOR ASBESTOS

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS. ALL SAMPLES HAVE PKP0915- PREFIX.

LOWER YUKON
SCHOOL
DISTRICT

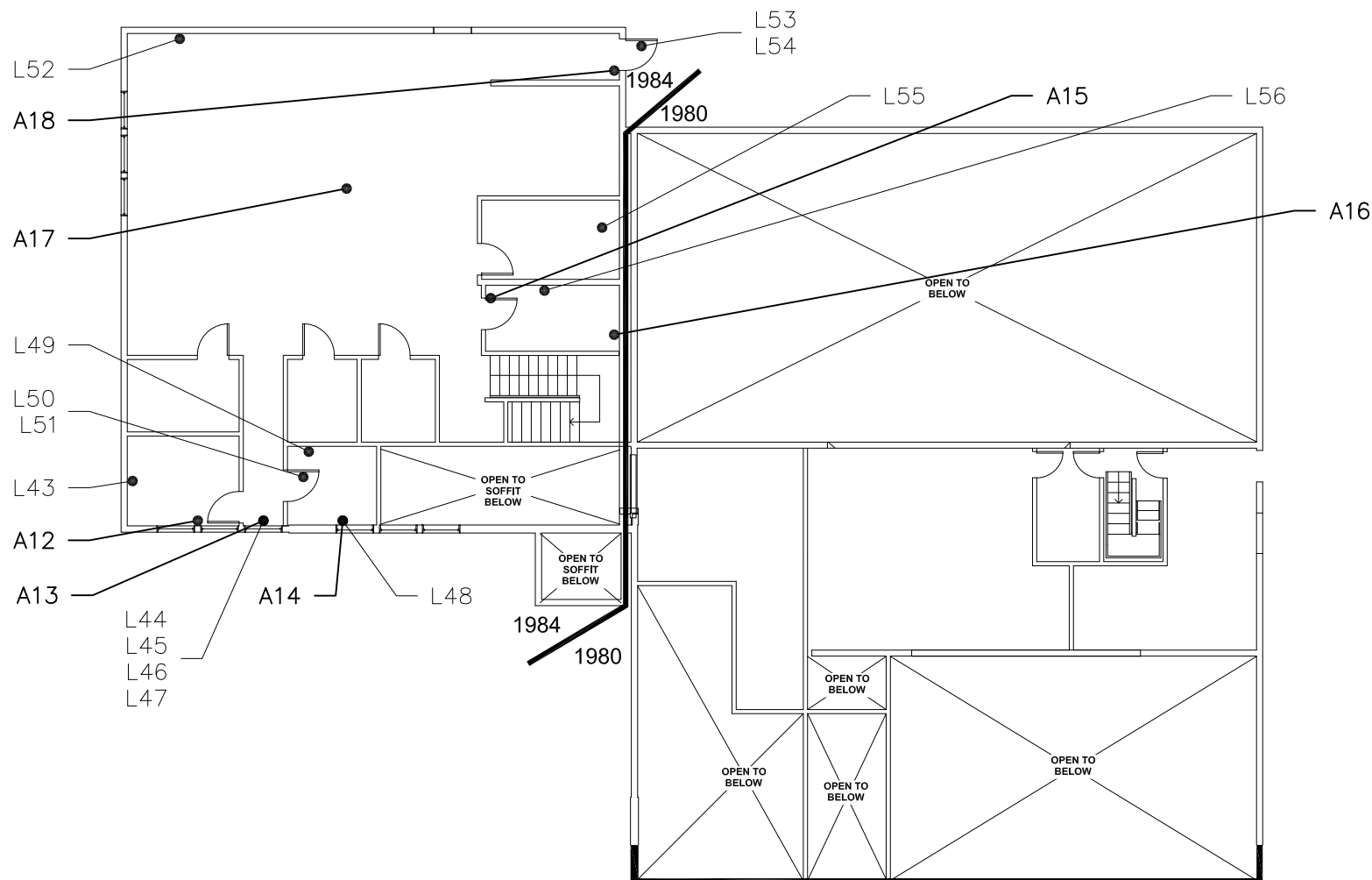
PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
ASBESTOS & LEAD SAMPLE LOCATIONS



EHS ALASKA
INCORPORATED
ENGINEERING, HEALTH & SAFETY CONSULTANTS

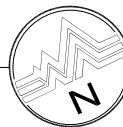
DRAWN: CTO
CHECK: RAF
FILE #:
7395-SL

DATE:
09/16/2015
DWG.NO:
C-2



1
C-3

MAIN SCHOOL – 2ND FLOOR NTS



LEGEND

- LXX LEAD TEST LOCATION
- LXX LEAD TEST CLASSIFIED AS LEAD BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

LEGEND

- AXX ASBESTOS TEST LOCATION
- AXX LAB TEST RESULTS POSITIVE FOR ASBESTOS

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS. ALL SAMPLES HAVE PKP0915- PREFIX.

LOWER YUKON
SCHOOL
DISTRICT

PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
ASBESTOS & LEAD SAMPLE LOCATIONS



EHS ALASKA
INCORPORATED

ENGINEERING, HEALTH & SAFETY CONSULTANTS

DRAWN: CTO
CHECK: RAF

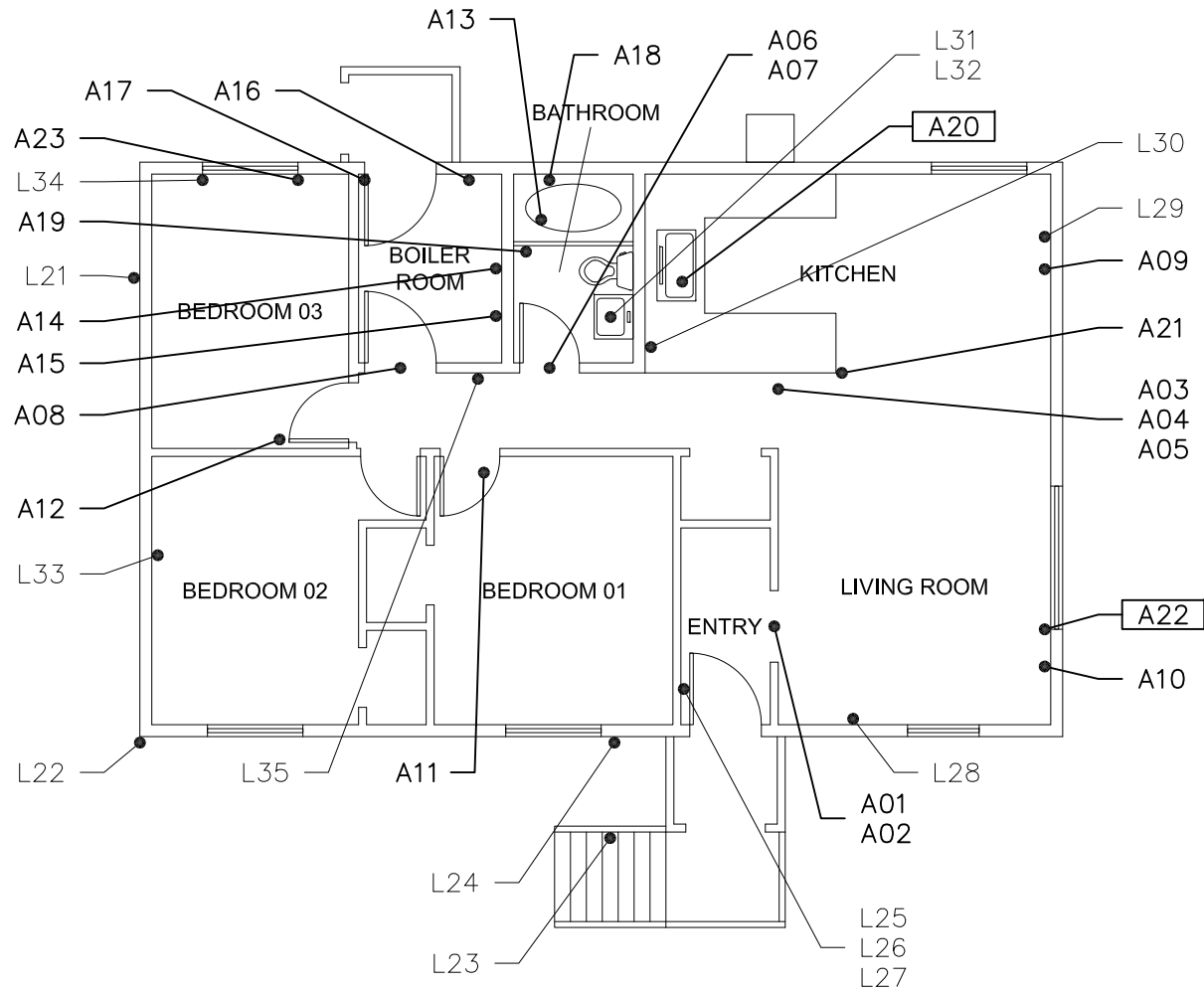
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09/16/2015

FILE #:

DWG.NO:

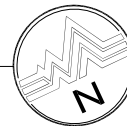
7395-SL

C-3



1
C-4

TEACHER HOUSING UNIT #1 NTS



LEGEND

- LXX LEAD TEST LOCATION
- LXX LEAD TEST CLASSIFIED AS LEAD BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

LEGEND

- AXX ASBESTOS TEST LOCATION
- AXX LAB TEST RESULTS POSITIVE FOR ASBESTOS

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS. ALL SAMPLES HAVE PKPTH0915- PREFIX.

LOWER YUKON
SCHOOL
DISTRICT

PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
ASBESTOS & LEAD SAMPLE LOCATIONS



EHS ALASKA
INCORPORATED

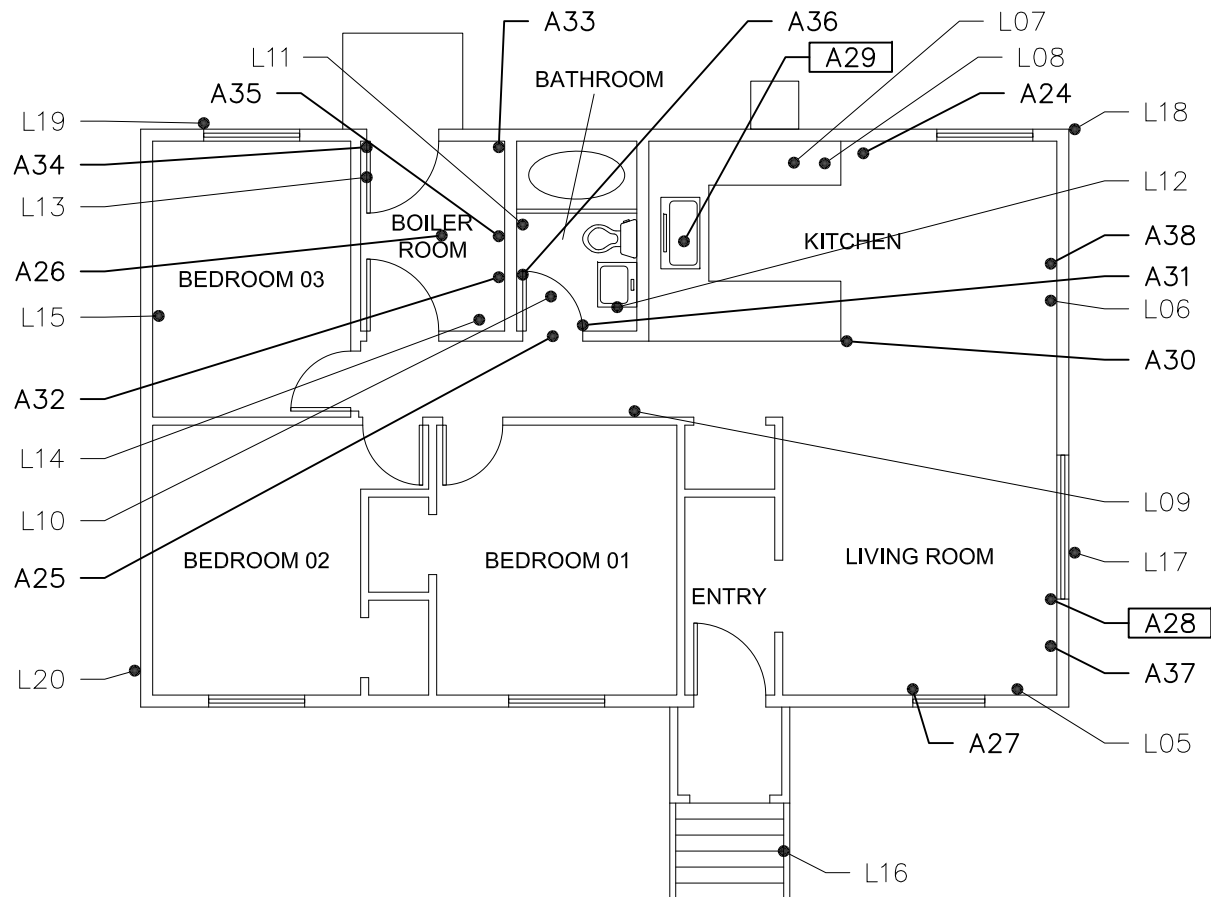
ENGINEERING, HEALTH & SAFETY CONSULTANTS

DRAWN: CTO
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FILE #:
7395-SL

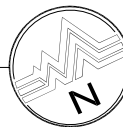
DATE:
09/16/2015

DWG.NO:
C-4



1
C-5

TEACHER HOUSING UNIT #2 NTS



LEGEND

- LXX LEAD TEST LOCATION
- LXX LEAD TEST CLASSIFIED AS LEAD BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

LEGEND

- AXX ASBESTOS TEST LOCATION
- AXX LAB TEST RESULTS POSITIVE FOR ASBESTOS

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS. ALL SAMPLES HAVE PKPTH0915- PREFIX.

LOWER YUKON
SCHOOL
DISTRICT

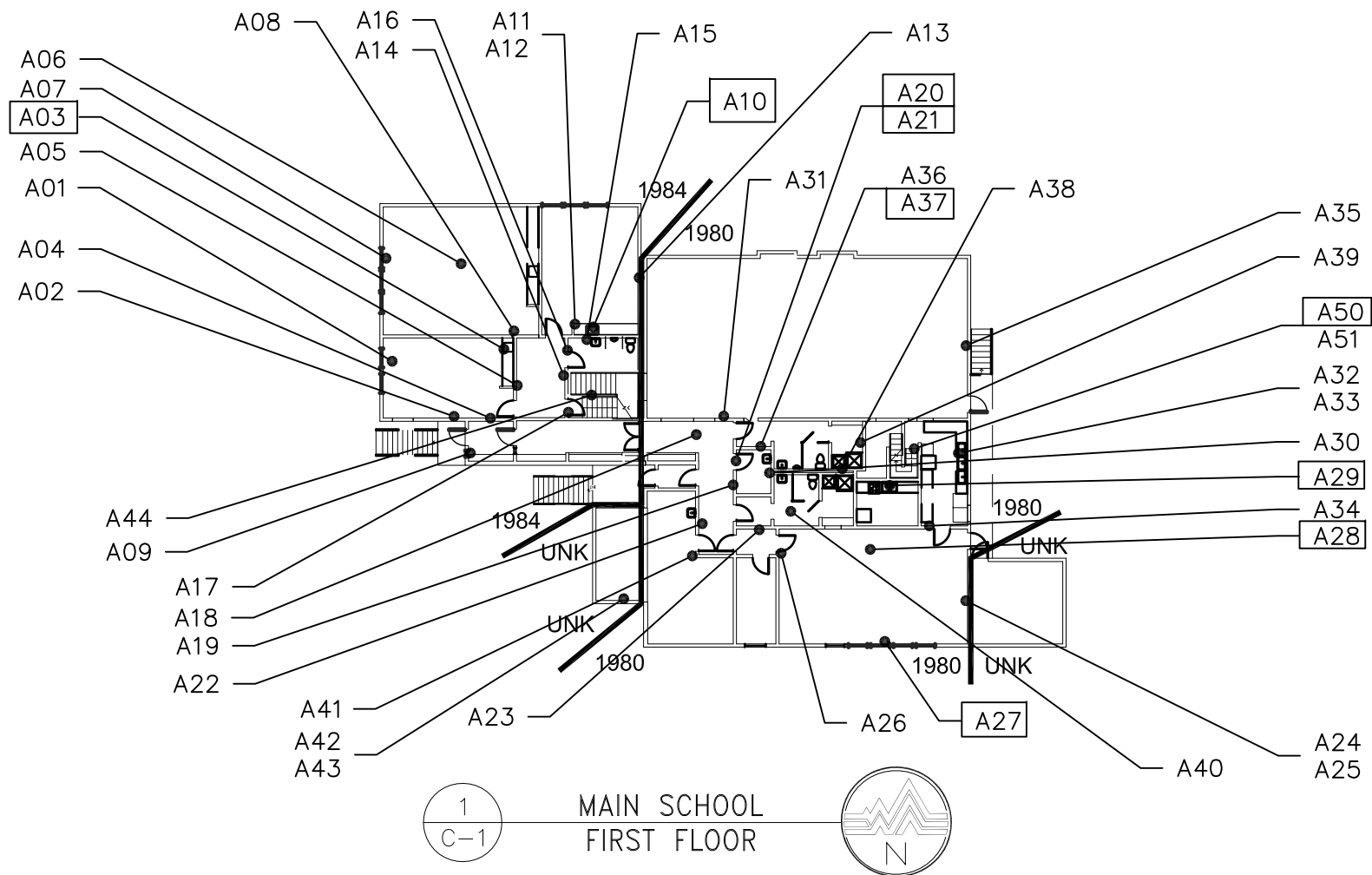
PITKAS POINT SCHOOL SITE
PITKAS POINT, ALASKA
ASBESTOS & LEAD SAMPLE LOCATIONS



EHS ALASKA
INCORPORATED
ENGINEERING, HEALTH & SAFETY CONSULTANTS

DRAWN: CTO
CHECK: RAF
FILE #:
7395-SL

DATE:
09/16/2015
DWG.NO:
C-5



LEGEND

- — AXX ASBESTOS TEST LOCATION
- — [AXX] LAB TEST RESULTS POSITIVE FOR ASBESTOS

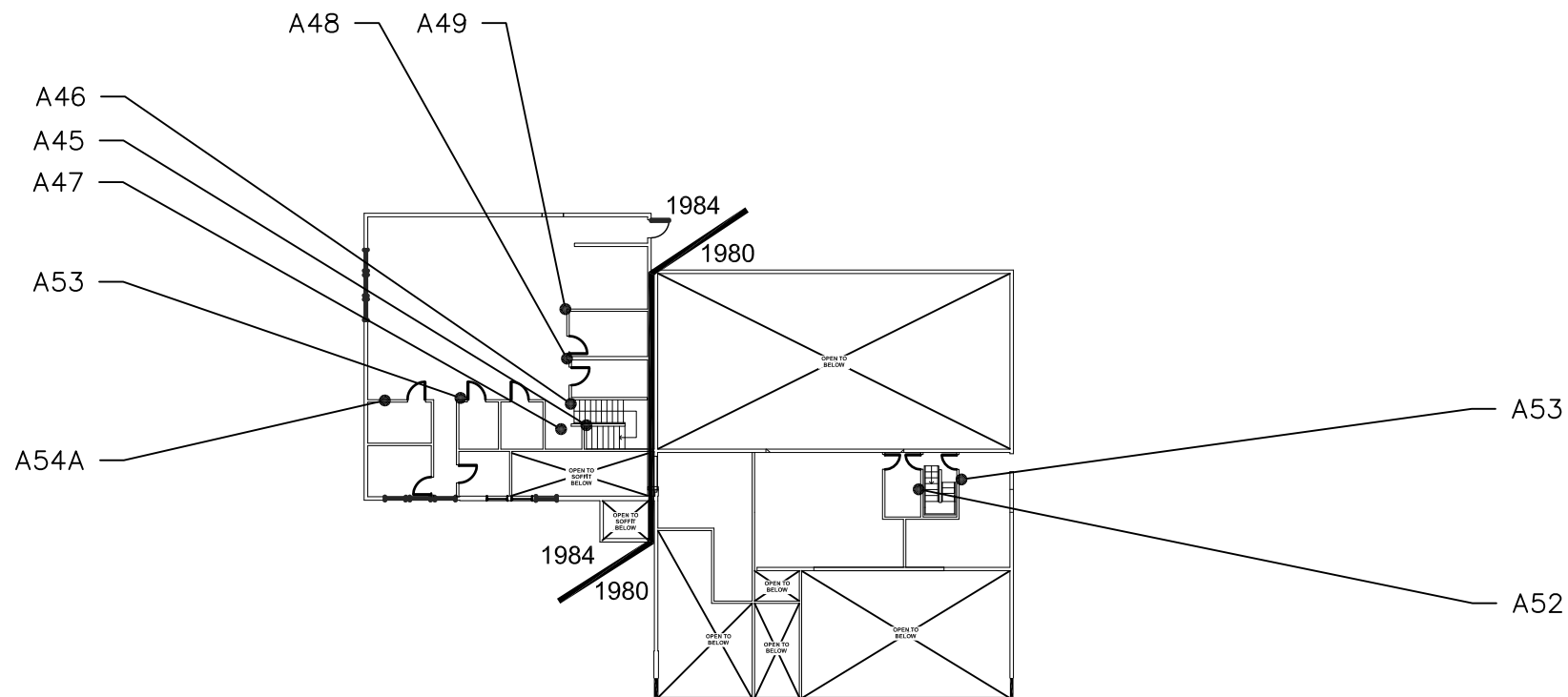
REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.
ALL SAMPLES HAVE PKP-0711 PREFIX.

LOWER YUKON
SCHOOL DISTRICT

PITKAS POINT
MAIN SCHOOL 1st FLOOR
ASBESTOS SAMPLE LOCATIONS



DRAWN: MJL	DATE: 7-18-11
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FILE #:	DWG.NO:
7032-SL	C-1



MAIN SCHOOL
SECOND FLOOR

LEGEND

- — AXX ASBESTOS TEST LOCATION
- — AXX LAB TEST RESULTS POSITIVE FOR ASBESTOS

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.
ALL SAMPLES HAVE PKP-0711- PREFIX.

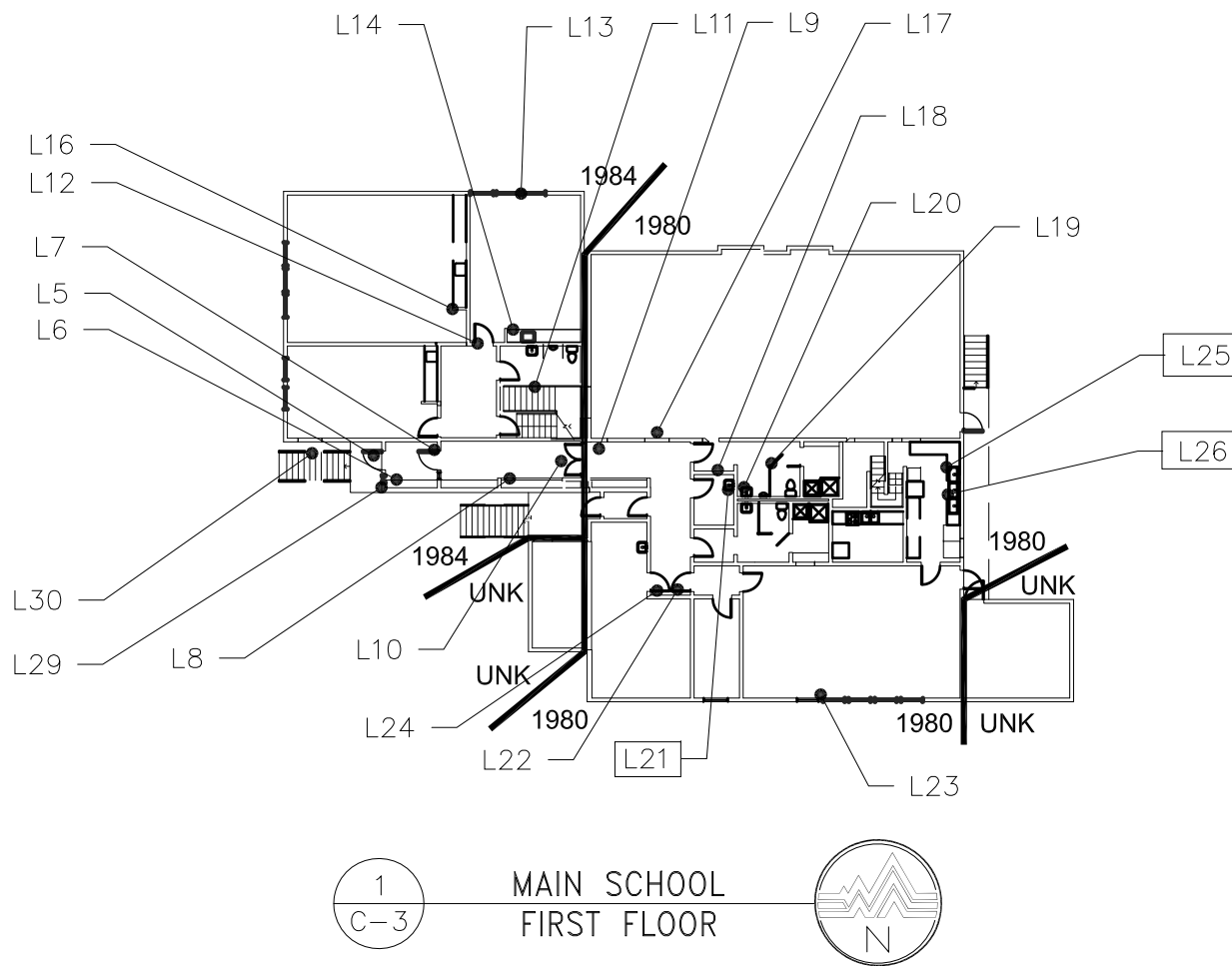
LOWER YUKON
SCHOOL DISTRICT

PITKAS POINT
MAIN SCHOOL 2nd FLOOR
ASBESTOS SAMPLE LOCATIONS



DRAWN: MJL
CHECK: RAF
FILE #: 7032-SL

DATE: 7-18-11
DWG.NO: C-2



LEGEND

- — LXX LEAD TEST LOCATION
- — LXX LEAD TEST CLASSIFIED AS LEAD-BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

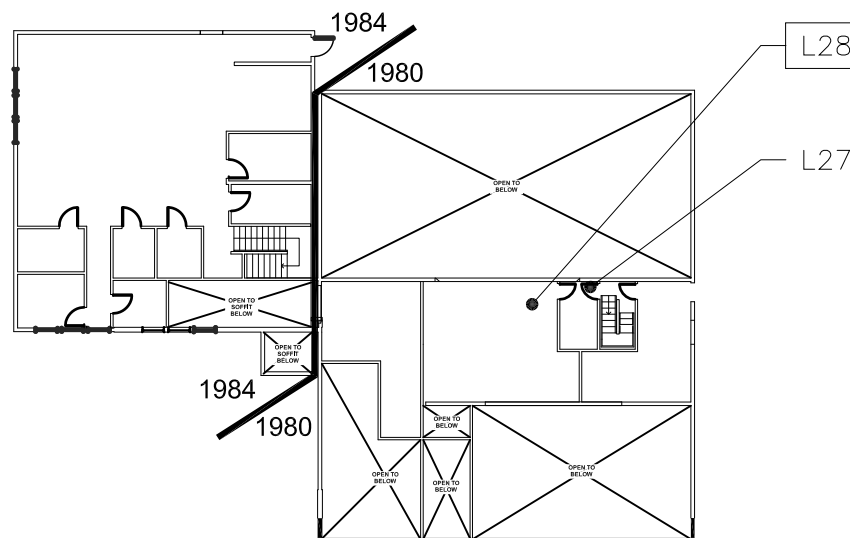
LOWER YUKON
SCHOOL DISTRICT

PITKAS POINT
MAIN SCHOOL 1st FLOOR
LEAD TESTING LOCATIONS



DRAWN: MJL
CHECK: RAF
FILE #:
7032-SL

DATE:
7-18-11
DWG.NO:
C-3



LEGEND

- — LXX LEAD TEST LOCATION
- — LXX LEAD TEST CLASSIFIED AS LEAD-BASED PAINT

REFER TO TESTING SUMMARY IN REPORT FOR FULL DETAILS.

LOWER YUKON
SCHOOL DISTRICT

PITKAS POINT
MAIN SCHOOL 2nd FLOOR
LEAD TESTING LOCATIONS



DRAWN: MJL
CHECK: RAF
FILE #: 7032-SL

DATE: 7-18-11
DWG.NO: C-4

APPENDIX E

Order of Magnitude Cost Estimate

Teacher Housing Unit #1

Teacher Housing Unit #1 is in disrepair and should not be entered by unprotected workers. There is extensive fungal growth within the unit caused by various forms of water intrusion noted in the Hazardous Materials Assessment. Due to the extensive fungal growth EHS proposes two options for the unit:

1. Completely demolish the unit.
2. Completely renovate the unit which would include removal of all existing equipment, finishes, plywood subfloor, plywood ceiling, roofing, etc. After removal of all of these items the contractor would need to inspect for any other water damaged structure and replace items as necessary to complete renovation work.
3. There were materials that were assumed to contain asbestos due to site conditions and the limited nature of this survey. Those materials should be investigated as part of a renovation or demolition design effort.

Teacher Housing Unit #2

Teacher Housing Unit #2 is in disrepair and should not be entered by unprotected workers. There is extensive fungal growth within the unit caused by various forms of water intrusion noted in the Hazardous Materials Assessment. Due to the extensive fungal growth EHS proposes two options for the unit:

1. Completely demolish the unit.
2. Completely renovate the unit which would include removal of all existing equipment, finishes, plywood subfloor, plywood ceiling, roofing, etc. After removal of all of these items the contractor would need to inspect for any other water damaged structure and replace items as necessary to complete renovation work.
3. There were materials that were assumed to contain asbestos due to site conditions and the limited nature of this survey. Those materials should be investigated as part of a renovation or demolition design effort.

Main School Building

The Main School Building is generally in fair condition with only a few areas of water damage noted, and a few areas of damaged asbestos-containing materials noted. Prior to building re-occupancy the following minimum actions are recommended:

1. Repair sources of water intrusion from various locations on the roof, exterior siding, and leaking piping.
2. Abate damaged asbestos-containing materials.

Assumptions made by estimate:

1. Mobilization costs are only for portable abatement equipment and supplies.
2. All non-asbestos-containing materials will be disposed of at the St. Mary's landfill at no charge.
3. All asbestos-containing materials will be shipped back to Anchorage and disposed of at the Anchorage Regional Landfill.
4. No waste stream will be considered hazardous by TCLP testing and will be disposed of locally.
5. Complete demolition of Teacher Housing Units #1 & #2 would add an additional 75% to costs listed in the estimate, which does not include any costs to mobilize heavy equipment.

6. Costs do not include any incidental work which may arise from unforeseen conditions discovered during demolition.
7. No replacement costs are included, only abatement of hazards.

**HAZARDOUS MATERIALS REMOVAL COST ESTIMATE
PITKAS POINT SCHOOL SITE**

PROJECT:	Pitkas Point School Site Hazmat Assessment	PROJECT NO	EHS-7395
LOCATION:	Pitkas Point, Alaska	CLIENT:	Shannon & Wilson
ESTIMATED BY:	Chris Ottosen - EHS Alaska, Inc.	DATE:	11/05/15

BASIC QUANTITY COSTS:

MATERIAL:	QTY UNIT	UNIT COST	TOTAL COST
TEACHER HOUSING UNIT #1			
SINK WITH UNDERCOAT	1 EA @	\$80.00	\$80
WINDOWS WITH PUTTY	120 SF @	\$4.50	\$540
BOILER (ASSUMED)	1 EA @	\$1,500.00	\$1,500
VERMICULITE (ASSUMED)	40 CY @	\$80.00	\$3,200
ROOFING TARS & SEALANTS (ASSUMED)	1,410 SF @	\$1.50	\$2,115
MERCURY LAMPS	16 EA @	\$1.00	\$16
MERCURY THERMOSTATS	1 EA @	\$10.00	\$10
MOLD RELATED REMOVAL	1 EA @	\$15,000.00	\$15,000
TEACHER HOUSING UNIT #2			
SINK WITH UNDERCOAT	1 EA @	\$80.00	\$80
WINDOWS WITH PUTTY	120 SF @	\$4.50	\$540
BOILER (ASSUMED)	1 EA @	\$1,500.00	\$1,500
VERMICULITE (ASSUMED)	40 CY @	\$80.00	\$3,200
ROOFING TARS & SEALANTS (ASSUMED)	1,410 SF @	\$1.50	\$2,115
PCB BALLAST	2 EA @	\$25.00	\$50
MERCURY LAMPS	13 EA @	\$1.00	\$13
MERCURY THERMOSTATS	1 EA @	\$10.00	\$10
MOLD RELATED REMOVAL	1 EA @	\$15,000.00	\$15,000
MAIN SCHOOL BUILDING			
FLOOR TILE & MASTIC	1,900 SF @	\$4.50	\$8,550
STAIR TREAD	40 SF @	\$5.00	\$200
ROOFING TARS & SEALANTS (ASSUMED)	8,900 SF @	\$2.50	\$22,250
MERCURY LAMPS	250 EA @	\$1.00	\$250
MOLD RELATED REMOVAL	1 EA @	\$5,000.00	\$5,000
TOTAL QUANTITY COSTS:			\$81,219

BASIC TASK COSTS:

PROJECT DESIGNER FEE:	1 EA @	\$500	\$500
MOBILIZATION / DEMOB:	1 LOT	\$5,000	\$5,000
TRAVEL TO SITE :	5 EA @	\$600	\$3,000
RENTAL TRUCKS - SMALL EQUIPMENT:	1 LOT	\$8,000	\$8,000
CREW PER DIEM:	12 DAYS @	\$310	\$18,600
LEAD EXPOSURE ASSESSMENT:	1 EA @	\$1,500	\$1,500
AIR MONITORING:	12 DAYS @	\$600	\$7,200
TCLP TESTING:	5 EA @	\$200	\$1,000
DISPOSAL COSTS, ASBESTOS:	2 TONS @	\$500	\$1,000
DISPOSAL COSTS, MERCURY:	2 BBLS @	\$600	\$1,200
DISPOSAL COST, PCB:	1 BBLS @	\$600.00	\$600

TOTAL TASK COSTS: \$47,600

HAZARDOUS MATERIALS REMOVAL COST ESTIMATE PITKAS POINT SCHOOL SITE			
PROJECT:	Pitkas Point School Site Hazmat Assessment	PROJECT NO	EHS-7395
LOCATION:	Pitkas Point, Alaska	CLIENT:	Shannon & Wilson
ESTIMATED BY:	Chris Ottosen - EHS Alaska, Inc.	DATE:	11/05/15
	TOTAL BASIC COSTS:	(QUANTITY & TASK)	\$128,819
	LOCATION ADJUSTMENT:	INDEX = 1.50	\$193,229
	CONTINGENCY:	PERCENT= 15	\$28,984
	TOTAL BASIC COST ADJUSTED:		\$222,213
OTHER COSTS:			
INSURANCE	3.5 PCT		\$7,800
BONDING	3.5 PCT		\$7,800
OFFICE OVERHEAD	10.0 PCT		\$22,200
PROFIT	20.0 PCT		\$44,400
	TOTAL OTHER COSTS:		\$82,200
	TOTAL ESTIMATED REMOVAL & DISPOSAL COST :		\$304,413

APPENDIX E

**COFFMAN ENGINEERS, PITKA'S POINT SCHOOL – STRUCTURAL INTEGRITY
ASSESSMENT**

January 25, 2016

Trevor Crosby
Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, Alaska 99518

Project: Pitka's Point School
Pitka's Point, Alaska
CEI Project #150880

Subject: PITKA'S POINT SCHOOL – STRUCTURAL INTEGRITY ASSESSMENT

Scope of Work:

Coffman Engineers has been tasked with performing a structural integrity assessment of the Teacher Housing Buildings #1 and #2 and the main school building at Pitka's Point School site in Pitka's Point, Alaska. The overall purpose of the structural integrity assessment of the selected buildings is to determine if the structures can be used as residential buildings in their current condition. If the buildings cannot be safely used in their present condition, the following assessment will be used to develop recommendations and costs to repair the structures and/or a recommendation to demolish the building(s). Due to the unknown condition of the three buildings, Coffman Engineers participated in an overnight site visit to Saint Mary's and Pitka's Point to visually assess the structures to determine if the buildings are safe for re-use in their existing condition, can be repaired, or if they should be demolished.

The site visit was completed by a Coffman representative, Structural Engineer Sean Lamb, along with Trevor Crosby (Shannon & Wilson) and Chris Ottosen (EHS-Alaska, Inc.). Trevor was responsible for soil sampling and overall site evaluation for environmental contamination, while Chris was responsible for evaluating the selected buildings for hazardous materials.

Housing Building #1 Assessment:

Housing Building #1 is a one story wood framed building with a footprint of 24'x38' (approximately 912 square feet). The following outlines the construction details of the building (also noted on S-1):

- Foundation: (15) 6x6 timber posts founded on stacked timber pads.
- Floors: Plywood floor sheathing over 2x10 floor joists spanning north-south spaced @ 2'-0" o.c. with the bottom side of the floor covered by a plywood soffit. The major floor supports consist of (3) 2x10's spanning east-west at the edges and center of the building, bearing on the 6x6 foundation posts.
- Walls: 2x6 stud framing @ 16" o.c. with T111 plywood siding. Interior wall finish is wood paneling over a vapor barrier.
- Roof: Wood trusses (assumed) at an unknown spacing. Roof diaphragm is assumed to be plywood sheathing, which is covered by metal roofing. Ceiling is covered by a plywood soffit.

General Observations:

The building was only observed from the exterior due to the presence of extreme mold growth on the interior. Per Chris Ottosen's direction, the building was not to be entered without the use of a respirator, therefore Sean was unable to enter the building for interior observation. Chris Ottosen was able to access the interior of the building with the use of a respirator. Based on his observations, he did not note any

major areas of water damage along the walls, ceiling, or floor. However, no destructive testing was performed and the condition of concealed structural roof, wall, and floor framing is unknown.

Based on exterior observation, the primary building appeared to be in sound structural condition with no major water damage noted. The following deficiencies were noted:

- Windows and doors do not appear to be weather tight.
- The boardwalk, stairs and entry landing are experiencing some water damage/rot and missing stair treads.
- Areas of the T111 paneling, covering the perimeter of the breezeway between the ground and floor soffit, have experienced water damage. In addition, the paneling blocks air flow beneath the building. Replace the T111 paneling with chain link fence or similar.

Recommendations for Re-use of Building:

Based on the visual observations made, Housing Building #1 appears to be structurally sound. However, in order to bring the building up to a livable condition the entire interior of the unit would need to be remediated due to the presence of extreme mold infestation, and re-constructed using new interior architectural finishes. New windows and exterior doors are also recommended.

Estimated Cost of Building Repairs:

▪ Remove and replace two new exterior doors	\$5,500
▪ Remove and replace six new windows	\$9,000
▪ Renovate interior with new finishes (arch, elec, mech, plumbing)	\$114,000
▪ Remove and replace stairs and boardwalk	\$12,000
▪ Remove and replace skirting with chain-link	\$7,000
▪ Small tool equipment rental – 45 days	\$4,500
▪ Vehicle Rental – 45 days	\$9,000
▪ Mobilization of Equipment to/from Job Site	\$20,000
▪ Contractor Travel – 8 roundtrip airline tickets	\$8,000
▪ Contractor Room & Board – 45 days	\$24,500
▪ 25% Contingency	<u>\$53,500+/-</u>
	\$267,000**

**** Notes:**

- 1) Interior mold/water damage remediation/abatement costs are not included in the above estimate.
- 2) The estimated cost of building repairs is based on the visual observations made during the site visit and include a 25% contingency based on unknown conditions. The extent of repairs should be determined once a contractor is involved and able to expose the concealed spaces. Once the extent of damage is known, an accurate estimated cost of repairs may be developed.

Conclusion:

Based on the estimated cost of repair and additional cost of remediation (refer to EHS-Alaska's findings), we recommend Housing Building #1 be demolished. In the interim period, the building should remain condemned for occupation.

Housing Building #2 Assessment:

Housing Building #2 is a one story wood framed building with a footprint of 24'x38' (approximately 912 square feet). The following outlines the construction details of the building (also noted on S-1):

- Foundation: (15) 6x6 timber posts founded on stacked timber pads.

- Floors: Plywood floor sheathing over 2x10 floor joists spanning north-south spaced @ 2'-0" o.c. with the bottom side of the floor covered by a plywood soffit. The major floor supports consist of (3) 2x10's spanning east-west at the edges and center of the building, bearing on the 6x6 foundation posts.
- Walls: 2x6 stud framing @ 16" o.c. with T111 plywood siding. Interior wall finish is wood paneling over a vapor barrier.
- Roof: Wood trusses (assumed) at an unknown spacing. Roof diaphragm is assumed to be plywood sheathing, which is covered by metal roofing. Ceiling is covered by a plywood soffit.

General Observations:

The building was only observed from the exterior due to the presence of heavy mold growth on the interior. Per Chris Ottosen's direction, the building was not to be entered without the use of a respirator, therefore Sean was unable to enter the building for interior observation. Chris Ottosen was able to access the interior of the building with the use of a respirator. He was able to access the interior of the building with the use of a respirator. Based on his observations, he did not note any major areas of water damage along the walls, ceiling, or floor. However, no destructive testing was performed and the condition of concealed structural roof, wall, and floor framing is unknown.

Based on exterior observation, the primary building appeared to be in sound structural condition with no major water damage noted. The following deficiencies were noted:

- Windows and doors do not appear to be weather tight.
- The boardwalk, stairs and entry landing are experiencing some water damage/rot and missing stair treads.
- Areas of the T111 paneling, covering the perimeter of the breezeway between the ground and floor soffit, have experienced water damage. In addition, the paneling blocks air flow beneath the building. Replace the T111 paneling with chain link fence or similar.

Recommendations for Re-use of Building:

Based on the visual observations made, Housing Building #2 appears to be structurally sound. However, in order to bring the building up to a livable condition the entire interior of the unit would need to be remediated due to the presence of extreme mold infestation, and re-constructed using new interior architectural finishes. New windows and exterior doors are also recommended.

Estimated Cost of Building Repairs:

▪ Remove and replace two new exterior doors	\$5,500
▪ Remove and replace six new windows	\$9,000
▪ Renovate interior with new finishes (arch, elec, mech, plumbing)	\$114,000
▪ Remove and replace stairs and boardwalk	\$12,000
▪ Remove and replace skirting with chain-link	\$7,000
▪ Small tool equipment rental – 45 days	\$4,500
▪ Vehicle Rental – 45 days	\$9,000
▪ Mobilization of Equipment to/from Job Site	\$20,000
▪ Contractor Travel – 8 roundtrip airline tickets	\$8,000
▪ Contractor Room & Board – 45 days	\$24,500
▪ 25% Contingency	\$53,500+/-
	\$267,000**

**** Notes:**

- 1) Interior mold/water damage remediation/abatement costs are not included in the above estimate.

- 2) The estimated cost of building repairs is based on the visual observations made during the site visit, and include a 25% contingency based on unknown conditions. The extent of repairs should be determined once a contractor is involved and able to expose the concealed spaces. Once the extent of damage is known, an accurate estimated cost of repairs may be developed.

Conclusion:

Based on the estimated cost of repair and additional cost of remediation/abatement (refer to EHS-Alaska's findings), we recommend Housing Building #2 be demolished. In the interim period, the building should remain condemned for occupation.

Main School Building Assessment:

The main school building consists of an original high school building designed and built around 1979-1980; a major addition around 1984 and two smaller additions.

The original high school has a first floor area of approximately 4,320sf and a second floor mechanical/storage area with a footprint of approximately 1,120sf. The original high school houses a gymnasium, kitchen, two storage rooms, two bathrooms, one large classroom with a small kitchen used for Home Economics, and a smaller classroom labeled as a Vocational Education room. A 285sf cold storage room was added to the southeast corner of the building at an unknown date. A 168sf addition was also added to the west end of the Vocational Education room which occupies the original entry way landing.

Another addition was built onto the high school around 1984. The addition has a first floor area of approximately 2,180sf and a second floor area of approximately 2,120sf. The first floor of the addition is occupied by three classrooms, a bathroom, a corridor to access the existing high school, and a stairway to the second floor. The second floor of the addition is occupied by a library, boiler room, storage room, and office spaces.

The original high school building is timber construction founded on wood piles. The following is an outline of the original building construction:

- Foundation: 10"φ wood piles with thermosyphons strapped to their sides.
 - The original wood piles at the north edge are no longer in use. The north 5-1/8"x16-1/2" glulam beam (GLB) is now supported by (7) W10x39 (approx.) members located near each of the original pile locations. The W10's are supported by metal brackets attached to the 5-1/8"x16-1/2" GLB located approximately 15'-0" to the south, and by a series of (7) 6"φ steel piles capped by a W10 support beam approximately 1'-0" to the north. The piles are not equipped with thermosyphons. However, settlement is not apparent along the north edge.
 - The original wood piles at the south edge are no longer in use. The north 5-1/8"x16-1/2" GLB is now supported by (7) W10x39 (approx.) members located near each of the original pile locations. The W10's are supported by brackets at the 5-1/8"x16-1/2" GLB located approximately 11'-0" to the north, and by a series of (7) 6"φ steel piles capped by a W10 support beam located approximately 1'-0" to the south. The piles include three sets with cross braces, due to an increased pile height from grade. The piles are not equipped with thermosyphons. The piles along the south edge have experienced visual settlement, which occurs along the south wall of the Academic room.
- 1st Floor: 14" TJI-45 @ 24"o.c. with 3/4" plywood sheathing covered by 3/8" plywood underlayment and a 3/8" plywood soffit.

- 2nd Floor: 12" TJI-45 (at varying spacing) with 3/4" plywood sheathing covered by 3/8" plywood underlayment.
- Walls: 2x6 studs or 2-1/2"x7-1/2" mini-lams @ 24" o.c. with 1/2" plywood siding.
- Roof: 14" or 20" TJI-45 @ 24" o.c. covered by 3/4" plywood sheathing.

The 1984 building addition is timber construction founded on steel pipe piles. The following is an outline of the building addition's construction:

- Foundation: 10"φ steel pipe piles with integral thermosyphons by Arctic Foundations, Inc.
- 1st Floor: 20" TJI-45 @ 16" o.c. with 3/4" plywood sheathing covered by 3/8" plywood underlayment, and a 1/2" plywood soffit.
- 2nd Floor: 26" TJI-45 @ 16" o.c. with 3/4" plywood sheathing covered by 3/8" plywood underlayment.
- Walls: 2x6 studs @ 12" & 16" o.c. or 2x10's @ 12" o.c. at the corridor south wall, with 1/2" plywood siding.
- Roof: Pre-manufactured wood trusses @ 24" o.c. covered by 1/2" plywood sheathing.

General Observations:

The building was observed from the exterior and interior. Based on observation, the building appears to be in good overall structural condition, with a few areas of local damage and settlement. Observation of architectural finishes and components is not included in this scope of work. The following deficiencies were noted:

- Original High School Building - Exterior:
 - Several through bolts are missing at the wood pile cap brackets under the building.
 - Several of the GLB's appear to have rolled slightly from their vertical position at the wood pile caps under the building.
 - The stair at the north edge of the building, located at the northeast corner of the library, has an intermediate landing supported by knee braces bolted into shear tabs welded to a steel pile. One of the shear tabs has deformed, resulting in a cracked weld to the pile. The pile is not equipped with a thermosiphon.
 - T111 siding is missing at the top of the wall in the northeast corner of the gymnasium. The missing siding has resulted in water entering the building wall.
 - The stairs at the east walkway are not present.
 - Settlement/movement of the building is apparent along the roof line at the east edge of the building.
 - The 285sf cold storage room addition, located at the southeast corner of the building, is currently condemned for entry/access. The addition consists of floor framing fastened to the main building's perimeter glulam beam with joist hangers. The east end of the addition was originally supported by two rows of wood posts & beams. However, the original wood post & beam supports settled (no longer in contact with the floor framing) and have been replaced by a single set of steel pipe posts and glulam beam. The steel pipe posts are not equipped with thermosyphons and appear to be experiencing settlement. As a result of the settlement the addition has pulled away from the main building and become unstable.
 - Settlement/movement of the building is apparent along the south edge of the Academic room. The settlement appears to be occurring at the south row of steel pipe replacement piles which are not equipped with thermosyphons.
 - The original entry landing at the west side of the building has been infilled to create an extension off of the Academic room. The general construction of the addition is poor. The flashing/weather proofing details between the main building appear to be failing and allowing water to enter the building.

- o The stairs at the west entry to the main building, next to the addition to the Academic room, are not present.
- 1984 Building Addition - Exterior:
 - o The stair at the main entry, located at the west side of the building, is missing the top stair tread. In addition, the wood framing at the perimeter of the main entry landing has experienced water damage.
 - o The remainder of the exterior of the 1984 building addition appears to be in good condition.
- Original High School Building - Interior:
 - o General note: the interior of all surfaces are covered by architectural finishes. Observations made were visual only, with no destructive measures taken to verify the condition of concealed spaces.
 - o The exterior siding is missing at the northeast corner of the gymnasium. As a result, water has been able to enter the wall. Daylight is visible at the top of the wall since the intersection of the wall and ceiling sheetrock has been damaged. The 3/8" plywood floor underlayment at the northeast corner of the gymnasium is experiencing water damage/rot. The extent of water infiltration into the first floor system is unknown. A layer of plastic sheeting vapor barrier is present beneath the underlayment and may have prevented water from entering the main floor framing.
 - o The wall at the east side of the gymnasium appears to have experienced movement, resulting in large cracks in the sheetrock.
 - o Active leaks are present in the kitchen. The leaks are a result of an active roof leak in the mechanical room above. The 3/8" plywood floor underlayment appears to have bubbled at the leak locations. The extent of water infiltration into the first floor system is unknown. A layer of plastic sheeting is present beneath the underlayment and may have prevented water from entering the main floor framing.
 - o Water damage is present at the wall above the door between the Academic room and kitchen. The water damage is a result of an active roof leak in the mechanical room above the kitchen.
 - o Cracks are present in the ceiling of the Vocational Education room. The cracks are likely the result of the pile settlement which has occurred at the south edge of the building.
 - o The second floor mechanical room has experienced significant water damage. Water appears to be entering the room at the roof penetration around the mechanical exhaust stacks. Standing water is present on the floor, and the plywood floor surface has experienced water damage/rot. The extent of damage to the floor framing members is unknown.
- 1984 Building Addition - Interior:
 - o General note: the interior of all surfaces are covered by architectural finishes. Observations made were visual only, with no destructive measures taken to verify the condition of structure within concealed spaces.
 - o Small water stains are present at the classroom hallway.
 - o Small cracks are present at the sheetrock seams of the walls and ceilings of classrooms first floor classrooms (1-3).
 - o The floor carpet at classroom 3 is stained directly beneath a suspected leak at the ceiling above. The ceiling directly above the floor stain is damaged in the form of a failed taped sheetrock joint. The leak is suspected to be the result of a heating pipe leak, but could not be verified.
 - o Large cracks are present in the sheetrock ceiling of the second floor library. One large crack is at the top of the stairs and spans north-south. The other large crack is at the north half of the room and spans east-west, located at the midspan between the north load

bearing wall and the glulam support at the middle of the room. The cracks are presumed to be the result of pile settlement.

- o The remainder of interior of the 1984 building addition appears to be in good condition.

Recommendations for Re-use of Building:

Based on the visual observations made, the main school building appears to be in good overall structural condition and re-use of the building is an option. However, we recommend deficiencies noted above be addressed to convert the building for residential use. Specifically, shims shall be installed at the pile caps to level the building. In addition, the building shall be weather proofed and damage due to water infiltration should be repaired. We recommend the cold storage room be removed/demolished or releveled and strengthened with new piles/girders.

▪ Install shim kits at pile caps	\$53,000
▪ Install new thermosyphons at north & south edges (typical of 14)	\$134,000
▪ Install stairs at west entry of original high school building	\$10,000
▪ Repair west entry stairs to 1984 building addition	\$5,000
▪ Repair siding/framing at northeast corner of gymnasium	\$18,000
▪ Repair cold storage room	\$38,000
▪ Repair Voc. Ed room extension	\$5,000
▪ Repair mechanical room roof and floor framing	\$76,000
▪ Equipment Rental Man-lift & Crane – 60 days	\$66,000
▪ Vehicle Rental – 60 days	\$12,000
▪ Mobilization of Equipment to/from Job Site	\$50,000
▪ Contractor Travel – 6 roundtrip airline tickets	\$6,000
▪ Contractor Room & Board – 60 days, 4-man crew	\$42,000
▪ 50% Contingency	<u>\$258,000</u>
	\$773,000**

**** Notes:**

- 1) Interior mold/water damage remediation/abatement, architectural, mechanical, and electrical scope of work is not included in the above estimate.
- 2) The estimated cost of building repairs is based on the visual observations made during the site visit, and include a 50% contingency based on unknown conditions. The extent of repairs should be determined once a contractor is involved and able to expose the concealed spaces. Once the extent of damage is known, an accurate estimated cost of repairs may be developed.

Conclusion:

The main school building appears to be in good overall structural condition. We recommend the above building repairs be completed to convert the building for residential use. We believe the above information accurately reflects the activities that were performed during the site visit. Please feel free to share this document with all appropriate parties. If there are any questions or clarifications regarding this report please feel free to contact a Coffman representative directly.

Sincerely,
COFFMAN ENGINEERS, INC.

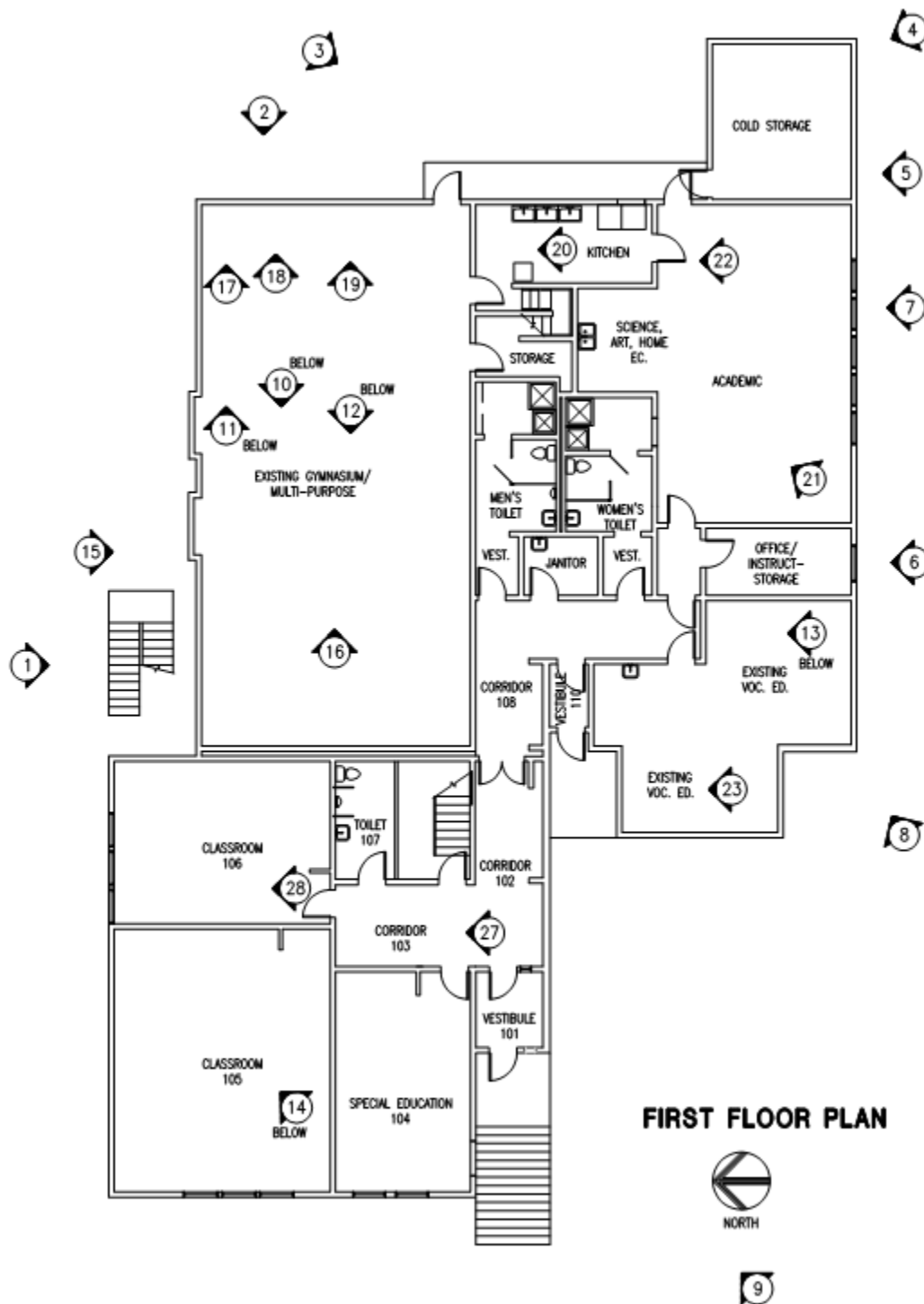


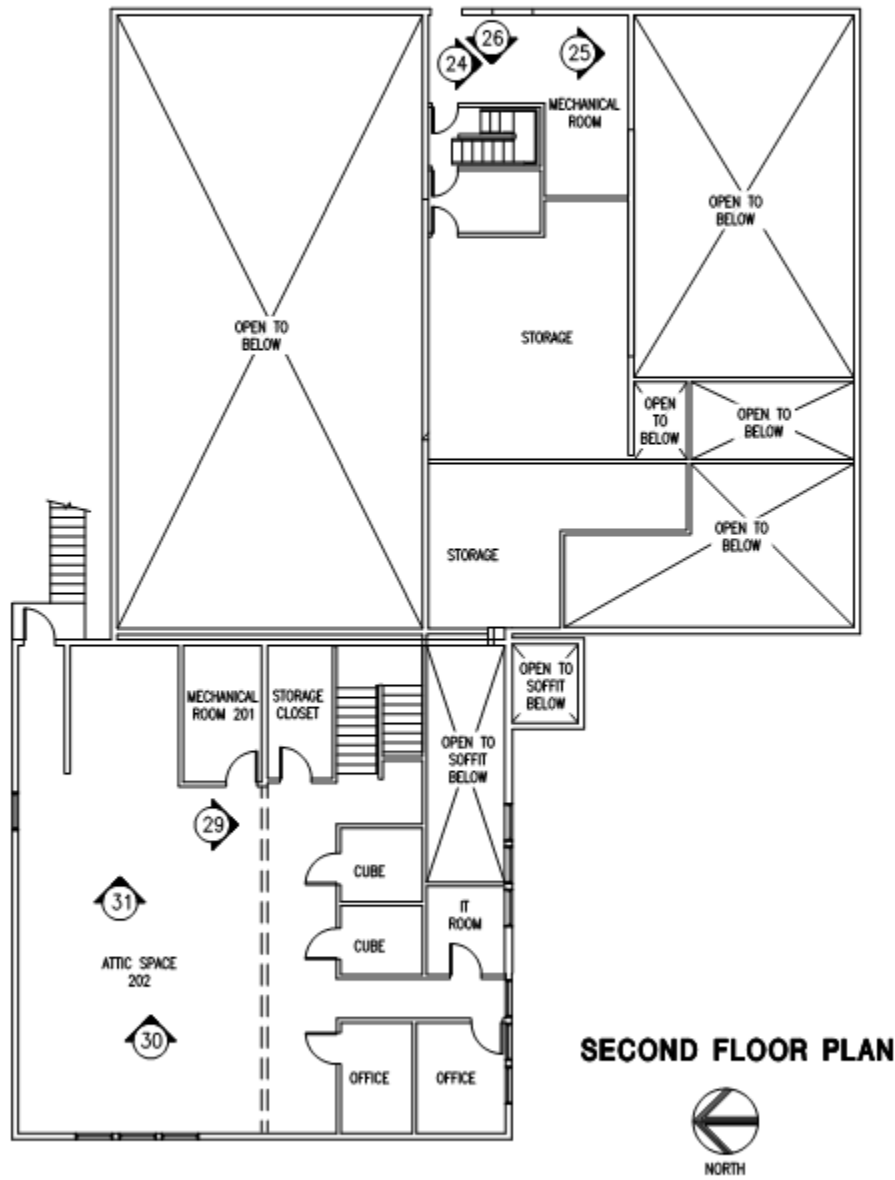
Sean Lamb, PE, SE
Civil/Structural Engineering



Will Veelman, PE, SE
Principal, Civil/Structural Engineering

Plans with Photo Callouts





School Photos



1. North Elevation



**2. Missing Exterior Siding – NE Corner
Gymnasium**



3. East Side of School



4. Cold Storage Room



5. Cold Storage Room – Separation of Structure From Existing Building



6. South Elevation



7. Roof Deformation



8. South Wall of Academic Room



9. View Looking NE



10. Foundation Modification at North Edge of Original Building - 1



11. Foundation Modification at North Edge of Original Building - 2



12. Rolled GLB & Missing Pile Saddle Bolts



13. Foundation Modification at South Edge of Original Building - 1



14. Steel Pipe Pile Foundation at Addition



15. Cracked Weld at Stair Connection



16. Gymnasium



17. Water Damage at Wall of NE Corner of Gymnasium



18. Water Damage at Floor of NE Corner of Gymnasium



19. Cracks at East Wall of Gymnasium



20. Active Leak at Ceiling of Kitchen



21. Academic Room



22. Water Damage at NE Corner of Academic Room



23. Vocational Education Room



24. Mechanical Room Roof Leak – 2



25. Mechanical Room Roof Leak – 3



26. Mechanical Room Roof Leak – 1



27. Water Stain at Corridor 103



28. Ceiling Water Damage at Corridor 106



29. Ceiling Sheetrock Damage at Library Entry



30. Ceiling Sheetrock Damage at North Half of Library – 1



31. Ceiling Sheetrock Damage at North Half of Library

Housing Photos



32. Teacher Housing Units



33. Housing Units #1 & #2



34. Housing Units #1



35. Housing Unit #1a



36. Stair #1



37. Housing Unit #1b



38. Housing Unit #2



39. Stair #2



40. Typical Housing Unit Foundation

APPENDIX F
CONCEPTUAL SITE MODEL

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Pitkas Point School Site, Pitkas Point, Alaska

Completed By: Shannon & Wilson

Date Completed: January 2016

Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Check the media that could be directly affected by the release.	(2) For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.
Media	Transport Mechanisms
☒ Surface Soil (0-2 ft bgs)	☒ Direct release to surface soil <i>check soil</i> ☒ Migration to subsurface <i>check soil</i> ☒ Migration to groundwater <i>check groundwater</i> ☒ Volatilization <i>check air</i> ☐ Runoff or erosion <i>check surface water</i> ☐ Uptake by plants or animals <i>check biota</i> ☐ Other (list):
☐ Subsurface Soil (2-15 ft bgs)	☐ Direct release to subsurface soil <i>check soil</i> ☐ Migration to groundwater <i>check groundwater</i> ☐ Volatilization <i>check air</i> ☐ Uptake by plants or animals <i>check biota</i> ☐ Other (list):
☐ Ground-water	☐ Direct release to groundwater <i>check groundwater</i> ☐ Volatilization <i>check air</i> ☐ Flow to surface water body <i>check surface water</i> ☐ Flow to sediment <i>check sediment</i> ☐ Uptake by plants or animals <i>check biota</i> ☐ Other (list):
☒ Surface Water	☒ Direct release to surface water <i>check surface water</i> ☒ Volatilization <i>check air</i> ☐ Sedimentation <i>check sediment</i> ☐ Uptake by plants or animals <i>check biota</i> ☐ Other (list):
☐ Sediment	☐ Direct release to sediment <i>check sediment</i> ☐ Resuspension, runoff, or erosion <i>check surface water</i> ☐ Uptake by plants or animals <i>check biota</i> ☐ Other (list):

(3) Check all exposure media identified in (2).	(4) Check all pathways that could be complete. The pathways identified in this column must agree with Sections 2 and 3 of the Human Health CSM Scoping Form.	(5) Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.						
Exposure Media	Exposure Pathway/Route	Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☒ soil	☒ Incidental Soil Ingestion ☐ Dermal Absorption of Contaminants from Soil ☐ Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F			
☒ groundwater	☒ Ingestion of Groundwater ☐ Dermal Absorption of Contaminants in Groundwater ☐ Inhalation of Volatile Compounds in Tap Water	F	F	F	F			
☒ air	☒ Inhalation of Outdoor Air ☒ Inhalation of Indoor Air ☐ Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F			
☒ surface water	☒ Ingestion of Surface Water ☐ Dermal Absorption of Contaminants in Surface Water ☐ Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F			
☐ sediment	☐ Direct Contact with Sediment							
☐ biota	☐ Ingestion of Wild or Farmed Foods							

Revised, 10/01/2010

Human Health Conceptual Site Model Scoping Form

Site Name:	Pitkas Point School Site, Pitkas Point, Alaska
File Number:	ADEC File ID: 2444.57.001
Completed by:	Shannon & Wilson

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: *Follow the italicized instructions in each section below.*

1. General Information:

Sources (*check potential sources at the site*)

☐ USTs	☐ Vehicles
☒ ASTs	☐ Landfills
☐ Dispensers/fuel loading racks	☐ Transformers
☒ Drums	☐ Other:

Release Mechanisms (*check potential release mechanisms at the site*)

☒ Spills	☒ Direct discharge
☒ Leaks	☐ Burning
	☐ Other:

Impacted Media (*check potentially-impacted media at the site*)

☒ Surface soil (0-2 feet bgs*)	☒ Groundwater
☒ Subsurface soil (>2 feet bgs)	☒ Surface water
☒ Air	☐ Biota
☐ Sediment	☐ Other:

Receptors (*check receptors that could be affected by contamination at the site*)

☒ Residents (adult or child)	☒ Site visitor
☒ Commercial or industrial worker	☒ Trespasser
☒ Construction worker	☒ Recreational user
☐ Subsistence harvester (i.e. gathers wild foods)	☐ Farmer
☐ Subsistence consumer (i.e. eats wild foods)	☐ Other:

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete:

Complete

Comments:

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☐

If both boxes are checked, label this pathway complete:

Incomplete

Comments:

Appendix B compounds have not been documented in the soil on the property.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete:

Complete

Comments:

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?



Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).



If both boxes are checked, label this pathway complete:

Complete

Comments:

Contaminants could potentially be discharged directly into or migrate to the nearby surface drinking water source.

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?



Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?



Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)



If all of the boxes are checked, label this pathway complete:

Incomplete

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)



Are the contaminants in soil volatile (see Appendix D in the guidance document)?



If both boxes are checked, label this pathway complete:

Complete

Comments:

Appendix D compounds (petroleum hydrocarbon constituents) are present in impacted soil on the Property.

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)



Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?



If both boxes are checked, label this pathway complete:

Complete

Comments:

Appendix D compounds (petroleum hydrocarbon constituents) are present in impacted soil on the Property. Several buildings on the Property are elevated on pilings. The exposure pathway for inhalation of indoor air is likely mitigated in these structures based on the airflow between the building and ground surface.

3. Additional Exposure Pathways: *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- ☐ Climate permits recreational use of waters for swimming.
- ☐ Climate permits exposure to groundwater during activities, such as construction.
- ☐ Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed:

☐

Comments:

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- ☐ The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- ☐ The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed:

☐

Comments:

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- o Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- o Dust particles are less than 10 micrometers (Particulate Matter - PM₁₀). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.
- o Chromium is present in soil that can be dispersed as dust particles of any size.

Generally, DEC direct contact soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because it is assumed most dust particles are incidentally ingested instead of inhaled to the lower lungs. The inhalation pathway only needs to be evaluated when very small dust particles are present (e.g., along a dirt roadway or where dusts are a nuisance). This is not true in the case of chromium. Site specific cleanup levels will need to be calculated in the event that inhalation of dust containing chromium is a complete pathway at a site.

Check the box if further evaluation of this pathway is needed:

☐

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- o Climate permits recreational activities around sediment.
- o The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed:

☐

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

APPENDIX A

BIOACCUMULATIVE COMPOUNDS OF POTENTIAL CONCERN

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table B-1 of 18 AAC 75.341 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Lead
Arsenic	Dibenzo(a,h)anthracene	Mercury
Benzo(a)anthracene	Dieldrin	Methoxychlor
Benzo(a)pyrene	Dioxin	Nickel
Benzo(b)fluoranthene	Endrin	PCBs
Benzo(k)fluoranthene	Fluoranthene	
Cadmium	Heptachlor	Pyrene
Chlordane	Heptachlor epoxide	Selenium
Chrysene	Hexachlorobenzene	Silver
Copper	Hexachlorocyclopentadiene	Toxaphene
DDD	Indeno(1,2,3-c,d)pyrene	Zinc
DDE		

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000).

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at <http://www.pbtprofiler.net/>. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX B

SOIL CONTAMINANTS EVALUATED FOR DERMAL EXPOSURE

Soil contaminants are evaluated for dermal exposure when a specific absorption factor is available (EPA, 2004c). If specific absorption factors are not available, chemicals with a Henry's constant below 1×10^{-5} atm-m³/mol and molecular weight below 400 g/mol are evaluated as semi volatile organic compounds. It is generally thought volatile compounds evaporate from skin before significant absorption occurs and are addressed through the inhalation exposure pathway. Compounds with a molecular weight greater than 400 g/mol are considered too large to be absorbed through the skin.

2-Amino-4,6-Dinitrotoluene	2,4-Dichlorophenol	Methoxychlor
4-Amino-2,6-Dinitrotoluene	Dieldrin	Mercury (Methyl)
Acenaphthene	Diethyl phthalate	1-Methylnaphthalene
Acenaphthylene	2,4-Dimethylphenol	2-Methylnaphthalene
Aldrin	Dimethyl phthalate	2-Methylphenol (o-cresol)
Anthracene	1,2-Dinitrobenzene	3-Methylphenol (m-cresol)
Arsenic	1,3-Dinitrobenzene	4-Methylphenol (p-cresol)
Benzo(a)anthracene	1,4-Dinitrobenzene	Naphthalene
Benzo(b)fluoranthene	2,4-Dinitrophenol	Nitroglycerin
Benzo(k)fluoranthene	2,4-Dinitrotoluene	Nitroguanidine
Benzoic Acid	2,6-Dinitrotoluene	n-Nitrosodiphenylamine
Benzo(g,h,i)perylene	1,4-Dioxane	n-Nitroso-di-n-propylamine
Benzo(a)pyrene	2,3,7,8-TCDD (Dioxin)	2-Nitrotoluene
Bis(2-ethylhexyl)phthalate	Diphenylamine	3-Nitrotoluene
Butanol	Endrin	4-Nitrotoluene
Butyl Benzyl Phthalate	Ethylene glycol	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
Cadmium	Fluoranthene	Pentachlorophenol
Carbazole	Fluorene	Phenanthrene
Carbon Disulfide	Heptachlor	Phenol
Chlordane	Heptachlor epoxide	PCB
p-Chloroaniline	Hexachlorobenzene	Propylene glycol
2-Chloronaphthalene	Hexachloro-1,3-butadiene	Pyrene
Chrysene	alpha-Hexachlorocyclohexane	Tributyltin (as Tributyltin Oxide)
DDD	beta-Hexachlorocyclohexane	2,4,5-Trichlorophenol
DDE	gamma-Hexachlorocyclohexane	2,4,6-Trichlorophenol
DDT	Hexachlorocyclopentadiene	2,4,5-TP
Dibenzo(a,h)anthracene	Hexachloroethane	1,3,5-Trinitrobenzene
Di-n-butyl phthalate	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2,4,6-Trinitrophenylmethylnitramine (Tetryl)
Di-n-octyl phthalate	Hydrazine	2,4,6-Trinitrotoluene (TNT)
2,4-D	Indeno(1,2,3-c,d)pyrene	
3,3-Dichlorobenzidine	Isophorone	

APPENDIX C

BIOACCUMULATIVE COMPOUNDS OF POTENTIAL CONCERN

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table B-1 of 18 AAC 75.341 that are bioaccumulative, based on the definition above, are listed below.

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Arsenic	Dibenzo(a,h)anthracene	Methoxychlor
Benzo(a)anthracene	Dieldrin	Nickel
Benzo(a)pyrene	Dioxin	PCBs
Benzo(b)fluoranthene	Endrin	Pyrene
Benzo(k)fluoranthene	Fluoranthene	Selenium
Cadmium	Heptachlor	Silver
Chlordane	Heptachlor epoxide	Toxaphene
Chrysene	Hexachlorobenzene	Zinc
Copper	Hexachlorocyclopentadiene	
DDD	Indeno(1,2,3-c,d)pyrene	
DDE	Lead	

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at <http://www.pbtprofiler.net/>. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX D

VOLATILE COMPOUNDS OF POTENTIAL CONCERN

A chemical is identified here as sufficiently volatile and toxic for further evaluation if the Henry's Law constant is 1×10^{-5} atm-m³/mol or greater, the molecular weight is less than 200 g/mole (EPA 2004a), and the vapor concentration of the pure component posed an incremental lifetime cancer risk greater than 10^{-6} or a non-cancer hazard quotient of 0.1, or other available scientific data indicates the chemical should be considered a volatile. Chemicals that are solid at typical soil temperatures and do not sublime are generally not considered volatile.

Acetone	Mercury (elemental)
Benzene	Methyl bromide (Bromomethane)
Bis(2-chloroethyl)ether	Methyl chloride (Chloromethane)
Bromodichloromethane	Methyl ethyl ketone (MEK)
Bromoform	Methyl isobutyl ketone (MIBK)
n-Butylbenzene	Methylene bromide
sec-Butylbenzene	Methylene chloride
tert-Butylbenzene	1-Methylnaphthalene
Carbon disulfide	2-Methylnaphthalene
Carbon tetrachloride	Methyl <i>tert</i> -butyl ether (MTBE)
Chlorobenzene	Naphthalene
Chlorodibromomethane (Dibromochloromethane)	Nitrobenzene
Chloroethane	n-Nitrosodimethylamine
Chloroform	n-Propylbenzene
2-Chlorophenol	Styrene
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	Tetrachloroethylene (PCE)
1,4-Dichlorobenzene	Toluene
Dichlorodifluoromethane	1,2,4-Trichlorobenzene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethylene	Trichloroethylene (TCE)
<i>cis</i> -1,2-Dichloroethylene	2,4,6-Trichlorophenol
<i>trans</i> -1,2-Dichloroethylene	1,2,3-Trichloropropane
1,2-Dichloropropane	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)
1,3-Dichloropropane	Trichlorofluoromethane (Freon-11)
Ethylbenzene	1,2,4-Trimethylbenzene
Ethylene dibromide (1,2-Dibromoethane)	1,3,5-Trimethylbenzene
Hexachlorobenzene	Vinyl acetate
Hexachloro-1,3-butadiene	Vinyl chloride (Chloroethene)
Hexachlorocyclopentadiene	Xylenes (total)
Hexachloroethane	GRO (see note 3 below)
Hydrazine	DRO (see note 3 below)
Isopropylbenzene (Cumene)	RRO (see note 3 below)

APPENDIX G

**IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL/ENVIRONMENTAL REPORT**



Date:	January 2016
To:	Alaska Department of Environmental Conservation
Re:	Site Assessment, Pitkas Point School Site, Pitkas Point

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland