FES

3538 International Street
Fairbanks, Alaska 99701

Phone: (907) 452-1006
FAX: (907) 452-2692
Email: FES@Alaska.com

FAIRBANKS ENVIRONMENTAL SERVICES

DATE: January 13, 2016

TO: Mr. Russell Grandel, Alaska Railroad Corporation (ARRC)

FROM: Michael Boese, Fairbanks Environmental Services

RE: 2015 Soil Removal Report, Rev1
ARRC Hurricane Siding
Alaska Railroad Milepost 281.5, Alaska
ADEC Hazard ID – 23545 / File ID – 2258.26.008

EXECUTIVE SUMMARY

On July 28, 2015, Fairbanks Environmental Services (FES), and its subcontractor Pinnacle Construction, removed approximately 100 cubic yards (cy) of petroleum, oil, and lubricants (POL)-contaminated soil from the Alaska Railroad Corporation (ARRC) Hurricane Siding site. The Hurricane Siding site is located at Milepost 171 of the Parks Highway, Alaska (Figure 1). Excavation and associated sampling was performed under the oversight of a qualified person (Mike Boese) as required by Title 18 of the Alaska Administrative Code, Chapter 75. Soil removal efforts focused on removal of the most contaminated soil above the water table; the goal of the excavation was to remove all accessible soil with diesel range organics (DRO) concentrations exceeding the Alaska Department of Environmental Conservation (ADEC) Method Two soil inhalation and ingestion exposure routes (Under 40 Inch Zone) of 12,500 milligrams per kilogram (mg/kg) and 10,250 mg/kg, respectively.

The source area was bisected by eight buried electrical lines (which were exposed prior to excavation activities using a vacuum truck), consequently two excavations were dug – one on either side of the utility lines. The first excavation measured approximately 250 square feet (sf) and was north of the electrical lines (North Excavation). The second excavation was dug south of the electrical lines (South Excavation) and measured approximately 400 sf.

A photoionization detector (PID) instrument was used to guide excavation activities. Initially, surface soil samples were collected in the general vicinity of the source area to evaluate whether the surface soils could be segregated from the contaminated soil. The decision to forgo soil segregation was made based on elevated field screening results in surface soil samples. All excavated soil, including the soil excavated using the vacuum truck to expose buried utilities, was removed from the site. Consequently, no laboratory samples were collected from overburden soil.

Removal activities focused on excavating accessible soil with the highest PID results from above the water table. Screening results from actively excavated soil in both excavations consistently exceeded 500 parts per million (ppm), but tended to decrease significantly as the excavations were expanded laterally. However, elevated PID results were noted in remaining soil near utility lines, near the foundation, and in the floor of the excavations (primarily the North Excavation). One laboratory sample was collected from the North Excavation and two laboratory samples were collected from the South Excavation during excavation activities to document the condition of soil being removed from the site; DRO concentrations in all three excavated soil samples were greater than the targeted 10,250 milligrams per kilogram (mg/kg) cleanup level indicating that excavation activities targeted the source area.

After excavation limits had been obtained, confirmation samples were collected from the limits of both excavations for PID screening. Samples collected from the locations with the highest PID results were sent to the laboratory for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), gasoline range organics (GRO), DRO, and residual range organics (RRO). Laboratory results indicate that although pockets of residual soil contamination remain onsite, the removal action was successful at removing accessible source area soil above the water table.

All excavated soil was loaded into ARRC rail cars and covered in plastic sheeting for transportation to Anchorage. In Anchorage, the excavated soil was loaded into dump trucks and transported to Alaska Soil Recycling (ASR) for thermal treatment.

1.0 INTRODUCTION

1.1 Site Description

The ARRC Hurricane Siding is located at Railroad Milepost 281.5 near Hurricane, Alaska (Figure 1). The project was limited to an area immediately west of the ARRC mainline at 62.9775 N and 149.6403 W. A tool shed, an abandoned foundation, the Hurricane Section House, and the excavations are illustrated on Figure 2.

1.2 Tank Removal and Previous Investigations

In 1990, two underground storage tanks (USTs) were removed from the ARRC Hurricane Siding site including one 500-gallon gasoline UST and one 7,500-gallon diesel UST. At that time, laboratory analytical data indicated that elevated concentrations of total petroleum hydrocarbons (TPH) remained at the south end of the diesel UST excavation area.

During the 2009 investigation, both GRO and DRO were detected in soil samples west and southwest of the former diesel UST excavation area (Clarus Technologies LLC [Clarus], 2010) at concentrations in excess of ADEC Method Two migration to groundwater cleanup levels (300 mg/kg and 250 mg/kg, respectively). Laboratory results from soil borings indicated GRO concentrations as high as 936 mg/kg in the vadose zone (2 to 3 feet below ground surface [bgs]), and as high as 736 mg/kg at the groundwater interface (5 to 6 feet bgs). DRO concentrations as high as 84,400 mg/kg were detected in soil samples collected from the vadose zone, and DRO concentrations as high as 6,920 mg/kg were detected in samples collected at the groundwater interface. The highest DRO results were from boring B5 at a depth of 2 to 3 feet bgs, but elevated DRO results (>10,000 mg/kg) were also detected in borings B1 and B2 at the same depth interval. Elevated GRO concentrations occurred in samples exhibiting elevated DRO results.

In 2011, four additional soil borings were advanced and sampled, and they were subsequently converted to monitoring wells (RSE-1, RSE-2, RSE-3, and RSE-4) in order to further delineate petroleum contamination in groundwater at the site. Although no soil results exceeded ADEC Method Two cleanup levels during the 2011 investigation, the DRO concentrations in the groundwater sample from downgradient monitoring well RSE-4 slightly exceeded the ADEC Table C groundwater cleanup level of 1.5 milligrams per liter (mg/L) (Restoration Science and Engineering, 2012).

Monitoring wells RSE-1 through RSE-4 were sampled annually between 2012 and 2014 to further evaluate groundwater conditions at the site. Groundwater samples were analyzed for BTEX, GRO, DRO, and RRO. The 2013 and 2014 samples were also analyzed for natural attenuation parameters dissolved (field filtered) iron and sulfate. No contaminants exceeded Table C cleanup levels during 2012 (FES, 2012), but both DRO and RRO exceeded in RSE-3 during 2013 (FES, 2013). DRO also exceeded the cleanup level in RSE-3 during the 2014 groundwater monitoring event, but the DRO concentration was less than the concentration detected in 2013. Changes noted in natural attenuation parameter concentrations indicate that anaerobic biodegradation of hydrocarbons has occurred; elevated ferrous iron concentrations (indicative of iron reduction) and reduced sulfate concentrations (indicative of sulfate reduction) were detected in both wells that historically contained petroleum hydrocarbons (RSE-3 and RSE-4) relative to background concentrations (RSE-1 and RSE-2). Groundwater flow direction remained to the north-northwest.

2.0 WORK PERFORMED

With the exception of the deviations noted in Section 2.7, fieldwork was performed in accordance with the approved work plan (FES, 2015). FES, in conjunction with contractor Pinnacle Construction, removed approximately 100 cy of diesel-contaminated soil from the source area. The goal of the work was to remove soil with DRO concentrations exceeding the ADEC Method Two soil inhalation and ingestion exposure routes (Under 40 Inch Zone) of 12,500 milligrams per kilogram (mg/kg) and 10,250 mg/kg, respectively. ADEC-qualified person Mike Boese provided excavation oversight and environmental sampling services. Site photographs are included in Appendix A.

2.1 Soil Sample Collection Method

Soil samples were collected for both field screening and laboratory analysis, and were collected prior to, during, and after excavation activities. Screening sample locations and PID results were documented in a field book during field efforts. Analytical samples from the final limits of excavation were collected from soil which field screening indicated was the most contaminated; this sampling strategy tends to depict a worst case contaminant concentration scenario and may not represent locations where screening levels were lower. All soil samples were collected from freshly exposed soil (analytical samples were not collected from the PID screening plastic bags) according to ADEC guidance in a manner that minimizes loss of volatile compounds.

Soil samples for field screening purposes were collected with a spade shovel or scoop and placed directly into quart-sized sealable plastic bags. Soil samples for laboratory analysis were collected using new stainless steel spoons; freshly exposed soil was scooped directly into pre-labeled sample jars. Soil samples for volatile analysis were immediately covered in surrogated methanol. Soil samples were stored in a cooler containing frozen gel ice until they were submitted to the project laboratory SGS North America (SGS) in Anchorage, Alaska.

All laboratory soil samples were relinquished to SGS in Anchorage, Alaska and analyzed for BTEX, GRO, DRO, and RRO using methods 8021B, AK101, AK102, and AK103.

2.2 Pre-Excavation Activities

On July 27, 2015, prior to excavation work, 12 surface soil samples were collected from hand-excavated holes at a depth of approximately 9 to 12 inches for screening purposes. Results are discussed in Section 3.1.

Underground utilities were located and marked prior to our arrival as shown in Photograph 1 (Appendix A). A vacuum truck was used to expose the existing buried electrical lines (Photograph 3) in three locations; a total of eight parallel lines were exposed on July 27, 2015. One of the eight lines branched off towards the tool shed. The locations of the electrical lines are shown on Figures 2 through 5.

A total 3 cy of soil was removed by the vacuum truck; the soil was dumped on a plastic liner and, because of a notable petroleum odor, was immediately placed into a rail car using the loader.

2.3 Soil Excavation Process and Soil Sampling

Contaminated soil was excavated by Pinnacle Construction on July 28, 2015, using a 200 series excavator; soil excavation was guided by Mike Boese of FES using PID data and field observations. Excavated soil was loaded directly into a 3 cy loader bucket and then transported over the train tracks and placed directly into one of two open top rail cars (50 cy capacity each) staged on the side rail (inset, Figure 2). The loader bucket was filled over the active excavation to mitigate spreading of potentially contaminated soil.

Soil samples were collected from the following locations:

- Surface soils (prior to excavation activities – discussed in Section 2.2);
- Soil being actively excavated (interim soil samples); and
- Residual soil from the final limits of the excavations.

A total of 12 screening and 3 interim laboratory samples were collected during soil removal efforts to guide excavation activities; associated soil was loaded into rail cars and removed from the site. A total of 38 screening and 14 laboratory samples were then collected from the final limits of the excavations to document contaminant concentrations in remaining soils. The sample frequency collected from the excavations met Work Plan requirements and the ADEC requirements listed in Table 2B of the Draft Field Sampling Guidance (ADEC, 2010). Results of interim and excavation confirmation samples are presented in Section 3.2 and 3.3, respectively.

2.4 Survey

The horizontal limits of the excavations, key site features, and soil sample locations were surveyed using a Trimble XH global positioning system (GPS). Due to time constraints, the location of the 12 active excavation PID samples were not measured with the GPS; however, the approximate locations (shown on Figure 3) were documented on field sketches.

2.5 Offsite Soil Transportation and Remediation

An ADEC-approved contaminated soil transport, treatment, and disposal form was obtained prior to offsite soil transportation. The copy of the signed form is included in Appendix B.

The soil in the rail cars was covered and transported from the site to the Anchorage Rail Yard. Upon arrival in Anchorage, the rail cars were unloaded onto a liner at ARRC's Anchorage Rail Yard using the side dump capabilities, and were then loaded into dump trucks, covered, and transported to the Alaska Soil Recycling (ASR) facility on Spar Avenue for thermal treatment (see photographs 13 and 14 in Appendix A). A total of 131.61 tons of diesel-contaminated soil was delivered to ASR on August 24, 2015. A copy of the tonnage is included in Appendix B.

2.6 Site Restoration

Upon completion of sampling and field documentation, the excavations were backfilled. The South Excavation was backfilled first. Approximately 100 cy of fill material was trucked in from a pit near Cantwell, Alaska. The loose material was placed in the open excavations using the loader, and then compacted in lifts using the excavator bucket and a vibrating compactor. The final soil elevation matched the existing grade.

2.7 Deviations to the Work Plan

The following Work Plan deviations were noted.

- The decision to forgo soil segregation was made based on elevated field screening results in surface soil samples. All excavated soil, including the soil excavated using the vacuum truck to expose buried utilities, was removed from the site. Consequently, no stockpiles were generated and no laboratory samples were collected from overburden soil.
- Since the buried utilities bisected the source area, two excavations (one on either side of the buried electrical lines) were dug instead of one. Each excavation was treated independently and the sample frequencies for each excavation met the requirements of ADEC's Draft Field Sampling Guidance (ADEC, 2010).
- Lastly, since ARRC's borrow pit located on the west side of the Parks Highway was inaccessible during field operations (the borrow site was being used for helicopter operations), clean fill was obtained from a commercial pit located near Cantwell, Alaska.

3.0 SOIL SAMPLE RESULTS

This section discusses soil sample results. Two excavations (North and South) were dug, one on either side of the buried electrical lines. Both excavations were guided by PID results and field observations and were advanced to a depth that was just above the groundwater table. Soil consisted primarily of brown gravelly sand that was stained gray in areas with notable contamination.

PID screening results are presented in Table 1. BTEX, GRO, and DRO results are also included for comparison to PID results. In general, the highest PID readings corresponded with the highest BTEX, GRO, and DRO results. One exception was the PID result from excavation confirmation sample C2-3; the PID result from this location was the highest recorded during the field effort (3,591 ppm); however, the corresponding laboratory results were generally lower than other samples exhibiting elevated PID results.

The reason for the anomaly is unknown. Also note that PID readings during active excavation were terminated at 500 ppm due to filter fouling and the extended time it took for the instrument to return to zero.

Laboratory samples are summarized on Table 2. Active excavation sample results, North Excavation confirmation sample results, and South Excavation confirmation sample results are included on Tables 3, 4, and 5, respectively. PID screening and laboratory results are also presented on Figures 3, 4, and 5.

3.1 Results of Surface Screening

PID results from the 12 surface soil samples ranged from 0.1 ppm to 738.1 ppm as shown on Figure 2. Three surface soil screening samples (SS-7, SS-10, and SS-11) exceeded the 25 ppm threshold listed in the Work Plan. Based on the elevated PID concentrations noted in surface soils within the source area, segregation of potentially uncontaminated overburden soil was not attempted. Surface soil within excavation boundaries (including soil from the three surface locations above the threshold) was loaded into rail cars and removed from the site.

3.2 Results of Active Excavation (Interim) Samples

The approximate locations of the 12 interim excavation samples, collected during active excavation activities, are shown on Figure 3. Six interim samples were collected from each excavation. PID results from the North Excavation ranged from 28.7 ppm to >500 ppm, and PID results from the South Excavation ranged from 14.5 ppm to >500 ppm. The majority (8 of 12) of the interim excavation samples exhibited PID readings >500 ppm.

Interim laboratory samples were collected from the three locations where screening samples exhibited elevated PID readings (EX-2, EX-7, and EX-9) and were sent to the project laboratory for analysis. All three laboratory samples exhibited DRO results in excess of the targeted 10,250 mg/kg ADEC cleanup level (ingestion exposure route for the Under 40 Inch Zone) indicating that excavation activities targeted the source area. In addition, DRO and GRO concentrations in all three laboratory samples exceeded the migration to groundwater cleanup levels. Screening and DRO results from excavated soil samples are included in Table 1, Table 3, and Figure 3.

3.3 North Excavation Results

The area located north of the buried electrical lines (North Excavation) was excavated first; the excavation was bounded to the east and south by buried electrical lines and to the west by an existing foundation (Figure 3) and at depth by the presence of groundwater. Approximately 35 cy of soil was removed from the 250 sf excavation. Groundwater was located at approximately 4.5 feet bgs, and the depth of the North Excavation was approximately 4 feet bgs. A 6-inch-thick coal layer approximately 2 to 2.5 feet bgs was identified in the western and northern walls.

A total of 10 floor and 7 sidewall screening samples were collected from the final limits of the North Excavation. Sidewall samples from the North Excavation were collected from a depth of 2.5 feet bgs. PID results in floor samples ranged from 211 ppm to 2,952 ppm, and PID results in sidewall samples ranged from 39.8 ppm to 2,419 ppm. All but one of the floor samples and approximately half of the sidewall samples exhibited elevated PID readings (>500 ppm). The highest field screening results in the

North Excavation were located on the southern (nearest the electrical lines) and southwestern (nearest the foundation) extent as shown in Figure 4.

Two floor and four sidewall samples were collected from locations exhibiting the highest PID reading for laboratory analysis. Results indicate that DRO concentrations in floor samples ranged from 6,140 mg/kg to 44,000 mg/kg, and DRO concentrations ranged from 1,640 mg/kg to 13,900 mg/kg in sidewall samples. The 44,000 mg/kg result in confirmation sample C1-29 was the highest DRO result measured during the field effort. One floor (C1-29) and one sidewall sample (C1-37 [and field duplicate C1-39]) exceeded the 10,250 mg/kg cleanup goal; however, over-excavation in these areas was impeded by the presence of groundwater and the foundation. In addition, the following analytes exceeded migration to groundwater cleanup levels: benzene in C1-29, C1-36, and C1-37 (and field duplicate C1-39); GRO in samples C1-29 and C1-37 (and field duplicate C1-39); and DRO in all six laboratory confirmation samples.

Screening and laboratory results are also shown in Tables 1 and 4 and in Figure 4.

3.4 South Excavation Results

The area located south of the buried electrical lines (South Excavation) was excavated last. Approximately 65 cy was removed from the 400 sf South Excavation (Figure 5). Groundwater was located at approximately 5 feet bgs, and most of the area was excavated to a depth of 4.5 feet bgs. The western extent of the South Excavation, however, was curtailed at approximately 3 feet bgs (2.5 feet above the water table), based on field observations and screening results indicating lack of contamination.

A total of 12 floor and 9 sidewall samples were collected from the final limits of the South Excavation. Sidewall samples from the South Excavation were consistently collected from a depth of 2.5 feet bgs. PID results in floor samples ranged from 8.9 ppm to 3,591 ppm, and PID results in sidewall samples ranged from 1.2 ppm to 1,275 ppm. Only 4 of the 12 floor samples and only 1 of the 9 sidewall samples exhibited elevated PID readings (>500 ppm). The highest screening results in the South Excavation were located on the northern extent of the excavation (nearest to the buried electrical lines) as shown in Figure 5.

Three floor and five sidewall samples were collected from the locations with the highest PID readings for laboratory analysis. Results indicate that DRO concentrations in floor samples ranged from 277 mg/kg to 17,400 mg/kg, and DRO concentrations ranged from 23.3 mg/kg to 1,460 mg/kg in sidewall samples. One floor sample (C2-7) exceeded the 10,250 mg/kg cleanup goal; however, over-excavation in that area was impeded by the presence of groundwater. In addition, two samples (C2-3 and C2-5) exceeded the migration to groundwater cleanup level for GRO, and six samples (C2-3 [and field duplicate C2-40], C2-5, C2-7, C2-15, and C2-21) exceeded the migration to groundwater pathway for DRO. No other analytes exceeded cleanup levels.

Screening and laboratory results are also shown in Tables 1 and 5 and in Figure 5.

4.0 DATA QUALITY SUMMARY

Soil samples were collected and analyzed in accordance with the approved Work Plan (FES 2015) with one exception: no samples were collected from overburden soil since it exhibited elevated PID readings and was removed from the site.

All project samples were analyzed by SGS of Anchorage, Alaska. The laboratory is approved by the State of Alaska through the Contaminated Sites Program for the contaminant methods employed. All samples were shipped in a single sample data group (SDG) and assigned the SGS report number 1154000. A copy of the laboratory report is included in Appendix C.

The chemical data were evaluated in order to assess whether they met data quality objectives and were acceptable for project use. The findings of the review are documented in the ADEC Laboratory Data Review Checklist (Appendix D). Overall, the review process deemed the soil data acceptable for project use. No data were rejected pursuant to FES's data quality review, and all analytical data may be used for project purposes. However, the following notable issues may have impacted project data quality:

- Elevated surrogate recoveries were noted in several GRO samples as a result of matrix interference. The GRO results in affected samples were qualified as high estimates (QH). The GRO concentrations in samples EX-09, C2-3, C2-5, C2-15, C1-29, and C1-37 (and field duplicate C1-39) may have been impacted since they were high biased and exceeded the migration to groundwater cleanup level.
- Field duplicate precision for sample pair C2-3/C2-40 exceeded the 50% criterion for GRO and several individual volatile compounds (toluene, ethylbenzene, m+p-xylenes, and o-xylenes). The lack of field precision could indicate a heterogeneous matrix or poor sample technique. The affected results were qualified as estimates with Q. Impact to GRO data is notable because the primary sample was above the migration to groundwater cleanup level but the field duplicate result was below the cleanup level.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A total of 100 cy of POL-contaminated soil was removed from the Hurricane Siding site. Two excavations were dug, one on either side of buried electrical utilities which bisected the source area. The footprints of the North and South Excavation were approximately 250 sf and 400 sf, respectively. The size of the excavations was impeded by the buried utilities and a shallow groundwater table.

Overall, screening and laboratory confirmation sample results indicate that the bulk of the accessible source area soil with DRO concentrations in excess of the 10,250 mg/kg cleanup goal was removed from the site. The sampling strategy employed to document residual contamination for this project (collecting laboratory samples from locations with the highest screening levels) tends to bias the laboratory results high. Nevertheless, a total of 11 of the 14 laboratory confirmation samples were below the 10,250 mg/kg threshold and met the goal. The three samples that exceeded the goal (two floor and one sidewall) were in locations that precluded over-excavation. In addition to those areas identified by elevated DRO concentrations, soil contamination in excess of the cleanup goal likely remains in limited quantities in surface and subsurface soils in the unexcavated area located directly between the two excavations (the soil directly above and below the buried electrical lines).

In addition, benzene, GRO, and DRO exceeded the ADEC migration to groundwater cleanup levels in several confirmation samples collected from the limits of the North Excavation; and GRO and DRO exceed the migration to groundwater cleanup levels in several confirmation samples collected from the limits of the South Excavation. Historically, DRO and RRO are the only contaminants to have exceeded ADEC groundwater cleanup levels in samples collected from site monitoring wells. The removal action should ultimately result in a decrease in groundwater concentrations with time. Groundwater monitoring is recommended for 2016.

6.0 REFERENCES

Alaska Department of Environmental Conservation (ADEC), 2016. *Oil and Other Hazardous Substances Pollution Control, 18 AAC 75*. January 1.

ADEC, 2010. *Draft Field Sampling Guidance.* May.

ARRC, 1990. *Underground Storage Tank Removal, Alaska Railroad Hurricane Section, MP 281.* December 12.

Clarus, 2010. *Hurricane Phase II Investigation Report.* April 2.

Restoration Science & Engineering, LLC, 2012. *Site Characterization Report, ARRC Hurricane Siding, Alaska Railroad Milepost 281.5, Hurricane, Alaska.* January.

Fairbanks Environmental Services (FES), 2012. *Groundwater Monitoring Report, Hurricane Siding, Alaska Railroad Milepost 281.5, Alaska.* October 24.

FES, 2013. *Groundwater Monitoring Report, Hurricane Siding, Alaska Railroad Milepost 281.5, Alaska*. October 4.

FES, 2014. *2014 Groundwater Monitoring Report, Hurricane Siding, Alaska Railroad Milepost 281.5, Alaska.* November 26.

FES, 2015. *2015 Soil Removal Work Plan, Rev 1, Hurricane Siding, Alaska Railroad Milepost 281.5, Alaska.* November 26.

Attachments

Table 1 – PID Screening Results
Table 2 – Laboratory Sample Summary
Table 3 – Soil Sample Results (Active Excavation)
Table 4 – Confirmation Sample Results (North Excavation)
Table 5 – Confirmation Sample Results (South Excavation)

Figure 1 – Vicinity Map
Figure 2 – Site Map and Surface Soil Screening Results
Figure 3 – Active Excavation Soil Sample Results
Figure 4 – Confirmation Sample Results (Northern Excavation)
Figure 5 – Confirmation Sample Results (Southern Excavation)

Appendix A – Site Photographs
Appendix B – Transport Letter and ASR Tonnage
Appendix C – Laboratory Report 1154000
Appendix D –ADEC Laboratory Review Checklist

Table 1 - PID Screening Results
ARRC Hurricane Siding Soil Removal

Location	Date	Depth (feet)	PID Result (ppm)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Description
Surface Soil Samples (6-12 inches below ground surface)							
SS-1	7/27/2015	0.75-1	0.4	-	-	-	Pre-Excavation
SS-2	7/27/2015	0.75-1	0.5	-	-	-	Pre-Excavation
SS-3	7/27/2015	0.75-1	0.8	-	-	-	Pre-Excavation
SS-4	7/27/2015	0.75-1	0.7	-	-	-	Pre-Excavation
SS-5	7/27/2015	0.75-1	0.3	-	-	-	Pre-Excavation (South Exc.)
SS-6	7/27/2015	0.75-1	0.1	-	-	-	Pre-Excavation (South Exc.)
SS-7	7/27/2015	0.75-1	141.7	-	-	-	Pre-Excavation (South Exc.)
SS-8	7/27/2015	0.75-1	0.2	-	-	-	Pre-Excavation
SS-9	7/27/2015	0.75-1	0.5	-	-	-	Pre-Excavation
SS-10	7/27/2015	0.75-1	738.1	-	-	-	Pre-Excavation (North Exc.)
SS-11	7/27/2015	0.75-1	344.3	-	-	-	Pre-Excavation (North Exc.)
SS-12	7/27/2015	0.75-1	0.4	-	-	-	Pre-Excavation (North Exc.)
Active Excavation Samples (from removed soil)							
EX-1	7/28/2015	2.5	28.7	-	-	-	North Excavation
EX-2	7/28/2015	3	>500	10.4	387	17,900	North Excavation
EX-3	7/28/2015	3.5	>500	-	-	-	North Excavation
EX-4	7/28/2015	4	>500	-	-	-	North Excavation
EX-5	7/28/2015	3	>500	-	-	-	North Excavation
EX-6	7/28/2015	3.5	>500	-	-	-	North Excavation
EX-7	7/28/2015	4	>500	21.4	630	11,400	South Excavation
EX-8	7/28/2015	3.5	>500	-	-	-	South Excavation
EX-9	7/28/2015	4	>500	25.1	627	10,900	South Excavation
EX-10	7/28/2015	3	14.5	-	-	-	South Excavation
EX-11	7/28/2015	3	20.8	-	-	-	South Excavation
EX-12	7/28/2015	3	66.3	-	-	-	South Excavation
Excavation Confirmation Samples (from remaining soil that was not removed)							
C1-22	7/28/2015	4.5	211.0	-	-	-	North Excavation - Floor
C1-23	7/28/2015	4.5	974.6	-	-	-	North Excavation - Floor
C1-24	7/28/2015	4.5	799.2	-	-	-	North Excavation - Floor
C1-25	7/28/2015	4.5	506.7	-	-	-	North Excavation - Floor
C1-26	7/28/2015	4.5	1,326	-	-	-	North Excavation - Floor
C1-27	7/28/2015	4.5	996.8	-	-	-	North Excavation - Floor
C1-28	7/28/2015	4.5	1,123	-	-	-	North Excavation - Floor
C1-29	7/28/2015	4.5	2,952	35.2	467	44,000	North Excavation - Floor
C1-30	7/28/2015	4.5	1,776	-	-	-	North Excavation - Floor
C1-31	7/28/2015	4.5	2,537	12.5	107	6,140	North Excavation - Floor
C1-32	7/28/2015	2.5	332.6	0.48	19.7	1,640	North Excavation - Sidewall
C1-33	7/28/2015	2.5	125.1	-	-	-	North Excavation - Sidewall
C1-34	7/28/2015	2.5	39.8	-	-	-	North Excavation - Sidewall
C1-35	7/28/2015	2.5	1,887	9.86	249	7,300	North Excavation - Sidewall
C1-36	7/28/2015	2.5	1,298	8.89	238	8,340	North Excavation - Sidewall
C1-37	7/28/2015	2.5	2,419	15.7	434	13,900	North Excavation - Sidewall
C1-38	7/28/2015	2.5	47.7	-	-	-	North Excavation - Sidewall
C2-1	7/28/2015	5	294.5	-	-	-	South Excavation - Floor
C2-2	7/28/2015	5	10.8	-	-	-	South Excavation - Floor
C2-3	7/28/2015	5	3,591	10.3	310	277	South Excavation - Floor
C2-4	7/28/2015	5	29.7	-	-	-	South Excavation - Floor
C2-5	7/28/2015	5	2,180	20.3	470	9,350	South Excavation - Floor
C2-6	7/28/2015	5	965.7	-	-	-	South Excavation - Floor
C2-7	7/28/2015	4.5	1,774	4.74	145	17,400	South Excavation - Floor
C2-8	7/28/2015	4.5	109.8	-	-	-	South Excavation - Floor
C2-9	7/28/2015	4	106.5	-	-	-	South Excavation - Floor
C2-10	7/28/2015	4	14.0	-	-	-	South Excavation - Floor
C2-11	7/28/2015	4	8.9	-	-	-	South Excavation - Floor
C2-12	7/28/2015	4	16.7	-	-	-	South Excavation - Floor
C2-13	7/28/2015	2.5	18.1	0.10	1.16	224	South Excavation - Sidewall
C2-14	7/28/2015	2.5	152.5	0.13	2.02	152	South Excavation - Sidewall
C2-15	7/28/2015	2.5	1,275	3.83	125	1,460	South Excavation - Sidewall
C2-16	7/28/2015	2.5	5.1	-	-	-	South Excavation - Sidewall
C2-17	7/28/2015	2.5	2.6	-	-	-	South Excavation - Sidewall
C2-18	7/28/2015	2.5	1.2	-	-	-	South Excavation - Sidewall
C2-19	7/28/2015	2.5	3.7	-	-	-	South Excavation - Sidewall
C2-20	7/28/2015	2.5	122.9	0.09	1.09	23.3	South Excavation - Sidewall
C2-21	7/28/2015	2.5	5.8	0.29	1.34	265	South Excavation - Sidewall

BTEX - benzene, toluene, ethylbenzene, and xylenes (total). Limits of detection were used for non-detected analytes.
BTEX - DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
PID - photoionization detector instrument
ppm - parts per million (heated headspace)

Table 2 - Laboratory Sample Summary
ARRC Hurricane Siding Soil Removal

Sample Number	Sample Type	Purpose	Location	Matrix	Sampler's Initials	Date	Time	BTEX (8021B)	GRO (AK101)	DRO (AK102)	RRO (AK103)
Primary Samples											
EX-02	Primary	Excavation	North Excavation	Soil	MB	7/28/2015	830	X	X	X	X
EX-07	Primary	Excavation	South Excavation	Soil	MB	7/28/2015	940	X	X	X	X
EX-09	Primary	Excavation	South Excavation	Soil	MB	7/28/2015	1015	X	X	X	X
C1-29	Primary	Confirmation	North Exc - Floor	Soil	MB	7/28/2015	1535	X	X	X	X
C1-31	Primary	Confirmation	North Exc - Floor	Soil	MB	7/28/2015	1530	X	X	X	X
C1-32	Primary	Confirmation	North Exc - Wall	Soil	MB	7/28/2015	1638	X	X	X	X
C1-35	Primary	Confirmation	North Exc - Wall	Soil	MB	7/28/2015	1642	X	X	X	X
C1-36	Primary	Confirmation	North Exc - Wall	Soil	MB	7/28/2015	1646	X	X	X	X
C1-37	Primary	Confirmation	North Exc - Wall	Soil	MB	7/28/2015	1650	X	X	X	X
C2-3	Primary	Confirmation	South Exc - Floor	Soil	MB	7/28/2015	1400	X	X	X	X
C2-5	Primary	Confirmation	South Exc - Floor	Soil	MB	7/28/2015	1403	X	X	X	X
C2-7	Primary	Confirmation	South Exc - Floor	Soil	MB	7/28/2015	1408	X	X	X	X
C2-13	Primary	Confirmation	South Exc - Wall	Soil	MB	7/28/2015	1506	X	X	X	X
C2-14	Primary	Confirmation	South Exc - Wall	Soil	MB	7/28/2015	1508	X	X	X	X
C2-15	Primary	Confirmation	South Exc - Wall	Soil	MB	7/28/2015	1510	X	X	X	X
C2-20	Primary	Confirmation	South Exc - Wall	Soil	MB	7/28/2015	1500	X	X	X	X
C2-21	Primary	Confirmation	South Exc - Wall	Soil	MB	7/28/2015	1502	X	X	X	X
Field Duplicates											
C1-39	Dup of C1-37	Quality Control	North Exc - Wall	Soil	MB	7/28/2015	1654	X	X	X	X
C2-40	Dup of C2-3	Quality Control	South Exc - Floor	Soil	MB	7/28/2015	1410	X	X	X	X
Quality Control Samples											
Trip Blank	Trip Blank	Quality Control	Trip Blank	Soil	-	7/28/2015	800	X	X		

All samples were submitted to SGS (Anchorage) in a single cooler on July 29, 2015.
BTEX - benzene, toluene, ethylbenzene, and xylenes
DRO - diesel range organics
GRO - gasoline range organics
MB - Mike Boese
RRO - residual range organics

Table 3 - Soil Sample Results (Active Excavation)
ARRC Hurricane Siding Soil Removal

		Client Sample Id:	ADEC Cleanup Level[1]		EX-02	EX-07	EX-09	TRIP BLANK
		Lab Sample Id:	Ingestion/ Inhalation	Migration to Groundwater	1154000001	1154000002	1154000003	1154000020
		Matrix:			Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Solid/Soil (Wet Weight)
		Sample Type			Excavated Soil	Excavated Soil	Excavated Soil	TRIP BLANK
		Location:			North Excavation	South Excavation	South Excavation	N/A
		Date Sampled:			7/28/2015	7/28/2015	7/28/2015	7/28/2015
Method	**Analyte**	**Units**			Result/Flag	Result/Flag	Result/Flag	Result/Flag
8021B	Benzene	µg/Kg	150,000/11,000	25	17.4 J	ND (121)	ND (74.0)	ND (6.20)
8021B	Toluene	µg/Kg	8,100,000/220,000	6,500	379	279 J	1120	10.7 J
8021B	Ethylbenzene	µg/Kg	10,100,000/110,000	6,900	190 ML	524	ND (149)	ND (12.4)
8021B	o-Xylene	µg/Kg	20,300,000/ 63,000 [2]	63,000 [2]	7260	14100	18700	8.22 J
8021B	p & m-Xylene	µg/Kg			2540	6330	5060	21.9 J
AK101	GRO	mg/Kg	1,400/1,400	300	387	630	627 QH	1.39 J,B
AK102	DRO	mg/Kg	10,250/12,500	250	17900	11400	10900	-
AK103	RRO	mg/Kg	10,000/22,000	11,000	756 QH	519	77.6 J	-
SM21 2540G	Total Solids	%	NA	NA	82.6	84.0	92.8	-

[1] - ADEC cleanup levels (18 AAC 75.341 Tables B1 and B2), Under 40 inch Zone.
[2] - cleanup levels are for total xylenes
Results in Orange highlight exceed the Ingestion and/or Inhalation cleanup level.
Results in Yellow highlight exceed the Migration to Groundwater cleanup level.
Results in Gray highlight have LODs greater than the Migration to Groundwater level.

Data Flags:
B - Analyte was also detected in a blank sample at a similar concentration.
J - The result is an estimate value because it was reported below the limit of quantitation.
ML - The result is considered a low-biased estimate due to matrix issues.
QH - The result is considered a high estimate due to a quality control failure.

Acronyms:
DRO - diesel range organics
GRO - gasoline range organics
NA - not applicable
ND - not detected
RRO - residual range organics

Table 4 - Confirmation Sample Results (North Excavation)
ARRC Hurricane Siding Soil Removal

		Client Sample Id:	ADEC Cleanup Level[1]		C1-29	C1-31	C1-32	C1-35	C1-36
		Lab Sample Id:			1154000013	1154000014	1154000015	1154000016	1154000017
		Matrix:			Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)
		Sample Type	Ingestion/ Inhalation	Migration to Groundwater	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
		Location:			North Excavation - Floor	North Excavation - Floor	North Excavation - Wall	North Excavation - Wall	North Excavation - Wall
		Date Sampled:			7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015
Method	**Analyte**	**Units**			Result/Flag	Result/Flag	Result/Flag	Result/Flag	Result/Flag
8021B	Benzene	µg/Kg	150,000/11,000	25	58.0	10.8 J	ND (8.35)	11.7 J	132
8021B	Toluene	µg/Kg	8,100,000/220,000	6,500	336	578	ND (16.6)	208	138
8021B	Ethylbenzene	µg/Kg	10,100,000/110,000	6,900	1160	216	ND (16.6)	420	110
8021B	o-Xylene	µg/Kg	20,300,000/ 63,000 [2]	63,000 [2]	25300	8680	306	6950	5870
8021B	p & m-Xylene	µg/Kg			8330	3010	134 B	2270	2640
AK101	GRO	mg/Kg	1,400/1,400	300	467 QH	107 QH	19.7 QH	249 QH	238 QH
AK102	DRO	mg/Kg	10,250/12,500	250	44000	6140	1640	7300	8340
AK103	RRO	mg/Kg	10,000/22,000	11,000	240 J	57.2 J	ND (46.7)	253	342
SM21 2540G	Total Solids	%	NA	NA	80.8	70.2	85.6	88.1	81.0

[1] - ADEC cleanup levels (18 AAC 75.341 Tables B1 and B2), Under 40 inch Zone.
[2] - cleanup levels are for total xylenes
Results in Orange highlight exceed the Ingestion and/or Inhalation cleanup level.
Results in Yellow highlight exceed the Migration to Groundwater cleanup level.
Results in Gray highlight have LODs greater than the Migration to Groundwater level.

Data Flags:
B - Analyte was also detected in a blank sample at a similar concentration.
J - The result is an estimate value because it was reported below the limit of quantitation.
QH - The result is considered a high estimate due to a quality control failure.

Acronyms:
DRO - diesel range organics
GRO - gasoline range organics
NA - not applicable
ND - not detected
RRO - residual range organics

Table 4 - Confirmation Sample Results (North Excavation)
ARRC Hurricane Siding Soil Removal

		Client Sample Id:	ADEC Cleanup Level[1]		C1-37	C1-39	TRIP BLANK
		Lab Sample Id:	Ingestion/ Inhalation	Migration to Groundwater	1154000018	1154000019	1154000020
		Matrix:			Soil/Solid (dry weight)	Soil/Solid (dry weight)	Solid/Soil (Wet Weight)
		Sample Type			Confirmation	Field Duplicate of C1-37	TRIP BLANK
		Location:			North Excavation - Wall	North Excavation - Wall	N/A
		Date Sampled:			7/28/2015	7/28/2015	7/28/2015
Method	**Analyte**	**Units**			Result/Flag	Result/Flag	Result/Flag
8021B	Benzene	µg/Kg	150,000/11,000	25	26.5 J	33.8 J	ND (6.20)
8021B	Toluene	µg/Kg	8,100,000/220,000	6,500	184	240	10.7 J
8021B	Ethylbenzene	µg/Kg	10,100,000/110,000	6,900	585	791	ND (12.4)
8021B	o-Xylene	µg/Kg	20,300,000/ 63,000 [2]	63,000 [2]	8180	10800	8.22 J
8021B	p & m-Xylene	µg/Kg			2950	3880	21.9 J
AK101	GRO	mg/Kg	1,400/1,400	300	322 QH	434 QH	1.39 J,B
AK102	DRO	mg/Kg	10,250/12,500	250	13900	13200	-
AK103	RRO	mg/Kg	10,000/22,000	11,000	164	144	-
SM21 2540G	Total Solids	%	NA	NA	81.2	80.9	-

[1] - ADEC cleanup levels (18 AAC 75.341 Tables B1 and B2), Under 40 inch Zone.
[2] - cleanup levels are for total xylenes
Results in Orange highlight exceed the Ingestion and/or Inhalation cleanup level.
Results in Yellow highlight exceed the Migration to Groundwater cleanup level.
Results in Gray highlight have LODs greater than the Migration to Groundwater level.

Data Flags:
B - Analyte was also detected in a blank sample at a similar concentration.
J - The result is an estimate value because it was reported below the limit of quantitation.
QH - The result is considered a high estimate due to a quality control failure.

Acronyms:
DRO - diesel range organics
GRO - gasoline range organics
NA - not applicable
ND - not detected
RRO - residual range organics

Table 5 - Confirmation Sample Results (South Excavation)
ARRC Hurricane Siding Soil Removal

		Client Sample Id:	ADEC Cleanup Level[1]		C2-3	C2-5	C2-7	C2-13	C2-14
		Lab Sample Id:			1154000004	1154000005	1154000006	1154000008	1154000009
		Matrix:			Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)
		Sample Type	Ingestion/ Inhalation	Migration to Groundwater	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
		Location:			Excavation 2 - Floor	South Excavation - Floor	South Excavation - Floor	South Excavation - Wall	South Excavation - Wall
		Date Sampled:			7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015
Method	**Analyte**	**Units**						Result/Flag	Result/Flag
8021B	Benzene	µg/Kg	150,000/11,000	25	24.3 J	19.1 J	ND (25.1)	ND (7.35)	ND (10.9)
8021B	Toluene	µg/Kg	8,100,000/220,000	6,500	246 Q	2590	ND (50.0)	38.4	ND (21.9)
8021B	Ethylbenzene	µg/Kg	10,100,000/110,000	6,900	556 Q	503	138	ND (14.7)	ND (21.9)
8021B	o-Xylene	µg/Kg	20,300,000/ 63,000 [2]	63,000 [2]	7570 Q	12900	3270	13.8 J,B	30.6 J,B
8021B	p & m-Xylene	µg/Kg			1920 Q	4300	1260	21.1 J,B	ND (43.7)
AK101	GRO	mg/Kg	1,400/1,400	300	310 Q,QH	470 QH	145 QH	1.16 J	2.02 J
AK102	DRO	mg/Kg	10,250/12,500	250	277	9350	17400	224	152
AK103	RRO	mg/Kg	10,000/22,000	11,000	118	97.9	185	67.4	18.3 J
SM21 2540G	Total Solids	%	NA	NA	88.9	90.5	77.2	93.2	78.9

[1] - ADEC cleanup levels (18 AAC 75.341 Tables B1 and B2), Under 40 inch Zone.
[2] - cleanup levels are for total xylenes
Results in Orange highlight exceed the Ingestion and/or Inhalation cleanup level.
Results in Yellow highlight exceed the Migration to Groundwater cleanup level.
Results in Gray highlight have LODs greater than the Migration to Groundwater level.

Data Flags:
B - Analyte was also detected in a blank sample at a similar concentration.
J - The result is an estimate value because it was reported below the limit of quantitation.
Q - The result is considered an estimate due to a quality control failure.
QH - The result is considered a high estimate due to a quality control failure.

Acronyms:
DRO - diesel range organics
GRO - gasoline range organics
NA - not applicable
ND - not detected
RRO - residual range organics

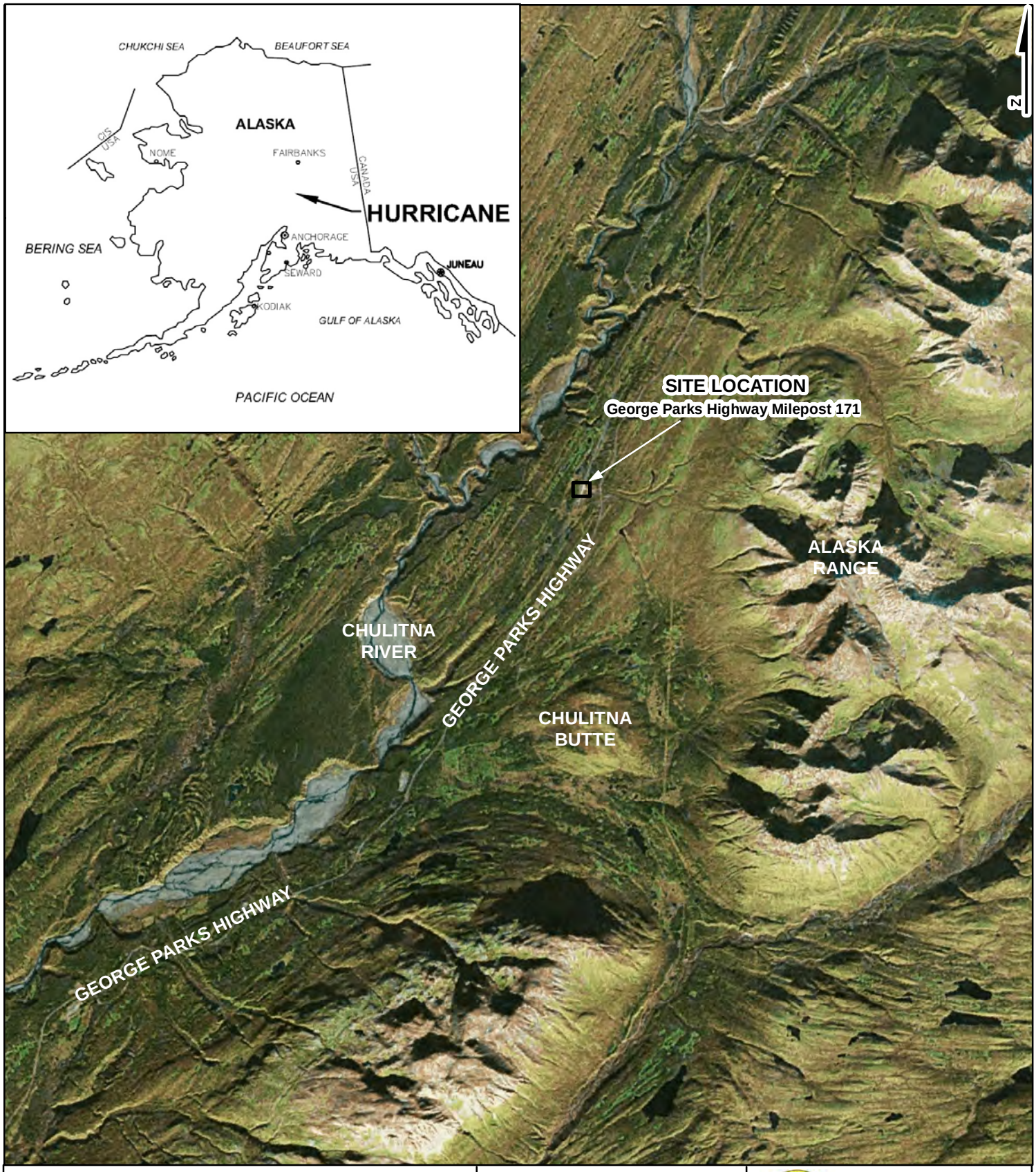
Table 5 - Confirmation Sample Results (South Excavation)
ARRC Hurricane Siding Soil Removal

		Client Sample Id:	ADEC Cleanup Level[1]		C2-15	C2-20	C2-21	C2-40	TRIP BLANK
		Lab Sample Id:			1154000010	1154000011	1154000012	1154000007	1154000020
		Matrix:			Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Soil/Solid (dry weight)	Solid/Soil (Wet Weight)
		Sample Type	Ingestion/ Inhalation	Migration to Groundwater	Confirmation	Confirmation	Confirmation	Field Duplicate of C2-3	TRIP BLANK
		Location:			South Excavation - Wall	South Excavation - Wall	South Excavation - Wall	South Excavation - Floor	N/A
		Date Sampled:			7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015
Method	**Analyte**	**Units**			Result/Flag	Result/Flag	Result/Flag	Result/Flag	Result/Flag
8021B	Benzene	µg/Kg	150,000/11,000	25	ND (19.8)	ND (8.50)	ND (11.2)	ND (18.3)	ND (6.20)
8021B	Toluene	µg/Kg	8,100,000/220,000	6,500	118	ND (17.0)	195	118 Q	10.7 J
8021B	Ethylbenzene	µg/Kg	10,100,000/110,000	6,900	139	ND (17.0)	ND (22.3)	169 Q	ND (12.4)
8021B	o-Xylene	µg/Kg	20,300,000/ 63,000 [2]	63,000 [2]	2730	ND (17.0)	15.6 J,B	2630 Q	8.22 J
8021B	p & m-Xylene	µg/Kg			828	ND (34.0)	ND (44.5)	803 Q	21.9 J
AK101	GRO	mg/Kg	1,400/1,400	300	125 QH	1.09 J,B	1.34 J,B	114 Q,QH	1.39 J,B
AK102	DRO	mg/Kg	10,250/12,500	250	1460	23.3	265	386	-
AK103	RRO	mg/Kg	10,000/22,000	11,000	137	68.7	440	196	-
SM21 2540G	Total Solids	%	NA	NA	89.3	87.3	85.7	95.7	-

[1] - ADEC cleanup levels (18 AAC 75.341 Tables B1 and B2), Under 40 inch Zone.
[2] - cleanup levels are for total xylenes
Results in Orange highlight exceed the Ingestion and/or Inhalation cleanup level.
Results in Yellow highlight exceed the Migration to Groundwater cleanup level.
Results in Gray highlight have LODs greater than the Migration to Groundwater level.

Data Flags:
B - Analyte was also detected in a blank sample at a similar concentration.
J - The result is an estimate value because it was reported below the limit of quantitation.
Q - The result is considered an estimate due to a quality control failure.
QH - The result is considered a high estimate due to a quality control failure.

Acronyms:
DRO - diesel range organics
GRO - gasoline range organics
NA - not applicable
ND - not detected
RRO - residual range organics



NOTE:

Source: Aerial Imagery was clipped to reduce file size, and was provided in web form by Alaska Mapped (UAF-GINA/SDMI http://alaskamapped.org/bdl).

0 0.5 1 2 Miles

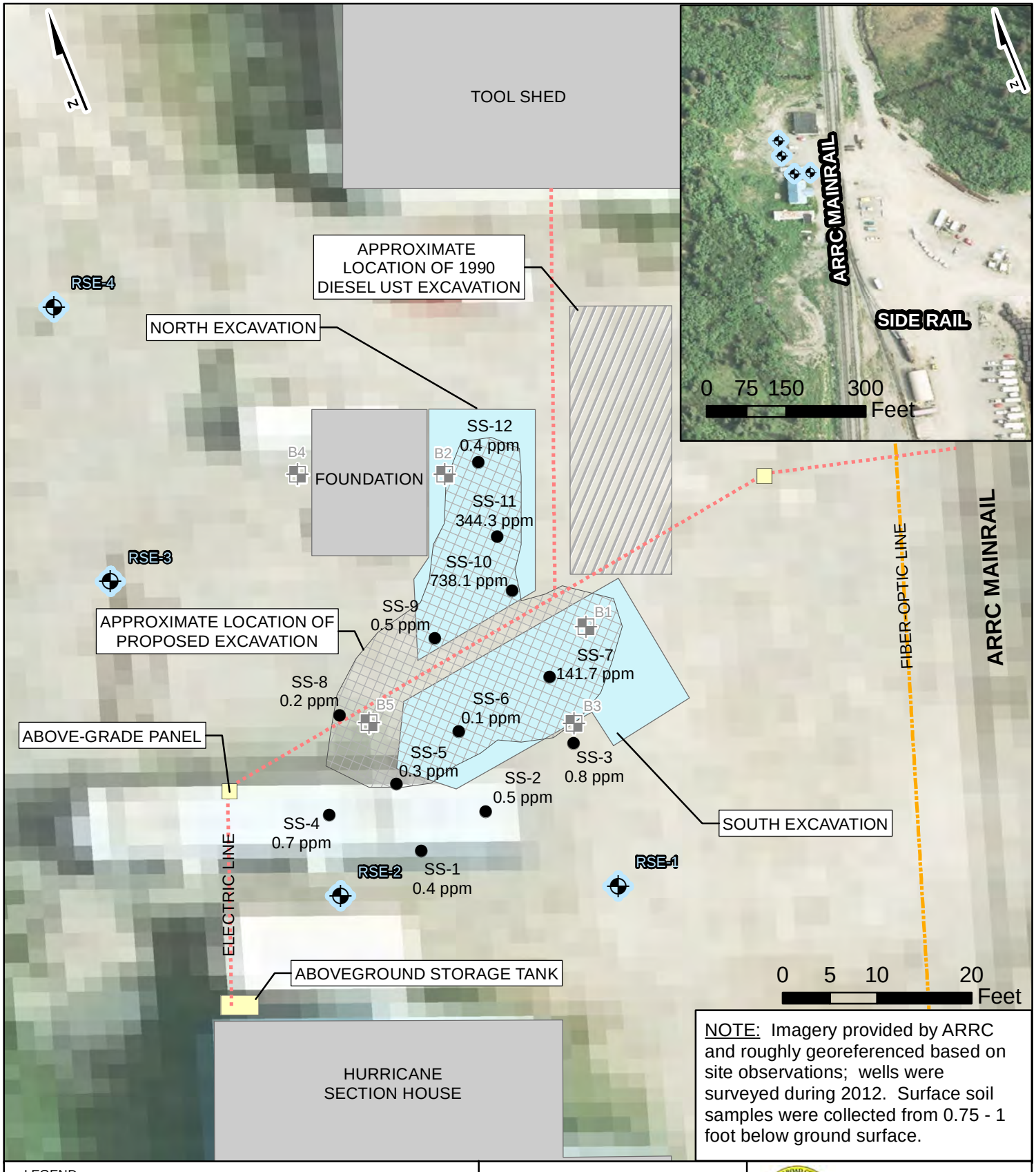
Fairbanks Environmental Services
3538 International Street
Fairbanks, Alaska 99701

ALASKA RAILROAD CORPORATION

Vicinity Map

2015 Soil Removal Report
Hurricane Siding
Hurricane, Alaska

CONTRACT:	FIGURE:	DATE:
85304	1	1/16



NOTE: Imagery provided by ARRC and roughly georeferenced based on site observations; wells were surveyed during 2012. Surface soil samples were collected from 0.75 - 1 foot below ground surface.

LEGEND:

- Surface Soil Screening Sample Location
  PID Result in ppm
- Monitoring Well
- Soil Boring (2009)
- Buried Fiber-Optic Line
- Buried Electric Line
- PID — Photoionization Detector
- ppm — Parts per Million

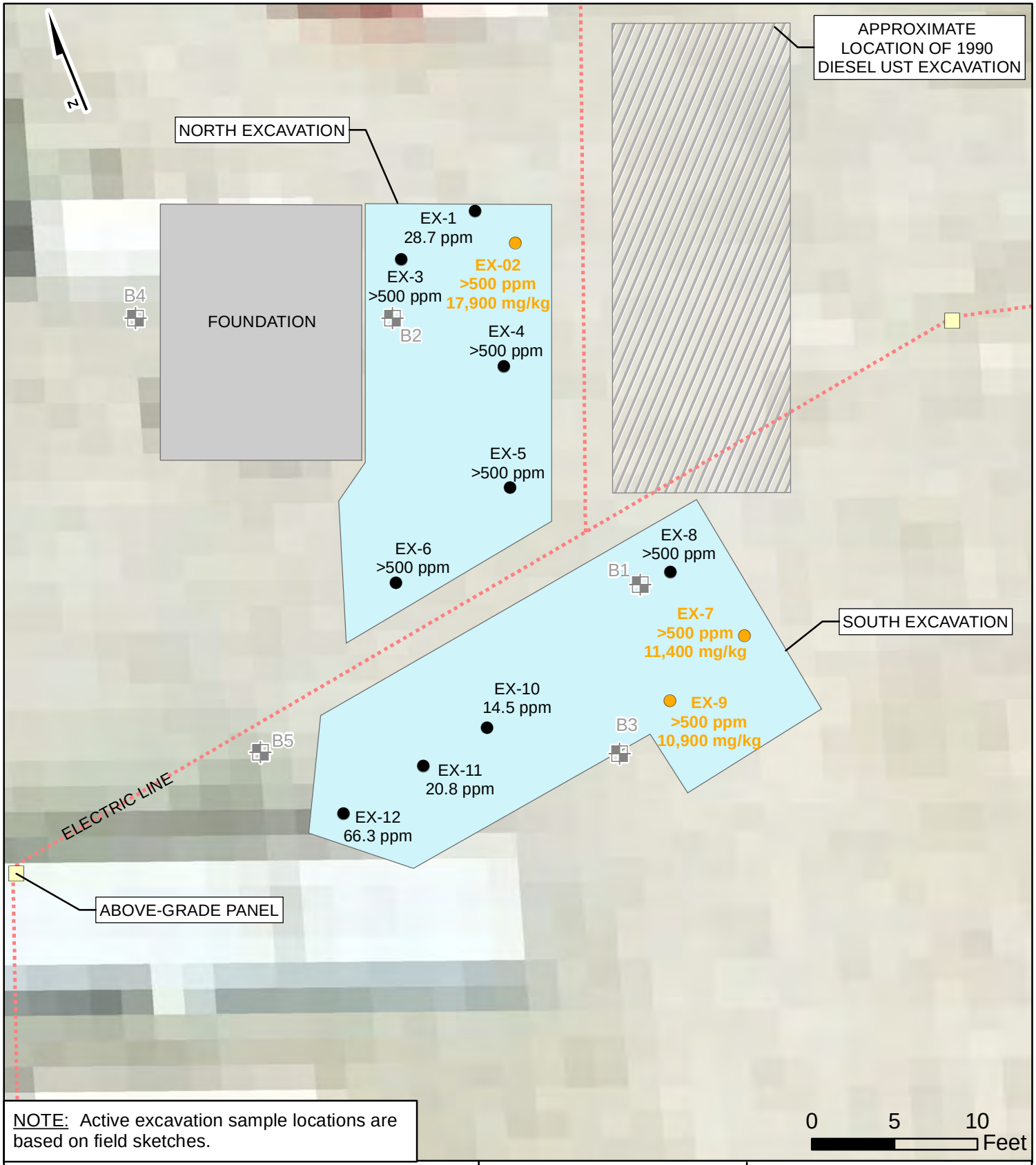
Fairbanks Environmental Services
3538 International Street
Fairbanks, Alaska 99701

ALASKA RAILROAD CORPORATION

Site Map and Surface Soil Screening Results

2015 Soil Removal Report
Hurricane Siding
Hurricane, Alaska

CONTRACT:	FIGURE:	DATE:
85304	2	1/16



NOTE: Active excavation sample locations are based on field sketches.

LEGEND:

- Screening and Laboratory Soil Sample Location
  PID Result in ppm
  DRO Result in mg/kg
- Screening Soil Sample Location (Only)
  PID Result in ppm
- Soil Boring (2009)
- Buried Electric Line

DRO	Diesel Range Organics	ppm	Parts per Million
mg/kg	Milligrams per Kilogram		
PID	Photoionization Detector		

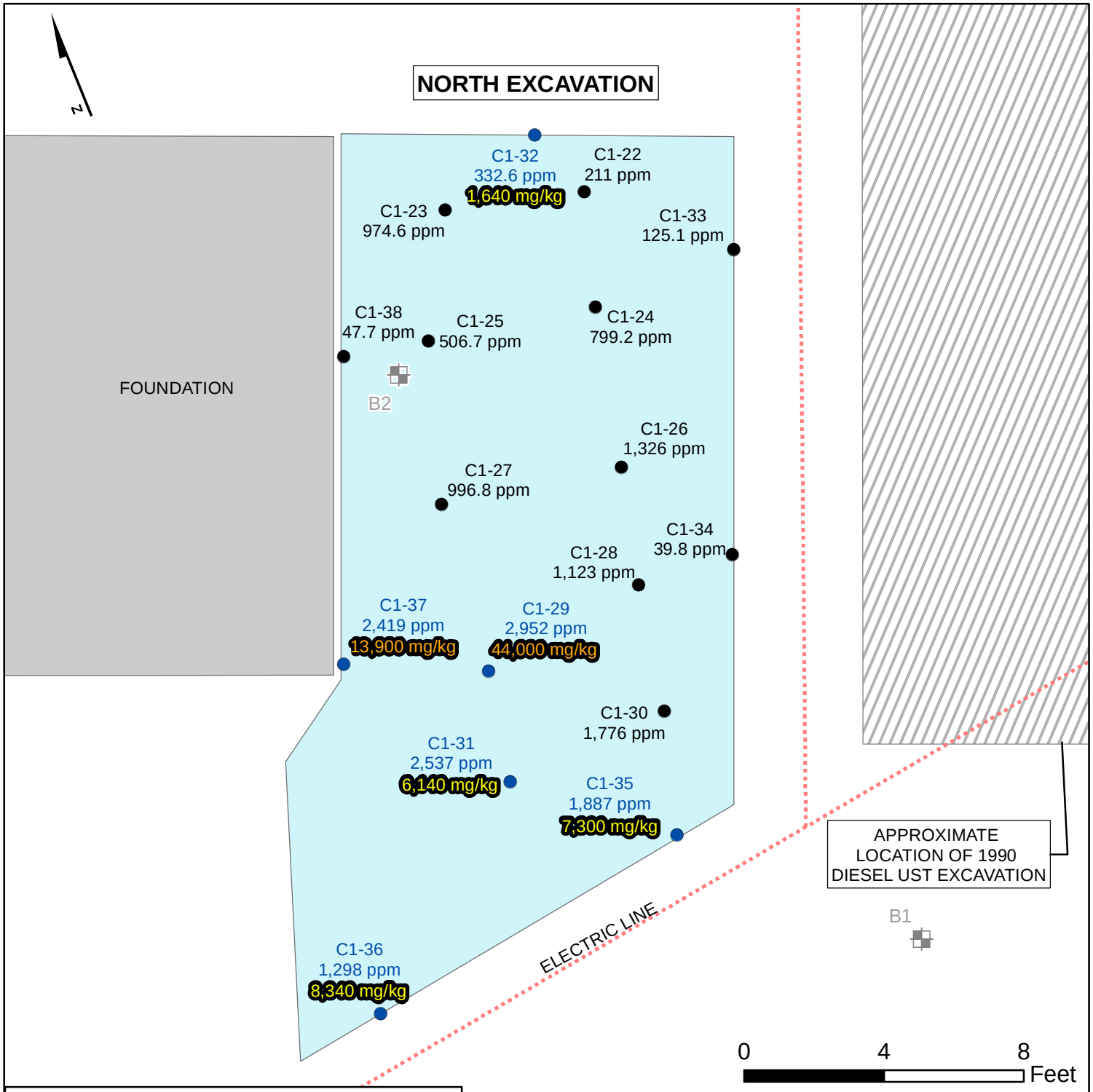
Fairbanks Environmental Services
3538 International Street
Fairbanks, Alaska 99701

ALASKA RAILROAD CORPORATION

Active Excavation Soil Sample Results

2015 Soil Removal Report
Hurricane Siding
Hurricane, Alaska

CONTRACT:	FIGURE:	DATE:
85304	3	1/16



SOIL CLEANUP GOAL

DRO 10,250 / 12,500 mg/kg

RESULTS EXCEEDING THE SOIL CLEANUP GOALS (ADEC METHOD TWO INGESTION AND / OR INHALATION PATHWAYS) ARE ORANGE

SOIL EXCEEDING THE MIGRATION TO GROUNDWATER CLEANUP LEVEL (DRO = 250 mg/kg) ARE YELLOW

NOTES: 1. Laboratory confirmation samples were collected from locations with the highest screening values. 2. Sidewall samples (C1-32 through C1-38) were collected from 2.5 feet below ground surface. 3. Floor samples (C1-22 through C1-31) were collected from 4 feet below ground surface.

LEGEND:

- Screening and Laboratory Confirmation Sample Location
  PID Result in ppm
  DRO Result in mg/kg
- Screening Soil Sample Location (Only)
  PID Result in ppm
- Soil Boring (2009)
- Buried Electric Line

DRO	Diesel Range Organics	ppm	Parts per Million
mg/kg	Milligrams per Kilogram		
PID	Photoionization Detector		

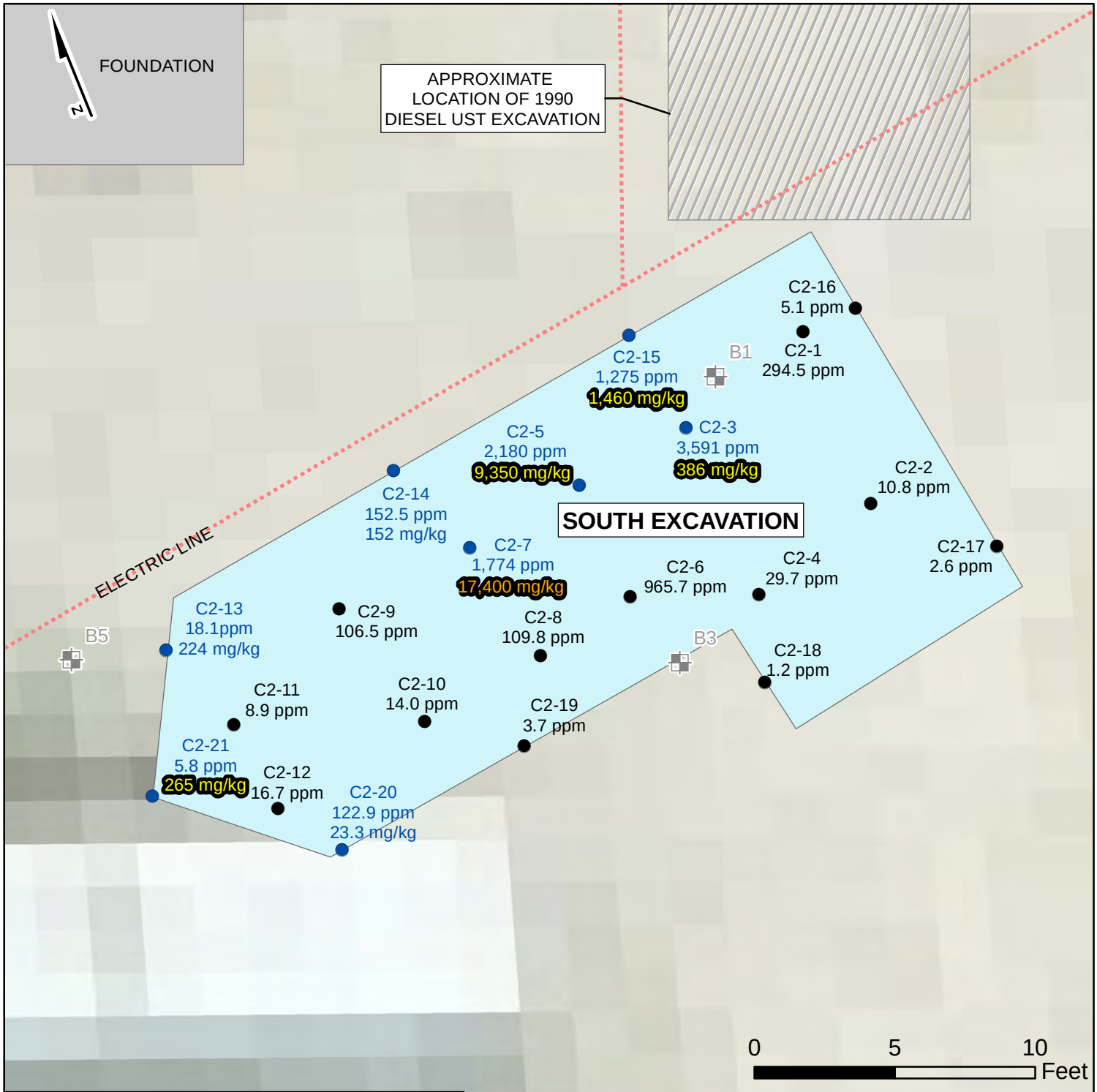
Fairbanks Environmental Services
3538 International Street
Fairbanks, Alaska 99701

ALASKA RAILROAD CORPORATION

Confirmation Sample Results (North Excavation)

2015 Soil Removal Report
Hurricane Siding
Hurricane, Alaska

CONTRACT:	FIGURE:	DATE:
85304	4	1/16



SOIL CLEANUP GOAL

DRO 10,250 / 12,500 mg/kg

RESULTS EXCEEDING THE SOIL CLEANUP GOALS (ADEC METHOD TWO INGESTION AND / OR INHALATION PATHWAYS) ARE ORANGE

SOIL EXCEEDING THE MIGRATION TO GROUNDWATER CLEANUP LEVEL (DRO = 250 mg/kg) ARE YELLOW

NOTES: 1. Laboratory confirmation samples were collected from locations with the highest screening values. 2. Sidewall samples (C2-1 through C2-12) were collected from 2.5 feet below ground surface. 3. Floor samples (C2-13 through C2-21) were collected from approximately 4 to 5 feet below ground surface.

LEGEND:

- Screening and Laboratory Confirmation Sample Location (PID Result in ppm, DRO Result in mg/kg)
- Screening Soil Sample Location (Only) (PID Result in ppm)
- Soil Boring (2009)
- Buried Electric Line

DRO	Diesel Range Organics	ppm	Parts per Million
mg/kg	Milligrams per Kilogram		
PID	Photoionization Detector		

Fairbanks Environmental Services
3538 International Street
Fairbanks, Alaska 99701

ALASKA RAILROAD CORPORATION

Confirmation Sample Results (South Excavation)

2015 Soil Removal Report
Hurricane Siding
Hurricane, Alaska

CONTRACT:	FIGURE:	DATE:
85304	5	1/16

APPENDIX A

SITE PHOTOGRAPHS

Soil Excavation at Hurricane Siding Site

Photograph 1 – View of site prior to excavation with Hurricane Section House in background. View to west.

Photograph 2 – View of surface soil screening locations installed prior to excavation. View to southwest.

Soil Excavation at Hurricane Siding Site

Photograph 3 – A vacuum truck (shown) was used to expose buried utilities prior to start of excavation work.

Photograph 4– This photograph shows the beginning of the North Excavation. This excavation was confined by buried utilities (shown in white paint and in the vacuum truck excavation) and a foundation (not shown). View to west.

Soil Excavation at Hurricane Siding Site

Photograph 5 – Excavated soil was loaded into the bucket and immediately placed in a railcar. View to southwest.

Photograph 6 – View of floor confirmation sample locations (represented by pink whiskers) and the limits of the North Excavation. Foundation is on the right of photograph. View to southwest.

Soil Excavation at Hurricane Siding Site

Photograph 7 – View of floor confirmation sample locations (represented by blue whiskers) and the limits of the South Excavation. View to east.

Photograph 8 – The locations of the excavation corners and confirmation samples were measured with a GPS. The North Excavation is in the foreground and the South Excavation is in the background. View to southwest.

Soil Excavation at Hurricane Siding Site

Photograph 9 – View of clean backfill being compacted in lifts in the South Excavation. The North Excavation and tool shed are in the left of the photograph. View to east.

Photograph 10 – Active backfilling of the first North Excavation. View to south-southwest.

Soil Excavation at Hurricane Siding Site

Photograph 11 – View of site after excavation work and backfill completed. View to south.

Photograph 12 – View of covered soil in one of the two railcars. Clean soil material was used to keep the plastic covers in place. View to north.

Soil Excavation at Hurricane Siding Site

Photograph 13 – A total of 132 tons of contaminated soil was transferred from the Hurricane site to the Anchorage Yard using two side dump railcars. View to northwest.

Photograph 14 – The contaminated soil was loaded into dump trucks and transferred from the Anchorage Yard to Alaska Soil Recycling for thermal treatment. View to northwest.

APPENDIX B

TRANSPORT LETTER AND ASR TONNAGE

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites and Prevention and Emergency Response Programs

Transport, Treatment, & Disposal Approval Form for Contaminated Media

DEC HAZARD/SPILL ID #	NAME OF SPILL OR CONTAMINATED SITE	
23545/2258.26.008	ARRC Hurricane Siding	
SITE OR SPILL LOCATION		
ARRC Hurricane Siding, Milepost 171 Parks Hwy		
CURRENT LOCATION AND TYPE OF CONTAMINATED MEDIA		**SOURCE OF THE CONTAMINATION**
Insitu Soil		Surface Spill(s)
COMPOUNDS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
DRO, GRO, BTEX	100 cy	July 28, 2015
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, BTEX, and/or Chlorinated Solvents)*		
GRO, DRO, BTEX		
COMMENTS		
Actual excavation date may vary. Contaminated soil will be taken by rail to the ARRC rail yard in Anchorage, and then it will be transported to ASR via dump truck.		

Facility Accepting the Contaminated Media

NAME OF THE FACILITY	PHYSICAL ADDRESS/PHONE NUMBER
Alaska Soil Recycling	2301 Spar Avenue, Anchorage/ 907-242-9587

Responsible Party and Contractor Information

BUSINESS/NAME	ADDRESS/PHONE NUMBER
ARRC/ Russell Grandel	327 W Ship Creek Avenue, Anchorage/ 907-265-2429
Fairbanks Environmental/Mike Boese	2400 Spenard Road #300, Anchorage/ 907-441-1346

MICHAEL L. BOESE
Name of the Person Requesting Approval (printed)

PROJECT MANAGER, FAIRBANKS ENVIRO. SERVICES
Title/Association

Michael L Boese
Signature

7/8/15
Date

907-441-1346
Phone Number

----------**DEC USE ONLY**----------

Based on the information provided, ADEC approves transport of the above-described media for treatment in accordance with the approved facility operations plan. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight/volume receipts of the loads transported to the facility and a post treatment analytical report. If the media is contaminated soil, it shall be transported as a covered load in compliance with 18 AAC 60.015.

Grant Lidren
DEC Project Manager Name (printed)

EPS
Project Manager Title

Grant Lidren
Signature

7-8-15
Date

269-8685
Phone Number

ASR

A Division of Anchorage Sand & Gravel Co. Inc.
1040 O'Malley Road, Anchorage, Alaska 99515
Phone (907) 349-3333, Fax (907) 344-2844

ASR Received Material Total

Customer: ARRC
Project: Hurricane Alaska

ASR Account #: 441047-1501

Date	Truck #	Ticket # (Tare)	Tare (lbs)	Ticket # (Gross)	Gross (lbs)	Net (lbs)	Tons POL	Billed Tons	2" minus Fill Mtl
8/24/15	52	41764	24,300	41789	41,880	17,580	8.79		
		41764	24,300	41787	46,260	21,960	10.98		
		41764	24,300	41782	48,660	24,360	12.18		
		41764	24,300	41779	51,760	27,460	13.73		
		41764	24,300	41774	51,940	27,640	13.82		
8/24/15	A111	41763	23,720	41788	55,540	31,820	15.91		
		41763	23,720	41786	52,060	28,340	14.17		
		41763	23,720	41780	55,420	31,700	15.85		
		41763	23,720	41777	49,180	25,460	12.73		
		41763	23,720	41773	50,620	26,900	13.45		
						0	0.00		
						0	0.00		

Total	**131.61**	0
Billed	**0.00**	
Remaining	**131.61**	

APPENDIX C

LABORATORY REPORT 1154000

Laboratory Report of Analysis

To: AK Railroad Corp
2400 Spenard Road, Suite 300
Anchorage, AK 99503
(907)277-7111

Report Number: **1154000**

Client Project: **Hurricane Siding (ARRC)**

Dear Mike Boese,

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 Justin 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.

Justin Nelson
2015.08.12
16:04:49 -08'00'

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

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

Print Date: 08/11/2015 4:45:11PM

Case Narrative

SGS Client: **AK Railroad Corp**
SGS Project: **1154000**
Project Name/Site: **Hurricane Siding (ARRC)**
Project Contact: **Mike Boese**

Refer to sample receipt form for information on sample condition.

EX-02 (1154000001) PS

AK103 - Surrogate recovery for n-triacontane (159%) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (50X).

EX-07 (1154000002) PS

AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (50X).

EX-09 (1154000003) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (182%) does not meet QC criteria due to matrix interference.
AK103 - The LOQ for RRO is elevated. The sample was diluted due to matrix.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

C2-3 (1154000004) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (537%) does not meet QC criteria due to matrix interference.

C2-5 (1154000005) PS

AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).
AK101 - Surrogate recovery for 4-bromofluorobenzene (1630%) does not meet QC criteria due to matrix interference.

C2-7 (1154000006) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (234%) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (50X).

C2-40 (1154000007) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (214%) does not meet QC criteria due to matrix interference.

C2-15 (1154000010) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (229%) does not meet QC criteria due to matrix interference.

C1-29 (1154000013) PS

AK103 - The LOQ for RRO is elevated. The sample was diluted due to matrix.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).
AK101 - Surrogate recovery for 4-bromofluorobenzene (2110%) does not meet QC criteria due to matrix interference.

C1-31 (1154000014) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (363%) does not meet QC criteria due to matrix interference.
AK103 - The LOQ for RRO is elevated. The sample was diluted due to matrix.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

C1-32 (1154000015) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (172%) does not meet QC criteria due to matrix interference.
AK103 - The LOQ for RRO is elevated. The sample was diluted due to matrix.

C1-35 (1154000016) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (941%) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

C1-36 (1154000017) PS

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **AK Railroad Corp**
SGS Project: **1154000**
Project Name/Site: **Hurricane Siding (ARRC)**
Project Contact: **Mike Boese**

AK101 - Surrogate recovery for 4-bromofluorobenzene (344%) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

C1-37 (1154000018) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (1020 %) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (50X).

C1-39 (1154000019) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (1230 %) does not meet QC criteria. Sample was analyzed twice and results confirmed.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (50X).

1154000001MS (1281666) MS

AK101/8021B - MS/MSD recovery for ethylbenzene and o-xylene does not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

15GV49CR02SS(1154165002MS) (1281843) MS

AK101 - MS/MSD recovery for GRO (124%) does not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

1154000001MSD (1281667) MSD

AK101/8021B - MS/MSD recovery for ethylbenzene and o-xylene does not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

15GV49CR02SS(1154165002MSD) (1281844) MSD

AK101 - MS/MSD recovery for GRO (123%) does not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

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, indenmification 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.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
EX-02	1154000001	07/28/2015	07/29/2015	Soil/Solid (dry weight)
EX-07	1154000002	07/28/2015	07/29/2015	Soil/Solid (dry weight)
EX-09	1154000003	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-3	1154000004	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-5	1154000005	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-7	1154000006	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-40	1154000007	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-13	1154000008	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-14	1154000009	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-15	1154000010	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-20	1154000011	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C2-21	1154000012	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-29	1154000013	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-31	1154000014	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-32	1154000015	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-35	1154000016	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-36	1154000017	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-37	1154000018	07/28/2015	07/29/2015	Soil/Solid (dry weight)
C1-39	1154000019	07/28/2015	07/29/2015	Soil/Solid (dry weight)
TRIP BLANK	1154000020	07/28/2015	07/29/2015	Solid/Soil (Wet Weight)

Method	Method Description
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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **EX-02**
Lab Sample ID: 1154000001

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	17900	mg/Kg
	Residual Range Organics	756	mg/Kg
Volatile Fuels	Benzene	17.4J	ug/Kg
	Ethylbenzene	190	ug/Kg
	Gasoline Range Organics	387	mg/Kg
	o-Xylene	7260	ug/Kg
	P & M -Xylene	2540	ug/Kg
	Toluene	379	ug/Kg

Client Sample ID: **EX-07**
Lab Sample ID: 1154000002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	11400	mg/Kg
	Residual Range Organics	519	mg/Kg
Volatile Fuels	Ethylbenzene	524	ug/Kg
	Gasoline Range Organics	630	mg/Kg
	o-Xylene	14100	ug/Kg
	P & M -Xylene	6330	ug/Kg
	Toluene	279J	ug/Kg

Client Sample ID: **EX-09**
Lab Sample ID: 1154000003

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	10900	mg/Kg
	Residual Range Organics	77.6J	mg/Kg
Volatile Fuels	Gasoline Range Organics	627	mg/Kg
	o-Xylene	18700	ug/Kg
	P & M -Xylene	5060	ug/Kg
	Toluene	1120	ug/Kg

Client Sample ID: **C2-3**
Lab Sample ID: 1154000004

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	277	mg/Kg
	Residual Range Organics	118	mg/Kg
Volatile Fuels	Benzene	24.3J	ug/Kg
	Ethylbenzene	556	ug/Kg
	Gasoline Range Organics	310	mg/Kg
	o-Xylene	7570	ug/Kg
	P & M -Xylene	1920	ug/Kg
	Toluene	246	ug/Kg

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **C2-5**
Lab Sample ID: 1154000005

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	9350	mg/Kg
	Residual Range Organics	97.9	mg/Kg
Volatile Fuels	Benzene	19.1J	ug/Kg
	Ethylbenzene	503	ug/Kg
	Gasoline Range Organics	470	mg/Kg
	o-Xylene	12900	ug/Kg
	P & M -Xylene	4300	ug/Kg
	Toluene	2590	ug/Kg

Client Sample ID: **C2-7**
Lab Sample ID: 1154000006

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	17400	mg/Kg
	Residual Range Organics	185	mg/Kg
Volatile Fuels	Ethylbenzene	138	ug/Kg
	Gasoline Range Organics	145	mg/Kg
	o-Xylene	3270	ug/Kg
	P & M -Xylene	1260	ug/Kg

Client Sample ID: **C2-40**
Lab Sample ID: 1154000007

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	386	mg/Kg
	Residual Range Organics	196	mg/Kg
Volatile Fuels	Ethylbenzene	169	ug/Kg
	Gasoline Range Organics	114	mg/Kg
	o-Xylene	2630	ug/Kg
	P & M -Xylene	803	ug/Kg
	Toluene	118	ug/Kg

Client Sample ID: **C2-13**
Lab Sample ID: 1154000008

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	224	mg/Kg
	Residual Range Organics	67.4	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.16J	mg/Kg
	o-Xylene	13.8J	ug/Kg
	P & M -Xylene	21.1J	ug/Kg
	Toluene	38.4	ug/Kg

Client Sample ID: **C2-14**
Lab Sample ID: 1154000009

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	152	mg/Kg
	Residual Range Organics	18.3J	mg/Kg
Volatile Fuels	Gasoline Range Organics	2.02J	mg/Kg
	o-Xylene	30.6J	ug/Kg

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **C2-15**
Lab Sample ID: 1154000010

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	1460	mg/Kg
	Residual Range Organics	137	mg/Kg
Volatile Fuels	Ethylbenzene	139	ug/Kg
	Gasoline Range Organics	125	mg/Kg
	o-Xylene	2730	ug/Kg
	P & M -Xylene	828	ug/Kg
	Toluene	118	ug/Kg

Client Sample ID: **C2-20**
Lab Sample ID: 1154000011

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	23.3	mg/Kg
	Residual Range Organics	68.7	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.09J	mg/Kg

Client Sample ID: **C2-21**
Lab Sample ID: 1154000012

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	265	mg/Kg
	Residual Range Organics	440	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.34J	mg/Kg
	o-Xylene	15.6J	ug/Kg
	Toluene	195	ug/Kg

Client Sample ID: **C1-29**
Lab Sample ID: 1154000013

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	44000	mg/Kg
	Residual Range Organics	240J	mg/Kg
Volatile Fuels	Benzene	58.0	ug/Kg
	Ethylbenzene	1160	ug/Kg
	Gasoline Range Organics	467	mg/Kg
	o-Xylene	25300	ug/Kg
	P & M -Xylene	8330	ug/Kg
	Toluene	336	ug/Kg

Client Sample ID: **C1-31**
Lab Sample ID: 1154000014

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	6140	mg/Kg
	Residual Range Organics	57.2J	mg/Kg
Volatile Fuels	Benzene	10.8J	ug/Kg
	Ethylbenzene	216	ug/Kg
	Gasoline Range Organics	107	mg/Kg
	o-Xylene	8680	ug/Kg
	P & M -Xylene	3010	ug/Kg
	Toluene	578	ug/Kg

Detectable Results Summary

Client Sample ID: **C1-32**
Lab Sample ID: 1154000015

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	1640	mg/Kg
Volatile Fuels	Gasoline Range Organics	19.7	mg/Kg
	o-Xylene	306	ug/Kg
	P & M -Xylene	134	ug/Kg

Client Sample ID: **C1-35**
Lab Sample ID: 1154000016

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	7300	mg/Kg
	Residual Range Organics	253	mg/Kg
Volatile Fuels	Benzene	11.7J	ug/Kg
	Ethylbenzene	420	ug/Kg
	Gasoline Range Organics	249	mg/Kg
	o-Xylene	6950	ug/Kg
	P & M -Xylene	2270	ug/Kg
	Toluene	208	ug/Kg

Client Sample ID: **C1-36**
Lab Sample ID: 1154000017

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	8340	mg/Kg
	Residual Range Organics	342	mg/Kg
Volatile Fuels	Benzene	132	ug/Kg
	Ethylbenzene	110	ug/Kg
	Gasoline Range Organics	238	mg/Kg
	o-Xylene	5870	ug/Kg
	P & M -Xylene	2640	ug/Kg
	Toluene	138	ug/Kg

Client Sample ID: **C1-37**
Lab Sample ID: 1154000018

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	13900	mg/Kg
	Residual Range Organics	164	mg/Kg
Volatile Fuels	Benzene	26.5J	ug/Kg
	Ethylbenzene	585	ug/Kg
	Gasoline Range Organics	322	mg/Kg
	o-Xylene	8180	ug/Kg
	P & M -Xylene	2950	ug/Kg
	Toluene	184	ug/Kg

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **C1-39**
Lab Sample ID: 1154000019

Semivolatile Organic Fuels

Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	13200	mg/Kg
Residual Range Organics	144	mg/Kg
Benzene	33.8J	ug/Kg
Ethylbenzene	791	ug/Kg
Gasoline Range Organics	434	mg/Kg
o-Xylene	10800	ug/Kg
P & M -Xylene	3880	ug/Kg
Toluene	240	ug/Kg

Client Sample ID: **TRIP BLANK**
Lab Sample ID: 1154000020

Volatile Fuels

Parameter	Result	Units
Gasoline Range Organics	1.39J	mg/Kg
o-Xylene	8.22J	ug/Kg
P & M -Xylene	21.9J	ug/Kg
Toluene	10.7J	ug/Kg

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **EX-02**

Client Sample ID: **EX-02**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000001
Lab Project ID: 1154000

Collection Date: 07/28/15 08:30
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):82.6
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17900		1200	372	mg/Kg	50		08/10/15 10:48
Surrogates								
5a Androstane (surr)	0	*	50-150		%	50		08/10/15 10:48

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 10:48
Container ID: 1154000001-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.316 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	756		95.9	29.7	mg/Kg	4		08/07/15 01:37
Surrogates								
n-Triacontane-d62 (surr)	159	*	50-150		%	4		08/07/15 01:37

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 01:37
Container ID: 1154000001-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.316 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **EX-02**

Client Sample ID: **EX-02**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000001
Lab Project ID: 1154000

Collection Date: 07/28/15 08:30
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):82.6
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	387		54.3	16.3	mg/Kg	10		08/10/15 16:21

Batch Information

Analytical Batch: VFC12573
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/10/15 16:21
Container ID: 1154000001-B

Prep Batch: VXX27692
Prep Method: SW5035A
Prep Date/Time: 07/28/15 08:30
Prep Initial Wt./Vol.: 34.635 g
Prep Extract Vol: 31.0399 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	17.4	J	27.1	8.68	ug/Kg	1		08/05/15 12:42
Ethylbenzene	190		54.3	16.9	ug/Kg	1		08/05/15 12:42
o-Xylene	7260		54.3	16.9	ug/Kg	1		08/05/15 12:42
P & M -Xylene	2540		109	32.6	ug/Kg	1		08/05/15 12:42
Toluene	379		54.3	16.9	ug/Kg	1		08/05/15 12:42
Surrogates								
1,4-Difluorobenzene (surr)	86.2		72-119		%	1		08/05/15 12:42

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 12:42
Container ID: 1154000001-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 08:30
Prep Initial Wt./Vol.: 34.635 g
Prep Extract Vol: 31.0399 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **EX-07**

Client Sample ID: **EX-07**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000002
Lab Project ID: 1154000

Collection Date: 07/28/15 09:40
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11400		1180	367	mg/Kg	50		08/10/15 10:58
Surrogates								
5a Androstane (surr)	0	*	50-150		%	50		08/10/15 10:58

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 10:58
Container ID: 1154000002-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.149 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	519		94.7	29.4	mg/Kg	4		08/07/15 01:47
Surrogates								
n-Triacontane-d62 (surr)	147		50-150		%	4		08/07/15 01:47

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 01:47
Container ID: 1154000002-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.149 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **EX-07**

Client Sample ID: **EX-07**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000002
Lab Project ID: 1154000

Collection Date: 07/28/15 09:40
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	630		48.1	14.4	mg/Kg	10		08/05/15 14:36
Surrogates								
4-Bromofluorobenzene (surr)	128		50-150		%	10		08/05/15 14:36

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 14:36
Container ID: 1154000002-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 09:40
Prep Initial Wt./Vol.: 38.525 g
Prep Extract Vol: 31.1476 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	121	U	241	77.0	ug/Kg	10		08/05/15 14:36
Ethylbenzene	524		481	150	ug/Kg	10		08/05/15 14:36
o-Xylene	14100		481	150	ug/Kg	10		08/05/15 14:36
P & M -Xylene	6330		962	289	ug/Kg	10		08/05/15 14:36
Toluene	279	J	481	150	ug/Kg	10		08/05/15 14:36
Surrogates								
1,4-Difluorobenzene (surr)	84.7		72-119		%	10		08/05/15 14:36

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 14:36
Container ID: 1154000002-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 09:40
Prep Initial Wt./Vol.: 38.525 g
Prep Extract Vol: 31.1476 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **EX-09**

Client Sample ID: **EX-09**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000003
Lab Project ID: 1154000

Collection Date: 07/28/15 10:15
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):92.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	10900		425	132	mg/Kg	20		08/10/15 11:08
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 11:08

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 11:08
Container ID: 1154000003-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.442 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	77.6	J	84.9	26.3	mg/Kg	4		08/07/15 01:57
Surrogates								
n-Triacontane-d62 (surr)	107		50-150		%	4		08/07/15 01:57

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 01:57
Container ID: 1154000003-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.442 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **EX-09**

Client Sample ID: **EX-09**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000003
Lab Project ID: 1154000

Collection Date: 07/28/15 10:15
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):92.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	627		29.7	8.91	mg/Kg	10		08/05/15 14:55
Surrogates								
4-Bromofluorobenzene (surr)	182	*	50-150		%	10		08/05/15 14:55

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 14:55
Container ID: 1154000003-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 10:15
Prep Initial Wt./Vol.: 52.14 g
Prep Extract Vol: 28.7384 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	74.0	U	148	47.5	ug/Kg	10		08/05/15 14:55
Ethylbenzene	149	U	297	92.6	ug/Kg	10		08/05/15 14:55
o-Xylene	18700		297	92.6	ug/Kg	10		08/05/15 14:55
P & M -Xylene	5060		594	178	ug/Kg	10		08/05/15 14:55
Toluene	1120		297	92.6	ug/Kg	10		08/05/15 14:55
Surrogates								
1,4-Difluorobenzene (surr)	82.6		72-119		%	10		08/05/15 14:55

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 14:55
Container ID: 1154000003-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 10:15
Prep Initial Wt./Vol.: 52.14 g
Prep Extract Vol: 28.7384 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-3**

Client Sample ID: **C2-3**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000004
Lab Project ID: 1154000

Collection Date: 07/28/15 14:00
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	277		22.3	6.93	mg/Kg	1		08/07/15 00:28
Surrogates								
5a Androstane (surr)	93.9		50-150		%	1		08/07/15 00:28

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 00:28
Container ID: 1154000004-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.208 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	118		22.3	6.93	mg/Kg	1		08/07/15 00:28
Surrogates								
n-Triacontane-d62 (surr)	103		50-150		%	1		08/07/15 00:28

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 00:28
Container ID: 1154000004-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.208 g
Prep Extract Vol: 1 mL

Results of **C2-3**

Client Sample ID: **C2-3**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000004
Lab Project ID: 1154000

Collection Date: 07/28/15 14:00
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	310		8.37	2.51	mg/Kg	2		08/05/15 16:53
Surrogates								
4-Bromofluorobenzene (surr)	537	*	50-150		%	2		08/05/15 16:53

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 16:53
Container ID: 1154000004-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:00
Prep Initial Wt./Vol.: 39.498 g
Prep Extract Vol: 29.3938 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	24.3	J	41.9	13.4	ug/Kg	2		08/05/15 16:53
Ethylbenzene	556		83.7	26.1	ug/Kg	2		08/05/15 16:53
o-Xylene	7570		83.7	26.1	ug/Kg	2		08/05/15 16:53
P & M -Xylene	1920		167	50.2	ug/Kg	2		08/05/15 16:53
Toluene	246		83.7	26.1	ug/Kg	2		08/05/15 16:53
Surrogates								
1,4-Difluorobenzene (surr)	84.7		72-119		%	2		08/05/15 16:53

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 16:53
Container ID: 1154000004-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:00
Prep Initial Wt./Vol.: 39.498 g
Prep Extract Vol: 29.3938 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-5**

Client Sample ID: **C2-5**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000005
Lab Project ID: 1154000

Collection Date: 07/28/15 14:03
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):90.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	9350		438	136	mg/Kg	20		08/10/15 11:27
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 11:27

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 11:27
Container ID: 1154000005-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.301 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	97.9		87.5	27.1	mg/Kg	4		08/07/15 02:07
Surrogates								
n-Triacontane-d62 (surr)	114		50-150		%	4		08/07/15 02:07

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:07
Container ID: 1154000005-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.301 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-5**

Client Sample ID: **C2-5**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000005
Lab Project ID: 1154000

Collection Date: 07/28/15 14:03
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):90.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	470		38.2	11.4	mg/Kg	10		08/10/15 16:40
Surrogates								
4-Bromofluorobenzene (surr)	1630	*	50-150		%	10		08/10/15 16:40

Batch Information

Analytical Batch: VFC12573
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/10/15 16:40
Container ID: 1154000005-B

Prep Batch: VXX27692
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:03
Prep Initial Wt./Vol.: 41.998 g
Prep Extract Vol: 28.9992 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	19.1	J	38.2	12.2	ug/Kg	2		08/05/15 18:28
Ethylbenzene	503		76.3	23.8	ug/Kg	2		08/05/15 18:28
o-Xylene	12900		76.3	23.8	ug/Kg	2		08/05/15 18:28
P & M -Xylene	4300		153	45.8	ug/Kg	2		08/05/15 18:28
Toluene	2590		76.3	23.8	ug/Kg	2		08/05/15 18:28
Surrogates								
1,4-Difluorobenzene (surr)	85.5		72-119		%	2		08/05/15 18:28

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 18:28
Container ID: 1154000005-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:03
Prep Initial Wt./Vol.: 41.998 g
Prep Extract Vol: 28.9992 mL

Results of **C2-7**

Client Sample ID: **C2-7**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000006
Lab Project ID: 1154000

Collection Date: 07/28/15 14:08
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):77.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17400		1280	397	mg/Kg	50		08/10/15 11:37
Surrogates								
5a Androstane (surr)	0	*	50-150		%	50		08/10/15 11:37

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 11:37
Container ID: 1154000006-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.347 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	185		102	31.8	mg/Kg	4		08/07/15 02:17
Surrogates								
n-Triacontane-d62 (surr)	123		50-150		%	4		08/07/15 02:17

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:17
Container ID: 1154000006-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.347 g
Prep Extract Vol: 1 mL

Results of **C2-7**

Client Sample ID: **C2-7**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000006
Lab Project ID: 1154000

Collection Date: 07/28/15 14:08
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):77.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	145		10.0	3.01	mg/Kg	2		08/05/15 18:47
Surrogates								
4-Bromofluorobenzene (surr)	234	*	50-150		%	2		08/05/15 18:47

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 18:47
Container ID: 1154000006-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:08
Prep Initial Wt./Vol.: 45.753 g
Prep Extract Vol: 35.4326 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	25.1	U	50.2	16.1	ug/Kg	2		08/05/15 18:47
Ethylbenzene	138		100	31.3	ug/Kg	2		08/05/15 18:47
o-Xylene	3270		100	31.3	ug/Kg	2		08/05/15 18:47
P & M -Xylene	1260		201	60.2	ug/Kg	2		08/05/15 18:47
Toluene	50.0	U	100	31.3	ug/Kg	2		08/05/15 18:47
Surrogates								
1,4-Difluorobenzene (surr)	84.8		72-119		%	2		08/05/15 18:47

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 18:47
Container ID: 1154000006-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:08
Prep Initial Wt./Vol.: 45.753 g
Prep Extract Vol: 35.4326 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-40**

Client Sample ID: **C2-40**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000007
Lab Project ID: 1154000

Collection Date: 07/28/15 14:10
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	386		83.2	25.8	mg/Kg	4		08/07/15 02:27
Surrogates								
5a Androstane (surr)	92.7		50-150		%	4		08/07/15 02:27

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 02:27
Container ID: 1154000007-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.138 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	196		83.2	25.8	mg/Kg	4		08/07/15 02:27
Surrogates								
n-Triacontane-d62 (surr)	106		50-150		%	4		08/07/15 02:27

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:27
Container ID: 1154000007-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.138 g
Prep Extract Vol: 1 mL

Results of **C2-40**

Client Sample ID: **C2-40**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000007
Lab Project ID: 1154000

Collection Date: 07/28/15 14:10
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	114		7.29	2.19	mg/Kg	2		08/05/15 19:07
Surrogates								
4-Bromofluorobenzene (surr)	214	*	50-150		%	2		08/05/15 19:07

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 19:07
Container ID: 1154000007-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:10
Prep Initial Wt./Vol.: 38.211 g
Prep Extract Vol: 26.6537 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	18.3	U	36.5	11.7	ug/Kg	2		08/05/15 19:07
Ethylbenzene	169		72.9	22.7	ug/Kg	2		08/05/15 19:07
o-Xylene	2630		72.9	22.7	ug/Kg	2		08/05/15 19:07
P & M -Xylene	803		146	43.7	ug/Kg	2		08/05/15 19:07
Toluene	118		72.9	22.7	ug/Kg	2		08/05/15 19:07
Surrogates								
1,4-Difluorobenzene (surr)	84.7		72-119		%	2		08/05/15 19:07

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 19:07
Container ID: 1154000007-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 14:10
Prep Initial Wt./Vol.: 38.211 g
Prep Extract Vol: 26.6537 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-13**

Client Sample ID: **C2-13**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000008
Lab Project ID: 1154000

Collection Date: 07/28/15 15:06
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):93.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	224		21.3	6.59	mg/Kg	1		08/07/15 00:38
Surrogates								
5a Androstane (surr)	90.3		50-150		%	1		08/07/15 00:38

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 00:38
Container ID: 1154000008-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.279 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	67.4		21.3	6.59	mg/Kg	1		08/07/15 00:38
Surrogates								
n-Triacontane-d62 (surr)	106		50-150		%	1		08/07/15 00:38

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 00:38
Container ID: 1154000008-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.279 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-13**

Client Sample ID: **C2-13**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000008
Lab Project ID: 1154000

Collection Date: 07/28/15 15:06
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):93.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.16	J	2.93	0.879	mg/Kg	1		08/06/15 16:48
Surrogates								
4-Bromofluorobenzene (surr)	96.4		50-150		%	1		08/06/15 16:48

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 16:48
Container ID: 1154000008-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:06
Prep Initial Wt./Vol.: 52.237 g
Prep Extract Vol: 28.538 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	7.35	U	14.7	4.69	ug/Kg	1		08/06/15 16:48
Ethylbenzene	14.7	U	29.3	9.14	ug/Kg	1		08/06/15 16:48
o-Xylene	13.8	J	29.3	9.14	ug/Kg	1		08/06/15 16:48
P & M -Xylene	21.1	J	58.6	17.6	ug/Kg	1		08/06/15 16:48
Toluene	38.4		29.3	9.14	ug/Kg	1		08/06/15 16:48
Surrogates								
1,4-Difluorobenzene (surr)	84.2		72-119		%	1		08/06/15 16:48

Batch Information

Analytical Batch: VFC12564
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 08/06/15 16:48
Container ID: 1154000008-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:06
Prep Initial Wt./Vol.: 52.237 g
Prep Extract Vol: 28.538 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-14**

Client Sample ID: **C2-14**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000009
Lab Project ID: 1154000

Collection Date: 07/28/15 15:08
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):78.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	152		25.0	7.75	mg/Kg	1		08/07/15 00:48
Surrogates								
5a Androstane (surr)	90.7		50-150		%	1		08/07/15 00:48

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 00:48
Container ID: 1154000009-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.418 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	18.3	J	25.0	7.75	mg/Kg	1		08/07/15 00:48
Surrogates								
n-Triacontane-d62 (surr)	108		50-150		%	1		08/07/15 00:48

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 00:48
Container ID: 1154000009-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.418 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-14**

Client Sample ID: **C2-14**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000009
Lab Project ID: 1154000

Collection Date: 07/28/15 15:08
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):78.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.02	J	4.37	1.31	mg/Kg	1		08/06/15 17:07
Surrogates								
4-Bromofluorobenzene (surr)	116		50-150		%	1		08/06/15 17:07

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 17:07
Container ID: 1154000009-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:08
Prep Initial Wt./Vol.: 52.289 g
Prep Extract Vol: 36.044 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	10.9	U	21.8	6.99	ug/Kg	1		08/06/15 17:07
Ethylbenzene	21.9	U	43.7	13.6	ug/Kg	1		08/06/15 17:07
o-Xylene	30.6	J	43.7	13.6	ug/Kg	1		08/06/15 17:07
P & M -Xylene	43.7	U	87.4	26.2	ug/Kg	1		08/06/15 17:07
Toluene	21.9	U	43.7	13.6	ug/Kg	1		08/06/15 17:07
Surrogates								
1,4-Difluorobenzene (surr)	84.8		72-119		%	1		08/06/15 17:07

Batch Information

Analytical Batch: VFC12564
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 08/06/15 17:07
Container ID: 1154000009-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:08
Prep Initial Wt./Vol.: 52.289 g
Prep Extract Vol: 36.044 mL

Results of **C2-15**

Client Sample ID: **C2-15**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000010
Lab Project ID: 1154000

Collection Date: 07/28/15 15:10
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1460		88.4	27.4	mg/Kg	4		08/07/15 02:37
Surrogates								
5a Androstane (surr)	108		50-150		%	4		08/07/15 02:37

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 02:37
Container ID: 1154000010-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.425 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	137		88.4	27.4	mg/Kg	4		08/07/15 02:37
Surrogates								
n-Triacontane-d62 (surr)	124		50-150		%	4		08/07/15 02:37

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:37
Container ID: 1154000010-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.425 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-15**

Client Sample ID: **C2-15**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000010
Lab Project ID: 1154000

Collection Date: 07/28/15 15:10
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	125		7.90	2.37	mg/Kg	2		08/05/15 20:04
Surrogates								
4-Bromofluorobenzene (surr)	229	*	50-150		%	2		08/05/15 20:04

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 20:04
Container ID: 1154000010-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:10
Prep Initial Wt./Vol.: 41.816 g
Prep Extract Vol: 29.4823 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	19.8	U	39.5	12.6	ug/Kg	2		08/05/15 20:04
Ethylbenzene	139		79.0	24.6	ug/Kg	2		08/05/15 20:04
o-Xylene	2730		79.0	24.6	ug/Kg	2		08/05/15 20:04
P & M -Xylene	828		158	47.4	ug/Kg	2		08/05/15 20:04
Toluene	118		79.0	24.6	ug/Kg	2		08/05/15 20:04
Surrogates								
1,4-Difluorobenzene (surr)	81.5		72-119		%	2		08/05/15 20:04

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 20:04
Container ID: 1154000010-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:10
Prep Initial Wt./Vol.: 41.816 g
Prep Extract Vol: 29.4823 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-20**

Client Sample ID: **C2-20**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000011
Lab Project ID: 1154000

Collection Date: 07/28/15 15:00
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	23.3		22.6	7.02	mg/Kg	1		08/07/15 00:58
Surrogates								
5a Androstane (surr)	81.7		50-150		%	1		08/07/15 00:58

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 00:58
Container ID: 1154000011-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.359 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	68.7		22.6	7.02	mg/Kg	1		08/07/15 00:58
Surrogates								
n-Triacontane-d62 (surr)	96.4		50-150		%	1		08/07/15 00:58

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 00:58
Container ID: 1154000011-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.359 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C2-20**

Client Sample ID: **C2-20**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000011
Lab Project ID: 1154000

Collection Date: 07/28/15 15:00
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.09	J	3.40	1.02	mg/Kg	1		08/06/15 18:23
Surrogates								
4-Bromofluorobenzene (surr)	104		50-150		%	1		08/06/15 18:23

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 18:23
Container ID: 1154000011-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:00
Prep Initial Wt./Vol.: 53.691 g
Prep Extract Vol: 31.832 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.50	U	17.0	5.43	ug/Kg	1		08/06/15 18:23
Ethylbenzene	17.0	U	34.0	10.6	ug/Kg	1		08/06/15 18:23
o-Xylene	17.0	U	34.0	10.6	ug/Kg	1		08/06/15 18:23
P & M -Xylene	34.0	U	67.9	20.4	ug/Kg	1		08/06/15 18:23
Toluene	17.0	U	34.0	10.6	ug/Kg	1		08/06/15 18:23
Surrogates								
1,4-Difluorobenzene (surr)	83.9		72-119		%	1		08/06/15 18:23

Batch Information

Analytical Batch: VFC12564
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 08/06/15 18:23
Container ID: 1154000011-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:00
Prep Initial Wt./Vol.: 53.691 g
Prep Extract Vol: 31.832 mL

Results of **C2-21**

Client Sample ID: **C2-21**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000012
Lab Project ID: 1154000

Collection Date: 07/28/15 15:02
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	265		23.0	7.14	mg/Kg	1		08/07/15 01:08
Surrogates								
5a Androstane (surr)	118		50-150		%	1		08/07/15 01:08

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 01:08
Container ID: 1154000012-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.402 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	440		23.0	7.14	mg/Kg	1		08/07/15 01:08
Surrogates								
n-Triacontane-d62 (surr)	137		50-150		%	1		08/07/15 01:08

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 01:08
Container ID: 1154000012-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.402 g
Prep Extract Vol: 1 mL

Results of **C2-21**

Client Sample ID: **C2-21**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000012
Lab Project ID: 1154000

Collection Date: 07/28/15 15:02
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.34	J	4.45	1.34	mg/Kg	1		08/06/15 18:42
Surrogates								
4-Bromofluorobenzene (surr)	97.2		50-150		%	1		08/06/15 18:42

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 18:42
Container ID: 1154000012-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:02
Prep Initial Wt./Vol.: 40.308 g
Prep Extract Vol: 30.7703 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	11.2	U	22.3	7.13	ug/Kg	1		08/06/15 18:42
Ethylbenzene	22.3	U	44.5	13.9	ug/Kg	1		08/06/15 18:42
o-Xylene	15.6	J	44.5	13.9	ug/Kg	1		08/06/15 18:42
P & M -Xylene	44.5	U	89.1	26.7	ug/Kg	1		08/06/15 18:42
Toluene	195		44.5	13.9	ug/Kg	1		08/06/15 18:42
Surrogates								
1,4-Difluorobenzene (surr)	83.9		72-119		%	1		08/06/15 18:42

Batch Information

Analytical Batch: VFC12564
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 08/06/15 18:42
Container ID: 1154000012-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:02
Prep Initial Wt./Vol.: 40.308 g
Prep Extract Vol: 30.7703 mL

Results of **C1-29**

Client Sample ID: **C1-29**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000013
Lab Project ID: 1154000

Collection Date: 07/28/15 15:35
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	44000		2470	765	mg/Kg	20		08/10/15 11:47
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 11:47

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 11:47
Container ID: 1154000013-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.066 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	240	J	494	153	mg/Kg	4		08/07/15 02:47
Surrogates								
n-Triacontane-d62 (surr)	113		50-150		%	4		08/07/15 02:47

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:47
Container ID: 1154000013-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.066 g
Prep Extract Vol: 5 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-29**

Client Sample ID: **C1-29**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000013
Lab Project ID: 1154000

Collection Date: 07/28/15 15:35
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	467		46.0	13.8	mg/Kg	10		08/10/15 17:56
Surrogates								
4-Bromofluorobenzene (surr)	2110	*	50-150		%	10		08/10/15 17:56

Batch Information

Analytical Batch: VFC12573
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/10/15 17:56
Container ID: 1154000013-B

Prep Batch: VXX27692
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:35
Prep Initial Wt./Vol.: 45.27 g
Prep Extract Vol: 33.6709 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	58.0		46.0	14.7	ug/Kg	2		08/05/15 21:01
Ethylbenzene	1160		92.0	28.7	ug/Kg	2		08/05/15 21:01
o-Xylene	25300		92.0	28.7	ug/Kg	2		08/05/15 21:01
P & M -Xylene	8330		184	55.2	ug/Kg	2		08/05/15 21:01
Toluene	336		92.0	28.7	ug/Kg	2		08/05/15 21:01
Surrogates								
1,4-Difluorobenzene (surr)	80.4		72-119		%	2		08/05/15 21:01

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 21:01
Container ID: 1154000013-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:35
Prep Initial Wt./Vol.: 45.27 g
Prep Extract Vol: 33.6709 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-31**

Client Sample ID: **C1-31**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000014
Lab Project ID: 1154000

Collection Date: 07/28/15 15:30
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):70.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	6140		564	175	mg/Kg	20		08/10/15 11:57
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 11:57

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 11:57
Container ID: 1154000014-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.313 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	57.2	J	113	34.9	mg/Kg	4		08/07/15 02:57
Surrogates								
n-Triacontane-d62 (surr)	124		50-150		%	4		08/07/15 02:57

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 02:57
Container ID: 1154000014-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.313 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-31**

Client Sample ID: **C1-31**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000014
Lab Project ID: 1154000

Collection Date: 07/28/15 15:30
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):70.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	107		5.42	1.63	mg/Kg	1		08/05/15 19:48
Surrogates								
4-Bromofluorobenzene (surr)	363	*	50-150		%	1		08/05/15 19:48

Batch Information

Analytical Batch: VFC12563
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 19:48
Container ID: 1154000014-B

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:30
Prep Initial Wt./Vol.: 53.878 g
Prep Extract Vol: 41.0315 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	10.8	J	27.1	8.67	ug/Kg	1		08/05/15 19:48
Ethylbenzene	216		54.2	16.9	ug/Kg	1		08/05/15 19:48
o-Xylene	8680		54.2	16.9	ug/Kg	1		08/05/15 19:48
P & M -Xylene	3010		108	32.5	ug/Kg	1		08/05/15 19:48
Toluene	578		54.2	16.9	ug/Kg	1		08/05/15 19:48
Surrogates								
1,4-Difluorobenzene (surr)	89.9		72-119		%	1		08/05/15 19:48

Batch Information

Analytical Batch: VFC12563
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 19:48
Container ID: 1154000014-B

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 07/28/15 15:30
Prep Initial Wt./Vol.: 53.878 g
Prep Extract Vol: 41.0315 mL

Results of **C1-32**

Client Sample ID: **C1-32**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000015
Lab Project ID: 1154000

Collection Date: 07/28/15 16:38
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.6
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1640		93.4	29.0	mg/Kg	4		08/07/15 03:07
Surrogates								
5a Androstane (surr)	95.6		50-150		%	4		08/07/15 03:07

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/07/15 03:07
Container ID: 1154000015-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.001 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	46.7	U	93.4	29.0	mg/Kg	4		08/07/15 03:07
Surrogates								
n-Triacontane-d62 (surr)	98.8		50-150		%	4		08/07/15 03:07

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 03:07
Container ID: 1154000015-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.001 g
Prep Extract Vol: 1 mL

Results of **C1-32**

Client Sample ID: **C1-32**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000015
Lab Project ID: 1154000

Collection Date: 07/28/15 16:38
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.6
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	19.7		3.33	1.00	mg/Kg	1		08/05/15 20:06
Surrogates								
4-Bromofluorobenzene (surr)	172	*	50-150		%	1		08/05/15 20:06

Batch Information

Analytical Batch: VFC12563
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 20:06
Container ID: 1154000015-B

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:38
Prep Initial Wt./Vol.: 58.489 g
Prep Extract Vol: 33.4011 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Ethylbenzene	16.6	U	33.3	10.4	ug/Kg	1		08/05/15 20:06
Benzene	8.35	U	16.7	5.33	ug/Kg	1		08/05/15 20:06
o-Xylene	306		33.3	10.4	ug/Kg	1		08/05/15 20:06
P & M -Xylene	134		66.7	20.0	ug/Kg	1		08/05/15 20:06
Toluene	16.6	U	33.3	10.4	ug/Kg	1		08/05/15 20:06
Surrogates								
1,4-Difluorobenzene (surr)	82.2		72-119		%	1		08/05/15 20:06

Batch Information

Analytical Batch: VFC12563
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 20:06
Container ID: 1154000015-B

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:38
Prep Initial Wt./Vol.: 58.489 g
Prep Extract Vol: 33.4011 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-35**

Client Sample ID: **C1-35**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000016
Lab Project ID: 1154000

Collection Date: 07/28/15 16:42
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):88.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	7300		448	139	mg/Kg	20		08/10/15 12:17
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 12:17

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 12:17
Container ID: 1154000016-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.394 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	253		89.6	27.8	mg/Kg	4		08/07/15 03:17
Surrogates								
n-Triacontane-d62 (surr)	133		50-150		%	4		08/07/15 03:17

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 03:17
Container ID: 1154000016-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.394 g
Prep Extract Vol: 1 mL

Results of **C1-35**

Client Sample ID: **C1-35**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000016
Lab Project ID: 1154000

Collection Date: 07/28/15 16:42
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):88.1
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	249		30.8	9.23	mg/Kg	10		08/06/15 19:01
Surrogates								
4-Bromofluorobenzene (surr)	941	*	50-150		%	10		08/06/15 19:01

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 19:01
Container ID: 1154000016-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:42
Prep Initial Wt./Vol.: 59.051 g
Prep Extract Vol: 32.0178 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	11.7	J	30.8	9.85	ug/Kg	2		08/05/15 15:15
Ethylbenzene	420		61.5	19.2	ug/Kg	2		08/05/15 15:15
o-Xylene	6950		61.5	19.2	ug/Kg	2		08/05/15 15:15
P & M -Xylene	2270		123	36.9	ug/Kg	2		08/05/15 15:15
Toluene	208		61.5	19.2	ug/Kg	2		08/05/15 15:15
Surrogates								
1,4-Difluorobenzene (surr)	85.9		72-119		%	2		08/05/15 15:15

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 15:15
Container ID: 1154000016-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:42
Prep Initial Wt./Vol.: 59.051 g
Prep Extract Vol: 32.0178 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-36**

Client Sample ID: **C1-36**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000017
Lab Project ID: 1154000

Collection Date: 07/28/15 16:46
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):81.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	8340		491	152	mg/Kg	20		08/10/15 12:27
Surrogates								
5a Androstane (surr)	0	*	50-150		%	20		08/10/15 12:27

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 12:27
Container ID: 1154000017-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.203 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	342		98.1	30.4	mg/Kg	4		08/07/15 03:27
Surrogates								
n-Triacontane-d62 (surr)	141		50-150		%	4		08/07/15 03:27

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 03:27
Container ID: 1154000017-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.203 g
Prep Extract Vol: 1 mL

Results of **C1-36**

Client Sample ID: **C1-36**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000017
Lab Project ID: 1154000

Collection Date: 07/28/15 16:46
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):81.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	238		9.98	2.99	mg/Kg	2		08/05/15 15:34
Surrogates								
4-Bromofluorobenzene (surr)	344	*	50-150		%	2		08/05/15 15:34

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 15:34
Container ID: 1154000017-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:46
Prep Initial Wt./Vol.: 40.473 g
Prep Extract Vol: 32.7025 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	132		49.9	16.0	ug/Kg	2		08/05/15 15:34
Ethylbenzene	110		99.8	31.1	ug/Kg	2		08/05/15 15:34
o-Xylene	5870		99.8	31.1	ug/Kg	2		08/05/15 15:34
P & M -Xylene	2640		200	59.9	ug/Kg	2		08/05/15 15:34
Toluene	138		99.8	31.1	ug/Kg	2		08/05/15 15:34
Surrogates								
1,4-Difluorobenzene (surr)	88.8		72-119		%	2		08/05/15 15:34

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 15:34
Container ID: 1154000017-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:46
Prep Initial Wt./Vol.: 40.473 g
Prep Extract Vol: 32.7025 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-37**

Client Sample ID: **C1-37**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000018
Lab Project ID: 1154000

Collection Date: 07/28/15 16:50
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):81.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	13900		1220	377	mg/Kg	50		08/10/15 12:37
Surrogates								
5a Androstane (surr)	0	*	50-150		%	50		08/10/15 12:37

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 12:37
Container ID: 1154000018-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.34 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	164		97.4	30.2	mg/Kg	4		08/07/15 03:36
Surrogates								
n-Triacontane-d62 (surr)	124		50-150		%	4		08/07/15 03:36

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 03:36
Container ID: 1154000018-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.34 g
Prep Extract Vol: 1 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-37**

Client Sample ID: **C1-37**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000018
Lab Project ID: 1154000

Collection Date: 07/28/15 16:50
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):81.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	322		37.8	11.3	mg/Kg	10		08/06/15 19:21
Surrogates								
4-Bromofluorobenzene (surr)	1020	*	50-150		%	10		08/06/15 19:21

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 19:21
Container ID: 1154000018-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:50
Prep Initial Wt./Vol.: 58.597 g
Prep Extract Vol: 36.006 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	26.5	J	37.8	12.1	ug/Kg	2		08/05/15 15:52
Ethylbenzene	585		75.7	23.6	ug/Kg	2		08/05/15 15:52
o-Xylene	8180		75.7	23.6	ug/Kg	2		08/05/15 15:52
P & M -Xylene	2950		151	45.4	ug/Kg	2		08/05/15 15:52
Toluene	184		75.7	23.6	ug/Kg	2		08/05/15 15:52
Surrogates								
1,4-Difluorobenzene (surr)	81.1		72-119		%	2		08/05/15 15:52

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 15:52
Container ID: 1154000018-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:50
Prep Initial Wt./Vol.: 58.597 g
Prep Extract Vol: 36.006 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **C1-39**

Client Sample ID: **C1-39**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000019
Lab Project ID: 1154000

Collection Date: 07/28/15 16:54
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):80.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	13200		1230	381	mg/Kg	50		08/10/15 12:47
Surrogates								
5a Androstane (surr)	0	*	50-150		%	50		08/10/15 12:47

Batch Information

Analytical Batch: XFC11998
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 08/10/15 12:47
Container ID: 1154000019-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.17 g
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	144		98.4	30.5	mg/Kg	4		08/07/15 03:46
Surrogates								
n-Triacontane-d62 (surr)	118		50-150		%	4		08/07/15 03:46

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 08/07/15 03:46
Container ID: 1154000019-A

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 07/30/15 12:42
Prep Initial Wt./Vol.: 30.17 g
Prep Extract Vol: 1 mL

Results of **C1-39**

Client Sample ID: **C1-39**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000019
Lab Project ID: 1154000

Collection Date: 07/28/15 16:54
Received Date: 07/29/15 13:15
Matrix: Soil/Solid (dry weight)
Solids (%):80.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	434		41.3	12.4	mg/Kg	10		08/06/15 19:40
Surrogates								
4-Bromofluorobenzene (surr)	1230	*	50-150		%	10		08/06/15 19:40

Batch Information

Analytical Batch: VFC12564
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 08/06/15 19:40
Container ID: 1154000019-B

Prep Batch: VXX27675
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:54
Prep Initial Wt./Vol.: 52.481 g
Prep Extract Vol: 35.0398 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	33.8	J	41.3	13.2	ug/Kg	2		08/05/15 16:11
Ethylbenzene	791		82.6	25.8	ug/Kg	2		08/05/15 16:11
o-Xylene	10800		82.6	25.8	ug/Kg	2		08/05/15 16:11
P & M -Xylene	3880		165	49.5	ug/Kg	2		08/05/15 16:11
Toluene	240		82.6	25.8	ug/Kg	2		08/05/15 16:11
Surrogates								
1,4-Difluorobenzene (surr)	81		72-119		%	2		08/05/15 16:11

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 16:11
Container ID: 1154000019-B

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 16:54
Prep Initial Wt./Vol.: 52.481 g
Prep Extract Vol: 35.0398 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Results of **TRIP BLANK**

Client Sample ID: **TRIP BLANK**
Client Project ID: **Hurricane Siding (ARRC)**
Lab Sample ID: 1154000020
Lab Project ID: 1154000

Collection Date: 07/28/15 08:00
Received Date: 07/29/15 13:15
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.39	J	2.49	0.747	mg/Kg	1		08/05/15 18:09
Surrogates								
4-Bromofluorobenzene (surr)	105		50-150		%	1		08/05/15 18:09

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 08/05/15 18:09
Container ID: 1154000020-A

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 08:00
Prep Initial Wt./Vol.: 50.213 g
Prep Extract Vol: 25 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	6.20	U	12.4	3.98	ug/Kg	1		08/05/15 18:09
Ethylbenzene	12.4	U	24.9	7.77	ug/Kg	1		08/05/15 18:09
o-Xylene	8.22	J	24.9	7.77	ug/Kg	1		08/05/15 18:09
P & M -Xylene	21.9	J	49.8	14.9	ug/Kg	1		08/05/15 18:09
Toluene	10.7	J	24.9	7.77	ug/Kg	1		08/05/15 18:09
Surrogates								
1,4-Difluorobenzene (surr)	82.5		72-119		%	1		08/05/15 18:09

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 08/05/15 18:09
Container ID: 1154000020-A

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 07/28/15 08:00
Prep Initial Wt./Vol.: 50.213 g
Prep Extract Vol: 25 mL

Print Date: 08/11/2015 4:45:16PM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1715355 [SPT/9677]
Blank Lab ID: 1280408

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000008, 1154000009, 1154000010, 1154000011, 1154000012, 1154000013, 1154000014, 1154000015, 1154000016, 1154000017, 1154000018, 1154000019

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT9677
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R
Analytical Date/Time: 7/30/2015 4:10:00PM

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Duplicate Sample Summary

Original Sample ID: 1154000006
Duplicate Sample ID: 1280409

Analysis Date: 07/30/2015 16:10
Matrix: Soil/Solid (dry weight)

QC for Samples:

1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000008, 1154000009, 1154000010, 1154000011

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	77.2	77.2	%	0.05	(< 15)

Batch Information

Analytical Batch: SPT9677
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R

Print Date: 08/11/2015 4:45:21PM

Duplicate Sample Summary

Original Sample ID: 1154000011
Duplicate Sample ID: 1280410

Analysis Date: 07/30/2015 16:10
Matrix: Soil/Solid (dry weight)

QC for Samples:

1154000007, 1154000008, 1154000009, 1154000010, 1154000011, 1154000012, 1154000013, 1154000014, 1154000015, 1154000016, 1154000017, 1154000018, 1154000019

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	87.3	87.5	%	0.22	(< 15)

Batch Information

Analytical Batch: SPT9677
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R

Print Date: 08/11/2015 4:45:21PM

Duplicate Sample Summary

Original Sample ID: 1154032004
Duplicate Sample ID: 1280411

Analysis Date: 07/30/2015 16:10
Matrix: Soil/Solid (dry weight)

QC for Samples:

1154000012, 1154000013, 1154000014, 1154000015, 1154000016, 1154000017, 1154000018, 1154000019

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	91.3	91.1	%	0.22	(< 15)

Batch Information

Analytical Batch: SPT9677
Analytical Method: SM21 2540G
Instrument:
Analyst: A.R

Print Date: 08/11/2015 4:45:21PM

Method Blank

Blank ID: MB for HBN 1716061 [VXX/27669]
Blank Lab ID: 1281654

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000014, 1154000015

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	96.4	50-150		%

Batch Information

Analytical Batch: VFC12563
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 11:10:00AM

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX27669]
Blank Spike Lab ID: 1281657
Date Analyzed: 08/05/2015 12:07

Spike Duplicate ID: LCSD for HBN 1154000 [VXX27669]
Spike Duplicate Lab ID: 1281658
Matrix: Soil/Solid (dry weight)

QC for Samples: 1154000014, 1154000015

Results by **AK101**

	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	10.0	10.4	104	10.0	10.3	103	(60-120)	1.00	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	95.5	96	1.25	96.1	96	(50-150)	0.63	

Batch Information

Analytical Batch: **VFC12563**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27669**
Prep Method: **SW5035A**
Prep Date/Time: **08/05/2015 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

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1154165001
MS Sample ID: 1281659 MS
MSD Sample ID: 1281660 MSD

Analysis Date: 08/05/2015 15:36
Analysis Date: 08/05/2015 15:55
Analysis Date: 08/05/2015 16:14
Matrix: Soil/Solid (dry weight)

QC for Samples: 1154000014, 1154000015

Results by **AK101**

		Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	8.64	13.6	18.6	73	13.6	18.6	73	60-120	0.07	(< 20)
Surrogates										
4-Bromofluorobenzene (surr)		1.71	1.38	80	1.71	1.35	79	50-150	1.60	

Batch Information

Analytical Batch: VFC12563
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 3:55:00PM

Prep Batch: VXX27669
Prep Method: AK101 Extraction (S)
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 44.92g
Prep Extract Vol: 25.00mL

Print Date: 08/11/2015 4:45:26PM

Method Blank

Blank ID: MB for HBN 1716061 [VXX/27669]
Blank Lab ID: 1281654

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000014, 1154000015

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
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)	82.6	72-119		%

Batch Information

Analytical Batch: VFC12563
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 11:10:00AM

Prep Batch: VXX27669
Prep Method: SW5035A
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 08/11/2015 4:45:26PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX27669]
Blank Spike Lab ID: 1281655
Date Analyzed: 08/05/2015 11:29

Spike Duplicate ID: LCSD for HBN 1154000 [VXX27669]
Spike Duplicate Lab ID: 1281656
Matrix: Soil/Solid (dry weight)

QC for Samples: 1154000014, 1154000015

Results by **SW8021B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	1250	1430	114	1250	1420	114	(75-125)	0.44	(< 20)
Ethylbenzene	1250	1270	102	1250	1290	103	(75-125)	1.20	(< 20)
o-Xylene	1250	1230	98	1250	1240	99	(75-125)	0.85	(< 20)
P & M -Xylene	2500	2490	99	2500	2530	101	(80-125)	1.70	(< 20)
Toluene	1250	1350	108	1250	1360	109	(70-125)	0.31	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	89.9	90	1250	89	89	(72-119)	0.94	

Batch Information

Analytical Batch: **VFC12563**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27669**
Prep Method: **SW5035A**
Prep Date/Time: **08/05/2015 08:00**
Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1716062 [VXX/27670]
Blank Lab ID: 1281661

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000010, 1154000013, 1154000016, 1154000017, 1154000018, 1154000019, 1154000020

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.915J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	104	50-150		%

Batch Information

Analytical Batch: VFC12562
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 11:07:00AM

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX276709
Blank Spike La] ID: 12b1664
Da8e t nalAyez: 0bd05d2015 12:04

Spike D/ pliua8e ID: LCSD for HBN 1154000 [VXX276709
Spike D/ pliua8e La] ID: 12b1665
s a8iM Soild Soliz xzrA(eiwg8n

KC for SaP pleR 1154000001Q1154000002Q115400000, Q1154000004Q1154000005Q1154000006Q1154000007Q 1154000010Q115400001, Q1154000016Q1154000017Q115400001bQ115400001GQ1154000020

c eR/ l8R] A **AK101**

	Blank Spike xP wd%wh			Spike D/ pliua8e xP wd%wh					
) araP e8er	Spike	c eR/ l8	c eu xmh	Spike	c eR/ l8	c eu xmh	CL	c) D xmh	c) D CL
OaRoline c anwe . rwaniuR	1030	G3b1	Gb	1030	1030	100	x60-120 h	1330	x< 20 h
Surrogates									
4-BroP ofl/ oro] enyene xR/ rrh	1325	10G	10G	1325	112	112	x50-150 h	2340	

Batch Information

t nalA8ual Ba8ug: **VFC12562**
t nalA8ual s e8goz: **AK101**
InR8/ P en8 **Agilent 3780A 9IPDFIP**
t nalAR8 **C/ P**

) rep Ba8ug: **VRR23630**
) rep s e8goz: **SX 50W5A**
) rep Da8edTiP e: **07D05D2015 07:00**
Spike Ini8W8dVol3 1030 P wd%w EM8au8Vol: 25 P L
D/ pe Ini8W8dVol3 1030 P wd%w EM8au8Vol: 25 P L

) rin8Da8e: 0bdf1d2015 4:45:2G) s

Method Blank

Blank ID: MB for HBN 1716062 [VXX/27670]
Blank Lab ID: 1281661

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000010, 1154000013, 1154000016, 1154000017, 1154000018, 1154000019, 1154000020

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
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	16.3J	50.0	15.0	ug/Kg
Toluene	14.3J	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	83.3	72-119		%

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 11:07:00AM

Prep Batch: VXX27670
Prep Method: SW5035A
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX276709
Blank Spike La] ID: 12b1662
Da8e t nalAyez: 0bd05d2015 11:26

Spike D/ pliua8e ID: LCSD for HBN 1154000 [VXX276709
Spike D/ pliua8e La] ID: 12b166c
Ma8ix: Soild Soliz (zrA weigh8)

QC for Samples: 1154000001, 1154000002, 115400000c, 1154000004, 1154000005, 1154000006, 1154000007, 1154000010, 115400001c, 1154000016, 1154000017, 115400001b, 115400001- , 1154000020

Res/ l8s] A **SW8021B**

	Blank Spike (/ gdKg)			Spike D/ pliua8e (/ gdKg)					
Parame8er	Spike	Res/ l8	Reu (%)	Spike	Res/ l8	Reu (%)	CL	RPD (%)	RPD CL
Benyene	1250	11b0	- 4	1250	1140	- 1	(75<125)	c320	(. 20)
E8hA] enyene	1250	11- 0	- 5	1250	1160	- c	(75<125)	2360	(. 20)
o>XAlene	1250	11b0	- 5	1250	1170	- c	(75<125)	1360	(. 20)
P & M >XAlene	2500	2cb0	- 5	2500	2c40	- c	(b0<125)	2310	(. 20)
Tol/ ene	1250	1170	- 4	1250	11c0	- 1	(70<125)	c310	(. 20)
Surrogates									
1,4>Difl/ oro] enyene (s/ rr)	1250	- 034	- 0	1250	- 13c	- 1	(72<11-)	03-	

Batch Information

t nalA8ual Ba8uh: **VFC12562**
t nalA8ual Me8noz: **SW8021B**
Ins8/ men8 **3 gilent A8703 9IPDFIP**
t nalAs8 **C/ P**

Prep Ba8uh: **VRR2A6A0**
Prep Me8noz: **SW50X53**
Prep Da8edTime: **08D05D2015 08:00**
Spike Ini8W8dVol3 1250 / gdKg Ex8rau8Vol: 25 mL
D/ pe Ini8W8dVol3 1250 / gdKg Ex8rau8Vol: 25 mL

Prin8Da8e: 0bdf1d2015 4:45:c1PM

Matrix Spike Summary

Original Sample ID: 1154000001
MS Sample ID: 1281666 MS
MSD Sample ID: 1281667 MSD

Analysis Date: 08/05/2015 12:42
Analysis Date: 08/05/2015 13:01
Analysis Date: 08/05/2015 13:20
Matrix: Soil/Solid (dry weight)

QC for Samples: 1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000010, 1154000013, 1154000016, 1154000017, 1154000018, 1154000019, 1154000020

Results by **SW8021B**

		Matrix Spike (ug/Kg)				Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Benzene	17.4J	2179	1901	86		2179	1864	84		75-125	2.00	(< 20)
Ethylbenzene	190	2179	1792	73	*	2179	1755	72	*	75-125	1.60	(< 20)
o-Xylene	7260	2179	3148	-188	*	2179	3123	-189	*	75-125	0.52	(< 20)
P & M -Xylene	2540	4370	7034	103		4370	7022	103		80-125	0.21	(< 20)
Toluene	379	2179	2119	80		2179	2070	78		70-125	2.20	(< 20)
Surrogates												
1,4-Difluorobenzene (surr)		2179	2022	93		2179	2010	92		72-119	1.00	

Batch Information

Analytical Batch: VFC12562
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 8/5/2015 1:01:00PM

Prep Batch: VXX27670
Prep Method: AK101 Extraction (S)
Prep Date/Time: 8/5/2015 8:00:00AM
Prep Initial Wt./Vol.: 34.64g
Prep Extract Vol: 25.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1716102 [VXX/] 767Lb
Blank 8aQID: 1] C1CSC

Matrix: eoil/eolid (dry w4ight)

mp for eas 5l4, :
11L200000C311L2000009311L2000011311L200001] 311L2000016311L200001C311L2000019

R4, ult, Qy **AK101**

Paras 4t4r	R4, ult,	8Om/p 8	D8	Unit,
Ga, olin4 Rang4 Organic,	0.C66J	] .L0	0.7L0	s g/Kg
Surrogates				
2-Bros ofluoroQ4nz4n4 (, urr)	101	L0-1L0		%

Batch Information

Analytical Batch: VFp 1] L62
Analytical M4thod: AK101
In, trus 4nt: Agil4nt 7C90A PID/FID
Analy, t: eT
Analytical Dat4/Tis 4: C/6/] 01L 11:06:00AM

Pr45 Batch: VXX] 767L
Pr45 M4thod: eWL0SLA
Pr45 Dat4/Tis 4: C/6/] 01L C:00:00AM
Pr45 Initial Wt./Vol.: L0 g
Pr45 Extract Vol:] L s 8

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX276759
Blank Spike La] ID: 12b1b41
Da8e t nalAyez: 0bd06d2015 12:0/

Spike Duplica8e ID: LCSD for HBN 1154000 [VXX276759
Spike Duplica8e La] ID: 12b1b42
Ma8ix: Soild Soliz (zrA weigh8)

QC for Samples: 115400000b, 115400000G, 1154000011, 1154000012, 1154000016, 115400001b, 115400001G

Resul8s] A **AK101**

	Blank Spike (mgdKg)			Spike Duplica8e (mgdKg)					
Parame8er	Spike	Resul8	Rec (%)	Spike	Resul8	Rec (%)	CL	RPD (%)	RPD CL
Oasoline Range . rganics	1030	1032	102	1030	1032	102	(60-120)	0360	(< 20)
Surrogates									
4-Bromofluoro] enyene (surr)	1325	104	104	1325	10/	10/	(50-150)	0337	

Batch Information

t nalA8cal Ba8ch: **VFC12564**
t nalA8cal Me8hoz: **AK101**
Ins8umen8 **Agilent 7890A PID/FID**
t nalAs8 **ST**

Prep Ba8ch: **VXX27675**
Prep Me8hoz: **SW5035A**
Prep Da8ed Time: **08/06/2015 08:00**
Spike Ini8W8 Vol3 1030 mgdKg Ex8ac8Vol: 25 mL
Dupe Ini8W8 Vol3 1030 mgdKg Ex8ac8Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1716102 [VXX/] 767Lb
Blank 8aQID: 1] C1CSC

Matrix: eoil/eolid (dry w4ight)

mp for eas 5l4, :
11L200000C311L2000009311L2000011311L200001] 311L2000016311L200001C311L2000019

R4, ult, Qy **SW8021B**

Paras 4t4r	R4, ult,	8Om/p 8	D8	Unit,
B4nz4n4	6.] LU	1] .L	2.00	ug/Kg
EthylQ4nz4n4	1] .LU	] L.0	7.C0	ug/Kg
o-Xyl4n4	1] .LU	] L.0	7.C0	ug/Kg
P & M -Xyl4n4	] L.0U	L0.0	1L.0	ug/Kg
Jolu4n4	1] .0T	] L.0	7.C0	ug/Kg
Surrogates				
132-DifluoroQ4nz4n4 (, urr)	C2.2	7] -119		%

Batch Information

Analytical Batch: VFp 1] L62
Analytical M4thod: eWC0] 1B
In, trus 4nt: Agil4nt 7C90A PID/FID
Analy, t: eJ
Analytical Dat4/Jis 4: C/6/] 01L 11:06:00AM

Pr45 Batch: VXX] 767L
Pr45 M4thod: eWL0SLA
Pr45 Dat4/Jis 4: C/6/] 01L C:00:00AM
Pr45 Initial Wt./Vol.: L0 g
Pr45 Extract Vol:] L s 8

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX276759
Blank Spike La] ID: 12b1b8t
DaAe y nalzde/ : 0bu06u2015 11:25

Spike DcpliRaAe ID: LCSD for HBN 1154000 [VXX276759
Spike DcpliRaAe La] ID: 12b1b40
x aAi(: SoiluSoli/ w/rz g eih) AP

, C for Sa%pleM 1154000000b- 1154000000t - 1154000011- 1154000012- 1154000016- 1154000001b- 1154000001t

s eMctlAM] z **SW8021B**

	Blank Spike wchuQhP			Spike DcpliRaAe wchuQhP					
mara%eAer	Spike	s eMctlA	s eRvK P	Spike	s eMctlA	s eRvK P	CL	s mD vK P	s mD CL
Bendene	1250	11t 0	t 5	1250	1200	t 6	w75<125 P	1320	w 20 P
EA,zl] endene	1250	1210	t 6	1250	1220	t 7	w75<125 P	03b7	w 20 P
o>Xzlene	1250	1210	t 7	1250	1210	t 7	w75<125 P	031t	w 20 P
m & x >Xzlene	2500	2440	t b	2500	2450	t b	wb0<125 P	0354	w 20 P
Tolcene	1250	11t 0	t 5	1250	1200	t 6	w70<125 P	03b2	w 20 P
Surrogates									
1-4<Diflcoro] endene wMcrrP	1250	t 23b	t 8	1250	t 23b	t 8	w72<11t P	0324	

Batch Information

y nalzARal BaAR) : **VFC12564**
y nalzARal x eA,o/ : **SW8021B**
InMkc%enA **Agilent 7890A PID/FID**
y nalzMA **ST**

mrep BaAR) : **VXX27675**
mrep x eA,o/ : **SW5035A**
mrep DaAeuTi%e: **08/06/2015 08:00**
Spike IniAWABVol3 1250 chuQh E(AkaRAVol: 25 %L
Dcpe IniAWABVol3 1250 chuQh E(AkaRAVol: 25 %L

SGS NorA y %eriRa InR3
200 WeMAmoAer Drive y nR) orahe- y Q t 551b
t t 073562328 48 f t 073561358 01 g g g 3cM3MnM3Ro%

Matrix Spike Summary

Original Sample ID: 1281925
MS Sample ID: 1281843 MS
MSD Sample ID: 1281844 MSD

Analysis Date: 08/06/2015 12:41
Analysis Date: 08/06/2015 13:00
Analysis Date: 08/06/2015 13:19
Matrix: Soil/Solid (dry weight)

QC for Samples: 1154000008, 1154000009, 1154000011, 1154000012, 1154000016, 1154000018, 1154000019

Results by **SW8021B**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	6.90U	1380	1370	99	1380	1420	103	75-125	4.10	(< 20)
Ethylbenzene	13.8U	1380	1380	100	1380	1440	105	75-125	4.10	(< 20)
o-Xylene	51.9	1380	1430	100	1380	1490	104	75-125	4.40	(< 20)
P & M -Xylene	34.5J	2760	2800	100	2760	2920	105	80-125	4.10	(< 20)
Toluene	10.8J	1380	1380	99	1380	1440	103	70-125	4.10	(< 20)
Surrogates										
1,4-Difluorobenzene (surr)		1380	1250	91	1380	1340	97	72-119	6.70	

Batch Information

Analytical Batch: VFC12564
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 8/6/2015 1:00:00PM

Prep Batch: VXX27675
Prep Method: AK101 Extraction (S)
Prep Date/Time: 8/6/2015 8:00:00AM
Prep Initial Wt./Vol.: 45.28g
Prep Extract Vol: 25.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1716770 2[VVX 76] / L
Blank ba8 ID: 1/ QI 70]

Matrix: moilXmolid (dry wsight)

CS for map els5:
1104, , , , , 131104, , , , , 031104, , , , 19

Rs5ult5 8y **AK101**

Parap stsr	Rs5ult5	bOCXSb	Db	Unit5
Ga5olins Rangs Organic5	, .77/ J	/ .0,	, .70,	p gXKg
Surrogates				
4-Brop ofluoro8snzsns (5urr)	1, 9	0, -10,		%

Batch Information

Analytical Batch: [FS1/ 079
Analytical Msthod: AK1, 1
In5trup snt: Agilsnt 7Q] , A PIDXFID
Analy5t: SRD
Analytical DatsXTip s: QX1, X, 10 11:90:, , AM

Prse Batch: [VV/ 76] /
Prse Msthod: mW0, 90A
Prse DatsXTip s: QX1, X, 10 Q, , :, , AM
Prse Initial Wt.X[ol.: 0, g
Prse Extract [ol: / 0 p b

Print Dats: , QX1X, 10 4:40:9QPM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VXX27692]
Blank Spike Lab ID: 1282762
Date Analyzed: 08/10/2015 12:uu

Spike DcpliRate ID: LCSD for HBN 1154000 [VXX27692]
Spike DcpliRate Lab ID: 128276u
x atri(: Soil/Solid wdry g eih) tP

, C for Sa%pleM 1154000001G1154000005G115400001u

s eMcltMby **AK101**

	Blank Spike w%h/QhP			Spike DcpliRate w%h/QhP					
mara%eter	Spike	s eMclt	s eRwK P	Spike	s eMclt	s eRwK P	CL	s mD wK P	s mD CL
OaMoline s anhe . rhaniRM	1030	9354	95	1030	9347	95	w60-120 P	0370	w< 20 P
Surrogates									
4-Bro%oflcorobenzene wMcrrP	1325	10u	10u	1325	144	144	w50-150 P	u2380	

Batch Information

AnalytiRal BatR) : **VFC12563**
AnalytiRal x et) od: **AK101**
InMrc%ent: **Agilent 6780A 9IPDFIP**
AnalyM: **C/ P**

mrep BatR) : **VRR26X82**
mrep x et) od: **SW5035A**
mrep Date/Ti%e: **07D10D2015 07:00**
Spike Init Wt3Vol3 1030 %h/Qh E(traRt Vol: 25 %L
Dcpe Init Wt3Vol3 1030 %h/Qh E(traRt Vol: 25 %L

mrint Date: 08/11/2015 4:45:u8mx

Method Blank

Blank ID: MB for HBN 1715179 [XXX/33700]
Blank Lab ID: 1280294

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000008, 1154000009, 1154000010, 1154000011, 1154000012, 1154000013, 1154000014, 1154000015, 1154000016, 1154000017, 1154000018, 1154000019

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	76.5	60-120		%

Batch Information

Analytical Batch: XFC11991
Analytical Method: AK102
Instrument: HP 6890 Series II FID SV D R
Analyst: AYC
Analytical Date/Time: 8/6/2015 11:58:00PM

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/Time: 7/30/2015 12:42:40PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VVVXX2007
Blank Spike La6 ID: 19] 09b5
Da8e t nalAyez: 0] d02d9015 00:0]

Spike D/ pliua8e ID: LCSD for HBN 1154000 [VVVXX2007
Spike D/ pliua8e La6 ID: 19] 09bc
Ma8ix: SoildSoliz (zrA weigh8)

QC for Samples: 1154000001, 1154000009, 115400000X, 1154000004, 1154000005, 115400000c, 1154000002, 115400000] , 115400000b, 1154000010, 1154000011, 1154000019, 115400001X, 1154000014, 1154000015, 115400001c, 1154000012, 115400001] , 115400001b

Res/ l8s 6A **AK102**

	Blank Spike (mgdKg)			Spike D/ pliua8e (mgdKg)					
Parame8er	Spike	Res/ l8	Reu (%)	Spike	Res/ l8	Reu (%)	CL	RPD (%)	RPD CL
Diesel Range Grganius	1c2	152	b4	1c2	1c0	bc	(25C195)	1340	(. 90)
Surrogates									
5a t nzros8ane (s/ rr)	X3XX	104	104	X3XX	10c	10c	(c0C190)	13c0	

Batch Information

t nalA8ual Ba8uh: **XFC11991**
t nalA8ual Me8hoz: **AK102**
Ins8/ men8 **HP 6890 Series II FID SV D R**
t nalAs8 **AYC**

Prep Ba8uh: **XXX33700**
Prep Me8hoz: **SW3550C**
Prep Da8ed ime: **07/30/2015 12:42**
Spike Ini8< 8dTol3 1c2 mgdKg Wk8au8Tol: 1 mL
D/ pe Ini8< 8dTol3 1c2 mgdKg Wk8au8Tol: 1 mL

Method Blank

Blank ID: MB for HBN 1715179 [XXX/33700]
Blank Lab ID: 1280294

Matrix: Soil/Solid (dry weight)

QC for Samples:
1154000001, 1154000002, 1154000003, 1154000004, 1154000005, 1154000006, 1154000007, 1154000008, 1154000009, 1154000010, 1154000011, 1154000012, 1154000013, 1154000014, 1154000015, 1154000016, 1154000017, 1154000018, 1154000019

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
nA riacontaneAd62 (surr)	92.4	60A120		%

Batch Information

Fnalytical Batch: XVC11991
Fnalytical Method: FK103
Instrument: HP 6890 Series II VID SY D R
Fnalyst: FTC
Fnalytical Date/- ime: 8/6/2015 11:58:00PM

Prep Batch: XXX33700
Prep Method: SW3550C
Prep Date/- ime: 7/30/2015 12:42:40PM
Prep Initial Wt./Yol.: 30 g
Prep Extract Yol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1154000 [VVVXX2007
Blank Spike La6 ID: 19] 09b5
Da8e t nalAyez: 0] d02d9015 00:0]

Spike D/ pliua8e ID: LCSD for HBN 1154000 [VVVXX2007
Spike D/ pliua8e La6 ID: 19] 09bc
Ma8ix: SoilbSoliz (zrA weigh8)

QC for Samples: 1154000001, 1154000009, 115400000X, 1154000004, 1154000005, 115400000c, 1154000002, 115400000] , 115400000b, 1154000010, 1154000011, 1154000019, 115400001X, 1154000014, 1154000015, 115400001c, 1154000012, 115400001] , 115400001b

Res/ l8s 6A **AK102**

	Blank Spike (mgdKg)			Spike D/ pliua8e (mgdKg)					
Parame8er	Spike	Res/ l8	Reu (%)	Spike	Res/ l8	Reu (%)	CL	RPD (%)	RPD CL
Resiz/ al Range Grganius	1c2	140	] 4	1c2	140	] 4	(c0C190)	0310	(. 90)
Surrogates									
nG riauon8aneG2c9 (s/ rr)	X3XX	100	100	X3XX	101	101	(c0C190)	03X1	

Batch Information

t nalA8ual Ba8uh: **XFC11991**
t nalA8ual Me8hoz: **AK102**
Ins8/ men8 **HP 6890 Series II FID SV D R**
t nalAs8 **AYC**

Prep Ba8uh: **XXX22300**
Prep Me8hoz: **S7 2WW0C**
Prep Da8ed ime: **035205 01W1/ :4/**
Spike Ini8< 8dTol3 1c2 mgdKg Wk8au8Tol: 1 mL
D/ pe Ini8< 8dTol3 1c2 mgdKg Wk8au8Tol: 1 mL

SGS

1154000

SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide

Alaska Maryland
New Jersey New York
North Carolina Ohio
West Virgina

www.us.sgs.com

CLIENT: Fairbanks Enviromental Services

CONTACT: Mike Boese PHONE NO: 907-441-1346

PROJECT/SITE: Hurricane Siding (ARRC)

REPORTS TO: Mike Boese E-MAIL: MBoese@FESalaska.com

INVOICE TO: ARRC Project: ARRC-2015 Hurricane

CONTRACT NUMBER: ARRC - 265-2429

SGS Reference #:

page 1 of 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative	HCl	HCl	HNO_3	None						REMARKS
						SAMPLE TYPE C = COMP G = GRAB MI = Multi Incremental Samples	GRO/BTEX (AK101/8021B)	DRO/RRO (AK 102/103)								
(1)AB	EX-02	7/28/2015	830	Soil	2	G	x	x								
(2)AB	EX-07	7/28/2015	940	Soil	2	G	x	x								
(3)AB	EX-09	7/28/2015	1015	Soil	2	G	x	x								
(4)AB	C2-3	7/28/2015	1400	Soil	2	G	x	x								
(5)AB	C2-5	7/28/2015	1403	Soil	2	G	x	x								
(6)AB	C2-7	7/28/2015	1408	Soil	2	G	x	x								
(7)MB	C2-40	7/28/2015	1410	Soil	2	G	x	x								
(8)AB	C2-13	7/28/2015	1506	Soil	2	G	x	x								
(9)AB	C2-14	7/28/2015	1508	Soil	2	G	x	x								
(10)AB	C2-15	7/28/2015	1510	Soil	2	G	x	x								

	Date	Time	Received By:
Collected/Relinquished By: (1) Michael Boese	7/29/15	1315	
Relinquished By: (2)			
Relinquished By: (3)			
Relinquished By: (4)	7/29/15	1315	Received For Laboratory By:

DOD Project? NO

Cooler ID

Cooler Temp °C

Special Deliverable Requirements:

Level 2 Data Package, EQuiS, and PDF. No hard copy required.

Requested Turnaround Time and-or Special Instructions:

Quote 12537a, Normal TAT, Bill ARRC directly (265-2429)

Temperature Blank °C: 6.2/7.1 Cooler: 3.2/7.1

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT IF IB

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350

SGS **1154000**

SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide

Alaska Maryland
New Jersey New York
North Carolina Ohio
West Virgina

www.us.sgs.com

CLIENT: Fairbanks Enviromental Services

CONTACT: Mike Boese PHONE NO: 907-441-1346

PROJECT/SITE: **Hurricane Siding (ARRC)**

REPORTS TO: Mike Boese E-MAIL: MBoese@FESalaska.com

INVOICE TO: ARRC **Project: ARRC-2015 Hurricane**

CONTRACT NUMBER: ARRC - 265-2429

SGS Reference #:

page 2 of 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative	HCl	HCl	HNO_3	None						REMARKS
						SAMPLE TYPE C = COMP G = GRAB MI = Multi Incremental Samples	GRO/BTEX (AK101/8021B)	DRO/RRO (AK 102/103)								
(11) AB	C2-20	7/28/2015	1500	Soil	2	G	x	x								
(12) AB	C2-21	7/28/2015	1502	Soil	2	G	x	x								
(13) AB	C1-29	7/28/2015	1535	Soil	2	G	x	x								
(14) AB	C1-31	7/28/2015	1530	Soil	2	G	x	x								
(15) AB	C1-32	7/28/2015	1638	Soil	2	G	x	x								
(16) AB	C1-35	7/28/2015	1642	Soil	2	G	x	x								
(17) AB	C1-36	7/28/2015	1646	Soil	2	G	x	x								
(18) AB	C1-37	7/28/2015	1650	Soil	2	G	x	x								
(19) AB	C1-39	7/28/2015	1654	Soil	2	G	x	x								
(20) A	TRIP BLANK	7/28/2015	800	Soil	1	G	x									

Collected/Relinquished By: (1) Michael Boese	Date 7/29/15	Time 1315	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 7/29/15	Time 1315	Received For Laboratory By:

DOD Project? NO

Cooler ID

Cooler Temp °C

Special Deliverable Requirements:

Level 2 Data Package, EQuiS, and PDF. No hard copy required.

Requested Turnaround Time and-or Special Instructions:

Quote 12537A, Normal TAT, Bill ARRC directly (265-2429)

Temperature Blank °C: 6.2/7.1 Cooler: 3.2/7.1

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT IF USED

76 of 79

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350

1154000

SAMPLE RECEIPT FORM

Review Criteria:	Yes	N/A	No	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	☑ ☑	☐ ☐	☐ ☐	***Exemption permitted if sampler hand carries/delivers.*** 2 Side
Temperature blank compliant* (i.e., 0-6°C after CF)? *If >6°C, were samples collected <8 hours ago?* *If <0°C, were all sample containers ice free?* Cooler ID: [1] _____ @ 6.2 _____ w/ Therm.ID: 71 _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received without 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 nor cooler temp can be obtained, note "ambient" or "chilled."	☑ ☐ ☐	☐ ☑ ☑	☐ ☐ ☐	***Exemption permitted if chilled & collected <8 hrs ago.*** Cooler temp was 3.2 #71 ***Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.***
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?	☑ ☑ ☑	☐ ☐ ☐	☐ ☐ ☐	***Note: Refer to form F-083 "Sample Guide" for hold times.*** ***Note: If times differ <1hr, record details and login per COC.***
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?	☑ ☑ ☐ ☑	☐ ☐ ☑ ☐	☐ ☐ ☐ ☐	☐ ***Exemption permitted for metals (e.g., 200.8/6020A).***
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: EDJ PM notified:
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	☑	☐	☐	Peer Reviewed by: D.C
Additional notes (if applicable):				

Note to Client: *Any "no" answer above indicates non-compliance with standard procedures and may impact data quality.*

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1154000001-A	No Preservative Required	OK			
1154000001-B	Methanol field pres. 4 C	OK			
1154000002-A	No Preservative Required	OK			
1154000002-B	Methanol field pres. 4 C	OK			
1154000003-A	No Preservative Required	OK			
1154000003-B	Methanol field pres. 4 C	OK			
1154000004-A	No Preservative Required	OK			
1154000004-B	Methanol field pres. 4 C	OK			
1154000005-A	No Preservative Required	OK			
1154000005-B	Methanol field pres. 4 C	OK			
1154000006-A	No Preservative Required	OK			
1154000006-B	Methanol field pres. 4 C	OK			
1154000007-A	No Preservative Required	OK			
1154000007-B	Methanol field pres. 4 C	OK			
1154000008-A	No Preservative Required	OK			
1154000008-B	Methanol field pres. 4 C	OK			
1154000009-A	No Preservative Required	OK			
1154000009-B	Methanol field pres. 4 C	OK			
1154000010-A	No Preservative Required	OK			
1154000010-B	Methanol field pres. 4 C	OK			
1154000011-A	No Preservative Required	OK			
1154000011-B	Methanol field pres. 4 C	OK			
1154000012-A	No Preservative Required	OK			
1154000012-B	Methanol field pres. 4 C	OK			
1154000013-A	No Preservative Required	OK			
1154000013-B	Methanol field pres. 4 C	OK			
1154000014-A	No Preservative Required	OK			
1154000014-B	Methanol field pres. 4 C	OK			
1154000015-A	No Preservative Required	OK			
1154000015-B	Methanol field pres. 4 C	OK			
1154000016-A	No Preservative Required	OK			
1154000016-B	Methanol field pres. 4 C	OK			
1154000017-A	No Preservative Required	OK			
1154000017-B	Methanol field pres. 4 C	OK			
1154000018-A	No Preservative Required	OK			
1154000018-B	Methanol field pres. 4 C	OK			
1154000019-A	No Preservative Required	OK			
1154000019-B	Methanol field pres. 4 C	OK			
1154000020-A	Methanol field pres. 4 C	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

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.

APPENDIX D

ADEC LABORATORY REVIEW CHECKLIST

Laboratory Data Review Checklist

Completed by: Mike Boese

Title: Chemist Date: 9/3/2015

CS Report Name: ARRC Hurricane Removal Action Report Report Date: 9/16/2015

Consultant Firm: Fairbanks Environmental Services

Laboratory Name: SGS Laboratory Report Number: 1154000

ADEC File Number: 2258.26.008 ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ●Yes No NA (Please explain.) Comments:

   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 (Please explain.) Comments:

      No samples were transferred.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ●Yes No NA (Please explain.) Comments:

   b. Correct analyses requested?
      ●Yes No NA (Please explain.) Comments:

      However, the incorrect preservative (HCl) was inadvertently indicated on the COC forms. The soil samples for BTEX/GRO analysis were preserved in methanol as indicated on the Sample Containers and Preservatives table prepared by the laboratory (page 78 of 79 of lab report).

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes ●No NA (Please explain.) Comments:

      The temperature blank was above the acceptable range at 6.2 °C upon arrival at the project laboratory. However, the cooler temperature was acceptable (3.2 °C) and there was no impact to sample data.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

●Yes No NA (Please explain.) Comments:

As noted in 2b, the incorrect preservative (HCl) was inadvertently indicated on the COC forms. . The soil samples for BTEX/GRO analysis were preserved in methanol as indicated on the Sample Containers and Preservatives table prepared by the laboratory (page 78 of 79 of lab report). There was no impact to data.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

●Yes No NA (Please explain.) Comments:

Samples were reportedly in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

●Yes No NA (Please explain.) Comments:

The temperature and methanol preservation were noted; however, there was no mention of the incorrect preservative listed on the COC forms.

e. Data quality or usability affected? (Please explain.)

Comments:

Impact to data quality was minor. See 3a and 3b.

4. Case Narrative

a. Present and understandable?

●Yes No NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

●Yes No NA (Please explain.) Comments:

There were several surrogate recovery issues, an MS/MSD recovery issue, and some sample dilutions (elevated reporting limits) issues noted.

c. Were all corrective actions documented?

●Yes No NA (Please explain.) Comments:

In general, the issues noted in 4b were caused by highly contaminated samples and there were no suitable corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Case narrative does not discuss data quality - it typically only lists anomalies and outliers.

5. Samples 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 (Please explain.) Comments:

   c. All soils reported on a dry weight basis?
      ●Yes No NA (Please explain.) Comments:

   d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
      Yes ● No NA (Please explain.) Comments:

Due to required sample dilutions on highly contaminated samples, the following samples had Limits of Detection (LOD) reported above the ADEC soil cleanup level: Benzene in samples EX-07, EX-09, and C2-7. There was only minimal impact to data since soil associated with EX-07 and EX-09 were removed from the site, and the Detection Limit (DL) for sample C2-7was less than the ADEC cleanup level.

   e. Data quality or usability affected?
      Comments:

See comments in 5d above.

6. QC Samples
   a. Method Blank
      i. One method blank reported per matrix, analysis and 20 samples?
         ●Yes No NA (Please explain.) Comments:

      ii. All method blank results less than PQL?
         ●Yes No NA (Please explain.) Comments:

However, GRO was detected in the MBs associated with Method AK101 batches VXX27670, VXX27675, and VXX27692 below the limit of quantitation (0.915 mg/L, 0.866 mg/L, 0.772 mg/L, respectively). Consequently, the GRO concentrations in associated sample s C2-20, C2-21, and the Trip Blank were qualified B since these results were within 10 times the GRO concentration detected in the MBs. Impact to data was minor as all the affected GRO results were two orders of magnitude below the groundwater cleanup level.

iii. If above PQL, what samples are affected?

Comments:

See 6aii.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

●Yes No NA (Please explain.) Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

See 6aii.

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 (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No ●NA (Please explain.) Comments:

There were no metals or inorganic analyses performed for this project.

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 (Please explain.) Comments:

All LCS recoveries were acceptable. However, ethylbenzene and o-xylene recoveries in MS/MSD samples performed on sample EX-02 failed acceptable criteria. There was an elevated concentration of o-xylene in the parent sample, and the MS/MSD recovery criteria do not apply for this analyte. The ethylbenzene result in sample EX-02 was qualified as a low estimate (ML). Impact to data is minor as the MS/MSD recovery failures for ethylbenzene were minor (2% and 3%, respectively, below the lower control limit) and the ethylbenzene result in the parent sample was greater than 2 orders of magnitude below the ADEC cleanup level.

iv. Precision – All relative percent differences (RPD) 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?
Comments:

Not applicable.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
●Yes No NA (Please explain.) Comments:

All LCS precision and accuracy criteria were acceptable. One result was flagged based on poor MS/MSD accuracy, however (see 6biii).

vii. Data quality or usability affected? (Use comment box to explain.)
Comments:

See 6biii.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
Yes ●No NA (Please explain.) Comments:

The Method AK102 surrogate (5a Androstane) was not measured in 11 of the 19 DRO samples associated with this sample data group (SDG) because of sample dilution; these samples contained elevated concentrations of DRO and required dilutions between 20X and 50X. None of the 11 DRO sample results were qualified based on sample dilution preventing surrogate recoveries.

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 (Please explain.) Comments:

In addition to the DRO surrogate recoveries that were not reported (discussed in 6ci), 13 method AK101 GRO samples (EX-09, C2-3, C2-5, C2-7, C2-15, C1-29, C1-31, C1-32, C1-35, C1-36, C1-37, C1-39, and C2-40) and one method AK103 sample (EX-02) had surrogate recoveries above acceptable control limits. All of the GRO and RRO results in the aforementioned samples were qualified as high estimates (QH). Impact to GRO data is likely minor as matrix interference was the root cause of the elevated surrogate recoveries (11 o f the 13 samples were diluted). There was only minor impact to seven GRO results reported below the cleanup level (C2-7, C2-15, C1-31, C1-32, C1-35, C1-36, and C2-40). The GRO results that exceeded cleanup levels (EX-09, C2-3, C2-5, C2-15, C1-29, C1-37 [and dup C1-39]) would have been the most likely to be affected by a high biased recovery. The method AK103 surrogate recovery exceedance was marginally high and the corresponding RRO result was below the associated cleanup level, so there was no impact to RRO data.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

GRO and RRO data were flagged according to 6cii. Note that DRO results (discussed in 6ci) were not flagged because the surrogates were diluted out and could not be recovered.

●Yes No NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:

See 6cii for discussion. DRO results discussed in 6ci were not qualified.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
●Yes No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
Yes No ●NA (Please explain.) Comments:

There was only one cooler used to transport all of the samples including the trip blank.

iii. All results less than PQL?
●Yes No NA (Please explain.) Comments:

However, GRO, o-xylene, m&p-xylene, and toluene were detected in the Trip Blank below the LOQ. The GRO result was attributable to MB contamination – See 6aii. The following results were detected within 10X the concentration detected in the Trip Blank and qualified (B):

- o-xylene – samples C2-13, C2-14, and C2-21
- p+m-xylene – samples C2-13 and C1-32.

Impact to data is minor as the affected xylene results are three to four orders of magnitude below the ADEC soil cleanup levels.

iv. If above PQL, what samples are affected?
Comments:

See 6diii.

v. Data quality or usability affected? (Please explain.)
Comments:

See 6diii.

e. Field Duplicate

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

Field duplicates were collected at a rate of 12% (2 per 17 project soil samples). Sample C2-40 was a field duplicate of C2-3. Sample C1-39 was a field duplicate of C1-37.

●Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

●Yes No NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes ●No NA (Please explain.) Comments:

Sample pair C1-37/C1-39 field duplicate precision was acceptable for all analytes.

The RPD for GRO, toluene, ethylbenzene, m+p-xylenes, and o-xylene failed the 50% criterion in field duplicate pair C2-3/C2-40. GRO, toluene, ethylbenzene, m+p-xylenes, and o-xylene results I these samples were qualified (Q) as estimates. Impact to VOC data was minor as the affected toluene, ethylbenzene, m+p-xylenes, and o-xylene results were all below respective cleanup levels. Impact to GRO data may be more significant since the primary sample (C2-3) result was above the cleanup level but the field duplicate sample (C2-40) was below the cleanup level. The higher GRO result was used to evaluate site conditions.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

See 6eiii.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No ●NA (Please explain.) Comments:

No decontamination blank was needed since new, stainless steel spoons were used to collect soil samples.

i. All results less than PQL?

Yes No ●NA (Please explain.) Comments:

No decon blank was needed since disposable sampling equipment was used to collect samples.

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

No data were affected. No decontamination blank was needed.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?
      ●Yes No NA (Please explain.) Comments:

Results reported below the limit of quantitation (LOQ) were qualified with a J flag to indicate they are estimated values.