

NATIVE AMERICAN LANDS ENVIRONMENTAL
MITIGATION PROGRAM (NALEMP) 2012

OCEAN CAPE RADIO RELAY STATION
PETROLEUM-CONTAMINATED SOIL
INTERIM REMOVAL ACTION REPORT

for
Field Season 2013

YAKUTAT TLINGIT TRIBE

Prepared by
RIDOLFI Inc.

March 2014



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EXECUTIVE SUMMARY

This Interim Removal Action Report describes work that was conducted under a Cooperative Agreement between the U.S. Department of Defense and the Yakutat Tlingit Tribe. The purpose of this removal action was to complete removal of petroleum-contaminated soil (PCS) remaining within the Ocean Cape Radio Relay Station (OCRRS) site near Yakutat, Alaska (Figure 1). The objective of the removal action was to reduce risks to human health and to the environment. The petroleum-related contaminants of concern are diesel-range organics (DRO) and residual-range organics (RRO).

Based on the Work Plan (Ridolfi, 2012), work at the OCRRS for the 2012 field season consisted of removing PCS, two concrete tank footings, and associated piping. However, not all of the PCS was removed during 2012 due to budget constraints. Costs for shipping and disposal of contaminated soil were higher than anticipated. To complete the removal of PCS at the OCRRS, additional removal actions were performed and completed in 2013. Three locations within the OCRRS site were excavated. These areas were the Former Diesel Aboveground Storage Tank (AST) Area, the Drain Area, and Former Fuel Pumphouse Area.

Removal of PCS at the Former Diesel AST Area began on May 30, 2013 and continued until June 12, 2013. A total of approximately 68 cubic yards (CY) of PCS were removed from the Former Diesel AST Area excavation.

Removal of PCS at the Drain Area took place June 13 and 14, 2013. A total of approximately 3 CY of PCS were removed from the Drain Area excavation.

Removal of PCS at the Former Fuel Pumphouse Area began on June 17, 2013 and continued until June 21, 2014. A total of approximately 43 CY of PCS were removed from the Former Fuel Pumphouse Area excavation.

Soil confirmation samples were collected from each excavation at the three areas and analyzed for diesel-range organics (DRO) and residual-range organics (RRO). Analytical results from these samples show that concentrations of DRO and RRO are below the Alaska Department of Environmental Conservation (ADEC) Method One Petroleum Hydrocarbon Soil Cleanup Levels in Nonarctic Zones, Category B. Sample locations and analytical results are provided on Figure 2.

Upon completion of the excavation activities at the three removal areas, the excavations were backfilled to grade with clean fill material. A total of 122 tons of PCS in 128 Super Sacks[®] were transported in eight shipping containers by Alaska Marine Lines to Seattle, where the containers were transferred to Waste Management for disposal at the Columbia Ridge Landfill in Arlington, Oregon.



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LIST OF ACRONYMS

ADEC	Alaska Department of Environmental Conservation
ARI	Analytical Resources, Inc.
AST	aboveground storage tank
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BTEX	benzene, toluene, ethylbenzene, and xylene
CA	Cooperative Agreement
CY	cubic yards
DoD	U.S. Department of Defense
DRO	diesel-range organics
DZ	Decontamination Zone
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GPS	Global Positioning System
GRO	gasoline-range organics
HAZWOPER	Hazardous Waste Operations and Emergency Response
IRAR	Interim Removal Action Report
LF	linear feet
mg/kg	milligrams per kilogram
NALEMP	Native American Lands Environmental Mitigation Program
OCRRS	Ocean Cape Radio Relay Station
PCB	polychlorinated biphenyls
PCS	petroleum-contaminated soil
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
Ridolfi	RIDOLFI Inc.
RRO	residual-range organics
SPIP	Strategic Project Implementation Plan
sq. ft.	square feet
TCLP	toxicity characteristic leaching procedure
TS	total solids
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
UST	underground storage tank
VOC	volatile organic compounds
YTT	Yakutat Tlingit Tribe



1.0 INTRODUCTION

This Interim Removal Action Report (IRAR) describes work that was conducted under a Cooperative Agreement (CA) between the U.S. Department of Defense (DoD) and the Yakutat Tlingit Tribe (YTT). Funding for this CA is for Fiscal Year (FY) 2012 and is provided by the Native American Lands Environmental Mitigation Program (NALEMP). This report describes the removal of petroleum-contaminated soil (PCS) that was performed in 2013 at the Ocean Cape Radio Relay Station (OCRRS) site. The work was conducted by YTT NALEMP workers with technical assistance from RIDOLFI Inc. (Ridolfi). This site and the facilities identified are within Concern Group H, as described in the YTT's Strategic Project Implementation Plan (SPIP) (Ridolfi, 2010). The work conducted in 2013 included:

- Excavating PCS adjacent to and east of the Former Fuel Pumphouse Area
- Removal of existing pipe at the Former Fuel Pumphouse Area
- Excavating PCS at the Drain Area
- Excavating PCS at the Former Diesel Aboveground Storage Tank (AST) Area
- Filling excavations with clean material
- Transportation and disposal of excavated PCS

1.1 Purpose and Objectives

The purpose of the 2013 removal action was to complete the removal of PCS that remained within the OCRRS site after the 2012 removal action (Ridolfi, 2013). The objective of the OCRRS site removal action is to reduce risks to human health and the environment. This removal action is consistent with the YTT's Mitigation Project Objectives as outlined in the SPIP (Ridolfi, 2010). The locations of the OCRRS site and the City of Yakutat are shown in Figure 1, the general location map.

The lists below provide a summary of the work that has been conducted under NALEMP at the OCRRS in 2012 and 2013.

Completed in 2012 under the FY 2011 CA:

- Excavated and removed PCS at the Former Diesel AST Concrete Footing and Former Diesel AST Area
- Excavated PCS at the Former Gasoline AST Area and within the Water Tank Concrete Footing
- Conducted sampling of concrete slab floor in the Garage Building for polychlorinated biphenyls (PCB)
- Conducted reconnaissance-level sampling at the North Drum Dump Area
- Transported and disposed of PCS



Completed in 2013 under the FY 2012 CA:

- Excavated and removed PCS at the Former Fuel Pumphouse Area
- Excavated and removed PCS at the Drain Area
- Excavated and removed remaining PCS at the Former Diesel AST Area
- Removed and disposed of the existing subsurface piping at the Former Fuel Pumphouse Area
- Transported and disposed of PCS

The purpose of this IRAR is to summarize work completed in 2013 at the OCRRS.

1.2 Regulatory Authority

The State of Alaska is the primary regulatory authority for environmental cleanup work at the OCRRS site. The Alaska Department of Environmental Conservation (ADEC) is the regulatory agency for remediation of contaminated soils.

Cleanup standards for diesel-range organics (DRO) and residual-range organics (RRO) at the site are ADEC Method One – Petroleum Hydrocarbon Soil Cleanup Levels in Nonarctic Zones, Category B.

The U.S. Army Corps of Engineers (USACE) prepared an environmental assessment (EA) dated April 16, 2012 to address the excavation of PCS and other environmental restoration work to be performed at the former military facilities at OCRRS. These actions were evaluated for their effects on several significant resources, including fish and wildlife, wetlands, threatened or endangered species, marine resources, and cultural resources. No significant short-term or long-term adverse effects were identified. The completed EA supported the conclusion that the action did not constitute a major federal action significantly affecting the quality of the human and natural environment and a Finding of No Significant Impact (FONSI) was included in the EA. The EA is provided as Appendix A.

The following regulatory documents and guidance have been used to prepare for and conduct this work:

- State of Alaska Administrative Code (AAC), *Oil and Other Hazardous Substances Pollution Control* (18 AAC 75). April 2012.
- ADEC Division of Spill Prevention and Response-Contaminated Sites Program. *Draft Field Sampling Guidance*. May 2010.



1.3 Background

1.3.1 Site Description

The community of Yakutat is located on the Gulf of Alaska at the mouth of Monti Bay, approximately 370 miles east-southeast of Anchorage in the northern part of the Alaska Panhandle (Figure 1). The northwest-trending St. Elias Mountains border the Yakutat area to the northeast. The Tongass National Forest, which is under jurisdiction of the U.S. Forest Service (USFS), is to the northeast and east of Yakutat; and Wrangell-St. Elias National Park, which is under jurisdiction of the National Park Service, is to the northwest across Yakutat Bay. The community occupies the site of an earlier Eyak and Tlingit permanent village. In the Tlingit language, the name Yakutat (*Yaakwdáat*) means “the place where canoes rest.” The OCRRS lies approximately five miles west of the community of Yakutat, at the end of Point Carrew Road on the Phipps Peninsula.

Repeated cycles of glacial advance and retreat deposited the moraine complex and outer border of outwash that now comprise the Yakutat foreland, a gently sloping glacial outwash plain between the St. Elias Mountains and the Gulf of Alaska (Wahrhaftig, 1965, as cited in Neal, 1998). Most of the area slopes gently toward the south, except near the coastline of Yakutat Bay, which consists of steep bluffs exposing glacial moraine deposits formed during the retreat of the Yakutat Bay Glacier about 500 years ago (Holmes and Dorava, 1995).

The area around the OCRRS is low-lying, mostly at elevations between 0 and 65 feet above mean sea level. It consists largely of estuarine marshy areas called “saltchucks,” which constitute rich hunting, fishing, and gathering grounds. Three types of plant communities are found within the coastal area: true forest, grass-sedge meadows, and muskeg. The area is renowned for its wildlife, both terrestrial and aquatic, as well as its rich marine and aquatic fauna.

The climate of the Yakutat area is characterized by mild temperatures and small temperature variations, high humidity, heavy precipitation, cloudy skies, and fog (Hartman and Johnson, 1984, as cited in Neal, 1998).

Surface water is abundant in the Yakutat area. The Gulf of Alaska bounds the area on the south and west. The Situk River enters the area in the northeast and, along with the Ahrnklin River, drains most of the eastern part of the area. The Lost River and its two main tributaries, Tawah Creek and Ophir Creek, drain most of the western part of the area. Numerous small lakes occur on top of glacial moraine deposits near the shoreline of Monti Bay, and most of the interior land is classified as saturated or seasonally flooded (U.S. Fish and Wildlife Service, 1993, as cited in Holmes and Dorava, 1995).



Ground water recharge to the unconsolidated glacial deposits is primarily from infiltration of precipitation and streamflow as well as subsurface inflow. Most of the recharge from precipitation and streamflow is believed to occur along an area mapped as Holocene outwash or artificial fill deposits. These deposits have high permeability, which allows rapid infiltration of precipitation or streamflow. Recharge occurs during most of the year, but likely is greatest when precipitation and streamflow are at or near a maximum for the year (Holmes and Dorava, 1995).

1.3.2 Historical Uses

In 1960, the U.S. Air Force acquired 78.6 acres of land from the USFS and 96.96 acres of tidelands from the State of Alaska Division of Lands to construct a radio link between Cape Yakataga and Hoonah. The OCRRS served as a tropospheric communications station as part of the Ballistic Missile Early Warning System under the White Alice Communication System.

An additional 69.27 acres were obtained from the U.S. Bureau of Land Management (BLM) in 1967 and 1968 for gravel removal. This land, located on the Phipps Peninsula at the end of Point Carrew Road approximately five miles west of the city of Yakutat, included eight industrial buildings; 17 miscellaneous support facilities, including water and fuel tanks; fuel and water lines; four 60-foot tropospheric antennas; an access road; a bridge; and utility lines. The facilities were leased to Recording Company America Alaska Communications, Inc. between 1974 and 1976.

The OCRRS was declared excess by the U.S. Air Force in June 1976. The land was relinquished to the BLM in 1977, and conveyed to the village corporation Yak-Tat Kwaan, Inc., of which YTT is a member, in 1983. Since then, it has remained the property of Yak-Tat Kwaan, Inc. The OCRRS has been identified by DoD as Formerly Used Defense Site (FUDS) No. F10AK0747.

1.3.3 Previous OCRRS Investigations

Investigations to determine the nature and extent of contamination at the OCRRS were performed in 2007 and 2008. The results of these investigations are detailed in the following documents:

- *NALEMP 2006 Site Investigation Report for Ocean Cape Radio Relay Station (Concern Group H)* (Ridolfi, 2008).
- *NALEMP 2007 Final Removal Action and Site Investigation Report for the Ocean Cape Radio Relay Station (Concern Group H)* (Ridolfi, 2009).

During the 2007 OCRRS investigation, samples were collected at the Former Water Pumphouse Area, Garage Building, and the Fuel Pumphouse Area for petroleum contaminants, metals, PCBs, and volatile organic compounds (VOC). Sample locations and results are



depicted on Figure 3, which is adapted from the 2007 OCRRS investigation report (Ridolfi, 2008).

During the 2008 OCRRS investigation, samples were collected at the Garage Building and the Fuel Pumphouse Area for petroleum contaminants, metals, PCBs, and VOCs. Sample locations and results are depicted on Figure 4, which is adapted from the 2008 OCRRS investigation report (Ridolfi, 2009).

The following conclusions were presented in the 2007 investigation:

- At the Former Water Pumphouse Area, neither gasoline-range organics (GRO) nor benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected adjacent to the underground storage tank (UST) cradle.
- At the Garage Building, petroleum, PCBs, and arsenic were detected at concentrations above cleanup levels.
- At the Fuel Pumphouse Area, surface petroleum contamination was found within the berm area surrounding the AST. Petroleum contamination in surface and subsurface soils under the fill port outside of the berm exceeded cleanup levels. Within the moat surrounding the berm, diesel was detected above cleanup levels to a depth of 52 inches below ground surface (bgs).

The following conclusions were presented in the 2008 investigation:

- At the Garage Building, PCB contamination was detected above cleanup levels in both the sediment and water from the Garage Building drains and in the manhole located 200 feet west of the Garage Building.
- At the Fuel Pumphouse and AST Areas, an estimated 400 cubic yards (CY) of PCS was present above cleanup levels. The PCS within the berm area along the southwest corner ranged in depth down to four feet. Outside of the berm area, the highest level of petroleum contamination was found under the truck unloading connection. PCS in the moat surrounding the berm averaged one foot in depth. Petroleum detected west of the Fuel Pumphouse Area was below the cleanup level.



2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

YTT conducted the removal activities with technical support from professional engineers and environmental scientists with Ridolfi. Alex James, NALEMP Project Manager for YTT, was the field supervisor and YTT technical contact. The YTT team is identified below:

- Alex James Field Supervisor
- Albert Porter Field Technician
- Jack Kluskan Field Technician
- Derek James Field Technician

The Ridolfi team assigned to this project included:

- Bruno Ridolfi, P.E. Principal Engineer
- Kathryn Foster, P.E. Project Engineer
- Steve Hannan, P.E. Civil Engineer
- Tom Bowden, L.G. Quality Assurance Coordinator

All Ridolfi personnel meet the requirements of qualified persons in accordance with Alaska regulations (18 AAC 75.990 (100)).

The Ridolfi team with assistance from Alex James prepared work plans, assisted in preparing for fieldwork, coordinated field activities, conducted sampling and analysis, observed and recorded removal activities, and produced this IRAR.

The analytical laboratory that analyzed the soil samples is Analytical Resources, Inc. (ARI) of Tukwila, Washington. ARI is accredited through the ADEC Laboratory Certification Program and the DoD Environmental Laboratory Accreditation Program.



3.0 REMOVAL ACTION

The 2013 removal action consisted of removing PCS at three locations within the OCRRS site (Figure 2). Field notes are presented in Appendix B and photographs are presented in Appendix C.

Prior to the start of removal actions, the entrance to the site was posted with a construction sign to warn the community of the work being conducted. The work area was marked off with flagging, traffic cones, and other barriers. Visitors were required to check in with Alex James or the supervisor onsite.

Removal actions were conducted at the following areas of the OCRRS site during the 2013 field work:

- Former Diesel AST Area
- Drain Area
- Former Fuel Pumphouse Area

For each excavation area, laboratory soil confirmation samples were collected at the locations where field screening detected the highest levels of contamination. Confirmation samples were analyzed for DRO and RRO using Alaska Methods AK102 and AK103, respectively. A summary of sample information is included in Table 1. Validated laboratory analytical results are summarized in Table 2. A quality assurance summary is provided in Section 6.0. The data validation report and ADEC laboratory data review checklists are provided as Appendix D and Appendix E, respectively. Laboratory analytical data reports for DRO and RRO analysis are provided in Appendix F.

Field work started with mobilizing equipment and supplies to the site on May 27, 2013. The field crew then cleared brush as necessary to access the PCS in the Drain Area. The brush was chipped and stockpiled on site for use as mulch after soil removals were completed. The other areas were cleared in 2012.

Once the area was cleared, marked, and posted, a decontamination zone (DZ) was set up adjacent to the construction area for decontaminating boots, tools, and equipment. The ground in the DZ was covered with an impermeable drop cloth to contain contaminated materials.

Field laborers assisted the excavator operator during the excavation. The laborers used hand signals to communicate with the operator to guide the slope and depth of the excavation. Laborers opened and staged the Super Sacks[®] along the edge of the excavation. As the sacks were filled, they were loaded into trailers and transported into town. They were then loaded into



containers for shipment out of Yakutat and disposal at a licensed facility (Photograph 1). Once complete, the excavated areas were backfilled with clean fill material.

3.1 Excavation Screening and Sampling Rationale

To determine the extent of soil removal, field personnel employed both physical and instrumental field screening, followed by sampling and laboratory analysis to determine whether or not the contaminant concentrations in the soil were below the ADEC cleanup levels:

Physical screening methods are qualitative and can provide only basic information related to the presence or absence of petroleum hydrocarbons. Physical screening methods included the following:

1. Visual Inspection – Visual observations of petroleum staining of the soil were conducted during excavation and removal activities.
2. Odor – During the excavations and collection of field screening samples, the presence of petroleum odors was observed.

Instrumental screening was performed with a photoionization detector (PID) according to ADEC headspace method. The PID was used to guide the excavation activities and determine appropriate locations for soil confirmation sampling .

Once the field screening indicated that the petroleum concentrations in the soil remaining in the excavation were likely to be below the ADEC cleanup levels, laboratory soil confirmation samples were collected from the excavation base and sidewalls at locations with the highest PID measurements.

3.1.1 Instrumental Field Screening

Instrumental field screening was performed with a portable PID to detect the presence of petroleum contamination on a real-time basis (Photograph 2). The PID used was a FirstCheck® multi-gas meter equipped with a 10.6 electron volt bulb. The areas screened were:

- Areas of suspected or obvious contamination
- Areas adjacent to or below fill pipes or vent pipes
- Every 10 feet along the excavation sidewall
- Every 100 square feet of the excavation base
- Areas below pipe joints, elbows, and connections
- Every 10 feet below pipes

The field screening threshold measurement used to guide removals was 10 parts per million (ppm) following the ADEC Draft Field Sampling Guidance (2010).



3.1.2 Confirmatory Soil Sampling

Laboratory soil confirmation samples were collected in accordance with the ADEC 2010 guidance:

- Excavation Sidewall Samples - One soil sample for every 20 linear feet (LF) of sidewall from the location of the highest field screening level measurement.
- Excavation Base Samples – Two soil samples should be collected for the first 250 square feet (sq. ft.) of the base of the excavation and one soil sample should be collected for each additional 250 sq. ft. of the base of the excavation.

Each sample was placed in an appropriate container, placed in an ice-filled cooler, and sent to ARI under chain-of-custody for DRO analysis by AK102 and RRO analysis by AK103.

The laboratory soil confirmation samples collected during the 2013 field activities are summarized in Table 1 and the validated laboratory data are tabulated and presented in Table 2.

3.2 Former Diesel AST Area Soil Removal

Removal of PCS at the Former Diesel AST Area began on May 30, 2013 and was completed on June 12, 2014. The removal limits are depicted on Figure 2. Field screening with the PID guided the removal. The PID field screening locations and results are provided on Figure 2.

The dimensions of the Former Diesel AST Area excavation are approximately 38 by 30 feet. The final excavation depth ranged from 1 to 2 feet. Approximately 68 CY of PCS were removed. Photographs 3, 4 and 5 show the excavations before backfilling (Appendix C).

The excavation dimensions for determining field screening and confirmation sample frequency are:

- Excavation base area – 1,140 sq. ft.
 - Field screening frequency – 19 measurements
 - Confirmation sample frequency – 6 samples
- Sidewall length – 99 LF
 - Field screening frequency – 10 measurements
 - Confirmation sample frequency – 5 samples

The south sidewall length was not included in the total sidewall length since this sidewall was comprised of clean fill material placed during the 2012 excavation activities (Ridolfi, 2013).



Once the Former Diesel AST Area excavation was completed, screening samples were collected every 10 LF of sidewall length and at the frequency required by the base area (Photograph 5). The samples were screened using the on-site PID. Measurements ranged from 0 ppm to 47 ppm (Figure 2).

After soil screening was completed, six soil confirmation samples were collected from the excavation base (Samples 13062706, 13062715, 13062716, 13062717, 13062718, and 13062719) and five soil confirmation samples were collected from the sidewalls (Samples 13062710, 13062711, 13062712, 13062713, and 13062714). Samples were collected at the locations where field screening with the PID detected the highest readings. The soil confirmation samples were analyzed for DRO and RRO and concentrations were determined to be below ADEC cleanup levels (Table 2).

Based on the soil confirmation sample results, the excavation was backfilled with clean fill material to grade.

3.2.1 Former Diesel AST Area Soil Removal Exceptions to the Work Plan

There are no exceptions to the Work Plan for the field work associated with excavation of the Former Diesel AST Area.

3.3 Drain Area Soil Removal

Removal of the PCS at the Drain Area began on June 13, 2013 and was completed on June 14, 2013. The removal limits are depicted on Figure 2. The excavation exposed a 2-foot square concrete catch basin (Photograph 6) with a shut off valve and a 4-inch outlet pipe that runs through the remaining section of the berm.

The catch basin was pulled and contents transferred to a Super Sacks®. The pipe was inspected and left in place. Once the catch basin was removed, field screening with the PID guided the removal (Photograph 7). The PID field screening locations and results are provided on Figure 2.

The dimensions of the Drain Area excavation are approximately 5 by 6 feet. The final excavation depth was approximately 27 inches. Approximately 3 CY of PCS were removed.

The excavation dimensions for determining field screening and confirmation sample frequency are:

- Excavation base area – 26 sq. ft.
 - Field screening frequency – 5 measurements
 - Confirmation sample frequency – 1 sample
- Sidewall length – 22 LF



- Field screening frequency – 3 measurements
- Confirmation sample frequency – 2 samples

Once the Drain Area excavation was completed, screening samples were collected every 10 LF of sidewall length and at the frequency required by the base area. The samples were screened using the on-site PID. Measurements ranged from 0 ppm to 1 ppm (Figure 2).

After soil screening was completed, one soil confirmation sample was collected from the excavation base (Sample 13062709) and one soil confirmation sample was collected from the sidewall (Sample 13062708). Samples were collected at the locations where field screening detected the highest readings. The soil confirmation samples were shipped to ARI and analyzed for DRO and RRO, and concentrations were determined to be below ADEC cleanup levels (Table 2).

Based on the soil confirmation sample results, the excavation was backfilled with clean fill material to grade.

3.3.1 Drain Area Soil Removal Exceptions to the Work Plan

There is one exception to the Work Plan for the field work associated with excavation of the Drain Area: Sidewall confirmation sampling frequency required two samples be collected and analyzed for the 22 LF of sidewall but only one sample was collected and analyzed. Results for confirmation samples in this area well below ADEC cleanup levels and it is unlikely this exception affects the removal action objectives.

3.4 Former Fuel Pumphouse Area Soil Removal

Removal of PCS at the Former Fuel Pumphouse Area began on June 17, 2013 and was completed on August 9, 2013. The removal limits are depicted on Figure 2. Field screening with the PID guided the removal. The PID field screening location and results are provided on Figure 2.

The trench excavation at this site was completed over an area of 3 feet by 36 feet and to a depth of one foot (Photograph 8). A 5-foot by 5-foot extension of the trench excavation at its western end was completed to a depth of 2.5 feet (Figure 2). Once the excavations were completed, screening samples were collected every 10 LF of sidewall length and at the frequency required by the base area. The samples were screened using the on-site PID. Measurements ranged from 0 ppm to 68 ppm (Figure 2).

Based on the field screening results, additional soil was removed. The removal area was then screened at two locations. PID measurements ranged were 10.2 ppm and 50 ppm (Figure 2). Although the PID measurements were above the work plan prescribed 10 ppm, soil confirmation



samples were collected to better determine petroleum concentrations and provide a comparison with PID measurements.

The excavation dimensions for determining field screening and confirmation sample frequency are:

- Excavation base area – 231 sq. ft.
 - Field screening frequency – 10 measurements
 - Confirmation sample frequency – 2 samples
- Sidewall length – 120 LF
 - Field screening frequency – 12 measurements
 - Confirmation sample frequency – 6 samples

After soil screening was completed, four soil confirmation samples were collected from the excavation base (Samples 13062705, 13062707, 13062720, and 13062724) and five soil confirmation samples were collected from the sidewalls (Samples 13062701, 13062702, 13062703, 13062704, and 13062723). Samples were collected at the locations where field screening with the PID detected the highest readings. The soil confirmation samples were transported to ARI under chain-of-custody and were analyzed for DRO and RRO.

The results for the confirmation samples showed that DRO concentrations were above ADEC cleanup levels in three of the excavation base samples (Samples 13062707, 13062720 and 13062724) and two of the sidewall samples (Samples 13062704 and 13062723) in the expanded excavation at western end of the trench (Table 2; Figure 2).

Based on these results, additional soil was removed in this area from the base of the excavation, the east sidewall and south toward the pipe junction. At this point, a total of approximately 37 CY of soil were removed to a depth of 6 feet.

During the excavation activities, the remains of the abandoned fuel piping system that was connected to the Fuel Pumphouse were also removed. The aboveground truck unloading pipe section measured about 15 feet in length and connected to the remains of the overshot fill tank pipe. The overshot fill pipe went below ground surface about five feet and then trended northwest toward the Former Fuel Pumphouse. The pipe was approximately 4 inches in diameter and 25 feet long in three sections (Photograph 9).

The expanded excavated base measured 123 sq. ft. with 45 LF of side wall. This excavation was resampled on July 8, 2013. Five soil confirmation samples were collected at the appropriate frequency, two excavation base samples (Samples 13070801 and 13070802) and three sidewall samples (Samples 13070803, 13070804, and 13070805). The samples were transported to ARI under chain-of-custody and were analyzed for DRO and RRO.



The results for these five samples showed DRO and RRO concentrations were below ADEC cleanup levels with the exception of sample 13070804 (Table 2). This sample was located on the excavation base near the south edge.

Based on the second round of soil confirmation sampling results, approximately 4 CY of additional soil was removed from the base of the excavation to a depth of 3 feet. Two soil confirmation samples (Samples 13071701 and 13071702) were collected from the base of the excavation on July 17, 2013. The samples were transported to ARI under chain of custody and were analyzed for DRO and RRO. This third round of soil confirmation sampling results showed DRO concentrations were still above ADEC cleanup levels in both samples (Table 2).

Based on the third round of soil confirmation sampling results, approximately 2 CY of additional soil was removed from the base of the excavation to a depth of 2 feet. One soil confirmation sample (Sample 13080901) was collected from the base of the excavation on August 9, 2013. The sample was shipped to ARI and analyzed for DRO and RRO, and concentrations were determined to be below ADEC cleanup levels (Table 2).

Based on the fourth and final round of soil confirmation sample results, the excavation was backfilled with clean fill material to grade.

3.4.1 Former Fuel Pumphouse Area Soil Removal Exceptions to the Work Plan

There are no exceptions to the Work Plan for the field work associated with excavation of the Former Fuel Pumphouse Area.



4.0 WASTE MANAGEMENT

Potential waste types and disposal options are discussed in this section. All activities related to the handling of waste materials were performed by Hazardous Waste Operations and Emergency Response (HAZWOPER) certified workers. Wastes that were generated at the site consisted of the following types:

- petroleum-contaminated Soil (PCS)
- disposable sampling equipment and supplies
- disposable personal protective equipment (PPE) and clothing
- non-contaminated solid waste

All waste materials generated during this removal action were removed from the project site and properly disposed of according to their level of contamination. YTT worked with Emerald Services in Palmer, Alaska, to coordinate handling of waste that required off-site disposal.

Analytical data were provided to Waste Management (waste disposal company) through Emerald Services for the purposes of waste profiling for disposal during the 2012 field activities. To characterize the OCRRS site soil for disposal, one representative sample was collected in 2012 at the Former Fuel Pumphouse Area (Ridolfi, 2013) prior to the start of removals and analyzed for DRO, RRO, VOCs, PCBs, and pesticides. The sample was also analyzed by toxicity characteristic leaching procedure (TCLP) for lead and cadmium. Following receipt of the analytical results, the data were sent to Emerald Services for development of the waste profile and waste manifests.

4.1 Petroleum-Contaminated Waste

PCS was placed in Super Sacks[®], which were then transported into town, loaded into containers, labeled, and placed on a barge. The approximate amount of PCS removed from each area is listed below:

Former Diesel AST Area	68 CY
Drain Area	3 CY
Former Fuel Pumphouse Area	43 CY
Total PCS removed	114 CY (122 tons)

A total of 122 tons of PCS in 128 Super Sacks[®] were transported in eight shipping containers by Alaska Marine Lines to Seattle, where the containers were transferred to Waste Management for disposal at the Columbia Ridge Landfill in Arlington, Oregon. Waste disposal documentation is included in Appendix G with weight values provided by Waste Management using the certified scale at the Columbia Ridge Landfill.



4.2 Other Wastes

All non-contaminated solid waste, PPE, disposable sampling equipment, and other waste generated during removal actions was bagged in plastic garbage bags, and transported to the Yakutat landfill for disposal.



5.0 QUALITY ASSURANCE SUMMARY

This section summarizes data quality assurance and is based on information collected during sampling, in the data validation report (Appendix D), and the laboratory checklists (Appendix E) prepared by EcoChem, Inc. Based on the information presented below, all data, as qualified, is considered acceptable for use. Data validation qualifier codes are as follows:

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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

DNR – Do not report; a more appropriate result is reported from another analysis or dilution.

5.1 Chain-of Custody Documents

Chain-of-Custody (COC) documents were reviewed for accuracy and completeness. COCs were determined to meet project requirements with the exception that some COCs did not indicate that matrix quality control analyses were to be performed, as specified in the Work Plan. This is discussed in Section 5.4.1.

5.2 Holding Times and Sample Preservation

Samples were extracted and analyzed within the holding times specified in the Work Plan.

Sample coolers were delivered to the laboratory within the temperature specifications in the Work Plan (2 °C to 6 °C) with the following exceptions:

- The cooler for SDG WX26 arrived at the lab at 8.8 °C.
- The cooler for SDG XA83 arrived at the lab at 1.3 °C.

These exceptions should not affect data quality; therefore, no data qualifiers were assigned.

Samples were collected and preserved as specified in the Work Plan or as required by ADEC guidance.

5.3 Precision

5.3.1 Laboratory Duplicate Samples

Precision criteria for laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses were acceptable.



Precision criteria for matrix spike/matrix spike duplicate (MS/MSD) analyses were acceptable.

5.3.2 Field Duplicates

Field duplicate split soil samples were collected and analyzed for all analytical methods. The required minimum number of field duplicates (minimum of one per every 10 field samples per target analyte) was met for DRO and RRO analyses (3 field duplicates were collected for the 30 primary samples collected).

Results for both duplicate analyses were within the control limits specified in the Work Plan ($\pm 30\%$).

5.4 Accuracy

5.4.1 Laboratory QC Sample Recoveries

LCS/LCSD analyses were performed at the proper frequency (one per digestion batch). Acceptance criteria for LCS/LCSD analyses were met.

MS/MSD analyses were specified in the Work Plan for matrix quality control, but no frequency was given. Preferably, MS/MSD analyses are performed at a frequency of one per digestion batch (SDG). One MS/MSD analysis was performed for SDG WW04. MS/MSD analysis was intended for SDG WW05, but due to a miscommunication with the laboratory the analyses were not performed. The remaining SDGs were small batches and MS/MSD analyses were not requested.

The MSD percent recovery for the one MS/MSD analysis was 72.4%, which is less than the lower control limit of 75%. No action was taken as the MS percent recovery was acceptable.

5.4.2 Surrogate Spike Recoveries

Surrogate compounds were added to all samples as required by the specific methods. Surrogate recoveries were acceptable for field samples with the exception of o-terphenyl recoveries for the DRO analysis of Sample 13062704. The surrogate was not detected in the initial analysis or in the 100X dilution in the second analysis. The reported DRO result from the diluted analysis was qualified as estimated (J).

5.5 Representativeness

Representativeness is a qualitative measurement that expresses the degree to which data accurately and precisely represent site conditions. Representativeness was ensured through the use of appropriate sampling methods and sample handling procedures as specified in the Work



Plan. Also, concerted efforts were made to ensure that subsamples collected from bulk samples were representative of the sample.

5.6 Comparability

Comparability expresses the confidence that one data set can be compared with another. Comparability was ensured by using standard methods for sampling and analysis as specified in the Work Plan.

Comparability can also be assessed by comparing the results of field screening with laboratory analyses. Accordingly, field screening measurements from the PID were compared to laboratory analyses for DRO confirmation samples (Table 2). Approximately half of the PID measurements had no response (0.0 ppm); none of the associated lab results for this set of measurements exceeded cleanup levels. Those remaining results with a positive PID measurement show poor statistical correlation ($r^2 = 0.025$) to DRO laboratory results.

5.7 Completeness

Completeness is a numerical measure that refers to the number of valid (usable or non-rejected) measurements divided by the total number of measurements and expressed as a percentage. The Work Plan specified a completeness goal of 95%, based on the number of acceptable sample analyses. The UST Procedures Manual (ADEC, 2002) specifies a minimum completeness goal of 85%.

Of the 33 samples analyzed for this project, all of the results were acceptable. One required confirmation samples was not collected. Therefore, sample completeness is 97%, which meets both completeness goals.

5.8 Sensitivity

Sensitivity is evaluated to provide confidence that method blanks contain no target analytes and that the limits of detection are less than regulatory cleanup levels. Method blanks were analyzed for all methods at the required frequency of one per preparation batch (20 or fewer samples). No target analytes were detected in any of the method blanks.

Target reporting limits specified in the work plan were provided by the laboratory at the time the Work Plan was written. The reporting limits are the laboratory's Limits of Quantitation (LOQ) for the referenced methods. Prior to dilution and correction for the moisture content of the samples, the laboratory met all of the target reporting limits in the Work Plan. All laboratory reporting limits for samples with non-detect results were well below soil cleanup levels.



6.0 CONCLUSIONS

This IRAR summarizes the work completed under the FY 2012 CA. In addition, previous documents were used (Ridolfi, 2008; Ridolfi, 2009; Ridolfi 2012) to support the conclusions presented in this section.

Approximately 114 CY (122 tons) of in place PCS were removed from three areas at the OCRRS site, loaded into 128 sacks, placed in shipping containers, and shipped out of Yakutat for proper disposal.

PCS at the Former Diesel AST Area was successfully removed. Soil confirmation sampling showed that concentrations of DRO and RRO remaining in the soils are below ADEC cleanup levels.

PCS at the Former Fuel Pumphouse Area was successfully removed. Soil confirmation sampling showed that concentrations of DRO and RRO remaining in the soils are below ADEC cleanup levels.

PCS at the Drain Area was successfully removed. Soil confirmation sampling showed that concentrations of DRO and RRO remaining in the soils are below ADEC cleanup levels.




7.0 REFERENCES

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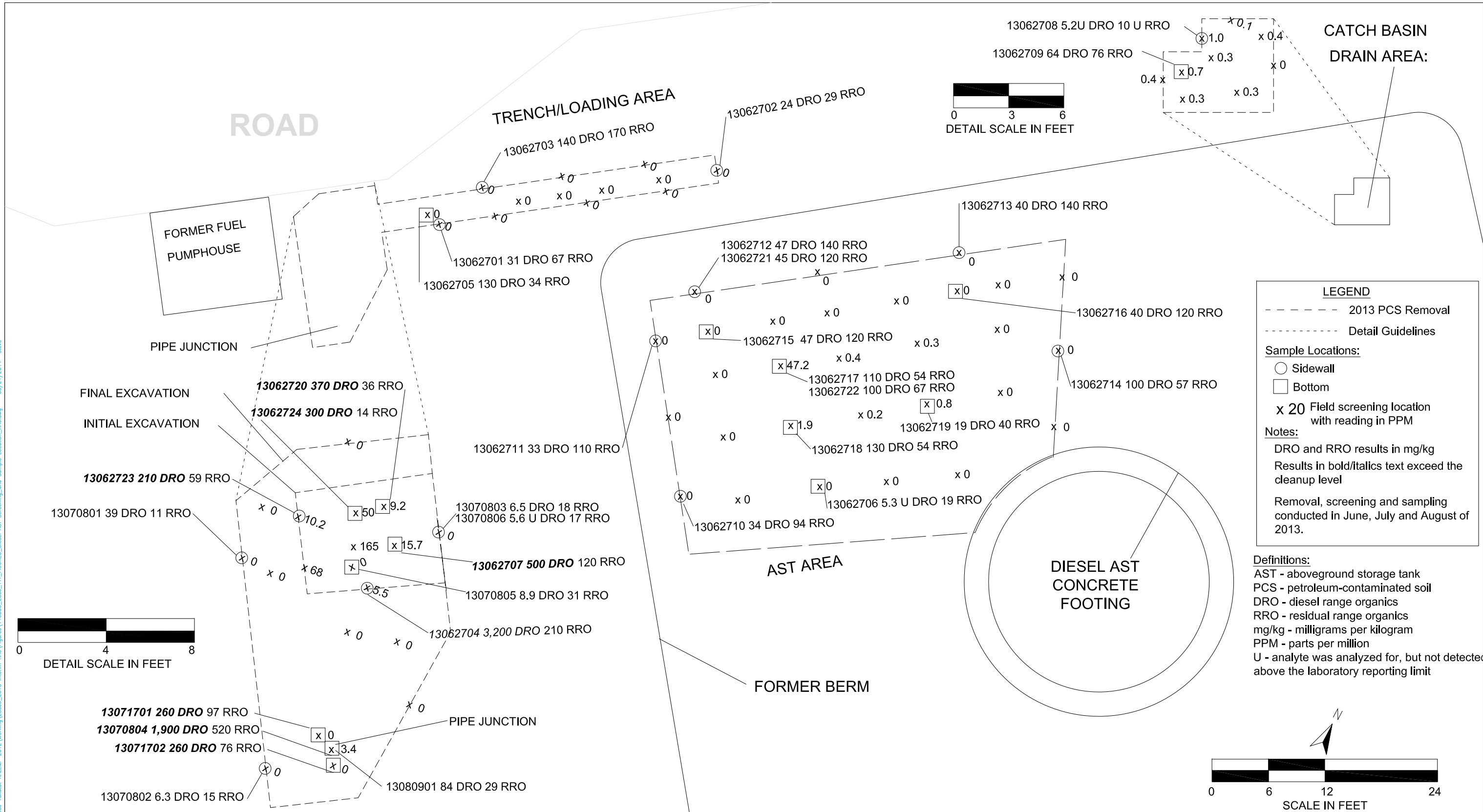


FIGURES



 <p>YAKUTAT TLINGIT TRIBE</p>	<p>OCRRS Petroleum-Contaminated Soil Interim Removal Action Report</p>	March 2014	Figure 1
		<p>Prepared for Yakutat Tlingit Tribe</p>	

J:\255 Yokohai\Tingli_Tiba\255J Yokohai_NALDIP_2012\Working\255J_2013 Interim RAC\Figures\140306_255J_YT_FIGURES_Diesel_Screening_and_Sample_Location_RAC.dwg - 03/21/2014 -Steve



LEGEND

- 2013 PCS Removal
- Detail Guidelines

Sample Locations:

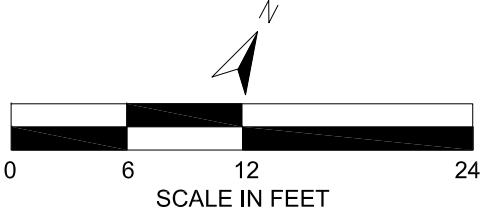
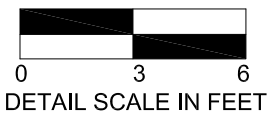
- Sidewall
- Bottom
- x 20 Field screening location with reading in PPM

Notes:

- DRO and RRO results in mg/kg
- Results in bold/italics text exceed the cleanup level
- Removal, screening and sampling conducted in June, July and August of 2013.

Definitions:

- AST - aboveground storage tank
- PCS - petroleum-contaminated soil
- DRO - diesel range organics
- RRO - residual range organics
- mg/kg - milligrams per kilogram
- PPM - parts per million
- U - analyte was analyzed for, but not detected above the laboratory reporting limit



REV.	DATE	DESCRIPTION	DES BY	DWN BY	CHK BY	APP BY

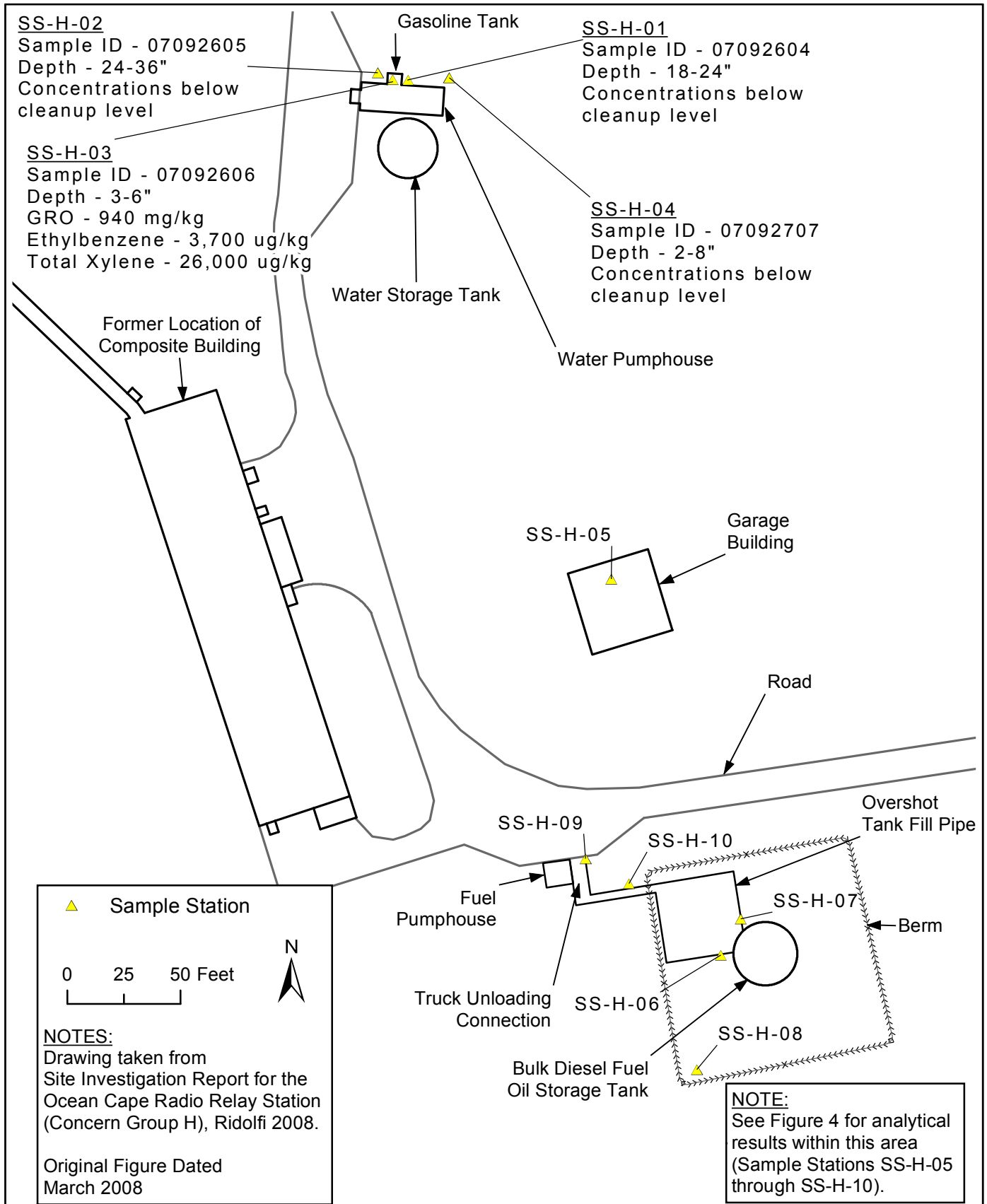




Date Of Issue: March 2014
 Designed By: KF
 Drawn By: SH
 Checked By: PB
 Approved By: BR

OCRRS Petroleum-Contaminated Soil
 Interim Removal Action Report

Diesel AST Area and Former Fuel
 Pumphouse Area - Soil Sample
 Locations and Removal Areas

Drawing No.
2
 Project No.
255J



 YAKUTAT TLINGIT TRIBE	OCRRS Petroleum-Contaminated Soil Interim Removal Action Report	March 2014	Figure 3
		2007 OCRRS Site Investigation Sample Locations	
 RIDOLFI	Prepared for the Yakutat Tlingit Tribe		

Legend

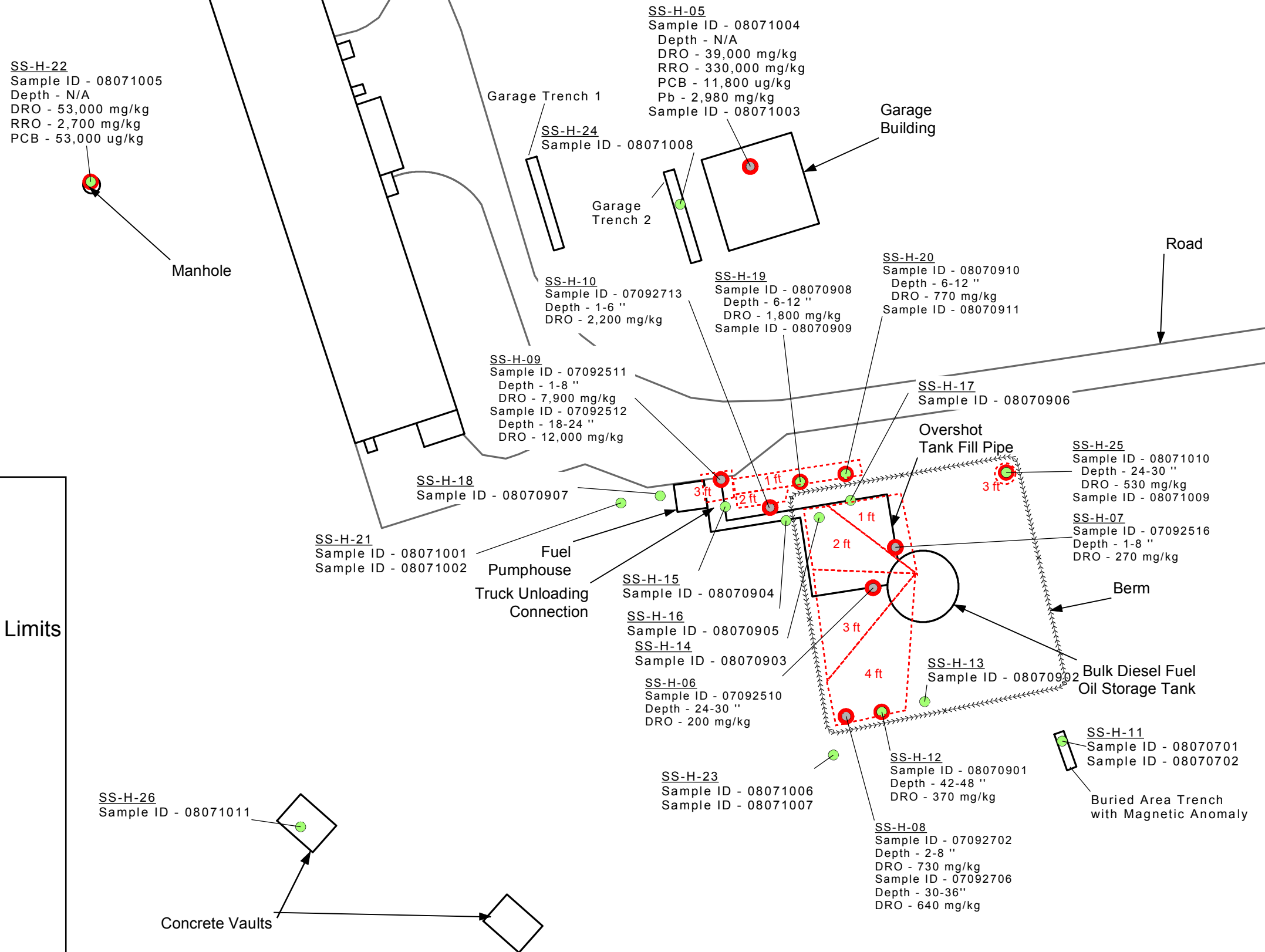
- Sample Station 2008
- Sample Station 2007
- Stations with Samples Exceeding Limits
- Extent of PCS labeled with depth

0 50 Feet



NOTES:
 Drawing taken from
 Site Investigation Report for the
 Ocean Cape Radio Relay Station
 (Concern Group H), Ridolfi 2008.

Original Figure Dated
 November 2008



TABLES

Table 1. Sample Identification, Description, and Analyses Performed

Sample Identification	Latitude	Longitude	Sample Matrix	Sample Depth (inches) bgs	USCS Soil Description	USCS Symbol	Area	Comments	Date Collected	Time Collected	Analyses Performed		Cooler No. with Turn-Around
											DRO/RRO (AK102/103)	Total Solids	
13062701	-139.859969	59.540379	Soil	12-15	Poorly graded sand	SP	Trench Sidewall	Collected at T-FS-01 sidewall sample	6/27/2013	11:40 AM	X	X	No. 1 STD
13062702	-139.859813	59.540406	Soil	12-15	Poorly graded sand	SP	Trench Sidewall	Collected at T-FS-05 sidewall sample	6/27/2013	11:42 AM	X	X	No. 1 STD
13062703	-139.859971	59.540378	Soil	12-15	Poorly graded sand	SP	Trench Sidewall	Collected at T-FS-08 sidewall sample	6/27/2013	11:45 AM	X	X	No. 1 STD
13062704	-139.860000	59.540364	Soil	24-27	Sandy gravel	GP	Trench Sidewall	Collected at T-FS-14 sidewall sample	6/27/2013	11:47 AM	X	X	No. 1 Rush
13062705	-139.859963	59.540378	Soil	12-15	Sandy gravel	GP	Trench Bottom	Collected at T-FS-09 bottom sample	6/27/2013	11:50 AM	X	X	No. 1 STD
13062706	-139.859755	59.540268	Soil	24-27	Sandy gravel	GP	AST Area Bottom	Collected at A-FS-27 bottom sample	6/27/2013	11:52 AM	X	X	No. 1 STD
13062707	-139.860003	59.540369	Soil	30-33	Sandy gravel mild odor	GP	Trench Bottom	Collected at T-FS-17 bottom sample	6/27/2013	11:55 AM	X	X	No. 1 Rush
13062708	-139.859495	59.540378	Soil	12-15	Poorly graded sand	SP	Drain Area Sidewall	Collected at D-FS-07 sidewall sample	6/27/2013	12:05 PM	X	X	No. 1 STD
13062709	-139.859778	59.540381	Soil	27-30	Poorly graded sand	SP	Drain Area Bottom	Collected at D-FS-04 bottom sample	6/27/2013	12:10 PM	X	X	No. 1 STD
13062710	-139.859794	59.540238	Soil	15-18	Well graded sand	SW	AST Area Sidewall	Collected at A-FS-01 sidewall sample	6/27/2013	3:40 PM	X	X	No. 1 STD
13062711	-139.859799	59.540306	Soil	21-24	Well graded sand	SW	AST Area Sidewall	Collected at A-FS-03 sidewall sample	6/27/2013	3:42 PM	X	X	No. 1 STD
13062712	-139.859789	59.540318	Soil	21-24	Poorly graded sand	SP	AST Area Sidewall	Collected at A-FS-04 sidewall sample	6/27/2013	3:45 PM	X	X	No. 1 STD
13062713	-139.859679	59.540339	Soil	9-12	Poorly graded sand	SP	AST Area Sidewall	Collected at A-FS-06 sidewall sample	6/27/2013	3:48 PM	X	X	No. 1 STD
13062714	-139.859640	59.540311	Soil	9-12	Sandy gravel	GP	AST Area Sidewall	Collected at A-FS-08 sidewall sample	6/27/2013	3:50 PM	X	X	No. 1 STD
13062715	-139.859770	59.540308	Soil	24-27	Sandy gravel	GP	AST Area Bottom	Collected at A-FS-10 bottom sample	6/27/2013	4:10 PM	X	X	No. 1 STD
13062716	-139.859676	59.540318	Soil	12-18	Sandy gravel	GP	AST Area Bottom	Collected at A-FS-14 bottom sample	6/27/2013	4:12 PM	X	X	No. 1 STD
13062717	-139.859752	59.540303	Soil	24-27	Sandy gravel, mild odor	GP	AST Area Bottom	Collected at A-FS-17 bottom sample	6/27/2013	4:15 PM	X	X	No. 1 Rush
13062718	-139.859752	59.540291	Soil	24-27	Sandy gravel	GP	AST Area Bottom	Collected at A-FS-22 bottom sample	6/27/2013	4:18 PM	X	X	No. 1 STD
13062719	-139.859707	59.540287	Soil	24-27	Sandy gravel	GP	AST Area Bottom	Collected at A-FS-24 bottom sample	6/27/2013	4:20 PM	X	X	No. 1 STD
13062720	-139.860002	59.540368	Soil	36-39	Sandy gravel	GP	Trench Bottom	Collected at T-FS-19 bottom sample	6/27/2013	4:25 PM	X	X	No. 1 STD
13062723	-139.860002	59.540367	Soil	36-39	Sandy gravel	GP	Trench Sidewall	Collected at T-FS-18 sidewall sample	6/27/2013	4:45 PM	X	X	No. 1 Rush
13062724	-139.860002	59.540366	Soil	36-39	Sandy gravel	GP	AST Area Bottom	Collected at T-FS-21 bottom sample	6/27/2013	4:50 PM	X	X	No. 1 Rush
13070801	-139.860001	59.540372	Soil	72-75	Sandy gravel	GP	Trench Sidewall	Collected at T-FS-2-1 bottom sample	7/8/2013	4:15 PM	X	X	No. 2 Rush
13070803	-139.860024	59.540365	Soil	72-75	Sandy gravel	GP	Trench Sidewall	Collected at T-FS-2-3 bottom sample	7/8/2013	4:23 PM	X	X	No. 2 Rush
13070804	-139.859996	59.450311	Soil	72-75	Sandy gravel	GP	Trench Bottom	Collected at T-FS-2-1 bottom sample	7/8/2013	4:26 PM	X	X	No. 2 Rush
13070805	-139.859966	59.540302	Soil	72-75	Sandy gravel	GP	Trench Bottom	Collected at T-FS-2-1 bottom sample	7/8/2013	4:30 PM	X	X	No. 2 Rush
13070806	-139.860024	59.540365	Soil	72-75	Sandy gravel	GP	Trench Bottom	Field Duplicate of 13070803	7/8/2013	4:33 PM	X	X	No. 2 Rush
13071701	-139.859969	59.450310	Soil	99-103	Sandy gravel	GP	Trench Bottom	Collected at T-FS-21 bottom sample	7/17/2013	3:00 PM	X	X	No. 3 Rush
13071702	-139.859969	59.450318	Soil	99-103	Sandy gravel	GP	Trench Bottom	Collected at T-FS-21 bottom sample	7/17/2013	3:05 PM	X	X	No. 3 Rush
13080901	-139.859996	59.450311	Soil	124-127	Sandy gravel	GP	Trench Bottom	Collected at T-FS-21 bottom sample	8/9/2013	9:36 AM	X	X	No. 4 Rush

Notes:
 AK102/103 = ADEC diesel/residual range organics analytical methods
 bgs = below ground surface
 DRO = Diesel Range Organics
 RRO = Residual Range Organics
 STD = Standard
 USCS = Unified Soil Classification System

Comment Notes:
 A- Former Diesel AST Area
 D- Drain Area
 FS- Field Screening
 T- Former Fuel Pumphouse Area (Trench)

Table 2. Yakutat OCRRS Soil Confirmation Sample Results

			Analytical Method	Field		AK102		AK103	
			Parameter Name	Screening	Total Solids	Diesel Range Organics		Residual Range Organics	
			ADEC Method One Petroleum Hydrocarbon Soil Cleanup levels in Nonarctic Zones, Category B			200		2000	
			CAS Number			68334-30-5			
			Reporting Units	ppm	%	mg/kg		mg/kg	
Station Name	Sample ID	Lab ID	Sample Date and Time	Result	Result	Result	Q	Result	Q
Former Diesel AST Area Floor	13062706	13-13865-WW05E	6/27/2013 11:52:00 AM	0.0	94	5.3	U	19	
	13062715	13-13873-WW05M	6/27/2013 4:10:00 PM	0.0	85	47		120	
	13062716	13-13874-WW05N	6/27/2013 4:12:00 PM	0.0	78	40		120	
	13062717	13-13857-WW04C	6/27/2013 4:15:00 PM	47.2	93	110		54	
	13062718	13-13875-WW05O	6/27/2013 4:18:00 PM	1.9	93	130		54	
	13062719	13-13876-WW05P	6/27/2013 4:20:00 PM	0.8	91	19		40	
	13062722	13-13858-WW04D	6/27/2013 4:30:00 PM	47.2	92	100		67	
Former Diesel AST Area Sidewalls	13062710	13-13868-WW05H	6/27/2013 3:40:00 PM	0.0	83	34		94	
	13062711	13-13869-WW05I	6/27/2013 3:42:00 PM	0.0	84	33		110	
	13062712	13-13870-WW05J	6/27/2013 3:45:00 PM	0.0	87	47		140	
	13062713	13-13871-WW05K	6/27/2013 3:48:00 PM	0.0	91	40		140	
	13062714	13-13872-WW05L	6/27/2013 3:50:00 PM	0.0	94	100		57	
13062721	13-13878-WW05R	6/27/2013 4:00:00 PM	0.0	88	45		120		
Drain Area Floor	13062709	13-13867-WW05G	6/27/2013 12:10:00 PM	0.7	94	64		76	
Drain Area Sidewalls	13062708	13-13866-WW05F	6/27/2013 12:05:00 PM	1.0	95	5.2	U	10	U
Former Fuel Pumphouse Area Floor	13062705	13-13864-WW05D	6/27/2013 11:50:00 AM	0.0	90	130		34	
	13062707	13-13856-WW04B	6/27/2013 11:55:00 AM	15.7	89	500*		120	
	13062720	13-13877-WW05Q	6/27/2013 4:25:00 PM	9.2	96	370*		36	
	13062724	13-13860-WW04F	6/27/2013 4:55:00 PM	50.0	95	300*		14	
Former Fuel Pumphouse Area Sidewall	13062701	13-13861-WW05A	6/27/2013 11:40:00 AM	0.0	91	31		67	
	13062702	13-13862-WW05B	6/27/2013 11:42:00 AM	0.0	94	24		29	
	13062703	13-13863-WW05C	6/27/2013 11:45:00 AM	0.0	91	140		170	
	13062704	13-13855-WW04A	6/27/2013 11:47:00 AM	5.5	85	3200*	J	210	
	13062723	13-13859-WW04E	6/27/2013 4:45:00 PM	10.2	96	210*		59	
Former Fuel Pumphouse Area Sidewall	13070801	13-14611-WX26A	7/8/2013 4:15:00 PM	0.0	95	39		11	U
	13070802	13-14612-WX26B	7/8/2013 4:19:00 PM	0.0	91	6.3		15	
	13070803	13-14613-WX26C	7/8/2013 4:23:00 PM	0.0	94	6.5		18	
	13070806	13-14616-WX26F	7/8/2013 4:33:00 PM	0.0	91	5.6	U	17	
Former Fuel Pumphouse Area Floor	13070804	13-14614-WX26D	7/8/2013 4:26:00 PM	34.0	88	1900*		520	
	13070805	13-14615-WX26E	7/8/2013 4:30:00 PM	0.0	92	8.9		31	
	13071701	13-15679-WY82A	7/17/2013 3:00:00 PM	0.7	92	260*		97	
	13071702	13-15680-WY82B	7/17/2013 3:05:00 PM	0.8	93	260*		76	
	13080901	13-16833-XA83A	8/9/2013 9:36:00 AM	0.0	95	84		29	
Result exceeds ADEC Method One Petroleum Hydrocarbon Soil Cleanup Levels in Nonarctic Zones, Category B									
% = Percent									
* = Soil represented by this sample was subsequently excavated because of exceedance of the ADEC Cleanup Level									
ppm = parts per million									
mg/kg = milligrams per kilogram									
ADEC = Alaska Department of Environmental Conservation									
AST = Aboveground Storage Tank									
CAS = Chemical Abstracts Service									
ID = Identification									
Q = Data Qualifier									
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.									
J = the analyte was positively identified; the associated numerical value is the approximate concentrate of the analyte in the sample.									

APPENDIX A

**Environmental Assessment and Finding of No Significant Impact
for Removal Action**

Petroleum-Contaminated Soil

Ocean Cape Radio Relay Station, Yakutat, Alaska



**Alaska District
U.S. Army Corps of Engineers**

Engineering Division

Public Notice

Date 16 April 2012 Identification No. ER 12-06
Please refer to the identification number when replying

**Environmental Assessment and Finding of No Significant Impact
for
Removal Action
Petroleum-Contaminated Soil
Ocean Cape Radio Relay Station
Yakutat, Alaska**

Defense Environmental Restoration Program
Native American Lands Environmental Mitigation Program

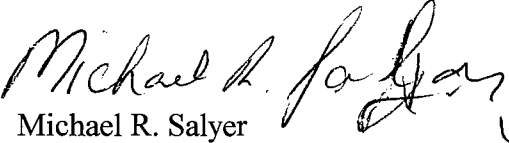
The U.S. Army Corps of Engineers (Corps) prepared this environmental assessment (EA) to address the excavation of petroleum-contaminated soils and other environmental restoration work to be performed at the former military facilities at Ocean Cape near Yakutat, Alaska. The Yakutat Tlingit Tribe (YTT) would perform the work as part of the Native American Lands Environmental Mitigation Program (NALEMP), in partnership with the Corps. The proposed project is a continuation of recent activities by YTT to remediate the former Ocean Cape Radio Relay Station. Currently planned activities include the removal and off-site treatment of about 500 cubic yards of contaminated soil, demolition of concrete footings, and further environmental sampling.

Comments and questions regarding the proposed action should be submitted to the address below no later than 30 days from the date of this public notice. Written comments received on or before this date will become part of the official record and will be considered in the determination of whether to prepare an environmental impact statement. No public meeting is scheduled.

If you believe a public meeting is needed, send a written request to the address below during the 30-day review period explaining why a meeting is necessary.

U.S. Army Engineer District, Alaska
ATTN: CEPOA-EN-CW-ER (FLOYD)
P.O. Box 6898
Elmendorf AFB, Alaska 99506-0898

Please contact Mr. Chris Floyd of the Corps' Environmental Resources Section at (907) 753-2700 or write to the above address if you would like more information about the proposed work. Comments, requests for public meetings, and requests for additional information may also be submitted electronically to the following e-mail address:
Christopher.B.Floyd@usace.army.mil.


Michael R. Salyer
Chief, Environmental Resources

Enclosure



**US Army Corps
of Engineers**

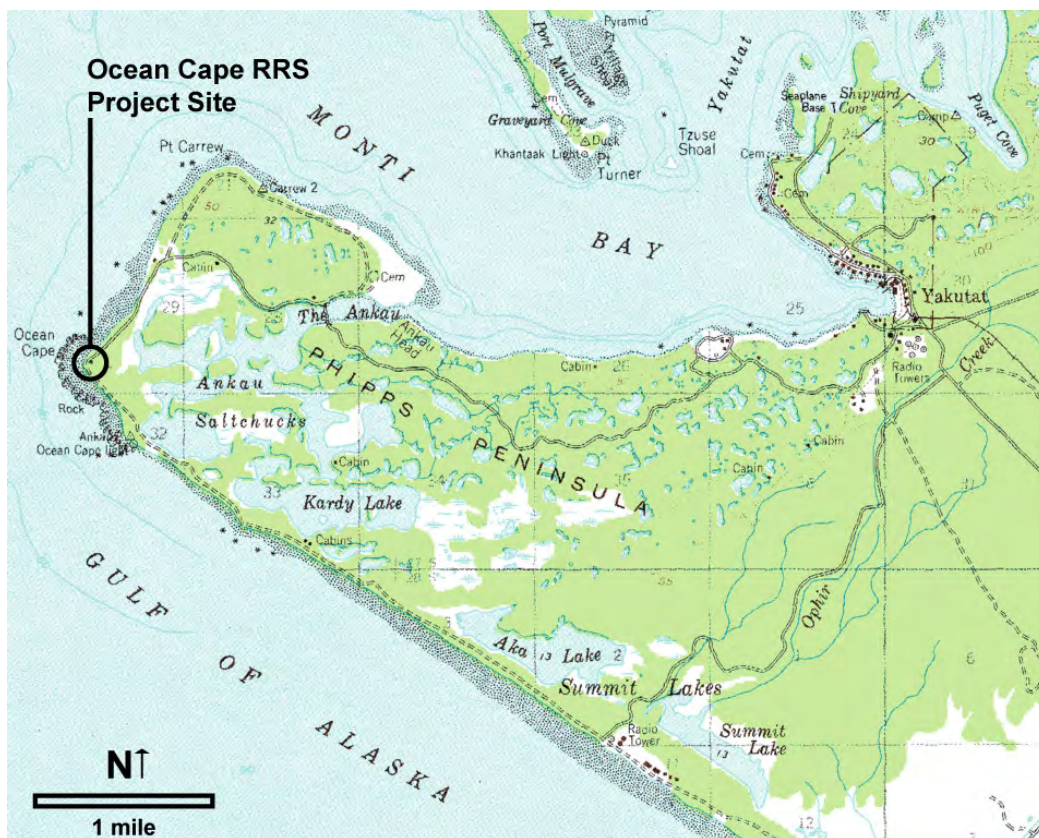
Alaska District

Environmental Assessment and Finding of No Significant Impact

Removal Action
Petroleum-Contaminated Soil

Ocean Cape Radio Relay Station Yakutat, Alaska

Native American Lands Environmental Mitigation Program



April 2012

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, as amended, the U.S. Army Corps of Engineers, Alaska District (Corps) has assessed the environmental effects of the following action:

**Removal Action
Petroleum-Contaminated Soil
Ocean Cape Radio Relay Station
Yakutat, Alaska**

This action has been evaluated for its effects on several significant resources, including fish and wildlife, wetlands, threatened or endangered species, marine resources, and cultural resources. No significant short-term or long-term adverse effects were identified.

This Corps action complies with the National Historic Preservation Act, the Endangered Species Act, the Clean Water Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the National Environmental Policy Act. The completed environmental assessment supports the conclusion that the action does not constitute a major Federal action significantly affecting the quality of the human and natural environment. An environmental impact statement is therefore not necessary for the removal action at Ocean Cape.

Reinhard W. Koenig
Colonel, Corps of Engineers
District Commander

Date

Environmental Assessment

1.0 PURPOSE AND NEED OF REMEDIAL ACTION

1.1 Introduction

The U.S. Army Corps of Engineers (Corps) prepared this environmental assessment (EA) to address under the National Environmental Policy Act (NEPA) the excavation of petroleum-contaminated soils and other ground-disturbing activities to be performed at the former military facilities at Ocean Cape near Yakutat, Alaska. The Yakutat Tlingit Tribe (YTT), in partnership with the Corps, would perform the work as part of the Native American Lands Environmental Mitigation Program (NALEMP). The Corps has prepared several EAs in the past for environmental cleanup projects in the Yakutat area, but none of those EAs addressed large-scale excavation and removal of soil. Previous YTT cleanup activities at Ocean Cape have consisted primarily of environmental sampling, structure demolition, and debris removal. Those activities were determined to fall under categorical exclusions to the NEPA process established by the U.S. Army, so no EA was prepared for those efforts.

1.2 Site Description

The Ocean Cape site is located on the Gulf of Alaska, approximately 370 miles southeast of Anchorage and 5 miles west of Yakutat (figure 1). Ocean Cape can be accessed by road from Yakutat.

The U.S. Air Force acquired the Ocean Cape site in 1960 to construct a radio relay station between Hoonah and Cape Yakataga. The facility was part of the White Alice Communication System (WACS) and Ballistic Missile Early Warning System. Four 60-foot tropospheric antennas were constructed, as well as support buildings, water and fuel tanks, utility lines and utilidors, an access road, and a bridge. The U.S. Air Force released the Ocean Cape property in 1977, and ultimately conveyed it to the YTT in 1983. The property is owned by the village corporation Yak-Tat Kwann, Inc. (Ridolfi 2012).

Under the NALEMP program, the YTT conducted site investigations and cleanup work at the Ocean Cape site each year from 2008 through 2011. YTT activities have included sampling and analysis of soil, water, and waste materials; demolition of buildings and removal of debris; and dismantling and removal of water and fuel tanks. Several concrete foundations and a drum dump remain at the site. Sampling results show that soil contamination with petroleum hydrocarbons and polychlorinated biphenyls (PCBs) still exists in some areas of the site (Ridolfi 2012).

1.3 Need for Action

The YTT wishes to expedite the removal of contaminated soil and building remnants at the former Ocean Cape site, as it is within a popular subsistence and recreation area. A youth culture camp is operated nearby, where local elders teach traditional subsistence practices.

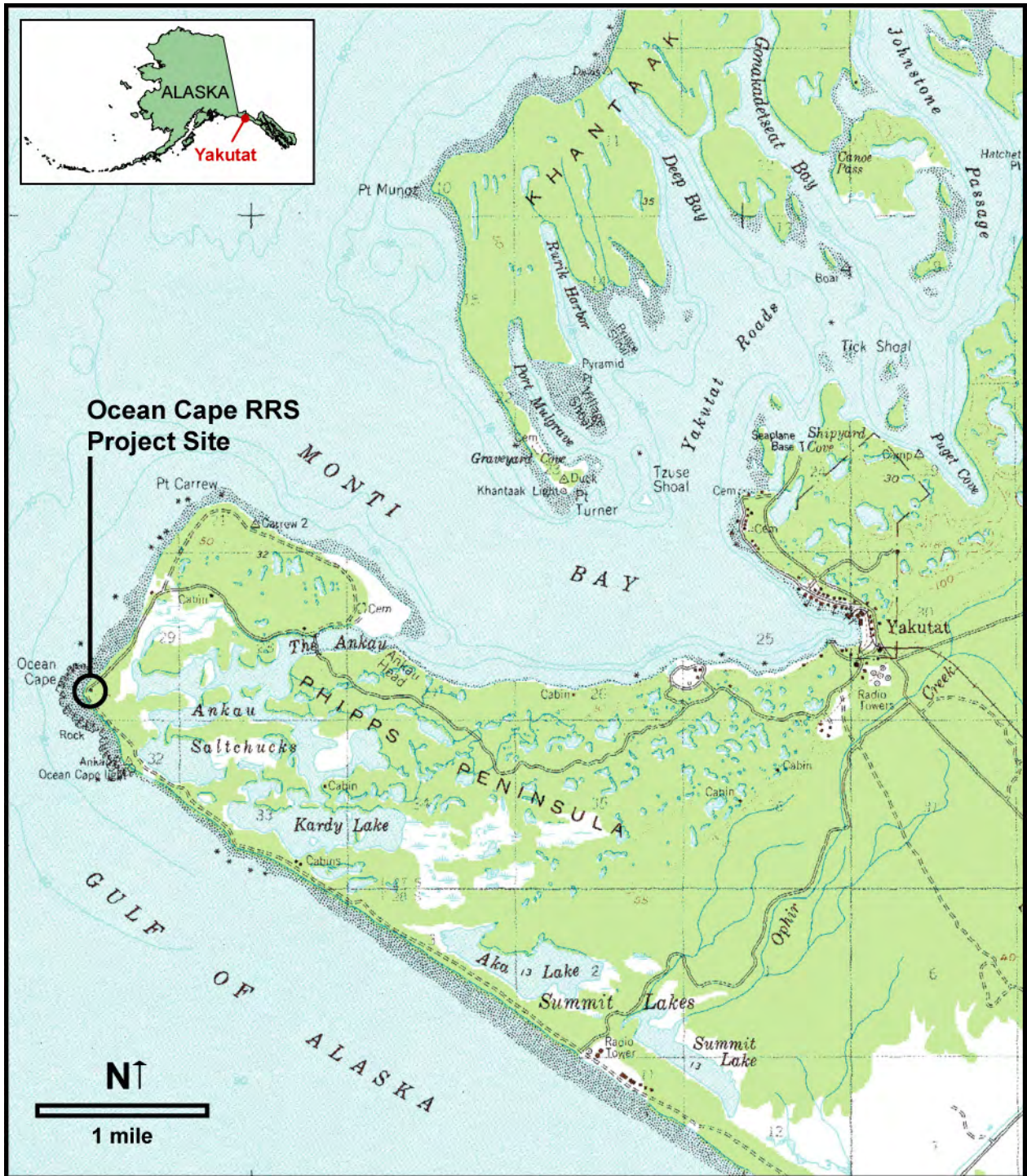


Figure 1. Location of Ocean Cape Radio Relay Station site.

2.0 ALTERNATIVES

2.1 No-Action Alternative

Under the no-action alternative, the contaminated soil, concrete foundations, and debris would remain in place. This would limit the use of the area by the community, and potentially allow the migration of chemical contaminants to nearby wetlands and subsistence areas. The no-action alternative would avoid the short-term disruptions to the local environment that would be caused by the operation of heavy equipment and excavation of soil and concrete.

2.2 Removal Action Alternative

The preferred alternative is to continue with the removal of contaminated soil and building remnants, and investigations of potentially contaminated areas.

In 2012, YTT plans to:

- Excavate and remove up to 500 cubic yards of petroleum-contaminated soil at the former diesel aboveground tank (AST) and fuel pump house area, and remove and dispose of concrete footings and associated piping from the AST area (figures 2 and 3).
- Excavate 5 cubic yards of petroleum-contaminated soil at the former gasoline storage tank.
- Remove the water tower footing and associated piping.
- Conduct sampling of the concrete slab in garage building for PCBs.
- Conduct a site investigation at the north drum dump (figure 2).

The proposed activities are detailed in YTT's project work plan (Ridolfi 2012). Contaminated soil would be excavated and loaded into 1-cubic-yard sacks. The sacks of contaminated soil would be transported to Yakutat, loaded into a shipping container, and ultimately shipped to an appropriate remediation facility. The excavations would be backfilled with clean soil from the remaining earthen berm at the AST location. Concrete footings would be broken up with jackhammers, and the debris disposed of at the Yakutat landfill.

The project site would be accessed by existing roads. Some brush removal with hand tools and chainsaws would be necessary to approach some features with heavy equipment; trees with a diameter of 12 inches or greater would not be felled unless absolutely necessary. Cut brush may be used alongside silt as an erosion control measure (Ridolfi 2012).

Future restoration activities planned by YTT at Ocean Cape include:

- Removing concrete foundations.
- Removing or closing concrete vaults and manholes.
- Remediating PCB contamination.

- Remediating the north drum dump.
- Conducting confirmation sampling.

3.0 AFFECTED ENVIRONMENT

3.1 Community

The Ocean Cape site is near the city of Yakutat, a community of about 700 at the mouth of Yakutat Bay on the Gulf of Alaska. Yakutat is accessible only by air or sea. Yakutat's economy depends on fishing and fish processing; in 2010, 153 residents held commercial fishing licenses. Recreational fishing in the area, both saltwater and freshwater, is considered to be world class. Most residents depend on subsistence hunting and fishing, harvesting salmon, trout, shellfish, deer, moose, bear, and mountain goat. The area maintains a traditional Tlingit culture with influences from Eyak Athabascans, as well as Russian, English, and American traders and miners (ADCRA 2012).

3.2 Current Land Use

The Phipps Peninsula and Ankau Saltchucks area has been relied upon heavily for subsistence foods, including berries, clams, cockles, ducks, salmon, and seaweed. Yak-Tat Kwan operates the Yakutat Culture Camp, a youth camp where local tribal elders teach traditional subsistence practices near the site of the former Ocean Cape WACS (CCTH 2004).

3.3 Climate

Yakutat is in a maritime climate zone, characterized by heavy precipitation, cool summers, and mild winters. July is the warmest month with an average temperature of 53.6 degrees Fahrenheit. January is the coldest month with an average temperature of 25 degrees Fahrenheit. Average annual precipitation for the area is 151 inches, while the average annual snowfall accumulation is 202 inches. June is usually the driest month, with an average monthly precipitation of 7.3 inches. The greatest amount of rainfall is in October, with an average monthly precipitation of 23 inches. Prevailing winds blow from the east to southeast at an average velocity of 6 to 8 miles per hour (USACE 1999).

3.4 Topography, Soils, and Hydrology

The Ocean Cape site is on the low-lying Phipps Peninsula between the Gulf of Alaska and Monti Bay (figure 1). The soils in the area are likely a complex of glacial outwash, alluvial, and lacustrine sediments, overlain with an organic layer deposited by the well-established conifer forest that occupies much of the area. The highest ground on the peninsula appears to be a low ridge running along the western shore, while the interior of the peninsula contains an extensive network of tidal lagoons (also known as saltchucks), ponds, and bogs. Groundwater is thought to be about 10 feet below ground surface at the project site (ENSR 2000).

3.5 Biological Resources

The main terrestrial vegetative community in the Yakutat area is coastal western hemlock-Sitka spruce forest. The coastal forest consists of three plant communities: true forest, grass-sedge meadows, and muskeg. The dominant tree species in the true forest are western hemlock, Sitka spruce, Alaska cedar, and western red cedar. Understory vegetation is represented by alder shrubs and moss. Wetland habitats and ponds along glacial moraines are dominated by sedges, mosses, and low shrubs. Wetlands along streams are dominated by tall willows, alder, sedges, mosses, and low shrubs. Low lying muskegs are dominated by thick mats of sphagnum moss, sedges, herbs, and low shrubs (USACE 1999).

Black bear and brown bear are common in the Yakutat region, along with deer, moose, mountain goat, wolf, and wolverine. Other mammals known to inhabit the area include marten, land otter, fox, ermine, lynx, coyote, and weasel. Marine mammals expected to frequent the area include harbor seals, sea lions, fur seals, and sea otters. Several species of whales, most notably humpback, gray, killer, fin, right, sperm, and blue also have been seen in the area. The Yakutat area is on a major flyway for waterfowl and shorebirds, and is important for nesting bald eagles and swans (USACE 1999). The USFWS eagle nest database has no records of eagle nests within 1 mile of the project site (Lewis 2012), but the presence of an undocumented nest is a possibility.

Area streams support all five species of Alaska salmon (red, chum, pink, king and coho), along with steelhead trout, cutthroat trout, Dolly Varden, northern pike, and rainbow trout. Salmon are known to spawn in drainage ditches and other water bodies adjacent to the airport runway. Many of the lakes, especially the larger lakes such as Malaspina, Harlequin Mountain, and Italo provide important fish habitat. Saltwater habitats support important species including herring, halibut, flounder, cod, rockfish, crab, clams and cockles. A significant portion of Yakutat's economy is tied to the use of marine fishery resources. Sport fishing for salmon and steelhead trout plays a vital role in the area's economy (USACE 1999).

3.5 Wetlands

The Phipps Peninsula contains extensive lagoons, marshes, ponds, and bogs. However, the Ocean Cape facility appears to have been built on higher ground and perhaps areas of fill along the western shore. The immediate project work areas where buildings and other structures were constructed were presumably filled and modified at the time of construction.

3.6 Threatened and Endangered Species

The project area is within the historic range of seven species of whales (blue, fin, sperm, humpback, right, bowhead, and sei). All seven species of whale are federally listed under the Endangered Species Act (ESA) as endangered. Whales are infrequent visitors to near-shore waters. Most are found in deeper waters off the Gulf of Alaska, North Pacific, and Bering Sea (USACE 1999).

The Steller sea lion population west of 144° west longitude (a line near Cape Suckling, Alaska, or roughly 150 miles west of Yakutat) was listed as “endangered” under the ESA in April 1997 due to recent declines in populations in the western Gulf of Alaska. The Steller sea lion population east of this line is listed as “threatened.” It is unclear how extensively Steller sea

lions use the Yakutat area; the closest NMFS-designated sea lion critical habitat area to Ocean Cape is a haulout at Cape Fairweather, about 80 miles to the southeast (NMFS 2012a).

Kittlitz's murrelet was designated a candidate species in 2004 for listing under the ESA. In Southeast and Southcentral Alaska, this seabird selects a nest site on the ground, on barren, steep-sided mountains or ledges of steep, rocky cliffs adjacent to the coastal waters where it feeds (USFWS 2011).

3.7 Essential Fish Habitat and Anadromous Streams

The near-shore marine waters adjacent to Ocean Cape are designated by the National Marine Fisheries Service (NMFS) as essential fish habitat (EFH) for Chinook, chum, coho, pink, and sockeye salmon, as well as flathead sole and skate. No NMFS-designated Habitats of Particular Concern (HAPC) or other fishery protection areas are nearby. The "Gulf of Alaska Slope Habitat Conservation Area – Yakutat" is on the continental shelf roughly 50 miles south of Ocean Cape (NMFS 2012).

The Alaska Department of Fish and Game (ADFG) lists several nearby waterbodies on the Phipps Peninsula in the Anadromous Waters Catalog (AWC). The Ankau Saltchucks (AWC #183-50-10100) and Kardy Lake (AWC #183-50-10100-0010) are cataloged as having coho and sockeye salmon, as well as steelhead, Dolly Varden, and cutthroat trout "present." An unnamed stream (AWC #183-50-10100-200) discharging into the west end of the Ankau Saltchucks near the project site is listed as a spawning stream for coho salmon. Several other salmon spawning streams discharge along the coast within a few miles southeast of Ocean Cape, such as Ophir Creek, Tawah Creek, Lost River, and Situk River (ADFG 2012).

3.8 Cultural and Historical Resources

The primary historical properties within the project's area of potential effect (APE) are the Ocean Cape White Alice site itself (cataloged in the Alaska Historical Resource Survey as YAK-00047), Ocean Cape Road (YAK-00121), Pt. Carew Road (YAK-00129), Artillery Road (YAK-00119), and the Ankau Slough Bridge (YAK-00153). All WACS properties in Alaska were listed on the National Register of Historic Places (NRHP) in 1988. Since their listing, many WACS properties, including Ocean Cape, have undergone demolition and removal. The distinguishing features of the Ocean Cape site, namely its tropospheric antennae and the radio station building, were removed in 1984 (USACE 2008).

The roads listed above would be used to access the site. These roads have undergone minor repairs and brush-clearing during earlier phases of the Ocean Cape cleanup. The bridge over Ankau Slough is a treated-timber stringer bridge built in 1961 as an access route to the Ocean Cape lighthouse (USACE 2008).

Eight other known sites are listed on the AHRS in the vicinity of Ocean Cape, which is within the boundaries of the Yakutat Landing Field (YAK-072), a National Register eligible World War II facility; however, Ocean Cape is not a contributing property to the landing field. The Ocean Cape Loran A station (YAK-089) is roughly 1 mile southeast of the WACS facility. Another 2 miles southeast along the coast is New Russia (YAK-029). This was the site of a major Russian colony that was established in 1796 and completely destroyed by the Yakutat Tlingit in 1805. Some archaeological traces of the colony have been reported. The Ocean Cape cleanup will avoid

the Loran station and New Russia, and thus, there will be no effect on these properties (USACE 2008).

3.9 Air Quality

No information on local air quality is available. The low density of emission sources in the Ocean Cape area suggests generally good air quality

3.10 Noise

The noise levels at the site are generally low and considered comparable to similar rural areas. The major source of noise would presumably be from motor vehicles such as watercraft, aircraft, and all-terrain vehicles.

4.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

4.1 No-Action Alternative

The no-action alternative would avoid the short-term disruptions to the local environment that would be caused by the operation of heavy equipment and excavation of soil and concrete. However, the contaminated soil, concrete foundations, and debris would remain in place, which would limit the use of the area by the community and potentially allow the migration of chemical contaminants to nearby wetlands and subsistence areas.

4.2 Preferred Alternative

Under the preferred alternative, contaminated soils would be removed from the site to the extent practical, and the removal of building remnants such as concrete foundations would be completed. The potential environmental consequences are described below.

4.2.1 Current Land Use

The planned environmental cleanup activities at Ocean Cape may cause some brief restrictions on public access to portions of the general area. Active work sites may need to be closed off for public safety, and heavier-than-usual vehicle traffic on the local roads may discourage some residents from accessing the area.

4.2.2 Topography, Soils, and Hydrology

The small areas of excavation would not significantly alter the topography or patterns of overland water flow in the area.

4.2.3 Biological Resources

The planned activities would be highly localized in their impacts and affect an area already altered by the former military facility and past cleanup efforts. A small amount of brush may need to be cleared to access specific features. The activities would have little effect on local wildlife and no long-term negative impact on their habitat. The project site is surrounded by large

areas of similar, higher-quality habitat, and any wildlife displaced from the project area by noise and activity should be able to quickly resume their natural behavior.

Nesting birds are likely to be the most vulnerable animal species at the site. The destruction of active nests, eggs, or nestlings is a violation of the Migratory Bird Treaty Act (MBTA). The U.S. Fish and Wildlife Service advises that the period 15 April through 15 July should be considered the nesting window for forest- or shrub-nesting birds in Southeast Alaska (USFWS 2007). The project activities may overlap this nesting window. One means of avoiding a “taking” of nesting birds under the MBTA would be to perform the necessary brush and tree removal before the start of the nesting window.

The Corps determines that the planned activities would have no adverse effect on any species listed under the Endangered Species Act or their critical habitat. The project would not enter the marine environment or require crossing or altering any anadromous streams, and so would not have any effect on essential fish habitat.

The currently planned activities do not involve the discharge of material into wetlands and should have no adverse effects on any wetlands or water bodies.

4.2.4 Cultural Resources

In a letter dated 16 May 2008, the State Historic Preservation Officer concurred with the Corps’ determination (USACE 2008) that removing the Ocean Cape Radio Relay structures will have no adverse effect on historic properties. The Corps will seek concurrence from the SHPO with a determination that excavation of contaminated soil from areas at the site will likewise have no effect on historic properties.

4.2.5 Air Quality

Air quality may be affected during the project period from the use of heavy equipment, vehicles, and generators. The Corps believes any poor air quality conditions caused by the project would be transient and highly localized and would dissipate entirely at the end of the project.

4.2.6 Noise

The planned activities at the site and the movement of trucks and equipment into and out of the project along local roads would increase the levels of noise in the local area during several weeks of the working season. The remedial activities would be timed to minimize the level of interference with the lives of the local residents.

4.2.7 Coastal Zone Management

Alaska’s Coastal Zone Management Program expired on 31 July 2011. Project proponents are no longer required to evaluate projects for consistency with enforceable standards of coastal management plans. The annual activities of the Ocean Cape environmental restoration project were offered for review to the former Alaska Coastal Management Program in 2008, 2009, 2010, and 2011, and the Corps received concurrences that the project would have no impact on the coastal zone. The Corps believes that the proposed continuation of the Ocean Cape project would likewise have no adverse impact on coastal resources.

4.2.8 Effects on Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires Federal agencies to identify and address any disproportionately high and adverse human health effects of its programs and activities on minority and low-income populations.

The express purpose of the proposed project is to reduce risks to human health and welfare in the region by removing contaminants from the environment. The Corps does not anticipate adverse impacts from this project to the local human population.

4.2.9 Cumulative Effects

Federal law (40 CFR 651.16) requires that NEPA documents assess cumulative effects, which are the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

The proposed project would have the ultimate net effect of removing a large mass of chemical contamination from the environment. The immediate incremental impacts of air pollutants and noise from construction machinery would be of short duration and would not contribute to long-term cumulative effects. The project may indirectly contribute to long-term changes in land use and environmental quality by encouraging use of the restored land.

4.2.10 Mitigation

The YTT work plan (Ridolfi 2012) describes the measures site workers would take to minimize negative environmental impacts to the area as a result of the project. Erosion control best management practices would include covering exposed soil with brush, netting, erosion blankets, or mulches (e.g., chipped brush). Silt fences would be used to control sediment runoff from the project site perimeter and to protect any nearby creeks or drainage channels. Exposed soil at the surface of the backfilled excavations would be covered with a layer of mulch that would be left in place at the end of the project.

All fuels and fluids used in machinery and excavation equipment would be stored at least 50 feet from creeks and beaches. Equipment and trucks containing fuel would park at least 50 feet from creeks and beaches when not in use. Emergency spill response procedures and materials would be provided on all equipment; materials will include sorbent mats, socks, and pads for absorbing fuels and fluids used on site.

Site workers would avoid destroying active bird nests, as described in Section 4.2.3. No active eagle nests have been documented by the USFWS within a mile of the project site, but if new eagle nests are discovered, the site workers should consult USFWS guidance on avoiding disturbances to nesting eagles at http://alaska.fws.gov//eaglepermit/guidelines/baea_nhstry_snstvy.htm.

5.0 PERMITS AND AUTHORIZATIONS

This continuing project would require few resource permits or authorizations. The Corps will seek concurrence from the State Historical Preservation Officer that the soil excavation work would not cause adverse effects to historical properties. The Corps does not expect the project to require discharge of materials into wetlands. If an excavation did extend into a wetland area, the backfilling of that excavation would be authorized by Nationwide Permit No. 38, "Cleanup of Hazardous and Toxic Waste".

6.0 CONCLUSION

The continued environmental cleanup efforts at Ocean Cape, as discussed in this document, would have some minor, largely controllable short-term impacts, but in the long term would help improve the overall quality of the human environment. This assessment supports the conclusion that the proposed project does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, a finding of no significant impact will be prepared.

7.0 PREPARERS OF THIS DOCUMENT

This Environmental Assessment was prepared by Chris Floyd and Diane Walters of the Environmental Resources Section, Alaska District Corps of Engineers. The Corps of Engineers Project Manager is Carey Cossaboom.

8.0 REFERENCES

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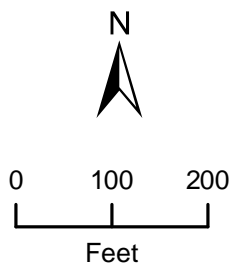
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http://alaska.fws.gov/fisheries/fieldoffice/anchorage/endangered/pdf/factsheet_kimu.pdf

USFWS. 2012. Alaska Region Endangered Species Consultation website:
<http://alaska.fws.gov/fisheries/endangered/consultation.htm>



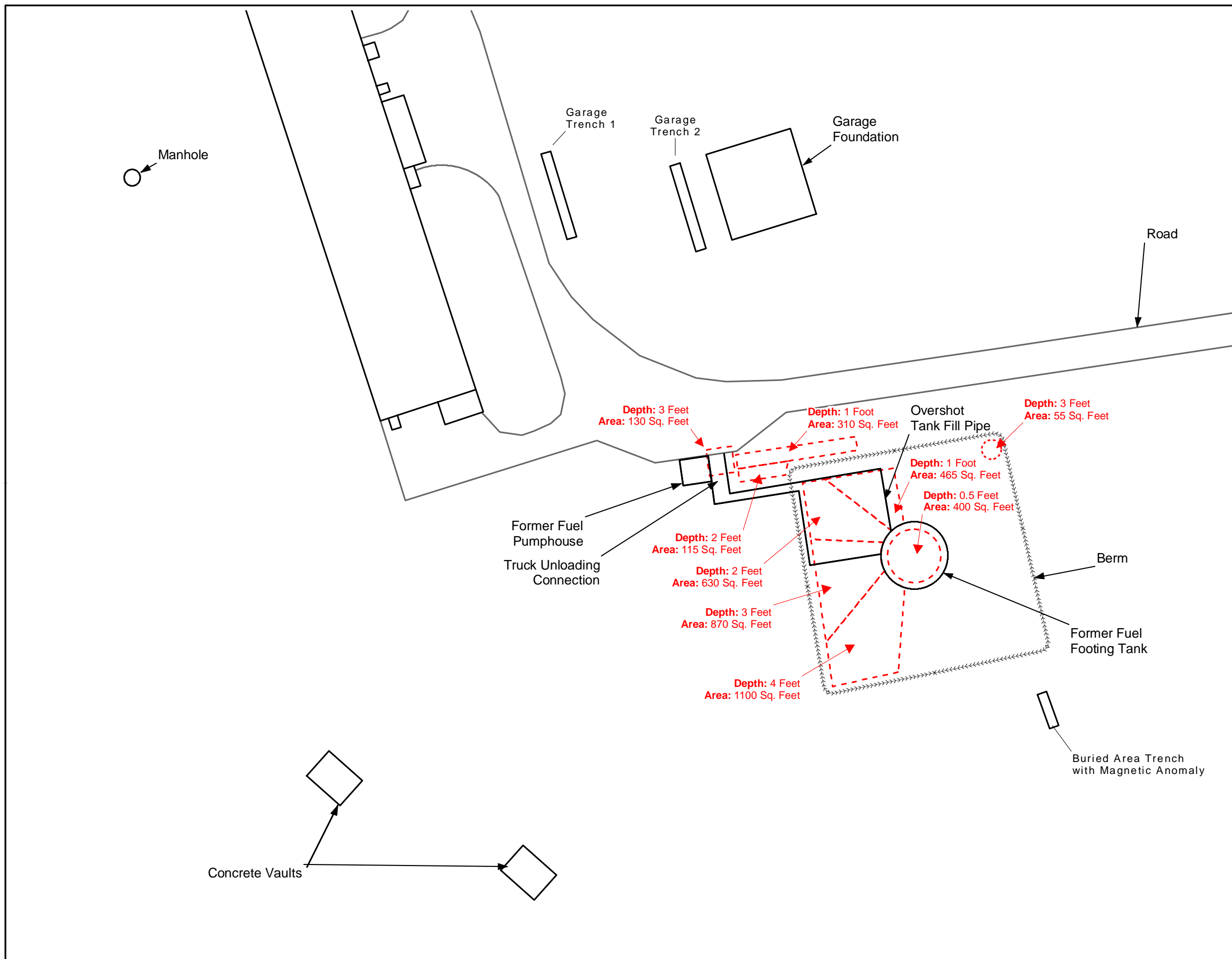
Figure 2
OCRRS Site Features

Ocean Cape Radio Relay Station
Removal Action / Site Investigation
Work Plan



February 2012





Legend

- Extent of Petroleum Contaminated Soil With Depth and Area

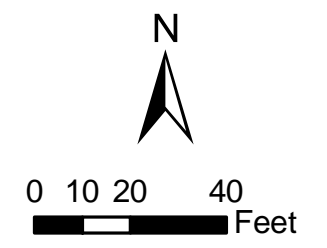


Figure 3
Removal Areas

Ocean Cape Radio Relay Station
Removal Action and
Site Investigation Work Plan

February 2012



APPENDIX B
2013 Field Notes

² OCRRS Yakutat, AK 6/27/13
on site 8AM, overcast
light drizzle 53°

Personnel: Kathryn Foster (Ridd)
Derek James, Albert Porter,
Jack Kluska (Yakutat NALMP)

Collect field screening & confirmation
samples at Fuel Pumphouse/
AST Diesel Area
following soil removal
from 3 sub areas -
Trench/Loading Area
AST Area
Drain Area

Set up sampling station
and decon area adjacent to
AST footing

lined back of SUV with
black plastic prior to unpacking
gear

lined sample process area
with foil.

KJ 6/27/13

6/27/13³

Measure excavated areas
calculate sidewall
lengths & bottom areas
for field screening &
confirmation sample
count calculations

	Field Scr.		Lab Samples	
	sidewall	bottom	sidewall	bottom
Trench	8	5	4	2
Load Area	2	5	1	1
AST Area	9	19	5	6
Drain	2	5	1	1
			11	10
			total Lab samples 22	
			Field Dups	2
				24

KJ 6/27/13 *Rite in the Rain*

6/27/13

Trench

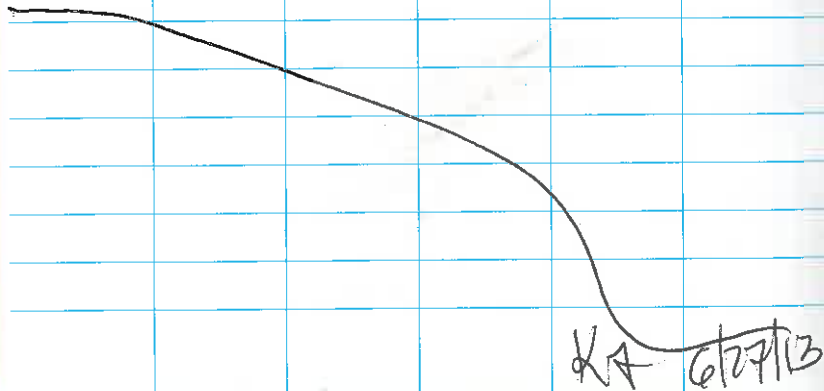
sidewall (ft) $(36 \times 2) + 3 = 75 \text{ LF}$
 bottom $(3 \times 36) = 108 \text{ SF}$

Loading Area

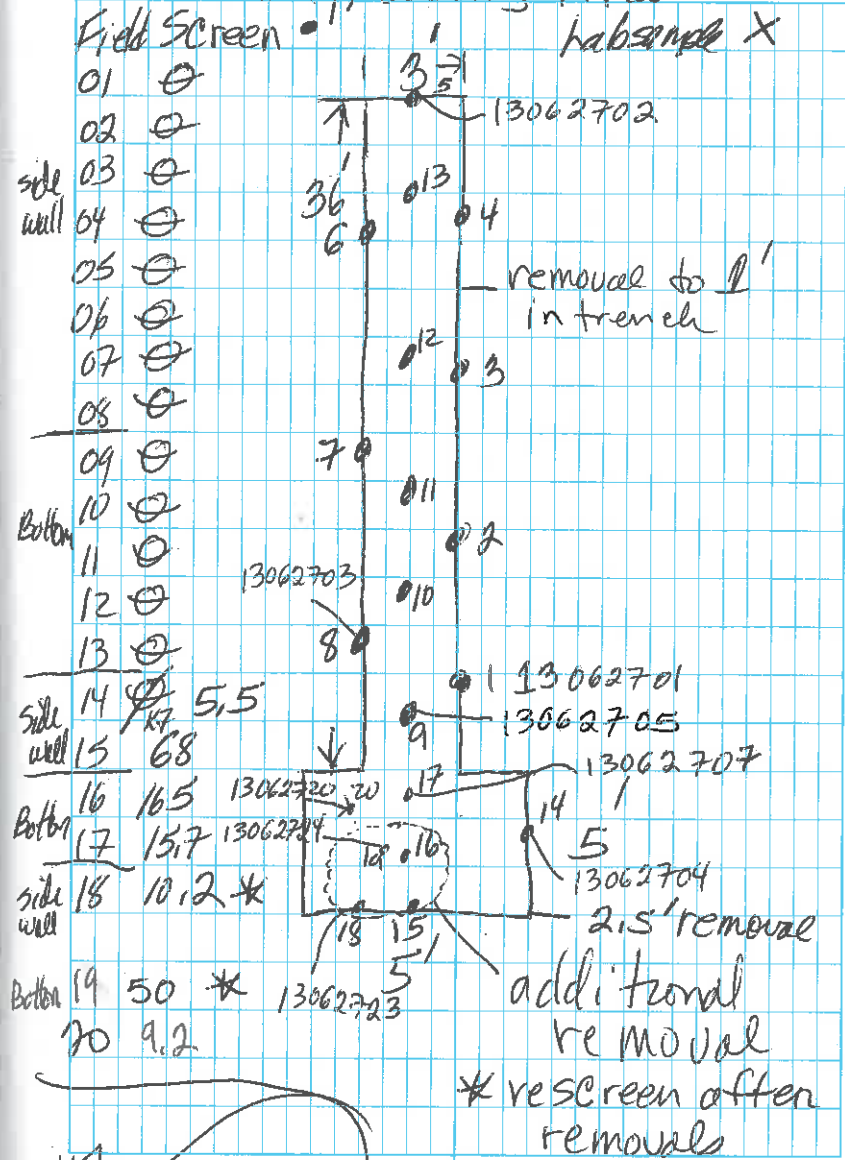
sidewall $4 \times 5 = 20 \text{ LF}$
 bottom $5^2 = 25 \text{ SF}$

Field Screening	Trench	load Area
sidewall	8	2
bottom	5	5

T - trench T-FS-#
 FS - Field Screen
 # - number



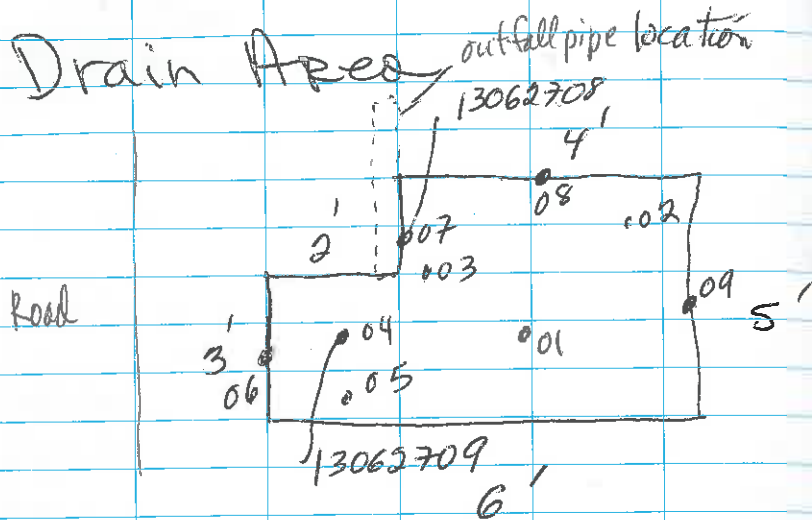
Trench/Loading Area



Rite in the Rain.

6/27/13

Drain Area



Field Screening $(5 \times 2) + 6 + 4 + 2 = 22 \text{ LF}$

side wall FS - 2 - 3

bottom $(5 \times 4) + (2 \times 3) = 26 \text{ SF}$

FS - 5

samples lab

side wall - 1

Bottom - 1

6/27/13 KA

Field Screening Results

6/27/13

Drain FS D-FS-#

Bottom area

01 - 0.3

02 - 0.4

03 - 0.3

04 - 0.7

05 - 0.3

side wall

06 0.4

07 1.0

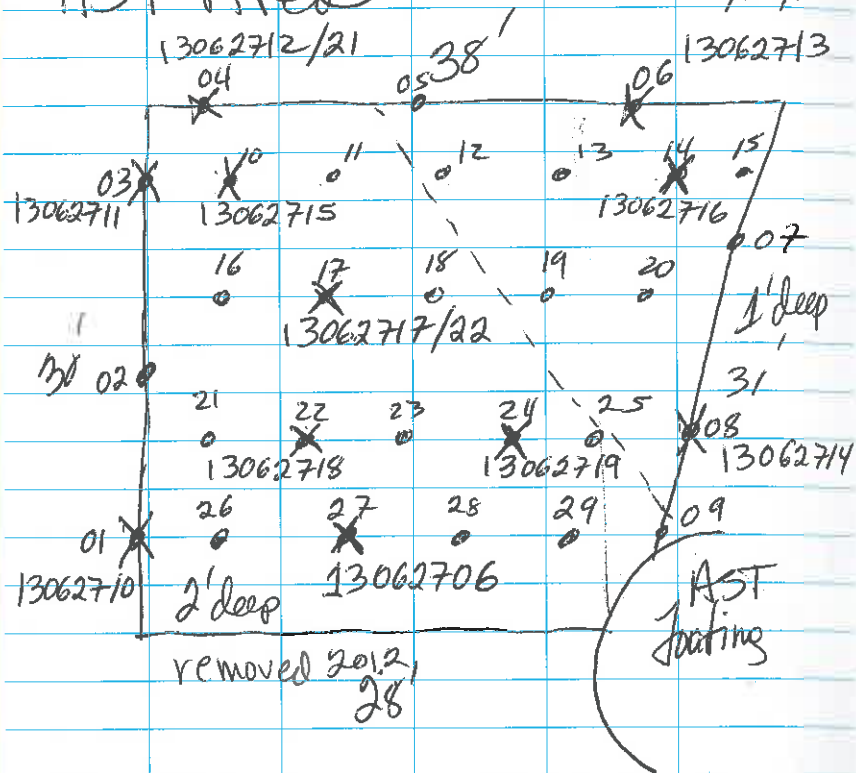
08 0.1

09 0

KA 6/27/13 *Left in the Rain*

AST Area

6/27/13



sidewall $30 + 38 + 31 = 99$ LF
 bottom $38 \times 30 = 1140$ SF

FS sidewall = 9
 bottom $10 + 9 = 19$

Lab sidewall = 5
 bottom $2 + 4 = 6$

Field Screenings Results

6/27/13

Side wall

- 01 ⊕
- 02 ⊕
- 03 ⊕
- 04 ⊕
- 05 ⊕
- 06 ⊕
- 07 ⊕
- 08 ⊕
- 09 ⊕

K² Bottom

- 10 ⊕
- 11 ⊕
- 12 ⊕
- 13 ⊕
- 14 ⊕
- 15 ⊕
- 16 ⊕
- 17 47.2
- 18 0.4
- 19 0.3
- 20 ⊕
- 21 ⊕
- 22 1.9

- 23 0.2
- 24 0.8
- 25 ⊕
- 26 ⊕
- 27 ⊕
- 28 ⊕
- 29 ⊕

6/27/13

Return to the Rain

Following measurements
and calc of samples
areas field screened with
First Check 1000 multi-gas
meter. Results are
entered on each area
sketch

Field screening conducted
according to ADSC guidelines

Following FS results were
reviewed to determine
laboratory sample collection
locations
Samples collected at highest
PID reading or other rationale

Samples collected according to Work Plan
All samples will be 1-8g jar

6/27/13

6/27/13

analyzed for DRO/KRO by
Method AK102/103 except
as noted in field notes
CoC.

Sample locations marked
on Area figures

samples collected with new
disposal spoon in to disposable
polytetrafluorethylene (teflon)
jar. Material Monoginized
then placed in 8g jar
supplied jar, threads were
wiped w/ paper towel and lid
replaced.

Jar then labeled and
placed in cooler on black ice

KJ 6/27/13 *Rite in the Rain*

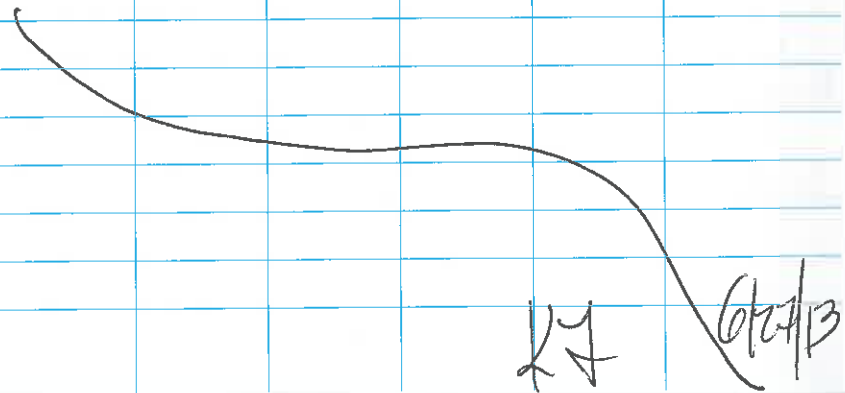
6/27/13

Trench loading Area

Following screening additional soil removal from bottom of loading area

Inspection of area revealed layer PCS b/t 2-4' bgs.

layer of plastic at 2' fuel appears to be below plastic for depth of PCS to 4'



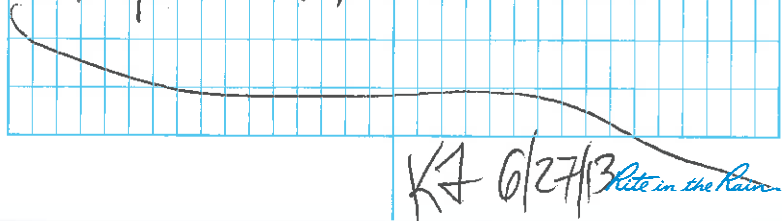
Sample tally

Trench
 sidewall IIII
 bottom III

Drain area
 sidewall I
 bottom I

Asst Area
 sidewall IIII
 bottom IIII

7 Dups II



Laboratory Samples

6/27/13

Trench Area - all depth below original ground surface

13062701 11⁴⁰ AM @ T-FS-01
sidewall sample ~~poorly~~^{well} sorted sand collect due to proximity to original Contamination 12-15" bgs

13062702 11⁴² A @ T-FS-5
sidewall sample ~~poorly~~^{well} sorted sand collect @ east end of trench collected 12-15" bgs

13062703 11⁴⁵ A @ T-FS-8
sidewall ~~poorly~~^{well} sorted sand collected road side of trench collected 12-15" bgs

13062704 11⁴⁷ A @ T-FS-14
sidewall sample damp sandy gravel collected at highest sidewall PID collected 24"-27" bgs

13062705 11⁵⁰ A @ T-FS-9
bottom sample sandy gravel collected mid-trench 12-15" bgs

light rain + wind halt

Sampling to be cured + cover sample collection + processing + equipment area

While at SUU reviewed procedures with crew collected sample @ AST AREA to walk crew through process + handling

AST AREA

13062706 11⁵² A A-FS-27
Bottom sample sandy gravel collected 24-27" bgs
Returned to Trench Area

13062707 11⁵⁵ A T-FS-17
bottom damp sandy gravel mild odor collected 30-33" bgs

move to Drain Area to field screen + sampler

6/27/13 *Att in the Rain*

Drain Area

13062708 12⁰⁵ p D-FS-7
 sidewall sample damp ~~poorly~~^{well} sorted sand collected at
 highest PID reading also
 under where cut fall
 pipe exited concrete
 catch basin collected 12-15" bgs

13062709 12¹⁰ A D-FS-04
 damp ~~poorly~~^{well} sorted sand
 bottom sample collected
 at highest PID value
 collected 27-30" bgs

Break for lunch 12³⁰ pm

walked beach, bluff, garage
 areas photographing areas
 after removal conducted
 under FADS

3³⁰ pm light rain 52°F

6/27/13

6/27/13

A-AST Area FS-Field Screening
 see page 15 for 1st Ast Area Sample
 13062710 3⁴⁰ p @ A-FS-1
 sidewall sample damp poorly
 sorted sand collected 15-18" bgs

13062711 3⁴⁵ p @ A-FS-3
 sidewall sample damp poorly
 sorted sand collected 21-24" bgs

13062712 3⁴⁵ p @ A-FS-4
 sidewall sample damp sand some
 gravel collect closest to loading
 area collected 21-24" bgs

13062721 4 p @ A-FS-4
 Field duplicate of 13062712

13062713 3⁴⁵ p @ A-FS-6
 sidewall sample damp poorly
 sorted sand collected 9-12" bgs

13062714 3⁵⁰ p @ A-FS-8
 damp sandy gravel sidewall
 collected 9-12" bgs

AST Area Sampling (Cont)

13062715 4¹⁰ p @ A-FS-10
bottom damp sandy gravel w/
dark stain streaks 24-27" bgs

13062716 4¹² @ A-FS-14
bottom sample damp sandy
gravel 12-18" bgs

13062717 4¹⁵ @ A-FS-17
bottom sample damp sandy 24-27" bgs
gravel mild odor highest PID
2-802 jaco marked for ms/ms Don Coe

13062722 4²⁰ @ A-FS-17
field duplicate 13062717

13062718 4¹⁸ p ^{K7} damp A-FS-22
damp sandy gravel bottom sample
2nd highest PID reading
collected 24-27" bgs

13062719 4²⁰ p A-FS-24
bottom sample damp sandy
gravel 3rd highest PID
collect 24-27" bgs

6/27/13

6/27/13

Trench area

13062723 @ 4⁴⁵ p F-FS-18
sidewall damp sandy gravel
collected after add removals
+ re field screen
collect 36-39" bgs

13062724 4⁵⁵ p F-FS-19
bottom damp sandy gravel
collected 36-39" bgs

13062720 4²⁵ p T-FS-20
bottom damp sandy gravel
collected 36-39" bgs
Soil above field screening
limit of 10 ppm remains

at loading area. Will remove
additional soil then re screen
and sample

K7 6/27/13 Put on the Rain.

6/27/13
 Following samples were
 selected for RUSH Analysis
 samples listed separate CoC
 from rest of samples

13062704

13062707

13062717 (MS/MSD)

13062722 FD of 17

13062723

13062724

group together in cooler
 all samples packed on blue ice
 after checking labels and
 packing in bubble wrap
 off site 5³⁰ pm

6/27/13/13

APPENDIX C
Photographs



PHOTOGRAPH LOG

- Photograph 1. Loading PCS filled Super Sacks® in shipping container.
- Photograph 2. Crew conducting field screening using PID.
- Photograph 3. Former Diesel AST Area excavation. Looking northwest.
- Photograph 4. Former Diesel AST Area excavation. Looking northeast.
- Photograph 5. Former Diesel AST Area showing screening samples and PCS filled Super Sacks®.
- Photograph 6. Drain Area concrete catch basin after removal.
- Photograph 7. Drain Area excavation showing screening samples.
- Photograph 8. Former Fuel Pumphouse Area showing screening samples in shallow trench area.
- Photograph 9. Piping removed from the Former Fuel Pumphouse Area.



Photograph 1. Loading PCS filled Super Sacks® in shipping container.



Photograph 2. Crew conducting field screening using PID.



Photograph 3. Former Diesel AST Area excavation. Looking northwest.



Photograph 4. Former Diesel AST Area excavation. Looking northeast.



Photograph 5. Former Diesel AST Area showing screening samples and PCS filled Super Sacks®.



Photograph 6. Drain Area concrete catch basin after removal.



Photograph 7. Drain Area excavation showing screening samples.



Photograph 8. Former Diesel AST Area showing screening samples in trench area.



Photograph 9. Removed piping from the Former Fuel Pumphouse Area.

APPENDIX D
Data Validation Report



EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Yakutat Tribal Response Program Removal Action

Prepared for:

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Prepared by:

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EcoChem Project: C25202-4

February 3, 2014

Approved for Release:

Christine Ransom
Technical Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and tissue and quality control sample data for the Yakutat Tribal Response Program – Removal Action. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources Incorporated, Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

Analysis	Method	Primary Review	Secondary Review
Diesel Range Hydrocarbons	AK102	J. Holder	C. Ransom
Residual Range Hydrocarbons	AK103		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Tribal Response Program – Removal Action Work Plan for Concern Groups C Areas C1, Y-C-101, Y-C-102; G, and H Diesel AST for Field Season 2013* (Ridolfi, June 2013); and *National Functional Guidelines for Organic Data Review* (USEPA 2008).

EcoChem’s goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are flagged do-not-report (DNR), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. A Qualified Data Summary Table is included in **APPENDIX B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Yakutat Tribal Response Program - Removal Action

SDG	Sample ID	Lab ID	AL102	AK103
WW04	13062704	WW04A	✓	✓
WW04	13062707	WW04B	✓	✓
WW04	13062717	WW04C	✓	✓
WW04	13062722	WW04D	✓	✓
WW04	13062723	WW04E	✓	✓
WW04	13062724	WW04F	✓	✓
WW05	13062701	WW05A	✓	✓
WW05	13062702	WW05B	✓	✓
WW05	13062703	WW05C	✓	✓
WW05	13062705	WW05D	✓	✓
WW05	13062706	WW05E	✓	✓
WW05	13062708	WW05F	✓	✓
WW05	13062709	WW05G	✓	✓
WW05	13062710	WW05H	✓	✓
WW05	13062711	WW05I	✓	✓
WW05	13062712	WW05J	✓	✓
WW05	13062713	WW05K	✓	✓
WW05	13062714	WW05L	✓	✓
WW05	13062715	WW05M	✓	✓
WW05	13062716	WW05N	✓	✓
WW05	13062718	WW05O	✓	✓
WW05	13062719	WW05P	✓	✓
WW05	13062720	WW05Q	✓	✓
WW05	13062721	WW05R	✓	✓
WX26	13070801	WX26A	✓	✓
WX26	13070802	WX26B	✓	✓
WX26	13070803	WX26C	✓	✓
WX26	13070804	WX26D	✓	✓
WX26	13070805	WX26E	✓	✓
WX26	13070806	WX26F	✓	✓
WY82	13071701	WY82A	✓	✓
WY82	13071702	WY82B	✓	✓
XA83	13080901	XA83A	✓	✓

DATA VALIDATION REPORT

Yakutat NALEMP – Removal Action

Diesel Range Organics by Method AK102 and Motor Oil Range Organics by Method AK103

This report documents the review of the data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. See the **Sample Index** for a complete list of samples

SDG	Number of Samples	Validation Level
WW04	6 Soil	EPA Stage 2A
WW05	18 Soil	EPA Stage 2A
WX26	6 Soil	EPA Stage 2A
WY82	2 Soil	EPA Stage 2A
XA83	1 Soil	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review, with the exception of the total solids results. The bench sheets for the total solids analysis were provided by the laboratory upon request.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
1	Blanks (Method and Field)	2	Reported Results
✓	Laboratory Control Samples (LCS/LCSD)	✓	Reporting Limits
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)	✓	Target Analyte List
2	Surrogate Compounds		

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

SDG WX26: The sample cooler temperature upon receipt at the laboratory was greater than the advisory range of 2°C to 6°C, at 8.8°C. This temperature outlier did not impact the sample results; no action was taken.

SDG XA83: The sample cooler temperature upon receipt at the laboratory was less than the advisory range of 2°C to 6°C, at 1.3°C. This temperature outlier did not impact the sample results; no action was taken.

Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

SDG WW04: The matrix spike/matrix spike duplicate (MS/MSD) analyses were performed using Sample 13062717. The MSD recovery for diesel was less than the lower control limit of 75%. No action was taken as the MS recovery was acceptable.

SDGs WW05, WX26, WY82, and XA83: No MS/MSD analyses were performed for these SDG. Accuracy and precision were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD), surrogate, and field duplicate results.

Surrogate Compounds

SDG WW04: For Sample 13062704, the recoveries for the surrogates o-terphenyl in the initial analysis and n-triacontane and o-terphenyl in the 100x dilution were not reported. Motor oil was reported from the 1x dilution with an acceptable recovery of n-triacontane. The diesel result for this sample was reported from the 100x dilution. The DRO result for this sample was estimated (J-13) based on the lack of surrogate recovery information. No bias could be determined as the surrogate was diluted below the detection limit.

Field Duplicates

The field duplicate relative percent difference control limit is 30% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG WW04: Samples 13062722 & 13062717 were submitted as field duplicates. Field precision was acceptable.

SDG WW05: Samples 13062721 & 13062712 were submitted as field duplicates. Field precision was acceptable.

SDG WX26: Samples 13070803 & 13070806 were submitted as field duplicates. Field precision was acceptable.

Reported Results

SDG WW04: The DRO concentrations in the initial analyses of samples 13062704, 13062707, and 13062724 were greater than the instrument calibration range. The laboratory flagged these results with an "E". The samples were re-analyzed dilution; both sets of data were reported. The DRO results from the initial analyses were flagged do-not-report (DNR-20) and the motor oil range results from the dilutions were flagged (DNR-11).

SDG WW05: The DRO concentration in the initial analysis of Sample 13062720 was greater than the instrument calibration range. The sample was re-analyzed at a 10x dilution; both sets of data

were reported. The DRO result from the initial analysis was flagged (DNR-20) and the motor oil range result from the dilution was flagged (DNR-11).

Reporting Limits

Prior to correction for the moisture content of the samples, the laboratory met all target reporting limits (RL) in the Work Plan. All RLs were less than the project action levels.

III. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recoveries. Precision was acceptable as indicated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

One DRO result was estimated based on lack of surrogate recovery information. Data were flagged do-not-report (DNR) to indicate which results should not be used from multiple reported analyses. A usable result remains for all analytes in all samples; therefore completeness is unaffected.

Data flagged DNR should not be used for any purpose. All other data, as qualified, are acceptable for use.



EcoChem, INC.
Environmental Data Quality

APPENDIX A

**DATA QUALIFIER DEFINITIONS,
REASON CODES, AND CRITERIA TABLES**

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
-----	---

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r ²)
	5B	Calibration Verification (ICV, CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS &/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated
L = low bias indicated

DATA VALIDATION CRITERIA

Table No.: AK-102 DRO

Revision No.: 0

Last Rev. Date: 9/26/03

Page: 1 of 2

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel Range (Based on EPA National Functional Guidelines as applied to State of Alaska Method AK-102DRO)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C±2°C	J(+)/UJ(-) using Professional Judgement	2
Holding Time	Water: 14 days from collection (if acidified); 7 days (if unacidified) Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (Prof. Judgement)	1
Resolution Check	Beginning of ICAL Sequence Separation number (TZ) >15 for C ₂₄ & C ₂₅ if analyzing RRO concomitantly	Narrate (Use Professional Judgement to qualify)	14
Retention Time Standards (RTS)	RTS run every 24 hours or at the beginning of each analytical shift (C10 and C25)	Narrate (Use Professional Judgement to qualify)	5B
Initial Calibration	3 calibration points (5 recommended) If Linear Regression: R ² ≥ 0.995 If Response Factors: %RSD < 25% If Quadratic Fit: R ² ≥ 0.995	J(+)/UJ(-) If %RSD > 25% or R ² < 0.995 (Narrate if less than 5 calibration points)	5A
Continuing Calibration	Calibration Verification Standard (CVS) (2nd Source) analyzed once per analytical shift Continuing Calibration Standard (CCS) analyzed every 20 samples Recovery range 75% to 125%	CVS - Professional judgement CCS - J(+)/UJ(-) If %D > 25%	5B
Method Blank	One per matrix per batch No results ≥ CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) UJ(+) if sample result is ≥ CRQL and < 5X rule (at reported sample value)	7
Instrument Blank (Solvent Blank - MeCl ₂)	Analyzed at the beginning of every analytical sequence No analyte ≥ CRQL	Same as Method Blank	7
Field Blanks	No results ≥ CRQL	Apply 5X rule; U(+) < action level	6

DATA VALIDATION CRITERIA

Table No.: AK-102 DRO

Revision No.: 0

Last Rev. Date: 9/26/03

Page: 2 of 2

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel Range (Based on EPA National Functional Guidelines as applied to State of Alaska Method AK-102DRO)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS (Optional)	Lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL PJ if only one %R outlier	8
Precision: MS/MSD or LCS/LCSD or sample/dup	One per analytical batch RPD \leq 20%	J(+) if RPD >20%	9
LCS (LFB)	One per analytical batch %R = 75% to 125%	J(+) If %R >UCL J(+)/R(-) If %R <LCL	10
Surrogates	ortho-terphenyl (OTP) added to every sample %R = 50-150% (Field Samples) %R = 60-120% (LCS)	If %R < LCL, J(+)/UJ(-) If > UCL, J(+) If any %R <10%, J(+)/R(-)	13
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	14
Internal Standards	Alpha androstane (or equivalent) IS area within -50% to 100% of CCS IS RT within 30 seconds of CCS IS RT	If IS area >100%, J(+) assoc.cmpds. If IS area <50%, J(+)/UJ(+) assoc. cmpds. If IS area <25%, notify PM	19
Field Duplicates	Use RPD < 35% (water) or < 50% (soil)	Narrate (Use Professional Judgement to qualify)	9

DATA VALIDATION CRITERIA

Table No.: AK-103 RRO

Revision No.: 0

Last Rev. Date: 9/26/03

Page: 1 of 2

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Residual Range (Based on EPA National Functional Guidelines as applied to State of Alaska Method AK-103RRO)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C±2°C	J(+)/UJ(-) using Professional Judgement	2
Holding Time	Water: 14 days from collection (if acidified); 7 days (if unacidified) Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (Prof. Judgement)	1
Resolution Check	Beginning of ICAL Sequence Separation number (TZ) >15 for C ₂₄ & C ₂₅ if analyzing RRO concomitantly	Narrate (Use Professional Judgement to qualify)	14
Retention Time Standards (RTS)	RTS run every 24 hours or at the beginning of each analytical shift (C25 and C36)	Narrate (Use Professional Judgement to qualify)	5B
Initial Calibration	3 calibration points (5 recommended) If Linear Regression: R ² ≥ 0.995 If Response Factors: %RSD < 25% If Quadratic Fit: R ² ≥ 0.995	J(+)/UJ(-) If %RSD > 25% or R ² < 0.995 (Narrate if less than 5 calibration points)	5A
Continuing Calibration	Calibration Verification Standard (CVS) (2nd Source) analyzed once per analytical shift Continuing Calibration Standard (CCS) analyzed every 20 samples Recovery range 75% to 125%	CVS - Professional judgement CCS - J(+)/UJ(-) If %D > 25%	5B
Method Blank	One per matrix per batch No results ≥ CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) UJ(+) if sample result is ≥ CRQL and < 5X rule (at reported sample value)	7
Instrument Blank (Solvent Blank - MeCl ₂)	Analyzed at the beginning of every analytical sequence No analyte ≥ CRQL	Same as Method Blank	7

DATA VALIDATION CRITERIA

Table No.: AK-103 RRO

Revision No.: 0

Last Rev. Date: 9/26/03

Page: 2 of 2

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Residual Range (Based on EPA National Functional Guidelines as applied to State of Alaska Method AK-103RRO)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blanks	No results \geq CRQL	Apply 5X rule; U(+) < action level	6
MS (Optional)	Lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL PJ if only one %R outlier	8
Precision: MS/MSD or LCS/LCSD or sample/dup	One per analytical batch RPD \leq 20%	J(+) if RPD >20%	9
LCS (LFB)	One per analytical batch %R = 60% to 120%	J(+) if %R >UCL J(+)/R(-) if %R <LCL	10
Surrogates	n-triacontane d62 (or equivalent) added to every sample %R = 50-150% (Field Samples) %R = 60-120% (LCS)	If %R < LCL, J(+)/UJ(-) If > UCL, J(+) If any %R <10%, J(+)/R(-)	13
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	14
Internal Standards	No IS has been used in the development of this method. May use appropriate compound with ADEC approval.	If IS area >100%, J(+) assoc.cmpds. If IS area <50%, J(+)/UJ(+) assoc. cmpds. If IS area <25%, notify PM	19
Field Duplicates	Use RPD < 35% (water) or < 50% (soil)	Narrate (Use Professional Judgement to qualify)	9



EcoChem, INC.
Environmental Data Quality

APPENDIX B QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Yakutat Tribal Response Program - Removal Action**

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qualifier	Validation Reason
WW04	13062704	13-13855-WW04A	AK102	Diesel Range Hydrocarbons	3200	mg/kg	ES	DNR	20
WW04	13062704	13-13855-WW04ADL	AK102	Diesel Range Hydrocarbons	3200	mg/kg		J	13
WW04	13062704	13-13855-WW04ADL	AK103	Motor Oil	1100	mg/kg	U	DNR	11
WW04	13062707	13-13856-WW04B	AK102	Diesel Range Hydrocarbons	520	mg/kg	E	DNR	20
WW04	13062707	13-13856-WW04BDL	AK103	Motor Oil	120	mg/kg		DNR	11
WW04	13062724	13-13860-WW04F	AK102	Diesel Range Hydrocarbons	300	mg/kg	E	DNR	20
WW04	13062724	13-13860-WW04FDL	AK103	Motor Oil	97	mg/kg	U	DNR	11
WW05	13062720	13-13877-WW05Q	AK102	Diesel Range Hydrocarbons	390	mg/kg	E	DNR	20
WW05	13062720	13-13877-WW05QDL	AK103	Motor Oil	100	mg/kg	U	DNR	11

APPENDIX E
ADEC Laboratory Data Review Checklists

Laboratory Data Review Checklist

Completed by:	Julie Holder		
Title:	Associate Chemist	Date:	Jan 29, 2014
CS Report Name:	Yakutat NALEMP - Removal Action	Report Date:	Jan 31, 2014
Consultant Firm:	EcoChem, Inc.		
Laboratory Name:	Analytical Resources	Laboratory Report Number:	WW04
ADEC File Number:		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:

Certificate of Approval for Contaminated Sites Analysis: UST-033

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:

1 Complete COC submitted.

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

AK 102/103

3. Laboratory Sample Receipt Documentation

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

Yes No NA (Please explain) Comments:

4.6 C

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

Yes No NA (Please explain) Comments:

No preservation requirements for AK102/AK103

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

Yes No NA (Please explain) Comments:

All bottles arrived in good condition.

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

Yes No NA (Please explain) Comments:

No discrepancies

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

Comments:

no discrepancies - no effects on data quality/usability

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:

The MSD %R for DRO < LCL for QC Sample 13062717.

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective action was taken.

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

Comments:

low bias

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

AK 102/103 DRO-RRO

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

14 Days from collection.

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:

DRO Target RL: 5mg/kg
RRO Target RL: 10 mg/kg

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

Comments:

No effects on data quality/usability

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

Two MB dated for 07/02/2013. One should be dated 07/01/2013.

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

Both MB were ND at the target RLs.

iii. If above PQL, what samples are affected?

Comments:

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

Yes No NA (Please explain) Comments:

No outliers

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

No effects on data quality/usability

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:

Two LCS/LCSD sets dated for 07/02/2013. One set should be dated 07/01/2013. One set of MS/MSD using Sample 13062717.

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

Yes No NA (Please explain) Comments:

No Metals/Inorganics analyses

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:

LCS/LCSD = all %R within control limits
MSD DRO %R < LCL

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/DMSD, 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:

MSD outlier affects Sample 13062717

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

Samples not flagged. Outlier flagged on QC summary form.

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

No effect on data usability. MS and LCS/LCSD recoveries acceptable

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

o-terphenyl in the 1x analysis of Sample 13062704 was not quantitated due to the very high concentration of DRO in this sample. DRO was reported from the 100x dilution for this sample.

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:

Both surrogates o-terphenyl and n-triacontane in the 100x dilution Sample 13062704 were reported as diluted out "D" (not recovered).

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

Yes No NA (Please explain) Comments:

The lab did not flag sample results based on surrogates. The surrogates were flagged when not quantitated due to very high DRO concentrations and/or high dilution factors

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

Comments:

No effects for RRO - result reported from 1x with acceptable surrogate recovery. Result for DRO Sample 13062704 estimated (J-13) lack of surrogate recovery information. No bias.

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:

No volatile analyses

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:

No trip blanks or volatile analyses

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

No trip blanks

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

No effects on data quality/usability

e. Field Duplicate

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

Yes No NA (Please explain)

Comments:

Samples 13062722 & 13062717

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)

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain)

Comments:

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

Yes No NA (Please explain)

Comments:

No outliers - no effects on data quality usability

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

No field blanks were submitted

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No field blanks

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

No effects on data quality/usability

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

The DRO initial analyses of Samples 13062704, 13062707 and 13062724 were flagged with an "E" by the laboratory as they exceeded the calibration range. These results were flagged do-not-report (DNR-20) during validation. The motor oil results from the associated dilutions of these samples were flagged (DNR-11) in favor of the initial results. All non-detected results were flagged "U" by the laboratory.

Reset Form

Laboratory Data Review Checklist

Completed by:	Julie Holder		
Title:	Associate Chemist	Date:	Jan 29, 2014
CS Report Name:	Yakutat NALEMP - Removal Action	Report Date:	Jan 31, 2014
Consultant Firm:	EcoChem, Inc.		
Laboratory Name:	Analytical Resources	Laboratory Report Number:	WW05
ADEC File Number:		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:

Certificate of Approval for Contaminated Sites Analysis: UST-033

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:

2 Complete COC submitted.

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

AK102/103

3. Laboratory Sample Receipt Documentation

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

Yes No NA (Please explain) Comments:

4.6C

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

Yes No NA (Please explain) Comments:

No preservation required for AK102/103

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

Yes No NA (Please explain) Comments:

All bottles arrived in good condition.

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

Yes No NA (Please explain) Comments:

No discrepancies

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

Comments:

no effects on data quality/usability

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:

No discrepancies or QC failures

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective actions

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

Comments:

No effects on data quality/usability

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

AK 102/103 DRO-RRO

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

14 Days from collection.

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:

DRO Target RL: 5mg/kg
RRO Target RL: 10 mg/kg

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

Comments:

No effects on data quality/usability

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

MB-070213

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

MB was ND at the target RLs.

iii. If above PQL, what samples are affected?

Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

No effects on data quality/usability

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:

LCS/LCSD-070213

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

Yes No NA (Please explain) Comments:

No Metals/Inorganics analyses

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:

LCS/LCSD = all %R within control.

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/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

RPD within control for LCS/LCSD.

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

Comments:

NA - No outliers.

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

Comments:

no effects on data quality/usability

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:

No volatile analyses

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:

No trip blanks or volatile analyses

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

No trip blanks

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

e. Field Duplicate

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

Yes No NA (Please explain)

Comments:

Samples 13062721 & 13062712

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)

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain)

Comments:

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

Yes No NA (Please explain)

Comments:

No effects on data quality/usability

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

No field blanks were submitted

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No field blanks

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

No effects on data quality/usability

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

The DRO result for initial analysis of Sample 13062720 was flagged with an "E" by the laboratory as it was greater than the calibration range. This result was flagged do-not-report (DNR-20) during validation. The motor oil result from the associated 10x dilution was flagged (DNR-11) in favor of the initial result. All non-detected results were flagged "U" by the laboratory.

Reset Form

Laboratory Data Review Checklist

Completed by:	Julie Holder		
Title:	Associate Chemist	Date:	Jan 29, 2014
CS Report Name:	Yakutat NALEMP - Removal Action	Report Date:	Jan 31, 2014
Consultant Firm:	EcoChem, Inc.		
Laboratory Name:	Analytical Resources	Laboratory Report Number:	WX26
ADEC File Number:		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:

Certificate of Approval for Contaminated Sites Analysis: UST-033

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:

1 Complete COC submitted.

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

AK102/AK103

3. Laboratory Sample Receipt Documentation

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

Yes No NA (Please explain) Comments:

8.8C

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

Yes No NA (Please explain) Comments:

No preservation required for AK102/103

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

Yes No NA (Please explain) Comments:

All bottles arrived in good condition.

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

Yes No NA (Please explain) Comments:

cooler temperature documented

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

Comments:

cooler temp did not impact data/quality or usability - no qualifiers assigned

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:

cooler temp noted. no QC failures

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective actions taken

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

Comments:

No effects on data quality/usability

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

AK102/103 DRO-RRO

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

14 Days from collection.

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:

DRO Target RL: 5mg/kg
RRO Target RL: 10 mg/kg

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

Comments:

No effects on data quality/usability

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

MB-071213

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

MB was ND at the target RLs.

iii. If above PQL, what samples are affected?

Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

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:

LCS/LCSD-071213

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

Yes No NA (Please explain) Comments:

No Metals/Inorganics analyses

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:

LCS/LCSD - all %R within control limits

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/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

RPD within control limit for LCS/LCSD.

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

Comments:

NA - No outliers.

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

Comments:

no effects on data quality/usability

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:

no volatile analyses

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:

No trip blanks or volatile analyses

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

No trip blanks

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

e. Field Duplicate

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

Yes No NA (Please explain.)

Comments:

No field duplicates were submitted with this data set. Field duplicates were submitted in other SDGs.

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

No field duplicates were submitted with this data set.

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:

No field duplicates were submitted with this data set.

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

Yes No NA (Please explain.)

Comments:

no effects on data quality usability. field duplicates submitted in other SDGs

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

No field blanks were submitted

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No field blanks were submitted

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

All non-detected results were flagged "U" by the laboratory.

Reset Form

Laboratory Data Review Checklist

Completed by:	Julie Holder		
Title:	Associate Chemist	Date:	Jan 29, 2014
CS Report Name:	Yakutat NALEMP - Removal Action	Report Date:	Jan 31, 2014
Consultant Firm:	EcoChem, Inc.		
Laboratory Name:	Analytical Resources	Laboratory Report Number:	WY82
ADEC File Number:		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:

Certificate of Approval for Contaminated Sites Analysis: UST-033

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:

1 Complete COC submitted.

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

AK 102/103

3. Laboratory Sample Receipt Documentation

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

Yes No NA (Please explain) Comments:

3.8C

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

Yes No NA (Please explain) Comments:

no preservation required for AK102/103

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

Yes No NA (Please explain) Comments:

All bottles arrived in good condition.

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

Yes No NA (Please explain) Comments:

No discrepancies

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

Comments:

no effects on data quality/usability

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:

No discrepancies or QC failures

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective actions taken

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

Comments:

no effects on data quality/usability

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

AK102/103 DRO-RRO

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

14 Days from collection.

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:

DRO Target RL: 5mg/kg
RRO Target RL: 10 mg/kg

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

Comments:

no effects on data quality/usability

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

MB-072613

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

MB was ND at the target RLs.

iii. If above PQL, what samples are affected?

Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

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:

LCS/LCSD-072613

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

Yes No NA (Please explain) Comments:

No Metals/Inorganics analyses

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:

LCS/LCSD - all %R within control limits

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/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

RPD within control limit for LCS/LCSD.

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

Comments:

NA - No outliers.

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

Comments:

no effects on data quality/usability

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:

No trip blanks or volatile analyses

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:

No trip blanks or volatile analyses

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

No trip blanks

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

e. Field Duplicate

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

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set. Field duplicates submitted in other SDGs

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set.

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

Yes No NA (Please explain.)

Comments:

No effects on data quality/usability - field duplicates in other SDGs

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

No field blanks were submitted

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No field blanks

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

No effects on data quality/usability

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

All non-detected results were flagged "U" by the laboratory.

Reset Form

Laboratory Data Review Checklist

Completed by:	Julie Holder		
Title:	Associate Chemist	Date:	Jan 29, 2014
CS Report Name:	Yakutat NALEMP - Removal Action	Report Date:	Jan 31, 2014
Consultant Firm:	EcoChem, Inc.		
Laboratory Name:	Analytical Resources	Laboratory Report Number:	XA83
ADEC File Number:		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:

Certificate of Approval for Contaminated Sites Analysis: UST-033

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:

1 Complete COC submitted.

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

AK102/103

3. Laboratory Sample Receipt Documentation

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

Yes No NA (Please explain) Comments:

1.3C

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

Yes No NA (Please explain) Comments:

no preservation required for AK102/103

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

Yes No NA (Please explain) Comments:

All bottles arrived in good condition.

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

Yes No NA (Please explain) Comments:

cooler temp

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

Comments:

cooler temp did not affect data quality/usability - no qualifiers assigned

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:

cooler temp - no QC failures

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective actions

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

Comments:

No effects on data quality/usability

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

AK 102/103 DRO-RRO

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

14 Days from collection.

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:

DRO Target RL: 5mg/kg
RRO Target RL: 10 mg/kg

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

Comments:

no effects on data quality/usability

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

MB-081413

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

MB was ND at the target RLs.

iii. If above PQL, what samples are affected?

Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

no effects on data quality/usability

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:

LCS/LCSD-081413

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

Yes No NA (Please explain) Comments:

No Metals/Inorganics analyses

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:

LCS/LCSD - all %R within control limits

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/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

RPD within control limit for LCS/LCSD.

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

Comments:

no outliers

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

No outliers

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

no effects on data quality/usability

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No outliers.

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

Comments:

no effects on data quality/usability

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:

No trip blanks or volatile analyses

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:

No trip blanks or volatile analyses

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

No trip blanks

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

e. Field Duplicate

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

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set. field duplicates submitted in other SDGs

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain.)

Comments:

No field duplicates submitted with this data set.

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

Yes No NA (Please explain.)

Comments:

no effects on data quality/usability - field duplicates submitted in other SDGs

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

No field blanks were submitted

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No field blanks were submitted

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

no effects on data quality/usability

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

All non-detected results were flagged "U" by the laboratory.

Reset Form


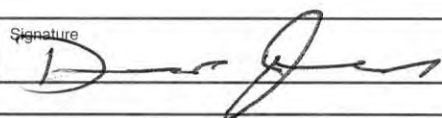

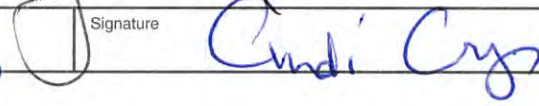
APPENDIX F
Laboratory Analytical Data Reports

Laboratory Data Reports are not included in the pdf file.

APPENDIX G
Waste Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 A		2. Page 1 of 2	
3. Generator Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES			
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID		B. Transporter 1 Phone (800) 326-8346	
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		C. State Transporter's ID		D. Transporter 2 Phone (206) 674-1438	
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		E. State Facility's ID		F. Facility's Phone (541) 454-2030	
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812							
11. WASTE DESCRIPTION				Containers		13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.				No. Type		16 bags	32,000 lbs p
b. 				1 CM			
c. 695206-3							
d.							
G. Additional Descriptions for Materials Listed Above 1) 110760 OR POL CONTAMINATED SOIL				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information CONTAINER NUMBER 5 M/L 601079							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Derek James				Signature 		Date 07 06 13	
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name John W. Moorman		Signature 	
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name Cindi Crys		Signature 	
19. Discrepancy Indication Space				20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.		Date	
Printed/Typed Name Sarah Mastriona				Signature Sarah Mastriona		Date 07 24 13	

NON-HAZARDOUS WASTE


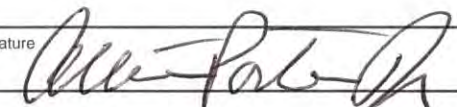
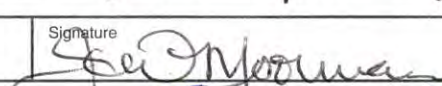
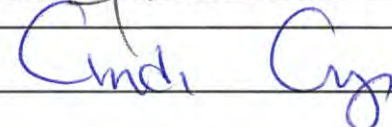
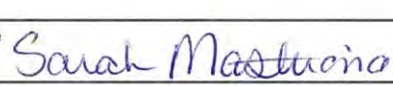
GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 B		2. Page 1 of 2	
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES			
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID			
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		B. Transporter 1 Phone (800) 326-8346			
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		C. State Transporter's ID			
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812				D. Transporter 2 Phone (206) 674-1438			
				E. State Facility's ID			
				F. Facility's Phone (541) 454-2030			
11. WASTE DESCRIPTION				Containers No. Type		13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.				1 CM		16 bags	32,000 P
b. 							
c. 695212-1							
d.							
G. Additional Descriptions for Materials Listed Above 1)110760OR POL CONTAMINATED SOIL				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information CONTAINER NUMBER AMLU 603599							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Albert Porter		Signature 				Date 7 18 13	
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name John W. Mooradian		Signature 		Date 07 28 13	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name Cindi Cuy		Signature 		Date 7 19 13	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name Sarah Mastriano		Signature 				Date 07 24 13	

NON-HAZARDOUS WASTE


GENERATOR

TRANSPORTER

FACILITY


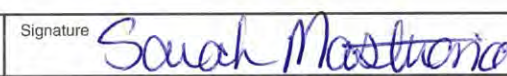
NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 C	2. Page 1 of 2
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES	
4. Generator's Phone (907) 784-3238		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID	
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		B. Transporter 1 Phone (800) 326-8346	
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		C. State Transporter's ID	
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812		E. State Facility's ID		D. Transporter 2 Phone (206) 674-1438	
11. WASTE DESCRIPTION		F. Facility's Phone (541) 454-2030		E. State Facility's ID	
a. MATERIAL NOT REGULATED BY D.O.T.		Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
		1	CM	14 bags	28,000 P
b. 					
c. 695211-3					
d.					
G. Additional Descriptions for Materials Listed Above 1)110760OR POL CONTAMINATED SOIL		H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information CONTAINER NUMBER <u>AMLU 600709</u>					
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name Albert Porter		Signature <i>Albert Porter</i>		Date 7 8 13	
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name John W. Moorhead		Signature <i>John W. Moorhead</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name Cindi Cresap (up)		Signature <i>Cindi Cresap</i>	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name Sarah Mastriana		Signature <i>Sarah Mastriana</i>		Date 07 25 13	

NON-HAZARDOUS WASTE GENERATOR

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 D		2. Page 1 of 2	
3. Generator Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES			
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID		B. Transporter 1 Phone (800) 326-8346	
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		C. State Transporter's ID		D. Transporter 2 Phone (206) 674-1438	
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		E. State Facility's ID		F. Facility's Phone (541) 454-2030	
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812							
11. WASTE DESCRIPTION				Containers		13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.				No. Type		16 bags	32,000 lbs P
b. ALASKA MARINE LINES							
c. 							
d. 695214-7							
G. Additional Descriptions for Materials Listed Above 1) 110760R POL CONTAMINATED SOIL				H. Handling Codes for Wastes Listed Above			
15. CONTAINER NUMBER Additional Information AMLU 603574							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Derek James				Signature 		Date 7 9 13	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature 		Date 07 09 13	
Printed/Typed Name John W. Mooradian				Signature 		Date 7 19 13	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature 		Date 07 25 13	
Printed/Typed Name Mark				Signature Sarah Mastriona		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name Sarah Mastriona				Signature Sarah Mastriona		Date 07 25 13	

NON-HAZARDOUS WASTE GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G	Manifest Document No. 1 8 9 9 9 E	2. Page 1 of 2
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		
4. Generator's Phone (907) 784-3238		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9	A. State Transporter's ID	
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0	B. Transporter 1 Phone (800) 326-8346	
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7	C. State Transporter's ID	
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812		D. Transporter 2 Phone (206) 674-1438		
		E. State Facility's ID		
		F. Facility's Phone (541) 454-2030		
11. WASTE DESCRIPTION		Containers No.	Type	13. Total Quantity
a. MATERIAL NOT REGULATED BY D.O.T.		1	CM	16 bags
b.				32,000 155 P
c.				
d.				
G. Additional Descriptions for Materials Listed Above 1) 110760R POL CONTAMINATED SOIL		H. Handling Codes for Wastes Listed Above		
15. CONTAINER NUMBER Additional Information AMLU 603508				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name Derek James		Signature <i>[Signature]</i>		Date 7/9/13
17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed/Typed Name John W. Mooreman		Signature <i>[Signature]</i>		Date 07/09/13
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name Lindi Crep		Signature <i>[Signature]</i>		Date 7/19/13
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.				
Printed/Typed Name Sarah Mastriona		Signature <i>[Signature]</i>		Date 07/25/13

NON-HAZARDOUS WASTE GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 F		2. Page 1 of 2	
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES			
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID			
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		B. Transporter 1 Phone (800) 326-8346			
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		C. State Transporter's ID			
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812				D. Transporter 2 Phone (206) 674-1438			
				E. State Facility's ID			
				F. Facility's Phone (541) 454-2030			
11. WASTE DESCRIPTION				Containers		13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.				No.	Type		
				1	CM	16 bags	32,000 lbs p
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above 1) 1107600R POL CONTAMINATED SOIL				H. Handling Codes for Wastes Listed Above			
CONTAINER NUMBER AMLU 603551							
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name John W. Moore							Date Month Day Year 07/10/13
Signature <i>[Signature]</i>							
17. Transporter 1 Acknowledgement of Receipt of Materials							
Printed/Typed Name Albert Porter							Date Month Day Year
Signature <i>[Signature]</i>							
18. Transporter 2 Acknowledgement of Receipt of Materials							
Printed/Typed Name Cindy Cuy							Date Month Day Year 7/19/13
Signature <i>[Signature]</i>							
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name Sarah Mastriona							Date Month Day Year 07/25/13
Signature <i>[Signature]</i>							

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 F	2. Page 1 of 2	
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES		
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID		
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		B. Transporter 1 Phone (800) 326-8346		
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		C. State Transporter's ID		
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812				D. Transporter 2 Phone (206) 674-1438		
				E. State Facility's ID		
				F. Facility's Phone (541) 454-2030		
11. WASTE DESCRIPTION			Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.			1	CM	16 bags	32,000 lbs p
b.						
c.						
d.						
G. Additional Descriptions for Materials Listed Above 1) 1107 GAK POL CONTAMINATED SOIL			H. Handling Codes for Wastes Listed Above			
CONTAINER NUMBER <u>AMLU 603551</u>						
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.						
Printed/Typed Name John W. Moorhead			Signature <i>[Signature]</i>		Date Month Day Year 07 10 13	
17. Transporter 1 Acknowledgement of Receipt of Materials			Printed/Typed Name Albert Porter		Signature <i>[Signature]</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials			Printed/Typed Name		Signature	
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.						
Printed/Typed Name			Signature		Date Month Day Year	

NON-HAZARDOUS WASTE GENERATOR

NON-HAZARDOUS WASTE MANIFEST


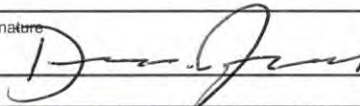
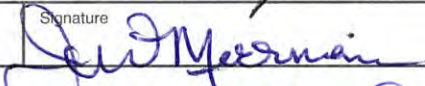
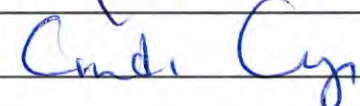

Please print type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G	Manifest Document No. 1 8 9 9 9 G	2. Page 1 of 2
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES
4. Generator's Phone (907) 784-3238		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		B. Transporter 1 Phone (800) 326-8346
7. Transporter 2 Company Name UNION PACIFIC		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		C. State Transporter's ID
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812		E. State Facility's ID		D. Transporter 2 Phone (206) 674-1438
11. WASTE DESCRIPTION		F. Facility's Phone (541) 454-2030		
a. MATERIAL NOT REGULATED BY D.O.T.		Containers No.	Type	13. Total Quantity
		1	CM	16 bags
b.				32,000 lbs p
c.				
d.				
G. Additional Descriptions for Materials Listed Above 1)110760OR POL CONTAMINATED SOIL		H. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information CONTAINER NUMBER <u>AMLU 603426</u>				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name John W. Moorman		Signature <i>John W. Moorman</i>		Date 07/10/13
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Albert Porter		Signature <i>Albert Porter</i>		Date 7/10/13
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Cindi Croy		Signature <i>Cindi Croy</i>		Date 7/19/13
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.				
Printed/Typed Name Sarah Mastriana		Signature <i>Sarah Mastriana</i>		Date 07/25/13

NON-HAZARDOUS WASTE GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 H		2. Page 1 of 2	
3. Generator's Name and Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES			
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number W A D 9 9 1 2 8 1 8 0 9		A. State Transporter's ID		B. Transporter 1 Phone (800) 326-8346	
5. Transporter 1 Company Name ALASKA MARINE LINES, INC.		7. Transporter 2 Company Name UNION PACIFIC		8. US EPA ID Number N E D 0 0 1 7 9 2 9 1 0		C. State Transporter's ID	
9. Designated Facility Name and Site Address COLUMBIA RIDGE RECY. & LNDFL. 18177 CEDAR SPRINGS LANE ARLINGTON, OR 97812		10. US EPA ID Number O R D 9 8 7 1 7 3 4 5 7		D. Transporter 2 Phone (206) 674-1438		E. State Facility's ID	
11. WASTE DESCRIPTION		Containers		13. Total Quantity		14. Unit Wt./Vol.	
a. MATERIAL NOT REGULATED BY D.O.T.		No. Type		14 bags		28,000 lbs P	
b. 		1 CM					
c. 710782-4							
d.							
G. Additional Descriptions for Materials Listed Above 1) 110760OR POL CONTAMINATED SOIL				H. Handling Codes for Wastes Listed Above RECEIVED SEP 16 2013			
15. Special Handling Instructions and Additional Information CONTAINER NUMBER AMLU 603434 # 478556				Yakutat Tlingit Tribe			
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Derek James		Signature 		Date 7 30 13			
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name John W. Meerman		Signature 		Date 07 30 13	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name Cindi Cuy		Signature 		Date 8 22 13	
19. Discrepancy Indication Space (ys)							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name Sarah Mastriona		Signature 		Date 08 29 13			

NON-HAZARDOUS WASTE GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C E S Q G		Manifest Document No. 1 8 9 9 9 I	2. Page 1 of 1
3. Generator's Name and Mailing Address YAKUTAT TLINGIT TRIBE PO BOX 418 YAKUTAT, AK 99689		Site Address OCEAN CAPE RADIO RELAY STATION MILE 6 OCEAN CAPE ROAD YAKUTAT, AK 99689		ALEX JAMES	
4. Generator's Phone ((907) 784-3238)		6. US EPA ID Number		A. State Transporter's ID	
5. Transporter 1 Company Name		8. US EPA ID Number		B. Transporter 1 Phone	
7. Transporter 2 Company Name		10. US EPA ID Number		C. State Transporter's ID	
9. Designated Facility Name and Site Address EMERALD ALASKA, INC. 2020 VIKING DRIVE ANCHORAGE, AK 99501		10. US EPA ID Number A K R 0 0 0 0 0 4 1 8 4		E. State Facility's ID	
				F. Facility's Phone (907) 258-1558	
11. WASTE DESCRIPTION			Containers		13. Total Quantity
			No.	Type	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.			2	BA	5340 P
b.					
c.					
d.					
G. Additional Descriptions for Materials Listed Above 1)AK03200 PETROLEUM CONTAMINATED SOIL,SAND AND GRAVEL			H. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information I certify that this material is not regulated nor mixed with waste regulated as a Hazardous waste under 40CFR261 or TSCA regulated waste under 40CFR761. All used oil meets the definition under 40CFR279. Generator agrees to indemnify and hold harmless Emerald Alaska or its subsidiary for any damages, costs, attorneys and expert fees arising from or related to the above certification.					
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name X ALEX JAMES				Signature <i>[Signature]</i>	
				Date Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name X ALEX JAMES				Signature <i>[Signature]</i>	
				Date Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name				Signature	
				Date Month Day Year	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name				Signature	
				Date Month Day Year	

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENT

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed:	July 24, 2013
Generator:	Ocean Cape
Profile #:	110760OR
Manifest#:	18999A
Container #:	AMLU601079
Weight Disposed:	31320 lbs.
Waste Description:	PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

Sarah Mastriona

Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed: July 24, 2013
Generator: Ocean Cape
Profile #: 110760OR
Manifest#: 18999B
Container #: AMLU603599
Weight Disposed: 28740 lbs.
Waste Description: PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

Sarah Mastriona

Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

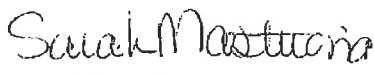
Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed: July 25, 2013
Generator: Ocean Cape
Profile #: 110760OR
Manifest#: 18999C
Container #: AMLU600709
Weight Disposed: 25560 lbs.
Waste Description: PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.


Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed: July 25, 2013
Generator: Ocean Cape
Profile #: 110760OR
Manifest#: 18999D
Container #: AMLU603574
Weight Disposed: 32380 lbs.
Waste Description: PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

A handwritten signature in cursive script that reads 'Sarah Mastriona'.

Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENTI

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed:	July 25, 2013
Generator:	Ocean Cape
Profile #:	110760OR
Manifest#:	18999E
Container #:	AMLU603508
Weight Disposed:	30180 lbs.
Waste Description:	PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

A handwritten signature in cursive script that reads 'Sarah Mastriona'.

Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENT

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed:	July 25, 2013
Generator:	Ocean Cape
Profile #:	110760OR
Manifest#:	18999F
Container #:	AMLU603551
Weight Disposed:	31500 lbs.
Waste Description:	PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

Sarah Mastriona

Sarah Mastriona
Special Waste Scale Clerk



July 26, 2013

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed: July 25, 2013
Generator: Ocean Cape
Profile #: 110760OR
Manifest#: 18999G
Container #: AMLU603426
Weight Disposed: 32460 lbs.
Waste Description: PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

Sarah Mastriona

Sarah Mastriona
Special Waste Scale Clerk



August 30, 2013

Emerald Alaska, Inc
7343 E Marginal Way S.
Seattle, WA 98108-3513

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

CERTIFICATE OF DISPOSAL

Waste Management, Inc. dba Columbia Ridge Landfill has received NON HAZARDOUS Waste material from Emerald Alaska, Inc.

Date Disposed: August 29, 2013
Generator: Ocean Cape
Profile #: 110760OR
Manifest#: 18999H
Container #: AMLU603434
Weight Disposed: 27500 lbs.
Waste Description: PCS

I certify, on behalf of the above listed facility, that the above-described non hazardous waste was managed in compliance with all applicable laws.

Sarah Mastriona

Sarah Mastriona
Special Waste Scale Clerk



CERTIFICATE OF DISPOSAL/RECYCLE

GENERATOR: OCEAN CAPE RADIO RELAY STATION
MILE 6 OCEAN CAPE ROAD
YAKUTAT AK 99689

DISPOSAL FACILITY: EMERALD ALASKA, INC.
2020 VIKING DRIVE
ANCHORAGE AK 99501

EPA ID NUMBER: CESQG
MANIFEST/DOCUMENT #: 189991
DATE OF DISPOSAL/RECYCLE: 09/05/2013

<u>LINE</u>	<u>WASTE DESCRIPTION</u>	<u>CONTAINERS</u>	<u>TYPE</u>	<u>QUANTITY</u>	<u>UOM</u>
1	PETROLEUM CONTAMINATED SOIL,SAND AND GRAVEL	2	BA	5,340	P

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits, and licenses on the date listed above.

PREPARED BY: JOHN PEREZ

SIGNATURE: _____

DATE: 9/10/2013

Your Local Partner for Recycling Environmental Services

425 Outer Springer Loop Road - Palmer, AK 99645 - (907) 258-1558 - Fax (907) 746-3651 - Toll Free (877) 375-504