The U.S. Air Force is committed to keeping the community informed of activities, investigations, and cleanup schedules at Sparrevohn LRRS.

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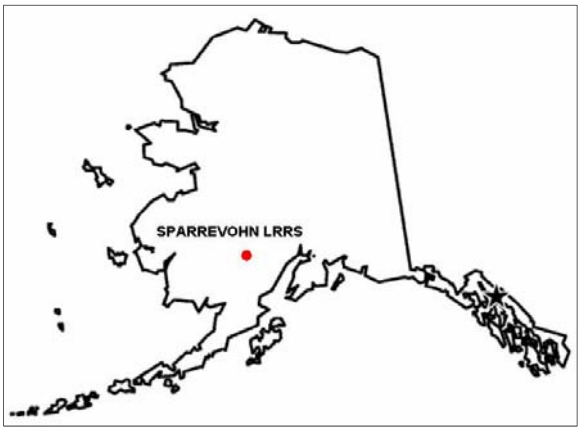
Proposed Plan for Seven ERP Sites at Sparrevohn

Long Range Radar Site

Comment Period October 6, 2008 to November 6, 2008

SUMMARY



This Proposed Plan presents the Preferred Alternatives for remediation at seven United States Air Force (USAF) Environmental Restoration Program (ERP) contaminated sites at Sparrevohn Long Range Radar Site (LRRS), Alaska. The sites addressed in this plan are Road and Runway Oiling (SD002), Transmitter Pad/Opportunity Site (SD003), White Alice Communication System (OT004), Spill/Leak No 1 and Lower Camp (ST005), Spill/Leak No. 2 (ST006), Waste Accumulation Area (SS007), and Hillside Disposal Area (DP008). The primary chemicals of interest in soil and groundwater at Sparrevohn LRRS are petroleum hydrocarbon compounds (e.g. gasoline range organics [GRO], diesel range organics [DRO], and residual range organics [RRO]), trichloroethylene (TCE) and/or polychlorinated biphenyls (PCBs). The Preferred Alternative for each site is designed to limit exposure to contamination and be protective of human health and the environment. Additionally, each Preferred Alternative is compliant with all applicable Federal and State regulations, and represents the most cost-effective solution based on site location, and current and anticipated future activities at Sparrevohn LRRS. No further action (NFA) is proposed at two sites, Road and Runway Oiling and Hillside Disposal Areas, because the human health risk at these locations was determined to be below the Alaska Department of Environmental Conservation (ADEC) risk management standards and there were no Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances exceeding cleanup levels. At four sites (Transmitter Pad/Opportunity Site, White Alice Communication System, Spill/Leak No. 2, and Waste Accumulation Area), three alternatives were evaluated: no action; institutional controls; and excavation and offsite disposal. For each of these sites, institutional controls were the Preferred Alternative because they were protective of human health and the environment, compliant with all applicable regulations, identified potential contamination and areas of exposure to all site users, restricted land use to non-residential functions, and were cost effective. For the Spill/Leak No. 1 and the Lower Camp Area, the Preferred Alternatives were institutional controls, including restrictions on groundwater use from contaminated areas and construction of residential structures, and natural attenuation and long term monitoring for groundwater. CERCLA Five-Year review will be completed as required at sites to verify protectiveness of the Preferred Alternative. Finally, ADEC approval shall be obtained prior to moving or disposal of soil or groundwater which were subject to site cleanup rules (18 AAC 75.325[i]).

INTRODUCTION

The USAF and the ADEC request your comments on this Proposed Plan for seven sites of environmental concern at Sparrevohn LRRS. This Proposed Plan is prepared under Section 117(a) of CERCLA and the National Contingency Plan (NCP) Section 300.430(f)(2). These federal laws regulate the cleanup of hazardous waste sites that contain substances covered under CERCLA.

The Proposed Plan is a document that the lead cleanup agency, in this case the USAF, is required to issue to fulfill the public participation requirement under CERCLA and the NCP. This document summarizes information from the Remedial Investigation and Feasibility Study (RI/FS) reports and

INTRODUCTION (CONTINUED)

Risk Assessment (RA). The reader should refer to these reports and the administrative record for more information regarding the proposed remedial actions. This Proposed Plan:

- Identifies the Preferred Alternative for each site;
- Provides a summary of the Preferred Alternative selected for each site;
- Provides the rationale for the selection of the Preferred Alternative; and
- Provides information on how the public can comment on the Proposed Plan and become involved in the remedy selection process.

At Sparrevohn LRRS, ADEC is the lead regulatory agency. The U.S. Environmental Protection Agency (USEPA) has deferred regulatory authority to ADEC; therefore, no comments to this Proposed Plan were received from the USEPA. ADEC concurs with the preferred alternative discussed in this Proposed Plan.

Not all contamination is addressed under CERCLA, which only covers specified hazardous substances. Petroleum products such as crude oil or refined fuel are not considered hazardous substances under CERCLA. In Alaska, sites that are contaminated with releases of petroleum products or other hazardous substances are addressed by ADEC under the contaminated sites regulations (18 Alaska Administrative Code [AAC] 75, Article 3, Discharge Reporting Cleanup and Disposal of Oil and Other Hazardous Substances). All seven ERP sites addressed in this plan contain hazardous substances regulated under CERCLA, although none are on the National Priorities List (NPL). All sites are required to meet 18 AAC 75 regulations. The seven ERP sites addressed in this Proposed Plan (shown on Figure 1) are:

- **Road and Runway Oiling (SD002)**
- **Transmitter Pad/Opportunity Site (SD003)**
- **White Alice Communication System (OT004)**
- **Spill/Leak No. 1 and Lower Camp Area (ST005)**
- **Spill/Leak No. 2 (ST006)**
- **Waste Accumulation Area (SS007)**
- **Hillside Disposal Areas (DP008)**

Public comments will become part of the Record of Decision (ROD) for each site. Involving the public in the ERP decision making process is required by 40 Code of Federal Regulations (CFR) 300 for sites on the NPL. Although Sparrevohn LRRS is not on the NPL, the USAF is committed to keeping the community informed of activities, investigations, and cleanup schedules at the sites. The site ROD will include a summary of public comments received during the comment period for this Proposed Plan and responses by the USAF. The USAF is responsible for implementing, maintaining, monitoring, reporting, and enforcing the decisions selected in this Proposed Plan.

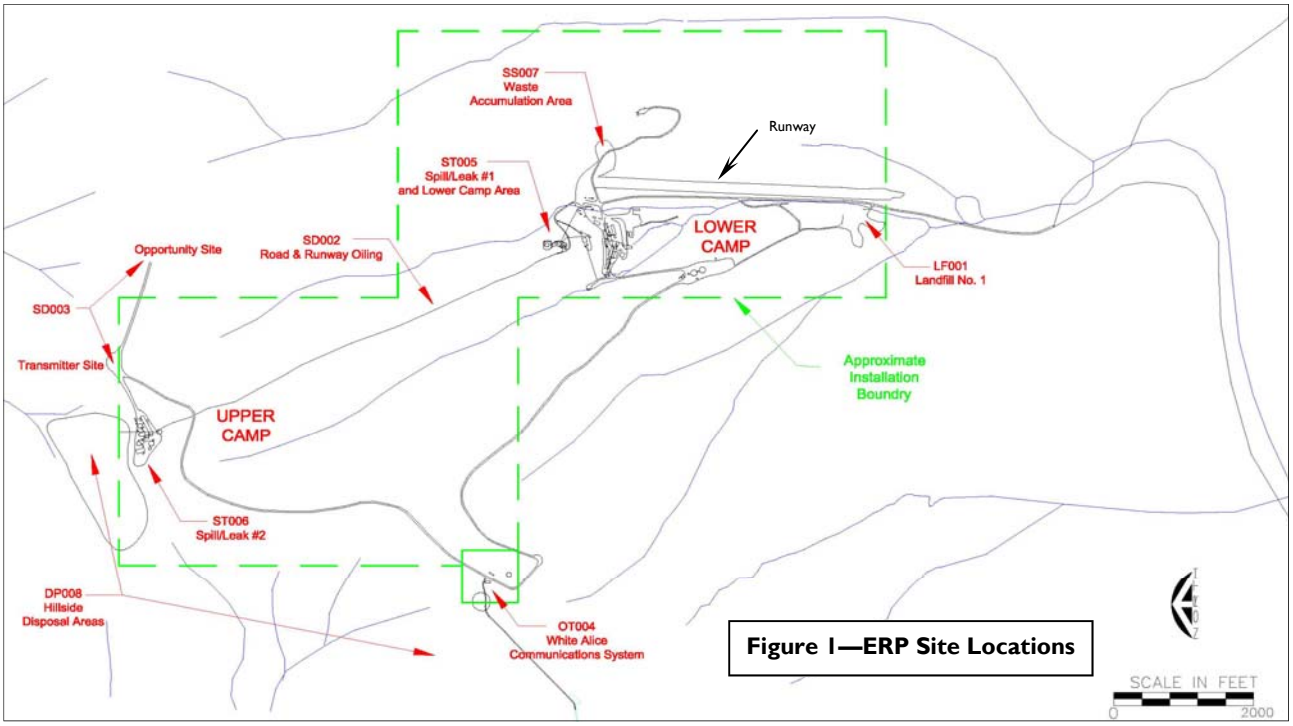


Figure 1—ERP Site Locations

INTRODUCTION (CONTINUED)

Final decisions on the Preferred Alternative are not made until all comments submitted during the public comment period have been reviewed and considered. Changes to the preferred alternatives may be made if public comments or additional data indicate that such changes would result in more appropriate remedies.

SITE HISTORY AND BACKGROUND

Sparrevohn LRRS is located in the western foothills of the Alaska Range, approximately 200 miles west of Anchorage. The installation occupies 1,180 acres on the top and southern slope of a northeast-southwest trending ridge. This ridge is referred to as Sparrevohn Mountain. Lime Village is the nearest town and is located roughly 18 miles north of Sparrevohn LRRS. No roads connect Lime Village with Sparrevohn LRRS. Sparrevohn is bordered by Bureau of Land Management property to the east, north, and west, and State of Alaska land to south.

The Sparrevohn LRRS installation consists of two primary areas, the Upper Camp and the Lower Camp, which are connected by road and served by a single landing strip (Figure 1). The Upper Camp area is located on the top of the ridge at an elevation of approximately 3,300 feet. Facilities at the Upper Camp were primarily intended for radio and/or radar communication. Housing, fuel storage, water supply, and the landing strip were located at the Lower Camp. The Lower Camp is located on the lower south-facing side of the ridge at an elevation of between approximately 1,500 and 1,750 feet.

Many of the buildings associated with the Sparrevohn LRRS have been demolished as a result of decommissioning activities in the late 1980s. The radome is the only remaining facility at the top of the ridge. Several warehouse buildings and residential facilities remain at the Lower Camp.

Sparrevohn LRRS was activated in 1952 to close a gap in the radar coverage of interior Alaska. An experimental very high frequency (VHF) communications link was established in 1952 and is believed to have been operated from the Opportunity Site on the ridge top. The White Alice Communication System (WACS) facility was constructed at Upper Camp in 1957. The WACS was replaced in 1977 by an Alascom satellite earth terminal. Dismantling of the WACS began in 1980. In 1982, a Minimally Attended Radar was put into operation. Since that time, the number of personnel operating the LRRS has been reduced to approximately four.

Current land use at the facility consists primarily of industrial use with occasional recreational use by site contractors and visiting USAF personnel. Future land use is anticipated to be similar as the USAF intends to maintain the installation indefinitely. Groundwater from a water gallery on the south side of Sparrevohn Mountain supplies all water (including drinking water) at the installation. Groundwater feeds into the streams in the valley below Lower Camp, which in turn drain into Hook Creek and finally into the Kuskokwim River.

Table 1 - Proposed Actions for Sparrevohn LRRS Sites

Site	CERCLA Hazardous Substances Detected	Proposed Action[1]	
		Under CERCLA	Under 18 AAC 75
Road and Runway Oiling (SD002)	Yes	NFA[2]	
Transmitter Pad/Opportunity Site (SD003)	Yes	IC[3]-Transmitter Pad/NFA[2]-Opportunity Site	
White Alice Communication System (OT004)	Yes	IC[3]	
Spill/Leak No. 1/Lower Camp Area (ST005)	Yes	Monitored Natural Attenuation and IC[3]	
Spill/Leak No. 2 (ST006)	Yes	IC[3]	
Waste Accumulation Area (SS007)	Yes	IC[3]	
Hillside Disposal Areas (DP008)	Yes	NFA[2]	

Notes:
[1] Proposed action for remediation of contamination will be performed in accordance with CERCLA and Alaska State laws and regulations
[2] NFA– No Further Action, indicates no further sampling or remediation will occur at the site
[3] Institutional controls are intended to prevent exposure and alert site workers and residents to hazardous substances in the area

SITE HISTORY AND BACKGROUND (CONTINUED)

Under the USAF ERP, environmental investigations have been conducted at the Sparrevohn LRRS since 1985. Cleanup actions were conducted in 1979, 1984, 1988, and 1989 to remove debris and contaminated soil. Environmental samples were collected at Sparrevohn LRRS in 1992 as part of a Site Investigation (SI) at 5 sites, including Road and Runway Oiling (SD002), White Alice Communication System (OT004), Spill/ Leak No. 1 and Lower Camp Area (ST005), Waste Accumulation Area (SS007), and Hillside Disposal Areas (DP008). The USAF conducted an RI in 1998 followed by an FS in 2002 for eight sites. Additional environmental sampling occurred at the Spill/Leak No. 1 and Lower Camp Area from 1996 to 2006. A risk assessment was conducted in 2000 with an addendum in 2002 for eight sites. Seven of the eight ERP sites at Sparrevohn LRRS are included in this Proposed Plan (PP). The information used to develop this Proposed Plan comes primarily from the most recent reports: *Final Remedial Investigation Report, Sparrevohn LRRS, Alaska, April 1999*; *Baseline Human Health and Ecological Risk Assessment, Sparrevohn LRRS, Alaska, June 2000; Final Feasibility Study Report, Remedial Investigation/Feasibility Study, Sparrevohn LRRS, Alaska, September 2002*; and *Final Report, ST05 Long Term Monitoring Report, Sparrevohn LRRS, Alaska, February 2001.* Detailed information about these and other investigations can be found in reports at the information repositories listed on page 28.

Table 1 on the previous page presents the Preferred Alternative for the seven sites included in this Proposed Plan. NFA indicates that no further investigations, sampling, or cleanup actions will be performed at a site.

The sites addressed in this plan have been used for a variety of industrial purposes. Past activities potentially resulting in chemical releases at the Sparrevohn LRRS include:

- Spills during the transfer of fuels into and out of storage tanks;
- Leaks from fuel lines and tanks;
- Road oiling for dust control;
- Leaks or spills of oil or cleaning solvents from the former vehicle and equipment maintenance shop and other areas; and
- Disposal of wastes and other discarded material containing hazardous substances.

The chemicals detected during the investigations included benzene, toluene, ethylbenzene, and total xylenes (BTEX); DRO; GRO; polynuclear aromatic hydrocarbons (PAHs); volatile organic compounds (VOCs); semivolatile organic compounds (SVOCs); PCBs; RRO; and metals. As discussed in the RI and risk assessments, sampling of surface water and sediment at downgradient locations (i.e., Tundra Lake to the north and Hook Creek to the south) did not indicate significant offsite migration of contaminants or risk to human health or the environment.

Site specific background information, remedial investigations, risk assessment results, and the Preferred Alternative for each site are presented on the following pages.

Chemical of Potential Concern (COPC):

A COPC is a chemical that initially exceeds screening criteria, but it is unknown whether it poses an unacceptable risk to human health and the environment.

Chemical of Concern (COC):

A COC is a chemical that exists at a concentration that poses an unacceptable risk to human health and the environment. The concentration at which a chemical poses an unacceptable risk depends upon many factors, including its toxicity and the frequency or chance that an individual may become exposed to the chemical. Therefore, the location and size of a contaminated area affects the potential risk. A small area of contamination that is unlikely to come into contact with animals or humans typically represents a low risk.

Receptors:

Receptors are the site-specific populations that could be exposed to contamination. Examples include humans, plants, aquatic organisms, birds, and mammals.

Exposure Pathways:

Pathways are the means by which receptors may be exposed to contamination. Examples include direct contact, ingestion, or inhalation. ADEC defines complete exposure pathways as those that are currently complete or could be complete in the future based on chemical migration or future land use.

Ecological Risk Standards:

ADEC permits several different methods for evaluating the potential adverse effects to ecological receptors. In the Sparrevohn risk assessment, the potential risk to plants was evaluated by comparing the concentrations of COCs in the soil and surface water to values from existing plant toxicity studies. Potential risks to aquatic organisms, birds, and mammals were evaluated using the hazard quotient (HQ) method, which is a calculated value. If the HQ is less than 1.0, then adverse effects in ecological receptors at the site are not expected. If the HQ is equal to or greater than 1.0, a potential for adverse effects exists.

ADEC Risk Management Standards:

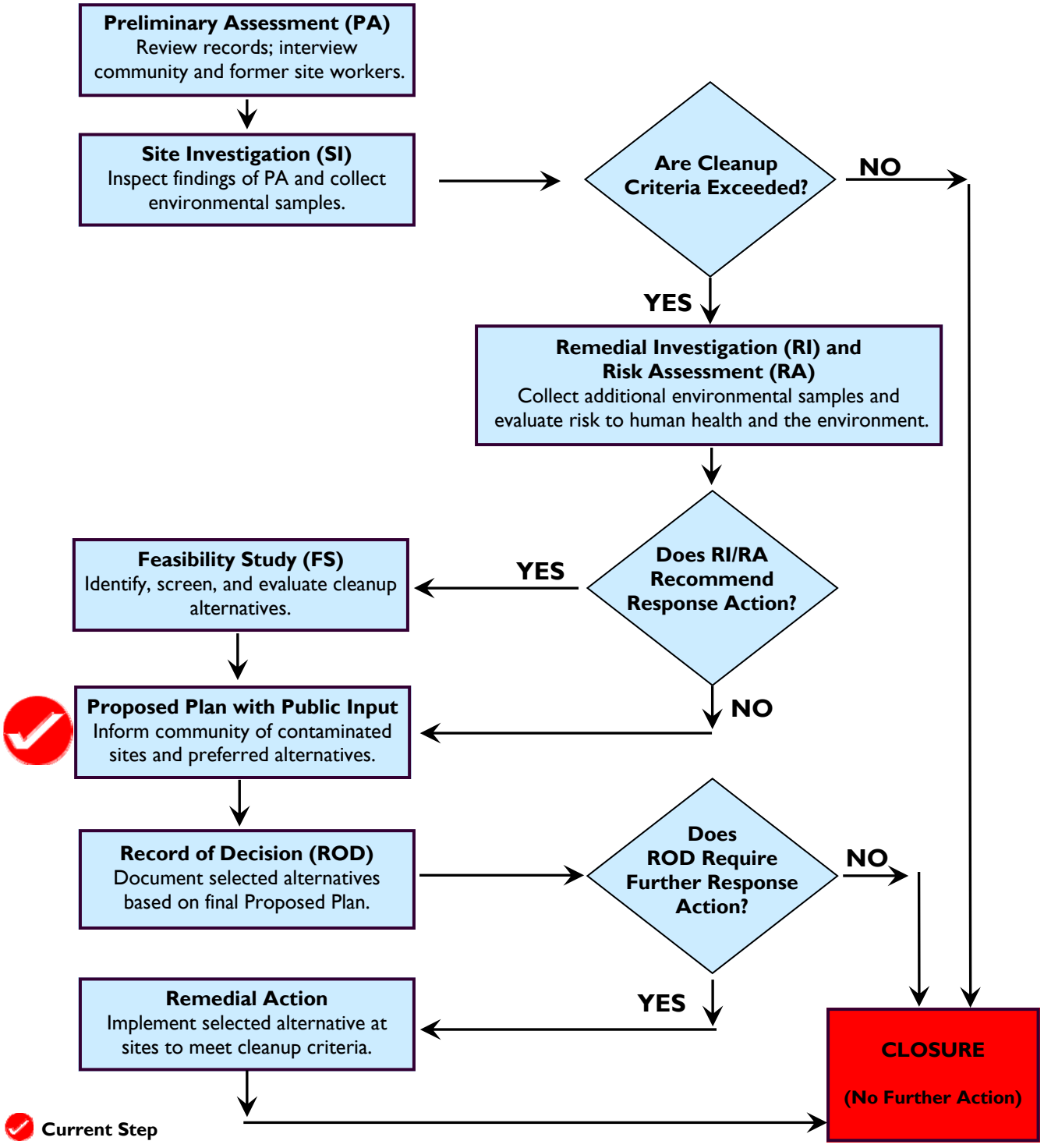
ADEC has set standards to protect people from health risks caused by exposure to chemicals in soil and water(18 AAC 75.325[h]). The cancer risk standard is 1 in 100,000. This means that contact with chemicals at the site over a 70-year lifetime will not increase the cancer risk among individuals by more than 1 in 100,000. These levels are calculated to protect people who are both easily affected by the chemicals and often come into contact with the chemicals at the site.

The noncancer risk standard is a hazard index of 1. This hazard index measures the likelihood that a person who comes into contact with chemicals at the site over the course of a lifetime will experience noncancer health effects. A hazard index of 1 is the maximum level at which people are not expected to experience any unacceptable health effects.

INVESTIGATION AND REMEDIATION PROCESSES

The environmental investigations and cleanup at Sparrevohn LRRS are being performed as part of the USAF ERP, which is consistent with CERCLA. The ERP is designed to identify, quantify, and remedy problems associated with past and current management of hazardous substances and hazardous waste at USAF facilities. The steps involved in evaluation and cleanup of sites under the ERP are summarized below.

As indicated in the flow chart, areas which potentially contain environmental contamination are first sampled as part of a site investigation.



INVESTIGATION AND REMEDIATION PROCESSES (CONTINUED)

If the sample concentrations exceed screening criteria indicating a concern, then a more detailed remedial investigation (RI) is conducted. The purpose of an RI is as follows:

- Identify the hazardous substances that have been released to the environment;
- Determine the nature, extent, and distribution of the hazardous substances in the affected media and identify the **chemicals of potential concern** (COPCs);
- Identify migration pathways and **receptors**;
- Determine the direction and rate of migration of the COPCs;
- Evaluate the risk to human health and the environment; and
- Determine the need for remedial action.

The data from the RI are used to develop a conceptual site model and complete a risk assessment to determine the probability that the COPCs will cause adverse (harmful) effects in humans or the environment.

An RA was conducted at Sparrevohn LRRS in 2000 with an addendum published in 2002, in order to:

- Identify human and/or ecological receptors potentially exposed to the COPCs by evaluating complete **exposure pathways**;
- Determine if risks to ecological receptors are significant by comparing them to **ecological risk standards**;
- Calculate human noncancer and cancer risks associated with exposure to the COPCs and compare them to **risk management standards;** and
- Identify **chemicals of concern** (COCs) based on risk calculations.

At sites where the RI and RA identify COCs needing remedial action, a feasibility study (FS) is performed. A feasibility study was performed at the Sparrevohn LRRS in 2002. The objectives of the FS were as follows:

- Identify potential remedial alternatives;
- Evaluate potential alternatives using established selection criteria and site-specific conditions; and
- Select a preferred remedial action alternative.

Table 2—Primary Regulatory and Risk-Based Screening Criteria Used to Identify Chemicals of Concern and Evaluate Risk

Media	Screening Criteria
Soil (including tundra, beach sands, and gravel pads)	• 18 AAC 75.341, Tables B1 and B2, Under 40-inch Zone (i.e., ADEC Method Two Soil Cleanup Levels for the Under 40-inch Zone), for inhalation, ingestion, or migration to groundwater[1]
Sediment (from aquatic habitats)	• National Oceanic and Atmospheric Association Screening Quick Reference Table Probable Effects Levels for Freshwater or Marine Sediment (NOAA SQuiRT PELs)[2]. PELs represent concentrations **above** which adverse effects in ecological receptors are frequently expected.
Surface Water	• 18 AAC 70 (Alaska Water Quality Standards) • *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* • SQuiRT for Aquatic life Criteria Continuous Concentration (CCC). CCCs are the highest concentrations of a chemical in the surface water that ecological receptors can be exposed to indefinitely without adverse effects.
Groundwater	• 18 AAC 75.345, Table C, Groundwater Cleanup Levels • 18 AAC 75.350, determination of groundwater use

Notes:

[1] Four of the Sparrevohn sites are located at a ridge top where groundwater is of no current or future potential use. At those sites, the most stringent of either the ingestion or inhalation pathway standards will be used. At the other three sites, the migration to groundwater pathway is applicable. Method Two cleanup soil levels are risk-based standards that are protective of human health and the environment. Following ADEC guidance, all applicable chemicals which exceeded 1/10 of the Method Two soil cleanup level were identified and included in cumulative risk calculations to determine if **ADEC risk management standards** were exceeded.

[2] Samples collected from streams or water bodies found in the tundra or seasonal drainages judged to be viable aquatic habitat were classified as sediment and screened against sediment criteria. This criterion is also considered secondarily for soils that have a high likelihood to erode into freshwater or marine environments.

INVESTIGATION AND REMEDIATION PROCESSES (CONTINUED)

Unless a waiver is justified, CERCLA Section 121(d)(2)(A) usually requires that remedial actions meet federal standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate. These requirements are commonly referred to as applicable or relevant and appropriate requirements (ARARs). CERCLA Section 121(d)(2)(A)(ii) requires state ARARs (listed in Table 2) to be met if they are more stringent than federal requirements.

The sampling results from the RIs conducted at Sparrevohn LRRS were compared against human health and ecological risk criteria to determine whether there were COCs that potentially pose a risk to human health and the environment, and require remedial action. The primary regulatory and risk-based screening criteria used to identify COCs and evaluate risk are provided in Table 2. The ADEC Method Two soil cleanup levels applicable to the Under 40-Inch Zone (i.e., less than 40 inches of precipitation per year) for petroleum contamination are provided in Table 3. ADEC Method Two cleanup levels are tabulated for three exposure pathways: ingestion, inhalation, and migration to groundwater. The most stringent (i.e., lowest) ADEC Method Two cleanup level applicable to a site was used for screening. Because groundwater is present at the Lower Camp sites (Road and Runway Oiling [SD002], Spill/Leak No. 1 [ST005], and Waste Accumulation Area [SS007]), the ADEC Method Two soil cleanup levels for the migration to groundwater pathway were used as screening criteria at the Lower Camp sites.

Migration to groundwater screening criteria are not applicable to the sites located on the ridge top or hillsides (Transmitter Pad/Opportunity Site [SD003], WACS [OT004], Spill Leak No. 2 [ST006], and Hillside Disposal Area [DP008]) because there is no groundwater. An evaluation of the groundwater at the ridge-top sites was completed as part of the 2002 feasibility study. A determination of no potential current or future water use was made for these sites in accordance with state regulation 18 AAC 75.350. As a result, the ADEC Method Two soil cleanup levels applicable for the ridge-top sites are for the ingestion and inhalation exposure pathways. For each compound detected the most stringent of the two screening levels was used.

These screening criteria were developed to be protective of sensitive human populations (e.g., residents or children) and ecological receptors under typical site conditions. They were based on the current and projected land use for each site. However, criteria protective of people using the site for residential purposes were used to screen the data (i.e., ADEC Method Two cleanup levels), even in cases where there is no current or anticipated residential land use at the site.

A chemical was considered a COC if it exceeded the screening criteria, unless further evaluation indicated the chemical posed an insignificant risk. A baseline human health and ecological risk assessment was performed in 2000. The baseline risk assessment was not conducted for individual sites, but rather for five exposure areas that potentially were impacted by the sites. The five exposures areas are the Lower Camp (on-site), Lower Camp (off-site), Northern Hillside/Valley, Upper Camp, and Hook Creek. The baseline human risk assessment evaluated the risk to current and future resident site workers, subsistence hunters, and recreational receptors. The baseline ecological risk assessment evaluated risks to receptors in the terrestrial and aquatic environments present at Sparrevohn LRRS.

Table 3—Soil Cleanup Levels for Oil and Other Hazardous Substances in the Under 40-Inch Zone

Compound	Method Two Cleanup Level for Ingestion or Inhalation (mg/Kg)[1]	Method Two Cleanup Level for Migration to Groundwater (mg/Kg)[2]
Gasoline Range Organics (GRO)	1,400	300
Diesel Range Organics (DRO)	10,250	250
Residual Range Organics (RRO)	10,000	11,000
PCBs[3]	1	1

Notes:

[1] The most stringent (lowest) of the ingestion and inhalation pathway concentrations is used. Applies to sites that have no current or potential future groundwater use. Sites are located at the ridge top and include SD003, OT004, ST006, and DP008.

[2] Applies to sites located at Lower Camp where groundwater can be readily impacted by contamination. Sites include SD002, ST005, and SS007. The ingestion/inhalation cleanup level for RRO is lower than the migration to groundwater level, and as a result the ingestion/inhalation cleanup level for RRO is applied to the Lower Camp ERP sites.

[3] As per Footnote 9 to Tables B1 and B2 in 18 AAC 75.341— For unrestricted land use, PCBs shall be cleaned up to 1 mg/Kg or less. With prior approval from ADEC, PCBs in soil may be cleaned up to: A) between 1 and 10 mg/kg if appropriately capped; or B) an alternate PCB soil cleanup level developed in accordance with the ADEC *Risk Assessment Procedures Manual.*

INVESTIGATION AND REMEDIATION PROCESSES (CONTINUED)

Potentially exposed **receptors** were identified, and then information on exposure and toxicity were combined to determine whether there was a significant risk to those receptors. The initial step in the risk assessments was to identify COCs in the soil, sediment, and water. Next, the potential for human or ecological **receptors** to be exposed to these COCs was evaluated by examining complete or potentially complete **exposure pathways**.

Finally, the risks to these ecological receptors were determined to be significant or insignificant by comparing them to the **ecological risk standards**. Risks to humans were evaluated by calculating the cumulative noncancer and cancer risks associated with exposure to COCs at the Sparrevohn LRRS sites. These "cumulative risk calculations" were compared to ADEC **risk management standards** in 18 AAC 75.325(g) to identify sites which exceeded risk standards.

SPARREVOHN RECOMMENDED ACTIONS

REMEDIAL ACTION OBJECTIVES

The remedial action objectives for the seven sites at Sparrevohn LRRS addressed in this Proposed Plan are to:

1. Protect human health and the environment; and
2. Comply with applicable Federal, State and local laws and regulations.

To meet these remedial action objectives, five of the seven sites are considered for further remedial action. The cleanup levels are based on the screening criteria presented in Tables 2 and 3.

Remedial alternatives for CERCLA sites are evaluated based on nine criteria outlined in CERCLA guidance. The nine evaluation criteria are described below:

Protection of Human Health and the Environment—Addresses how well an alternative provides adequate protection of human health and the environment. It includes how risks posed through each exposure pathway are reduced, eliminated, or controlled.

Compliance with Applicable and Relevant or Appropriate Requirements (ARARs)—Addresses whether an alternative will meet all of the requirements of Federal and State environmental statutes.

Long-Term Effectiveness and Permanence—Addresses potential residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time. It includes the adequacy and reliability of controls, along with the degree of certainty that the alternative will prove successful.

Reduction of Toxicity, Mobility, or Volume through Treatment—Addresses the extent to which the treatment reduces the toxicity, mobility, or volume of contaminated media.

Short-Term Effectiveness—Addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during the construction and operation of a remedial alternative until cleanup levels are achieved.

Implementability—Addresses the technical and administrative feasibility of an alternative from design through construction and operation. It includes the availability of services and materials, administrative feasibility, and coordination with other governmental agencies.

Cost—The full cost of an alternative.

State Acceptance—Addresses approval of an alternative by the State of Alaska and any comments or concerns expressed.

Community Acceptance—Addresses the reaction by the community during the public comment period about an alternative. It includes comments and concerns expressed at that time, and whether there is support for an alternative.

CERCLA REGULATED SITES

This section of the PP discusses the CERCLA regulated sites at Sparrevohn LRRS. Since CERCLA regulated hazardous substances have been detected at each site, all ERP sites at Sparrevohn LRRS are considered CERCLA sites. The most common CERCLA regulated hazardous substance detected is PCBs. All of the sites also contain fuel contaminated soil which is being addressed under Alaska State laws and regulations.

Abandoned switchback road to Upper Camp looking north with the radome in the background (2006).

RUNWAY AND ROAD OILING (SD002)

Site Background and Description

Road and runway oiling using waste oils, hydraulic fluid, and solvents, was conducted as a means of dust control and waste disposal at Sparrevohn LRRS from the 1950s to the mid-1970s. No documentation indicates which roads were oiled; therefore, all roads (in current use and abandoned) and the runway are considered to be part of this ERP site. The roads and runway at Sparrevohn LRRS are unpaved and consist of fractured or crushed bedrock. Because the site includes both the valley area of the Lower Camp and the ridge-tops of the Upper Camp, migration to groundwater impacts were considered as part of the evaluation.

Remedial Investigations

During the 1998 RI, samples were collected from the runway and five different road segments at the installation: 1) the road between Lower Camp and the WACS; 2) the old switchback road to Upper Camp; 3) the old Weasel Ridge road from Lower Camp to the ridge top; 4) the ridge top road between WACS and Upper Camp; and 5) the road from Lower Camp to Landfill No.1, southwest of the runway. The runway and road segments are shown in Figure 1. A near-surface composite soil sample of three discrete samples was collected from each of the road segments. Four discrete samples were included in the composite sample for the runway. Road segment samples were collected in the drainage ditches next to the road where it was most likely chemicals would have been washed to during snowmelt or rainfall. The runway samples were collected from holes in the runway at the approximate depth of the runway surface during oiling activities. Composite samples were analyzed for DRO, RRO, VOCs, SVOCs, PCBs, pesticides, and metals.

Compounds detected during the 1998 RI were DRO, RRO, PCBs, VOCs, pesticides, and metals. RRO, PCBs, and pesticides did not exceed their respective ADEC Method Two soil cleanup levels. Arsenic and chromium were detected at concentrations exceeding soil cleanup levels, however, these concentrations were considered to be naturally occurring (i.e., unrelated to site activities) based on background samples collected for Sparrevohn LRRS. As a result, DRO was the only compound considered to exceed the ADEC Method Two cleanup level of 250 mg/Kg for the migration to groundwater pathway, with a maximum concentration of 480 mg/Kg from the runway. The overall low levels of other compounds (i.e., below ADEC Method Two cleanup level) indicate that road and runway oiling did not result in widespread distribution of chemicals.

Risk Evaluation Summary

Based on the results of the investigations conducted at the Runway and Road Oiling site, no COCs were identified. Although DRO was detected above the ADEC Method Two soil cleanup level, the exceedance was minor (less than a factor of two) and only occurred in one composite sample from the runway. Although a site-specific risk assessment was not performed for the Runway and Road Oiling site, the site was included in the cumulative risk calculations for both the Lower Camp (on-site) and Upper Camp exposure areas. The baseline human health and ecological risk assessment concluded that runway and roadway oiling did not significantly contribute to the risk in either of the two exposure areas. Finally, the petroleum hydrocarbons detected are likely to degrade naturally with time. Therefore, no remedial action is necessary to ensure protection of human health and the environment.

Proposed Action

Because no CERCLA hazardous substances exceeded the screening criteria, the Runway and Road Oiling ERP site is proposed for NFA under CERCLA. Although petroleum hydrocarbons (DRO), regulated under 18 AAC 75, were detected above screening criteria, the concentrations only slightly exceeded screening levels and the one exceedance was isolated to the runway sample. Therefore, sampling and remediation of the Runway and Road Oiling ERP site at Sparrevohn LRRS is complete and no future activities are planned. This decision is consistent with Alaska state laws and regulations. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

TRANSMITTER PAD/OPPORTUNITY SITE (SD003)

Site Background and Description

This ERP site consists of two areas known as the Transmitter Pad and the Opportunity Site. The Transmitter Pad is approximately 500 feet northeast of Upper Camp (Figure 1) and currently consists of a gravel pad sloping steeply downward to the north, south, and east. Antenna arrays and two buildings are known to have occupied the site. The Opportunity Site is approximately 1 mile east of the Transmitter Pad (Figure 1) and was believed to have been used for VHF radio communication in the 1950s. No buildings or structures are currently located at either site. Because this site is located on the ridge-top, there is no potential for site activities to impact groundwater.

Looking north at Upper Camp with antenna array on the Transmitter Pad on the right (circa 1970).

Previous Investigations

A site visit in 1984 identified PCB-contaminated soil at the Transmitter Pad. A soil removal action was conducted in 1989 at the Transmitter Pad, although records indicate soil was likely only excavated on the western end of the gravel pad. Approximately half of the excavated soil was shipped off site for disposal. The remainder of the excavated soil could not be shipped off site due to the onset of winter and was placed in a covered stockpile. In 1996, the stockpiled soil was treated on site using a solvent extraction process and the extracted PCB were disposed of off site. It was estimated in 1989 that approximately 200 cubic yards of PCB-contaminated soil remained on the north slope of the ridge with PCB concentrations ranging from 1 to 684 mg/Kg.

During the 1998 RI, surface and subsurface soil samples were collected from both the Transmitter Pad and Opportunity Site and analyzed for RRO and PCBs. Samples at the Transmitter Pad were collected from the surrounding slopes and from test pits on the western end of the gravel pad. Twenty-four of 51 samples collected contained PCBs with concentrations above the ADEC Method Two soil cleanup level of 1 mg/Kg. The highest PCB concentration was 2,200 mg/Kg from a surface sample collected on the slope northwest of the pad. This area was re-sampled due to data validation problems and the new sample had a concentration of 620 mg/Kg. PCB concentrations were highest (non-detect to 620 mg/Kg) in the soil and fill material off the north end of the pad, and lower (non-detect to 2 mg/Kg) on the pad and off the east and south sides. The highest RRO concentration at the Transmitter Pad was 1,600 mg/Kg from a sample collected in native soil. Samples collected at the Opportunity Site were non-detect for PCBs. Three of 15 soil samples from the Opportunity Site had RRO concentrations which exceeded the ADEC Method Two soil cleanup level of 10,000 mg/Kg, with a maximum RRO concentration of 100,000 mg/Kg. The three samples were collected from isolated locations where stained soil was observed. Samples collected outside the stained areas had a maximum RRO concentration of only 2,600 mg/Kg, well below the cleanup level.

During a site visit in 2006, no stained soils were evident at either the Transmitter Pad or Opportunity Site. Additionally, backfilled areas were distinguishable from the native soils, but were being reclaimed by native tundra grasses and lichens.

Risk Evaluation

The 2000 baseline risk assessment for the Upper Camp exposure area included the Transmitter Pad and Opportunity Site. The cumulative cancer risk to a worker resident at Upper Camp was calculated to be 4.16×10^{-6} and the non-cancer HI was 0.07, both of which are below ADEC risk management standards.

PCBs, which were detected at the Transmitter Pad, are stable compounds with the ability to bioaccumulate in the food chain. However, PCBs are relatively immobile and are not soluble in water. As a result, they are unlikely to migrate. Although PCBs remain at the site above the 1 mg/Kg Method Two cleanup level, they are located on a steep slope that is virtually inaccessible to heavy equipment or for industrial or residential purposes. The area has limited access and the USAF intends to retain control of the site for the foreseeable future. Therefore, removal is not proposed.

Transmitter Pad following antenna removal. Looking west with radome in background (2006).

The highest levels of RRO detected at the Opportunity Site in 1998 were in oil stained areas, which were no longer evident in 2006. Outside the stained areas, the concentrations of RRO were below the ADEC Method Two soil cleanup level for this site. RRO concentrations will likely decrease over time through natural volatilization and degradation.

Proposed Action

Although the results of the risk assessment indicate that ADEC risk management standards are not exceeded in the Upper Camp exposure area, the Transmitter Pad does contain soil that exceed the ADEC Method Two soil cleanup level for PCBs (Table 4). As a result, this site is proposed for remedial action under CERCLA. The Preferred Alternative is institutional controls.

The Preferred Alternative was selected based on a comparative analysis of remedial alternatives following CERCLA guidance, as illustrated in Table 5. The three alternatives considered for this site included no action, institutional controls, and excavation and offsite disposal.

The area of PCB-impacted soil with concentrations exceeding the ADEC Method Two soil cleanup level of 1 mg/Kg is limited to a steep and virtually inaccessible area on the northwest side of the Transmitter Pad. As a result of the low risk to human health and the environment, and the impracticalities of accessing the area with equipment necessary to limit exposure via capping or fencing, institutional controls consisting of signage identifying the compounds present at the site and updates to the Base Master Plan documenting site conditions at the Transmitter Pad is the Preferred Alternative. The USAF will provide copies of the updated Base Master Plan to ADEC.

Excavating and disposing of the soil to an offsite landfill is more expensive than institutional controls, and would not provide significantly better protection of human health and the environment. Excavation and offsite removal was not selected, as the costs are excessive. The no action alternative fails to satisfy the threshold criteria (Table 5) and therefore was not evaluated further.

Section 121 of CERCLA requires that remedial actions which result in any hazardous substances remaining at the site above concentrations that allow for unlimited use and unrestricted exposure are subject to a Five-Year Review. The purpose of the Five-Year Review is to assess the remedy's performance and protectiveness. Because PCBs exceeding ADEC soil cleanup levels will remain on site, a CERCLA Five-Year Review will be part of the remedy. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

Table 4—Transmitter Pad/Opportunity Site (SD003) Summary

Chemical of Concern (COC)	Media	Maximum Sample Result	Cleanup Standard	Citation
PCBs	Soil	620 mg/Kg	1.0 mg/Kg	18 AAC 75.341 (Table B1)

Table 5 — Comparison of Remedial Alternatives Addressing Transmitter Pad (SD003)

Remedial Alternative	Threshold Criteria		Balancing Criteria					Modifying Criteria	Cumulative Evaluation Result
	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness (Impacts, Time to Achieve Remedial Action Objectives)	Implementability	Cost	State and Public* Acceptance	
No Action	○	○	○	○	○	●	○	To Be Determined	○
Institutional Controls	●	●	◐	○	●	◐	◐	To Be Determined	●
Excavation and Offsite Disposal	●	●	●	○	○	○	●	To Be Determined	◐

* ADEC has participated in the development of this plan. Final State acceptance will be evaluated following public comment.

Symbol Key

● High ◐ Medium ○ Low

Description of Alternatives

No Action — No response action.

Institutional Controls — Signs indicating chemicals present above screening levels and updates to the Base Master Plan.

Excavation and Offsite Disposal — The soil with PCBs > 1 mg/Kg would be excavated and shipped offsite for disposal in the Lower 48. Confirmation sampling would be required following excavation.

WHITE ALICE COMMUNICATION SYSTEM (OT004)

Site Background and Description

The White Alice Communication System (WACS) occupied the ridge top to the southwest of Upper Camp (Figure 1). It operated from 1957 to 1979 and all structures were demolished by 1985. Fuel storage tanks were present at each tropospheric antenna and adjacent to industrial buildings (Figure 2). When the buildings were demolished, the majority of debris was buried on site and as a result, the original ground surface is no longer exposed. The WACS had high power requirements and most electrical equipment used at the time contained PCB-laden insulating oil. It was common practice to dispose of waste oil on the ground outside the buildings. Because this site is located on the ridge-top, there is no potential for site activities to impact groundwater.

WACS looking north with road to Lower Camp curving downward (circa 1970).

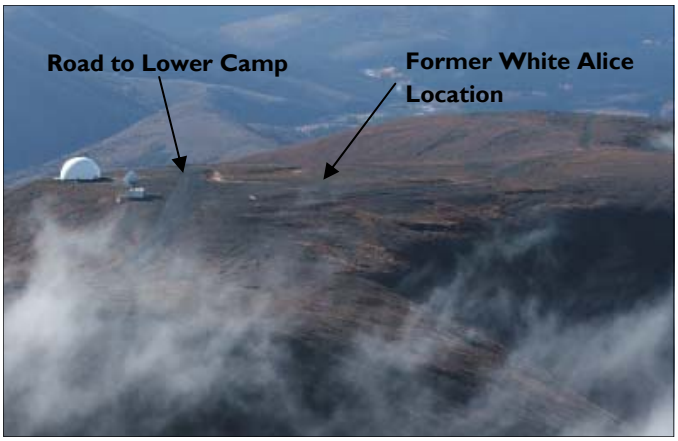
Previous Investigations

As part of the 1998 RI, 35 test pits were dug around the former building locations, near fuel tanks, and in a drum storage area. A total of 98 soil samples were collected from the near surface (approximately 0.5 feet below ground surface), the middle, and at the fill/bedrock interface at each test pit. The fill material is crushed rock consisting of silty sandy gravel. Test pits extended down to 9 feet below ground surface. Soil samples were analyzed for GRO, DRO/RRO, VOCs, SVOCs, PCBs, pesticides, and metals. The maximum DRO concentration was 8,580 mg/Kg, which is below the ADEC Method Two cleanup level of 10,250 mg/Kg applicable to this site (i.e., ingestion and inhalation; migration to groundwater does not apply because no groundwater is found on the ridge-top). PCBs were detected in 63 samples and exceeded the Method Two cleanup level of 1 mg/Kg in 10 samples. The concentrations ranged from 0.055 mg/Kg to a maximum concentration of 18.7 mg/Kg (Figure 2). Arsenic was detected above the ADEC Method Two soil cleanup level, but within the background concentrations found at Sparrevohn LRRS. No other compounds exceeded ADEC Method Two soil cleanup levels at the WACS site.

During a 2006 site visit, no soil staining was evident, and vegetation typical of the surrounding tundra was beginning to colonize the gravel-filled areas. Additionally, no structures or footings were noted in the area.

Risk Evaluation Summary

The WACS site was included as a source in the Upper Camp exposure area risk assessment. The baseline human health and ecological risk assessment found minimal risk to human and ecological receptors at Upper Camp. Because PCBs are stable compounds, they do not readily degrade in the environment. PCBs bioaccumulate and reach higher concentrations in the upper levels of the food chain. PCBs are generally insoluble in water; therefore, the primary migration pathway would be through erosion or dispersion of contaminated soil by vehicle traffic. However, the site has limited access and no activities currently occur or are likely to occur at the site in the future that would result in exposure. In addition, the PCBs were detected in the subsurface soil at or below 0.5 feet below ground surface. The two samples with the highest concentrations (13 and 18.7 mg/Kg) were detected at 2 feet and 2.5 feet below ground surface, respectively. The remaining samples above the Method Two cleanup level had concentrations ranging from 1.7 mg/Kg to 4.8 mg/Kg and were collected between 0.5 feet and 6 feet below ground surface. As a result, the likelihood of receptors coming into contact with the contaminated soil is relatively low because the receptor would likely only contact surface soil. Cumulative cancer risk calculations for a worker resident at Upper Camp was calculated to be 4.16×10^{-6} and the non-cancer HI was 0.07. Both values are below ADEC risk management standards.



OT004 from Upper Camp. Alascom dome is on opposite side of road. Looking southwest (2006).

Proposed Action

Although the results of the risk assessment indicate that ADEC risk management standards are not exceeded in the Upper Camp exposure area, the WACS site does contain soil that exceeds the ADEC Method Two soil cleanup levels for PCBs (Table 6). As a result, this site is proposed for remedial action under CERCLA and Alaska State laws and regulations to address the PCB-contaminated soil.

Table 6—WACS (OT004) Summary

Chemical of Concern (COC)	Media	Maximum Sample Result	Cleanup Standard	Citation
PCBs	Soil	18.7 mg/Kg	1.0 mg/Kg	18 AAC 75.341 (Table B1)

The Preferred Alternative was selected based on a comparative analysis of remedial alternatives following CERCLA guidance, as illustrated in Table 7. The three alternatives considered for this site included no action, institutional controls, and excavation and offsite disposal.

The area of PCB-impacted soil with concentrations exceeding the ADEC Method Two soil cleanup level of 1 mg/Kg is limited to discrete locations at the WACS site. Most PCB detections occurred in subsurface soil, and the risk of exposure is low. Additionally, the WACS site is located on a ridge-top and within the boundaries of Sparrevohn LRRS, making access to the site relatively difficult. Currently, no activities occur at the WACS site. As a result of the low risk of exposure and the difficulties in accessing the area and implementing active remediation, institutional controls were selected as the Preferred Alternative. Institutional controls will consist of signage identifying the compounds present at the site and updates to the Base Master Plan documenting site conditions. The USAF will provide copies of the updated Base Master Plan to ADEC.

Excavating and disposing of the soil offsite is significantly more expensive than institutional controls, and would not provide better protection of human health and the environment. The no action alternative fails to satisfy the threshold criteria (Table 7), and therefore was not evaluated.

Section 121 of CERCLA requires that remedial actions which result in any hazardous substances remaining at the site above concentrations that allow for unlimited use and unrestricted exposure are subject to a Five-Year Review. The purpose of the Five-Year Review is to assess the remedy's performance and protectiveness. Because PCBs exceeding the ADEC soil cleanup level will remain on site, a CERCLA Five-Year Review will be part of the remedy. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

Figure 2—OT004 PCB Sample Locations and Results, 1998 RI

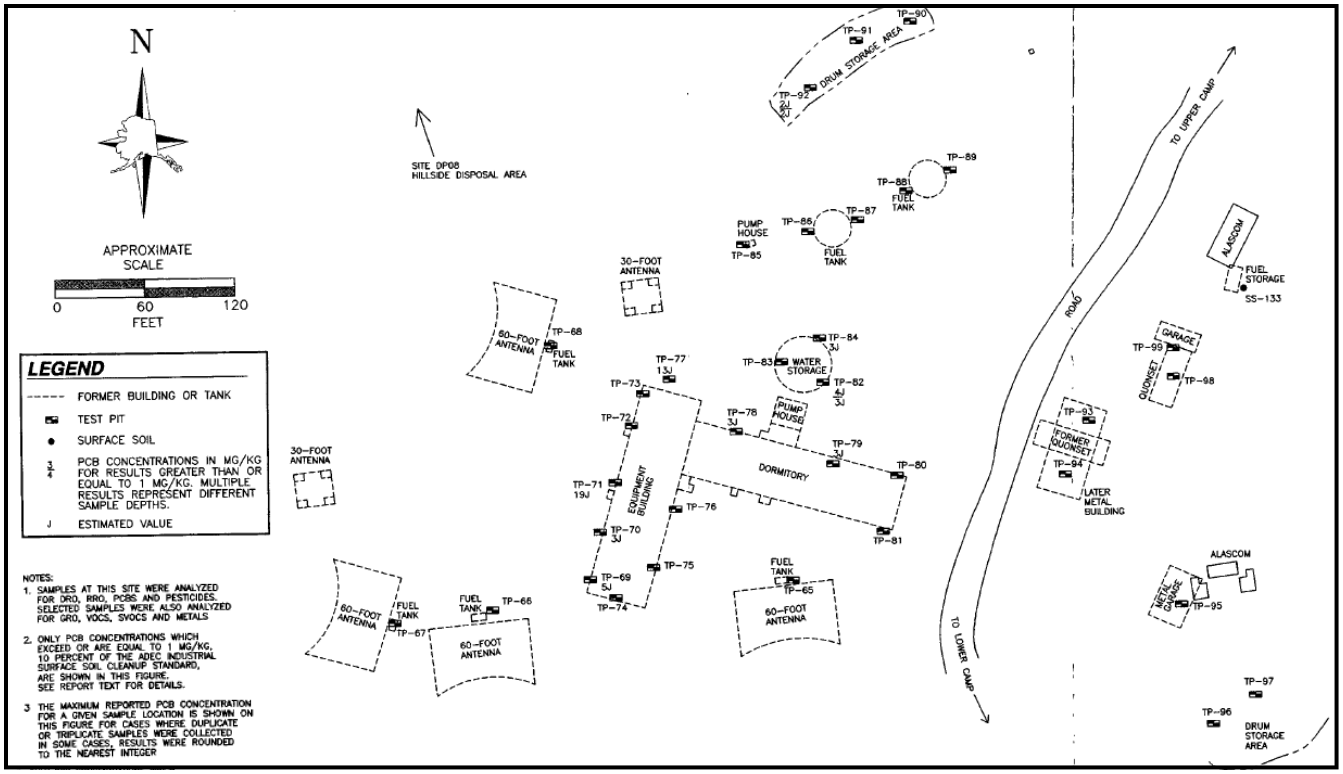


Table 7 — Comparison of Remedial Alternatives Addressing WACS (OT004)

Remedial Alternative	Threshold Criteria		Balancing Criteria					Modifying Criteria	Cumulative Evaluation Result
	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness (Impacts, Time to Achieve Remedial Action Objectives)	Implementability	Cost	State and Public* Acceptance	
No Action	○	○	○	○	○	●	○	To Be Determined	○
Institutional Controls	●	●	◐	○	●	◐	◐	To Be Determined	●
Excavation and Offsite Disposal	●	●	●	○	○	○	●	To Be Determined	◐

* ADEC has participated in the development of this plan. Final State acceptance will be evaluated following public comment.

Symbol Key

● High ◐ Medium ○ Low

Description of Alternatives

No Action — No response action.

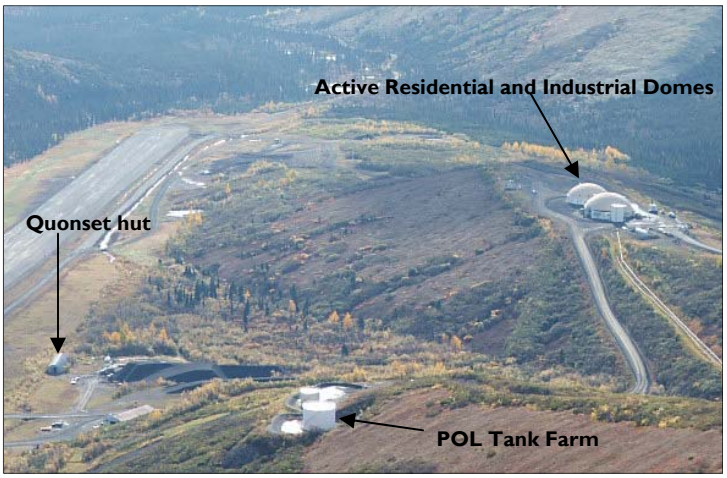
Institutional Controls — Signs indicating chemicals present above screening levels and updates to the Base Master Plan.

Excavation and Offsite Disposal — The soil with PCBs > 1 mg/Kg would be excavated and shipped offsite for disposal in the Lower 48. Confirmation sampling would be required following excavation.

SPILL/LEAK NO. 1 (ST005)

Site Background and Description

The Spill/Leak No. 1 ERP site encompasses the POL tank farm and former powerhouse on the lower hillside of Sparrevohn Mountain, the former Lower Camp facility, and the valley south of Lower Camp (Figure 3). This site was originally defined as an area contaminated by a January 1980 release of an estimated 12,000 to 42,000 gallons of diesel fuel from the pipeline between the POL tank farm and the powerhouse fuel tank. However, there is evidence that previous fuel spills occurred in the area, as the original water supply gallery for Sparrevohn LRRS had to be replaced in the 1960s when the water became contaminated by hydrocarbons. The water supply was reportedly contaminated by an undocumented release of fuel from the pipeline connecting the powerhouse and Upper Camp. Other leaks and spills associated with site operations are also suspected. Another potential source of contamination is the former vehicle maintenance shop (Figure 3), which is known to have had two drains which discharged directly to the ground surface.



View of Lower Camp and majority of ST005 from Upper Camp. POL tank farm in foreground located up the hillside from the former powerhouse location. Note creek flowing adjacent to runway. Looking south (2006).

The majority of Lower Camp buildings were removed during the 1980s. A warehouse (Building 130) near the base of the mountain and a Quonset hut (Building 150) west of the runway remain (photograph this page). The area occupied by the Lower Camp buildings is now a graded gravel pad with vegetation in some areas (photograph this page). Two crushed gravel stockpiles for use as road and runway base are located south of the former Lower Camp facility. The valley south of Lower Camp is highly vegetated and contains two stream tributaries, which come together approximately halfway down the runway and eventually drain into Hook Creek.

The site is located on the valley floor; as a result, groundwater is likely to occur beneath this location and chemical migration to groundwater was considered for this site.

Previous Investigations

Cleanup actions were taken to recover fuel seeping into a tributary of Sparrevohn Creek in the early 1980s. The fuel source was attributed to the January 1980 fuel release mentioned above. Recovery was accomplished with product skimming devices in two ponds downstream of the seep. The recovery system was supposedly in operation during the summers between 1979 and 1981. Although no conclusive records of performance are available and recovery volumes are unknown, it was reported that the volume of fuel recovered and reused was enough to decrease fuel consumption at the Lower Camp heating plant.

A gravel borrow source investigation and site inspection were conducted in 1995. Soil samples were collected from locations based on visual observations and previous knowledge of site operations. Six soil samples were collected and analyzed for GRO, DRO, SVOCs, and PCBs. Two of the six samples exceeded the 1 mg/Kg ADEC Method Two cleanup level for PCBs. A maximum DRO concentration of 49,000 mg/Kg (collected in an oily ditch at the base of the hill below the powerhouse) and a maximum GRO concentration of 1,700 mg/Kg (collected near a PCB-contaminated soil stockpile west of the Quonset hut) were reported. The GRO and DRO concentrations exceed the ADEC soil cleanup levels for the migration of chemicals to groundwater pathway (Table 3). No recommendations resulted from the site inspection.

Site characterization activities were conducted again in September and December 1996, April 1997, and August 1998. RI activities coincided with the characterization sampling in 1997 and 1998. Groundwater, surface water, and sediment were sampled and analyzed for GRO, DRO, RRO, VOCs, SVOCs, PCBs, and metals. Soil samples were analyzed for GRO, DRO, RRO, VOCs, PCBs, pesticides, and metals. Samples were collected in the vicinity of the former powerhouse, near the sewage lagoon, throughout the Lower Camp area, and downstream of Lower Camp (Figure 3). Widespread subsurface petroleum contamination, primarily associated with diesel fuel, was evident across the site. Only minor diesel fuel as light non-aqueous phase liquid (LNAPL) was observed during the investigation; however, subsurface evidence of hydrocarbon impacts near the water table was seen as far south as the midpoint of the runway, indicating that hydrocarbons had traveled downgradient with the groundwater. It was estimated that approximately 35 acres were underlain by this smear zone. Additionally, PCBs were detected above the 1 mg/Kg Method Two soil cleanup level in 8 of 15 surface and subsurface samples on the south side of the former powerhouse and west of the Quonset hut. Maximum concentrations detected are shown in Table 8.

Figure 3—Map of Lower Camp Area (ST005) and 2006 Sample Results

LEGEND

- MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- SURFACE WATER SEEP SAMPLE LOCATION
- POTENTIAL EXTENT OF PETROLEUM HYDROCARBON IMPACTED AREA (USAF 1999)
- POTENTIAL SOURCE AREA (USAF 1999)
- ** NOT SAMPLED IN 2006
- STREAM
- PIPELINE
- FORMER BUILDING OR TANK
- mg/L MILLIGRAMS PER LITER
- DRO DIESEL RANGE ORGANICS
- TCE TRICHLOROETHENE

The total aqueous hydrocarbon (TAH, the sum of detected BTEX compounds) concentration exceeded the 18 AAC 70 criteria in one surface water sample. DRO concentrations exceeded the ADEC groundwater cleanup level of 1.5 mg/L listed in Table C of 18 AAC 75 at four sample locations (MW5, MW9, MW20, and MW22). The sample from MW20 in 1996 had a concentration of 604 mg/L and was believed to contain trace amounts of product.

Seven groundwater, six surface water, and two water gallery samples were collected in 2000 to monitor natural attenuation of subsurface chemicals. Samples were analyzed for GRO, DRO, VOCs, methane, ethane, and ethene. DRO was detected above the ADEC groundwater cleanup level of 1.5 mg/L in two wells, MW5 and MW22. Groundwater from both wells had previously exceeded for DRO. TCE was also detected above the groundwater cleanup level of 0.005 mg/L in well MW5. No surface water or water gallery samples exceeded cleanup criteria. Results from the natural attenuation parameter analyses indicate that biodegradation of chemicals is likely occurring.

The most recent sampling effort was conducted in 2006. Groundwater, surface water, and sediment samples were collected, some of them at the same locations as in 2000. Groundwater samples were analyzed for DRO and VOCs, and surface water and sediment samples were analyzed for VOCs and SVOCs. The only exceedance of cleanup criteria was at MW5, which had concentrations of DRO and TCE above their respective ADEC groundwater cleanup levels. An evaluation of historical concentrations in MW5 indicated the DRO concentrations have been slowly decreasing since sampling began in 1996; however, the TCE concentration in MW5 has increased over the same time period. Monitoring well MW5 is located directly downgradient of the former vehicle maintenance shop where drains once discharged directly to the ground surface.

Risk Summary

The 2000 baseline risk assessment included the Spill/Leak No. 1 site as part of the Lower Camp exposure area. The baseline risk assessment concluded that for a worker resident, the only current receptor at the site, the cumulative cancer risk was 4.8×10^{-6} and the noncancer HI was 0.25. Both of these risk values are below ADEC risk management standards as described on page 4.

For a potential future worker resident exposed to contaminated groundwater, the baseline risk assessment calculated the risk on a well-by-well basis. Based on the chemical concentrations in each well, cumulative carcinogenic and noncarcinogenic risk values were calculated. Risk values exceeded the ADEC risk management standards in the vicinity of monitoring wells MW5, MW9, MW11, MW22, MW33, MW34, MW35, or MW36, with the highest cumulative cancer risk of 1.6×10^{-3} and noncancer HI of 23.9 occurring in the vicinity of MW36. Cumulative risk calculations for a future resident worker exposed to site soil did not exceed the ADEC risk management standards.

For a current and future subsistence hunter the maximum cumulative carcinogenic risk calculated in baseline risk assessment was 7.1×10^{-7} and the HI was 0.0016. These calculations used area-specific home range exposure factors for wild game. Both risk values are below ADEC risk management standards.

The only cumulative risk calculation that exceeded ADEC risk management standards in the baseline risk assessment was for a future resident scenario in which the resident was exposed to contaminated groundwater. Without exposure to groundwater, all human health risk scenarios resulted in risk values below ADEC risk management standards. Additional human health exposure scenarios were evaluated to estimate risk in the 2002 baseline risk assessment addendum. The exposure scenarios evaluated included vapor migration to indoor air, subsistence and recreational ingestion of berries, direct contact with surface and subsurface soil, resident child, ingestions and vapors from household use of groundwater, and recreation and subsistence contact with surface water and sediment. The baseline risk assessment addendum estimated that the risk associated with the Lower Camp area, including the Spill/Leak No. 1 site and assuming the following exposure scenarios, exceeded the ADEC risk management standards: resident exposure to Lower Camp soil via direct contact and ingestion; resident exposure to Lower Camp soil vapor migration to indoor air; and resident exposure to Lower Camp groundwater and vapors released as a result of routine water use.

The baseline risk assessment also evaluated risk to ecological receptors in the Lower Camp area. Based on the concentration of PCBs in the Lower Camp, there is potential ecological risk to freshwater benthic invertebrates. The baseline risk assessment also reported a potential risk to masked shrews associated with DRO, RRO, and PCBs in Lower Camp soil. However, the risk associated with petroleum hydrocarbons was based on a surrogate approach which assumes specific chemicals are present. Because the lighter end hydrocarbons which are the first to volatilize and degrade are also the most toxic of the hydrocarbon chemicals, risks based on DRO and RRO analyses alone very likely overestimate risk (i.e., the more toxic hydrocarbon compounds are not likely to still be present in older petroleum releases). Also, the highest concentration of PCBs occurred in the northern area of Lower Camp in the vicinity of the former powerhouse, and at two test pits in the central part of Lower Camp. This limited area of potential exposures suggests that the ecological risk associated with PCBs may be overestimated when extrapolated to the full area.

Table 8 —Spill/Leak No. 1 (ST005) Summary

Chemical of Concern (COC)	Media	Maximum Sample Result	Cleanup Standard	Citation
PCBs	Soil	28.6 mg/Kg	1.0 mg/Kg	18 AAC 75.341 (Table B1)
DRO	Soil	49,000 mg/Kg	250 mg/Kg	18 AAC 75.341 (Table B2)
GRO	Soil	1,700 mg/Kg	300 mg/Kg	18 AAC 75.341 (Table B2)
TAH (i.e., BTEX)	Surface Water/Seeps	17.9 µg/L	10 µg/L	18 AAC 70
DRO	Groundwater	604,000 µg/L	1,500 µg/L	18 AAC 75.345 (Table C)
TCE	Groundwater	9 µg/L	5 µg/L	18 AAC 75.345 (Table C)

Proposed Action

The Preferred Alternative was selected based on a comparative analysis of five remedial alternatives following CERCLA guidance, as illustrated in Table 9. The five alternatives considered for this site included no action, institutional controls, capping of PCB contamination, excavation and offsite disposal, and natural attenuation with long term monitoring.

Three additional alternatives for groundwater remediation - seepage water control and treatment, capping of seeps, and enhanced bioremediation - were considered as part of an initial screening completed for the Feasibility Study. The initial screening evaluated effectiveness, implementability, and cost. All three failed the initial screening because they did not provide greater protection of human health or the environment then the other more cost effective alternatives evaluated.

Petroleum hydrocarbons exceeding ADEC Method Two screening levels are found in soil across a large area of the site. Additionally, PCB-impacted soil with concentrations exceeding the ADEC Method Two soil cleanup levels of 1 mg/Kg are found to be localized near the former powerhouse area and in the central region of the Lower Camp. Institutional controls were selected as the Preferred Alternative to address soil contamination at the site. Institutional controls will consist of signage identifying the compounds present at the site, updates to the Base Master Plan documenting site conditions, and land use restrictions on construction of residential structures. The USAF will provide copies of the updated Base Master Plan to ADEC.

Capping of PCB-contaminated soils in the Lower Camp was reviewed. The capping alternative would not reduce toxicity or volume of contaminated soil better than institutional controls. Because PCBs are relatively stable compounds and not soluble in water, capping would not provide significant added value with regard to migration. Like institutional controls, capping would also require land use restrictions (i.e., restriction on excavation and construction) near the cap. Also, because PCB-contaminated soil will remain above concentrations that allow for unlimited use and unrestricted exposure, CERCLA Five-Year Reviews will be required with both the capping and institutional control alternatives. Although capping would create a physical barrier to exposure, the site is only used for low occupancy industrial purposes and no change is anticipated in the foreseeable future. Therefore, institutional controls including signage warning of site contaminants and land use restrictions will adequately limit exposure at approximately half the cost of capping. Excavating and disposing of the soil offsite was eliminated because it is significantly more expensive than institutional controls. Finally, because the site is seldom used and the areas of contamination are relatively small, fencing was not considered as a necessary element of the alternative evaluated. The no action alternative for soil fails to satisfy the threshold criteria (Table 9), and therefore was not evaluated.

For groundwater and surface water, the Preferred Alternative is monitored natural attenuation and institutional controls. Petroleum hydrocarbon concentrations in groundwater at the site have shown a decreasing trend over time and natural attenuation parameters measured at select wells suggest that natural attenuation processes are active. A long term monitoring program is proposed to track natural attenuation and determine when groundwater concentrations fall below ADEC groundwater cleanup levels. Additionally, institutional controls are proposed to restrict groundwater use in areas of contamination.

Section 121 of CERCLA requires that remedial actions which result in any hazardous substances remaining at the site above concentrations that allow for unlimited use and unrestricted exposure are subject to a Five-Year Review. The purpose of the Five-Year Review is to assess the remedy's performance and protectiveness. Because PCBs exceeding ADEC soil cleanup levels will remain on site, a CERCLA Five-Year Review will be part of the remedy. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

Table 9 — Comparison of Remedial Alternatives Addressing Spill/Leak No. 1 (ST005)

Remedial Alternative	Threshold Criteria		Balancing Criteria					Modifying Criteria	Cumulative Evaluation Result
	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness (Impacts, Time to Achieve Remedial Action Objectives)	Implementability	Cost	State and Public* Acceptance	
No Action (soil, groundwater)	○	○	○	○	○	●	○	To Be Determined	○
Institutional Controls (soil, groundwater)	●	●	◐	○	●	●	◐	To Be Determined	●
Capping (soil)	●	●	◐	○	◐	◐	●	To Be Determined	◐
Excavation and Offsite Disposal (soil)	●	●	●	●	◐	○	●	To Be Determined	◐
Monitored Natural Attenuation (groundwater)	●	●	◐	◐	○	◐	◐	To Be Determined	◐

* ADEC has participated in the development of this plan. Final State acceptance will be evaluated following public comment.

Symbol Key ● High ◐ Medium ○ Low

Description of Alternatives

No Action — No response action.

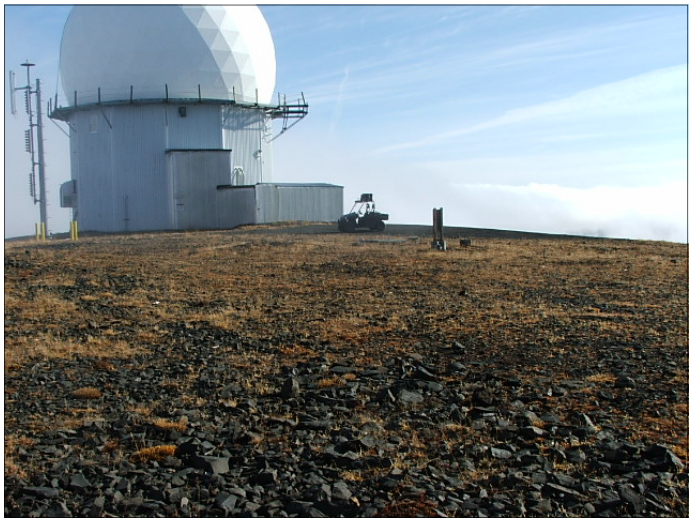
Institutional Controls — Signs indicating chemicals present above screening levels and updates to the Base Master Plan, restriction on construction of residential structures, and restriction of groundwater use in areas of contamination.

Capping— Construction of 1– foot cap of crushed rock over PCB areas at former Power Plant and other areas of PCB contamination at Lower Camp

Excavation and Offsite Disposal — The soil with PCBs > 1 mg/Kg would be excavated and shipped offsite for disposal in the Lower 48. Confirmation sampling would be required following excavation.

Natural Attenuation/Long Term Monitoring — Natural attenuation of groundwater with long term monitoring to evaluate degradation over time.

SPILL/LEAK NO. 2 (ST006)



Looking east across area affected by diesel spill at ST006 (2006).

Site Background and Description

The Spill/Leak No. 2 site is the location of a diesel fuel release in 1983 estimated at 375 to 2,175 gallons. The site is located at Upper Camp in the vicinity of former Building 204 (Figure 4 on the following page). The fuel release occurred as the result of a leak in a feeder line between two fuel tanks and Building 219. It was reported that the fuel soaked into the ground and snow. The buildings and tanks in the vicinity of the spill are no longer present at Upper Camp. The area consists of fractured bedrock overlain by tundra lichens and grasses and is surrounded by steep slopes to the north and south. The radome is the only building left at Upper Camp (photograph this page and Figure 4). Because this site is located on the ridge-top, there is no potential for site activities to impact groundwater.

Remedial Investigations

As part of the 1998 RI, soil samples were collected from test pits and surface soil samples were collected from the hillsides north and south of Upper Camp pad. Test pits ranged in depth from 0.5 to 8 feet below ground surface. Groundwater was not encountered in any of the test pits. Soil samples were analyzed for GRO, DRO, RRO, PCBs, BTEX, and SVOCs.

The maximum DRO concentration was 3,720 mg/Kg, collected at 2 feet below ground surface. This DRO concentration was below the applicable ADEC Method Two cleanup level of 10,250 mg/Kg for exposure via ingestion and inhalation. PCBs were detected in 7 of 10 surface soil samples with concentrations ranging from 0.031 to 1.6 mg/Kg. Two samples had PCB concentrations of 1.3 and 1.6 mg/Kg which exceeded the Method Two cleanup level of 1 mg/Kg. Concentration exceedances were minor (less than a factor of two) and both samples were collected on the steep hillside north of the area. No other compounds exceeded ADEC Method Two soil cleanup levels.

Risk Evaluation Summary

The site was evaluated in the risk assessment as part of the Upper Camp exposure area. Except for PCBs, no samples exceeded the Method Two cleanup levels, which are protective of human health and the environment. The PCB exceedances were minor (less than a factor of two greater than the cleanup level) and occurred on the steep hillside north of Upper Camp. This area is difficult to access due to the steepness of the slope; thus, the likelihood of direct contact with the contaminated soil is very low.

The Spill/Leak No. 2 site was included in the baseline human health and ecological risk assessment for the Upper Camp. The risk assessment found minimal risk to human and ecological receptors at the Upper Camp. The cumulative cancer risk for a resident worker at Upper Camp was calculated to be 4.16×10^{-6} and the non-cancer HI as 0.07. Both of these risk values were below the ADEC risk management standards; neither required active remediation.

Proposed Action

Although the results of the risk assessment indicated that contamination at Spill/Leak No. 2 is not above ADEC risk management standards, the site does contain concentrations of PCBs which slightly exceed the ADEC Method Two soil cleanup levels (Table 10). As a result, this site is proposed for remedial action under CERCLA and Alaska State laws and regulations to address PCBs. The Preferred Alternative is institutional controls.

The Preferred Alternative was selected based on a comparative analysis of remedial alternatives following CERCLA guidance, as illustrated in Table 11. The three alternatives considered for this site included no action, institutional controls, and excavation and offsite disposal.

SPILL/LEAK NO. 2 (ST006), CONTINUED

Concentrations of PCBs exceeding screening levels were detected in only two samples, indicating that the zone of impacted soil is localized. Because access to the site is difficult due to the steep hillside, there is little risk of exposure. Institutional controls including signage identifying the compounds present at the site, and updates to the Base Master Plan documenting site conditions is the Preferred Alternative for the Spill/Leak No. 2 site. The USAF will provide copies of the updated Base Master Plan to ADEC.

Excavating and disposing of the soil offsite would be very difficult due to the steep terrain, and significantly more expensive than institutional controls. The no action alternative fails to satisfy the threshold criteria (Table 11), and therefore was not evaluated further.

Section 121 of CERCLA requires that remedial actions which result in any hazardous substances remaining at the site above concentrations that allow for unlimited use and unrestricted exposure are subject to a Five-Year Review. The purpose of the Five-Year Review is to assess the remedy's performance and protectiveness. Because PCBs slightly exceeding the ADEC soil cleanup level will remain on site, a CERCLA Five-Year Review will be part of the remedy. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

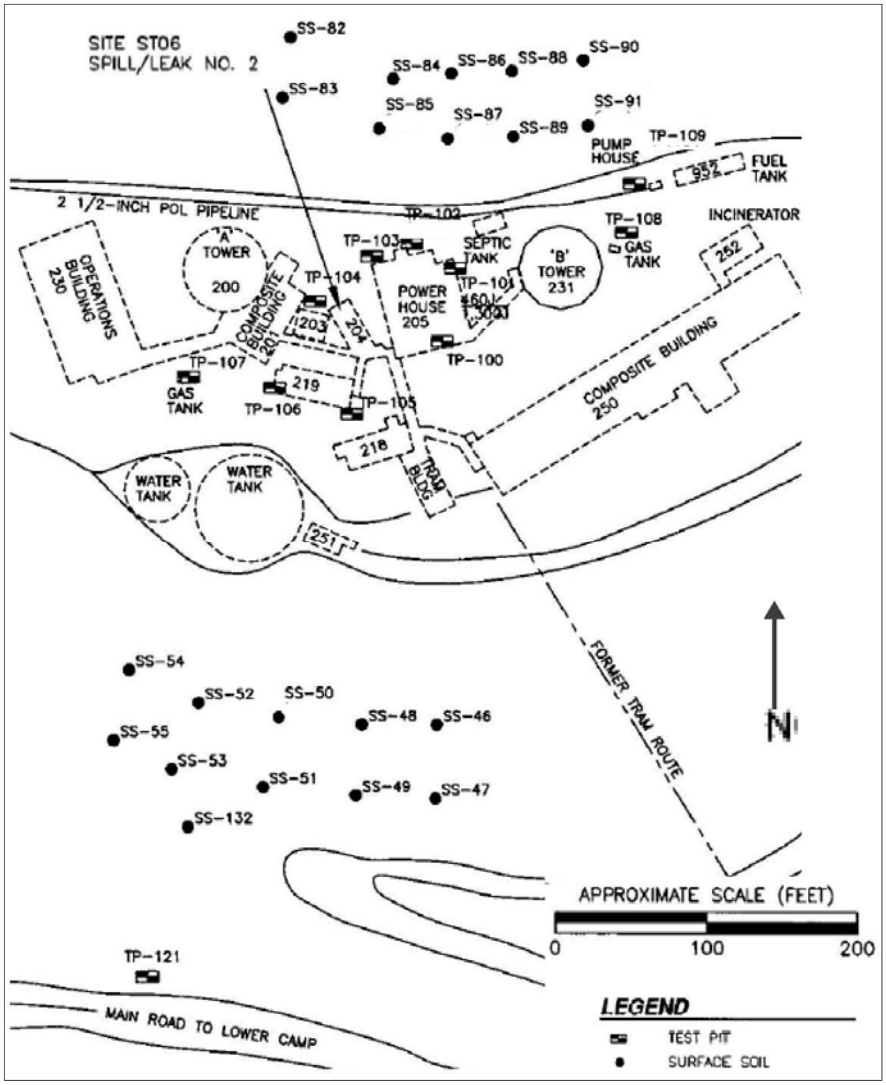


Figure 4—1998 RI Site Map of ST006 with Sample Locations

Table 10—Spill Leak No. 2 (ST006) Summary

Chemical of Concern (COC)	Media	Maximum Sample Result	Cleanup Standard	Citation
PCBs	Soil	1.6 mg/Kg	1.0 mg/Kg	18 AAC 75.341 (Table B1)

Table 11 — Comparison of Remedial Alternatives Addressing Spill/Leak No. 2 (ST006)

Remedial Alternative	Threshold Criteria		Balancing Criteria					Modifying Criteria	Cumulative Evaluation Result
	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness (Impacts, Time to Achieve Remedial Action Objectives)	Implementability	Cost	State and Public* Acceptance	
No Action	○	○	○	○	○	●	○	To Be Determined	○
Institutional Controls	●	●	◐	○	●	◐	◐	To Be Determined	●
Excavation and Offsite Disposal	●	●	●	○	○	○	●	To Be Determined	◐

* ADEC has participated in the development of this plan. Final State acceptance will be evaluated following public comment.

Symbol Key

● High ◐ Medium ○ Low

Description of Alternatives

No Action — No response action.

Institutional Controls - Signs indicating chemicals are present above screening level and updates to the base master plan

Excavation and Offsite Disposal — The soil with PCBs > 1 mg/Kg would be excavated and shipped offsite for disposal in the Lower 48. Confirmation sampling would be required following excavation.

WASTE ACCUMULATION AREA (SS007)

Site Background and Description

The Waste Accumulation Area includes the parking apron at the northeast corner of the runway and the undeveloped area east of the runway (Figure 1). The site has been used since the 1950s as a storage area for drums and waste to be transported off site for disposal. A 1,500-gallon fuel spill occurred on the apron in 1984 when a fuel bladder burst. No fuel was reported recovered. A site visit in 1985 indicated staining on the gravel pad.

The gravel pad consists of packed crushed bedrock from the surrounding area. The area of the site south of the apron is vegetated with tall grasses, and brush clearing occurs there as necessary. The parking apron is relatively flat and the vegetated area slopes to the south. Due to the proximity of the runway, construction is prohibited at the Waste Accumulation Area.

Looking northeast at SS007 with the runway in the foreground (2006).

The site is located on the valley floor; as a result, groundwater is likely to occur beneath this location. Therefore, chemical migration to groundwater was considered for the Waste Accumulation Area.

Previous Investigations

Six soil samples were collected from the northwest portion of the parking apron at the Waste Accumulation Area during the 1992 site investigation. Pesticides were detected in all six samples and PCBs in three samples. All concentrations of pesticides in soil were below the ADEC Method Two soil cleanup level for chemical migration to groundwater. The maximum PCB concentration was 2 mg/Kg, which was a factor of two greater than the ADEC Method Two soil cleanup level of 1 mg/Kg.

As part of the 1998 RI, 36 soil samples were collected from the gravel pad and the vegetated area to the south. Samples were analyzed for DRO, RRO, VOCs, SVOCs, PCBs, pesticides, and metals. Although other VOCs and SVOCs were detected the only compound that exceeded their respective ADEC Method Two soil cleanup levels in at least one sample were DRO, PCBs, and metals . The maximum DRO concentration was 442 mg/Kg, which was less than a factor of two above the Method Two migration to groundwater soil cleanup level of 250 mg/Kg. PCBs concentrations of 1.2 and 1.7 mg/Kg in two of 36 samples slightly (less than a factor of two) exceeded the ADEC Method Two soil cleanup level of 1 mg/Kg. Concentrations of two metals, arsenic and chromium, also exceeded ADEC Method Two cleanup levels in some samples. However, based on background soil sampling at Sparrevohn LRRS, the metals concentrations reported are consistent with natural conditions. Although groundwater does occur beneath the valley floor and Lower Camp area, borings drilled to depths greater than 20 feet on the parking apron did not encounter groundwater.

A site visit in 2006 revealed no staining or hydrocarbon odor at the gravel pad. Additionally, petroleum sheens were not visible on the surface water at the gravel pad.

Risk Evaluation Summary

DRO and PCBs exceeded the ADEC Method Two cleanup levels in only three of 36 samples. In each case, the DRO exceedance was less than a factor of two greater than the cleanup level. To further evaluate site conditions, the 95% UCL of the mean concentration for DRO was calculated. The 95% UCL for DRO was 104 mg/Kg. This indicates a 95% confidence that the actual average concentration for DRO is below the ADEC Method Two soil cleanup level of 250 mg/Kg. The Waste Accumulation Area was included in the Lower Camp exposure area baseline risk assessment. The Lower Camp risk assessment also included the Spill/Leak No. 1 and Lower Camp Area sites, as well as portions of the Runway and Road Oiling site. Although the cumulative cancer and non-cancer risk values for the Lower Camp exposure area were greater than ADEC risk management standards, the fact that the maximum concentrations for DRO and PCBs only slightly exceed cleanup levels and that the mean concentrations for DRO and PCBs are below cleanup levels indicates that the Waste Accumulation Area does not significantly contribute to the Lower Camp risk.

WASTE ACCUMULATION AREA (SS007), CONTINUED

Proposed Action

Although the results of the risk assessment indicated that the Waste Accumulation Area does not contribute significantly to the overall risk of the Lower Camp, the site does contain concentrations of DRO and PCBs which slightly exceed the most stringent ADEC Method Two soil cleanup levels (Table 12). As a result, this site is proposed for remedial action under CERCLA and Alaska State laws and regulations to address PCBs and DRO. The Preferred Alternative is institutional controls.

The Preferred Alternative was selected based on a comparative analysis of remedial alternatives following CERCLA guidance, as illustrated in Table 13. The three alternatives considered for this site included no action, institutional controls, and excavation and offsite disposal.

Because concentrations of DRO and PCBs exceeding screening levels were detected in only three of 36 samples, the zone of impacted soil is localized. Access to the site is already controlled by the USAF, and there are no permanent residents in the area. Therefore, there is little risk of exposure. As such, institutional controls consisting of signage identifying the compounds present at the site, and updates to the Base Master Plan documenting site conditions is the Preferred Alternative. The USAF will provide copies of the updated Base Master Plan to ADEC.

Excavating and disposing of the soil offsite is significantly more expensive than institutional controls, and would not provide significantly better protection of human health and the environment. The no action alternative fails to satisfy the threshold criteria (Table 13) and was not evaluated.

Section 121 of CERCLA requires that remedial actions which result in any hazardous substances remaining at the site above concentrations that allow for unlimited use and unrestricted exposure are subject to a Five-Year Review. The purpose of the Five-Year Review is to assess the remedy's performance and protectiveness. Because PCBs slightly exceeding the ADEC soil cleanup level will remain on site, a CERCLA Five-Year Review will be part of the remedy. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

Table 12 —Waste Accumulation Area (SS007) Summary

Chemical of Concern (COC)	Media	Maximum Sample Result	Cleanup Standard	Citation
PCBs	Soil	1.3 mg/Kg	1.0 mg/Kg	18 AAC 75.341 (Table B1)
DRO	Soil	442 mg/Kg	250 mg/Kg	18 AAC 75.341 (Table B1)

Table 13 — Comparison of Remedial Alternatives Addressing Waste Accumulation Area (SS007)

Remedial Alternative	Threshold Criteria		Balancing Criteria					Modifying Criteria	Cumulative Evaluation Result
	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness (Impacts, Time to Achieve Remedial Action Objectives)	Implementability	Cost	State and Public* Acceptance	
No Action	○	○	○	○	○	●	○	To Be Determined	○
Institutional Controls	●	●	◐	○	●	◐	◐	To Be Determined	●
Excavation and Offsite Disposal	●	●	●	○	○	○	●	To Be Determined	◐

* ADEC has participated in the development of this plan. Final State acceptance will be evaluated following public comment.

Symbol Key

● High ◐ Medium ○ Low

Description of Alternatives

No Action — No response action.

Institutional Controls — Signs indicating contaminants present above screening levels and updates to the Base Master Plan.

Excavation and Offsite Disposal — The soil with PCBs > 1 mg/Kg would be excavated and shipped offsite for disposal in the Lower 48. Confirmation sampling would be required following excavation.

HILLSIDE DISPOSAL AREAS (DP008)

Looking east at the disposal area behind the Upper Camp with the radome out of the picture to the right (2006).

Site Background and Description

The Hillside Disposal Areas are located on the hillsides north of the WACS and Upper Camp (Figure 1). Wood debris, drums, used equipment, and metal waste were disposed of down these slopes during the lifetime of the facilities. Cleanup efforts in 1984 and 1988 removed much of the debris and waste. Because this site is located on the steep hillside where groundwater does not occur, there is no potential for groundwater impacts from site activities.

Previous Investigations

During a 1992 site investigation, three soil samples were collected from the Hillside Disposal Areas (two behind Upper Camp, one behind WACS). Concentrations of PCBs, pesticides, and VOCs were all below the ADEC Method Two soil cleanup screening criteria.

During the 1998 RI, soil, sediment, and surface water samples were collected from the site and downgradient areas to the north. Soil samples were collected on the steep slopes north of both Upper Camp and the WACS and analyzed for DRO, RRO, VOCs, PCBs, pesticides, SVOCs, and metals. Surface water samples were collected in the drainages north of the two sites. Surface water and sediment samples were also collected from Tundra Lake, which is about 8 miles downstream from Sparrevohn LRRS, at the request of locals from Lime Village. The drainages from both Upper Camp and WACS empty into Tundra Lake. Surface water samples were analyzed for DRO, RRO, VOCs, SVOCs, PCBs, pesticides, and metals. Sediment samples were analyzed for DRO, RRO, VOCs, SVOCs, PCBs, pesticides, and metals.

The maximum DRO concentration in the soil was 980 mg/Kg. Because groundwater water is not present at this location, the ADEC Method Two soil cleanup level of 10,250 mg/Kg for ingestion and inhalation exposure was used for screening. No PCBs, pesticides, VOCs, or SVOCs exceeded screening criteria for the sediment or stream surface water samples.

Risk Evaluation Summary

No compounds exceeded screening criteria at the Hillside Disposal Areas; therefore, no COCs were identified. The Hillside Disposal Areas is one part of the Upper Camp Exposure Area, where the baseline risk assessment indicated that no cumulative risks exceeded ADEC risk management standards. No additional investigation or remediation is proposed for this site.

Proposed Action

Because no CERCLA hazardous substances exceeded the screening criteria, the Hillside Disposal Area ERP site is proposed for NFA under CERCLA. Additionally, no petroleum hydrocarbons (e.g., DRO), regulated under 18 AAC 75, were detected above screening criteria. Therefore, sampling and remediation of the Hillside Disposal Area ERP site at Sparrevohn LRRS is complete and no future activities are planned. ADEC approval shall be obtained before moving or disposing of soil which was subject to the site cleanup rules.

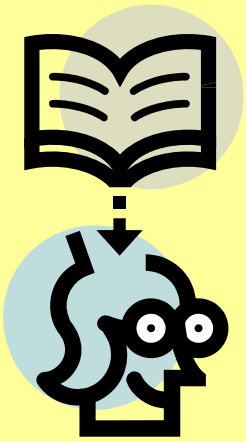
Questions?

If you have any questions about the information provided in this Proposed Plan, or if you would like to be added to or deleted from the mailing list, please contact the Air Force Community Relations Coordinator:

611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf Air Force Base, AK 99506-2200
(907) 552-4506 or (800) 222-4137

Additional Information

You are encouraged to provide comments on any of the alternatives presented in this Proposed Plan for Sparrevohn LRRS. Use the comment form provided on the next page. A final decision on the alternatives for each of these sites will not be made until public comments are considered. Your comments can be provided to the USAF by:



- Mailing in the Comment Form provided on the next page; or
- Presenting your comments or by calling 1-800-222-4137.

The public comment period will begin on October 6, 2008 and end on November 6, 2008. A public meeting may be conducted if sufficient interest is expressed.

Involving the public in the ERP decision-making process is required by 40 Code of Federal Regulations (CFR) 300 for sites on the NPL. Although Sparrevohn is not on the NPL, the USAF is committed to keeping the community informed of activities, investigations, and cleanup schedules at the site. Some of the community relations activities that the 611 Civil Engineering Squadron (CES) spearheads include the following:

Information Repositories and Online Web Site

Additional information can be found in the information repository located at Elmendorf Air Force Base (AFB). The information repository contains newspaper clippings and community relations documents relating to Proposed Plans and response actions for all of the ERP sites maintained by the 611 CES Community Relations Coordinator at Elmendorf AFB.

A Web Site is also available to the public for additional information on Sparrevohn LRRS:

http://www.adminrec.com/PACAF.asp?Location=Alaska

Some of the more recent reports are available online at the following website:

http://www.hoeflernet.com/index.php?/document/area/sparrevohn/

Sparrevohn LRRS Proposed Plan Comment Form

You are encouraged to comment on this Sparrevohn LRRS Proposed Plan. The USAF and ADEC will consider all comments received. Use the space provided to submit your comments. Fold, tape, and mail this form when you are finished. A return address has been provided on the back of this page for your convenience. Comments must be postmarked by November 6, 2008. If you have any questions or concerns, feel free to contact the Community Relations Coordinator at (907) 552-4506 or (800) 222-4137.

Name:

Address:

City & State:

Zip Code:

Telephone Number:

Proposed Plan for Seven ERP Sites
Sparrevohn Long Range Radar Station
Sparrevohn, Alaska

Please Affix
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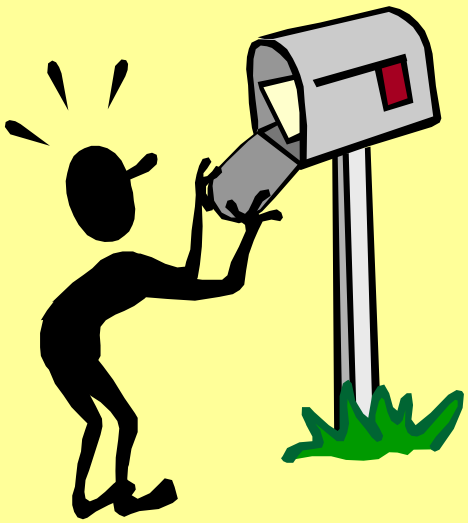
Community Relations Coordinator
10471 20th Street, Suite 302
Elmendorf AFB, AK 99506-2200

Additional Information (Continued)



Updated Mailing List

A mailing list of interested parties is maintained and updated regularly by the USAF Community Relations Coordinator. These mailing lists are used to provide interested parties with copies of the newsletters, fact sheets, and public notices and to announce public meetings that pertain to environmental issues at the various installations.

1-800 Hotline

A toll-free number to the 611 CES Community Relations Coordinator was established in May 1995. The line provides immediate access to the 611 CES for questions and information relating to environmental activities at 611 CES sites. The number is **1-800-222-4137**.

Administrative Record

An Administrative Record has been established in the 611 CES offices on Elmendorf AFB. The Administrative Record contains information that has been used to support USAF decision making and is accessible to the public.

Management Action Plan

The Management Action Plan is updated periodically and made available to the public to provide a summary of all restoration activities in one document. The most recent Management Action Plan was published in 2000.

Restoration Advisory Board

Restoration Advisory Boards (RABs) provide a forum for discussion and exchange of information among federal and state agencies and the community regarding cleanup of a military site. There was not sufficient interest in the formation of a RAB at Lime Village. Therefore, a RAB for Sparrevohn LRRS does not currently exist.

Proposed Plan Online

An electronic copy of this Proposed Plan can be found on the following website:

http://www.hoeflernet.com/index.php?/document/area/sparrevohn/

Community Relations Coordinator
611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, AK 99506-2200

AFFIX ADDRESS LABEL HERE

Please remember to complete the included Comment Form.