

Environmental Assessment
Point Barrow Long Range Radar Site
Remedial Action-Cleanup and
Building Demolition/Debris Removal Activities



Prepared for:
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AFCEE Contract No: FA8903-08-D-8770

February 2011

ENVIRONMENTAL ASSESSMENT

Point Barrow Long Range Radar Site

Remedial Action-Cleanup and Building Demolition/Debris Removal

Title: Point Barrow Long Range Radar Site Debris Removal and Cleanup

NEPA Document #: DOI-BLM-LLAKF010-2011-0002-CX

Type of Action: NPR-A ROW Renewal

Serial Number: FF081465

Land Use Plans/Acts: Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) dated November 2003

Applicant: United States Air Force 611th Civil Engineer Squadron

Date Prepared: February 2011

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The proposed actions are located on lands and waters that are in the National Petroleum Reserve-Alaska (NPR-A). Lands and waters in the NPR-A were originally set aside as the Naval Petroleum Reserve #4 by Executive Order 3797 – A, dated February 27, 1923. Jurisdiction of the land was transferred to the Department of the Interior from the Department of Navy by the Naval Petroleum Reserve Production Act of April 5, 1976 (PL. 94-258, Stat. 303) (NPRPA). United States jurisdiction over coastal tidally influenced waters and associated submerged lands was affirmed in *United States v. Alaska*, 117 U.S. 1888, No. 84, Orig (1997).

The proposed action evaluated in this environmental assessment (EA) encompasses a total acreage of approximately 267 acres.

Specific legal land descriptions are all located within the Umiat Meridian.

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ACRONYM LIST

| | |
|--------|---|
| AAC | Alaska Administrative Code |
| ACM | asbestos containing material |
| ADEC | Alaska Department of Environmental Conservation |
| ANILCA | Alaska National Interest Lands Conservation Act |
| AST | above-ground storage tank |
| BLM | Bureau of Land Management |
| BMP | Best Management Practices |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CES | Civil Engineer Squadron |
| CFR | Code of Federal Regulations |
| COC | Contaminant of concern |
| CWA | Clean Water Act |
| cy | cubic yard |
| DEW | Distant Early Warning |
| DR | Decision Record |
| ea | each |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| ERP | Environmental Restoration Program |
| ESA | Endangered Species Act |
| FONSI | Finding of No Significant Impact |
| FS | Feasibility Study |
| gal | gallon |
| HABS | Historic American Buildings Survey |
| IAP | Integrated Activity Plan |
| lf | linear feet |
| INRMP | Integrated Natural Resource Management Plan |
| LRRS | Long Range Radar Site |
| MAR | Minimally Attended Radar |
| MOA | Memorandum of Agreement |
| NARL | Naval Arctic Research Laboratory |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NOAA | National Oceanic and Atmospheric Administration |
| NORAD | North American Aerospace Defense |
| NPR-4 | Naval Petroleum Reserve 4 |
| NPR-A | National Petroleum Reserve-Alaska |

| | |
|--------|--|
| NRHP | National Register of Historic Places |
| NSB | North Slope Borough |
| PCB | polychlorinated biphenyls |
| ppm | part per million |
| RAB | Resource Advisory Board |
| RA-C | Remedial Action-Cleanup |
| RCRA | Resource Conservation and Recovery Act |
| RI | Remedial Investigation |
| ROP | Required Operating Procedure |
| ROW | Right-of-Way |
| sf | square feet |
| SHPO | State Historic Preservation Officer |
| T&E | Threatened and Endangered |
| U.S. | United States |
| U.S.C. | U.S. Code |
| UIC | Upkeagvik Inupiat Corporation |
| USAF | U.S. Air Force |
| USDOI | U.S. Department of the Interior |
| USFWS | U.S. Fish and Wildlife Service |

ENVIRONMENTAL ASSESSMENT

Point Barrow LRRS

1 PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of proposed demolition and disposal of excess buildings, structures, and surface debris, and disposal of environmental contamination on the Point Barrow Long Range Radar Site (LRRS). The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The proposed action evaluated in this EA encompasses a total acreage of approximately 267 acres. The EA assists the Department of the Interior Bureau of Land Management (BLM or Bureau) and the United States Air Force (USAF or Air Force) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that the proposed action has significant impacts following the analysis in the EA, then an EIS would be prepared for the proposed action. If it is determined that the proposed action would not cause significant impacts, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in Northwest National Petroleum Reserve-Alaska (NPR-A), Integrated Activity Plan/Environmental Impact Statement (IAP/EIS).

Point Barrow LRRS is the northern most Minimally Attended Radar (MAR) installation in Alaska. Prior to it becoming a LRRS in the late 1980’s, Point Barrow was a Distant Early Warning (DEW) station. Point Barrow LRRS occupies about 267 acres of land situated at approximately 8 to 25 feet above mean sea level on the north coast of Alaska on the Barrow Peninsula. The installation is located in an area predominately influenced by coastal erosion and thaw lake processes. It is bordered on the west by a large freshwater thaw lake (Imikpuk Lake) and on the east by a saltwater lagoon (North Salt Lagoon). The North Salt Lagoon has an outlet on the northeast side to the larger Elson Lagoon, which is connected to the Beaufort Sea. The entire area is part of the NPR-A, which was formerly Naval Petroleum Reserve 4 (NPR-4).

The Point Barrow DEW station was constructed in 1953 and became operational in 1957. The installation was one of two “main stations” for the DEW System in Alaska. Current facilities include two module building trains connected with an overhead bridge and equipped with rotating radar. The trains contain living quarters and radar operations. In addition, there is a garage, warehouse, gas meter

facility, fuel pump station, and air terminal. The facility includes a lighted, perforated-steel plate runway and apron. The airstrip, owned by the Ukpeagvik Inupiat Corporation (UIC), is inactive. The station is accessed by sea via barge or through the village of Barrow.

The Point Barrow LRRS is component of a USAF radar/communications network, part of the overall North American Aerospace Defense (NORAD) Command mission. The station is permitted by a right-of-way (ROW) from the BLM and is adjacent to the former Naval Arctic Research Laboratory (NARL). The Air Force's land interest at Point Barrow is through a ROW from the BLM, who plays an active role in land management.

The USAF is the agency responsible for managing these facilities and has identified the need for environmental cleanup and abandonment of obsolete infrastructure. The current ROW grant for the site was established in 1986 to manage for continued radar and defense monitoring which expired in April 2006. "Upon termination of the grant, structures and buildings shall be removed and the land rehabilitated to the satisfaction of the Arctic Area Manager", and "[a]ll trash and debris associated with operations under this grant must be removed to an approved solid waste disposal site." The proposed action is part of the USAF's process in meeting this stipulation.

Environmental studies and assessments have been conducted at Point Barrow LRRS since the early 1980s. However, very little sampling and analysis of soil or water samples was performed until a Remedial Investigation (RI)/Feasibility Study (FS) was conducted in 1993 (ICF Technology Inc., 1996). In 2000, a Clean Sweep environmental survey was conducted to verify and refine a list of facilities identified for demolition (USAF, 2001). The Clean Sweep Program combines Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-governed remediation along with non-CERCLA building demolition and environmental restoration of facilities and structures at installations no longer required by the Air Force. To prepare for the USAF's Clean Sweep Program, a second RI was conducted in 2007 to fill data gaps necessary for planning and decision making and to identify, quantify, and remedy problems associated with past management, disposal, and spills of hazardous substances at USAF facilities (USAF, 2008). In 2010, the USAF completed a FS identifying appropriate remedial alternatives for contaminants and detailed analysis of the alternatives for selection of appropriate remedial remedies for implementation (USAF, 2010). A Final Proposed Plan was completed in July 2010 that identified the USAF preferred cleanup option for the four areas with contaminated soil and for the single site with contaminated surface water (USAF, 2010). Community feedback on remedy alternatives was solicited and a public meeting held in Barrow on August 12, 2010 (USAF, 2010).

Under the proposed action the USAF would conduct environmental restoration activities in accordance with its Environmental Restoration Program (ERP), which is consistent with CERCLA guidelines for investigation, remediation, and site closure. The ERP is designed to identify, quantify, and remedy problems associated with past management, disposal, and spills of hazardous substances at USAF facilities.

1.2 Need for Action

The USAF desires to conduct removal actions on properties used by the USAF at the Point Barrow LRRS. The need for the USAF action is to remove wastes and materials from the lands and waters in accordance with State regulations and BLM ROW grant stipulations. BLM's need for the proposed action is to concur that the USAF request for removal actions on public lands administered by the BLM near Point Barrow, Alaska is in compliance with ROW grant stipulations.

The specific objectives of this project are to demolish, remove, and dispose of excess buildings and structures and surface debris at the Point Barrow LRRS Camp and Air Terminal Areas (see Figure 1-1 in Appendix A), and excavate, treat, or dispose of xylene and polychlorinated biphenyls (PCB) contaminated soils to meet Alaska Department of Environmental Conservation (ADEC) regulations. The proposed action includes the following activities.

Remedial Action-Cleanup (RA-C) activities include:

- Excavation and off-site disposal for the four areas in the Camp area (also referred to as ERP Site SS002 or Garage Area as identified in the 2007 RI and 2010 FS reports) with contaminated soil to meet ADEC regulations. The estimated types and volumes of soil to be excavated and disposed are:

| Site | Volume (cy ¹) | Contaminant (ppm ²) |
|------------------------------|---------------------------|---------------------------------|
| Vehicle Fueling Station | 70 | Xylenes > 63 |
| Radome Area | 25 | PCB > 1 |
| Transformer Stand Area | 16 | PCB > 1 |
| Vehicle Maintenance Facility | 178 | PCB > 1 |

¹cy – cubic yard,

²ppm – part per million

- Institutional controls, natural attenuation, and long-term monitoring of contaminated surface water (total aromatic hydrocarbons or total BTEX) at the Air Terminal Area (also referred to as ERP Site SS003 as identified in the 2007 RI and 2010 FS reports).

The USAF proposes to demolish, remove and dispose of the following structures located at the Camp and Air Terminal Areas:

- Air Terminal Area (see Figure 1-2 in Appendix A):
 - Remaining Jet Fuel Tanks and Stand
 - Tanks 4, 5, 6, 7, 8, and 9 – 18,300 gal ea.
 - Tank 10 – 23,000 gal
 - Float Plane Fuel Dock
 - Air Terminal
 - Storage Yard Debris
 - Transmission Lines/Utility Poles
 - Marston Matting

- Camp Area (see Figure 1-3 in Appendix A):
 - Remaining Diesel Storage Tanks (berm area)
 - Tanks 1, 28, and 29 – 550 gallon (gal) each
 - Tank 2 – 6,000 gal
 - Tank 11 – 65,000 gal
 - Tank 12 – 50,000 gal
 - Tanks 22, 23, 24, 25, 26, and 27 – 275 gal each
 - Tank 30 – 1,000 gal
 - Antenna and Support Structures
 - Liquid Fueling Pump Station Tanks/Circulation Pump
 - Gas Meter Facility
 - Vehicle Fueling Station

If no action is taken then the wastes and materials would remain in the land and waters at the site near Point Barrow. These would continue to pose a risk to human health and the environment, and the risk would increase over time.

The proposed action would allow the USAF to remove the contamination and debris which would result in a beneficial effect to the environment.

1.3 Purpose(s) of Action

The purpose of the proposed action is to remove debris and clean up contaminants at Point Barrow LRRS to reduce the risk to human health and the environment through implementation of efficient, legally compliant, and cost-effective response actions.

The objective of the proposed action is to demolish and dispose of inactive buildings and structures, remove surface debris, and treat or dispose of environmental contamination in compliance with BLM ROW stipulations and required operating procedures.

1.4 Laws, Regulations other EAs that Influence this EA

Although the proposed action and alternative are not specifically mentioned in the Northwest NPR-A, IAP/EIS, approved in January 2004, within the Record of Decision, the proposed action is consistent with the plan's objectives, goals and decisions as the proposed action relates to the protection of resources and human uses and the protection of subsistence resources and access (USDOI BLM, 2004).

The proposed action is based upon and tiered to, when appropriate, the following laws, regulations, policies, decisions and opinion:

- 18 AAC 75, Oil and Other Hazardous Pollution Control Regulations - Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances;
- National Historic Preservation Act (NHPA) of 1966, as amended;
- Endangered Species Act (ESA) of 1973, as amended;
- Alaska National Interest Lands Conservation Act (ANILCA) of 1980, as amended;
- Executive Order (EO) 11988: Floodplain Management;
- EO 11990: Protection of Wetlands;

- EO 12898: Environmental Justice
- Record of Decision, Northwest NPR-A, IAP/EIS, January 22, 2004;
- Biological Opinion for BLM for the Northern Planning Areas of the NPR-A, July 2008;

1.5 Decision to be Made

The USAF will consider whether to continue with the cleanup and if so, decide what terms and conditions are necessary to mitigate adverse impacts, if any.

1.6 Scoping and Issues

The USAF has gone through a lengthy planning and public participation process in addressing remediation needs at the Point Barrow LRRS through regular Barrow Resource Advisory Board (RAB) meetings and project specific meetings. In July 2008, the USAF released the Final RI Report for the Point Barrow LRRS. On August 12, 2010, the USAF held a public meeting in Barrow to seek public comments on the Final Proposed Plan and on November 9, 2010 held an agency scoping meeting on the proposed action in Fairbanks that included representatives from the North Slope Borough (NSB). The U.S. Fish and Wildlife Service (USFWS), BLM and ADEC commented on the FS, Proposed Plan, and rough drafts of the work plans for the proposed action. Comments received were incorporated into contractor scope of work per USAF contracting obligations. The proposed action was announced on the BLM Arctic Field Office NEPA Register on (http://www.blm.gov/ak/st/en/info/nepa/fdo_nepa_register/arctic_nepa_reg.html).

BLM guidelines include a list of issues that are addressed, where applicable, in NEPA EAs (USDOI BLM, 2008). Some elements are not present in the project area and are therefore not discussed any further. A summary of related issues considered by the USAF and BLM Arctic Field Office is provided in Table 1-1.

Table 1-1 Issues Considered in Evaluating Impacts

| Issue Considered | Determination¹ | Basis of Determination (See Note) |
|-------------------------|---|---|
| Air Quality | No Impact | Protections provided by: State of Alaska Air Non-Point and Mobile Program and regulations [18 Alaska Administrative Code (AAC) 50] |
| Cultural Resources | Adverse Effect | Protections provided by: Section 106 of the National Historic Preservation Act, Effects mitigated through 2005 Memorandum of Agreement (MOA) between USAF and Alaska State Historic Preservation Office (SHPO), Required Operating Procedure (ROP) E-13 |
| Subsistence | Potentially Affected | Protections provided by: Alaska National Interest Lands Conservation Act (ANILCA), ROP H-1, I-1 |
| Environmental Justice | Potentially Affected | Protections provided by: EO 12898 |
| Waste (Hazardous/Solid) | Potentially Affected – basis for proposed | Protections provided by: CERCLA, Resource Conservation and Recovery Act (RCRA), 18 |

| Issue Considered | Determination ¹ | Basis of Determination (See Note) |
|--|----------------------------|---|
| | action | AAC 30, 60, 62, 63, 72, and 75; ROPs A-1, A-2a, A-3, A-4, and A-5 |
| Water Resources | Minimally Affected | Protections provided by: Clean Water Act (CWA), Safe Drinking Water Act, ROPs A-4, A-5, B-1, B-2, C-3 |
| Flood Plains/Wetlands and Riparian Zones | Minimally Affected | Protections provided by: EO 11988, EO 11990, ROPs A-4, A-5, C-2, C-3 |
| Native American Religious Concerns | Not Present | Protections provided by: American Indian Religious Freedom Act |
| Recreation | No Impact | Protections provided by: ROPs A-1, A-4, A-5, C-2, C-3, H-1, I-1 |
| Public Health | Minimally Impacted | Protections provided by: ROP A-1, A-4 |
| Sociocultural Systems | Minimally Impacted | Protections provided by: ROP H-1, I-1 |
| Vegetation | No Impact | Protections provided by: ROP C-2 |
| Visual Resource Management | No Impact | Protections provided by: ROPs A-1, A-4, A-5, C-2, C-3 |
| Wild & Scenic Rivers | Not Present | Protections provided by: Wild and Scenic Rivers Act |
| Wilderness | Not Present | Protections provided by: Federal Land Policy and Management Act, Wilderness Act |
| Threatened & Endangered Species (T&E) | | |
| Eiders | Potentially Affected | Protections provided by: Section 7 of the Endangered Species Act (ESA) (J), ROP A-4, A-5, C-1, E-9 |
| Polar Bears | Potentially Affected | Protections provided by: Section 7 of the ESA (J), ROP A-4, A-5, C-1, E-9 |
| Fish | Not Present | Protections provided by: Magnuson-Stevens Act, ROPs A-3, A-4, A-5, B-1, B-2, C-2, C-3, C-4 |
| non-T&E birds | Minimally Impacted | Protections provided by: EO 131186, ROPs A-2a, A-4, A-5, C-2, E-9, E-10 |
| non-T&E mammals | Minimally Impacted | Protections provided by ROPs: A-2a, A-4, A-5, C-1 |

¹**Explanation of Determinations** (USDOI BLM, 2008)

Potentially Affected: The proposed action or alternative could result in potential impacts to resource or issues to the level that additional mitigation may be required, or there is a need to evaluate potentially significant issues.

Minimally Impacted: Resources or issues would not be affected to a degree requiring further analysis because either the expected impacts from the proposed action and alternative would be minimal, or standard protections (e.g., ROPs and Stipulations from overriding BLM plans or other legal protections) would reduce impacts. Minimally impacted resources or issues will not be analyzed further in this EA.

Not Present: Resources or issues are not expected to be affected by the proposed action or alternatives because activities would occur at a different time or place. Resource or issues not present will not be analyzed further in the EA.

1.7 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed action:

- Cultural and paleontological resources
- Subsistence
- Environmental justice
- Wastes (hazardous and solid)
- Threatened & Endangered species
 - Eiders
 - Polar bears

In order to meet the purpose and need of the proposed action in a way that resolves the issues, the USAF has considered alternatives. The action and no action alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 4 for each of the identified issues.

2 ALTERNATIVES INCLUDING THE NO ACTION

2.1 Introduction

This chapter both describes the alternatives (potential actions) and compares the alternatives in terms of their environmental impacts and their achievement of objectives.

2.2 Description of the Alternatives

2.2.1 Alternative A: No Action

Under the No Action Alternative, contaminated soil would remain on site—negatively impacting human health and the environment, further creating navigational hazards and environmental liabilities. Ongoing responses/repairs would likely be needed in order to maintain compliance with state and federal regulations, resulting in increased costs to the USAF. Risks to human health and the environment would remain because exposure routes to contaminants would still exist, resulting in damaging effects to subsistence resources. Unnecessary buildings and related structures would not be demolished and disposed and surface debris would remain and terms of BLM ROW grant stipulations would not be met. This alternative does not meet the project need of disposing or treating contaminated soil and surface water in order to prevent contamination from entering the environment, however inclusion of the No Action Alternative is required by the NEPA. The No Action Alternative is not protective of human health and the environment, does not meet cleanup objectives, and would not remove potential risks to the community.

2.2.2 Alternative B: Proposed Action

The purpose of the proposed action is for building demolition, debris removal, and remedial action-cleanup. The need for the action is to remove wastes and materials in accordance with BLM ROW grant stipulations and to protect human health and the environment from exposure to contaminants; particularly Stipulation 5 – All trash and debris associated with operations under this grant must be removed to an approved solid waste disposal site. This project has several aspects including removal and off-site disposal of PCBs and xylene contaminated soils, and demolition and disposal of tanks, antenna structures, buildings, miscellaneous debris, and utility lines and poles.

A 2007 RI conducted by the USAF found petroleum hydrocarbon contamination present in the soil and subsurface water (pore water) throughout most of the Air Terminal Area, located north of the main installation on the western shore of North Salt Lagoon. A FS for the Air Terminal Area and the Vehicle Maintenance Facility, including the Vehicle Fueling Station Area, the Radome Area, and the Transformer Stand Area, was completed in April 2010 based on results obtained during the 2007 RI and the Vehicle Maintenance Facility Remedial Action and Site Characterization.

The USAF has conducted studies at the Point Barrow LRRS under the ERP to identify, quantify, and remedy problems associated with past and current management of hazardous substances and hazardous waste at USAF facilities. According to the 2011 Winter Work Plan for Environmental Restoration and Demolition Activities at Point Barrow LRRS prepared by SIKU Construction, LLC dated December 10, 2010; the Statement of Work for Environmental Restoration and Demolition Activities at Point Barrow LRRS, FA8903-10-C-8121 dated September 14, 2010; and the 2010 Final Proposed Plan for Two ERP Sites at Point Barrow LRRS, the USAF proposes to conduct the following activities described below.

2.2.3 Remedial Action-Cleanup

The USAF proposes excavation and off-site disposal of xylene and PCB contaminated soils to meet ADEC Method Two clean up levels at ERP Site SS002 which include the Radome Area, Transformer Stand Area, Vehicle Maintenance Facility, and Vehicle Fueling Station Area. Institutional controls, natural attenuation and long-term monitoring are proposed at the Air Terminal Area, ERP Site SS003.

2.2.3.1 Radome Area

The Radome Area, located below the radome at the west end of Module Train A, encompasses the gravel pad in the vicinity of the stairs. The area has an estimated 25 cy of soil exceeding ADEC cleanup level for PCBs. PCBs are a CERCLA Hazardous Substance and are also regulated by the ADEC. The horizontal extent of soil with PCBs above Method Two cleanup levels is 440 square feet (sf) although the lateral extent of contamination is likely larger based on recurring flooding and human activity in the area which serves to disperse the fine grained soil. Soil with contaminants above health-based cleanup levels would be excavated and placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. The excavated area would be backfilled with clean soil.

2.2.3.2 Transformer Stand Area

The Transformer Stand Area is located adjacent to the south side of Module Train B, west of the catwalk connecting the two module trains. Two transformers are situated on a raised wooded platform. The area has an estimated 16 cy of soil exceeding ADEC cleanup level for PCBs. The estimated horizontal extent of soil with PCBs above Method Two cleanup levels is approximately 274 sf. However, the total volume may be greater due to the fine-grained soils below the transformer stand which are susceptible to dispersion from foot traffic and seasonal runoff. Soil with contaminants above health-based cleanup levels would be excavated and placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. The excavated area would be backfilled with clean soil.

2.2.3.3 Vehicle Maintenance Facility

The Vehicle Maintenance Facility (also referred to as the Garage), located west of Module Train A, is an approximately 90-foot by 40-foot building elevated about three feet above the tundra and surrounded by a gravel pad on the north, south, and east sides. The building is used for vehicle maintenance and storage. Floor drains in the building discharged directly onto the tundra beneath the structure. The discharge may have included vehicle maintenance waste. The flood drains were sealed by the USAF in July 1993 to prevent possible future releases of contaminants. During the summer of 2006 a total of 63.1 tons of PCB contaminated soil was excavated to permafrost from the area adjacent to the west end of the garage, placed in Super Sacks, stockpiled in the hangar, and barged offsite during 2007 to the lower 48 for disposal. The excavation was covered with geofabric and covered with clean fill. A berm was constructed to prevent further migration of contamination from under the garage building. Confirmation sampling showed that PCBs remain on the southern portion of the excavation with concentrations exceeding the ADEC cleanup level. PCB contaminated soil estimated volume is approximately 178 cy which includes both the gravel pad and tundra surrounding the garage building. Soil with contaminants above health-based cleanup levels would be excavated and placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. Areas of the tundra that have known contamination would be removed as part of this cleanup action. The excavated area would be backfilled with clean soil. Additional characterization would be required to ensure complete removal of the PCB contaminated soil. PCB contamination located directly beneath the garage building will not be removed at this time. This contamination would be documented in the USAF and BLM property records to ensure that intrusive activities would not be permitted in this area. Signage would be installed and maintained to alert people to the contamination beneath the building. Skirting such as chain link fencing would be installed along the foundation of the building and maintained to prevent human and animal contact with contaminated soil beneath the building.

2.2.3.4 Vehicle Fueling Station Area

The Vehicle Fueling Station is a former gasoline fueling station that consists of a gravel bermed containment area surrounded by tundra and a gravel pad/access road to the west. The area has an

estimated 70 cy of soil exceeding the ADEC cleanup levels for xylenes resulting from minor, historic gasoline spills associated with vehicle fueling activities. Soil with contaminants above health-based cleanup levels would be excavated, placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. The excavated area would be backfilled with clean soil. Remaining wooden and metal supports within the lined gravel containment area would be removed.

2.2.3.5 Air Terminal Area

The Air Terminal Area (ERP Site SS003) is located north of the main installation on the western shore of the North Salt Lagoon. A road along to the west edge of the area connects the Air Terminal Area to the main installation located to the south. The area extends from just north of the hangar building, south to the curve in the main installation road, east to the North Salt Lagoon, and west to the boundary between USAF and NARL properties that generally follows the main area access road. The Air Terminal Area is made up of gravel pads and access roads, tundra, and ponded water. Activities at the NARL area adjacent to the Air Terminal Area are believed to have contributed to contaminants found in the area. The Air Terminal Area has surface water adjacent to the Navy property border with total BTEX above cleanup levels. All or most of the contamination on the USAF property is believed to be due to migration from upgradient sources located on Navy property. Because the USAF cannot address the source of the contamination at this site, most treatment options are not likely to be effective until the contaminant source is treated as well. Therefore, the USAF proposes natural attenuation with long-term monitoring. The components would include the following:

- Placement of signs at the site to notify people where surface water contamination is at concentrations above cleanup levels protective of human health.
- Placement of notice on property records to inform current and future property owners of the presence of surface water contamination. Restrictive covenants would also be put in place to prevent the use of contaminated water.
- Allow natural processes to break down contaminants in surface water.
- Perform surface water monitoring by collecting samples each year for five years, and then every five years thereafter to assess changes in surface water contaminant concentrations over time. Site inspections would also occur at the same frequency as the sampling to inspect signs and maintain them as needed. Monitoring would be performed until the source contamination has been cleaned up and surface water sample results show that contaminants are below cleanup levels.

2.2.4 Building Demolition/Debris Removal Air Terminal Area Activities

2.2.4.1 Remaining Jet Fuel Tanks and Stand

Remaining tanks 4, 5, 6, 7, 8, 9, and 10 would be transported to the UIC gravel pit (located approximately 1,500 feet south of the NSB landfill and approximately 9 miles from the Point Barrow LRRS accessed via NSB maintained roads) and staged for demolition activities. Tanks 4 through 9 are each 18,300-gal tanks while tank 10 has a 23,000-gal capacity. Tanks would be inspected for any loose

paint that could fall off during transport. If present, the area would be covered with visqueen and the perimeter duct taped. Plastic and tape would be removed once tanks are set on geotextile fabric at demolition area. Tanks would be lifted out of the berm area with crane or loader and the tank bottom visually inspected for presence of lead-based paint. If none present, tanks would be towed to UIC gravel pit using loaders rigged to the front and back of the tank. If lead paint is present on bottom of tank, the tank would be loaded onto a trailer and hauled to the UIC gravel pit and stored until spring. Tanks staged at the UIC gravel pit would be cut into pieces approved for burial by the NSB. Tanks would be disposed of in the NSB landfill located adjacent to the UIC gravel pit. Soil confirmation sampling would be performed following tank removals. Soil will be excavated, placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. The geotextile liner will be removed and disposed at the landfill and the berm will be collapsed and graded.

2.2.4.2 Float Plane Fuel Dock

The fuel tank would be removed from the stand using a telehandler forklift. The stand framework would be cut in pieces acceptable to NSB landfill using hand tools. Remaining piling would be removed using a steam generator unit mounted to a skid trailer which is towed by dozer. The loader would be attached to the above ground portion of piling and pulled from thawed ground. Holes would be backfilled using clean native soils hauled to location from the UIC gravel pit. Demolition debris would be loaded into approximately two dump trucks and hauled to the NSB landfill for disposal.

2.2.4.3 Storage Yard Debris

Miscellaneous debris present on the gravel pad during the 2007 investigation included abandoned tanks, tubing, metal piping, and wooden dunnage. Debris not requiring excess snow removal efforts and easily accessible would be removed using loader and forklifts, loaded into dump trucks, and hauled to the NSB landfill for disposal. Remaining items would be removed in the summer 2011.

2.2.4.4 Transmission Line/Utility Poles

Transmission line/utility poles would be accessed by constructing a temporary heavy equipment snow and ice trail along the utility poles from the Air Terminal to the Camp area. The ice trail would be graded using a grader and dozer. Depressions would be filled with snow and water slurry using a loader and insulated water truck. The grading and filling process would be repeated until trail is adequate for heavy equipment. The local electric utility would verify all utility cables are abandoned and de-energized. All cabling/wires would be disconnected and dismantled from poles using qualified personnel in a forklift with a man basket and dropped to the ground. Sections of utility line would be cut into pieces, consolidated and loaded into dump trucks using a loader and forklift, and hauled in approximately six dumptruck loads to the NSB landfill for disposal. Utility poles would be cut down at three to four feet above ground surface using a chainsaw and the remainder of the poles would be removed using steam to thaw ground, and pulled from ground using loader. Poles and related debris would be consolidated, loaded and hauled in approximately seven dump truck loads to the NSB landfill for disposal. Holes would be backfilled using clean native soils hauled from the UIC gravel pit.

2.2.4.5 Air Terminal Building

The Air Terminal Building would be demolished in the spring. All asbestos containing material (ACM), loose/flaking lead/PCB paint, and regulated/hazardous waste present in the building would be removed. The types and quantities of ACM that would need to be abated from the Air Terminal Building prior to demolition include:

- a) ACM flooring – 402 sf
- b) Covebase with brown mastic - 88 linear feet (lf)
- c) Cement wall board – 1, 1,116 sf
- d) Exhaust stack insulation – 15' diameter x 11' long
- e) Gray coating on exterior metal siding and roof – Building approximately 2,747 sf

ACM would be removed and loaded into containers for shipment to lower 48 disposal sites. Demolition of the remaining structure would include steaming existing pilings for removal with a similar process utilized for utility pole removal described above. All remaining debris generated from the building demolition process would be disposed of at the NSB landfill.

2.2.4.6 Marston Matting Hazards

Pieces of metal Marston matting (perforated steel matting material) located directly north of the hangar protrude above the ground surface and create a hazard. Protruding pieces would be removed and disposed of at the NSB landfill.

2.2.5 Building Demolition/Debris Removal Camp Area Activities

2.2.5.1 Remaining Diesel Storage Tanks

The Diesel Storage Tanks Area is an inactive tank farm that consists of multiple above-ground storage tanks (ASTs) located within a lined and bermed gravel containment area. Some of the tanks have been relocated from other installation locations. Low levels of hydrocarbon contamination were detected during the 2007 investigation. There are no contaminants of concern (COCs) at this site, as no compounds exceeded ADEC Method Two soil cleanup levels for the Arctic Zone.

The remaining storage tanks in the bermed area (1, 2, 28, 29, 12, 22, 23, 24, 25, 26, 27 and 30) would be transported to the UIC gravel pit and staged for demolition activities. Tanks less than 6,000 gal would be loaded into a dump truck and hauled directly to the NSB Landfill for disposal. Tanks staged at the UIC gravel pit would be cut into pieces acceptable for burial by the NSB and disposed of at the NSB landfill, located adjacent to the UIC gravel pit. The tank cutting area would be prepared by surrounding the tank with geotextile fabric preventing contamination due to cutting activities. Tank pieces cut to acceptable NSB landfill parameters would be lifted from the tank cutting area and transported directly into a dump truck and hauled to the NSB landfill for disposal. When all tanks have been disposed of the tank cutting area geotextile fabric liner and debris would be loaded into a dump truck and disposed of in the NSB landfill. Soil confirmation sampling would be conducted following tank removals. Soil will be excavated, placed in Super Sacks that would be temporarily staged on the south side of the Hangar until such time the contaminated soils would be loaded onto barges and shipped to the approved Waste Management Facility in Arlington, Oregon for disposal. The berm will be collapsed and graded.

2.2.5.2 Antenna and Support Structures

Antennas and support structures would be dismantled into pieces acceptable to NSB landfill using a 50-ton hydraulic crane and qualified workers. Dismantled sections of the tower would be loaded onto tractor trailers and into dump trucks using the crane, loaders and forklifts. Foundation pilings would be removed using steam to thaw frozen ground. Holes left from piling removal would be backfilled with clean native soils. Clean frozen native soils would be hauled from UIC gravel pit. Holes would be shovel filled with slight mounds to compensate for subsidence caused by ground thaw in the spring. Haul would be conducted using approximately 8 dump truck loads and 12 trailer loads.

2.2.5.3 Liquid Fueling Pump Station Tanks/Circulation Pumps

Liquid fuel pump station tanks and circulation pumps would be prepared for demolition by removing ACM which would be loaded into containers for shipment to approved lower 48 disposal sites. Remaining wooden supports in a gravel containment area would be removed using the same process described below for utility poles in section 2.2.5.4.

2.2.5.4 Gas Meter Facility

The Gas Meter Facility consists of a 64 sf metal building with a concrete floor located on skids. The contractor would ensure gas mains are not pressurized. The metal structure, concrete slab, and skids would be dismantled into pieces acceptable to the NSB landfill, loaded into dump trucks and hauled to the landfill for disposal.

If no action is taken then the wastes and materials would remain in the land and waters at the site near Point Barrow. These would continue to pose a risk to human health and the environment, and the risk would increase over time. The proposed action would allow the USAF to remove the debris and contamination which would result in a beneficial effect to the environment.

2.2.6 Schedule

The USAF proposes to accomplish the scope of activities by conducting all heavy equipment use in sensitive tundra area during winter season 2011 and completing the remaining work through the spring and summer of 2011.

- Late February – demolish fuel station and dock area and remove utility poles
- Early April – demolish antenna towers and remove tanks from camp and air terminal areas
- Mid April – abate air terminal ACM
- Early May – demolish air terminal
- Mid May – remove air terminal area debris
- Early July – excavate, treat, or dispose of contaminated soils
- Late August – mobilize barge service
- Early August – load barge
- Mid August – dispose of regulated waste
- Late September – secure disposal certificates

2.3 Description of Options Considered but Eliminated from Detailed Study

The USAF evaluated cleanup options for CERCLA contaminants to address contamination at five Point Barrow LRRS areas. The cleanup options were evaluated against nine criteria to compare the alternative and select the preferred cleanup option. The first two criteria, “overall protection of human health and the environment” and “compliance with regulations” were threshold criteria that must be met in order for a cleanup option or alternative to be considered. The remaining seven criteria are described in the 2010 FS study. The options considered are shown in Table 2-1 below:

Table 2-1 Options Considered by Location

| Description of Option | Options Evaluated at Point Barrow LRRS Areas | | | |
|---|---|---|---|--|
| | Vehicle Fueling Station Area (xylenes in soil) | Radome & Transformer Sand Areas (PCBs in soil) | Vehicle Maintenance Facility Area (PCBs in soil) | Air Terminal Area (BTEX in surface water) |
| Institutional Controls, Engineering Controls, & Natural Attenuation with Long-term Monitoring | √ ^a | | | |
| Institutional Controls, Capping, and Long-term Monitoring | | √ | √ | |
| Excavation, On-Site Treatment, and On-Site Disposal | | √ | √ | |
| Excavation, Off-Site Treatment, and Disposal | | √ | | |
| Excavation, Ex-Situ Treatment, and Disposal | √ ^a | | | |
| Ex-Situ Treatment | | | | √ ^a |
| In-Situ Treatment | √ ^a | | | √ ^a |

√- Option evaluated to address contamination at the area

^a - Option evaluated as non-CERCLA action regulated by ADEC

Following are the reasons for not selecting the above options at each area:

2.3.1 Vehicle Fueling Station Area

Because of the depth of the contamination (extends to permafrost) combined with the cold climate and frozen soil conditions for much of the year at Point Barrow, the Natural Attenuation and In-Situ Treatment options would take an extraordinarily long time to reach cleanup goals. The Ex-Situ Treatment (land farming) was not selected because of concern about the amount of space that would be needed to spread soil to a depth of 12-24 inches, and the increased risk of short-term exposure of the contaminated soil to residents, workers, and wildlife.

2.3.2 Radome Area and Transformer Stand Areas

The Capping option does not meet cleanup objectives for these areas. The On-Site Treatment option (soil washing) involves large quantities of chemicals that must be transported and stored on-site,

generates a large amount of contaminated waste after the chemicals have been used for treatment and is not cost effective. The Off-Site Treatment option (incineration) is not easy to implement due to the difficulty of finding a permitted disposal facility that can properly incinerate PCB contaminated soil.

2.3.3 Vehicle Maintenance Facility Area

The Capping option does not meet cleanup objectives for this area. The On-Site Treatment option (soil washing) involves large quantities of chemicals that must be transported and stored on-site, generates a large amount of contaminated waste after the chemicals have been used for treatment, and is not cost effective.

2.3.4 Air Terminal Area

Without addressing the contamination source, both the In-Situ and Ex-Situ Treatment options would take an extraordinarily long time to reduce contaminant concentrations at the Air Terminal Area. These options would also become extremely expensive as they continued over a long period of time.

3 AFFECTED ENVIRONMENT

Environmental characteristics of the general project area have been extensively described in the 2003 NW NPR-A IAP/EIS (Vol. 1, Chapter 3), to which this analysis is tiered, with some site-specific features described below.

Based on the proposed project and the issues analysis in Section 1.6, the following discussion of the affected environment covers 1) Cultural Paleontological Resources, 2) Subsistence, 3) Environmental Justice, 4) Wastes, Hazardous and Solid, and 5) Threatened and Endangered Species-Polar Bear and Eiders.

The affected environment for the area of the proposed action is discussed in greater detail in the following documents:

- Record of Decision, Northwest National Petroleum Reserve-Alaska, Integrated Activity Plan/Environmental Impact Statement, January 22, 2004;
- Biological Opinion for Bureau of Land Management for the Northern Planning Areas of the National Petroleum Reserve-Alaska, July 2008; and
- USAF Integrated Natural Resources Management Plan and Appendices, Alaska Radar System, Alaska, Short and Long Range Radar Sites, 2007.

3.1 Cultural Resources

3.1.1 Archaeological Resources:

About 400 cultural resource sites have been identified within the Northwest NPR-A. Multiple archeological and ethnographic/land use surveys have been conducted on, and around, Point Barrow. Several archeological sites have been documented for the village of Barrow and the Pt. Barrow LRRS area.

According to the *Integrated Cultural Resources Management Plan Distant Early Warning (DEW) System, Alaska* (USAF, 2006), four different archeological and ethnographic/land use surveys have been conducted at the installation and adjacent areas. Surveys began in 1959, with the most recent being in 2000. The surveys concluded that there are no known sites within installation boundaries, but there are several recorded sites within a 5-mile radius. The Birnik site is located northeast of North Salt Lagoon. The site was discovered by the Stefansson-Anderson expedition of 1912 and was subsequently excavated in 1959. It consists of 16 mounds with artifacts dating to approximately A.D. 500. There is a late prehistoric/historic site on Brant Point consisting of a sod House ruin, several graves, and other features. There are also several sites in Browerville and Barrow including a complex of prehistoric mounds, a historic period Eskimo settlement, a trading/whaling post, and two multiple burial sites.

3.1.2 Historic Cold War Resources

The Point Barrow DEW station (BAR-041) has been recommended as eligible for listing on the National Register of Historic Places (NRHP) as an element of the DEW System. The entire DEW System has been determined eligible for listing on the NRHP under Criterion A and Criteria Consideration G for its association with events important in the history of the Cold War and the history of the development of the state of Alaska according to the Final Historic Building Inventory and Evaluation for DEW System (USAF, 1999). There are eight recorded buildings and/or structures at Point Barrow, all of which were constructed during the DEW period of significance (1953-1969). DEW System facilities include two 25-module building trains connected with overhead bridges and equipped with rotating radar and support buildings (BAR-00048), a vehicle maintenance shop (BAR-00050), an air freight terminal (BAR-00051), a supply and equipment warehouse (BAR-00047), a gas meter facility (BAR-00051), and a fuel pump station (XBP-00052). In addition to the extant facilities, the Point Barrow LRRS road system (BAR-00053) and gravel pad system (BAR-00054) are still intact.

All extant DEW buildings/structures at Point Barrow are considered eligible for nomination to the NRHP as part of the DEW System. A 1996 MOA addressed the conversion of Point Barrow from manned to MAR site. In accordance with the MOA, the DEW System buildings and structures at Point Barrow were to be documented to Historic American Buildings Survey (HABS) Level 1 requirements. The proposed undertaking was later determined to have no adverse effect on the extant buildings/structures and the documentation never occurred (USAF, 2000).

When installations of the DEW System were inventoried and evaluated in the *Final Historic Building Inventory and Evaluation for Distant Early Warning (DEW) System*, the report recommended no further documentation for Point Barrow buildings/structures (USAF, 1999). The report reasoned that there were two DEW System “main stations” constructed in Alaska (Point Barrow and Barter Island) and that DEW System “main stations” are nearly identical in layout and construction. Since Barter Island has been documented to HABS Level 1 requirements, no further documentation was recommended for Point Barrow. A 2005 MOA between the USAF and the Alaska State Historic Preservation Officer (SHPO) mitigates the adverse effects of environmental restoration and demolition activities on DEW System facilities including Point Barrow, satisfying the requirements of taking into account the effects of the Clean Sweep Environmental Restoration of former DEW sites on historic properties and compliance with Section 106 of the NHPA

3.2 Subsistence

Subsistence can be defined as “hunting, fishing, and gathering for the primary purpose of acquiring traditional food” (USDOI BLM, 2003). Subsistence activities are a culture base and provide a sense of identity to the Inupiat people. Subsistence resources supply not only nutritional value, but are also used for clothing, tools, and transportation. Cultural and family ties are preserved through obtaining, sharing, and bartering such resources (USDOI BLM, 2003).

There is a wide range of species hunted throughout the year in the NPR-A region for local subsistence purposes. These include whale, seal, walrus, bear, birds, caribou, furbearers, small mammals, and fish. Species such as seals, polar bears, and caribou are hunted throughout the entire year in the Barrow area. Fresh and salt-water fish, and small mammals are hunted or trapped in the late spring and summer months. Caribou, whales, walrus are typically hunted or fished in late summer and early fall. Berries and other flora are normally gathered in early to mid-fall.

The Barrow area is located within the historical and/or current subsistence use area for the communities of Point Lay, Wainwright, and Barrow (USDOI BLM, 2003). The primary resources used for subsistence in the area include whales, caribou, walrus, fish, and waterfowl. Bowhead whale, caribou, walrus, and whitefish account for about 85 percent of Barrow’s annual subsistence harvest in terms of edible pounds (Braund and Associates, 2004).

3.3 Environmental Justice

Environmental justice is an initiative that culminated with President Clinton’s 1994 EO 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”. This executive order’s intent was to promote fair treatment to people of all races, so no person or group of people bears a disproportionate share of the negative environmental impacts from the country’s domestic and foreign programs.

As documented in the 2003 BLM IAP/EIS, the Inupiat is recognized Alaska Native minorities group (the Barrow community consisting of 64% Alaska Native or part Native) and thus afforded protection relative to EO 12898. Scoping meetings held during the preparation of the 2003 BLM IAP/EIS identified several concerns that would be germane to this project: the need to protect subsistence areas, cleaning up contaminated sites, and preventing fish contamination from contaminated sites.

3.4 Wastes (Hazardous/Solid)

There are no known landfills at the LRRS (USAF, 2007). All solid waste generated at the facility is transported to the Barrow community landfill, operated by the NSB. A variety of past uses at the state have resulted in environmental contamination. The USAF has investigated and remediated past sources of contamination through the ERP. Past activities potentially resulting in contaminant releases are as follows:

- Transfer of fuels in and out of storage tanks;
- Leaking of fuel lines, tanks, and drums;
- Vehicle and equipment maintenance activities at the garage, hangar, and other areas;

- Operation of facilities using PCB-containing transformers or other electrical equipment resulting in leaks or spills to the environment; and
- Disposal of wastes with hazardous substances.

The USAF conducted RI/FS in 1993 and 2007 to investigate locations that had potential for environmental contamination based on historical activities or use and to prepare for Clean Sweep Program activities. Soil, sediment, and water samples were collected at identified sites and analyzed for appropriate compounds based on the site conditions and suspected contaminants of concern. The sampling results were screened for ADEC Method Two cleanup levels for the Arctic Zone, which are protective of unrestricted site use, including residential site use. A brief description of the 2007 RI findings and recommendations are summarized below.

As discussed in Section 2.2.3.5, the Air Terminal Area (or ERP Site SS003) encompasses the area between the main installation road and the North Salt Lagoon, and extends north to the hangar and south to the installation access road intersection. Petroleum hydrocarbon contamination is present in the soil and subsurface water throughout most of the site however the concentrations of petroleum hydrocarbons in the soil are weathered, lack volatiles, and are well below Method Two cleanup levels for the Arctic Zone over the entire site. Contaminant concentrations in the site soils and surface and active zone water do not indicate there is sufficient risk to human health or ecological receptors to warrant a cleanup action given current site uses. The RI recommended monitoring of petroleum hydrocarbon related compounds in surface water and pore water to document that natural attenuation is occurring and to determine when Alaska Water Quality Standards are no longer exceeded.

Other areas of interest were investigated to determine whether or not COCs were present, and if additional investigation or cleanup action was warranted. The three areas recommended for further action or study were: the Vehicle Fueling Station, Radome Area, and Transformer Stand Area.

The only soil COC is total xylenes found at the Vehicle Fueling Station. Based on exceedances of ADEC Method Two soil cleanup levels for the Arctic Zone and on cumulative risk calculations, the site poses low risk to human health and the environment. Method Two cleanup levels for the Arctic Zone are protective of surface water at this location due to the lack of surface water bodies and low potential for petroleum migration. No further investigation or cleanup under CERCLA is recommended for this site however, remedial action is warranted under 18 AAC 75 based on the ADEC Method Two soil cleanup level exceedances of total xylenes and the likelihood that the natural attenuation process would likely be slow, especially in the subsurface.

PCB is a CERCLA contaminant with levels below Toxic Substances Control Act regulations at the Radome Area and the Transformer Stand Area that present a low risk to human health and the environment. However, cleanup action under state regulations would be necessary because PCBs at both locations exceed the ADEC Method Two cleanup levels for unrestricted site use.

3.5 Threatened and Endangered Species

Threatened, endangered, and candidate species occurring in the project area are shown in Table 3-1 below.

Table 3-1 Protected Species Occurring in Project Area

| Species | Status | Occurrence |
|--------------------|--|---------------------------------|
| Bowhead whale | Endangered | Chukchi & Beaufort Seas |
| Polar bear | Threatened | Barrow area |
| Spectacled eider | Threatened | Barrow area |
| Steller's eider | Threatened | Barrow area |
| Yellow-billed loon | Candidate | Arctic coastal plain |
| Bearded seal | Proposed Threatened | Bering, Chukchi & Beaufort Seas |
| Ringed seal | Proposed Threatened | Arctic Basin incl. Bering Sea |
| Pacific walrus | Petition to List as Threatened or Endangered | Bering & Chukchi Seas |

(USFWS NOAA Fisheries, 2010)

The endangered bowhead whale has been observed in the Chukchi and Beaufort Seas (USAF, 2007). The polar bear, spectacled eider, and Steller's eider are listed threatened species and are known to occur in the Barrow area (USFWS NOAA Fisheries, 2010). The yellow-billed loon was listed as a candidate species in 2009 and has been observed on the Point Barrow LRRS during waterfowl surveys conducted in 2002 (Ritchie, et al., 2003). On December 3, 2010, the National Oceanic and Atmospheric Administration (NOAA) Fisheries announced a proposal to list the ringed seal and bearded seal as threatened (NOAA, 2010). Ringed seals are found in the Arctic Basin (including the Bering Sea) and throughout most of its range, the Arctic ringed seal does not come ashore. The bearded seal occurs in the Bering, Chukchi and Beaufort Seas where areas where seasonal sea ice occurs over relatively shallow waters. The Pacific walrus occurs in the continental shelf waters of the Bering and Chukchi seas and in low numbers in the Beaufort Sea. On September 10, 2009 the USFWS initiated a status review of the Pacific walrus to determine if listing was warranted (USFWS, 2009) however it is currently not listed.

3.5.1 Eiders

Both the spectacled eider and Alaska-breeding population of the Steller's eider are listed as threatened under the federal ESA however the USFWS has not designated critical habitat on the North Slope for either species (USFWS, 2010).

No Spectacled Eider nests have been located at Point Barrow LRRS during USFWS ground surveys since at least 1999 (USAF, 2007). No Steller's eiders nests were recorded at Point Barrow during the three years of ground-based surveys conducted by ABR (1994, 2000, and 2002) (Schick, et al., 2004).

3.5.2 Polar Bears

The polar bear was listed as a threatened species, range wide, under the Endangered Species Act in 2008. The Department of the Interior Fish and Wildlife Service announced its final designation of polar bear critical habitat on November 24, 2010. The critical habitat included in the final rule exempts the Point Barrow LRRS based on the USAF's 2007 Integrated Natural Resource Management Plan which

includes measures to protect polar bears occurring in habitats within or adjacent to the facility. Additionally, the Native community of Barrow was excluded from the final designation as well as all existing manmade structures (regardless of land ownership status) (USFWS, 2010).

Polar bears have been seen using riverbanks and shore-fast ice for maternity dens during between October and April in areas throughout the NPR-A coastal region, primarily east of Barrow. The polar bear population which includes the Alaskan Beaufort Sea coast within its range dens primarily in the Arctic National Wildlife refuge. Radio tagged bears have denned within 40 miles of Barrow and Point Barrow LRRS. Polar bears have developed a habit of gathering at the butchering sites of bowhead whales that are harvested by local Natives during spring and autumn whaling seasons and sightings of polar bears are possible in the Barrow area. In Barrow, whales are hauled to the Marston-matting airstrip north of the LRRS where they are butchered (Davidson, 2007). Carcasses are then hauled to Point Barrow in an effort to keep polar bears out of the community.

4 ENVIRONMENTAL IMPACTS

Because the proposed activities are not substantially different from those previously evaluated, and because no significant new scientific information or analyses have been developed since the most recent related evaluation (i.e., NW NPR-A IAP/EIS, November 2003), this NEPA analysis will focus on impacts due to the project-specific/site-specific differences of the proposed action.

4.1 Direct and Indirect Effects

This EA is tiered from the following documents with a more in-depth discussion of potential effects:

- Northwest National Petroleum Reserve-Alaska, Integrated Activity Plan/Environmental Impact Statement, 2003, Volume 2, Section 5; and
- Biological Opinion for Bureau of Land Management for the Northern Planning Areas of the National Petroleum Reserve-Alaska, July 2008.

Issues specifically identified in Section 1.6 for further analysis in this EA are discussed below.

This section provides the evaluation of direct, indirect and cumulative environmental impacts of the Proposed Action. Impacts may be to society, the economy, or the environment. Any issues or concerns raised by the USAF and BLM are discussed below. If these resulted in any measures to mitigate the environmental impacts, those measures are also discussed in this section. Finally, any residual impacts to the environment, despite applications of mitigation measures are identified here.

Clean Sweep activities generally have a positive effect on natural resources. However, care must be taken with timing of demolition and debris removal to not adversely affect wildlife. Site restoration strives to return the surroundings to its original state, contouring terrain and using native species for revegetation.

4.1.1 Cultural Resources

4.1.1.1 Alternative A: No Action

Under the No Action Alternative, there would be no impacts to cultural and paleontological resources because no building demolition would occur.

4.1.1.2 Alternative B: Proposed Action

The Proposed Action Alternative could result in disturbance to undiscovered archaeological sites encountered during soil excavation operations. Although no cultural resources are likely to be present at the site according to the USAF 2006 Integrated Cultural Resource Management Plan for Distant Early Warning (DEW) System, Alaska, all site employees will be oriented to the Cultural Resources Protection Plan prior to conducting work at the site. Site employees will be trained to identify and avoid any cultural resources encountered during the project activities. The Cultural Resources Protection Plan would outline the procedures to be followed in the event that cultural resources are discovered. Following these procedures will ensure that even if cultural resources are discovered, no significant impacts to cultural resources will occur as a result of this action.

All extant DEW buildings/structures at Point Barrow are considered eligible for nomination to the NRHP as part of the DEW System. The USAF proposes to remove original material from historic properties determined eligible for the NRHP which constitutes an adverse effect. A 2005 MOA between the USAF and the Alaska SHPO mitigates the adverse effects of environmental restoration and demolition activities on DEW System facilities including Point Barrow, satisfying the requirements of taking into account the effects of the Clean Sweep Environmental Restoration of former DEW sites on historic properties and compliance with Section 106 of the NHPA (USAF, 2006).

4.1.2 Subsistence

4.1.2.1 Alternative A: No Action

Under the No-Action Alternative, the USAF would not remediate the Point Barrow LRRS site and continued risk to human health and environment would remain from continued exposure of contaminants to subsistence resources. No activity would occur within the subsistence use areas for the communities of Barrow, therefore, no potential displacement of resources from the area would occur.

4.1.2.2 Alternative B: Proposed Action

The Proposed Action Alternative over the long term will result in a positive effect to subsistence resources. Over the short term, the Proposed Action Alternative may temporarily impact furbearer and small mammal hunting and trapping due to the possibility of the temporary displacement of these animals during removal activities, including equipment noise and human presence in the immediate Point Barrow LRRS area and along the road to the staging areas and NSB landfill. To minimize noise and other disturbances, a maximum of five pieces of equipment would be operating at the site at any given time.

Barge transportation is required for disposal of contaminated materials in August, which may affect some hunting or fishing activities. Any displacement or disruption in subsistence activities would be

temporary. Although the work will occur during active fishing, hunting, and trapping seasons, the work should not have a significant effect on these activities because there are hunting, trapping, or fishing harvest periods which extend outside of the fieldwork season for every species listed.

In order to ensure no further contamination is exposed or spread that could potentially impact subsistence hunting in the excavation areas or along the haul road, best practices for waste removal and transport, as outlined in the 2010 Point Barrow LRRS Work Plan would be followed (Siku, 2010). These include excavating to clean boundaries to ensure no contaminants are exposed which are not removed during the RA-C. Also, all contaminated soil would be placed in Super Sacks prior to transport to eliminate the possibility of a spill along the haul road. Solid metal waste would be transported in covered dump-truck loads. These measures would ensure that the impacts to subsistence hunting in the area would only be temporary noise/disturbance impacts during removal and transport activities, and that no additional impacts to the land or animals will occur.

4.1.3 Environmental Justice

4.1.3.1 Alternative A: No Action

The No Action Alternative would not remedy contamination or cleanup debris however the continued exposure to local populations or subsistence resources is not disproportionate to minority, low income, or tribal populations.

4.1.3.2 Alternative B: Proposed Action

The Proposed Action Alternative will have the following temporary negative effects including temporary noise to users of the site (however, not be audible to the village), temporary air quality impacts in the vicinity of the site, and temporary visual effects. The loss of potential use of the air terminal would negatively impact the community as local entities have expressed interest in using the building as an activity center in the future. These impacts would not be disproportionate to minority, low income or tribal populations. The removal of contamination and debris and potential increase in local employment during implementation would benefit all populations.

All stakeholders, regardless of race, have been involved in the planning process. Their concerns have been addressed and minority, low income or tribal populations are not being asked to take on an unequal proportion of the environmental impacts of this action. In addition, the proposed action serves to remove contaminated soil, hazardous materials, and solid waste from the area instead of leaving it there to negatively impact the local population.

4.1.4 Wastes (Hazardous/Solid)

4.1.4.1 Alternative A: No Action

The No Action Alternative would result in wastes and materials remaining in the land and waters and continue to pose a risk to human health and the environment. Current or future exposure to contaminated media consisting of surface soil and surface water would remain.

4.1.4.2 Alternative B: Proposed Action

As described in Section 4.1.2.2 best practices for waste removal and transport would be followed (Siku, 2010). Confirmation sampling of excavated areas would be conducted.

Tanks would be transported to the UIC gravel pit and staged for demolition. Tanks would be visually inspected for loose paint prior to transport to the staging area and if present, the perimeter area would be covered with visqueen and taped. Plastic would be removed once tanks are placed on geotextile fabric located at demolition area.

During antenna and support structure demolition, the work area will be barricaded to protect workers, traffic, and pedestrians from overhead work hazards. Traffic impacts from debris and soil haul will be minimal. The USAF Project Manager would be notified of required traffic pattern changes and schedule two week priors to the start of work to minimize impacts to facility roads used year-round by NOAA, U.S. Geological Survey (USGS), and the U.S. Department of Energy for research activities.

Beneficial impacts include improve wildlife habitat from reduced or eliminated exposure to contaminants, elimination of potential bird strikes and predator nesting by removal of vertical antenna structures, and removal of navigation hazards caused by miscellaneous debris.

4.1.5 Threatened and Endangered Species

The USAF conducted informal consultation with the USFWS pursuant to section 7 of the ESA for the proposed cleanup activities at Point Barrow LRRS and the record is included in Appendix C. In their analysis the USFWS found the likelihood that Steller's eiders would nest in the limited tundra habitat available in the project area to be very low and consequently, determined adverse effects to nesting Steller's eiders would be discountable because they are extremely unlikely to occur. The USFWS also expect the removal of overhead transmission lines and utility poles would be beneficial to eiders by reducing collision risks to birds flying in or through the area, including breeding, postbreeding, and migrating eiders. In addition, annual surveys conducted in the vicinity of the Point Barrow LRRS indicate that spectacled eiders do not use the surrounding habitat, and the likelihood of disturbance to this species would be very low and that adverse effects would be discountable. Following the same logic presented for Steller's eiders above, they determined effects to spectacled eiders to be discountable, insignificant, or beneficial.

In regards to polar bears, the USFWS stated the following, "Given that 1) proposed work at Point Barrow LRRS will occur within the footprint of previously disturbed land, 2) polar bears are not known to regularly use the habitat immediately surrounding the project area, and 3) risks associated with polar bear encounters will be managed by following USAF and UIC human-polar bear interaction plans and safety training, we expect that effects to polar bears will be minimized to an extent that take will not occur. We therefore expect that adverse effects to polar bears will be insignificant and conclude that the proposed action is not likely to adversely affect polar bears."

In summary, the USFWS determined the proposed activities are not likely to affect listed eiders or polar bears. There is no designated critical habitat for listed eiders within the project area. Point Barrow LRRS

is exempted from the polar bear critical habitat designation because the site is covered by an approved INRMP that provides a benefit to the species.

4.2 Cumulative Effects

Cumulative impacts result from the incremental addition of past, present, and reasonably foreseeable actions. Each action may be individually minor by itself, but when added to others could become significant over a period of time.

The 2003 Northwest NPR-A IAP/EIS, Volume 1, Section IV.F analyzing cumulative effects is incorporated by reference. Past, present and future impacts in the region include infrastructure use at the site and in the village of Barrow, oil and gas exploration, recreation and subsistence activities. The analysis concludes there would be minimal cumulative effects to resources identified and analyzed in this EA, as well as to other important issues and resources identified in the IAP/EIS.

The time frame for the proposed action for the project area is from the 1950's to thirty years into the future, assuming that the relatively low level of activity and management would remain at about the same level as present. Due to the limited scope and intensity of the proposed action, potential effects to the geographic area would be limited within one mile of the proposed use areas. Additional past, present, and future activities in the area include recreation, subsistence, research and monitoring. While the level of such activities may increase slightly within the next thirty years, there are no development proposals that would substantially add to the current levels. The incremental addition of the proposed action would be short-term and dispersed, which should not add to increased cumulative effects.

The proposed action is not anticipated to result in increased incremental cumulative effects to the identified issues in this EA due to the remoteness of the portion of the area where the activity would occur and the low impact levels associated with the activity. The sites have been previously disturbed by human activity and the proposed action would result in decreased long-term impacts to subsistence, environmental justice, wastes (hazardous/solid), polar bears, and eiders.

The proposed action could result in adverse cumulative effects to cultural sites because once these sites are disturbed or destroyed, their integrity is permanently lost. Nevertheless, much of the sites have been disturbed by decades of past human activities and the risk of damaging undiscovered archaeological sites is relatively small.

The proposed action is not likely to adversely affect listed eiders or polar bears however; some combination of oil and gas exploration, subsistence activities, clean-up activities, and research and monitoring activities by scientists, industry, and agency personnel may cumulatively cause an incremental increase in disturbance to listed species. There would be no incremental increase in human activity with the no action alternative. The proposed action will likely improve habitat for listed species and other wildlife by removing contaminated materials from the area.

4.3 Mitigation and Monitoring

4.3.1 Mitigation

Mitigation strategies generally include the following Best Management Practices (BMPs), which are presented in the preferred order for implementation, and were established in accordance with CEQ regulations.

- Avoid the impact altogether by stopping or modifying the proposed action.
- Minimize impacts by limiting the degree of magnitude of the action and its implementation.
- Rectify the impact by repairing, rehabilitating, or restoring the affected environment.
- Reduce or eliminate the impact over time through use of preservation and maintenance operations during the life of the action.
- Compensate for the impact by replacing resources or providing substitute resources.

This EA has determined that mitigation is not required to avoid or compensate for significant impacts. However, the USAF has identified BMPs to minimize impacts to the environment and reduce health and safety risks. Additionally, the USAF follows standard construction BMPs (such as silt fencing and hay bales) to help minimize movement of materials from construction sites, and has a Spill Control and Countermeasures Plan in place to minimize the risks of spills and associated impacts.

4.3.1.1 Cultural Resources

All operations would be conducted in such a manner as not to cause damage or disturbance to any historical or archaeological sites and artifacts. The Antiquities Act (1906), Archaeological Resources Protection Act (1979), Federal Land Policy and Management Act (1976), and general United States property laws and regulations, all prohibit the appropriation, excavation, injury, or destruction of any historic or prehistoric ruin or monument, or any other object of antiquity situated on lands owned or controlled by the United States (16 U.S.C. 470; 16 U.S.C. 432; 43 U.S. 1733(a); 18 U.S.C. 1361; 18 U.S.C. 641; 43 CFR 8365.1). Such items include both prehistoric stone tools and sites, refuse dumps, and other such features. In accordance with the 2005 MOA between the USAF and the Alaska SHPO, if a previously unknown historic or prehistoric property is encountered during the undertaking, all work that might adversely affect the property would cease until:

- a. The property is evaluated for eligibility for inclusion in the National Register in consultation with Alaska SHPO; and
- b. The agreed-upon mitigation measures have been completed. Consultation with the Alaska SHPO would be carried out in an expeditious manner to avoid unnecessary delays to the project. The Alaska SHPO may provide the USAF with initial comments by telephone and would follow up with a letter within 30 days of USAF's request for comments.
- c. If needed, the USAF would consult with affected federally-recognized tribes pursuant to the Native American Graves and Repatriation Act.

- d. If the previously unknown historic property is determined to be of Native-American affiliation, the appropriate federally-recognized tribes would be consulted as per the terms of the MOA stipulation.

4.3.1.2 Wastes (Hazardous/Solid)

A copy of the BMP's developed specifically for the proposed action is provided in Appendix E and includes the following:

- Material handling and waste management,
- Sanitary and septic waste management,
- Equipment/vehicle fueling and maintenance practices,
- Spill prevention controls and countermeasures,
- Training,
- Preservation of existing vegetation, and
- Threatened and endangered species protection.

4.3.1.3 Eiders

A nesting survey will be completed by the USAF to ensure that there are no nesting of listed eiders has occurred within the project area. Should a nest be located within the project area, USFWS will be immediately notified and appropriate protection measures will be incorporated.

4.3.1.4 Polar Bears

The USAF will manage risks associated with polar bear encounters by following USAF and UIC human-polar bear interaction plans and safety training. A copy of the North Slope Operations Bear & Pacific Walrus Avoidance and Human Encounter/Interaction Plan (UIC, 2005) is provided in Appendix D.

4.3.2 Monitoring

Surface water monitoring in the Air Terminal Area will be conducted by the USAF by collecting samples each year for five years, and then every five years thereafter to assess changes in surface water contaminant concentrations over time. Site inspections would also occur at the same frequency as the sampling to inspect signs and maintain them as needed. Monitoring would be performed until the source contamination has been cleaned up and surface water sample results show that contaminants are below cleanup levels.

Compliance inspections shall take place during the period of the proposed activities to ensure all mitigation measures and required operating procedures are in compliance.

4.4 Summary of Environmental Consequences

The proposed action is likely to result in no adverse impacts to only minor short-term adverse impacts to cultural and paleontological resources, subsistence activities, environmental justice, wastes (hazardous and solid), water resources, flood plans/wetlands and riparian zones and eiders as a listed threatened species. The proposed action will ultimately result in improving the overall quality of the area's environment, prevent future releases of contamination, and protect human health and safety.

5 CONSULTATION AND COORDINATION

5.1 Agencies, Organization and Persons Consulted

Public notification of this EA will be on file at the BLM Arctic Field Office and was posted on the BLM Arctic Field Office NEPA Register on January 11, 2011. A summary of the USAF's public participation activities is provided in Section 1.6. USAF consulted with the Alaska SHPO and federally-recognized tribes regarding removal of historic properties at Point Barrow LRRS and signed a 2005 MOA with the SHPO in satisfaction of its NHPA Section 106 responsibilities. The USAF conducted informal consultation with the USFWS pursuant to section 7 of the ESA. The USFWS determined the proposed action not likely to adversely affect listed eiders or polar bears on January 21, 2011. A record of the consultation is included in Appendix C.

5.2 List of Preparers

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