THE U.S. NAVY, ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY announce the

PROPOSED PLAN FOR CLEANUP OF ORDNANCE AND EXPLOSIVES AND UNEXPLODED ORDNANCE WITHIN OPERABLE UNIT B-1 ON ADAK ISLAND

MAY 2001

INTRODUCTION

This Proposed Plan describes the U.S. Navy's proposal for addressing safety risks posed by ***ordnance and explosives***# (OE) and ***unexploded ordnance*** (UXO) on Adak Island, Alaska, within a portion of the former Navy facility. This portion is called Operable Unit B-1 (OU B-1). OU B-1 consists of 130 sites, as shown in Figure 1. Operable Unit B-2 is another portion of the former Navy facility and consists of 62 sites. A Proposed Plan for OU B-2 is anticipated for next year. Six sites initially evaluated are outside the Navy facility on the southern part of Adak and will be investigated by the U.S. Army Corps of Engineers under the ***Formerly Used Defense Sites*** (FUDS) program. This Proposed Plan, developed by the Navy in consultation with the Alaska Department of Environmental Conservation (ADEC) and the U.S. Environmental Protection Agency (EPA), describes the proposed decisions for the sites in OU B-1, including actions for 26 sites where the potential for OE or UXO exists. These sites were identified using historical records, ***geophysical*** information, subsurface investigations, and/or knowledge of known former ordnance activities.

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Italicized words are defined in the glossary at the end of this document.

Risks associated with chemical and petroleum contamination (including possible chemical contamination from ordnance filler materials at several sites) on Adak Island were initially addressed under Operable Unit A (OU A). However, additional archival information suggesting more widespread presence of ordnance on Adak was discovered. As a result, OU B was created to focus on these ordnance-related hazards. The Navy is proposing to sample and clean up soil that is found above ***cleanup levels*** for ordnance-related chemicals at 14 sites that were found during OU B-1 investigations.

The Navy and the agencies invite you to comment on this Proposed Plan. Your comments will help determine what actions will be taken at the former Naval facility at Adak Island. Final decisions for OU B-1 OE/UXO sites will be presented in the ***Record of Decision*** (ROD) for OU B-1. This Proposed Plan fulfills the requirements of Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund.

SCOPE AND ROLE OF OPERABLE UNIT B-1

A land transfer agreement was signed in September 2000. Under this agreement, the Navy is to return approximately 47,000 acres of the military reservation property on Adak Island to the U.S. Fish & Wildlife Service (USFWS). The Bureau of

PUBLIC COMMENT PERIOD

May 14, 2001 through June 12, 2001

OPEN HOUSE and PUBLIC MEETING

May 29, 2001
Bob Reeves School, Adak Island

May 31, 2001
Hilton Hotel, Anchorage

Land Management (BLM) will then convey these lands to The Aleut Corporation (TAC) for private sector reuse in exchange for other lands desired by USFWS. To complete this process as quickly as possible, the OU B Project Team divided OU B into OU B-1 and OU B-2 (see Figure 1). OU B-1 is the portion of the military reservation that contains the core of the proposed reuse area and will therefore be the initial focus for final clean up decisions.

OU B-1 includes all ordnance sites within the military reservation lying outside of the Mt. Moffett/ Andrew Lake area (identified as OU B-2 on Figure 1). OU B-1 includes 104 sites that met the criteria for No Further Action (NOFA) during the Preliminary Assessment (PA) and ***Remedial Investigation (RI)***. The Navy is proposing to undertake the cleanup actions described in this Proposed Plan for the 26 OE/UXO sites and 14 chemical sites within OU B-1 during the 2001 field season. Some sites fall into both categories. Results from the OU B-2 site investigations (also conducted in 2001) will be reported in a separate document. That document will be the OU B-2 ***Remedial Investigation (RI)/Feasibility Study (FS)***, expected to be available in early 2002.

KEY POINTS

1. Because of limitations of existing technologies, uncertainties associated with past land use, and the steep terrain and dense vegetative cover that exists in many areas on Adak, we cannot know if all areas on Adak are free of OE/UXO. For this reason, the Navy is committed to maintain the existing Adak ordnance awareness and education program for visitors and residents. In addition, the Navy will provide a copy of the ROD to BLM to maintain as part of the permanent file of conveyance documentation that is available to future users. The Navy will also continue to respond to any future discoveries of OE/ UXO.

2. Starting in July 1999, the OU B Project Team of ***Adak Stakeholders*** – consisting of the Navy, EPA, ADEC, TAC, Aleutian/Pribilof Islands Association (A/PIA), USFWS and community members – began to develop a process to characterize and prioritize cleanup of ordnance materials on Adak. The results of this process, conducted under CERCLA, are summarized in this Proposed Plan.

3. The Project Team identified 130 ordnance sites. Table 1 summarizes the status of these sites.

4. Over 1,200 miles of geophysical investigation were performed within approximately 17,000 acres of the northern portion of Adak as part of the RI for OU B. Approximately 1,000 OE-related items such as metal fragments were collected; 60 of these were intact UXO. Almost all of the OE/UXO has been found at depths shallower than 2 feet and none greater than 4 feet.

5. The Project Team determined that 40 of the OU B-1 RI sites did not require additional action because of OE/UXO removal during investigation, evaluation of target information, or lack of ordnance-related hazard, based on an Adak-specific hazard assessment approach.

6. Three sites (Combat Range 3, Site C3-01A, Ordnance Disposal Site; Combat Range 6, Site C6-01A Mortar Impact Area; and Mitt Lake Impact Area, Site ML-01A, Mortar Impact Area) were evaluated for remedial action alternatives. In addition, 23 sites were identified for additional field work and possible cleanup. These sites include: Combat Range 3 Sites C3-01B, -01C, -01D, -01E, and C3-04A; Combat Range 8 Sites C8-01, -03 and -05A; Lake Jean Site LJ-01; Mitt Lake Sites ML-01B, -02A and -02B; Lake DeMarie Site DM-06A; Finger Bay Sites FB-01 and -04; Blind Cove Site BC-01; Husky Pass Training Area; the Shagak Bay Gun Emplacement; the 20mm, 40mm, and 37mm gun emplacements (GUN-01, -02, and –03); and the Ammo Pier sites, FBAP-02 and AP-02. The alternatives are summarized below and the details of the Selected Alternative will be described in the Record of Decision.

Adak Ordnance Awareness and Education Program

- **Has been in place since 1997**
- **“Blue-card” briefing for visitors and residents**
- **Includes ordnance awareness videos and “Boomer” cartoon for kids**
- **Adak safety precautions, such as what to do and who to notify if an ordnance object is discovered**

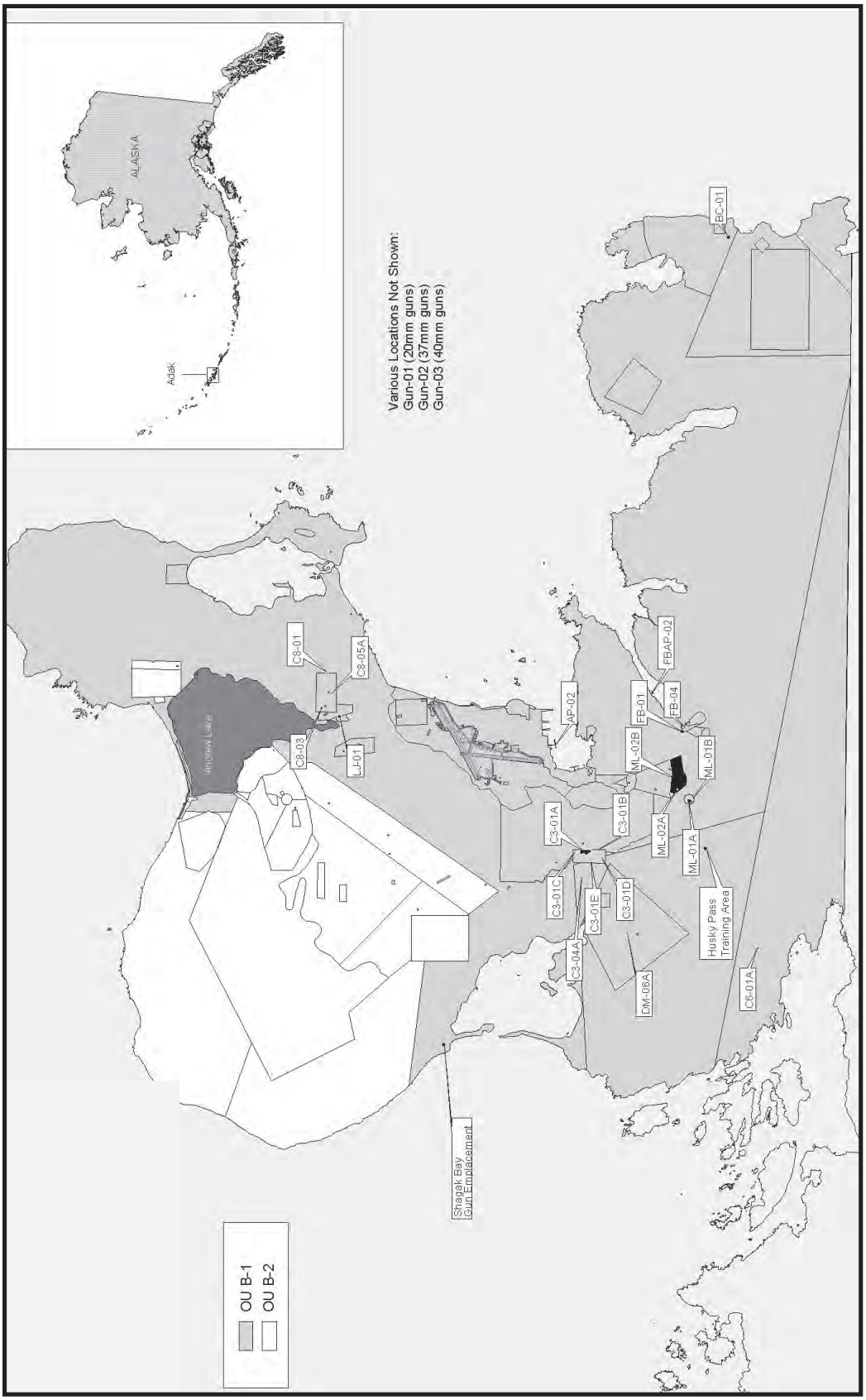


Figure 1. OU B Sites

7. Current land use plans require clearance of OE/UXO items to a depth of 2 feet below ground surface (bgs) to support the current and reasonably expected future land uses at sites requiring cleanup within OU B-1. However, the clearance process to be used for these sites results in an added measure of protection by achieving clearance of OE/UXO items to a depth of 4 feet bgs. Based on information available on the nature of past ordnance use, storage, handling and disposal on Adak, this clearance process will allow Adak residential land use for sites within OU B-1.

Table 1 lists the number of sites in OU B-1 and the site status totals. The key below the table provides a description of the status categories.

Table 1 Site Summary for OU B-1

Operable Unit	No. of Sites	NOFA	RI	Inspection	FS
OU B-1	**130**	**104[1]**	**60[2]** (completed)	**11[3]** (completed)	**26[4]**

NOFA: No Further Action required. For OE/UXO sites, a NOFA is the result of evaluations and investigations that showed no OE/UXO was present or that OE/UXO was removed during investigations.

RI: A Remedial Investigation determines the extent of ordnance contamination

Inspection: A visual reconnaissance with geophysical equipment assesses the presence of large caches of ordnance or specific locations of firing points

FS: A Feasibility Study identifies and evaluates remedial alternatives for ordnance contamination sites.

[1] Includes 57 from PA screening

[2] Includes 36 that went to NOFA and 24 that went to FS

[3] Includes 11 that went to NOFA from RI data

[4] Includes 24 transferred from RI and 2 new sites identified from archive search records

BACKGROUND

Adak Island is a 280-square-mile island in the Aleutian Island chain. It is located approximately 1,200 miles southwest of Anchorage, Alaska (Figure 2). The Aleutian Islands were historically populated by the Aleut people, Alaska Natives having a common heritage and sharing common interests. Adak Island has been federal property since the United States acquired Alaska from Russia in 1867. Since 1913, it has been a federal wildlife refuge and, while the Aleut people have historically frequented Adak Island, no permanent Aleut settlement has existed on Adak Island since before that time. In 1980, all of Adak Island was included within the Alaska Maritime National Wildlife Refuge established by Congress in the Alaska National Interest Lands Conservation Act (ANILCA), and it remains part of that wildlife refuge today.

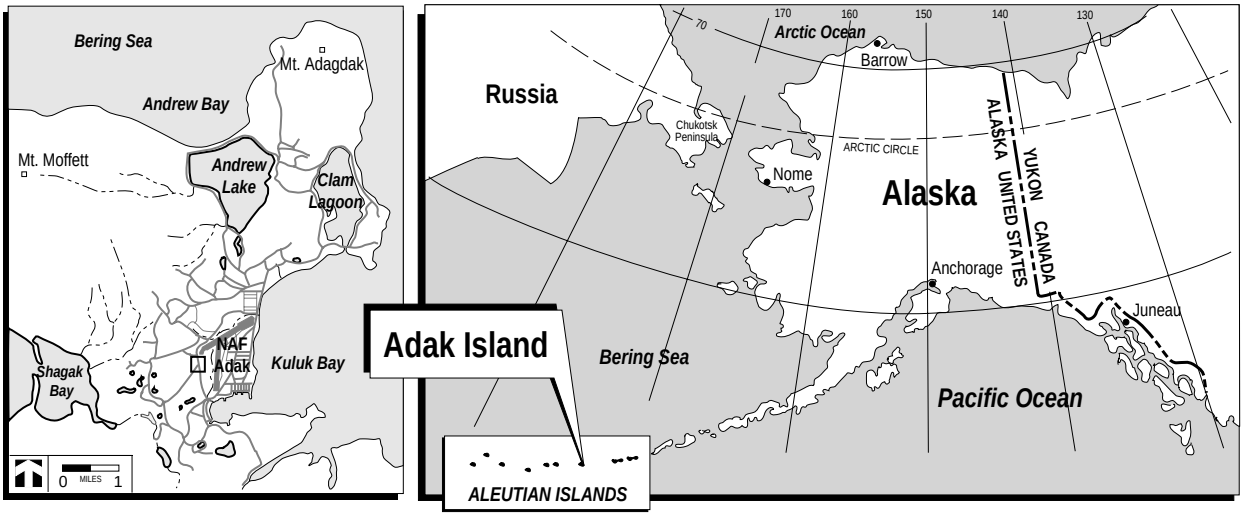
Military presence on Adak began in 1942 with its occupation as a staging area to mount a counter-offensive to dislodge the Japanese from Attu and Kiska Islands. The Navy presence at Adak was officially recognized by Public Land Order 1949, dated August 19, 1959, which withdrew the northern portion of Adak Island, comprising approximately 76,800 acres, for use by the Navy for military purposes. The Navy used the base to conduct a variety of Cold War-era military activities.

Naval Air Facility Adak was on the list of Department of Defense installations recommended for closure in 1995, and that recommendation became final when Congress did not disapprove the list. The active Navy mission ceased, and the base operationally closed on March 31, 1997.

From April 1997 through September 2000, critical facilities such as the power plant, airfield, and environmental cleanup systems were operated by the Navy through a caretaker contractor. In June 1998, the Navy entered into a lease with the Adak Reuse Corporation (ARC), which is the designated local redevelopment authority, that authorized ARC to use or sublease property in the developed core of the military reservation for commercial reuse purposes. In October 2000, ARC commenced operation of community facilities such as the airfield and utility systems in support of reuse activities under the authority of this lease.

A land transfer agreement among the Navy, USFWS, and TAC was signed in September 2000. This agreement sets forth terms and conditions for an eventual exchange under which TAC will obtain title to approximately 47,000 acres of the former Adak military reservation, including all of the downtown area, housing units, and industrial facilities. Special legislation by Congress is needed to carry out this exchange, and it is expected to be introduced and enacted during 2001.

Figure 2. Military Complex at Adak



In 1986, the Navy began to investigate possible contamination from past military activities, in consultation with ADEC and EPA. In September 1993, the three agencies entered into a Federal Facilities Agreement to conduct an RI/FS for evaluation and cleanup of potentially contaminated sites. In May 1994, NAF Adak was formally placed on the National Priorities List. The results of investigation and cleanup for chemical and petroleum contamination are described in the ROD for Operable Unit A (OU A), which was finalized in April 2000.

Ordnance Sources

Most of the ordnance contamination at Adak is from the WWII–era, when historical information reports that up to 100,000 soldiers were stationed on the island or offshore on support ships. Ordnance activities throughout Adak's military history included small arms training, training in mortar and artillery range, ordnance storage, and open burning (OB)/open detonation (OD) of munitions. Most of the ordnance contamination is suspected to be in the "outback" or "remote areas", based on archive research and previous OE investigations. The OE items recovered in the "downtown" area are considered to be mainly souvenirs abandoned by residents and visitors.

While NAF Adak was an active military facility, an Explosive Ordnance Disposal (EOD) Team was stationed on the island to safely handle any OE/UXO that was found. Throughout the 55 years of active service, thousands of items (mostly small arms ammunition) were identified, removed and destroyed.

Site Characteristics

Topography, Climate, and Physical Factors that Impact Remedy Selection

The terrain surrounding the former Naval facility at Adak Island includes exposed bedrock, steep ridges, deep ravines, rolling hills, and some flatlands. The tundra vegetation on Adak consists of grasses, lichens, mosses, and other species adapted to the wet, cold, and windy climate. This vegetation, often thick and spongy (even on level terrain), is difficult to walk on and prevents easy access.

Summary of Ordnance Investigations

Investigations of ordnance sites included archive record searches that began in 1995 and ***reconnaissance surveys*** of known ordnance training and disposal areas that began in 1996. These surveys were performed near Andrew Lake, a suspected minefield at Clam Lagoon, the Andrew Bay Seawall, and a suspected mortar impact area near Andrew Lake. Later surveys included "downtown" Adak, and various sites in the "outback area."

A geophysical survey of the majority of the "downtown" area was performed in 1997. The survey covered 1,073 acres and excavated 4,481 ***anomalies***. Three ordnance items were found and removed for proper disposal during surface clearance activities. No ordnance items were found in the subsurface. Follow-on work in the Bering Hill area was completed in 1998. Three OE/UXO items were found at approximately one foot bgs and removed for proper disposal (all categorized as abandoned ordnance), and no OE/UXO items were found during surface clearance activities.

In 1998-2000, geophysical surveys and ***intrusive investigations*** were also performed for "outback" sites that had been identified through archive research. The focus of the 1998 work was to investigate 27 potential locations of WWII-era defensive minefield locations. These areas were identified through a 1945 order, which authorized placement of mines if a threat of enemy invasion occurred. Following extensive investigation, mines were found only in one location, at Clam Lagoon Minefield (a.k.a. Solid Waste Management Unit (SWMU) 2). Both training and live mines were discovered in 1996 at SWMU 2, and the entire area was cleared to a depth of one foot bgs in 1998. All ordnance materials (60 OE/UXO in OU B-1) were either blown in place or removed and detonated at a remote location.

Chemical contamination resulting from ordnance was evaluated at SWMU 1, Andrew Lake Waste Ordnance Demolition Range, under the OU A investigation. This site was used extensively for open burning and detonation of OE/UXO and is therefore believed to represent the "worst case" for chemical contamination at OU B sites. The results of the SWMU 1 sampling near OB/OD areas and analysis of the results indicated levels of contamination were below cleanup levels. Chemical sampling at OU B sites, where the potential exists for residual ordnance compounds, will be performed during the 2001 field season. Should sampling of the remaining OE/UXO sites indicate levels of contamination above cleanup levels, the contaminated soil will be excavated, placed in proper containers, and shipped to an offsite permitted disposal facility or treated on site.

SUMMARY OF SITE RISKS

Prior to initiating the RI/FS, the Project Team completed preliminary assessment screening of sites in OU B. The objective of the screening was to identify sites that: (1) would need to be evaluated further, and (2) are not a threat (NOFA sites) and can be managed through existing site awareness and training programs. Sites that were not screened to NOFA went forward to the RI and were evaluated using the Adak explosive safety hazard assessment (ESHA) methodology. ESHA was developed by the Project Team to evaluate the explosive dangers associated with OE and UXO on Adak. It is a site-specific hazard assessment methodology developed to address explosive safety considering the unique character of the island. It follows CERCLA principles and incorporates extensive input from Adak stakeholders.

The Adak ESHA is based on four primary factors:

1. Likelihood of Ordnance Being Present – Was it ever found in the area?
2. Ordnance Characteristics—Is it danger ous to handle?
3. Ordnance Accessibility—Is it buried or on the surface?
4. Public Exposure—Is it in a remote area or an easy-to-get-to location?

Results of ESHA

During the RI/FS for OU B-1, the Project Team evaluated 43 OE/UXO contaminated sites with the ESHA process in order to develop a relative risk ranking ranging from low risk (A) to extreme risk (E). Forty sites received a score of A or B, which results in a recommendation for an Adak NOFA. The NOFA includes an OE/UXO awareness training program for island residents and visitors, with specific guidelines for conducting intrusive activities such as construction or utility line installation. Three sites received a score of C or D in the ESHA indicating that remedial action of some type may be needed to reduce risk to the public. These sites were evaluated further in the Feasibility Study and included the: (1) Combat Range 3, Site C3-01A, Ordnance Disposal Site, (2) Combat Range 6, Site C6-01A, Mortar Impact Area, and (3) Mitt Lake Impact Area, Site ML-01A, Mortar Impact Area. Additional information will be gathered at twenty-three sites. Additional information is required at these sites to determine the extent of areas that may have OE/UXO. OE/UXO that has been found on these areas during past investigations has been removed. Any additional ordnance items that are found will be removed and disposed of properly.

Chemical Risks

Based upon past assessments conducted under OU A, no unacceptable risks related to ordnance chemical contamination are currently believed to exist within OU B-1. However, 14 sites were noted as showing some evidence of possible contamination. Evidence included staining or discoloration of soil. These sites will be sampled and evaluated for the presence of explosive filler material. Soils that exceed cleanup levels will be excavated, containerized, and sent offsite for disposal or treated on site.

OBJECTIVES FOR CLEANUP

While the safe removal of all OE/UXO items may be technically impossible, given currently available ordnance detection technologies, cleanup goals were established to eliminate or reduce the potential for exposure.

SUMMARY OF ALTERNATIVES

To satisfy the cleanup objectives, the Navy conducted a detailed analysis of cleanup alternatives for OE/UXO items. These alternatives are:

- Alternative 1: Adak NOFA
- Alternative 2: Surface Clearance
- Alternative 3: Surface and Subsurface Clearance
- Alternative 4: Sampling for ordnance compounds and removal and disposal of explosives-contaminated soils

Adak NOFA (No Further Action/Institutional Controls)

Adak NOFA is a term used to describe the OE/UXO awareness program and policy that is currently required for Adak residents and visitors. This program applies to the entire military reservation at Adak, including areas that are not sites which are part of OU B-1. This program is intended to familiarize on island residents and visitors with the past history of ordnance use, storage, handling and disposal on Adak Island; basic characteristics of OE/UXO items on Adak; and the procedures that should be followed in the event a suspected OE/UXO item is encountered. In addition to maintaining this program, deed notices or other legal instruments will also be used to inform future users of the possibility of the presence of OE/UXO. For example, the Navy will provide a copy of the ROD to BLM to maintain as part of the permanent file of conveyance documents that would be available to current and future owners of the real estate seeking information about past land uses including the potential for OE/UXO items . This measure would provide the current and future land owners with a source for information about OE/UXO and the depth to which clearance actions have been taken. Otherwise, no site-specific actions are provided under the Adak NOFA, and no land use restrictions are identified for the NOFA sites.

Surface Clearance (removal of surface OE/UXO)

Surface Clearance (removal of surface OE/UXO) This alternative involves identifying and removing OE/UXO that is visible at the surface of the soil by conducting a surface sweep and a subsequent removal and disposal operation. This surface clearance action would be applied to all accessible portions of the site, removing and disposing of all metal scrap, OE debris, and OE/UXO found on the surface. Hand-held metal detectors would be used to assist in locating these items potentially obscured by the tundra vegetation. Digging for OE/UXO is not included with this alternative. Future use of the site will be restricted to surface activities only, requiring additional institutional controls such as the posting of signs or restrictions on digging and construction.

Surface and Subsurface Clearance

This alternative includes all the work performed as part of the Surface Clearance alternative with an additional subsurface investigation to a depth of at least 4 feet (bgs) in the site using geophysical survey equipment or hand-held metal detectors. In addition to reducing risk at the site, subsurface clearance to the maximum depth that OE/UXO were found will further meet the site-specific guidelines outlined in DoD 6055.9-STD Chapter 12, Department of Defense Explosives Safety Standards, for cleanup and transfer of property potentially contaminated by OE/UXO. All ***accessible*** portions of the site would be geophysically surveyed, with removal of detected subsurface OE/UXO and ordnance debris. While a clearance depth of 2 feet below ground surface is the minimum required clearance to support the current and reasonably likely future land use for these sites, a 4 foot depth was chosen by the Project Team based upon site conditions, past ordnance management history, technology to be used for clearance, and the depth intervals at which OE/UXO has been found on Adak. Achieving a 4 foot clearance depth on these sites will allow Adak residential land use for these sites.

Sampling for Ordnance Compounds and Removal and Disposal of Explosives-Contaminated Soils

This presumptive alternative addresses the 14 sites that will be investigated during the upcoming field season and includes performing composite sampling of sites where there may be a potential

for residual ordnance compounds. Sampling would be performed where field observations indicate that breached ordnance or staining may have contaminated the soil with toxic chemicals from OE/UXO and thereby pose a potential human health or ecological risk. This alternative includes excavation and either onsite or offsite treatment and disposal of contaminated soil. Due to the number of sites and limited amount of OE/UXO present only a small volume of soil (less than 7 cubic meters) is likely to require cleanup.

SITE DESCRIPTIONS

Twenty-six sites were evaluated for cleanup because of their potential impact to human health and the environment. The following are descriptions for these sites:

Combat Range 3, Site C3-01A, Ordnance Disposal Site:

This site is an approximately 10-acre area located on the southeast side of Heart Lake (Figure 1). The number, type, and conditions of OE/UXO items found indicated it was an ordnance disposal site. During the investigation, 28 abandoned ordnance items, 26 pieces of OE scrap, and two UXO items were found on the surface and in the subsurface zone (to a maximum depth of 2 feet).

Combat Range 6, Site C6-01A, Mortar Impact Area:

This site is a one-acre area located in Combat Range 6 on the southwest side of Mt. Reed (Figure 1). The number, type, and condition of OE/UXO items found indicated it was a mortar impact area. During the investigation, nine pieces of OE scrap and four UXO items were found on the surface and the subsurface (to a maximum depth of 2 feet).

Mitt Lake Impact Area, Site ML-01A, Mortar Impact Area:

This site is a 3.5-acre area located in the Mitt Lake Impact Area, southwest of downtown Adak adjacent to the Naval Magazine sector (Figure 1). The number, type, and condition of OE/UXO items found indicated it was a mortar impact area. During the investigation, four pieces of OE scrap and six UXO items were found on the surface and the subsurface (to a maximum depth of 1 foot).

Additional Sites to be Investigated in Field Season 2001:

23 sites were identified for additional investigation and cleanup, as needed. These include Combat Range 3 Sites C3-01B, -01C, -01D, -01E and C3-04A; Combat Range 8 Sites C8-01, -03 and -05A; Lake Jean Site LJ-01; Mitt Lake Sites ML-01B, -02A, and -02B; Lake DeMarie Site DM-06A; Finger Bay Sites FB-01 and -04; Blind Cove Site BC-01; Husky Pass Training Area; the Shagak Bay Gun Emplacement; the 20mm, 40mm, and 37mm gun emplacements (GUN-01, -02, and –03); and the Ammo Pier sites, FBAP-02 and AP-02. These are relatively small sites that include: ordnance disposal sites, impact areas, ammunition transfer and storage areas, firing points, training areas, or gun emplacements.

EVALUATION OF ALTERNATIVES

The Navy evaluated cleanup alternatives for each site according to the nine CERCLA criteria described in Table 2. Criteria 1 and 2 are called threshold criteria. They must be met by the proposed alternative. Criteria 3 through 7 are balancing criteria, which means they are used to compare the alternatives. Criteria 8 and 9 are modifying criteria, which are evaluated after receiving public and state comments on the proposed cleanup actions and are not evaluated in this plan.

Due to the similarity of the OE/UXO sites, and the similarity of alternatives developed and conclusions reached in the Feasibility Study, Table 3 compares the cleanup alternatives for sites C3-01A, C6-01A, and ML-01A and the 23 additional sites using the CERCLA evaluation criteria. Alternative 4 is a presumptive remedy for 14 sites to be investigated in the upcoming field season.

The alternatives for each of the evaluation criteria are described here in greater detail:

- **Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) or To Be Considered (TBC) Guidance**
  Clearance to 4 feet bgs is the only alternative that will satisfy the site-specific requirements for land transfer without OE/UXO-related land use restrictions.

- **Overall Protection of Human Health and the Environment**
  Clearance to 4 feet bgs would be highly protective of human health and the environment based on projected future land uses. Surface Clearance would also provide some protection of human health and the environment due to reduced contact with surface items. Adak NOFA is slightly protective through resident and visitor education and area identification. Clean up of soils that contain ordnance-related contaminants will be protective of human health and the environment.

- **Long-Term Effectiveness and Permanence**
  Clearance to 4 feet bgs provides the most permanent and effective removal of risk associated with OE/UXO for these sites. Cleanup and offsite disposal or on-site treatment will result in a permanent solution.

- **Reduction of Toxicity, Mobility, and Volume Through Treatment**
  Both Surface Clearance and Clearance to 4 feet bgs provide a reduction in the volume of OE/UXO. Clearance to 4 feet provides the most complete treatment of OE/UXO by reducing its amount and potential mobility through removal to a depth of 4 feet. Onsite treatment of soils with ordnance-related contaminants would provide the best remedy to meet this criterion. Offsite disposal would meet the reduction of mobility, but would not address reduction in toxicity, unless the disposal facility includes treatment.

- **Short Term Effectiveness**
  Both Surface Clearance and Clearance to 4 feet bgs have fair short-term effectiveness evaluations due to the risk to site workers and the impact on the environment due to clearance activities such as excavation of tundra. Adak NOFA is considered to be acceptable, as it provides no risk to workers and causes no short-term environmental impacts. There is little short-term risk associated with the soil cleanup because of the small volumes and lack of acute toxicity. Protective clothing and adherence to standard protocols for sampling and cleanup will minimize any exposure risks to workers.

- **Implementability**
  Adak NOFA has acceptable implementability, as it requires no physical site access. Both Surface Clearance and Clearance to 4 feet bgs are considered fair for implementability due to logistics requirements and physical hazards in accessing and working at the site. Soil cleanup is easily implemented.

Table 2 CERCLA Evaluation Criteria

Criterion	Description
1. Overall protection of human health and environment	Evaluates whether a cleanup action provides adequate protection of human health and the environment and how potential risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. Compliance with regulations	Evaluates whether a cleanup action will meet ARARs and TBCs federal and state laws, policies and guidance
3. Long-term effectiveness and permanence	Evaluates the ability of a cleanup action to reliably protect human health and the environment over time.
4. Reduction of toxicity, mobility, or volume through treatment	Evaluates the degree to which an alternative uses treatment that reduces toxicity, mobility, or volume.
5. Short-term effectiveness	Evaluates the potential of the cleanup action to create adverse effects during construction and implementation and how fast it can protect human health and the environment.
6. Implementability	Evaluates how suitable a remedy is from a technical and administrative standpoint, including the availability of materials and services needed for the chosen solution.
7. Cost	Evaluates capital and operation and maintenance costs.
8. State acceptance	Evaluates whether, based on its review of the project documents and proposed plan, the state agrees with, opposes, or has no comment on the preferred alternative.
9. Community acceptance	Evaluates whether the public agrees with, opposes, or has no comment on the preferred alternative; this is determined after reviewing the public comments received on this Proposed Plan.

- **Cost**
  Costs for alternatives were based on clearance activities previously performed at similar sites on Adak. The Surface Clearance alternative was estimated at a combined cost of $310,000, with the Clearance to 4 feet bgs estimated at a combined cost of $1,107,000. Adak NOFA costs were estimated at $50,000, however as this program is implemented on an island-wide basis, the costs are not directly attributable to any one site. Costs for the chemical sampling and disposition of soil potentially contaminated with ordnance compounds at sites to be investigated during the summer field season are estimated to be $17,000. These costs are based upon worst case assumptions that will generate 7 cubic yards of hazardous waste that must be disposed of off island.

Table 3. Alternative Comparison

	Cleanup Alternatives			
CERCLA CRITERIA	**NOFA**	**Surface Clearance**	**Subsurface Clearance**	**Soil Sample and Removal**
Compliance with ARARs	○	◔	◕	◕
Overall protectiveness of human health and the environment	○	○	◕	◕
Long-term effectiveness and permanence	◔	◒	◕	◕
Reduction of toxicity, mobility, or volume through active treatment	○	◒	◕	◕
Short-term effectiveness	◕	◔	◔	◕
Implementability	◕	◔	◔	◕
Cost ($)	C3-$0 C6-$0 ML-$0 *-$0#	C3-$144,000 C6-$31,000 ML-$74,000 *-$60,800	C3-$299,000 C6-$65,000 ML-$193,000 *-$550,000	$17,000

○ Poor ◔ Fair ◒ Good ◕ Excellent ● Superior

C3 - C3-01A, C6 - C6-01A, ML - ML-01A

***23 additional sites investigated in 2001 under FS and RA**

#Baseline costs to administer the island-wide program are estimated to be $50,000; however the costs are not directly attributable to one site

PREFERRED ALTERNATIVE

For the 26 sites listed above, where OE/UXO may still be present, Alternative 3, the clearance to 4 feet bgs alternative was selected as the Preferred Alternative due to its long-term effectiveness by permanently removing OE/UXO to the maximum depth that items were discovered. It also allows for current and reasonably expected future land use of the site. The costs and implementability issues are considered acceptable for this alternative. While no remedial action alternative currently exists that will ensure identification and removal of all OE/UXO items, the preferred alternative is considered the most protective and permanent. This preferred alternative is currently being evaluated by the regulatory agencies and public and may change in part, or in its entirety, due to new information or public comment. The elements of this alternative include:

- Remove all metallic debris from the surface that could interfere with geophysical surveys.
- Geophysically survey sites to find possible OE/UXO.
- Process and interpret geophysical data to identify locations to dig for possible OE/UXO ("hits").
- Relocate "hits" through a Global Positioning System (GPS) system and dig the "targets".
- Blow in place UXO items or remove them for treatment at a remote location.

No Further Action, Alternative 1, is the selected preferred alternative for sites where OE/UXO was not found or was cleared during investigations. The Adak NOFA alternative also will be applied for all sites under OU B-1 and includes the following elements:

- Continue the Adak OE/UXO awareness program.
- Provide copies of the ROD to BLM to remain available as part of the permanent file of conveyance documentation. This information will include what is known about OE/UXO and the depth to which clearance actions were taken.

For the 14 sites that have been identified as possibly containing ordnance-related chemical contamination, Alternative 4 is selected as the preferred alternative. It includes the following elements:

- Sample sites (through a composite sampling process) where ordnance compounds may pose a risk to human or ecological receptors and excavate, containerize, and ship for treatment and disposal, contaminated soils that exceed cleanup levels.

It is the Navy's current judgment that the Preferred Alternative identified in this Proposed Plan is necessary to protect public health or welfare or the environment from actual exposure to OE/UXO.

COMMUNITY PARTICIPATION

The public meetings to discuss the Proposed Plan are scheduled from 6:30 p.m. to 8:30 p.m. on May 29, 2001, at the Bob Reeve High School on Adak and from 6:00 p.m. to 8:00 p.m. on May 31, 2001 at the Hilton Hotel, 500 W. 3rd Avenue, Anchorage. Representatives from the Navy, ADEC, and the EPA will be present to discuss the Proposed Plan and to answer questions.

This plan summarizes information contained in the Remedial Investigation/Feasibility Study. You may review this and other significant documents contained in the Administrative Record at the following locations, where they are available for public review:

Library Reserve Room
University of Alaska, Anchorage
3211 Providence Drive
Anchorage, AK 99501
(907) 786-1871

Engineering Field Activity, Northwest
Naval Facilities Engineering Command
19917 Seventh Avenue NE
Poulsbo, WA 98370-7570

These documents and other helpful information on the Adak cleanup may be viewed at the following Website: www.adakupdate.com

Another source of information on the environmental cleanup process is the Restoration Advisory Board (RAB) for the Adak base. The RAB is a group of community volunteers who act as a focal point for exchange of information about environmental cleanup issues. The RAB has been meeting for several years to discuss subjects such as the OE/UXO investigations at Adak and the development of cleanup alternatives. The public is welcome to attend the RAB meetings. Please refer to the Website or contact the number shown below for information on upcoming RAB meetings.

WE WANT YOUR COMMENTS

Comments from the public will be used to help determine what action to take. We invite you to comment on this proposed plan. You may communicate verbally or in writing at the public meeting on May 29, 2001 on Adak Island and May 31, 2001 in Anchorage. If you prefer, you may submit written comments during the public comment period, May 14 through June 12, 2001, by sending them to:

Mark Murphy, P.E.
Engineering Field Activity, Northwest
Naval Facilities Engineering Command
19917 Seventh Avenue NE
Poulsbo, WA 98370-7570

Fax: (360) 396-0857
E-mail: murphyms@efanw.navfac.navy.mil
(to provide comments electronically)

If you have special accommodation needs or require this document in alternative format, please call (907) 789-3098.

After considering public comments, the Navy, ADEC, and the EPA will select the final cleanup remedies. The preferred cleanup remedy may be modified based on public comment or new information. The chosen remedy will be described in the Record of Decision. The Navy will respond to your comments in a responsiveness summary. The responsiveness summary will be part of the Record of Decision, which will be available for review in the Administrative Record at the centers listed above.

GLOSSARY

Accessible
Portions of Adak that are not restrictive to foot travel because of steep terrain.

Adak Stakeholders
All individuals or groups with regulatory, economic, or political interest in the cleanup or reuse of Adak Island.

Anomalies
Possible ordnance or other metallic debris that is identified by one or more geophysical techniques.

Base Closure and Realignment Act
A federal program established by Congress to transfer closed military installations to the private sector and expedite cleanup of such contaminated sites to be consistent with their reasonably anticipated future land uses.

Cleanup Levels
A risk-based concentration measured in an environmental sample (air, soil, groundwater, etc.) above which some regulatory action is justified. (equivalent to a human cancer risk of 1×10^{-5} and ecological Hazard Index of 1)

Explosive Safety Hazard Assessment
An evaluation tool developed by the OU B Project Team to assess the explosive hazards posed by OE/UXO on Adak.

Formerly Used Defense Sites
A Department of Defense program administered by the Army Corps of Engineers to investigate, clean up, and manage former military sites that contain ordnance

Geophysical
Pertaining to a group of magnetic, electromagnetic, or other tools that are used to help interpret the subsurface conditions at a site.

Intrusive Investigation
Dig and define buried ordnance or other metallic debris by an explosives ordnance technician.

No Further Action
A no-cost baseline alternative used to assess the effectiveness and cost of remedial alternatives in a Feasibility Study.

Ordnance and Explosives
All components related to munitions that were designed to cause damage to personnel or property through explosive force, incendiary action, or toxic effects.

Preliminary Assessment
A limited investigation, based primarily upon existing information, which is intended to identify sites that pose a significant threat to human health and the environment.

Reconnaissance Survey
A visual survey of a suspected ordnance site to determine the need for a remedial investigation of the site.

Record of Decision
A legal document describing the remedial actions selected for a site evaluated by a remedial investigation/feasibility under the Superfund program.

Remedial Investigation/Feasibility Study
A study conducted to determine the nature and extent of contamination at a hazardous waste site/ A study conducted to identify and evaluate cleanup alternatives for contamination.

Unexploded Ordnance
Military munitions that have been primed, fuzed, armed, or otherwise prepared for action, but remain unexploded by malfunction, design, or any other cause, such that they constitute an explosive hazard.

COMMENT FORM

Your Name

Your Address

Your Phone Number

Comments