



FACT SHEET

Former Adak Naval Complex, Adak Island, Alaska Proposed Cleanup of Area 303

August 2011

Introduction

The Navy has issued the Proposed Plan for Area 303 at the former Adak Naval Complex, Adak Island, Alaska, which presents the preferred cleanup alternative for the petroleum contamination at the site. The public is encouraged to review and comment on the Proposed Plan, which is available at Bob Reeve High School on Adak Island; the University of Alaska at Anchorage Library; and the U.S. Navy website https://portal.navfac.navy.mil/portal/page/portal/NAVFAC/NAVFAC_WW_PP/NAVFAC_EFANW_PP. Comments will be accepted on the Proposed Plan from August 16 through September 15, 2011. The Navy, in consultation with the Alaska Department of Environmental Conservation (DEC), may modify the preferred cleanup alternative based on public comments or new information. The final decision for Area 303 will be presented in a Decision Document, which will include a responsiveness summary describing how public comments were addressed.

Site Background

The Area 303 site is located in downtown Adak between the air terminal and the former high school building (Figure 1). Area 303 occupies approximately 24 acres that include commercial, aviation, public facilities, and residential areas. There are two structures within the Area 303 site, the General Communications, Inc. (GCI) Compound building and Building T-2776. The GCI

Compound is also contaminated with petroleum, and cleanup of the GCI Compound petroleum-release site is being addressed separately from Area 303.

Environmental field investigations in Area 303 detected petroleum compounds, primarily gasoline, in subsurface soil, soil vapor, and groundwater samples collected from various locations at the site. Petroleum is a complex

mixture containing hundreds of compounds, and different types of petroleum (e.g., gasoline, diesel, and jet fuel) contain different chemicals. It is important to know the type of petroleum in the environment, because toxicity and cleanup strategies can differ depending on the type of petroleum fuel.

Underground petroleum distribution pipes are present at the site (Figure 2) and are believed to be the source of petroleum fuel to the environment. These underground pipes include an aviation gasoline (avgas)



Figure 1
Site Location and Vicinity, Area 303

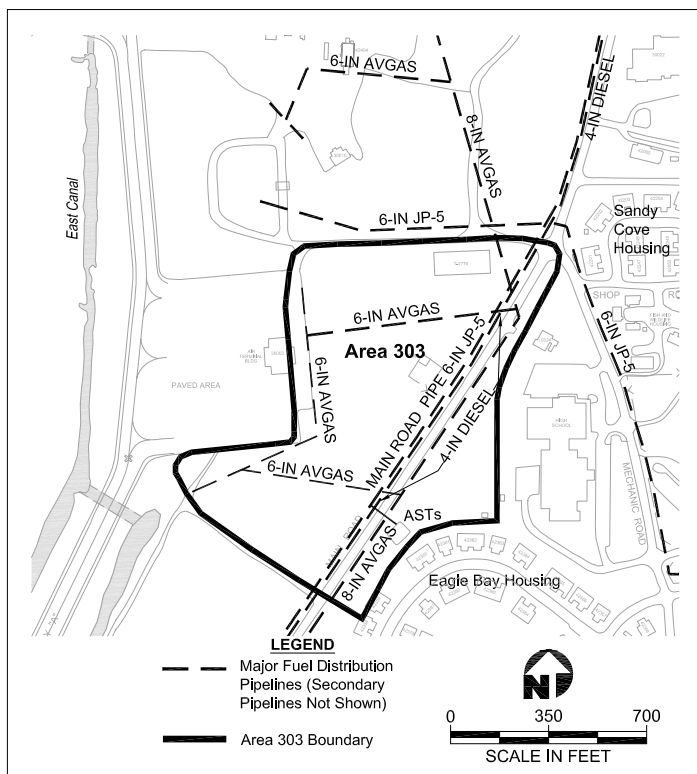


Figure 2
Potential Petroleum Sources at Area 303

pipeline distribution system, a diesel pipeline, and two jet petroleum No. 5 (JP 5) pipelines. None of these pipelines is currently active. Based on the results of the 2006 remedial investigation and the 2009 pipeline integrity

testing, the avgas pipeline distribution system was the apparent source of gasoline contamination within Area 303. Neither diesel fuels nor jet fuels were identified as a concern in subsurface soil and groundwater. Thus, the diesel and jet fuel pipelines do not appear to have contributed to contamination in Area 303.

Liquid petroleum (referred to as “free-phase petroleum product” or “free product”) has been observed floating on top of the groundwater in four wells within the vicinity of Area 303 (Figure 3). However, the free product measured in two of the wells (located in the extreme southern portion of the site) is thought to have resulted from the releases from an adjacent petroleum-contaminated site, the SWMU 62 Eagle Bay Housing area, and unrelated to Area 303.

The Navy completed decommissioning of six pipelines in the downtown area, including the pipelines at Area 303. Decommissioning work included integrity testing using a vacuum test; draining, cleaning, and filling the pipelines with grout; removing all aboveground sections of pipeline, valve sheds, valves, and controls; and removing all belowground low-point drains, high-point vents, and valve pits/vaults. Pipeline integrity testing results indicated that sections of the 8-inch diameter avgas pipeline and its 6-inch diameter branch were compromised, and therefore it is highly likely that they had leaked. Both of these sections are located in the northern portion of Area 303. This decommissioning work was completed in September 2009.

Regulatory Background

Investigation and cleanup of petroleum-contaminated sites at the former Adak Naval Complex have been ongoing since 1986. A Record of Decision (ROD) for Operable Unit A (OU A) was prepared for both the petroleum sites and the hazardous substance release sites and signed by the Navy, the U.S. Environmental Protection Agency, and the Alaska DEC in 2000. The ROD is the legal document describing the cleanup actions selected for a site. The ROD for OU A selected final or interim remedies for each of 128 petroleum-contaminated sites identified on Adak Island.

Area 303 was not one of the 128 petroleum-contaminated sites included in the OU A ROD. Area 303 was identified after the OU A ROD was signed during a U.S. Geological Survey (USGS) investigation performed to monitor changes in petroleum concentrations over time in groundwater in the downtown area. This USGS

investigation was conducted during May and June 2003 and included collection of groundwater samples from locations between GCI Compound and the East Canal of the Airport surface water collection system (the East Canal is shown on Figure 2). The chemical analyses conducted on these samples identified the presence of gasoline at concentrations that greatly exceeded the concentrations observed in the GCI Compound source area. As a result, USGS concluded that a second overlapping gasoline plume, which had not been previously identified, existed near GCI Compound. The Navy subsequently conducted an investigation of the newly identified Area 303 to characterize the gasoline release and prepared a focused feasibility study to determine what cleanup actions might be necessary at the site. The Proposed Plan identifies the preferred cleanup action from the several cleanup actions evaluated in the focused feasibility study report.

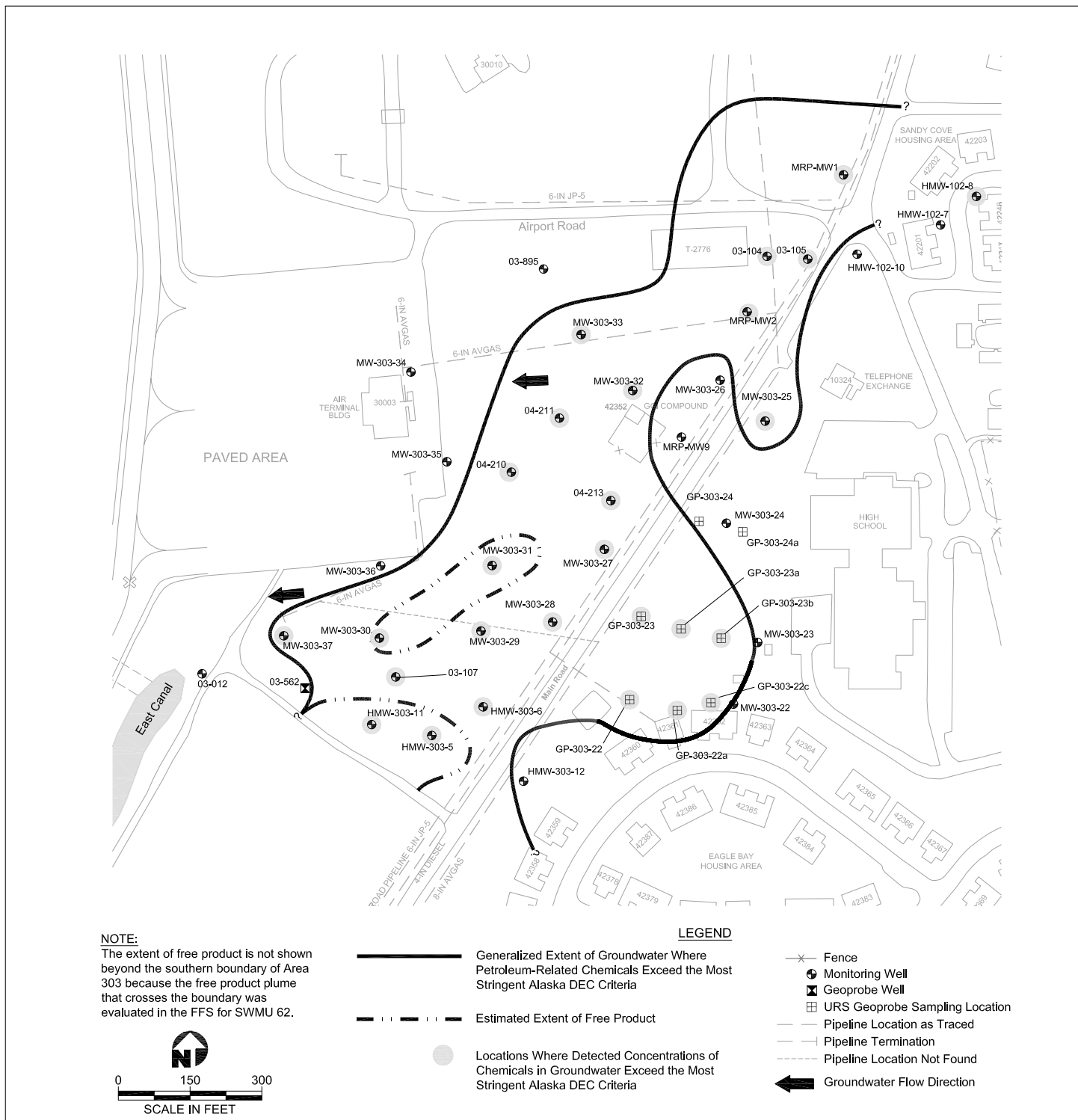


Figure 3
Estimated Extent of Free Product and Groundwater Contamination, Area 303

Cleanup Levels at Area 303

Cleanup levels are used to help determine how much cleanup is required, help determine at what point contaminants no longer pose an unacceptable risk to human health or the environment, and establish when the sites can be considered “clean” after cleanup actions have been implemented.

Soil

Alaska petroleum cleanup regulations (18 Alaska Administrative Code [AAC] 75) establish four methods for determining cleanup levels for soil. Alternative cleanup levels are proposed for remediation of soil following Alaska DEC Method Four (18 Alaska Administrative Code [AAC] 75.340[a][4]), which uses site-specific risk assessments to establish cleanup levels. The risk assessment for this site demonstrated that existing concentrations in soil do not pose a current unacceptable risk to humans or the environment. Therefore, the soil concentrations identified during site investigation and used in the risk assessment are protective of human health and the environment and, by default, are the cleanup levels for the site.

Groundwater

Alaska regulations (18 AAC 75) establish two methods for determining cleanup levels for groundwater. Cleanup levels specified for remediation of groundwater at Area 303 are based on the tabulated groundwater cleanup levels (18 AAC 75.345[b][1], Table C). The extent of groundwater at the site containing petroleum-related chemicals at concentrations greater than the applicable groundwater cleanup levels is shown on Figure 3.

Soil Vapor

Vapor intrusion target levels for soil gas were developed by Alaska DEC in 2009 (Draft Vapor Intrusion Guidance for Contaminated Sites, Appendix F). These target levels protect human health if vapors in the subsurface reach indoor air. The supplemental risk assessment for this site demonstrated that existing concentrations in soil vapor do not pose a risk to humans above target health goals. Therefore, the existing concentrations at the site are protective of human health and, by default, are the cleanup levels for the site.

Surface Water and Sediment

Although petroleum hydrocarbons released in Area 303 have not impacted the East Canal (the nearest surface water to the site), groundwater beneath the site is moving toward the East Canal. Therefore, petroleum compounds or volatile organic compounds in the groundwater may be carried to East Canal in the future at high enough concentrations to result in an exceedance of Alaska surface water quality standards. As specified in 18 AAC 75.345(f), chemicals present in groundwater that is closely connected to nearby surface water should be evaluated for their potential to cause a violation of surface water quality standards. Therefore, the surface water quality standards established in Alaska regulation 18 AAC Chapter 70 apply to the East Canal.

Alaska State regulations do not establish cleanup levels for sediment. Therefore, sediment cleanup levels are established based on the results of the ecological risk assessment conducted for the site. A screening-level ecological risk assessment was performed to identify the contaminants and environmental media, if any, that warranted detailed evaluation in a baseline risk assessment. The results of the screening-level risk assessment indicated that no ecological threat exists for any ecological receptor from any petroleum-release product at Area 303, and preparation of a detailed risk assessment was not warranted. Therefore, cleanup levels are not necessary for sediment.

Remedial Action Objectives

Although health risks at Area 303 are acceptable, groundwater beneath the site exceeds Alaska DEC cleanup levels. Therefore, remedial action objectives (RAOs) were developed for groundwater at the site. RAOs are goals that are to be achieved by the final remedy selected to clean up a site. The RAOs are the following:

- Reduce petroleum hydrocarbons or volatile organic compounds in groundwater to concentrations less than or equal to the Alaska DEC groundwater cleanup levels established for groundwater used as a drinking water source.
- Minimize exposure to free-phase product.
- Prevent migration of petroleum hydrocarbons or volatile organic compounds to surface water that would result in an exceedance of the Alaska DEC surface water quality standards.

Based on the ecological risk analysis conducted for this site, no RAO was found to be necessary for the protection of ecological receptors at Area 303. Preventing the migration of free product to surface water and preventing

the migration of chemicals in groundwater from reaching surface water at concentrations greater than Alaska DEC surface water quality standards will protect ecological receptors in East Canal in the future.

Remedy Selection

Initially, four different cleanup alternatives were evaluated for Area 303 in order to select the best remedy to achieve the RAOs. These four cleanup alternatives are no action, limited groundwater monitoring, monitored natural attenuation and institutional controls, and product recovery. In addition to achieving RAOs, a cleanup alternative must meet several strict criteria established by state regulations to be selected as the best remedy. These criteria are protection of human health and the environment, compliance with Alaska regulations, long-term and short-term effectiveness, cost-effectiveness, and implementability (ease of execution).

Alternative 3, Monitored Natural Attenuation and Institutional Controls, and Alternative 4, Product Recovery, are the preferred remedial alternatives for Area 303 (Figure 4). These alternatives will provide appropriate, cost-effective remedies that protect human health and the environment and can be implemented at the earliest possible time.

Monitored Natural Attenuation and Institutional Controls was selected as a preferred remedial alternative. Concentrations of petroleum and volatile organic compounds in groundwater are declining over time due to natural processes. These natural attenuation processes include evaporation (volatilization), dispersion, and microbial degradation. Monitored natural attenuation consists of conducting ongoing groundwater monitoring over time to measure the natural reduction in

concentrations until concentrations are below the Alaska DEC cleanup levels. This ongoing monitoring ensures that concentrations are decreasing as expected and that surface water will not be adversely impacted. Although institutional controls are already in place preventing the use of the downtown aquifer and requiring notification of excavation activities in the downtown area, Area 303 would be added to the Institutional Control Management Plan to ensure that compliance with the groundwater use prohibition and soil excavation notification requirements are verified annually at the site. Furthermore, verification that land use remains commercial to the west of Main Road, and public facilities and residential to the east of Main Road would also be performed annually at the site.

Product Recovery was also selected as a preferred remedial alternative, because free product has been detected at the site. Removal of free product will reduce the risk of exposure to free product and will reduce the likelihood of migration of free product to the East Canal. Monitoring in wells located between the free-product plume and surface water will be used to determine whether free product is migrating toward the East Canal. Free-product recovery will comply with Alaska regulations and will reduce the source of petroleum dissolving into groundwater.

Alternatives 3 and 4 will be performed concurrently. The Alaska DEC concurs with the selection of this remedy as the Preferred Cleanup Alternative. This Preferred Cleanup Alternative is currently open for public comment.

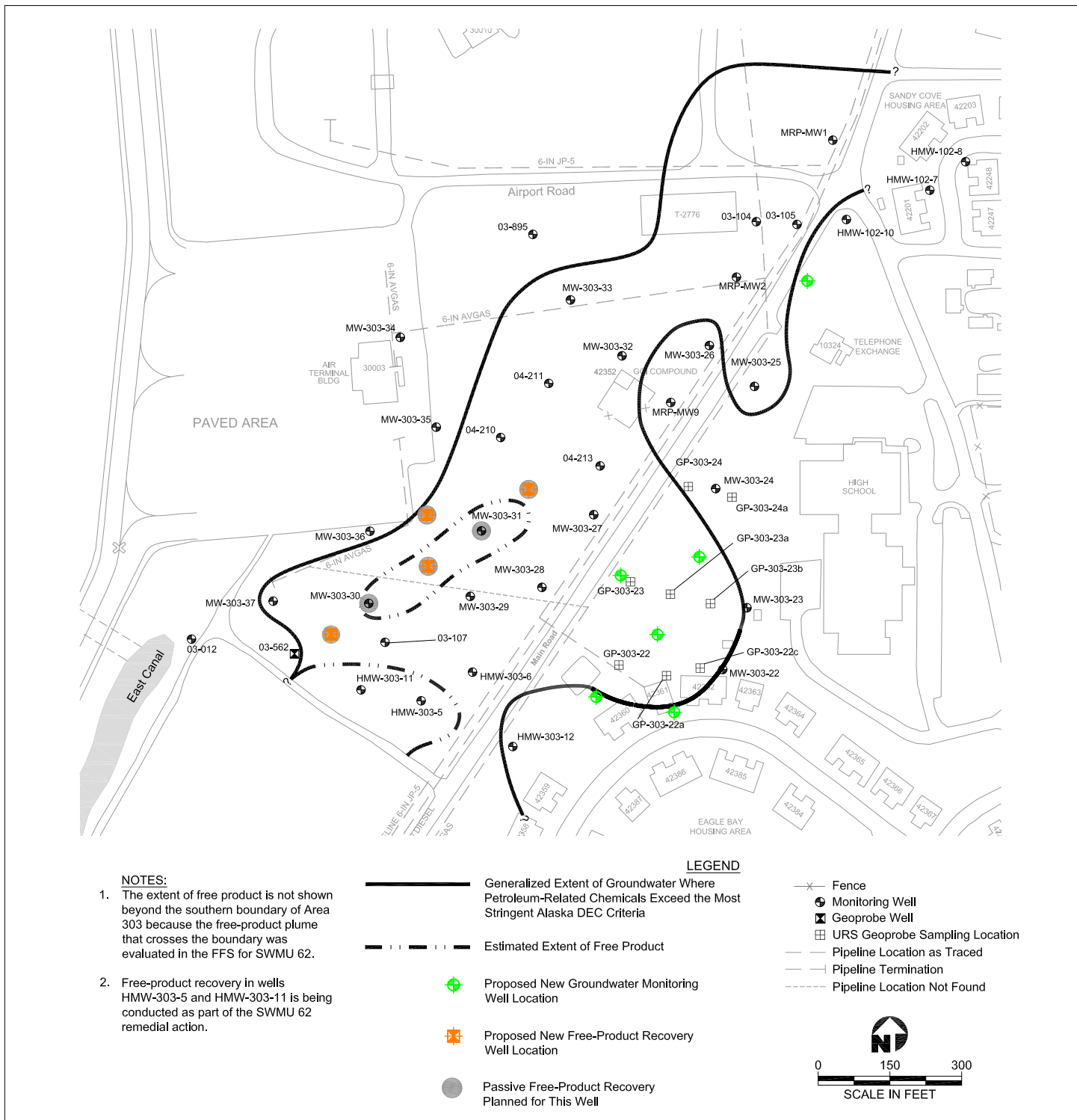


Figure 4 Preferred Cleanup Alternative Activities, Area 303

Additional Information

More detailed information about the proposed cleanup plan for Area 303 can be found in the Proposed Plan, which is available at the Bob Reeve High School; the University of Alaska at Anchorage Library; and the U.S. Navy website <https://portal.navfac.navy.mil/portal/page/portal/>

NAVFAC/NAVFAC_WW_PP/NAVFAC_EFANW_PP.
Public comment period for the proposed cleanup plan is from August 16 through September 15, 2011. For further information please contact:

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