U.S. Army Corps of Engineers
Alaska District

Final
Proposed Plan
Building A-141 HTRW
Kodiak, Alaska
Formerly Used Defense Site

Buskin Beach, Kodiak Island **July 2022**
FUDS Project No. F10AK0902-06

INTRODUCTION

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This Proposed Plan summarizes the proposed decision of No Further Action at the former Building A-141 site located in the Kodiak Borough on Kodiak Island, Alaska. This document is issued by the U.S. Army Corps of Engineers (USACE), the lead agency for site activities. The USACE has determined that No Further Action is necessary to protect public health, or welfare, or the environment.

The Proposed Plan was prepared in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and follows the requirements from Engineer Regulation (ER) 200-3-1, Formerly Used Defense Sites (FUDS) Program Policy (USACE, 2004) and U.S. Environmental Protection Agency (USEPA) guidance. The Proposed Plan is a document that USACE is required to issue to fulfill the public participation requirements of Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund [42 U.S.C. § 9601 et al.]. The site described in this Proposed Plan is a CERCLA site; however, it is not listed on the National Priority List. USACE is issuing this Proposed Plan as part of its public participation responsibilities under CERCLA.

Although a brief summary of the previous investigations has been provided in this Proposed Plan, the USACE encourages the public to review the Phase II Remedial Investigation Report (USACE, 2020) in its entirety to gain a better understanding of the site and the environmental investigation activities that support the No Further Action decision. A public comment period of no less than 30 days, as well as the opportunity to participate in a public meeting are being provided in accordance with ER 200-3-1 and following CERCLA § 117(a) and NCP § 300.430(f)(3). The public comment period will be from 6 August 2022 through 9 September 2022 and a public meeting will be held at the Best Western Kodiak Inn Harbor Room located at 236 Rezanof Drive, Kodiak Alaska on 25 August 2022 from 5:30 to 6:30 PM. New information or recommendations received during the public comment period and/or public meeting will be documented in the Decision Document.

The Department of Defense (DoD) is authorized to carry out a program of environmental restoration at former military sites under the Defense Environmental Restoration Program (DERP), which includes clean-up efforts at FUDS. FUDS are defined as real property that was under the jurisdiction of the Secretary (Secretary of Defense and the Secretaries of each of the Military Departments, as well as the Secretaries of any predecessor departments or agencies of DoD) and owned by, leased by, or otherwise possessed by the United States (including governmental entities that are the legal predecessors of DoD or the Components), and those real properties where accountability rested with DoD or the Components but

where the activities at the property were conducted by contractors (i.e., government-owned, contractor-operated [GOCO] properties) that were transferred from DoD control prior to 17 October 1986. The FUDS eligibility status of former DoD property is not affected by its being the current responsibility of another federal agency. FUDS properties range from privately owned lands to state or Federal lands such as national parks, as well as residential land, schools, and industrial areas. The FUDS program includes former Army, Navy, Marine, Air Force, and other defense-used properties. Over 500 FUDS have been identified in Alaska.

This Proposed Plan addresses the remedial investigation (RI) results conducted under CERCLA. In addition to this, the Proposed Plan discusses petroleum, oil, and lubricants (POL)-contamination at the site. POL contamination is excluded under CERCLA, but was investigated under the authority of the DERP, U.S. Code, Title 10, Section 2701, et seq. The DERP provides authority to clean up petroleum contamination if it poses an imminent and substantial endangerment to public health, welfare or the environment.

This Proposed Plan highlights the key information used to support the No Further Action decision. The documents used to uphold the No Further Action decision are available in the Administrative Record/Information Repository located at the Kodiak Public Library, Kodiak, Alaska.

PURPOSE

ACRONYMS

This Proposed Plan contains many acronyms that are used to represent complex terms, titles, and other words or phrases. The use of acronyms enables us to provide more information to the reader with less space and greater brevity. We have provided a list of acronyms and their meanings at the end of the Proposed Plan. Please refer to the list, as needed, to improve your understanding of the site.

The purpose of this proposed plan is to:

- describe the environmental conditions at the site,
- describe the investigations, remedial actions, and removal actions conducted at the site,
- discuss the proposed decision of No Further Action at the site,
- request public comment on the proposed No Further Action decision, and
- provide information on how the public can be involved with the decision-making process.

SITE BACKGROUND

The former Building A-141 site (Alaska Department of Environmental Conservation [ADEC]) file number 2601.38.118) is located within the boundaries of the 26,000-acre U.S. Coast Guard Base Kodiak on Kodiak Island, Alaska. The site is located on a side road projecting northwestward off Tom Stiles Road near the Buskin River access, approximately 6 miles southwest of the City of Kodiak and north of the Kodiak Airport (Figure 1). The side road is gated, and U.S. Coast Guard (USCG) security personnel maintain access through this gate.

The former Building A-141 site is a subarea to the Buskin Beach FUDS property (FUDS F10AK0902), which includes land on both sides of West Rezanof Drive (Figure 2). Except for building foundations and other loose structures, such as concrete blocks, and the former concrete underground storage tanks (USTs), no other structures remain on the property where Building A-141 or the adjacent Building A-140 sites were located. Buildings A-140 and A-141 were historically located within the former Building A-141 site within Lot 21. Although contamination near the Former Building A-140 is discussed in this Proposed Plan, the Former Building A-141 and Former Building A-140 sites are being treated as separate sites.

The U.S. Navy used Buskin Beach and the surrounding area from 1939 to 1975 as part of the Kodiak Naval Station Reservation. Fort Greely, the Army Garrison on Kodiak Island, was located on 4,583 acres within the Naval Station Reservation boundary. Analysis of historical photographs from 1948 identifies

former Building A-141 as a boiler plant; additional documentation detailing historical use of the building is not available. Historical documentation suggests former Building A-140 might have been a dry-cleaning facility. The U.S. Army occupied the area until Fort Greely was vacated on 1 July 1952, at which time the facilities were transferred to the U.S. Navy.

Buskin Beach was transferred to the Bureau of Land Management (BLM) on 1 December 1975, and 688 acres were withdrawn from the Naval Reservation for Native selection pursuant to the Alaska Native Claims Settlement Act. The surface estate for the Buskin Beach area (Lots 15, 22-24) was conveyed to the Natives of Kodiak, Inc. in November 1989. The subsurface estate was conveyed to Koniag, Inc. Portions of the Greely Road Garrison subarea were retained by the USCG (Lot 25) and BLM (Lot 17). The USCG currently owns Lots 21 and 25 (USACE, 2008). Figure 2 shows current land ownership and former Building A-141 site location at Buskin Beach.

Residents have indicated that the Buskin Beach area was used primarily as a dumping ground for U.S. Army and U.S. Navy waste (USACE, 1997, as cited in USACE, 2000). The contaminants identified at the former Building A-141 site are petroleum hydrocarbons and associated contaminants (POLs). The results of several investigations indicate that most of the POL contamination at the former Building A-141 site originated from the area of a concrete UST vault with additional localized releases.

Most of the Buskin Beach area remains undeveloped and the USCG does not have any current plans to develop the affected area. The site does have land use controls and is part of the USCG land management plan.

PRIOR INVESTIGATIONS

USACE has conducted Site Inspections (SI), Interim Removal Actions (IRA), and Remedial Investigations (RI) at the former Building A-141 site since 1996. These activities, listed below, included groundwater monitoring and preparation of a Focused Feasibility Study (FFS).

- 1998/1999 Remedial Investigation
- 1998 Interim Removal Action
- 1999 Groundwater Monitoring
- 2007 Site Inspection
- 2008 Interim Removal Action
- 2008 Focused Feasibility Study
- 2014 Phase I Remedial Investigation
- 1999, 2014, 2015 and 2018 Groundwater Monitoring
- 2018 Phase II Remedial Investigation

Site features and historical sample locations at former Building A-141 are shown on Figures 3 and 4.

Site Inspection (2007)

This inspection involved performing excavation and sampling of eight test pits around the former UST vault area (USACE, 2008). Confirmation soil samples were collected and analyzed to evaluate the POL contamination, as well as polychlorinated biphenyls (PCBs). Analytical results were compared to Alaska's Site Cleanup Rules (Article 3 of Title 18 Alaska Administrative Code Chapter 75 [18 AAC 75]). Petroleum hydrocarbon results from the SI prompted the 2008 IRA, discussed below. The results also detected PCB Aroclor-1260 in several soil samples, but at concentrations below the ADEC and USEPA cleanup level of 1 milligram per kilogram (mg/kg) listed in 18 AAC 75.341 and 40 Code of Federal Regulations (CFR) 761.61, respectively.

Interim Removal Actions (1998, 2008)

In 1998, removal activities involved closing in-place two 4,000-gallon concrete USTs after removing approximately 150 gallons of Bunker C fuel with water and sludge. The two USTs were adjoining and formed a UST vault. The USTs were closed in place due to the large volume and weight of the concrete. POL-impacted soil beneath the concrete vault was left in place. Two fuel lines, wood debris, concrete roofing from the USTs, and 1,160 pounds of wood were removed from the site, as well as 50 cubic yards of impacted soil that was transported to Nyman Peninsula for treatment (USACE, 1999). Three confirmation soil samples were collected from test pits east and north of the concrete vault. After the concrete USTs were steam-cleaned, drainage holes were constructed in the floor of each UST followed by backfilling of the USTs with crushed rock (USACE, 1999).

Another IRA was conducted in 2008 (USACE, 2009) following the results of the 2007 SI. A total of 1,455 tons of POL-contaminated soil was removed from the site and properly disposed. During soil excavation activities, free product (fuel) was observed floating on the exposed water table surrounding parts of the UST vault as well as underneath the concrete UST within the excavation area (USACE, 2009).

Groundwater Monitoring (1999, 2014, 2015, 2018)

Extensive groundwater monitoring activities were conducted as part of a larger effort at Buskin Beach to determine whether contaminants were migrating to the Buskin River via groundwater or groundwater seeps along the river, or in groundwater flowing preferentially along abandoned wood-stave pipelines. The Buskin River is located approximately 1,000 feet northwest of the Building A-141 site. Groundwater generally flows with the topography, trending down the slope toward Buskin River to the west (USACE, 2020). Groundwater monitoring at the former Building A-141 site began in 1999 at two wells (USACE, 2000). Eight additional monitoring wells installed during the 2014 RI were sampled in 2014 (USACE, 2016b), 2015 (USACE, 2016a) and 2018 (USACE, 2020).

Remedial Investigations (1998/1999, 2014, 2018)

The remedial investigations (RIs) were performed to acquire detailed information about the subsurface characteristics of the site, and to support a future FFS. The RI conducted in 1998/1999 included installing and sampling soil borings and groundwater monitoring wells (USACE, 2000).

In 2014, a Phase I investigation was performed, in part, to positively identify the contaminants of concern (COCs) affecting the impacted soil and to determine if any remaining contaminants had migrated from the source areas to the soil/groundwater interface. Investigation activities at the site included the installation of 44 ultraviolet optical screening tool (UVOST) probes that detect POL soil contamination, the collection and analysis of 14 soil samples to evaluate the concentrations of contamination, and the installation, sampling and analysis of eight groundwater monitoring wells (USACE, 2016b).

In 2018, a Phase II investigation was completed to fully delineate the extent of petroleum hydrocarbons in the subsurface soil remaining after the IRA was conducted in 2008; monitor for potential migration to groundwater; and collect sufficient data to assess risk from contaminants at the site to human health using the ADEC Method Three Hydrocarbon Risk Calculator (HRC). The ADEC HRC was used in place of the ADEC Method Three and cumulative risk calculators to assess site-specific risk at the site in 2018 due to low concentrations of contamination detected (USACE, 2020).

Focused Feasibility Study (2008)

A FFS was completed to develop, evaluate, and compare potential remedial action alternatives for the former Building A-141 site that would meet the remedial action objectives (RAOs) so that an appropriate remedy could be selected. The FFS used the information obtained during the 1998/1999 RI (USACE, 2000) and the 1998 IRA (USACE, 1999) to perform a systematic analysis to determine appropriate remedial action alternatives based on current and anticipated future land use. The FFS screened and evaluated five remedial alternatives identified to address POL contaminated soil and non-aqueous-phase liquid at the former Building A-141 site (USACE, 2008). The FFS, which discusses the five remedial alternatives, may be reviewed at the Administrative Record/Information Repository located at the Kodiak Public Library.

The remedial alternatives that were proposed in the FFS were not used to inform response decisions. Additional investigations and remedial actions were conducted after completion of the FFS. Eight test pits

were installed and sampled in 2007 around the former UST vault area to evaluate extent of POL contamination, and based on analytical results and site observations, an IRA was conducted (USACE, 2009). Approximately 1,455 tons of POL contaminated soil and 30 gallons of free product was removed from the site and properly treated. The excavation at the site was backfilled with clean material after collection of confirmation soil samples to characterize the presence or absence of contamination (USACE, 2009). In 2014, further RI efforts were performed at the former Building A-141 site in part to positively identify the COCs affecting the impacted soil remaining and to determine if COCs had migrated from the source areas to create smear zones of contamination at the soil/groundwater interface (USACE, 2016b). A groundwater investigation was conducted during a period of low precipitation in 2015 to determine if groundwater fluctuations influence contaminant concentrations (USACE, 2016a). Lastly, a Phase II RI was conducted in 2018 (USACE, 2018) to collect sufficient data to eliminate data gaps remaining from previous investigations and to address the recommendations identified in the 2014 RI (USACE, 2016b). Additional soil samples were collected from borings and groundwater monitoring was completed. Based on the 2018 RI, no further soil or groundwater investigations were recommended at the former Building A-141 site (USACE, 2020).

SITE CHARACTERISTICS

The former Building A-141 was utilized as a boiler plant. The two 4,000-gallon concrete USTs were closed in place because of the large volume and weight of the concrete (USACE, 2000). The concrete roofing from the USTs was removed, steam-cleaned and properly disposed off-site. The fuel/water mix in the USTs was pumped into a storage tank, and sludges in the bottom of the USTs were shoveled into 55-gallon drums and transported for disposal. The concrete USTs were then steam-cleaned until all surfaces were visibly residue-free. Drainage holes were constructed in the floor of each UST followed by backfilling of the USTs with crushed rock and left in-place. The tops of the USTs were located at 3 feet below ground surface (bgs).

Due to the presence of the existing vault, the soil underneath could not be removed, thus POL contaminated soil remained in-place. Although no sampling has been conducted underneath the concrete UST vault, the extent of impacts to soil around the former excavation area and several localized releases have been laterally and vertically defined.

After the building structures, excluding the foundations, were removed, the site has remained undeveloped since past DoD use.

Factors that had a major impact on the proposed decision of No Further Action included evaluation of the type and concentration of contamination remaining at the site, and evaluation of resources affected or threatened by remaining site contamination, such as current or potential drinking water sources or wetlands.

- No CERCLA COCs remain at the site. The COCs at the former Building A-141 site that are DoD-related have been determined to be derived from POLs and are exempt from remedial action under CERCLA Section 101. Therefore, No Further Action is recommended by USACE under CERCLA.
- The majority of remaining POL contaminants exist in subsurface soil (greater than 2 feet bgs).
- When considering the downward percolation from annual rainfall and the generally porous vadose material, the primary transport mechanism is downward migration to the subsurface soil, with the primary concern that POL contaminants could impact groundwater. Given the timeframe when the site ceased operations and lack of evidence for dissolved phase contamination, it is expected that the remaining POL contamination will stay bound to the soil.
- Advection (groundwater flow) is the primary transport mechanism for groundwater contamination, with the calculated directions of groundwater flow generally coinciding with the surface topography, exhibiting a low hydraulic gradient that trends east to west (Figure 4). If POL contaminants had become mobilized by groundwater flow, the path of migration would likely trend toward downgradient monitoring wells A141-MW05, A141-MW06, and A141-MW08. As of 2018, sample results for gasoline range organics (GRO) and volatile organic compounds (VOCs) have

been non-detect for all three groundwater monitoring wells, while diesel range organics (DRO) concentrations have been reported below the current Table C ADEC cleanup level (1.5 milligrams per liter [mg/L]) at 0.051 mg/L, 0.039 mg/L, and 0.089 mg/L, respectively. There is sufficient evidence from historical sampling and analyses to suggest that various dissolved phase hydrocarbon contaminants have been detected throughout the groundwater monitoring history below current Table C ADEC cleanup levels, and that the remaining contaminants in soil are not at risk of migrating to groundwater in the future due to the time span since fuel had been released to the subsurface; therefore, migration to groundwater is no longer considered a transport mechanism for this site.

- Habitat is considered the location in the environment where an organism lives which contains all physical and biological resources necessary for that species. The following four criteria were evaluated to determine if the site contains these necessary resources to support any native species: 1) does the site provide habitat for the valued species listed in the *Alaska Ecoregions Technical Background Document* (Shannon and Wilson, 1999); 2) does the site provide critical habitats and anadromous streams; 3) does the site provide other important habitat features or structural complexity to provide a niche environment for any particular plant or animal; and 4) does the site reside in an area designated as a state or federal park or protected area. It was determined that the footprint of the site does not meet the criteria for any of the above designations to be considered as habitat for valuable species (USACE, 2020).

Based on the available data, releases to soil likely occurred in the vadose zone with detections found in the soil column from approximately 5 to 14 feet bgs. It is assumed that most of the source contamination has been excavated during the 1998 and 2008 removal actions described above. Although remaining soil contamination is present in areas of the groundwater interface and dissolved phase contamination has been detected, the concentrations are below current Table C ADEC cleanup levels. POL contaminants from fuels, VOCs, and polycyclic aromatic hydrocarbons (PAHs) are delineated in all directions, and given the age of the release, are at this point unlikely to migrate downward into the water table (USACE, 1999 as referenced by USACE, 2020).

POL SITE CHARACTERIZATION

Soil

Since 1998, soil sampling has been conducted to evaluate the site contaminants of concern (COCs). There is no CERCLA contamination at the site. The POL contamination at the site was investigated to determine whether it poses an imminent and substantial endangerment to human health or the environment under DERP. To make this determination, the concentrations of petroleum compounds were compared to Alaska's Site Cleanup Rules (18 AAC 75 Article 3) which are indicative of when an imminent and substantial endangerment to the public health or welfare or the environment exists.

The COCs for this site include:

- Total petroleum hydrocarbons: GRO and DRO
- VOCs: ethylene dibromide (EDB) and 1,2,4-trimethylbenzene (1,2,4-TMB) (both fuel additives)
- PAHs: naphthalene

Soil investigation activities have adequately characterized the soil conditions at the former Building A-141 site. Fifty cubic yards of petroleum contaminated soil was removed from the site in 1998 (USACE, 1999), and a total of 1,455 tons of petroleum contaminated soil was removed from the site in 2008. Phase I and II RIs conducted in 2014 and 2018 included characterization of subsurface soil.

The 2014 Phase I RI was conducted to determine the extent of soil contamination, confirm contamination detected during the UVOST investigation, and to quantify the COCs impacting the site (USACE, 2016b). Although many of the RI objectives were achieved by completing advancement of UVOST probes and analytical sampling to confirm and delineate soil contamination, due to the similarity in the UVOST signatures between the organics present in the soil and the Bunker C fuel, the UVOST was not able to

delineate the vertical and horizontal extent of Bunker C impacted soil. A Phase II RI was recommended to allow for a complete understanding of the site.

The 2018 Phase II RI (USACE, 2020) was conducted to fully delineate the extent of petroleum hydrocarbons in the subsurface soil remaining after the RA was conducted in 2008 (USACE, 2009). Results of the 2018 RI concluded that the source material has been mostly removed and remaining POL contaminants are sufficiently delineated (Figure 4). Results from soil sampling of the COCs that exceeded the most stringent project action levels (PALs) remaining at the site are listed in Table 1 and shown on Figure 5.

POL contamination in the soil is believed to exist below and around the footprint of the concrete vault. The estimated lateral extent of DRO in soil around the northwestern extent of the 2008 excavation, as indicated by soil boring 04SL, is approximately 133 square feet, as partially defined in 2014 by screening sample UV005 (Figure 3). Although no samples have been collected beneath the concrete UST vault, the release has been defined vertically by monitoring well A141-MW07 (Figure 3).

Six PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, naphthalene, phenanthrene and pyrene) were detected in excess of current ADEC Level 2 migration to groundwater cleanup levels (ADEC, 2021) in one soil boring sample (14A141-06SL) collected from a depth of 5.5 to 6.5 feet bgs. This soil boring (06SL) was advanced in June 2014 to characterize the definitive UVOST fuel signature at UV-040 (Figure 3). The definitive UVOST fuel signature at UV-040 was surrounded by non-detect probes.

The PAH contamination at soil boring 06SL is likely associated with and limited to the fuel release detected at UV-040 and not related to the vault release from past DoD activities. Only three UVOST probes contained a definitive fuel signature (UV-040, UV-023, and UV-028). The highest fluorescence (maximum laser induced fluorescence of 6.6%) was detected at UV-040 (Figure 3). All three UVOST probes appeared to have a fuel signature that was consistent with a weathered diesel fuel or heating oil. The observed diesel fuel/heating oil signature was significantly different from a Bunker C fuel signature that would be associated with the tank vault release. Additionally, the PAH detections from the initial UST excavation and test pits from 1998 were far less than what was observed in soil boring 06SL (USACE, 1999). None of the six PAHs were detected in the groundwater samples.

The PAHs from soil boring 06SL exceeding current human health cleanup levels in 18 AAC 75 are benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene and fluorene. Additional borings were advanced in 2018 to verify the 06SL soil boring results; however, all borings placed within 17 feet of boring 06SL could not replicate contaminant results (USACE, 2020). Remaining POL contamination in soil at this location is approximately 3 cubic yards.

The PAHs detected at soil boring 06SL above 18 AAC 75 human health cleanup levels are not consistent with the results related to the vault release from past DoD activities. While No Further Action is required by USACE, additional action may be necessary at this location (06SL) in order to meet applicable State regulatory requirements for remaining POL contamination, including establishing adequate controls and documentation to track and manage the contamination in the event future land use changes and/or disturbance/removal of contamination occurs. However, the elevated PAHs identified in soil at soil boring 06SL are not related to the vault and are not DoD related.

Groundwater

Ten groundwater monitoring wells exist at the site; two wells were installed by 1999, and another eight wells were installed in 2014. The wells were sampled three times in 1999, and again in 2014, 2015 and 2018 for various chemicals indicative of petroleum contamination. Site characterization samples were analyzed for petroleum hydrocarbons (DRO and residual range organics [RRO]), VOCs, PAHs, and Resource Conservation and Recovery Act (RCRA) metals [arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver]. Vanadium and nickel were additionally analyzed starting in 2014. Analysis of characterization samples was completed to determine the presence or absence of contamination and to identify the extent of possible groundwater contamination associated with the former Building A-141 site activities.

All historical analytical sample results were compared to current 18 AAC 75 Table C cleanup levels (ADEC, 2021). Historical analytical sample results identified metals contamination above current regulatory cleanup levels from 1999 (lead), arsenic from 2015, and one VOC (chloroform) from 2015.

Although various petroleum hydrocarbons have been detected throughout the history of groundwater monitoring, none have been detected above the ADEC Table C PALs. The concentrations of remaining contaminants in groundwater from the last three sampling events (2014, 2015 and 2018) were compared with target levels in Appendix F of ADEC's Vapor Intrusion Guidance (ADEC, 2017b); none of the remaining contaminants detected that are listed in Appendix F are greater than the target levels for groundwater (chloroform), or there are no values provided (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and 1-methylnaphthalene).

Arsenic, the primary constituent affecting groundwater, is a naturally occurring metal found in Alaska. As determined during a 1994 background study conducted by Science Applications International Corporation (SAIC) at the Buskin Lake area and its drainage to Inner Womens Bay, concentrations of arsenic in the groundwater are indicative of background levels and are not believed to be the result of an anthropogenic source (SAIC, 1995). Arsenic was determined to not be a COC because it is not related to the source of contamination, and the concentrations detected in the groundwater samples (0.0027 to 0.006 mg/L) do not exceed the 1994 background level of 0.128 mg/L.

Lead only exceeded the current cleanup level of 0.015 mg/L in 1999 (USACE, 1999) at former well A141-CG2 with a concentration of 0.020 mg/L. The location of former well A141-CG2 was on the north side of Greely Road, between groundwater monitoring wells A141-MW08 and A141-MW06 (Figure 2). Lead has since been detected in groundwater samples during the 2014, 2015, and 2018 investigations, but at concentrations below the 2021 ADEC Table C cleanup level.

Chloroform was detected near the 18 AAC 75 Table C cleanup level in a single monitoring well (A141-MW01) in 2015, which is cross-gradient from the known contaminants (Figure 3). Chloroform is a common laboratory contaminant since it is a disinfection by-product commonly found in tap water. Chloroform is also frequently detected on Kodiak Island and other locations near chlorine sources, like the ocean. It forms in small amounts during the natural biodegradation of organic material when chlorine is added to water, as occurs when sea spray deposits sodium chloride into terrestrial water bodies. No chloroform detections were reported in any other media or locations at this site except in this well in 2018, but below the cleanup level. Due to the cross-gradient location from known contaminants, and absence of other contaminants associated with disinfection products of drinking water, the available data suggests that chloroform at this location is produced naturally as opposed to a localized occurrence attributable to the former Building A-141 activities.

No further investigation is recommended to evaluate groundwater. There is sufficient evidence from historical sampling and analyses to suggest that various dissolved phase hydrocarbon contaminants have been detected throughout the groundwater monitoring history below current Table C ADEC cleanup levels, and that the remaining contaminants in soil are not at risk of migrating to groundwater in the future due to the time span since fuel had been released to the subsurface. Additionally, the remaining source soil at the groundwater interface has been mostly removed and the remaining contaminants are sufficiently delineated.

Sediment and Surface Water

The nearest surface water feature to the former Building A-141 site is the Buskin River, which passes approximately 700 feet northwest of the site (USACE, 2020). Sediment and surface water from representative bodies of standing water within and downgradient of the site were evaluated during the 1998/1999 RI as potentially impacted media (USACE, 2000); results indicated COCs are not present at levels of concern in surface waters and sediment. Concentrations of metals were also detected in samples but were within background ranges. Sediment and surface water have not been impacted by the known contaminant releases to surface or subsurface soil.

Soil Vapor

Currently, there are no existing structures on the site and therefore, there is no complete vapor intrusion pathway into overlying buildings. The method two soil cleanup levels in Tables B1 and B2 of 18 AAC 75.340 address volatilization to outdoor air and subsequent inhalation by receptors (ADEC, 2017b). The volatile COCs remaining in soil after the 1998 and 2008 removal actions include DRO and GRO, VOCs (1,2,4-TMB, EDB, and naphthalene), and PAHs (benzo(a)anthracene and naphthalene); the detected

concentrations of these chemicals are well below the human health inhalation cleanup levels for the over 40-inch zone (ADEC, 2021).

The concentrations of remaining contaminants in groundwater and soil were compared with target levels in Appendix D and F of ADEC's Vapor Intrusion Guidance (ADEC, 2017b), respectively; none of the site contaminants listed in the guidance are greater than the target levels or there are no values provided. If a building was constructed at the site in the future, the vapor intrusion pathway would be incomplete.

SCOPE AND ROLE OF RESPONSE ACTION

USACE considers remedial actions for sites that have confirmed unacceptable risk to human health or the environment from historical DoD activities. The 2018 Phase II investigation concluded that there is no unacceptable risk to human health or the environment associated with the former Building A-141 site (USACE, 2020). The conclusion took into consideration the following:

- The site is primarily undeveloped;
- Land use of property and surrounding property is current/future industrial and hypothetical residential; a residential scenario for the Building A-141 site is unlikely but was evaluated as this is the most stringent potentially complete pathway.
- The source material (soil) has been mostly removed and remaining POL contaminants are sufficiently delineated;
- Arsenic, lead, and chloroform detected in groundwater are not considered COCs associated with fuel released at the site and are either naturally occurring or produced naturally as opposed to a localized occurrence attributable to the former Building A-141 activities; and
- There is no imminent and substantial endangerment finding for POL under DERP.

Therefore, no RAOs were developed nor were remedial alternatives considered.

The COCs at the Building A-141 site have been determined to be derived from POLs. The POL contaminants are predominantly DRO and RRO resulting from former UST fuel releases. IRAs were conducted at the A-141 site during 1998 and 2008. In 1998, two 4,000-gallon concrete USTs containing Bunker C fuel were closed in-place. One cubic yard of asbestos waste, the concrete roofing from the USTs, 1,160 pounds of wood, fuel/water mix remaining in the USTs, and sludge were removed and disposed off-site. Confirmation soil samples were collected from locations with the highest field screening results. Based on the soil sample analytical results, a total of 50 cubic yards of POL contaminated soil was excavated and transported off-site. During 2008, an additional 1,455 tons of POL contaminated soil and 30 gallons of free product from ponded groundwater were removed and disposed off-site. A total of 31 confirmation soil samples were collected from the perimeters of the excavation and submitted for DRO analysis (USACE, 2009). Results indicated the identified contaminated soil was removed, and clean lateral excavation boundaries were obtained to the north and east. Four confirmation soil samples collected from the west wall of the excavation exceeded the ADEC Method Two cleanup criterion (230 mg/kg). Soil saturated with a thick petroleum product was observed underneath the concrete vault located on the south side of the excavation. Due to the presence of the remaining vault, this soil could not be removed, and contaminated soil remains on site. The lateral and vertical extents of this saturated soil were not determined during project activities.

Residents have indicated the Buskin Beach area was used primarily as a dumping ground for U.S. Army and U.S. Navy waste (USACE, 1997, as cited in USACE, 2000). Building A-141 is one of four sites that make up the greater Buskin Beach FUDS; the other three associated FUDS properties are Swampy Acres (Lead Battery Site and POL), Lube Pits, and Asphalt Disposal Area. These three FUDS properties are in various stages of long-term groundwater monitoring (Asphalt Disposal Area) and continued investigation and response (Swampy Acres and Lube Pits). FUDS will decommission any groundwater monitoring wells that are no longer being utilized as part of the active FUDS monitoring program.

SUMMARY OF SITE RISKS

CERCLA

Under CERCLA Section 101(14), the term “hazardous substance” includes approximately 800 toxic substances listed under four other environmental statutes, including RCRA. Under Section 104(a)(2), both the definition of hazardous substance and the definition of “pollutant or contaminant” exclude “petroleum, including crude oil or any fraction thereof,” unless specifically listed under those statutes (USEPA, 1987).

The COCs at the former Building A-141 site that are DoD-related have been determined to be derived from POLs and are exempt from remedial action under CERCLA Section 101. Therefore, No Further Action is recommended by USACE under CERCLA.

POL

The calculated risk of site-specific hydrocarbon contaminants to human health and the environment from possible exposure to contaminated soil and groundwater was performed using the ADEC Method Three Hydrocarbon Risk Calculator (HRC) in accordance with 18 AAC 75.340e and 18 AAC 78.600e (USACE, 2020). Risks were characterized for direct contact, outdoor air inhalation, vapor intrusion, and groundwater ingestion pathways. Based on the results of the HRC risk evaluation, the cancer and non-cancer cumulative risk estimates are below the regulatory risk standards. Potential hazards posed by the GRO, DRO, and RRO aromatic and aliphatic fractions are below the regulatory risk standard for each potentially complete exposure pathway. The migration to groundwater criteria attained in surface and subsurface soil support a Cleanup Complete without institutional controls determination.

The site does not present an imminent and substantial endangerment finding for POL under DERP and is therefore ineligible for further site characterization or cleanup. Sample locations and results of impacted soil remaining at the site is shown on Figure 5.

BASIS OF NO FURTHER ACTION

There is no unacceptable risk to human health or the environment at the site based on the calculated risk of site-specific hydrocarbon contaminants in soil and groundwater, and the releases involved only petroleum product that is exempt from remedial action under CERCLA Section 101. Additionally, previous removal actions eliminated existing and potential risks to human health and the environment such that no further action is necessary. Therefore, as part of the CERCLA process in the Proposed Plan for the FUDS site, the No Further Action determination is recommended by USACE.

COMMUNITY PARTICIPATION

The NCP specifies the lead agency must provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the proposed plan and the supporting analysis and documentation located in the Information Repository. The public is encouraged to provide comments on the No Further Action decision presented in this Proposed Plan for the former Building A-141 site.

Public input is important to the decision-making process. Interested parties are encouraged by USACE and ADEC to use the comment period to review the Proposed Plan for No Further Action and to provide their comments to the USACE.

In accordance with CERCLA criteria Section 117(a), a public comment period of no less than 30 days for this Proposed Plan for No Further Action has been provided, and a public meeting regarding the Proposed Plan for No Further Action has been scheduled to be held during the public comment period.

Community acceptance of the Proposed Plan for No Further Action will be evaluated after the public comment period ends and the public meeting has been held. Following the public comment period, USACE will provide responses to all comments received in a Responsiveness Summary which will be part of the final Decision Document. The final Decision Document will provide a record of the official decision for the site.

The public comment period will be from **6 August through 9 September 2022**. Notification for virtual participation in the public meeting via a readily accessible on-line forum due to the COVID-19 situation will be provided at a later date.

Comments can be submitted to USACE by any of the following methods:

- Call: **1 (907) 753-5680**
- Email a comment to the following address: **Joshua.Barsis@usace.army.mil**
- Mail a written comment to the following address: **ATTN: Mr. Joshua Barsis, FUDS Project Manager, USACE, Alaska District, P.O. Box 6898, JBER, Alaska 99506-0898**
- Attend the **public meeting:**

PUBLIC MEETING TO BE HELD
5:30 to 6:30 PM
August 25, 2022
Best Western Kodiak Inn Harbor Room
236 Rezanof Drive, Kodiak, Alaska 99615

Information Repository Location

Additional detailed information regarding the Buskin Beach former Building A-141 site is available for review. The Administrative Record file includes reports summarizing the results and data from previous investigations and remedial actions performed at the site. Please refer to the Information Repository located at the Kodiak Public Library, 612 Egan Way, Kodiak, Alaska. The Public Library can be reached at (907) 486-8686.

Electronic Copy

An electronic copy of this Proposed Plan is available during the public comment period at https://www.poa.usace.army.mil/Library/Reports-and-Studies.

ACRONYMS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
bgs	below ground surface
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DRO	diesel range organics
EDB	ethylene dibromide
FFS	Focused Feasibility Study
FUDS	Formerly Used Defense Sites
GRO	gasoline range organics
HRC	Hydrocarbon Risk Calculator
IRA	Interim Removal Action
mg/kg	milligram per kilogram
mg/L	milligram per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PAH	polycyclic aromatic hydrocarbon
PAL	project action level
POL	petroleum, oil, and lubricants
RAO	Removal Action Objective
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RRO	residual range organics
SI	Site Investigation or Site Inspection
SVOC	semivolatile organic compound
TMB	trimethylbenzene
UST	underground storage tank
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
UVOST	ultraviolet optical screening tool
VOC	volatile organic compound

REFERENCES

Alaska Department of Environmental Conservation (ADEC), 2017a (January). *Guidance on Developing Conceptual Site Models*.

ADEC, 2017b (November). *Vapor Intrusion Guidance for Contaminated Sites*.

ADEC, 2021 (November). *Oil and Other Hazardous Substances Pollution Control*, Title 18 Alaska Administrative Code (AAC) Chapter 75.

Science Applications International Corporation (SAIC), 1995 (February). *Final RFI/CMS Report, Volume 1, Introduction and Facility Wide Information, US Coast Guard Support Center Kodiak, Kodiak, Alaska*.

Shannon and Wilson 1999. *Ecoregions/Assessment Endpoint Project Technical Background Document for Selection and Application of Default Assessment Endpoints and Indicator Species in Alaskan Ecoregions*. http://www.dec.state.ak.us/spar/csp/guidance/ecoregion_endpoint_report99.pdf.

U.S. Army Corps of Engineers (USACE), 1997 (April). *Phase I Remedial Investigation: Buskin Beach, Kodiak Island, Alaska*. Prepared by Montgomery Watson.

USACE, 1999 (June). *1998 Final Interim Removal Action Report, Buskin Beach, Kodiak, Alaska*. Prepared by Jacobs Engineering Group Inc. F10AK090204_07.08_0510_a.

USACE, 2000 (November). *1998/1999 Final Remedial Investigation Report, Buskin Beach, Kodiak, Alaska*. Prepared by OASIS Environmental, Inc. under the direction of Jacobs Engineering Group, Inc. F10AK090202_03.10_0501_a.

USACE, 2004 (May). *Engineer Regulation (ER) 200-3-1, Environmental Quality – Formerly Used Defense Sites (FUDS) Program Policy*.

USACE, 2008 (May). *Final Focused Feasibility Study Buskin Beach, Kodiak, Alaska*. Prepared by Jacobs Engineering Group Inc. F10AK090204_04.09_0500_a.

USACE, 2009 (March). *2008 Final Interim Removal Action Report, Building A-141, Kodiak Island, Alaska*. F10AK090204_07.08_0503_p.

USACE, 2012 (December). *Engineer Manual (EM) 200-1-12, Environmental Quality – Conceptual Site Models*.

USACE, 2016a (January). *Draft Groundwater Monitoring Report Summer 2015, Building A-141 Formerly Used Defense Site F10AK090206 HTRW, Buskin Beach, Kodiak, Alaska.* F10AK090206_xx.xx_xxxx_p.

USACE, 2016b (September). *Final Remedial Investigation Report Building A-141 Formerly Used Defense Site F10AK090206 HTRW, Buskin Beach, Kodiak, Alaska*. F10AK090206_03.10_0500_a.

USACE, 2018 (May). *Final Building A-141 Phase II Remedial Investigation Work Plan, Buskin Beach, Kodiak, Alaska*. F10AK0902-06 HTRW. Prepared by Jacobs Engineering Group Inc. FRMD No. F10AK090206_03.04_0501a.

USACE, 2020 (September). *Final Building A-141 Phase II Remedial Investigation Report, Buskin Beach, Kodiak, Alaska*. FUDS No. F10AK0902-06 HTRW.

U.S. Environmental Protection Agency (USEPA), 1999 (July). *Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, OSWER 9200.1-23P, PB98-963241.

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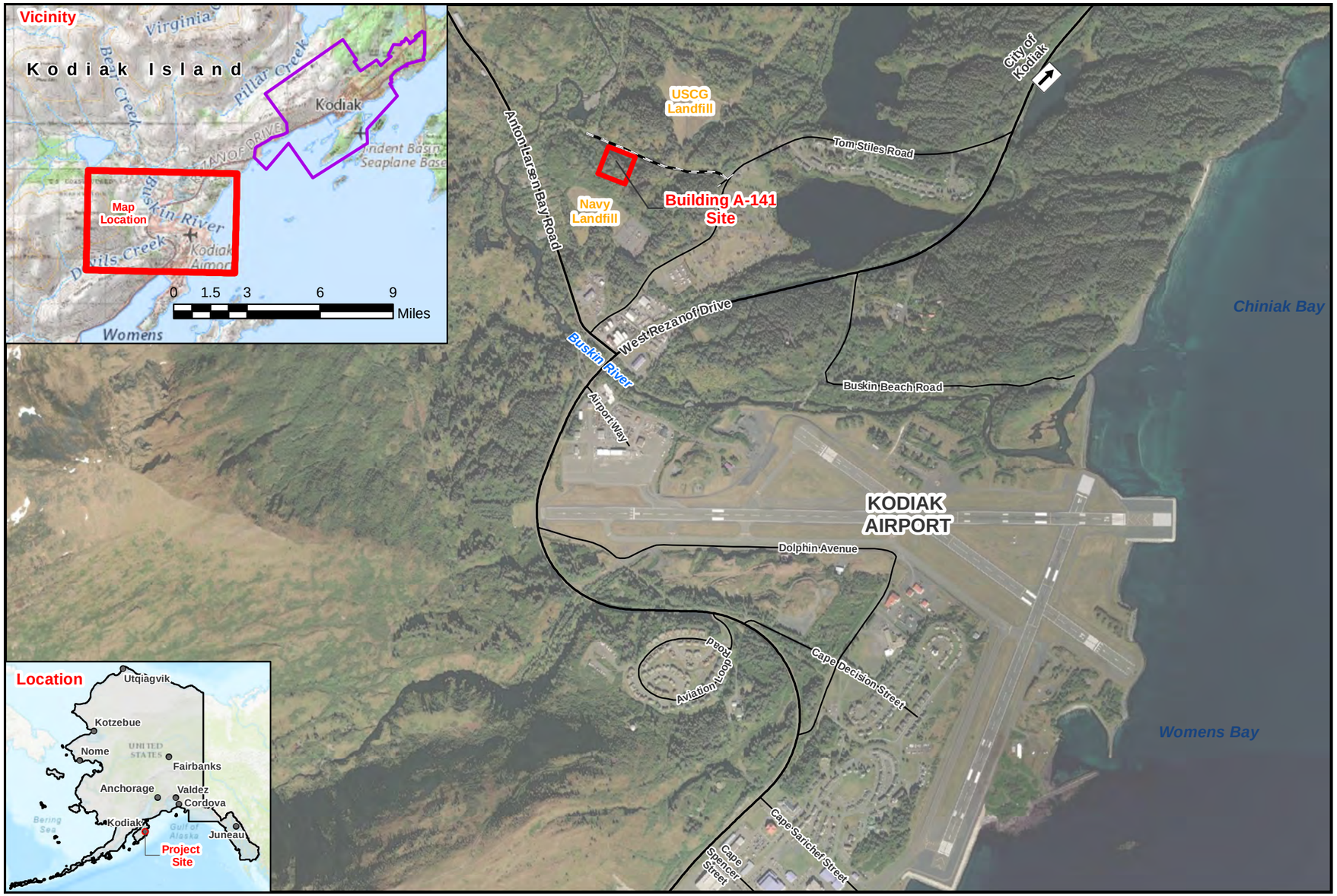

Building A-141 Location and Vicinity

F10AK0902-06
Kodiak Island, Alaska

Legend

- Building A-141
- City of Kodiak Limits
- Primary Road
- Secondary Road

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

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Feet

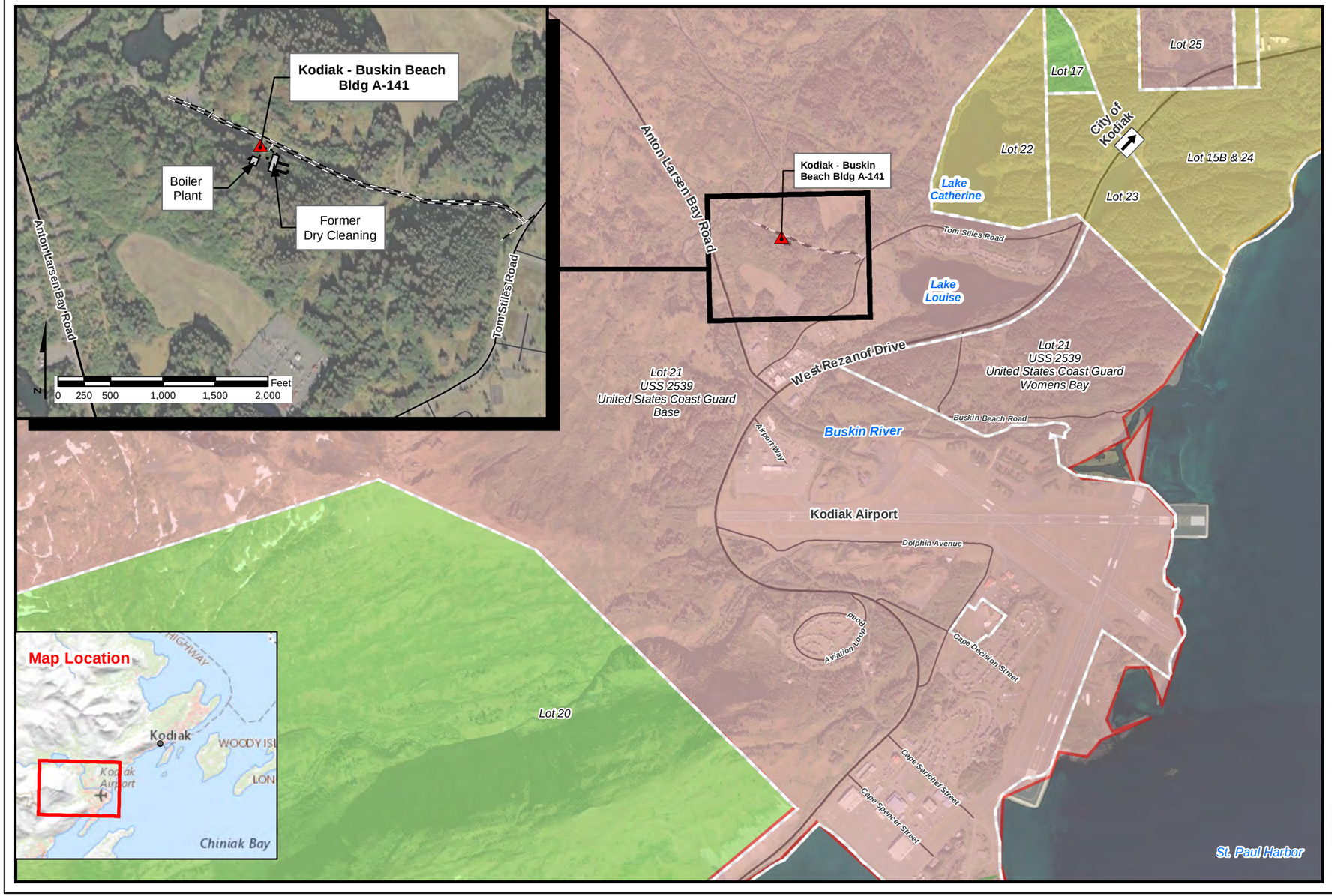
1 inch = 1,500 feet

COORDINATE SYSTEM:
NAD83 ALASKA STATE PLANE, ZONE 5, US SURVEY, FEET

Date: 5/13/2021

Figure 1

Document Path: Q:\Alaska-Files\Projects - Active\0G0002.001 USACE Kodiak Buskin Beach_060067\12. GIS\Building A-141\GIS\01_MXD\Buskin Beach 1-141 MXDs\Fig1_Kodiak_BA141_ProjectSiteLocation.mxd



Building A-141 Land Ownership

Kodiak Island, Alaska

Legend

- Kodiak - Buskin Beach Bldg A-141
- Temporary Gravel Road
- Lot Boundary

Land Ownership

- Bureau of Land Management
- Native Corporation
- United States Coast Guard

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

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1 inch = 1,917 feet

COORDINATE SYSTEM: NAD83 ALASKA STATE PLANE, ZONE 5, US SURVEY, FEET

Date: 5/19/2021

Figure 2

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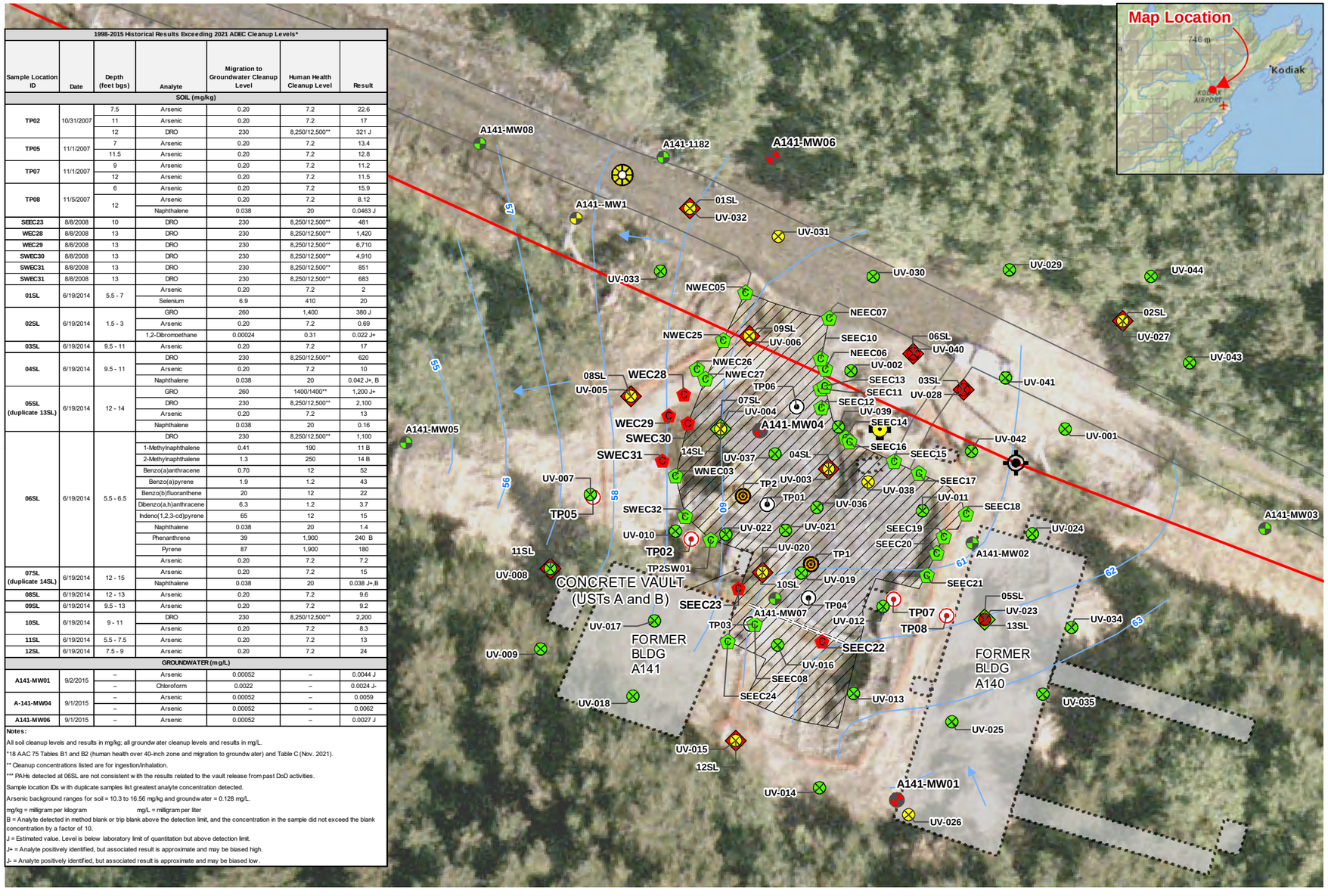
Historical (1988-2015) Sample Locations and Analytical Exceedances Near Former Building A-141

F10AK0902-06
Kodiak Island, Alaska

1998-2015 Historical Results Exceeding 2021 ADEC Cleanup Levels*

Sample Location ID	Date	Depth (feet bgs)	Analyte	Migration to Groundwater Cleanup Level	Human Health Cleanup Level	Result
SOIL (mg/kg)						
TP02	10/31/2007	7.5	Arsenic	0.20	7.2	22.6
		11	Arsenic	0.20	7.2	17
		12	DRO	230	8,250/12,500**	321 J
TP05	11/1/2007	7	Arsenic	0.20	7.2	13.4
		11.5	Arsenic	0.20	7.2	12.8
TP07	11/1/2007	9	Arsenic	0.20	7.2	11.2
		12	Arsenic	0.20	7.2	11.5
TP08	11/5/2007	6	Arsenic	0.20	7.2	15.9
		12	Arsenic	0.20	7.2	8.12
			Naphthalene	0.038	20	0.0463 J
SEEC23	8/8/2008	10	DRO	230	8,250/12,500**	481
WEC28	8/8/2008	13	DRO	230	8,250/12,500**	1,420
WEC29	8/8/2008	13	DRO	230	8,250/12,500**	6,710
SWEC30	8/8/2008	13	DRO	230	8,250/12,500**	4,910
SWEC31	8/8/2008	13	DRO	230	8,250/12,500**	851
SWEC31	8/8/2008	13	DRO	230	8,250/12,500**	683
01SL	6/19/2014	5.5 - 7	Arsenic	0.20	7.2	2
			Selenium	6.9	410	20
02SL	6/19/2014	1.5 - 3	GRO	260	1,400	380 J
			Arsenic	0.20	7.2	0.69
			1,2-Dibromoethane	0.00024	0.31	0.022 J+
03SL	6/19/2014	9.5 - 11	Arsenic	0.20	7.2	17
04SL	6/19/2014	9.5 - 11	DRO	230	8,250/12,500**	620
			Arsenic	0.20	7.2	10
			Naphthalene	0.038	20	0.042 J+, B
05SL (duplicate 13SL)	6/19/2014	12 - 14	GRO	260	1400/1400**	1,200 J+
			DRO	230	8,250/12,500**	2,100
			Arsenic	0.20	7.2	13
			Naphthalene	0.038	20	0.16
06SL	6/19/2014	5.5 - 6.5	DRO	230	8,250/12,500**	1,100
			1-Methylnaphthalene	0.41	190	11 B
			2-Methylnaphthalene	1.3	250	14 B
			Benzo(a)anthracene	0.70	12	52
			Benzo(a)pyrene	1.9	1.2	43
			Benzo(b)fluoranthene	20	12	22
			Dibenzo(a,h)anthracene	6.3	1.2	3.7
			Indeno(1,2,3-cd)pyrene	65	12	15
			Naphthalene	0.038	20	1.4
			Phenanthrene	39	1,900	240 B
			Pyrene	87	1,900	180
07SL (duplicate 14SL)	6/19/2014	12 - 15	Arsenic	0.20	7.2	7.2
			Arsenic	0.20	7.2	15
			Naphthalene	0.038	20	0.038 J+,B
08SL	6/19/2014	12 - 13	Arsenic	0.20	7.2	9.6
09SL	6/19/2014	9.5 - 13	Arsenic	0.20	7.2	9.2
10SL	6/19/2014	9 - 11	DRO	230	8,250/12,500**	2,200
			Arsenic	0.20	7.2	8.3
11SL	6/19/2014	5.5 - 7.5	Arsenic	0.20	7.2	13
12SL	6/19/2014	7.5 - 9	Arsenic	0.20	7.2	24
GROUNDWATER (mg/L)						
A141-MW01	9/2/2015	–	Arsenic	0.00052	–	0.0044 J
		–	Chloroform	0.0022	–	0.0024 J-
A-141-MW04	9/1/2015	–	Arsenic	0.00052	–	0.0059
		–	Arsenic	0.00052	–	0.0062
A141-MW06	9/1/2015	–	Arsenic	0.00052	–	0.0027 J

Notes:
All soil cleanup levels and results in mg/kg; all groundwater cleanup levels and results in mg/L.
*18 AAC 75 Tables B1 and B2 (human health over 40-inch zone and migration to groundwater) and Table C (Nov. 2021).
** Cleanup concentrations listed are for ingestion/inhalation.
*** PAHs detected at 06SL are not consistent with the results related to the vault release from past DoD activities.
Sample location IDs with duplicate samples list greatest analyte concentration detected.
Arsenic background ranges for soil = 10.3 to 16.56 mg/kg and groundwater = 0.128 mg/L.
mg/kg = milligram per kilogram mg/L = milligram per liter
B = Analyte detected in method blank or trip blank above the detection limit, and the concentration in the sample did not exceed the blank concentration by a factor of 10.
J = Estimated value. Level is below laboratory limit of quantitation but above detection limit.
J+ = Analyte positively identified, but associated result is approximate and may be biased high.
J- = Analyte positively identified, but associated result is approximate and may be biased low.



- Electric Pole
- Fire Hydrant
- Sanitary Sewer Manhole
- 2014 UVOST Probe, Definative Fuel Signature
- 2014 UVOST Probe, Potential Fuel Signature
- 2014 UVOST Probe, No Fuel Signature
- 2014 Analytical Soil Sample, Exceedance
- 2014 Analytical Soil Sample, No Exceedance
- 2008 Confirmation Soil Sample, Exceedance
- 2008 Confirmation Soil Sample, No Exceedance
- 2007 Test Pit Location, Exceeds Current Screening Level
- 2007 Test Pit Location, Does Not Exceed Current Screening Level
- 2007 Test Pit Location, Former Exceedance, Removed
- 1998 Excavation Test Pit Location
- 1999 Historic Groundwater Monitoring Well, No Exceedance
- 2014/2015 Historic Groundwater Monitoring Well, Exceedance
- 2014/2015 Historic Groundwater Monitoring Well, No Exceedance
- Wooden Water Stave Pipe
- Overhead Electric Line
- Gravel Road
- 2018-06-04 Groundwater Elevation Contour (ft)
- Groundwater Flow Direction
- 2008 Excavation Perimeter
- Former Stucture or Concrete Pad

Notes:
Test pit exceedances are exceedances of 2020ADEC cleanup lrvrls from samples collected during 1998 test pit excavation.

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National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

N W E S

1 inch = 33 feet

0 30 60
Feet

WGS 1984 UTM Zone 5N, Meters

DATE:
09 MAY 2022

Figure 3

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2018 Sample Locations and Analytical Exceedances Near Former Building A-141

F10AK0902-06
Kodiak Island, Alaska

2018 Phase II RI Soil Results Exceeding 2021 ADEC Cleanup Levels

Location ID	Sample ID	Date	Depth (feet bgs)	Analyte	Cleanup Level (mg/kg)[1]	Result (mg/kg)
SB02	18K-A141-SB02-12	6/5/2018	12	DRO	230	390
SB06	18K-A141-SB06-06	6/5/2018	6	1,2,4-TMB	0.61	0.66 J+
SB16	18K-A141-SB16-14	6/4/2018	14	GRO	260	270 J+

Notes:
[1] 18 AAC 75 Tables B1 and B2 (over 40-inch zone migration to groundwater); November 2021.
1,2,4-TMB = 1,2,4-Trimethylbenzene
J+ = Analyte positively identified, but associated result is approximate and may be biased high.

2018 Phase II RI Groundwater Results Exceeding 2021 ADEC Cleanup Levels

Location ID	Sample ID	Date	Groundwater Elevation (feet)	Analyte[2]	Cleanup Level (mg/L)[1]	Result (mg/L)
A141-MW01	18K-A141-WG-MW01	6/5/2018	60.39	Arsenic	0.00052	0.0062
A141-MW02	18K-A141-WG-MW02	6/5/2018	60.52	Arsenic	0.00052	0.0007 J
A141-MW03	18K-A141-WG-MW03	6/6/2018	63.87	Arsenic	0.00052	0.008
A141-MW06	18K-A141-WG-MW06	6/7/2018	59.84	Arsenic	0.00052	0.0014
A141-MW07	18K-A141-WG-MW07	6/6/2018	60.75	Arsenic	0.00052	0.0022
A141-MW07	18K-A141-WG-MW70*	6/6/2018	60.75	Arsenic	0.00052	0.0027
A141-MW08	18K-A141-WG-MW08	6/7/2018	56.25	Arsenic	0.00052	0.0016

Notes:
[1] 18 AAC 75 Table C Human Health Cleanup Level (November 2021).
[2] Background concentration = 0.128 mg/L *RCRA Facility Invest/Corrective Measures Study Report, Volume 1* (SAIC, 1995).
mg/L = milligram per liter
* Duplicate to sample 18K-A141-WG-MW07
J = Estimated value. Level is below laboratory limit of quatitation but above detection limit.

Map Location

LEGEND

- Monitoring Well, Exceedance
- Monitoring Well, No Exceedance
- Monitoring Well, Not Sampled in 2018
- Soil Boring, Exceedance
- Soil Boring, No Exceedance
- Electric Pole
- Fire Hydrant
- Sanitary Sewer Manhole
- 2018-06-04 Groundwater Elevation Contour (ft)
- Groundwater Flow Direction
- Wooden Water Stave Pipe
- Overhead Electric Line
- Gravel Road
- 2008 Excavation Perimeter
- Former Stucture or Concrete Pad

Service Layer Credits:
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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N W E S

1 inch = 33 feet

0 30 60
Feet

WGS 1984 UTM Zone 5N, Meters

DATE:
09 MAY 2022

Figure 4

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Historical Results Exceeding 2021 ADEC Cleanup Levels and Remaining On-Site Soils Risk to Human Health

Location ID	Date	Depth (feet bgs)	Analyte	Migration to Groundwater[1] Cleanup Level	Human Health Cleanup Level[2]	Result
SOIL (mg/kg)						
SEEC23	8/8/2008	10	DRO	230	8,250/12,500[a]	481
WEC28	8/8/2008	13	DRO	230	8,250/12,500[a]	1,420
WEC29	8/8/2008	13	DRO	230	8,250/12,500[a]	6,710
SWEC30	8/8/2008	13	DRO	230	8,250/12,500[a]	4,910
SWEC31	8/8/2008	13	DRO	230	8,250/12,500[a]	851
02SL	6/19/2014	1.5 - 3	GRO	260	1400/1400[a]	380 J, QN
			Arsenic[2]	0.20	7.2	0.69
			1,2-Dibromoethane	0.00024	0.31	0.022 J+
03SL	6/19/2014	9.5 - 11	Arsenic[2]	0.20	7.2	17
04SL	6/19/2014	9.5 - 11	DRO	230	8,250/12,500[a]	620
			Arsenic[2]	0.20	7.2	10
			Naphthalene	0.038	20	0.042 J+,B
05SL/13SL*	6/19/2014	12 - 14	GRO	260	1400/1400[a]	1,200 J+
			DRO	230	8,250/12,500[a]	2,100
			Arsenic[2]	0.20	7.2	13
			Naphthalene	0.038	20	0.16
06SL**	6/19/2014	5.5 - 6.5	DRO	230	8,250/12,500[a]	1,100
			1-Methylnaphthalene	0.41	190	11 B
			2-Methylnaphthalene	1.3	250	14 B
			Benzo(a)anthracene	0.70	12	52
			Benzo(a)pyrene	1.9	1.2	43
			Benzo(b)fluoranthene	20	12	22
			Dibenzo(a,h)anthracene	6.3	1.2	3.7
			Indeno(1,2,3-cd)pyrene	65	12	15
			Naphthalene	0.038	20	1.4
			Phenanthrene	39	1,900	240 B
			Pyrene	87	1,900	180
			Arsenic[2]	0.20	7.2	7.2
07SL/14SL*	6/19/2014	12 - 15	Arsenic[2]	0.20	7.2	15
			Naphthalene	0.038	20	0.038 J+,B
08SL	6/19/2014	12 - 13	Arsenic[2]	0.20	7.2	9.6
09SL	6/19/2014	9.5 - 13	Arsenic[2]	0.20	7.2	9.2
10SL	6/19/2014	9 - 11	DRO	230	8,250/12,500[a]	2,200
			Arsenic[2]	0.20	7.2	8.3
11SL	6/19/2014	5.5 - 7.5	Arsenic[2]	0.20	7.2	13
12SL	6/19/2014	7.5 - 9	Arsenic[2]	0.20	7.2	24
SB02	6/5/2018	12	DRO	230	8,250/12,500[a]	390
SB06	6/5/2018	6	1,2,4-Trimethylbenzene	0.61	210	0.66 J+
SB16	6/4/2018	14	GRO	260	1400/1400[a]	270 J+
TP02	10/31/2007	7.5	Arsenic[2]	0.20	7.2	22.6
		11.5	DRO	230	8,250/12,500[a]	321 J
			Arsenic[2]	0.20	7.2	17
TP05	11/1/2007	7	Arsenic[2]	0.20	7.2	13.4
		11.5	Arsenic[2]	0.20	7.2	12.5
TP07	11/1/2007	9	Arsenic[2]	0.20	7.2	11.2
		12	Arsenic[2]	0.20	7.2	11.5
TP08	11/5/2007	6	Arsenic[2]	0.20	7.2	15.9
		12	Arsenic[2]	0.20	7.2	8.12
			Naphthalene	0.038	20	0.0463 J
GROUNDWATER (mg/L)						
A141-MW01	9/2/2015	–	Arsenic[2]	0.00052	–	0.0044 J
		–	Chloroform[3]	0.0022	–	0.0024 J-
A141-MW04	9/1/2015	–	Arsenic[2]	0.00052	–	0.0059
		–	Arsenic[2]	0.00052	–	0.0062
A141-MW06	9/1/2015	–	Arsenic[2]	0.00052	–	0.0027 J

Notes:

[1] Analytes listed if detected concentration was equal to or exceeded migration to groundwater or human health cleanup criteria in 18 AAC 75, over 40-inch zone for soils, and Table C for groundwater (ADEC November 2021).

[2] Arsenic is a naturally occurring metal and determined to not be a contaminant of concern. Arsenic background ranges for soil = 10.3 to 16.56 mg/kg and groundwater = 0.128 mg/L.

[3] Chloroform is not considered a contaminant of concern; data suggests that chloroform at this location is produced naturally as opposed to a localized occurrence attributable to the former Building A-141 activities.

[a] Cleanup concentrations listed are for ingestion/inhalation.

* Denotes primary/duplicate sample; corresponding result listed is the greater of the two.

** PAHs detected at 06SL are not consistent with the results related to the vault release from past DoD activities.

Concentration above or equal to ADEC migration to groundwater cleanup level only.

Concentration above both ADEC migration to groundwater cleanup level and human health cleanup level.

Concentration above human health cleanup level only.

bgs = below ground surface; mg/kg = milligram per kilogram; mg/L = milligram per liter

B = Analyte detected in method blank or trip blank above the detection limit, and the concentration in the sample did not exceed the blank concentration by a factor of 10.

J = Estimated value. Level is below laboratory limit of quantitation but above detection limit.

J+ = Analyte positively identified, but associated result is approximate and may be biased high.

J- = Analyte positively identified, but associated result is approximate and may be biased low.

QN = Analyte result is an estimated value (biased indeterminate) due to a quality control failure

LEGEND

- Electric Pole
- Fire Hydrant
- Sanitary Sewer Manhole
- Monitoring Well
- Overhead Electric Line
- Gravel Road
- Area of Soil Above ADEC Migration To Groundwater Cleanup Levels
- Concrete Block
- Concrete Foundation

Note:
- 2008 Imagery provided by USACE Alaska District.
- Soil and Groundwater detections are less than target levels for soil vapor intrusion

0 25 50 75 100
Feet

1 inch = 25 feet

NAD 1983 UTM Zone 5N, Meters

N

REMAINING SOIL IMPACTS
NEAR BUILDING A-141
F10AK0902-06
KODIAK ISLAND, ALASKA

DATE:	PROJECT MANAGER:	FIGURE NO:
02 MAY 2022	R. LaFata	5

Q:\Alaska-Fes\Projects - Active\0G0002.001 USACE Kodiak Buskin Beach_BA141_RemainingSoilImpacts.mxd eadams
Q:\GIS\01_MXD\Buskin Beach 1-141 MXDs\F5_Kodiak_BA141_RemainingSoilImpacts.mxd eadams
Q:\Alaska-Fes\Projects - Active\0G0002.001 USACE Kodiak Buskin Beach_060067\12. GIS\Building A-141\GIS\01_MXD\Buskin Beach 1-141 MXDs\F5_Kodiak_BA141_RemainingSoilImpacts.mxd eadams

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TABLES

Table 1. Sample Result Exceedances of Remaining On-site Soils

Analyte	Sample Location	Sample Date	Depth (feet bgs)	Result (mg/kg)	Migration to Groundwater Cleanup Level [1] (mg/kg)	Method 2 Human Health Cleanup Level [2] (mg/kg)
Total Petroleum Hydrocarbons						
GRO	02SL	6/19/2014	1.5 - 3	380 J	260	Migration to groundwater cleanup level is the most stringent
	05SL / 13SL*		12 - 14	1,200 J+		
	SB16	6/05/2018	14	270 J+		
DRO	TP02	10/31/2007	12	321 J	230	
	SEEC23	8/08/2008	10	481		
	WEC28		13	1,420		
	WEC29		13	6,710		
	SWEC30		13	4,910		
	SWEC31		13	851		
	04SL	6/19/2014	9.5 - 11	620		
	05SL / 13SL*		12 - 14	2,100		
	06SL		5.5 - 6.5	1,100		
	10SL		9 - 11	2,200		
	SB02	6/05/2018	12	390		
Volatile Organic Compounds (VOC)						
1,2,4-Trimethylbenzene (TMB)	SB06	6/05/2018	6	0.66 J+	0.61	210
1,2-Dibromoethane (EDB)	02SL	6/19/2014	1.5 - 3	0.022 J+	0.00024	0.31
Polycyclic Aromatic Hydrocarbons (PAHs)						
Naphthalene	TP08	11/05/2007	12	0.0463 J	0.038	20
Naphthalene	04SL	6/19/2014	9.5 - 11	0.042 J+,B	0.038	
Naphthalene	05SL / 13SL*	6/19/2014	12 - 14	0.16	0.038	
Benzo(a)anthracene	06SL***	6/19/2014	5.5 - 6.5	52**	0.70	12
Benzo(a)pyrene				43**	1.9	1.2
Benzo(b)fluoranthene				22**	20	12
Dibenzo(a,h)anthracene				3.7[a]	6.3	1.2
Indeno(1,2,3-cd)pyrene				15[a]	65	12
Naphthalene				1.4	0.038	20
Phenanthrene				240 B	29	1,900
Pyrene				180	87	1,900
Naphthalene	07SL	6/19/2014	12 - 15	0.038 J+,B	0.038	20
Semivolatile Organic Compounds (SVOCs)						
1-Methylnaphthalene	06SL	6/19/2014	5.5 - 6.5	11 B	0.41	190
2-Methylnaphthalene	06SL	6/19/2014	5.5 - 6.5	14 B	1.3	250

Notes and Acronyms:

[1] ADEC Method Two migration to groundwater cleanup level for over 40-inch precipitation zone in 18 Alaska Administrative Code (AAC) 75 (ADEC, 2021).

[2] ADEC Method Two human health soil cleanup level for over 40-inch precipitation zone in 18 AAC 75.341(c).

* Denotes primary / duplicate sample; corresponding analytical result listed is the greater of the two.

** Denotes detected concentration also exceeds the ADEC Method 2 Human Health Cleanup Level for over 40-inch precipitation zone in 18 AAC 75.341(c).

*** Denotes PAH concentrations detected are not related to the vault release from past DoD activities.

[a] Denotes the detected concentration exceeds only the ADEC Method 2 Human Health Cleanup Level for over 40-inch precipitation zone in 18 AAC 75.341(c).

For other definitions, refer to Acronyms on Page 12.

Data Qualifiers:

B = Analyte result is considered a high estimated value due to contamination present in the method or trip blank.

J = Analyte result is considered an estimated value because the level is below the laboratory limit of quantitation (LOQ) but above the detection limit (DL).

J+ = Analyte positively identified, but associated result is approximate and may be biased high.

GLOSSARY OF TERMS

Alaska Department of Environmental Conservation (ADEC)	The ADEC provides regulatory oversight for the assessment and cleanup of contaminated sites in Alaska.
Administrative Record (AR)	The documents that form the basis for the selection of a response action compiled and maintained by the lead agency. This file is available for public review and a copy maintained at the Kodiak Public Library.
Carcinogenic (Cancer) Risk	The likelihood that a person will develop cancer from direct exposure to chemicals classified as carcinogens. Carcinogens are chemicals known or suspected to cause cancer. The U.S. Environmental Protection Agency (USEPA) defines the acceptable cancer risk range as one additional cancer case in a population of 1,000,000 (10^{-6}) to no more than one additional cancer case in a population of 10,000 (10^{-4}). In other words, for every 10,000 people who could be exposed, one additional cancer may occur as a result of exposure to chemicals at a site compared to the background rate of developing cancer among an unexposed population.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.
Contaminant of Concern (COC)	Contaminants of Concern (COCs) are those contaminants which have been shown through analysis to be those that are likely to be causing risk to plants and animals at a site. Screening levels are selected based on the exposure pathways and media identified in the conceptual site model.
Conceptual Site Model	A description of a site and its environment that is based on existing knowledge. It describes sources and receptors, and the interactions that link these. It assists the team in planning, data interpretation, and communication.
Decision Document	A public document that describes the remedy selected for a site, the basis for the choice of that remedy, and provides responses to public comments.
Defense Environmental Restoration Program (DERP)	Established law authorizing environmental investigation and cleanup at sites in the U.S. and its territories that the U.S. Department of Defense (DoD) either currently owns or owned in the past.
Department of Defense (DoD)	An executive branch department of the federal government of the U.S. charged with coordinating and supervising all agencies and functions of the government concerned directly with national security and the U.S. Armed Forces.
Focused Feasibility Study (FFS)	A study undertaken by the lead agency to develop and evaluate options for remedial action. The remedial investigation (RI) data are used to define the objectives of the response action, to develop remedial action alternatives, and to undertake an initial screening and detailed analysis of the alternatives. The term also refers to a report that describes the results of the study.

Formerly Used Defense Sites (FUDS)	Facility or site which was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the U.S. at the time of actions leading to contamination by hazardous substances, for which the Secretary of Defense shall carry out all response actions with respect to releases of hazardous substance from that facility or site.
Groundwater	Water in a saturated zone or stratum beneath the surface of land or water.
Hazard Index	For non-carcinogenic health effects, a “hazard index” is calculated. The key concept here is that a “threshold level” (measured usually as a hazard index of less than 1) exists below which non-carcinogenic health effects are no longer predicted.
Human Health Risk Assessment	A human health risk assessment estimates the likelihood of health problems, either carcinogenic or non-carcinogenic, occurring if no cleanup action is taken at a site.
Interim Removal Action (IRA)	Removal actions are interim actions to clean up or remove hazardous materials.
Monitoring Well	Wells used to collect chemical concentration information in groundwater over a period of time.
National Oil and Hazardous Substances Pollution Contingency Plan (NCP)	The plan revised pursuant to 42 U.S. Code (U.S.C.) 9605 and found at 40 Code of Federal Regulations (CFR) 300 that sets out the plan for hazardous substance remediation under CERCLA.
No Further Action	The No Further Action (Proposed Plan) identifies the proposed decision for a site where the baseline risk assessment concluded that conditions at the site pose no unacceptable risks to human health and the environment; where a release involved only petroleum product that is exempt from remedial action under CERCLA Section 101; and where a previous removal action eliminated existing and potential risks to human health and the environment such that no further action is necessary.
Non-Carcinogenic Risk	The likelihood that a person will develop an illness from chemicals through eating, drinking, breathing, or touching soil, groundwater, surface water, sediment, or vapors that contain these chemicals. Non-carcinogenic risk is defined as the ratio of the concentration of a chemical detected at a site to the concentration of the chemical at which illness is expected.
Petroleum Hydrocarbons	A very broad range of chemicals that comprise oil and products refined from oil, such as gasoline and diesel.
Petroleum, Oil, and Lubricants (POLs)	A common abbreviation used to describe the contents of tanks and associated piping that contains these materials. It is a broad term used by the DoD and includes all petroleum and associated products. Finished petroleum products include non-hydrocarbon compounds, such as additives and detergents, after they have been blended into the products.
Project Action Level (PAL)	Chemical concentrations established to protect human health under different land use scenarios (e.g., industrial or residential) for chemicals in soil, surface water, sediment, and groundwater. The PALs are the Method Two soil cleanup levels established in the Alaska Administrative Code [AAC] (18 AAC 75.341) for the over 40-inch precipitation zone (Tables B1 and B2), and the migration to groundwater (Table C) for ingestion and inhalation pathways in 18 AAC 75.345.

Proposed Plan	The Proposed Plan identifies the proposed decision for a site that best meets the requirements of CERCLA and the NCP. The purpose of the Proposed Plan is to summarize the Remedial Investigation and provide the public with a reasonable opportunity to comment on the proposed decision and to participate in the final decision for a site.
Public Comment Period	The time allowed for the members of a community to express views and concerns regarding an action proposed to be taken by the USACE.
Receptor	Humans, animals, or plants that may come into contact with chemicals present at a site.
Remedial Action (RA)	Those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment.
Remedial Action Objective (RAO)	Remedial action objectives are developed to address specific chemicals in the environment (e.g., soil and groundwater). Remedial action objectives are cleanup concentrations that protect humans and the environment. When these concentrations are met, there are no longer any unacceptable risks at a site.
Remedial Investigation (RI)	A process undertaken by the lead agency to determine the nature and extent of the problem presented by the release. The RI emphasizes data collection and site characterization and is generally performed concurrently and in an interactive fashion with the feasibility study. The RI includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for remedial action and to support the evaluation of remedial alternatives.
Responsiveness Summary	A summary of responses to the public's comments and concerns regarding the Proposed Plan. These comments and concerns can be in writing or spoken at a public meeting. The Responsiveness Summary is included as part of the Decision Document.
Site Inspection (SI)	An on-site investigation to determine whether there is a release or potential release and the nature of the associated threats. The purpose is to augment the data collected in the preliminary assessment and to generate, if necessary, sampling and other field data to determine if further action or investigation is appropriate.