FINAL

PROPOSED PLAN

INSTALLATION RESTORATION SITE 7
NAVAL BASE POINT LOMA
SAN DIEGO, CALIFORNIA

JULY 2023

The United States Department of the Navy (Navy) is requesting comments from the public on its proposed final **remedial action** for addressing waste **polychlorinated biphenyl (PCB)** mixtures (Aroclor-1242, Aroclor-1248, and Aroclor-1254) and metals (hexavalent chromium and lead) in soil at **Installation Restoration (IR) Program** Site 7, at Naval Base Point Loma (NBPL) (**Figure 1, Page 2**). The information presented herein is primarily summarized from the IR Site 7 **Remedial Investigation (RI)** and **Focused Feasibility Study (FFS)**, which can be found in the **Administrative Record**. Information for accessing the Administrative Record is found on **Page 15**.

IR Site 7 was a waste disposal area for construction and demolition debris (concrete, brick, scrap metal, and wood), industrial waste, and municipal waste used from 1955 to 1965 and later covered with soil. Currently, the site is not in use and access is controlled by the NBPL perimeter fence.

This **Proposed Plan** describes the Navy's investigations of impact to soil and soil vapor resulting from previous disposal activities at IR Site 7. The Proposed Plan also presents five options, or alternatives, that have been evaluated by the Navy for addressing the waste and soil contaminants at IR Site 7, and explains the Navy's rationale for choosing the Preferred Alternative.

INSTALLATION RESTORATION PROCESS FOR IR SITE 7

Site Discovery	*Investigations/Feasibility Study*	*Proposed Plan Public Comment Period*	*Final Record of Decision (ROD)*
COMPLETED	**COMPLETED**	**WE ARE HERE**	**TO BE DONE**
The Navy identified the site as an area where waste was disposed of during the Initial Assessment Study for Naval Base Point Loma completed in 1986.	Major investigations conducted include: a Preliminary Assessment and Site Inspection (2003), Extended Site Inspection (2014), Remedial Investigation and Focused Feasibility Study (2021), and Focused Feasibility Study Addendum (2022).	The public has the opportunity to comment on the Navy's recommendations for remedial action to protect human health and the environment at IR Site 7.	The final decisions for remedial action at IR Site 7 and responses to public comments will be documented in the ROD.

Community Involvement Opportunities — 30-Day Public Comment Period: August 16–September 16, 2023

Attend the Public Meeting

August 16, 2023, 6:00 p.m.

Southwestern Yacht Club
2702 Qualtrough Street
San Diego, CA 92136

You are invited to a public meeting to discuss the proposed remedy for IR Site 7 recommended in this Proposed Plan. Navy and regulatory agency representatives will be on hand to provide information and answer questions. You will have the opportunity to officially comment on the Navy's proposed remedy.

Submit Your Comments

August 16–September 16, 2023

We encourage you to comment on this Proposed Plan during the 30-day public comment period. Public comments received during this period will be incorporated into the Responsiveness Summary portion of the Record of Decision and will be considered in the final decision for IR Site 7.

Comments must be postmarked or sent via phone or email to Mr. Nicholas Shih (Naval Base Point Loma Environmental Restoration Program Manager) no later than September 16, 2023. For contact information, please refer to **Page 15**.

The Navy's Preferred Alternative is Consolidate, Cap, Erosion and Stormwater Controls, and **Land Use Controls (LUCs)** to address the waste and soil contamination. This Proposed Plan documents regulatory concurrence with the Navy's proposed remedy.

The Navy, in consultation with the **California Department of Toxic Substances Control (DTSC)** and the **San Diego Regional Water Quality Control Board (RWQCB)**, will make the final decision on the remedy for IR Site 7 after reviewing and considering all information submitted during the **public comment period**, which will be documented in a final **Record of Decision (ROD)**.

We invite you to review and provide comments on this Proposed Plan. You do not have to be a technical expert to comment. If you have questions or concerns, the Navy wants to hear them before making a final decision regarding IR Site 7. For information on the public comment process and comment period, refer to the "Community Involvement Opportunities" text box on **Page 1**.

SITE BACKGROUND FOR IR SITE 7

NBPL consists of approximately 1,000 acres located in San Diego County, California (**Figure 1**). The facility is partially located on and named after the Point Loma Peninsula, which extends 4 miles into the Pacific Ocean and forms a natural breakwater for the San Diego Bay to the east. The peninsula is 1 to 1.5 miles wide with uneven terrain and steep slopes. NBPL is a federally owned facility, operated and managed by the Navy.

IR Site 7 encompasses 5.8 acres and is located in the northern portion of the NBPL peninsula approximately 0.25 miles east of the Pacific Ocean (**Figure 1**). The site is bounded to the north and west by the Point Loma Ecological Conservation Area, to the east by Cabrillo Memorial Drive, and to the south by on-Base buildings and a small unpaved road that provides access to the site and a former communication tower (**Figure 2, Page 3**). An east-west trending canyon bisects the site and waste, consisting of construction and demolition debris, industrial and municipal waste, and fill were disposed of in the canyon between approximately 1955 and 1965. The canyon is currently overgrown, and the majority of the area surrounding the site is also covered with dense vegetation.

A stormwater drainage pipe transports and discharges stormwater onto the eastern end of the site below Cabrillo Memorial Drive. Stormwater discharge from the drainage pipe and an adjacent ravine travels westward through the site. This stormwater discharge has eroded soil and exposed a portion of the waste at IR Site 7.

Figure 1 – Installation and IR Site 7 Location

Regulatory Framework

The Navy's IR program follows the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980**, commonly known as Superfund (as amended by the Superfund Amendments and Reauthorization Act of 1986). The IR program is implemented by the Navy at its facilities to identify, assess, characterize, and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills. The steps in the CERCLA process are shown on **Page 1**.

This Proposed Plan was developed in accordance with Section 117 of CERCLA and applicable provisions of the **National Oil and Hazardous Substance Pollution Contingency Plan (NCP)** and fulfills the public participation requirements of the lead agency, the Navy.

Figure 2 – IR Site 7 Layout

Site characteristics and the findings of site investigations are summarized in **Table 1**. The sampling locations from these investigations are shown on **Figure 3** (**Page 6**). These studies under the IR program have found soil and soil vapor to be the environmental media of concern at IR Site 7. Groundwater is not of concern at IR Site 7 because it is estimated to be at depths of more than 300 feet **below ground surface (bgs)** and has been designated by the RWQCB as having no existing beneficial use for municipal, agricultural, or industrial application due to its salinity. There are also no surface water bodies within IR Site 7 and the closest surface water body (Pacific Ocean) is located approximately 0.25 mile west of IR Site 7.

The site studies indicated that the total depth of waste appears to range from about 4 to 10 feet in thickness to a maximum depth of 17 feet bgs at the western edge of the main ravine. The disposal area generally contains sandy fill materials along with waste, overlying the sandstone bedrock of the NBPL peninsula. Various types of waste (construction and demolition, municipal, and industrial) are present.

Table 1 – Previous Investigations and Studies

Previous Study	Administrative Record Numbers	Activities and Findings
1986 Initial Assessment Study (IAS) (NEESA, 1986)	000032	An IAS was conducted at NBPL to identify and assess sites posing a potential threat to human health or the environment because of contamination from past hazardous materials operations. The IAS determined that IR Site 7 was used for waste disposal of rubble and demolition debris from 1955 to 1965, and a 1966 aerial photograph showed the site covered with soil fill. The IAS concluded that because there was no evidence hazardous materials were disposed of at the site, no further action was needed.
2003 Preliminary Assessment/ Site Inspection (PA/SI) (NAVFAC Southwest, 2008)	Pending Upload	Although the IAS recommended no further action, the DTSC recommended an additional investigation at the site because the layer of fill containing debris had not been sampled and the extent and types of debris in the fill were not sufficiently characterized. Therefore, a PA/SI was conducted. The PA/SI consisted of historical information reviews, field observations, and soil sampling. The historical information review confirmed the disposal of rubble and demolition debris and indicated a small volume was placed as fill at the site. The field observations identified only non-hazardous debris (concrete, gravel, pieces of pipe, wood, scrap metal, and plastic sheeting). Lead and PCBs were each detected in a sample collected in the fill at concentrations that exceeded the United States Environmental Protection Agency (USEPA) residential preliminary remediation goals (PRGs) in effect at the time. Arsenic results were also above the residential PRG applicable at the time of the investigation; however, the concentrations were similar to **background concentrations** in soils in the Point Loma area. Additional metals (including mercury), total petroleum hydrocarbons as motor oil, **volatile organic compounds (VOCs)**, semivolatile organic compounds (SVOCs), and polyaromatic hydrocarbons (PAHs) were detected at concentrations below their respective PRG, or did not have a PRG. Based on the elevated lead and PCB concentrations in the fill, an additional investigation was recommended.
2014 Extended Site Inspection (KCH, 2014)	000408	An Extended Site Inspection was conducted to further assess the nature of soil fill deposited at IR Site 7 and evaluate whether the fill posed unacceptable risks to human health and the environment. The Extended Site Inspection consisted of trenching, soil boring, and soil sampling. Concrete, asphalt, glass, brick, porcelain, plastic, and metal debris were observed in a silty sand fill, which is approximately 7 to 8 feet thick starting at the ground surface. Debris were also observed on the ground surface outside the site boundary, indicating that the lateral extent of fill/debris had not been delineated. Metals, pesticides, VOCs, SVOCs, PCBs, PAHs, and dioxins/furans were detected in soil. Potential unacceptable risk was identified for human receptors from exposure to lead and PCBs in soil and ecological receptors from exposure to lead and mercury in soil. Because of the potentially unacceptable risks, and the undefined extent of debris and potentially impacted fill soil, an additional investigation was recommended.
2016 Site Reconnaissance (CH2M, 2017)	000479	A Site Reconnaissance was conducted to visually estimate the lateral extent of the debris outside of the previously defined site boundary. Surface and partially buried debris observed included drums and evidence of mixed waste buried in layers with visual evidence of burning. Although the site area was previously estimated to cover 0.08 acre, the observations from reconnaissance showed that the extent of debris could extend approximately 3 to 4 acres. However, site access was limited because of steep terrain and dense vegetation, and no intrusive tools were used to locate the additional debris. Therefore, it was concluded the area of debris could extend further than defined during the site reconnaissance.

Table 1, continued – Previous Investigations and Studies

Previous Study	Administrative Record Numbers	Activities and Findings
2017 to 2020 RI/FFS (CH2M, 2021)	000559-000568	An RI was conducted to better establish the nature and extent of contamination associated with fill and buried construction and demolition debris, and identify **chemicals of concern (COCs)** for the site requiring remedial action based on a more in-depth HHRA and **ecological risk assessment (ERA)**. An FFS conducted in conjunction with the RI further developed **remedial action objectives (RAOs)**, identified **applicable or relevant and appropriate requirements (ARARs)**, and evaluated remedial alternatives for the COCs. The RI field activities included asbestos survey and sampling, **geophysical survey**, test pit excavation and soil boring, and soil and soil vapor sampling. The geophysical survey and test pit excavation further delineated the extent of the buried debris, while the soil boring and sampling further characterized associated chemical contamination. In addition, soil vapor implants were installed along the southeastern and eastern portion of the site to evaluate the potential for offsite migration of VOCs or methane in shallow soil vapor into indoor air of buildings located near the site. The geophysical surveys and test pitting identified four areas of disturbance/disposal that total approximately 1.76 acres. The waste characteristics for each area (**Figure 3, Page 6**) are as follows: • Area 1 – The western portion of the site, with buried and surficial construction and demolition debris at the top of a slope, on the slope, and at the bottom of the slope in the westernmost portion of the main drainage ravine • Area 2 – A southeast-northwest trending ravine, with buried municipal waste including bottles, wood, newspaper, metal, and plastic • Area 3 – The main east-west trending ravine, with construction and demolition debris and municipal and industrial waste observed buried in layers with indications of burning, one partially buried drum, and potential asbestos-containing material • Area 4 – A plateau area in the northeastern portion of the site, with buried construction and demolition debris Within surface soil, metals (lead and hexavalent chromium) and PCB mixtures (Aroclor-1248 and Aroclor-1254) exceeded risk-based **screening levels**. Lead also exceeded the background concentration. The highest concentrations were detected in Area 1. Additional metals, dioxins/furans, PAHs, perchlorate, SVOCs, pesticides, and VOCs were detected in surface soil at concentrations below their respective risk-based screening levels. Within subsurface soil, metals (lead, mercury, and hexavalent chromium), PCB mixtures (Aroclor-1242, Aroclor-1254, and Aroclor-1260), one pesticide (delta-hexachlorocyclohexane), and total dioxin exceeded risk-based screening levels. Lead and mercury also exceeded background concentrations. Most elevated concentrations of metals in the subsurface were from samples obtained within Area 1 and the buried waste in Area 3. The subsurface soil exceedances of PCBs and the pesticide were in Area 3. The dioxin exceedances were located within Area 3 and adjacent to Area 1. Asbestos-containing material was identified at the site, primarily within the main east-west trending ravine. Additional metals, PAHs, perchlorate, SVOCs, pesticides, and VOCs were detected in subsurface soil at concentrations below their respective risk-based screening levels. A HHRA and an ERA were conducted as part of the RI, and potential unacceptable human health risks were identified from exposure to the COCs in soil: three PCB mixtures (Aroclor-1242, Aroclor-1248, Aroclor-1254) and two metals (hexavalent chromium and lead). Potential ecological risks were identified from exposure to lead in soil. The FFS developed RAOs, ARARs, and remedial alternatives for these COCs. The findings of the HHRA and ERA, and the evaluation of remedial alternatives from the FFS, are discussed in more detail later in this Proposed Plan. A graphical **Conceptual Site Model** is presented on **Figure 4** (**Page 7**).
2021 Time Critical Removal Action Memorandum (TCRA) (CH2M, 2021)	000542	An Action Memorandum was prepared to implement a TCRA at IR Site 7 because stormwater discharge on the site had eroded soil and exposed a portion of the waste and there was the potential contaminants at the site could migrate offsite. The TCRA was intended to remove waste and soil COCs within Area 1 and a section of Area 3 where the COCs with the highest concentrations were detected during previous investigations.

Table 1, continued – Previous Investigations and Studies

Previous Study	Administrative Record Numbers	Activities and Findings
2022 Removal Action Closeout Report (Cape, 2022)	Pending Upload	The TCRA removed approximately 6,000 cubic yards of waste and COC-impacted soil from the entirety of Area 1 and a portion of Area 3 and was completed in February 2022. The TCRA area was excavated vertically until waste was visually removed. The area was also excavated horizontally until waste was visually removed with the exception of the northern sidewall of the TCRA area, which extends further into Area 3 toward the remainder of the site. The waste and COCs in soil in the remaining areas of the site will be addressed by the final remedial action for the site. Following excavation, confirmation soil samples were collected from the excavation floors and sidewalls and the excavations were backfilled and are being managed for revegetation and erosion control. The Final TCRA Completion Report concluded that all RAOs in the 2021 Action Memorandum had been achieved. The TCRA area is shown on **Figure 3** (**Page 6**). During the TCRA, test pits were advanced at select locations outside of the TCRA area around Areas 2, 3, and 4 to gain a better understanding of the extent of waste in those areas. The test pits around Areas 3 and 4 confirmed the extents of waste in those areas. The test pits around Area 2 suggested the extent of waste was smaller than originally assumed. The locations of the test pits and the refined waste extents are shown on **Figure 3** (**Page 6**).
2022 FFS Addendum (CH2M, 2022)	Pending Upload	An FFS Addendum was prepared to revise the remedial alternatives developed in the RI/FFS to reflect changes to the site conditions as a result of the TCRA, as well as to refine some of the waste extent assumptions made in the FFS based on additional test pitting information collected during the TCRA. The RAOs identified in the RI/FFS for the subsurface soil lead "hot spot" area downgradient of the disposal areas were removed because the TCRA met the RAOs.

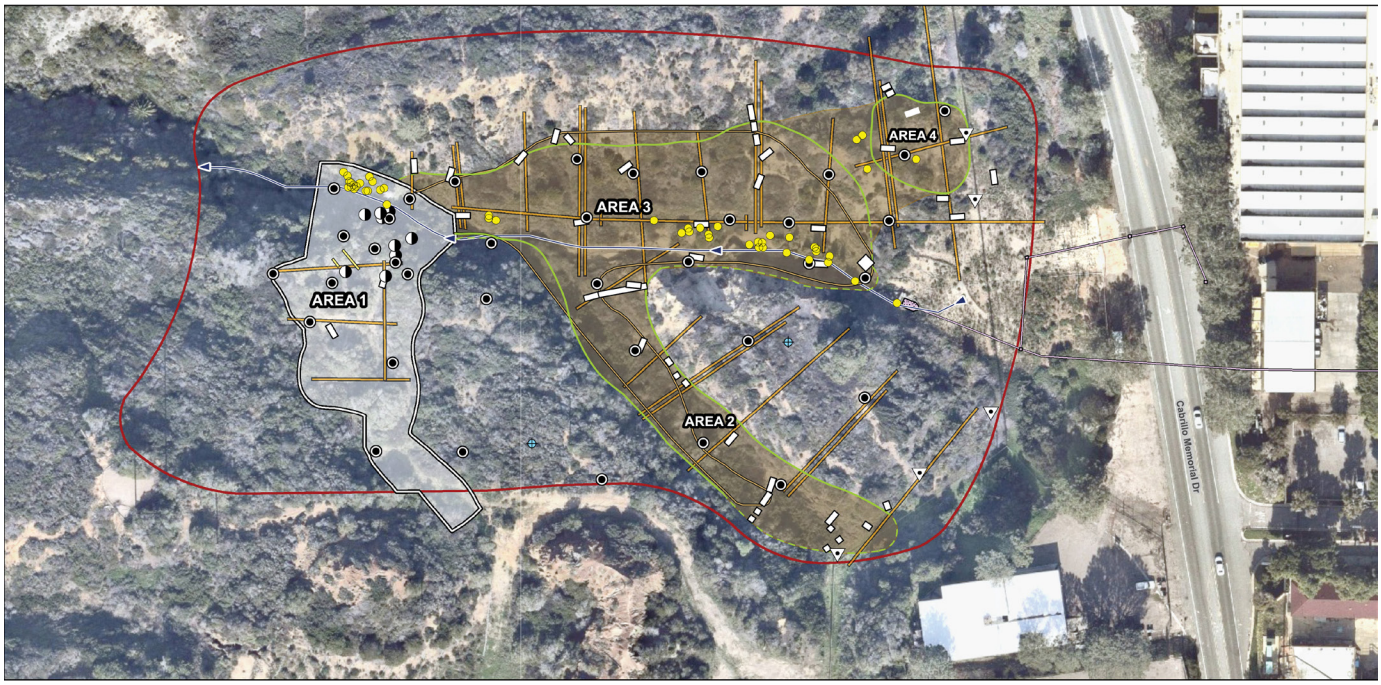

Figure 3 – Investigation Data Collection Locations

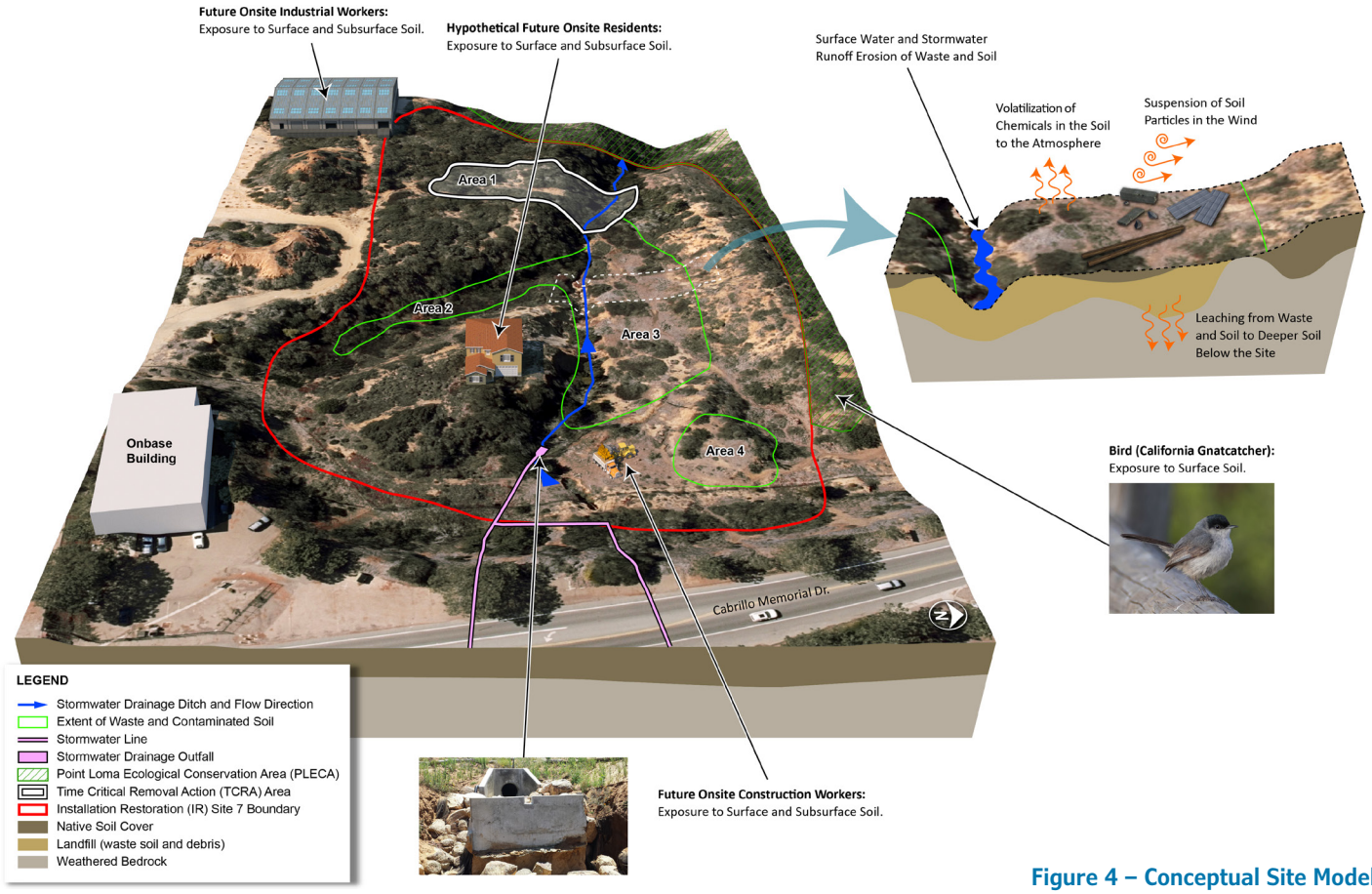

Figure 4 – Conceptual Site Model

SUMMARY OF SITE RISKS

Potential human health risks from exposure to soil and soil vapor and ecological risks from exposure to soil at IR Site 7 were evaluated based on the data collected as part of the RI. The following sections summarize the risk assessment findings.

Human Health Risk Assessment

A **Human Health Risk Assessment (HHRA)** was completed to evaluate potential impacts to human receptors from exposure to soil and soil vapor at IR Site 7. An office building is located immediately south of IR Site 7; therefore, current and future offsite military/industrial worker exposure was evaluated. Although future site use is expected to remain military/industrial, possible future construction worker exposure and hypothetical future residential land use were also evaluated in addition to future onsite industrial use during the HHRA.

Health risks are based on a conservative estimate of the potential **cancer risk** or the potential to cause other health effects not related to cancer, as indicated by a **hazard index (HI)**. CERCLA requirements as outlined in the NCP identify an acceptable cancer risk range of 1 in 10,000 (10^{-4}) to 1 in 1,000,000 (10^{-6}), called the "risk management range", and an acceptable noncancer hazard as a HI of less than 1. These criteria were used to determine whether any further actions were required to sufficiently protect human health at IR Site 7.

Potential unacceptable cancer risks and/or noncancer hazards were identified for the future onsite industrial worker (cancer risk of $1x10^{-5}$) and future onsite construction worker (cancer risk of $2x10^{-6}$ and HI of 3) from exposure to soil at IR Site 7. The primary chemicals that contributed significantly to these risks include PCB mixtures (Aroclor-1242 and Aroclor 1248) for the future onsite industrial worker and the PCB mixture Aroclor-1248 for the future construction worker.

Although future residential use of IR Site 7 is considered unlikely, the Navy conservatively developed risk and hazard estimates for a hypothetical residential exposure scenario. The risk ($4x10^{-5}$) was estimated to be in the upper end of the risk management range for cancer risk and the hazard of 6 was above a noncancer HI of 1. The primary chemicals that contributed significantly to these risks in soil included PCB mixtures (Aroclor-1242, Aroclor-1248, and Aroclor-1254), and the metal hexavalent chromium. No unacceptable

risks from potential vapor intrusion were identified for volatile chemicals detected in soil vapor samples collected along the eastern boundary of the site.

Additionally, the HHRA evaluated the potential for health effects from exposure to lead by comparing the **exposure point concentration (EPC)** for lead in surface soil and subsurface soil with California-recommended screening levels for lead and evaluated whether geographically collocated areas of elevated lead concentrations or individual samples with elevated lead concentrations were present at the site. Based on the evaluation, lead was identified as a primary risk contributor for the future onsite industrial worker, future construction worker, and future hypothetical resident.

In summary, PCB mixtures (Aroclor-1242, Aroclor-1248, and Aroclor-1254) and metals (hexavalent chromium and lead) were determined to warrant remedial action consideration and are identified as COCs in soil at IR Site 7.

Ecological Risk Assessment

An ERA was completed to evaluate potential impacts to ecological receptors from exposure to soil at IR Site 7. Representative terrestrial receptors (plants, soil invertebrates, and terrestrial birds and mammals) were selected for the ERA based on a review of current site conditions and potential habitat. Because there is a potential for a threatened species, the federally listed California gnatcatcher, to forage near IR Site 7, this bird species was specifically assessed.

Potential risks to ecological receptors are estimated by calculating a **hazard quotient (HQ)** to determine if exposure to a given chemical represents a significant risk of harm to ecological receptors. HQs are calculated based on the types and concentrations of chemicals present and the possible ways ecological receptors could be exposed to them. An HQ less than 1 indicates that the receptor's estimated exposure to a given chemical parameter is less than the minimum threshold associated with toxicity, and exposure is unlikely to present a significant risk of harm. Therefore, it is determined that if the HQ is less than 1, the risk to ecological receptors is negligible.

The results of the ERA indicate that concentrations of lead found in surface soil pose a potential for unacceptable risk to the California gnatcatcher if they forage within the site. Therefore, lead was determined to warrant remedial action consideration and is identified as an ecological COC in surface soil at IR Site 7.

REMEDIAL ACTION OBJECTIVES

The Navy has identified a Preferred Alternative in this Proposed Plan for the protection of public health and the environment from actual or threatened releases of hazardous substances into the environment. The following RAOs were developed for IR Site 7:

- Prevent unacceptable exposure by human receptors to waste and COC-impacted soil.
- Prevent unacceptable exposure by ecological receptors to waste and lead-impacted soil.
- Prevent waste and COC-impacted soil from leaving the site via erosion.

Figure 5 (**Page 9**) displays the remediation target areas, which consist of the waste and contaminated soil areas.

The FFS Addendum presented the RAOs along with preliminary **remedial goals**, which are concentration thresholds for the COCs intended to be protective of the exposures and receptors of concern. Final remedial goals will be established in the ROD for IR Site 7.

SUMMARY OF REMEDIAL ALTERNATIVES

The following remedial alternatives were developed to address waste and COC-impacted soil at IR Site 7 and are detailed in the FFS:

- Alternative 1 – No Action
- Alternative 2 – Fencing, Signage, and **Institutional Controls (ICs)**
- Alternative 3 – Cap, Erosion and Stormwater Controls, and LUCs
- Alternative 4 – Consolidate, Cap, Erosion and Stormwater Controls, and LUCs
- Alternative 5 – Excavation and Transport to Corrective Action Management Unit and Offsite Disposal
- Alternative 6 – Excavation and Offsite Disposal

Table 2 (**Page 10**) presents a summary of the components of each remedial alternative, excluding Alternative 2, along with estimated costs. Alternative 2 is not included in **Table 2** (**Page 10**) and was not considered further because it is not a viable remedy to reduce risk to sensitive ecological receptors. The alternative would not meet RAOs as fencing, signage, and ICs would only control human receptor access to the site and would not prevent ecological receptors from potentially unacceptable exposure to waste and contaminated soil at the site.

Figure 5 – Remediation Target Areas

Table 2 – Description of Remedial Alternatives

Alternative[a]	Details	Cost	
1 – No Action	None	**Total Cost**	**$0**
3 – Cap, Erosion and Stormwater Controls, and LUCs	• Conduct pre-design investigation and complete remedial design. • Construct a landfill cap over the waste and remaining impacted soil, and install a landfill gas monitoring system. • Improve erosion and stormwater controls by diverting surface drainage away from the landfill cap and any subsurface drainage from outside of the unit via concrete-lined stormwater drainage ditches. • Conduct revegetation and habitat restoration at impacted areas. • Implement LUCs that include engineering controls (fencing and signage) and ICs to reduce direct human exposure to the waste disposal area and provide a warning of the potential risks present at the site. • Conduct long-term maintenance and inspections of the landfill cap, fencing, and signage and conduct CERCLA Five-Year Reviews.	Capital Cost O&M Cost **Total Cost[b]** **Timeframe**	$1,982,000 $1,880,000 **$4,634,000** **32 years**
4 – Consolidate, Cap, Erosion and Stormwater Controls, and LUCs	• Conduct pre-design investigation and complete remedial design, as in Alternative 3. Consolidate the nonhazardous waste and impacted soil from Area 2 to Area 3. Dispose of any hazardous materials offsite. • Construct a landfill cap over the waste at Areas 3 and 4, and install a landfill gas monitoring system. • Improve erosion and stormwater controls by constructing perimeter ditches to convey stormwater runoff from the waste disposal area surface and run-on around the consolidated waste, restoring the existing ravine to natural conditions (that is, remove debris and stabilize slopes), and installing an energy dissipator before discharge to the ravine to address erosion control and stormwater management. • Conduct revegetation and habitat restoration, as in Alternative 3. • Apply LUCs and conduct inspections and CERCLA Five-Year Reviews as in Alternative 3.	Capital Cost O&M Cost **Total Cost[b]** **Timeframe**	$3,836,000 $1,863,000 **$6,839,000** **32 years**
5 – Excavation and Transport to a Corrective Action Management Unit and Offsite Disposal	• Conduct pre-design investigation and complete remedial design, as in Alternative 3. • Excavate waste and COC-impacted soil, conduct post-excavation confirmation soil sampling and additional excavation until remedial goals are met, and backfill with clean material and nonimpacted excavated materials. • Transport nonhazardous waste to a corrective action management unit (another IR site at NBPL) and segregate hazardous waste and recyclable material for offsite disposal. • Improve erosion and stormwater controls by restoring the existing ravine to natural conditions (that is, remove debris and stabilize slopes), and installing an energy dissipator before discharge to the ravine to address erosion control and stormwater management. • Conduct revegetation and habitat restoration, as in Alternative 3.	Capital Cost O&M Cost **Total Cost[b]** **Timeframe**	$7,502,000 $372,000 **$9,449,000** **7 years**
6 – Excavation and Offsite Disposal	• Conduct pre-design investigation, remedial design and excavation activities, as in Alternative 5. • Dispose of all excavated waste and soil offsite (segregate hazardous waste and recyclable material). • Conduct erosion and stormwater controls, as in Alternative 5, and conduct revegetation and habitat restoration, as in Alternative 3.	Capital Cost O&M Cost **Total Cost[b]** **Timeframe**	$8,002,000 $372,000 **$10,073,000** **7 years**

a Alternative 2 (Fencing, Signage, and Institutional Controls) was screened out before the comparative analysis of alternatives because it did not meet the RAOs.

b Total costs equal capital costs plus O&M costs, plus a 20% contingency.

O&M = operations and maintenace

Also, it would not prevent future migration of exposed waste via erosion from the site. Although Alternative 1 (No Action) does not meet the **threshold criteria** (overall protection of human health and the environment and compliance with ARARs) and therefore, not considered a viable remedy, it was included in **Table 2** (**Page 10**) because it is required by the NCP to provide a baseline for the alternatives comparisons.

Presumptive remedies were considered when developing the alternatives for IR Site 7 in the FFS. USEPA developed presumptive remedies as a tool to accelerate site investigation and cleanup. The presumptive remedy for legacy landfills on military bases should include containment of landfill waste, source area groundwater control, collection and treatment of **leachate**, collection and/or treatment of landfill gas, and implementation of ICs to supplement the **engineering controls**. The containment alternatives (Alternatives 3 and 4) for IR Site 7 include landfill covers and ICs. A landfill cap to contain the waste would minimize infiltration of precipitation into the waste, thereby eliminating the potential for leachate generation. Although no collection or control of landfill gas is necessary at IR Site 7, because it is unlikely significant concentrations of gases would be generated due to the age and type of waste, a Landfill Gas Monitoring Plan was included in Alternatives 3 and 4 in accordance with California RWQCB requirements.

The excavation alternatives (Alternatives 5 and 6) were developed following Department of Defense policy for considering an **unlimited use/unrestricted exposure (UU/UE)** scenario wherein the site would be released from any further action or controls.

EVALUATION OF REMEDIAL ALTERNATIVES

The NCP outlines the approach for comparing remedial alternatives using **nine evaluation criteria** to identify a preferred alternative for the site. **Table 3** compares the alternatives for IR Site 7 based on seven of the nine criteria. The last two criteria (**state and community acceptance criteria**) will be addressed through public comment and regulatory agency review of this Proposed Plan.

Comparisons based on these criteria are further discussed in the subsequent sections.

Overall Protection of Human Health and the Environment

All of the alternatives, with the exception of the No Action alternative, are protective of human health and environment by eliminating, reducing, or controlling risks posed by the site through removal of waste and/or contaminated soil and/or LUCs.

Compliance with ARARs

All of the alternatives, with the exception of the No Action alternative, are expected to meet the ARARs. Alternatives 3, 4, 5, and 6 would be subjected to ARARs associated with erosion control, dust emissions, and discharges; and excavation and stockpiling including hazardous waste management, characterization, and disposal requirements. Alternatives 3 and 4 would also be subjected to ARARs associated with construction of landfill covers and LUCs.

Table 3 – Comparative Analysis of Remedial Alternatives

Criterion	Alt 1	Alt 3	Alt 4	Alt 5	Alt 6
Threshold Criterion					
Overall protection of human health and the environment	Not protective	Protective	Protective	Protective	Protective
Compliance with ARARs	Not applicable	Complies	Complies	Complies	Complies
Balancing Criterion					
Long-term effectiveness and permanence	○	○	⊗	●	●
Reduction of toxicity, mobility, or volume through treatment	○	○	○	○	○
Short-term effectiveness	●	⊗	⊗	○	○
Implementability	●	⊗	⊗	○	○
Cost[a]	$0	$4.5M	$6.7M	$9.5M	$10.1M

● Better satisfies criterion ⊗ Moderately satisfies criterion ○ Poorly satisfies criterion

a Includes a net present value adjustment to the Total Costs in **Table 2** (**Page 10**), using a real discount rate of 0.5 percent per year for Alternatives 3 and 4 (32-year duration), and –0.6 percent per year for Alternative 5 and 6 (7-year duration).

Long-Term Effectiveness and Permanence

Each alternative, except the No Action alternative, provides some degree of long-term protection. Alternatives 5 and 6 rank high for this criterion as both of these alternatives would remove all waste and COC-impacted soil from the site and would be intended to achieve site closure. No LUCs, inspections, or maintenance would be required for these alternatives beyond the 3 years of maintenance associated with the revegetation conducted at completion of the excavation.

Some waste and COC-impacted soil would remain in place, requiring landfill cap, erosion, and stormwater control inspections and maintenance to ensure long-term effectiveness for Alternatives 3 and 4. However, Alternative 3 is ranked low and Alternative 4 is ranked moderate because Alternative 4 would consolidate and reduce the waste footprint for maintenance purposes, would result in UU/UE for a portion of the site, and has a smaller cap area than Alternative 3.

Reduction of Toxicity, Mobility, or Volume Through Treatment

None of the alternatives include an active treatment component. Therefore, all alternatives rank low for this criterion. However, reducing the contamination toxicity, mobility, or volume would be achieved to some degree for each alternative. The waste and COC-impacted soil would be removed from the site during implementation of Alternatives 5 and 6. Alternatives 3 and 4 would remove waste beneath the existing and new proposed drainage channels and would minimize infiltration, reducing mobility through installation of the cap over the remaining waste. Additionally, Alternatives 3 and 4 are presumptive remedies, because they include landfill covers and LUCs.

Short-Term Effectiveness

Alternative 1 would not result in short-term impacts to site workers or the local community, dust, or transportation impacts. Therefore, Alternative 1 is rated high for this criterion.

Alternatives 3 and 4 are ranked moderate for this criterion because the short-term impacts to site workers or the local community would be associated primarily with dust and transportation while constructing a landfill cap and would be relatively minimal. However, Alternative 4 has slightly more short-term impacts and ranks slightly lower than Alternative 3 because it involves excavation of a portion of the waste for consolidation.

Alternatives 5 and 6 are rated low for this criterion because field activities associated with these alternatives would pose higher short-term risks to site workers than the other alternatives. This is because of the inherent risks associated with excavation, segregation, and transportation of all the waste and COC-impacted soil offsite. Alternative 6 would present the greatest short-term risk to the environment and the community near the disposal transportation route because it has the largest volume of waste and COC-impacted soil being transported offsite for disposal.

Based on an evaluation conducted to measure the sustainability of the alternatives, Alternative 6 had the highest environmental footprint because it would require the most energy and generate the most greenhouse gases and particular matter. The environmental footprints for Alternatives 3 and 4 were similar to each other and lower than Alternative 6, and Alternative 5 had the lowest environmental footprint.

Alternative 3 has a slightly shorter timeframe to meet RAOs (6 months) than Alternatives 4, 5, and 6 (1 year).

Implementability

Alternative 1 is rated high in implementability because it involves no action and would be easier to implement than other alternatives evaluated.

Alternatives 3, 4, 5, and 6 are all implementable because they include common activities performed routinely at similar sites and require equipment and supplies that are readily available. However, the site conditions (steep topography) present some challenges in implementation of each of the alternatives. Alternatives 5 and 6 rank lower than Alternatives 3 and 4 because the impacts on the implementability associated with the site conditions would be more significant during the excavation activities, such as requiring planning and safety measures for fall protection, and slope stability (revegetation and erosion control).

Costs

Alternatives 3 and 4 have the lowest costs, at $4,500,000 and $6,700,000, respectively. The cost for Alternative 5, $9,500,000, falls in the middle of the alternatives. Alternative 6 has the highest cost among the five alternatives at $10,100,000

PREFERRED ALTERNATIVE

Based on the evaluation of remedial alternatives, the Navy proposes Alternative 4, Consolidate, Cap, Erosion and Stormwater Controls, and LUCs, as the Preferred Alternative for IR Site 7. Alternative 4 includes a presumptive remedy (containment of landfill waste through a cap) and addresses the risks to potential future residents by constructing a cap over the consolidated waste and contaminated soil, restoring the ravine to natural conditions, and prohibiting the construction of buildings for occupancy on the landfill cap and adjacent areas (**Figure 6, Page 14**).

Alternative 4 is the Preferred Alternative because it consolidates the waste into a smaller area before capping, resulting in a larger area of UU/UE than Alternative 3, and is more cost effective than excavation and disposal of the waste as part of Alternatives 5 and 6. However, to ensure the integrity of the landfill cap as part of Alternative 4, the adjacent ravine must have sufficient flow capacity for a 100-year storm event which is currently being evaluated. Based on the results of this evaluation, Alternative 4 may prove less favorable to implement and the excavation alternatives (Alternatives 5 or 6), resulting in UU/UE of the entire site, are identified as contingency measures and one of these alternatives would be selected as the remedy in the ROD.

Based on information currently available, the lead and support agencies believe the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The lead and support agencies expect the Preferred Alternative to satisfy the following statutory requirements of CERCLA Section 121(b): (1) be protective of human health and the environment, (2) comply with ARARs, (3) be cost-effective, and (4) use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Because there is not highly toxic or mobile source material (**principal threat waste**) at IR Site 7, it is not necessary for the Preferred Alternative to satisfy the preference for treatment as a principal element. Final concurrence will be solicited following the review of all comments received during the public comment period.

Because COCs will remain in place at the site, the Navy will conduct regular inspections of the site over the long term, implement and enforce associated ICs, and review the final remedial action no less than every 5 years after initiation of the remedial action, in accordance with CERCLA Section 121(c) and the NCP at 40 *Code of Federal Regulations* §300430(f)(4)(ii). If results of the Five Year Review reveal that remedy integrity is compromised and the protection of human health and the environment is insufficient, additional remedial actions would be evaluated by the parties and implemented by the Navy.

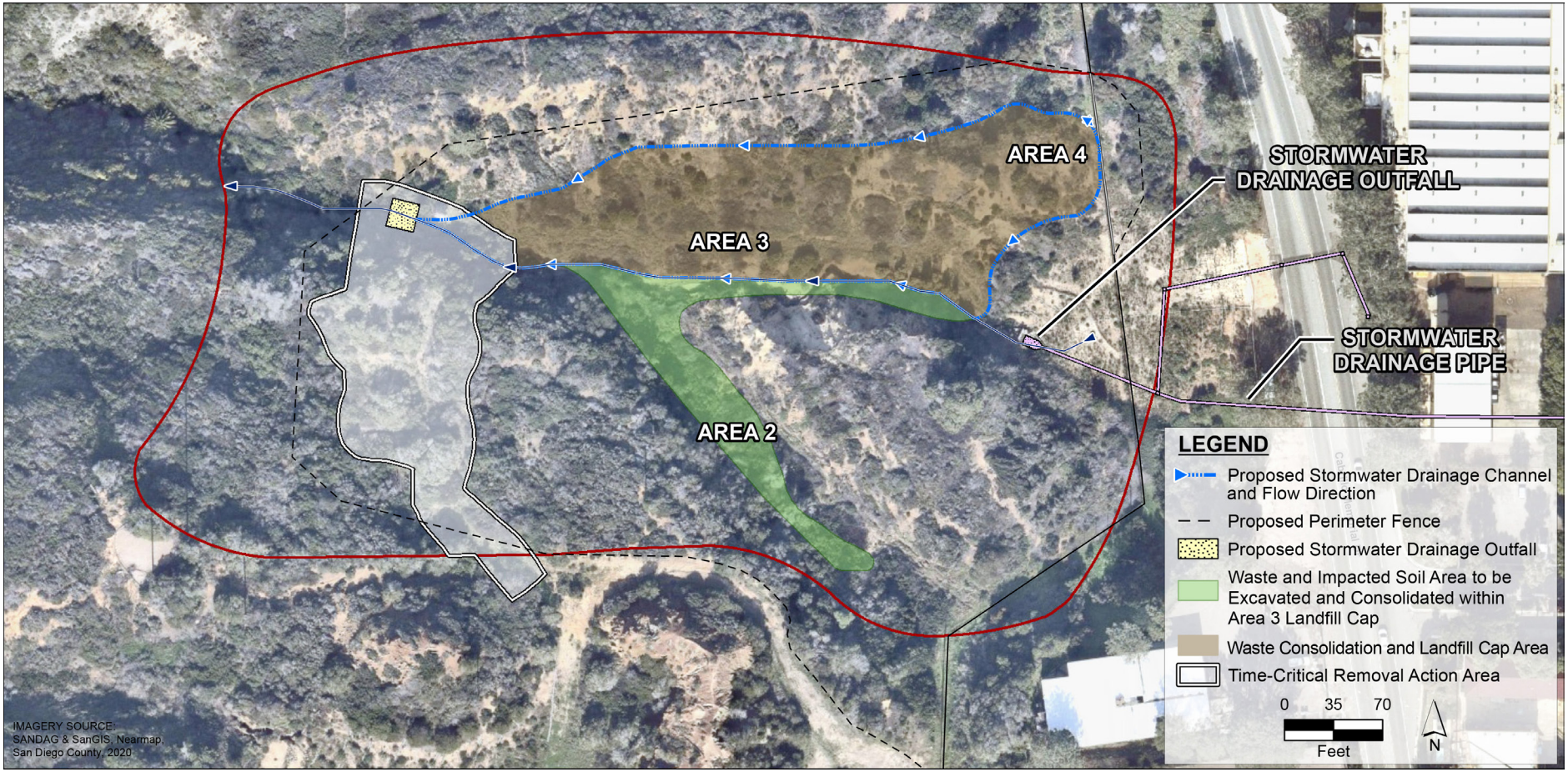

Figure 6 – Alternative 4 Features

The Next Step...

Public comments on the Proposed Plan are being accepted from August 16, 2023, through September 16, 2023. Comments received will be considered in making the final remedial determination in the ROD for IR Site 7. Refer to the "Community Involvement Opportunities" box on **Page 1** for more information on submitting comments during the public comment period or at the public meeting.

THE ADMINISTRATIVE RECORD: A SOURCE FOR REPORTS AND STUDIES

The reports and studies used to identify and justify the proposed remedy for IR Site 7 are contained in the Administrative Record. These documents, as well as other investigation and cleanup information for NBPL, are available to the public in the Administrative Record file.

To access the Navy's Administrative Record file, please contact:

Ms. Diane Silva
Certified Command Records Manager

Naval Facilities Engineering Systems Command Southwest
750 Pacific Highway, Code EV33
NBSD Bldg 3519
San Diego, CA 92132-5190

(619) 556-1280
diane.c.silva.civ@us.navy.mil

Monday through Friday, 8:00 a.m. to 5:00 p.m.

To access State records files, please contact:

DTSC Administrative Records and Files
5796 Corporate Ave
Cypress, CA 90630-0058

(714) 484-5300
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=37970016

California RWQCB
Attention: File Review Request
2375 Northside Drive, Suite 100
San Diego, CA 92108

(619) 516-1994
https://geotracker.waterboards.ca.gov/

For more information about IR Site 7, contact:

Mr. Nicholas T. Shih
Lead Remedial Project Manager, NBPL

Naval Facilities Engineering Systems Command Southwest
750 Pacific Highway
11th Floor, Environmental
San Diego, CA 92132-5190

(619) 705-5431
nicholas.shih.civ@us.navy.mil

State agency contacts:

Ms. Sara Michael, M.Sc.
Remedial Project Manager

Department of Toxic Substances Control
5796 Corporate Ave
Cypress, CA 90630-0058

(714) 484-5300
sara.michael@dtsc.ca.gov

Ms. Kristin K. Schwall, P.E.
Water Resources Control Engineer

California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108

(619) 521-3368
kristin.schwall@waterboards.ca.gov

Glossary

This glossary defines in nontechnical language the more commonly used environmental terms that appear in this Proposed Plan. The definitions do not constitute the Navy's, DTSC's, or Water Board's official use of terms and phrases for regulatory purposes.

Administrative Record – Consists of reports, data, and historical documents used in the selection of remedial or environmental management alternatives. The Administrative Record is available for public review.

Applicable or Relevant and Appropriate Requirements (ARARs) – Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility citing laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements address problems or situations at a site that are sufficiently similar (that is, relevant) to the circumstances of the proposed response action and that are well suited (that is, appropriate) to the conditions of the site.

Below Ground Surface (bgs) – Below grade.

Background Concentration – The amount of a chemical present in the environment because it is naturally occurring or because it was introduced by humans through activities not associated with a site related release.

California Department of Toxic Substances Control (DTSC) – Part of the California Environmental Protection Agency, and is the lead state regulatory agency for Naval Base Point Loma.

Cancer Risk – Cancer risks are expressed as a number reflecting the increased chance that a person will develop cancer if exposed to chemicals or substances. The acceptable risk range as defined in the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) is $1x10^{-4}$ to $1x10^{-6}$, meaning there is 1 additional chance in 10,000 ($1x10^{-4}$) to 1 additional chance in 1,000,000 ($1x10^{-6}$) that a person will develop cancer if exposed to a site that is not remediated.

Chemical of Concern (COC) – A subset of chemicals of potential concern that are identified in the RI/feasibility study (FS) as needing to be addressed by the proposed response action.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Also known as Superfund, this federal law regulates environmental investigation and cleanup of sites possibly posing a risk to human health or the environment.

Conceptual Site Model – A written and/or illustrative representation of the conditions and physical, chemical, and biological processes that control the transport, migration, and potential impacts of contamination to human and ecological receptors.

Ecological Risk Assessment (ERA) – An evaluation of the risk posed to the environment (organisms and media) if remedial activities are not performed at a site.

Exposure Point Concentration (EPC) – EPCs are estimated from measured or modeled concentrations, and pathway-specific intakes (doses) are estimated using hypothetical human receptors for evaluation in the subsequent risk calculations.

Focused Feasibility Study (FFS) – A Feasibility Study is the CERCLA mechanism for the development, screening, and detailed evaluation of alternative remedial actions for a given site. An FFS is streamlined and focused on only a few remedial options that are judged likely to work based on experience as well as knowledge of the site and the contamination.

Geophysical Survey – The noninvasive investigation of subsurface conditions at the site through measuring, analyzing, and interpreting physical fields at the surface.

Hazard Index (HI) – The potential for multiple chemicals to cause noncancer health effects through multiple exposure pathways.

Hazard Quotient (HQ) – The potential to for a single chemical to cause noncancer health effects through multiple exposure pathways.

Human Health Risk Assessment (HHRA) – An evaluation of potential risk posed to human health (human receptors) by site contamination if protective remedies are not implemented at the site.

Institutional Controls (ICs) – Nonengineered methods, such as administrative or legal controls, that help minimize the potential for human exposure to contamination or protect the integrity of the remedy. Examples include prohibiting access, or prohibitions on activities without written permission.

Installation Restoration (IR) Program – The Department of Defense's comprehensive program to investigate and clean up environmental contamination at military facilities, in full compliance with CERCLA.

Land Use Controls (LUCs) – Physical, legal, or administrative methods that restrict the use of or limit access to property to reduce risks to human health and the environment. LUCs include engineering controls and institutional controls:

- **Engineering controls –** Engineered or constructed physical barriers to contain and/or prevent exposure, such as signs and fences.
- **Institutional Controls (ICs) –** Nonengineered methods, such as administrative or legal controls, that help minimize the potential for human exposure to contamination or protect the integrity of the remedy. Examples include prohibiting access, or prohibitions on activities without written permission.

Leachate – Formed when rainwater filters through wastes placed in a landfill. When this liquid comes in contact with buried wastes, it leaches, or draws out, chemicals or constituents from those wastes.

National Oil and Hazardous Substance Pollution Contingency Plan (NCP) – The federal regulation that guides removal actions and remedial responses to a release (or potential release) of hazardous substances or contaminants into the environment.

Nine Evaluation Criteria – The NCP outlines the approach for comparing remedial alternatives using these evaluation criteria. The criteria are organized into three categories as follows:

Threshold Criteria

1. **Overall Protection of Human Health and the Environment –** Addresses whether a remedy provides adequate protection and how risks posed by each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or ICs.
2. **Compliance with ARARs –** A statutory requirement that an alternative will either meet all of the ARARs or that there is a good rationale for waiving an ARAR.

Balancing Criteria

3. **Long-Term Effectiveness and Permanence –** The expected residual risk that will remain at the site after completion of the remedial action and the ability of a remedy to maintain reliable protection of human health and the environment in the future.
4. **Reduction of Toxicity, Mobility, and Volume through Treatment –** The anticipated ability of the treatment technologies to reduce toxicity, mobility, or volume of contamination.
5. **Short-Term Effectiveness –** The short-term impacts of the alternatives on the neighboring community, remedial construction workers, and the surrounding environment, including potential threats to human health and the environment associated with the collection, handling, treatment, and transport of hazardous substances.
6. **Implementability –** The technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement an option.
7. **Cost –** The construction, operation, and maintenance costs incurred over the life of the project, expressed as the net present value of these costs.

State and Community Acceptance Criteria

8. **State Acceptance –** Substantial and meaningful state involvement in the Proposed Plan for remedial action at a site.
9. **Community Acceptance –** The public's general response to the alternatives described in the Proposed Plan and FS report. The specific responses to the public comments are addressed in the Responsiveness Summary section of the ROD.

Polychlorinated Biphenyl (PCB) – A type of industrial compound or mixture that can be used in lubricants, heat-transfer fluids, and plasticizers, that accumulates in animal tissue and may result in potential adverse noncancer and cancer health effects. PCBs are especially harmful to fish and invertebrates, and stay in the food chain for many years.

Presumptive Remedies – Preferred technologies for common categories of sites based on historical patterns of remedy selection and the United States Environmental Protection Agency's scientific and engineering evaluation of performance data on technology implementation. Presumptive remedies are intended to expedite remedy selection at sites with similar characteristics (for example, municipal landfills) or contaminants (for example, volatile organic compounds [VOCs]).

Principal threat waste – Wastes that generally will be considered to constitute principal threats include, but are not limited to, the following:

- **Liquid source material –** waste contained in drums, lagoons or tanks, free product in the subsurface (that is, non-aqueous phase liquids) containing contaminants of concern (generally excluding groundwater).
- **Mobile source material –** surface soil or subsurface soil containing high concentrations of COCs that are (or potentially are) mobile due to wind entrainment, volatilization (for example, volatile organic compounds [VOCs]), surface runoff, or subsurface transport.
- **Highly toxic source material –** buried drummed non-liquid wastes, buried tanks containing non liquid wastes, or soils containing significant concentrations of highly toxic materials.

Proposed Plan – A document that summarizes IR program site information from previous investigation documents, describes and evaluates the remedial alternatives, and meets federal (Proposed Plan) and state (Preliminary Remedial Action Plan) requirements for public participation.

Public Comment Period – The time allowed for the members of an affected community to express views or concerns regarding an action proposed to be taken by the Navy, such as a rulemaking, permit application, or remedy selection.

Record of Decision (ROD) – The legal document that explains the selected remedy to be used. It is signed by the Navy and regulatory agencies and is a binding legal agreement regarding how and when site remediation is conducted.

Remedial Action – The construction or implementation phase of a CERCLA site remedy.

Remedial Action Objectives (RAOs) – Objectives of remedial actions that are based on contaminated media, COCs, potential receptors and exposure scenarios for the COCs, human health and ecological risk assessments, and attainment of regulatory cleanup levels.

Remedial Goal – A chemical-specific cleanup goal that is protective of human health and the environment, complies with ARARs, and is used during the analysis of remedial alternatives in the Feasibility Study.

Remedial Investigation (RI) – An investigation of the nature and extent of contamination at a given site, for the purpose of assessing risk and the need for cleanup.

San Diego Regional Water Quality Control Board (RWQCB) – Part of the California Environmental Protection Agency; provides oversight of activities involving water quality.

Screening Levels – Environmental concentrations established for individual chemicals that are generally considered safe and compared with initial sampling data to characterize the potential nature and extent of contamination present at a site. Exceedance of regulatory screening levels does not necessarily represent risk to receptors.

Unlimited Use/Unrestricted Exposure (UU/UE) – No unacceptable human health or ecological risks or hazards associated with a CERCLA release are present at the site, and the site can be used for any use without LUCs.

Volatile Organic Compound (VOC) – A compound that easily vaporizes into soil gas air. Many VOCs are manufactured chemicals that are associated with paint, solvents, and petroleum, VOCs are common groundwater and soil vapor contaminants.

NOTES

Please print your comments here and return via one of the methods listed below

Name: _____

Affiliation (group/agency): _____

Address: _____

_____

_____

Submit comments or questions to:

Mr. Nicholas Shih
NAVFAC Southwest
750 Pacific Highway
EV Core, Floor 11
San Diego, CA 92132-5190
nicholas.shih.civ@us.navy.mil
(619) 705-5431

Mr. Nicholas Shih
Naval Facilities Engineering Systems Command Southwest
750 Pacific Highway
EV Core, Floor 11
San Diego, CA 92132-5190

Public Comment Period: **August 16–September 16, 2023**

Public Meeting: **August 16, 2023, at 6:00 p.m.**