

**FINAL
SITE MANAGEMENT PLAN
ALAMEDA POINT
ALAMEDA, CALIFORNIA**

Prepared for

City of Alameda
Base Reuse Department
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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
the Advisory	DTSC's <i>Vapor Intrusion Mitigation Advisory</i>
ARIC	Area Requiring Institutional Controls
ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
B(a)P	benzo(a)pyrene
BCT	BRAC Cleanup Team
bgs	below ground surface
BMP	best management practice
BRAC	Base Realignment and Closure
CAA	Corrective Action Area
CalEPA	California Environmental Protection Agency
CBO	Chief Building Official
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
the City	City of Alameda
COC	chemical of concern
CRUP	Covenant to Restrict Use of Property
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EDC	Economic Development Conveyance
ESL	Environmental Screening Level
the Fact Sheet	Regional Water Board's <i>Fact Sheet: Development on Properties with a Vapor Intrusion Threat</i>
FFA	Federal Facility Agreement
FID	flame ionization detector

Final Memorandum To File	<i>Final Memorandum to File for Addition of PFOA and PFOS to the Institutional Controls for Shallow Groundwater at OU-2C IR Sites 5, 10, and 12</i>
FISCA	Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex
FOST	Finding of Suitability to Transfer
GIS	geographic information system
HAZWOPER	Hazardous Waste Operations and Emergency Response
HERO	Human and Ecological Risk Office
HHRA	human health risk assessment
HSP	Health and Safety Plan
IC	institutional control
Imported Fill Advisory	<i>DTSC's Information Advisory: Clean Imported Fill Material</i>
Intrusive Activity	redevelopment activity that involves subsurface exposures, such as grading, excavating, trenching, pile driving, and dewatering
IR	Installation Restoration
IWL	industrial waste line
the IWL LUC RD	<i>Final Land Use Control Remedial Design, Operable Unit 2C, Industrial Waste Line Located Outside Buildings 5/5A and 400/400A, Alameda Point, Alameda, California</i>
LBP	lead-based paint
LHA	lifetime health advisory
LUC	Land Use Control
MCO	Marsh Crust Ordinance: City of Alameda Ordinance No. 2824 (Alameda Municipal Code Chapter XIII, Article XVII, Section 13-56)
mg/kg	milligrams per kilogram
msl	mean sea level
MTBE	methyl tert-butyl ether
NA	No Action
the Navy	the United States Department of the Navy
NAS	Naval Air Station
NCP	National Contingency Plan
NEPA	National Environmental Policy Act

NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NPL	National Priority List
OEHHA	Office of Environmental Health Hazard Assessment
OMM	operation, monitoring, and maintenance
OPS	Operating Properly and Successfully
OSHA	Occupational Safety and Health Administration
OSR	Off-Site Rule
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	Professional Engineer
PERF	Preliminary Environmental Review Form
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PG	Professional Geologist
PID	photoionization detector
PRC	Preliminary Remediation Criterion
PRG	Preliminary Remediation Goal
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
Regional Water Board	San Francisco Bay Regional Water Quality Control Board
RG	Remedial Goal
ROD	Record of Decision
RSL	USEPA Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act of 1986
SIM	selective ion monitoring

SMP	Site Management Plan
SPL SMP	Seaplane Lagoon – Sediment Management Plan
STLC	Soluble Threshold Limit Concentrations
SVOC	semivolatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
Terraphase	Terraphase Engineering Inc.
Threshold Depth	the depth below which excavations must comply with the MCO
TPH	total petroleum hydrocarbon
TPHd	TPH as diesel
TPHg	TPH as gasoline
TPHmo	TPH as motor oil
TRW	tarry refinery waste
TSCA	Toxic Substances Control Act
TTLIC	Total Threshold Limit Concentration
USC	United States Code
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	vapor intrusion
VIM	vapor intrusion mitigation
VOC	volatile organic compound
WET	Waste Extraction Test
yd ³	cubic yard

1.0 INTRODUCTION

This Site Management Plan (SMP) has been prepared by Terraphase Engineering Inc. (Terraphase) for the City of Alameda (“the City”) to mitigate potential risks associated with redevelopment of the onshore portions of the former Naval Air Station (NAS) Alameda, now known as Alameda Point. Alameda Point is located in the northern, eastern, and central parts of the former NAS Alameda, located in Alameda, California. For the purpose of this SMP, Alameda Point is defined as the area shown on Figure 1. On November 1, 1940, NAS Alameda opened with operations that included an airfield, docks for naval vessels, and manufacturing/maintenance facilities. In 1997, the NAS Alameda was officially closed; however, the United States Department of the Navy (“the Navy”) continued to address environmental conditions in support of the transfer of NAS Alameda properties to the City. The City intends for the transferred properties to be redeveloped as residential, commercial/industrial, recreational, and open space areas in accordance with the City’s adopted General Plan, Specific Plans, Zoning, Disposition and Development Agreements.

The objective of this SMP is to convey the following information:

- The previous site investigation activities and the nature and extent of residual contamination in site soils and groundwater;
- Department of Toxic Substances Control (DTSC) Envirostor database links to Navy and regulatory documents that are relevant to the environmental investigation and remediation activities of the various areas of Alameda Point;
- Mitigation efforts to be implemented during site development and ongoing maintenance activities that will minimize exposure of people and environmental receptors to contaminants that may be present at Alameda Point;
- Applicable state and federal environmental health and safety regulations;
- Applicable institutional and engineering controls necessary to maintain compliance with each City-owned parcel’s Covenant to Restrict Use of Property (CRUP) Environmental Restrictions;
- The mitigation measures for the avoidance and proper management of Tarry Refinery Waste (TRW) and underground utilities containing radiological contaminants.

1.1 Document Organization

This SMP is organized as follows:

- Section 1 presents site background information and describes the SMP objectives;
- Section 2 Summarizes the corresponding regulatory oversight, the SMP Update Process, and the Parcel Transfer Process;

- Section 3 discusses the regulatory statutes, regulations, and CRUPs associated with Alameda Point;
- Section 4 discusses the residual environmental conditions at Alameda Point and references SMP appendices that contain more detailed information about site environmental conditions;
- Section 5 presents risk management measures to be implemented at Alameda Point;
- Section 6 presents contamination-related field activities reporting;
- Section 7 lists references used to prepare this SMP.
- Appendix A includes the April 11, 2016 document, *Final Sediment Management Plan, Seaplane Lagoon, Alameda, California* (SPL SMP) that conveys the mitigation procedures for construction and maintenance within the Seaplane Lagoon. Appendix B includes the March Crust Ordinance.

1.2 Site History and Previous Site Use

Alameda Point encompasses roughly 878 acres of land (Figure 2). Development of Alameda Point first began in 1930 under the ownership of the U.S. Army, and the majority of the former NAS Alameda was built on dredged fill that was placed over shallow open water. The average elevation of Alameda Point is approximately 15 feet above mean sea level (msl).

Former NAS Alameda served as a base of operations for naval aviation from before World War II through its closure in 1997. Closure of former NAS Alameda was conducted pursuant to the Defense Base Realignment and Closure (BRAC) Act of 1990. During its long history of operations, former NAS Alameda was home to several thousand military and civilian personnel and supported operations of the Marine Corps, Navy, and other military entities. Hundreds of buildings and an extensive network of roadways and utilities were constructed at former NAS Alameda, and much of this infrastructure still exists. Former NAS Alameda supported aviation and surface craft activities through extensive runway and tarmac infrastructure and an enclosed lagoon for seaplanes and naval surface vessels (including aircraft carriers). Specific activities conducted historically at NAS Alameda include, but were not limited to, aircraft maintenance, ship maintenance, support and training for Navy and Marine air units, storage, rework, distribution of weaponry, fuel storage and refueling, dry goods storage and distribution, pest control, plating, metal working and fabrication, parts washing, cleaning and routine maintenance, blasting and painting, testing jet engines, heavy equipment maintenance, woodworking, and photography.

1.3 Previous Site Environmental Investigations

The Navy has performed investigations of Alameda Point since the late 1980s and identified potential areas of concern based on past activities and/or releases. Thirty-four of these areas

are carried through to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program as Installation Restoration (IR) Sites (Figures 2 and 3), because historical information suggests these areas could be impacted with chemicals. Extensive sampling has been conducted within each of the IR Sites, as these were the identified potential CERCLA “source areas” at Alameda Point. Soil sampling conducted at each of the IR Sites was comprehensive, in that generally samples were analyzed for metals, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and pesticides. In some cases, IR Sites are grouped into Operable Units (OUs) for purposes of CERCLA decision (Figure 3).

For each onshore IR site that has been transferred to the City, Table 1A summarizes chemicals of concern (COCs) in soil and groundwater, indicates whether the site’s remedial status is active, and whether restrictions have been established, per conveyance parcel. Certain IR sites are associated with multiple conveyance parcels, and vice versa.

The scope of this SMP does not include the status of the IR Sites and OUs that have not been transferred to the City. Section 1.4 of this SMP discusses the procedures to be implemented when completing work on parcels that have not been transferred to the City. That procedure will identify the COCs in soil and groundwater on the parcels, the restrictions associated with the parcel, and the procedures necessary to complete the scope of work proposed.

A summary of the regulatory status of the IR Sites and petroleum program sites is presented in Tables 1A and 1B and Appendix E.

The Navy addresses petroleum-related contamination at Alameda Point through the Petroleum Program. CERCLA generally does not consider petroleum contamination unless it is comingled with non-petroleum contamination. Some of the Petroleum Program sites covered by this SMP are closed without restrictions, some have institutional controls (ICs), and the Navy is still working to close others (open petroleum sites). In general, petroleum contamination at Alameda Point is related to fuels and lubricants. The most common petroleum contaminants include gasoline, diesel, motor oil, aviation gasoline, and jet fuel, for which the principal constituents of interest are benzene, ethylbenzene, toluene, xylenes, naphthalene and other PAHs, lead, dichloroethane, and methyl tert-butyl ether (MTBE). The open petroleum sites are illustrated on Figure 4 and summarized in Table 1B. Figure 4 also includes the approximate boundaries of the TRW.

1.4 Areas Covered by the SMP and Implementation

The procedures and mitigation measures discussed in this SMP apply to the redevelopment of land that has been transferred from the Navy to the City and the ongoing maintenance of utilities installed in support of these developments. Figure 2 illustrates the Alameda Point boundaries as well as the properties that have been transferred from the Navy to the City to date. This SMP provides the procedures to be followed during intrusive activities (i.e., redevelopment activities that involve subsurface exposures, such as grading, excavating,

trenching, pile driving, and dewatering) on the onshore land transferred to the City within the boundary of Alameda Point and land still owned by the Navy (“untransferred”), as illustrated in Figure 2. Intrusive work within and adjacent to the Seaplane Lagoon (Figure 2) is to be completed in accordance with the document provided as Appendix A.

This SMP also provides the approval process to be followed prior to development activities on Navy-owned land and the ongoing maintenance activities in support of these developments. Intrusive activities on Navy-owned land requires the submittal and approval of a Preliminary Environmental Review Form (PERF) in advance of those intrusive activities as described further in Section 1.4.1. The procedures discussed in this SMP apply to site development activities, site maintenance activities and activities pertaining to the management of ICs stipulated by parcel deeds or remedial decision documents.

The risk mitigation efforts specified in this SMP are to be implemented by contractors performing SMP-covered work at Alameda Point on behalf of the entity undertaking redevelopment, tenant improvements, public infrastructure, and by utility providers. Applicable construction activities include: hazardous materials testing and abatement, demolition of existing structures, materials handling including soil import and off-haul, and dewatering activities performed to support site redevelopment or tenant improvements. As described in applicable sections of this SMP, implementation of this SMP will be overseen by a qualified environmental professional who is familiar with environmental monitoring equipment, environmental health and safety regulations, and general industrial hygiene practices. Tasks that fall within the practice of engineering or geology shall be conducted by a California State Licensed Professional Engineer (PE) or Professional Geologist (PG), respectively. Before initiating subsurface activities in impacted areas of Alameda Point, each contractor shall prepare their own separate site-specific Health and Safety Plan (HSP) to address requirements in this SMP, worker safety measures, including personal protective equipment, monitoring, training requirements, personal decontamination methods, and the appropriate notifications required. At a minimum, the HSP shall conform to 29 Code of Federal Regulations 1910.120 and applicable California Code of Regulations Title 8 sections.” HSPs shall be prepared by a qualified professional and, if deemed necessary, reviewed by a Certified Industrial Hygienist (CIH).

When required by state regulation, Storm Water Pollution Prevention Plans (SWPPPs) shall be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP).

Personnel such as PE, PG, QSD, and QSP may be assisted by other qualified personnel, provided the accredited professional remains in responsible charge of the work.

The Seaplane Lagoon is a submerged portion of Alameda Point (Figures 2 and 3; IR Site 17). The SPL SMP was prepared to mitigate risks associated with maintenance and use of the Seaplane Lagoon. The SPL SMP is provided as Appendix A to this SMP and is to be referred to for any work in and directly adjacent to the Seaplane Lagoon.

This document has been prepared to fulfill the requirements of developer and utility owner election under Section 13-56.8.c of City Ordinance No. 2824 regulating excavation into the marsh crust ("Marsh Crust Ordinance" [MCO]). The MCO requires preparation of an SMP for handling materials excavated from below the marsh crust Threshold Depth (the depth below which excavations must comply with the MCO). The MCO has been provided as Appendix B to this SMP. Furthermore, this SMP fulfills the worker health and safety and waste management procedures stipulated in the Marsh Crust Remedial Action Plan/Record of Decision (RAP/ROD; Navy 2001) approved by the DTSC on February 2, 2001.

1.4.1 Procedure to Implement Activities on Navy-Owned Land

For intrusive activities to be completed on Navy-owned land (Figure 2), a PERF is to be completed on behalf of the party for which the work is being completed. An example PERF document is provided in Appendix C for reference. The document is to be completed and submitted to the Navy for review and comment. The Navy will attempt to provide review comments to the applicant within 30 days of submission. However, intrusive work on Navy-owned land cannot be initiated until Navy approval of the PERF is obtained. Based on review of the PERF, the Navy may require the preparation of an addendum to the SMP to address activities on Navy-owned land, in which case both the PERF and the SMP addendum will require BCT approval.

In addition, the PERF document will require regulatory review and approval if the activities described in the PERF will not be implemented in accordance with the mitigative procedures described in this SMP at a minimum, or require activities that cannot comply with regulatory approved engineering controls and property use restrictions. In this scenario, the applicant is to submit the PERF to the Navy prior to submittal to the applicable regulatory agencies. The PERF is not to be submitted to the applicable regulatory agencies until the Navy provides approval for the document to be transmitted.

For utility work or the installation of permanent structures, the PERF is to include procedures to be implemented during activities pertaining to installation, ongoing maintenance, and emergency response actions related to maintaining the structure/utility.

1.4.1.1 *Minimum Provisions Required for Utility Work on Navy-owned Land*

At a minimum, any utility work on Navy-owned land will comply with the following provisions.

- The City and any utility service provider assigned an interest in the *Grant of Non-Exclusive Easement For Access and Maintenance of Utility Systems At The Former NAS Alameda* executed on June 4, 2013 and recorded on June 6, 2013, in the Official Records of Alameda County as Series No. 2013-199835 (Original Agreement), must comply with all rights and obligations of the City as set forth in the Original Agreement with respect to the assigned easement area.

- With respect to any work to be performed in or about a “historic property” as defined by 36 Code of Federal Regulations (CFR) § 800.16, any Grantee shall not undertake any activity that may affect the NAS Alameda Historic District, including excavation, construction, alteration or repair, without the prior written approval of the Grantor and the Navy.
- Any Grantee shall immediately cease any excavation on Navy Retained Land if it discovers the presence of hazardous substances or wastes, pollutants or contaminants in any soil or groundwater, and promptly notify the City of Alameda and the Navy and Regulatory Agencies in writing of such fact. Thereafter, any Grantee may proceed in accordance with all applicable laws and regulations.
- Any Grantee shall strictly comply with the hazardous waste permit requirements under the Resource Conservation and Recovery Act or its applicable state equivalent for any accumulation of hazardous wastes derived from the activities of Grantee on the Assigned Easement Area. The Grantee shall be solely responsible for providing at its own cost and expense hazardous waste storage, as may be necessary or required by law or regulation, except as specifically authorized by the Navy in writing
- If any Grantee intends to make any improvements or repairs that require the abatement or removal of Asbestos Containing Materials (“ACM”), Lead Based Paint (“LBP”), or Polychlorinated biphenyl (“PCBs”), the Grantee shall comply with all federal, state, and local laws and regulations applicable to such abatement or removal.
- Any Grantee shall have a Navy-approved plan for responding to hazardous waste, fuel and other chemical spills prior to commencement of operations on the Assigned Easement Area. Should the Navy or the City of Alameda provide any personnel or equipment whether for initial fire response and/or spill containment, or otherwise on request of a Grantee, or because the Grantee was not, in the opinion of the Navy or City of Alameda conducting timely response cleanup actions, the Grantee agrees to reimburse the Navy or the Grantor, as applicable, for its reasonable and necessary costs associated with such response or cleanup.

2.0 REGULATORY OVERSIGHT, SMP UPDATES, AND PARCEL TRANSFER PROCEDURES

2.1 Regulatory Oversight

Oversight of remediation and development activities at Alameda Point is shared by U.S. Environmental Protection Agency (USEPA), the DTSC, and the Regional Water Quality Control Board (Regional Water Board). With the Navy, these agencies constitute the BRAC Cleanup Team (BCT), which provides ongoing oversight at Alameda Point for CERCLA activities. Within the BCT, the USEPA is the lead regulatory agency for National Priority List (NPL) sites until they are delisted. At Alameda Point, the petroleum program is regulated by the Regional Water Board.

Regulatory oversight of SMP implementation will be provided by the BCT as a whole. The BCT will provide regulatory oversight as a group. Individual agencies of the BCT may determine that regulatory oversight regarding specific matters is within the jurisdiction of a single BCT agency. In those scenarios, the BCT will respond by identifying the lead agency to work with. The City's Chief Building Official (CBO), as designated by the City Building Department, will oversee permitting of excavations in accordance with the provisions of the MCO. The contact information for BCT representatives and the City's CBO appears in the following table.

Agency	Representative	Telephone Number	E-mail and Physical Addresses
USEPA	Xuan-Mai Tran	(415) 972-3002	tran.xuan-mai@epa.gov 75 Hawthorne Street San Francisco, CA 94105
DTSC	Yun-hu (Hugo) Hsu, PE	(510) 540-3732	Yun-Hu.Hsu@dtsc.ca.gov 700 Heinz Avenue Berkeley, CA 94710
Regional Water Board	Yemia Hashimoto	(510) 622-2756	yemia.hashimoto@waterboards.ca.gov 1515 Clay Street, Suite 1400 Oakland, CA 94612
Navy	Cecily Sabedra	(619) 524-4569	cecily.sabedra@navy.mil 33000 Nixie Way – Bldg. 50 San Diego, CA 92147
City, Community Development	Lois Butler	(510) 747-6894	lbutler@alameda.ca.gov City Hall West 950 West Mall Square Alameda, CA 94501

2.2 SMP Update Procedures

This SMP can be considered a living document in that it will require to be updated to account for regulatory and transfer status of parcels at Alameda Point as well as to accommodate changes in state and federal regulations. In addition, as Alameda Point is developed, unforeseen development activities may require that additional mitigation procedures be discussed in this document.

If the SMP is updated to account for documented regulatory status of a parcel or to account for additional transferred parcels from the Navy to the City, the updates will be completed in the corresponding figures and tables of this document. If no changes to mitigation measures are made or if no additional mitigation measures are necessary, submittal to the BCT for review and comment is not necessary.

If the SMP is updated in a manner that modifies the mitigation measures previously approved by the BCT, adds additional mitigation measures to account for changes in development activities or addresses changes in state and federal regulations, the SMP will be re-submitted to the BCT for review and approval. A red-line draft of the SMP document will be provided to the BCT to identify the portions of the document that have been modified.

2.3 Alameda Point Parcel Transfer Process

At Alameda Point, the US Navy may transfer land to the City after regulatory approval of a Finding of Suitability of Transfer (FOST), which is a document prepared by the US Navy that describes the site history, remediation and, if applicable, the environmental restrictions. The FOST is reviewed and must be approved by the Regional Water Board, the California DTSC, and the USEPA.

For parcels where CERCLA response actions have been initiated, the FOST cannot be approved until the response actions have received regulatory agency concurrence for either No Action (NA), No Further Action (NFA) or the activity has been determined to be Operating Properly and Successfully (OPS). For sites where only petroleum impacts have been identified the FOST may be approved and the parcel transferred without a finding of NA or NFA because petroleum products are not classified as hazardous substances under CERCLA and are instead addressed under the Alameda Point Petroleum Program. These sites may be transferred to the City while characterization and remediation is ongoing by the Navy.

3.0 APPLICABLE INSTITUTIONAL CONTROLS, STATUTES, AND REGULATIONS

Following is a list of ICs and local, state, and federal laws and regulations that may apply to site redevelopment activities.

3.1 Federal Statutes and Regulations

National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 – Administered by the Council on Environmental Quality and the USEPA, this act addresses projects that constitute major federal actions with the potential to significantly impact the environment.

The NEPA process often invokes one or several other federal statutes as described further in this section. In California, NEPA requirements are often addressed under the California Environmental Quality Act (CEQA), discussed in Section 3.2.

Section 404, Clean Water Act, 33 USC 1344 – Administered by the U.S. Army Corps of Engineers, this act addresses discharges to navigable waters of the United States (including wetlands and streams that are tributaries to navigable waters), and may apply to discharges of excavated soil or groundwater generated by construction and dewatering.

Endangered Species Act, 16 USC 1536 – Administered by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, this act regulates activities affecting federally protected species. It also protects listed species from harm or “take,” which is broadly defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” The definition of “take” further includes unintentional, or incidental take, which might be associated with construction or other activities.

Coastal Zone Management Act, 16 USC 1451 – Administered by the National Oceanic and Atmospheric Administration, this act regulates projects in the coastal zone.

Resource Conservation and Recovery Act of 1976 (RCRA), 42 USC 692 – Administered by the USEPA, this act manages hazardous wastes from “cradle to grave,” governing the generation, storage, transportation, and disposal of hazardous waste. This includes excavated soil and/or groundwater that exceeds threshold criteria. RCRA also governs underground storage tanks (USTs).

Toxic Substances Control Act of 1976 (TSCA), 15 USC 2601 et seq. – Administered by the USEPA, this act governs the introduction, manufacture, and importation/exportation of chemicals produced in the United States. Relevant to this SMP, TSCA also governs asbestos and LBP hazards.

CERCLA, 42 USC 9601 et seq., and Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 USC 9601 – Known as the Superfund Law, these acts direct the USEPA to develop the NPL, a federal list of the most highly contaminated, abandoned hazardous waste sites in the

nation, and gives the USEPA jurisdiction over funds to identify potentially responsible parties and implement remediation at those sites.

Emergency Planning and Citizen's Right to Know Act of 1986, 42 USC 11001 – Also known as Title III of SARA, this act is designed to help communities protect public health, safety, and the environment from chemical hazards. Through the Toxics Release Inventory, a list of all chemicals used and emitted by businesses small and large, it also gives individuals the right to obtain information regarding chemical hazards in their communities. It established the State Emergency Response Commission, responsible for the development of emergency action plans.

Occupational Safety and Health Administration (OSHA) Regulations, 29 Code of Federal Regulations (CFR) Sections 1910.120 and 1926.65 – These regulations govern the applicability and scope of training requirements for personnel involved in the handling of hazardous wastes.

3.2 State Statutes and Regulations

CEQA, California Public Resources Code 21000 et seq. and the CEQA Guidelines, 14 California Code of Regulations (CCR) 15000 et seq. – This act creates the state companion to the federal NEPA process, and is invoked by any nonexempt development project that requires public agency approval. This process can require, among other things, an Environmental Impact Report evaluating potentially significant environmental impacts related to the proposed project, as well as associated mitigation measures.

Porter-Cologne Water Quality Control Act of 1969, California Water Code, Division 7, Section 13000 et seq. – This act authorizes the Regional Water Quality Control Boards as the lead agencies in protecting the waters of the state. This is accomplished through implementation of the National Pollutant Discharge Elimination System permitting program for surface waters, and through issuing Waste Discharge Requirements for discharges potentially affecting groundwater quality. The State Water Resources Control Board (SWRCB) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Constructional General Permit) Order 2009-0009-DWQ (and subsequent amendments) addresses stormwater discharges associated with construction and land disturbance activities. The Construction General Permit applies to “any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre.” The existing Construction General Permit expired September 2, 2014 and has been administratively extended until the SWRCB adopts a permit reissuance and the new permit becomes effective. Prior to initiating work at Alameda Point, information pertaining to current Construction General Permit applicability and requirements should be reviewed. The development of a site-specific SWPPP is required for each site that is covered by the Construction General Permit. The SWPPP must include the information needed to demonstrate compliance with all requirements of this General Permit, e.g., inspections, monitoring, spill response procedures, and other stormwater Best Management Practices (BMPs). The SWPPP must be kept on the construction site and be available for review.

Safe Drinking Water and Toxic Enforcement Act of 1986, California Health and Safety Code Section 25249.6 et seq. (Proposition 65), 22 CCR Section 12000 et seq. – Proposition 65 is a voter ballot initiative passed in 1986 that requires the Governor to publish and update at least annually a list of chemicals known by the State of California to cause cancer or reproductive harm. The law prohibits businesses from discharging such chemicals into sources of drinking water and requires that warnings be given to potentially exposed individuals. Section 25249.6 of Proposition 65 requires “clear and reasonable warning” for specified potential chemical exposures. The Office of Environmental Health Hazard Assessment (OEHHA) administers the Proposition 65 program. OEHHA, which is part of the California Environmental Protection Agency (CalEPA), determines in many cases whether chemicals meet the scientific and legal requirements for placement on the Proposition 65 list, and administers regulations that govern warnings and other aspects of Proposition 65. Proposition 65 was updated through new legislations that was adopted in August 2016 but become operative in August 2018. To receive information regarding the updated legislation, go to the OEHHA website www.P65Warnings.ca.gov.

Air Toxic Hot Spots Information and Assessment Act of 1987, AB 2588 – This requires the Air Resources Board to inventory sources of over 700 toxic air contaminants to assess the health risks of toxic air releases, and notify potentially exposed populations.

California Health and Safety Code Section 39000 et seq. – The California Clean Air Act empowers regional air quality districts to enact rules and regulations that bring sources of air pollution into compliance with state and federal requirements. Section 41700 prohibits “discharge from any source whatsoever of such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to...the public.”

California Endangered Species Act, Fish and Game Code, Sections 2050 et seq. – This act mirrors the Federal Endangered Species Act and is implemented by the California Department of Fish and Wildlife.

California Code of Regulations, Section 8 – These regulations, implemented and enforced by the California Division of OSHA, complement the federal statutes governing worker health and safety in hazardous environments and in the presence of hazardous materials.

3.3 Local Statutes and Regulations

Bay Area Air Quality Management District (BAAQMD) Rules and Regulations – Local regulations regarding discharge of air contaminants in the BAAQMD, which includes Alameda Point. Particularly germane with respect to redevelopment of Alameda Point are BAAQMD Regulation 6, which addresses “Particulate Matter and Visible Emissions”, and Regulation 8, Rule 40, which addresses “Aeration of Contaminated Soil”.

City of Alameda Ordinance No. 2824 (Alameda Municipal Code Chapter XIII, Article XVII, Section 13-56) – Informally known as the Marsh Crust Ordinance (MCO), this is an excavation ordinance that defines the depth to which anyone may excavate soil at the former NAS Alameda and Fleet

and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex (FISCA) without taking special measures. Any excavations at or below the specified depth (the Threshold Depth) would require a permit from the City's CBO, an approved site-specific HSP, and special material handling procedures. The MCO is attached as Appendix B.

This SMP is submitted pursuant to Section 13-56.8.c of the MCO and is intended to comply fully with the requirements of the MCO for construction site management plans. Section 5.6.1 of this SMP details material sampling and handling protocols for soils excavated from below the Threshold Depth. However, this SMP also applies to those excavations above the depths that trigger compliance with the MCO.

Environmental Restrictions and Covenants – Alameda Point is currently subject to certain environmental restrictions that place restrictions on excavation into the marsh crust. In addition, CRUPs apply to portions of Alameda Point. Please refer to Section 3.4 for restrictions established by the DTSC-issued CRUPs.

Property Quitclaim Deeds and Environmental Restrictions (Property Deeds) – Quitclaim Deeds from the Navy may include Environmental Restrictions pursuant to California Civil Code Section 1471 for all Economic Development Conveyance (EDC) Parcels at the former NAS Alameda, Alameda Point. Alameda Point EDC Parcels are conveyed "AS IS" and "WHERE IS" with respect to both LBP and ACM along with other notifications which include: Floodplains; Pesticides; Biological Opinion Restrictions; and the management and disposal of PCBs which are also required to be removed in accordance with applicable federal, state, and local laws and regulations relating to PCBs. The Navy will, however, provide Notice of Release for LBP and ACM, in recordable form, when the building or buildings on the Property containing LBP and/or ACM have been demolished, or when LBP and/ACM have been removed from the buildings or structures in accordance with all applicable federal, state, and local laws and regulations.

City of Alameda Community Noise Ordinance – This ordinance affects the redevelopment project in that it restricts the hours of operation for heavy construction machinery.

Marsh Crust RAP/ROD – The Marsh Crust RAP/ROD, approved by the Regional Water Board on January 12, 2001, and by the DTSC on February 2, 2001, requires that excavations below the Threshold Depth conform to the City's MCO. Should the MCO be repealed or invalidated, the RAP/ROD specifies that such excavations can be performed only with prior DTSC approval. The MCO is provided in Appendix B.

3.4 Land Use Restrictions and Institutional Controls

As a mitigation measure to protect human health and the environment during property development and use, some of the transferred properties had specific site use restrictions implemented as part of the remedial activities that require to be maintained. The site use restrictions are described in CRUPs that are recorded onto the deed of the property. In an effort to manage the restrictions placed on sites, the City has prepared a geographic information system (GIS)-based map that provides the following information:

- The location of IR Sites, OUs, and open Petroleum Sites;
- The site-wide conveyance parcel numbers;
- The CRUPs associated with the parcels.

The URL for the GIS-based map will be incorporated into this section of the SMP at a later date. In addition, the CRUPs are also available online at the following locations:

- DTSC Envirostor Website:
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=01970005
- Regional Water Board Geotracker Website:
https://geotracker.waterboards.ca.gov/military_base?pca_num=16521&status=&case_number_&business_name_ALAMEDA

The above information is provided to the user of this SMP for reference. To verify the restrictions on a parcel, the user is required to contact the tax assessor's office.

It is the responsibility of the property owner to complete annual inspections to verify that land use is in compliance with the restrictions recorded on the property deed. The reporting periods for the inspections are from February 1 of each year and extend to January 31 of the following year. Appendix C includes example forms to be completed and submitted to the Navy, the City, USEPA, DTSC, and the Regional Water Board. The forms are to be submitted by March 1 of each year.

4.0 SITE-WIDE ENVIRONMENTAL CONDITIONS

For purposes of discussing environmental conditions, Alameda Point is subdivided into four zones: Southeast Zone, Northeast Zone, Hangar Zone, and Runways Zone. Figure E-1 within Appendix E illustrates the location of each of these zones. Note that the Runways Zone and the Hangar Zone both contain a portion of transfer parcel ALA-18-EDC. Appendix E provides a discussion that briefly summarizes the nature and extent of residual chemical occurrence in soils and groundwater that can be encountered across Alameda Point. The environmental conditions discussed in Appendix E will be taken into consideration when designing and implementing intrusive activities at Alameda Point.

The following subsections reference specific environmental conditions that can either be encountered across Alameda Point or in specific locations within Alameda Point. Development activity procedures and associated HSPs should be prepared to take into account the following conditions.

4.1 Marsh Crust

The marsh crust is a subsurface soil horizon that lies between the native Bay mud sediment and the overlying imported fill material, within the former intertidal zone throughout much of the eastern and central portions of Alameda. Heavy industrial activity, such as operations of petroleum refineries and manufactured gas plants, in the vicinity of Alameda Point prior to the time artificial fill was placed in Alameda resulted in significant discharges of petroleum waste to the surrounding marshlands. These wastes, often rich in SVOCs, including PAHs, were spread over much of the surface of the surrounding marshes, probably through tidal action. As artificial fill was later placed over the native marshes to create what is now Alameda, it is postulated that a thin, contaminated soil horizon (i.e., the marsh crust) was formed between the former high tide and low tide elevations.

The marsh crust is present only in some areas, and it is absent from many boring logs for the vicinity of Alameda Point, particularly beneath the former runways and in the southeast, which historically was dry land. The fill/native soil interface at which the marsh crust may be present increases in depth at Alameda Point from northeast to southwest, ranging from 4 feet to 15 feet or more below ground surface (bgs). Appendix B presents a conceptual model of the marsh crust. The MCO Threshold Depth map is provided in Appendix B. As indicated on the MCO map, the Marsh Crust Threshold Depth is as great as 10 feet bgs over the western portion of Alameda Point, with the more easterly portions of Alameda Point being shallower. Because the area in the southeast portion of Alameda Point (not hatched on the MCO map) was part of the original (prefill) Alameda land mass and thus above the high tide level, the MCO does not apply there. The GIS-based map discussed in Section 3.4 provides an overlay of the conceptual model of the marsh crust onto the parcels at Alameda Point. When performing subsurface investigations or excavations, the map is to be consulted to assess if marsh crust has the potential to be encountered within the extents of the subsurface work. If it is determined that the marsh crust is within the extents of the subsurface work, project procedures are to be in compliance with the MCO.

The MCO allows for reconnaissance sampling prior to the initiation of subsurface investigations/excavations to establish the presence or absence of marsh crust within the extent of the subsurface work. Risk-management procedures pertaining to marsh crust are discussed in Section 5.6.1.

4.2 Tarry Refinery Waste

Historically, the Pacific Coast Oil Works Company petroleum refinery operated within the area of the IR Sites 13 and 23 from 1879 until 1903. No refinery structures remain within these IR sites. It is assumed that refinery wastes and asphaltic residues were disposed within the area of the IR Sites 13 and 23 and the surrounding tidal lands. The wastes are referred to as TRW. The OU-2A ROD documents no further CERCLA action for TRW is required (Navy 2012a). However, the Regional Water Board retained its authority to regulate the TRW and/or co-located petroleum in the future at Sites 13 and 23. The Regional Water Board has indicated that the closure of Corrective Action Area (CAA)-13 is directly affected by the TRW. The approximate boundaries of the TRW are provided in Figure 4. Construction procedures within and adjacent to the TRW need to take into account the material with regard to disposal, health and safety and corresponding dewatering.

4.3 Industrial Waste Line Restrictions

The industrial waste line (IWL) is located within OU-2C and runs along Monarch Street, Tower Avenue, and Lexington Street. The *Final Land Use Control Remedial Design, Operable Unit 2C, Industrial Waste Line Located Outside Buildings 5/5A and 400/400A, Alameda Point, Alameda, California* ("the IWL LUC RD") is provided in Appendix I. Figures 2 through 4 within the IWL LUC RD illustrate the location of the IWL. Within the IWL LUC RD, Figure 4 and Attachment 3 present the portions of the IWL that have been removed and the associated survey coordinates. The IWL discharged from Building 5 and, during the operational history of Alameda Point, transported industrial waste including radium-226 paint wastes. The previous IWL investigation included inspection and sampling from the lines and manholes and video inspection of a portion of the line. The OU-2C Drain Line ROD determined no remedial action is necessary for a portion of the IWL located upgradient from Buildings 5 and 400. ICs and partial removal were the selected remedy for the remaining portions of the IWL. The partial removal of the IWL was completed in the summer of 2019. An institutional control has been put into place for the remaining portion of the IWL. In the context of the IWL LUC RD, the Federal Facility Agreement (FFA) signatories comprise the BCT. As stated in the IWL LUC RD, "unless such activity is conducted in accordance with a SMP approved by the FFA signatories, the ICs in [the] LUC RD prohibit soil disturbance or other intrusive activities as follows:

- Above and below the IWL, regardless of depth.
- Horizontally within 5 feet of the centerline of IWL, including 5 feet from the end of the cut IWL piping, beginning at the surface and extending vertically, regardless of depth."

The area described above is referred to as the Area Requiring Institutional Controls (ARIC). As defined in Attachment 1 of the IWL LUC RD, intrusive activities include ground disturbance such

as digging, well installation, drilling, excavation, grading, and construction of roads, utilities, or structures that penetrate the ground surface. If any intrusive work is to be completed within the ARIC, a separate SMP addendum shall be submitted for approval by the FFA signatories and describe the following, at a minimum:

- The purpose of the intrusive activity.
- The location and approximate area to be disturbed; a figure illustrating the location and proposed area of disturbance shall be included.

For proposed work within the ARIC, the specific location and depth of both the force main portion and gravity portion of the IWL within the proposed work area is required to be field verified. Geophysical technologies such as ground-penetrating radar can be used for locating the IWL. Any work within the ARIC must include methods for maintaining avoidance of the IWL. The SMP addendum must also address the following:

- For any surficial work (e.g., placement, removal, and/or replacement of asphalt or concrete), soil monitoring and air monitoring activities related to the IWL will not be required.
- For intrusive activities:
 - **Above the IWL** (Zone A, as shown on Figure 6): If at least 5 feet of clearance of the IWL horizontal plane will be maintained above the IWL (Zone A), the SMP addendum must include procedures for protecting and monitoring worker health and safety. At a minimum, those procedures will include:
 - Method(s) for maintaining avoidance of the IWL.
 - Procedures to determine background for radiological constituents and to excavate are described in Section 4.3.1. If a trenchless technology is to be used, the soil cuttings will be monitored in accordance with the screening procedures described in Section 4.3.1.
 - Monitoring procedures and equipment to be used during work within the ARIC.
 - Action levels that would trigger stoppage of work, and the procedures to be followed for securing the work area in the event of work stoppage.
 - If work stoppage is required, excavations will be backfilled immediately to secure the area, and regulatory agencies will be notified immediately.
 - Surface measurements will be recorded using on-site instruments to document the extent of potential radiological exposure.
 - If, during installation of a utility, the monitoring does not indicate a risk to human health or the environment, the location and depth of this area will be marked and recorded on a City-maintained map. Records of the monitoring results will also be

kept by the City. Future maintenance work taking place within the same location will not require additional SMP addenda, and field monitoring will not be required.

- Procedures for long-term maintenance of the newly-installed utility.
- **If it is necessary for the work to be conducted below the IWL, or within 5 feet of the IWL horizontal plane above the IWL (Zone B, as shown on Figure 6), the SMP addendum must include all procedures required for Zone A, with the following additions and modifications:**
 - The overall rationale for the work and a feasibility assessment of alternative approaches.
 - Procedures for pre-excavation soil sampling at depths corresponding to the depths of the proposed work.
 - Procedures for the monitoring and profiling of the soil for potential off-site disposal
 - For any utilities installed within Zone B, future maintenance work will require additional SMP addenda and field monitoring, regardless of prior sampling results.
 - ICs shall be maintained indefinitely unless the portion of the IWL requiring remedial action (IWL-RA) and associated soil and sediment are removed in accordance with the SMP as approved by the FFA signatories. IWL removal activities will require approval from the FFA signatories.

This SMP addendum will be prepared by a Professional Engineer or Geologist licensed in the State of California on behalf of the entity for whom the intrusive activity is being conducted. The addendum will be provided to the FFA signatories for a 60-day review period. Approval must be obtained prior to the initiation of the activities within the ARIC.

The procedures discussed in this section are for maintaining the ICs, as stipulated by the IWL LUC RD with regard to the IWL and Radium-226 issue. Soil in the vicinity of the IWL may contain other COCs, e.g., metals. As such, the ICs associated with those potential COCs must be maintained. Soil reuse and disposal must be handled in accordance with Section 5.6.2.6.

4.3.1 One-Foot Incremental Excavations

The SMP addendum must specify that shallow soil (i.e., surface soil to soil greater than 5 feet from the top of the gravity IWL) will be radiologically surveyed in-situ as the soil is being excavated. If the work includes the excavation of a trench, after the asphalt/concrete is removed, an in-situ radiological survey will be completed over the top layer of material as a precautionary screen for exceedances of radium-226, the COC potentially within the IWL. Within the ARIC, the excavation will be advanced in 1-foot intervals, down to the anticipated total depth of the excavation. After each foot of the excavation has been completed, a radiological survey will be performed. The radiological surveys will be performed with a Ludlum

Model 44-20 gamma scintillation detector (or equivalent) to confirm the shallow soils are at radiation levels consistent with background.

Background will be established from a background reference area which will be an area from which representative radioactivity measurements are performed for comparison with measurements performed within the ARIC. The reference area will have similar physical (including depth), chemical, radiological, and biological characteristics as the area within the ARIC; however, it will be an area that has not been identified as impacted by the IWL. The SMP addendum will identify this location for approval by the BCT. Background measurements that have been previously established for nearby locations may be proposed. If new background measurements are warranted, they will be performed prior to the initiation of excavation activities.

If soil exceeds 3 sigma above the mean of the reference area, work will be stopped within the ARIC, and the Navy will be notified.

4.4 Emerging Contaminants

The emerging contaminants currently under evaluation at Alameda Point include per- and polyfluoroalkyl substances (PFAS). This section will be updated in the event that additional emerging contaminants are identified in the future. Any work involving contact with, or discharge of, groundwater must be conducted in conformance with the current local and federal guidelines and requirements.

Emerging contaminants are chemicals deposited into the environment through industrial and/or waste processes that have been broadly detected in soil, groundwater and surface water but have not been evaluated in terms of the health risks to human and ecological receptors. As a result, there is little to no regulatory screening criteria or regulatory requirements regarding the handling, disposal and discharge of the chemical. In some cases, as information regarding the particular chemical becomes more prevalent, a regulatory agency may require sampling and analysis of the chemical to identify if it is present in environmental media at a site to aid in how environmental media is managed.

Based on previous site use, to date the Navy has collected groundwater samples at Alameda Point for chemical analysis of PFAS. The analytical results are included in the June 2018 document titled, *Final Memorandum to File for Addition of PFOA and PFOS to the Institutional Controls for Shallow Groundwater at OU-2C IR Sites 5, 10, and 12* (the Final Memorandum to File), which is provided in Appendix D of this SMP. In addition to the discussion provided in the Final Memorandum to File, groundwater data collected from IR Site 14 indicate detections of PFAS, as shown in the data table provided in Appendix D. PFAS are a class of man-made chemicals that include perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). In military applications, PFOA/PFOS were included in materials used for firefighting activities, firefighting equipment testing and training, and potentially other applications such as in plating shops or fire suppression systems. Currently, the health risks of the PFAS suite of chemicals to human and ecological receptors are being evaluated. In May 2016, the USEPA issued lifetime

health advisory (LHA) that established the health advisory level at 70 parts per trillion for the combined concentrations of PFOA and PFOS in drinking water. Currently, there are no further regulations for PFAS and PFOA other than this drinking water criteria. Shallow groundwater at Alameda Point is not used for drinking water and is not anticipated to be used as a future drinking water source. Alameda Point is situated on an island in the San Francisco Bay, so use of shallow groundwater as a drinking water source would not be feasible due to the risk of saltwater intrusion. Large portions of Alameda Point are documented by the Regional Water Board as not of sufficient quality to be considered as a domestic water source. In addition, institutional controls are in place in many areas of Alameda Point that prohibit the installation of groundwater wells and/or extraction of groundwater without regulatory agency approval.

The Final Memorandum to File identifies the location and type of institutional control placed on groundwater use. Figure 1 of the Final Memorandum to File illustrates the location of the PFOA/PFOS restriction on soil and groundwater use.

In accordance with the Final Memorandum to File, this SMP has been prepared to provide the additional protocols required during construction and redevelopment to be protective of human health and the environment taking into account the presence of PFAS and PFOA in groundwater. These additional protocols include the following:

- Health and safety plans will be prepared to identify PFAS and PFOA as a COC in groundwater.
- Groundwater cannot be re-used as a dust suppressant at Alameda Point and dewatering activities will require discharge to sanitary drains in accordance with the applicable utility's or entity's permit conditions.
- Dewatering of trenches and excavations cannot be discharged to storm drains or surface waters.

Additional groundwater remediation may be necessary at locations across Alameda Point as risk analysis for PFAS and PFOA are more developed and regulatory statutes are communicated. As additional regulatory guidance and requirements are developed, this SMP will be modified accordingly.

5.0 RISK MANAGEMENT MEASURES TO BE IMPLEMENTED AT ALAMEDA POINT

The following subsections describe the risk management measures to be implemented at Alameda Point to minimize the potential for human exposures to residual chemicals present at Alameda Point. This section also includes procedural guidelines to ensure that redevelopment and ongoing maintenance activities at Alameda Point are conducted in accordance with applicable federal, state, and local environmental health and safety regulations.

This section is not intended to impose redevelopment requirements other than those that should be applied (when prudent) at any other urban construction project in the City, unless areas of known or suspected environmental contamination are involved.

This SMP does not set forth the scope of the active remediation required to be implemented by the Navy, nor does it include the criteria for confirming the adequacy of those efforts nor the mitigation measures required to be implemented to control air emissions, surface runoff, and similar environmental conditions occurring during the implementation of the remedy. Those management measures are detailed in applicable Navy documents.

Construction and redevelopment efforts at Alameda Point are likely to include various site preparation activities that will disturb soils and/or groundwater. The following activities have the potential to impact human or environmental receptors:

- Unauthorized access to work sites during construction;
- Dust, vapor, and odor generation associated with Intrusive Activities, movement of construction and transportation equipment, and winds traversing exposed soils or stockpiles;
- Offsite transport of sediment by surface runoff;
- Contaminated groundwater migration via preferential groundwater flow pathways associated with subsurface utility conduits;
- Contamination of soil and/or groundwater from the stockpiling of saturated, contaminated soil;
- Excavation and stockpiling of contaminated soil, especially soil with chemical concentrations that would characterize the soil as “hazardous waste”;
- Inadvertent offsite transport of soils on truck wheels or from unsecured truck beds;
- Dewatering;
- Encroaching on threatened and endangered birds and other fauna;

- Potential noise and traffic hazards, including potential hazards to pedestrians;
- Installation of subsurface utility conduits has the potential to create a preferential flow pathway for VOC vapors.

5.1 Worker Health and Safety

5.1.1 Site-Specific Health and Safety Plan

Before initiating subsurface activities in impacted areas of Alameda Point, each entity performing work shall prepare their own separate site-specific HSP to address requirements in this SMP, worker safety measures, including personal protective equipment, monitoring, training requirements, personal decontamination methods, and the appropriate notifications required. At a minimum, the HSP shall conform to 29 Code of Federal Regulations 1910.120 and applicable California Code of Regulations Title 8 sections. HSPs shall be prepared by a qualified professional and if deemed necessary, reviewed by a CIH. Site-specific HSPs are designed to help ensure that site construction activities are performed in a manner protective of the health and safety of site construction workers and of interim site users in the construction zone (i.e., within the fence that is erected at the beginning of construction activities to demarcate those areas where access needs to be restricted, as discussed in Section 5.5). This SMP is designed primarily to ensure the health and safety of current and future site users outside the immediate vicinity of construction; the development of a site-specific HSP is the responsibility of the contractor and is beyond the scope of this SMP. The site-specific HSP provides one mechanism through which workers involved in the redevelopment of Alameda Point are informed of the presence of chemicals in the area prior to initiating work.

The contractor's HSP will indicate training requirements, such as Hazardous Waste Operations and Emergency Response (HAZWOPER) certification, if applicable. A copy of the HSP will be made available within 15 days upon request by DTSC or members of the Federal Facility Agreement (FFA).

5.2 Risk Management to Be Implemented During Demolition

5.2.1 Asbestos Abatement

Per deed restrictions, and in accordance with industry standards, demolition plans will require a survey for asbestos and post-abatement air sampling prior to the start of demolition. Previous asbestos surveys conducted at Alameda Point have identified buildings in which ACM are present. Removal and disposal of ACM is regulated by the USEPA and BAAQMD pursuant to the National Emission Standards for Hazardous Air Pollutants (NESHAP) portion of the Clean Air Act and BAAQMD regulations. The following regulations apply to asbestos abatement:

- 29 CFR Sections 1910.12, 1910.20, 1910.134, 1910.145, and 1910.1001;
- 29 CFR Section 1926.1101;
- 34 CFR Section 231;
- 40 CFR Section 61, Subparts A and M;

- CCR Title 8, Sections 1529 and 5208;
- CCR Title 8, Article 2.5;
- CCR Title 22, Division 4; and
- BAAQMD Regulation 11, Hazardous Pollutants Rule 2.

Removal of ACM at Alameda Point must be performed in accordance with NESHAP requirements, BAAQMD regulations, any air monitoring plan prepared pursuant to Section 5.8.2, and any other applicable rules and regulations, including restrictions stipulated by the parcel deed. Collectively, these requirements include provisions for worker health and safety, prevention of releases to the environment, and material handling and disposal.

Underground pipes can have asbestos associated with them: as a coating, a wrapping, or within asbestos-concrete pipes. Underground pipes shall be considered suspected ACM, unless and until determined to be free of asbestos through sample collection and analysis or visual inspection by a licensed Certified Asbestos Consultant. Such pipes shall not be crushed in place. Such pipes and any soil in which pipe pieces have become comingled shall be managed in accordance with the soil management guidelines presented in Section 5.6.2. General dust control measures to be employed during redevelopment, including demolition, are discussed in Section 5.8.1.

5.2.2 Lead-Based Paint Abatement and Hazardous Materials Assessment

Most buildings at the Alameda Point were constructed prior to 1978; therefore, LBP is likely present. In addition, other hazardous materials within building and utility construction materials, such as PCBs, may be present.

Per deed restrictions, and in accordance with industry standards, demolition plans will require a survey for lead and hazardous materials. Lead and hazardous materials surveys will be conducted in accordance with industry standards, state and federal regulations, and all stipulations stated by the property deed.

According to CCR Title 8, Section 1532.1 and CCR Title 17, Sections 35000-36100, loose and flaking LBP must be removed and properly disposed of prior to demolition of impacted structures. Appropriate measures to control the generation of dust particles during building demolition must then be implemented prior to demolition. LBP and hazardous materials abatement/removal will be performed according to all applicable regulations and statutes. General dust control measures to be employed during redevelopment, including demolition, are discussed in Section 5.8.1.

5.2.2.1 *Soil Sampling within Dripline Areas*

If the lead survey identifies the potential presence of LBP or lead-containing paint on the exterior of a building, soil sampling activities will be completed to evaluate lead concentrations in the soil that may be potentially present within the building's dripline. Composite soil sampling will be conducted in the perimeter drip lines of the painted structures to provide a baseline level of lead in soil. In these areas, composite samples will be collected, which will consist of five to

eight aliquots from surface (0 to 3 inches) soils surrounding the structures. One composite soil sample will be collected from each of the painted structures. Each composite sample will contain no greater than eight aliquots, and at least one composite sample will be collected from each side of the building where exposed soil is present. Samples will be collected from areas with the highest likelihood of elevated lead in soil (at areas of flaking paint or in drip lines within 2 feet of the building). If composite soil samples exceed the soil concentration of 80 milligrams per kilogram (mg/kg) for lead (DTSC 2019), additional step-out samples will be collected and analyzed in accordance with EPA SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. The step-out sampling will be completed up to 10 feet from the painted structure being evaluated and to a maximum depth of 2 feet below the existing ground surface. Soils with lead concentrations exceeding 80 mg/kg will be excavated from the site in accordance with the procedures provided in this SMP. If lead concentrations are greater than 80 mg/kg in soils at or below 2 feet from the ground surface or 10 feet or greater away from the painted surface, refer to Section 6.0 for reporting responsibilities.

After the completion of demolition of LBP-containing materials, additional soil samples will be collected for confirmation that potential airborne material has not impacted the soil. One sample will be collected per 50-foot by 50-foot cell around the structure (within a maximum of 20 feet of the structure). Samples will be collected from the surface to a maximum depth of 6 inches. Based on the sample results, additional sampling may be warranted to further characterize the initial results.

5.2.3 Subsurface Structure Demolition

Subsurface structures harboring impacted soils may be brought to the surface during demolition activities. If the location of these structures is known and anticipated, then demolition will be conducted in accordance with the soil management guidelines presented in Section 5.6.1 and Section 5.6.2.

In the event that unknown subsurface structures are encountered, demolition activities will be conducted in accordance with the contingency protocols set forth in Section 5.7.2.

5.3 Vapor Intrusion Design Considerations

Future buildings at Alameda Point that potentially would be underlain by VOCs in soil or groundwater will need to be evaluated regarding the potential for soil-vapor intrusion in accordance with current requirements and guidelines, and may need to be constructed in a manner that mitigates the potential for volatile organic vapors to intrude into occupied spaces. This applies to buildings in CERCLA and Petroleum Program sites, until the sites are closed without restrictions (Appendix E). These areas of concern are addressed below. Appropriate vapor intrusion mitigation (VIM) measures will need to be identified if concentrations are above the applicable Remedial Goals (RGs). The required vapor intrusion evaluation package is discussed in Section 5.3.1. It should be noted that the regulatory members of the BCT have the authority to evaluate all development projects located in areas that are or potentially will be underlain by VOCs in soil or groundwater for soil vapor intrusion.

Sites that have residual VOCs must be evaluated based DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3 (DTSC 2019) and other screening levels for VOCs established by USEPA, DTSC, and Regional Water Board for indoor air by a qualified environmental professional. When DTSC-modified screening levels are not available, USEPA Regional Screening Levels (RSLs) will be used.

According to the DTSC *Vapor Intrusion Mitigation Advisory* (“the Advisory”; DTSC 2011) of October 2011, acceptable vapor mitigation measures include, but are not limited to, sub-slab pressurization, depressurization, and venting systems for new buildings, such as the installation of a gravel blanket and piping system installed under the proposed floor slabs of any future building. The need for a vapor mitigation system will be dependent upon development specifics, environmental conditions in the area of proposed development and current regulatory requirements. Generally, structural designs for buildings outside closed CERCLA or Petroleum Program sites with VOCs in soil or groundwater are not required to include VIM, unless specified in site closure documents and deed restrictions

Once construction of the mitigation system is completed, operation, maintenance, and monitoring of the system should be implemented in general accordance with the October 2011 DTSC *Advisory*.

All remedial measures associated with VOC contamination of soil and groundwater, including but not limited to groundwater RAs and monitoring, will be addressed and implemented by the Navy through the applicable Alameda Point documents. The development and implementation of the vapor mitigation remedy will be coordinated with ongoing CERCLA remedial activities to ensure that access to and operation of the groundwater remedial system is not impeded.

The Regional Water Board is the lead agency for petroleum cleanup sites at Alameda Point; any VIM measures associated with a Regional Water Board-led site would be requested to consider the measures provided in the Regional Water Board’s *Fact Sheet: Development on Properties with a Vapor Intrusion Threat* (“the Fact Sheet”; Regional Water Board 2019). The Fact Sheet is provided in Appendix G for reference.

5.3.1 Vapor Intrusion Evaluation Package

In certain areas where construction is being completed before VOC concentrations in soil or groundwater meet RGs, VIM measures will need to be implemented to help ensure protection against the infiltration of organic vapors into future buildings. For any project with an active (i.e., where RGs have not been achieved) VOCs-impacted groundwater plume located within 100 feet of the property to be developed, the site owner will prepare a vapor intrusion evaluation package. To determine whether a VIM system is warranted, the evaluation package will consider the current regulations and screening criteria, potential exposure pathways, and any existing restrictions applicable to the site. The evaluation package will be prepared by a PE and submitted to the City. The package shall contain the following components, at a minimum:

- a. Names, organization and contact information of the property owner, developer, and general contractor;
- b. Parcel number for the development;
- c. Maps of the development, including locations, project layouts, and future land uses;
- d. Descriptions of potential surface intrusion work such as borings, excavation, trenching or groundwater dewatering for the project;
- e. Records of CRUP, Land Use Control (LUC), Deed, and/or other restrictions on the subject property;
- f. Soil, groundwater, and soil-gas data of the subject property collected from previous investigations;
- g. Soil, groundwater, and soil-gas data planned to be collected for the development, if any;
- h. Proposed mitigation measures (including design, construction, and installation plans) for vapor intrusion;
- i. Proposed operation, monitoring, and maintenance (OMM) plans for the mitigation measures;
- j. Responsible party (or parties) for implementing the OMM plans; and
- k. Financial support plans for the OMM activities and regulatory oversight costs.

Design plans for any VIM measures will be prepared by the property owner and submitted to the BCT for review and approval (within 60 days) before implementation.

5.4 Risk Mitigating Construction Techniques

Redevelopment and ongoing maintenance activities have the potential to bring impacted subsurface soil and groundwater to the surface where site users could potentially be exposed. This SMP addresses requirements for site-specific construction techniques that minimize the transport of impacted material to the surface, where practicable. Site-specific conditions that may warrant mitigating construction efforts include chemical presence in subsurface soil and/or groundwater and a shallow groundwater table.

Construction techniques designed to minimize the amount of subsurface soil and groundwater brought to the surface include:

- Abandonment in place of utility lines that are deeper than approximately 4 feet below finished grade rather than excavation and disposal, except in the case of crushing in place underground pipes with associated asbestos (see Section 5.2.1); and
- Driving support piles directly into the underlying soil without pre-boring, where practicable.

5.5 Access Control During Construction

The potential for unauthorized access to the construction site and the accompanying risk of exposure to contaminated soil shall be managed as follows, at a minimum:

- For sites involving greater than or equal to one acre of surface disturbance, a 6-foot-high chain-link fence, or similar, shall be erected around the construction site perimeter. Alternative barrier methods may be used for sites involving less than one acre of surface disturbance, e.g., caution tape or construction cones. Access to work sites will be restricted by control points (i.e., gates) that will be monitored and locked during non-construction hours.
- “No Trespassing” signs in both English and Spanish shall be posted every 500 linear feet along the fence line.
- If required pursuant to Proposition 65, public notices shall be posted along the fence line alerting the public that chemicals with known adverse health effects have been found in soil and/or groundwater at Alameda Point.

These are standard construction site security measures that are required to be implemented even in the absence of any contaminants in soil and/or groundwater.

Endangered species, such as the California least tern (*Sternula antillarum browni*), which is a protected bird that nests on Alameda Point and has been observed using Seaplane Lagoon, other protected bird species that may be present during migration season, and other species of fauna, such as burrowing owls (*Athene cunicularia*), may be present during construction. For projects in Seaplane Lagoon, and along its shoreline, a project-specific wildlife management plan shall be prepared by a resource management professional, wildlife biologist, or other qualified individual. All work shall comply with the plan’s procedures to safeguard protected birds and other fauna from construction, trenching, and remedial activities, as well as to discourage birds from occupying the work area, including discouraging burrowing owls from nesting in stockpiled soil. The project-specific wildlife management plans shall be submitted to the lead regulatory agency. It is anticipated that the lead regulatory agency will determine the appropriate review team members, including BCT or other specialists. It is anticipated that approval of the wildlife management plan will be provided by the review team within 60 calendar days of receiving the submittal. If a protected species is identified in other areas covered by this SMP (i.e., other than the Seaplane Lagoon and its vicinity), then work shall stop and the BCT shall be notified.

5.6 Risk Mitigation to Address Contaminants in Soil

5.6.1 Excavations Below the Marsh Crust Threshold Depth

The marsh crust is a potentially contaminated subsurface soil horizon, which has been identified in borings throughout much of Alameda, between the native Bay Mud sediment and the overlying imported fill material. Section 4.1 contains a more detailed discussion, and the map attached to the MCO (Appendix B) presents the City Marsh Crust Threshold Depth contours. To

address concerns associated with contaminants in the marsh crust, the City enacted the MCO (Alameda Ordinance No. 2824) on February 15, 2000, regulating excavation activities in areas suspected to contain marsh crust. The MCO, which is attached as Appendix B, requires the following:

- An excavation permit for any excavations performed that bring to the surface soil from below the specified Threshold Depth;
- Adequate measures to protect worker health and safety;
- Handling of soils excavated from below the Threshold Depth as hazardous waste (if the soil were deemed a waste), unless reconnaissance sampling proves it to be non-hazardous waste to the satisfaction of the CBO;
- Adequate characterization of excavated soils to ensure that they are handled in accordance with all applicable environmental laws and regulations, for example, disposal in an offsite landfill or other disposal facility that is approved to accept such soils; and
- Construction site BMPs.

The MCO is regulated by the City's CBO, under DTSC oversight.

This SMP is intended to complement the MCO and provide for the installation of public utilities below the Marsh Crust Depth during site development and redevelopment. Section 5.6.1.1 and Section 5.6.1.2 fulfill the requirements of Sections 13-56.8a and 13-56.8c of the MCO, respectively. Compliance with this SMP does not relieve the contractor from fulfilling the permitting, health and safety, and other obligations promulgated in the MCO.

It is important to make future property owners at Alameda Point aware of the presence and location of the marsh crust. Hence, as required under Section 13-56.8 of the MCO, any analytical data or observations regarding the marsh crust shall be submitted to the City for use by the CBO in updating the marsh crust map to reflect actual site conditions. The analytical data and observations will be made available to the BCT members within 30 calendar days upon request. Prior to excavation that might extend below the Threshold Depth, the excavation contractor shall contact the CBO to obtain the most recent Marsh Crust Threshold Depth Map. Timing for contacting the CBO must be coordinated with intrusive activities to allow modification of the project's work plan as needed to account for the potential presence of marsh crust.

The contractor performing the work is required to observe excavated soils, especially in the vicinity of the expected depth of the Marsh Crust, to visually confirm that Marsh Crust is not encountered.

5.6.1.1 Reconnaissance Sampling

Section 13-56.8a of the MCO allows soils from below the Threshold Depth to be treated as non-hazardous waste if implementation of a reconnaissance sampling plan rules out, to the

satisfaction of the CBO, the presence of soil that would be "hazardous waste" if the soil were deemed a waste. The CBO shall use the RCRA and CCR definitions of hazardous waste in making this determination. This section stipulates the reconnaissance sampling plan for excavations that will continue below the Threshold Depth pursuant to Section 13-56.8a of the MCO. Pursuant to the MCO, the CBO, under DTSC supervision, is the lead regulator overseeing implementation of these provisions of this SMP at non-NPL sites. However, the USEPA is the lead regulatory agency for NPL sites until they are delisted.

The results of previous environmental investigations conducted in the proposed area of excavation may be used to confirm the presence or absence of the marsh crust only following submission of these results to the CBO, and following approval by the CBO of their use for this purpose. Unless redundant with the use of previous assessment results, or in conflict with any specific requirements stipulated in the excavation permit by the CBO, the following shall be considered minimum requirements that the entity conducting the work below the Threshold Depth must meet to provide adequate confirmation of the presence or absence of the marsh crust for the purpose of hazardous waste characterization, though more refined characterization may be conducted at the entity's discretion:

- One boring will be advanced per 1,000 yd³ of disturbed soil. At a minimum, one soil boring will be advanced. In instances where greater than 1,000 yd³ of soil are proposed to be removed, one additional soil boring will be advanced for each additional 1,000 yd³ of proposed to be removed, or fraction thereof. The borings will be advanced to a total depth of one foot below the planned excavation. Visual observations regarding the suspected presence or absence of Marsh Crust will be recorded during boring advancement activities. Lithological logging for each boring will be performed under the supervision of a California Professional Geologist. As a conservative measure, soil cores will be screened in the field using a photoionization detector (PID); PID measurements shall be recorded on the boring log. If the marsh crust interval is observed in the soil boring, a soil sample will be collected from within the interval of suspected marsh crust. For the purpose of delineating the vertical extent of the marsh crust, soil samples will also be collected from approximately 1 foot above the interval, and from approximately 1 foot below the interval. Soil samples will be placed in an ice-chilled cooler and submitted to a state-certified laboratory under chain-of-custody for the following analyses:
 - TPH as gasoline (TPHg), motor oil (TPHmo), and diesel (TPHd) using USEPA Method 8015B.
 - VOCs using EPA Method 8260. Soil samples collected for VOC analysis should be collected and prepared using USEPA Method 5035 in order to minimize loss of VOCs from volatilization and degradation during sample handling.
 - PAHs using EPA Method 8270.
 - PCBs using EPA Method 8082.
 - Title 22 metals using EPA Method 6010.

To support hazardous waste characterization, additional laboratory analyses may be warranted, based on the following:

- The total concentration results (reported on wet-weight basis) will be used to determine if analysis using the Toxicity Characteristic Leaching Procedure (TCLP) is necessary by comparing 20 times the TCLP thresholds (expressed as mg/kg) to the total concentration results. The factor of 20 accounts for a 1:20 dilution factor, which is a result of the preparation process used in the TCLP. If the total concentration exceeds 20 times the TCLP threshold, the TCLP is necessary to determine if the material would meet the definition of a RCRA hazardous waste for toxicity, if it is excavated. If the results following TCLP extraction and analysis exceed TCLP thresholds, the material would meet the definition of RCRA hazardous waste, if it is excavated.
- In addition, the total concentration results (reported on a wet-weight basis) will be compared to the Total Threshold Limit Concentration (TTLC), and 10 times the Soluble Threshold Limit Concentrations (STLC) threshold (1:10 dilution factor for the Waste Extraction Test [WET]). If the total concentration result exceeds the TTLC for any constituent, the waste stream would meet the definition of California non-RCRA hazardous waste, if it is excavated, and comparison to 10 times the STLC is not necessary. If the total concentration is below the TTLC and exceeds 10 times the STLC threshold, the WET is conducted to determine if the material would meet the definition of California non-RCRA hazardous waste for toxicity. If the results following WET extraction and analysis exceed the STLC thresholds, the material would meet the definition of California non-RCRA hazardous waste, if it is excavated.

If a suspected marsh crust interval is not observed, photo documentation will be completed of the soil core; samples will not be collected.

Soil sampling and logging shall be performed in general conformance with the guidance provided in DTSC's *Drilling, Logging, and Sampling at Contaminated Sites* (DTSC 2013).

The applicable boring permit(s) shall be obtained from the Alameda County Public Works Agency prior to the initiation of boring activities. Boreholes will be abandoned in accordance with Alameda County Public Works Agency regulations.

Utility Construction

Prior to the installation of any public utility within the Marsh Crust Threshold depth (as defined by the MCO), soil removal must be conducted in the utility corridor, whether in the right-of-way or utility easement, if reconnaissance sampling indicates the presence of soil that represents hazardous waste. The reconnaissance sampling will be completed for the full extent of either the right-of-way or utility easement in which the public utility or utilities are to be installed. If hazardous waste is identified, per RCRA and CCR definitions of hazardous waste, that waste must be excavated and transported, per Section 5.6.1.2.

For a given utility project, the reconnaissance sampling activities are expected to produce one of the following scenarios:

1. If the results of reconnaissance sampling and associated visual observations do not indicate the presence of marsh crust soil, utility excavation may proceed. The contractor performing the work is required to observe utility excavation activities, notably near the expected depth of the Marsh Crust, to visually monitor whether Marsh Crust is encountered. If visual observations during excavation activities indicate the potential presence of Marsh Crust soil, then additional sampling will be warranted. If reconnaissance sampling results and visual observations made during sampling and excavations activities do not indicate the presence of marsh crust, no further action is warranted.
2. If the results of reconnaissance sampling indicate the presence of an area impacted by marsh crust soil, the impacted soil will be excavated to its full extent within the right-of-way or utility easement. After soil removal, excavation confirmation sampling shall be conducted to verify the impacted soil has been effectively removed from the right-of-way or utility easement. Confirmation sampling will be completed in 50-foot increments along the trench bottom and sidewall. The excavation will be backfilled with imported soil, in accordance with the soil movement, import, and handling procedures discussed in Section 5.6.2.1.
3. If the results of reconnaissance sampling and/or confirmation sampling discussed above indicate the presence of an area impacted by marsh crust soil, then construction of a “clean utility corridor” will be required in accordance with the design criteria provided in Appendix H. The utility corridor will be backfilled with imported soil in accordance with the soil movement, import, and handling procedures discussed in Section 5.6.2.1. The “clean utility corridor” shall be delineated with the use of bright orange delineation fabric as specified in Appendix H. The sampling requirements in this section supersede the requirements included in Appendix H, which can be disregarded for the purposes of this SMP. The extent of the “clean utility corridor” shall be surveyed and recorded with the City of Alameda Building Department and Department of Public Works.

When the above requirements are followed, public utility owners will not be required to obtain an MCO permit or conduct additional sampling for ongoing utility maintenance or installation of new services within the characterized easement or right-of-way.

5.6.1.2 Excavation of Marsh Crust Soils or Uncharacterized Soils Below the Threshold Depth

Section 13-56.8c of the MCO allows uncharacterized soils to be excavated from below the Threshold Depth and stockpiled while characterization takes place, provided a site-specific construction SMP has been implemented to ensure proper handling, characterization, and disposal of these soils as hazardous waste (unless/until demonstrated otherwise). This section is intended to fulfill the requirements of Section 13-56.8c of the MCO, and also to provide handling protocols for soils shown to be hazardous waste by reconnaissance sampling

or previous environmental investigations. Under the MCO, handling of material excavated below the Threshold Depth is to be overseen by a PG or PE licensed in the State of California.

Should excavation of soils from below the Threshold Depth occur without prior reconnaissance sampling that rules out the presence of marsh crust soils per Section 5.6.1.1, or should soils known or suspected to be "hazardous waste" under law be excavated, the material should be managed as hazardous waste pursuant to CCR Title 22, Division 4.5 and the following handling protocols shall be implemented:

- Excavation and transportation shall be performed by OSHA-certified personnel;
- Soil shall be removed from Alameda Point within 90 days of excavation, unless it is characterized as non-hazardous material;
- Breathing zones shall be monitored for dust and VOC concentrations as specified by the site-specific HSP;
- Trucks transporting these soils shall be loaded atop polyethylene sheeting and decontaminated, as necessary, prior to departing the loading area;
- All loads shall be covered during transport;
- Soil stockpiles shall be:
 - Labeled and managed to segregate soils of different origins
 - Tracked in compliance with a stockpile tracking system that is specified in the project specific work plan to ensure multiple checks before any stockpiles are moved or disposed
 - Placed atop and under anchored, impermeable sheeting
 - Limited in volume to 1,000 cubic yards (yd³)
 - Managed in accordance with a SWPPP that complies with the SWRCB Construction General Permit, if required, otherwise in accordance with BMPs
 - Access-restricted via erection of a 6-foot-high chain link fence with locked access points
 - Inspected daily, with inspection records maintained pursuant to Section 5.6.2.5
 - Posted with appropriate signage indicating the presence of potentially hazardous waste
- Drainage basins shall be protected in accordance with a SWPPP that complies with the SWRCB Construction General Permit, if required, otherwise with BMPs;
- Should soils be determined to be hazardous waste, transportation shall be manifested under the appropriate RCRA or California regulations; offsite disposal shall be at a federal- or state-licensed hazardous waste treatment or disposal facility, as appropriate; and disposal documentation shall be provided to the CBO.

Additional sampling for waste profiling may be required by the disposal facility prior to acceptance of the waste.

5.6.2 Soil Management Protocols During Site Redevelopment

All handling, movement, stockpiling, and reuse of soils within Alameda Point is subject to protocols delineated in this section, except for soils addressed in Section 5.6.1. Section 5.7.2 specifies contingency protocols to manage risk in the event that unknown contamination or structures are discovered.

5.6.2.1 *Soil Movement, Import, and Handling*

Soil may be handled and moved from one portion of Alameda Point to another, as needed, within the limitations established in Section 5.6.2.6. Potential impacts associated with movement and handling are addressed through adherence to the soil stockpile management procedures (this section), the dust control measures (Section 5.8), and the storm water pollution prevention control measures (Section 5.9.1) detailed in this SMP. Additionally, soil movement shall be conducted pursuant to any traffic management plan that is applicable to the project.

Proposed import fill soil will be evaluated in accordance with requirements set forth in the *Information Advisory: Clean Imported Fill Material* (Imported Fill Advisory; DTSC 2001). The DTSC Imported Fill Advisory is provided in Appendix F for reference.

5.6.2.2 *Soil Stockpiles and Associated Dust Generation*

Soils excavated from Alameda Point may require stockpiling. The risk management measures discussed below address potential risks from wind transport, surface erosion, and unauthorized access to these stockpiles.

Soils whose chemical concentrations would characterize the soil as “hazardous waste” if the soil were deemed a waste shall not be stockpiled for longer than 90 days. Should the soils meet any of the hazardous waste criteria, they will be disposed offsite accordingly within 90 days of generation.

As required by Section 5.6.1.2, with respect to soils excavated from below the MCO Threshold Depth without prior reconnaissance sampling that rules out the presence of marsh crust soils per Section 5.6.1.1, and with respect to soils known or suspected of being “hazardous waste” under law, stockpiling and other soil management shall segregate soils of different origins.

All stockpiles shall be placed atop water-impermeable plastic sheeting and managed per the SWPPP, if required by state law, otherwise as part of BMP. Several alternative measures are available to minimize the generation of dust from soil stockpiles:

- Cover the stockpiles with anchored impermeable sheeting,
- Enclose the stockpiles in a covered structure,
- Hydroseed the stockpiles,
- Apply a non-toxic soil stabilizer to the surface of the stockpiles, or

- Regularly spray stockpiles with water.

One or more of these dust mitigation methods shall be selected based on field conditions, such as weather and the size of the stockpile(s). To maintain compliance with the requirements set forth in Section 5.8, it is recommended to cover the stockpiles prior to predicted high wind and storm events. Selection of stabilization efforts shall be at the contractor's discretion, provided compliance with the BAAQMD regulations is ensured. These soil stockpile management protocols are consistent with what is required by BAAQMD for the management of soil stockpiles in a Bay Area construction setting.

5.6.2.3 Soil Stockpiles and Erosion Management

To help ensure that stockpiled soils do not erode and potentially impact offsite receptors, all stockpiles shall be protected in accordance with a SWPPP that complies with the SWRCB Construction General Permit (regardless of the presence of potential contaminants), if required, or through BMPs. Collection, containerization, profiling, and disposal of any water that collects within any soil berm surrounding the stockpile shall be in accordance with applicable regulations.

5.6.2.4 Soil Stockpiles and Access Management

Provided stockpiles are located within active construction zones, the access restrictions set forth in Section 5.5 will be sufficient to control stockpile access. However, should the stockpile be located outside an active construction zone, access will be controlled using a chain-link fence with locked gates and appropriate warning signs in English and Spanish.

Stockpiles of the following types of soil shall be segregated from soils of different origin and surrounded by a 6-foot-high, locked, chain-link fence until determined to be non-hazardous or disposed offsite within 90 days:

- Soil stockpiles apparently containing unknown contamination encountered during redevelopment and/or excavation, as described in Section 5.7.2;
- Soils excavated from below the marsh crust Threshold Depth, unless sampling has shown them to be non-hazardous; and
- Soils whose chemical concentrations would characterize the soil as "hazardous waste" if the soil were deemed a waste.

5.6.2.5 Soil Stockpiles and Monitoring

Inspections will not be necessary for soil that has been containerized in accordance with Section 5.12. Daily inspection of stockpiles shall be conducted for stockpiles of contaminated or uncharacterized materials and any stockpile located outside an active construction zone. All stockpiles shall be monitored in accordance with a SWPPP, if applicable, that complies with the SWRCB Construction General Permit (regardless of the presence of potential contaminants). If

operating under a SWPPP, all inspection activities shall be performed by or supervised by a QSP. The QSP may delegate any or all of these activities to an employee appropriately trained to do such task(s). If a SWPPP is not required, inspections should be performed by an appropriately trained employee. Inspections of the integrity of the stockpile shall include an assessment of the following:

- The integrity of erosion control efforts;
- The effectiveness of access control measures; and
- The need for repairs to maintain erosion or access control.

Tears in a stockpile cover shall be repaired or the cover replaced if the tears exceed 6 inches in length and one-eighth inch in width. Soil washouts are to be replaced and recovered.

To facilitate adherence to the SMP, a stockpile log shall be kept by the developer's designated environmental professional, and shall be made available to the City upon request. The log shall include the following information:

- Date(s) of soil generation;
- Approximate location of excavation(s) generating stockpiled soils;
- Location of stockpile;
- Final destination of stockpiled soils;
- Log of any erosion control measures implemented or modifications made; and
- Stockpile inspection documentation.

Similarly, large and small debris shall be inspected and tracked and a log shall be kept by the developer's designated environmental professional, which shall be made available to the City upon request. Debris that has no radiological association, for example, debris not encountered in connection with Seaplane Lagoon or with drain lines downstream of IR Sites 5 or 10, need not be tracked. The log shall include the following information:

- Date(s) debris is encountered;
- Approximate location of excavation(s) in which debris was encountered;
- Location of debris;
- Whether debris has been scanned or swipe sampled for radioactivity;
- Final destination of stockpiled debris that is to be disposed as low-level radioactive waste; and
- Debris inspection documentation.

5.6.2.6 Soil Disposition

For Site projects, the Regional Water Board's Environmental Screening Levels (ESLs) are planned to be used, and the screening levels selected will be appropriate for the current and future land use of the subject project. For reference, analytical data will also be compared to RSLs and the current version of the DTSC HERO HHRA Note 3 screening levels (DTSC 2019). The most conservative screening levels provided by the applicable regulatory agency will be used.

Soil reuse at Alameda Point shall adhere to the following five principles:

- Soil from an area known to be impacted by emerging contaminants, e.g., PFAS, may not be reused in another location without prior approval from the applicable regulatory agency.
- Soil from a “contaminated area” that does not exceed ESLs is not necessarily equivalent to soil from a “clean area”.
- Soil from a “contaminated area” that does not exceed ESLs may be reused at the site where the release or cleanup occurred but not in a “clean area”.
- Contaminated soil can be reused in areas with comparable or greater contamination of the specific COCs.
- TRW and soil impacted by TRW may not be reused at Alameda Point, unless prior approval by the Regional Water Board staff is obtained.
- Soil that is considered hazardous under RCRA cannot be reused at Alameda Point and must be properly removed and disposed of or treated.

For purposes of this section, a “clean area” shall be an area of Alameda Point where it has been established through sampling and analysis that the soil does not contain contamination, and where the soil does not appear to contain unknown (i.e., unexpected) contamination (see Section 5.7.2). Sampling will not be required for soil from NFA or NA sites if there are no indications of contamination. For other areas of Alameda Point which have not been sampled previously, refer to the “Sampling and Analysis of Excavated Soils” subsection below. A “clean area” must be one of the following areas:

- An area that is not within a CERCLA site or a Petroleum Program site;
- An area within a CERCLA site, but outside the area where a release occurred or to where contamination may have migrated;
- An area within a CERCLA site where the Navy has excavated and backfilled with clean soil;
- An area within a closed Petroleum Program site for which the site closure package concludes that no significant release has occurred; or
- An area within a closed Petroleum Program site that had a release, but outside the area where the release occurred or to where contamination may have migrated.

Conversely, for purposes of this section, “contaminated area” shall mean any of the following areas:

- An area where soil appears to contain unknown (i.e. unexpected) contamination (see Section 5.7.2);

- An area within a CERCLA site or within a closed Petroleum Program site where a release has occurred or to where contamination may have migrated, except to the extent the area has been excavated and backfilled with clean soil; or
- Any area within an open Petroleum Program site.

Soil from below the MCO Threshold Depth, even in an otherwise “clean area”, shall be managed the same as soil from a “contaminated area”, unless an evaluation of the area, as described in Section 5.6.1, establishes that marsh crust is not present in that area.

Soil from a “clean area” may be reused anywhere at Alameda Point.

Soil from a “contaminated area” may be reused in the same “contaminated area” or in another “contaminated area” with comparable or greater contamination of the specific COCs, unless the CERCLA ROD or the Petroleum Program site closure letter restricts such reuse. With respect to carcinogenic PAHs, reuse in another “contaminated area” is also acceptable when the soil being reused has benzo(a)pyrene [B(a)P] equivalent levels that meet the following: (a) no soil has greater than 1 mg/kg, and (b) the 95% upper confidence limit of the mean of analytical results from samples that appropriately characterize the soil is no greater than 0.62 mg/kg. B(a)P equivalent concentrations should be calculated using the methods presented in *Table 2-4 Potency Equivalency Factors for PAHs* in DTSC’s Preliminary Endangerment Assessment Guidance Manual (DTSC 2015). The 1 mg/kg value was presented in a previously approved iteration of this SMP (Russell Resources 2016). The value was based on the information provided in a DTSC letter to the Navy regarding PAHs (DTSC 2006).

5.7 Sampling and Analysis of Excavated Soils

Soils excavated from a “contaminated area” or an inadequately characterized area to be relocated and reused shall be sampled according to American Society for Testing and Materials (ASTM) E1903-11, *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, and ASTM D4700-91, *Standard Guide for Soil Sampling from the Vadose Zone*. Excavated soils intended for relocation and reuse are subject to the following analytical requirements as needed to supplement existing validated characterization data:

- One discrete sample from every 50 yd³ (at most) for VOCs (including benzene, toluene, ethylbenzene, xylenes, and naphthalene) by USEPA Method 8260C;
- One composite sample from every 250 yd³ (at most) for Title 22 metals by USEPA Methods 6020/6010B/7470/7471A, and SVOCs (including PAHs) by USEPA Method 8270C SIM;
- One composite sample from every 500 yd³ (at most) for TPH by USEPA Method 8015B, pesticides by USEPA Method 8081A, PCBs by USEPA Method 8082, and asbestos by OSHA Method ID-191;
- Closed-system purge and trap for volatile organics in soil by USEPA Method 5035; and

- Any other analytical methods that the disposal site requires, such as WET or TCLP.
- Composite soil samples shall be created from one subsample from every 50 yd³ (at most).
- Composite sampling of unanalyzed stockpiled soil is unacceptable, unless the soil is stockpiled at the borrow area and originates from a single source area. In addition, if samples are composited, they should be from the same in-place depth interval (before excavation and stockpiling) and not from different depth intervals.
- The analytical requirements for excavated soils intended for reuse from a CERCLA site that has a ROD consist only of analytes with RGs. The analytical requirements for excavated soils intended for reuse from an open Petroleum Program site consist only of analytes that had an Alameda Point Preliminary Remediation Criterion (PRC).

The direction provided in this section is intentionally conservative in order to be appropriate for all areas covered by this SMP. On a case-by-case basis, departures from this section may be acceptable. However, proposed reuse of soil that does not adhere to this section shall be proposed to the Regional Water Board staff for concurrence. Concurrence is also required from USEPA if the applicable site has not been delisted from the CERCLA NPL.

5.7.1.1 Offsite Soil Disposal

Excavated soils that are not reused at Alameda Point must be fully profiled for offsite disposal and managed accordingly. If profiling determines that soils are hazardous waste under RCRA or California hazardous waste regulations, such soils will require appropriate handling and disposal at a licensed hazardous waste treatment, storage, and disposal facility. Any excavated soil considered RCRA or State of California hazardous waste will be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22), as applicable. The USEPA offsite rule expert for Region 9 will be consulted before any hazardous waste is disposed of offsite.

The Off-Site Rule (OSR), set forth in the National Contingency Plan (NCP), at 40 CFR 300.440 applies to disposal of waste from a CERCLA-authorized or CERCLA-funded removal or remedial action. For the OSR to apply, the waste must also meet the definition of "CERCLA waste" any CERCLA "hazardous substance" or "pollutant or contaminant" (40 CFR 300.440(a)(1)). If the waste falls outside this definition, the OSR will not apply. The purpose of the OSR is to avoid having CERCLA wastes from response actions authorized or funded under CERCLA contribute to present or future environmental problems by directing these wastes to management units determined to be environmentally sound (preamble to final OSR, 58 FR 49200, 49201, September 22, 1993). Under this SMP, prior to shipment of excavated materials offsite that are subject to the OSR, it must be verified that the receiving waste management facility meets USEPA requirements acceptable for receipt of the waste.

5.7.1.2 *Soil Transportation*

Soils requiring offsite transportation must be fully profiled prior to removal from the work area. If profiling determines that the soil is hazardous waste under RCRA or California hazardous waste regulations, the soil must be managed in accordance with RCRA and/or California waste tracking protocols. If profiling determines that the soil is a designated waste, it will be managed and transported under Bill of Lading protocols.

Transporters of hazardous waste must meet the requirements of 40 CFR 263 and 22 CCR 66263 and be listed in the DTSC Hazardous Waste Haulers database. All trucks transporting bulk hazardous waste will be properly lined and covered with compatible materials. Soil exported offsite that is characterized as a hazardous waste will require an appropriate USEPA Generator Identification Number, which will be recorded on the hazardous waste manifests used to document transport of hazardous waste offsite. The hazardous waste transporter, disposal facility, and U.S. Department of Transportation waste description required for each manifest will be determined on a case-by-case basis. A description of the number of containers being shipped, the type of container, and the total quantity of waste being shipped will also be included on each manifest.

5.7.2 Contingency Protocols for the Discovery and Management of Unknown Contamination or Structures

During construction at Alameda Point, unknown contamination and/or structures may be encountered, especially during excavation. If such unknown contamination and/or structures are encountered, the risk mitigation measures described in the following subsections should be implemented.

5.7.2.1 *Identification and Management of Unknown Contamination*

Prior to beginning construction at Alameda Point, the entity performing the work shall review available information to identify any known areas of contaminant presence, including contaminant location, type, and concentration. The site-specific HSP, to be prepared by the entity performing the work, shall incorporate a summary of the specific chemical constituents (including asbestos associated with underground piping) present at the work area to which workers may be exposed.

Contingency monitoring protocols will be triggered by the identification of any nonconforming soil or groundwater conditions that are not consistent with the review of available information. Such conditions may be noted by visual or olfactory differences, or differences in physical composition from surrounding soils, and shall include, but not be limited to, the following:

- Oily or shiny soils;
- Soils saturated with a liquid other than water (i.e., free-phase liquids);
- Soils with an appreciable chemical or hydrocarbon odor;

- Soils with elevated organic vapor measurements (as measured with a PID, flame ionization detector [FID], or equivalent);
- Soil discoloration not related to lithologic facies changes; and
- Groundwater coloration, odor, or sheen.

Biased samples from soil with visual or olfactory evidence of contamination should be collected, placed in an ice-chilled cooler, and submitted to a state-certified laboratory under chain-of-custody for the following analyses:

- TPHg, TPHmo, and TPHd using USEPA Method 8015B.
- VOCs using EPA Method 8260. Soil samples collected for VOCs analysis should be collected and prepared using USEPA Method 5035 in order to minimize loss of VOCs from volatilization and degradation during sample handling.
- SVOCs, including PAHs, using EPA Method 8270.
- PCBs using EPA Method 8082.
- Title 22 metals using EPA Method 6010.
- Chlorinated herbicides using EPA Method 8151.
- Organochlorine pesticides using EPA Method 8081.
- Dioxins and furans using EPA Method 8290. Dioxin congeners will be assessed through a Toxicity Equivalence evaluation. Ambient concentrations will be taken into consideration.

If areas previously unidentified as having apparent contamination are encountered, work shall cease in that area immediately, and the City and either the Regional Water Board staff (if apparently petroleum-related) or DTSC (if apparently not primarily petroleum-related) shall be contacted (within ten days, unless applicable law requires more immediate reporting). If the nature of encountered conditions is not readily apparent, both the Regional Water Board and DTSC shall be contacted (within ten days, unless applicable law requires more immediate reporting) and their assistance shall be requested in determining further sampling or mitigation. If the applicable site has not been delisted from the CERCLA NPL, USEPA is to be contacted concurrently with DTSC whenever DTSC must be contacted. Contact information for BCT representatives and the City's CBO is provided in Section 2.1. Further construction in the area shall not proceed until authorized by the regulatory agency or City representative. Materials that trigger these protocols shall be handled pursuant to Section 5.6.1.2.

To minimize down time, samples should be collected immediately and analyzed by a State-certified laboratory for any suspected contaminants. Target analytes should be determined with input from the BCT and the City and shall be based on a review of field evidence, as well as

existing information about the area. If the unidentified material proves to be unacceptably contaminated, further actions shall be undertaken consistent with applicable Cal/OSHA rules and regulations, and under proper regulatory oversight.

5.7.2.2 Identification and Management of Unknown Structures

During Intrusive Activities at Alameda Point, pipelines, underground storage tanks (USTs), sumps, drainage structures, or other previously unidentified subsurface structures might be encountered.

Chapter 6.7 of the California Health and Safety Code governs the removal and remediation of contamination associated with USTs. The Regional Water Board is responsible for oversight of UST removal and any associated remediation activities. In the event that a UST or associated vents or piping are discovered, the Regional Water Board staff shall be contacted and their assistance requested.

Other underground structures shall be assessed as follows:

1. The structure shall be inspected to assess whether it contains any indication of chemical residuals or free-phase liquids other than water. This assessment shall be conducted by the contractor's designated environmental professional, and shall be based on visual evidence and the results of vapor monitoring using a PID, FID, or equivalent (except as provided in the site-specific HSP, under no circumstances shall any personnel enter an unknown subsurface structure at any time). If chemicals are not indicated within the structure by the above-referenced means, the structure may be removed or abandoned in place in a safe manner by the contractor.
2. If liquids are present in the structure, samples shall be collected and submitted to a state-certified laboratory for analysis. Liquids may be temporarily drummed or collected by vacuum truck while analysis is pending. Based on analytical results, the liquids shall be disposed under the direction of the contractor's environmental professional in accordance with all applicable environmental laws and disposal requirements.
3. If solids are present in the structure and contamination is suspected, samples shall be collected and submitted to a state-certified laboratory for analysis. Solids may be temporarily drummed while analysis is pending. Based on analytical results, the solids shall be disposed under the direction of the contractor's environmental professional in accordance with all applicable environmental laws and disposal requirements.
4. If contaminated liquid or solid media are present in the structure, the structure shall be inspected for physical integrity following removal of the contaminated media. The contractor's environmental professional shall document the results of this inspection, including an estimation of the volume and former use of the structure. The structure shall then be excavated and disposed at the direction of the environmental professional.

5. Once the structure is removed, soils adjacent to and beneath the structure shall be assessed for contamination through visual observation, organic vapor analysis, and soil sample collection. The results of the assessment shall be documented. Section 5.7.2.1 provides a list of impacts that may be identified based on visual or olfactory observations. If contamination is suspected, soils should be managed as discussed in Section 5.6.1.2.

If an unknown structure is encountered, notification will be provided to the USEPA, DTSC, and Regional Water Board. The notification will specify the structure and its location. Prior to removal of the structure, a work plan will be submitted. The work plan will address procedures for removing the structure and properly disposing of associated debris and will establish the sampling frequency for soils below the unknown structure. At a minimum, samples will be collected and analyzed for VOCs, PAHs, PCBs, and metals. If the identity, purpose, and history of the structure can be determined, the sampling parameters may be modified to reflect the contaminants of potential concern related to the historical use of the structure.

5.8 Risk Mitigation Efforts to Address Contaminants in Air

5.8.1 Construction Emissions Control Measures

Contractors shall implement dust and equipment-exhaust control measures, as discussed in this section, during construction to minimize air pollutant emissions. Successful dust and equipment-exhaust mitigation will accomplish the following goals:

- Reduce the potential for health impacts to construction workers;
- Prevent violations of ambient air quality standards;
- Minimize nuisance dust complaints from site neighbors; and
- Minimize the migration of contaminants adhered to fugitive dust particles outside the work area.

5.8.1.1 *Specific Emissions Control Measures*

The emissions control measures presented in this section are provided as minimum requirements; depending on site conditions, these measures may require adjustments or enhancements. For example, if visible dust is observed leaving a work site, all work shall be stopped until the source of fugitive dust is controlled using enhanced mitigation measures.

For all intrusive activities within the geographic area covered by this SMP, the following emissions control measures are required, regardless of whether contamination is present. These recommendations are excerpted from Table 8-2, "Basic Construction Mitigation Measures" in the current BAAQMD CEQA Guidelines for construction sites (BAAQMD 2017).

1. All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
2. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

For construction and maintenance activities disturbing more than 1 acre of land, regardless of whether contamination is present, basic emissions control measures to be implemented at Alameda Point are identified in the list below, which is excerpted from Table 8-2, “Basic Construction Mitigation Measures” in the current BAAQMD CEQA Guidelines for construction sites (BAAQMD 2017). If determined to be necessary based on site conditions, the following measures may also be implemented for construction and maintenance activities disturbing less than 1 acre of land.

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
3. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
4. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the CCR). Clear signage shall be provided for construction workers at all access points.
5. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
6. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District’s phone number shall also be visible to ensure compliance with applicable regulations.

Additionally, for construction and maintenance activities disturbing more than one acre of land, the following mitigation measures will be implemented to supplement the basic emissions control measures from the BAAQMD guidelines.

- Apply water or a soil tackifier on exposed soil surfaces to reduce dust levels if visible dust is being produced;
- Mist or spray water while loading or unloading soil transportation vehicles as needed to prevent dust generation;
- Minimize drop heights when loading transportation vehicles carrying sand, soil, or other loose materials;

- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent;
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established;
- Loose soil will be removed (e.g., via brushing or rumble strips) from all trucks and equipment, including their tires, and such soil shall be managed per Section 5.6.2.5. Soil adhering to trucks, tires, and equipment shall be washed off prior to leaving Alameda Point, with collection, sampling, analysis, and appropriate treatment/disposal of equipment/tire wash water, and proper soil management of mud and dirt. Any visible mud or dirt tracked offsite will be cleaned up as it is observed or reported;
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction (wind breaks should have at maximum 50 percent air porosity);
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour; and/or
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

Fueling should be conducted using best management measures in a controlled area to prevent and mitigate spills that could impact surface water or groundwater. Workers will use precautions to properly minimize and manage spills during fueling. Fuel storage containers must be in good condition, without leaks. Absorbent material and booms will be on hand and readily available for use. Filter socks, drain guards, and/or drain seals will be placed at storm drains and channels to mitigate spill transport into storm drains. If a small fuel spill occurs, adsorbent materials will be used to remove the material rather than hosing down the spill area. The contractor health and safety plans will also outline emergency response procedures including spill containment.

The safety data sheets associated with emissions control chemicals, e.g., odor and dust suppressants, shall be maintained at the work area where intrusive activities are performed.

Soil or water generated during sweeping or wheel wash activities will be containerized and analyzed for the purpose of waste profiling for offsite disposal in accordance with applicable regulations.

5.8.2 Air Monitoring Plan and Dust Control Plan

For construction and maintenance activities disturbing more than one acre of land, the contractor's environmental professional will provide an air monitoring plan and dust control plan for submittal to the BCT and the City. Site-specific information will be considered in the development of the air monitoring and dust control plans. The plans will indicate whether the emissions control measures described in Section 5.8.1 of this SMP will be sufficient, or if additional measures are warranted. Selected additional measures will be detailed in the air monitoring plan and/or dust control plan. It is assumed that approval of the air monitoring plan will be provided by the BCT within 30 days of submittal.

5.9 Risk Mitigation Efforts to Address Contamination of Surface Water and/or Groundwater

5.9.1 Offsite Runoff Control

As discussed in Section 3.2, the SWRCB Construction General Permit regulates stormwater discharges associated with construction and land disturbance activities. The development of a site-specific SWPPP is required for sites that are covered by the Construction General Permit. The SWPPP must include the information needed to demonstrate compliance with all requirements of this General Permit, e.g., inspections, monitoring, spill response procedures, and other stormwater BMPs. The SWPPP must be kept on the construction site and be available for review, as required by the Construction General Permit.

To prevent the migration of soil from the work area into adjacent areas by surface drainage, runoff control measures shall be implemented in accordance with a SWPPP that complies with the SWRCB Construction General Permit, if required, otherwise through BMPs. If a SWPPP is required, it must be prepared by a QSD.

If dewatering is required for construction projects located within 100 feet of an impacted groundwater plume, the extracted groundwater will be contained and sampled. The contained water can only be discharged into a storm drain or a sanitary sewer line after permit requirements established by the Regional Water Board or the local sanitary district, respectively, are obtained and met.

5.9.2 Methods to Minimize the Creation of Preferential Flow Pathways

During redevelopment of Alameda Point, trenches will be constructed for the placement of public and private utilities. In general, the depth to groundwater at Alameda Point is between 4 and 8 feet bgs. The following risk management measures apply to trenches constructed below the upper limit of groundwater fluctuation at 4 feet, or below the water table as observed during construction, whichever is shallower. These measures will ensure that trench construction minimizes the migration of impacted groundwater through utility conduits. The measures to mitigate groundwater preferential flow pathways are to be implemented in all trenches that are constructed in a CERCLA or Petroleum Program site having groundwater contamination, an open Petroleum Program site, or other areas where apparent groundwater

contamination has been encountered (as described in Section 5.7.2.1). For CERCLA or Petroleum Program sites where investigations are complete, these measures are not required more than 100 feet from any groundwater contaminant plume.

Mitigation measures include the following:

- Utility corridors within 100 feet of a VOCs-impacted groundwater plume must be designed to minimize vapor migration through utility trenches or corridors.
- Low permeability materials, as defined below, will be placed at 300-foot intervals in the trench to disrupt groundwater flow within the trench backfill.
- Such impediments will also be placed at the intersection of trenches with the CERCLA or Petroleum Program site boundary.
- Several acceptable flow-disruption alternatives exist:
 - Backfilling a 1-foot trench section with a cement and bentonite mixture;
 - Installing a clay plug by compacting clay around the utility for a 5-foot trench section. If clay is selected as the low-permeability material, a sieve and hydrometer analysis will be performed to confirm the material is at least 50% clay; or
 - Creating a 1-foot barrier by forming and pouring concrete around the utility.

5.9.3 Dewatering Management Protocols

Dewatering conducted in an open CERCLA or Petroleum Program site having groundwater contamination (Figures 3 and 4) or in areas where apparent contamination has been encountered in groundwater, shall be conducted in compliance with all OSHA rules and regulations, and in accordance with the following guidelines:

- The dewatering system shall be monitored on a continuous, 24-hour basis during dewatering, or be designed with dual redundancy to prevent an overflow of contaminated water from detention structures. For example, tanks shall be equipped with both a high-level and an ultrahigh-level sensor, both of which will shut off influent pumps if tripped.
- All applicable discharge permits shall be obtained and observed.
- Dewatering and treatment residuals, such as tank bottoms and spent granular activated carbon, shall be disposed of in an appropriate manner at the direction of the contractor's environmental professional.
- Prior to dewatering in an open CERCLA or Petroleum Program site having groundwater contamination, the Navy shall be contacted to ensure coordination between proposed dewatering activities and groundwater investigation and remediation activities.

- If existing monitoring wells are located between the dewatering site and known groundwater contaminant plumes, such wells should not be abandoned if they are not located with the construction area. Baseline water levels should be collected at these wells and periodic groundwater level measurements should be conducted during dewatering for comparison to verify that appreciable drawdown, which could affect plume migration, is not occurring. A plan should be developed by a PG to define the site-specific threshold for drawdown that would require action. The plan should be submitted to the BCT members for approval before performing the dewatering work. The plan should include, at a minimum, estimated pump rates, anticipated and acceptable drawdown, contaminants of concern (COCs), adjacent plume location, monitoring well locations, concentrations of COCs in adjacent monitoring wells, routine sentinel monitoring during dewatering, dewatering extraction well locations, analyte list, and sample collection procedures. Appreciable drawdown will depend on the site geology and the location of the measurements. If measured water levels indicate that appreciable drawdown is occurring, existing wells will be sampled for VOC analysis on a 24-hour turnaround basis. The results will be evaluated to assess potential plume migration, and dewatering rates will be adjusted if needed. Under emergency conditions, in lieu of the plan described above, upon completion of an emergency response action, the responding agency will submit documentation of the activities conducted to the BCT. This documentation will include conclusions regarding whether additional assessments of adjacent groundwater plumes or institutional controls are warranted.

5.9.4 Long-Term Groundwater Monitoring Impacts

Due to the presence of the CERCLA and Petroleum Program sites as shown in Figures 3 and 4, groundwater monitoring at Alameda Point is ongoing. To prevent redevelopment activities at Alameda Point from negatively impacting these groundwater monitoring activities, the following actions will be taken:

- Prior to Intrusive Activities, site-specific documents will be reviewed to identify the location of monitoring wells in the vicinity of the work area. Monitoring wells will be located in the field and appropriately abandoned or, if they are to be preserved, protected by the installation of an appropriate crash barrier around the wellhead. Examples of appropriate crash barriers include a concrete K-rail triangle around the wellhead, or steel I-beams driven into the ground on four sides of the well.
- Any wells destroyed during redevelopment activities will be replaced following approval by and under the supervision of the Navy.
- Any wells rendered ineffective due to permanent changes in groundwater flow patterns caused by redevelopment activities will be replaced following approval by and under the supervision of the Navy.
- Prior to well abandonment or replacement activities, work plans for well abandonment and installation will be submitted to the DTSC and the Regional Water Board for approval. The

work plans will include groundwater monitoring well abandonment and groundwater monitoring well installation procedures. Following these activities, a report detailing well abandonment or well installation activities should be submitted to DTSC for review.

5.10 Long-Term Restrictions on Groundwater Use

Based on high total dissolved solids concentrations, shallow groundwater (the water-bearing zones located between ground surface and the Yerba Buena Mud Aquitard) beneath Alameda Point is unlikely to be used as a source of drinking water. Extraction of groundwater for necessary construction dewatering will be permitted following notification of the Regional Water Board and concurrence by the Navy (if required in Section 5.9.3) that such extraction does not conflict with environmental remediation activities.

For buildings constructed with VIM systems, long-term OMM will be required to maintain the integrity of the mitigation system. These requirements will be outlined in building-specific OMM plans and will include periodic system component inspection and repair procedures, and appropriate agency reporting. The OMM plans will be prepared by the property owner and/or developer.

5.11 Site Spoils from Utility Management

For utility agencies or private utility companies doing work within public rights-of-way, excess soils and groundwater can be transported to the locations illustrated in Figure 5 for temporary storage. The soil must be temporarily stored in a roll-off bin and remain covered for the duration of its time at the temporary storage area. Groundwater may be stored in drums or totes with secondary containment measures in place. The material will be profiled accordingly for offsite disposal from Alameda Point. The stormwater BMP requirements as well as all other regulatory permitting requirements for the storage of the material are the responsibility of the entity completing the work.

Excess groundwater generated during emergency response activities may be permissible to discharge to the storm sewer, provided the appropriate NPDES permit has been obtained.

6.0 CONTAMINATION-RELATED FIELD ACTIVITIES REPORTING

For activities disturbing more than 1 acre of area, data collected in accordance with the SMP shall be informally provided to the BCT on monthly basis, at a minimum.

At the conclusion of subsurface work in the following types of areas, the entity conducting the work will be required to provide a report:

- areas currently undergoing remedial action;
- areas in and around unknown structures;
- areas where unexpected contamination is encountered; or
- areas requiring hazardous materials surveys, e.g., lead and asbestos

Reports will include:

- a description of the activities completed;
- analytical results;
- results of hazardous materials surveys, such as records of visual inspections;
- waste manifests; and
- photo documentation of the work.

Reports will be prepared by an environmental professional registered in California as a PG or PE and will be submitted to the BCT and the City within 90 days of the conclusion of field activities.

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TABLES

Table 1A
CERCLA Sites
Site Management Plan
Alameda Point, Alameda, California

Site ID	Conveyance Parcel	Status	Restrictions	COCs	
				Groundwater	Soil
IR-3	ALA-70-EDC	Closed	Yes	VOCs	cobalt, lead
	ALA-71-EDC	Closed	Yes	VOCs	cobalt, lead
	ALA-72-EDC	Closed	No	VOCs	cobalt, lead
IR-7	ALA-60-EDC	Closed	No	none	arsenic, cadmium, lead
IR-8	ALA-39-EDC	Closed	No	none	lead, dieldrin, Aroclor-1254, Aroclor-1260, total PCBs
IR-9	ALA-52-EDC	Closed	Yes	1,2,3-TCP, VC, 1,1-DCA, cis-1,2-DCE, benzene, MTBE, and 1,1-DCE	none
	ALA-53-EDC	Closed	Yes	1,2,3-TCP, VC, 1,1-DCA, cis-1,2-DCE, benzene, MTBE, and 1,1-DCE	none
IR-13	ALA-64-EDC	Closed	Yes	benzene, ethylbenzene, toluene, and total xylene	none
	ALA-65-EDC	Closed	Yes	benzene, ethylbenzene, toluene, and total xylene	none
IR-14	ALA-02-EDC	OPS	Yes	vinyl chloride	dioxins
	ALA-03-EDC	OPS	Yes	vinyl chloride	dioxins
	ALA-04-EDC	OPS	Yes	vinyl chloride	dioxins
	ALA-05-EDC	OPS	Yes	vinyl chloride	dioxins
IR-15	ALA-18-EDC	Closed	No	none	none
IR-17 ¹	N/A	Closed	Yes	N/A	N/A
IR-16	ALA-75-EDC	Closed	Yes	cis-1,2-DCE, PCE, TCE, VC	none
	ALA-76-EDC	Closed	No	cis-1,2-DCE, PCE, TCE, VC	none
	ALA-77-EDC	Closed	Yes	cis-1,2-DCE, PCE, TCE, VC	none
IR-19	ALA-62-EDC	Closed	Yes	VC, TCE, and PCE	none
	ALA-64-EDC	Closed	Yes	VC, TCE, and PCE	none
IR-22	ALA-63-EDC	Closed	No	none	lead
IR-23	ALA-66-EDC	Closed	No	none	none
	ALA-67-EDC	Closed	No	none	none
IR-26	ALA-18-EDC	OPS	Yes	cis-1,2-DCE, TCE, VC	none
	ALA-19-EDC	OPS	Yes	cis-1,2-DCE, TCE, VC	none
	ALA-20-EDC	Closed	No	cis-1,2-DCE, TCE, VC	none
	ALA-21-EDC	OPS	Yes	cis-1,2-DCE, TCE, VC	none
	ALA-23-EDC	Closed	No	cis-1,2-DCE, TCE, VC	none
	ALA-24-EDC	Closed	No	cis-1,2-DCE, TCE, VC	none
	ALA-25-EDC	Closed	No	cis-1,2-DCE, TCE, VC	none
IR-27	ALA-43-EDC	OPS	Yes	chlorinated VOCs, including VC, TCE, and PCE	none
	ALA-45-EDC	OPS	Yes	chlorinated VOCs, including VC, TCE, and PCE	none

Table 1A
CERCLA Sites
 Site Management Plan
 Alameda Point, Alameda, California

Site ID	Conveyance Parcel	Status	Restrictions	COCs	
				Groundwater	Soil
	ALA-46-EDC	OPS	Yes	chlorinated VOCs, including VC, TCE, and PCE	none
	ALA-47-EDC	OPS	No	chlorinated VOCs, including VC, TCE, and PCE	none
	ALA-51-EDC	OPS	No	chlorinated VOCs, including VC, TCE, and PCE	none
IR-28	ALA-58-EDC	OPS	Yes	copper	arsenic, lead, PAHs
IR-34	ALA-22-EDC	Closed	No	none	Arsenic, lead, 1,4-DCB, dieldrin, heptachlor epoxide, total PCBs
IR-35	ALA-31-EDC	Closed	No	none	heptachlor, lead
	ALA-32-EDC	Closed	No	none	heptachlor, lead
	ALA-36-EDC	Closed	No	none	heptachlor, lead
	ALA-37-EDC	Closed	No	none	heptachlor, lead
	ALA-38-EDC	Closed	No	none	heptachlor, lead
	ALA-40-EDC	Closed	No	none	heptachlor, lead
	ALA-41-EDC	Closed	No	none	heptachlor, lead
	ALA-55-EDC	Closed	No	none	heptachlor, lead
	ALA-57-EDC	Closed	No	none	heptachlor, lead
	ALA-59-EDC	Closed	No	none	heptachlor, lead
	ALA-61-EDC	Closed	No	none	heptachlor, lead
	ALA-82-EDC	Closed	No	none	heptachlor, lead
	ALA-83-EDC	Closed	No	none	heptachlor, lead
	ALA-84-EDC	Closed	No	none	heptachlor, lead
ALA-86-EDC	Closed	No	none	heptachlor, lead	
ALA-87-EDC	Closed	No	none	heptachlor, lead	

Notes and Abbreviations:

¹IR Site 17 has a separate Site Management Plan which is provided in Appendix A.

Covenant to Restrict Use of Property (CRUP) documentation and associated details regarding institutional controls will be made accessible via a Geographic Informations Systems based map, to be provided by the City.

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

1,1-DCA = 1,1-dichloroethane

1,1-DCE = 1,1-dichloroethene

1,2,3-TCP = 1,2,3-trichloropropane

1,4-DCB = 1,4-dichlorobenzene

cis-1,2-DCE = cis-1,2-dichloroethene

COC = contaminant of concern

IR = installation restoration

MTBE = methyl tert-butyl ether

OPS = Operating Properly and Successfully

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

PCE = tetrachloroethene

TCE = trichloroethene

VC = vinyl chloride

VOCs = volatile organic compounds

Table 1B**Open Petroleum Sites**

Site Management Plan

Alameda Point, Alameda, California

Navy	Water Board	GT Status	Updates 02/27/2020
Site Name	GT Name		
--	Alameda Parent	open	Water Board parent case for Alameda NAS.
AOC 397	CAA 13, AOC 397	open	CAP Implementation 2019 (MNA Monitoring)
AST 330B	AST 330B	open	Investigated 2019. Further investigation to be completed 10/2019
AST 372	CAA 04A, AST 372	open	Remedial Design to be completed 2020
AST 530B	CAA 13, AST 530B and 530C	open	Remedial Design to be completed 2020
AST 530C	CAA 13, AST 530B and 530C	open	Remedial Design to be completed 2020
BUILDING 166	BUILDING 166	open	Investigated 2019. Further investigation to be completed 10/2019
CAA-04A	CAA 04A	open	Remedial Design to be completed 2020
CAA-04B	CAA 04B	open	Remedial Design to be completed 2020
CAA-05B West	CAA 05B West	open	CAP Implementation 2020 (Soil excavation and MNA Monitoring)
CAA-05C	CAA 05C	open	CAP Implementation 2019 (MNA Monitoring)
CAA-06	CAA 06	open	Remedial Design to be completed 2020
CAA-07	CAA 07	open	Revision to draft closure to be submitted for WB review 11/19
CAA-09A	CAA 09A	open	Remedial Design to be completed 2020
CAA-11A	CAA 11A	open	CAP Implementation 2019 (Soil excavation, well installation, free product monitoring to transition to MNA Monitoring)
CAA-11B	CAA 11B	open	CAP Implementation 2019 (Soil excavation, well installation, free product monitoring to transition to MNA Monitoring)
CAA-13	CAA 13	open	AOC 397 CAP implementation 2019. Remainder of CAA 13 to be addressed.
	CAA B	open	Site was created in GT(7/31/2009), not on Navy List
CAA-B South	CAA B South	open	CAP for component FLs in preparation. Closure request for remaining components to be submitted 11/19 for WB review
Defueling Area 530	CAA 13, Defueling Area 530	open	Remedial Design to be completed 2020
FL-139A	FL 139A	open	CAP Implementation 2020 (Well installation and MNA Monitoring)
FL-154	FL 154	open	CAP Implementation 2020 (Well installation and MNA Monitoring)
FL-155A	FL 155A	open	part of CAA 11. MNA Monitoring on going
FL-155B	FL 155B	open	part of CAA 11. MNA Monitoring on going
FL-155C	FL 155C	open	part of CAA 11. MNA Monitoring on going

Table 1B**Open Petroleum Sites**

Site Management Plan

Alameda Point, Alameda, California

Navy	Water Board	GT Status	Updates 02/27/2020
Site Name	GT Name		
FL-162	FL 162	open	Closure request to be prepared
FL-163A	FL 163A	open	Closure request to be prepared
FL-165	FL 165	open	Closure request to be prepared
NADEP GAP 37	CAA 06, NADEP GAP 37	open	Remedial Design to be completed 2020
NAS GAP 04/SWMU 584	CAA 09A, NAS GAP 04/ SWMU 584	open	Remedial Design to be completed 2020
OWS 162	CAA 11A, OWS 162	open	Remedial Design to be completed 2020
Tarry Refinery Waste Site*	CAA 13, Tarry Refinery Waste Site	open	Navy developing strategy for further site evaluation
UST 37-1	CAA 11B, UST 037-1 through 037-4	open	part of CAA 11. MNA Monitoring on going
UST 37-2	CAA 11B, UST 037-1 through 037-4	open	part of CAA 11. MNA Monitoring on going
UST 37-3	CAA 11B, UST 037-1 through 037-4	open	part of CAA 11. MNA Monitoring on going
UST 37-4	CAA 11B, UST 037-1 through 037-4	open	part of CAA 11. MNA Monitoring on going
UST 37-5	CAA 11B, UST 037-5 through 037-8	open	part of CAA 11. MNA Monitoring on going
UST 37-6	CAA 11B, UST 037-5 through 037-8	open	part of CAA 11. MNA Monitoring on going
UST 37-7	CAA 11B, UST 037-5 through 037-8	open	part of CAA 11. MNA Monitoring on going
UST 37-8	CAA 11B, UST 037-5 through 037-8	open	part of CAA 11. MNA Monitoring on going
UST 37-13	CAA 11B, UST 037-13 through 037-16	open	part of CAA 11. MNA Monitoring on going
UST 37-14	CAA 11B, UST 037-13 through 037-16	open	part of CAA 11. MNA Monitoring on going
UST 37-15	CAA 11B, UST 037-13 through 037-16	open	part of CAA 11. MNA Monitoring on going
UST 37-16	CAA 11B, UST 037-13 through 037-16	open	part of CAA 11. MNA Monitoring on going
UST 37-17	CAA 11B, UST 037-17 through 037-20	open	part of CAA 11. MNA Monitoring on going
UST 37-18	CAA 11B, UST 037-17 through 037-20	open	part of CAA 11. MNA Monitoring on going
UST 37-19	CAA 11B, UST 037-17 through 037-20	open	part of CAA 11. MNA Monitoring on going
UST 37-20	CAA 11B, UST 037-17 through 037-20	open	part of CAA 11. MNA Monitoring on going
UST 37-21	CAA 11B, UST 037-21 through 037-24	open	part of CAA 11. MNA Monitoring on going
UST 37-22	CAA 11B, UST 037-21 through 037-24	open	part of CAA 11. MNA Monitoring on going
UST 37-23	CAA 11B, UST 037-21 through 037-24	open	part of CAA 11. MNA Monitoring on going
UST 37-24	CAA 11B, UST 037-21 through 037-24	open	part of CAA 11. MNA Monitoring on going
UST 163-1	UST 163-1	open	Remedial Design to be completed 2020
UST 372-1	CAA 04B, UST 372-1 and 372-2	open	Remedial Design to be completed 2020

Table 1B**Open Petroleum Sites**

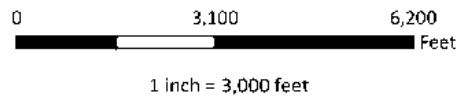
Site Management Plan


Alameda Point, Alameda, California


Navy	Water Board	GT Status	Updates 02/27/2020
Site Name	GT Name		
UST 372-2	CAA 04B, UST 372-1 and 372-2	open	Remedial Design to be completed 2020
UST 373-1	CAA 06, UST 373-1 and 373-2	open	Remedial Design to be completed 2020
UST 373-2	CAA 06, UST 373-1 and 373-2	open	Remedial Design to be completed 2020
UST 400-1	CAA 05C, UST 400-1	open	CAP Implementation 2019 (MNA Monitoring)
UST 459-1	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 459-2	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 459-3	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 459-4	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 459-5	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 459-6	CAA 07, UST 459-1 through 459-6	open	Part of CAA 7. Revised closure request in process.
UST 584-1	CAA 09A, UST 584-1 and 584-2	open	Remedial Design to be completed 2020
UST 584-2	CAA 09A, UST 584-1 and 584-2	open	Remedial Design to be completed 2020
Note: *This site is regulated by the Regional Water Board as a petroleum contaminant. However, the Navy has not included it within its site-wide petroleum management program.			

FIGURES

File: K:\GIS\Proj\0284 - Alameda Point\MXD\05\SWP\20191120\Figure 1 - Site Vicinity.mxd 11/20/2019 Created by: BO Checked by: EM Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet



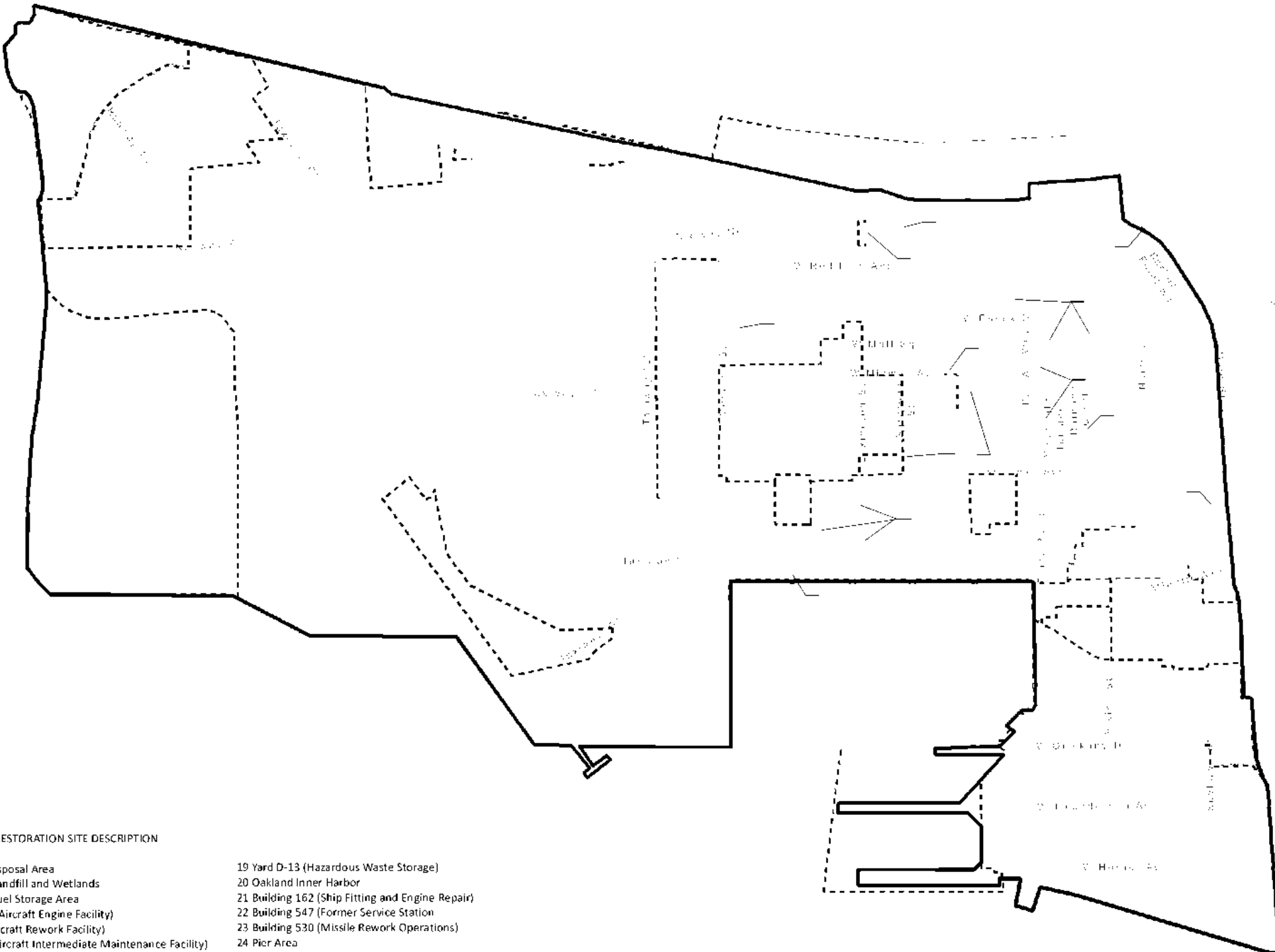
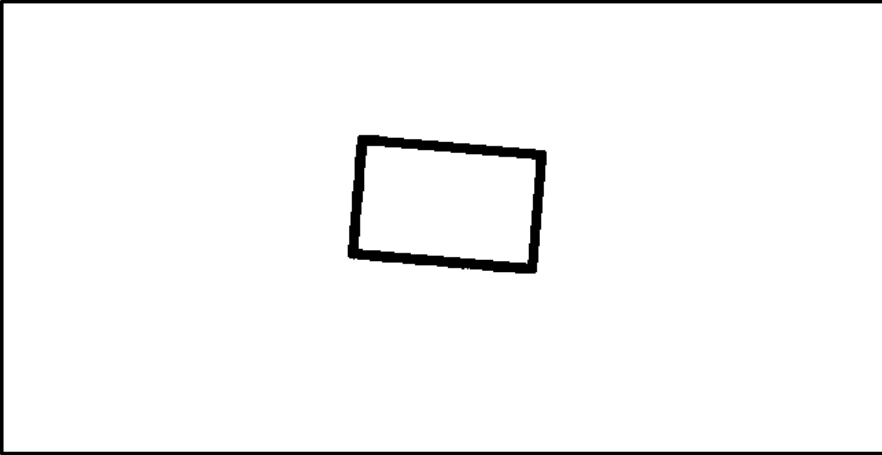
Legend
 Alameda Point site boundary
 Base Map: DigitalGlobe 08/20/2017

	SAFETY FIRST	CLIENT: City of Alameda
	PROJECT: Alameda Point Former NAS Alameda, Alameda, CA	
	PROJECT NUMBER: 0284.001.007	

Vicinity of Alameda Point

FIGURE 1

File: N:\GIS\Projects\0284 - Alameda Point\GIS\Map\20200401\Figure 2 - Land Transferred to the City of Alameda.mxd 4/17/2020 Created by: JD Checked by: Intcal Coordinate System: NAD 1983 StatePlane California III FIPS 1403 Feet



INSTALLATION RESTORATION SITE DESCRIPTION

- | | |
|--|--|
| 1 1943-1956 Disposal Area | 19 Yard D-13 (Hazardous Waste Storage) |
| 2 West Beach Landfill and Wetlands | 20 Oakland Inner Harbor |
| 3 Abandoned Fuel Storage Area | 21 Building 162 (Ship Fitting and Engine Repair) |
| 4 Building 360 (Aircraft Engine Facility) | 22 Building 547 (Former Service Station) |
| 5 Building 5 (Aircraft Rework Facility) | 23 Building 530 (Missile Rework Operations) |
| 6 Building 41 (Aircraft Intermediate Maintenance Facility) | 24 Pier Area |
| 7 Building 459 (Navy Exchange Service Station) | 25 Former North Village Housing and Estuary Park |
| 8 Building 114 (Pesticide Storage Area) | 26 Western Hangar Zone |
| 9 Building 410 (Paint Stripping Facility) | 27 Dock Zone |
| 10 Building 400 (Missile Rework Operations) | 28 Todd Shipyard |
| 11 Building 14 (Engine Test Cell) | 29 Skeet Range |
| 12 Building 10 (Power Plant) | 30 Miller School |
| 13 Former Oil Refinery | 31 Marina Village Housing |
| 14 Former Fire Training Area | 32 Northwestern Ordnance Storage Area |
| 15 Buildings 301 and 389 (Former Transformer Storage Area) | 33 South Tarmac and Runway Wetlands |
| 16 C-2 CANS Area (Shipping Container Storage) | 34 Former Northwest Shop Area |
| 17 Seaplane Lagoon | 35 Areas of Concern in Transfer Parcel EDC-5 |

Note: Offshore IR sites are shown for reference only and are not discussed in the SMP.

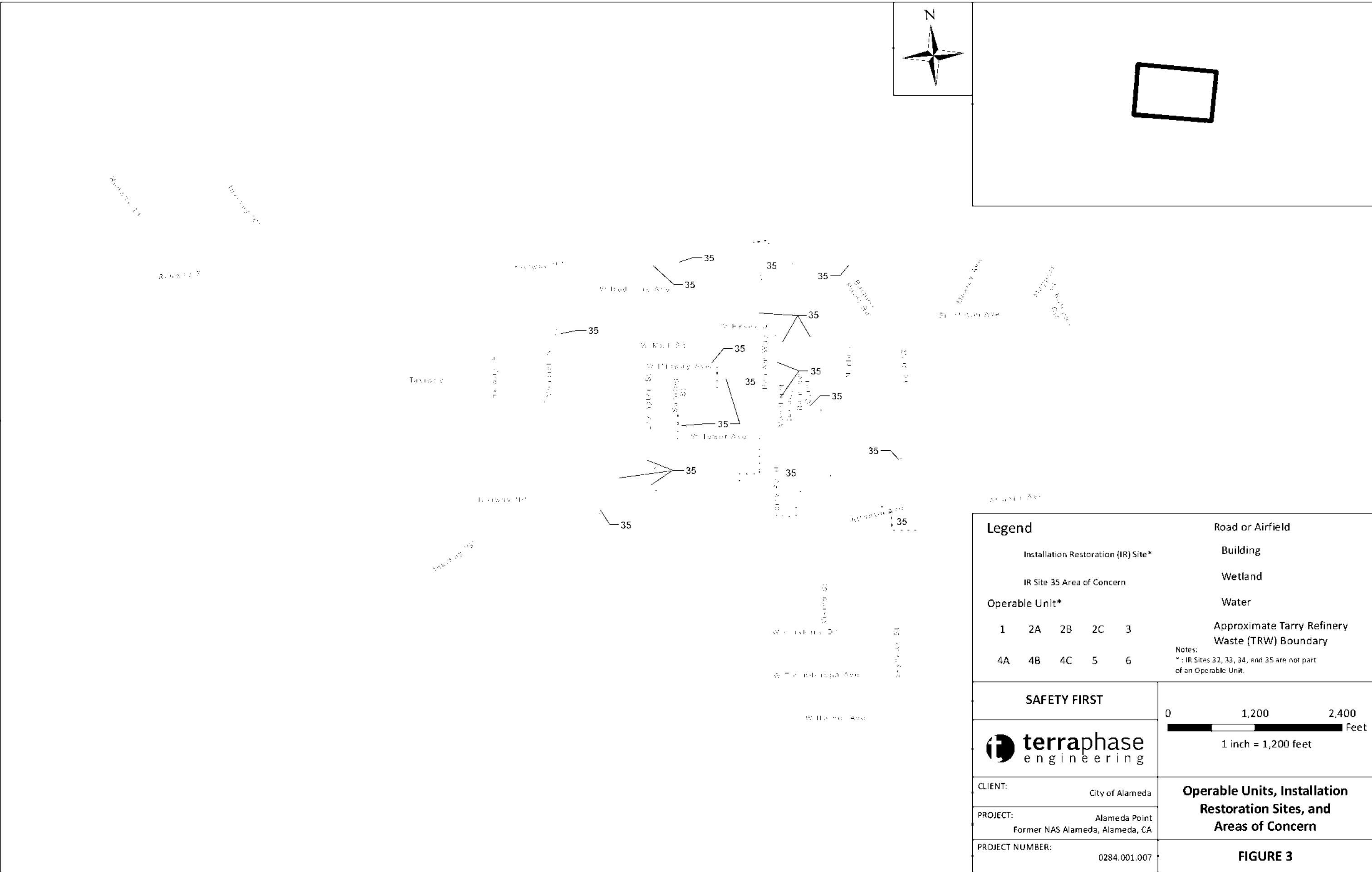
Legend	
	Alameda Point Boundary
	Installation Restoration (IR) Site
	Land Transferred to the City of Alameda
	Road or Airfield
	Building
	Wetland
	Water

SAFETY FIRST	<p>1 inch = 1,250 feet</p>


CLIENT:	City of Alameda	Land Transferred to the City of Alameda
PROJECT:	Alameda Point Former NAS Alameda, Alameda, CA	
PROJECT NUMBER:	0284.001.007	

FIGURE 2

File: N:\GIS\Prj\0284 - Alameda Point\MXD\S\MPI\20191119\Figure 3 - Operable Units, Installation Restoration Sites, and Areas of Concern.mxd 12/3/2020 Created by: AR Checked by: BO Coordinate System: NAD 1983 StatePlane California III FIPS 5003 Feet

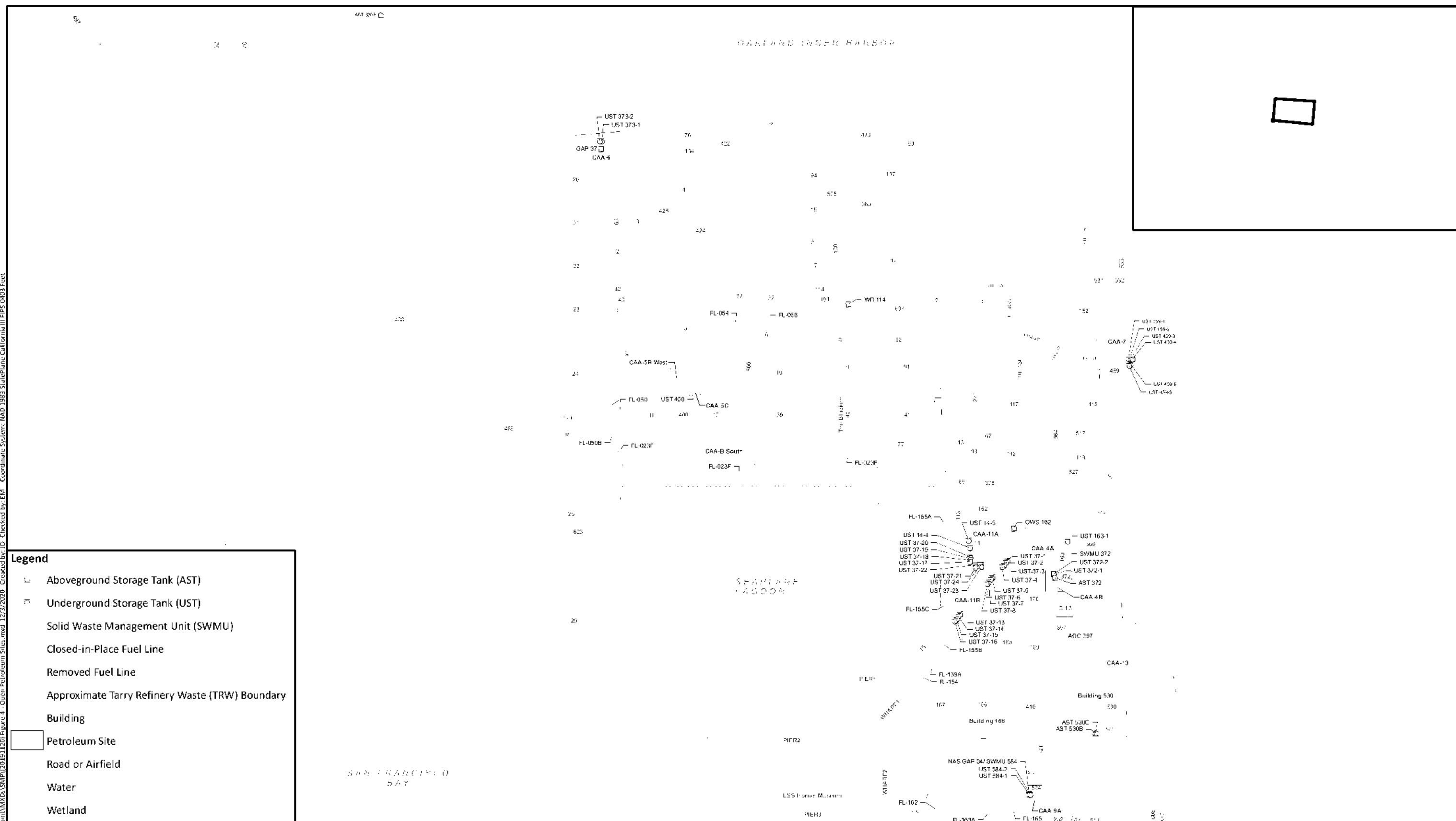


Legend	Road or Airfield
Installation Restoration (IR) Site*	Building
IR Site 35 Area of Concern	Wetland
Operable Unit*	Water
1 2A 2B 2C 3	Approximate Tarry Refinery Waste (TRW) Boundary
4A 4B 4C 5 6	Notes: * : IR Sites 32, 33, 34, and 35 are not part of an Operable Unit.

SAFETY FIRST	0 1,200 2,400 Feet
	1 inch = 1,200 feet

CLIENT:	City of Alameda	Operable Units, Installation Restoration Sites, and Areas of Concern
PROJECT:	Alameda Point Former NAS Alameda, Alameda, CA	
PROJECT NUMBER:	0284.001.007	
		FIGURE 3

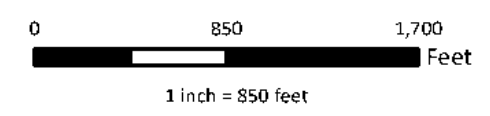
File: N:\GIS\Projects\0284 - Alameda Point\MXDs\SMP\20181120\Figure 4 - Open Petroleum Sites.mxd 12/23/2020 Created by: ID Checked by: EM Coordinate System: NAD 1983 StatePlane California III FIPS 4033 Feet



Legend

- Aboveground Storage Tank (AST)
- Underground Storage Tank (UST)
- Solid Waste Management Unit (SWMU)
- Closed-in-Place Fuel Line
- Removed Fuel Line
- Approximate Tarry Refinery Waste (TRW) Boundary
- Building
- Petroleum Site
- Road or Airfield
- Water
- Wetland

Notes:
 AOC: Area of Concern
 COA: Corrective Action Area
 GAP: Generator Accumulation Point
 NAS: Naval Air Station
 WD: Washdown Area



	SAFETY FIRST CLIENT: City of Alameda	Open Petroleum Sites
	PROJECT: Alameda Point Former NAS Alameda, Alameda, CA PROJECT NUMBER: 0284.001.007	
FIGURE 4		

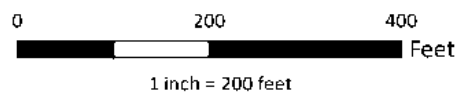
File: K:\G:\SP_02\B4 - Alameda Point\K4\05\MP\120111221 - figure 6 - Temporary Soil Staging Area.mxd 11/22/2019 9:48 AM Created by: BD Checked by: 48 Coordinates: System: NAD 1983 StatePlane California III FIPS 10403 Feet



Legend

- Temporary Soil Staging Area for Private and Public Utility Work in Public Right of Way

Aerial Imagery Source: NearMap 08/31/19

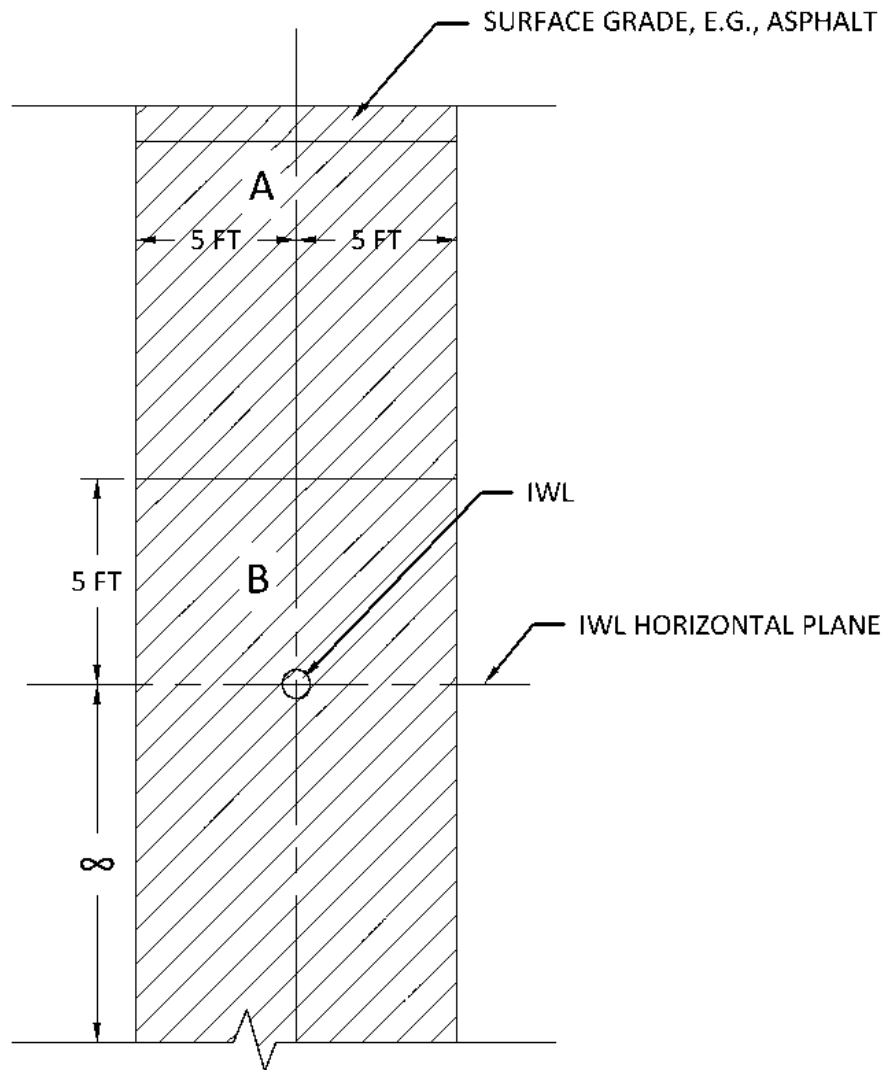


SAFETY FIRST 	CLIENT:	City of Alameda
	PROJECT:	Alameda Point Former NAS Alameda, Alameda, CA
	PROJECT NUMBER:	0284.001.007

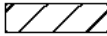

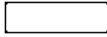

Temporary Soil Staging Area for Private and Public Utility Work in Public Right of Way

FIGURE 5

J:\CADD FILES\0284-City of Alameda\ARIC CROSS-SECTION.dwg Drawn by: MEO ; Checked by: XXX




LEGEND

-  ARIC
-  SURFACE GRADE
-  ZONE A
-  ZONE B

IWL = INDUSTRIAL WASTE LINE
 ARIC = AREA REQUIRING INSTITUTIONAL CONTROLS

NOT DRAWN TO SCALE

SAFETY FIRST 	CLIENT: City of Alameda	Cross-Section of Industrial Waste Line Area Requiring Institutional Controls
	PROJECT: Alameda Point Site Management Plan	
	PROJECT NUMBER: 0284.001.010	Figure 6

APPENDIX A
SEAPLANE LAGOON SEDIMENT MANAGEMENT PLAN

City of Alameda

Sediment Management Plan
Seaplane Lagoon
Alameda, California

April 11, 2016

FINAL

Russell Resources, Inc.
440 Nova Albion Way, Suite 1
San Rafael, California 94903

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Peter Russell <peter94903@gmail.com>

Draft Final Sediment Management Plan -- Seaplane Lagoon -- IR Site 17

Parker, Mary E CTR NAVFAC HQ, BRAC PMO <mary.parker@navy.mil>

Wed, Mar 16, 2016 at 3:22 PM

To: Peter Russell <Peter@russellresources.com>

Cc: "Sabedra, Cecily D CIV NAVFAC HQ, BRAC PMO" <cecily.sabedra@navy.mil>, "McGinnis, William CIV NAVFAC SW, PACO" <william.mcginnis1@navy.mil>, Yemia Hashimoto <yemia.Hashimoto@waterboards.ca.gov>, James Fyfe <James.Fyfe@dtsc.ca.gov>, "Tran, Xuan-Mai" <Tran.Xuan-Mai@epa.gov>, "Slack, Matthew L CIV SEA 04 04N" <matthew.slack@navy.mil>

I have completed coordination with Matt Slack of RASO and Cecily Sabedra on their review of the City's responses to comments on the IR Site 17 SMP. This e-mail documents that they have reviewed the responses to the Navy's comments on the SMP for IR Site 17 provided by the City of Alameda and that the Navy has no further comments.

Have a good day!!
Mary

MARRS Services, Inc.
Contracted Project Manager
for BRAC PMO West
33000 Nixie Way
Bldg 50
San Diego CA 92147
Desk Phone: (619) 524-5846

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Peter Russell <peter94903@gmail.com>

Draft Final Sediment Management Plan -- Seaplane Lagoon -- IR Site 17

Tran, Xuan-Mai <Tran.Xuan-Mai@epa.gov>

Tue, Apr 5, 2016 at 4:30 PM

To: Peter Russell <Peter@russellresources.com>

Cc: Cecily Sabedra <cecily.sabedra@navy.mil>, William McGinnis <william.mcginnis1@navy.mil>, Yemia Hashimoto <yemia.Hashimoto@waterboards.ca.gov>, James Fyfe <James.Fyfe@dtsc.ca.gov>

Hi Peter

Thank you for the responses to EPA's comments on Site 17 Draft Final Sediment Management Plan as well as the changed pages. All EPA's comments have been addressed adequately; therefore, we have no further comments. We are looking forward to receive the clean/final copy of Site 17 Sediment Management Plan.

Thanks

XM

From: Peter Russell [mailto:Peter@russellresources.com]

Sent: Tuesday, March 29, 2016 4:57 PM

To: Tran, Xuan-Mai <Tran.Xuan-Mai@epa.gov>

Cc: Peter Russell <Peter@russellresources.com>; Cecily Sabedra <cecily.sabedra@navy.mil>; Parker, Mary E CTR NAVFAC HQ, BRAC PMO <mary.parker@navy.mil>; William McGinnis <william.mcginnis1@navy.mil>; Yemia Hashimoto <yemia.Hashimoto@waterboards.ca.gov>; James Fyfe <James.Fyfe@dtsc.ca.gov>; Jennifer Ott <JOtt@alamedaca.gov>; Bob Burns <reburns@ngtsinc.com>; John Edgcomb <jedgcomb@edgcomb-law.com>

Subject: Re: Draft Final Sediment Management Plan -- Seaplane Lagoon -- IR Site 17

[Quoted text hidden]



Peter Russell <peter94903@gmail.com>

SPL SMP

Fyfe, James@DTSC <James.Fyfe@dtsc.ca.gov>
To: Peter Russell <Peter@russellresources.com>

Fri, Mar 25, 2016 at 1:14 PM

Hi Peter,

DTSC and CDPH-RHB have reviewed the draft final SPL SMP as well as the RTCs for the draft SMP and have no further comments.

Please tell Petra "Happy Birthday!!" for me. Hope you both enjoy the day and the weekend and take advantage of the great weather we are having.

Jim Fyfe

Alameda Point Project Manager
(510) 540-3850

From: Peter Russell [mailto:Peter@russellresources.com]
Sent: Friday, March 25, 2016 9:05 AM
To: Fyfe, James@DTSC
Subject: SPL SMP

[Quoted text hidden]



Peter Russell <peter94903@gmail.com>

Draft Final Sediment Management Plan -- Seaplane Lagoon -- IR Site 17

Hashimoto, Yemia@Waterboards <Yemia.Hashimoto@waterboards.ca.gov>

Fri, Mar 18, 2016 at 3:39 PM

To: Peter Russell <Peter@russellresources.com>, "Tran, Xuan-Mai" <Tran.Xuan-Mai@epa.gov>, "Fyfe, James@DTSC" <James.Fyfe@dtsc.ca.gov>, Cecily Sabedra <cecily.sabedra@navy.mil>
Cc: "Parker, Mary E CTR NAVFACHQ, BRAC PMO" <mary.parker.ctr@navy.mil>, Bill McGinnis <william.mcginis1@navy.mil>, Jennifer Ott <JOtt@alamedaca.gov>, John Edgcomb <jedgcomb@edgcomb-law.com>, Bob Burns <reburns@ngtsinc.com>, Farimah F Brown <FBrown@alamedacityattorney.org>

Hi Peter,

The RTC provided addresses the Regional Water Board's comments.

We have no further comments,

Yemia Hashimoto

From: Peter Russell [mailto:Peter@russellresources.com]

Sent: Thursday, March 03, 2016 10:01 AM

To: Tran, Xuan-Mai; Fyfe, James@DTSC; Hashimoto, Yemia@Waterboards; Cecily Sabedra

Cc: Parker, Mary E CTR NAVFACHQ, BRAC PMO; Bill McGinnis; Jennifer Ott; John Edgcomb; Bob Burns; Farimah F Brown

Subject: Draft Final Sediment Management Plan -- Seaplane Lagoon -- IR Site 17

All,

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ACRONYMS, ABBREVIATIONS, AND CONTROLLED VOCABULARY

ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Conservation and Development Commission
BCT	BRAC Cleanup Team
BMP	best management practice
BRAC	Base Realignment and Closure
CBO	Chief Building Official
CCR	California Code of Regulations
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHP	Certified Health Physicist
CIH	Certified Industrial Hygienist
City	City of Alameda
CoC	Chemical of Concern
CRUP	covenant to restrict use of property
DDx	the sum of dichlorodiphenyldichloroethane, dichlorodiphenyldichloroethylene, and dichlorodiphenyltrichloroethane
DMMO	Dredged Material Management Office of U.S. Army Corps of Engineers
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
ESD	explanation of significant differences
ESL	Environmental Screening Level
FFA	Alameda Point Federal Facilities Agreement
FOST	<i>Finding of Suitability to Transfer for Former Naval Air Station Alameda</i> , April 19, 2013
HSP	Health and Safety Plan
IC	institutional control
Intrusive Activity	redevelopment activity that involves subsurface exposures, such as grading, excavating, trenching, pile driving, and dewatering
IR	Installation Restoration
LLRW	Low Level Radioactive Waste
LTMS	Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region
LUC RD	Land Use Control Remedial Design
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
mg/kg	milligram per kilogram
NAS	Naval Air Station

NEPA	National Environmental Policy Act
NPL	CERCLA National Priority List
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
pCi/g	picocurie per gram
PE	Professional Engineer
PG	Professional Geologist
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
Ra-226	radium 226
RACR	Remedial Action Completion Report
RAWP	Remedial Action Work Plan
RCA	radiologically controlled area
RCRA	Resource Conservation and Recovery Act
Regional Water Board	Regional Water Quality Control Board, San Francisco Bay Region
RHB	Radiological Health Branch of CDPH
RI	CERCLA Remedial Investigation Report
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
Site	Seaplane Lagoon
SMP	Sediment Management Plan
SVOC	semivolatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
TPH	total petroleum hydrocarbon
TSCA	Toxic Substances Control Act
USC	United States Code
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
yd ³	cubic yard

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1 INTRODUCTION

This Sediment Management Plan (SMP) was prepared for the City of Alameda (the City) by Russell Resources, Inc. and Robert Burns, Certified Health Physicist (CHP) with NGTS, Inc., to mitigate potential risks associated with sediment handling at Seaplane Lagoon, Alameda Point (the Site). The Site consists of 111 submerged acres, located in the southeastern corner of the former Naval Air Station (NAS) Alameda, now known as Alameda Point. Alameda Point encompasses roughly 878 acres of land. The City plans to reuse the Site for passive open space, recreational uses, a marina, and ferry terminal.

This SMP is intended to supplement the regulatory dredging permitting process, not to replace it. For example, any radiological screening of sediment prior to navigational dredging would be a separate requirement and process from the standard Dredged Material Management Office (DMMO) testing and suitability determination process and will be overseen by California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in consultation with California Department of Public Health (CDPH), not DMMO.

This SMP has two primary purposes, as follows.

1. Provide specific procedures to be implemented to comply with the Seaplane Lagoon institutional controls (IC) restrictions and ensure that dredging and sediment handling and disposal associated with redevelopment of the Site are conducted in a manner protective of the health and safety of Site workers, future Site users, nearby residents, and the environment, due to residual radiological constituents, including small items with radium 226 (Ra-226) activity similar to the 51 small items encountered in sediment during the Navy's Seaplane Lagoon remedial action.
2. Assist in accessing Navy and regulatory documents that are relevant to the environmental investigation and remediation activities of the Site.

This SMP is an adaptation of several previously approved site management plans:

1. May 2008, ERM-West, Inc. and Iris Environmental, *Site Management Plan, Alameda Landing Site Portion of the Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex (FISCA), Alameda, California*, which was approved by DTSC,
2. November 2011, Russell Resources, Inc., entitled *Site Management Plan, Lawrence Berkeley National Laboratory Second Campus Portion of Alameda Point, Alameda, California*, which was approved by the Department of the Navy, the US Environmental Protection Agency (USEPA), DTSC, and the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) staff, and

3. March 2015, Russell Resources, Inc., entitled *Site Management Plan, Phase 1 Transfer Portion of Alameda Point, Alameda, California*, which was approved by the Department of the Navy (pending), USEPA, DTSC, and Regional Water Board staff.

The previously approved site management plans have been modified only in order to address the Site's unique conditions and proposed uses, and to provide an SMP that is applicable to reuse and redevelopment of the Site. This SMP is intended to complement the March 2015 *Site Management Plan, Phase 1 Transfer Portion of Alameda Point*. For example, dredging is expected to involve shore-side management of dredged sediment: drying, radiological scanning, profiling, stockpiling, etc. Such activities must be conducted in compliance with the Site Management Plan, unless this SMP specifies otherwise.

A fundamental difference between this SMP and its progenitors is this SMP's emphasis on proper management of potentially radiologically contaminated sediment. (See Section 4.4, in particular.) The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Explanation of Significant Differences (ESD) that supplements the Navy's Record of Decision (ROD) for the Site specifies a land use control, which prohibits dredging activities at Seaplane Lagoon for future reuse unless they are conducted in compliance with an SMP that is acceptable to the Federal Facilities Agreement (FFA) signatories, which are the Navy, USEPA, DTSC, and the Regional Water Board. This document is that SMP. In addition, dredging projects are to be conducted pursuant to a work plan that also is acceptable to DTSC.

A project-specific dredging work plan, specific to the work and the contractor performing the work, for any proposed dredging, shall be reviewed and approved by DTSC and, as appropriate, other FFA signatories or their successors to ensure that SMP requirements have been properly incorporated into the work plan. This SMP and a project-specific work plan do not apply to activities, such as weighing anchors, that may incidentally surface small amounts of sediment, for example, less than one cubic foot of sediment.

1.1 REPORT ORGANIZATION

This SMP is organized as follows:

- Section 1 presents Site background information and describes the objectives, implementation, and oversight of the SMP;
- Section 2 briefly summarizes the residual environmental conditions at the Site, and the estimated health risks associated with the redevelopment plans, and references SMP appendices that contain more detailed information about Site environmental conditions;

- Section 3 presents risk management measures to be implemented prior to Site redevelopment;
- Section 4 presents risk management measures to be implemented during Site redevelopment;
- Section 5 presents risk management measures to be implemented after Site redevelopment; and
- Section 6 lists references used to prepare this SMP.

Appendices to this SMP include:

- Appendix A – [This appendix place holder is included for organizational consistency with Site Management Plan. In the Site Management Plan, Appendix A is the City’s Marsh Crust Ordinance, which does not apply to Scaplane Lagoon.]
- Appendix B – Background Documents

1.2 HOW TO USE THE SMP

This section explains how best to use this SMP. The SMP is organized so generalists can readily understand the Site as a whole without wading through voluminous, detailed information. At the same time, the SMP’s structure allows those so interested to access efficiently the detailed information.

For the generalist, the main body of the SMP, with its figures and tables, provides a Site-wide overview and discusses environmental issues and requirements that are applicable to the whole or portions of the Site.

The focused user’s information needs include a general understanding of Alameda Point, similar to the generalist, but also include access to detailed information. This information includes historical land use, the location and nature of historical contamination, environmental investigation results, the nature and outcome of remediation efforts, residual contaminant levels, and requirements for future dredging. This information is compiled in Appendix B, which contains excerpts of important environmental documents that were prepared by the Navy with oversight by the environmental regulatory agencies. These documents include the CERCLA Remedial Investigation Report (RI), ROD, Remedial Action Completion Report (RACR), ESD, and Land Use Control Remedial Design (LUC RD).

This process of utilizing Appendix B as an integral part of implementing the SMP is an efficient and effective way of drawing on the very large body of environmental information that has been developed by the Navy at Alameda Point with regulatory agency oversight.

Dredging and other activities that bring significant amounts of Site sediments to the surface must be conducted in compliance with the Navy's LUC RD, this SMP and a work plan that is acceptable to DTSC. The LUC RD requires the FFA signatories review and approve the SMP. This SMP should be interpreted to be consistent with the LUC RD.

This SMP is to be used in conjunction with the regulatory dredging permitting process, as a supplement to it, not as substitute for it.

1.3 BACKGROUND

The Site is located in the southeastern quadrant of Alameda Point (formerly NAS Alameda) in Alameda, California. Development of Alameda Point first began in 1930 under the ownership of the U.S. Army, and the majority of the former NAS Alameda was built on dredged fill that was placed over shallow open water. The average elevation of Alameda Point is about 15 feet above mean sea level.

Former NAS Alameda served as a base of operations for naval aviation from before World War II through its closure in 1997. Closure of former NAS Alameda was conducted pursuant to the Defense Base Realignment and Closure (BRAC) Act of 1990. During its long history of operations, former NAS Alameda was home to several thousand military and civilian personnel and supported operations of the Marine Corps, Navy, and other military entities. Hundreds of buildings and an extensive network of roadways and utilities were constructed at former NAS Alameda, and much of this infrastructure still exists. Former NAS Alameda supported aviation and surface craft activities through extensive runway and tarmac infrastructure and an enclosed lagoon for seaplanes (the Site) and also supported naval surface vessels (including aircraft carriers) through an extensive system of piers, berthing areas, and turning basins. Specific activities conducted historically at NAS Alameda include, but are not limited to, aircraft maintenance, ship maintenance, support and training for Navy and Marine air units, storage, rework, and distribution of weaponry, fuel storage and refueling, dry goods storage and distribution, pest control, plating, metal working and fabrication, parts washing, cleaning and routine maintenance, blasting and painting, testing jet engines, heavy equipment maintenance, woodworking, and photography.

Figure 1 presents a general location map showing Alameda Point and the surrounding San Francisco Bay Area. Figure 2 is a map of Alameda Point that shows the location of Seaplane Lagoon. Figure 2 also shows buildings and other Site features. This SMP describes the

environmental conditions at the Site, including distinguishing chemical and physical features, and the associated management measures.

Investigation and cleanup activities have been performed at Alameda Point by the Navy under CERCLA with regulatory oversight administered by the USEPA, DTSC, and the Regional Water Board.

1.4 OBJECTIVES

The objective of this SMP is to document the following:

- Historical Site investigation activities and the nature and extent of residual contamination in Site sediment;
- Mitigation efforts to be implemented to minimize exposure of people and environmental receptors to contaminants that may be present at the Site prior to, during, and following redevelopment, especially with regard to potential radiological contamination in dredged Site sediment, including small items with Ra-226 activity similar to the 51 small items encountered in sediment during the Navy's Seaplane Lagoon remedial action;
- Protocols to help ensure that dredging and sediment management activities conducted at the Site are performed in accordance with applicable state and federal environmental health and safety regulations; and
- Provide proper procedures to meet IC requirements, and ensure proper handling, sampling, and disposal of dredge material.

1.5 IMPLEMENTATION AND OVERSIGHT

Oversight of cleanup at Alameda Point is shared by USEPA, the DTSC, and the Regional Water Board. With the Navy, these agencies constitute the BRAC Cleanup Team (BCT), which provides ongoing oversight at the Site for CERCLA activities. For Alameda Point environmental investigation and remediation activities, if radiological contamination is potentially present, the CDPH provides consultation to DTSC. The Petroleum Program is overseen by the Regional Water Board. In general, environmental regulatory oversight for the Site during development consists of DTSC taking the lead role. This SMP is not intended to change any of the legal authority or responsibilities that each of the BCT members may have.

The efforts specified in this SMP are to be implemented by the contractor performing SMP-covered work at the Site on behalf of the entity undertaking redevelopment and/or the City. These construction activities will include dredging and sediment handling, including spreading,

drying, radiological assessment, and off-site and on-site disposal. As described in applicable sections of this SMP, implementation of this SMP will be overseen by a CHP and a Professional Engineer (PE), Professional Geologist (PG), or other environmental professional who is familiar with environmental monitoring equipment, environmental health and safety regulations, and general industrial hygiene practices. Tasks that fall within the practice of engineering or geology shall be conducted by a PE or PG, respectively. Health and Safety Plans (HSPs) shall be prepared by a Certified Industrial Hygienist (CIH). Storm Water Pollution Prevention Plans (SWPPPs) shall be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP). The PE, PG, CIH, QSD, and QSP may be assisted by other qualified personnel, provided the accredited professional remains in responsible charge of the work.

Regulatory oversight of SMP implementation will be provided by the Regional Water Board (petroleum-related), DTSC (other than primarily petroleum-related), and the City. CDPH will provide radiological consultation to DTSC, as needed, when radiological contamination is potentially present. In addition, to the extent the Site has not been delisted from the CERCLA National Priorities List (NPL), USEPA must receive notifications and approve proposals, which after delisting would be handled solely by DTSC. The contact information for BCT representatives and the City's Chief Building Official (CBO) appears in the following table.

Agency	Representative	Telephone Number	E-mail and Physical Addresses
USEPA	Xuan-Mai Tran	(415) 972-3002	tran.xuan-mai@epa.gov 75 Hawthorne Street San Francisco, CA 94105
DTSC	James Fyfe	(510) 540-3850	james.fyfe@dtsc.ca.gov 700 Heinz Avenue Berkeley, CA 94710
Regional Water Board	Yemia Hashimoto	(510) 622-2756	yemia.hashimoto@waterboards.ca.gov 1515 Clay Street, Suite 1400 Oakland, CA 94612
Navy	Cecily Sabedra	(619) 524-4569	cecily.sabedra@navy.mil 33000 Nixie Way – Bldg. 50 San Diego, CA 92147
City of Alameda, Community Development	Greg McFann	(510) 747-6820	gmcfann@alamedaca.gov 2263 Santa Clara Ave., Rm. 190 Alameda, CA 94501

Contact information in the in the above table may become outdated, for example, due to personnel changes. All project-specific work plans prepared pursuant to this SMP shall include the then current contact information. If the identified contacts are unavailable, the contact's agency shall be consulted for further direction.

1.6 APPLICABLE STATUTES AND REGULATIONS

Following is a list of identified local, state, and federal laws and regulations that may apply to Site redevelopment activities.

1.6.1 Federal Statutes and Regulations

National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 – Administered by the Council on Environmental Quality and the USEPA, this act addresses projects that constitute major federal actions with the potential to significantly impact the environment.

The NEPA process often invokes one or several other federal statutes as described further in this section. In California, NEPA requirements are often addressed under the California Environmental Quality Act (CEQA), discussed in [Section 1.6.2](#).

33 USC 403 and Section 404, and Clean Water Act, 33 USC 1344 – Administered by the U.S. Army Corps of Engineers, these sections prohibit excavation and filling of the navigable waters of the United States unless the work has been permitted by the U.S. Army Corps of Engineers prior to beginning the same, and may apply to the dredging and disposal of the dredged sediments, including discharges to navigable waters of the United States (including wetlands and streams that are tributaries to navigable waters), and may apply to discharges of excavated soil or groundwater generated by construction and dewatering.

Endangered Species Act, 16 USC 1536 – Administered by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, this act regulates activities affecting federally protected species. It also protects listed species from harm or “take,” which is broadly defined as “*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.*” The definition of “take” further includes unintentional or incidental take, which might be associated with construction or other activities.

Coastal Zone Management Act, 16 USC 1451 – Administered by the National Oceanic and Atmospheric Administration, this act regulates projects in the coastal zone.

Resource Conservation and Recovery Act of 1976 (RCRA), 42 USC 692 – Administered by the USEPA, this act manages hazardous wastes from “cradle to grave,” governing the generation,

storage, transportation, and disposal of hazardous waste. This includes excavated soil and/or groundwater that exceeds threshold criteria. RCRA also governs underground storage tanks.

Toxic Substances Control Act of 1976 (TSCA), 15 USC 2601 et seq. – Administered by the USEPA, this act governs the introduction, manufacture, and importation/exportation of chemicals produced in the United States. Relevant to this SMP, TSCA also governs asbestos and lead-based paint hazards.

CERCLA, 42 USC 9601 et seq., and Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 USC 9601 – Known as the Superfund Law, these acts give the USEPA and States jurisdiction to identify potentially responsible parties who may be current or former owners or operators of sites where hazardous substances have been discharged, or who have transported or arranged for the disposal of hazardous substances at such sites, that may be ordered to implement remediation at those sites, or pay for remediation performed by the Federal, State or local governments or other non-liable parties. CERCLA also provides procedures by which such hazardous substance releases must be investigated and remedies selected by the USEPA or a State, and for continuing oversight to insure the long-term effectiveness of such remedies.

Emergency Planning and Citizen's Right to Know Act of 1986, 42 USC 11001 – Also known as Title III of SARA, this act is designed to help communities protect public health, safety, and the environment from chemical hazards. Through the Toxics Release Inventory, a list of all chemicals used and emitted by businesses small and large, it also gives individuals the right to obtain information regarding chemical hazards in their communities. It established the State Emergency Response Commission, responsible for the development of emergency action plans.

Occupational Safety and Health Administration (OSHA) Regulations, 29 Code of Federal Regulations (CFR) Sections 1910.120 and 1926.65 – These regulations govern the applicability and scope of training requirements for personnel involved in the handling of hazardous wastes.

1.6.2 State Statutes and Regulations

CEQA, California Public Resources Code 21000 et seq. and the CEQA Guidelines, 14 California Code of Regulations (CCR) 15000 et seq. – This act creates the state companion to the federal NEPA process, and is invoked by any nonexempt development project that requires public agency approval. This process can require, among other things, an Environmental Impact Report evaluating potentially significant environmental impacts related to the proposed project, as well as associated mitigation measures.

Radiation Control Law, Health and Safety Code, Div. 104, Part 9, Chapter 5, Article 1, Section 114705, et seq. and 17 CCR, Subchapter 4.6, Requirements for Land Disposal of Radioactive

Waste, Section 30470 – As any residual radioactive material that may remain at the Seaplane Lagoon will not be used by the City or future transferees, *Health and Safety Code, Division 104, Part 9, Chapter 5, commencing with Section 114705*, addressing “Containment of Radioactive Materials”, will be the basis for the CDPH to provide post-transfer oversight of the Seaplane Lagoon and to regulate the generation, handling, transportation and disposal of low-level radioactive waste that may be dredged from the Seaplane Lagoon in the future.

Vehicle Code, Div. 14.5, Transportation of Radioactive Materials, Section 33000 and 13 Cal. Code of Regs. Sections 1158, et seq. – Requires the California Highway Patrol, after consulting with the Department of Health Services, to promulgate regulations specifying the time that shipments may occur and the routes that are to be used in the transportation of cargoes of hazardous radioactive materials; the routes are established in *13 Cal. Code of Regs. Sections 1158, et seq.*

Porter-Cologne Water Quality Control Act of 1969, California Water Code, Division 7, Chapter 5.6, Section 13390 et seq. – This Chapter provides that the state and regional boards shall not grant approval for a dredging project that involves the removal or disturbance of sediment which contains pollutants at or above the sediment quality objectives unless the board determines all of the following: (a) the sediment will be removed in a manner that prevents or minimizes water quality degradation; (b) dredge spoils will not be deposited in a location that may cause significant adverse effects to aquatic life, fish, shellfish, or wildlife or may harm the beneficial uses of the receiving waters, or does not create maximum benefit to the people of the state; and (c) the project or activity will not cause significant adverse impacts upon a federal sanctuary, recreational area, or other waters of significant national importance.

California Health and Safety Code Section 39000 et seq. – The California Clean Air Act empowers regional air quality districts to enact rules and regulations that bring sources of air pollution into compliance with state and federal requirements. Section 41700 prohibits “discharge from any source whatsoever of such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to...the public.”

California Endangered Species Act, Fish and Game Code, Sections 2050 et seq. – This act mirrors the Federal Endangered Species Act and is implemented by the California Department of Fish and Wildlife.

California Code of Regulations, Section 8 – These regulations, implemented and enforced by the California Division of OSHA, complement the federal statutes governing worker health and safety in hazardous environments and in the presence of hazardous materials.

Executive Order (EO) D-62-02 (Sept. 30, 2002) – orders that the Regional Water Quality Control Boards to impose a moratorium on the disposal of decommissioned radioactive materials

into Class III landfills and unclassified waste management units, as described in Title 27, Sections 20260 and 20230, of the Cal. Code of Regulations.

1.6.3 Local Statutes, Regulations, and Institutional Controls

Bay Area Air Quality Management District (BAAQMD) Rules and Regulations – Local regulations regarding discharge of air contaminants in the BAAQMD, which includes the Site. Particularly germane with respect to redevelopment of the Site are BAAQMD Regulation 6, which addresses “Particulate Matter and Visible Emissions”, and Regulation 8, Rule 40, which addresses “Aeration of Contaminated Soil”.

Government Code, Chap. 4, San Francisco Bay Dredging, § 66600, et seq. – Any person or governmental agency wishing to place fill, to extract materials, or to make any substantial change in use of any water, land or structure, within San Francisco Bay, and the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC), must secure a permit from the BCDC.

California Government Code, Chap. 5.5, San Francisco Bay Dredging, § 66663, et seq. – These statutory provisions address the role of BCDC in the Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS). Any dredging and disposal activity in San Francisco Bay, marshes and some creeks requires a permit from BCDC. The BCDC works with its federal, state and local partners in the LTMS to manage dredging and disposal activities in the Bay Area. Formed in 1990, the LTMS Program is a collaborative partnership involving the regulatory agencies, resource agencies and stakeholders working together to maximize beneficial reuse of dredged material and minimize disposal in the Bay and at the Deep Ocean Disposal Site. The sponsoring agencies include the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the State Water Board, the Regional Water Board, and BCDC.

Environmental Restrictions and Covenants - The Site is currently subject to certain environmental restrictions that place restrictions on use of property apply to the Site. The Site 17 ESD prohibits future dredging in Seaplane Lagoon through ICs related to dredging and disposal of sediment. The Site 17 LUC RD provides specific requirements for implementation of the ICs identified in the ESD and illustrates the area requiring ICs, which is the whole of Seaplane Lagoon. The LUC RD specifies performance objectives to ensure protection of human health and the environment. These restrictions are implemented by provisions incorporated into the federal quitclaim deed and a Covenant to Restrict the Use of Property (CRUP) with DTSC.

City of Alameda Community Noise Ordinance – This ordinance affects the redevelopment project in that it restricts the hours of operation for heavy construction machinery.

Site Management Plan, Phase 1 Transfer Portion of Alameda Point -- Identification of measures to mitigate potential risks associated with redevelopment of the onshore portion of the Phase 1 Transfer of Alameda Point, which includes likely sediment handling areas for dredging projects at the Site. The Site Management Plan provides (1) guidelines to help ensure demolition and Intrusive Activities are conducted in a manner protective of the health and safety and the environment and (2) assistance in accessing relevant documents related to historical environmental investigation and remediation activities. Compliance with the Site Management Plan is required to the extent it does not conflict with this SMP.

City of Alameda CEQA Review – The environmental impacts of soil handling due to construction activities at Alameda Point, including sediment in the Seaplane Lagoon, are adequately analyzed in the environmental impact report (EIR) for the Alameda Point Project (State Clearinghouse No. 2013012043). The EIR was certified as having been prepared in compliance with CEQA, and the Alameda Point Project was approved by the City on February 4, 2014. As part of the certification and approval, the City adopted Resolution No. 2014-34, which adopted and incorporated into the Alameda Point Project all of the mitigation measures identified in the EIR and adopted a Mitigation Monitoring and Reporting Program for the Project.

The discussion of Impact 4.I-1 (potential of project construction to degrade water quality) in Section 4.I (Hydrology and Water Quality) the EIR concludes that the Project-related in-water construction in the Seaplane Lagoon would not have a significant impact on water quality because the documentation submitted to the U.S. Army Corps of Engineers, DMMO necessary to obtain regulatory permits for dredging would ensure the potential water quality impacts associated with in-water project construction activities would be less than significant, and no further water quality mitigation was required. For the same reasons, the discussion of Impact 4.I-5 (potential for maintenance dredging to affect water quality) concludes that maintenance dredging would have a less than significant impact on water quality and no mitigation is required.

Section 4.J (Hazards and Hazardous Materials) of the EIR discusses the potential risk due to radiological contamination at the Project site, including Installation Restoration (IR) Site 17. (EIR, pp. 4.J-18 to 4.J-21; see Figure 4.J-2 [Installation Restoration and Operable Unit Sites].) In the Environmental Setting portion of Section 4.J, the EIR discloses that “low levels of radioactive contamination exist within the confines of the former naval base,” specifically referring to IR Site 17. Although the EIR finds that “a review of previous radiological activities, cleanup actions, and release surveys has not identified any imminent threat or substantial risk to current tenants or the local community,” the identified sites were in various stages of evaluation. Since the EIR was certified, ongoing evaluation and cleanup of radiation sites has progressed. In the discussion of Impacts and Mitigation Measures, however, the analysis of Impact 4.J-2 (potential for construction to expose people to hazardous materials) concludes that potential

exposure to hazardous materials due to Project construction activities, including disturbance of contaminated soil, would be a significant impact. Mitigation Measure 4.J-2 requires the City to prepare a Site Management Plan, prior to the issuance of the first building or grading permit on the Project site, that is approved by USEPA, DTSC (in consultation with CDPH-Radiological Health Branch (RHB) for Ra-226 contamination issues), and the Regional Water Board. Mitigation Measure 4.J-2 was adopted and incorporated into the Project and reduces this impact to a less than significant level. The Site Management Plan, Phase I Transfer Portion of Alameda Point has been approved by the regulatory agencies. This SMP implements Mitigation Measure 4.J-2 specifically to address the potential risks to the public and construction workers associated with handling and exposure to radiological contamination in dredged soil (sediment).

2 ENVIRONMENTAL CONDITIONS

This section briefly summarizes the nature and extent of residual chemical occurrence at the Site, and the estimated potential health risks associated with the redevelopment plans.

The Navy has performed investigations of Alameda Point since the late 1980s and identified potential areas of concern based on past activities and/or releases. Thirty-four of these areas were carried through to the CERCLA Program as IR sites, because historical information suggested these areas could be impacted with chemicals. Extensive sampling has been conducted within each of the IR sites, as these were the identified potential CERCLA “source areas” at Alameda Point. Soil sampling conducted at each of the IR sites was comprehensive, in that generally samples were analyzed for metals, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic hydrocarbons (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and pesticides. In some cases, IR sites are grouped into Operable Units (OUs) for purposes of CERCLA decision making.

One IR site coincides with the Site. IR Site 17 is closed with IC restrictions on dredging; there are no restrictions on use of IR Site 17 with sediments in place. From the 1940s to 1975, approximately 300 million gallons of untreated industrial wastewater and stormwater that reportedly contained heavy metals, solvents, paints, detergents, acids, caustics, oil and grease, and Ra-226 (from radioluminescent paints) were discharged into a network of storm drains and carried, in part, through storm sewer outfalls directly into Seaplane Lagoon (the Site). The outfalls located in the northeast and northwest corners of the lagoon were the primary sources of contamination. Based on the results of site investigation and risk assessment, the CERCLA process identified the following Chemicals of Concern (CoCs) for IR Site 17 sediment: cadmium, chromium, DDx (the sum of dichlorodiphenyldichloroethane, dichlorodiphenyldichloroethylene, and dichlorodiphenyltrichloroethane), lead, and PCBs. Radionuclides were specifically evaluated as Chemicals of Potential Concern at IR Site 17. However, no radionuclide was identified as a risk driver in the ecological or human health risk assessments, and none was identified as a CoC. The CERCLA ROD notes that because “elevated concentrations [of Ra-226] are isolated within the [CERCLA] remediation areas, any potential risks will be addressed through the remedial activity of sediment removal and off-site disposal.” The CERCLA remedial action at the Site, which included dredging the northeast and northwest corners of the lagoon, has been successfully completed, including evaluation of Ra-226 in confirmation sediment samples at the boundaries of sediment removal. Confirmation sampling results document the residual levels of the metal and chemical CoCs and Ra-226 that remain in the sediment in the northeastern and northwestern areas of the lagoon. Sediment was the only affected environmental medium at the Site; no CoCs were identified for either surface water or groundwater. Although Ra-226 represents de minimis risk in undisturbed sediment, dredging and

subsequent sediment management activities potentially increase risks. Compliance with this SMP is intended to address such risks.

The Navy addresses petroleum related contamination at Alameda Point through the Petroleum Program. CERCLA generally does not consider petroleum contamination unless it is comingled with non-petroleum contamination. No significant petroleum contamination is known to be present in the water at the Site with sediments in place. Based on the dredging conducted by the Navy as part of the remediation, future dredging, particularly on the northeastern side of the lagoon, is likely to produce a sheen on the sediment and surface water that requires control measures such as isolation of the dredge area and skimming to ensure protection of wildlife. Site conditions based on previous dredging by the Navy also include a high likelihood of large debris within the sediment (previously including chunks of concrete to 6 to 8 feet in size, vehicle tires, and anchors), wire, and dense sediments.

IR Site 17 is delineated in Figure 3.

The purpose of the following description is to summarize the Site's history, environmental status, and associated potential human health risks. Further information regarding chemical analyses and remedial activities previously implemented at the Site is presented in applicable Navy reports, excerpts of which appear in Appendix B.

The summary for IR Site 17 below draws heavily from the Navy's October 2015, DRAFT FINAL *Finding of Suitability to Transfer Phase 2, Former Naval Air Station Alameda* (FOST). More detailed information for the CERCLA site is available in Appendix B to this SMP, which contains excerpts from various Navy and regulatory agency documents related to environmental investigations and remedial efforts at Alameda Point.

2.1 SEAPLANE LAGOON

IR Site 17, Seaplane Lagoon, consists of 111 submerged acres in the southeastern corner of Alameda Point. The Seaplane Lagoon was constructed in the 1930s by dredging a former tidal flat. During construction, seawalls were built along the eastern, western, and southern boundaries, and a bulkhead wall was constructed on the northern side. Four water access ramps are roughly evenly spaced along the northern perimeter. Two construction debris piles were stored along the northern shoreline of IR Site 17. From the 1940s until 1975, untreated industrial wastewater and stormwater were discharged into a network of storm drains and delivered to the Seaplane Lagoon through storm sewer outfalls in the northwestern and northeastern corners of the lagoon. IR Site 17 is grouped with IR Site 24 under OU-4B.

Total PCBs were identified as risk drivers in sediments at IR Site 17 based on the HHRA. Total PCBs, DDX, and metals (cadmium, chromium, and lead) were identified as risk drivers for ecological receptors.

The Final ROD for Site 17 was submitted in November 2006. The preferred alternative for contaminated sediment at Site 17 was dredging of sediment in the northeast and northwest corners of the Seaplane Lagoon, dewatering, and disposal at a permitted off-site waste disposal facility. Between October 2008 and December 2009, a time-critical removal action was conducted to remove the submerged construction debris piles located along the northern shoreline of Site 17. After evaluation of post-dredging data, additional sediment was removed. Remedial action for the sediments in the northeast and northwest corners of Seaplane Lagoon began in January 2011 and was completed in 2013. Analysis of confirmation sediment samples collected from the bottom and walls of the dredged areas at the completion of sediment removal verified that remedial goals had been achieved. The confirmation sampling also evaluated Ra-226 in sediment; no unacceptable radiological risks were found. The RACR documents that the CERCLA remedial action objectives have been achieved and concludes that no further action is required. During the processing of the sediment removed from the Seaplane Lagoon, 51 small items with Ra-226 (radioluminescent paint) were removed from the sediment and disposed of at a licensed facility. In recognition of the potential presence of similar items with radioluminescent paint may be present in the undredged areas of Seaplane Lagoon, the BCT completed an ESD that modifies the CERCLA decision in the ROD by adding an IC component to the remedy that prohibits dredging activities at the Site unless conducted in compliance with an SMP that is acceptable to FFA signatories and a project-specific work plan that is acceptable to DTSC and to CDPH-RHB in consultation with DTSC on radiation issues in Seaplane Lagoon.

The Final RACR was submitted in September 2014. USEPA concurred with the Final by letter dated March 17, 2016 and DTSC concurred by letter dated April 1, 2016. As noted in the March 2016 Final FOST, IR Site 17 is now suitable for transfer. The ESD was submitted in December 8, 2015, and approved on March 18, 2016. The ESD requires the implementation of a CERCLA IC to supplement current dredging regulations to ensure the protection of human health and the environment for potential future dredging of Seaplane Lagoon and disposal of that sediment by a future property owner. The LUC RD was submitted in December 8, 2015, and approved on March 17, 2016. The LUC RD defines the controls and responsibilities associated with implementation of the dredging IC defined in the ESD.

3 RISK MANAGEMENT MEASURES TO BE IMPLEMENTED AT THE SITE PRIOR TO REDEVELOPMENT

The following subsections describe the risk management measures to be implemented at the Site, prior to Site redevelopment, to minimize the potential for human exposures to residual radiological contamination potentially present at the Site. This section also includes procedural guidelines to ensure that redevelopment activities at the Site are conducted in accordance with applicable CERCLA ICs established in the ESD and LUC RD, deed, CRUP, and federal, state, and local environmental health and safety regulations.

This section is not intended to impose redevelopment requirements other than those that should be applied (when prudent) at any other urban waterfront construction project in the City, unless areas of known or suspected environmental contamination are involved.

3.1 WORKER HEALTH AND SAFETY

3.1.1 Site-Specific Health and Safety Plan

Site-specific HSPs are designed to help ensure that site construction activities are performed in a manner protective of the health and safety of site construction workers and of interim site users in the construction zone (i.e., within the fence that is erected at the beginning of construction activities to demarcate those areas where access needs to be restricted, discussed in Section 4.2). This SMP is designed primarily to ensure the health and safety of current and future Site users outside the immediate vicinity of construction; the development of a site-specific HSP is the responsibility of the contractor and is beyond the scope of this SMP. The site-specific HSP provides one mechanism through which workers involved in the redevelopment of the Site are informed of the presence of chemicals in the area prior to initiating work.

Any contractor's site-specific HSP must meet the following minimum requirements for that contractor to perform or oversee Intrusive Activities under this SMP:

- The HSP must be certified by a CIH and by a CHP (for radiological health portions);

The HSP must contain:

- A background section containing a description of the project, including work tasks, objectives, and personnel requirements;
- A discussion of project personnel organization and responsibilities, including names, assignments, responsibilities, reporting pathways, and contact information;

- A discussion of chemical hazards at the site, including acute and chronic health effects, and established occupational exposure limits of chemicals of potential concern identified at the site;
- A discussion of known and anticipated radiological hazards at the site and appropriate measures for worker protection;
- A discussion of physical hazards known or reasonably expected to be present at the site based on proposed construction, including but not limited to hazards associated with equipment use, environmental hazards (heat stress, etc.), and noise;
- A discussion of engineering controls that will be employed to minimize exposure of site workers and adjacent populations to chemicals in sediment, surface water, soil, and groundwater;
- A discussion of required worker qualifications, including training requirements, medical surveillance, and recordkeeping (see also [Section 3.1.2](#));
- An exposure monitoring plan, including personal workspace monitoring and sampling protocols, appropriate action levels, field monitoring logs, and monitoring equipment calibration specifications;
- A discussion of general safe work procedures, including site control and security measures, sanitation facilities, illumination, required personal protective equipment (types and rationale for selection), establishment of work zones and decontamination procedures, and documented daily tailgate safety meetings (during which the above information, particularly the information regarding the presence of chemicals and chemical hazards, is disseminated to all workers);
- A discussion of confined space entry locations, risks, and specific safety precautions and training requirements;
- Monitoring and general safety protocols to be used in the event of the discovery of areas of unknown contamination or subsurface structures; and
- Emergency response procedures, including a map to the nearest hospital, an evacuation plan, first aid procedures, fire protection and response procedures, spill containment procedures, and emergency references (key telephone numbers, addresses, etc.).

3.1.2 Health and Safety Training and Certification

Based on known environmental conditions at the Site, the use of personnel trained and certified in environmental health and safety procedures pursuant to OSHA 29 CFR 1910.120, HazWoper Training requirements (OSHA-certified), is required within the areas requiring ICs during Intrusive Activities. In order to comply with OSHA rules and regulations, which is the responsibility of all contractors at the Site, OSHA-certified workers would likely be required to be used if Intrusive Activities are to be performed.

Subject to the immediately preceding paragraph, this SMP does not require the use of OSHA-certified workers for Intrusive Activities at locations within the Site, unless such workers are required to comply with requirements under Cal/OSHA rules and regulations. If unknown areas of contamination or subsurface structures are identified pursuant to Section 4.3.3, compliance with OSHA rules and regulations would likely indicate that OSHA-certified employees should perform all remaining Intrusive Activities at the area in question.

Given the potential for encountering diffuse or discrete radioactive materials in Site sediments, personnel involved in removal activities such as dredging or other actions involving contact with Site sediments shall complete site-specific radiological awareness training, and, if appropriate, radiation worker training, prior to engaging in such actions.

4 RISK MANAGEMENT MEASURES TO BE IMPLEMENTED AT THE SITE DURING REDEVELOPMENT

This section identifies appropriate risk management measures to be implemented at the Site to minimize the potential for human or environmental exposure to chemicals or radioactive materials mobilized by construction, including dredging, activities. Where applicable, the risk management activities address each individual environmental medium, and provide risk mitigation efforts for each.

This section is not intended to impose redevelopment requirements other than those that should be applied (when prudent) at any other urban construction project in the City, unless areas or discoveries of known or suspected environmental contamination are involved.

4.1 IDENTIFICATION OF CONSTRUCTION/REDEVELOPMENT ACTIVITIES THAT COULD IMPACT HUMAN AND/OR ENVIRONMENTAL HEALTH

Construction, including dredging and sediment handling, and redevelopment within the areas requiring ICs are likely to include various site preparation activities that will disturb sediments. The following activities have the potential to impact human or environmental receptors:

- Unauthorized access to the Site during construction;
- Dust generation associated with Intrusive Activities, movement of construction and transportation equipment, and winds traversing exposed soils, including sediment, or stockpiles;
- Internal radiation exposure from ingestion or inhalation of loose radioactive material associated with discrete or diffuse radioactive material present in dredged sediments;
- Off-Site transport of sediment by surface runoff;
- Contamination of soil and/or groundwater from the stockpiling of saturated, contaminated soil;
- Stockpiling of contaminated sediment, especially sediment whose chemical concentrations would characterize the sediment as “hazardous waste”; and
- Inadvertent off-Site transport of sediment on truck wheels or from unsecured truck beds.

4.2 ACCESS CONTROL DURING CONSTRUCTION/DREDGING

The potential for unauthorized access to the construction/dredging site and the accompanying risk of exposure to contaminated sediment shall be managed as follows, at a minimum:

- A 6-foot-high chain-link fence shall be erected around the construction site perimeter, unless site conditions warrant the use of a taller fence. Access to the Site will be restricted by control points (i.e., gates) that will be monitored, and locked during non-construction hours.
- “No Trespassing” signs in both English and Spanish shall be posted every 500 linear feet along the fence line.
- If required pursuant to Proposition 65, public notices shall be posted along the fence line alerting the public that chemicals with known adverse health effects have been found in soil and groundwater at the Site.
- Appropriate postings shall be used to identify any radiologically controlled areas.

These are standard construction-site security measures that are required to be implemented even in the absence of any contaminants in sediment, soil, and/or groundwater.

4.3 RISK MITIGATION TO ADDRESS CHEMICAL CONTAMINANTS IN SEDIMENT

This section pertains primarily to non-radiological contaminants that could be present in sediment removed from Seaplane Lagoon. However, some requirements and protocols addressing potential radiological contamination have been included to avoid redundancy. Requirements and protocols specific to potential radiological contamination or radioactive items are given in [Section 4.4](#).

4.3.1 Sediment Disposal Profiling

Proper handling, waste profiling, and disposal are needed for sediment removed from Seaplane Lagoon. This section is intended to provide handling protocols for sediment that is or may be hazardous waste (unless/until demonstrated otherwise).

The IR Site 17 remedial action removed contamination in accordance with the ROD and remedial action work plan. Should sediment suspected to be “hazardous waste” under the regulations listed above in [Section 1.6](#) be dredged or otherwise handled, the material should be managed as hazardous waste pursuant to CCR Title 22, Division 4.5 and the following handling protocols shall be implemented:

- Excavation and transportation shall be performed by OSHA-certified personnel;
- Sediment shall remain on site until waste profiling is complete, unless disposed of as hazardous waste within 90 days;

- Sediment confirmed or presumed to contain radiological contamination or discrete radioactive items shall be segregated from sediment determined to be free from radiological contamination and managed pursuant to Section 4.4 of this SMP;
- Breathing zones shall be monitored for radiological material, dust, and VOC concentrations as specified by the site-specific HSP;
- Trucks transporting these sediments shall be loaded atop polyethylene sheeting, or equivalently impermeable and durable sheeting, and decontaminated, as necessary, prior to departing the loading area, and all loads shall be covered during transport;
- Sediment stockpiles shall be:
 - Managed to segregate sediment of different origins, including conspicuous and durable labeling or posting of stockpiles to display their origins
 - Tracked in compliance with a stockpile tracking system that is specified in the approved project-specific work plan to ensure multiple checks before any stockpiles are moved or disposed
 - Placed atop and under anchored, impermeable sheeting
 - Limited in volume to 1,000 cubic yards (yd³)
 - Managed in accordance with a SWPPP that complies with the State Water Resources Control Board (SWRCB) Construction General Permit
 - Access-restricted via erection of a 6-foot-high chain link fence with locked access points
 - Inspected daily, with inspection records maintained pursuant to Section 4.3.2.5
 - Posted with appropriate signage indicating the presence of potentially hazardous waste, including related radiological controls, as required
- Drainage basins shall be protected in accordance with a SWPPP that complies with the SWRCB Construction General Permit;
- Sediment shall be either characterized as non-hazardous waste or disposed of as hazardous waste within 90 days; and
- Should sediment be determined to be hazardous waste, transportation shall be manifested under the appropriate RCRA or California regulations; off-site disposal shall be at a federal- or state-licensed hazardous waste treatment or disposal facility, as appropriate; and disposal documentation shall be provided to the CBO.

Additional sampling for waste profiling may be required by the disposal facility prior to acceptance of the waste.

4.3.2 Sediment Management Protocols During Site Redevelopment

All handling, movement, stockpiling, and reuse of sediment within the Site is subject to protocols delineated in this section, except for sediments addressed in Section 4.3.1. Section

4.3.3 specifies contingency protocols to manage risk in the event that residual contamination, managed by ICs through implementation of the ESD and LUC RD, or unknown contamination or structures are encountered.

4.3.2.1 Sediment Movement and Handling

Sediment may be handled and moved from one portion of the Site to another, as needed, within the limitations established in Section 4.3.2.6. The movement and handling of sediment will be in compliance with applicable license conditions, if any, and regulatory requirements. Potential impacts associated with movement and handling are addressed through adherence to the sediment stockpile management procedures (this section), the dust control measures (Section 4.5), and the storm water pollution prevention control measures (Section 4.6.1) detailed in this SMP. Additionally, sediment movement shall be conducted pursuant to any traffic management plan that is applicable to the project.

4.3.2.2 Sediment Stockpiles and Associated Dust Generation

Sediments dredged from the Site may require stockpiling. The risk management measures discussed below address potential risks from wind transport, surface erosion, and unauthorized access to these stockpiles.

Sediments whose chemical concentrations would characterize the sediment as "hazardous waste" if the sediment were deemed a waste shall not be stockpiled for longer than 90 days. Should the sediments meet any of the hazardous waste criteria, they will be disposed offsite accordingly within 90 days of generation.

As required by Section 4.3.1, with respect to sediments known or suspected of being "hazardous waste" under law, stockpiling and other sediment management shall segregate sediments of different origins.

All stockpiles shall be placed atop water-impermeable plastic sheeting within a sediment berm, or equivalent sediment-trapping mechanism, as per the SWPPP. Several alternative measures are available to minimize the generation of dust from sediment stockpiles:

- Cover the stockpiles with anchored impermeable sheeting,
- Enclose the stockpiles in a covered structure,
- Hydroseed the stockpiles,
- Apply a non-toxic soil stabilizer to the surface of the stockpiles, or
- Regularly spray stockpiles with water.

One or more of these dust mitigation methods shall be selected based on field conditions, such as weather and the size of the stockpile(s). Selection of stabilization efforts shall be at the contractor's discretion, provided compliance with the BAAQMD regulations is ensured. These sediment stockpile management protocols are consistent with what is required by BAAQMD for the management of soil stockpiles in a Bay Area construction setting.

4.3.2.3 Sediment Stockpiles and Erosion Management

To help ensure that stockpiled sediments do not erode and potentially impact off-site receptors, all stockpiles shall be protected in accordance with a SWPPP that complies with the SWRCB Construction General Permit (regardless of the presence of potential contaminants). Collection, containerization, profiling, and disposal of any water that collects within any sediment berm surrounding the stockpile shall be in accordance with applicable regulations.

4.3.2.4 Sediment Stockpiles and Access Management

Provided stockpiles are located within active construction zones, the access restrictions set forth in Section 4.2 will be sufficient to control stockpile access. However, should the stockpile be located outside an active construction zone, access will be controlled using a chain-link fence with locked gates and appropriate warning signs in English and Spanish.

Stockpiles of the following types of sediment shall be segregated from sediments of different origin and surrounded by a 6-foot-high, locked, chain-link fence until determined to be non-hazardous or disposed off-Site within 90 days:

- Sediment stockpiles awaiting waste profiling,
- Sediments whose chemical concentrations would characterize the sediment as "hazardous waste", and
- Sediment that has been radiologically characterized and confirmed or presumed to contain radiological contamination or discrete radioactive items.

4.3.2.5 Sediment Stockpiles and Monitoring

Daily inspection of stockpiles shall be conducted for stockpiles of contaminated or uncharacterized materials and any stockpile located outside an active construction zone. All stockpiles shall be monitored in accordance with a SWPPP that complies with the SWRCB Construction General Permit (regardless of the presence of potential contaminants). All inspection activities shall be performed by or supervised by a QSP. The QSP may delegate any

or all of these activities to an employee appropriately trained to do such task(s). Inspections of the integrity of the stockpile shall include an assessment of the following:

- The integrity of erosion control efforts;
- The effectiveness of access control measures; and
- The need for repairs to maintain erosion or access control.

Tears in a stockpile cover shall be repaired or the cover replaced if the tears exceed 6 inches in length and one-eighth inch in width. Sediment washouts are to be replaced and recovered.

To facilitate adherence to the SMP, a stockpile log shall be kept by the developer's designated environmental professional, and shall be made available to the City upon request. The log shall include the following information:

- Date(s) of sediment generation;
- Approximate location of dredging activity(ies) generating stockpiled sediments;
- Location of stockpile;
- Final destination of stockpiled sediments;
- Log of any erosion control measures implemented or modifications made; and
- Stockpile inspection documentation.

4.3.2.6 Offsite Sediment Disposal

Dredged sediments must be fully profiled and managed accordingly. If profiling determines that sediments are hazardous waste under RCRA or California hazardous waste regulations, such sediments will require appropriate handling and disposal at a licensed hazardous waste treatment, storage, and disposal facility. The EPA off-site rule expert for Region 9 will be consulted before any hazardous waste is disposed off-site.

4.3.2.7 Sediment Disposition

Sediment reuse is subject to the same environmental practices and considerations that are applicable to such activities in other urbanized areas of the City, except to the extent this section provides more specific direction. For Alameda Point projects, the Regional Water Board's Environmental Screening Levels (ESLs, online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml) are planned to be used, and the screening levels selected will be appropriate for the current and future land use of the subject project.

Sediment reuse shall adhere to the following three principles:

- Sediment from a “contaminated area” that does not exceed ESLs is not necessarily equivalent to sediment from a “clean area”.
- Sediment from a “contaminated area” that does not exceed ESLs may be reused at the site where the release or cleanup occurred but not in a “clean area”.
- Contaminated sediment can be reused in areas with comparable or greater contamination of the specific CoCs.

For purposes of this section, a “clean area” shall be an area where soil does not appear to contain unknown (i.e., unexpected) contamination (see Section 4.3.3). In addition, a “clean area” must be one of the following areas:

- An area that is not within a CERCLA site or a Petroleum Program site;
- An area within a CERCLA site, but outside the area where a release occurred or to where contamination may have migrated;
- An area within a CERCLA site where the Navy has excavated and backfilled with clean soil;
- An area within a closed Petroleum Program site for which the site closure package concludes that no significant release has occurred; or
- An area within a closed Petroleum Program site that had a release, but outside the area where the release occurred or to where contamination may have migrated.

Conversely, for purposes of this section, “contaminated area” shall mean any of the following areas:

- An area where soil appears to contain unknown (i.e. unexpected) contamination (see Section 4.3.3);
- An area within a CERCLA site or within a closed Petroleum Program site where a release has occurred or to where contamination may have migrated, except to the extent the area has been excavated and backfilled with clean soil; or
- Any area within an open Petroleum Program site.

Sediment from the Site may be reused in another “contaminated area” with comparable or greater contamination of the specific CoCs. With respect to carcinogenic PAHs, reuse in another “contaminated area” is also acceptable when the sediment being reused has benzo(a)pyrene equivalent levels that do not exceed the Alameda Point-specific ambient levels, which are (a) no soil has greater than 1 milligram per kilogram (mg/kg) and (b) the 95% upper confidence limit of the mean of analytical results from samples that appropriately characterize the soil is no greater than 0.62 mg/kg.

Sediments to be relocated and reused shall be sampled according to American Society for Testing and Materials (ASTM) E1903-11, *Standard Practice for Environmental Site*

Assessments: Phase II Environmental Site Assessment Process, and ASTM D4700-91, *Standard Guide for Soil Sampling from the Vadose Zone*. Dredged sediments intended for relocation and reuse are subject to the following analytical requirements as needed to supplement existing validated characterization data:

- One discrete sample from every 50 yd³ (at most) for VOCs (including benzene, toluene, ethylbenzene, xylenes, and naphthalene) by USEPA Method 8260C;
- One composite sample from every 250 yd³ (at most) for Title 22 metals by USEPA Methods 6020/6010B/7470/7471A, and SVOCs (including PAHs) by USEPA Method 8270C, with selective ion monitoring;
- One composite sample from every 500 yd³ (at most) for TPH by USEPA Method 8015B, pesticides by USEPA Method 8081A, and PCBs by USEPA Method 8082,
- Closed-system purge and trap for volatile organics in soil by USEPA Method 5035, and
- Any other analytical methods that the disposal site requires, such as toxicity characteristic leaching procedure (TCLP) and radiological methods.

Composite sediment samples shall be created from one subsample from every 50 yd³ (at most).

The analytical requirements for dredged sediments intended for reuse consist only of analytes with remedial goals in the CERCLA ROD.

Composite sampling of unanalyzed stockpiled sediment is unacceptable, unless the sediment originates from the same source area. In addition, if samples are composited, they should be from the same in-place depth interval (before dredging and stockpiling) and not from different depth intervals.

The direction provided in this section is intentionally conservative in order to be appropriate for Site-wide applicability. On a case by case basis, departures from this section may be acceptable. However, proposed reuse of sediment that departs from this section shall be proposed to the FFA signatories for concurrence prior to implementation.

4.3.2.8 *Sediment Transportation*

Sediments requiring transportation must be fully profiled. If profiling determines the sediment is hazardous waste under RCRA or California hazardous waste regulations, the sediment must be managed in accordance with RCRA and/or California waste tracking protocols. If profiling determines that the sediment is a designated waste, it will be managed and transported under Bill of Lading protocols.

4.3.3 Contingency Protocols for the Discovery and Management of Residual Contamination or Unknown Contamination or Structures

During dredging or other construction at the Site, residual contamination may be encountered as discussed in the ESD and LUC RD. If such residual contamination is encountered, the risk mitigation measures described in the following subsections should be implemented.

Prior to beginning construction/dredging at the Site, the contractor shall review available information to identify any known areas of contaminant presence, including contaminant location, type, and concentration. As described in Section 3.1.1, the site-specific HSP, to be prepared by contractors at the Site, shall incorporate a summary of the specific chemical constituents present at the Site to which workers may be exposed.

Monitoring protocols should be in place to identify any residual sediment contamination that is not consistent with the review of available information. Such conditions may be noted by visual or olfactory differences, or differences in physical composition from surrounding sediments, and shall include, but not be limited to, the following:

- Oily or shiny sediments;
- Sediments saturated with a liquid other than water (i.e., free-phase liquids);
- Sediments with an appreciable chemical or hydrocarbon odor;
- Sediments with elevated organic vapor measurements (as measured with a photoionization detector, flame-ionization detector, or equivalent);
- Sediment discoloration not related to lithologic facies changes;
- Sediments exhibiting radiological measurements that are significantly above those of the IR Site 17 remedial action sediment confirmation samples; and
- Radiological devices that are significantly different from the 51 small radiological items encountered in sediment during the IR Site 17 remedial action.

Aside from the residual conditions described above or in the ESD, LUC RD, or RACR, if areas of conditions that are not consistent with the review of available information (unknown or not reasonably expected contamination) are encountered, work shall cease in that area immediately and the City and either the Regional Water Board staff (if apparently petroleum-related) or DTSC (if apparently not primarily petroleum-related) shall be contacted (within ten days, unless applicable law requires more immediate reporting) and their assistance requested in determining further sampling or mitigation. If it is unclear whether the residual conditions are primarily petroleum-related or not, then both Regional Water Board staff and DTSC shall be contacted and their assistance requested. To the extent the Site has not been delisted from the CERCLA NPL, USEPA is to be contacted concurrently with DTSC whenever DTSC must be contacted. Contact information for BCT representatives and the City's CBO is provided in Section 1.5. Further

construction in the area shall not proceed until authorized by the regulatory or City representative. Materials that trigger these protocols shall be handled pursuant to Section 4.3.1.

To minimize down time, samples should be collected immediately and analyzed by a State-certified laboratory for any suspected contaminants. Target analytes should be determined with input from the BCT and the City and shall be based on a review of field evidence, as well as existing information about the area. If the unidentified material proves to be unacceptably contaminated, further actions shall be undertaken consistent with applicable Cal/OSHA rules and regulations, and under proper regulatory oversight.

4.4 RISK MITIGATION TO ADDRESS RADIOLOGICAL CONTAMINANTS IN SEDIMENT

Any dredging or similar actions involving removal of sediments from the Site shall be performed by a contractor(s) holding the requisite radioactive materials licenses acceptable to the State of California. Contractors shall prepare and implement a project-specific work plan(s) that, at a minimum, addresses the radiological control provisions and requirements set forth in this SMP. This SMP and a project-specific work plan do not apply to activities, such as weighing anchors, that may incidentally surface small amounts of sediment, for example, less than one cubic foot of sediment.

Some of the radiation control measures defined herein will be necessary only if diffuse radiological contamination is present in dredged sediments. The pre-dredge sampling required under Section 4.4.2 will provide initial information regarding the presence of diffuse radioactive material in the area(s) to be dredged. However, the absence of diffuse radioactive material in the pre-dredge samples will not provide a sufficient basis for assuming diffuse radioactive material will not be encountered as dredging activities progress. Hence, the possibility of diffuse radiological contamination must be appropriately considered in the work plan(s) prior to beginning any work to ensure that appropriate controls are implemented in a timely manner in the event diffuse radioactive material is encountered.

The site-specific work plan(s) required by this subsection shall be reviewed and approved by the City and DTSC prior to any actions involving removal of sediments from the Site. DTSC, in consultation with CDPH, will be the principal agency providing oversight of radiological work practices and ensuring radiological regulatory compliance for sediment removal activities performed under this SMP.

The following subsections identify elements and, where appropriate, minimum requirements that the site-specific work plans and procedures must address prior to beginning large-scale sediment removal actions from the Site. The provisions in the following subsections are intended to replicate the corresponding sections in the BCT-approved CERCLA Remedial Action Work Plan

(RAWP) for IR Site 17 whenever applicable and will be in compliance with the ESD and LUC RD.

4.4.1 Worker Training Requirements

Contractors shall implement radiological awareness training and radiation worker training, as appropriate, for all site workers. An example of appropriate radiation worker training may be found in Section 4.2.2 of the IR Site 17 RAWP. A graded approach to training, whereby requirements are commensurate with expected work duties and potential for exposure to radioactive materials, is acceptable provided such training meets all applicable license conditions and regulatory requirements.

4.4.2 Pre-Dredge Characterization of the Intended Dredging Area

Prior to beginning any large-scale sediment removal actions from the Site, representative sampling shall be completed to screen for the presence of diffuse radioactive materials in the area(s) to be dredged. Significant amounts of diffuse radiological contamination are not expected, so the presence of such would warrant a thorough review and evaluation of any existing site-specific work plan(s).

Samples shall be prepared and analyzed for Ra-226 via gamma spectrometry via USEPA Method 901.1 or equivalent, following a sufficient period of time to ensure equilibrium of the bismuth-214 progeny. Analyses shall be performed by a laboratory accredited under the National Environmental Laboratory Accreditation Program and certified by the state of California for radiochemical analyses of environmental samples.

It may be desirable for the contractor(s) to develop a standalone work plan and/or sampling and analysis plan specifically for the required ex ante sampling of the intended dredging areas. Any requirements for pre-dredge screening of sediments for CoCs should be considered in conjunction with the requirements for radiological screening. The pre-dredge characterization sampling should reflect applicable elements of the work instruction utilized for the pre-dredge sampling performed in support of the environmental remediation actions completed by the Navy for the Site, which is included in Appendix C of the IR Site 17 RAWP. The work instruction will be provided by the individual contractor.

Selection of the number, type, and distribution of the pre-dredge sample locations may require a combination of judgment and systematic methods. Depending on the circumstances, an iterative approach to the pre-dredge sampling may be warranted. It may be desirable to first perform composite-type sampling to screen for the presence of diffuse radioactive material over a larger

area of the lagoon bottom, followed by core collections, as appropriate, to establish depth distribution.

Pre-dredge characterization data will be used for screening purposes only. It will not be used to characterize sediment for compliance with radiological release or waste disposal criteria.

4.4.3 Radiological Release Criteria

4.4.3.1 Land Areas and Sediments

Unless otherwise specified in an approved, project-specific work plan, the radiological release criterion for diffuse Ra-226 in Site sediments to be disposed or otherwise dispositioned as non-radioactive shall be 1 picocurie per gram (pCi/g) above the average background concentration. For the environmental remediation actions completed at the Site and/or surrounding areas of Alameda Point, the Navy, with concurrence from the USEPA, applied an average background concentration for Ra-226 in Site sediments of 0.56 pCi/g. This value was determined through sampling of an upland trench area at Alameda Point comprised of the San Francisco Bay sediments from which the area was constructed.

One hundred percent scanning will be required to demonstrate that the Ra-226 concentrations in dredged materials and land areas used for handling and processing do not exceed the applicable release criterion. Additional measurements, such as direct surveys and sampling, will be required to augment scanning results in the event scanning alone is not sufficiently sensitive to demonstrate compliance with the release criterion. Unless otherwise specified in an approved, project-specific work plan, adequate scan sensitivity shall be determined using the methods presented in Section 4.9 of the IR Site 17 RAWP, or equivalent. Additional methods, such as systematic sampling in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), will be required in the event an adequate scan sensitivity cannot be achieved.

Unless otherwise specified in an approved, project-specific work plan, the screening criterion for discrete radioactive items that might be present in sediments dredged from the Site will be derived for project-specific gamma scanning instrumentation using the method described in Section 4.7.1 of the IR Site 17 RAWP. Average instrument background readings and the corresponding standard deviations will be determined for an appropriate reference area(s) or material in a manner consistent with the methods of Section 4.6.2 of the IR Site 17 RAWP.

4.4.3.2 Surfaces, Vehicles, and Equipment

Release criteria for potentially-contaminated surfaces and items, such as vehicles, equipment, or dredged debris that cannot be considered a discrete radioactive item, shall be protective of human health and the environment and comply with all applicable federal, state, and local regulations. The decontamination criteria set forth in Nuclear Regulatory Commission Regulatory Guide 1.86 serve as de facto industry standards for radiological clearance of surfaces. Volumetrically-contaminated items (e.g. debris) or other items that cannot be adequately assessed for radioactive contamination will have to be disposed as radiological waste.

4.4.4 Instrumentation

Applications for which appropriate radiation survey or measurement instrumentation should be available are expected to include, but not be limited to, the following.

- Scan and direct surveys of land areas, dredged sediments, or other volumetric media for the presence of diffuse and discrete contamination.
- Surveys of surfaces, vehicles, and equipment for fixed plus removable contamination.
- Assessments of removable contamination on surfaces, vehicles, and equipment.
- Assessment of airborne radiological contamination in the breathing zone and ambient air.
- Personnel frisking, for the whole body and extremities, as appropriate.
- Measuring radiation dose or exposure rates.

All instrumentation used for radiation surveys and measurements under this Plan shall be appropriate for the expected environment and conditions, properly calibrated, and in good working condition. Instruments shall be operated only by appropriately trained and qualified personnel. Contractors shall demonstrate that any instrumentation used to detect or quantify diffuse or discrete Ra-226 for the purpose of radiological free release is sufficiently sensitive with respect to the applicable radiological release criteria. Instrument sensitivities will be determined using the methods described in Section 4.9 of the IR Site 17 RAWP unless otherwise specified in an approved, project-specific work plan. Instruments used for radiation protection or radiological control purposes, including, but not limited to, measurements of dose or exposure rates, surface contamination levels, or airborne concentrations, shall likewise be demonstrated to be sufficiently sensitive for those purposes in the same manner. Contractors are encouraged to have pressurized ion chambers, or equivalent, available for assessing energy-dependence effects for dose or exposure rate measurements performed using sodium iodide detectors.

In addition to appropriate instrumentation for field measurements, contractors shall also have access to appropriate laboratories or service providers capable of analyzing sediment and other

media samples, as appropriate, for Ra-226 concentration. Such laboratories or service providers shall meet the qualifications specified in Section 4.4.2 of this SMP.

4.4.5 Baseline Radiological Surveys

Baseline radiological surveys shall be performed in any work or support areas where there is a reasonable potential for radiological impact from sediment handling activities. This includes any areas intended for use as laydown or dewatering of dredged materials, or other areas where dredged sediments and debris are to be offloaded, handled, stockpiled, screened, packaged, etc. It also includes any areas to be used for equipment staging, wash down, decontamination, waste handling, etc. The purpose of the baseline surveys is to rule out the presence of any preexisting radiological impact, or, in the event preexisting impact is discovered, to determine its extent in any areas that will be subject to radiological controls or otherwise potentially impacted by sediment removal actions.

4.4.6 Radiological Controls and Radiologically Controlled Areas

Strict radiological controls shall be implemented and maintained at all times to ensure protection of workers, the public, and the environment from any radioactive materials encountered during sediment removal actions from the Site. Radiologically controlled areas (RCAs) shall be established for any local areas where there is a reasonable potential for radiological impact from sediment removal actions or where Site sediments or radioactive materials segregated from Site sediments could otherwise be encountered.

4.4.6.1 Access Controls

All RCAs will be properly segregated, secured, and posted such that unauthorized individuals cannot unknowingly gain access. Access control requirements are presented in Section 4.2.

4.4.6.2 Routine Surveys and Contamination Control Measures

Radiation surveys shall be conducted on a routine basis to assess radiological conditions and ensure that no radioactive contamination has occurred. Such surveys may include, but not be limited to, dose or exposure rate surveys, direct surveys for surface contamination, and swipe surveys for removable contamination. Routine surface contamination surveys should be performed regardless of the presence of diffuse radioactive materials having been identified in Site sediments.

4.4.6.2.1 Radiologically Controlled Areas

Points of access to/egress from RCAs will be staffed by a trained radiation control technician(s) or otherwise outfitted with appropriate contamination survey instrumentation to prevent the uncontrolled release of radioactive material. This applies to both onshore RCAs and any access/egress areas established for offshore activities. All personnel and equipment shall be screened for radioactive materials or contamination upon exiting RCAs in accordance with established radiation protection practices.

4.4.6.2.2 Vehicles and Heavy Equipment (Onshore)

All vehicles and equipment shall be properly surveyed prior to exiting any radiologically controlled area. The extent of radiological control and decontamination measures needed for vehicles and equipment involved in the removal of Site sediments will depend on whether diffuse radiological contamination is indeed present. Nonetheless, appropriate, graded contamination monitoring and control measures, including a properly-designed and contained decontamination area, should still be readily available in the event diffuse or dispersible contamination is encountered at some point.

4.4.6.2.3 Offshore equipment

Dredges, tugboats, and other water-based equipment used in the removal of Site sediments shall be routinely surveyed for surface contamination. Surveys should be performed at locations most likely to be affected by diffuse radioactive contamination in sediment or suspended in the water. These include boat decks and crew areas, as well as sampling of hull exteriors below the waterline. Section 4.6.4.2 of the IR Site 17 RAWP provides guidance for performing routine radiological surveys of water-based equipment. However, the appropriate frequency and extent of such surveys may vary depending on whether diffuse radiological contamination, i.e., greater than two times background, is known to exist in removed sediments. In general contamination surveys of potentially-contaminated above-water surfaces shall be performed at least daily (on working days). Below-water surfaces shall be screened weekly.”

4.4.6.3 Stormwater, Spill, and Erosion Control

Appropriate Best Management Practices (BMPs) shall be applied to ensure there are no uncontrolled releases of radioactive materials from any RCAs established during any removal actions involving sediments from the Site. Appropriate BMPs will be implemented as described in Section 3.1.5 and Appendix G of the IR Site 17 RAWP, unless explicitly specified otherwise in the project-specific work plan approved for sediment removal actions.

4.4.6.4 Dust Control and Ambient Air Monitoring

The need for dust control and air monitoring measures will be driven by the moisture content of dredged sediments. Unless otherwise stated in an approved project-specific work plan, the dust control practices described in Section 4.5.1.1 of the IR Site 17 RAWP will be applied to ensure there is minimal dust generation from handling of Site sediments regardless of the presence of dispersible radioactive material. As a precaution, daily monitoring of the ambient air shall be performed to ensure any airborne releases of Ra-226 are maintained As Low As (is) Reasonably Achievable (ALARA). Such monitoring should be performed in the vicinity of areas where Site sediments have been stockpiled or otherwise accumulated.

4.4.7 Personnel Monitoring

Discrete radioactive items containing Ra-226 may be encountered in sediments removed from the Site. Personnel dosimetry, including whole body and extremity monitoring, as appropriate, shall be worn by any personnel having a potential to encounter radioactive materials in or from Site sediments in the course of their job duties. All whole body monitoring for external dose shall employ dosimeters and dosimetry processors certified under the National Voluntary Laboratory Accreditation Program.

While unlikely, a potential may exist for ingestion or inhalation of dispersible radioactive material from discrete items or diffuse contamination present in sediments removed from the Site. Contractors should therefore have contingencies in place for implementing appropriate bioassay measures should field conditions indicate the possibility of an intake.

4.4.8 Radiological Monitoring of Dredged Debris

Any debris encountered and removed from the Site during dredging operations shall be appropriately screened for radiological contamination and, if contamination is found, decontaminated to the extent practical. If decontamination to meet the applicable release criteria cannot be achieved, then the debris must be handled as low-level radioactive waste (LLRW).

Debris refers to items substantially larger than the 51 discrete radioactive items encountered in sediment during the Navy's remedial actions. Such debris is not expected to be intrinsically radioactive, but could potentially be radiologically contaminated.

Debris shall be placed in suitable containers or otherwise contained to prevent migration of potentially-contaminated sediment or liquids. Debris shall be rinsed or cleaned as necessary to remove any adhering or entrained sediment. Removed sediment shall be transferred to the sediment dewatering area or otherwise staged for characterization pursuant to Section 4.4.9.

Accumulated liquids will be captured and stored in tanks, drums, or equivalent pending radiological characterization in accordance with [Section 4.4.10](#). Once suitably cleaned, debris shall be screened for radiological contamination and decontaminated as necessary to meet the radiological release criteria defined in [Section 4.4.3.2](#) for surfaces, vehicles, and equipment. Alternatively, if decontamination is impractical or cannot be achieved then the debris shall be segregated and handled as LLRW in accordance with [Section 4.4.10](#).

A tracking log or equivalent shall be maintained for any debris removed from Seaplane Lagoon during sediment removal operations. The log shall include the debris' origin, a physical description, a unique identifier, location and movement information, radiological characterization information, decontamination status, and other, pertinent information, as appropriate.

4.4.9 Screening of Dredged Sediments for Radioactive Materials

Sediments to be removed from the Site must be thoroughly screened for the presence of both discrete radioactive items (similar to the 51 small items encountered in sediment during the Navy's remedial actions) and any diffuse radioactive contamination before it is disposed or otherwise utilized as non-LLRW. Prior to screening, sediments should be sufficiently dewatered such that free liquids are not present.

It is anticipated that radiological screening of dredged sediments will be accomplished by scanning the material in shallow lifts having a depth selected to minimize the effects of self-shielding while at the same time providing sufficient throughput. Alternate methods to screening sediments (e.g. conveyor-based monitoring) may also be effective at meeting the radiological clearance requirements, but having the material spread out for scanning offers advantages when it comes to reinvestigations and confirmatory analyses. Contractors are encouraged to employ "scan and record" survey methods whereby scanning data may be analyzed after the fact using a combination of graphical and mathematical methods. In the event that gamma scanning alone is not sufficiently sensitive to demonstrate compliance with the radiological release criteria for Site sediments then additional screening methods, such as direct measurements and systematic sediment sampling (for diffuse activity) in accordance with the MARSSIM, will also need to be applied. In such cases, sediments should not be relocated or otherwise disturbed until sampling results are known.

Any discrete radioactive items or volumetrically-contaminated material discovered shall be properly segregated and controlled pending offsite disposal, pursuant to [Section 4.4.10](#). The stockpile tracking provisions of [Section 4.3.1](#) shall apply to any movements of sediments. A tracking log or equivalent shall likewise be used to record information about any discrete radioactive objects that are discovered. This information shall include the item's origin, a unique

identifier, a physical description, dose or exposure rate measurements, activity estimates, movement and location information, and other pertinent information, as appropriate.

4.4.10 Radioactive Waste Management

Dredging operations in SPL could result in the generation of solid or liquid radioactive wastes. Potential solid radioactive wastes include sediments containing diffuse Ra-226, discrete items, similar to the 51 items encountered in sediment during prior remedial actions performed by the Navy, or larger, radiologically-contaminated debris. Personal protective equipment, wipes, liners, etc. may also become contaminated and require handling as solid waste. Potential liquid radioactive wastes include liquids from sediment dewatering, stormwater runoff, or rinsing or decontamination of equipment.

Any solid or liquid waste materials determined to be LLRW, either presumptively or by radiological characterization, shall be segregated from non-LLRW materials and packaged or stabilized appropriately to ensure containment prior to and during loading and transportation to the disposal facility. Liquid wastes shall be stored in tanks, drums, or equivalent. LLRW shall be stored within an established RCA with appropriate access controls and radiation protection protocols.

Materials deemed to be LLRW shall be characterized, treated (e.g. solidified), packaged, loaded, and shipped as required to meet the requirements of the disposal facility and applicable state and federal transportation regulations. LLRW shall be carried by a licensed/certified hazardous material carrier.

4.4.11 Post-Action Radiological Clearance Surveys

At the completion of all sediment removal actions, all RCAs and any other areas where potentially radioactive materials were present will be thoroughly surveyed to verify there is no residual radioactive contamination distinguishable from background. All vehicles and equipment, both land- or water-based, shall likewise be cleared to the applicable release criteria. Representative surveys and sampling of surfaces and systems most likely to harbor contamination will be acceptable for clearing large equipment.

4.5 MEASURES TO ADDRESS CONTAMINANTS IN AIR

4.5.1 Construction Emissions Control Measures

Contractors shall implement one or more of the following dust and equipment-exhaust control measures during construction to minimize air pollutant emissions. Successful dust and equipment-exhaust control will accomplish the following goals:

- Reduce the potential for health impacts to construction workers;
- Prevent violations of ambient air quality standards;
- Minimize nuisance dust complaints from site neighbors; and
- Minimize the migration of contaminants adhered to fugitive dust particles outside the site.

4.5.1.1 Specific Emissions Control Measures

Basic emissions control measures to be implemented at the Site during construction are identified in the table below, which is excerpted from the current BAAQMD CEQA Guidelines for construction sites.

(http://www.baaqmd.gov/-/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en)

**Table 8-1
Basic Construction Mitigation Measures**

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| <ol style="list-style-type: none"> 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. 8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. |
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Additionally, the following measures will be implemented to supplement the basic emissions control measures from the BAAQMD guidelines.

- Apply water or a soil tackifier on exposed soil surfaces to reduce dust levels if visible dust is being produced;
- Mist or spray water while loading or unloading soil transportation vehicles as needed to prevent dust generation;
- Minimize drop heights when loading transportation vehicles carrying sand, soil, or other loose materials;
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent;
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in areas of bare soil that are created by excavation or construction activities, but not sediment stockpiles, as soon as possible and watered appropriately until vegetation is established.

Should the above efforts prove inadequate to prevent visible dust plumes from leaving the Site, one or more of the following additional dust control measures shall be implemented at the contractor's discretion:

- All trucks and equipment, including their tires, shall be washed off prior to leaving the Site, with collection, sampling, analysis, and appropriate treatment/disposal of equipment/tire wash water;
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. (Wind breaks should have at maximum 50 percent air porosity.);
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour; and/or
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

Should these dust control measures prove inadequate to prevent visible dust plumes from leaving the Site, excavation and grading activities shall be suspended until wind speeds diminish.

To minimize further construction equipment exhaust emissions, the following protocols shall be followed:

- Construction equipment shall be stored at the Site, except when not in continuous use;
- Alternative-fueled vehicles and equipment shall be used as practicable;
- Heavy equipment usage shall be restricted to 7 AM to 7 PM from Monday through Friday, and to 8 AM to 5 PM on Saturday, as specified in the City of Alameda Community Noise Ordinance.

4.5.1.2 Documentation of Emissions Control Measures

Contractors will be required to record all dust and equipment-exhaust control activities daily. Logs are to be maintained for 60 days following the completion of construction where such control efforts were implemented.

4.5.2 Air Monitoring Plan

In addition to emissions control measures, if the contractor's environmental professional deems an air monitoring plan to be advisable to ensure the health and safety of off-site receptors during

construction, a site-specific air monitoring plan will be developed and implemented by or at the direction of the environmental professional.

4.6 EFFORTS TO ADDRESS CONTAMINATION OF SURFACE WATER AND/OR GROUNDWATER

To prevent the migration of sediment from the Site into adjacent areas by surface drainage, runoff control measures shall be implemented in accordance with a SWPPP that complies with the SWRCB Construction General Permit. A SWPPP must be prepared by a QSD for each redevelopment project that is constructed at the Site.

To prevent salinity or other potential contamination of groundwater, sediment dewatering activities will be conducted on an impermeable surface that is designed to withstand operation of sediment handling equipment without damage.

Supernatant and other liquids produced by sediment dewatering will be collected for treatment (as necessary) before discharge under a site-specific National Pollutant Discharge Elimination System permit. Sampling and analysis before discharge will be in compliance with requirements specified in the discharge permit issued by the Regional Water Board.

The project-specific work plan must specify detailed procedures and protocols to avoid spills or leaks associated with fueling of equipment to avoid impacts to surface water and/or groundwater.

5 RISK MANAGEMENT MEASURES TO BE IMPLEMENTED AT THE SITE FOLLOWING REDEVELOPMENT

This SMP is applicable to dredging activities that occur following initial redevelopment. However, in areas that have been dredged in conformance with this SMP, subsequent maintenance dredging that does not dredge sediments from beneath the original dredge depth may be conducted pursuant to an approved work plan that scales back the procedures and protocols required for initial dredging.

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6 REFERENCES

1. May 2008, ERM-West, Inc. and Iris Environmental, *Site Management Plan, Alameda Landing Site Portion of the Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex (FISCA), Alameda, California*
2. November 2011, Russell Resources, Inc., *Site Management Plan, Lawrence Berkeley National Laboratory Second Campus Portion of Alameda Point, Alameda, California*
3. March 2015, Russell Resources, Inc., *Site Management Plan, Phase 1 Transfer Portion of Alameda Point, Alameda, California*
4. June 2004, Department of the Navy, *Final Remedial Investigation Report, Seaplane Lagoon, Alameda Point, Alameda* (available in Appendix B of this SMP, without appendices)
5. October 2006, Department of the Navy, *Final Record of Decision, Site 17, Seaplane Lagoon, Alameda Point, Alameda, California* (available in Appendix B of this SMP, without Administrative Record)
6. September 2014, Department of the Navy, *Final Remedial Action Completion Report, Installation Restoration Site 17, Seaplane Lagoon, Alameda Point, Alameda, California* (available in Appendix B of this SMP)
7. March 2016, Department of the Navy, *Final Explanation of Significant Differences, Installation Restoration Site 17, Alameda Point, California* (available in Appendix B of this SMP after signatures)
8. March 2016, Department of the Navy, *Final Finding of Suitability to Transfer Phase 2, Former Naval Air Station Alameda, Alameda, California* (available in Appendix B of this SMP after signatures)
9. March 2016, Department of the Navy, *Final Land Use Control Remedial Design, Installation Restoration Site 17, Alameda Point, California* (available in Appendix B of this SMP after signatures)

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FIGURES

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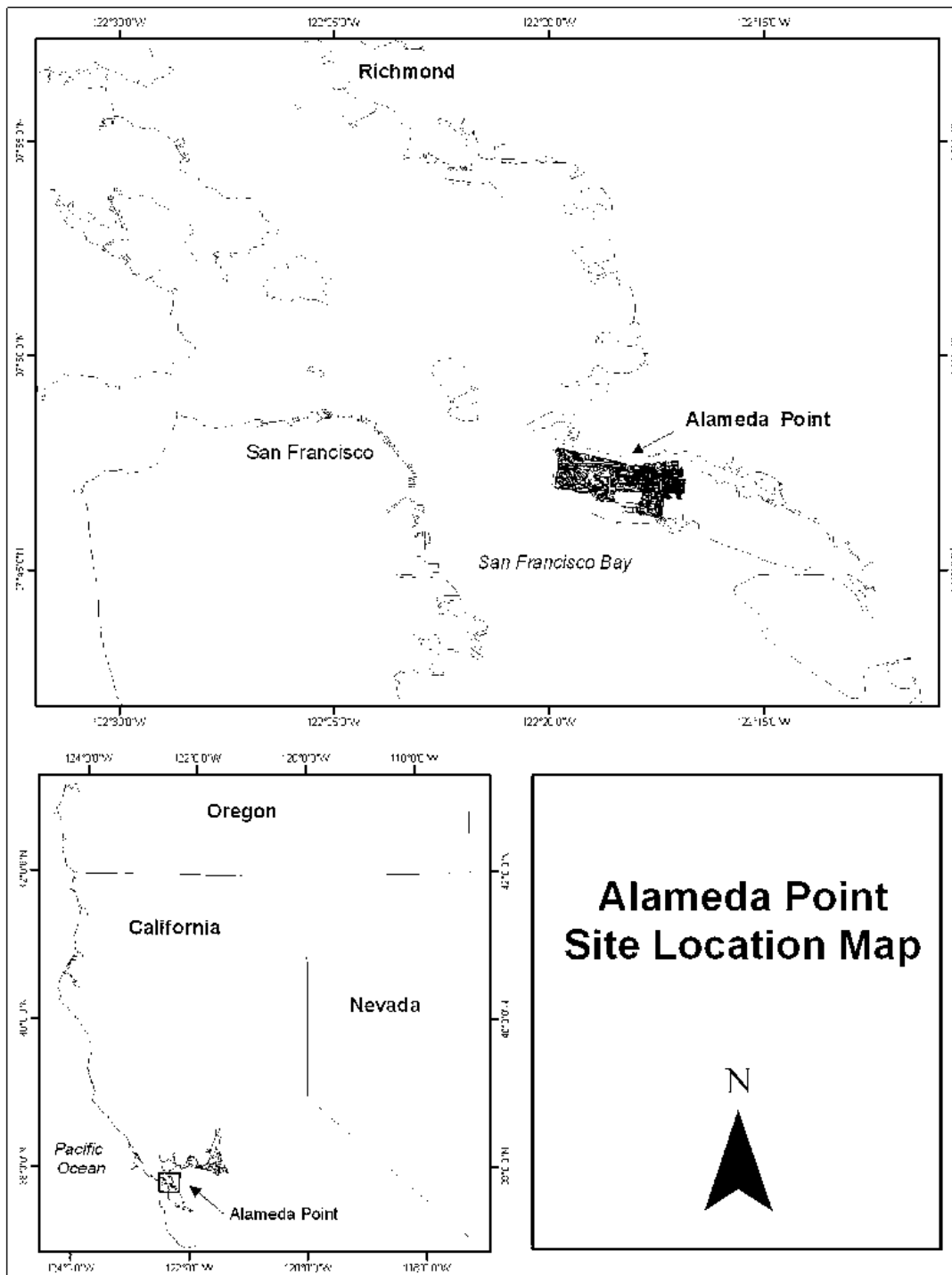


Figure 1. Regional Location Map

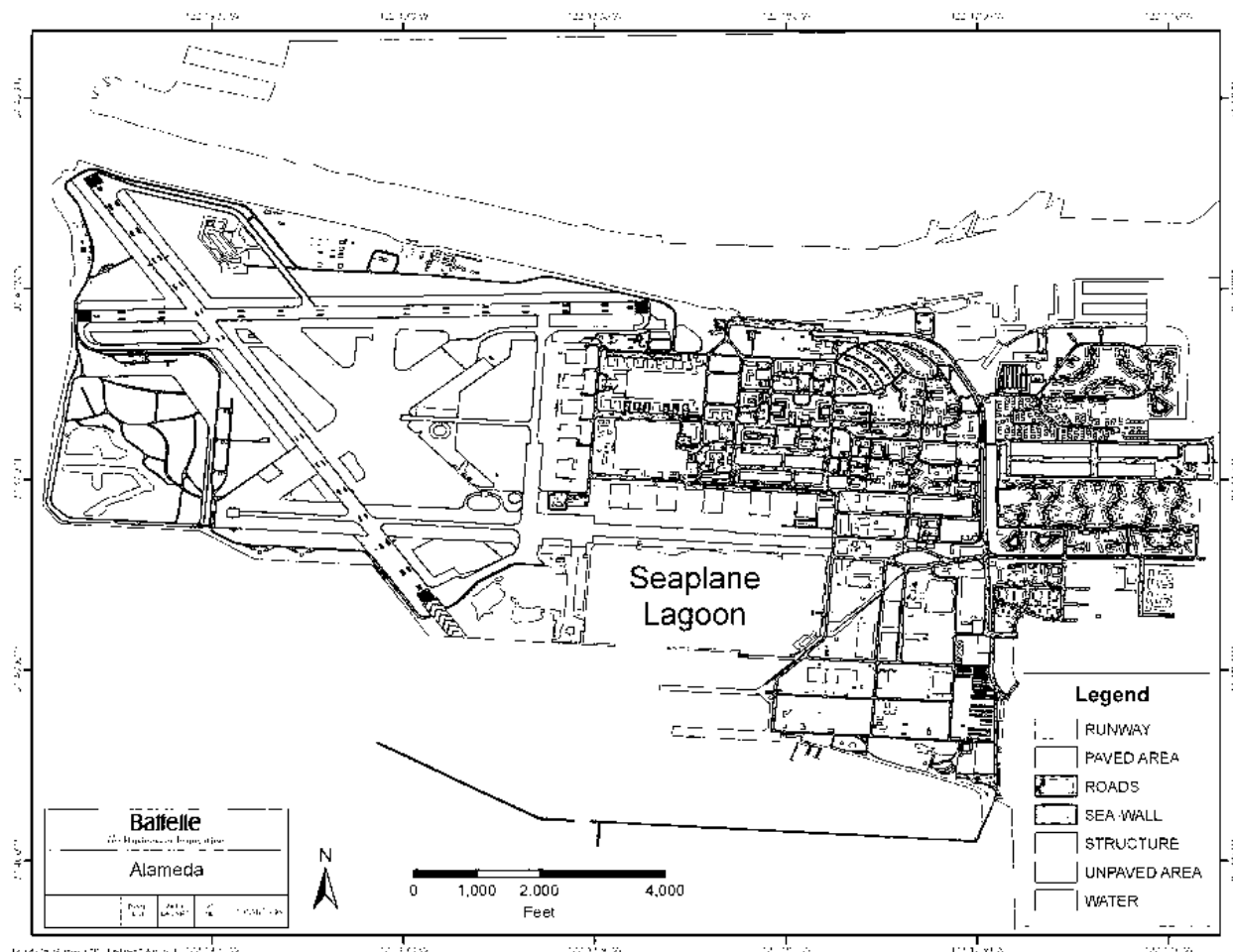


Figure 2. Site Location Map

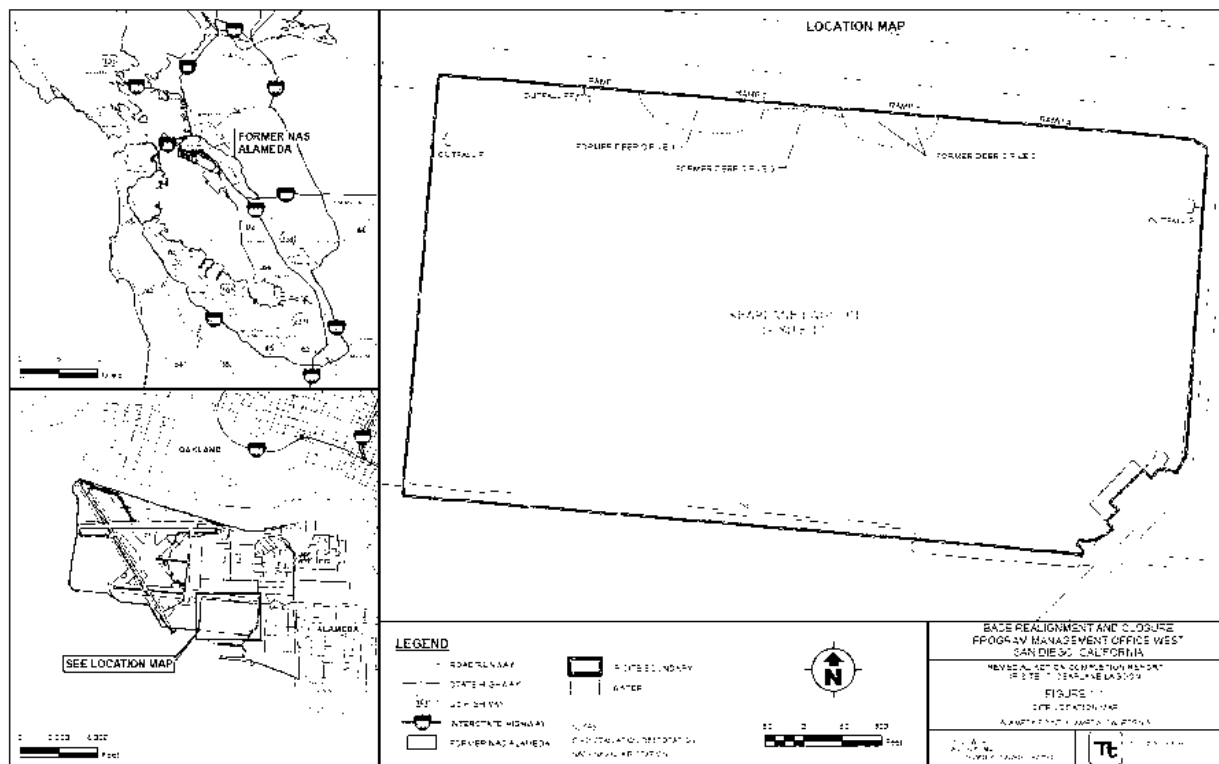


Figure 3. Area of Institutional Controls (entire IR Site 17)

APPENDIX A:

This appendix place holder is included for organizational consistency with Site Management Plan. In the Site Management Plan, Appendix A is the City's Marsh Crust Ordinance, which does not apply to Seaplane Lagoon.

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APPENDIX B: BACKGROUND DOCUMENTS

September 2014, Department of the Navy, *Final Remedial Action Completion Report, Installation Restoration Site 17, Seaplane Lagoon, Alameda Point, Alameda, California*

http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=01970005&doc_id=5010677

March 2016, Department of the Navy, *Final Explanation of Significant Differences, Installation Restoration Site 17, Alameda Point, California*

Included in this Appendix B

March 2016, Department of the Navy, *Final Finding of Suitability to Transfer Phase 2, Former Naval Air Station Alameda, Alameda, California*

Included in this Appendix B

March 2016, Department of the Navy, *Final Land Use Control Remedial Design, Installation Restoration Site 17, Alameda Point, California*

Included in this Appendix B



**FINAL
EXPLANATION OF SIGNIFICANT DIFFERENCES
INSTALLATION RESTORATION SITE 17**

**ALAMEDA POINT
ALAMEDA, CALIFORNIA**

February 2016

**Department of the Navy
Base Realignment and Closure
Program Management Office West
San Diego, California**

Document Control Number: BPMOW-2016-0001

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Abbreviations and Acronyms

ARAR	applicable or relevant and appropriate requirements
Cal-EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act Information System
CFR	Code of Federal Regulations
COC	chemical of concern
DDD	4,4'-dichlorodiphenyldichlorethane
DDE	4,4'-dichlorodiphenyldichloroethene
DDT	4,4'-dichlorodiphenyltrichloroethane
DDx	the sum of DDD, DDE and DDT
DON	Department of the Navy (United States)
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency (United States)
ESD	Explanation of Significant Differences
FFA	Federal Facility Agreement
FS	Feasibility Study
IC	institutional control
ID	identification
IR	Installation Restoration
LUC RD	Land Use Control Remedial Design
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NE RA	Northeast Remediation Area
NPL	National Priorities List
NW RA	Northwest Remediation Area
OU	operable unit
PCBs	polychlorinated biphenyls
pCi/g	picocuries per gram
Ra	radium
RACR	Remedial Action Completion Report
RAOs	remedial action objectives
Regional Water Board	Regional Water Quality Control Board, San Francisco Bay Region
RG	remediation goals
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SMP	Sediment Management Plan
TtEC	Tetra Tech EC, Inc.
UCL	upper confidence limit
USC	United States Code
USFWS	United States Fish and Wildlife Service

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1.0 INTRODUCTION, SITE DESCRIPTION, AND STATEMENT OF PURPOSE

1.1 Introduction

This Explanation of Significant Differences (ESD) applies to the Final Record of Decision (ROD) signed in October 2006 for Installation Restoration (IR) Site 17 (Department of the Navy [DON] 2006), which is Seaplane Lagoon, located at the former Naval Air Station (NAS) Alameda, in Alameda, California (Figures 1 and 2). This ESD follows successful implementation of the selected remedy in the ROD for IR Site 17 (DON 2006). This ESD documents a change in the remedy from dredging and disposal of contaminated sediments to dredging and disposal of contaminated sediments and implementation of an institutional control (IC) applicable to any future dredging and/or removal of sediments.

NAS Alameda was added to the National Priorities List (NPL) on July 22, 1999. A Federal Facility Agreement (FFA) between the DON and United States Environmental Protection Agency (EPA) was signed on July 5, 2001, and by the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) in 2005. The FFA documents how the DON intends to meet its statutory obligations and implement the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in partnership with EPA, DTSC, and the Regional Water Board. The EPA is the lead regulatory agency under the FFA.

IR Site 17 is located within Operable Unit (OU) 4B. Figure 3 shows the IR Site 17 boundary and area of institutional controls. The EPA Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) identification (ID) number on the NPL that is applicable to this ESD is CA 2170023236.

This ESD will become part of the Administrative Record. The Administrative Record file (40 Code of Federal Regulations [CFR] Section [§] 300.825(a)(2)) is maintained at the Naval Facilities Engineering Command, Southwest, in San Diego, California. The address is:

Naval Facilities Engineering Command, Southwest
Ms. Diane Silva, Records Manager
Administrative Record
NBSD Building 3519
2965 Mole Road,
San Diego, CA 92136
Business hours: 8:00 AM – 5:00 PM Monday – Friday
Telephone: (619) 556-1280

In addition, the ESD will be available for public review at the Information Repository located at:

City Administration Building 1
950 West Mall Square
Second Floor
Alameda Point, Alameda CA 94501
Business hours: 9:00 AM – 5:00 PM Monday – Friday

The Alameda public library also maintains new DON environmental documents. The Alameda public library is located at:

Alameda Main Library

1550 Oak Street

Alameda, CA 94501

Business hours: 12:00 PM – 8:00 PM Monday - Wednesday; 10:00 AM – 5:00 PM Thursday - Saturday;

1:00 PM – 5:00 PM Sunday

Telephone: (510) 747-7777

1.2 Site Description

The former NAS Alameda, now referred to as Alameda Point, is located at the western tip of Alameda Island, which is surrounded by San Francisco Bay and the Oakland Inner Harbor (Figure 1). IR Site 17 is located in the southeastern portion of Alameda Point, which is in Alameda, California (Figures 2 and 3).

IR Site 17, also referred to as Seaplane Lagoon, is a partially enclosed lagoon consisting of approximately 110 acres (DON 2006). This area was originally a tidal flat until the 1930s when seawalls were built along the eastern, western, and southern boundaries and a sheet pile wall was installed at the northern edge of the area. The interior of the lagoon was historically about 20 feet deep (DON 2006). The lagoon's entrance is an approximately 800-foot opening in the seawall along the southern perimeter (Figure 2).

Tides in Seaplane Lagoon are mixed semidiurnal (two high tides and two low tides of variable heights in a 24-hour period). Tidal currents are fastest in the entrance to the lagoon, where seawater enters and exits the opening in the breakwater. Recent investigations have determined sediment accumulation rates since 1963 have been approximately 0.4 inches/year (1 centimeter/year) (DON 2006). Fine-grained sediments can be re-suspended by waves, currents, ship wakes and propeller wash, dredging activities, and biological processes. Little erosion of the bottom sediments is expected from tidal or wind-generated currents except near the entrance, where current velocities are higher. Currently biological activity is likely the dominant process controlling sediment re-suspension in most of the lagoon. Given the proposed future use as a commercial marina, boat traffic and activities associated with marina use could become controlling forces of sediment transport in the lagoon (DON 2006).

Seaplane Lagoon is a foraging area for the California Least Tern. In accordance with the Biological Opinion (United States Fish and Wildlife Service [USFWS] 2012), dredging is prohibited during their breeding season, which is between April 1 and August 15. Since no dredging was necessary for the DON's historical use of the lagoon, it is believed that the first dredging of the lagoon was during the remedial action when sediment in the northeast and northwest corners of the lagoon was dredged. The dredging for the DON's remediation was conducted between 2011 and 2012 and showed the sediment in the lagoon to be hard and dense. A significant amount of non-hazardous debris was encountered during the dredging, including wire and large debris such as anchors and tires. It is likely that significant debris also is present in the sediment in other portions of the lagoon.

1.3 Statement of Purpose

The purpose of this ESD is to document a change to the IR Site 17 remedy from dredging and disposal of contaminated sediments to dredging and disposal of contaminated sediments and implementation of an IC applicable to any future dredging and/or removal of sediments. The IC will be implemented to minimize the potential for exposure to potential residual (post-remediation) low-level radium (Ra)-226 activity in

the sediment (from either Ra-226 activity associated with the sediment itself or items with Ra-226 activity within the sediment). The IC prohibits dredging and removal of sediments in Seaplane Lagoon by a future property owner unless such activity is conducted in accordance with a sediment management plan (SMP) approved by the DON and regulatory agencies. The IC applies to the entire IR Site 17 (Figure 3). The ESD also adds a requirement for Five-Year Reviews to be performed for IR Site 17.

The ROD specified removal of contaminated sediments at IR Site 17. The remedy had five components: (1) initial remedial action sampling to enable proper and safe handling, segregation, and disposal of sediment to be dredged; (2) dredging; (3) quality control sampling and confirmation testing; (4) dewatering; and (5) upland disposal at a permitted off-site waste disposal facility. The remedy was selected in accordance with CERCLA of 1980, as amended by Superfund Amendments and Reauthorization Act (SARA) of 1986 (Title 42 of the United States Code (USC) § 9601 et seq.), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Title 40 of the CFR Part 300). The remedy is based on information catalogued in the Administrative Record file (40 CFR § 300.825(a)(2)).

The DON and EPA, as the lead agencies, co-selected the IC requirements in this ESD. The DTSC and Regional Water Board concur on this ESD.

2.0 SITE HISTORY, CONTAMINATION, AND REMEDY IMPLEMENTATION

The former NAS Alameda was selected for closure by Congress in September 1993, and officially closed in April 1997. NAS Alameda was an active military installation from the 1930s to the 1990s that primarily provided facilities and support for fleet aviation activities. IR Site 17 was used by the DON for a variety of water-related activities, throughout the history of the NAS. From the 1940s to 1975, industrial wastewater and storm water generated at the former NAS Alameda was discharged directly into a network of storm drains and carried, in part, into IR Site 17 through storm water outfalls. During this period, approximately 300 million gallons of untreated industrial wastewater and storm water that reportedly contained heavy metals, solvents, paints, detergents, acids, caustics, mercury, oil and grease, and Ra-226 were discharged into the lagoon (DON 2006). Radiological constituents associated with the application and removal of radio luminescent paints, containing Ra-226, were primarily discharged into the lagoon through outfalls in the northwestern corner of the lagoon.

The outfalls located in the northeast and northwest corners of IR Site 17 were the primary sources of sediment contamination. In 1975, the direct discharge of industrial wastewater through the storm water network was terminated and since that time, a storm water pollution prevention program has been in place at Alameda Point.

As documented in the IR Site 17 ROD, between 1993 and 2002 numerous investigations were conducted by DON at IR Site 17. Results of these investigations showed that remedial action was required for sediment in the northeast and northwest corners of Seaplane Lagoon.

The ROD identifies the chemicals of concern (COCs) and remediation goals (RGs) for sediment in Seaplane Lagoon. The COCs with RGs are cadmium, total polychlorinated biphenyls (PCBs), and total DDx (the sum of 4,4'-dichlorodiphenyldichloroethane (DDD), 4,4'-dichlorodiphenyldichloroethene (DDE), and 4,4'-dichlorodiphenyltrichloroethane (DDT)).

In addition to the COCs with RGs, the ROD identified chromium and lead in the sediment as risk drivers for ecological receptors. The Remedial Investigation Report for IR Site 17 evaluated risk related to Ra-226 and did not identify Ra-226 as a risk driver in the ecological or human health risk assessments for IR

Site 17 (Battelle et al. 2004). However, the ROD noted that there may be elevated Ra-226 concentrations co-located with other COCs within the remediation areas. The ROD stated that any potential risks will be addressed through the remedial activity of sediment removal and proper disposal (DON 2006). Due to the potential for Ra-226 in the sediment, the ROD required health and safety monitoring of workers and decontamination and radiological clearance of equipment during the dredging.

The ROD presents the remedial action objectives (RAOs) related to protection of ecological receptors and human health. It specifies that the RAOs will be addressed primarily through achieving numerical sediment RGs for the primary risk drivers identified in the ecological risk assessment – cadmium, Total PCBs, and Total DDx.

The remedy selected in the ROD is Alternative 5: Dredging, Dewatering, and Upland Disposal at a Permitted Off-Site Waste Disposal Facility. Alternative 5 entails dredging contaminated sediment within the remediation areas in the northeast and northwest corners of the lagoon to a minimum uniform depth of 4 feet (plus 1-foot overdredge allowance to ensure that the design thickness is achieved). The ROD specifies verification of removal of contaminated sediment from the lagoon through confirmation sampling. The selected remedy complies with the statutory requirements set by CERCLA and requires removal of contaminants that otherwise would be present at levels that would preclude future re-use. The ROD (DON 2006) states that the sediment removal will enable unrestricted use and unlimited exposure, so a Five-Year Review was not required.

To ensure protectiveness and prevent potential adverse ecological impacts associated with TPH, turbidity curtains were installed around all areas to be dredged, and a skimmer boat was anchored within the turbidity curtain for dredging in the northeastern portion of the lagoon based on the history of petroleum operations along the northeastern shoreline. The dredging for the northeast remediation area (NE RA) was conducted in 2011, with 61,767 cubic yards of sediment dredged. The northwest remediation area (NW RA) was dredged in 2012, with 34,231 cubic yards of sediment dredged (Tetra Tech EC, Inc. [TtEC] 2014). The post-dredge Ra-226 activity in the sediment confirmation samples was highest in the NW RA. The maximum Ra-226 activity in the NW RA samples was 4.18 picocuries per gram (pCi/g). The 95 percent (%) upper confidence limit (UCL) for Ra-226 in the NW RA confirmation samples was 1.104 pCi/g.

The Final Remedial Action Completion Report (RACR) for IR Site 17 (Appendix E) presents the details of the remedial action, post-dredge confirmation sample results, and the statistical data evaluation (TtEC 2014). For Ra-226, statistical evaluations showed that after the remedial action, the levels in the sediment in the remediation areas are not higher than levels in the lagoon-wide data set located outside the areas where remediation was required per the ROD. Therefore, the RACR concludes that the IR Site 17 remediation was successfully completed in accordance with the ROD and remedial action work plan (TtEC 2014).

The IR Site 17 RACR also documents the removal of a radiological anomaly area, outside of the footprint of IR Site 17, located along the shoreline adjacent to IR Site 17 prior to the IR Site 17 sediment remediation (TtEC 2014). Although there was significant radiological contamination in this area, it was removed.

Finally, the IR Site 17 RACR includes documentation of removal of small items with Ra-226 activity (believed to have Ra-226 paint on them) during the radiological surveying of the sediment removed from both the NE RA and NW RA. As documented in the RACR, based on the Seaplane Lagoon dredging conducted for the remediation, one item with Ra-226 activity was identified per 1,882 cubic yards of sediment (TtEC 2014). The maximum curic content for an individual item with Ra-226 activity located

in each remediation area was 0.679 uCi (TtEC 2014). The size of the recovered discrete items with Ra-226 activity varied from a ship's compass to small pill-like items. The RACR Appendix W describes the discrete items and evaluates potential risk, concluding that there is no unacceptable risk due to these items, if present, for any potential use of the lagoon (TtEC 2014). All items with radiological activity in the NE and NW RAs that were identified during the remediation were removed and properly disposed at an out-of-state low-level radiation waste landfill.

During the IR Site 17 remediation, sediment removed close to the outfalls was placed on one drying pad and sediment removed at a greater distance from the outfalls was placed on a different drying pad. Both the size and distribution of the items with Ra-226 activity within sediment that was removed close to the outfalls and sediment removed at a greater distance from the outfalls indicate that they may not have been deposited via the outfalls. In addition to the site conceptual model in the ROD wherein contaminants entered the lagoon via the storm water system, these items may have fallen into the lagoon inadvertently from the seaplanes or were possibly discarded (TtEC 2014). Therefore, there is a potential for items with Ra-226 activity to be present throughout the lagoon. No items with radiological activity have been identified in other areas of the lagoon to date. However, it should be noted that unless the sediment is dredged, dried, and radiologically surveyed in 6-inch lifts, it is not likely that it would be possible to identify items with Ra-226 activity within the sediment.

3.0 ESD BASIS AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

3.1 ESD Basis

The basis for the ESD is data collected as part of the remediation, specifically related to the potential for Ra-226 activity within the sediment (see Section 2.1 of this ESD and TtEC 2014). The RACR (included in the Administrative Record) concludes that the remediation was successfully completed in accordance with the ROD, and there is no unacceptable risk due to Ra-226 activity in the sediment for any potential future use of the lagoon (TtEC 2014). The CERCLA control to be imposed is only considered necessary to address potential risks associated with dredging and/or sediment removal, managing, and disposing sediment that may contain Ra-226 activity, whether due to diffused Ra-226 activity in the sediment or in the form of discrete items with Ra-226 activity that may be present in the sediment. Planned reuse of the lagoon includes a marina and a ferry terminal. The Ra-226 activity may present a risk if sediments are removed during potential future dredging and are disposed without restrictions, such as re-used in sensitive settings including residential or school properties.

3.2 Description of Significant Differences

This ESD documents a change in the remedy for IR Site 17 from dredging and disposal of contaminated sediments (per the ROD) to dredging and disposal of contaminated sediments and implementation of an IC. ICs are legal and administrative mechanisms used to limit the potential for exposure. The significant difference to the IR Site 17 remedy documented by this ESD is the addition of an IC that prohibits future dredging and/or removal of sediments due to potential Ra-226 activity within the sediment throughout Seaplane Lagoon by a future property owner unless a SMP is approved by the DON and regulatory agencies in writing prior to the start of the dredging/sediment removal and is implemented for future dredging/sediment removal.

The IC boundaries are the boundaries of IR Site 17 shown on Figure 3. The IC applies to Ra-226 activity associated with the sediment itself and the potential for discrete items with Ra-226 activity to be present within the sediment.

The ROD did not require Five-Year Reviews for IR Site 17. This ESD adds the requirement for Five-Year Reviews for IR Site 17. Each Five-Year Review will determine if the remedy remains protective of human health and the environment. All components of the ROD were successfully implemented, and there is no other change to the remedy.

The performance objectives for the IC are as follows:

- Minimize the potential for exposure to Ra-226 activity in the sediment that may result in risks to human health or the environment during dredging and/or sediment removal activities;
- Prevent re-use or disposal of dredged/removed sediment in a manner that presents unacceptable risk to human health or the environment; and
- Preserve access to the area requiring the IC (entire IR Site 17 - Seaplane Lagoon) for the relevant regulatory agencies and the DON.

The associated land use restriction will be incorporated into the Covenants to Restrict the Use of Property, which will be executed prior to the transfer of title to such property. The restriction is a prohibition on future dredging and removal of sediments throughout Seaplane Lagoon unless an SMP is approved by the DON and regulatory agencies in writing prior to the start of the dredging/sediment removal and is implemented for future dredging/sediment removal. The SMP to be prepared by the transferee for review and approval shall define Ra-226 criteria to meet the performance objectives in a manner that is appropriate for proper risk management, taking into account the proposed activities. The transferee's SMP particularly shall include the transferee's detailed procedures and protocols related to their proposed dredging, sediment handling/management, and disposal of the dredged materials. The requirement for SMP approval is independent of and in addition to requirements of applicable regulations and standards enforced by other agencies and approval of dredging plans by the appropriate agencies that regulate dredging in the San Francisco Bay Area. No dredging and/or sediment removal shall be conducted until written regulatory agency approvals have been provided.

Land use controls will be maintained until the concentration of hazardous substances in the sediment are at such levels throughout IR Site 17 to allow for unrestricted use and exposure for any sediment removed at IR Site 17.

In accordance with the FFA schedule, the DON shall prepare and submit to the FFA signatories for review and approval a land use control remedial design (LUC RD) that shall contain implementation specifics, including periodic inspections. Although the DON may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or other means, the DON shall retain ultimate responsibility for the CERCLA remedy and enforcement of the IC described in this ESD in accordance with the approved LUC RD. Should the IC fail, the DON shall ensure that appropriate actions are taken to reestablish protectiveness. Further details for the implementation, monitoring and enforcement of the IC will be described in the LUC RD, including the items to be included in the SMP.

The LUC RD will include the following:

- Identification of responsibilities for DON, EPA, DTSC, Regional Water Board, other government agencies, and property owner;
- Statement of the IC with its expected duration;
- Map identifying where the IC will be implemented;

- Requirement for CERCLA Five-Year Reviews;
- Frequency and requirements for periodic monitoring or visual inspections;
- Reporting results from monitoring or inspections;
- Notification procedures to the regulators for planned property conveyance, corrective action required, and/or response to actions inconsistent with the IC; and
- Consultation with EPA, DTSC, Regional Water Board, and other government agencies regarding wording for land use restrictions and parties to be provided copies of the deed language once executed.

The restriction will be incorporated into the Covenants to Restrict the Use of Property, which will be executed prior to the transfer of title to such property and which will run with the land. The Covenants to Restrict the Use of Property will provide that the DON and FFA signatories and their authorized agents, employees, contractors, and subcontractors shall have the right to enter the site to conduct investigations, tests, or surveys; inspect site activities; or operate and maintain any response or remedial action as deemed necessary.

Based on the Feasibility Study (FS) report estimate of \$100,000 for IC implementation and Five-Year Reviews (for 30 years) and adding the FS report's 30% contingency, the estimated cost for the ICs in this ESD is \$130,000. Although the IC is expected to be required for longer than 30 years, this engineering estimate is consistent with CERCLA estimating requirements.

4.0 STATUTORY DETERMINATIONS

The DON's primary responsibility in regard to CERCLA is to achieve statutory requirements for protection of human health and the environment. Section 121 of CERCLA establishes several statutory requirements and preferences. The selected remedy, as changed pursuant to this ESD, remains protective of human health and the environment, continues to comply with Federal and State requirements that are applicable or relevant and appropriate requirements (ARARs) to the remedial action, and is cost-effective. It also accommodates the proposed future reuse of the site. This remedy uses permanent solutions by removing the contaminated sediments so that fish, birds, and humans will not come in contact with them in the future. This ESD adds an IC to the selected remedy, with the requirement for Five-Year Reviews to prevent exposure to potential Ra-226 activity associated with sediment and/or discrete items with radiological activity within the sediment if it is removed from IR Site 17; this modified remedy satisfies Section 121 of CERCLA.

5.0 ADMINISTRATIVE RECORD FILE AND PUBLIC PARTICIPATION

This ESD will become a part of the Administrative Record File for IR Site 17 in accordance with NCP Sections 300.435 (c)(2)(i)(A) and 300.825 (a)(2). The public can access this ESD by contacting Diane Silva, the Administrative Records Manager, at (619) 556-1280, or by email at diane.silva@navy.mil. In addition, the public can access the ESD at the Alameda Point Information Repository. The address of the Information Repository, along with its business hours, is presented in Section 1.1.

Following regulatory agency review, a notice of availability and a brief description of the ESD will be published in a major local newspaper of general circulation as required by NCP Section 300.435(c)(2)(i)(B).

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6.0 AUTHORIZING SIGNATURES

This signature sheet documents the DON's and the EPA's co-selection of the institutional control specified in this Explanation of Significant Differences for IR Site 17 at Alameda Point. It also documents the concurrence of the State of California through the DTSC and the Regional Water Board. The respective parties may sign this sheet in counterparts.

Cecily Sabedra
Signature

February 16, 2016
Date

Ms. Cecily Sabedra
Base Realignment and Closure Environmental Coordinator
Base Realignment and Closure Program Management Office West
Department of the Navy

Angeles Herrera
Signature

March 16, 2016
Date

Ms. Angeles Herrera
Assistant Director, Superfund Division
Federal Facilities and Cleanup Branch
United States Environmental Protection Agency, Region 9

Karen M. Toth
Signature

3/18/2016
Date

Ms. Karen M. Toth, P.E.
Unit Chief
Brownfields and Environmental Restoration Program
California Environmental Protection Agency
Department of Toxic Substances Control

Bruce H. Wolfe Assistant Executive Officer
for
Signature

3/18/2016
Date

Mr. Bruce H. Wolfe
Executive Officer
California Environmental Protection Agency
Regional Water Quality Control Board, San Francisco Bay Region

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7.0 REFERENCES

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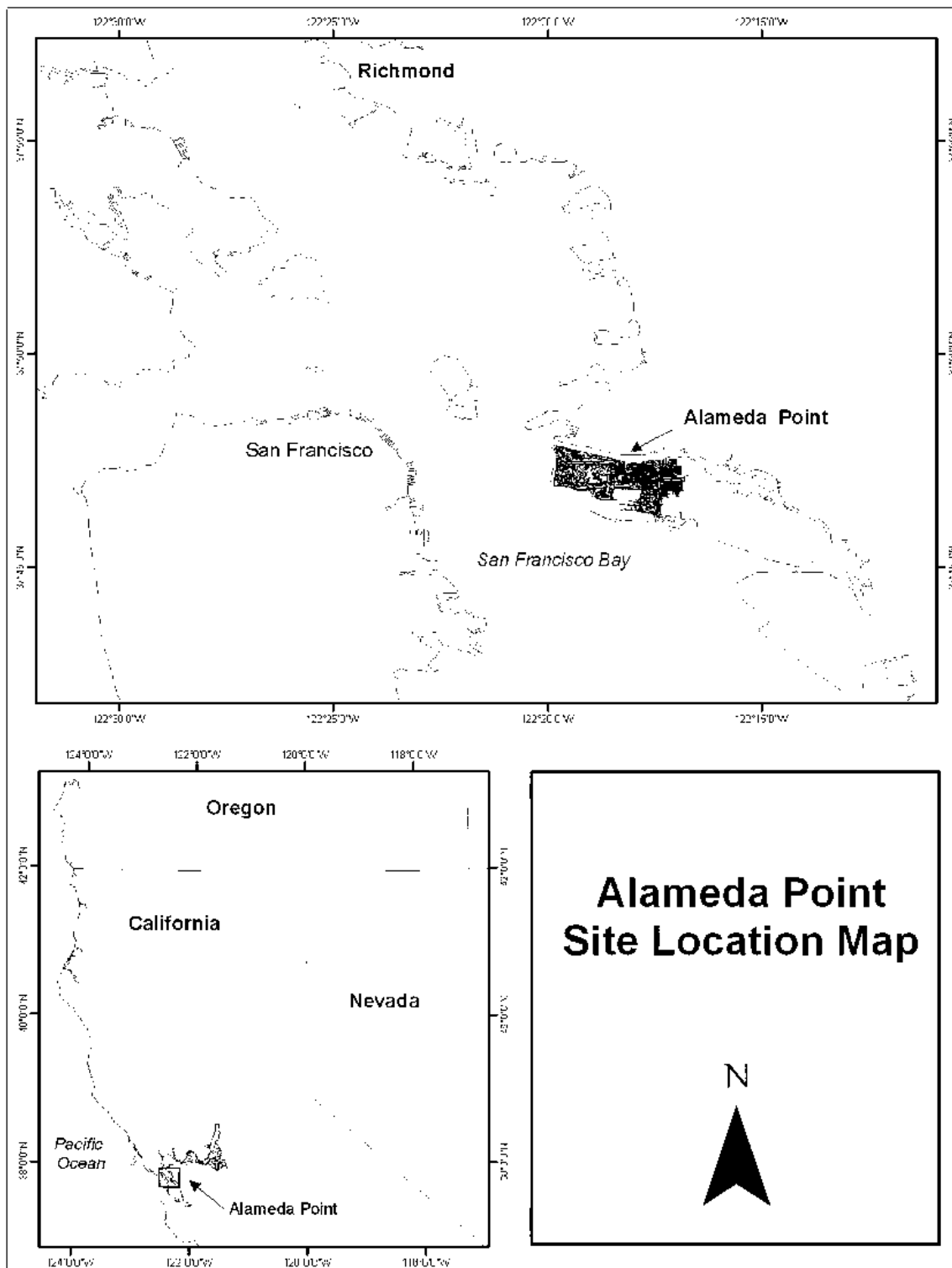


Figure 1. Alameda Point Site Location Map

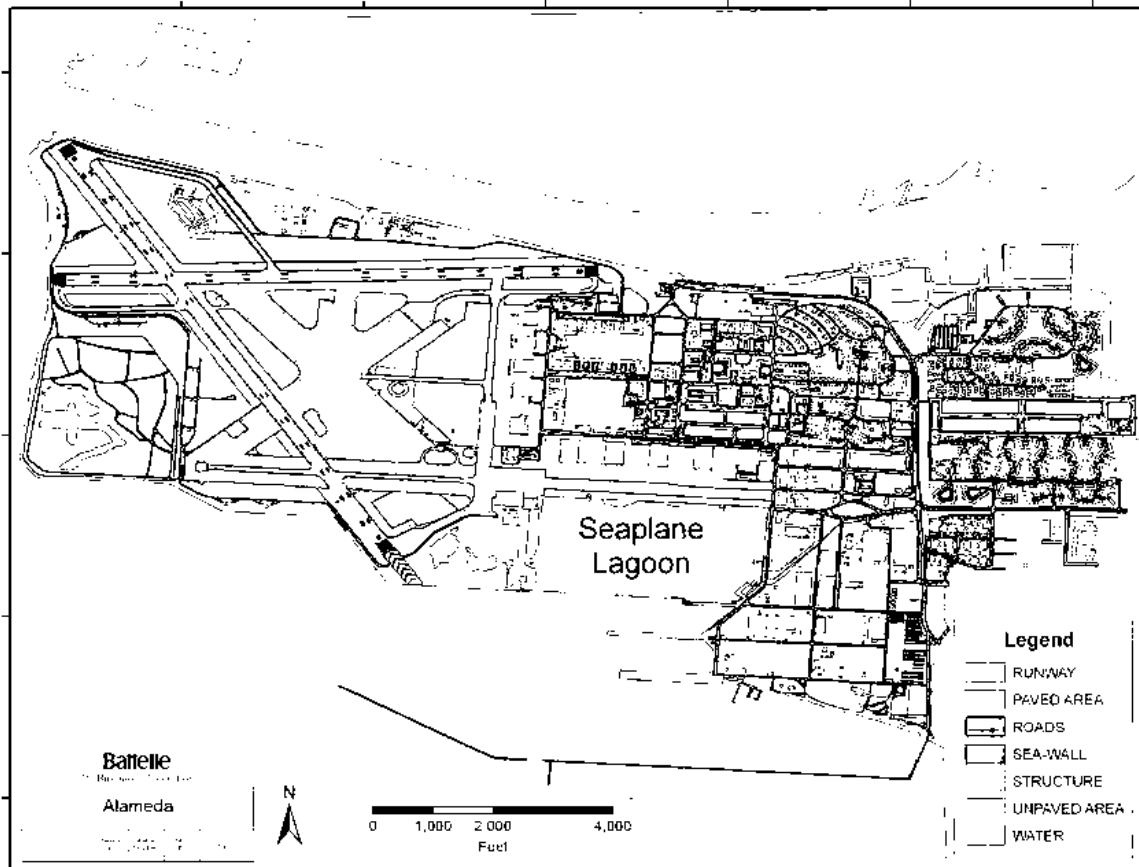


Figure 2. Seaplane Lagoon Location Map

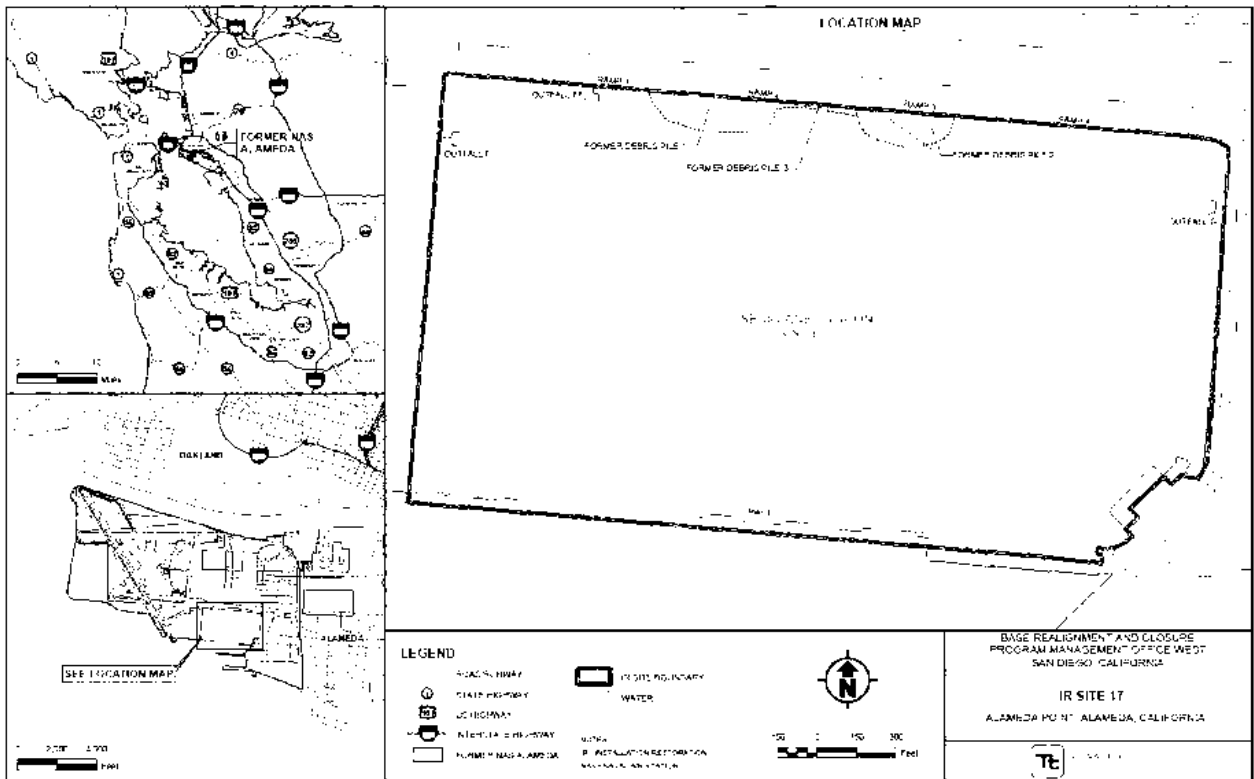


Figure 3. Area of Institutional Controls (entire IR Site 17)

FINAL
Finding of Suitability to Transfer Phase 2
Former Naval Air Station Alameda
Alameda, California

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Acronyms and Abbreviations

§	Section
ACM	asbestos-containing material
ASHERA	Asbestos Hazard Emergency Response Act
AOC	area of concern
ARIC	area requiring institutional controls
ARRA	Alameda Reuse and Redevelopment Authority
AST	aboveground storage tank
BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
CAA	Petroleum Program Corrective Action Area
CANS	shipping container storage
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Alameda
COC	chemical of concern
COPC	chemical of potential concern
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DDx	the sum of DDD, DDE, and DDT
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DTSC	California Department of Toxic Substances Control
EBS	environmental baseline survey
EDC	Economic Development Conveyance
ESD	Explanation of Significant Differences
FFA	Federal Facility Agreement
FFSRA	Federal Facility Site Remediation Agreement
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FISCA	Navy Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex
FL	fuel line
FOST	finding of suitability to transfer
FS	feasibility study
GAP	generator accumulation point
G-RAM	general radioactive material

HHRA	human health risk assessment
HRA	historical radiological assessment
HSC	California Health and Safety Code
IC	institutional control
IR	Installation Restoration (Program)
ISCO	in situ chemical oxidation
LBP	lead-based paint
LIFOC	Lease in Furtherance of Conveyance
LPL	Large Parcel Lease
LUC	land-use control
mg/kg	milligrams per kilogram
MEC	munitions and explosives of concern
MNA	monitored natural attenuation
MOA	Memorandum of Agreement
NACIP	Navy Assessment and Control of Installation Pollutants
NADEP	Naval Aviation Depot
NAS	Naval Air Station
Navy	U.S. Department of the Navy
NFA	No Further Action
NTCRA	non-time-critical removal action
OU	operable unit
OWS	oil-water separator
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PDDGS	Pre-Design Data Gap Sampling
PRG	preliminary remediation goal
Ra-226	radium-226
RA	remedial action
RACR	Remedial Action Completion Report
RAP	remedial action plan
RAO	remedial action objective
RAWP	remedial action work plan
RCRA	Resource Conservation and Recovery Act
RD	remedial design
RFA	RCRA facility assessment
RG	remedial goal
RI	remedial investigation
ROD	Record of Decision

SI	site inspection
SedMP	Sediment Management Plan
SVE	soil vapor extraction
SWMU	solid waste management unit
TCE	trichloroethene
TCRA	time-critical removal action
TPH	total petroleum hydrocarbons
U.S. EPA	United States Environmental Protection Agency
U.S.C.	<i>United States Code</i>
UST	underground storage tank
VI	vapor intrusion
VOC	volatile organic compound
Water Board	Regional Water Quality Control Board (San Francisco Bay)
WD	washdown area

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1.0 Purpose

The purpose of this Finding of Suitability to Transfer (FOST) is to summarize how the requirements and notifications for hazardous substances, petroleum products, and other regulated materials have been satisfied for a portion of the former Naval Air Station (NAS) Alameda by the U.S. Department of the Navy (Navy) (see Figure 1). Property included in this FOST may be transferred by the Navy to multiple property recipients under separate conveyance authorities, including but not limited to No-Cost Economic Development Conveyance (EDC) and Public Benefit Conveyance. This FOST includes property west of Main Street on what is now referred to as Alameda Point, as well as east of Main Street on what is now referred to as the former North Housing Area and former Alameda Unified School District parcel.

For simplicity, the lands covered by this FOST are referred to hereinafter as the FOST Parcel. The FOST Parcel is composed of seven noncontiguous upland and submerged land areas. Figure 2 shows the FOST Parcel. The lands identified for this FOST are described in Section 2.0.

This FOST provides documentation that a portion of the real property made available through the closure of NAS Alameda is environmentally suitable for transfer by deed. Note that certain environmental program activities are ongoing, including the Alameda Point Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program, as discussed in Section 4.1 and Alameda Point Petroleum Program activities, as discussed in Section 4.2. A summary of required restrictions is provided in Section 5.0.

This FOST was prepared in accordance with the Department of Defense (DoD) Base Redevelopment and Realignment Manual (DoD 2006) and the Navy Base Realignment and Closure (BRAC) Program Management Office Policy for Processing Findings of Suitability to Transfer or Lease (Navy 2008c).

2.0 Property Description

Alameda Point is located in the San Francisco Bay Area (see Figure 1) on the western end of Alameda Island, which lies on the eastern side of the San Francisco Bay, adjacent to the City of Oakland. The upland portion of Alameda Point is roughly rectangular in shape, approximately 2 miles long east–west and 1 mile wide north–south, and occupies 1,734 acres of upland land. The FOST Parcel includes approximately 70 acres of upland land areas and 154 acres of submerged land areas, or a total of approximately 224 acres. Alameda Point buildings in the FOST Parcel are shown on Figures 3A and 3B.

The FOST Parcel consists of nine environmental sites, including seven designated Installation Restoration (IR) sites: IR Sites 3, 16, 17, and 30; portions of IR Sites 24, 25, and 34; and two

Areas of Concern (AOCs), AOC 1 and AOC 6 (investigated as part of the IR Program) (Figure 4). Six of the sites are located within the southeastern portion of Alameda Point (IR Sites 3, 16, 17, and 24, plus AOCs 1 and 6), a seventh (IR Site 34) is located in the northwest, and two (IR Sites 25 and 30) are located in the northeast (see Figure 4). Two sites are submerged: IR Site 17, the Seaplane Lagoon and IR Site 24, the Pier Area. These nine sites are described in more detail in Section 4.1.

All of the FOST Parcel areas west of Main Street (IR-3, IR-16, IR-24, IR-34, AOC-1, and AOC-6) with the exception of IR-17 and the first floor of Building 112 located in the IR-3 area (Figure 3A) are currently leased by the Navy to the City of Alameda (City) under a Lease in Furtherance of Conveyance (LIFO). IR-17 was previously part of the LIFO, but was removed in 2009 pending completion of the Navy's remedial action. The FOST Parcel areas east of Main Street (IR-25 and IR-30) have never been under the LIFO (Figure 3B).

Prior to the LIFO on March 24, 1997, the Navy entered into a Large Parcel Lease (LPL) with the Alameda Reuse and Redevelopment Authority (ARRA) to allow the ARRA to lease various property and buildings prior to transfer (Navy and ARRA 1997). In June 2000, the Navy entered into the aforementioned LIFO with the ARRA to replace the LPL and to allow the ARRA to continue to lease property and buildings prior to transfer (Navy and ARRA 2000a). Also in June 2000, the Navy and the ARRA entered into a No Cost EDC Memorandum of Agreement (MOA) for the conveyance by the Navy of portions of Alameda Point to the ARRA (Navy and ARRA 2000b). The ARRA was dissolved in 2012, and the City, as the recognized Local Redevelopment Authority, assumed all of ARRA's rights, duties, assets, and obligations under the LIFO and the MOA. To date, the Navy has transferred approximately 83% of the Alameda Point to the City and other entities. A summary of these transactions is presented in Table 1.

Certain utility and other infrastructure including sanitary sewer, storm drain, fuel lines, and electric power lines are present within the FOST Parcel. The City is responsible for all operation, maintenance, repair, replacement, and administration of utilities and infrastructure located within property subject to the LIFO.

3.0 Regulatory Coordination

In September 1992, the Navy, the State of California Department of Health Services Toxic Substances Control Program (now referred to as the California Department of Toxic Substances Control [DTSC]), and the California Regional Water Quality Control Board - San Francisco Bay (Water Board) entered into a Federal Facility Site Remediation Agreement (FFSRA) (DTSC 1992a); the United States Environmental Protection Agency (U.S. EPA) was not a signatory to the FFSRA. The FFSRA defined the Navy's obligations for corrective action and response action under the Resource Conservation and Recovery Act (RCRA) and CERCLA for sites that had been identified in the Navy's IR Program at Alameda Point. Subsequent to the execution of

the FFSRA and following designation of Alameda Point as a National Priorities List site in 1999, the Navy and U.S. EPA executed a Federal Facility Agreement (FFA) in July 2001. Subsequently, DTSC signed the FFA in October 2005, and the Water Board signed it in November 2005. The FFA superseded the FFSRA and defines the Navy's corrective action and response obligations under CERCLA for the RCRA and CERCLA sites that have been identified at Alameda Point. The U.S. EPA, DTSC, and the Water Board were notified of the initiation of this FOST and were issued copies for review. Regulatory agency comments to this FOST are provided in Attachment 1.

3.1 Resource Conservation and Recovery Act Part A or B Permits and Subtitle C Corrective Action

This FOST reviews sites that were evaluated and addressed under the Navy's CERCLA and Defense Environmental Restoration Program (DERP) authority, as well as sites addressed under the corrective action requirements of RCRA Subtitle C (for solid waste management units [SWMUs]), RCRA Subtitle I (for underground storage tanks [USTs]), and associated state laws and regulations, administered by the U.S. EPA, the State of California, and Alameda County. These corrective action authorities are similar to CERCLA in that they require response/corrective action (i.e., cleanup) where necessary to ensure adequate protection of human health and the environment — see CERCLA Section (§) 121(d); California Health and Safety Code (HSC) § 25296.10(b); and *California Code of Regulations (CCR)* Title 23 § 2720 (definition of “corrective action”) and § 2725(c), and Title 22 CCR § 66264.101(a).

The rationale for integrating CERCLA and RCRA corrective action requirements is straightforward. The cleanup standard for CERCLA is set forth in CERCLA § 121 (Cleanup Standards), which states in the relevant part of Section 121(b)(1): “...The President shall select a remedial action that is protective of human health and the environment...” (42 *United States Code* [U.S.C.] § 9621(b)(1)). The cleanup standard for RCRA Subtitle C corrective action in the State of California, as set forth in Title 22 CCR § 66264.101(a), provides: “The owner or operator of a facility seeking a permit for the transfer, treatment, storage, or disposal of hazardous waste shall institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid or hazardous waste management unit at the facility, regardless of the time at which waste was placed in such unit.” Also see California HSC §§ 25187 and 25200.10(b).

Alameda Point was previously subject to a RCRA permit (CA2170023236), which expired in July 2003. As part of the RCRA permit closeout activities, a RCRA Facility Assessment (RFA) was conducted in 1992 and identified numerous SWMUs (which were referred to as “non-permitted SWMUs” for a period of time) at former NAS Alameda, and which had not been previously identified in the RCRA permit (DTSC 1992b).

All RCRA-permitted units have been closed (DTSC 2000a, 2000b, 2000c), and all non-permitted units were delegated either to the CERCLA Program or the Petroleum Program as detailed in Table 2. Table 2 provides information regarding the closure status of the CERCLA and petroleum sites to which the RCRA units were assigned. Additional information about the open petroleum sites within the FOST Parcel is discussed in Section 4.2.

3.2 Resource Conservation and Recovery Act Subtitle I Corrective Action

The Water Board administers the UST corrective action program at Alameda Point pursuant to RCRA Subtitle I and California HSC §§ 25280-25299.8. The authority of the Water Board to require corrective action at UST sites is set forth at Title 23 CCR Division 3, Chapter 16.

Many of the Petroleum Program sites were originally evaluated as part of a remedial investigation (RI) completed under CERCLA (Title 42 U.S.C. § 9601[14]) at Alameda Point between 1992 and 1995. However, petroleum and petroleum-related constituents are not included in the definition of hazardous substances under CERCLA (Title 42 U.S.C. § 9601[14]). By 1997, sufficient data had been obtained and analyzed for the BRAC Cleanup Team (BCT) to determine that a number of IR sites only contained petroleum or petroleum-related constituents, and, therefore, a subset of these sites was moved into the Petroleum Program (Navy 1997). By letter dated June 20, 1997, DTSC concurred with this decision (DTSC 1997). Petroleum-only sites and their constituents are being remediated under the 1994 California UST regulation (Title 23 CCR § 2720), which addresses releases to soil and groundwater from former petroleum fuel-containing USTs, aboveground storage tanks (ASTs), and pipelines.

3.3 Comprehensive Environmental Response, Compensation, and Liability Act

In 1993, the Defense Base Closure and Realignment Commission recommended the closure of NAS Alameda, which was operationally closed in 1997. In 1999, former NAS Alameda was added to the National Priorities List. Under Executive Order 12580, the Navy is the lead agency responsible for cleanup efforts at Navy properties.

CERCLA response actions are initiated at environmental sites where CERCLA hazardous substances have been or may have been released. There are seven areas known as IR Program sites and two AOCs within the FOST Parcel. As discussed in Section 4.1, CERCLA investigations were conducted under the IR Program for these sites.

4.0 Summary of Environmental Conditions and Notifications

This section summarizes the environmental conditions and notifications, as they relate to CERCLA, petroleum products and derivatives, asbestos-containing materials (ACM), lead-based paint (LBP), and other regulated materials.

The deed(s) for the CERCLA-impacted FOST Parcel will contain, to the extent such information is available on the basis of a complete search of agency files, a notification of hazardous substances stored for 1 year or more, or known to be released, or disposed of within the FOST Parcel, in the form and manner prescribed by CERCLA (42 U.S.C. § 9620[h]) and Title 40 of the *Code of Federal Regulations Part 373*. This notice is provided as Attachment 2, the Hazardous Substances Notification.

In addition to the hazardous substance notice, the Base Redevelopment and Realignment Manual outlines other environmental topics that must be addressed in a FOST (DoD 2006). These topics are further discussed below, including the environmental conditions and actions taken on the FOST Parcel; identification of notification requirements related to CERCLA, munitions response, and petroleum corrective action; and information regarding ACM, LBP, polychlorinated biphenyls (PCBs), radiological materials, and pesticides.

4.1 CERCLA Program

This section addresses the CERCLA sites within the FOST Parcel. The Navy initiated environmental investigations at NAS Alameda under the Navy Assessment and Control of Installation Pollutants (NACIP) Program. Under the NACIP Program, the Navy performed an initial assessment study in 1982 to assess NAS Alameda for areas posing a potential threat to human health or the environment due to contamination from historical uses involving hazardous materials (Ecology and Environment 1983).

On June 6, 1988, the Navy received a Remedial Action Order from the Department of Health Services (now DTSC) that identified NAS Alameda sites as needing a RI and feasibility study (FS) in accordance with the requirements of CERCLA. In response, the Navy converted its NACIP Program into the IR Program to be more consistent with CERCLA, and investigations were conducted in a phased approach.

A comprehensive base closure strategy was developed by the BCT as part of the 1997 BRAC Cleanup Plan at Alameda Point (Navy 1997). This strategy consolidated the initial 23 IR sites into four Operable Units (OUs) as a management tool to accelerate site investigation. OU-4 was later subdivided and OU-5 and OU-6 were added when IR Sites 24 through 31 were added to the CERCLA program. IR Site 18 (Storm Sewers) was reconfigured and eliminated as a separate IR site. Instead, the associated contamination in the storm sewers was investigated and remediated

within the footprint of individual sites. An additional four new sites, IR Sites 32, 33, 34, and 35, were added, but were not assigned to an OU.

Seven out of 34 Alameda Point IR sites are located within the FOST Parcel (Figure 4). These sites include IR Sites 3, 16, 17, and 30, and portions of IR Sites 24, 25, and 34. AOC 1 and AOC 6 are also within the FOST Parcel.

Environmental sites within the FOST Parcel have received regulatory agency concurrence for either No Further Action (NFA) or Response Complete. The status of environmental sites within the FOST Parcel is presented in Table 3. A NFA or Response Complete determination is based on the findings of evaluations or cleanup actions that the parcel is suitable for transfer as long as the applicable notifications and restrictions, outlined in Sections 4.0 and 5.0, have been implemented. NFA designations were given to sites either because no response action was required to provide adequate protection of human health and the environment, or the required remedial action has been completed.

Besides the IR sites, the Marsh Crust also was investigated under the CERCLA Program at Alameda Point. The Marsh Crust is a layer of sediment contaminated with polycyclic aromatic hydrocarbons (PAHs) that were deposited across the tidelands and the former subtidal areas from the late 1800s until the 1920s. The contamination is believed to have resulted from former industrial processes in the area that discharged petroleum products and wastes directly into San Francisco Bay. The Final Marsh Crust Remedial Action Plan (RAP)/Record of Decision (ROD) was signed in February 2001 (Navy 2001). The Marsh Crust RAP/ROD identifies restrictions on excavations that vary by location and that apply within all of the upland areas of the FOST Parcel. Figure 5, Footprint of Areas within FOST Parcel that Require Restrictions, includes depiction of the Marsh Crust restrictions.

A summary of the CERCLA investigations conducted within the FOST Parcel is presented below.

4.1.1 IR Site 3 (OU-2B)

IR Site 3, Abandoned Fuel Storage Area, is an approximately 12.8-acre site located near the eastern entrance to Alameda Point (Figure 2). IR Site 3 is known as the Abandoned Fuel Storage Area because between the 1940s and 1970s, aviation gasoline was stored there in USTs. Nearly 80 percent of the site is covered with asphalt and concrete in the form of buildings, roads, and parking lots (Figure 3A). IR Site 3 is grouped with IR Sites 4, 11, and 21 under OU-2B. Portions of the Petroleum Program Corrective Action Areas (CAAs) 3A, 3B, and 3C are located within IR Site 3 to the south of Buildings 112 and 527 (Figure 6 and Tables 4 and 5). There are several former SWMUs that are within the footprint of IR Site 3 (Figure 7 and Table 2). Only one of these former SWMUs, NAS Generator Accumulation Point (GAP) 10, is addressed under

CERCLA as part of IR Site 3 (Navy 2015a). The remaining SWMUs within the IR Site 3 portion of the FOST Parcel (Naval Aviation Depot [NADEP] GAPS 44 and 45, M-07, and AOC 398) are addressed as part of the Petroleum Program. The Petroleum Program sites located within the IR Site 3 portion of the FOST Parcel are discussed in Section 4.2.

The 2015 ROD identifies contaminants of concern (COCs) for IR Site 3 soils as cobalt and lead. Cobalt is present in one localized area at concentrations that exceed residential cleanup goals (Navy 2015a). This area was originally in IR Site 21, (an IR site adjacent to IR Site 3); however, after the CERCLA FS the boundary of IR Site 3 was modified to include this area. The remedy for cobalt impacted soil at IR Site 3 is institutional controls (ICs) to restrict residential use (Navy 2015a) (Figure 5). The ROD identified two areas within IR Site 3 with lead concentrations in soil that required remedial action. The selected remedy for lead-impacted soil was excavation with off-site disposal of the contaminated soil. The soil removal from the two areas has been completed, and the excavated areas were backfilled with fill suitable for reuse and returned to original grade.

The OU-2B Soil Remedial Action Completion Report (RACR) documents the areas within IR Site 3 where lead-impacted soil was removed and documents completion of the remedial action for soil (Arcadis 2015). The U.S. EPA submitted a letter concurring with the RACR for OU-2B Soil (U.S. EPA 2015b).

By letter dated August 6, 2012, the Navy provided information demonstrating that groundwater in the southeast portion of the base, including all of IR Site 3, meets State Water Board Resolution No. 88-63 and Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," exception criteria (a) and (c). Information presented included proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater (Navy 2012a). The regulatory agencies concurred with the Navy's assessment (Water Board 2012a, U.S. EPA 2012c). Therefore, it is unlikely that shallow groundwater will be used as a municipal water supply.

The 2015 ROD selected an OU-2B groundwater remedy for a volatile organic compounds (VOCs) groundwater plume that underlies portions of IR Sites 4, 11, and 21. While the OU-2B shallow VOC groundwater plume does not extend into IR Site 3, the remedy includes ICs with a buffer zone that extends beyond the perimeter boundary of the plume and onto a portion of IR Site 3 (Figure 5).

The ROD for OU-2B identifies the Area Requiring Institutional Controls (ARICs) and documents the ICs necessary to protect human health and attain the Remedial Action Objectives (RAOs) for soil and groundwater (Navy 2015a). The Land Use Control (LUC) Remedial Design (RD) for OU-2B documents the restrictions related to the ICs for soil at IR Site 3 and ICs for

OU-2B groundwater (Figure 5). The LUC RD refines the IC boundaries presented in the ROD for groundwater based on evaluation of recent data (Navy 2015c).

Soil remediation is complete, and ICs will be implemented to protect human health from residual contamination in soil and adjacent groundwater; therefore, IR Site 3 is suitable for transfer.

4.1.2 IR Site 16 (OU-1)

IR Site 16, the C-2 Shipping Container Storage (CANS) Area consists of 11.4 acres located 390 feet east of San Francisco Bay. Eighty percent of IR Site 16 is covered by asphalt, concrete, buildings, roads, and parking lots (Figure 3A). Historically, the site was used for industrial-type activities including aircraft parking, aircraft maintenance, material and equipment staging, discarded items storage, automobile servicing and maintenance, and hazardous materials storage. IR Site 16 contains Building 608, former Building 402 and shipping containers known as “CANS” (338A through 338H) in the eastern portion of IR Site 16 (see Figure 3A). The CANS were used to store avionics parts and test equipment, chemicals, and aircraft fabrication equipment. Three sheds associated with Building 608 were used as vehicle service bays. IR Site 16 also includes oil–water separators (OWSs) 608A and 608B, washdown area (WD) 608 (Figure 7), UST(R)-18/NAS GAP 17 (also known as UST 608-1), and AST 338-A1, AST 338-D4 and AST 608 (Figures 8 and 9). Site features WD 608, AST 338-A1 and AST 608 were closed as part of the ROD (Navy 2007b). Due to possible petroleum contamination, a portion of IR Site 16 is also designated as CAA 09B (Figure 6), which is discussed in Section 4.2.3 (Navy 2007b).

No COCs were identified in the RI report for soil under any of the IR Site 16 scenarios based on the human health risk assessment (HHRA). VOCs were identified as COCs in groundwater under the residential scenario with domestic/municipal beneficial use. The modified ecological risk assessment results did not identify any COCs for ecological receptors at IR Site 16. The lack of habitat, including nesting and foraging range, makes for minimal likelihood of exposure and hazards to the ecological receptors (Tetra Tech 2004).

In 1997, a non-time-critical removal action (NTCRA) was conducted at IR Site 16 for PCBs and lead in soil (Tetra Tech 1998). At the time the ROD was finalized in September 2007, the potential for soil contamination beneath and adjacent to OWS 608A and OWS 608B and the related potential human health and ecological risk in these locations had not been fully defined. The ROD specified that additional soil sampling, a Pre-Design Data Gap Sampling (PDDGS), should be performed in these areas (Navy 2007b). The ROD specified that the remedial goals (RGs) for any additional contaminants identified during the PDDGS would be based on the U.S. EPA’s 2004 residential Preliminary Remedial Goals (PRGs). COCs identified in the ROD were PCBs for soil, and cis-1,2-dichloroethene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride for groundwater. Lead,

chlordane, dieldrin, heptachlor, and heptachlor epoxide were not identified as soil COCs in the ROD, but they were added as soil COCs as a result of the PDDGS and were included in the RD and remedial action (RA). The purpose of the soil RA was to remove soil that exceeded the RGs for lead, chlordane, dieldrin, heptachlor, and heptachlor epoxide.

The RA for soil beneath and adjacent to OWSs 608A and 608B was completed in April 2011. An Explanation of Significant Differences (ESD) for soil was submitted in May 2012. The ESD describes further sampling and subsequent risk evaluation of a small section of soil with residual COCs remaining beneath a functional building (Building 608). The risk evaluation determined that the remaining site soils meet the RAOs and that the soil remediation was complete (Navy 2012b). The Final RACR for the soil remedial action was submitted in July 2012, and U.S. EPA and DTSC indicated their concurrence by signing the RACR on June 25, 2012 and June 30, 2012, respectively (URS 2012).

For IR Site 16 groundwater, the selected RA in the OU-1 ROD called for using in situ chemical oxidation (ISCO), accelerated bioremediation, monitored natural attenuation, and short-term ICs (Navy 2007b). As reported in the ESD, IR Site 16 groundwater had two treatment areas referred to as IR Site 16 North and IR Site 16 South. ISCO was implemented in May 2010 and groundwater was monitored quarterly for a year. Analytical results indicated significant decreases in COC concentrations from the baseline; however, 2013 monitoring data indicated that some COCs remained above RGs in five wells on IR Site 16 North and four wells on IR Site 16 South (Navy 2015d). While monitoring was ongoing, the regulatory agencies concurred with the Navy's groundwater assessment, which found that groundwater under this portion of Alameda Point met the criteria for exception to California's sources of drinking water policy; this finding is discussed in more detail in Section 4.1.1 (Water Board 2012a, U.S. EPA 2012c). As a result, drinking water standards do not apply to groundwater in the area covered under this exception, which includes IR Site 16.

The updated HHRA using post-RA groundwater monitoring data determined that as a result of the full-scale ISCO RA, the remaining COC concentrations in groundwater do not present unacceptable risk to current receptors (i.e., commercial/industrial). However, there are two areas where COCs in groundwater may potentially present unacceptable risk (i.e., greater than U.S. EPA point of departure of 10^{-6}) for residential site use, primarily due to potential vapor intrusion (VI) risk. An ESD for groundwater was prepared in 2015 to document the change in the nature of the ICs remedy from the short-term ICs implemented concurrent with the active groundwater treatment identified in the ROD, to permanent ICs to be implemented indefinitely as the final remedy to mitigate potential VI risk (Navy 2015d). The LUC RD identified the IC implementation areas, IC termination criteria, and groundwater monitoring requirements (Navy 2016a). The portions of IR Site 16 subject to ICs are shown on Figure 5. All remedial action is complete, and ICs will be implemented in the deeds that will be prepared for Site 16 at the time

of transfer to protect human health from residual groundwater contamination that could pose a risk to future residents. U.S. EPA and DTSC concurred that remedial action is complete at IR Site 16. Therefore, IR Site 16 is suitable for transfer.

4.1.3 IR Site 17 (OU-4B)

IR Site 17, Seaplane Lagoon, consists of approximately 110 submerged acres in the southeastern corner of Alameda Point. The Seaplane Lagoon was constructed in the 1930s by dredging a former tidal flat. During construction, seawalls were built along the eastern, western, and southern boundaries, and a bulkhead wall was constructed on the northern side. Four water access ramps are roughly evenly spaced along the northern perimeter; these seaplane ramps are cantilevered structures associated with and appurtenant to the adjacent apron and are not part of the FOST Parcel. Sediment beneath the ramps is part of Seaplane Lagoon and is included in the FOST Parcel. IR Site 17 is grouped with IR Site 24, another submerged site, under OU-4B (Navy 2006).

From the 1940s until 1975, untreated industrial wastewater and stormwater were discharged into a network of storm drains and delivered to the Seaplane Lagoon through storm sewer outfalls in the northwestern and northeastern corners of the lagoon. Outfall F discharged into the northwestern corner of Seaplane Lagoon. Outfall FF discharged into Seaplane Lagoon on the northern boundary, adjacent to the Seaplane Parking Apron. Outfall G discharged into the northeastern corner of Seaplane Lagoon. The storm drain lines leading to the outfalls are not within the FOST Parcel. The storm drain lines associated with Outfalls F, FF, and G were either replaced or cleaned prior to the IR Site 17 remediation.

The Final ROD for IR Site 17 was issued in November 2006. The selected remedy for contaminated sediment at IR Site 17 was dredging of sediment in the northeast and northwest corners of the Seaplane Lagoon, dewatering, and disposal at a permitted off-site waste disposal facility (Navy 2006). Total PCBs, pesticides (DDx, the sum of DDD [dichlorodiphenyldichloroethane], DDE [dichlorodiphenyldichloroethylene], and DDT [dichlorodiphenyltrichloroethane]), and metals (cadmium, chromium, and lead) were identified as risk drivers (Battelle, BBL, and Neptune & Company 2004). Although radium-226 (Ra-226) was not identified as a risk driver in the ecological or human health risk assessment, the ROD noted elevated Ra-226 concentrations within the remediation areas and stated that any potential risks would be addressed through the remedial activity of sediment removal and proper disposal (Navy 2006).

Between October 2008 and December 2009, a Time-Critical Removal Action (TCRA) was conducted to remove submerged and intertidal construction debris piles located along the northern shoreline of IR Site 17 (TiFCI 2010). After evaluation of the post-TCRA analytical

data, additional sediment was removed prior to the IR Site 17 remedial action for the northwest corner of the lagoon (TIECI 2012).

The Remedial Action Work Plan (RAWP) for IR Site 17 specified criteria for successful completion of the remedial action for both contaminants with RGs and those without RGs (including Ra-226) (Battelle and TIECI 2011). Remedial action for the sediments in the northeast and northwest corners of Seaplane Lagoon began in January 2011 and was completed in 2013.

The Final RACR, submitted in September 2014, documents that the RAOs in the 2006 ROD and completion criteria in the RAWP were achieved and that IR Site 17 does not pose a risk to human health or the environment under current or proposed future use (TIECI 2014). A total of 61,767 cubic yards of sediment was dredged from the northeast remediation area and 34,231 cubic yards of sediment was dredged from the northwest area. The RACR also documents the removal of small items with radioactivity, believed to have Ra-226 paint on them, from the remedial action area dredged sediment. During the processing of the sediment removed from both remediation areas of Seaplane Lagoon, 51 items with Ra-226 activity were removed from the sediment and disposed of at a licensed facility (TIECI 2014). An ESD and LUC RD were completed to add an IC as a component of the remedy (Navy 2016b; Navy 2016c). To ensure proper disposal and prevent potential exposure to Ra-226 in the sediment (including items with Ra-226 activity that may be present in the sediment), the IC prohibits dredging and/or removal of sediment in IR Site 17 unless performed subject to an approved Sediment Management Plan (ScdMP).

All remedial action is complete, and the IC will be implemented in the deed at the time of transfer. U.S. EPA and DTSC concur that remedial action is complete. Therefore, IR Site 17 is suitable for transfer.

4.1.4 IR Site 24 (OU-4B)

IR Site 24, the Pier Area, is a submerged site of approximately 50 acres in size located southeast of and adjacent to Seaplane Lagoon (IR Site 17). It is grouped with IR Site 17 under OU-4B (Navy 2010b). Control of approximately 7 acres of IR Site 24 previously transferred back to the City as part of the lease termination noted in Table 1. Approximately 43 acres of IR Site 24 that were retained by the Navy are included in the FOST Parcel. IR Site 24 consists of offshore areas in the vicinity of three existing piers; the site receives stormwater from three storm sewer outfalls (Figure 4). The piers and other infrastructure within the footprint of the submerged lands associated with IR Site 24 are appurtenant to the adjacent property and thus are not part of IR Site 24. The Navy historically used the piers to berth a variety of vessels, including destroyers, service ships, nuclear-powered ships, and occasionally submarines. The USS Hornet is currently

docked at Pier 3 as a naval museum. A portion of Pier 3 was identified as a general radioactive material location and is discussed as adjacent property in Section 6.2.9.

The RI Report identified cadmium, lead, total DDx (the sum of DDD, DDE, and DDT), and total PCBs as COCs (Battelle, Arcadis [BBL], and Neptune & Company 2007). Because of the limited habitat for shellfish at the site, as well as the limited and difficult access to the water and shoreline, no complete exposure pathways for human receptors were identified at IR Site 24. The ecological risk assessment concluded that risks were acceptable over the majority of IR Site 24 and that the only area having a potential for adverse impacts was in a small area in the northeastern corner in the sediment shelf near shore and under Wharf Road between Piers 1 and 2 (Navy 2010b). An FS was completed for the portion of IR Site 24 with COCs in the northeastern corner. The remedy selected in the ROD for the northeastern corner of IR Site 24 was sediment removal and dredging of an approximately 0.5-acre area adjacent to the quay wall and beneath the roadway; the remainder of IR Site 24 required no action (Navy 2010b).

The sediment removal and dredging began in January 2012 and was completed in May 2012. The Final RACR (UIC1 2013) was submitted in March 2013. U.S. EPA concurred that the remedial action was complete by letter dated March 21, 2013 (U.S. EPA 2013), and DTSC concurred via letter on July 23, 2013 (DTSC 2013). IR Site 24 is suitable for transfer.

4.1.5 IR Site 25 (OU-5)

IR Site 25, former North Housing, is approximately 42 acres in size and located east of Main Street in the northeast portion of Alameda Point. It is part of OU-5 (Navy 2007c). The portion of IR Site 25 included in this FOST is approximately 34 acres in size and is bounded by Estuary Park and the former Navy Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex (FISCA) to the north, former FISCA to the east and southeast, IR Site 30 to the south, and United States Coast Guard property to the west and southwest.

IR Site 25 is relatively flat. The area was originally mostly tidal wetlands, but dredging, construction, and development have altered the area. The historical land use for IR Site 25 was residential. Between 1947 and 1966, prior to acquisition of the property by the Navy, the area was used for residential purposes. The Navy acquired the IR Site 25 property in two transactions between 1966 and 1968 and constructed housing there in 1969; the housing units are shown on Figure 3B and are currently unoccupied. It has not been included in any of the past Alameda Point lease agreements; however, the site is currently licensed to the City for law enforcement activities.

Previous investigations conducted at IR Site 25 revealed the presence of PAHs in soil. Between 2001 and 2002 a TCRA was performed to address PAHs in the top 2 feet of soil (FWC 2002). The TCRA encompassed a total area of approximately 26 acres, but buildings and hardscape

limited access in some portions of the site, so the excavated area totaled approximately 22.2 acres. A ROD to address the remaining contaminated soil was signed and issued in 2007 (Navy 2007c). ICs were selected as the final remedy for IR Site 25 soil. The ICs require future landowners to obtain written approval from the Navy, U.S. EPA, and DTSC for excavation of soil from depths greater than 4 feet below ground surface or for the removal of hardscape. For this work, future landowners also must develop a Soil Management Plan, obtain approval of the plan from the Navy, DTSC, and U.S. EPA (unless U.S. EPA determines its review and approval of a specific Soil Management Plan is not necessary) and comply with the Soil Management Plan. Land use controls are detailed in the IR Site 25 LUC RD (Navy 2009a).

The groundwater beneath IR Site 25 was addressed in a 2007 ROD for OU-5 groundwater where the selected remedy consisted of biosparging with soil vapor extraction (SVE) in the plume centers, nutrient/microorganism enhancement as required, monitored natural attenuation (MNA), and ICs (Navy 2007a). Operation of the treatment system began in 2009 and ended in 2013. Based on additional evaluations of historical (pre-ROD) and post-ROD data that included post-ROD indoor air sampling by U.S. EPA in 2015, a ROD Amendment documenting that no further action is necessary for the groundwater was issued (Navy 2015b). U.S. EPA signed the ROD Amendment on June 17, 2015, DTSC signed on July 7, 2015, and the Water Board signed on July 9, 2015.

The ICs for soil have been implemented in accordance with the LUC RD, and no further action is required for OU-5 groundwater. This portion of IR Site 25 is suitable for transfer.

4.1.6 IR Site 30 (OU-5)

IR Site 30 is a 6.6-acre site located at the eastern end of Alameda Point and is part of OU-5. IR Site 30 is bounded by IR Site 25 (former North Housing) to the north and east, and IR Site 31 (Marina Village Housing owned by the United States Coast Guard) to the south and west. The Navy formerly leased the site to the Alameda Unified School District which operated the Woodstock Child Development Center, built in 1985 and Island High School (formerly the George P. Miller Elementary School), built between 1975 and 1977. Approximately 84 percent of the site is open space; however, most of this open space is paved, and approximately 74 percent of the site is covered with hardscape (Bechtel 2005) (Figure 3B).

The Navy conducted a TCRA in November 2004 at the Woodstock Child Development Center and Island High School (Shaw E&I 2005). The TCRA was based on results from the 2003 PAH assessment that indicated the presence of PAHs in soil at unpaved play areas of the site at concentrations above the Alameda Point screening criterion for residential use. The TCRA included installation of soil cover materials in four areas in the southwestern portion of the yard of the Woodstock Child Development Center and two areas east of Island High School.

A RI for IR Site 30 soil was conducted and an RI report was issued in October 2005. A background evaluation was subsequently conducted and documented in the RI Addendum, which presented the results and recommended no further action for soil (Bechtel 2008). The ROD for IR Site 30 soil was issued in September 2009 documenting no further action for IR Site 30 soil (Navy 2009b).

The groundwater beneath IR Site 30 was addressed in the 2007 ROD for OU-5 groundwater (Navy 2007a) and the 2015 ROD Amendment for OU-5 groundwater, which are discussed in Section 4.1.5. The ROD Amendment selected no further action for the groundwater beneath IR Site 30; the Navy, U.S. EPA, DTSC, and the Water Board signed the ROD Amendment in April 2015 (Navy 2015b). IR Site 30 is suitable for transfer.

4.1.7 IR Site 34

IR Site 34, Naval Air Rework Facility, is a 4.18-acre area that is a partially paved, relatively flat open space and is not part of an OU. IR Site 34 was used to maintain base equipment, such as scaffolding and other apparatus. The site was used primarily for painting services, storage, wood and metal shops, and sandblasting. IR Site 34 formerly contained several structures: 12 former buildings and intervening open areas; seven ASTs; NADEP GAPS 78 and 79; UST 473-1, a portion of fuel line (FL) -018, and 15 transformers. Two former SWMUs, UST 473-1 (also known as AOC 473), and AST 331 (also known as SWMU 331), were addressed under the Petroleum Program along with FL-018 and all of the ASTs. CAA-14 is also located within the footprint of IR Site 34 and was closed out with AST 331. The Petroleum Program is discussed in Section 4.2.

The remaining two former SWMUs (NADEP GAPS 78 and 79) were investigated as part of IR Site 34. All buildings, ASTs, GAPS, and transformers were removed between 1996 and 2000, except for their concrete pads. Figures 6, 7, 8, 9, and 10 show the locations of the CAA, the former SWMUs, the ASTs, the UST, and the fuel line, respectively. As shown on Figure 4, the southwestern 0.22-acre corner of IR Site 34 was transferred by the Navy to the Department of Veterans Affairs who will retain it in perpetuity, and it is not part of this FOST Parcel.

Arsenic, lead, 1,4 dichlorobenzene, dieldrin, heptachlor epoxide, total PCBs and total petroleum hydrocarbons (TPH) were identified as COCs in soil. The ROD for Site 34 was issued in April 2011 (Navy 2011a). The remedial action selected was excavation and off-site disposal of chemically impacted soil. Groundwater at Site 34 is not considered a potential source of drinking water, accordingly drinking water standards do not apply. Chemicals in groundwater were evaluated for potential VI and impacts to surface water in the Oakland Inner Harbor. Groundwater was determined not to pose a potential risk to human health or the environment, so no further action was necessary for groundwater. The no further action decision for groundwater was documented in the 2011 ROD.

The remedial action for soil was conducted between May and June 2013, and the Final RACR was completed in February 2014 (ERS 2014). U.S. EPA concurred with the Final RACR by letter dated March 4, 2014 (U.S. EPA 2014). DTSC concurred with the Final RACR by letter dated March 19, 2014 (DTSC 2014). There are no CERCLA restrictions with respect to IR Site 34 soil and groundwater. IR Site 34 is suitable for transfer.

4.1.8 AOC 1

This site is a former storage yard, approximately 0.5 acre in size, where arsenic and cobalt in soil were reported above background levels and residential screening levels (Bechtel 2007). AOC 1 contains M-10, a spent solvent tank for which DTSC concurred with NFA in 2000 (DTSC 2000c). In December 2013, additional soil samples were collected and analyzed for arsenic and cobalt. The arsenic and cobalt concentrations detected in the soil samples were within U.S. EPA's risk management range, and an evaluation of the area was included in the Amended Site Inspection (SI) for EDC 12 (please note EDC terminology is no longer used) which concluded no action is required (CH2MHill 2014). The Amended SI was reviewed by U.S. EPA and DTSC and finalized in accordance with FFA document review procedures. AOC 1 is suitable for transfer. U.S. EPA concurred with the recommendation for AOC 1 in the EDC 12 SI Addendum by letter dated November 23, 2015 (U.S. EPA 2015a).

4.1.9 AOC 6

AOC 6 is a small site, approximately 0.014 acre in size. SWMU AST 584 was recommended for further investigation under CERCLA as AOC 6 to assess whether the use of corrosion-inhibiting chemicals had resulted in a release. Hexavalent chromium was detected in soil samples above background levels and residential screening levels (Bechtel 2007). In December 2013, additional soil and groundwater samples were collected and analyzed for hexavalent chromium. As discussed in Section 4.1.1 the groundwater in this portion of Alameda Point meets the criteria for exception to sources of drinking water policy, thus drinking water standards do not apply. The hexavalent chromium concentrations detected in the soil samples were within U.S. EPA's target risk range. Groundwater sample results were nondetect for hexavalent chromium. As discussed in Section 4.1.9, AOC 6 was investigated in conjunction with EDC 12. The EDC terminology is no longer used, but the Amended SI for EDC 12 concluded with a no action recommendation for AOC 6 (CH2MHill 2014). The Amended SI was reviewed by EPA and DTSC and finalized in accordance with FFA document review procedures. AOC 6 is suitable for transfer. U.S. EPA concurred with the recommendation for AOC 6 in the EDC 12 SI Addendum by letter dated November 23, 2015 (U.S. EPA 2015a).

4.2 Petroleum Products and Derivatives

The history and status of the Alameda Point Petroleum Program is documented in the Petroleum Management Plan (Battelle 2010b) and a subsequent update (Battelle 2012a). Unless otherwise noted, these two documents are the primary sources for the descriptions in the following two sections and the associated tables (Tables 4, 5, and 6).

The Petroleum Program was created to address potential and actual soil and groundwater contamination related to petroleum products, which are excluded from CERCLA. The Navy developed a fuel site closure plan in 2001 in cooperation with the Water Board and DTSC. The Water Board issued a letter in 2001 providing concurrence on the approach (Water Board 2001).

The Navy identified a variety of CAAs as part of the Petroleum Program (Figure 6). CAAs that are wholly or partially within the FOST Parcel are listed in Table 4. Some of the sites included in the Petroleum Program were originally identified as part of the RFA prepared by the Navy and DTSC in 1992 (DTSC 1992b); the purpose of the RFA was to identify sites potentially requiring closure under RCRA regulations. As discussed in Section 3.1, all former RCRA SWMUs that had not previously been closed under RCRA, were transferred to either the CERCLA or Petroleum Programs (SulTech 2007). RCRA SWMUs transferred to the Petroleum Program included individual or collections of USTs, ASTs, OWSs, and GAPs (Table 2). USTs and ASTs within the FOST Parcel are listed in Table 5 and shown on Figure 8 and Figure 9. Some of the USTs and ASTs within the FOST Parcel are being addressed via CERCLA, so Table 5 also identifies the program under which closure is being addressed. Underground fuel lines are identified in Table 6 and shown on Figure 10.

4.2.1 Open Petroleum Program Sites

The Petroleum Program sites within the FOST Parcel discussed in this section are open and will be transferred prior to obtaining regulatory closure subject to the restrictions discussed in Section 5.2. The open sites include: sites with outstanding site closure requests that are awaiting written regulatory concurrence; sites pending submission of site closure requests; and sites requiring further investigation, remediation, and/or monitoring activities. These sites are shown on Figure 6.

CAA-03: This 9-acre site overlaps IR Site 3. The site was subdivided into CAA-03A, CAA-03B, and CAA-03C. Historic activities at CAA-03A, CAA-03B and CAA-03C resulted in the release of aviation fuel to soil and groundwater. The Navy has performed investigations and completed substantial corrective-action at CAAs-03A, -03B, and -03C; these efforts have cleaned up the vast majority of the petroleum contamination (Shaw E&I 2013). USTs 398-1 and 398-2, which are included in CAA-03A, were closed with a NFA letter from the Water Board dated October 13, 2014 (Water Board 2014c); other components of CAA-03A are being investigated or are

under review for closure (Table 4 and Table 5). UST 97-C, which is part of CAA-03C, was closed with a NFA letter from the Water Board dated April 21, 2015 (Water Board 2015d). Residual contamination at CAA-03B and -03C requires further investigation and possibly corrective action prior to requesting closure.

CAA-09A. This site consists of the area around Building 584, which was used for storage of corrosives, lubricating oils, and water-treatment chemicals. It includes USTs 584-1 and 584-2, both removed in 1994. The USTs were located adjacent to AOC 6, but a portion of CAA-09A overlaps AOC 6 (see detail 2 of Figure 4). AOC 6 is discussed in Section 4.1.9.

4.2.2 Open Aboveground Storage Tanks, Oil and Water Separators, Washdown Areas, Underground Storage Tanks, and Fuel Line Sites

AST 330B is the only open Petroleum Program site present in the FOST Parcel that is not associated with a CAA or CERCLA site. The Navy will continue to work with the Water Board to request closure for AST 330B after transfer.

4.2.3 Closed Petroleum Program Corrective Action Area Sites

The following Petroleum Program CAA sites are closed with written regulatory concurrence. Figure 6 shows all CAAs.

CAA-A. This site (both within and adjacent to IR Site 34) consists of the area around parallel 10-inch FLs used to transport jet fuel. The site was closed with concurrence in 2007 (Water Board 2007) without restrictions. A portion of CAA-A was included in the 2013 FOST.

CAA-09B. This site consists of the area around Building 608 that was used as an automobile service and repair facility. A waste oil UST (UST 608-1) and two OWSs (OWS 608A and 608B) within the site footprint were assigned to IR Site 16, which overlaps the CAA (see Section 4.1.2, IR Site 16, above). The OWSs were removed in 2010 under the CERCLA action for OU-1 Site 16 (URS 2012). No tanks or other RCRA Units are associated with CAA-09B. The CAA was closed along with IR Site 16 through the OU-1 ROD ESD (Navy 2015d).

CAA-14. This site consists of the area around Building 331 that was used as a woodworking facility and offices; it is located within IR Site 34. CAA-14 includes AST 331, also referred to as former SWMU 331. The Water Board concurred with NFA for AST 331 by letter dated March 20, 2013 (Water Board 2013a). CAA-14 coincides with Remedial Action Area 13 in IR Site 34. Remedial Action Area 13, including co-located petroleum contaminants, was remediated during the IR Site 34 remedial action as part of the CERCLA Program. IR Site 34 was certified by DTSC as having all appropriate response action completed and no further removal or remedial actions necessary (DTSC 2014). Therefore, all remediation work at CAA-14 has been completed and was closed when AST 331 was closed.

4.2.4 Closed Underground Storage Tanks

Five USTs located within the FOST Parcel (UST 97-C, UST 398-1, UST 398-2, UST 473-1, and UST 608-1) have been closed individually without restrictions by the Water Board (Table 5). UST 97-C, within CAA-3C, was closed with an NFA letter from the Water Board (Water Board 2015d). Collectively UST 398-1 and UST 398-2 comprise the former SWMU AOC 398 within CAA-3A; with the closure of these two USTs (Water Board 2014c), AOC 398 has also been closed. UST 473-1, the former SWMU AOC 473, is not associated with an open CAA; it was closed by the Water Board without restrictions (Water Board 2014f). UST 608-1 was closed concurrently with CAA-09B and IR Site 16 (Navy 2015d).

4.2.5 Closed Aboveground Storage Tanks, Oil and Water Separators, Washdown Areas, and Fuel Line Sites

Closed Petroleum Program ASTs, OWSs, WDs, and FLs present in the FOST Parcel not associated with a CAA or CERCLA site are listed below. Additional information can be found in Tables 5 and 6. Sites listed below were closed without land use restrictions:

- AST 331
- AST 338-D4
- AST 344A
- AST 344B
- AST 344C
- AST 344D
- FL 155
- FL 158

AST 330A was closed in February 2013. A restriction is required, as discussed in Section 5.2, to ensure the property remains protective of public health, safety, or the environment (Water Board 2013b).

4.3 Asbestos-Containing Material

DoD policy is to manage ACM in a manner protective of human health and the environment, and to comply with all applicable federal, state, and local laws and regulations governing ACM hazards (DoD 1994).

4.3.1 FOST Property West of Main Street (IR Sites 3, 16, 17, 24, and 34; AOCs 1 and 6)

As noted in Section 2, a significant portion of the FOST property was subject to the LPL and is currently subject to the existing EDC MOA and LIFOC with the City. All available information regarding the existence, extent, and condition of known ACM was fully identified in Exhibit "B" to the LPL and again in Exhibit "I" to the EDC MOA. As a result, the City has been responsible for monitoring the condition of existing ACM in compliance with all applicable federal, state,

and local laws relating to ACM, including prohibiting occupancy of any buildings or structures containing known ACM prior to abatement of the ACM or demolition of the structure. The Navy is not responsible for any damages relating to ACM arising out of any activities occurring after the date of the LIFOC.

For the FOST property located west of Main Street, a notification regarding the potential presence of ACM within the FOST property will be included in the deed. A restriction is required, as discussed in Section 5.3, to ensure ACM is properly handled after transfer.

4.3.2 FOST Property East of Main Street (IR Sites 25 and 30)

The areas of the FOST Parcel east of Main Street (IR Sites 25 and 30) were not subject to the LPL, EDC MOA or the LIFOC. Portions of the IR Site 30 property associated with the Miller High School and the Woodstock Child Development Center were leased to the Alameda Unified School District from 1976 to 2011, respectively. The IR Site 25 property (former North Housing Area) has been under continuous Navy custody and control.

Given their use as educational facilities, the IR Site 30 Woodstock Child Development Center and Miller High School were subject to the Asbestos-Containing Materials in Schools Rule under the Asbestos Hazard Emergency Response Act (AHERA) (Toxic Substances Control Act Title II). AHERA requires local educational agencies to inspect their school buildings for asbestos-containing building material, prepare asbestos management plans and perform asbestos response actions to prevent or reduce asbestos hazards.

In 1995, the Navy conducted a comprehensive ACM survey of the IR Site 25 former North Housing units and the Woodstock Child Development Center. The survey found only non-friable ACM at the Woodside Child Development Center. Friable ACM was noted within all the North Housing units surveyed. The North Housing units are not occupied, and there is no record of friable ACM abatement occurring. There is no record of the Island High School being included in the 1995 ACM survey conducted by the Navy. It is unknown whether the Alameda Unified School District found and abated any friable ACM at Island High School.

For the FOST property located east of Main Street, a notification regarding the potential presence of ACM within the FOST property will be included in the deed. A restriction is required, as discussed in Section 5.3, to ensure ACM is properly handled after transfer.

4.4 Lead-Based Paint

LBP hazards are defined in the Federal Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of Public Law 102550), as codified in 42 U.S.C. § 4822 (the Act) as “any condition that causes exposure to lead that would result in adverse health effects.” The Act provides for regulation of the lead hazard from LBP. Hazards include lead-contaminated dust

and soil for target housing only. The Act defines target housing as any housing constructed before 1978, except any housing for the elderly or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing for the elderly or persons with disabilities) or any zero-bedroom dwelling. Under the Act, the Navy is required to disclose the presence of known LBP and/or LBP hazards prior to the sale or transfer of property to a non-federal entity.

In 1998, the Navy conducted a LBP risk assessment for Alameda Point. The Navy found LBP hazards throughout the interior and exterior of all former housing units surveyed. Notice of the existence of LBP in the buildings subject to the LIFOC at Alameda Point was provided to the City in 2000 when the LIFOC was executed. The LIFOC transferred responsibility for LBP within the lease boundaries from the Navy to the City and required the City to comply with all applicable federal, state, and local laws.

The LIFOC also notified the City that (1) buildings and other painted structures in the leased premises potentially contained LBP, and (2) such buildings and structures were not suitable for occupancy for residential purposes until any inspections and abatement required by applicable law had been completed.

As noted previously, the property east of Main Street, including the former North Housing units located within the IR Site 25 area were not included in the LIFOC to the City. In 2010, the Navy conducted a LBP Evaluation of this housing area to support future transfer of the property (IISI 2010). Based on X-ray fluorescence testing, approximately 74 percent of the units tested had at least one LBP component above U.S. EPA and/or California Department of Public Health (CDPH) lead based paint criteria. Dust wipe samples collected in six of the units had lead dust levels in quantities greater than U.S. EPA and/or California regulatory criteria. None of the soil samples were above either U.S. EPA or California Regulatory criteria. As no LBP soil hazard was identified, no further action with respect to soil was required based on LBP releases.

As noted in the previous section, the IR Site 30 property was formerly leased to the Alameda Unified School District. As educational facilities, the Woodside Child Development Center and Island High School were subject to LBP regulations.

As a condition of property transfer, the transferee(s) will be required to acknowledge receipt of the U.S. EPA-approved pamphlet, "Protect Your Family From Lead in Your Home," (EPA 747-K-94-001) and to agree that for any improvements on the property defined as target housing by Title X and constructed before 1978, LBP hazards will be abated or disclosed to future occupants before use of such improvements as a residential dwelling.

A notification will be provided by the Navy that all buildings at Alameda Point that were constructed prior to 1978 may contain LBP, and demolition of nonresidential buildings

constructed before 1978 poses the possibility that lead will be found in the soil as a result of these activities. As a condition of redevelopment, transferees may be required under applicable law or regulation to evaluate the soil adjacent to the nonresidential buildings for the hazards of lead in soil.

A restriction is required as discussed in Section 5.4 to carry forward the appropriate LBP restrictions from the LIFOC and to implement restrictions for the FOST property east of Main Street.

4.5 Polychlorinated Biphenyls

DoD policy guidance for PCBs is based on the Toxic Substances Control Act regulations found in Title 40 of the *Code of Federal Regulations* Part 761. All Navy equipment at Alameda Point with oil or other dielectric fluids that contained PCBs had a PCB concentration of less than 40 parts per million; this equipment was transferred to the Alameda Bureau of Power and Light, currently known as the Alameda Municipal Power, in 2001.

4.6 Munitions and Explosives of Concern

Under the Munitions Response Program, the Navy conducted a search to address munitions and explosives of concern (MEC) and munitions constituents used or released at sites from past on-site activities.

In 1994, an Environmental Baseline Survey (EBS) was prepared and included a fence-to-fence inspection, a comprehensive document review, and personnel interviews to establish and document the history of MEC use, storage, and disposal at Alameda Point. The EBS did not identify any MEC use, storage, or disposal within the FOST Parcel (ERM-West 1994).

Ordnance was stored and used at Alameda Point throughout its history as a military installation. Ordnance storage included ship and aircraft weapons systems, combat force weapons, and small arms and ammunition used by base security personnel. The Navy has removed all stored ordnance from Alameda Point (EFA-West 1999). A Close-Out Explosives Safety Inspection was conducted March 4 to March 8, 2013 at Alameda Point, with research and off-site auditing conducted through September 2013. Based on inspection results, Alameda Point is in compliance with Termination of Potential Explosion Sites requirements of Naval Sea Systems Command Ordnance Pamphlet 05 (NOSSA 2013). Explosives safety quantity distance arcs for all potential explosion sites, not previously cancelled, at Alameda Point, are officially removed (NOSSA 2014). Department of Defense Explosives Safety Board approval for transfer is not required for the specific property within the FOST Parcel.

No further MEC investigation is required for this FOST Parcel, and no additional notices are required with respect to MEC.

4.7 Radiological Program

During the basewide EBS, the Navy reviewed on-site records and searched for additional information on known and potential uses of radiological materials at Alameda Point (ERM-West 1994). Radioactive materials are any materials that are radioactive, except for excluded radioactive materials as defined in Section 101(22) of CERCLA. Following this, a 1995 radiological survey and a subsequent Historical Radiological Assessment (HRA) were conducted by the Navy (Tetra Tech 2013).

The results of the HRA were presented as a two-volume set. Volume I addressed radioactivity associated with the Naval Nuclear Propulsion Program (PIINSY 2000). Volume II addressed radioactivity associated with general radioactive material (G-RAM), which, for the purposes of the HRA, is defined as any radioactive material used by the Navy or Navy contractors not associated with the Naval Nuclear Propulsion Program (Weston 2007). The two volumes were written by different organizations and published separately because G-RAM and the Naval Nuclear Propulsion Program are managed by different Naval Sea Systems Command offices.

4.7.1 Naval Nuclear Propulsion Program

Historically, nuclear-powered ships used NAS Alameda port facilities. Volume I of the HRA presents the Navy's investigation of radioactivity associated with the Naval Nuclear Propulsion Program at former NAS Alameda (PIINSY 2000). The HRA assessed the impact on the environment from nuclear-powered ship maintenance, overhaul, and refueling. The HRA concluded that the berthing and maintenance of nuclear-powered ships at NAS Alameda from 1956 to 1997 resulted in no adverse effects on human health or the environment. As noted in the submittal letter for the Final HRA Volume I, U.S. EPA was satisfied with the HRA draft and no further response was required, and DTSC had no comments (Navy 2000). Volume I of the HRA also concluded that an independent review conducted by U.S. EPA was consistent with findings presented in the Navy report (EPA-West 1999).

No notices or restrictions are required regarding the Naval Nuclear Propulsion Program.

4.7.2 General Radioactive Material

Alameda Point used and stored G-RAM during past base operations. The Volume II HRA designated historical use sites as either radiologically "impacted" or "non-impacted." The HRA defined a site as "impacted" when the site "has or historically had a potential for G-RAM contamination based on the site operating history or known contamination detected during previous radiation surveys." Therefore, an "impacted" site designation identified a site as having a possibility for contamination based on historical records. Impacted sites include those where: radioactive materials were used or stored; known spills, discharges, or other instances involving

radioactive materials have occurred; or where radioactive materials might have been disposed of or buried (Weston 2007).

Of 685 potential G-RAM sites at Alameda Point, the HRA historical review of records indicated that 23 of the 685 sites are designated as potentially radiologically “impacted.” Of these impacted sites, two – IR Site 17 and a small portion of the former Smelter Area located in IR Site 3 – are located within the FOST Parcel (Table 7). The radiological site locations and status of each site within the FOST Parcel are shown on Figure 11.

At IR Site 17, remedial action for the sediments in the northeast and northwest corners began in January 2011 and was completed in 2013. The Final RACR documents that the CERCLA remedial action objectives have been achieved and that IR Site 17 does not pose a risk to human health or the environment under current or proposed future use (TTECI 2014). Due to potential residual Ra-226 activity associated with the sediment and any items within it, an ESD and LUC RD were prepared to add an IC to the IR Site 17 remedy. The IR Site 17 ESD (Navy 2016b) and LUC RD (Navy 2016c) present the IC prohibiting future dredging and/or removal of sediments in Seaplane Lagoon unless performed subject to an approved SedMP.

The Former Smelter Area is a 40,000-square-foot area east of Building 66. Much of the area is occupied by Buildings 398 and 399 and support equipment. A small portion (approximately 16 percent) of the 26,200-square-foot Former Smelter Area east of Building 66 is located in the FOST Parcel in the western portion of IR Site 3. The remaining 84 percent of the Former Smelter Area is adjacent to the FOST Parcel. The HRA (Weston 2007) identified the possibility that radium components were melted down at the smelter, along with other metal components when the previous smelter was in operation. A radiological survey was conducted and no radioactive activity above background was detected (ChaduxIt 2012b). The Former Smelter Area is suitable for unrestricted reuse and is discussed in detail in Section 6.2.9.

Outfalls F and FF, which discharge into Seaplane Lagoon, were associated with radiologically impacted storm drain lines. Prior to remedial action in Seaplane Lagoon, Storm Drain Lines F and FF were removed and replaced. Outfalls F and FF were removed and replaced between January 2011 and August 2011 prior to remediation of the northwestern area of IR Site 17.

Two potentially radiologically impacted areas, the Seaplane Ramp and Parking Apron area and Pier 3, are adjacent to the FOST Parcel. The seaplane ramps are cantilevered structures appurtenant to the adjacent land, but sediment beneath the ramps is part of Seaplane Lagoon and part of the FOST Parcel. Pier 3 is appurtenant to the adjacent land, but sediment beneath the Pier is part of Site 24 which is part of the FOST Parcel. The Seaplane Ramp and Parking Apron area and Pier 3 are discussed in Section 6.2.9. Radiologically impacted sites adjacent to the FOST Parcel are shown on Figure 11 and are described in Section 6.2.9.

4.8 Pesticides

The FOST Parcel may contain residue from pesticides that have been applied in the management of the property. The Navy knows of no use of any registered pesticide in a manner inconsistent with its labeling and believes that all applications were made in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Title 7 U.S.C. § 136, et seq., its implementing regulations, and according to the labeling provided with such substances. It is the Navy's position that it shall have no obligation under the covenants provided pursuant to Section 120(h)(3)(A)(ii) of CERCLA, Title 42 U.S.C. § 9620(h)(3)(A)(ii), for the remediation of legally applied pesticides.

4.9 Other Areas Investigated/Issues

No other locations of concern were identified in areas not within IR Site boundaries.

5.0 Summary of Restrictions

This section summarizes the restrictions associated with the FOST Parcel proposed for transfer related to CERCLA/RCRA sites, petroleum products and derivatives, ACM, and LBP. These restrictions on certain activities ensure that post-transfer use of the FOST Parcel is consistent with protection of human health and the environment.

5.1 CERCLA

As detailed in the following subsections, ICs will be implemented to prevent exposures to COCs in soil and groundwater on the FOST Parcel. ICs will be included in the deed between the Navy and the property recipient and in Covenants(s) to Restrict Use of Property between the DTSC and the Navy to limit exposure to contaminated soil and groundwater. The CERCLA ICs will be implemented in accordance with remedial design documents for CERCLA sites where the remedy includes land use restrictions.

5.1.1 CERCLA Sites with Remedial Action Complete

The sites with Response Complete, NFA include: IR Sites 24, 30, and 34; these sites are unrestricted. AOCs 1 and 6 were designated NFA and are also unrestricted. ICs are required in one or more areas within IR Sites 3, 16, 17, and 25. The ICs include legal controls that minimize the potential for human exposure. ICs associated with the IR Sites are described below. Figure 5 shows the approximate boundaries of these restrictions. Final IC boundaries will be applied from the Final LUC RDs, as appropriate.

5.1.1.1 IR Site 3 (OU-2B)

ICs will be implemented for the cobalt-impacted soil area at IR Site 3. The LUC performance objective is to minimize the potential for exposure to cobalt-impacted soil at IR Site 3 that may result in risks to human health if no controls are implemented. Additional detail regarding implementation of the ICs is presented in the OU-2B LUC RD (Navy 2015c). ICs would be maintained until COC concentrations in the soil are at levels that allow unrestricted use and unlimited exposure.

The ROD for OU-2B documents the groundwater ICs to be implemented for the adjacent OU-2B groundwater plume. A portion of the IC buffer zone extends into IR Site 3 (see Figure 5). The groundwater underlying IR Site 3 is not within the OU-2B plume (i.e., groundwater concentrations at IR Site 3 do not exceed OU-2B RGs), but the ROD specifies the same ICs in the buffer area as within the plume (Navy 2015a). The specific ICs for the OU-2B groundwater ARIC, which includes the portion of IR Site 3 within the buffer area are detailed in the LUC RD (Navy 2015c).

5.1.1.2 IR Site 16 (OU-1)

The IR Site 16 ESD for groundwater identified two areas that require ICs to be protective of human health (Navy 2015d). The LUC RD (Navy 2016a) will implement restrictions within the areas requiring ICs identified for IR Site 16 on Figure 5.

5.1.1.3 IR Site 17 (OU-4B)

The area requiring IC restrictions is the entire Seaplane Lagoon and these will be maintained indefinitely. The LUC performance objective is to minimize exposure to post-remediation residual Ra-226 activity in sediment should a future property owner dredge Seaplane Lagoon. Ra-226 residual activity is related to the post-remediation Ra-226 activity in the sediment itself (maximum of 4.18 picocuries per gram in confirmation sampling) and the potential for residual Ra-226 activity due to discrete items with radiological activity in the sediment (currently no known items). Additional detail regarding implementation of the ICs is presented in the LUC RD (Navy 2016c).

5.1.1.4 IR Site 25 (OU-5)

The ICs and land use restrictions apply throughout IR Site 25 and will be maintained indefinitely unless PAH concentrations in soil are reduced or subsequently determined to not exceed levels that allow for unrestricted site use and exposure. Specific ICs will be implemented in the LUC RD (Navy 2009a).

5.1.2 Marsh Crust

The Final Marsh Crust RAP/ROD (Navy 2001) was signed in February 2001. The Marsh Crust RAP/ROD identifies restrictions on excavations within all of the upland FOST Parcel (see Figure 5).

For the areas shown on Figure 5, excavation within the Marsh Crust and former subtidal area is prohibited, unless proper precautions are taken to protect worker health and safety and to ensure that excavated material is disposed of properly. This prohibition will be implemented with a three-tiered approach following transfer of the land from the Navy to the transferee(s): 1) a land use covenant will be executed between DTSC and the transferee(s); 2) an environmental restriction will be included in the deed; and 3) enforcement of the existing City of Alameda Excavation Ordinance Number 2824 (Navy 2001). The Navy, City, and DTSC will all have enforcement authority for the Marsh Crust restrictions.

5.2 Petroleum Products and Derivatives

Although the Navy intends to obtain regulatory closure for all sites under the Petroleum Program, the FOST Parcel will likely be transferred before the Navy obtains regulatory closure for some petroleum sites. The Navy shall retain responsibility for obtaining regulatory closure, including required investigation, remediation, and reporting, for these open sites after the transfer. Transfer while petroleum remediation is ongoing is allowable under CERCLA because Section 101(14) excludes crude oil and fractions of crude oil from the definition of hazardous substance, including the hazardous substances such as benzene that are constituents of those petroleum substances. The Navy will fulfill its petroleum remediation obligation either by completing regulatory closure under Navy direction or by negotiating an agreement with the transferee to complete these actions on behalf of the Navy.

Based on current environmental conditions, some petroleum-impacted areas of the FOST Parcel cannot support unrestricted use due to potentially unacceptable human health risk from residual petroleum contamination in soil and/or groundwater. In addition, after property transfer the presence of residual petroleum in some areas of the FOST Parcel west of Main Street will require implementation of procedures for proper handling and disposal of any potentially contaminated soil or groundwater encountered during construction or removal from the site. Accordingly, land use or activity restrictions relating to the presence of residual petroleum contamination will be necessary. The restrictions for former AST 330A include a land use restriction stating that residential land use is prohibited to protect public health, safety, or the environment; no grading, excavation, or subsurface activities without a soil management plan, and notification to the Water Board of a change in land use. There are no petroleum restrictions related to the portions of FOST Parcel east of Main Street.

Federal quitclaim deed(s) for transfer of property that include petroleum sites closed subject to restrictions will contain a notice stating that the property has been investigated and remediated, but contains residual petroleum contamination, and the property will be the subject of a recorded covenant between the City and the Water Board that identifies the conditions and requirements necessary to protect human health, safety and the environment (“Covenant”). The Covenant will be executed and recorded immediately following conveyance of the property by the Navy to the City. A footprint of sites to which the Covenant shall apply shall be identified on a map to be approved by the Water Board and attached to the Covenant. Property that includes such restricted closed petroleum sites will be enrolled in the City of Alameda Land-Use Restriction Tracking and Site Management Plan Program (“City Program”). Any work conducted on the property that involves soil excavation, trenching, or groundwater contact shall be conducted in accordance with the Covenant and the City Program.

Federal quitclaim deed(s) for transfer of property that include open petroleum sites will contain a notice saying that the property has not been remediated to the satisfaction of the Water Board, or has not been investigated to the satisfaction of the Water Board to determine whether corrective action is appropriate. The property will be enrolled in the City Program discussed above, and any work conducted on the property that involves soil excavation, trenching, or groundwater contact shall be conducted pursuant to a Site Management Plan that is acceptable to the Water Board, and in accordance with the City Program. However, such regulatory closure remains the Navy’s responsibility and will be obtained at Navy direction or by negotiating an agreement with the transferee to complete these actions on behalf of the Navy.

5.3 Asbestos-Containing Material

The deed will contain a restriction that the transferee covenants, on behalf of itself, its successors and assigns, as a covenant running with the land, that it will prohibit occupancy and use of buildings and structures, or portions thereof, containing known asbestos hazards before abatement of such hazards. In connection with its use and occupancy of the FOST Parcel, including, but not limited to, demolition of buildings and structures containing asbestos or ACM, it will comply with all applicable federal, state, and local laws relating to asbestos and ACM.

In the event that friable, accessible, or damaged asbestos is discovered by the transferee, access, use, or occupancy is prohibited until either: 1) any necessary ACM abatement has been completed; or 2) the building is demolished by the transferee in accordance with all applicable federal, state, and local laws and other requirements relating to asbestos or ACM. Until abatement or demolition is complete, the transferee must manage the ACM in accordance with all applicable federal, state, and local laws and requirements.

5.4 Lead-Based Paint

The deed will contain a restriction that the transferee covenants, on behalf of itself, its successors and assigns, as a covenant running with the land, in its use and occupancy of the property, including, but not limited to, demolition of buildings, structures, and facilities, and identification and evaluation of any LBP hazards, the transferee shall be responsible for managing LBP and LBP hazards in accordance with applicable federal, state, and local laws, and other requirements relating to LBP and LBP hazards. Further, the transferee, its successors and assigns will prohibit residential occupancy and use of buildings and structures, or portions thereof, prior to identification and/or evaluation of any LBP hazards, and abatement of any hazards identified as required.

6.0 Adjacent Properties

CERCLA and Petroleum Program sites located immediately adjacent to the FOST Parcel that could affect the FOST Parcel are discussed in Sections 6.1 and 6.2. Environmental programs at Alameda Point have progressed to the point where characterization of the extent of contamination is generally complete and the CERCLA and petroleum site boundaries have been established to conservatively encompass all known contamination as well as any anticipated migration. As a result, these boundaries may be generally relied upon to determine if the FOST Parcel is impacted by adjacent sites simply by determining if the site boundaries overlap into the FOST Parcel. A review of CERCLA and Petroleum Program sites adjacent to the FOST Parcel shows that none of the adjacent sites is a potential source of contamination to the FOST Parcel, as further discussed below.

6.1 EnviroStor and GeoTracker Listed Sites

The DTSC EnviroStor and Water Board GeoTracker databases were reviewed to determine if any sites exist beyond the Alameda Point property boundary that could affect the FOST Parcel. Sites within approximately a 1 mile radius of the FOST Parcel boundaries were identified from the EnviroStor and GeoTracker databases. This section summarizes the evaluation of such sites.

Because of the size of Alameda Point, the majority of environmental sites adjacent to the FOST Parcel are associated with past Navy releases, and thus the Navy has the necessary information available to assess potential risks posed by these sites (Section 6.2). To identify adjacent environmental sites outside of Navy control, the DTSC EnviroStor and Water Board GeoTracker databases were reviewed to determine if any of these types of sites could affect the FOST Parcel. Sites within approximately a 1 mile radius of the FOST Parcel boundaries were identified from the EnviroStor and GeoTracker databases. Several properties to the north of former NAS Alameda fell within this radius, but these properties were located on the other side of the

Oakland Inner Harbor and are not discussed in this section because of the limited potential for soil or groundwater contamination from these sites to impact the FOST Parcel.

One non-Navy site, Trident Management, was identified based on EnviroStor records. Trident Management is adjacent to IR Site 17 on the east, and within 500 feet of IR Sites 16 and 3 to the west of the FOST Parcel on former Navy property that transferred to the City in 2013. Trident Management is listed as an inactive Tiered Permit holder. EnviroStor does not list any leaks, spills, or permit violations for the Trident Management site, so the potential for it to impact the FOST Parcel is low.

The GeoTracker database lists a total of 52 non-Navy, environmental sites on the Alameda Peninsula that are within approximately 1 mile of either IR Sites 3, 16, 25, or 30. Four of those sites are currently operating, permitted USTs associated with an either an ongoing UST investigation or a closed UST site. There are 11 release sites under current regulatory oversight; the rest have received regulatory closure and are not likely to impact the FOST Parcel, so they are not discussed below.

Four of the open sites are not related to petroleum releases; these include: Cross Alameda Trail, Searway Property, Stewart Court Property and Marina Village Cleaners.

The Cross Alameda Trail property is a recently identified former railroad corridor along the south side of the Ralph Appezato Memorial Parkway that terminates at Main Street, adjacent to IR Site 3. The chemicals of potential concern (COPCs) include arsenic, lead, PAHs, and TPH. Investigations are ongoing; however, the site is not likely to impact the FOST Parcel because COPCs are in soil and not likely to migrate.

The Searway Property is located east of the FOST Parcel approximately 3,000 to 4,000 feet from IR Sites 3, 16, 25, and 30. A dry cleaner operated at the facility from the 1940s until 1979. According to the GeoTracker database, "Subsurface investigations detected elevated concentrations of total petroleum hydrocarbons as Stoddard Solvent in soil and groundwater. Sub-slab vapor sampling detected elevated concentrations of VOCs. A sub-slab depressurization system currently operates beneath the building slab to mitigate potential risks from VOCs beneath the building. VOC concentrations appear to be decreasing over time." Remediation activities are ongoing. The Searway Property site is located over a half-mile from the FOST Parcel in a cross gradient direction, so it is not likely to impact the FOST Parcel.

The Stewart Court Property is approximately 3,000 to 5,000 feet from IR Sites 3, 16, 25, and 30. According to the GeoTracker database, "A machine shop was operated on the property starting in 1927, and elevated petroleum hydrocarbons were found in soil." Groundwater flow direction in the vicinity is not defined; however, it likely flows toward Oakland Inner Harbor, and away

from the FOST Parcel. Based on its distance from the FOST Parcel and the likely direction of groundwater flow, the site is not likely to impact the FOST Parcel.

The Marina Village Cleaners Property is approximately 3,000 feet east from IR Sites 25 and 30. A dry cleaner has operated at the facility since 1990, using PCE. Low levels of PCE and breakdown products (TCE, DCE, and vinyl chloride) were detected during a 1998 investigation. The groundwater flow direction is identified as north-northwest, and based on its distance from the FOST Parcel and the direction of groundwater flow, the site is unlikely to impact the FOST Parcel.

The seven remaining sites are open petroleum sites: Alameda Gateway Limited; Chevron #21-1663/Mariner Boat Yard; Delong Oil; Unocal #0843; Shell #13-5032; Olympian #112; and a private residence. Alameda Gateway Limited UST, is approximately 300 feet to the west of IR Sites 25 and 30. The groundwater flow direction is likely to the north, away from the IR Sites, so it is not likely to impact the FOST Parcel. Chevron #21-1663/Mariner Boat Yard; Delong Oil; Unocal #0843; Shell #13-5032 are within approximately 3,000 to 5,000 feet of IR Sites 3, 16, 25, and 30; these sites are not likely to impact the FOST Parcel as groundwater flow direction is identified as North-Northwest, which is not in the direction of the FOST Parcel. The Olympian #112 and the private residence are also not likely to impact the FOST Parcel as groundwater likely flows towards San Francisco Bay and away from IR Sites 3, 16, 25, and 30.

The GeoTracker database lists four closed UST sites east of Main Street, approximately 300 feet to the west of IR Sites 25 and 30. The Encinal High School leaking UST site was closed in 1994. It is not expected to impact the FOST Parcel based on the likely direction of groundwater flow. The two City sites are not expected to impact the FOST Parcel due to their distance from the FOST Parcel, the likely direction of groundwater flow, and their closed status.

Two sites including eight USTs, USTs 13-1 through 13-5 and USTs 173-1 through 173-3, are part of Former NAS Alameda. Site closure letters were issued by the Water Board for USTs 13-1 through 13-5 in 2001, and USTs 173-1, -2, and -3 in 2014. The USTs are located west of Main Street, but outside of the FOST Parcel. These two sites with eight USTs are not expected to impact the FOST Parcel.

6.2 Former NAS Alameda and FISCA Adjacent Property

Sites located on Alameda Point or FISCA situated adjacent to the FOST Parcel that are undergoing evaluation or remedial action are discussed below. No impact is anticipated to the FOST Parcel from these adjacent sites. Storm drain corridors in adjacent property have been investigated under the CERCLA program. The storm drain corridors have been determined to not impact the FOST Parcel.

6.2.1 IR Site 4 (OU-2B)

IR Site 4 is located south of IR Site 3 and covers approximately 22.7 acres within OU-2B. About 65 percent of the site is covered with asphalt and concrete in the form of buildings, roads, and parking lots. IR Site 4 includes Building 360, which was used for aircraft engine and airframe overhaul. Multiple process shops performed sandblasting, cleaning, painting, welding, plating, repairs to various aircraft components, and non-destructive testing. The ROD identified hexavalent chromium, pesticides, and PCBs as COCs in soil (Navy 2015a). COCs identified in groundwater at OU-2B were TCE and vinyl chloride. ICs will be implemented at OU-2B to restrict groundwater use and land use without VI mitigation measures. As discussed in Sections 4.1.1 and 5.1.1.1, the 100-foot IC buffer for the OU-2B groundwater plume beneath IR Site 4 impinges on the FOST Parcel (Figure 5) (Navy 2015a), but it does not impact the suitability to transfer.

6.2.2 IR Site 11 (OU-2B)

IR Site 11 covers approximately 5.4 acres within OU-2B. The site and its surrounding area are heavily developed with asphalt, concrete, buildings, roads, and parking lots covering approximately 95 percent of the site. IR Site 11 includes Building 14, an engine test cell, constructed in 1940 and operated as an aircraft testing and repair facility. Based on more recent data, the OU-2B ROD revised the FS and Proposed Plan findings for IR Site 11 documenting no actions for soil at IR Site 11 (Navy 2015a). COCs identified in groundwater at OU-2B were TCE and vinyl chloride. ICs will be implemented at OU-2B to restrict groundwater use and land use without VI mitigation measures. The site is not expected to impact the FOST Parcel.

6.2.3 IR Site 21 (OU-2B)

IR Site 21 is located south of IR Site 3 and east of IR Site 17. It is about 5.1 acres in size and located within OU-2B. The site and its surrounding area are heavily developed. About half of IR Site 21 is covered with asphalt and concrete, and includes buildings, roads, and parking lots. IR Site 21 includes Building 162, which was constructed in 1945 as a ship and aircraft maintenance shop. No COCs were identified in IR Site 21 soil in the RI (Navy 2015a). The COCs in groundwater at OU-2B were TCE and vinyl chloride. ICs will be implemented at OU-2B to restrict groundwater use and land use without VI mitigation measures. This site is not expected to impact the FOST Parcel.

6.2.4 IR Site 23 (OU-2A)

IR Site 23 is located north of IR Site 16 and covers approximately 14 acres in the southern half of OU-2A. Between 1953 and the early 1970s, portions of the site were used for airplane defueling activities. The main structure at IR Site 23 is Building 530, constructed in 1973 for missile rework operations. Operational support functions were provided at Buildings 529 and

600, two smaller adjacent buildings. The site is currently used for vehicle storage and parking. Historically, the Pacific Coast Oil Works Company petroleum refinery operated within the site from 1879 until 1903. No refinery structures remain within IR Site 23. It is assumed that refinery wastes and asphaltic residues, known as tarry refinery wastes, were disposed at IR Site 23 and the surrounding tidal lands. A portion of IR Site 23 includes areas where the Marsh Crust is known to exist, and these areas are subject to the excavation restrictions known as the Marsh Crust Ordinance, which limits the extent of excavations to designated threshold depths (Navy 2012c) (see Section 5.1.2 for a discussion of the Marsh Crust).

Three ASTs (ASTs 530A through 530C) have been removed from the site. There are no USTs associated with the site. The three former ASTs, along with two OWSs (529 and 530), were formerly associated with defueling activities that were performed at Building 530. Navy Public Works pressure-washed the OWSs and sealed the surface access ways prior to base closure. AST 530A and OWS 530 were closed to further investigation by the Water Board in March 2015 (Water Board 2015b, 2015c). A May 2015 memorandum removed OWS 529 from the Petroleum Program (Water Board 2015c). The greater area associated with defueling activities will be investigated under the Alameda Point Petroleum Program, including ASTs 530B and 530C. There were no CERCLA COCs identified in IR Site 23 soil or groundwater (Navy 2012c). The site has progressed through the CERCLA process and no actions were required (Navy 2012c). The site was transferred in 2013 to the City. The site is not expected to impact the FOST Parcel.

The Water Board retains its authority, independent of CERCLA, to regulate tarry refinery waste and/or co-located petroleum at IR Site 23.

6.2.5 IR Site 27 (OU-6)

IR Site 27, the Dock Zone, is located southeast of IR Site 17 and northeast of IR Site 24; it is 15.8 acres in size. IR Site 27 is mostly paved or covered by buildings. The site includes Buildings 68, 168, 555, and 601; Ferry Point Road and West Oriskany Avenue; inactive railroad tracks and sidings; and fenced open space between Building 168 and Ferry Point Road.

The ROD documented that NFA was necessary for soil with ISCO, MNA, and ICs as components of the selected remedy for groundwater in the central and eastern portion of IR Site 27 (Navy 2008a). A Technology Transfer Technical Memorandum (Battelle 2010c) documents the Remedy-In-Place for IR Site 27. Based on the documented remedial action progress, the U.S. EPA has determined that the remedy is operating properly and successfully (U.S. EPA 2012a). The site has progressed through the CERCLA process. The site was transferred in 2013 to the City. This site is not expected to impact the FOST Parcel.

6.2.6 IR Site 31 (OU-5)

IR Site 31, Marina Village Housing, was designated as an IR site because groundwater beneath the site was impacted by the OU-5/IR-02 groundwater plume. A series of environmental investigations were conducted at IR Site 31 between 1987 and 2005 to assess potential sources of contamination. No enforcement activities have occurred in association with IR Site 31, and there are no former RCRA units at the site. A NFA determination for the OU-5/IR-02 groundwater plume was documented in the OU-5/IR-02 ROD Amendment (Navy 2015b). The OU-5/IR-02 groundwater plume and subsequent decision documents and risk assessments are discussed in more detail in Section 4.1.5. The IR Site 31 Soil RI evaluated soil data collected during the RI and data from previous investigations (CIDM 2007). The RI recommended NFA for IR Site 31 soil, and the NFA decision was documented in a ROD in 2008 (Navy 2008b). The site transferred to the United States Coast Guard in 2008 and is currently used as military housing. The site has progressed through the CERCLA process and remedial actions have been completed. This site is not expected to impact the FOST Parcel.

6.2.7 IR Site 35

IR Site 35 is composed of 23 study areas, known as AOCs that are located throughout Alameda Point. Between 1995 and 1997, a TCRA for storm sewer sediment removal was completed by the Navy (II 1997). A portion of this work occurred within IR Site 35. In 2001, a NTCRA was conducted in AOC 12 to remove lead-containing soil (Shaw E&I 2003). In 2002, a TCRA was conducted for soil with reported benzo(a)pyrene equivalent concentrations that exceeded 1.0 milligram per kilogram (mg/kg) in the top 2 feet of soil in the West Housing Area (IR Site 35, AOCs 4, 5, 7, 9, 13, and 14) (FWC 2004). In 2002, a TCRA was conducted at Building 195 to remove a pesticide/fertilizer shed in AOC 8 (Shaw E&I 2004). These interim actions were documented in the ROD (Navy 2010a) as being protective of unrestricted site use. The ROD selected excavation and disposal remedies for AOCs 3, 10, and 12, and documented that the other 20 AOCs required no further action for unrestricted use.

The RACR documents the remedial actions completed to remove heptachlor from AOC 3 and lead-impacted soil from AOCs 10 and 12 in IR Site 35 between March and June 2011 (OTIE 2012). U.S. EPA concurred with the Final RACR on August 27, 2012 (U.S. EPA 2012b) and DTSC also concurred on September 6, 2012 (DTSC 2012b). The site has progressed through the CERCLA process and remedial actions have been completed. Portions of the site were transferred in 2013 to the City. This site is not expected to impact the FOST Parcel.

6.2.8 FISCA IR Site 02

FISCA IR Site 2 is located adjacent to IR Sites 25 and 30 to the southeast of the FOST Parcel. The site was used as a screening lot and scrap yard operated by the Defense Reutilization and Marketing Office (DRMO). The DRMO sorted excess property from the DoD for resale or

proper disposal. The site was designated as SWMU 1 under the FISCA RCRA permit because of hazardous waste storage associated with DRMO activities. Former SWMU 1 was transferred to the FISCA IR Program for investigation and closure under CERCLA. Groundwater underlying the site was investigated as the OU-5/IR-02 groundwater plume because the groundwater contamination impacted both Alameda Point and FISCA. A NFA determination for the OU-5/IR-02 groundwater plume was documented in the OU-5/IR-02 ROD Amendment (Navy 2015b). The OU-5/IR-02 groundwater plume and subsequent decision documents and risk assessments are discussed in more detail in Section 4.1.5.

Shallow soil within FISCA IR Site 2 had been impacted by the DRMO activities (PRC/MI & Versar 1996). The shallow soil contaminants related to DRMO activities included PCBs, TPH, cadmium, and lead. The site is also underlain by the Marsh Crust contamination discussed in Sections 4.1 and 5.1.2.

The DRMO-related soil contamination at FISCA IR Site 2 was addressed by two removal actions and one remedial action. The first removal action was conducted to excavate PCB- and lead-contaminated soil located near former Buildings 365 and 366. A second removal action occurred in 1998 in the south central portion of FISCA IR Site 2 to remove additional PCB-contaminated soil. In 2001, a remedial action was conducted to remove PCB- and cadmium-contaminated soil from both the planned residential area (western one-third of the property) and the planned industrial area (eastern two-thirds of the property). Soil contaminated with PCBs and cadmium in excess of residential levels (1 mg/kg and 12 mg/kg, respectively), and industrial levels (10 mg/kg and 450 mg/kg, respectively) were removed from the future residential and industrial areas. The excavated soils were disposed of at an off-site disposal facility. The work was performed pursuant to a RAP/ROD, which included ICs to restrict future residential development of the planned industrial portion of FISCA IR Site 2 (Navy 2001).

Although groundwater contamination originating from this site may have impacted the FOST Parcel in the past, the site has progressed through the CERCLA process and remedial actions have been completed. The potential for this site to impact the FOST Parcel is considered low.

6.2.9 Radiological Sites

Several radiological sites are located adjacent to the FOST Parcel (see Figure 11). As discussed below, no adjacent radiological sites will impact the FOST Parcel.

Seaplane Ramp and Parking Apron. The Seaplane Ramp and Parking Apron are included in the HRA (Weston 2007). HRA Section 6.2.15 states: “It was suspected that workers in Building 400 might have spilled radium paint waste that was being carried from the building to Seaplane Lagoon. The 1998 100 percent gamma survey of the ramp and parking area yielded no radioactive anomalies.” The Parking Apron area is adjacent to the FOST Parcel. The seaplane

ramps are cantilevered structures associated with the adjacent apron. Sediment beneath the ramps is part of Seaplane Lagoon and part of the FOST Parcel and this is further described in Section 4.7.2.

The Seaplane Parking Apron, which is a paved area, has been used as a processing area for various Navy radiological projects since 2008. In accordance with the work plans for those projects, the apron has been radiologically surveyed before and after each project prior to down posting of the area at the end of the project. To date, the last project that used the apron was the IR Site 17 Seaplane Lagoon remediation. The area has since been down posted for unrestricted use.

In January 2011, the entire Seaplane Parking Apron was incorporated into the Radiological Controlled Area in support of the IR Site 17 (Seaplane Lagoon) remedial action. As part of the Navy's work plan, drying pads were built over the eastern and western portions of the Parking Apron. The eastern Parking Apron was used for the adjacent remediation area in the northeastern corner of Seaplane Lagoon. While discreet sources of radioactive materials were found in the sediment from the northeast remediation area, no loose sediment contamination was found. After the northeast remediation area dredging, sediment drying and radiological processing of the sediment were completed. The Navy removed the drying pad on the east side of the Parking Apron and conducted radiological surveys in accordance with the remedial action work plan. No evidence of residual radioactivity from Navy activities was found on the eastern Parking Apron and no further action was required. The eastern portion of the Parking Apron was transferred in 2013.

The western Parking Apron was used for the adjacent remediation area in the northwestern corner of Seaplane Lagoon. Following completion of the remediation in the northwest remediation area of Seaplane Lagoon, the western portion of the apron was used as a radiological processing area for OU 2C soil and sediment. Following completion of this project, the Navy removed the drying pad and associated processing pads on the west side of the Parking Apron and conducted radiological surveys between 2014 and 2015 in accordance with the Seaplane Lagoon remedial action work plan. No evidence of residual radioactivity from Navy activities was found on the western Parking Apron and the area was down posted for unrestricted use.

Seaplane Lagoon Shoreline. A scoping survey was conducted along the entire western Seaplane Lagoon shoreline. An overall shoreline distance of approximately 1,575 feet was surveyed. A scoping survey was also conducted along the eastern shoreline to the north and south of Outfall G, approximately 100 feet in either direction. The surveyed areas were selected based on the Naval Air Rework Facility historical activities, potential radiological sources, and data collected to date. No elevated readings were identified as a result of the surveys on the eastern shoreline (TRCI 2011).

On the western shoreline, three discrete items were discovered and removed. The first item was a wire found in two pieces. The second item was a radioluminescent compass, which was found on the surface broken into three pieces with each piece spaced approximately 15 feet apart from the other pieces. The third item discovered was a radioluminescent toggle switch. After removing each of the items, 1 cubic foot of soil was removed from each of the locations where the items were found and confirmation samples were collected. None of the confirmation sample results were above the release criterion for any radionuclides of concern (TUECI 2011). No other elevated readings were identified as a result of the surveys on the western shoreline.

Pier 3. Pier 3 was the largest pier at Alameda Point for general purpose berthing of Navy vessels. At Pier 3, an area of radiological contamination was detected, possibly due to a strontium-90 deck marker that was crushed by the pier crane. The Navy removed and replaced the 9 feet of contaminated tracks, asphalt, and concrete. A Navy contractor surveyed the area and recommended release for unrestricted use (Gutierrez-Palmenberg 1996). A subsequent survey was conducted in 2011. The Pier 3 Final Status Survey Report (Tetra Tech 2013) determined that only background levels of radioactivity are present and recommended that no action is warranted at the radiologically impacted area on Pier 3. This confirms the free-release determination done in 1996, but the more recent survey used lower release criteria (Tetra Tech 2013). The Final Status Survey Report recommended no further action for the area and was finalized in accordance with FFA document review procedures.

Building 66. Building 66 is a 31,000-square-foot single-story structure that was used for aircraft engine work and engine accessory testing. Activities included work on spark gap irradiators that contained radioactive materials and possible decontamination and overhaul of contaminated aircraft engines (ChaduxTr 2012a). Based on the recommendation of the HRA (Weston 2007), a survey was performed to confirm that the building is free of radioactive materials associated with historical Navy activities and Building 66 is suitable for unrestricted use (ChaduxTr 2012a).

Former Smelter Area. The Former Smelter Area (FSA) is a 40,000-square-foot area east of Building 66. Much of the area identified as the smelter is occupied by new Buildings 398 and 399 and support equipment. The Former Smelter Area is a 26,200-square-foot area east of Building 66 where a former smelter building previously existed. The Former Smelter Area is now occupied by Buildings 398 and 399 and associated support equipment. A small portion (approximately 16 percent, or 4,200 square feet) of the Former Smelter Area is located in IR Site 3 within the FOST Parcel (see Section 4.7.2.) while the remaining 84 percent (22,000 square feet) is adjacent to the FOST Parcel. The HRA (Weston 2007) identified the possibility that radium components were melted down at the smelter, along with other metal components when the previous smelter was in operation.

A scoping survey was performed to evaluate whether radionuclides of concern were present in accessible areas and to provide information to assist in assessing whether the site was impacted or non-impacted and to identify future actions, if necessary (ChaduxTt 2012b). The results of the scoping survey did not identify any radioactivity in soil or the concrete pad above background levels or that can be associated with the Navy's former smelter operations. Therefore, the site is suitable for unrestricted use (ChaduxTt 2012b) and will not impact the FOST Parcel.

Building 113. Building 113 is a 12,260-square-foot sheet metal and steel structure initially built in 1943 and moved to its current location in 1948. The HRA (Weston 2007) identified the possibility that Building 113 was one of three possible areas for disassembly and decontamination of aircraft that supported nuclear weapons testing in 1951. A final status survey was performed to confirm the building was free of radioactive materials associated with historical Navy activities (ChaduxTt 2012c). The results of the final status survey did not identify any radioactivity in the building above background levels or that can be associated with the Navy's former operations; therefore, the site is suitable for unrestricted use (ChaduxTt 2012c).

IR Sites 5 and 10. A TCRA was conducted for IR Sites 5 and 10. The TCRA involved the removal of storm drain lines F and FF that originate in Buildings 5 and 400 and discharged to Seaplane Lagoon (TrECI 2011). The removal action was based on an operational history described in the HRA that determined discharge from these storm drain lines contained radioactive contamination and required a response action. The removal action occurred between 2008 and 2011.

6.2.10 Petroleum Sites

Several petroleum sites are located adjacent to the FOST Parcel and are further discussed below.

AOC 23. This site is located west of IR Site 3 and consists of petroleum site AOC 23 and a 1,2-dichloroethane plume. The Water Board concurred site investigations and corrective actions were complete, and NFA was granted for AOC 23 by letter dated November 30, 2012 (Water Board 2012c). The FOST Parcel is not expected to be impacted by any releases from the site. This site is in an area that transferred to the City in 2013.

CAA-A. This site (both within and adjacent to IR Site 34) consists of the area around parallel 10-inch FLs used to transport jet fuel. The site was closed with concurrence from the Water Board in 2007 (Water Board 2007) and without restrictions. The FOST Parcel is not expected to be impacted by any releases from the site. A portion of CAA-A is in an area that transferred to the City in 2013.

CAA-B. This site consists of the area around three east–west, parallel FLs used to transport jet fuel, with multiple crossing FLs (about 22,500 feet) that link a series of fueling pits within portions of IR Site 35. The FLs were abandoned in place in 1998 (Battelle 2010b). The site is adjacent to the FOST Parcel to the north of Seaplane Lagoon. The residual TPH is not expected to impact the FOST Parcel.

CAA-04B. This site consists of the area around Building 372 that was used as an engine test facility. It includes USTs 372-1 and 372-2 and an associated fuel spill called AOC 372 or SWMU 372. Both tanks were removed in 1995. It also includes former fuel oil AST 372, removed some time prior to 2002 (Battelle 2010b). These tanks and SWMU 372 are open petroleum sites. The tanks, SWMU, and the majority of the site are not immediately adjacent to the FOST Parcel; CAA-04B is located northwest of IR Site 16.

The site also includes USTs 616-1 and 616-2 (also collectively called AOC 616). These tanks were for emergency spill control but reportedly were never used and never held anything but water. They are closed-in-place. The Water Board concurred with the recommendation that no further action was required by letter dated August 28, 2013 (Water Board 2013c).

The Petroleum Management Plan indicates a recommendation of NFA for the USTs and for CAA-04B (Battelle 2010b). The FOST Parcel is not expected to be impacted by any releases from this site.

CAA-04C. This site consists of the area around former Building 547 that was used as a gasoline service station and car wash between 1971 and 1980. It includes USTs 547-1 through 547-3 (also collectively called UST(R)-17) and all of these USTs were removed in 1994. Suspected USTs 547-4 and 547-5 (identified in the RFA) could not be located by geophysical survey and do not appear on base records. Based on research into the existence of these USTs, it was concluded that the USTs 547-4 and 547-5 never existed and were incorrectly identified by prior contractors. USTs 547-4 and 547-5 have been removed from the Alameda Point Petroleum Program. CAA-04C also includes former OWS 547 (Battelle 2010b). The FOST Parcel is not expected to be impacted by any releases from this site. Portions of CAA-04C were included in the 2013 FOST.

CAA-11A. This site consists of the area around Building 14 that was used as an aircraft engine test and repair facility. The site includes USTs 14-1 through 14-6, sometimes referred to as UST(R)-06 and which were removed in 1994, and former OWS 162. Only a small portion of the site, and none of the above-listed associated features, is within the FOST Parcel. A biosparging system operated between 2003 and 2004 for releases attributed to USTs 14-1, 14-2, 14-3, and 14-6 (Battelle 2010b). The Water Board issued a NFA letter for the USTs dated February 19, 2015 (Water Board 2015a). Based on cleanup activities conducted between 2003 and 2004, the FOST Parcel is not expected to be impacted by any releases from this site.

CAA-11B. This site consists of the area designated as Area 37, a fuel storage area. Area 37 includes Structure 598 (sometimes called HW-04) that was a secondary containment area for ASTs 598A through 598C. These ASTs were removed in 2004 and received NFA concurrence from the Water Board in 2013 (Water Board 2013d). Area 37 also includes USTs 37-1 through 37-24, also collectively referred to as UST(R)-07, which were removed between 1995 and 1998. Area 37 also includes former ASTs 037A through 037D (Battelle 2012a). Portions of CAA-11B are within an area that transferred to the City in 2013. The FOST Parcel is not expected to be impacted by any releases from this site.

CAA-12. This site was divided into CAA-12N and CAA-12S. The site consists of the area around Building 29 that was an aircraft weapons overhaul and testing facility; Building 38, which served as an acoustical enclosure for aircraft engines; and Facilities 461A, B, and C, which served as aircraft run-up areas. The site includes former ASTs 029 and 038 and former OWS 038. OWS 038 received closure by the Water Board in May 2012 (Water Board 2012b), and AST 029 received closure by the Water Board in June 2014 (Water Board 2014b). The FOST Parcel is not expected to be impacted by any releases from this site. Portions of CAA-12 were included within the 2013 FOST Parcel.

CAA-13. This site consists of the area around Building 397 that was a jet engine testing facility; Building 406A, which contained control equipment for a defueling facility; Building 529, which supplied auxiliary power for Building 530; and Building 606, which was used as an administration building. The site includes former ASTs 530A through 530C, and closed-in-place OWSs 529 and 530. Free product was noted during sampling activities around the defueling facilities, sometimes referred to as Defueling Area 530. The site also includes former OWSs 397A through 397D, and a 3,500 to 17,000-gallon jet fuel spill circa 1991 (from an AST) (Shaw E&I 2011). Dual-vacuum extraction and biosparging systems were operated from 2003 until 2006. AST 530A and OWS 530 were closed to further investigation by the Water Board in March 2015 (Water Board 2015b, 2015c). A May 2015 memorandum removed OWS 529 from the Petroleum Program (Water Board 2015c). Based on cleanup activities conducted between 2003 and 2006, the FOST Parcel is not expected to be impacted by any releases from this site. Portions of CAA-13 were included within the 2013 FOST Parcel.

AOC 3 (EDC 12). This is a former aircraft scrap yard, parts storage, and treated lumber storage area where TPH-motor oil in soil has been reported (Bechtel 2007). The FOST Parcel is not expected to be impacted by any releases from this site. The Final SI Addendum for EDC 12 concluded that no further action is required under CERCLA (CH2MHill 2014). Because of petroleum compounds in soil exceeded residential screening values, AOC 3 was transferred to the Alameda Point Petroleum Program for evaluation. The entire site was within the 2013 FOST Parcel. U.S. EPA concurred with the recommendation for AOC 3 in the EDC 12 SI Addendum by letter dated November 23, 2015 (U.S. EPA 2015a).

AOC 5 (EDC 12). This is a former aircraft washdown area where TPH-diesel and TPH-motor oil in soil have been reported (Bechtel 2007). The FOST Parcel is not expected to be impacted by any releases from this site. The Final SI Addendum for EDC 12 concluded that no further action is required under CERCLA (CH2MHill 2014). Because petroleum compounds in soil exceeded residential screening values, AOC 5 was transferred to the Alameda Point Petroleum Program for evaluation. The entire site was within the 2013 FOST Parcel. U.S. EPA concurred with the recommendation for AOC 5 in the EDC 12 SI Addendum by letter dated November 23, 2015 (U.S. EPA 2015a).

7.0 Access Clause

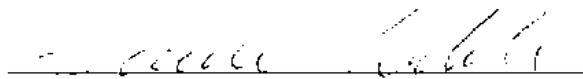
The deed(s) will reserve and the transferee shall grant to the United States access to the FOST Parcel pursuant to CERCLA Section 120(h)(3)(A)(iii). DTSC, the Water Board, and U.S. EPA and their successors and assigns shall also be granted access to the property to enter the FOST Parcel in any case in which response action or corrective action is found necessary on the FOST Parcel after the date of transfer. In addition, the deed(s) will provide for a right of access for the U.S. to traverse property owned by the transferee to gain access to property still owned by the U.S.

8.0 Covenants

The deed for transfer of any property on which “any hazardous substance was stored for one year or more, [or] known to have been released, or disposed...” as a result of former activities conducted by the United States, will include a covenant made pursuant to CERCLA Section 120(h)(3)(A)(ii) and (B). The covenant will warrant that “all remedial action necessary to protect human health and the environment with respect to any hazardous substance identified pursuant to Section 120(h)(3)(A)(i)(I) of the CERCLA of 1980 remaining on the property has been taken before the date of this deed(s)” and that “any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States.” This covenant will not apply to any remedial action required on the FOST Parcel that is the result of an act or omission of the transferee that causes a new release of hazardous substances.

9.0 Finding of Suitability to Transfer Statement

Based on the information contained in this FOST and the notices, restrictions, and covenants that will be contained in the deed, the FOST Parcel at the Alameda Point is suitable for transfer.

Signature: 
Lawrence Lansdale, P.E.
BRAC Environmental Director
By Direction

Date: 12/15/11

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10.0 References

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11.0 Table References

Tables 3 through 8 were generated directly from an Alameda Point database maintained to support property transfers. Because the database includes closure references for the entire installation, it was not possible to match reference citations from the database with the smaller subset of references relevant to this FOST. Below are all references that are cited in the tables. References appear exactly as they appear on the tables. Many of these references also appear in the text, in which case they are listed in the Section 10 References. Text and table reference citations may differ on the letter designation used to distinguish documents issued by an entity in the same year.

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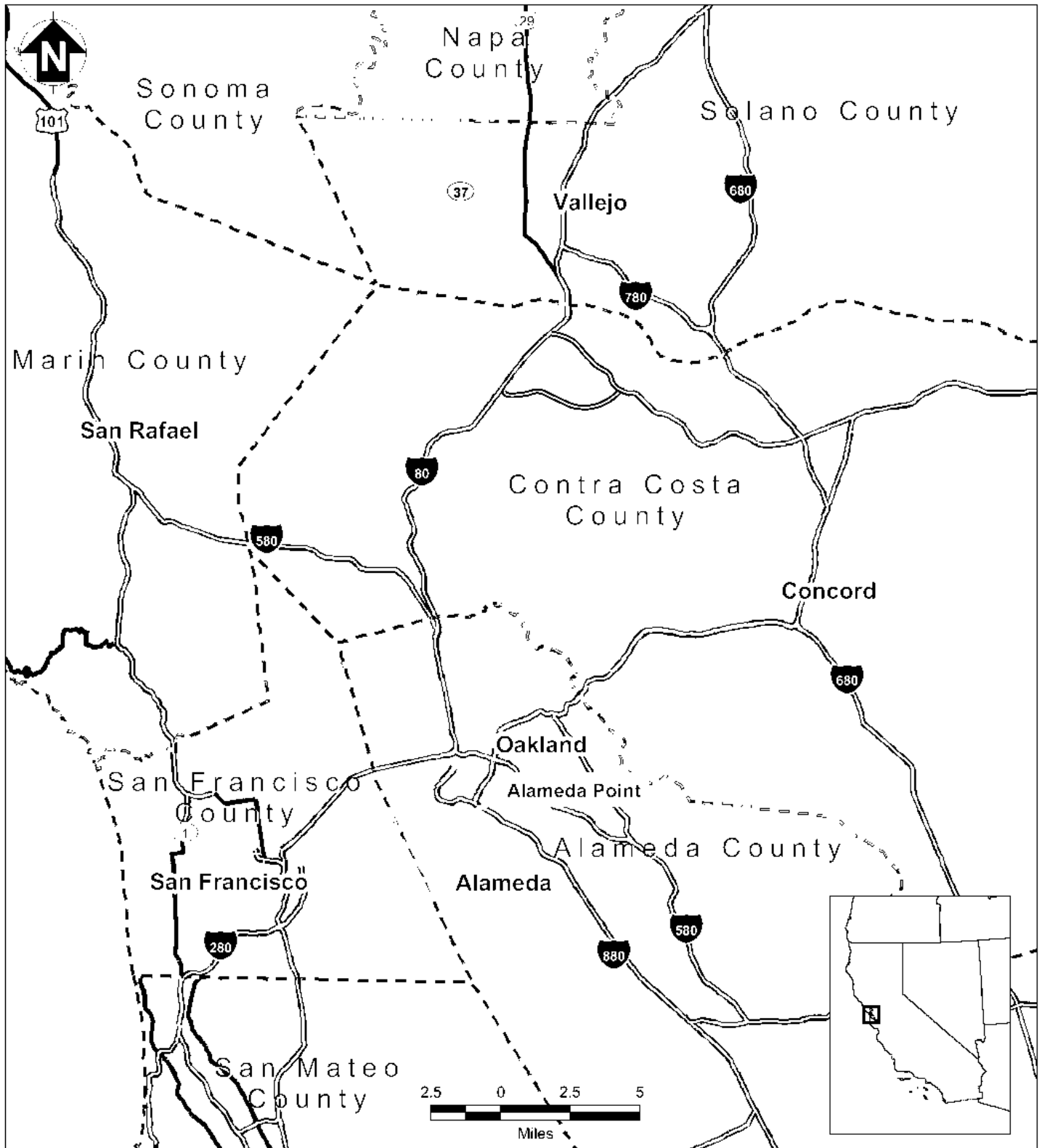
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Figures

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- Former Naval Air Station Alameda
- County Boundary
- Urban Area*
- Interstate
- Highway
- Major Road

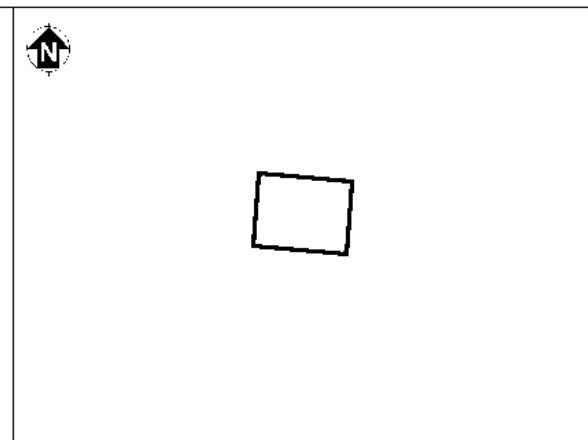
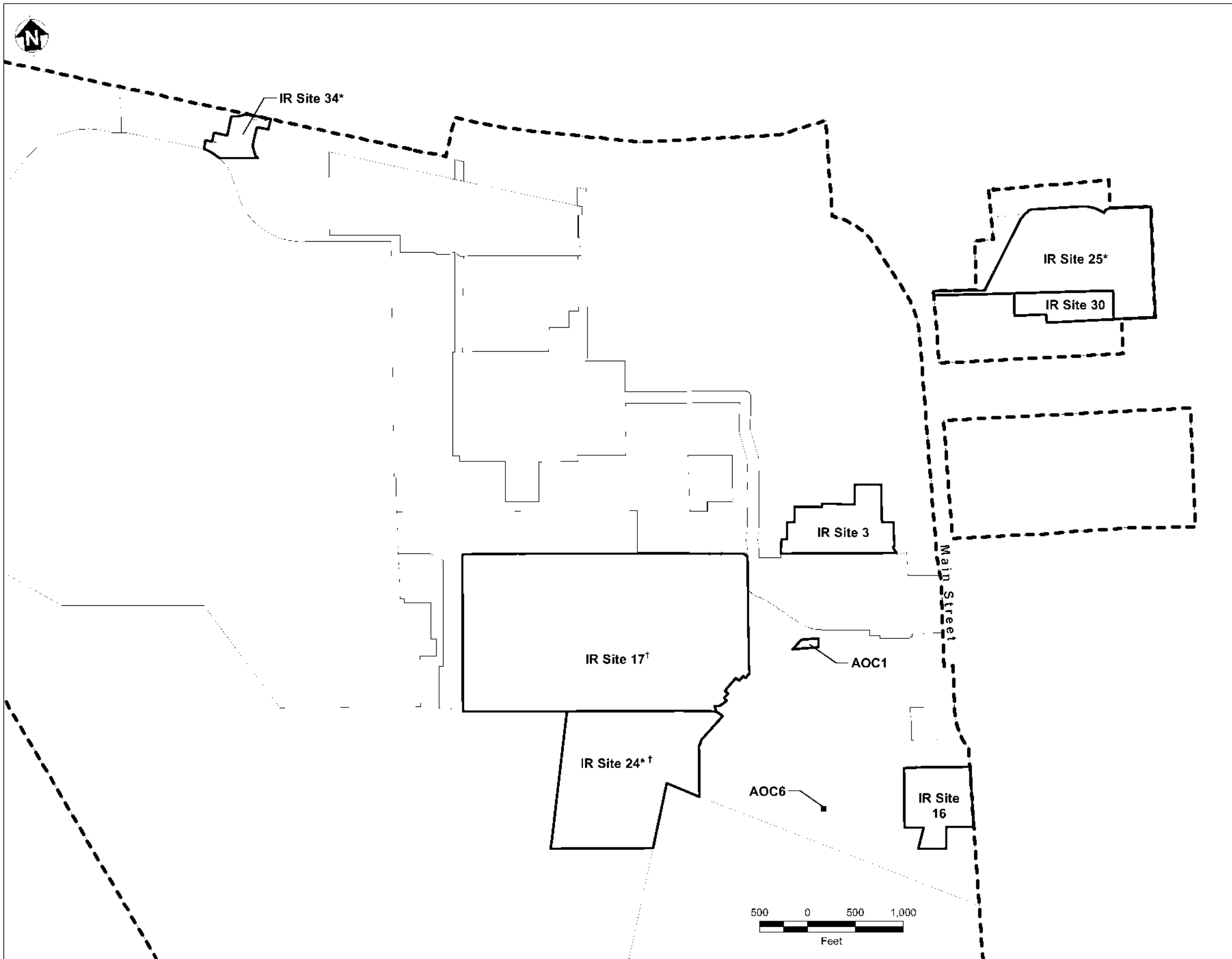
Note:
 * Darker shading indicates greater population density

Former NAS Alameda, Alameda, California
 Department of the Navy, BRAC PMO West, San Diego, California

Figure 1
Site Location Map

Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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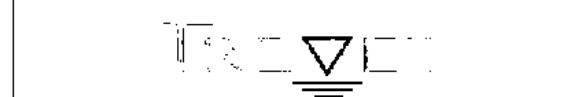


- FOST 2 Parcels
- Previously Transferred EDC Property
- Future Parcels for EDC Transfer
- Transferred Federal Agency to Federal Agency
- City of Alameda (Lease Termination)
- Previously Assigned PBC Property (DOI Sponsored)
- Installation Boundary
- Road or Airfield
- Building
- Wetland
- Water

Notes:

- * The portions of the FOST parcel labeled as IR Sites 24, 25, and 34 comprise the majority of each site, but not its entirety. See Figure 4 for site boundaries.
- † The parcels associated with IR Sites 17 and 24 are submerged land. Their transfer does not include any structures or appurtenances from adjacent property, such as docks or piers, that may overlay the submerged land.

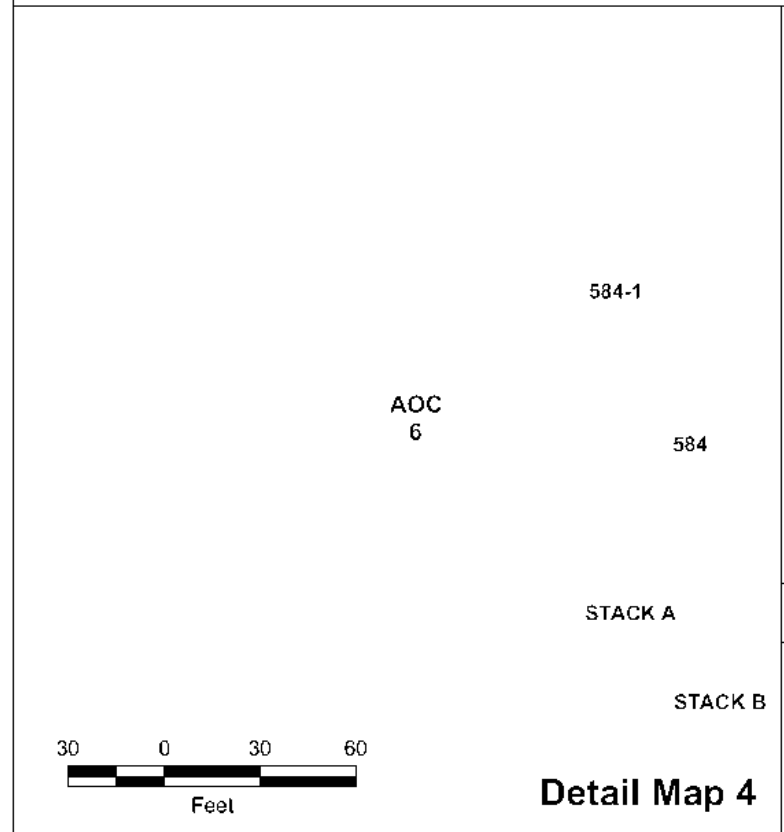
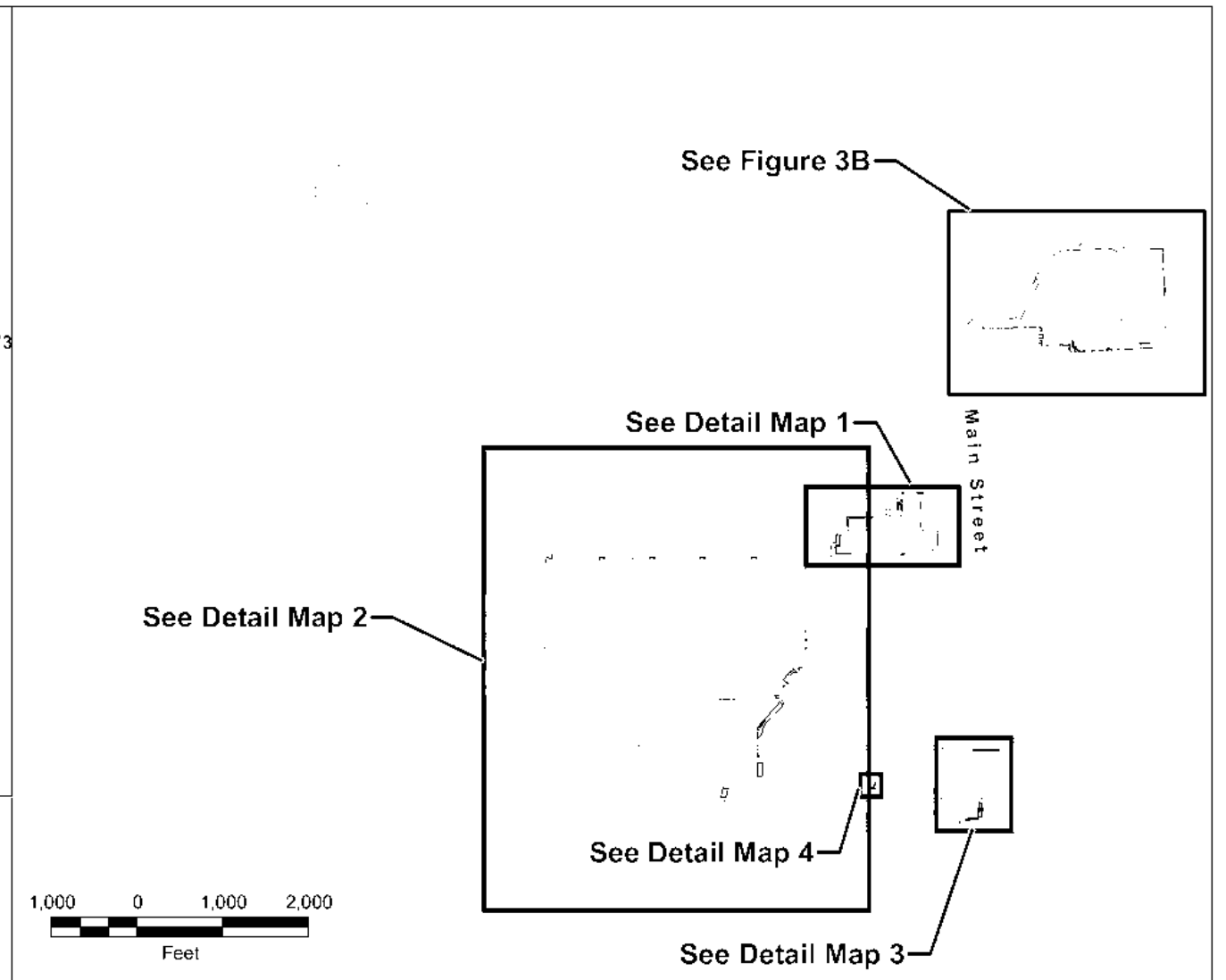
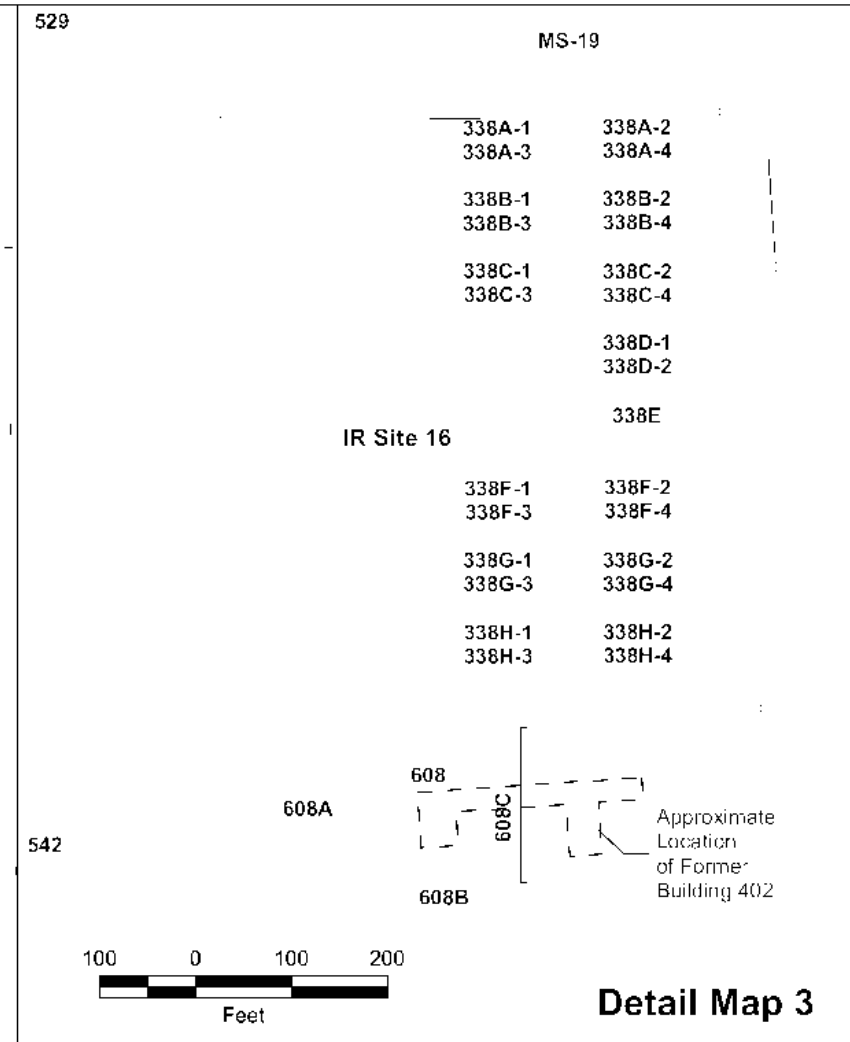
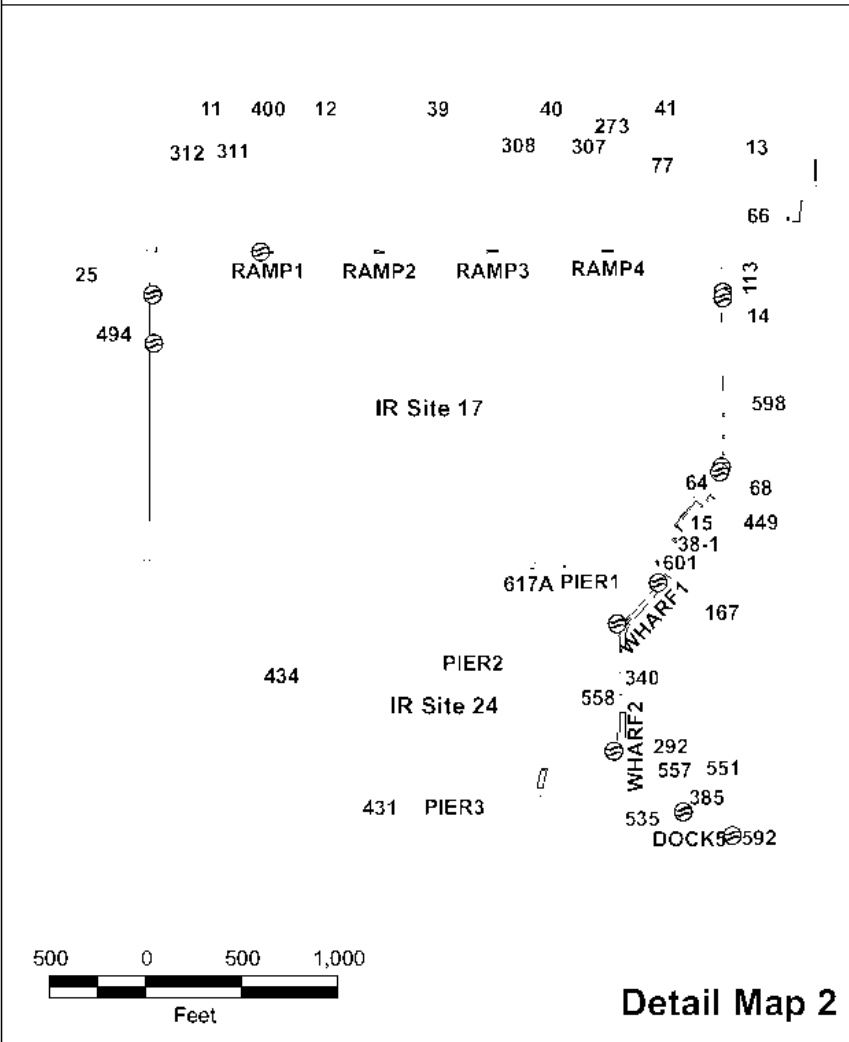
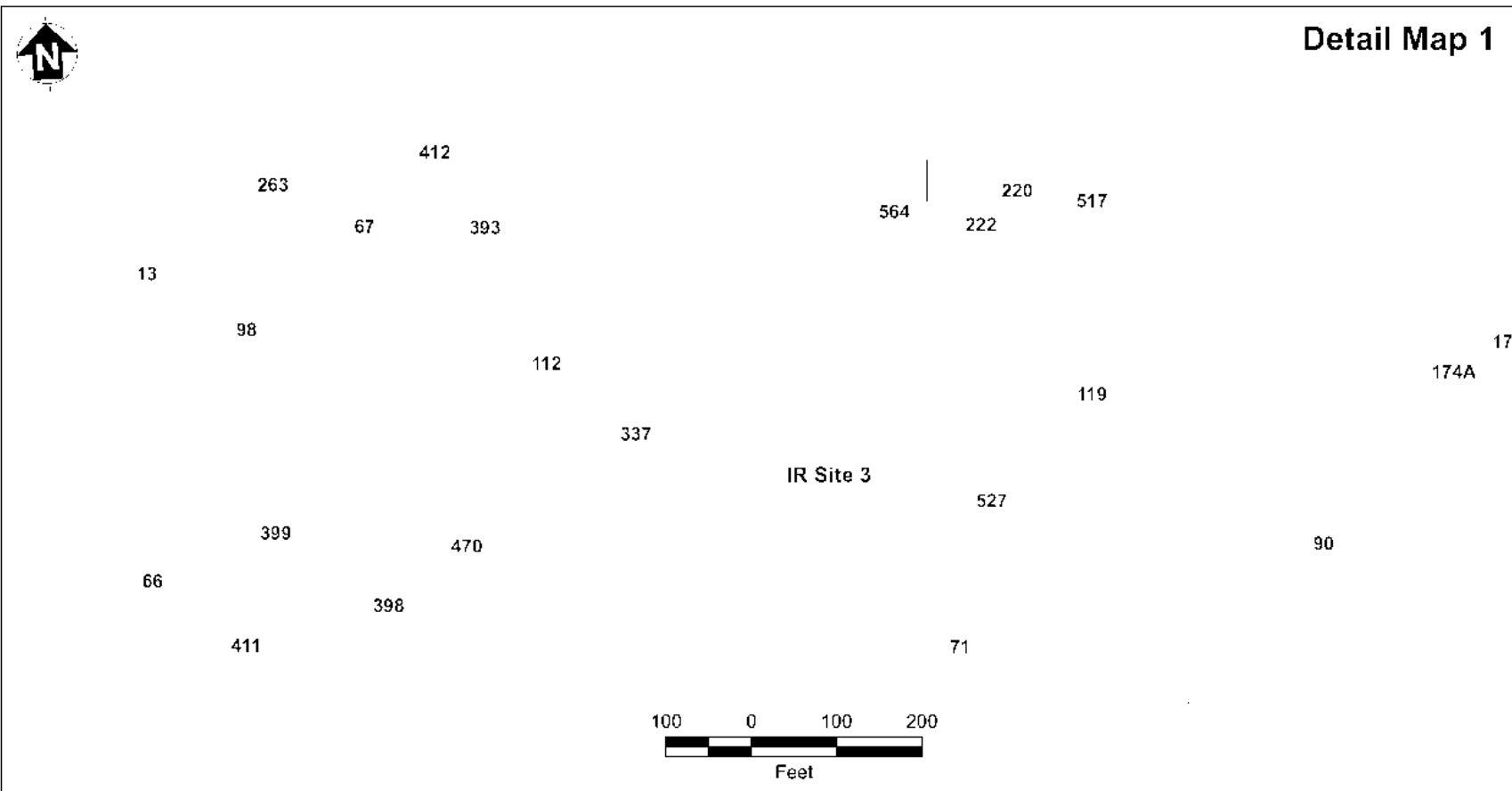
AOC Area of Concern
 DOI Department of the Interior
 EDC Economic Development Conveyance
 FOST Finding of Suitability to Transfer
 IR Installation Restoration
 PBC Public Benefit Conveyance



Former NAS Alameda, Alameda, California
 Department of the Navy, BRAC PMO West, San Diego, California

Figure 2
FOST Parcel
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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FOST Parcel Boundary

⊗ Storm Water Outfall

— Road or Airfield

▭ Building

▭ Former Building

▭ Wetland

▭ Water

Note:
FOST Finding of Suitability to Transfer

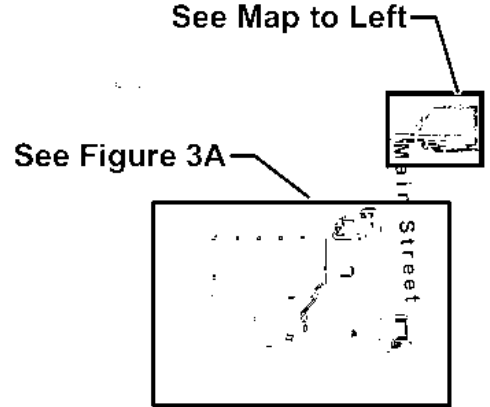
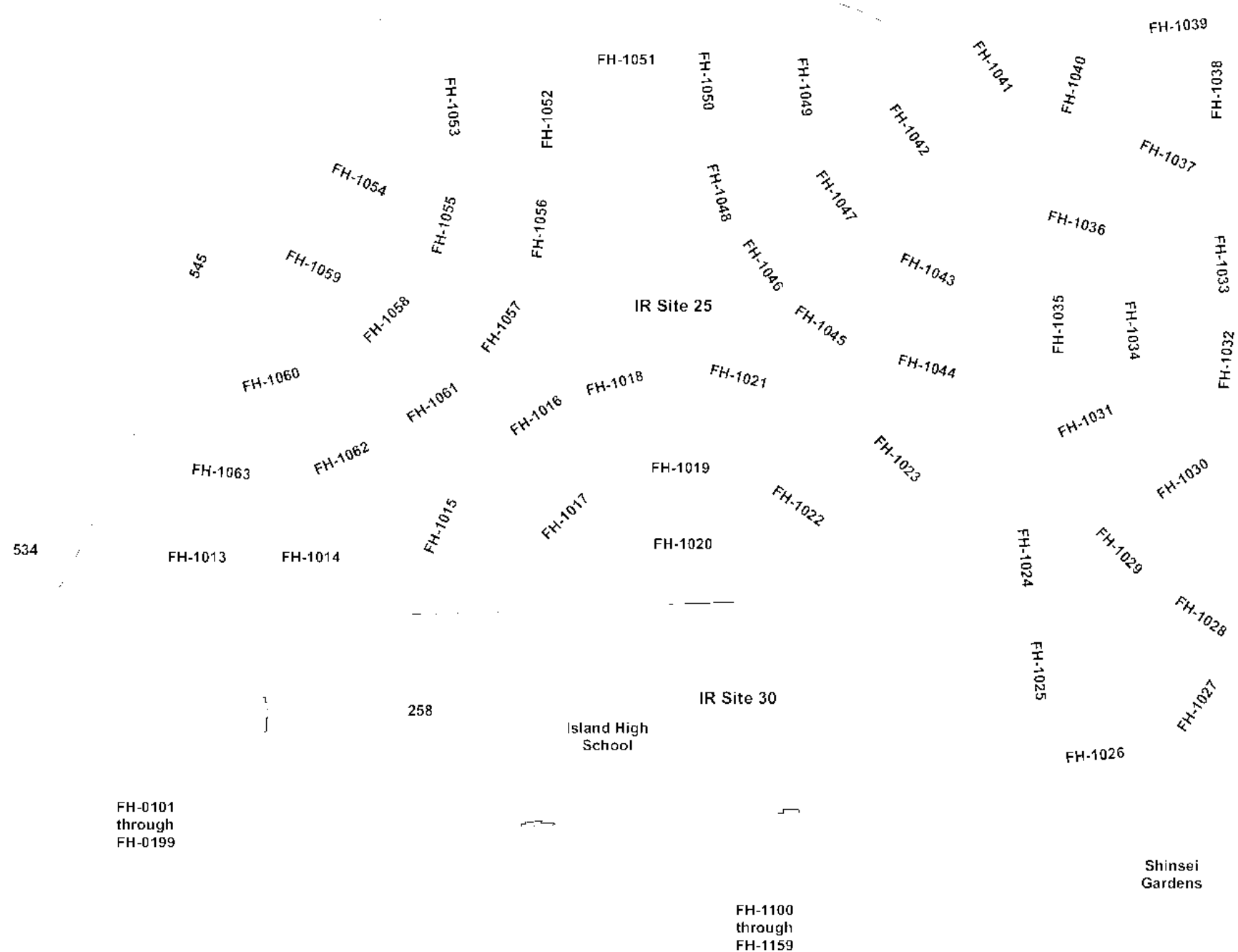
Former NAS Alameda, Alameda, California
Department of the Navy, BRAC PMO West, San Diego, California

Figure 3A
Buildings in or Adjacent to the FOST Parcel
Finding of Suitability to Transfer Phase 2
Former NAS Alameda

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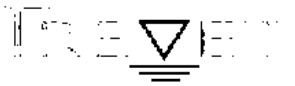


Main Street



- FOST Parcel Boundary
- Road or Airfield
- Building
- Wetland
- Water

Note:
FOST Finding of Suitability to Transfer

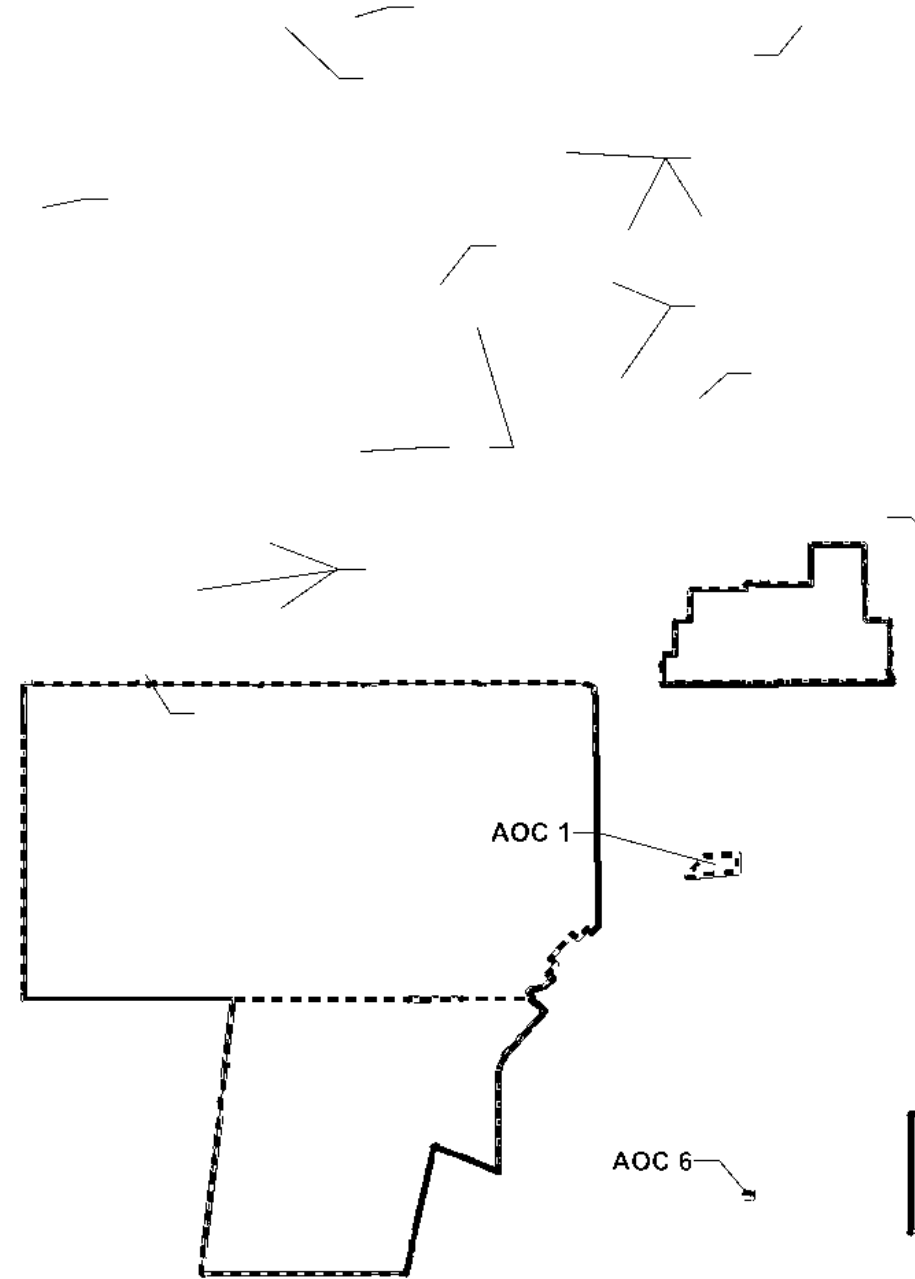
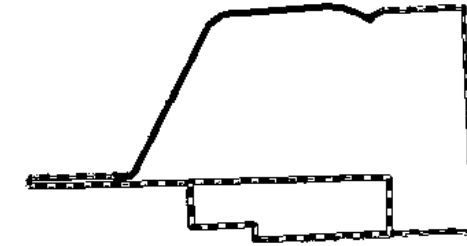


Former NAS Alameda, Alameda, California
Department of the Navy, BRAC PMO West, San Diego, California

Figure 3B
Buildings in or Adjacent to
the FOST Parcel
Finding of Suitability to Transfer Phase 2
Former NAS Alameda



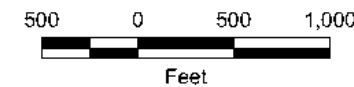
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INSTALLATION RESTORATION SITE DESCRIPTION

- 1 1943-1956 Disposal Area
- 2 West Beach Landfill and Wetlands
- 3 Abandoned Fuel Storage Area
- 4 Building 360 (Aircraft Engine Facility)
- 5 Building 5 (Aircraft Rework Facility)
- 6 Building 41 (Aircraft Intermediate Maintenance Facility)
- 7 Building 459 (Navy Exchange Service Station)
- 8 Building 114 (Pesticide Storage Area)
- 9 Building 410 (Paint Stripping Facility)
- 10 Building 400 (Missile Rework Operations)
- 11 Building 14 (Engine Test Cell)
- 12 Building 10 (Power Plant)
- 13 Former Oil Refinery
- 14 Former Fire Training Area
- 15 Buildings 301 and 389 (Former Transformer Storage Area)
- 16 C-2 CANS Area (Shipping Container Storage)
- 17 Seaplane Lagoon
- 19 Yard D-13 (Hazardous Waste Storage)

- 20 Oakland Inner Harbor
- 21 Building 162 (Ship Fitting and Engine Repair)
- 22 Building 547 (Former Service Station)
- 23 Building 530 (Missile Rework Operations)
- 24 Pier Area
- 25 Former North Village Housing and Estuary Park
- 26 Western Hangar Zone
- 27 Dock Zone
- 28 Todd Shipyard
- 29 Skeet Range
- 30 Miller School
- 31 Marina Village Housing
- 32 Northwestern Ordnance Storage Area
- 33 South Tarmac and Runway Wetlands
- 34 Former Northwest Shop Area
- 35 Areas of Concern in Transfer Parcel EDC-5
- AOC 1 Arsenic and cobalt (storage yard)
- AOC 6 Hexavalent chromium

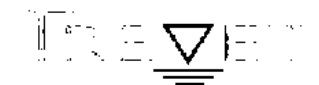


Operable Unit*

- 1 2A 2B 2C 3
- 4A 4B 4C 5 6

- FOST Parcel Boundary
- Installation Restoration (IR) Site*
- CERCLA Program Area of Concern†
- EDC-12 Site Inspection Area
- Road or Airfield Wetland
- Building Water

- Notes:
- * IR Sites 32, 33, 34, and 35 are not part of an Operable Unit.
 - † Only AOCs addressed under CERCLA and included in the FOST Parcel are shown.
 - AOC Area of Concern
 - CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 - EDC Economic Development Conveyance

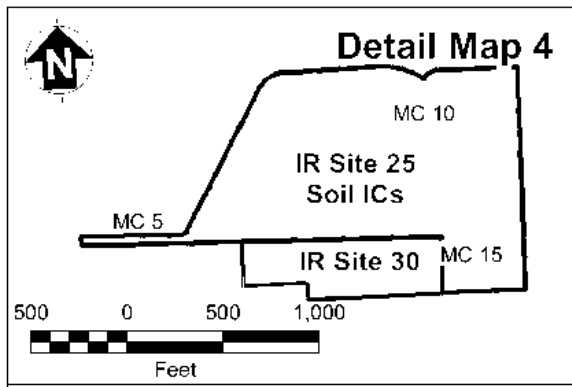


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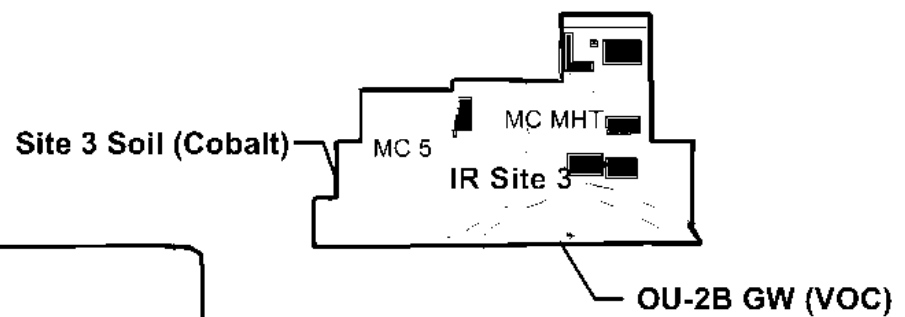
Figure 4
Operable Units, IR Sites,
and Areas of Concern

Finding of Suitability to Transfer Phase 2
Former NAS Alameda

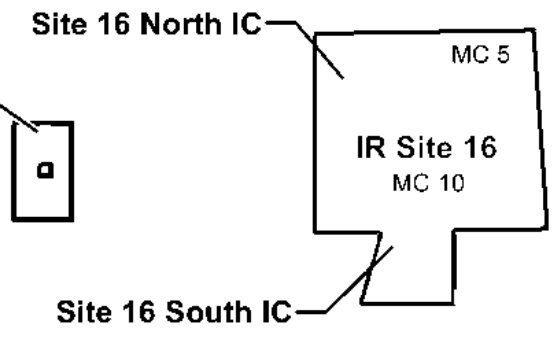
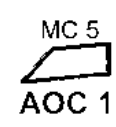
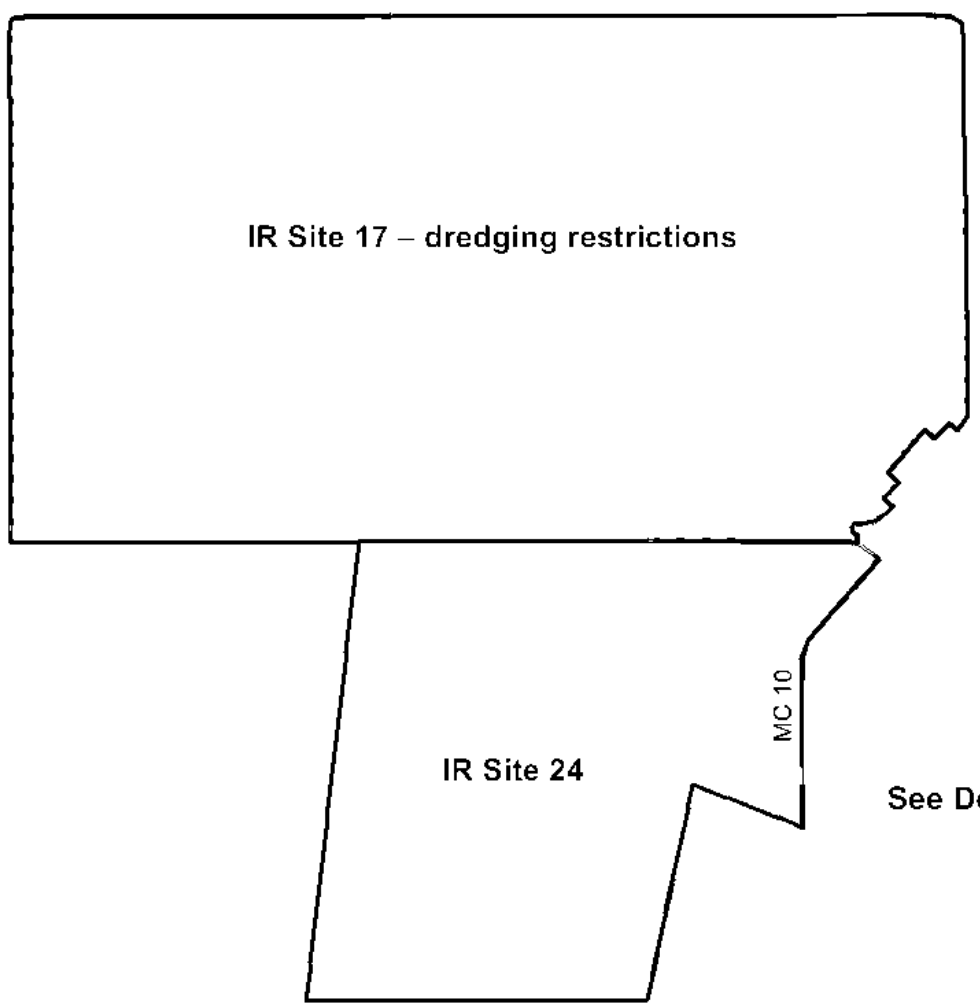
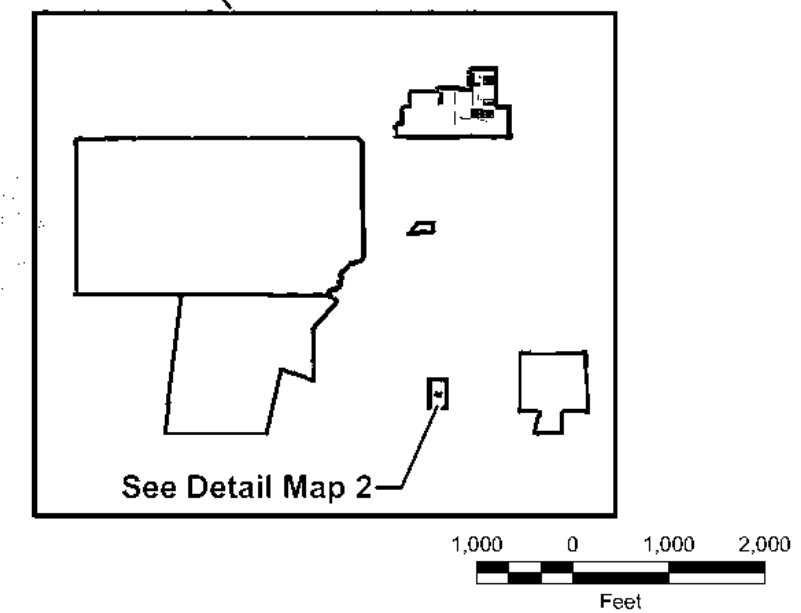
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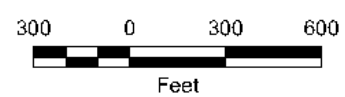
Detail Map 1



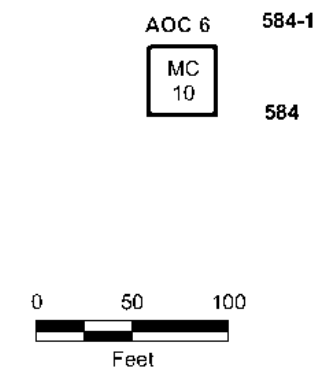
See Detail Map 1



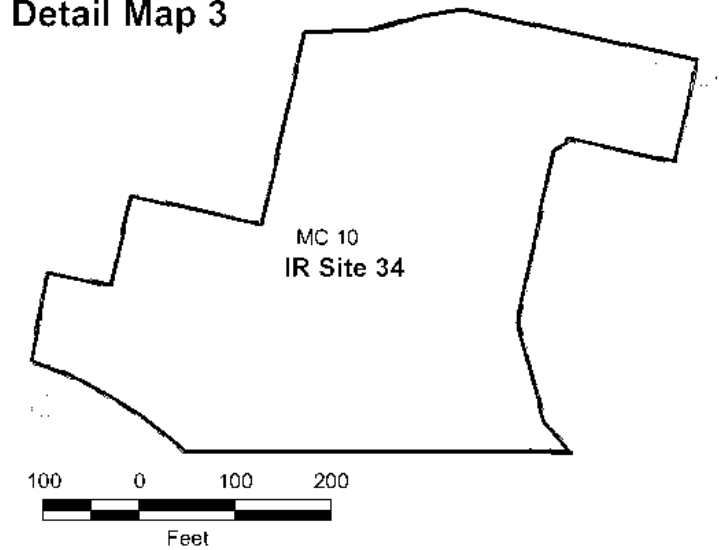
- Notes:
- * City of Alameda Ordinance No. 2824, Alameda Municipal Code Chapter XIII, Section 13-56.
 - AST Aboveground storage tank
 - bgs Below ground surface
 - CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 - FOST Finding of Suitability to Transfer
 - GW Groundwater
 - IC Institutional control
 - OU Operable unit
 - VOC Volatile organic compound



Detail Map 2



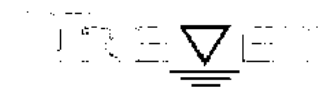
Detail Map 3



- Existing Marsh Crust-Related Restriction***
- Excavation permit required for excavations below Mean Higher High Tide. (MC MHT)
 - Excavation permit required for excavations below 5 feet bgs (MC 5)
 - Excavation permit required for excavations below 10 feet bgs. (MC 10)
 - Excavation permit required for excavations below 15 feet bgs. (MC 15)

- CERCLA Site Restrictions Required per Record of Decision (ROD), Explanation of Significant Difference for ROD, or Remedial Design
- Petroleum Restriction - 50-foot buffer around AST 330A per Water Board concurrence letter
- FOST Parcel Boundary

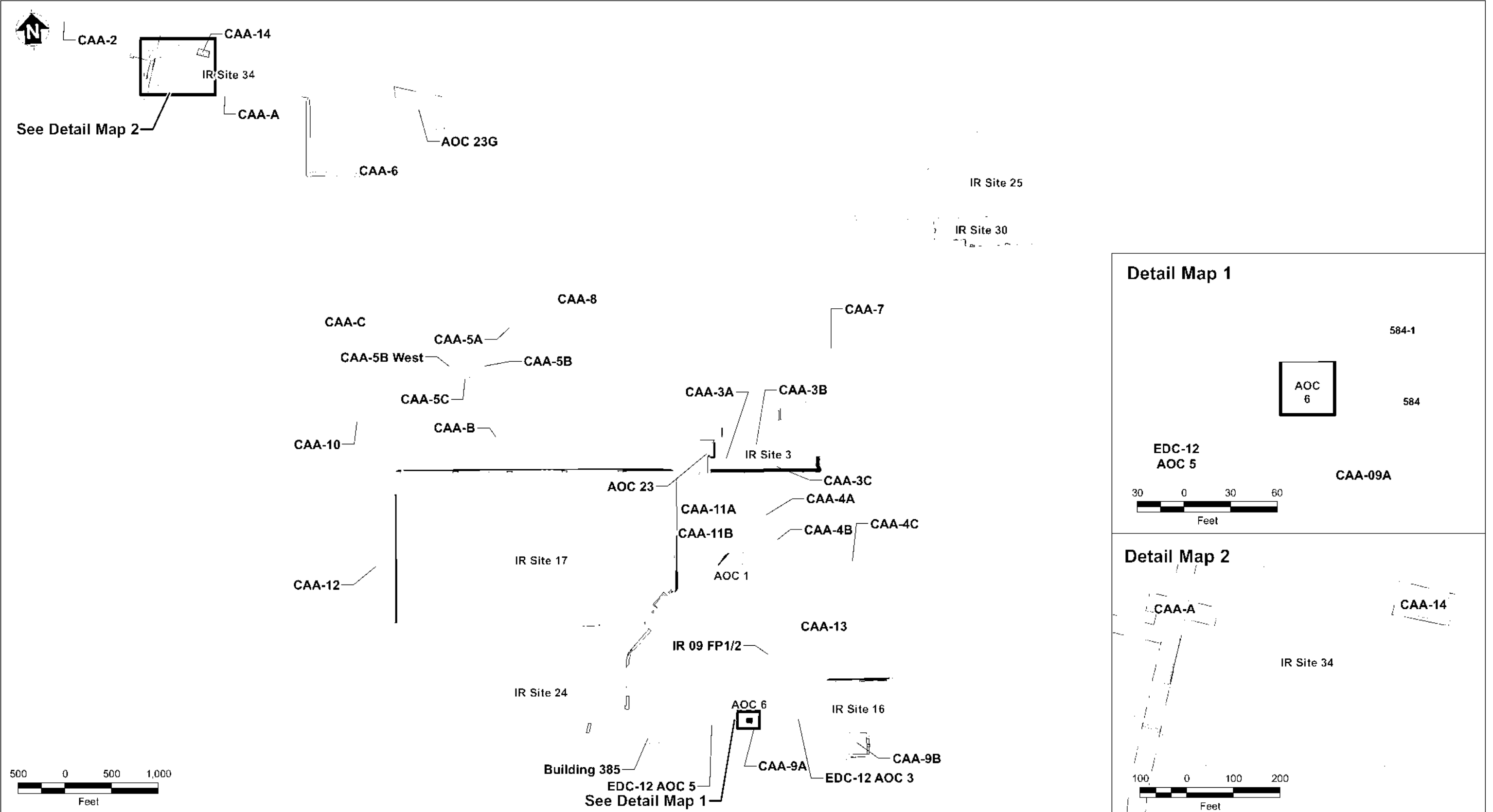
- Road or Airfield
- Building
- Wetland
- Water



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Figure 5
Footprint of Areas within FOST Parcel that Require Restrictions
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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Corrective Action Area*

- Open
- NFA with Restrictions
- NFA without Restrictions

- FOST Parcel Boundary
- Road or Airfield
- Building

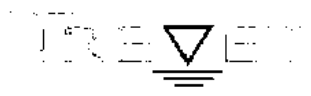
- Wetland
- Water

Notes:

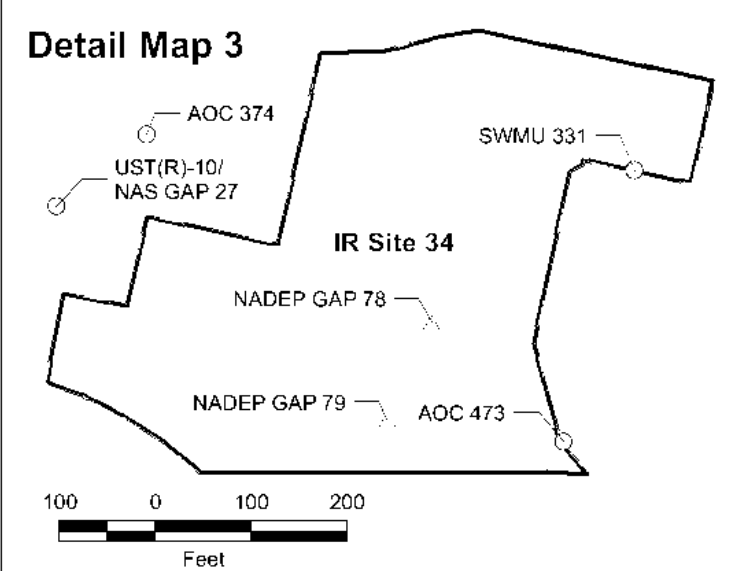
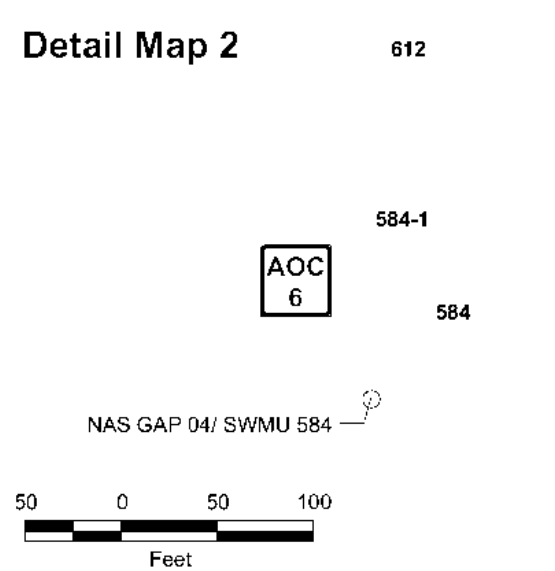
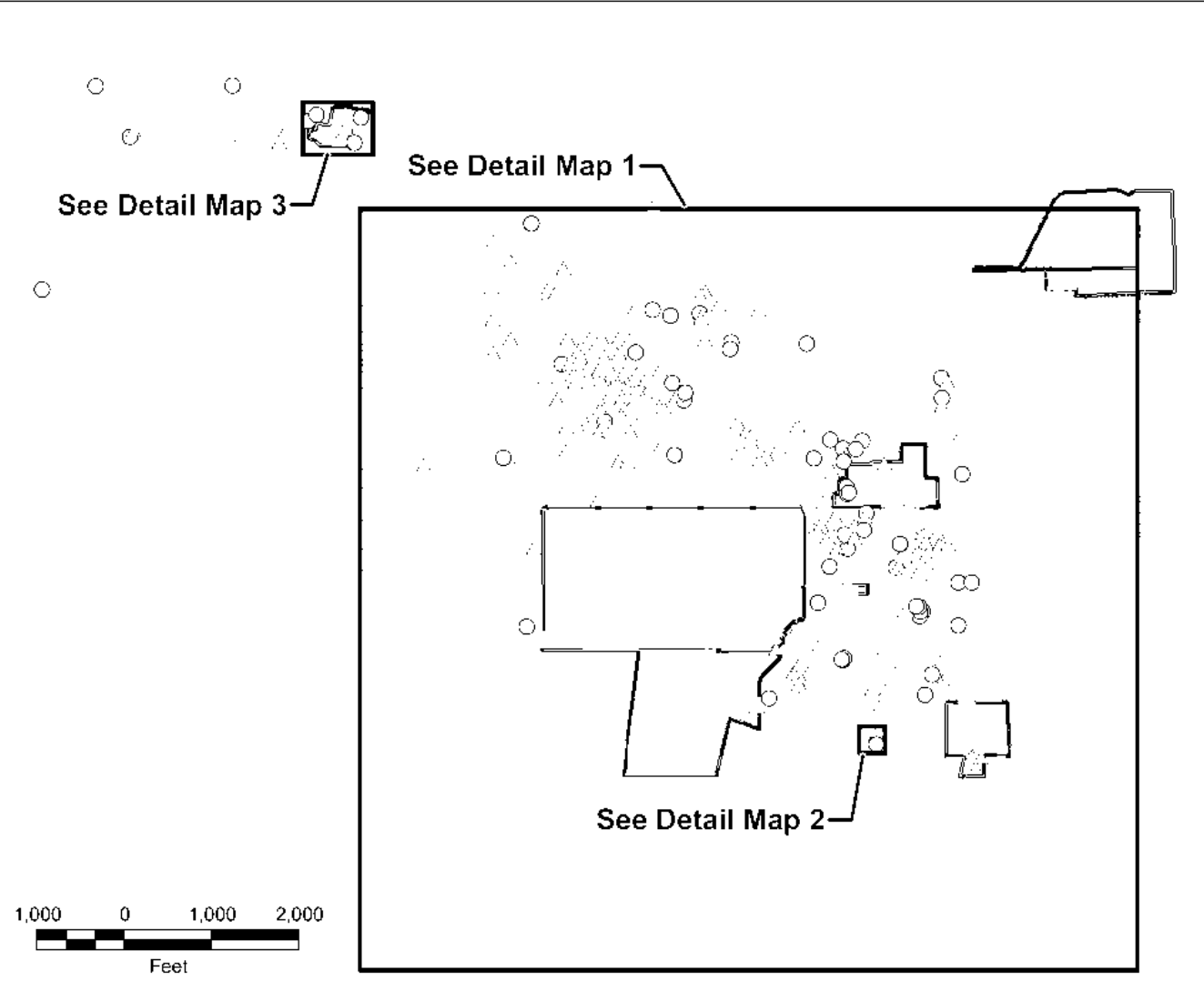
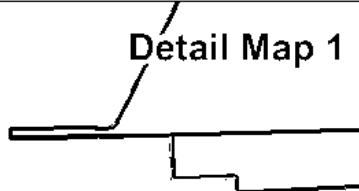
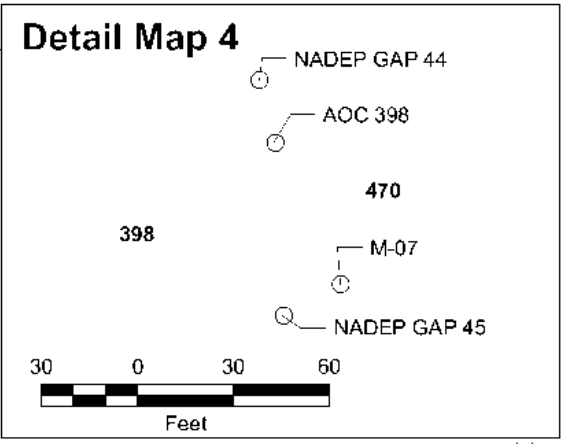
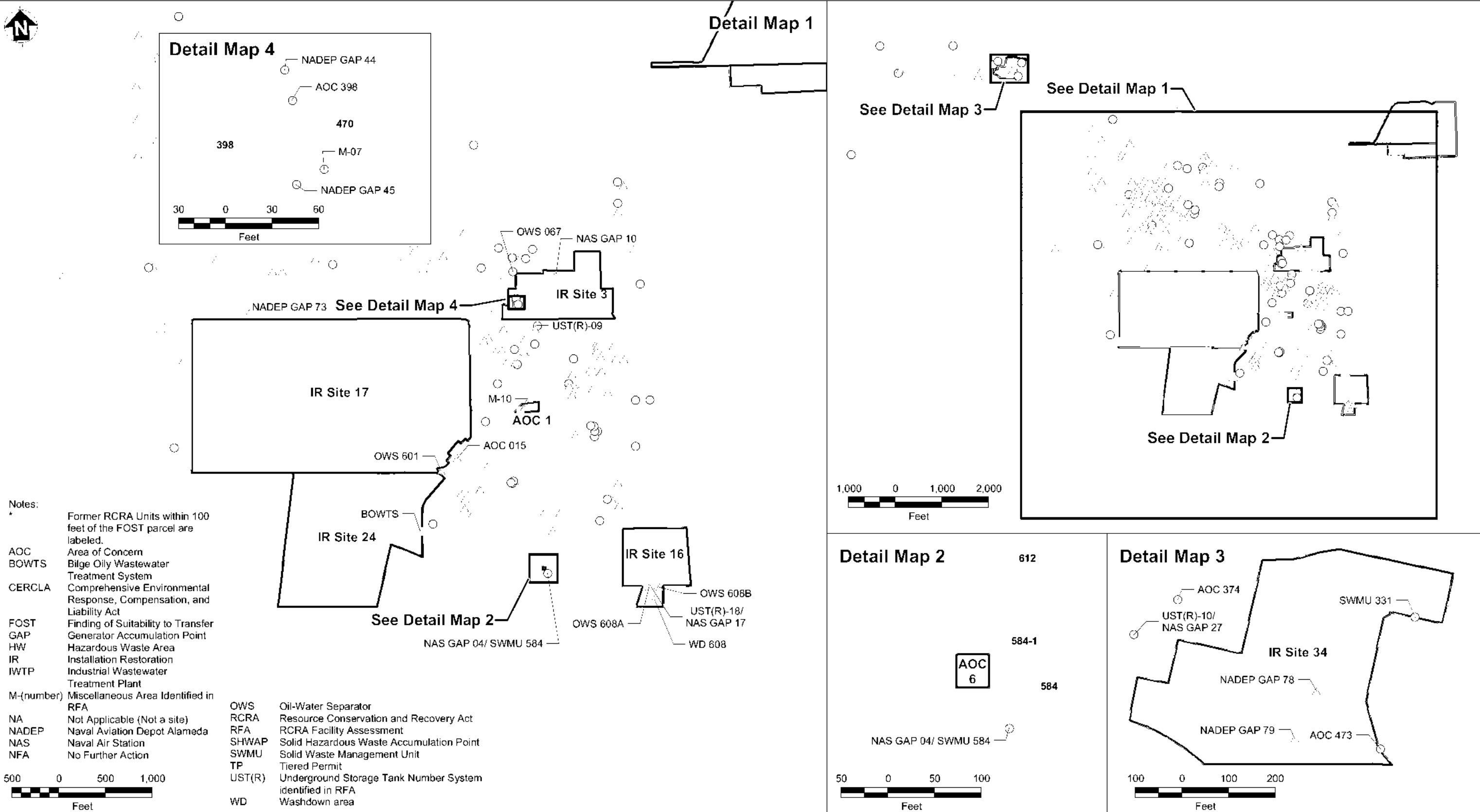
- * Sites within 100 feet of the FOST parcel are labeled.
- AOC Area of Concern
- CAA Petroleum Program Corrective Action Area
- FOST Finding of Suitability to Transfer
- IR Installation Restoration
- NFA No Further Action

Former NAS Alameda, Alameda, California
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Figure 6
Total Petroleum Hydrocarbons
Corrective Action Areas
and Areas of Concern
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda



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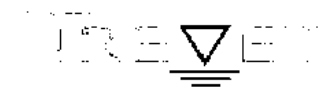


- Notes:**
- * Former RCRA Units within 100 feet of the FOST parcel are labeled.
 - AOC Area of Concern
 - BOWTS Bilge Oily Wastewater Treatment System
 - CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 - FOST Finding of Suitability to Transfer
 - GAP Generator Accumulation Point
 - HW Hazardous Waste Area
 - IR Installation Restoration
 - IWTP Industrial Wastewater Treatment Plant
 - M-(number) Miscellaneous Area Identified in RFA
 - NA Not Applicable (Not a site)
 - NADEP Naval Aviation Depot Alameda
 - NAS Naval Air Station
 - NFA No Further Action
 - OWS Oil-Water Separator
 - RCRA Resource Conservation and Recovery Act
 - RFA RCRA Facility Assessment
 - SHWAP Solid Hazardous Waste Accumulation Point
 - SWMU Solid Waste Management Unit
 - TP Tiered Permit
 - UST(R) Underground Storage Tank Number System identified in RFA
 - WD Washdown area

Solid Waste Management Units*

- | | |
|----------------------------------|---------------------------------------|
| ○ RCRA; NFA | ○ Petroleum; Open |
| ○ RCRA; NA | ○ Petroleum; NFA with Restrictions |
| △ CERCLA; Open | ○ Petroleum; NFA without Restrictions |
| △ CERCLA; Response Complete, NFA | ○ Petroleum; NA |

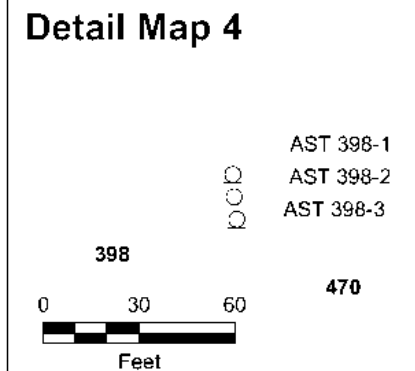
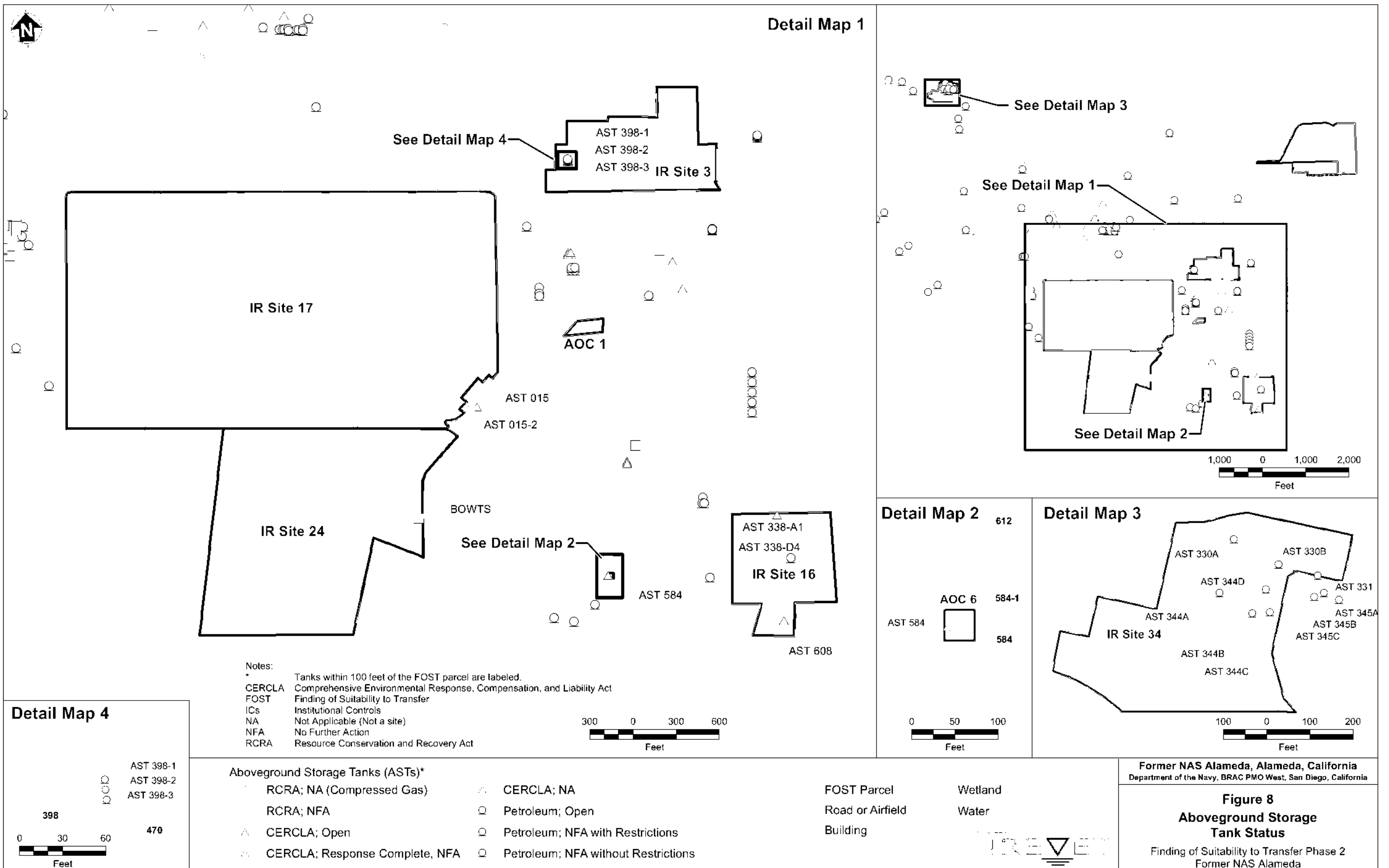
- | | |
|--------------------|------------|
| ▭ FOST Parcel | ▭ Building |
| ▭ Road or Airfield | ▭ Wetland |
| | ▭ Water |



Former NAS Alameda, Alameda, California
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Figure 7
Former Solid Waste Management Unit Status
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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Notes:
 * Tanks within 100 feet of the FOST parcel are labeled.
 CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 FOST Finding of Suitability to Transfer
 ICs Institutional Controls
 NA Not Applicable (Not a site)
 NFA No Further Action
 RCRA Resource Conservation and Recovery Act

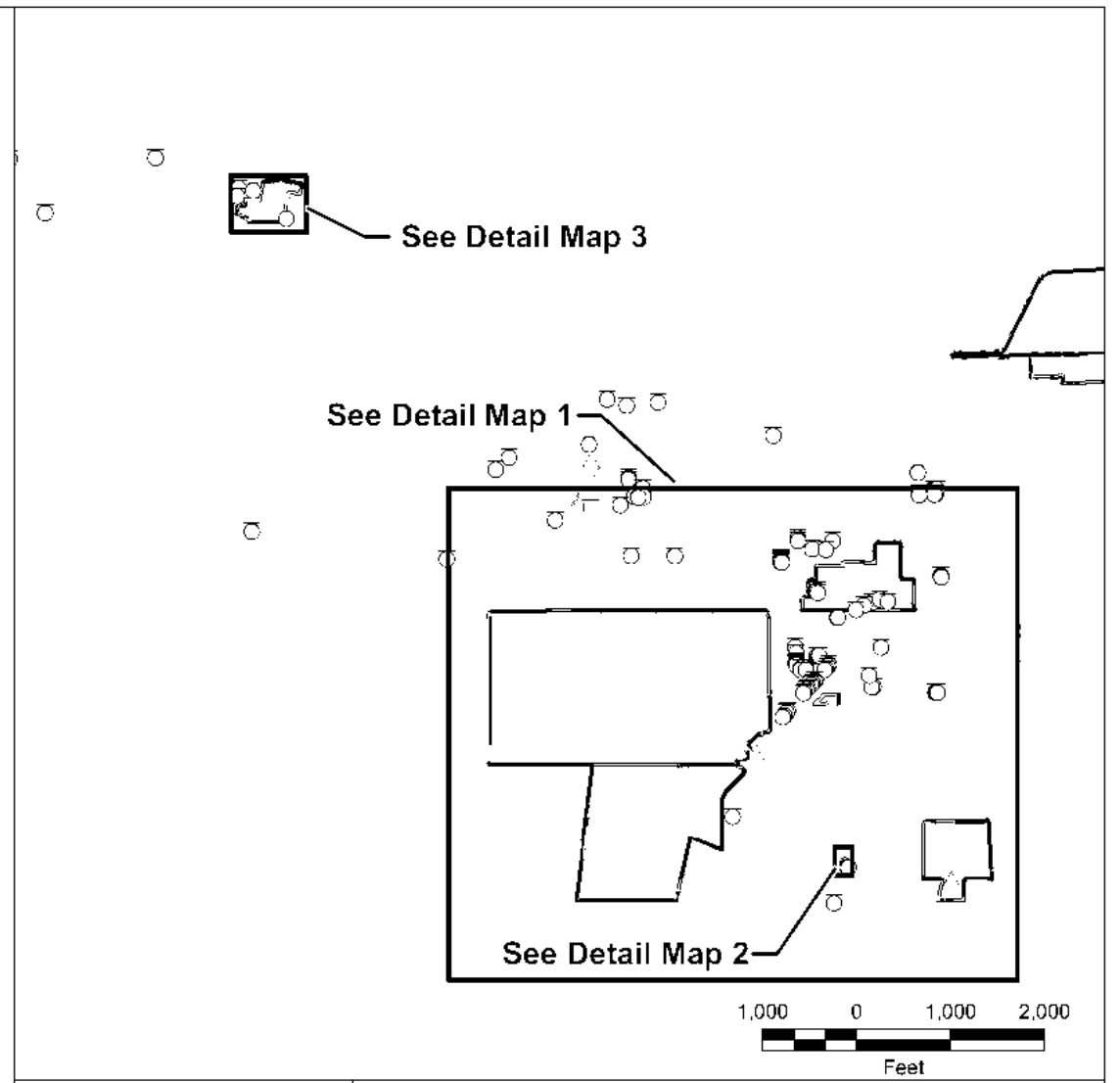
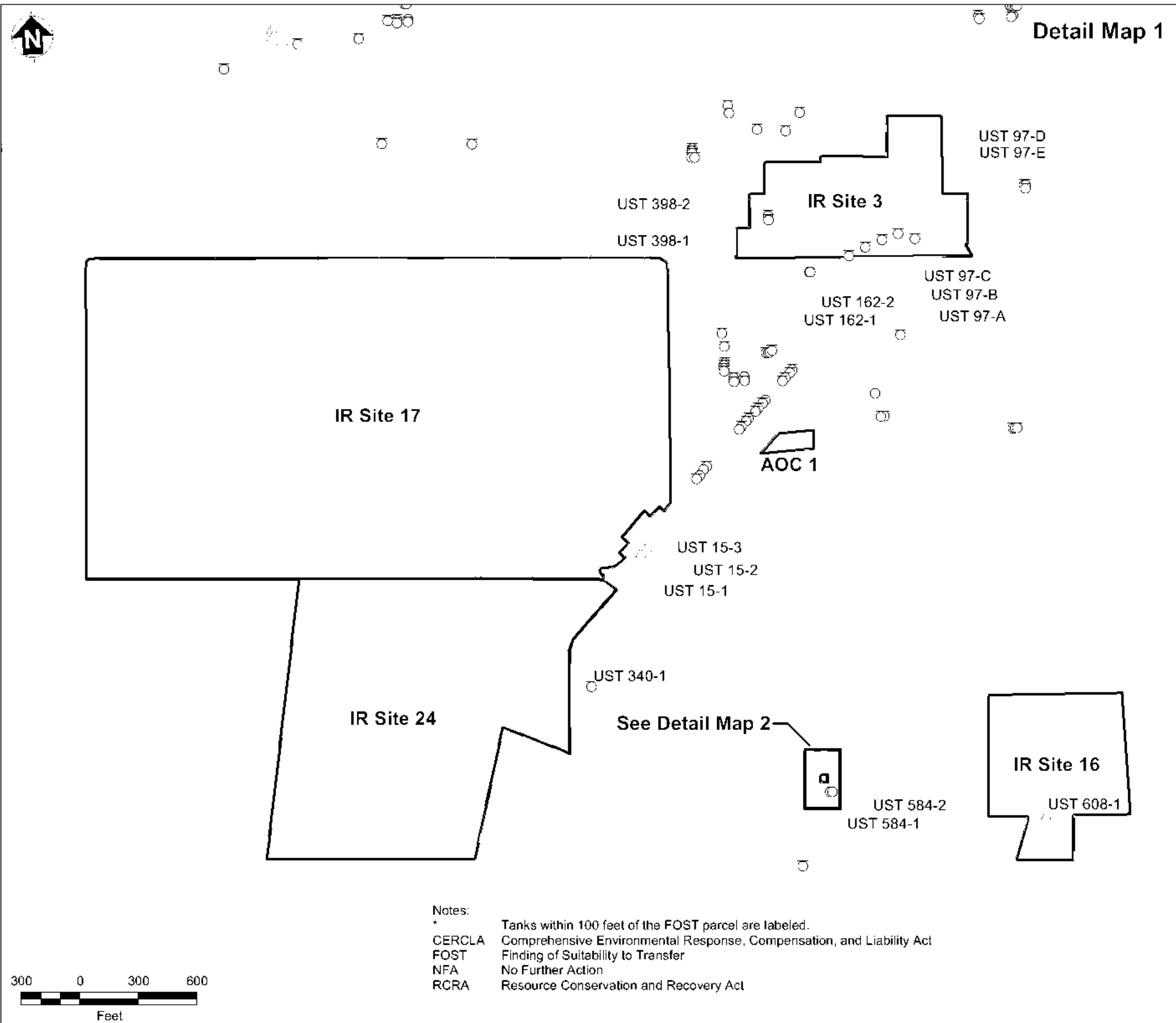
- Aboveground Storage Tanks (ASTs)***
- RCRA; NA (Compressed Gas)
 - RCRA; NFA
 - △ CERCLA; Open
 - △ CERCLA; Response Complete, NFA
 - CERCLA; NA
 - Petroleum; Open
 - Petroleum; NFA with Restrictions
 - Petroleum; NFA without Restrictions

- FOST Parcel
- Road or Airfield
- Building
- Wetland
- Water

Former NAS Alameda, Alameda, California
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Figure 8
Aboveground Storage Tank Status
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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Notes:
 * Tanks within 100 feet of the FOST parcel are labeled.
 CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 FOST Finding of Suitability to Transfer
 NFA No Further Action
 RCRA Resource Conservation and Recovery Act

Underground Storage Tanks*				
RCRA; NFA	○ Petroleum; Open	FOST Parcel	Road or Airfield	Wetland
△ CERCLA; Open	○ Petroleum; NFA with Restrictions		Building	Water
△ CERCLA; NFA without Restrictions	○ Petroleum; NFA without Restrictions			

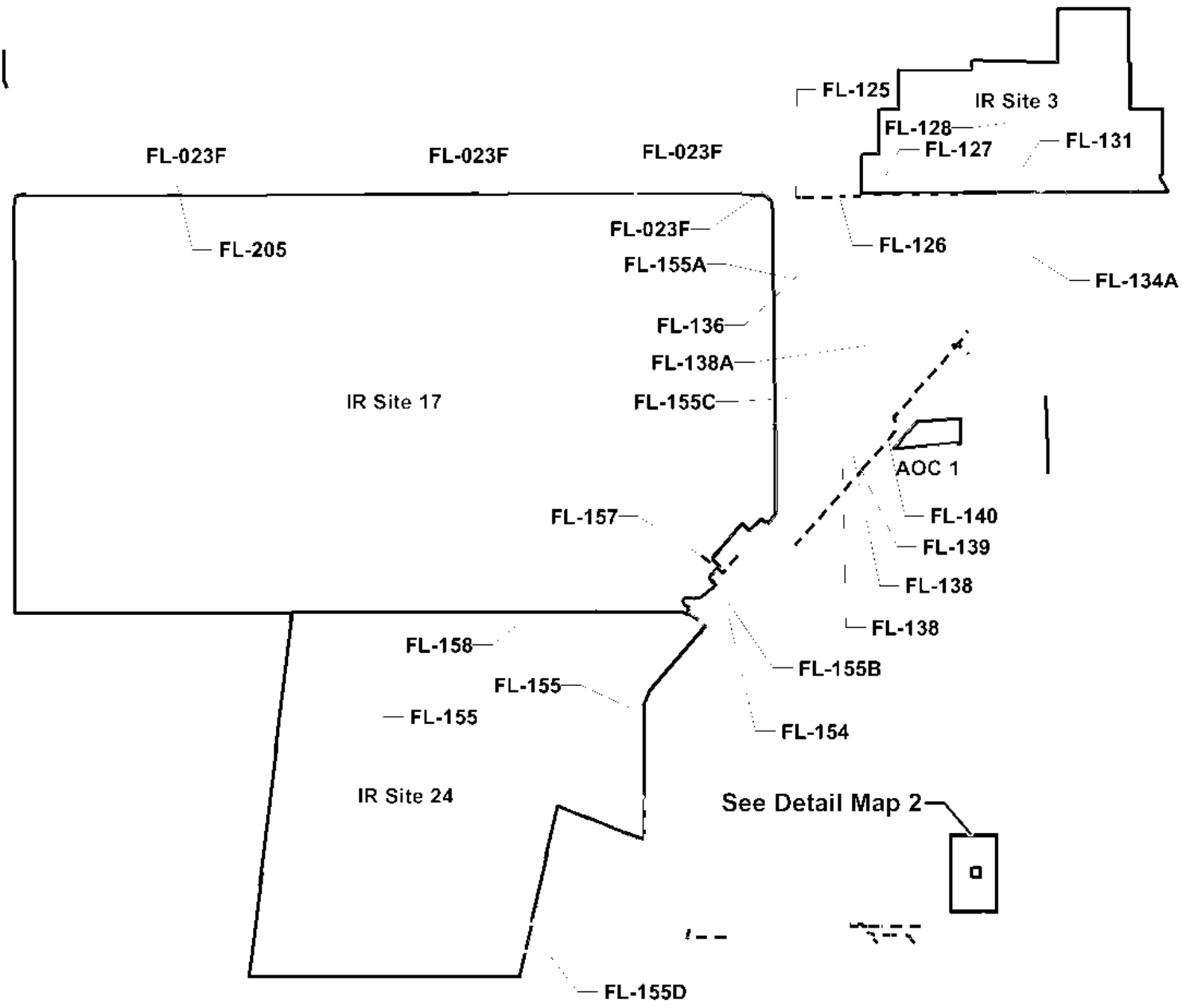
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Figure 9
Underground Storage Tank Status
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

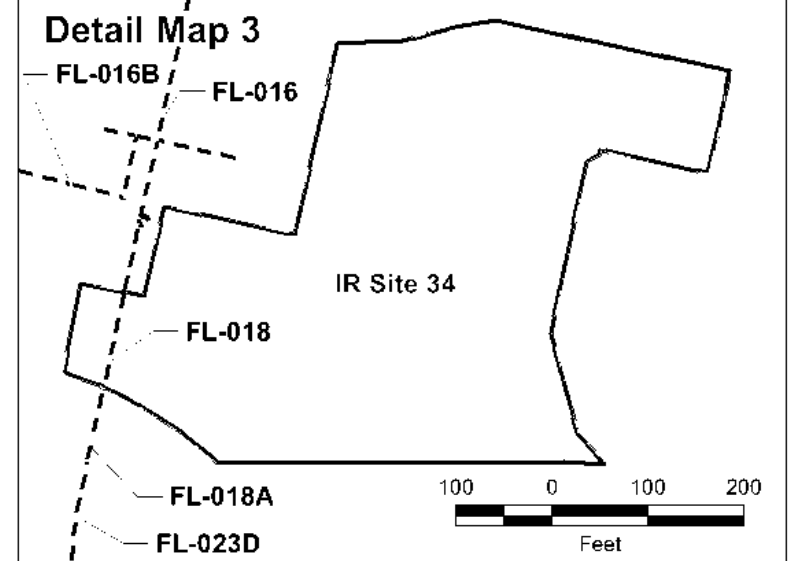
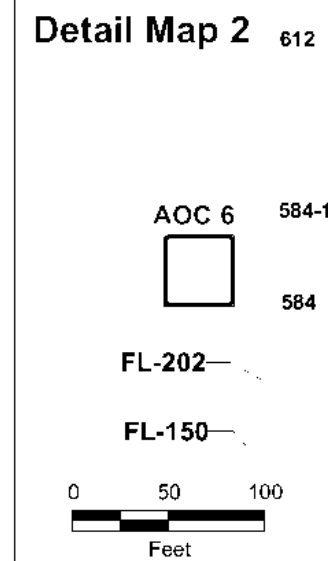
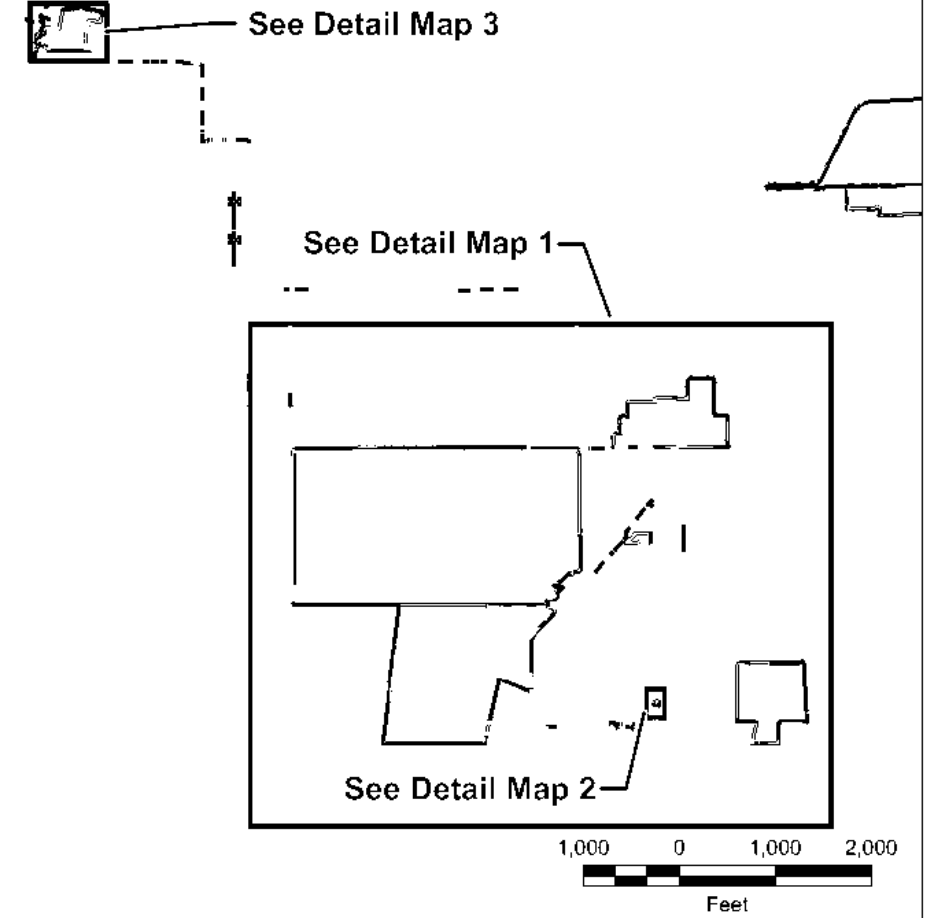
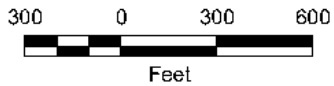
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Detail Map 1



Notes:
 * Fuel Lines within 100 feet of the FOST parcel are labeled.
 † "Closed in Place" indicates that the fuel line has been drained, flushed, and pressure-grouted. The line remains in place, but it has been properly abandoned.
 CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 FOST Finding of Suitability to Transfer
 NA Not Applicable (Not a site)
 NFA No Further Action
 RCRA Resource Conservation and Recovery Act



Fuel Line Site Status and Physical Disposition*

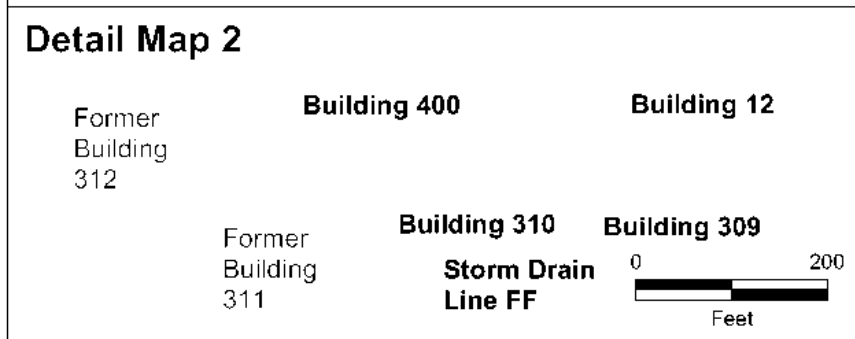
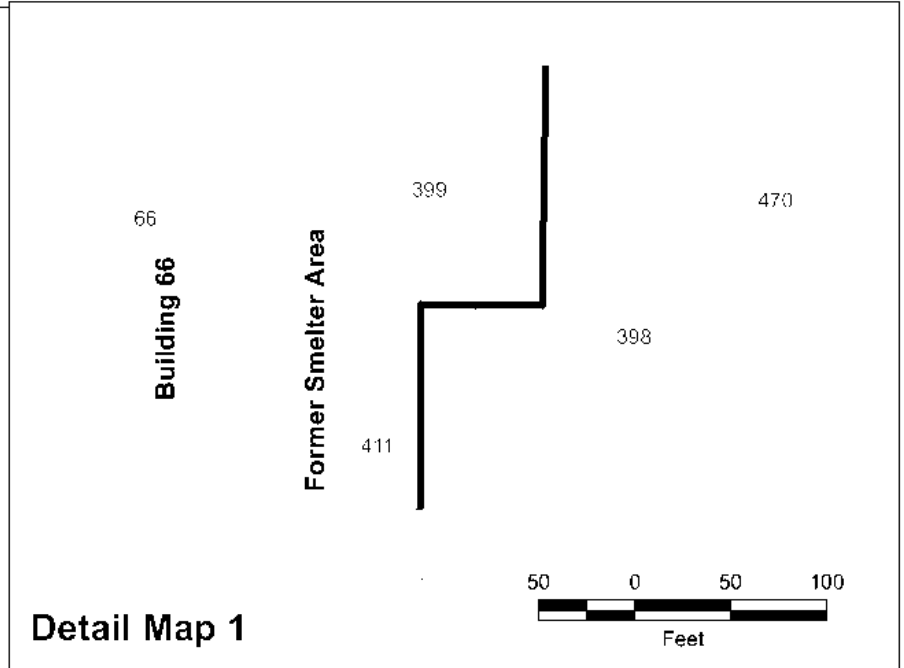
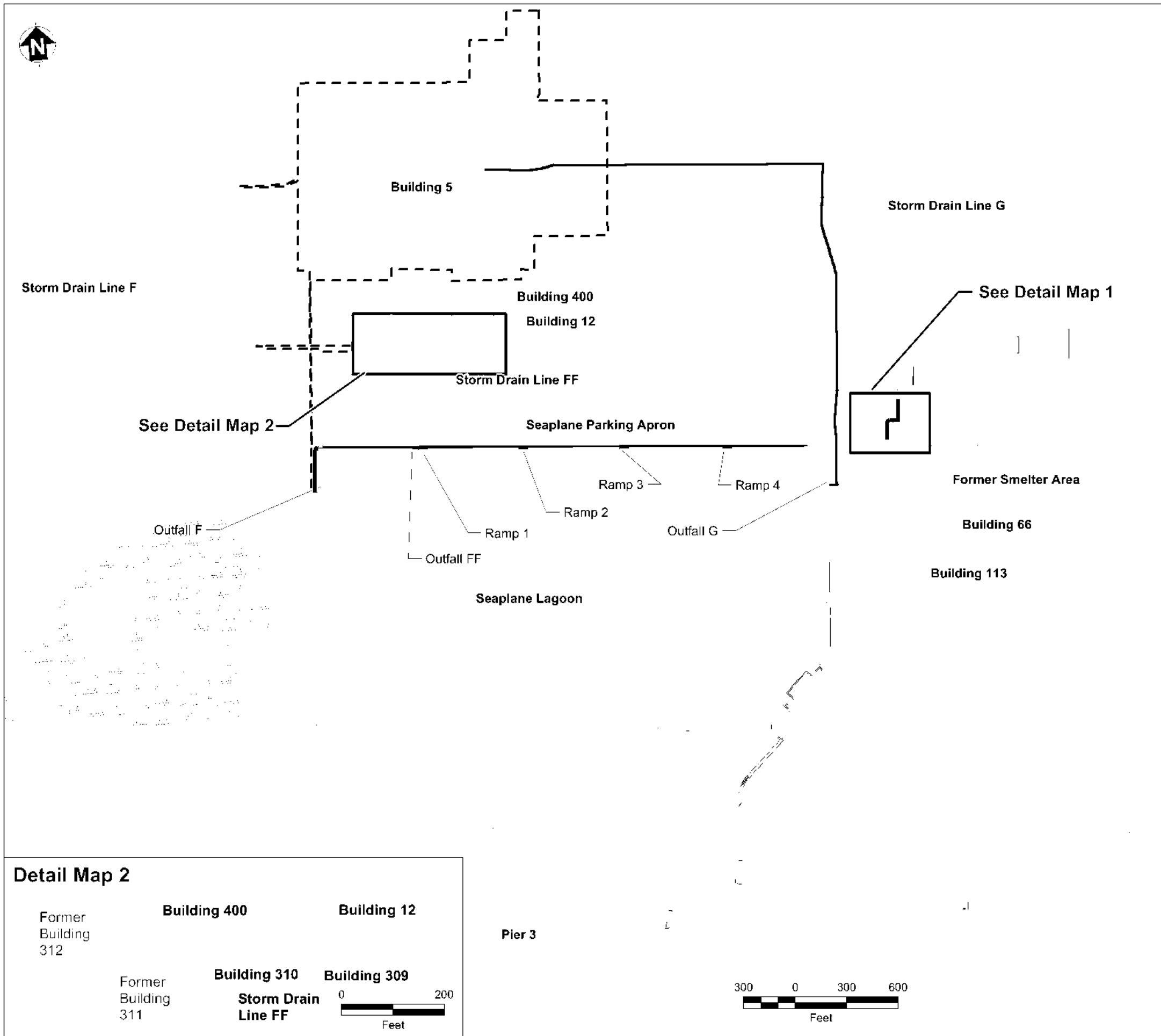
- | | | | | |
|---------------------------------------|--|-------------|------------------|---------|
| Removed, Open | Closed-in-Place†, Open | FOST Parcel | Road or Airfield | Wetland |
| Removed, NFA with Restrictions | Closed-in-Place†, NFA without Restrictions | Building | Water | |
| --- Removed, NFA without Restrictions | Closed-in-Place†, NA | | | |
| Removed, NA | | | | |

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Figure 10 Underground Fuel Line Status

Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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Suspected Radiologically Contaminated Area Status

- Unrestricted
- Closed with Restrictions
- Open (has not received regulatory closure)
- Pier 3, Unrestricted

— Storm Drain Line G

--- IR Site 5

--- IR Site 10

--- FOST Parcel Boundary

--- Road or Airfield

--- Building

--- Wetland

--- Water

Notes:
 FOST Finding of Suitability to Transfer
 IR Installation Restoration

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Figure 11
Radiological Sites Within or Adjacent to the FOST Parcel
 Finding of Suitability to Transfer Phase 2
 Former NAS Alameda

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Tables

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TABLE 1. PROPERTY DISPOSAL TO DATE

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Type of Disposal	Recipient	When	Description	Acres
NC-EDC	City of Alameda	2000	East Housing	75.00
Lease Termination	City of Alameda	2000	Lease Termination	161.50
Federal Agency to Federal Agency	U.S. Coast Guard	2008	Marina Village Housing	28.00
PBC	City of Alameda	2009	Via U.S. Dept. of Interior (Park & Rec.)	44.00
NC-EDC (Phase 1)	City of Alameda	2013	June 2013 Conveyance	1,379.21
PBC	City of Alameda	2013	Estuary Park	8.00
Federal Agency to Federal Agency	Veterans' Administration	2014	June 2014 Conveyance	624.00

Notes:

EDC = Economic Development Conveyance

NC = No Cost

PBC = Public Benefit Conveyance

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TABLE 2: RCRA UNIT CLOSURES AND REASSIGNMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

RCRA Unit Identification	Description	Material Stored / Disposed Of	Program Reassignment	Assigned Site	Status	Closure Reference ^o
AOC 398	USTs 398-1 and 398-2	JP-5 (UST 398-1) and JP-TS (UST 398-2)	Petroleum	UST 398-1, UST 398-2	NFA without Restrictions	Water Board 2014n
AOC 473	UST 473-1	Gasoline	Petroleum	UST 473-1	NFA without Restrictions	Water Board 2000, Water Board 2014r
BOWTS	Bilge Oily Water Treatment System		RCRA		NFA	DTSC 2000a, DTSC 2000b
M-07	Building 398 solvent distillation unit; Drize Test Shop	PD-680, paint thinners, and acetone	Petroleum	CAA-03A	Open	
M-10	Area 37 Annex	Spent solvents (toluene, MEK, 1,1,1-TCA, and methylene chloride), waste flammable liquids, beryllium, and mercury	RCRA		NFA	DTSC 2000c
NADEP GAP 44	ASTs 398-1, 398-2, and 398-3	Lube oil, JP-5, and M-114 solvent	Petroleum	CAA-03A	Open	
NADEP GAP 45	Building 398, Shop 96327 (Turbine Accessory Shop) GAP	Aerosol paint and paper towels contaminated with oil	Petroleum	CAA-03A	Open	
NADEP GAP 78	Building 479 Shop 65234 GAP	Aerosol paint, primer, alcohol, poly paint, naphtha, and acetone	CERCLA	IR 34	Response Complete, NFA	EPA 2014
NADEP GAP 79	Building 472 Shop 65234 GAP	Blasting grit (media)	CERCLA	IR 34	Response Complete, NFA	DTSC 1999c, EPA 2014
NAS GAP 10	Building 112 GAP	Solvents, lubrication and hydraulic oils, and asbestos (doubled bags)	CERCLA	IR 03	Response Complete, NFA	DTSC 1999c
OWS 608A	Oil-Water Separator 608A	Wastewater from cleaning automobiles with commercial soaps or drive train degreasers	CERCLA	IR 16	Response Complete, NFA	Navy 2016a, Navy 2015d
OWS 608B	Oil-Water Separator 608B	Wastewater from cleaning automobiles with commercial soaps or drive train degreasers	CERCLA	IR 16	Response Complete, NFA	Navy 2016a, Navy 2015d

TABLE 2: RCRA UNIT CLOSURES AND REASSIGNMENTS (Continued)

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

RCRA Unit Identification	Description	Material Stored / Disposed Of	Program Reassignment	Assigned Site	Status	Closure Reference ^o
SWMU 331	Solid Waste Management Unit Building 331	Diesel	Petroleum	CAA-14	NFA without Restrictions	DTSC 2014, Water Board 2013b
UST(R)-18/ NAS GAP 17	UST RCRA Unit 18 and Naval Air Station Generator Accumulation Point 17: UST 608-1	Waste oil	CERCLA	IR 16	Response Complete, NFA	Navy 2016a, Navy 2015d
WD 608	Washdown Area Building 608	Wastewater from cleaning automobiles with commercial soaps or drive train degreasers	CERCLA	IR 16	Response Complete, NFA	DTSC 2005e, Navy 2007b

Notes:

^o	If blank, the site remains open	JP-5	Jet propellant #5	UST(R)	UST numbering system as identified in RFA
AOC	Area of Concern	JP-TS	Jet propellant #5 thermally stabilized	WD	Washdown area
BOWTS	Bilge oily water treatment system	RCRA	Resource Conservation and Recovery Act		
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	M	Miscellaneous area identified in RFA		
CAA	Petroleum Program Corrective Action Area	MEK	Methyl ethyl ketone		
DTSC	Department of Toxic Substances Control	NADEP	Naval Aviation Depot		
EPA	Environmental Protection Agency	NAS	Naval Air Station		
GAP	Generator accumulation point	NFA	No Further Action		
IC	Institutional Control	OWS	Oil-water separator		
IR	Installation Restoration	TCA	Trichloroethane		
		UST	Underground storage tank		

TABLE 3: CERCLA SITE STATUS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Identification	Site Name	Status	Closure Reference
AOC 1	Arsenic and cobalt (storage yard)	NFA	CH2MHill 2014, EPA 2015a
AOC 6	Hexavalent chromium (likely source is AST 584 stored wastewater condensate from a heater)	NFA	CH2MHill 2014, EPA 2015a
IR 03	Abandoned Fuel Storage Area	Response Complete, includes ICs	EPA 2015b, Navy 2015a, Navy 2015c
IR 16	C-2 CANS Area (Shipping Container Storage)	Response Complete, includes ICs	Navy 2015d, Navy 2016a, URS 2012b
IR 17	Seaplane Lagoon	Response Complete, includes ICs	Tetra Tech EC 2014a, Navy 2016b, Navy 2016c
IR 24	Pier Area	Response Complete, NFA	DTSC 2013a, EPA 2013, Tetra Tech EC 2013
IR 25	Estuary Park and the Coast Guard Housing Area	Response Complete, includes ICs	Navy 2007a, Navy 2007c, Navy 2015b
IR 30	Miller School	Response Complete, NFA	Navy 2007a, Navy 2009, Navy 2015b
IR 34	Former Northwest Shop Area	Response Complete, NFA	DTSC 2014, EPA 2014, ERS 2014

Notes:

- AOC Area of Concern
- AST Aboveground storage tank
- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
- DTSC California Department of Toxic Substances Control
- IC Institutional Control
- IR Installation Restoration
- LUC RD Land Use Control Remedial Design
- NAS Naval Air Station
- Navy Department of the Navy
- NFA No Further Action

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TABLE 4: PETROLEUM CORRECTIVE ACTION AREA AND AREAS OF CONCERN SITE STATUS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Identification	Site Name	Status	Closure Reference^o
CAA-03A	Petroleum Corrective Action Area 03A	Open	
CAA-03B	Petroleum Corrective Action Area 03B	Open	
CAA-03C	Petroleum Corrective Action Area 03C	Open	
CAA-09A	Petroleum Corrective Action Area 09A	Open	
CAA-09B	Petroleum Corrective Action Area 09B	NFA without Restrictions	Navy 2015d
CAA-14	Petroleum Corrective Action Area 14	NFA without Restrictions	DTSC 2014, Water Board 2013b
CAA-A	Petroleum Corrective Action Area Fuel Line A	NFA without Restrictions	Water Board 2007

Notes:

- ° If blank, the site remains open
- CAA Petroleum Program Corrective Action Area
- NAS Naval Air Station
- NFA No Further Action
- Water Board Regional Water Quality Control Board

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TABLE 5: STORAGE TANK STATUS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Tank	Program	Physical Status	Contents	Capacity (gallons)	Install Date	Removal Date	Regulatory Status	Associated Site	Closure Reference ^o
AST 330A	Petroleum	Removed	Diesel	60	Unknown	Before 1994	NFA with Restrictions		Water Board 2013c
AST 330B	Petroleum	Removed	Diesel	60	Unknown	Before 1994	Open		
AST 331	Petroleum	Removed	Diesel	500	Unknown	Unknown	NFA without Restrictions		Water Board 2013b
AST 338-A1	CERCLA	Removed	Propane	500	Unknown	Unknown	Response Complete, NFA	IR 16	Navy 2007b
AST 338-D4	Petroleum	Removed	Diesel	200	Unknown	1992 - 1994	NFA without Restrictions		Water Board 2014j
AST 344A	Petroleum	Removed	Diesel	100	Unknown	Before 1994	NFA without Restrictions		Water Board 2014k
AST 344B	Petroleum	Removed	Diesel	100	Unknown	Before 1994	NFA without Restrictions		Water Board 2014k
AST 344C	Petroleum	Removed	Diesel	100	Unknown	Before 1994	NFA without Restrictions		Water Board 2014k
AST 344D	Petroleum	Removed	Diesel	100	Unknown	Before 1994	NFA without Restrictions		Water Board 2014k
AST 398-1	Petroleum	Removed					Open	CAA-03A	
AST 398-2	Petroleum	Removed					Open	CAA-03A	
AST 398-3	Petroleum	Removed					Open	CAA-03A	
AST 584	CERCLA	Removed	Industrial Wastewater (condensate from heater containing corrosion-resistant chemicals)	15,000	Unknown	NA	NFA	AOC 6	CH2MHill 2014
AST 608	CERCLA	Removed	Waste Oil	1,000	Unknown	NA	Response Complete, NFA	IR 16	Navy 2007b
UST 97-A	Petroleum	Removed	115/145 AVGAS	100,000	1943	1987	Open	CAA-03C	

TABLE 5: STORAGE TANK STATUS (Continued)

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Tank	Program	Physical Status	Contents	Capacity (gallons)	Install Date	Removal Date	Regulatory Status	Associated Site	Closure Reference ^o
UST 97-B	Petroleum	Removed	115/145 AVGAS	100,000	1943	1987	Open	CAA-03C	
UST 97-C	Petroleum	Removed	115/145 AVGAS	100,000	1943	1987	NFA without Restrictions		Water Board 2015h
UST 97-D	Petroleum	Removed	115/145 AVGAS	100,000	1943	1987	Open	CAA-03C	
UST 97-E	Petroleum	Removed	115/145 AVGAS	100,000	1962	1987	Open	CAA-03C	
UST 398-1	Petroleum	Removed	JP-5	10,000	1969	4/27/1995	NFA without Restrictions		Water Board 2014n
UST 398-2	Petroleum	Removed	JP-TS	10,000	1969	4/27/1995	NFA without Restrictions		Water Board 2014n
UST 473-1	Petroleum	Removed	Gasoline	500	1948	11/3/1994	NFA without Restrictions		Water Board 2000, Water Board 2014r
UST 608-1	CERCLA	Removed	Waste Oil	600	Unknown	2/6/1995	NFA without Restrictions	IR 16	Navy 2016a, Navy 2015d

Notes:

° If blank, the site remains open
 AOC Area of Concern
 AST Aboveground storage tank
 AVGAS Aviation Gasoline
 CAA Petroleum Program Corrective Action Area
 CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 IR Installation Restoration

JP-TS Jet propellant #5 thermally stabilized
 NA Not applicable
 NAS Naval Air Station
 Navy Department of the Navy
 NFA No Further Action
 UST Underground storage tank
 Water Board Regional Water Quality Control Board

TABLE 6: UNDERGROUND FUEL LINE STATUS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Identification	Physical Status	Regulatory Status	Associated Site	Closure Reference°
FL-018	Removed	NFA without Restrictions	CAA-A	Water Board 2007
FL-127	Removed	Open	CAA-03A	
FL-128	Removed	Open	CAA-03C	
FL-131	Removed	Open	CAA-03C	
FL-155	Closed-in-Place	NA		Water Board 2015k
FL-158	Closed-in-Place	NA		Water Board 2015k

Notes:

°	If blank, the site remains open
CAA	Corrective Action Area
FL	Fuel Line
NA	Not Applicable (Not designated a site)
NAS	Naval Air Station
NFA	No Further Action
Water Board	Regional Water Quality Control Board

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TABLE 7: RADIOLOGICALLY IMPACTED SITES WITHIN THE FOST PARCEL

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Identification	Associated CERCLA Site	Description	Status	Closure Reference
Former Smelter Area	IR Site 3	Melting of scrap metals (Ra-226). Former smelter was immediately east of Building 66, in use until approximately 1946. Former smelter area extends into a small portion of IR Site 3; see Figure 11.	Unrestricted	ChaduxTt 2012e
Seaplane Lagoon	IR Site 17	Location where seaplanes entered and exited the bay. Discharge location for the storm drain lines from Building 5 and 400 (Ra-226).	Response Complete, with Dredging Restrictions	Tetra Tech EC 2014a, Navy In Press-e

Notes:

FOST Finding of Suitability to Transfer
 IR Installation Restoration
 NAS Naval Air Station
 Ra-226 Radium-226

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Attachment 1: Responses to Regulatory Agency Comments

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ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Document Title: Draft Finding of Suitability to Transfer Phase 2, Former Naval Air Station, Alameda, California (May 2014)

Navy Initiated Change	
General	As a result of significant CERCLA progress made at OU5 and OU2B, the FOST schedules for these areas have converged with those areas previously included in the DRAFT Phase 2 FOST. Therefore, in furtherance of the BRAC Program Management Office mission to dispose of Department of the Navy BRAC property the Navy is initiating changes to the Draft Final FOST Phase 2 document to incorporate the remaining portions of OU5 (i.e. IR Site 30 and the remainder of IR Site 25) and a portion of OU2B (IR Site 3 - lead impacted area).

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Document Title: Draft Finding of Suitability to Transfer Phase 2, Former Naval Air Station, Alameda, California (May 2014)

Comments from Xuan-Mai Tran, Project Manager, USEPA - dated June 11, 2014		
Comment No.	General Comment	Response
1	<p>EPA’s review of the Draft Finding of Suitability to Transfer (FOST) Phase 2 for Former Naval Air Station Alameda is based on the expectation that the following listed documents will be finalized and/or approved prior to the FOST signature:</p> <ul style="list-style-type: none"> a. OU-2B Record of Decision (ROD) b. IR Site 16 Explanation of Significant Differences (ESD) c. IR Site 16 Remedial Action Completion Report (RACR) d. IR Site 17 Remedial Action Completion Report (RACR) e. Amended Site Inspection for Economic Development Conveyance (EDC) 12 	<p>1. Comment acknowledged. The OU-2B ROD, <i>the Site 16 ESD and LUC RD</i>, the Site 17 RACR, and the Amended SI for EDC 12 have been finalized. In accordance with resolution of comments on the Site 16 ESD, the Site 16 RACR will be a LUC/RD. In accordance with BCT discussions, a Site 17 ESD and LUC-RD will also be completed prior to the Final FOST.</p>
2	<p>EPA notes that Navy policy provides for a 30-day public notice prior to the signing of the FOST.</p>	<p>2. A Notice of Intent to Sign, Finding of Suitability to Transfer (FOST) will be published in local Alameda newspaper(s) 30 days prior to signing of the FOST.</p>
Comment No.	Specific Comments	Response
1	<p>Section 4.1.3, IR Site 17 (OU-4B), Page 9: To be consistent with the other documents for IR Site 17 Seaplane Lagoon (SPL), please replace the acres of Site 17 SPL from “111 submerged acres...” to “approximately 110 submerged acres...”</p>	<p>1. Comment incorporated.</p>

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from Xuan-Mai Tran, Project Manager, USEPA - dated June 11, 2014		
Comment No.	Specific Comments	Response
2	Section 4.1.3, IR Site 17 (OU-4B), Page 10: “RACR” is missing after “Final” on the second line of the first complete paragraph.	2. Comment incorporated.
3	Section 4.8, Pesticides, Page 20: EPA does not agree with the Navy assertion regarding its obligation to address post-transfer discovery of pesticide contamination. If such contamination requires a response action, it is not excluded from the Navy’s CERCLA obligation.	3. The Navy's position on the responsibility for legally applied pesticides remains unchanged. The FOST was not changed as a result of this comment. Despite the Navy and EPA's difference of opinion, in the past EPA has concurred with the Navy's determination that the parcel is suitable for transfer but has included the following statement in its concurrence letter: "EPA concurs with the Navy's determination that the parcel is suitable for transfer; however, it is EPA's position that residual pesticide contamination, if discovered following transfer at levels requiring a response action, is not excluded from the Navy's post-transfer obligations."
Comment No.	Minor Comment	Response
1	The full justification of the document caused the spelling on some of the words to be incorrect. Please do a global search throughout the document to correct them.	1. Comment incorporated.

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
1	p. v. "Acronyms": Include acronym for "SI", see, e.g. pp. 11-12.	1. Comment incorporated.
2	Throughout: Numerous sites are referenced as having received EPA and DTSC concurrence as to remedial status, yet approvals are noted as "(PENDING)" or "(Navy in Press)". Those sites are not ready for transfer until those approvals are provided in final, including EPA and DTSC approval of the Seaplane Lagoon RACR, including Draft Appendix W, "Evaluation of Items with Radiological Activity...".	2. Comment acknowledged.
3	p. 1: In the first paragraph, text should refer to "a portion of" the former NAS as being the subject to the FOST.	3. Comment incorporated.
4	p. 1: In the third paragraph, first sentence, text again should refer to "a portion of" the real property as being made available.	4. Comment incorporated.
5	2.0 Property Description, p. 1, bottom paragraph; 4.1 CERCLA Program, p. 6, first full paragraph: The southwest corner of IR Site 34 is not included in the FOST Parcel (see FOST Figure 3). The first sentence in each paragraph should state that a portion, not "all", of IR Site 34 is in the FOST Parcel.	5. Comment incorporated.
6	§3.2 p.4: Second to last line, add an "s" to "release"	6. Comment incorporated.

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Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
7	4.1.2 IR Site 16 (OU-1), p. 8: Consider mentioning in this section that an automobile service and repair facility was present in IR Site 16, as is done in Section 4.2.1 for CAA-09B (p. 13).	7. Comment incorporated.
8	4.1.3 IR Site 17 (OU-4B), p. 10, first complete sentence: Portions of the construction debris piles that were removed from the north shore of Seaplane Lagoon were sometimes exposed. Please consider adding “and intertidal” to the sentence: “Between October 2008 and December 2009, a time-critical removal action (TCRA) was conducted to remove the submerged <i>and intertidal</i> construction debris piles located along the northern shoreline of Site 17.”	8. Comment incorporated.
9	4.1.5 IR Site 34, p. 11, 3 rd paragraph and elsewhere; The text states that “NFA”, defined as “no further action”, was selected for groundwater by the IR Site 34 ROD. This implies “action” had already occurred for IR Site 34 groundwater, but none had. The selected remedy for IR Site 34 states in part that “no action is required for groundwater.” (ROD Section 2.9.1). The FOST contains many instances, for both CERCLA and Petroleum Program sites, where “NFA” is used as a shorthand for “no action”. In the interest of accuracy and to avoid confusion among FOST readers who would wonder what prior remedial/removal action they should be aware of, please consider reviewing the FOST for occurrences of “NFA” and “no further action” and substituting “no action” when appropriate.	9. NFA is standard language used throughout the Navy ER Program and is the appropriate terminology to use for all sites, including Site 34 that has undergone site characterization as part of the Remedial Investigation (RI) phase of the CERCLA process. The use of NFA terminology in the FOST is justified because the act of collecting samples and reviewing site risk are considered to be actions under both CERCLA and the UST programs.

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
10	4.2 Petroleum Products and Derivatives, p. 12, bottom paragraph, 2 nd sentence: “Separately” makes the sentence ambiguous and somewhat awkward to understand. Please consider beginning the sentence with “In addition”, instead.	10. Text revised for clarification: <i>“Some of the sites included in the Petroleum Program were originally identified as part of the RFA prepared by the Navy and DTSC in 1992 (DTSC 1992b); the purpose of the RFA was to identify sites potentially requiring closure under RCRA regulations.”</i>
11	4.2.1 Open Petroleum Program Sites, p. 13: Please consider adding additional detail to the CAA discussions in this section. For example, the Navy has completed considerable corrective-action efforts at CAAs-3A, -3B, and -3C, which cleaned up the vast majority of the petroleum contamination, and is now undertaking the final steps (hopefully) before site closure. However, the FOST does not provide this basic status information. Please consider revising the section to provide more detail about each site, its status, and its closure prospects.	11. Comment incorporated. The text was revised as follows (italics identify updated text): <i>“This 9-acre site overlaps IR Site 3. The site was subdivided into CAA-03A, CAA-03B, and CAA-03C. Historic activities at CAA-03A, CAA-03B and CAA-03C resulted in the release of aviation fuel to soil and groundwater. The Navy has performed investigations and completed substantial corrective-action at CAAs-03A, -03B, and -03C; these efforts have cleaned up the vast majority of the petroleum contamination (Shaw E&I 2013). USTs 398-1 and 398-2, which are included in CAA-03A, were closed with a NFA letter from the Water Board dated October 13, 2014 (Water Board 2014c); other components of CAA-03A are being investigated or are under review for closure (Table 4 and Table 5). UST 97-C, which is part of CAA-03C, was closed with a NFA letter from the Water Board dated April 21, 2015 (Water Board 2015c). Residual contamination at CAA-03B and -03C requires further investigation and possibly corrective action prior to requesting closure.”</i>
12	4.2.1 Open Petroleum Program Sites, p. 13, 1 st paragraph, 2 nd sentence: The sentence refers to “NFA requests” for Petroleum Program sites. Customarily at Alameda Point,	12. Comment incorporated. The text in 4.2.1, first paragraph, second sentence was changed from “NFA” requests to “site closure” requests.

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
	such requests are called “Site Closure Summaries”, or simply site closure requests. Please consider revising the FOST to identify petroleum site closure requests in the usual manner.	
13	4 th paragraph of section—last sentence—revise to read “The tables identify the program under which closure is being addressed.”	13. Comment incorporated. The text of Section 4.2, was revised to <i>indicate</i> the tables <i>that</i> identify the program under which closure is being addressed.
14	4.2.1 Open Petroleum Sites, pp. 13-14: Incomplete descriptions of current investigation, remediation and/or regulatory status are provided for some of the sites (see, e.g. CAA-03C and CAA-09A).	14. Comment incorporated. See RTC # 11, above for CAA-03. Information provided for CAA-09A is what is available to date. Information was added to the text for CAA-09B (see Response to Water Board Comment #4, below).
15	§4.1.3 IR Site 17 (p.9) and §4.7.2 General Radioactive Material (p.18): The FOST anticipates EPA concurrence and DTSC certification of the remedial action performed in Seaplane Lagoon (“SPL”) consistent with the IR Site 17 ROD, but this is premature. During implementation of the SPL sediment excavation remedy, 51 radiological devices (“RDs”) were unexpectedly found within the excavated sediment, requiring their removal and offsite disposal at an out-of-state low level radiation waste disposal site. The Navy prepared, as Appendix W to the RACR for the sediment removal remedy, an evaluation of, among other risks, the potential risk of additional RDs residing in the unexcavated SPL sediment. Appendix W is currently under review by DTSC and CDPH’s Environmental Management Branch (“EMB”). EMB has not yet commented on Appendix W or made a written determination whether SPL can be released for unrestricted use. Until all branches of CDPH complete their review, as necessary, SPL is not ready for	15. The Site 17 RACR documents that the RAOs in the 2006 ROD and completion criteria in the RAWP were achieved and that IR Site 17 does not pose a risk to human health or the environment under current or proposed future use. In accordance with previous agreements between the BCT and the City, the Navy is preparing a ROD ESD and LUC/RD for Site 17, and the City will be responsible for preparing the Sediment Management Plan (<i>SedMP</i>). Section 4.1.3 will be modified to include the following: “An ESD and LUC RD were completed to add ICs as a component of the remedy. To ensure proper disposal and prevent potential exposure to Ra-226 in the sediment (including items with Ra-226 activity that may be present in the sediment), the ICs prohibit dredging unless performed subject to an approved Sediment Management Plan”

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
	<p>transfer. First, if EMB determines SPL cannot be released for unrestricted use, the City of Alameda (“City”) will need to obtain from CDPH’s Radiologic Health Branch (“RHB”) a radiologic materials license or an exemption from the license obligation, or risk being in violation of the Radiation Law for possessing radiologic materials without a license or exemption upon title transfer. Furthermore, the City’s application for an exemption or license (if necessary) will include notice to RHB that the City’s reuse of SPL will include construction of a ferry terminal and marina in the northeast corner and along the eastern edge of the SPL. The City may choose to build these features by relocating sediment from one place to another along the bottom of the SPL, or it may dispose of such sediment offsite. Also, the City may conduct sediment dredging for maintenance and other purposes, again with final sediment placement in the SPL or offsite.</p> <p>Given the obligations of the Navy and EPA under CERCLA and the NCP to anticipate the City’s anticipated future use of part of the SPL for these purposes, and to select a remedy that reasonably accommodates that future use, and in anticipation of conditions the RHB will otherwise require as part of the license or license exemption process, the City proposes that the Navy, EPA, RHB and the City negotiate the terms of a sediment management plan (“SMP”) for SPL with protocols for the future excavation/ dragging, handling and final placement of any remaining unexcavated SPL sediment and residual RDs, possibly including the disposal of such sediment and RDs without further remediation, whether dragged and placed along the bottom of the other side of the SPL or if disposed of aquatically. Once approved</p>	

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Comment No.	Comment	Response
	by all agencies, that SMP should be added to the Navy’s ROD for the SPL through an Explanation of Significant Differences (“ESD”), as has been done at IR Site 16 (see Draft FOST, pp. 8-9), to reflect the unexpected discovery of the RDs and the updated remedial strategy to address those RDs remaining in SPL sediments, both in situ and in case of future dredging or dragging in connection with the City’s planned reuse of SPL. If the Site is not released for unrestricted reuse by EMB, then the statement at p. 18 of the draft FOST that “existing requirements for sediment disposal are protective if future dredging is performed” appears to insufficiently address the full scope of human health and environmental concerns potentially presented by the residual RDs if dredged, and the remedial actions potentially required to mitigate them. Those potential health concerns and additional remedial actions would be better and more directly addressed now through a site-specific SMP vetted and approved by all relevant agencies and made part of the SPL remedy through an ESD, as proposed above.	
16	§5.1 CERCLA, p. 20: In first sentence, replace “property” with “FOST Parcel.”	16. Comment incorporated.
17	§5.1.1 CERCLA Sites with Remedial Action Complete, p. 20: Draft FOST refers to [“ASSUMES RESPONSE COMPLETE AT IR SITE 17”] and “[ASSUMES NO RESTRICTIONS AT IR 17”]. Neither assumption may be correct per above discussion. May need to be revised, and add a Section 5.1.3 to refer to a SPL SMP.	17. See Response to City Comment #15, above. The text will be revised to reflect the impact of the Site 17 ESD and LUC RD on the FOST Parcel.

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
18	5.1.2 Marsh Crust, p. 20, 1 st paragraph, last sentence: The remedy selected in the 2001 Marsh Crust RAP/ROD applies to “the marsh crust and former subtidal area”, which is depicted in Figure 4 of the RAP/ROD. IR Site 34 is not included in the marsh crust and former subtidal area. Please consider appending “, except IR Site 34” to the subject sentence, and revising FOST Figure 10 accordingly.	18. Comment incorporated. Site 34 is not in the footprint of the Former Subtidal Area and Tidal Marshland as shown on Figure 4 in the RAP/ROD. However, the “City of Alameda Ordinance No. 2824, Alameda Municipal Code Chapter XIII, Section 13-56” (dated June 2000), shows that IR Site 34 is subject to the Marsh Crust/Subtidal Restriction.
19	§ 5.2 Petroleum Products and Derivatives, p. 21: In the last paragraph regarding federal quitclaim deeds for transfers of property that includes open petroleum sites, to remove ambiguity, language should be added to make clear that although the property where these sites are located will be enrolled in the City Program and work will be conducted pursuant to a soil/groundwater management plan acceptable to the Water Board, “such regulatory closure remains the Navy’s responsibility and will be obtained at Navy direction or by negotiating an agreement with the transferee to complete these actions on behalf of the Navy.”	19. Comment incorporated. A sentence was added at the end of the paragraph and the text was revised to read: “...plan is acceptable to the Water Board, in accordance with the City Program. However, such regulatory closure remains the Navy’s responsibility and will be obtained at Navy direction or by negotiating an agreement with the transferee to complete these actions on behalf of the Navy.”
20	6.2.4 IR Site 23, pp. 24 & 25, sentence that spans the page break: The remedy selected in the 2001 Marsh Crust RAP/ROD applies to “the marsh crust and former subtidal area”, which is depicted in Figure 4 of the RAP/ROD. A portion of IR Site 23 is not included in the marsh crust and former subtidal area. Please consider prefacing the subject sentence with “A portion of”.	20. Comment incorporated. The text spanning pages 24-25 was revised to read: “A portion of IR Site 23 includes areas where the Marsh Crust is known to exist...” [now on p. 26]

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Comments from Jennifer Ott, Chief Operating Officer, City of Alameda - dated June 12, 2014		
Comment No.	Comment	Response
21	§ 6.2.4 IR Site 23, pp. 24-25: In second paragraph, please clarify whether two OWSs referenced have been removed or not.	21. Comment incorporated. The test was revised to include this sentence: <i>“Navy Public Works pressure-washed the oil water separators and sealed the surface access ways prior to base closure.”</i> [now on p. 31]
22	§ 6.2.5 IR Site 27, p. 25 First sentence, change to read that IR Site 27 is located “adjacent to” [not “in”] the southeastern portion of Seaplane Lagoon.	22. Comment incorporated. The text was revised to read: “IR Site 27, the Dock Zone, is located southeast of IR Site 17 and northeast of IR Site 24; it is 15.8 acres in size.”
23	6.2.9 Petroleum Sites, p. 32, 2 nd sentence of AOC 3 (EDC 12) and AOC 5 (EDC 12) sections: The text states that “no further action is required” for each of the AOCs. However, the Navy has referred both of these AOCs to the Petroleum Program for evaluation of petroleum contamination. Please consider appending “for the CERCLA Program” to the subject sentence and adding following it with the sentence: “However, these sites have been transferred to the Alameda Point Petroleum Program to evaluate petroleum contamination.”	23. Comment incorporated. The text was revised to read: AOC 3: “The FOST Parcel is not expected to be impacted by any releases from this site. The Final SI Addendum for EDC 12 concluded that no further action is required under CERCLA (CH2MHill 2014), but because of petroleum compounds in soil exceeded residential screening values, AOC 3 was transferred to the Alameda Point Petroleum Program for evaluation. The entire site was within the 2013 FOST Parcel.” AOC 5: “The FOST Parcel is not expected to be impacted by any releases from this site. The Final SI Addendum for EDC 12 concluded that no further action is required under CERCLA (CH2MHill 2014), but because petroleum compounds in soil exceeded residential screening values, AOC 5 was transferred to the Alameda Point Petroleum Program for evaluation. The entire site was within the 2013 FOST Parcel.”

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Comment No.	Comment	Response
24	Attachment 3: Hazardous Substances Notification Table Entry for IR Site 17 should note probability of additional RAs being located in remaining undredged SPL sediment and proposed revision to the remedy to reflect preparation and adoption of a SMP.	24. Footnote for IR Site 17: "No hazardous substances are known, but there is a potential for some fragments/items with radioluminescent paint to be present in the sediment based on items found during the dredging conducted for the remediation. Under CERCLA, there is no unacceptable risk associated with these potential items. A ROD ESD and LUC/RD have been prepared to ensure proper disposal of these items if removed from the SPL sediments."
25	Table 3: CERCLA Status: Status should reflect proposed revision to the remedy to reflect preparation and adoption of a SMP.	25. See response to City comment 15. The status of Site 17 does not need to be updated in Table 3, but the references for the "response complete" status will be updated to include the final RACR for Site 17, the ROD ESD and LUC/RD, which are still pending. The ESD and LUC/RD will be finalized prior to FOST signatures.
26	Table 5: Storage Tank Status, Table 6: RCRA Unit Status: On these tables, many of the storage tanks and RCRA units that are associated with other sites, for example CAAs, have "See Associated Site" as the entry under the Status column heading. This entry may give the impression that the storage tank or RCRA unit is to be closed with the associated site. However, the closure strategy the Water Board and the Navy are utilizing is to first close discrete sites within a CAA followed by separate closure of the CAA itself. Please consider replacing "See Associated Site" with the appropriate status, which in most cases is "Open".	26. Comment incorporated. Tables 5 and 6 were revised to reflect the current status of the storage tanks and RCRA units as either "Open" or "Closed".

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Comments from James Fyfe, Department of Toxic Substances Control, Hazardous Substance Engineer - dated June 27, 2014		
Comment No.	Comment	Response
1	Page 1, Section 2.0, second paragraph: “The FOST Parcel consist of seven sites, including five Installation Restoration (IR) sites: 16, 17, 24, 34, and portions of 3...” should be corrected to state: “The FOST Parcel consist of seven sites, including five Installation restoration (IR) sites: 16, 17, 24, and portions of 3 and 34...” Make the same correction on Page 6, second paragraph from top.	1. Comment incorporated. Two additional IR Sites have been added to the FOST Parcel (see Navy Initiated Change above). The text on pages 1 and 6 was revised to read: “The FOST Parcel consists of nine sites, including seven Installation Restoration (IR) sites: 3, 16, 17, and 30 and portions of 24, 25 and 34;...”
2	Page 2, Section 3.0, first paragraph: “...the State of California Department of Health Services (now referred to as the California Department of Toxic Substances Control [DTSC])...” should be corrected as: “the state of California Department of Health Services Toxic Substances Control Program (now referred to as California Department of Toxic Substances Control [DTSC])...”	2. Comment incorporated. The text was revised to read: “In September 1992, the Navy, the State of California Department of Health Services Toxic Substances Control Program (now referred to as California Department of Toxic Substances Control [DTSC]), ...”

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Comments from James Fyfe, Department of Toxic Substances Control, Hazardous Substance Engineer - dated June 27, 2014		
Comment No.	Comment	Response
3	<p>At this time, there are several sites in the FOST Parcel for which there is no concurrence that remedial actions are complete. The sites and their respective status for each site are as follows:</p> <p>a) OU-1, IR Site 16: Currently the Navy is requesting that the Record of Decision for Site 16 Groundwater be modified via and Explanation of Significant Difference (ESD) due to the Beneficial Use Exception (BUE) being granted by the Water Board for groundwater at Site 16. With the BUE, RGs [remedial goals] are revised from MCLs [maximum contaminant levels] to a higher calculated value based on the risk of inhalation from vapor intrusion. The ICs that were developed as a final remedy for Site 16 remain unchanged but the levels of contamination that require the ICs to remain in force will be increased.</p>	<p>3a. Comment acknowledged. The Site 16 ESD <i>was completed in September 2015.</i></p>
3	<p>b) OU-4B, IR Site 17: The Navy has issued a draft final Remedial Action Completion Report (RACR) for Site 17. There are still remaining issues related to radiological contamination at Site 17. Numerous small radiologically contaminated devices were discovered in the Seaplane Lagoon during dredging and it is assumed that similar devices remain scattered throughout the lagoon. As a result, unrestricted radiological release of Seaplane Lagoon is not possible. Also, the Navy is seeking unrestricted release of portions of the</p>	<p>3b. Comment acknowledged. The Navy is preparing a ROD ESD and LUC/RD for Site 17 to address potential future dredging. The Site 17 RACR, ESD, and LUC/RD will be finalized prior to transfer.</p> <p>The lagoon shoreline is not part of the parcel in this FOST.</p>

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Comments from James Fyfe, Department of Toxic Substances Control, Hazardous Substance Engineer - dated June 27, 2014		
Comment No.	Comment	Response
	lagoon shoreline (radiological anomaly area, storm drain outfalls, and shore survey units).	
3	c) OU-2B, IR Site 3 (portion): Site 3 contains two lead-contaminated areas and one cobalt-contaminated area. The lead sites are excluded from the FOST Parcel and will be transferred at a later date after remedial action (excavation and replacement of contaminated soil) is completed. The remedy for cobalt in Site 3 is institutional controls (ICs). The ROD for OU-2B is currently in draft final form and the remedial design is in preliminary form.	3c. Comment acknowledged. The OU-2B ROD was finalized in March 2015, and all of Site 3, not just a portion, is now included in the FOST Parcel. The OU-2B Soil RACR and the LUC RD will be complete prior to completion of the FOST.
3	d) AOC 1 and AOC 6: The Amended Site Inspection Report for EDC 12, which includes AOC 1 and AOC 6, has not yet been finalized and the regulators have not yet concurred with the Navy's determination that no further action is required for AOC 1 and AOC 6.	3d. In accordance with the Alameda FFA document review process, The Addendum to Final Site Inspection Report Transfer Parcel EDC-12 concluding no further action for AOC-1 and AOC-6 was submitted in August 2014 and accepted by the agencies.

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

Document Title: Draft Finding of Suitability to Transfer Phase 2, Former Naval Air Station, Alameda, California (May 2014)

Comments from James Fyfe, Department of Toxic Substances Control, Hazardous Substance Engineer - dated June 27, 2014		
3	e) Pier 3 (located in IR Site 24): The Navy completed a cleanup of radioactive contamination on Pier 3 and issued a free release determination in 1996. A Final Status Survey Report (FSSR) was finalized in October 2013 recommending no further action in the area. California Department of Public Health, Environmental Management Branch has yet to concur with the FSSR and issue a Recommendation for Unrestricted Radioactive Release for Pier 3.	3e. Comment acknowledged. Site 24 is a sediment site which does not include structures (i.e. Pier 3). The TERM-1 Parcel includes the landside base and almost half of Pier 3. The entirety of Pier 3 reverted to the City of Alameda when the Navy’s lease of TERM-1 was terminated. The FSSR (October 2013) was finalized resolving agency comments in accordance with the Alameda FFA document review process, and concluded no further action is required for Pier 3 .
4	Will finalization of the FOST Phase 2 be delayed until remedial action is completed or “operating properly and successfully” (with concurrence from regulators) for all sites contained in the FOST Parcel?	4. The FOST Phase 2 may be further delayed or sites removed (or added) such that all sites contained in the FOST Parcel have remedial action completed or are determined to be OPS prior to completion of the FOST. The Navy anticipates that all sites will have remedial actions completed prior to publication of the final FOST Phase 2 as currently scheduled.

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from George Leyva, Project Manager, Regional Water Quality Control Board - dated June 30, 2014		
Comment No.	Comment	Response
1	DTSC’s October 2011 Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air is applicable and we expect the guidance to be considered and implemented for all FOST parcels being transferred.	1. The vapor intrusion pathway is evaluated as part of the restoration process. DTSC guidance is considered in the restoration process and implemented where appropriate.
2	<p>The term “beneficial use exception” cited in several locations in the report should be changed to “exception to sources of drinking water policy.” As an example, under Section 4.1.1 IR Site 30 (OU-2B), the last paragraph of page 10 should be changed to:</p> <p>“By letter dated August 6, 2012, the Navy provided information demonstrating that groundwater under the portions of IT Site 3 identified above meet State Water Board Resolution NO. 88-63 and Regional Water Board Resolution NO. 89-39, “Sources of Drinking Water,” exception criteria (a) and (c): proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater (Navy 2012a). The regulatory agencies concurred with the Navy’s assessment (Water Board 2012a, USEPA 2012b). As a result, standards for cleanup are based upon protection of ecological resources and human health, by both direct and indirect exposures.”</p> <p>See also page 9 and page 12, and revised as needed.</p>	<p>2. Comment incorporated as below with minor variances noted in italics.. The term “beneficial use exception” was removed from the OU-2B ROD, and the FOST was revised to use the suggested language throughout.</p> <p>“By letter dated August 6, 2012, the Navy provided information demonstrating that groundwater <i>in the southeast portion of the base, including all of IR Site 3,</i> meets State Water Board Resolution No. 88-63 and Regional Water Board Resolution No. 89-39, “Sources of Drinking Water,” exception criteria (a) and (c). <i>Information presented included</i> proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater (Navy 2012a). The regulatory agencies concurred with the Navy’s assessment (Water Board 2012a, USEPA 2012c). <i>Therefore, it is unlikely that shallow groundwater will be used as a municipal water supply</i></p>

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

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Comments from George Leyva, Project Manager, Regional Water Quality Control Board - dated June 30, 2014		
Comment No.	Comment	Response
3	As for any of the properties being considered for a FOST transfer please indicate whether, or not, the IR site is located above any known tarry refinery waste (TRW) areas. For any area located above TRW with contaminant concentrations that create, or threaten to create, a condition of pollution or nuisance that is harmful to human health or the environment, and if the TRW has been or will be evaluated and closed under CERCLA and not the Petroleum Program, then the FOST must state that the State will continue to regulate the TRW, including requiring additional site investigation, cleanup, and/or institutional controls under Water Board authority.	3. This FOST does not include property with TRW. Property adjacent to the FOST Parcel, which transferred in 2013, includes OU-2A where TRW is present.
4	Section 4.1.2 – IR Site 16 (OU-1) – The report states “No COCs were identified in the RI report for soil under any of the IR Site 16 scenarios based on the human health risk assessment (HHRA).” Even though this report pertains to CERCLA hazardous waste issues, if there is soil or groundwater contamination of petroleum above residential and/or commercial cleanup goals, please state this also. If a petroleum cleanup is needed, please include this site in Table 4- Petroleum Program.	4. <i>Petroleum Program Site CAA 9B is located within IR Site 16 and is included in Table 4 as a closed petroleum site. CAA 9B was closed along with IR Site 16 through the OU-1 ROD ESD (Navy 2015d).</i>
5	Section 4.2.1 – Open Petroleum Program Sites – AST 331 is described in this section as a closed site. However, it is not listed as a closed site in Section 4.2.5 – Closed Sites. Please review and correct if needed.	5. Comment incorporated. AST 331 was added to the list of closed sites under 4.2.5. It is also listed on Table 5 as closed with agency concurrence.

ATTACHMENT 1. RESPONSES TO REGULATORY AGENCY COMMENTS

Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from George Leyva, Project Manager, Regional Water Quality Control Board - dated June 30, 2014		
Comment No.	Comment	Response
6	Section 4.2.1 – Open Petroleum Program Sites – Please consider the first section to read: “The Petroleum Program sites within the FOST Parcel discussed in this section are open and will be transferred prior to obtaining regulatory closure subject to the restrictions discussed in Section 5.2. The open sites are those with...”	6. Comment incorporated. The text was revised to read: “The Petroleum Program sites within the FOST Parcel discussed in this section are open and will be transferred prior to obtaining regulatory closure subject to the restrictions discussed in Section 5.2. The open sites are those with...”
7	Section 4.2.1 Open Petroleum Program Sites - Please change “The Petroleum Program sites within the FOST Parcel discussed in this section are open” to “The Petroleum Program sites within the FOST Parcel discussed in this section are open and will be transferred prior to obtaining regulatory closure subject to the restrictions discussed in section 5.2. The open sites are those with...”	7. Comment incorporated.
8	Section 4.2.1 – Open Petroleum Program Sites – CAA-03B & CAA-03C – Please cite source reports describing characterization and that provide representative soil and groundwater data. In addition, unless this Water Board has agreed to a “No Further Action” for a site, please delete statements that assert that “no source contamination remains” from the FOST.	8. Comment incorporated. See Response to City Comment #11, above, for text revisions to CAA-03(A, B, and C). A citation (Shaw E&I 2013) was added at the end of the new paragraph under 4.2.1, Open Petroleum Sites, describing CAA03. The text saying “the site has been characterized and there is no source remaining,” was deleted.

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Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from George Leyva, Project Manager, Regional Water Quality Control Board - dated June 30, 2014																										
Comment No.	Comment	Response																								
9	<p>Section 4.8 Pesticides – Please correct the typo on p. 20 in reference to Title 42; the appropriate code citing should be section 9620 not 06720. Section 9620 provides that a deed of transfer shall contain: (ii) a covenant warranting that –</p> <p>(I) All remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer, and</p> <p>(II) Any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States.</p>	9. Comment incorporated. The typo was corrected.																								
10	<p>Section 5.0 Summary of Restrictions – The report indicates that ICs will be prepared. Comment: Even though the ICs may be prepared independent of the FOST, we request to review the full deed restriction document prior to Water Board final concurrence with the FOST.</p>	10. Comment acknowledged. The Water Board will be provided a review copy of the proposed deed restrictions when the deeds are drafted; however, please note deeds are not drafted prior to the Final FOST.																								
11	<p>Section 6.1 EnviroStor and Geotracker Listed Sites – Please delete sentence as underlined below:</p> <p>“Two sites including eight USTs, USTs 173-1 through 173-3 and USTs 13-1 through 13-5, shown as located east of Main Street, are part of Former NAS Alameda. <u>However, the location is inaccurate and the status is not current in GeoTracker.</u> Site closure letters have been issued by the Water Board for each of these sites, and the USTs are <u>actually</u> located west of Main Street, but outside of the FOST Parcel. These two sites with eight USTs are not expected to impact the FOST Parcel.”</p>	<p>11. Comment incorporated. The latitudes and longitudes for the USTs are provided here for the Water Board’s use in GeoTracker:</p> <table border="1"> <thead> <tr> <th>ENVUST_ID</th> <th>POINT_X</th> <th>POINT_Y</th> </tr> </thead> <tbody> <tr> <td>UST 13-1</td> <td>-122.29771556800</td> <td>37.78150336350</td> </tr> <tr> <td>UST 13-2</td> <td>-122.29772382200</td> <td>37.78146835270</td> </tr> <tr> <td>UST 13-3</td> <td>-122.29772606000</td> <td>37.78143642780</td> </tr> <tr> <td>UST 13-4</td> <td>-122.29773673300</td> <td>37.78137690580</td> </tr> <tr> <td>UST 13-5</td> <td>-122.29768344700</td> <td>37.78137310360</td> </tr> <tr> <td>UST 173-1</td> <td>-122.29190024700</td> <td>37.78067628840</td> </tr> <tr> <td>UST 173-2</td> <td>-122.29186735500</td> <td>37.78067140450</td> </tr> </tbody> </table>	ENVUST_ID	POINT_X	POINT_Y	UST 13-1	-122.29771556800	37.78150336350	UST 13-2	-122.29772382200	37.78146835270	UST 13-3	-122.29772606000	37.78143642780	UST 13-4	-122.29773673300	37.78137690580	UST 13-5	-122.29768344700	37.78137310360	UST 173-1	-122.29190024700	37.78067628840	UST 173-2	-122.29186735500	37.78067140450
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Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Comments from George Leyva, Project Manager, Regional Water Quality Control Board - dated June 30, 2014		
Comment No.	Comment	Response
	Comment: If there is an error on GeoTracker we should try to fix it rather than state in this report that GeoTracker is not correct. The locations on GeoTracker are easily correctable but we need exact latitude and longitude information which originate with the discharger/responsible party.	<p>UST 173-3 -122.29187689400 37.78062497530</p> <p>Conversations between the Navy and Water Board indicate that USTs 173-1, -2, and -3 were not formally closed. The text was rewritten as follows (italics identify updated text):</p> <p>“Two sites including eight USTs, <i>USTs 13-1 through 13-5 and USTs 173-1 through 173-3</i>, are part of Former NAS Alameda. Site closure letters were issued by the Water Board for USTs 13-1 through 13-5 in 2001, and USTs 173-1, -2, and -3 <i>in 2014</i>. The USTs are located west of Main Street, but outside of the FOST Parcel. These two sites with eight USTs are not expected to impact the FOST Parcel.”</p>
12	Section 6.2.1 IR Site 4 – “The 100-foot IC buffer for the OU-2B groundwater plume beneath IR Site 4 impinges on the FOST Parcel.” Comment: If the IR Site 4 overlaps onto FOST property, then that portion of the FOST should be “carved out” and retained for further remedy.	12. Comment acknowledged. However, the OU-2B plume buffer zone is not an area where groundwater contains contaminants above remediation goals. The institutional controls associated with the buffer zone are included in the OU-2B LUC RD, which will be finalized prior to transfer.
13	Section 6.2.2 IR Site 11 – The report refers to the OU-2B ROD – Please add a reference for this document.	13. Comment incorporated. Reference to the OU-2B Final ROD dated March 2015 has been added.

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14	Section 6.2.8 Radiological Sites – Seaplane Apron drying pad – The report states that a survey will be done when the drying pad is removed. Please state in this section that any previously undiscovered radiological contamination is a “Navy Retained Condition” and will be cleaned up as directed by DTSC/CADPH.	14. <i>Comment acknowledged. The report was revised to clarify the status of this area: The work was completed in accordance with the Site 17 RAWP and with the contractor’s RAD license. All work was conducted with CDPH-RHB oversight. Upon completion of the work the drying pad was removed and a radiological survey was conducted (Appendix Z to the Site 17 RACR) to confirm that drying pad activities did not contaminate the underlying surface, allowing down posting of the Radiologically Controlled Area (RCA). This portion of the property will not be transferred to the city at this time (Navy is retaining ownership of the area associated with the drying pad).</i>
15	Section 6.2.9 Petroleum Sites – AOC-23, please add the word “and” in this sentence – “This site consists of petroleum site AOC 23 <u>and</u> a 1,3-dichloroethane plume...”	15. Comment incorporated. The text was revised to read: “This site consists of petroleum site AOC 23 and a 1,3-dichloroethane plume...”
16	Section 6.2.9 Petroleum Sites – CAA-11A & 11B – The report states “The Water Board was provided a Summary Closure Report for these petroleum sites in October of 2011 (Navy 2011b). The Water Board has not issued NFA concurrence for these sites as of the date of this FOST.” Comment: Several of these sites may have already been closed. Please review your records and express the current status of those closures.	16. Comment acknowledged. The Tables have been updated in accordance with current status.
17	In the paragraph regarding AOC 3 and AOC 5 (EDC 12), on page 32, where the report states “no further action is required” please change the sentence to read “no further action is required for CERCLA related contamination. Any petroleum related cases will be cleaned up separate from	17. See Response to City of Alameda Comment # 23, above. AOCs 3 and 5 are adjacent sites and Table 4 addresses sites within the FOST Parcel; therefore AOCs 3 and 5

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	CERCLA activities.” Also, please include these sites on Table 4 Petroleum Program.	were not added to Table 4.

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Finding of Suitability to Transfer Phase 2 - Former NAS Alameda

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Attachment 2: Hazardous Substances Notification Table

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ATTACHMENT 2: HAZARDOUS SUBSTANCES NOTIFICATION TABLE

Finding of Suitability to Transfer Phase 2, Former NAS Alameda

Identification ^a	Media/ Description	Hazardous Substance ^{b,c}	Reportable Quantity (lbs) ^b	CAS Number	RCRA Waste Code ^b	Quantity Stored, Released, or Disposed ^d	Date Stored, Released, or Disposed ^d	Stored (S), Released (R), or Disposed (D)	Action Taken ^e
IR Site 3	Soil	Cobalt	NA	NA	NA	Unknown	Unknown	R	Between 1991 and 2008, a series of soil and groundwater investigations were conducted at the site. The OU2B ROD, which includes IR Site 3, was signed in 2015. The ROD selected ICs for cobalt-impacted soil and excavation of lead impacted soil. The excavation work has been completed. No action is required for other soil within IR Site 3. No remedial action is required for groundwater at IR Site 3; however, ICs associated with a VI buffer zone for the OU-2B plume to the south of IR Site 3 extend into IR Site 3. All ICs are in place.
		Lead	10	7439-92-1	NA	Unknown	Unknown	R	
IR Site 16	Soil	Lead	10	7439-92-1	NA	Unknown	Unknown	R	Between 1990 and 2009 a series of soil and groundwater investigations and removal actions were conducted at the site in correlation with OU-1. The OU-1 ROD selected the remedial action of soil excavation and off-site disposal, which was conducted from November 2009 to July 2010. The ROD selected remedial action of ISCO/Bioremediation, monitored natural attenuation and ICs for groundwater. The RACR for soil remedial action documents that the RAOs have been met and the action is complete. The ESD for groundwater documents that RAOs have been met for groundwater.
		Chlordane	1	57-74-9	U035	Unknown	Unknown	R	
		Dieldrin	1	60-57-1	P037	Unknown	Unknown	R	
		Heptachlor	1	76-44-8	P059	Unknown	Unknown	R	
		Heptachlor Epoxide	1	1024-57-3	NA	Unknown	Unknown	R	
		PCBs	1	1336-36-3	NA	Unknown	Unknown	R	
	Groundwater	Nickel	100	7440-02-0	NA	Unknown	Unknown	R	
		1,3-Dichlorobenzene	100	541-73-1	NA	Unknown	Unknown	R	
		1,4-Dichlorobenzene	100	106-46-7	U072	Unknown	Unknown	R	
		Cyanide	NA	57-12-5	NA	Unknown	Unknown	R	
		Tetrachloroethene	100	127-18-4	U210	Unknown	Unknown	R	
Trichloroethane	100	79-01-6	U228	Unknown	Unknown	R			
Vinyl chloride	1	75-01-4	U043	Unknown	Unknown	R			

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IR Site 17	Sediment	Cadmium	10	7440-43-9	NA	Unknown	Unknown	R	Between 1993 and 2013, various investigations and removal actions were conducted at IR Site 17. A TCRA was conducted between October 2008 and December 2009 to remove debris piles along the shoreline. Between July 2008 and September 2010, another TCRA was conducted for IR Sites 5 and 10, which included the stormwater lines that discharge into the lagoon. Between January 2011 and 2013, dredging removed contaminated sediment in the northeast and northwest corners of the site; the dredge spoils were dried, radiologically surveyed, sampled, and properly disposed. During sediment processing, 51 radiological devices with Radium 226 activity were removed and properly disposed. The RACR documents that the RAOs from the ROD have been met. No hazardous substances are known to remain on site, but there is a potential for some fragments/items with radioluminescent paint to be present in the sediment based on items found during the dredging conducted for the remediation. Under CERCLA, there is no unacceptable risk associated with these potential items. ICs for future sediment management were added to the remedy via a ROD ESD and LUC RD to ensure proper disposal of these items if removed from the Seaplane Lagoon sediments. Remedial action is complete.
		Chromium	5,000	7440-47-3	NA	Unknown	Unknown	R	
		Lead	10	7439-92-1	NA	Unknown	Unknown	R	
		PCBs	1	1336-36-3	NA	Unknown	Unknown	R	
		Dichlorodiphenyltrichloroethane (DDT)	1	50-29-3	NA	Unknown	Unknown	R	
		Dichlorodiphenyldichloroethane (DDD)	1	72-54-8	NA	Unknown	Unknown	R	
		Dichlorodiphenyldichloroethene (DDE)	1	72-55-9	NA	Unknown	Unknown	R	
		Radium 226	0.1 Ci	7440-14-4	NA	Unknown	Unknown	R	
IR Site 24	Sediment	Cadmium	10	7440-43-9	NA	Unknown	Unknown	R	Sediment sampling was conducted in 1997, 2005, and 2006. No human health risks were identified, but the northeastern corner of the site was identified as an area of ecological concern. The ROD selected sediment removal via dredging to remediate the area of ecological concern. The remedial action occurred between December 2011 and June 2012. The RACR documents that the RAOs have been met and remedial action is complete.
		Lead	10	7439-92-1	NA	Unknown	Unknown	R	
		PCBs	1	1336-36-3	NA	Unknown	Unknown	R	
		Dichlorodiphenyltrichloroethane (DDT)	1	50-29-3	NA	Unknown	Unknown	R	
		Dichlorodiphenyldichloroethane (DDD)	1	72-54-8	NA	Unknown	Unknown	R	
		Dichlorodiphenyldichloroethene (DDE)	1	72-55-9	NA	Unknown	Unknown	R	

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IR Site 25	Soil	PAHs	NA	NA	NA	Unknown	Unknown	D	Between 1994 and 2005, a series of soil and groundwater investigations were conducted at the site. These investigations concluded that metals in the soil are present at concentrations consistent with background levels, but PAHs were identified as COCs in IR Site 25 soil. The PAHs are not related to a Navy release but appear to be associated with contaminated fill placed at the site prior to the Navy obtaining the property. Two TCRA's were conducted in 2000 and 2001-2002 to address PAHs in IR Site 25 soil. Over 66,700 cubic yards of soil was removed during the TCRA's and disposed off site; then clean topsoil was added to return the excavated areas to grade. The ROD for IR Site 25 soil was signed in 2007 and selected ICs for soil beneath structures and at depths greater than 4 feet bgs. Groundwater at IR Site 25 is part of the OU5/FISCA IR-02 groundwater discussed below. In 2015 a ROD Amendment recommended NFA for OU5/FISCA IR-02 Groundwater with regulatory concurrence. Remedial action is complete.
IR Site 30	Soil	PAHs	NA	NA	NA	Unknown	Unknown	D	Between 1994 and 2005, a series of soil and groundwater investigations and a removal action for soil were conducted at the site. The TCRA was completed at IR Site 30 in 2004 to address PAHs in soil associated with contaminated fill placed at the site prior to the Navy obtaining the property. The TCRA also removed Aroclor 1254, cadmium, chromium, copper, and lead present in one boring location. Following the TCRA, risk assessment results showed that there is no unacceptable risk for school, daycare, residential, or other land uses. The ROD for IR Site 30 soil was signed in 2009 and selected NFA for soil. Groundwater at IR Site 30 is part of OU5/FISCA IR-02 groundwater. In 2015 a ROD Amendment recommended NFA for OU5/FISCA IR-02 Groundwater with regulatory concurrence.
		Aroclor 1254	1	11097-69-1	NA	Unknown	Unknown	R	
		Cadmium	10	7440-43-9	NA	Unknown	Unknown	R	
		Chromium	5,000	7440-47-3	NA	Unknown	Unknown	R	
		Copper	5,000	7440-50-8	NA	Unknown	Unknown	R	
Lead	10	7439-92-1	NA	Unknown	Unknown	R			

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OU5/FISCA IR-02	Groundwater	Benzene	10	71-43-2	U019	Unknown	Unknown	R	Between 1988 and 2013, a series of environmental investigations and a remedial action were conducted for shallow groundwater at OU-5/FISCA IR-02. Benzene and naphthalene are the COCs; there is stratification, with the highest concentrations located at depths adjacent to the Marsh Crust. A ROD for the shallow groundwater was signed in 2007; the selected remedy was biosparging with soil vapor extraction in the plume centers, monitored natural attenuation, and ICs. Biosparge wells screened at the Marsh Crust were installed between 2008 and 2009. Operation of the treatment system began in 2009 and ended in 2013. Following evaluation of potential vapor intrusion using current methodologies and toxicities and indoor air sampling conducted in 2013, a ROD Amendment documenting that NFA is required for shallow groundwater was signed in 2015.
		Naphthalene	100	91-20-3	U165	Unknown	Unknown	R	
IR Site 34	Soil	Arsenic	1	7440-38-2	NA	Unknown	Unknown	R	A series of soil and groundwater investigations were conducted between 1993 and 2010. The ROD documented NFA for groundwater because groundwater is not a source of drinking water. The ROD selected excavation and off-site disposal for impacted soil. No groundwater COCs were identified. The soil remedial action was conducted between May 2013 and June 2013. The RACR documents that the RAOs have been met and remedial action is complete.
		Lead	10	7438-92-1	NA	Unknown	Unknown	R	
		PCBs	1	1336-36-3	NA	Unknown	Unknown	R	
		Dieldrin	1	60-57-1	P037	Unknown	Unknown	R	
	Groundwater	Heptachlor Epoxide	1	1024-57-3	NA	Unknown	Unknown	R	
		Arsenic	1	7440-38-2	NA	Unknown	Unknown	R	
		Manganese	NA	NA	NA	Unknown	Unknown	R	
		1,2-Dichloroethane	100	107-06-2	U077	Unknown	Unknown	R	
		1,2-Dichloropropane	1000	78-87-5	U083	Unknown	Unknown	R	
AOC 1	Soil	Chromium	5000	7440-47-3	NA	Unknown	Unknown	R	
		Trichloroethene	100	79-01-6	U228	Unknown	Unknown	R	
AOC 1	Soil	Cobalt	NA	NA	NA	Unknown	Unknown	R	Results of samples collected in December 2013 did not exceed screening criteria, therefore, NFA required. (CH2MHill 2014)
		Arsenic	1	7440-38-2	NA	Unknown	Unknown	R	
AOC 6	Soil	Hexavalent Chromium	NA	18540-29-9	NA	Unknown	Unknown	R	Results of samples collected in December 2013 did not exceed the risk management range, therefore, NFA required. (CH2MHill 2014)
Annex Area 37/M10 (AOC 1)	Covered, bermed storage area	Toluene	1,000	108-88-3	U220	Unknown	Unknown	S	DTSC concurred NFA for Alameda Annex Area 37 by letter dated October 10, 2000.
		Methyl Ethyl Ketone	5,000	78-93-3	U159	Unknown	Unknown	S	
		1,1,1-Trichloroethane	1,000	71-55-6	U226	Unknown	Unknown	S	
		Methylene chloride	1,000	75-09-2	U080	110,994	Unknown	S	
		Mercury	1	7439976	NA	Unknown	Unknown	S	
		Beryllium	10	7440-41-7	P015	Unknown	Unknown	S	

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Finding of Suitability to Transfer Phase 2, Former NAS Alameda

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AST 338-A1 (IR Site 16)	500 gallon	Propane	NA	74-98-6	NA	Unknown	Unknown	S	NFA documented in 2007 ROD for OU1, tank was removed prior to 2002.
AST 584 (AOC 6)	15,000 gallon	Industrial Wastewater with corrosion resistant chemicals	Various	NA	NA	Unknown	Unknown	S	Results of samples collected in December 2013 indicated no further investigation or action was necessary. (CH2MHill 2014)
AST 608 (IR Site 16)	1,000 gallon	Waste Oil	Various	70514-12-4	NA	Unknown	Unknown	S	Site was investigated as part of the IR Site 16. The RACR for soil remedial action documents the RAOs have been met and the action is complete. The ESD for groundwater documents RAOs have been met.
UST 608-1 (IR Site 16)	600 gallon	Waste Oil	Various	70514-12-4	NA	Unknown	Unknown	S	Site was investigated as part of the IR Site 16. The RACR for soil remedial action documents the RAOs have been met and the action is complete. The ESD for groundwater documents RAOs have been met.
BOWTS (IR Site 24)	Bilge oily water treatment system	Waste Oil	Various	NA	NA	Unknown	Unknown	S	NFA from DTSC in letter dated June 22, 2005.
NADEP GAP 78 (IR Site 34)	Building 479	Paints	Various	NA	NA	Unknown	Unknown	S	NFA IR Site 34 RACR (ERS JV 2014)
		Naphtha	Various	8030-30-6	NA	Unknown	Unknown	S	
		Acetone	5,000	67-64-1	U002	Unknown	Unknown	S	
NADEP GAP 79 (IR Site 34)	Building 472	Blasting Grit	Various	NA	NA	Unknown	Unknown	S	NFA from DTSC in letter dated November 4, 1999. NFA IR Site 34 RACR (ERS JV 2014)
NAS GAP 10 (IR Site 3)	Building 112	Solvents	100	NA	NA	55 gallon	Unknown	S	NFA from DTSC in letter dated November 4, 1999. NFA OU2B ROD (Navy 2015a)
		Lubrication and hydraulic oils	Various	NA	NA	55 gallon	Unknown	S	
		Asbestos (double bagged)	1	1332-21-4	NA	Unknown	Unknown	S	
WD 608/OWS 608A/ OWS 608B (IR Site 16)	Building 608	Waste water	Various	NA	NA	Unknown	Unknown	S	Site was investigated as part of the IR Site 16. The RACR for soil remedial action documents the RAOs have been met and the action is complete. The ESD for groundwater documents RAOs have been met.
UST (R)-18/ NAS GAP 17 (IR Site 16)	AKA UST 608-1	Waste Oil	Various	70514-12-4	NA	Unknown	Unknown	S	Site was investigated as part of the IR Site 16. The RACR for soil remedial action documents the RAOs have been met and the action is complete. The ESD for groundwater documents RAOs have been met.
M-07 (IR Site 3)	Building 398 Turbine Accessory Shop	Solvents	100	NA	NA	15	Unknown	S	NFA per SWMU Evaluation Report (Tetra Tech EMI 2007)

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Building 112 (within IR Site 3 footprint)	Hydraulics; welding and wood finishing	Hydraulic Fluid	Various	NA	NA	Unknown	Unknown	S	Chemical storage was associated with hydraulic systems (hydraulic fluid), welding activities (acetylene, oxygen, and argon gases; cutting fluids; and lubricant oils), and wood finishing activities (paints, stains, varnishes, solvents, adhesives, cleaners, and various corrosive materials). No action necessary. Materials stored on site. No spills or releases reported.
		Acetylene Gas	Various	74-86-2	NA	Unknown	Unknown	S	
		Argon Gas	Various	7440-37-1	NA	Unknown	Unknown	S	
		Lubrication and hydraulic oils	Various	NA	NA	55 gallon	Unknown	S	
		Paints	Various	NA	NA	Unknown	Unknown	S	
		Solvents	100	NA	NA	Unknown	Unknown	S	
Building 337 (within IR Site 3 footprint)	Paved chemical supply storehouse	Corrosives	1,000	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Paints	Various	NA	NA	Unknown	Unknown	S	
		Adhesives	Various	NA	NA	Unknown	Unknown	S	
Building 222 (within IR Site 3 footprint)	Garden Shop	Waste Oil	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Chlorine	10	7782-50-5	NA	Unknown	Unknown	S	
Building 517 (within IR Site 3 footprint)	Garden Shop	Muriatic Acid	5,000	7647-01-0	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Pesticides	Various	NA	NA	Unknown	Unknown	S	
Building 398 (within IR Site 3 footprint)	Turbine Accessories Shop	PD-680 (Solvent)	NA	64742-96-7	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Mercury	1	7439976	NA	Unknown	Unknown	S	
		1,1,1-Trichloroethane	1,000	71-55-6	U226	Unknown	Unknown	S	
		Lubrication and hydraulic oils	Various	NA	NA	55 gallon	Unknown	S	
		Paints	Various	NA	NA	Unknown	Unknown	S	
		Solvents	100	NA	NA	Unknown	Unknown	S	
		Acrylic Lacquer	Various	NA	NA	Unknown	Unknown	S	
Building 608 (within IR Site 16 footprint)	Auto Repair Facility	Acrylic Paint	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Lubrication Oil	Various	NA	NA	Unknown	Unknown	S	
		Solvents	100	NA	NA	Unknown	Unknown	S	
		Hydraulic Fluid	Various	NA	NA	Unknown	Unknown	S	
		Paints	Various	NA	NA	Unknown	Unknown	S	
CANS 338A (within IR Site 16 footprint)	Storage Facility	Acetylene Gas	Various	74-86-2	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
CANS 338H (within IR Site 16 footprint)	Storage Facility	Solvents	100	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Petroleum Products	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.

ATTACHMENT 2: HAZARDOUS SUBSTANCES NOTIFICATION TABLE

Finding of Suitability to Transfer Phase 2, Former NAS Alameda

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Building 402 (within IR Site 16 footprint)	Maintenance Shop and Sand Blast Shelter	Aluminum Oxide	NA	1344-28-1	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Blasting Grit	Various	NA	NA	Unknown	Unknown	S	
		Cleaning Compounds	Various	NA	NA	Unknown	Unknown	S	
		Corrosives	1,000	NA	NA	Unknown	Unknown	S	
		Degreaser	Various	NA	NA	Unknown	Unknown	S	
		Ethylene Acetate	5000	141-78-6	U112	Unknown	Unknown	S	
		Hydraulic Fluid	Various	NA	NA	Unknown	Unknown	S	
		Paints	Various	NA	NA	Unknown	Unknown	S	
Building 510 (within IR Site 34 footprint)	Storage Facility	Petroleum Products	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Solvents	100	NA	NA	Unknown	Unknown	S	
Building 343 (within IR Site 34 footprint)	Sheet Metal Shop	Arsenic	1	7440-38-2	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Lead	10	7439-92-1	NA	Unknown	Unknown	S	
		Blasting Grit	Various	NA	NA	Unknown	Unknown	S	
Building 477 (within IR Site 34 footprint)	Paint Booth	Blasting Grit	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Paints	Various	NA	NA	Unknown	Unknown	S	
		Solvents	100	NA	NA	Unknown	Unknown	S	
Building 475 (within IR Site 34 footprint)	Bead Blast Area	Paint Waste	Various	NA	NA	Unknown	Unknown	S	No action necessary. Materials stored on site. No spills or releases reported.
		Blasting Grit	Various	NA	NA	Unknown	Unknown	S	
Building 476 (within IR Site 34 footprint)	Paint Storage	Paints	Various	NA	NA	Unknown	Unknown	S	None. Materials stored on site. No spills or releases reported.

Notes:

- a No chemicals were found to have been stored, disposed, or released within other areas of the FOST Parcel.
- b This table was prepared in accordance with 40 CFR 373 and 40 CFR 302.4. The substances which do not have chemical-specific break down (and associated annual reportable quantity) are not listed in 40 CFR 302.4, and therefore have no corresponding CAS number, no regulatory synonyms, no RCRA waste numbers, and no reportable quantities. Hazardous substances listed in this table were compiled based on known contamination at the sites and historic activities at specific locations.
- c The FOST Parcel may contain pesticide residue from pesticides that have been applied in the management of the property. The Grantor knows of no use of any registered pesticide in a manner inconsistent with its labeling and believes that all applications were made in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA - 7 U.S.C. Sec. 136, et seq.), its implementing regulations, and according to the labeling provided with such substances. It is the Grantor's position that it shall have no obligation under the covenants provided pursuant to Section 120(h)(3)(A)(ii) of CERCLA, 42 U.S.C. Sections 9620(h)(3)(A)(ii), for the remediation of legally applied pesticides.
- d The quantity stored, released, or disposed, and the date stored, released, or disposed, is unknown because documentation related to storage, release, or disposal of these hazardous substances was not available during records searches for the property.
- e References listed in this section are included in FOST as part of Section 10 References

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Finding of Suitability to Transfer Phase 2, Former NAS Alameda

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Acronyms and Abbreviations.

AKA	Also known as					NAS		Naval Air Station Alameda	
AST	Aboveground storage tank					Navy		United States Department of the Navy	
AOC	Area of Concern					NFA		No Further Action	
bgs	Below ground surface					OU		Operable Unit	
CAS	Chemical Abstract System					OWS		Oil-Water Separator	
COC	Chemical of concern					PAH		Polycyclic Aromatic Hydrocarbons	
CFR	Code of Federal Regulations					PCB		Polychlorinated biphenyl	
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980					lbs		Pounds	
Cl	Curia					R		Released	
D	Disposed					RACR		Remedial Action Completion Report	
DDD	Dichlorodiphenyldichloroethane					RAOs		Remedial Action Objectives	
DDE	Dichlorodiphenyldichloroethylene					RCRA		Resource Conservation and Recovery Act	
DDT	Dichlorodiphenyldichloromethane					RD		Remedial Design	
DTSC	Department of Toxic Substances Control					ROD		Record of Decision	
EDC	Economic Development Conveyance					S		Stored	
FISCA	Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex					SWMU		Solid Waste Management Unit	
FOST	Finding of Suitability to Transfer					TCRA		Time Critical Removal Action	
GAP	Generator Accumulation Point					USEPA		United States Environmental Protection Agency	
IC	Institutional control					U.S.C.		United States Code	
IR	Installation Restoration					UST		Underground storage tank	
ISCO	In situ chemical oxidation					WD		Washdown area	
LUC	Land Use Control								
NA	Not available								
NADEP	Naval Aviation Depot								



**FINAL
LAND USE CONTROL REMEDIAL DESIGN
INSTALLATION RESTORATION SITE 17**

**ALAMEDA POINT
ALAMEDA, CALIFORNIA**

February 2016

**Department of the Navy
Base Realignment and Closure
Program Management Office West
San Diego, California**

Document Control Number: BPMOW-2016-0002

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ATTACHMENTS

- Attachment 1: IR Site 17 IC Compliance Monitoring Report and IC Compliance Certificate
- Attachment 2: Interested Parties for Land Use Control Remedial Design Distribution

ACRONYMS AND ABBREVIATIONS

ARRA	Alameda Reuse and Redevelopment Authority
Cal-EPA	California Environmental Protection Agency
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRUP	Covenant to Restrict Use of Property
DON	Department of the Navy (United States)
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency (United States)
ESD	Explanation of Significant Differences
FFA	Federal Facility Agreement
IC	institutional control
IR	Installation Restoration
LUC	land use control
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
pCi/g	picocuries per gram
Ra	radium
RACR	Remedial Action Completion Report
RD	Remedial Design
Regional Water Board	Regional Water Quality Control Board, San Francisco Bay Region
RG	remediation goal
ROD	Record of Decision
SMP	Sediment Management Plan
TtEC	Tetra Tech EC, Inc.
UCL	upper confidence limit
USFWS	United States Fish and Wildlife Service

1.0 PURPOSE

This Land Use Control (LUC) Remedial Design (RD) for Installation Restoration (IR) Site 17 at Alameda Point, Alameda, California addresses the institutional control (IC) and restrictions required by the Explanation of Significant Differences (ESD) issued in 2016 (United States Department of the Navy [DON] 2016). The IR Site 17 ESD was prepared following implementation of the selected remedy (removal of contaminated sediments) and supplements the Record of Decision (ROD) for IR Site 17 signed in October 2006 (DON 2006). The ROD documents selection of a remedy with five components: (1) initial remedial action sampling to enable proper and safe handling, segregation, and disposal of sediment to be dredged; (2) dredging; (3) quality control sampling and confirmation testing; (4) dewatering; and (5) upland disposal at a permitted off-site waste disposal facility. The ESD documents a change in the remedy by adding implementation of an IC applicable to any future dredging and/or removal of sediments. This IC serves as an additional measure of protection to limit potential exposure and ensure protection of human health and the environment due to potential radium (Ra)-226 activity within the sediment when the sediment is removed.

A RD is a primary Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) document under the Federal Facility Agreement (FFA). This LUC RD was prepared in accordance with the “Navy Principles and Procedures for Specifying Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions” attached to the January 16, 2004 Department of Defense Memorandum titled “CERCLA ROD and Post-ROD Policy.”

The Alameda Point FFA signatories include the DON, United States Environmental Protection Agency (EPA), the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board). The inspections and reporting requirements described herein will be effective immediately upon approval of this LUC RD by the FFA signatories.

2.0 DESCRIPTION OF THE SITE

The former Naval Air Station (NAS) Alameda is located at the western tip of Alameda Island, which is surrounded by San Francisco Bay and the Oakland Inner Harbor (Figure 1). IR Site 17 is Seaplane Lagoon, which is located in the southeastern portion of Alameda Point, at the west end of the City of Alameda in Alameda County, California (Figure 2). IR Site 17 is a partially enclosed lagoon consisting of approximately 110 acres (DON 2006). This area was originally a tidal flat until the 1930s when seawalls were built along the eastern, western, and southern boundaries and a sheet pile wall was installed at the northern edge of the area. The interior of the lagoon was historically about 20 feet deep (DON 2006). The lagoon’s entrance is an approximately 800-foot opening in the scawall along the southern perimeter (Figure 2).

IR Site 17 is a foraging area for the California Least Tern. In accordance with the Biological Opinion (United States Fish and Wildlife Service [USFWS] 2012) there are restrictions on dredging during their breeding season, which is between April 1 and August 15 each year.

Since no dredging was necessary for the DON’s historical use of the lagoon, it is believed that the first dredging of the lagoon was during the remedial action when sediment in the northeast and northwest corners of the lagoon was dredged. The dredging was conducted between 2011 and 2012 and showed the sediment in the lagoon to be hard and dense. A significant amount of inert, non-hazardous debris was encountered during the dredging, including wire and large debris such as anchors and tires. It is likely

that similar significant debris also is present in other portions of the lagoon. To ensure protectiveness, the dredging for the remediation required silt curtains around all dredge areas, and a skimmer boat was anchored within the turbidity curtain during the dredging in the northeastern portion of the lagoon based on the history of petroleum operations along the northeastern shoreline. Due to the potential for Ra-226 in the sediment, the 2006 ROD required measures during the dredging for the remediation to include “health and safety monitoring of workers and decontamination and radiological clearance of equipment.”

The sediment remediation specified in the IR Site 17 ROD was successfully conducted between 2011 and 2013. For post-remediation conditions with the sediment in place, the Final Remedial Action Completion Report (RACR) documents that there is currently no unacceptable CERCLA risk for any potential use of the lagoon (Tetra Tech EC, Inc. [TtEC] 2014). In accordance with the ESD, there is potential risk if the sediment is removed. The ESD (Section 2.1) describes the site history, contaminants, and remediation (DON 2016); a brief description of post-remediation site data follows.

The IR Site 17 RACR presents the details of the remedial action and post-dredge confirmation sample results (TtEC 2014). The residual Ra-226 activity in the sediment confirmation samples is highest in the northwest remediation area, with a 95 percent (%) upper confidence limit (UCL) of 1.104 picocuries per gram (pCi/g) and maximum activity of 4.18 pCi/g. For the northeast remediation area, the maximum Ra-226 result in the sediment confirmation samples was 1.45 pCi/g. The post-dredge 95% UCLs for the northeast and the northwest remediation areas for each contaminant either 1) were below the remediation goals (RGs) for chemicals of concern with RGs or 2) met dredging completion criteria specified in the IR Site 17 remedial action work plan and its associated sampling and analysis plan (including for Ra-226).

The IR Site 17 RACR includes documentation of removal of small items with Ra-226 activity (believed to have Ra-226 paint on them) during the radiological surveying of the dewatered sediment from the northeast and northwest remediation areas. All items with radiological activity that were identified were removed. In addition to potential discharge through outfalls, these items may have fallen into the lagoon inadvertently from seaplanes or may have been discarded in the lagoon (TtEC 2014). Therefore, there is a potential for items with Ra-226 activity to be present in other areas of the lagoon.

As documented in the IR Site 17 RACR, based on the dredging conducted for the remediation of the northeast and northwest corners of the lagoon, one item with Ra-226 activity was identified per 1,882 cubic yards of sediment (TtEC 2014). The maximum curie content for an individual item with Ra-226 activity located in each remediation area was 0.679 uCi (TtEC 2014). The size of the recovered discrete items with Ra-226 activity varied from a ship’s compass to small pill-like items. The RACR Appendix W describes these items and evaluates potential risk should similar items be present in sediment in other areas of the lagoon. The RACR Appendix W concludes that there is no unacceptable risk due to these items within the sediment in the lagoon, if present, for any potential use of the lagoon (TtEC 2014). The City of Alameda indicates that the planned reuse of the lagoon includes a marina and a ferry terminal, which may require dredging in localized areas. There is potential risk if the sediment is removed.

3.0 AREA REQUIRING THE INSTITUTIONAL CONTROL

The area requiring the IC is the entire IR Site 17 (Seaplane Lagoon). The boundaries of IR Site 17 and, thus, the area requiring the IC, are shown in Figure 3. The total areal extent of the IC area is approximately 110 acres (DON 2006). The IC is required for the entire lagoon for the following reasons:

- The lagoon is a dynamic surface water environment with tidal influence, so in addition to the residual concentrations in the confirmation samples collected during the remediation of the

northeast and northwest corners of the lagoon, residual concentrations of Ra-226 could be present in sediment outside the areas dredged during the remediation.

- Although no discrete items with radiological activity are known to be present within the Scaplane Lagoon sediment, both the size and disbursed distribution of these items indicates that some of the items may not have been deposited via the outfalls. These items may have fallen into the lagoon inadvertently from seaplanes or may have been discarded in the lagoon (TtFC 2014). Therefore, discrete items may be present in other parts of the lagoon.

4.0 INSTITUTIONAL CONTROLS PERFORMANCE OBJECTIVES AND RESTRICTIONS

Section 3.2 of the ESD specifies “the addition of an IC that prohibits future dredging and/or removal of sediments throughout Scaplane Lagoon by a future property owner unless a Sediment Management Plan (SMP) is approved by the DON and regulatory agencies in writing prior to the start of the dredging/sediment removal and is implemented for future dredging/sediment removal.” IC performance objectives are documented in the ESD and are intended to ensure protection of human health and the environment. Ra-226 residual activity is related to the post-remediation Ra-226 activity in the sediment itself (maximum of 4.18 pCi/g in confirmation sampling) and the potential for residual Ra-226 activity due to discrete items with radiological activity in the sediment.

4.1 Performance Objectives and Land Use Restrictions

As stated in the ESD, the performance objectives for the IC are as follows:

- Minimize the potential for exposure to Ra-226 activity in the sediment that may result in risks to human health or the environment during dredging and/or sediment removal activities
- Prevent re-use or disposal of dredged/removed sediment in a manner that presents unacceptable risk to human health or the environment; and
- Preserve access to the area requiring the IC (entire IR Site 17 - Scaplane Lagoon) for the relevant regulatory agencies and the DON.

There is one associated land use restriction, which is a prohibition on future dredging and removal of sediments throughout IR Site 17 unless an SMP is approved by the DON and FFA signatories in writing prior to the start of the dredging/sediment removal and is implemented for future dredging/sediment removal. This LUC RD describes responsibilities of the DON and other parties regarding inspections, notifications, reviews and reporting, enforcement, and IC termination associated with this restriction.

The SMP to be prepared by the transferee for review and approval by the DON and FFA signatories shall define Ra-226 criteria to meet the performance objectives in a manner that is appropriate for proper risk management, taking into account the proposed activities. Accordingly, the SMP will supplement dredging regulations by prescribing requirements that limit exposure to residual Ra-226 to ensure protection of human health and the environment. The transferees’ SMP particularly shall include the transferee’s detailed procedures and protocols related to their proposed dredging/sediment removal (for personnel and equipment), sediment handling/management, and disposal of the removed materials. The SMP shall present procedures that shall be implemented during future dredging and/or removal of sediments from IR Site 17. All dredging/sediment removal shall be subject to a requirement for advance notification to the DON and other FFA signatories.

The requirements for SMP approval and compliance are independent of and in addition to requirements of applicable regulations and standards enforced by other agencies and approval of project-specific dredging work plans by all of the appropriate agencies that would regulate the dredging/sediment removal in IR Site 17. The project-specific dredging work plan for any future proposed dredging shall be reviewed and approved by DTSC and, as appropriate, other FFA signatories or their successors to ensure that SMP requirements have been properly incorporated into the work plan. DTSC, a FFA signatory, indicates that the California Department of Public Health (CDPH) performs their technical reviews for radiological sites, so it is expected that CDPH will provide technical review of the project-specific dredging work plans to support DTSC review and approval of each project-specific dredging work plan. No dredging and/or sediment removal shall be conducted until written regulatory agency approvals, from DTSC and as appropriate other FFA signatories or their successors, have been provided for the project-specific dredging work plan.

Although analysis of the Ra-226 activity (TtEC 2014) shows no unacceptable risk for any potential future uses of the lagoon, the requirement that future dredging be conducted with radiological controls is a conservative measure to ensure (1) protection of workers during sediment removal and management, (2) survey and radiological release of dredging equipment that will leave the site, and (3) overall protection of the public, including related to the disposition of the dredged sediment. This IC is due to uncertainty associated with 1) potential Ra-226 activity in the sediment, 2) the potential for discrete items with radiological activity to be present in the lagoon, and 3) the disposition/disposal of sediment removed from the lagoon in the future. The property owner shall be responsible for implementing all requirements of this LUC RD. This includes all costs associated with implementation of and compliance with the IC.

The IC is expected to be maintained indefinitely, and Five-Year Reviews will be conducted. Inspections and reporting will be conducted in accordance with requirements in Section 5.0 of this LUC RD. If site conditions change in the future (such as following significant sediment removal) and it can be demonstrated to the satisfaction of the DON and other FFA signatories that the ICs are no longer necessary, the ICs could then be removed.

4.2 Legal Mechanisms Prior to Conveyance

Prior to property transfer, the DON will exercise its authority as landowner to control land use to ensure that no dredging and/or sediment removal is permitted to be conducted in Seaplane Lagoon.

4.3 Legal Mechanisms Following Conveyance to a Non-Federal Entity

Each transfer of fee title from the United States to a non-federal entity will include a description of the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the IC performance objective and restrictions. The DON will meet the statutory requirements of CERCLA 120(h)(3) for any transfer of fee title. Concurrent with the transfer of fee title from the DON to transferee, information regarding the environmental use restrictions and controls will be communicated in writing to the property owners and to appropriate State and local agencies to ensure such agencies can factor these conditions into their oversight and decision-making activities regarding the property.

The following two proprietary legal mechanisms will incorporate and be relied upon to implement the IC objective and restrictions when the property is conveyed to a non-federal entity, and shall remain in effect until terminated:

- (1) Restrictive covenants will be included in one or more Quitclaim Deed(s) from the DON to the property recipient.
- (2) Restrictive covenants will be included in a Covenant to Restrict Use of Property (CRUP¹) entered into by the DON and DTSC as provided in the DON/DTSC Memorandum of Agreement (DON and DTSC 2000) and consistent with the substantive provisions of California Code of Regulations Title 22 § 67391.1.

The CRUP will incorporate the land use restrictions that run with the land and are enforceable by DTSC against future transferees. The Quitclaim Deed(s) will include identical land use restrictions that run with the land and that will be enforceable by the DON against future transferees. Each quitclaim deed will contain a reservation of access to the property for the DON, EPA, DTSC, and the Regional Water Board and their respective officials, agents, employees, contractors, and subcontractors for the purposes consistent with the FFA. IC restrictions will remain in place indefinitely unless the IC has been terminated as provided in Section 5.0.

5.0 REMEDY IMPLEMENTATION ACTIONS

This section describes the responsibilities of the DON and future transferees for implementing the IC.

5.1 DON Responsibilities with Respect to IC Inspections, Reporting, and Enforcement

The DON is responsible for implementing, maintaining, inspecting, reporting, and enforcing the IC identified in Section 4.0 prior to conveyance of the property. As identified in Section 4.1, this entails ensuring that there is no dredging and removal of sediments in Seaplane Lagoon unless a SMP specifying appropriate health and safety controls and sediment handling procedures related to dredging/sediment removal and disposal of the sediment is approved by the DON and regulatory agencies and implemented for future dredging and/or sediment removal. The ESD establishing this IC follows successful implementation of the remedy (removal of contaminated sediments). The DON may later transfer these procedural responsibilities to another party (“transferee”) by contract, property transfer agreement, or other means. Although the DON may contractually arrange for third parties to assume responsibility for and perform any and all actions associated with the IC, the DON shall retain ultimate responsibility under CERCLA for successful implementation of the IC, including maintaining, reporting on, and enforcing the requirements. Should the IC objective fail, the DON shall ensure that appropriate actions are taken to ensure protectiveness.

The DON will undertake the following IC implementation actions to ensure that the aforementioned IC objective and restrictions are met and maintained:

- (1) **LUC RD Distribution:** Within 30 days of receiving FFA signatories’ concurrence on this LUC RD, the DON will place the LUC RD in the Information Repository currently located at Alameda Point (see ESD for details on location and hours of operation). A copy of the LUC RD will also be sent to the following interested parties: EPA, DTSC, Regional Water Board,

¹See “Memorandum of Agreement between the United States Department of the Navy and the California Department of Toxic Substances Control, Use of Model ‘Covenant to Restrict Use of Property’ at Installations Being Closed and Transferred by the United States Department of the Navy” dated March 10, 2000.

and the City of Alameda. Attachment 2 presents a table with these entities and their respective mailing addresses.

- (2) **Site Access:** Each deed will contain a reservation of access to the property for the DON, the FFA signatories, and CDPH, and their respective officials, agents, employees, contractors, and subcontractors for the purposes consistent with the DON IR Program or the FFA. Entry shall be granted to conduct investigations, tests, or surveys; inspect field activities, site conditions, and/or sediment removal activities; or construct, operate, and maintain any response, as required or necessary.
- (3) **Site Inspections:** Beginning upon approval of this LUC RD by the FFA signatories, and continuing until the effective date of property transfer, the DON will undertake annual physical inspections of the site to confirm continued compliance with the IC performance objective and restrictions. At the time of conveyance of the site, the DON and DTSC will require, via appropriate provisions to be placed in the DON's Quitclaim Deed(s) of conveyance and DTSC's CRUP(s), that the landowner(s) and subsequent transferees undertake continuing annual site inspections to ensure that the IC objective and restrictions are complied with by all future user(s) as provided in Section 5.2. Photographs will be taken of any violations, when possible.
- (4) **Compliance Reporting:** Beginning upon approval of this LUC RD and continuing until the effective date of property transfer, the DON will monitor the environmental use restrictions and controls and provide to the EPA, DTSC, and Regional Water Board an annual IC Compliance Monitoring Report and Certificate for IR Site 17 consistent with the form in Attachment 1. The annual IC Compliance Monitoring Report will assess the status of IC compliance and thus, will address, among other things, whether the restrictions were communicated in the deed(s) and CRUP, whether the owners and state and local agencies were notified of the use restrictions and controls affecting the property, and whether use of the property has conformed with such restrictions and controls. In addition, should any deficiencies be found during the annual inspection, the DON will provide the EPA, DTSC, and Regional Water Board with a separate written explanation with the IC Compliance Certificate indicating the specific deficiencies found and what efforts or measures have or will be taken to correct those deficiencies. Copies of a completed and signed IC Compliance Monitoring Report and Certificate shall be sent to the EPA, DTSC, and Regional Water Board within 60 days of the inspection date by Certified Mail, Return Receipt Requested annually, unless a different method is agreed to by the FFA signatories. Upon conveyance of fee title for the site to a nonfederal entity, the DON will require, via appropriate provisions to be placed in the deed(s) of conveyance and CRUP, that the landowner(s) and subsequent transferees respond to IC violations as detailed in Section 5.2 and provide to the FFA signatories an annual IC Compliance Monitoring Report and Certificate for IR Site 17 consistent with the form located in Attachment 1, unless and until the IC is terminated at IR Site 17.

If the transferee fails to provide an annual compliance monitoring report as described previously to the DON, the DON will notify the EPA, DTSC, and Regional Water Board soon as practicable. If the EPA, DTSC, or Regional Water Board does not receive the annual monitoring report from the transferee, it will notify the DON as soon as practicable. The DON shall ensure appropriate measures have been taken to verify the status of the IC and that an annual compliance monitoring report is submitted to the EPA, DTSC, and Regional Water Board within 90 days after the report's due date.

- (5) **CERCLA Five-Year Reviews:** The DON shall conduct Five-Year Reviews for IR Site 17 as required by CERCLA Section 121(c) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Five-Year Reviews will evaluate, among other things, implementation and compliance with the IC to determine whether it is or will be protective of human health and the environment in the future. The annual IC monitoring reports prepared by the DON or transferee will be used in preparation of the Five-Year Reviews to evaluate the effectiveness of the restrictions.
- (6) **Notice of Planned Property Conveyances:** The DON will provide notice to the EPA, DTSC, and Regional Water Board at least 6 months prior to any transfer or sale of any IR Site 17 property subject to the IC so that the EPA, DTSC, and Regional Water Board can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for the DON to notify the EPA, DTSC, and Regional Water Board at least 6 months prior to any transfer or sale, then the DON will provide notification as soon as possible but no later than 60 days prior to the transfer or the sale of any property by the DON that is subject to the IC. The DON shall provide a copy of executed deed(s) of conveyance and CRUP to the EPA, DTSC, and Regional Water Board. In addition to the land transfer notice and discussion provisions above, the DON further agrees to provide the EPA, DTSC, and Regional Water Board with similar notice, within the same time frames, as to federal-to-federal transfer of property.
- (7) **Opportunity to Review Text of Intended Deed Restrictions:** Prior to conveyance of the site, the EPA, DTSC, and Regional Water Board will be given reasonable opportunity to review and comment upon the applicable Quitclaim Deed and CRUP language related to the IC and associated rights of entry for the FFA signatories for purposes of IC oversight and enforcement. The provisions in that deed or other enforceable document(s) will be consistent with the IC objective in Section 4.0 of this LUC RD.
- (8) **Notification should Action(s) that Interfere with LUC Effectiveness be Discovered:** The DON or transferee will notify the FFA signatories as soon as practicable, but no later than 10 working days after the DON's or transferee's discovery of any activity that is inconsistent with the IC objective or use restrictions or any other action that may interfere with the effectiveness of the IC. The DON or transferee will notify the FFA signatories regarding how the breach will be addressed or has been addressed as soon as practicable, but no more than 10 working days after notification of the breach. This reporting requirement does not preclude the DON from taking immediate action pursuant to its CERCLA authorities to prevent any actual or perceived risk(s) to human health or the environment.
- (9) **IC Enforcement:** The process of addressing any activity that is inconsistent with the IC objective or restrictions, or any other action that may interfere with the effectiveness of the IC will be initiated by the landowner as soon as practicable, but no longer than 60 days after the landowner becomes aware of the breach. If a violation of a restriction is identified and/or documented by one of the FFA signatories, the entity identifying the violation will notify the other FFA signatories and the property owner within 10 working days of identifying the violation. If a violation of a restriction is identified and/or documented by the property owner, he will notify the FFA signatories within 10 working days of identifying the violation. The FFA signatories will then consult to evaluate what, if any, action(s) should be taken, who shall take the action(s), and when the action(s) shall be undertaken. Depending on the violation, action may be taken by either the DON or DTSC. The actions may range from informal resolution with the owner or violator of an IC provision(s) as described in this LUC

RD, to the pursuit of legal remedies or enforcement action to enforce deed or CRUP restrictions under the state property law or CERCLA if the property is transferred to a nonfederal entity. Alternatively, the DON may choose to exercise its response authorities under CERCLA and seek cost recovery from the person(s) or entity(ies) who violate a given IC objective/restriction set forth in the deed(s) transferring the property. Should the DON become aware that any future owner or user of the property has violated any IC requirement over which a local agency may have independent jurisdiction, the DON will notify these agencies of such violation(s) and work cooperatively with them to re-achieve owner/user compliance with the IC and associated restrictions.

DTSC as a signatory to a CRUP (and EPA as a third-party beneficiary) will have independent authority to enforce violations of restrictions, requirements, and obligations under a CRUP. While DTSC may agree to consult with other parties before taking any enforcement action under a CRUP, it will not waive its authority to take action as necessary in the event of violations.

- (10) **Modification of Restrictions in Quitclaim Deed and DTSC Covenant to Restrict Use of Property:** Modifications to the IC may be required based on changes in site conditions (e.g., reduction in the area requiring the IC) during the expected duration of the IC. When the DON or future property owner(s) determines, with EPA, DTSC, and Regional Water Board concurrence, that modifications to the IC are appropriate, the IC modifications shall be documented in accordance with procedures consistent with applicable laws and regulations. The DON or future property owner(s) shall be responsible for providing pertinent information on the IC modifications to the City of Alameda and will also advise the interested parties listed in Attachment 2. The FFA signatories shall determine whether an Explanation of Significant Differences or some other procedure consistent with the NCP is required to support the modification of the IC. The DON shall not modify or terminate LUCs, implementation actions, or modify land use restrictions without approval by the EPA, DTSC, and Regional Water Board. The DON or transferee shall seek prior concurrence before any action anticipated by the DON or transferee that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.
- (11) **Termination of ICs:** When the DON determines, with FFA signatory concurrence, that the IC is no longer needed for protection of human health and the environment because levels are acceptable for unrestricted use of dredged/removed sediment and unlimited exposure, the DON and DTSC shall provide to the current landowner(s) of the property an appropriate release of the restriction (DON for the deed and DTSC for the CRUP) in accordance with State law for recordation with the deed and will also timely advise the additional interested parties listed in Attachment 2 of that action.

5.2 Responsibilities of the Property Owner(s) and Successors with Respect to IC Inspections, Reporting, and Implementation

By including appropriate provisions in the deed(s) or other enforceable document(s) pertaining to a conveyance of fee title to the site to a non-federal entity, the DON will cause the future property owner(s) and successors to assume the following IC implementation responsibilities upon the DON's conveyance of the property in order to ensure that the aforementioned IC objective and restrictions for are complied with after property transfer:

- (1) **Site Inspections:** The property owner(s) will conduct annual physical inspections of the site to confirm continued compliance with all IC objective and restrictions in the Quitclaim Deed(s) and CRUP(s) unless and until all IC restrictions at the site are terminated with the FFA signatories' approval.
- (2) **Compliance Reporting:** The property owner(s) will notify the DON, EPA, DTSC, and Regional Water Board within 10 working days of the property owner(s)' discovery of any violation of an IC and will include in the notification a written explanation indicating the specific IC violations found and what efforts or measures have or will be taken to correct those violations. The property owner(s) will also provide the DON, EPA, DTSC, and Regional Water Board with an annual Compliance Monitoring Report and IC Compliance Certificate consistent with the form included as Attachment 1 within 60 days of the inspection date unless and until all IC restrictions are terminated. In addition, should any IC violations be discovered during the annual site inspection, the property owner(s) will notify the DON, EPA, DTSC, and Regional Water Board within 10 days of discovery of the violation and will provide, along with the required IC Compliance Monitoring Report Certificate, a separate written explanation indicating the specific IC violations found and what efforts or measures have or will be taken to correct those violations within 10 days of notification of the discovery. The annual Compliance Monitoring Report and Certificate shall be sent to the DON, EPA, DTSC, and Regional Water Board by Certified Mail, Return Receipt Requested annually. The need to continue to provide such inspections and certifications on an annual basis will be re-evaluated by the FFA signatories using the CERCLA Five-Year Review process.

The future property owner(s), or other entity responsible for preparation, review, and approval of any development plans prepared for projects within the area requiring the IC, shall identify any potential for the project to impact the restrictions and/or IC effectiveness and shall coordinate with the DON, EPA, DTSC, and Regional Water Board to prevent interference with the IC effectiveness. This coordination shall include providing written plans to these agencies for review and approval prior to the start of the subject project(s). The DON and other FFA signatories reserve the right to deny approval of projects within the area requiring the IC that are deemed to interfere with IC effectiveness. This process will be evaluated during the CERCLA Five-Year Review, as necessary, to determine whether any changes need to be implemented.

- (3) **Notification of Proposed Changes in Property Use:** Contemporaneous with seeking approval from the EPA, DTSC, and Regional Water Board for restricted activities within the area requiring the IC (e.g., dredging and/or otherwise removing sediment), the landowner must notify and obtain approval from the DON of any proposals for a property use change that is inconsistent with the property use and restrictions described in the ESD (DON 2016) and the restrictions presented in this LUC RD.

6.0 REFERENCES

- Tetra Tech EC, Inc. (TtEC). 2014. Final Remedial Action Completion Report, IR Site 17, Seaplane Lagoon, Alameda Point, Alameda, California, September.
- United States Department of the Navy (DON). 2006. Final Record of Decision for Site 17, Seaplane Lagoon, Alameda Point, Alameda, California. October.
- United States Department of the Navy (DON). 2016. Final Explanation of Significant Differences for Site 17, Seaplane Lagoon, Alameda Point, Alameda, California, February.
- United States Department of the Navy (DON) and Alameda Reuse and Redevelopment Authority (ARRA). 2000. Lease in Furtherance of Conveyance Between the United States of America and the Alameda Reuse and Redevelopment Authority for the Former Naval Air Station Alameda. June 6.
- United States Department of the Navy (DON) and Department of Toxic Substances Control (DTSC). 2000. Memorandum of Agreement between the United States Department of the Navy and the California Department of Toxic Substances Control, Use of Model 'Covenant to Restrict Use of Property' at Installations Being Closed and Transferred by the United States Department of the Navy. March 10.
- United States Fish and Wildlife Service (USFWS) 2012. Biological Opinion on the Proposed Naval Air Station Alameda Disposal and Reuse Project in the City of Alameda, Alameda County, California. August 29.

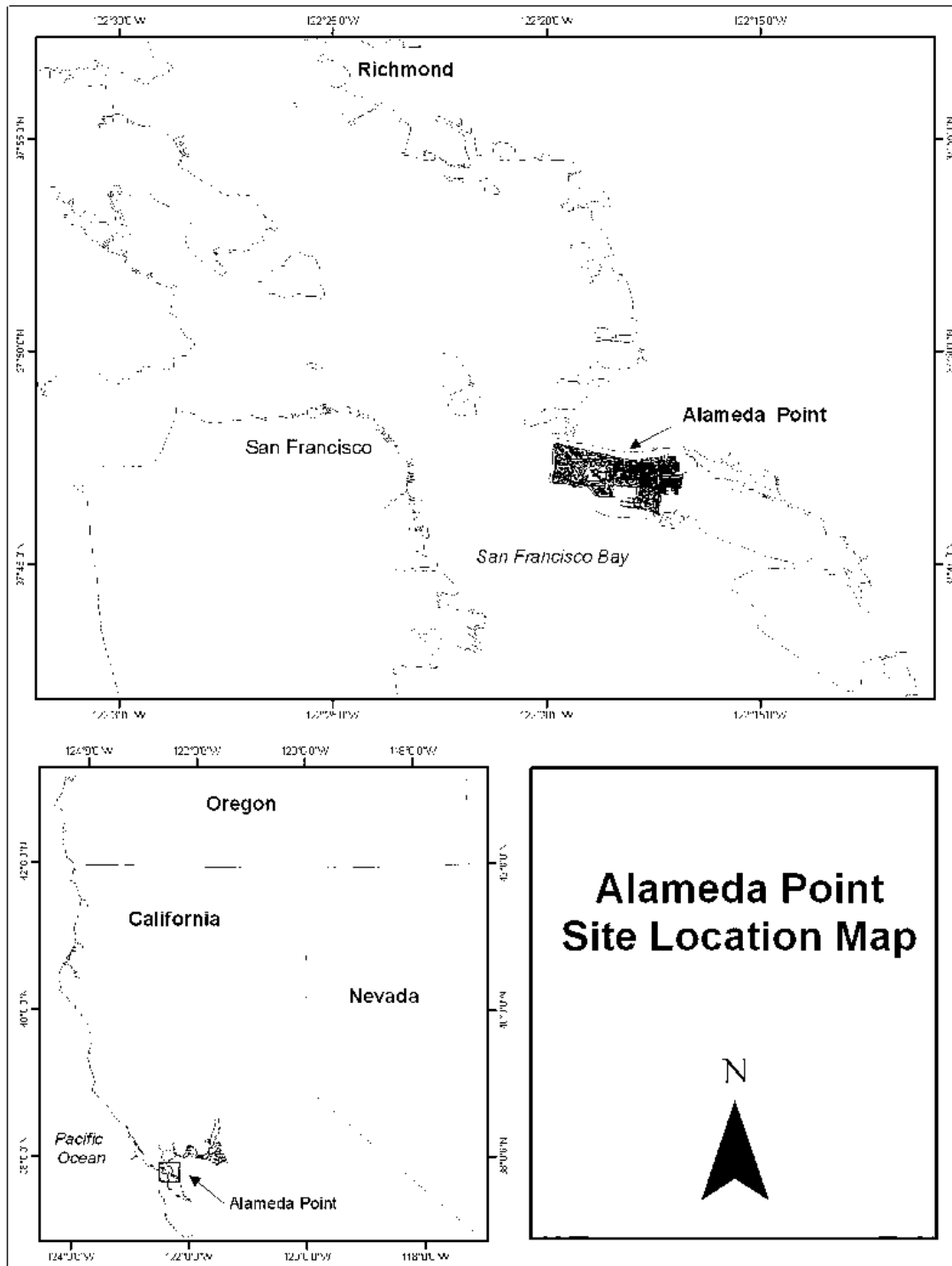


Figure 1. Regional Location Map

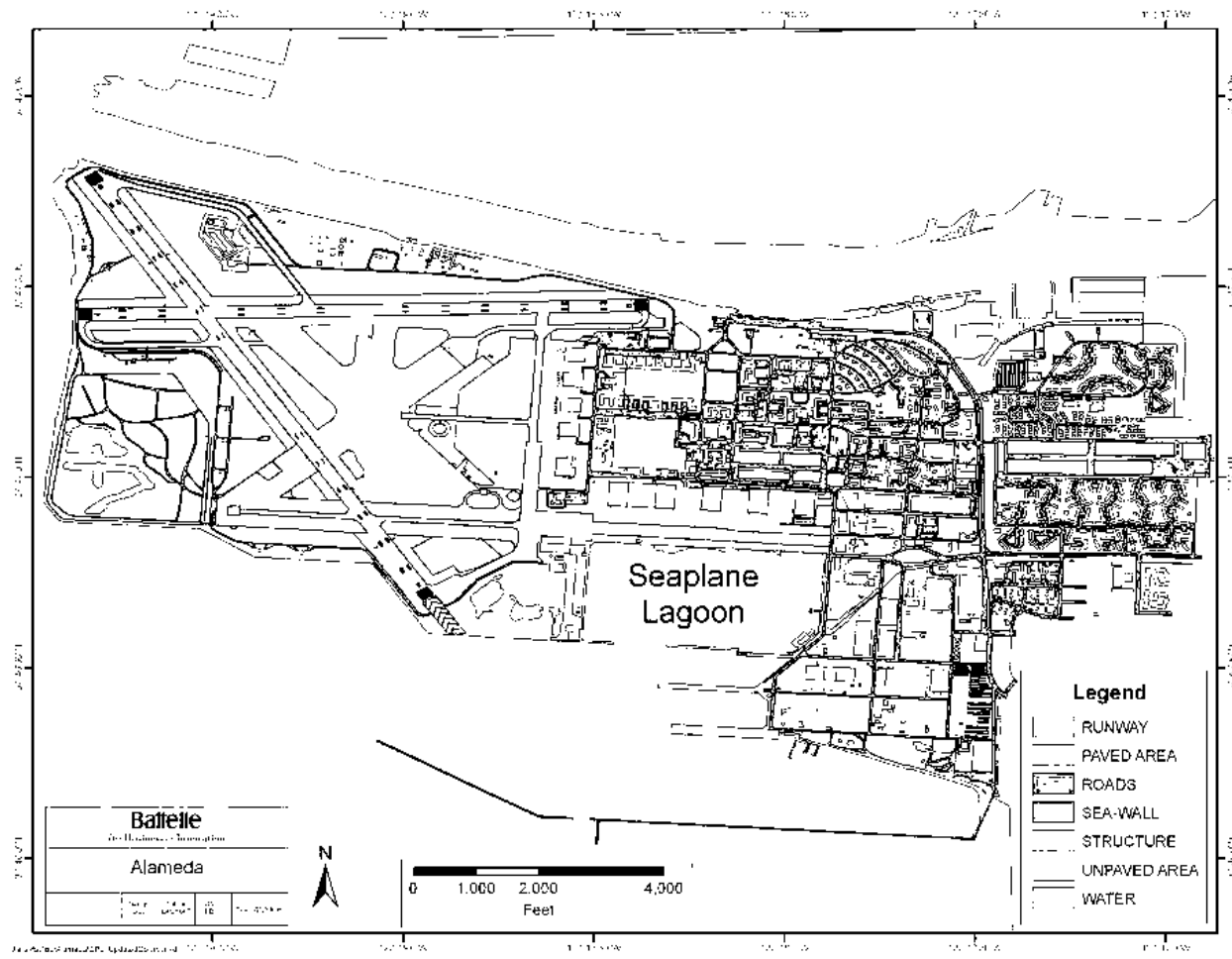


Figure 2. Site Location Map

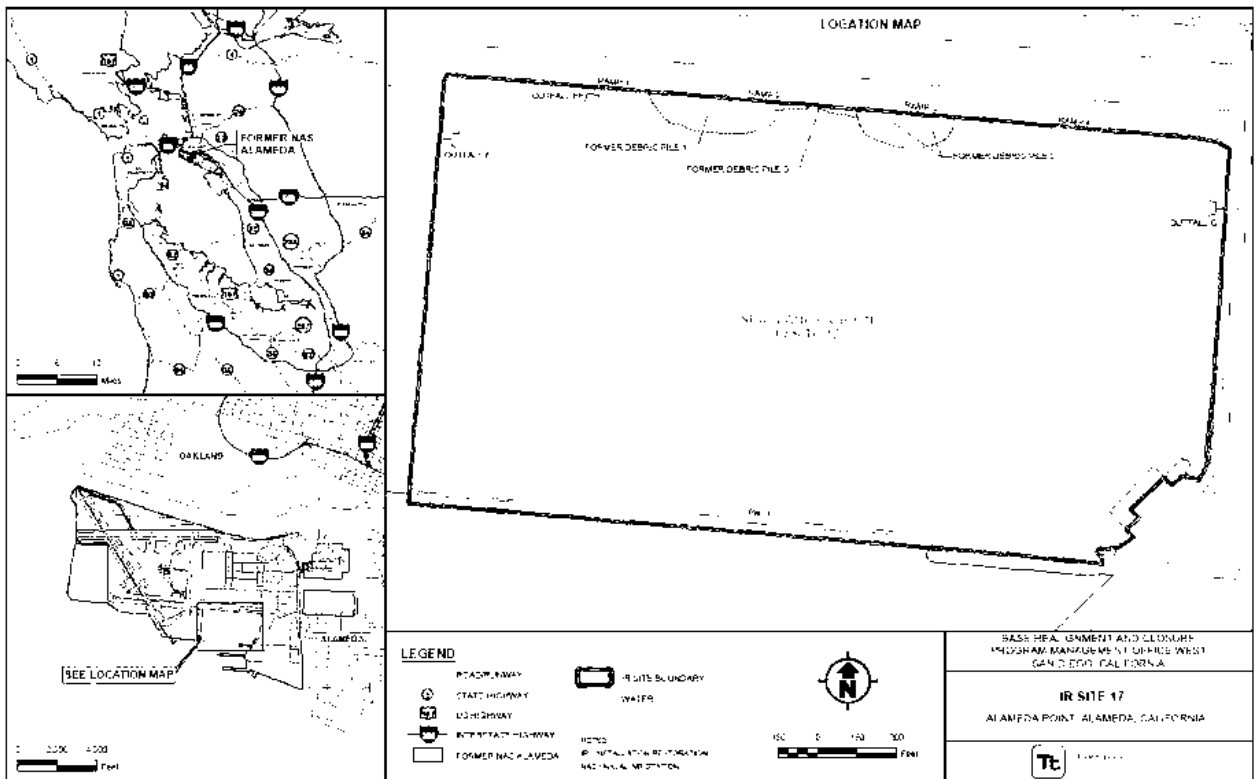


Figure 3. Area of Institutional Controls (entire IR Site 17)

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ATTACHMENT 1

**IR SITE 17 IC COMPLIANCE MONITORING REPORT
AND IC COMPLIANCE CERTIFICATE**

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Attachment 1
IR Site 17 IC Compliance Monitoring Report

IR Site 17, Alameda Point, Alameda, California
 EPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Department of the Navy (DON) certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) No dredging and sediment removal at IR Site 17 unless checklist items 2 through 5 are met.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) A requirement that future dredging/sediment removal be conducted with radiological controls to ensure the health and safety of the workers unless the FFA signatories or their successors determine that this is no longer required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) A requirement that the FFA signatories review and approve a Sediment Management Plan (SMP) for any future proposed dredging/sediment removal to ensure proper procedures and disposal of sediment consistent with residual chemical concentrations and potential Ra-226 activities due to sediment or discrete items with radiological activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) A requirement that a dredge-specific work plan for any future proposed dredging shall be reviewed and approved by DTSC and, as appropriate, other FFA signatories or their successors to ensure that SMP requirements have been properly incorporated into the work plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No dredging and/or sediment removal shall be conducted without written approvals of the reviewers specified in checklist items 3 and 4 above.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Any violations of these LUCs were reported within 10 business days of discovery, and an explanation of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

 Signature

 Date

Comments: _____

Mail completed form(s) to the DON, EPA, DTSC, and Regional Water Board in January of each calendar year.

IR SITE 17 ANNUAL IC COMPLIANCE CERTIFICATE

IR Site 17
Alameda Point, Alameda, California
EPA I.D. No. CA2170023236

I _____ hereby certify that the attached IR Site 17 Institutional Control Compliance Monitoring Report is complete and accurate. The requirements of LUC RD Section 4.0 have been met. I further certify that a copy of this compliance certificate and the attached IR Site 17 Institutional Control Compliance Monitoring Report have been sent by Registered Mail to the Federal Facility Agreement signatories.

(Name and Title)

(Date)

ATTACHMENT 2

INTERESTED PARTIES FOR LAND USE CONTROL REMEDIAL DESIGN DISTRIBUTION

Attachment 2

Interested Parties for Land Use Control Remedial Design Distribution

- 1 United States Environmental Protection Agency (EPA) Region IX
75 Hawthorne Street
San Francisco, California 94105
- 2 Department of Toxic Substances Control (DTSC)
700 Heinz Avenue
Berkeley, California 94710
- 3 Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612
- 4 City of Alameda
Alameda City Hall
2263 Santa Clara Avenue
Alameda, California 94501

APPENDIX B
MARSH CRUST ORDINANCE

RECEIVED

FEB 17 2000

CITY OF ALAMEDA
ALAMEDA POINT

CITY OF ALAMEDA ORDINANCE NO. 2824
New Series

AMENDING THE ALAMEDA MUNICIPAL CODE BY AMENDING CHAPTER XIII (BUILDING AND HOUSING) BY ADDING A NEW SECTION 13-56 (EXCAVATION INTO THE MARSH CRUST/SUBTIDAL ZONE AT THE FORMER NAVAL AIR STATION ALAMEDA AND FLEET INDUSTRIAL SUPPLY CENTER, ALAMEDA ANNEX AND FACILITY) TO ARTICLE XVII (PITS, WELLS AND EXCAVATIONS)

WHEREAS, the marshlands and near shore areas once located adjacent to the island of Alameda were filled with dredge material between approximately 1900 and 1940; and

WHEREAS, the marsh crust, and the subtidal zone extending from it, is a horizon that is identifiable in the subsurface (the interface at the bottom of the fill material) which contains remnants of grasses and other intertidal and subtidal features; and

WHEREAS, the marsh crust/subtidal zone also contains, at least locally, elevated levels of petroleum-related substances, such as semi-volatile organic compounds, which substances may pose an unacceptable risk to human health and the environment if excavated in marsh crust/subtidal zone materials, brought to the ground surface and handled in an uncontrolled manner; and

WHEREAS, proper handling, storage and disposal of materials excavated from the marsh crust/subtidal zone, pursuant to state and federal hazardous materials laws, will help eliminate unacceptable exposures and risks to human health and the environment; and

WHEREAS, the Draft Base-wide Focused Feasibility Study for the Former Subtidal Area and Marsh Crust and Ground Water (U.S. Navy, February 20, 1999) recommends implementation by the City of an institutional control, such as an excavation ordinance, as a remedial action related to the cleanup by the United States Navy of Naval Air Station Alameda and the Fleet Industrial Supply Center, Alameda Annex and Facility, which closed military installations are anticipated to be transferred to the City; and

WHEREAS, it can be seen with a certainty that adoption of a permitting program by the City that requires proper handling, storage and disposal, pursuant to existing state and federal hazardous materials laws, of materials excavated from the marsh crust/subtidal zone will not involve or require any physical activities other than optional testing of excavated materials and, therefore, is exempt from the California Environmental Quality Act pursuant to California Code of Regulations, title 14, section 15061(b)(3) because there is no possibility that the enactment of the ordinance may have a significant effect on the environment.

Approved as to Form
CITY ATTORNEY

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Alameda that:

Section 1. The Alameda Municipal Code is hereby amended by adding a new Section 13-56 (Excavation Into the Marsh Crust/Subtidal Zone at the Former Naval Air Station Alameda and Fleet Industrial Supply Center) to Article XVII (Pits, Wells and Excavations) of Chapter XIII (Building and Housing) thereof to read:

13-56 EXCAVATION INTO THE MARSH CRUST/SUBTIDAL ZONE AT THE FORMER NAVAL AIR STATION ALAMEDA AND FLEET INDUSTRIAL SUPPLY CENTER, ALAMEDA ANNEX AND FACILITY.

13-56.1 DEFINITIONS.

For purposes of this Section 13-56 the following definitions shall apply:

Bay shall mean San Francisco Bay, including the Oakland Estuary and the Oakland Inner Harbor.

DTSC shall mean the California Environmental Protection Agency, Department of Toxic Substances Control.

Earth material shall mean any rock, natural soil or fill or any combination thereof.

Excavation shall mean the mechanical removal of earth material.

Hazardous materials, as defined in California Health and Safety Code sections 25260(d) and 25501(k), shall mean any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste and any material which a handler or the administering agency has reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Marsh crust shall mean the underground layer that is the remnant of the tidal marsh that existed along the shoreline of Alameda Island before filling to create additional dry land. In many places, this layer contains substances from former industrial discharges that were retained in the historic marsh before filling.

Subtidal zone shall mean the underground layer that is the pre-filling Bay floor extension of the historic marsh. Together, the marsh crust and the subtidal zone constitute a single, continuous, underground layer that extends Bayward of the original mean higher high tide line of Alameda Island, before filling, throughout the area that was filled.

Threshold depth shall mean the depth below which a permit is required by this Section 13-56. The threshold depth is conservatively identified with the elevation above which there is little likelihood that substances from the historic marsh or Bay floor would have mixed during filling, including a margin of safety above the elevation of the historic marsh surface or subtidal zone. In no event will the threshold depth be above mean higher high water.

13-56.2 Permit Required.

- a. It shall be unlawful for any person, including utility companies and their employees and contractors, to excavate below a threshold depth above the marsh crust/subtidal zone within the area of the former Naval Air Station Alameda and Fleet and Industrial Supply Center, Alameda Annex and Facility, as depicted in Exhibit A, hereto, without first obtaining a permit in writing from the Chief Building Official.
- b. All excavation below the threshold depth in the area subject to this Section 13-56 shall be performed solely in accordance with the permit as approved and issued by the City.

13-56.3 Depth of Excavation Subject to Permit Requirement.

The Chief Building Official shall establish a threshold depth, consistent with DTSC's remedial decision documents pertaining to the marsh crust/subtidal zone, below which a permit shall be required for excavation pursuant to this Section 13-56. The threshold depth may vary by location. The Chief Building Official shall publish a map depicting the parcels and threshold depths for which a permit is required under this Section 13-56. The Chief Building Official may update the map, consistent with DTSC's remedial decision documents pertaining to the marsh crust/subtidal zone, as necessary to incorporate any new information concerning the depth of the marsh crust/subtidal zone received by the City since the preparation of the initial map or last update.

13-56.4 Exception to Permit Requirement.

- a. No permit shall be required under this Section 13-56 for pile driving or other penetration of the marsh crust/subtidal zone that involves neither (i) bringing materials from below the threshold depth to above the threshold depth; nor (ii) exposure of construction workers to soil excavated from below the threshold depth.
- b. No permit shall be required under this Section 13-56 for excavation associated with emergency repair of public infrastructure facilities; provided, however, that soil excavated from below the threshold depth in the area of the marsh crust/subtidal zone, as depicted on Exhibit A, must be managed as though it were hazardous in accordance with Subsection 13-56.8b.

13-56.5 Permit Application.

Application for a permit shall be made in writing on forms available in or from the Building Services Office and shall be filed in the Building Services Office. Subsection 13-1.2 of Article I of Chapter XXIII regarding Appeals (Section 105.1), Appeal Fee (Section 105.2), Expiration (Section 106.4.4), Permit Fees (Section 107.2) and Plan Review Fees (Section 107.3) shall apply to all permits issued pursuant to this Section 13-56. The information required to be provided on the application shall be determined by the Chief Building Official and shall include at a minimum:

- a. A description and map of the property that is to be excavated sufficient to locate the area of proposed excavation on Exhibit A.
- b. Detailed plans, prepared by a registered civil engineer licensed in the State of California, of the excavation work to be done, including a drawing with dimensions to scale of all proposed excavation activity.
- c. A statement of the maximum depth of excavation.
- d. All elevations in plans and application materials submitted to the City shall be referenced to City Datum and shall show depth below ground surface.
- e. A cost estimate for purposes of determining the amount of the bond required to be obtained pursuant to Subsection 13-56.11.

13-56.6 Certifications and Acknowledgments.

- a. The following certifications shall be required as part of the permit application:
 1. The applicant shall sign a certification prepared by the Chief Building Official acknowledging receipt of notice that the property to be excavated may be in the area of the marsh crust/subtidal zone, and that hazardous materials may be encountered during excavation.
 2. The applicant shall sign a certification prepared by the Chief Building Official acknowledging that federal and state hazardous materials laws and regulations will apply to storage, transportation and disposal of any materials excavated from the marsh crust/subtidal zone that are hazardous materials.
 3. The applicant shall sign a certification prepared by the Chief Building Official acknowledging liability for disturbing and removing all materials from the marsh crust/subtidal zone in accordance with this Section 13-56 and the permit.

- b. All building and excavation permits issued for construction or excavation within the area subject to this SubSection 13-56 shall contain the following written warning:

“Pursuant to Section 13-56 of Article XVII of Chapter XIII of the Alameda Municipal Code, excavation work in the area of the marsh crust/subtidal zone within the area of the former Naval Air Station Alameda and Fleet and Industrial Supply Center, Alameda Annex and Facility, as depicted in Exhibit A to Section 13-56 of Article XVII of Chapter XIII of the Alameda Municipal Code, may be subject to special materials handling requirements. The permittee acknowledges that he or she has been informed of the special materials handling requirements of Section 13-56 of Article XVII of Chapter XIII of the Alameda Municipal Code and that hazardous materials may be encountered during excavation.”

13-56.7 Notification Prior to Start of Excavation.

- a. After receipt of a permit and no less than two (2) business days (forty-eight (48) hours minimum) before commencement of any excavation activity in the area subject to this Section 13-56, the permittee shall notify the Chief Building Official of the planned start of excavation. Said notification shall include a schedule for any excavation work that will last for more than one day.
- b. The permittee shall give adequate notice to Underground Service Alert prior to commencing any excavation activity subject to this Section 13-56.

13-56.8 Materials Handling.

The permittee shall elect to follow one or more of the courses of action set forth below before beginning any excavation activities in the area subject to this Section 13-56. Unless otherwise demonstrated by the permittee by means of reconnaissance investigation pursuant to Subsection 13-56.8a, or unless the permittee prepares site management plans pursuant to Subsection 13-56.8c, soil below the threshold depth in the area of the marsh crust/subtidal zone, as depicted on Exhibit A, must be managed as though it were hazardous pursuant to Subsection 13-56.8b. The permittee may elect to follow Subsection 13-56.8a, but must comply with Subsection 13-56.8b or 13-56.8c if testing demonstrates that the materials below the threshold depth are hazardous materials. Copies of all reconnaissance testing results and/or existing information used to satisfy the reconnaissance investigation requirements of Subsection 13-56.8a shall be reported to and filed with the City. All observations or encounters with the marsh crust/subtidal zone during excavation shall be reported to the City.

- a. **Reconnaissance Investigation to Rule Out the Presence of Hazardous Materials Below the Threshold Depth.**

The permittee may elect to use reconnaissance borings, pursuant to a plan prepared by a qualified registered engineer or registered geologist, licensed in the State of California, to rule out, to the satisfaction of the Chief Building Official, the presence of hazardous materials below the threshold depth in the area to be excavated. As part or all of the reconnaissance plan, the permittee may make use of existing information, where appropriate, if the existing information is directly relevant to the location and depth to be excavated and contains observations or results of analyses that assist in concluding whether hazardous materials are present. The reconnaissance report shall include a description of all observations from below the threshold depth evidencing the presence or absence of the marsh crust/subtidal zone.

1. If hazardous materials are found below the threshold depth within the area to be excavated at any time (during reconnaissance or during excavation), the permittee shall comply with either Subsection 13-56.8b or Subsection 13-56.8c, at his or her election.
2. If hazardous materials are not found below the threshold depth within the area to be excavated, no additional materials controls, except as otherwise may be required under applicable federal, state or local law, are required under this Section 13-56.

b. Handling Materials Excavated From Below the Threshold Depth as Hazardous Materials.

If the permittee has not ruled out the presence of hazardous materials pursuant to Subsection 13-56.8a, or elects not to prepare a site management plan and materials testing program pursuant to Subsection 13-56.8c, the permittee shall presume that materials excavated from below the threshold depth must be disposed at an appropriately permitted disposal facility. In addition, no excavated materials from below the threshold depth may be stockpiled prior to disposal or returned to the excavation.

c. Preparation of Construction Site Management Plan for Handling Materials Excavated From Below the Threshold Depth.

1. In lieu of handling materials excavated from below the threshold depth pursuant to the restrictions in Subsection 13-56.8b, the permittee may elect to hire a qualified registered engineer or registered geologist, licensed in the State of California, to develop a site-specific construction site management plan, including a materials testing program, to the satisfaction of the Chief Building Official. The construction site management plan shall include, at a minimum, provisions governing control of precipitation run on and run off from stockpiled soils, soil segregation, securing of stockpiled soils, duration of stockpiling, and contingency plans for handling materials excavated from below the threshold depth that prove to be hazardous materials.

2. The permittee shall hire a qualified registered engineer or registered geologist, licensed in the State of California, to oversee compliance with the approved construction site management plan, and shall transmit to the Chief Building Official upon completion of the project written certification of compliance with the construction site management plan. The certification report shall include a description of all observations from below the threshold depth evidencing the presence or absence of the marsh crust/subtidal zone.

13-56.9 Health and Safety Plan.

The applicant shall cause to be prepared by a certified industrial hygienist, and keep on the construction site at all times, a health and safety plan to protect workers at the excavation site and the general public to the satisfaction of the Chief Building Official. The Chief Building Official may prepare and provide to applicants a model health and safety plan which, if used by the applicant, shall be modified by the applicant's certified industrial hygienist to suit the specific requirements of the applicant's project.

13-56.10 Excavation Site Best Management Practices.

All excavation and materials handling activities permitted under this Section 13-56 shall be conducted in accordance with applicable Alameda Countywide Clean Water Program Best Management Practices and City of Alameda Storm Water Management and Discharge Control Program Ordinance requirements.

13-56.11 Bonds.

Upon a finding by the Chief Building Official that a permit should issue for excavation pursuant to this Section 13-56, a surety or performance bond conditioned upon the faithful performance and completion of the permitted excavation activity shall be filed with the City. Such bond shall be executed in favor of the City and shall be maintained in such form and amounts prescribed by the Risk Manager sufficient to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

13-56.12 Nonassumption of Liability.

In undertaking to require applicants for certain excavation permits to comply with the requirements of this Section 13-56, the City of Alameda is assuming an undertaking only to promote the general welfare. The City is not assuming, nor is it imposing on itself or on its officers and employees, an obligation for breach of which it is liable in money damages to any person who claims that such breach proximately caused injury.

13-56.13 Construction on City Property.

- a. The Chief Building Official shall prepare standard work procedures that comply with all the requirements of this Section 13-56 for all City

construction or improvement activities involving excavation below the threshold depth in the area subject to this Section 13-56. All departments, boards, commissions, bureaus and agencies of the City of Alameda that conduct construction or improvements on land under their jurisdiction involving excavation below the threshold depth in the area subject to this Section 13-56 shall follow such standard work procedures.

- b. The City shall include in all contracts involving excavation below the threshold depth in the area subject to this Section 13-56 a provision requiring City contractors to comply with all the requirements of this Section 13-56. All contracts entered into by departments, boards, commissions, bureaus and agencies of the City of Alameda that authorize construction or improvements on land under their jurisdiction involving excavation below the threshold depth in the area subject to this Section 13-56 also shall contain such standard contract provision.

13-56.14 Severability.

If any section, subsection, subdivision, paragraph, sentence, clause or phrase of this Section 13-56 or any part thereof is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this Section 13-56 or any part thereof. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase of this Section 13-56 irrespective of the fact that one or more sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional or invalid or effective.

13-56.15 Permit Fee.

No permits for excavation in the marsh crust/subtidal zone shall be issued unless a fee has been paid. The fee shall be set by City Council resolution.

13-56.16 Penalties.

- a. Any person, including utility companies and their employees and contractors, violating any of the provisions of this Section 13-56 shall be deemed guilty of a misdemeanor, and each person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Section 13-56 is committed, continued or permitted, and such violation may be prosecuted and punished as an infraction or misdemeanor pursuant to the provisions of Section 1-5.1 of the Alameda Municipal Code.
- b. Any person, including utility companies and their employees and contractors, that commences any excavation without first obtaining the necessary permits therefor shall, if subsequently allowed to obtain a permit, pay an amount, in

addition to the ordinary permit fee required, quadruple the permit fee otherwise required.

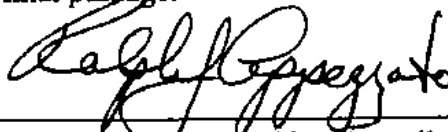
13-56.17 Retention and Availability of Permit Files

The City shall maintain files pertaining to all permits issued under this Section 13-56, and shall make such files available to DTSC for inspection upon request during normal business hours.

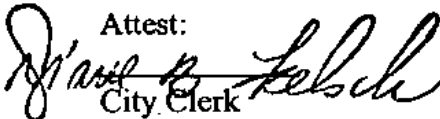
13-56.18 Amendment of Section 13-56

This Section 13-56 shall not be repealed or amended without thirty (30) days prior written notice to the DTSC Deputy Director for Site Mitigation.

Section 2. This Ordinance shall be in full force and effect from and after the expiration of thirty (30) days from the date of its final passage.



Presiding Officer of the City Council

Attest:

City Clerk

I, the undersigned, hereby certify that the foregoing Ordinance was duly and regularly adopted and passed by the Council of the City of Alameda in regular meeting assembled on the 15th day of February, 2000, by the following vote to wit:

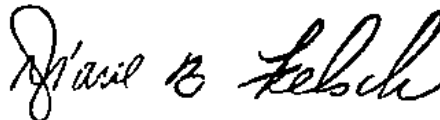
AYES: Councilmembers Daysog, DeWitt, Johnson, Kerr and Mayor Appezzato - 5.

NOES: None.

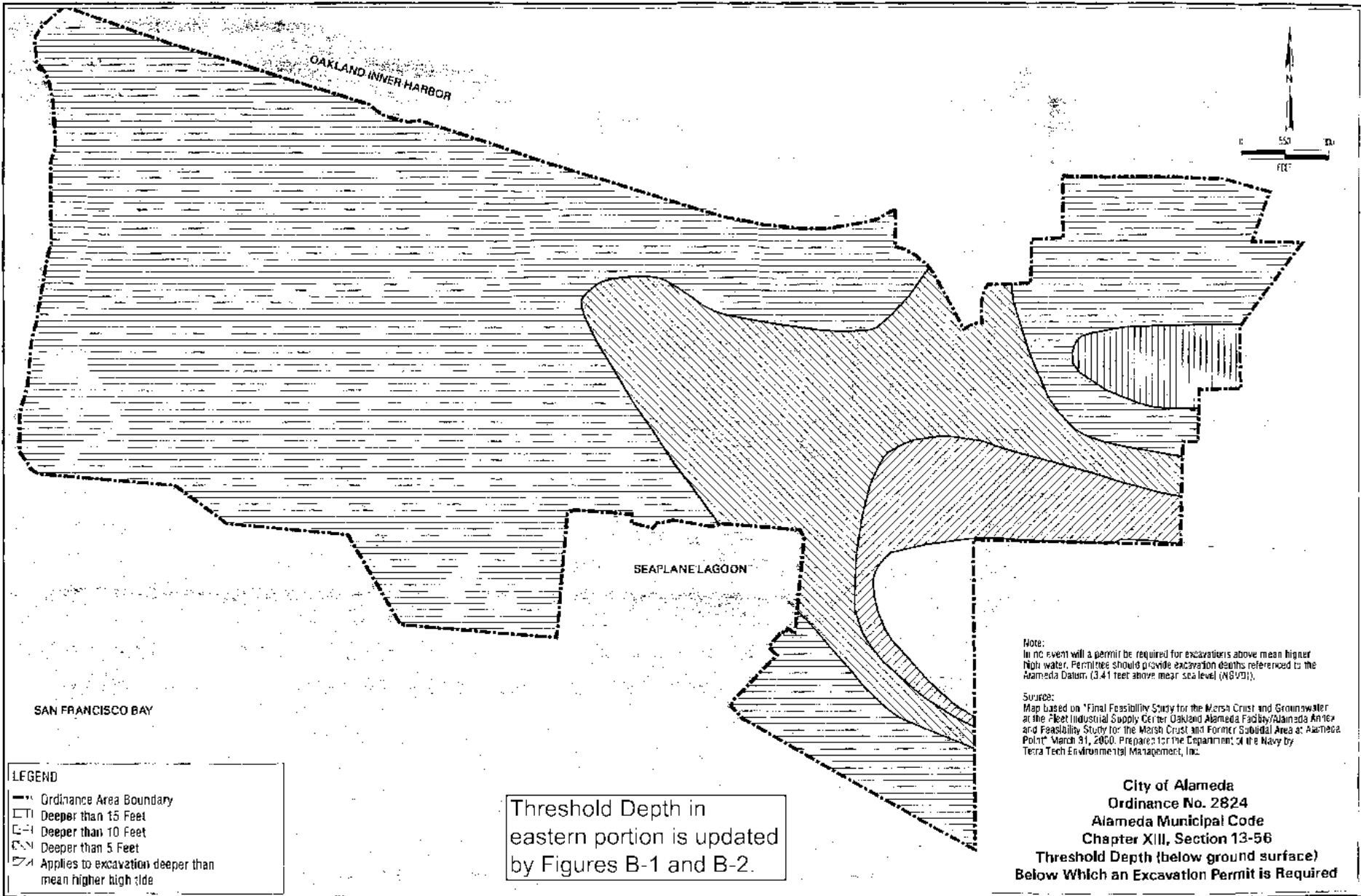
ABSENT: None.

ABSTENTIONS: None.

IN WITNESS, WHEREOF, I have hereunto set my hand and affixed the official seal of said City this 16th day of February, 2000.



Diane Felsch, City Clerk
City of Alameda



OAKLAND INNER HARBOR

SEALANE LAGOON

SAN FRANCISCO BAY

- LEGEND**
- Ordinance Area Boundary
 - ▨ Deeper than 15 Feet
 - ▤ Deeper than 10 Feet
 - ▧ Deeper than 5 Feet
 - ▧ Applies to excavation deeper than mean higher high tide

Threshold Depth in eastern portion is updated by Figures B-1 and B-2.

Note:
In no event will a permit be required for excavations above mean higher high water. Permits should provide excavation depths referenced to the Alameda Datum (3.41 feet above mean sea level (MSL)).

Source:
Map based on "Final Feasibility Study for the Marsh Crest and Groundwater at the Fleet Industrial Supply Center Oakland Alameda Facility/Alameda Annex and Feasibility Study for the Marsh Crest and Former Subtidal Area at Alameda Point" March 31, 2000. Prepared for the Department of the Navy by Terra Tech Environmental Management, Inc.

City of Alameda
Ordinance No. 2824
Alameda Municipal Code
Chapter XIII, Section 13-56
Threshold Depth (below ground surface)
Below Which an Excavation Permit is Required

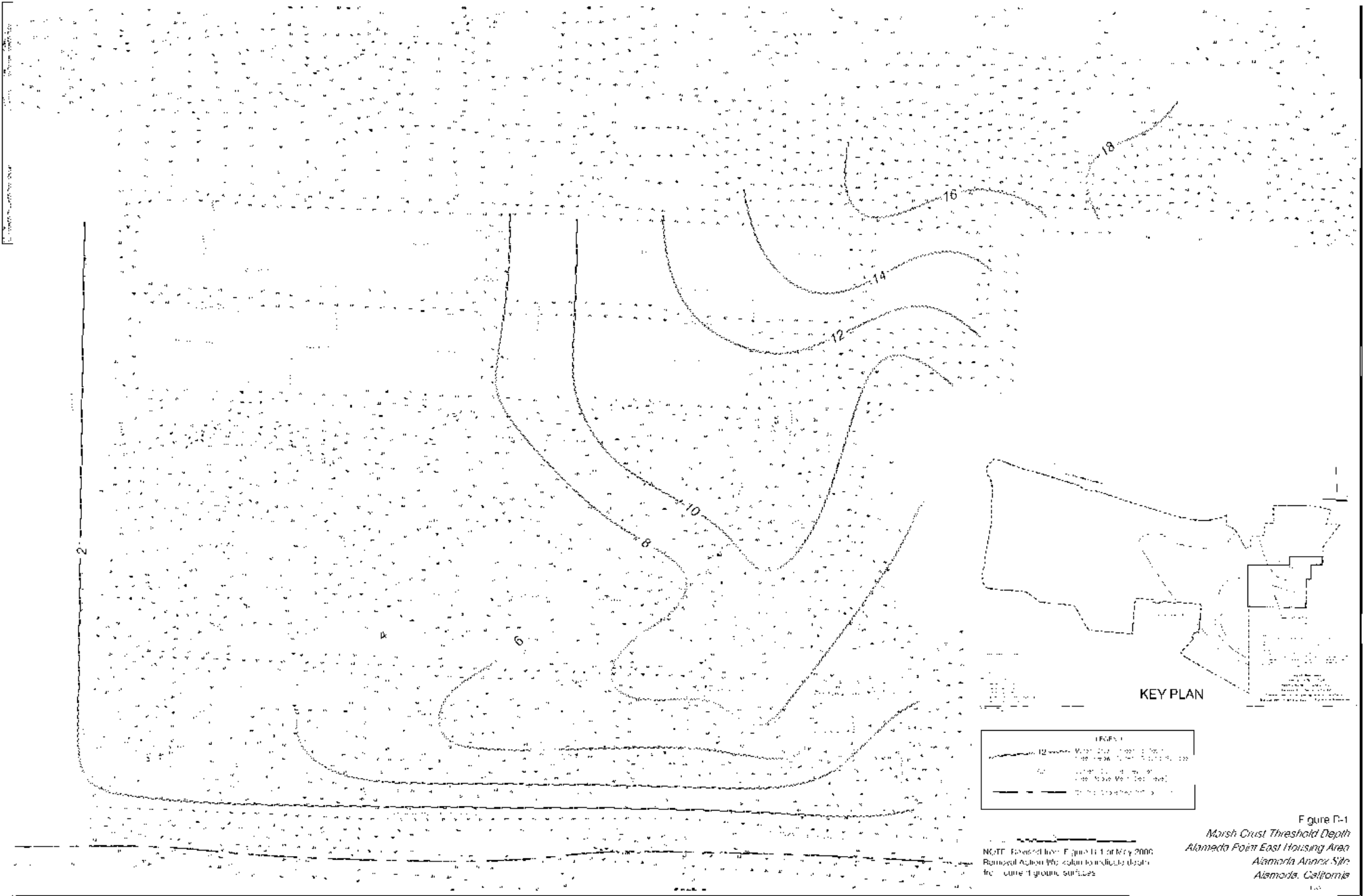




Figure D-2
 Marsh Crust Threshold Elevation
 Relative to the Alameda Datum
 Alameda Point East Housing Area
 Alameda Annex Site
 Alameda, California

APPENDIX C
INSTITUTIONAL CONTROLS CHECKLISTS AND EXAMPLE PERF

Attachment H-1
IR 14 IC Compliance Monitoring Report
 Installation Restoration Site 14, Alameda Point, Alameda, California
 EPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Navy certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non- Compliance	See Comment
1) No use of Site 14 for a residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation, a hospital for humans, a school for persons under 21 years of age, a day care facility for children, a playground or any permanently occupied human habitation other than those used for commercial or industrial purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No installation of new groundwater wells of any type within the area requiring institutional controls ^a .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No groundwater use for any purpose ^a (No evidence of tampering with existing wells, no evidence of new subsurface penetrations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing groundwater monitoring wells and associated equipment within the area requiring institutional controls ^a .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No removal or damage to security features (such as locks on monitoring wells, site fencing, or signs) or to survey monuments, monitoring equipment, piping or other appurtenances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Notification provided for any unauthorized change in land use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Signature

Date

Comments:

^a Future property owner may provide plans to the Navy, U.S. EPA, DTSC, and RWQCB for review and approval if the plans do not impact land use restrictions provided in the LUC RD.

Mail completed form(s) to the Navy, U.S. EPA, DTSC, and RWQCB in January of each calendar year.

IR SITE 16 ANNUAL IC COMPLIANCE MONITORING REPORT AND IC COMPLIANCE CERTIFICATE

Property
owner: _____

This evaluation is the final Department of the Navy (DON) certification just prior to site conveyance:

Yes No

If for an annual inspection, this evaluation covers the period:

from _____ through _____

Certification Checklist			
	In Compliance	Non- Compliance	See Comment
1) No groundwater use for any purpose (no evidence of tampering with existing wells or evidence of new wells).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No land-disturbing activity (excavation; construction of roads, utilities, or structures; or activity that facilitates movement of known contaminated groundwater).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No installation of new groundwater wells of any type (other than remedy-related wells).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing components of the remedy including groundwater monitoring wells and associated equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	In Compliance	Non-Compliance	See Comment
5) For all residential buildings constructed above the IC implementation areas, engineered vapor intrusion mitigation systems that meet indoor air risk criteria, and are acceptable to the FFA signatories or their successors, have been installed and remain in place until COC concentrations in groundwater meet IC termination criteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) No construction of buildings with ground-floor residential units or occupancies with sensitive receptors, including schools, child care facilities, hospitals, and senior care facilities, overlying the IC implementation areas until IC termination criteria are achieved, unless approved by FFA signatories or their successors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) No removal or damage to security features (such as locks on monitoring wells, site fencing or signs) or to survey monuments, monitoring equipment, groundwater remediation wells, treatment facilities, piping or other appurtenances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) Notification and/or plans provided to the FFA signatories or their successors for any proposed project that may affect the land use restrictions and IC effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Notification provided to the FFA signatories or their successors for any unauthorized change in land use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described land use restrictions have been compiled with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached explanation of deficiencies.

Signature _____ Date _____

Notes and Comments:

Photographs of deficiencies, in addition to other notes and forms, to document the conditions certified in this checklist, should be provided when appropriate.

Send the completed form and all accompanying information by certified mail, return receipt requested, to DON, EPA, DTSC, Regional Water Board, and City of Alameda each calendar year.

Attachment 1
IR Site 17 IC Compliance Monitoring Report

IR Site 17, Alameda Point, Alameda, California
 EPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Department of the Navy (DON) certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) No dredging and sediment removal at IR Site 17 unless checklist items 2 through 5 are met.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) A requirement that future dredging/sediment removal be conducted with radiological controls to ensure the health and safety of the workers unless the FFA signatories or their successors determine that this is no longer required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) A requirement that the FFA signatories review and approve a Sediment Management Plan (SMP) for any future proposed dredging/sediment removal to ensure proper procedures and disposal of sediment consistent with residual chemical concentrations and potential Ra-226 activities due to sediment or discrete items with radiological activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) A requirement that a dredge-specific work plan for any future proposed dredging shall be reviewed and approved by DTSC and, as appropriate, other FFA signatories or their successors to ensure that SMP requirements have been properly incorporated into the work plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No dredging and/or sediment removal shall be conducted without written approvals of the reviewers specified in checklist items 3 and 4 above.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Any violations of these LUCs were reported within 10 business days of discovery, and an explanation of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

 Signature

 Date

Comments: _____

Mail completed form(s) to the DON, EPA, DTSC, and Regional Water Board in January of each calendar year.

APPENDIX A

INSTALLATION RESTORATION SITE 25 SOIL INSTITUTIONAL CONTROL COMPLIANCE MONITORING REPORT

Installation Restoration Site 25
Alameda Point, Alameda, California
EPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Department of the Navy certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) Excavation below 4 feet approved and in accordance with a Soil Management Plan (excluding utility repair and utility maintenance).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Major site work consisting of demolition or removal of hardscape and buildings approved and in accordance with a soil management plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Notification of incidents/conditions inconsistent with requirements (copies attached).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Any violations of these land use restrictions were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 business days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Printed Name/Signature

Date

Mail completed form(s) to the Department of the Navy, U.S. Environmental Protection Agency, California Department of Toxic Substances Control, and California Regional Water Quality Control Board annually.

Comments:

Attachment I-1
IR 26 IC Compliance Monitoring Report
 Installation Restoration Site 26, Alameda Point, Alameda, California
 EPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Navy certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) No use of Site 26 for a residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation, a hospital for humans, a school for persons under 21 years of age, a day care facility for children, a playground or any permanently occupied human habitation other than those used for commercial or industrial purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No installation of new groundwater wells of any type within the area requiring institutional controls ⁴ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No groundwater use for any purpose ⁴ (No evidence of tampering with existing wells, no evidence of new subsurface penetrations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing groundwater monitoring wells and associated equipment within the area requiring institutional controls ³ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No removal or damage to security features (such as locks on monitoring wells, site fencing, or signs) or to survey monuments, monitoring equipment, piping or other appurtenances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Notification provided for any unauthorized change in land use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Signature

Date

Comments:

⁴ – Future property owner may provide plans to the Navy, U.S. EPA, DTSC, and RWQCB for review and approval if the plans do not impact land use restrictions provided in the LUC RD.

Mail completed form(s) to the Navy, U.S. EPA, DTSC, and RWQCB in January of each calendar year.

IR 27 IC COMPLIANCE MONITORING REPORT

Installation Restoration Site 27
Alameda Point, Alameda, California
EPA ID. No. CA2170023236

Property Owner: _____

This evaluation is the final Navy certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) Unless otherwise approved by DON and FFA signatories, no use of IR 27 for a residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation, a hospital for humans, a school for persons under 21 years of age, a day care facility for children, a playground or any permanently occupied human habitation other than those used for commercial or industrial.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No installation of new groundwater wells of any type within the area requiring institutional controls ⁱⁱ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No groundwater use for any purpose ⁱⁱ (no evidence of tampering with existing wells, no evidence of new subsurface penetrations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing groundwater monitoring wells and associated equipment within the area requiring institutional controls ⁱⁱ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No removal or damage to security features (such as locks on monitoring wells, site fencing, or signs) or survey monuments, monitoring equipment, piping or other appurtenances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Notification provided for any unauthorized change in land use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IR 27 IC COMPLIANCE MONITORING REPORT

Installation Restoration Site 27
Alameda Point, Alameda, California
EPA ID. No. CA2170023236

- 7) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Signature

Date

Comments:

^a – Future property owner may provide plans to the Navy, USEPA, DTSC, and RWQCB for review and approval if the plans do not impact land use restrictions provided in the LUC RD.

Mail completed form(s) to the Navy, USEPA, DTSC, and RWQCB in January of each calendar year.

IR 28 IC COMPLIANCE MONITORING REPORT

Installation Restoration Site 28
Alameda Point, Alameda, California
EPA ID. No. CA2170023236

Property Owner: _____

This evaluation is the final Navy certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) Unless otherwise approved by DON and FFA signatories, no use of IR 28 for a residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation, a hospital for humans, a school for persons under 21 years of age, a day care facility for children, a playground or any permanently occupied human habitation other than those used for commercial or industrial.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No installation of new groundwater wells of any type within the area requiring institutional controls ⁱⁱ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No groundwater use for any purpose ⁱⁱ (no evidence of tampering with existing wells, no evidence of new subsurface penetrations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing groundwater monitoring wells and associated equipment within the area requiring institutional controls ⁱⁱ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No removal or damage to security features (such as locks on monitoring wells, site fencing, or signs) or survey monuments, monitoring equipment, piping or other appurtenances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Notification provided for any unauthorized change in land use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IR 28 IC COMPLIANCE MONITORING REPORT

Installation Restoration Site 28
Alameda Point, Alameda, California
EPA ID. No. CA2170023236

- 7) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Signature

Date

Comments:

^a – Future property owner may provide plans to the Navy, USEPA, DTSC, and RWQCB for review and approval if the plans do not impact land use restrictions provided in the LUC RD.

Mail completed form(s) to the Navy, USEPA, DTSC, and RWQCB in January of each calendar year.

IR SITES 9, 13, AND 19 ANNUAL IC CERTIFICATION CHECKLIST AND COMPLIANCE CERTIFICATE

Property owner: _____

This evaluation is the final Navy certification just prior to site conveyance:

Yes No

If for an annual inspection, this evaluation covers the period:

from _____ through _____

Certification Checklist

	In Compliance	Non- Compliance	See Comment
1) No groundwater use for any purpose (no evidence of tampering with existing wells or evidence of new wells).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No land-disturbing activity (excavation, construction of roads, utilities, or structures; or activity that facilitates movement of known contaminated groundwater).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No installation of new groundwater wells of any type.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No altering, disturbing, or removing components of the remedy including groundwater monitoring wells and associated equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) No construction of enclosed structures.*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Certification Checklist

	In Compliance	Non- Compliance	See Comment
6) No removal or damage to security features (such as locks on monitoring wells, site fencing or signs) or to survey monuments, monitoring equipment, piping or other appurtenances.*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Notification provided for any unauthorized change in land use.*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) Any violations of these LUCs were reported within 10 business days of discovery and an explanation provided of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Certification checklist items 5, 6, and 7 apply to IR Site 13 only.

I, the undersigned, hereby certify that the above-described land use restrictions have been compiled with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached explanation of deficiencies.

Signature _____ Date _____

Notes and Comments:

- a These prohibited or restricted activities may be conducted provided that the requirements in the LUC RD are followed. If the inspector finds that a prohibited or restricted activity has occurred, the inspector shall check whether the activity was conducted in accordance with approved plans for that activity. Activities that are conducted in accordance with the approved plans will be considered “in compliance.” Comments should be attached to the compliance checklist to describe how the requirements in the plans were adhered to. Activities that are not conducted in accordance with the approved plans would be considered “non-compliance.”

Photographs, in addition to other notes and forms, to document the conditions certified in this checklist, should be provided.

Send the completed form and all accompanying information by certified mail, return receipt requested, to the Navy, EPA, DTSC, Water Board, and City of Alameda each calendar year.

Attachment 1
OU-2B IC Compliance Monitoring Report

OU-2B, Alameda Point, Alameda, California
USEPA I.D. No. CA2170023236

Property Owner: _____

This evaluation is the final Department of the Navy (DON) certification just prior to site conveyance (yes or no) _____

If for an annual inspection, this evaluation covers the period from _____ through _____

Certification Checklist

	In Compliance	Non-Compliance	See Comment
1) No residential use at IR Site 3 in the area of cobalt-impacted soil and at IR Site 4 in the area of hexavalent chromium-impacted soil (shown on LUC RD Figure 3).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) No intrusive activities without prior approval by the agencies approving or concurring on the OU-2B ROD or their successors at IR Site 4 in the area of hexavalent chromium-impacted soil shown on LUC RD Figure 3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) No domestic use of shallow groundwater.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) No drilling of groundwater wells of any type (other than remedy-related wells).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Requirement for engineered vapor intrusion mitigation systems acceptable to the FFA signatories or their successors for all buildings constructed on the area overlying the impacted shallow groundwater plus the approximately 100-foot buffer area until VOC concentrations in groundwater do not pose an unacceptable risk due to the vapor intrusion pathway.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) No construction of buildings with ground-floor residential units or occupancies with sensitive receptors, including schools, child care facilities, hospitals, and senior care facilities, overlying the impacted shallow groundwater plus the 100-foot buffer area until remedial goals are achieved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) No disturbing/removing/altering security features (such as locks on monitoring wells, site fencing, or signs) and components of the remedy, including monitoring wells, survey monuments, groundwater remediation wells, treatment facilities, and associated equipment and warning signs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) Notification and/or plans provided to the FFA signatories or their successors for any proposed project that may affect the land use restrictions and IC effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	In Compliance	Non-Compliance	See Comment
9) Notification provided to the FFA signatories or their successors for any proposals for a land use change that is inconsistent with the land use restrictions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Any violations of these LUCs were reported to the DON, USEPA, DTSC, and Water Board within 10 business days of discovery, and an explanation of those actions taken or to be taken was provided within 10 days of notification of discovery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, hereby certify that the above-described land use restrictions have been complied with for the period noted. Alternately, any known deficiencies and completed or planned actions to address such deficiencies are described in the attached Explanation of Deficiencies.

Signature

Date

Comments:

Mail completed form(s) to the DON, USEPA, DTSC, and Water Board in January of each calendar year.

Header

**For LIFOC, City must request
PERF. For Deed, Developer or City
may request PERF.

Date

Ms. Amy Jo Hill, BRAC Operations
33000 Nixie Way
Bldg 50 2nd Floor Attn Amy Jo Hill
San Diego, CA 92147

Subject: **PROJECT ENVIRONMENTAL REVIEW FORM (PERF) FOR PROPOSED (Insert the activity, for example
Construction, Biological Enhancement, Demolition of Above Ground Structures, etc.) ACTIVITIES WITHIN
LIFOC PARCEL (X) AT NAS Alameda**

Dear Ms. Hill:

CONTRACTOR/CITY is pleased to submit this project environmental review form (PERF) request to perform construction activities in the (Lease in Furtherance of Conveyance (LIFOC) or Transfer Deed) Parcel X. State why it's being amended, if applicable. (X) activities are scheduled to begin in (date).

Your cooperation is greatly appreciated. If you have questions and/or require additional information, please feel free to contact me at (510) 747-4747 or my local point of contact X.

Sincerely,

Jen Ott

TITLE (Insert Subject Line Header)

1.0 PROPOSED PROJECT

Contractor-list Introduction of project and the parcel description (consider location/adjacent to and extending on to other parcels)

Provide Schedule (not just start date, expected duration etc.)

Provide a Description of technical work

Example:

- a. Alameda Point, Northwest Territory Runway. Proposed License Area 36,000 square feet (0.83 acres) (area marked with orange boarder with GPS markers) within the "Open Space" area). See Figure 1 and 2. The site area was selected with the following considerations:
 - i. With consideration of current and planned usage of space by the city.
 - ii. With consideration to minimize impact to ongoing remediation efforts.
 - iii. With consideration to the 2012 Biological Opinion (2012-F-0524).
 - iv. With consideration to creating the largest possible unoccupied and undeveloped area around the test site.
- b. Schedule: Month to Month
- c. Tenant will prepare site by removing asphalt apron next to runway and pour a small concrete pad (see Figure 4). No fencing will be constructed.
- d. Tenant will temporarily place equipment on the site to perform a small number of short duration (5 second) rocket engine tests. During tests, all equipment will be securely fastened to the ground and will not leave the site. Equipment will be moved to the site for periods of one to two weeks approximately every three months. Equipment will be secured on site and either locked up in a shipping container or monitored by a security guard, as appropriate.
- e. Tests that involve ignition of flammable materials will be coordinated with and monitored by Alameda Fire Department.
- f. The byproduct of the tests are water and the CO2 equivalent to what is consumed by a typical tree in the period of a few months. Tenant has planted several trees to offset CO2 emissions for the tests.

2.0 EXISTING LAND USE RESTRICTIONS

Contractor-It is mandatory to list all restrictions listed in the FOSL, LIFOC, Record of Decision (ROD)/Land Use Control Remedial Design (LUC RD), Deed, and/or CRUP restrictions.

Examples:

Applicable Restrictions	Proposed Activity
LIFOC Section 8.1 – Lessee and sublessee shall not begin excavation, construction, alteration, maintenance or repairs of the Leased Premises without the prior written consent of the government.	Opening manholes
LIFOC Section 11 – Non-Interference with operations: Lessee shall not conduct operations or make any alterations on Leased premises that would interfere with or otherwise restrict operations, environmental clean-up or restoration actions by Government, EPA, state environmental	Placement of storage shed over existing monitoring well.

regulators, or their contractors.	
LUC RD	No digging.

3.0 STATUS OF ONGOING ENVIRONMENTAL ACTIONS WITHIN PARCEL X

Contractor to list those IR Site, AOC or Petroleum Sites that are in the property. If there are No IR, AOC or Petroleum – say how this finding is reinforced by current and relevant documents (FOST or FOSL). Contractor to note if the property is untransferred (covered by LIFOC and other environmental restrictions from ROD/LUC RD)

Examples:

- a. This area is located on untransferred property adjacent to IR 32 and is covered by the restrictions in the LIFOC. IR 32 is currently planning for remedial action starting in 2018.
- b. This area is also adjacent to IR 1. IR 1 is currently in the Long Term Management phase. Access is required to the site on an ongoing basis to sampling groundwater and perform site inspections.

4.0 POTENTIAL PROJECT IMPACTS

Contractor-provide a short list of potential issues of what can go wrong as a result of your intended specific to each IR item above. If none/say none.

Examples

- Work will occur within 3 feet of the Navy treatment system. Potential to encounter contaminated soil, etc.
- Work will occur directly above the IR 32 easement area. The potential exists for interfering with area’s activity.
- Survey Area A is on Navy property, on their 4A parcel. Per Navy comment, there are IC’s (institutional controls) within this area. As almost all survey work will be conducted via surface or air, with the exception of inserting a rod into existing storm drain manholes, there will be no expected impact.

5.0 PROPOSED MEASURES TO BE IMPLEMENTED

Contractor- proposed specific onsite mitigation measure in this section (see examples listed below). This section is for the Contractor to show how he or she will eliminate the potential impacts listed above in Section 4. 0, Potential Project Impacts. The contractor should identify applicable Soil/Site Management Plans (SMP) or Health and Safety plans that will be used onsite. If an already approved SMP is being referenced. Please refer to the SMP Sections that apply to the work.

Examples:

- To mitigate (state what risk you are mitigating), a HF representative will be present for all work within the IRP 24 easement. The HF representative will also perform inspections of all DON facilities within the project limits, every day of construction.
- To mitigate (state what risk you are mitigating), all work alongside the conveyance system trench, plus one foot on either side of the trench, will be performed by hand (equating to approximately 5.5 feet wide). An exception will be for the deep portions of the existing 12-KV line (known to be 13’-14’ deep at existing triple RCB). In addition, all work within four feet of any DON box or vault will be performed by hand.
- To mitigate (state what risk you are mitigating), all work alongside the conveyance system trench, plus one foot on either side of the trench, will be performed by hand (equating to approximately 5.5 feet wide). An exception will be for the deep portions of the existing 12-KV line (known to be 13’-14’ deep at existing triple RCB). In addition, all work within four feet of any DON box or vault will be performed by hand.

6.0 REGULATORY COORDINATION TO DATE

If Applicable-Agency, Real Estate Agreement will be listed and referenced in this section and attached to the PERF. Response should can be the following: Some, None, to be performed and/or demonstrated to Navy prior to construction commencement. Note to Contractor – The Navy will determine if Regulatory Coordination is needed for this PERF. This section lists out any prior coordination.

Example:

None.

7.0 CONDITIONS FOR APPROVAL

Contractor selects those items it feels are appropriate to monitor and report on its activities (essentially enters the X in the “applicable” column).

Example:

Applicable	Condition for Approval
<i>Pre-Activity</i>	
X	CONTRACTOR will provide to the Base Realignment and Closure Environmental Coordinator (BEC) a detailed work plan, including health and safety plan, to the Navy no less than two weeks prior to commencing construction activities
X	CONTRACTOR will provide to the BEC a proposed construction schedule X prior to commencement of the construction activities.
	CONTRACTOR will contact the BEC two weeks prior to commencing proposed construction activities.
	Photo documentation of protective measures around remediation equipment will be provided to the BEC for approval no less than one week prior to commencing construction activities
X	CONTRACTOR will provide written or email evidence of regulatory concurrence with proposed activities no less than three days prior to commencing activities
<i>Activity</i>	
	Alteration, relocation, or disturbance of any extraction wells, associated control boxes, or pipelines is prohibited without prior government approval. HF will coordinate with the DON prior to fieldwork to discuss protection measures to prevent disturbance of remediation equipment located on the site.
	Costs to repair or replace the any Government equipment (including but not limited to...) as a result of CONTRACTOR’s activities will be the responsibility of CONTRACTOR.
	In the event remediation equipment is damaged, the work in the vicinity of the damaged remediation equipment will be stopped until a DON representative arrives on-site and completes an assessment. A damage report will be submitted to the BEC within 7 days.
X	Should the construction schedule change in a delay of larger than 30 days, CONTRACTOR will notify the BEC and provide an updated schedule
	Activities associated with the PERF will not interfere with the DON’s or Regulatory Agency’s access to areas with ongoing environmental activities.
	Biweekly remediation system condition inspection reports with photos will be submitted to the BEC, in the absence of a BEC, to the DBCM.
<i>Post-Activity</i>	

	Provide email or brief summary upon completion to indicate workplan requirements were met and there were no incidents.
<i>General Agreements</i>	
	CONTRACTOR is responsible for all costs incurred by CONTRACTOR, its subcontractors and assigns related to the excavation, disposal, and treatment of contaminated soil and/or groundwater incurred in the course of activities related to work within the easement.
	CONTRACTOR is responsible for all costs of protection, repair, alteration, and replacement of groundwater monitoring and extraction wells, and any associated piping and equipment that are included in the CERCLA remedial action for this property and that have been altered, disturbed or removed during activities related to work within the easement.

8.0 Attachments/Figures

Contractor to List in separate lines all attachments and figures for this request. Please include titles as necessary.

Example:

- Survey Scope Area Exhibit, PDF
- Figure 1. Proposed License Area (Area bordered in orange with GPS coordinates)

9.0 Additional Conditions based on Navy Review

This is the section for the Navy to fill out. Contractor does not put any information in this section. Based on a review of Section 7, the Navy may require additional measures in order to approve the request.

APPENDIX D
MEMORANDUM TO FILE FOR ADDITION OF PFOA AND PFOS
TO THE INSTITUTIONAL CONTROLS FOR SHALLOW GROUNDWATER
AT OU-2C IR SITES 5, 10, AND 12



**Naval Facilities Engineering Command Southwest
BRAC PMO West
San Diego, CA**

**FINAL
MEMORANDUM TO FILE FOR ADDITION OF
PFOA AND PFOS TO THE INSTITUTIONAL
CONTROLS FOR SHALLOW GROUNDWATER AT
OU-2C IR SITES 5, 10, and 12**

ALAMEDA POINT
ALAMEDA, CALIFORNIA

June 2018

**Statement A - Approved for public release;
distribution is unlimited**

DCN: KMJV-1418-0040-0003



**Naval Facilities Engineering Command Southwest
BRAC PMO West
San Diego, CA**

**FINAL
MEMORANDUM TO FILE FOR ADDITION OF
PFOA AND PFOS TO THE INSTITUTIONAL
CONTROLS FOR SHALLOW GROUNDWATER AT
OU-2C IR SITES 5, 10, and 12**

ALAMEDA POINT
ALAMEDA, CALIFORNIA

June 2018

Prepared for:



Department of the Navy
Naval Facilities Engineering Command Southwest
BRAC PMO West
33000 Nixie Way, Bldg. 50
San Diego, CA 92147

Prepared by:



**KMEA MACTEC Joint Venture
9177 Sky Park Court
San Diego CA 92123-4341
(858) 278-3600**

Contract Number: N62473-14-D-1418; Task Order No. 0040
DCN: KMJV-1418-0040-0003

MEMORANDUM TO FILE

DATE: June 1, 2018

SUBJECT: **Memorandum to File for Addition of PFOA and PFOS to the Institutional Controls for Shallow Groundwater at OU-2C IR Sites 5, 10, and 12, Alameda Point, Alameda, CA**

DCN: KMJV-1418-0040-0003

The purpose of this memorandum is to document a non-significant modification to the remedy selected in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 2014 Final Record of Decision (ROD) for the former Naval Air Station (NAS) Alameda Operable Unit (OU)-2C Installation Restoration (IR) Sites 5, 10, and 12 (Figure 1).

The United States Department of the Navy (DON) is the lead Federal agency for all CERCLA actions at former NAS Alameda, now known as Alameda Point. Alameda Point was placed on the National Priorities List (NPL) in July 1999 (United States Environmental Protection Agency [U.S. EPA], 1999) Identification Number CA2170023236. The DON has initiated the CERCLA Remedial Action (RA) selected in the Final ROD for OU-2C IR Sites 5, 10, 12 (DON, 2014) in accordance with the requirements of CERCLA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 1994), and the Alameda Naval Air Station Federal Facility Agreement (FFA). Regulatory oversight and guidance during development, approval, and implementation of the RA has been provided by the DON, U.S. EPA, California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and California Regional Water Quality Control Board, San Francisco Bay Region (Water Board). Collectively, the DON and the regulatory agencies are referred to as the "FFA signatories".

The modification described in this memorandum consists of the addition of emerging contaminants perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) to the groundwater remedy currently in place, expanding the boundary of the groundwater Institutional Controls (ICs) to the entire OU-2C boundary (excluding drain lines) and the imposition of ICs on the use, handling, and disposal of shallow groundwater for emerging contaminants and contaminants of concern (COCs).

DESCRIPTION OF THE RECORD OF DECISION SELECTED REMEDY

OU-2C consists of IR Sites 5, 10, and 12 (Figure 1). Results of investigations and risk assessments for OU-2C required RA for groundwater at IR Site 5. Groundwater RA was not required for IR Sites 10 and 12 (DON, 2014). IR Site 5 was the former Naval Air Rework Facility and contains Building 5. A detailed site description and history, and discussion of selected remedies, are presented in the 2014 ROD (DON, 2014). The selected remedy for OU-2C shallow groundwater at IR Site 5 includes, as appropriate, in-situ chemical oxidation (ISCO) or enhanced bioremediation, groundwater monitoring, and institutional controls (ICs) for elevated concentrations of volatile organic compounds (VOCs) (DON, 2014).

The remedial action objective (RAO) for IR Site 5 groundwater is to protect future commercial human receptors (as represented by future office workers) within IR Site 5 from potentially unacceptable risks associated with the presence of chemicals of concern (COCs) in shallow groundwater at concentrations that exceed occupational remedial goals (RGs) (DON, 2014).

The Final 2017 Remedial Design/Remedial Action Work Plan (RD/RAWP) describes the methodology for the groundwater remedy, which is currently being implemented (Tetra Tech EC, Inc. [TTECI], 2017).

REVISED INSTITUTIONAL CONTROLS

Existing ICs are described in the ROD (DON, 2014) and the Land Use Control Remedial Design (LUC RD) (TTECI, 2017). The following addition to ICs at OU-2C is proposed:

- No use or disturbance of groundwater without an approved Site Management Plan. The Site Management Plan shall include worker health and safety, handling, and disposal protocols for groundwater impacted by emerging contaminants and COCs consistent with Federal, State and local regulations. The Site Management Plan will be approved by the FFA signatories.

The LUC RD defines specific areas requiring ICs for groundwater COCs within OU-2C in accordance with the ROD. This memorandum extends the areas requiring ICs for groundwater (Figure 1). The PFOS and PFOA IC boundary encompasses the entire OU-2C boundary.

Proposed restrictions on the use, handling, and disposal of shallow groundwater for emerging contaminants and COCs, pursuant to a Site Management Plan approved by the FFA signatories, will ensure that human health and the environment remain protected. Once groundwater COC cleanup objectives are obtained, the IC restrictions for COCs could be eliminated; the IC restrictions for emerging contaminants would remain in place until approved for removal by the FFA signatories.

BASIS FOR NON-SIGNIFICANT CHANGE

PFOA and PFOS are fluorinated compounds used in aqueous film-forming foam (AFFF), which is used for fire suppression. AFFF was used in firefighting equipment testing and training, and potentially for other operations in plating shops or in hangar fire suppression systems. IR Site 5 was used for multiple industrial activities such as those associated with aircraft rebuilding and a plating shop. Building 400 at IR Site 10 was used as a rework and maintenance facility. The base power plant was at IR Site 12. Pursuant to DON policy, groundwater was sampled for the presence of PFOS/PFOA in October 2016. PFOA and PFOS were reported in the shallow First Water Bearing Zone in groundwater monitoring wells screened approximately 5 to 15 feet bgs at OU-2C exceeding the current drinking water Lifetime Health Advisory (LHA). The results for total PFOA and PFOS range from 0.02 to 19.81 micrograms per liter ($\mu\text{g/L}$) or 20 to 19,810 parts-per-trillion (ppt).

In May 2016, the U.S. EPA issued a LHA and Fact Sheet (U.S. EPA, 2016a) that states the following:

“To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the health advisory levels at 70 parts-per-trillion (ppt). When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should be compared with the 70 parts-per-trillion health advisory levels. This health advisory level offers a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in drinking water.”

On November 15, 2016, the U.S. EPA published a memorandum to clarify the appropriate application of the May 2016 drinking water LHAs for PFOA and PFOS, stating that “these HAs only apply to exposure scenarios involving drinking water and cannot be used in identifying risk levels for ingestion of food sources, including: fish, meat produced from livestock that consumes contaminated water, or crops irrigated with contaminated water” (U.S. EPA, 2016b).

PFOA and PFOS have U.S. EPA LHA values for drinking water; however, neither the U.S. EPA nor the State of California has promulgated maximum contaminant levels (MCLs). The DON is proactively proposing to expand the existing ICs at OU-2C to prevent exposure to PFOA and PFOS through contact with shallow groundwater in accordance with United States Department of Defense instruction on emerging contaminants (DoD, 2009).

BACKGROUND OF POTENTIAL PFOA/PFOS IMPACTS AT ALAMEDA POINT

Shallow groundwater beneath specific designated areas of Alameda Point (i.e., southeast portion and central portion west of Saratoga Avenue) are documented as not of sufficient quality to be considered a future potential municipal or domestic water source, pursuant to State Water Resources Control Board (State Water Board) Resolution No. 88-63 and 89-39 “Sources of Drinking Water” (State Water Board, 2006).

Water service in the City of Alameda is currently provided by the East Bay Municipal Utility District (EBMUD). The City of Alameda’s reuse planning documents indicate that a new water distribution system will be installed to serve the proposed Alameda Point development area and to connect to the existing EBMUD water facilities. For additional information, refer to EBMUD’s 2015 Urban Water Management Plan and the City of Alameda’s Environmental Impact Report (EBMUD, 2016; Environmental Science Associates, 2013).

OU-2C is currently under DON control with interim ICs restricting the use of groundwater in accordance with the Final ROD (DON, 2014). Groundwater is being monitored for COCs in accordance with the Final RD/RAWP (TTECI, 2017). Going forward, all redevelopment activities are to be conducted in accordance with the City of Alameda’s Site Management Plan, which requires strict protocols for any extraction, treatment, and/or disposal of soil and/or groundwater in areas with restrictions.

HEALTH AND SAFETY REGARDING PFOA/PFOS-IMPACTED GROUNDWATER

The following general health and safety protocols must be followed with respect to handling PFOA/PFOS-impacted groundwater. Site workers performing intrusive work that may result in contact with PFOA/PFOS-impacted groundwater at concentrations exceeding the LHA must handle, manage, and dispose of the groundwater in a manner consistent with the current federal, state, and local rules and regulations. All protocols will be included in the Site Management Plan prepared by the transferee. The current Site Management Plan does not include PFOA/PFOS protocols.

SUMMARY OF NON-SIGNIFICANT CHANGE

Pursuant to DON policy, the DON is adding PFOA and PFOS as emerging contaminants at OU-2C IR Sites 5, 10 and 12, and is imposing ICs on the use, handling, and disposal of shallow groundwater for emerging contaminants and COCs, pursuant to a Site Management Plan approved by the FFA signatories. This decision is not a risk-based decision, but rather is a proactive, conservative measure of safety to ensure the continued protection of human health and the environment. Once groundwater COC cleanup objectives are achieved, the IC

restrictions for groundwater COCs could be eliminated; the groundwater IC restrictions for emerging contaminants would remain in place. Adding PFOA and PFOS to the existing groundwater ICs does not significantly change or fundamentally alter the RA selected in the Final ROD for OU-2C.

REFERENCES

- California State Water Resources Control Board (Water Board). 2006. Resolution No. 88-63. Adoption of Policy Entitled "Sources of Drinking Water". February.
- East Bay Municipal Utility District (EBMUD). 2016. 2015 Urban Water Management Plan. July.
- Environmental Science Associates. 2013. Environmental Impact Report, Alameda Point Project. September.
- National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR §300.435. 1994.
- Tetra Tech EC, Inc. (TTECI). 2017. Final Remedial Design/Remedial Action Work Plan, Operable Unit 2C/Installation Restoration Site 5 Shallow First Water-Bearing Zone Groundwater, Alameda Point, Alameda, California. February.
- United States Department of Defense (DoD). 2009. Instruction No. 4715.18: Emerging Contaminants. June.
- United States Department of the Navy (DON). 2014. Final Record of Decision, OU-2C (IR Sites 5, 10, and 12) Former Naval Air Station Alameda, California. April.
- United States Environmental Protection Agency (U.S. EPA). 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. EPA 540-R-98-031. July.
- _____. 2016a. Drinking Water Health Advisories for PFOA and PFOS. <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>. Accessed 8/4/2017.
- _____. 2016b. Memorandum: Clarification about the Appropriate Application of the PFOA and PFOS Drinking Water Health Advisories. https://www.epa.gov/sites/production/files/2016-11/documents/clarification_memo_pfoapfos_dw_has.pdf. Accessed 10/26/2017.

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**Alameda BGMP
Analytical Results - PFAS in Groundwater**

								PFBS	PFOA	PFOS	PFOA + PFOS	
								EPA Health Advisory:	380	0.07	0.07	0.07
IR Site	Sample Location	Sample ID	Sample Type	Matrix Spike Collected (Y/N)	Sample Date	Sample Time	SDG	µg/L	µg/L	µg/L	µg/L	
IR Site 4	M03-06	M03-06_161027	N	N	10/27/2016	11:41	1601380	0.0124	0.0266	0.0388	0.0654	
		EB-M03-06_161027	EB	N	10/27/2016	11:50	1601380	ND	ND	0.00085 J	0.00085 J	
		FB-M03-06_161027	FB	N	10/27/2016	11:45	1601380	ND	ND	ND	ND	
	M04-05	M04-05_161027	N	N	10/27/2016	10:41	1601380	ND	ND	0.00979	0.00979	
		EB-M04-05_161027	EB	N	10/27/2016	10:50	1601380	ND	ND	0.000802 J	0.000802 J	
	M04-06	M04-06_161027	N	N	10/27/2016	8:41	1601380	0.00601 J	ND	0.00614 J	0.00614 J	
	MW360-4	MW360-4_161027	N	N	10/27/2016	9:40	1601380	0.00328 J	0.0217	0.0901	0.1118	
		EB-MW360-4_161027	EB	N	10/27/2016	9:50	1601380	ND	ND	ND	ND	
		FB-MW360-4_161027	FB	N	10/27/2016	9:45	1601380	ND	ND	ND	ND	
	MW4-2-1	MW4-2-1_161027	N	N	10/27/2016	13:41	1601380	ND	ND	0.00507 J	0.00507 J	
		EB-MW4-2-1_161027	EB	N	10/27/2016	13:50	1601380	ND	ND	0.00139 J	0.00139 J	
		FB-MW4-2-1_161027	FB	N	10/27/2016	13:45	1601380	ND	ND	ND	ND	
	MW4-2-11	MW4-2-11_161028	N	N	10/28/2016	10:13	1601381	ND	ND	0.00268 J	0.00268 J	
MW4-2-14	MW4-2-14_161028	N	N	10/28/2016	9:25	1601381	ND	ND	0.000961 J	0.000961 J		
MW4-2-16	MW4-2-16_161028	N	N	10/28/2016	8:40	1601381	ND	ND	0.00393 J	0.00393 J		
MW4-2-6	MW4-2-6_161028	N	N	10/28/2016	11:30	1601381	ND	0.0183	0.0323	0.0506		
IR Site 5	5-3MW1S	5-3MW1S_161025	N	N	10/25/2016	9:26	1601359	0.00185 J	0.00977	0.0104	0.02017	
	5-3MW7S	5-3MW7S_161025	N	N	10/25/2016	8:30	1601359	0.00198 J	0.0122	0.0269	0.0391	
	M05-02	M05-02_161025	N	N	10/25/2016	11:15	1601360	0.00289 J	0.101	0.0252	0.1262	
		EB-M05-02_161025	EB	N	10/25/2016	11:25	1601360	ND	ND	ND	ND	
		FB-M05-02_161025	FB	N	10/25/2016	11:20	1601360	ND	ND	ND	ND	
	M05-03	M05-03_161025	N	N	10/25/2016	12:56	1601360	0.00732 J	0.232	0.302	0.534	
		EB-M05-03_161025	EB	N	10/25/2016	13:05	1601360	ND	ND	ND	ND	
		FB-M05-03_161025	FB	N	10/25/2016	13:00	1601360	ND	ND	ND	ND	
	M05-20	M05-20_161024	N	N	10/24/2016	14:03	1601359	ND	0.0177	0.0126	0.0303	
		DUP05_161024	FD	N	10/24/2016	14:08	1601359	0.00194 J	0.0179	0.0102	0.0281	
	M08-07	M08-07_161025	N	N	10/25/2016	10:23	1601359	1.37	1.71	18.1	19.81	
		EB-M08-07_161025	EB	N	10/25/2016	10:30	1601360	ND	ND	ND	ND	
		FB-M08-07_161025	FB	N	10/25/2016	10:25	1601359	ND	ND	ND	ND	
M10-01	M10-01_161025	N	N	10/25/2016	13:50	1601360	0.0463	2.52	0.732	3.252		
	EB-M10-01_161025	EB	N	10/25/2016	14:00	1601360	ND	ND	ND	ND		
	FB-M10-01_161025	FB	N	10/25/2016	13:55	1601360	ND	ND	ND	ND		

**Alameda BGMP
Analytical Results - PFAS in Groundwater**

								PFBS	PFOA	PFOS	PFOA + PFOS	
								EPA Health Advisory:	380	0.07	0.07	0.07
IR Site	Sample Location	Sample ID	Sample Type	Matrix Spike Collected (Y/N)	Sample Date	Sample Time	SDG	µg/L	µg/L	µg/L	µg/L	
IR Site 6	M06-02	M06-02_161024	N	N	10/24/2016	11:38	1601348	0.00331	0.162	0.0209	0.1829	
		EB-M06-02_161024	EB	N	10/24/2016	11:00	1601348	ND	ND	ND	ND	
		FB-M06-02_161024	FB	N	10/24/2016	11:05	1601348	ND	ND	ND	ND	
	M06-04	M06-04_161024	N	N	10/24/2016	9:44	1601348	ND	ND	0.00616	0.00616	
	S6-MW06	S6-MW06_161024	N	N	10/24/2016	13:00	1601348	0.00596	2.21	0.106	2.316	
		EB-S6-MW06_161024	EB	N	10/24/2016	12:30	1601348	ND	ND	ND	ND	
		FB-S6-MW06_161024	FB	N	10/24/2016	12:35	1601348	ND	0.00079	ND	0.00079	
	S6-MW07	S6-MW-07_161024	N	N	10/24/2016	10:49	1601348	0.00449	1.16	0.0181	1.1781	
		EB-S6-MW-07_161024	EB	N	10/24/2016	9:50	1601348	ND	0.000796	ND	0.000796	
FB-S6-MW-07_161024		FB	N	10/24/2016	10:05	1601348	ND	0.000665	ND	0.000665		
IR Site 14	M14-09D	M14-09D_161031	N	Y	10/31/2016	10:23	1601391	1.2 J	24.6 J	39.2 J	63.8 J	
		DUP06_161031	FD	N	10/31/2016	10:28	1601391	1.19 J	19.5	43.9 J	63.4 J	
		EB-M14-09D_161031	EB	N	10/31/2016	10:38	1601391	ND	ND	ND	ND	
		FB-M14-09D_161031	FB	N	10/31/2016	10:33	1601391	ND	ND	ND	ND	
	M14-09S	M14-09S_161031	N	N	10/31/2016	9:40	1601391	7.87 J	34.3 J	302 J	336.3 J	
		EB-M14-09S_161031	EB	N	10/31/2016	9:50	1601391	ND	ND	0.00312 J	0.00312 J	
		FB-M14-09S_161031	FB	N	10/31/2016	9:45	1601391	ND	0.000676 J	0.00158 J	0.002256 J	
	M14-14	M14-14_161031	N	N	10/31/2016	8:50	1601391	0.214 J	5.56	1.54 J	7.1 J	
		EB-M14-14_161031	EB	N	10/31/2016	9:00	1601391	ND	ND	ND	ND	
		FB-M14-14_161031	FB	N	10/31/2016	8:55	1601391	ND	ND	ND	ND	
	M14-22	M14-22_161031	N	Y	10/31/2016	12:10	1601391	3.04 J	35.2 J	258 J	293.2 J	
		EB-M14-22_161031	EB	N	10/31/2016	12:20	1601391	ND	ND	ND	ND	
		FB-M14-22_161031	FB	N	10/31/2016	12:15	1601391	ND	ND	ND	ND	
	M14-23	M14-23_161031	N	N	10/31/2016	13:03	1601391	1.14 J	23.7 J	42.5 J	66.2 J	
		EB-M14-23_161031	EB	N	10/31/2016	13:10	1601391	ND	ND	0.00311 J	0.00311 J	
		FB-M14-23_161031	FB	N	10/31/2016	13:05	1601391	ND	ND	0.00161 J	0.00161 J	
	M14-24	M14-24_161031	N	N	10/31/2016	13:50	1601391	1.04 J	27.6 J	67.7 J	95.3 J	
		EB-M14-24_161031	EB	N	10/31/2016	14:00	1601391	ND	ND	0.0017 J	0.0017 J	
FB-M14-24_161031		FB	N	10/31/2016	13:55	1601391	ND	ND	0.00161 J	0.00161 J		
IR Site 26	26MW06	26MW06_161101	N	N	11/1/2016	10:10	1601395	ND	ND	ND	ND	
	26MW08	26MW08_161101	N	N	11/1/2016	11:20	1601395	ND	0.0162 J	0.0159 J	0.0321 J	
		DUP07_161101	FD	N	11/1/2016	11:25	1601395	ND	0.0275 J	ND	0.0275 J	
	26SW01	26SW01_161101	N	N	11/1/2016	9:13	1601395	ND	0.0367	0.0283	0.065	
	26SW04	26SW04_161101	N	N	11/1/2016	8:25	1601395	0.0418 J	0.392	0.503	0.895	
		EB-26SW04_161101	EB	N	11/1/2016	8:35	1601395	ND	ND	0.00319 J	0.00319 J	
		FB-26SW04_161101	FB	N	11/1/2016	8:30	1601395	ND	ND	0.0105	0.0105	

**Alameda BGMP
Analytical Results - PFAS in Groundwater**

								PFBS	PFOA	PFOS	PFOA + PFOS
								EPA Health Advisory:			
IR Site	Sample Location	Sample ID	Sample Type	Matrix Spike Collected (Y/N)	Sample Date	Sample Time	SDG	µg/L	µg/L	µg/L	µg/L
N/A	N/A	EB11_161024	EB	N	10/24/2016	14:30	1601348	ND	0.000894	ND	0.000894
		EB12_161025	EB	N	10/25/2016	14:30	1601360	ND	ND	ND	ND
		EB13_161027	EB	N	10/27/2016	14:10	1601380	ND	ND	0.000799 J	0.000799 J
		EB15_161028	EB	N	10/28/2016	14:00	1601381	ND	ND	ND	ND
		EB17_161031	EB	N	10/31/2016	14:15	1601391	ND	0.0201	0.0217	0.0418
		EB18_161101	EB	N	11/1/2016	13:00	1601395	ND	ND	ND	ND
		SB02_161024	SB	N	10/24/2016	10:10	1601348	ND	0.00131	ND	0.00131

Notes:

Bold = analyte detected

Highlight = analyte exceeds screening criteria (HA)

HA = EPA Drinking Water Health Advisory

µg/L = micrograms per liter

PFAS = per- and polyfluoroalkyl substances

PFBS = perfluorobutanesulfonic acid

PFOA = perfluorooctanoic acid

PFOS = perfluorooctanesulfonic acid

SDG = sample delivery group

EB = equipment blank

FB = field blank

SB = source blank

N = normal field sample (sample type)

FD = field duplicate

ND = analyte not detected

J = estimated result

All groundwater sample results validated (samples marked as type N or FD)

PFOA and PFOS screening levels are based on a U.S. EPA Drinking Water Health Advisory for PFOA and PFOS (U.S. EPA, 2016a). The screening value of 0.07 µg/L will also be used as the sum of PFOS and PFOA when they are both present.

Comparison criteria for PFBS is established in the May 2016 United States Regional Screening Level (RSL) for tapwater (U.S. EPA, 2016b).

APPENDIX E
SUMMARY OF AREA-SPECIFIC ENVIRONMENTAL CONDITIONS

**APPENDIX E
SUMMARY OF AREA-SPECIFIC ENVIRONMENTAL
CONDITIONS
SITE MANAGEMENT PLAN
PHASES 1, 2, 3A, AND 3B TRANSFERS
PORTION OF ALAMEDA POINT
ALAMEDA, CALIFORNIA**

Prepared for

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Base Reuse Department
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December 3, 2020

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FIGURE

E-1 SMP Zones

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AST	aboveground storage tank
CAA	Corrective Action Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CoC	Chemical of Concern
DCB	dichlorobenzene
DCE	dichloroethane
DTSC	Department of Toxic Substances Control
DVE	dual-phase vacuum extraction
EDC	Economic Development Conveyance
EISB	enhanced in-situ bioremediation
ESD	Explanation of Significant Difference
FFA	Federal Facility Agreement
FOST	Finding of Suitability to Transfer for Former Naval Air Station Alameda, April 19, 2013
FS	Feasibility Study
GAP	Generator Accumulation Point
HHRA	human health risk assessment
IC	institutional control
IR	Installation Restoration
ISCO	in-situ chemical oxidation
MCL	Maximum Contaminant Level
MNA	monitored natural attenuation
NA	No Action
OPS	Operating Properly and Successfully
OU	Operable Unit
OWS	oil-water separator
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl

PCE	tetrachloroethene
PDDGS	pre-design data gap sampling
RA	Remedial Action
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
Regional Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
RG	Remedial Goal
RI	CERCLA Remedial Investigation Report
ROD	Record of Decision
SI	Site Inspection
SMP	Site Management Plan
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TCRA	Time-Critical Removal Action
Tech memo	technical memorandum
VI	vapor intrusion
VOC	Volatile Organic Compound
Terraphase	Terraphase Engineering Inc.
TPH	total petroleum hydrocarbon
TRW	tarry refinery waste
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
WD	washdown area

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1.0 INTRODUCTION

For purposes of discussing environmental conditions, Alameda Point is subdivided into four zones: Southeast Zone, Northeast Zone, Hangar Zone, and Runways Zone (Figure E-1). Alameda Point is defined as shown on Figure 1 within the Site Management Plan (SMP).

The purpose of the following descriptions of the various sites is to summarize their history, environmental status, and associated potential human health risks. Further information regarding chemical analyses and remedial activities previously implemented at each of the sites is presented in applicable Navy reports, which can be accessed via the EnviroStor and GeoTracker websites.

The following subsections contain four groups of discussions: one for each of the four zones. Within each zone's discussions, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Installation Restoration (IR) sites are discussed first, followed by Petroleum Program sites, including the Economic Development Conveyance (EDC) 12 Areas of Concern (AOCs) and tarry refinery waste (TRW). The summaries for the IR sites and Petroleum Program Corrective Action Areas (CAAs) draw heavily from the previous Navy documents which are available via the EnviroStor and GeoTracker websites.

The IR sites, Petroleum Program sites, AOCs, and TRW area are delineated in Figures 3 and 4 of the SMP.

2.0 SOUTHEAST ZONE

2.1 CERCLA-Specific Conditions in the Southeast Zone

2.1.1 IR Site 9 (OU-2A)

IR Site 9, Building 410 (Paint Stripping Facility), is 2.9 acres located in the southeastern portion of the former NAS Alameda. Two buildings (Buildings 410 and 351), covering approximately 37,000 square feet, are present at IR Site 9. Industrial Wastewater Treatment Plant 410, also known as Structure 588, was located east of Building 351 and treated paint-stripping wastes. IR Site 9 is grouped with Sites 13, 19, 22, and 23 under Operable Unit (OU) 2A.

The OU-2A FS Report (Navy 2011a) concludes that there are no chemicals of concern (CoCs) for soil. Groundwater CoCs identified in the Feasibility Study (FS) Report include volatile organic compounds (VOCs) that exceeded drinking water standards (i.e., maximum contaminant levels [MCLs]). By letter dated August 6, 2012, the Navy provided information to support a qualification of groundwater for an exception to sources of drinking water policy (at the time called a Groundwater Beneficial Use Exception) for Southeast Alameda Point based on several lines of evidence, including proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater. The Regional Water Board staff concurred with the qualification of groundwater for an exception to sources of drinking water policy. As a result of qualification of groundwater for an exception to sources of drinking water policy, MCLs do not apply as cleanup goals. The Operable Unit OU-2A Record of Decision (ROD) (Navy 2012a) documents No Action (NA) for soil and institutional control (ICs) preventing use of groundwater at Site 9.

2.1.2 IR Site 13 (OU-2A)

IR Site 13, the Former Oil Refinery, covers 17.5 acres in the southeastern portion of the former NAS Alameda. IR Site 13 includes Building 397, a 17,400-square-foot aircraft overhaul plant and engine test facility constructed in 1958 and operated by the Naval Air Rework Facility Alameda. A self-storage facility occupies the southeastern corner of the site. The rest of the site is paved or open space. IR Site 13 is grouped with IR Sites 9, 19, 22, and 23 under OU-2A.

The revised OU-2A FS (Navy 2011a) concludes there are no soil CoCs, and benzene and ethylbenzene are groundwater CoCs at Site 13 due to localized vapor intrusion (VI) risk. The OU-2A ROD (Navy 2012a) selects No Further Action (NFA) for soil and in situ bioremediation, with monitored natural attenuation (MNA) and ICs for the localized benzene plume in the southeast corner of Site 13 and an IC restricting use of groundwater for all of Site 13. The Regional Water Board retains its authority to regulate the TRW and/or co-located petroleum in the future at Site 13 due to the high likelihood of nuisance conditions associated with the TRW. TRW is discussed further in Section 4.2 in the SMP.

2.1.3 IR Site 16 (OU-1)

IR Site 16, the C-2 Shipping Container Storage (CANS) Area consists of 11.4 acres located 390 feet east of San Francisco Bay. Eighty percent of IR Site 16 is covered by asphalt, concrete, buildings, roads, and parking lots. Historically, the site was used for industrial-type activities including aircraft parking, aircraft maintenance, material and equipment staging, discarded items storage, automobile servicing and maintenance, and hazardous materials storage. IR Site 16 contains Building 608, former Building 402, and shipping containers known as "CANS" (338A through 338H) in the eastern portion of IR Site 16. The CANS were used to store avionics parts and test equipment, chemicals, and aircraft fabrication equipment. Three sheds associated with Building 608 were used as vehicle service bays. IR Site 16 also includes OWSs 608A and 608B, washdown area (WD) 608, underground storage tank (UST) (removed)-18/Naval Air Station (NAS) Generator Accumulation Point (GAP) 17 (also known as UST 608-1), and aboveground storage tank (AST) 338-A1, AST 338-D4 and AST 608. Site features WD 608, AST 338-A1 and AST 608 were closed as part of the OU-1 IR Sites 6, 7, 8, & 16 ROD (Navy 2012a). Due to possible petroleum contamination, a portion of IR Site 16 is also designated as CAA 09B, which is discussed in Section 2.2.3 herein.

No CoCs were identified in the OU-1 IR Sites 6, 7, 8, & 16 RI report (Navy 2004) for soil under any of the IR Site 16 scenarios based on the human health risk assessment (HHRA). VOCs were identified as CoCs in groundwater under the residential scenario with domestic/municipal beneficial use. The modified ecological risk assessment results did not identify any CoCs for ecological receptors at IR Site 16. The lack of habitat, including nesting and foraging range, makes for minimal likelihood of exposure and hazards to the ecological receptors.

In 1997, a non-time-critical removal action was conducted at IR Site 16 for polychlorinated biphenyls (PCBs) and lead in soil. At the time the OU-1 IR Sites 6, 7, 8, & 16 ROD was finalized in September 2007, the potential for soil contamination beneath and adjacent to oil-water separator (OWS) 608A and OWS 608B and the related potential human health and ecological risk in these locations had not been fully defined. The ROD specified that additional soil sampling, a Pre-Design Data Gap Sampling (PDDGS), should be performed in these areas. The ROD specifies that the Remedial Goals (RGs) for any additional contaminants identified during the PDDGS would be based on the United States Environmental Protection Agency's (USEPA's) 2004 residential Preliminary Remedial Goals. CoCs identified in the ROD are PCBs for soil, and cis-1,2-dichloroethene (DCE), 1,3-dichlorobenzene (DCB), 1,4-DCB, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride for groundwater. Lead, chlordane, dieldrin, heptachlor, and heptachlor epoxide are not identified as soil CoCs in the ROD, but they were added as soil CoCs as a result of the PDDGS and were included in the RD and remedial action (RA). The purpose of the soil RA was to remove soil that exceeded the RGs for lead, chlordane, dieldrin, heptachlor, and heptachlor epoxide.

The RA for soil beneath and adjacent to OWSs 608A and 608B was completed in April 2011. An ESD (Navy 2015a) for soil was submitted in May 2012. The ESD describes further sampling and subsequent risk evaluation of a small section of soil with residual CoCs remaining beneath a functional building (Building 608). The risk evaluation determined that the remaining site soils

meet the Remedial Action Objectives (RAOs) and that the soil remediation is complete. The Final RACR (Navy 2012b) for the soil RA was submitted in July 2012, and USEPA and Department of Toxic Substances and Control (DTSC) indicated their concurrence by signing the RACR on June 25, 2012 and June 30, 2012, respectively.

For IR Site 16 groundwater, the selected RA in the OU-1 IR Sites 6, 7, 8, & 16 ROD called for using in situ chemical oxidation (ISCO), accelerated bioremediation, monitored natural attenuation, and short-term ICs. As reported in the ESD, IR Site 16 groundwater had two treatment areas referred to as IR Site 16 North and IR Site 16 South. ISCO was implemented in May 2010 and groundwater was monitored quarterly for a year. Analytical results indicated significant decreases in CoC concentrations from the baseline; however, 2013 monitoring data indicated that some CoCs remained above RGs in five wells on IR Site 16 North and four wells on IR Site 16 South. While monitoring was ongoing, the regulatory agencies concurred with the Navy's groundwater assessment, which found that groundwater under this portion of Alameda Point met the criteria for exception to California's sources of drinking water policy. As a result, drinking water standards do not apply to groundwater in the area covered under this exception, which includes IR Site 16.

The updated HHRA using post-RA groundwater monitoring data determines that as a result of the full-scale in-situ chemical oxidation (ISCO) remedial action (RA), the remaining CoC concentrations in groundwater do not present unacceptable risk to current receptors (i.e., commercial/industrial). However, there are two areas where CoCs in groundwater may potentially present unacceptable risk (i.e., greater than USEPA point of departure of 10^{-6}) for residential site use, primarily due to potential VI risk. An explanation of significant difference (ESD) for groundwater was prepared in 2015 to document the change in the nature of the ICs remedy from the short-term ICs implemented concurrent with the active groundwater treatment identified in the OU-1 IR Sites 6, 7, 8, & 16 ROD, to permanent ICs to be implemented indefinitely as the final remedy to mitigate potential VI risk. The land use control (LUC) remedial design (RD) identifies the IC implementation areas, IC termination criteria, and groundwater monitoring requirements. The portions of IR Site 16 subject to ICs are in Parcels 75 and 77. All RA is complete, and ICs are included in the deeds prepared for Site 16 at the time of transfer to protect human health from residual groundwater contamination that could pose a risk to future residents. USEPA and DTSC concurred that RA is complete at IR Site 16.

2.1.4 IR Site 19 (OU-2A)

IR Site 19, Yard D-13 (Hazardous Waste Storage), covers 2.7 acres in the southeastern area of the former NAS Alameda. IR Site 19 includes Building 616 and Yard D-13, the only two structures on the site. IR Site 19 is grouped with IR Sites 9, 13, 22, and 23 under OU-2A.

The OU-2A FS Report (Navy 2011a) concludes that there are no CoCs for soil. Groundwater CoCs identified in the FS Report include VOCs that exceeded MCLs. By letter dated August 6, 2012, the Navy provided information to support a qualification of groundwater for an exception to sources of drinking water policy for Southeast Alameda Point based on several lines of evidence,

including proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater. The Regional Water Board staff concurred that the shallow groundwater in the water bearing zones located between ground surface and the Yerba Buena Mud Aquitard meets the criteria in State Board Resolution 88-63 in a letter dated September 13, 2012. As a result of this concurrence, shallow groundwater has been demonstrated to not likely be a potential drinking water source and achieving MCLs is no longer a remedial objective. Direct exposure to groundwater contamination will be addressed by institutional controls. The OU-2A ROD (Navy 2012a) documents NA for soil and ICs preventing use of groundwater at Site 19. In addition, the ROD includes a restriction in appropriate real property transfer documents that prohibits domestic use of shallow groundwater and the installation of groundwater supply wells for any purpose. Regardless of whether RAOs are achieved, these restrictions to shallow groundwater use shall remain in place.

2.1.5 IR Site 22 (OU-2A)

IR Site 22, Building 547 (Former Service Station), covers 2.1 acres in the southeastern area of former NAS Alameda along Main Street (eastern property boundary). IR Site 22 was formerly a gasoline distribution and service station. All buildings associated with the service station (Building 547, 547A, and Structure 547) have been demolished. IR Site 22 is grouped with IR Sites 9, 13, 19, and 23 under OU-2A.

Lead is the only CoC identified in soil at IR Site 22 in the OU-2A RI report (Navy 2005a). No CoCs are identified for groundwater at IR Site 22. Data gaps were identified during preparation of the OU-2A FS (Navy 2011a) for IR Site 22. The draft FS recommends collection of additional data including soil samples beneath OWS 547 to be analyzed for metals, PCBs, pesticides, and VOCs. The data gaps investigation was completed in 2008. The results of the data gaps investigation are reported in the final data gap technical memorandum (tech memo) for OU-2A and -2B, submitted in January 2009. The results of a supplemental data gaps investigation were reported in 2010. The revised FS report was submitted in June 2011.

The OU-2A ROD (Navy 2012a) documents NA for soil and groundwater at Site 22.

2.1.6 IR Site 23 (OU-2A)

IR Site 23, Building 530 (Missile Rework Operations), covers 14.3 acres in the southeastern area of former NAS Alameda along the eastern property boundary. Building 530 is the main structure at IR Site 23, along with Buildings 529 and 600. The eastern one-third of IR Site 23 is used currently as a self-storage facility. Site 23 is grouped with IR Sites 9, 13, 19, and 22 under OU-2A.

Arsenic and TRW (lead, PAHs, and benzene) are identified as CoCs in soil. No CoCs are identified for groundwater at IR Site 23.

Data gaps were identified during preparation of the OU-2A FS for IR Site 23. The FS (Navy 2011a) recommends collection of additional data, including samples of groundwater near GAP 64 for analysis of VOCs. In addition, the FS recommended collecting samples of soil beneath OWSs 529 and 530 to be analyzed for metals, PCBs, pesticides, and VOCs. The data gaps investigation was

completed in 2008. The results of the data gaps investigation are reported in the final data gap tech memo (Navy 2009a) for OU-2A and -2B, submitted in January 2009. The FS report was submitted in June 2011.

The OU-2A ROD (Navy 2012a) documents NA for soil and groundwater at Site 23. The Regional Water Board retains its authority to regulate the TRW and/or co-located petroleum in the future at Site 23. TRW is discussed further in Section 4.2 of the SMP.

2.1.7 IR Site 27 (OU-6)

IR Site 27, the Dock Zone, covers 15.8 acres. IR Site 27 is located adjacent to the Seaplane Lagoon (Figures 3 and 4 of the SMP). IR Site 27 is mostly paved or covered by buildings. The site includes Buildings 68, 168, 555, and 601; Ferry Point Road and West Oriskany Avenue; inactive railroad tracks and sidings; and fenced open space between Building 168 and Ferry Point Road.

Historical activities at IR Site 27 include ship docking, ship repair, and marine painting. The eastern portion of IR Site 27 was used for storing materials and equipment, as well as vehicle parking. Building 168 was used as a warehouse and to support waterfront services, including welding activities. Building 555 was used as an electrical substation. Historically, open space at IR Site 27 was used as an aircraft parking area. The southern portion of a former fuel farm area is located in the northwestern portion of IR Site 27.

No CoCs are identified for soil at IR Site 27. Chlorinated VOCs, including vinyl chloride, TCE, and PCE, are identified as CoCs in groundwater.

The ROD (Navy 2008a) selects NA for soil and ISCO, MNA, and ICs for groundwater in the central and eastern portion of IR Site 27. Sampling was conducted to support the design of the selected remedy. The IR Site 27 Remedial Design/RA Work Plan (RD/Remedial Action Work Plan (RAWP); Navy 2009b) was submitted in June 2009. RA began in July 2009 with ISCO completed and MNA currently ongoing. A Technology Transfer Tech Memo (Navy 2010a) documents the Remedy-In-Place for IR Site 27. Evaluation of continuing groundwater monitoring is guiding the ongoing RA. Based on the documented RA progress, USEPA has determined that the remedy is operating properly and successfully (OPS).

2.2 Petroleum Program-Specific Conditions in the Southeast Zone

The open petroleum sites are shown on Figure 4 of the SMP and summarized in Table 1 of the SMP.

The discussions below summarize conditions at some of the larger Petroleum Program sites in the Southeast Zone. The applicable background documents, which can be accessed via the EnviroStor and GeoTracker websites, provide more detailed summaries than the discussions below, as well as summaries for Petroleum Program sites that are not discussed below.

2.2.1 CAA-4B

CAA-4B consists of the area around Building 372 that was used as an engine test facility. It includes USTs 372-1 and 372-2 (and an associated fuel spill called AOC 372 or Solid Waste Management Unit [SWMU] 372.) Both tanks were removed in 1995. It also includes former fuel oil AST 372, removed some time prior to 2002. These tanks, and the majority of the site, are not within the parcels transferred to the City.

The site also includes USTs 616-1 and 616-2 (sometimes collectively called AOC 616.) These tanks were for emergency spill control, but reportedly were never used and never held anything but water. They are closed-in-place and are within the small portion of this site that is within the parcels transferred to the City.

2.2.2 CAA-9A

The site consists of the area around Building 584, which was used for storage of corrosives, lubricating oils, and water treatment chemicals. It includes USTs 584-1 and 584-2, both removed in 1994.

2.2.3 CAA-9B

This site consists of the area around Building 608 that was used as an automobile service and repair facility. A waste oil UST (UST 608-1) and two OWSs (OWS 608A and 608B), within the site footprint, were assigned to IR Site 16, which overlaps the CAA (Section 2.1.3 herein). The OWSs were removed in 2010 under the CERCLA action for OU-1 Site 16. No tanks or other Resource Conservation and Recovery Act (RCRA) Units are associated with CAA-09B. The CAA was closed along with IR Site 16 through the OU-1 IR Site 16 ROD ESD (Navy 2015a).

2.2.4 CAA-11A

The site consists of the area around Building 14, which was used as an aircraft engine test and repair facility. The site includes USTs 14-1 through 14-6, sometimes referred to as UST(R)-06, which were removed in 1994, and former OWS 162. Only a small portion of the site, and none of the above-listed features, is within the parcels transferred to the City.

2.2.5 CAA-11B

The site consists of the area designated Area 37, a fuel storage area. Area 37 includes Structure 598 (also sometimes called HW-04) that was a secondary containment area for ASTs 598A through 598C. These ASTs were removed in 2004 and all are within the Finding of Suitability to Transfer for Former Naval Air Station Alameda, April 19, 2013 (FOST) Parcel. Area 37 also includes USTs 37-1 through 37-24, sometimes collectively referred to as UST(R)-07, which were removed between 1995 and 1998. A majority of the CAA and 18 of the 24 USTs are within the parcels transferred to the City.

2.2.6 CAA-13

The site consists of the area around Building 397, which was a jet engine testing facility; Building 406A, which contained control equipment for a defueling facility; Building 529, which supplied auxiliary power for Building 530; and Building 606, an administration building. The site includes former ASTs 530A through 530C, and closed-in-place OWSs 529 and 530. Free product was noted during sampling activities around the defueling facilities, sometimes referred to as Defueling Area 530. The site also includes former OWSs 397A through 397D, and a 3,500- to 17,000-gallon jet fuel spill circa 1991 when heavy rains caused these four OWSs to overflow, and a drain valve left open on a fuel supply line allowed the release of jet fuel. Dual-vacuum extraction (DVE) and biosparging systems were operated from 2003 until 2006. TRW occurs only within one area of CAA-13 (Parcels 65 and 66). Most of the site, and all the above-listed associated features, are within the parcels transferred to the City.

2.2.7 IR 09

Free product at IR 09 is being addressed under the Petroleum Program, referred to in the Petroleum Management Plan as IR SITE 09-FP1/2. The entire site is within the parcels transferred to the City.

2.2.8 Tarry Refinery Waste (TRW)

The former Pacific Coast Oil Works Refinery operated from 1879 to 1903 in the area that is now IR Site 13 and CAA-13. The TRW reported in subsurface soil at some locations in IR Sites 13 and 23 is believed to have originated during the operation of the Pacific Coast Oil Works Refinery. TRW is believed to have been disposed on the surface near the former shoreline during refinery operations. The evaluation of the nature and extent of contamination in soil summarized in the OU-2A RI report (Navy 2005a) concludes that most chemicals reported at IR Site 13 are consistent with historical site activities, which include the former oil refinery and the aircraft storage, overhaul, and defueling area. The TRW appears to be mainly comprised of solid long chain alkanes with a very low volatile fraction and mainly occurs at depth and below the water table, although surface manifestation of this asphalt-like refining residue has been observed at several locations within IR Site 13. TRW underlies most of Parcels ALA-65-EDC and ALA-66-EDC, which are shown on Figure E-1.

TRW remains an open Petroleum Program site within CAA-13. Additional characterization and risk assessment activities are currently ongoing in accordance with the Regional Water Board letter, *Revised Water Code Section 13267 Technical Report Requirements Order, Tarry Refinery Waste, Alameda Point, Alameda*, dated November 8, 2018. TRW and soil impacted by TRW may not be reused at Alameda Point, unless prior approval by the Regional Water Board staff is obtained.

City zoning and land-use plans do not allow residential land use in the TRW area. The City will deny all requests to change the land use to residential or to operate a day-care facility or other sensitive land use, unless Regional Water Board staff approval is first obtained.

The deeds for the two transfer parcels that have TRW contain the following notification that all intrusive work must be conducted pursuant to an SMP:

"The Property has not been remediated to the satisfaction of the Regional Water Quality Control Board ("Water Board") or has not been investigated to the satisfaction of the Water Board to determine whether corrective action is appropriate. Accordingly, the Property has not received Regulatory Closure and may contain petroleum concentrations in soil and/or groundwater that may present an unacceptable risk to human health. ... Any work conducted by the GRANTEE or its agent(s) on the Property that involves construction, soil excavation or grading, trenching or groundwater contact shall be conducted pursuant to a site management plan that is acceptable to the [Regional] Water Board, and in accordance with the City Program."

3.0 NORTHEAST ZONE

3.1 CERCLA-Specific Conditions in the Northeast Zone

3.1.1 IR Site 3 (OU-2B)

IR Site 3, Abandoned Fuel Storage Area, is an approximately 12.8-acre site located near the eastern entrance to Alameda Point. IR Site 3 is known as the Abandoned Fuel Storage Area because between the 1940s and 1970s, aviation gasoline was stored there in USTs. Nearly 80 percent of the site is covered with asphalt and concrete in the form of buildings, roads, and parking lots. IR Site 3 is grouped with IR Sites 4, 11, and 21 under OU-2B. Portions of the Petroleum Program CAAs 3A, 3B, and 3C are located within IR Site 3 to the south of Buildings 112 and 527. There are several former SWMUs that are within the footprint of IR Site 3. Only one of these former SWMUs, NAS GAP 10, is addressed under CERCLA as part of IR Site 3. The remaining SWMUs within the IR Site 3 portion of the FOST Parcel (Naval Aviation Depot Gaps 44 and 45, M-07, and AOC 398) are addressed as part of the Petroleum Program. The Petroleum Program sites located within the IR Site 3 portion of the FOST Parcel are discussed Section 3.2.1 herein.

The 2015 OU-2B ROD (Navy 2015b) identifies CoCs for IR Site 3 soils as cobalt and lead. Cobalt is present in one localized area at concentrations that exceed residential cleanup goals. This area was originally in IR Site 21, (an IR site adjacent to IR Site 3); however, after the CERCLA OU-2B FS (Navy 2011b) the boundary of IR Site 3 was modified to include this area. The remedy for cobalt impacted soil at IR Site 3 is ICs to restrict residential use. The ROD identifies two areas within IR Site 3 with lead concentrations in soil that required remedial action. The selected remedy for lead-impacted soil was excavation with off-site disposal of the contaminated soil. The soil removal from the two areas has been completed, and the excavated areas were backfilled with fill suitable for reuse and returned to original grade.

The OU-2B Soil Remedial Action Completion Report (RACR) (Navy 2015c) documents the areas within IR Site 3 where lead-impacted soil was removed and documents completion of the remedial action for soil. The USEPA submitted a letter concurring with the RACR for OU-2B Soil.

By letter dated August 6, 2012, the Navy provided information demonstrating that groundwater in the southeast portion of the base, including all of IR Site 3, meets State Water Board Resolution No. 88-63 and Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," exception criteria (a) and (c). Information presented included proximity to San Francisco Bay and potential for salt water intrusion, high salinity, current county restrictions on well installation in shallow groundwater, and potential for surface runoff to contaminate groundwater. The regulatory agencies concurred with the Navy's assessment. Therefore, it is unlikely that shallow groundwater will be used as a municipal water supply.

The 2015 OU-2B ROD selects a groundwater remedy for a VOC groundwater plume that underlies portions of IR Sites 4, 11, and 21. While the OU-2B shallow VOC groundwater plume

does not extend into IR Site 3, the remedy includes ICs with a buffer zone that extends beyond the perimeter boundary of the plume and onto a portion of IR Site 3.

The OU-2B ROD identifies the Area Requiring Institutional Controls and documents the ICs necessary to protect human health and attain the Remedial Action Objectives (RAOs) for soil and groundwater. The LUC RD (Navy 2015d) for OU-2B documents the restrictions related to the ICs for soil at IR Site 3 and ICs for OU-2B groundwater. The LUC RD refines the IC boundaries presented in the ROD for groundwater based on evaluation of recent data.

Soil remediation is complete, and ICs have been implemented to protect human health from residual contamination in soil and adjacent groundwater.

3.1.2 IR Site 7 (OU-1)

IR Site 7, the Navy Exchange Service Station, occupies 3.9 acres on the eastern boundary of former NAS Alameda, adjacent to Main Street. IR Site 7 consists of buildings and structures that cover about 30 percent of the site, while the remainder of the site is open space covered with asphalt, concrete, and some unpaved areas. IR Site 7 is grouped with IR Sites 6, 8, 14, 15, and 16 under OU-1.

Historical uses at IR Site 7 include an automotive repair and servicing facility and an incinerator (former Building 68-3) surrounded by grassy open space. The OU-1 IR Sites 6, 7, 8, & 16 RI report (Navy 2004) identifies CoCs (arsenic, cadmium, and lead) in the soil at IR Site 7 that required RA. No CoCs are identified for groundwater at IR Site 7; therefore, NA is identified for groundwater. The Final OU-1 IR Sites 6, 7, 8, & 16 FS (Navy 2005b) was completed in 2005. Pre-design data gaps sampling was conducted in 2007 and 2008 to optimize the remedial design. The OU-1 IR Sites 6, 7, 8, & 16 ROD (Navy 2012a) selects the RA of soil excavation and off-site disposal, which was conducted from November 2009 to January 2011.

The RACR (Navy 2013) documents that the implemented remedy met RGs and RAOs for unrestricted use.

3.1.3 IR Site 8 (OU-1)

IR Site 8, Building 114 (Pesticide Storage Area), covers 4.3 acres in the central portion of former NAS Alameda and includes Building 191, Building 391, and sewage pumping station 10. Eighty percent of IR Site 8 is covered by asphalt, concrete, buildings, roads, and parking lots. Building 191 was used as storage for the Public Works Department, and Building 391 was used to store paints, degreasers, petroleum products, and hazardous waste. IR Site 8 is grouped with IR Sites 6, 7, 14, 15, and 16 under OU-1.

The OU-1 IR Sites 6, 7, 8, & 16 RI report (Navy 2004) identifies CoCs (lead, dieldrin, Aroclor-1254, Aroclor-1260, and total PCBs) in soil at IR Site 8 that required RA. No CoCs are identified for groundwater.

The OU-1 IR Sites 6, 7, 8, & 16 FS report (Navy 2005b) was completed in 2005. Pre-design data gaps sampling was conducted in 2007 and 2008 to optimize the remedial design. The OU-1 IR

Sites 6, 7, 8, & 16 ROD (Navy 2012a) selects the RA of soil excavation and off-site disposal, which was conducted from November 2009 to July 2010.

The RACR (Navy 2013) documents that the implemented remedy met RGs/RAOs for unrestricted use. USEPA approved the Final RACR in July 2012.

3.1.4 IR Site 28 (OU-6)

IR Site 28, Todd Shipyards, covers 2.9 acres along Oakland Inner Harbor. The IR Site 28 ROD (Navy 2007a) was signed in October 2007 and includes soil excavation and disposal and groundwater metals immobilization. The ROD identifies arsenic, lead, and PAHs in soil and copper in both soil and groundwater as CoCs. The RA was completed in June 2010.

The Site 28 Interim-RACR (I-RACR; Navy 2012c) documents that all necessary soil RAs have been conducted to achieve the RAOs for soil and that the soil remedy is complete. The I-RACR also documents successful implementation of the groundwater remedy, which consisted of removing and disposing of source-area soil, applying and injecting metals immobilization compound, and follow-on groundwater monitoring. Evaluation of continued groundwater monitoring is guiding the ongoing RA. Based on the progress documented in the I-RACR, USEPA has determined that the remedy is OPS.

3.1.5 IR Site 35

IR Site 35 is composed of 23 study areas, known as AOCs. In 1995 and 1997, a Time Critical Removal Action (TCRA) for storm sewer sediment removal was completed by the Navy. A portion of this work occurred within IR Site 35. In 2001, a non-Time Critical Removal Action was conducted in AOC 12 to remove lead-containing soil. In 2002, a TCRA was conducted for soil with reported benzo(a)pyrene (B(a)P) equivalent concentrations that exceeded 1.0 milligrams per kilogram (mg/kg) in the top two feet of soil in the West Housing Area (IR Site 35 AOCs 4, 5, 7, 9, 13, and 14). In 2002 a TCRA was conducted at Building 195 to remove a pesticide/fertilizer shed in AOC 8. These interim actions are documented in the IR Site 35 ROD (Navy 2010b) as being protective of unrestricted site use.

A Final IR Site 35 RI/FS Report (Navy 2007b) was prepared in April 2007. Based on the findings of the RI portion of the report, eight AOCs are identified for soil action and NA for groundwater. AOCs 19 and 22 were removed from Site 35 and included within IR Site 6 and CAA-B, respectively, prior to completion of the Final RI/FS. The IR Site 35 ROD documents NA for groundwater, NFA for AOCs 14, 15, 16, and RA for soil in AOCs 3, 10, and 12. The ROD identifies heptachlor at AOC 3 and lead at AOCs 10 and 12 as soil CoCs. The RA included soil excavation and offsite disposal followed by site restoration.

The RACR (Navy 2012d) documents that the implemented remedy met RGs/RAOs for unrestricted use. USEPA concurred with the Site 35 RACR and with site closure.

3.2 Petroleum-Specific Conditions in the Northeast Zone

The open petroleum sites are shown on Figure 4 of the SMP and summarized in Table 1 of the SMP.

The discussions below summarize conditions at some of the larger Petroleum Program sites in the Northeast Zone. The applicable Navy and regulatory documents, which can be accessed via the EnviroStor and GeoTracker websites, provide more detailed summaries than the discussions below, as well as summaries for Petroleum Program sites that are not discussed below.

3.2.1 CAA-3

This 9-acre site overlaps IR Site 3. The site was subdivided into CAA-3A, CAA-3B, and CAA-3C. Historic activities at CAA-3A, CAA-3B and CAA-3C resulted in the release of aviation fuel to soil and groundwater. The Navy has performed investigations and completed substantial corrective-action at CAAs-3A, -3B, and -3C; these efforts have cleaned up the vast majority of the petroleum contamination. USTs 398-1 and 398-2, which are included in CAA-3A, were closed with a NFA letter from the Water Board dated October 13, 2014; other components of CAA-3A are being investigated or are under review for closure. UST 97-C, which is part of CAA-03C, was closed with a NFA letter from the Water Board dated April 21, 2015. Residual contamination at CAA-3B and -3C requires further investigation and possibly corrective action prior to requesting closure.

3.2.2 CAA-7

The site consists of the area around Building 459 that was used as an automobile service station, and Building 506 that was used for maintenance and miscellaneous equipment storage. It includes USTs 459-1 through -8 (sometimes collectively called UST RCRA Unit [UST(R)]-16, and UST 459-7 is sometimes referred to as NAS GAP 16) and UST 506-1, all removed in the mid- to late-1990s. CAA-7 generally coincides with IR Site 7, which is discussed in Section 3.1.2 herein.

4.0 HANGAR ZONE

4.1 CERCLA-Specific Conditions in the Hangar Zone

4.1.1 IR Site 26 (OU-6)

IR Site 26, the former Western Hangar Zone, is located in the center of former NAS Alameda. IR Site 26 is covered by pavement, four aircraft hangars (Buildings 20 through 23), a painting and finishing building (Building 24), and several ancillary buildings.

No CoCs are identified for soil at IR Site 26. CoCs identified for groundwater are cis-1,2-DCE, TCE, and vinyl chloride. The final IR Site 26 ROD (Navy 2006a) documents NFA for soil and ISCO, enhanced in-situ bioremediation (EISB), MNA, and ICs for groundwater. The Final RD/RAWP (Navy 2008b) for groundwater was submitted in October 2008.

Full-scale ISCO was performed between July 2008 and February 2009. EISB was performed between October 1, 2008 and November 5, 2008. Evaluation of continuing groundwater monitoring is guiding the ongoing RA. Based on the documented RA progress, USEPA has determined that the remedy is OPS.

4.2 Petroleum-Specific Conditions in the Hangar Zone

The open petroleum sites are shown on Figure 4 of the SMP and summarized in Table 1 of the SMP.

The discussions below summarize conditions at some of the larger Petroleum Program sites in the Hangar Zone. The applicable Navy and regulatory documents, which can be accessed via the EnviroStor and GeoTracker websites, provide more detailed summaries than the discussions below, as well as summaries for Petroleum Program sites that are not discussed below.

4.2.1 CAA-6

The site consists of the area around Building 373 that was used as a fuel-loading station. It includes USTs 373-1 and 373-2 (sometimes collectively called AOC 373) and OWS 373, all removed in 1998-1999, and a solvent storage area known as GAP 37. DVE and biosparging systems were installed and operated between 2002 and 2005. A small portion of the CAA, but none of the above listed associated features, is within the Site.

4.2.2 CAA-10

The site consists of the area around Building 19 that was a control tower, photographic processing operations area, and fire/rescue station; and Building 491 that housed an emergency generator. It includes UST 491-1 (sometimes referred to as AOC 491) and ASTs 019A through 019C. The entire CAA is within the parcels transferred to the City. The tanks at the site are closed with ICs, and CAA-10 was closed without additional restrictions.

4.2.3 CAA-12

The site consists of the area around Building 29, which was an aircraft weapons overhaul and testing facility; Building 38, which served as an acoustical enclosure for aircraft engines; and Facilities 461A, B, and C, which served as aircraft run-up areas. The site includes former ASTs 029 and 038 and former OWS 038. The majority of the CAA and all the above-listed associated features, except OWS 038 are within the parcels transferred to the City. CAA-12, and CAA-12N were closed without restriction and CAA-12S was closed with conditions/requirements.

4.2.4 CAA-B

The site consists of the area around three east-west, parallel fuel lines (FLs) used to transport jet fuel, with multiple crossing FLs (about 22,500 feet) that link a series of fueling pits. The FLs were abandoned in place in 1998. A substantial portion of the CAA is within the parcels transferred to the City. The extent of petroleum hydrocarbons, including polycyclic aromatic hydrocarbons (PAHs) in soil and PAHs and lead in groundwater, has not been fully assessed in portions of CAA-B South, and further investigation and monitoring activities are required for this area prior to site closure.

4.2.5 CAA-C

The site consists of the area around Hanger 23, which was used for aircraft parking, maintenance, and fueling activities. The FLs were closed in place. DVE and air sparging systems operated in 2008 and 2009. Post-remediation monitoring is ongoing. The majority of the CAA is within the parcels transferred to the City. The Regional Water Board closed CAA C, with no restrictions on land use, in a letter dated October 19, 2015.

5.0 RUNWAY ZONE

5.1 CERCLA-Specific Conditions in the Runway Zone

5.1.1 IR Site 14 (OU-1)

IR Site 14, Former Fire Training Area, covers 14.2 acres along Oakland Inner Harbor. IR Site 14 is partially paved and relatively flat, and includes five buildings (26, 120, 121, 122, and 388) and open space. Historical use at IR Site 14 includes airfield-related materials and equipment storage, and firefighter training in the northwestern portion of the site. The buildings at IR Site 14 are currently unoccupied. Site 14 is grouped with IR Sites 6, 7, 8, 15, and 16 within OU-1.

CERCLA investigations were conducted in 1991, with follow-on investigations in 1994 and 1998, data gap sampling in 1998, supplemental RI data gap sampling in 2001, and removal of soil containing dioxins in 2001.

The IR Site 14 ROD (Navy 2007c) documents NFA for soil and selects ISCO, monitoring, and temporary ICs for groundwater. The ROD identifies vinyl chloride in groundwater as a CoC. Data gaps were identified and further investigations were conducted in March and April 2007, including a pilot test on a portion of the groundwater plume, to optimize the remedial design. The groundwater RA began in September 2008. A Technology Transition Tech Memo (Navy 2010c) was submitted to the agencies in December 2010 and presents the findings of the post-ISCO monitoring, as well as support to transition to MNA. The MNA work plan (Navy 2011c) was completed as an addendum to the RAWP (Navy 2008c). Groundwater monitoring will continue until RAOs are achieved. Based on progress of the RA, USEPA determined that the remedy is OPS.

5.1.2 IR Site 15 (OU-1)

IR Site 15, the Former Transformer Storage Area, consists of 5.8 unpaved acres in the northwestern portion of former NAS Alameda, adjacent to the Oakland Inner Harbor. IR Site 15 includes Building 27 and former Buildings 283, 301, and 389, constructed by the Navy in the 1950s. IR Site 15 was used primarily to store petroleum products, biocides, electrical equipment, including oil-filled transformers and machinery. IR Site 15 and is grouped with IR Sites 6, 7, 8, 14, and 16 within OU-1.

An OU-1 IR Sites 14 & 15 CERCLA Remedial Investigation (RI) Report (Navy 2003) was prepared in 2003. In 2005, soil samples were collected at IR Site 15 for further PAH analysis, because detection limits for historical PAH data were elevated. The average PAH concentration in soil, expressed as benzo(a)pyrene (B[a]P) equivalents, was below the screening level of 0.62 mg/kg.

In October 2005, the Navy distributed the Proposed Plan (Navy 2005c) for IR Site 15, which includes a recommendation for NFA for soil and NA for groundwater. The Navy prepared an IR Site 15 ROD (Navy 2006b) documenting the decision of NFA for soil and NA for groundwater.

The ROD identifies no CoCs in either soil or groundwater. The final ROD was signed with regulatory concurrence in June 2006. IR Site 15 is closed.

5.1.3 IR Site 34

IR Site 34, Naval Air Rework Facility, is a 4.18-acre is a partially paved, relatively flat open space, which is not part of an OU. IR Site 34 was used to maintain base equipment, such as scaffolding and other apparatus. The site was used primarily for painting services, storage, wood and metal shops, and sandblasting. IR Site 34 formerly contained several structures: 12 former buildings and intervening open areas; seven ASTs; NADEP GAPs 78 and 79; UST 473-1, and 15 transformers. Two former SWMUs, UST 473-1 (also known as AOC 473), and AST 331 (also known as SWMU 331), were addressed under the Petroleum Program along with all of the ASTs. CAA-14 is also located within the footprint of IR Site 34 and was closed out with AST 331. The Petroleum Program is discussed in Section 5.2 herein.

The remaining two former SWMUs (NADEP GAPs 78 and 79) were investigated as part of IR Site 34. All buildings, ASTs, GAPs, and transformers were removed between 1996 and 2000, except for their concrete pads. Figure 4 of the SMP shows the locations of the CAA, ASTs, the UST, and the fuel line. The southwestern 0.22-acre corner of IR Site 34 was transferred by the Navy to the Department of Veterans Affairs who will retain it in perpetuity, and is not part of the parcels transferred to the City.

Arsenic, lead, 1,4 DCB, dieldrin, heptachlor epoxide, total PCBs and TPH were identified as CoCs in soil. The IR Site 34 ROD (Navy 2011d) was issued in April 2011. The RA selected was excavation and off-site disposal of chemically impacted soil. Groundwater at Site 34 is not considered a potential source of drinking water, accordingly, drinking water standards do not apply. Chemicals in groundwater were evaluated for potential VI and impacts to surface water in the Oakland Inner Harbor. Groundwater was determined not to pose a potential risk to human health or the environment, so no further action is necessary for groundwater. The no further action decision for groundwater is documented in the 2011 ROD.

The RA for soil was conducted between May and June 2013, and the Final RACR (Navy 2014) was completed in February 2014. USEPA concurred with the Final RACR by letter dated March 4, 2014. DTSC concurred with the Final RACR by letter dated March 19, 2014. There are no CERCLA restrictions with respect to IR Site 34 soil and groundwater.

5.2 Petroleum Program-Specific Conditions in the Runway Zone

The open petroleum sites are shown on Figure 4 of the SMP and summarized in Table 1 of the SMP.

The discussions below summarize conditions at some of the larger Petroleum Program sites in the Runway Zone. The applicable Navy and regulatory agency documents, which can be

accessed via the EnviroStor and GeoTracker websites, provide more details than the discussions below, as well as documentation for Petroleum Program sites that are not discussed below.

5.2.1 CAA-2

The site consists of the area around UST 357 FS-1, sometimes also referred to as AOC 357 or UST 357-1. The tank was removed in 1995 and the site received closure concurrence with ICs in 2011.

5.2.2 CAA-14

The site consists of the area around Building 331 that was used as a woodworking facility and offices; it is located within IR Site 34. CAA-14 includes AST 331, also referred to as former SWMU 331. The Water Board concurred with NFA for AST 331 by letter dated March 20, 2013. CAA-14 coincides with RA Area 13 in IR Site 34. RA Area 13, including co-located petroleum contaminants, was remediated during the IR Site 34 RA as part of the CERCLA Program. IR Site 34 was certified by DTSC as having all appropriate response action completed and no further removal or RAs necessary. Therefore, all remediation work at CAA-14 has been completed, and it was closed when AST 331 was closed.

5.2.3 CAA-A

The site consists of the area around two parallel, 10-inch fuel lines used to transport jet fuel. The site was closed with concurrence in 2007 without restrictions. Although the site closure summary assumed the future land use likely would be recreational, soil and groundwater data were compared to residential criteria. The site closure summary states "With only a few isolated exceptions [all in "before" cleanup samples], the concentrations of all detected contaminants were below the applicable PRC [residential]." Preliminary Remediation Criteria (PRCs) were Alameda Point-specific screening levels that the Regional Water Board formerly used at Alameda Point Petroleum Program sites. Portions of CAA-A are both within and adjacent to IR Site 34.

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FIGURE

APPENDIX F
DTSC INFORMATION ADVISORY - CLEAN IMPORTED FILL MATERIAL

Information Advisory

Clean Imported Fill Material



October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:

Target Compounds

Land near to an existing freeway

Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)

Land near a mining area or rock quarry

Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH

Agricultural land

Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)

Residential/acceptable commercial land

VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area

2 acres or less

2 to 4 acres

4 to 10 acres

Greater than 10 acres

Sampling Requirements

Minimum of 4 samples

Minimum of 1 sample every 1/2 acre

Minimum of 8 samples

Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile

Up to 1,000 cubic yards

1,000 to 5,000 cubic yards

Greater than 5,000 cubic yards

Samples per Volume

1 sample per 250 cubic yards

4 samples for first 1000 cubic yards + 1 sample per each additional 500 cubic yards

12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

materials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAHs from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Collman, Ph.D., R.G., at (818) 551 2175.

APPENDIX G
REGIONAL WATER BOARD FACT SHEET: DEVELOPMENT ON
PROPERTIES WITH A VAPOR INTRUSION THREAT - JULY 2019



San Francisco Bay Regional Water Quality Control Board

Fact Sheet: Development on Properties with a Vapor Intrusion Threat – July 2019

The San Francisco Bay Regional Water Board (Regional Water Board) oversees an increasing number of cleanups at properties where volatile organic compounds (VOCs) are present in soil vapor and development is occurring. These VOCs can pose a health threat to building occupants if they migrate into buildings through vapor intrusion (VI). We will continue to require site cleanup where threats to human health or the environment exist. However, we recognize that achieving cleanup standards may take years given currently available remedial technologies, and therefore interim protective measures may be needed. Typically, VI mitigation systems (VIMS) are installed in the interim to mitigate VI threats. VIMS are not a substitute for cleanup. Operation, maintenance, and monitoring (OM&M) and agency oversight are typically warranted to ensure effectiveness. The Regional Water Board's approach to regulating VIMS has evolved since the 2014 release of our *Framework for Assessment of Vapor Intrusion at TCE-Contaminated Sites in the San Francisco Bay Region* (VI Framework). This fact sheet is intended to provide developers, cities, homeowners associations, and the public a summary of expectations for development at sites where VI may pose a threat.

Types of VIMS

Traditional VIMS for the soil vapor intrusion pathway can be divided into two main categories: Subslab Depressurization Systems (SSDS) and Vented VIMS. SSDS rely on active electromechanical means to divert subslab vapors and generate a constant negative pressure beneath a building's slab foundation to prevent contaminated vapors from migrating up into the building. Vented VIMS rely on passive or active mechanisms (e.g., thermal gradients, wind driven ventilation, or powered fans) to dilute vapors beneath the building and vent them into the outdoor air.

Updated Approach to VIMS

In the 2014 VI Framework, the Regional Water Board expressed a preference for passive venting systems, which have fewer moving parts and potentially require less maintenance, and we typically did not require monitoring after occupancy. Since 2014, our concerns about long-term effectiveness of VIMS have increased due to awareness of failures and limited monitoring at buildings with VIMS. We now prefer SSDS for slab on grade design because they provide greater protection and allow for simpler monitoring.

In 2019, the Regional Water Board also updated our approach to VI assessment by providing more stringent soil gas and groundwater VI Environmental Screening Levels (ESLs) based on empirical attenuation factors rather than those determined using the Johnson and Ettinger VI model. We also updated the ESL guidance to recommend verification of VI model predictions and evaluation of the sewer/utility conduit air pathway. See the [ESL Webpage](#) for more information.

Evaluating Effectiveness

For vented VIMS, ongoing monitoring of contaminant concentrations (subslab and/or indoor air) is needed to demonstrate effectiveness. Long-term monitoring of indoor air can be problematic because it requires access permission, is intrusive to occupants, and data interpretation can be challenging due to confounding factors from indoor and outdoor sources of VOCs. For SSDS, the measurement of cross-slab vapor pressure differential can be used to monitor if subsurface vapors are migrating into the building. Pressure differential monitoring can provide real-time, continuous readings more cost effectively than indoor air monitoring. This reduces the need for long-term indoor air monitoring except as a contingency measure.

Evaluating Operational Lifetime

The Regional Water Board encourages active cleanup to reduce or eliminate the ongoing need for VIMS. Therefore, the operational lifetime of the VIMS is related to the cleanup timeframe and may be years to decades until the VI threat is abated. OM&M and Regional Water Board oversight are needed for the entire duration to ensure

protectiveness. The operational lifetime of the VIMS will depend on site-specific data on the VI threat. An estimate of the operational lifetime should be included in the VIMS plans. The operational lifetime of the VIMS should be reevaluated as part of long-term monitoring reports and 5-year reviews conducted under our oversight. Soil vapor monitoring near the source of pollution where the VIMS is installed provides the best evidence to evaluate the VI threat and evaluate when VIMS are no longer needed. VIMS operation can be discontinued when we determine that the VI threat has ceased.

Regional Water Board Oversight

For cases under Regional Water Board oversight, we should be informed early in the development planning process of VI issues and the need for VIMS. When we concur that VIMS are necessary, we will typically need to review the documents summarized in Table 1, below. All documents should be prepared under the direction of an appropriately licensed professional. In addition, some documents will also require approval by local agencies including, but not limited to; the local building department, local environmental health agency, air quality agency, and local water agency. Local building departments routinely rely on regulatory oversight agency concurrence with milestone documents before granting building permits or approving occupancy.

Table 1. Documents Needed for a VIMS

Document Title	Milestone
VIMS Plan(s) – Including VIMS design, OM&M, contingency plans, and financial assurance.	Pre-construction
VIMS Construction Completion Report – Including as-built drawings	Post-construction and pre-occupancy
Long-Term Monitoring Reports	Ongoing post-construction
Five-Year Review Reports	Every five years post-construction

Financial Assurance

Financial assurance is typically required to ensure sufficient funds are available to operate, maintain, and monitor the VIMS, and pay regulatory oversight cost recovery for the anticipated operational lifetime of the VIMS. Prior to construction, a financial assurance mechanism should be created to fund costs associated with the VIMS (e.g., OM&M, reporting, potential contingency measures, Regional Water Board oversight). Financial assurance may be in the form of a trust fund, surety bond, letter of credit, insurance, corporate guarantee, qualification as a self-insurer by a financial means test, or other acceptable mechanism. A detailed cost estimate should be provided to quantify the amount of the financial assurance needed and should be based on the length of time that residual contamination may pose a vapor intrusion risk, up to 30 years.

Expectations for Regulatory Review Timeframes

For planning purposes, assume the Regional Water Board will need 60 days per submittal for review. Actual review times may vary depending on workload and project complexity (e.g., alternative designs, site complexity). Expectations for our oversight and review timeframes should be explicitly discussed with the site's case manager.

Questions or Comments

For general questions about our VIMS guidance, contact ESLs.ESLs@waterboards.ca.gov. For questions regarding a specific site, contact the Regional Water Board case manager. Contact information for the case manager can be accessed on the [GeoTracker](https://geotracker.waterboards.ca.gov/) database (<https://geotracker.waterboards.ca.gov/>). To request oversight on a project, refer to the "Requesting Oversight" information and complete the new case application on our [Site Cleanup Webpage](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/sitecleanupprogram.html#RequestingOversight) (https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/sitecleanupprogram.html#RequestingOversight).

APPENDIX H
EBMUD CLEAN UTILITY CORRIDOR DETAIL
