

Summary of the Hunters Point Shipyard Site

HPS History

The Hunters Point Naval Shipyard (HPS) site is a former Navy shipyard located in the southeast portion of the City of San Francisco, California, situated on a long promontory extending eastward into the San Francisco Bay (see Figure 1). The site currently consists of approximately 866 acres, 446 of which are under water. Six parcels (B, C, D, E, E-2, and F) have been identified to facilitate investigation and cleanup activities. A seventh parcel, Parcel A, was conveyed to the City of San Francisco in December 2004 (see Figure 2).

HPS is a federally owned facility, which began using radioactive materials in the early 1940's. The Navy's Historical Radiological Assessment (HRA), completed in 2004, describes the radiological history of the site. The HRA indicates that radioactive materials were used in shipyard operations from 1941 to 1974, primarily for gamma radiography, calibration, and radioluminescent device handling, maintenance and disposal. After 1955, Atomic Energy Commission (AEC) licenses were issued for calibration and gamma radiography. Radioactive materials were also extensively used for research conducted at the Naval Radiological Defense Laboratory (NRDL) from 1946 to 1969. NRDL's mission was to study the effects of atomic weapons. Activities included animal research, radiation detection instrumentation development, ship shielding studies, fallout testing, decontamination of ships that participated in atomic weapons testing, burning contaminated fuel, and handling and packaging radioactive waste for deep-sea disposal. NRDL used both radioactive material from the atomic weapons testing and material under AEC licenses that were issued after 1955. AEC licenses were issued for both sealed sources and loose material, including a broad scope license managed by the NRDL Radioisotope Committee.

The HRA also systematically identified and described the potential for residual contamination at over 90 radiologically impacted sites within the 6 parcels. The radionuclides encountered to date include: americium-241, cobalt-60, strontium-90, cesium-137, europium-152, europium-154, plutonium-239, radium-226, hydrogen-3, thorium-232, and uranium-235. The Navy believes that the residual contamination is primarily the result of: 1) NRDL activities with both atomic weapons testing material and AEC licensed material; 2) radium and strontium from radioluminescent devices; and 3) decontamination of ships that participated in the Pacific atomic weapons testing. The material from atomic weapons testing is exempt from U.S. Nuclear Regulatory Commission (NRC) licensing under Section 91b of the Atomic Energy Act (AEA). The Navy assumes that AEC-licensed material could be present at over half of the impacted sites. Furthermore, the Navy believes that the AEC-licensed material would likely be commingled with, and indistinguishable from, the atomic weapons testing material, because both types of material were used by NRDL research. In some cases these two sources involve the same radionuclides and therefore, cannot be differentiated. Some of this material can also be commingled with radium. The AEC-licensed material has the potential to exist base-wide in the storm drain lines, sanitary sewer lines, and septic systems, as well as one of the landfills.

According to the HRA, almost all radioactive materials encountered at HPS have been isolated from human contact and located in restricted-access areas. The overall conclusion from the HRA was that ". . . low levels of radioactive contamination exist within the confines of HPS. The review of previous radiological activities, cleanup actions, and release surveys has not identified

any imminent threat or substantial risk to tenants or the environment of HPS or the local community.”

Status of the Navy's Remediation

The site was placed on the National Priorities List (NPL) in 1989 for remediation of both radiological and hazardous materials under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In 1991, the site was identified for closure pursuant to the terms of the Defense Base Realignment and Closure Act of 1990. Closure of HPS includes conducting environmental remediation activities and transferring the property to the City of San Francisco for future non-defense reuse. A Federal Facility Agreement (FFA) signed on January 22, 1992, by the Navy, the U.S. Environmental Protection Agency (EPA), and the State of California, established cleanup actions and timeframes for HPS. On January 21, 1994, a Memorandum of Understanding was executed among the Navy, the City and County of San Francisco, and the City and County of San Francisco Redevelopment Agency to establish the process for conveyance of the property at HPS for reuse. On January 23, 2002, a Memorandum of Agreement (MOA) between the Navy and the City of San Francisco established the terms and conditions to be included in a binding and comprehensive agreement regarding the remediation and conveyance of HPS to the city.

The U.S. Department of Defense (DoD) has the authority to undertake CERCLA actions and, as a result, the Navy has undertaken the assessment of radioactive materials at HPS by conforming to the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan. Because CERCLA defines radionuclides as hazardous substances, radionuclides are included in the CERCLA process to investigate, characterize, and remediate contamination. Most of the radionuclides previously used at HPS are radionuclides defined as CERCLA hazardous substances.

Beginning in 1991, five phases of radiological investigations were performed at HPS. Phases I and II delineated the surface and subsurface distribution of radium-containing devices. Phases III and IV recommended actions and performed the removal of anomalies from various buildings on Parcels D and E. Phase V conducted radiological surveys and remedial action in Parcels B, C, D, and E. Current radiological actions include various localized removal actions and implementation of recommended actions identified in the HRA. Future activities are being planned through the development of a radiological addendum to the existing CERCLA Record of Decision for Parcels B, D, and E. Removal actions for soils, debris/slag, and concrete surfaces (walls, slabs, and foundations) are expected to result in removal of radioactive materials to or below the established cleanup goals, followed by off-site disposal. Removal actions are subject to release criteria developed for surfaces, soil, and water as part of the process for developing the Basewide Radiological Removal Action, Action Memorandum—Revision 2006.

The primary remediation goal is to achieve a 10^{-6} risk level for both hazardous chemicals and radioactive material combined. In addition, pursuant to CERCLA requirements, Applicable or Relevant and Appropriate Requirements (ARARs) are currently being developed and are under review by all the parties. There is a proposal to include, as an ARAR, the unrestricted release and restricted release criteria set forth in the U.S. Nuclear Regulatory Commission's (NRC's) decommissioning regulations in 10 CFR Part 20 Subpart E.

The overall objective of the Navy's HPS remediation is unrestricted release for Parcels C and D and major portions of Parcels B and E-2. Parcel A was released for unrestricted use in 2004 and transferred to the City of San Francisco. Draft plans currently under review also propose restricted release for the fill areas of Parcel B and the existing landfill on Parcel E-2. For any restricted release areas, proposed institutional controls consist of future restrictive covenants designed to prevent any contact with soils below a one-foot depth without prior approval. The specific restrictive covenant for these restricted release areas would be prepared using a "model" or generic restrictive covenant that was developed as a MOA between the State of California and the Navy in 2000 and is consistent with CERCLA and State of California law. Current plans assume that these restricted areas would be released and ownership would likely transfer to the City of San Francisco. Furthermore, under CERCLA, the Navy would be required to conduct a Five Year Review of the effectiveness of the institutional controls and engineered controls for these restricted areas. CERCLA requires that EPA conduct an independent review of the Navy's Five Year Reviews. Thus, the current approach would result in a layered system of government controls including: City Government ownership; legal controls using a restrictive covenant that involves the Navy, City, and State; and CERCLA oversight and enforcement through the Five-Year Review process conducted by the Navy and EPA. These plans are being coordinated and reviewed by the City so that they will be acceptable to the future owner and consistent with the City's plans for redevelopment of the HPS site. The restricted areas are currently planned for open space or recreational use and would not be used for residential or commercial/industrial purposes.

Regulatory History

The HRA also summarizes the regulatory history for the HPS site. Under the AEA, the AEC controlled uses of radioactive material by issuing "authorization" or "permits" until 1954, when the AEA was amended to establish the licensing program. In some instances, the AEC licenses were issued for the Navy's use of radioactive material. The shipyard and NRDL were subject to the AEC licensing requirements for radioactive material that began in 1954. The HRA summarizes the multiple AEC licenses for possession and use of radioactive material at HPS. NRDL was authorized to use a broad spectrum of all types of radioactive materials for its research. These authorizations were incorporated into AEC licenses after 1954. At the time of NRDL's closure in 1969, a specific license was issued for decommissioning activities. Prior to termination of NRDLs' AEC licenses in 1970, all licensed sealed sources were transferred to other licensed activities or sent to a radioactive waste disposal facility. Surveys were conducted in areas where radioactive materials had been used. AEC inspectors conducted independent final surveys to verify that areas released for unrestricted use met the standard in effect at the time.

Current Regulatory Involvement under CERCLA

The Navy's remediation of the HPS site is conducted under CERCLA and a FFA. Oversight is provided by EPA Region 9 since the property was designated as an NPL site in 1989. For HPS, the EPA oversees the radiological release of outdoor structures and open areas but defers release of buildings to the State of California Department of Public Health (DPH). EPA is a member of both the Base Closure Team and the Restoration Advisory Board (RAB). EPA Region 9 has regulatory oversight both during and after remediation. EPA conducts reviews and some confirmatory surveys during remediation. After remediation, EPA will independently

review the Navy's Five-Year Reviews of the restricted release areas that rely on institutional controls, engineering controls, and potentially monitoring, and maintenance.

The State of California works with EPA Region 9 to ensure that all aspects of CERCLA are implemented at the HPS site. Three State of California agencies are involved with the Navy's remediation at the HPS site. The Department of Toxic Substance Control (DTSC) is the lead State regulator and a co-signature, to the FAA for this site. The DPH provides technical assistance to DTSC for radiological reviews, including restricted release. DPH has done some confirmatory surveys of buildings and plans on conducting these surveys in the future, as its limited resources permit. The Regional Water Quality Control Board is a regional office of the California State Water Resources Control Board and develops and enforces water quality objectives and protects the beneficial uses of the state's waters. It focuses on water related reviews at the HPS site.

The City and County of San Francisco take an active role in the ongoing CERCLA process at HPS as a member of the Base Closure Team, which also includes representatives from the Navy, EPA Region 9, DTSC, the Regional Water Quality Control Board, and the City of San Francisco. San Francisco is the potential transferee of the HPS site from the Navy and also provides representation on the RAB. It reviews all radiological actions at the HPS site and has been, and continues to be, involved with preparations for potentially implementing institutional controls at the restricted release areas which it would also regulate if it becomes the owner.

NRC's Current Regulatory Involvement

NRC no longer exercises direct regulatory authority over the residual contamination at the HPS site that may have resulted from the Navy's use of licensed radioactive material because, as noted above, all the AEC licenses have been terminated since 1970. However, the Navy currently holds an NRC Master Materials License (MML), which allows the Navy to administer and manage the use of licensed radioactive materials by the Navy and Marine Corps at any Navy location around the country. The MML authorizes the licensee to issue permits for the possession and use of licensed material under the license, and ties the license to a framework for oversight and internal licensee inspection of the MML. For the HPS site, the remediation activities conducted by Navy contractors, including radiological surveys and sampling as well as removing, storing, and disposing of material, are done under Navy oversight within the BRAC/CERCLA process. In addition, these Navy contractors have specific NRC licenses. As a result, NRC inspects these activities as part of its routine materials inspection program. However, this NRC oversight does not include regulating the remediation of the residual contamination at the site under NRC's decommissioning regulations because the BRAC process includes remediation under CERCLA.

Plans for Future Redevelopment

The City of San Francisco began redevelopment planning in 1993 and adopted a Redevelopment Plan for the HPS site in 1997. A mixed-use project is planned for the entire site that includes a mix of residential, retail and research space, and new waterfront parks and open space. There is the potential that Parcel D could be the location for the new San Francisco 49ers football stadium. The Navy's remediation plans and schedules have been coordinated extensively with the City to support, and be consistent with, the redevelopment plans.

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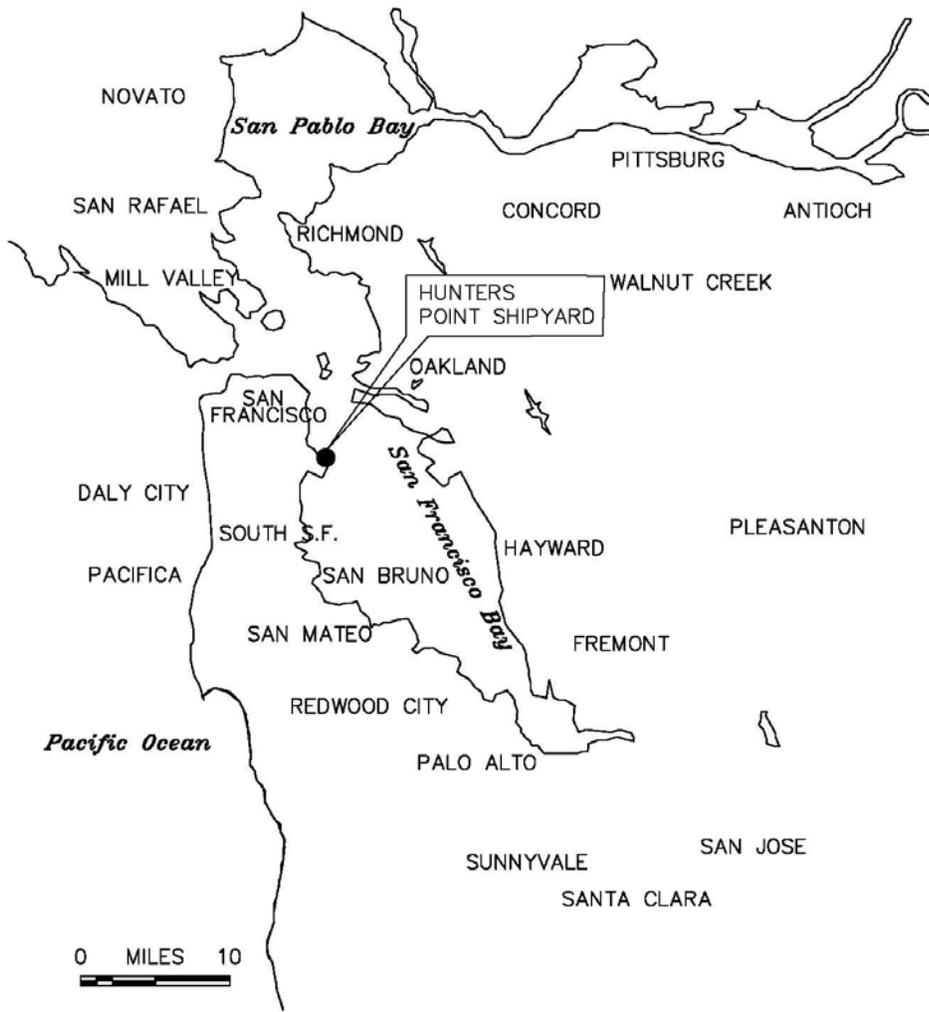
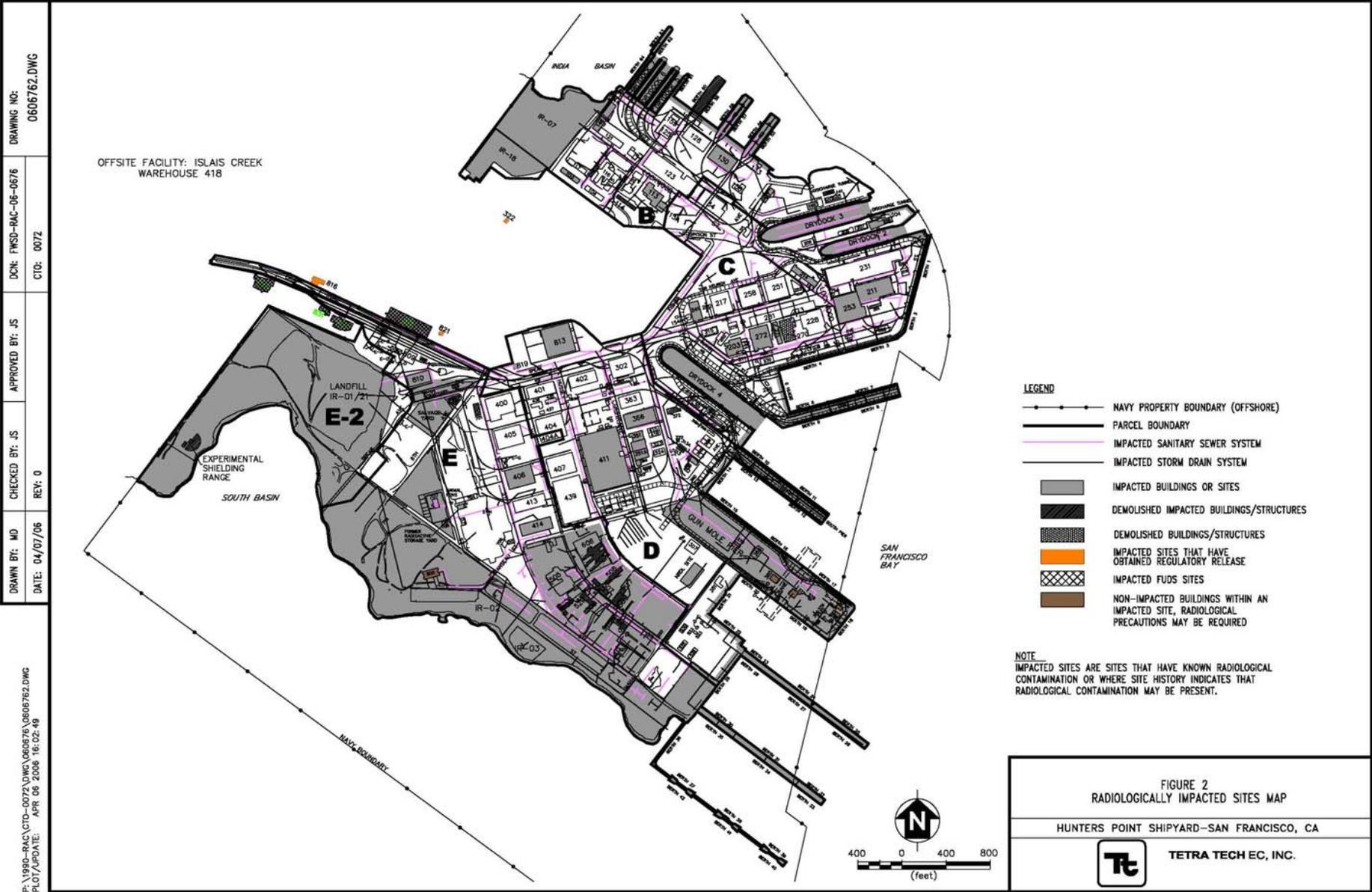


FIGURE 1
 HUNTERS POINT SHIPYARD LOCATION

HUNTERS POINT SHIPYARD-SAN FRANCISCO, CA

 TETRA TECH EC, INC.



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DCK: FMSD-RAC-06-0676
CTC: 0072

APPROVED BY: JS

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OFFSITE FACILITY: ISLAIS CREEK
WAREHOUSE 418

LEGEND

- NAVY PROPERTY BOUNDARY (OFFSHORE)
- PARCEL BOUNDARY
- IMPACTED SANITARY SEWER SYSTEM
- IMPACTED STORM DRAIN SYSTEM
- IMPACTED BUILDINGS OR SITES
- DEMOLISHED IMPACTED BUILDINGS/STRUCTURES
- DEMOLISHED BUILDINGS/STRUCTURES
- IMPACTED SITES THAT HAVE OBTAINED REGULATORY RELEASE
- IMPACTED FUDS SITES
- NON-IMPACTED BUILDINGS WITHIN AN IMPACTED SITE, RADIOLOGICAL PRECAUTIONS MAY BE REQUIRED

NOTE
IMPACTED SITES ARE SITES THAT HAVE KNOWN RADIOLOGICAL CONTAMINATION OR WHERE SITE HISTORY INDICATES THAT RADIOLOGICAL CONTAMINATION MAY BE PRESENT.

FIGURE 2
RADIOLOGICALLY IMPACTED SITES MAP

HUNTERS POINT SHIPYARD-SAN FRANCISCO, CA



TETRA TECH EC, INC.