

**ACTION MEMORANDUM
REMOVAL ACTION DOCUMENTATION
FOR DRY DOCK 4 DRAINAGE CULVERT
SEDIMENTS**

**HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA**

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1.0 PURPOSE

The purpose of this action memorandum (AM) is to document approval of a time-critical removal action of sediments in the drainage culverts of Dry Dock 4 at Hunters Point Shipyard (HPS) in San Francisco, California. As the lead agency, the Navy has authority over risk evaluation, removal action alternative selection, and overall public participation activities. The Navy is working in cooperation with the U.S. Environmental Protection Agency (EPA) Region IX; the State of California Department of Toxic Substances Control (DTSC) Region II; and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) to develop and implement the removal action.

The proposed time critical removal action will eliminate the potential for migration of contaminated sediments into the San Francisco Bay via Dry Dock 4 by cleaning all sediments from the drainage culverts and disposing of the sediments off site. By doing this, the proposed action will substantially eliminate the identified pathway of exposure to contaminants of concern for aquatic life and humans ingesting aquatic life. This removal action is anticipated to be a final action with regard to contaminated drainage culvert sediments; no further study or evaluation will be required.

The proposed action for drainage culvert sediments is deemed consistent with the factors set forth within the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Title 40 Code of Federal Regulations Part 300).

This AM has eight sections including this section. Section 2.0 discusses site conditions and background information for HPS; Section 3.0 discusses threats to public health and welfare, and to the environment from the culverts sediments; Section 4.0 presents the endangerment determination; Section 5.0 discusses proposed removal action alternatives and estimated costs; Section 6.0 discusses the effects of delaying or not implementing the removal action; Section 7.0 discusses outstanding policy issues; and Section 8.0 discusses the recommended removal action alternative. This AM frequently references text, tables, and figures in the Removal Preliminary Assessment report.. The Removal Preliminary Assessment report is included as Attachment A. Attachment B presents the administrative record index for this action.

2.0 SITE CONDITIONS AND BACKGROUND

This section summarizes (1) the site description, (2) other removal actions conducted to date at HPS, and (3) the state and local agency roles.

2.1 SITE DESCRIPTION

This section discusses the removal site evaluation, the physical location of HPS, drainage culverts sediment profile and characteristics, release information, the National Priorities List (NPL) status of HPS, and tables and figures related to the drainage culverts removal action.

2.1.1 Removal Site Evaluation

Various past industrial activities at the shipyard are believed to be the source of sediment contamination in the HPS dry dock drain system. A study was conducted by Navy in 1996 to assess the nature and extent of sediment contamination. Sediments were sampled at 16 different locations throughout the culverts.

Generally, metals, polychlorinated biphenyl compounds (PCBs), and total petroleum hydrocarbons (TPH) were detected in samples collected throughout the culverts during the 1996 study. Table 2 of the Removal Preliminary Assessment report shows the distribution of detections in the total metals. Table 3 of the Removal Preliminary Assessment report summarizes maximum values in the data set for TPH and PCBs (Attachment A).

2.1.2 HPS Physical Location

HPS is in southeastern San Francisco at the tip of a peninsula extending into San Francisco Bay (Figure 1, Attachment A). HPS encompasses 936 acres, 493 of which are on land and 443 of which are below the waters of the bay. The acreage has been divided into five parcels of land (Parcels A through E). The climate at HPS is characterized by partly cloudy, cool summers with little precipitation and mostly clear, mild winters with rainstorms. The average annual precipitation is approximately 19 inches.

HPS is bordered by San Francisco Bay to the north, east, and south. A mixed-use residential and industrial area is located west of HPS. The northern and eastern shores of HPS were developed for ship repair and are equipped with drydock and berthing facilities. The Navy

used HPS from 1939 through 1976 for ship repair. Triple A Machine Shop operated HPS as a commercial ship repair facility from 1976 to 1987. Currently, the Navy and private businesses use HPS for limited commercial and light industrial activities.

HPS has been divided into five parcels of land, Parcels A through E, and the subtidal areas, Parcel F. The Dry Dock 4 drainage culverts covered by this removal action are located in Parcel C.

2.1.3 Drainage Culverts Characteristics

The Dry Dock 4 drainage culverts include approximately 2,100 linear feet of drain line varying in size from 24 to 48 inches in diameter. Approximately 750 feet are completely filled with sediment, about 750 feet are more than one half full to completely full, and the remaining 600 feet are less than one half full. The general configuration of the drainage culvert is shown in Figure 3 of the Removal Preliminary Assessment report (Attachment A).

2.1.4 Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Some contaminants present in drainage culvert sediments, including heavy metals, and PCBs are hazardous or toxic substances as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 101(14), or the Toxic Substances Control Act (TSCA). A potential exists for contaminated sediments to be transported to the San Francisco Bay with drainage culverts effluent.

2.1.5 National Priorities List Status

Because of the presence of hazardous materials from past shipyard operations, HPS was placed on the NPL in 1989. In 1991, HPS was slated for closure pursuant to the terms of the Defense Base Realignment and Closure Act of 1990 (Public Law 101-510). Closure activities at HPS involve environmental remediation activities and making the property available for nondefense use.

2.1.6 Maps, Pictures, and other Graphic Representations

Figures and tables related to the storm drain system removal action are contained in the Removal Preliminary Assessment report (Attachment A). Figure 1 shows the HPS location. Figure 2 presents the Dry Dock 4. Figure 3 depicts the drainage culverts layouts and presents sediment sampling locations from the 1996 study. Table 1 presents sediment depth in inches. Tables 2 and 3 present contaminant concentrations.

2.2 OTHER ACTIONS TO DATE

Previous removal activities conducted at HPS include (1) PCB cleanup at IR-08, (2) the Tank S-505 removal action, (3) underground storage tank (UST) removals, (4) sandblast grit fixation, (5) the pickling and plating yard (PPY) removal action; (6) the exploratory excavation sites removal action; and (7) the IR-06 Tank Farm removal action.

Current removal activities include (1) the IR-03 removal action; (2) the IR-1/21: Industrial Landfill Groundwater Plume removal action; (3) the IR-06 removal action; and (4) the IR-50 storm drain removal action. The IR-03 removal action will involve isolating impacted groundwater from the San Francisco Bay using a containment technology. The IR-1/21 removal action will include using source control and remediation or isolation of groundwater. The IR-06 removal action will involve excavating and treating or disposing of impacted, vadose zone soil. The IR-50 storm drain system removal action includes cleaning all sediments from the storm drain system and disposing of the sediments off site.

2.3 STATE AND LOCAL AGENCY ROLES

Federal Executive Order 12580 delegates the President's authority to undertake CERCLA response actions to the Department of Defense. Congress further outlines this authority in its Defense Environmental Restoration Program (DERP) Amendments, which are presented in 10 United States Code (U.S.C.) 2701-2705. Both CERCLA 120(f) and 10 U.S.C. 2705 require naval facilities to ensure that state and local officials be given the timely opportunity to review and comment on Navy response actions.

Accordingly, DTSC and RWQCB are representing the state during activities that are part of the Navy's CERCLA response program at HPS. This project has been coordinated with representatives of DTSC and RWQCB.

To foster community awareness and public input, the Navy has an established community relations program at HPS. The Navy regularly publishes fact sheets and public notices to announce environmental restoration activities at HPS. An important part of the community relations program is the HPS restoration advisory board (RAB). The HPS RAB meets monthly as a forum for interested parties to receive information and comment on HPS documents and environmental activities.

3.0 THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Because of the presence of hazardous substances in sediments throughout the drainage culverts at Dry Dock 4, the Navy determined that the drainage culvert sediments pose a substantial threat to human health or the environment and that a removal action is appropriate to mitigate the potential for exposure to hazardous substances in the drainage culverts. Two of the NCP removal action factors apply to the storm drain system sediments as discussed in Sections 3.1 and 3.2.

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

NCP Section 300.415 (b)(2)(I): Actual or potential exposure of nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

A potential indirect human exposure pathway to contaminants exists via ingestion of fish and other aquatic life from the San Francisco Bay with bioaccumulated contaminants. There are no direct pathways for human exposure to contaminated sediments. Because bay water is not used as a domestic drinking water source, exposure resulting from ingestion of bay water is not

considered a complete exposure pathway. The only direct human exposure to contaminated sediments would occur during removal of the sediments from drainage culverts.

3.2 THREATS TO THE ENVIRONMENT

NCP Section 300.415 (b)(2)(iv): High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

Environmental impacts could occur from release of contaminated soils into the San Francisco Bay via the dry dock operations. Aquatic life in the bay could be directly exposed to toxic constituents from ingestion of sedimentary material and indirectly from desorption of contaminants from sediments into bay water.

4.0 ENDANGERMENT DETERMINATION

Qualitative risk evaluation conducted during the Removal Preliminary Assessment report, which was based on comparison of sediment contaminant concentrations to screening criteria for protection of aquatic life, demonstrate that current conditions of the drainage culverts at Dry Dock 4 present immediate and severe threats to the aquatic ecosystem, public health, welfare, or the environment. Actual or threatened releases of contaminants from this site, if not addressed by implementing the proposed response action recommended in this AM, may present an imminent and substantial endangerment to public health, welfare, or the environment due to migration of contaminated drainage culvert sediments to the San Francisco Bay.

5.0 PROPOSED REMOVAL ACTIONS AND ESTIMATED COSTS

This section discusses the proposed removal action, including the description of the proposed removal action, its contribution to remedial performance, a description of alternative technologies, the removal action schedule, and estimated costs.

5.1 PROPOSED ACTION DESCRIPTION

The drainage culverts removal action will involve cleaning of sediments from all culverts at Dry Dock 4. Drainage culverts will be cleaned with a high-pressure jet washer suitable for cleaning gravity flow drain lines. The downstream will be plugged in order to contain washwater and sediments. The resulting sediment slurry will be collected in specially adapted rolloff containers equipped with filters and decanting equipment. Water will be decanted into a baker tank until remaining solids pass the paint filter liquids test.

Decanted water will be reused whenever possible for additional line cleaning. Spent wash water will be characterized before discharge to the local publicly-owned treatment works (POTW). The spent water is expected to meet POTW acceptance criteria based on pretreatment standards, sediment concentrations, and vendor information.

Sediments will be sampled and analyzed to determine waste characteristics. Laboratory analysis of the sediments will be accelerated to the extent possible to facilitate completion of cleaning. All sediments with metals concentrations exceeding land disposal restrictions (LDRs) will be transported to, and stabilized by, an appropriate disposal facility. All sediments with organic compound concentrations exceeding LDRs will be transported to, thermally treated (or equivalent), and stabilized (if necessary) by an appropriate disposal facility. Thus, transportation to different disposal facilities may be necessary for sediments with contaminants exceeding LDRs. Sediments that do not exceed hazardous levels will be transported to and disposed of at a Class III landfill.

Removal and off-site disposal of the sediments will mitigate any public health or environmental threat posed by discharge of contaminated sediments to the San Francisco Bay. This removal action is intended to be a permanent or final response action for contaminated sediments in the drainage culverts. Because all the sediments of concern will be cleaned from the culvert, post-removal site control will not be necessary.

5.2 PROPOSED ACTION CONTRIBUTION TO REMEDIAL PERFORMANCE

All sediments will be removed from the drainage culverts at Dry Dock 4 and disposed of off site. Metals and PCB concentrations in sediment samples collected during the 1996 study consistently exceeded screening criteria. Because of the widespread nature of the sediment contamination as exhibited by the 1996 study results, cleaning of all sediments from the drainage culverts is considered appropriate. Following this removal action, no further action will be required regarding drainage culverts sediments. This removal action will contribute to the long-term remedial action for HPS by mitigating the threats from a major source of contamination.

5.3 DESCRIPTION OF ALTERNATIVE TECHNOLOGIES

Two treatment or disposal alternatives were identified and evaluated in the Removal Preliminary Assessment report. A brief description of the two removal action alternatives is provided below. Detailed descriptions of the alternatives and comparison of the effectiveness, implementability, and cost of each alternative are presented in Attachment A:

Alternative 1: On-Site Sealing of Hazardous Sediments. This alternative involves (1) cleaning portion of culverts and all gutters; (2) sealing all culverts and gutters with concrete; and (6) transporting and disposing of sediments at an appropriate Class I landfill.

Alternative 2: Off-Site Disposal of All Sediments. This alternative involves (1) cleaning all sediments out of culverts; (2) sampling all generated sediments; (3) transporting and disposing of sediments at an appropriate Class I, II, or III landfill; (4) reusing treated wash water whenever possible for additional line cleaning, characterizing and discharging spent wash water to the local publicly-owned treatment works (POTW).

5.4 REMOVAL PRELIMINARY ASSESSMENT REPORT

The Removal Preliminary Assessment report developed for this time-critical removal action identifies and compares several alternatives for management and disposal of hazardous substance-impacted sediments removed from the drainage culverts at dry dock 4. Based on comparison of the removal action alternatives, the Removal Preliminary Assessment report recommended Alternative 2, sediment removal followed by off-site disposal of both hazardous and nonhazardous sediments.

5.5 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The NCP states that "removal actions. . . shall to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws." ARARs are substantive requirements that must be met for on-site actions at CERCLA sites. A requirement is deemed applicable if the law or regulation specifically addresses the chemical of concern, the action, or the affected location at a CERCLA site. If a law or regulation is not applicable, it may be relevant and appropriate if the circumstances are sufficiently similar to circumstances in which the law otherwise applies and if the law or regulation is well suited to site conditions. ARARs are identified for on-site activities, not off-site activities, such as discharge to the POTW or sanitary sewer.

In addition to ARARs, the NCP provides that agency advisories, criteria, or guidance may, as appropriate, be considered for a particular release [40 Code of Federal Regulations (CFR), Part 300.400(g)(3)]. As explained in the preamble to the NCP, "TBCs [criteria to be considered] should not be required as cleanup standards...because they are, by definition, generally neither promulgated nor enforceable so they do not have the same status under CERCLA as do ARARs. TBCs may, however, be useful in helping to determine what is protective at a site, or how to carry out certain actions or requirements (NCP, 55 Federal Register at 8745).

Based on the current site data, a list of federal ARARs and criteria to be considered (TBCs) and the Navy's determination of state ARARs applicable to this removal action are presented below and in the Removal Preliminary Assessment report (Attachment A). ARARs and TBCs are generally divided into three categories: chemical-specific, location-specific, and action-specific.

The sections below discuss these ARARs, TBCs, and other requirements for the proposed storm drain system removal action.

Chemical-Specific ARARs and TBCs

Chemical-specific ARARs are generally health- or risk-based numerical values or methodologies applied to site-specific conditions that result in the establishment of numerical cleanup values. No health- or risk-based numerical cleanup values for soil (sediment) have been promulgated by EPA or the State of California; however, federal and state hazardous

waste laws are ARARs for evaluating whether excavated soil (sediment) should be managed as a hazardous waste.

The drainage culverts removal action involves removing contaminated sediments from the culvert if they pose an imminent threat to potential surface water receptors. The scope of the proposed removal action does not include cleaning up surface water or groundwater. Therefore, it will not be practicable to comply with chemical-specific ARARs for groundwater or surface water during this action.

It is appropriate to evaluate chemical-specific ARARs for the sediment removal action because it is intended as the final action for sediments. No cleanup goals for sediment have been promulgated by EPA or the State of California. Consequently, by definition, no chemical-specific ARARs exist for sediment.

Location-Specific ARARs and TBCs

Location-specific ARARs are restrictions on the concentrations of hazardous substances or on the conduct of activities solely because they are in specific locations. Special locations include flood plains, wetlands, historic places, and sensitive ecosystems or habitats. The drainage culverts exist at dry dock 4. Dry dock 4 is eligible for inclusion on the National Register of Historic Places. Therefore, location-specific ARARs are identified for this removal action based on current site data.

Action-Specific ARARs and TBCs

Action-specific ARARs are technology- or activity-based requirements or limitations on actions taken with respect to hazardous substances. These requirements are triggered by the particular remedial activities selected. Action-specific ARARs alone do not determine the remedial alternative; rather, they indicate how a selected alternative must be implemented.

The substantive requirements of the Resource Conservation and Recovery Act (RCRA) for management of hazardous wastes, as embodied in the California Code of Regulations (CCR),

are ARARs for the identification and disposal of sediments determined to be hazardous wastes generated by the drainage culverts removal action. A hazardous waste is a waste (any material that is discarded, relinquished, recycled, or inherently waste like [22 CCR 66261.2]) that exhibits one of the characteristics specified in 22 CCR Chapter 11, Article 3 or is listed in 22 CCR, Chapter 11, Article 4.

Soil, groundwater, sediment, and other environmental media are not considered wastes in and of themselves, but they may contain listed hazardous wastes or exhibit a characteristic of hazardous waste (EPA 1988, Wehling 1994). The sediments were determined not to contain listed wastes because there is no documentation to support placement or discharge of listed hazardous wastes into the drainage culverts. However, based on a preliminary review of data available for drainage culvert sediments, some sediments may exhibit one or more of the toxicity characteristics of hazardous waste. All the drainage culverts sediments will be stored on site in compliance with hazardous waste regulations, whether or not the sediment is determined to exhibit a hazardous waste characteristic. Any wastewater generated during the removal action that exceeds toxicity characteristics will be handled as hazardous waste.

LDRs prohibit the disposal of hazardous wastes unless treatment standards are met. RCRA Subtitle D as codified in 40 Code of Federal Regulations (CFR) 257 and 258 establishes requirements governing the management and disposal of nonhazardous solid wastes. In addition, the California Integrated Waste Management Board (IWMB) has promulgated regulations for the handling and disposal of solid wastes, and State Water Resources Control Board (SWRCB) regulations (23 CCR Division 2, Chapter 15) address the disposal of nonhazardous and designated solid wastes. Nonhazardous sediments that are disposed of at off-site landfills will be managed according to these regulations.

The drainage culverts removal action may include an on-site discharge, such as air emissions. The Bay Area Air Quality Management District (BAAQMD) requirements for managing stockpiled soil (Rule 8, Regulation 40) are relevant and appropriate to any action that removes and stockpiles sediments from the storm drain.

Off-site activities, such as discharge to the POTW and landfilling, must comply with all applicable requirements, such as POTW acceptance criteria and LDRs.

U.S. Department of Transportation (DOT) requirements (49 CFR, Part 107) are applicable to the transportation of any hazardous waste from HPS to a treatment, storage, or disposal facility.

5.6 PROJECT SCHEDULE

The drainage culvert removal action process began with the submission of the removal action work plan in May 1997. Field implementation of the removal action is anticipated to begin in May 1997 and last approximately 2 months. Once the removal action is complete, a removal action summary report will be prepared within 90 days to document the field activities and analytical results. The drainage culvert removal action process is expected to be completed by July 1997 (barring undue interference from AMC activities).

5.7 ESTIMATED COSTS

A detailed cost opinion for sediment removal and off-site disposal is provided in the Removal Preliminary Assessment report (Attachment A). Total cost of \$1,095,518 covers mobilization and demobilization, sampling and analysis, sediment collection and treatment, and waste disposal. Actual costs may vary depending on the quantity of hazardous sediments generated, the subcontract negotiated with the construction firm completing the work, and on disposal fees from actual waste management facilities used.

6.0 EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT TAKEN

If the removal action is delayed, the potential for discharge of contaminated sediments to San Francisco Bay will continue. The result will be potential negative impact to water quality and to aquatic organisms in the bay, and potential threat to human health from ingestion of aquatic organisms.

7.0 OUTSTANDING POLICY ISSUES

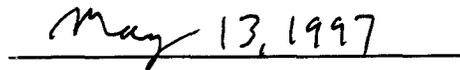
No outstanding policy issues exist for this removal action.

8.0 RECOMMENDATION

This AM represents the selection of sediment removal and off-site disposal of all sediments as the removal action for hazardous substance-impacted sediments in the dry dock 4 drainage culverts at HPS in San Francisco, California. The proposed removal action was developed in accordance with CERCLA as amended by SARA, and is consistent with the NCP. Conditions within the drainage culverts indicate that a removal action is appropriate in accordance with Title 40 CFR, Section 300.415(b)(2), criteria for a removal. This decision is based on the administrative record for this action. The index to the administrative record for this action is included in Attachment B.



Michael McClelland
BRAC Environmental Coordinator



Date

9.0 REFERENCES

- PRC. 1994. Parcel B Site Inspection Report, Human Health Risk Assessment, Dry Dock 4. Hunters Point Annex. July.
- U.S. Environmental Protection Agency (EPA). 1988. CERCLA Compliance With Other Laws Manual: Interim Final. EPA/540/G-89/006. July.
- Wehling. 1994. Verbal Guidance to RCRA Hotline. Between Carrie Wehling, EPA Office of Solid Waste and Booze, Allen, and Hamilton. August.

N00217.003512
HUNTERS POINT
SSIC NO. 5090.3

ATTACHMENT A

REMOVAL PRELIMINARY ASSESSMENT
DRY DOCK (IR-57)
DRAINAGE CULVERT NETWORK

DATED 24 MARCH 1997

IS ENTERED IN A DATABASE AND FILED AT
ADMINISTRATIVE RECORD NO. N00217.003511

ATTACHMENT ①

**DD 4 DRAINAGE CULVERT REMOVAL ACTION
ADMINISTRATIVE RECORD INDEX**

<u>Document Title</u>	<u>Author</u>	<u>Date</u>
Environmental Baseline survey (EBS) for Dry Dock 4 at Hunters Point Annex	Mare Island Naval Shipyard, Code 106.4	September 8, 1994
Action Memorandum, Removal Action Documentation for Dry Dock 4 Drainage Culvert Sediments	EFA WEST	March 24, 1997