Public Summary: **Final Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California, December 17, 2009**

The Department of Navy has prepared this final record of decision (ROD) to address remaining contamination at Parcel UC-2 at Hunters Point Shipyard in San Francisco, California. The remedial action selected in this ROD is necessary to protect the public health, welfare, and the environment from actual or potential releases of contaminants from this parcel. The selected remedial action for Parcel UC-2 addresses metals (especially arsenic and manganese) in soil, volatile organic compound (VOC) vapors from groundwater in the A-aquifer, and radionuclides in structures (storm drains and sanitary sewers) and the soil associated with these structures.

In 2009, the Navy divided the former Parcel C into two new parcels: UC-2 and C. One overall remedy was selected for Parcels UC-2 and C; however, many of the actions in the overall remedy are not required at Parcel UC-2 based on the types and locations of contaminants. Only remedy components relevant to Parcel UC-2 were evaluated in this ROD. The Navy considered the following remedial alternatives for contaminants in soil: (S-1) no action; (S-2/3) institutional controls (IC), and maintained landscaping; and (S-4/5) covers and ICs. The Navy considered the following remedial alternatives for contaminants in groundwater: (GW-1) no action; (GW-2) long-term monitoring and ICs; and (GW-3/4) monitored natural attenuation (MNA) and ICs. The Navy considered the following remedial alternatives for radiologically impacted structures (storm drains and sanitary sewers) and the soil associated with these structures: (R-1) no action; and (R-2) surveying radiologically impacted areas, excavating storm drain and sanitary sewer lines and soils in impacted areas, and screening, separating, and disposing of radioactive sources and contaminated excavated soil at an off-site, low-level radioactive waste facility. The selected remedy for Parcel UC-2 is Alternative S-4/5 for soil; Alternative GW-3/4 for groundwater; and Alternative R-2 for radiologically impacted structures (storm drains and sanitary sewers) and the soil associated with these structures. Implementation of the remedy at Parcel UC-2 will consist of durable covers and ICs to address soil contamination; MNA and ICs to address groundwater contamination; and removal of storm drains and sanitary sewer lines and excavation of soil to address radiologically impacted soil and structures.

Information Repositories: A complete copy of the "Final Record of Decision for Parcel UC-2" dated December 17, 2009, is available to community members at:

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: (415) 557-4500

Anna E. Waden Bayview Library
5075 Third Street
San Francisco, CA 94124
Phone: (415) 355-5757

The report is also available to community members on request to the Navy. For more information about environmental investigation and cleanup at Hunters Point Shipyard, contact Sarah Koppel, remedial project manager for the Navy, at:

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Final

Record of Decision for Parcel UC-2

Hunters Point Shipyard
San Francisco, California

December 17, 2009

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

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ACRONYMS AND ABBREVIATIONS

§	Section
µg/L	Microgram per liter
ARAR	Applicable or relevant and appropriate requirement
ARIC	Area requiring institutional controls
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
COC	Chemical of concern
CSM	Conceptual site model
cy	Cubic yard
dpm/100cm^2	Disintegrations per minute per 100 square centimeters
DTSC	Department of Toxic Substances Control
ELCR	Excess lifetime cancer risk
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
FS	Feasibility study
GRA	General response action
HHRA	Human health risk assessment
HI	Hazard index
HPAL	Hunters Point ambient level
HPS	Hunters Point Shipyard
HRA	Historical Radiological Assessment
IC	Institutional control
IR	Installation Restoration
LUC RD	Land use control remedial design
mg/kg	Milligram per kilogram
millirem	One thousandth of a rem (10^{-3})
MNA	Monitored natural attenuation
MOA	Memorandum of agreement
mrem/yr	Millirem per year
msl	Mean sea level

ACRONYMS AND ABBREVIATIONS (Continued)

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NRDL	Naval Radiological Defense Laboratory
O&M	Operation and maintenance
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary assessment
pCi/g	Picocurie per gram
pCi/L	Picocurie per liter
PQL	Practical quantitation limit
RAO	Remedial action objective
RBC	Risk-based concentration
RD	Remedial design
RI	Remedial investigation
RME	Reasonable maximum exposure
RMP	Risk management plan
RMR	Risk management review
ROD	Record of Decision
RU	Remedial unit
SARA	Superfund Amendments and Reauthorization Act
SI	Site inspection
SVE	Soil vapor extraction
TCRA	Time-critical removal action
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board
ZVI	Zero-valent iron

1.0 DECLARATION

This Record of Decision (ROD) presents the selected remedy for Parcel UC-2 at Hunters Point Shipyard (HPS) in San Francisco, California. HPS was included on the National Priorities List (NPL) in 1989 (U.S. Environmental Protection Agency [EPA] ID: CA1170090087). The remedy was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Title 42 *United States Code* Section [§] 9601, et seq.) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Title 40 *Code of Federal Regulations* [CFR] Part 300). This decision is based on information contained in the administrative record[1] (Attachment 4) for the site. Information not specifically summarized in this ROD or its references but that is contained in the administrative record has been considered and is relevant to the selection of the remedy at Parcel UC-2. Thus, the ROD is based on and relies on the entire administrative record file in making the decision.

The Department of the Navy and EPA jointly selected the remedy for Parcel UC-2, and the California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (Water Board) concur on the remedy for Parcel UC-2. The Navy provides funding for site cleanups at HPS. The Federal Facility Agreement (FFA) for HPS documents how the Navy intends to meet and implement CERCLA in partnership with EPA, DTSC, and the Water Board.

Parcel UC-2 was part of the former Parcel C. The former Parcel C is one of six parcels (Parcels A through F) originally designated for environmental restoration. The boundaries of Parcels B and C were redefined in 1997 and 2002, and Installation Restoration (IR) 06 (2002) and IR-25 (1997) became part of the former Parcel C. In 2009, the Navy divided the former Parcel C into two new parcels: UC-2 and C. Parcel C is not part of this ROD. Long-term uses in specified areas within Parcel UC-2 include mixed use and research and development.

Environmental investigations began in 1984 at the former Parcel C, which includes Parcel UC-2. A Draft Final Remedial Investigation (RI) Report for the former Parcel C was completed in 1997; the Draft Final RI for Parcel B (which covers IR-06 and IR-25) was completed in 1996. The revised Final Feasibility Study (FS) Report for the former Parcel C was completed in 2008. This ROD documents the final remedial action selected for Parcel UC-2 and does not include or affect any other sites at HPS.

[1] **Bold blue text** identifies detailed site information available in the administrative record and listed in the references table (Attachment 3). This ROD is also available on CD, whereby **bold blue text** serves as a hyperlink to reference information. The hyperlink will open a text box at the top of the screen. A blue box surrounds applicable information in the hyperlink. To the extent there may be any inconsistencies between the referenced information attached to the ROD via hyperlinks and the information in the basic ROD itself, the language in the basic ROD controls.

1.1 SELECTED REMEDY

The CERCLA remedial action selected in this ROD is necessary to protect the public health, welfare, and the environment from actual or potential releases of contaminants from the site. The selected remedial action for Parcel UC-2 addresses metals in soil and radionuclides in soil and structures associated with storm drains and sewer lines. The remedial action also addresses volatile organic compounds (VOC) in groundwater. Parcel UC-2 was evaluated as part of the FS for the former Parcel C and Proposed Plan for Parcels C and UC-2. However, this ROD addresses only those releases located within the newly defined Parcel UC-2 and does not address the balance of the former Parcel C. Implementation of the remedy at Parcel UC-2 will consist of durable covers and institutional controls (IC) to address soil contamination; monitored natural attenuation (MNA) and ICs to address groundwater contamination; and removal of storm drains and sanitary sewer lines and excavation of soil to address radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures.

The selected remedial action is protective of human health and the environment, complies with federal and state statutes and regulations that are applicable or relevant and appropriate to the remedial action, and is cost-effective. The selected remedial action uses permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The selected remedy does not satisfy the statutory preference for treatment as a principal element of the remedy because there is no cost-effective means of treating the large quantity of low-level soil contamination and low-level groundwater contamination. A statutory review will be conducted within 5 years after the remedial action is initiated to ensure that the remedy is protective of human health and the environment.

1.2 DATA CERTIFICATION CHECKLIST

The following information is included in Section 2.0 of this ROD. Additional information can be found in the administrative record file for this site:

- Chemicals of concern (COC) and their concentrations (Sections 2.3 and 2.5).
- Baseline risk represented by the COC (Section 2.5).
- Remediation goals established for COCs and the basis for these goals (Sections 2.5 and 2.7).
- Principal threat wastes (Section 2.6).
- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater (Section 2.4).
- Potential land and groundwater use that will be available at the site as a result of the selected remedy (Section 2.9.3).

- Estimated capital costs, annual operation and maintenance (O&M), and total present-worth costs; discount rate; and the number of years over which the remedy cost estimate is projected (Table 7).
- Key factors that led to selecting the remedy (for example, a description of how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) (Section 2.9.1).

1.3 AUTHORIZING SIGNATURES

This signature sheet documents the Navy's and EPA's co-selection of the remedy in this ROD. This signature sheet also documents the State of California's (DTSC and Water Board) concurrence with this ROD.

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Base Realignment and Closure Environmental Coordinator
Base Realignment and Closure Program Management
Office West
Department of the Navy

12/17/09
Date

Mr. Michael M. Montgomery
Assistant Director of Federal Facilities
and Site Cleanup Branch, Region 9
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12/17/09
Date

Dr. Ryan K. Miya
San Francisco Peninsula Team Leader
California Environmental Protection Agency
Department of Toxic Substances Control

12/23/09
Date

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

12/22/09
Date

2.0 DECISION SUMMARY

2.1 SITE DESCRIPTION AND HISTORY

HPS is located in southeastern San Francisco on a peninsula that extends east into San Francisco Bay (see Figure 1). HPS consists of 866 acres: 420 acres on land and 446 acres under water in the San Francisco Bay. In 1940, the Navy obtained ownership of HPS for shipbuilding, repair, and maintenance. After World War II, activities at HPS shifted to submarine maintenance and repair. HPS was also the site of the Naval Radiological Defense Laboratory (NRDL). HPS was deactivated in 1974 and remained relatively unused until 1976. Between 1976 and 1986, the Navy leased most of HPS to Triple A Machine Shop, Inc., a private ship repair company. In 1987, the Navy resumed occupancy of HPS.

HPS property was included on the NPL in 1989 pursuant to CERCLA as amended by SARA because past shipyard operations left hazardous substances on site. In 1991, HPS was designated for closure pursuant to the Defense Base Closure and Realignment Act of 1990. Closure at HPS involves conducting environmental remediation and making the property available for nondefense use.

The former **Parcel C$_{(1)}$** historically included about 79 acres in the central portion of the shipyard (see Figure 1), was formerly part of the industrial support area, and was used for shipping, ship repair, and office and commercial activities. Industrial support facilities for ship repair dominated the land use at the former Parcel C and included a foundry, a power plant, a sheet manufacturing shop, a paint shop, and various machine shops; 70 buildings are located within the boundaries of the former Parcel C. The docks at the former Parcel C were formerly part of the industrial production area. Portions of the former Parcel C were also used by NRDL. In 2002, the boundaries of Parcel B and C were redefined, and IR-06 and IR-25 became part of the former Parcel C. In 2009, the Navy divided the former Parcel C into new parcels: **Parcel UC-2$_{(2)}$** and Parcel C. Parcel UC-2 was split from the former Parcel C because transfer of this property provides access to Fisher Avenue and the nearby utility corridor for redevelopment. Parcel UC-2 is about 3.9 acres (see Figure 2); the current Parcel C is not addressed in this ROD.

Historical use of the southern portion of Parcel UC-2 is as a roadway (Fisher Avenue) and the northern portion is as a triangularly shaped parking lot (at the corner of Fisher Avenue and Robinson Street) for Building 101. The roadway was constructed by placing borrowed fill, and the parking lot is located on the original promontory with native soil over shallow bedrock. These features apply to most of the parcel, with a limited amount of property directly adjacent to them; there are no buildings. Along the western side of Fisher Avenue is a sharp rise of 5 to 15 feet that is vegetated with ice plant and annual grass.

The storm drains and sanitary sewers in Parcel UC-2 are considered radiologically impacted because operations at HPS resulted in the disposal of radioactive materials through these systems. These wastes included materials from ship and personnel decontamination, fallout samples, and radioactive materials from refurbishment of radioluminescent devices, including radium-bearing paint.

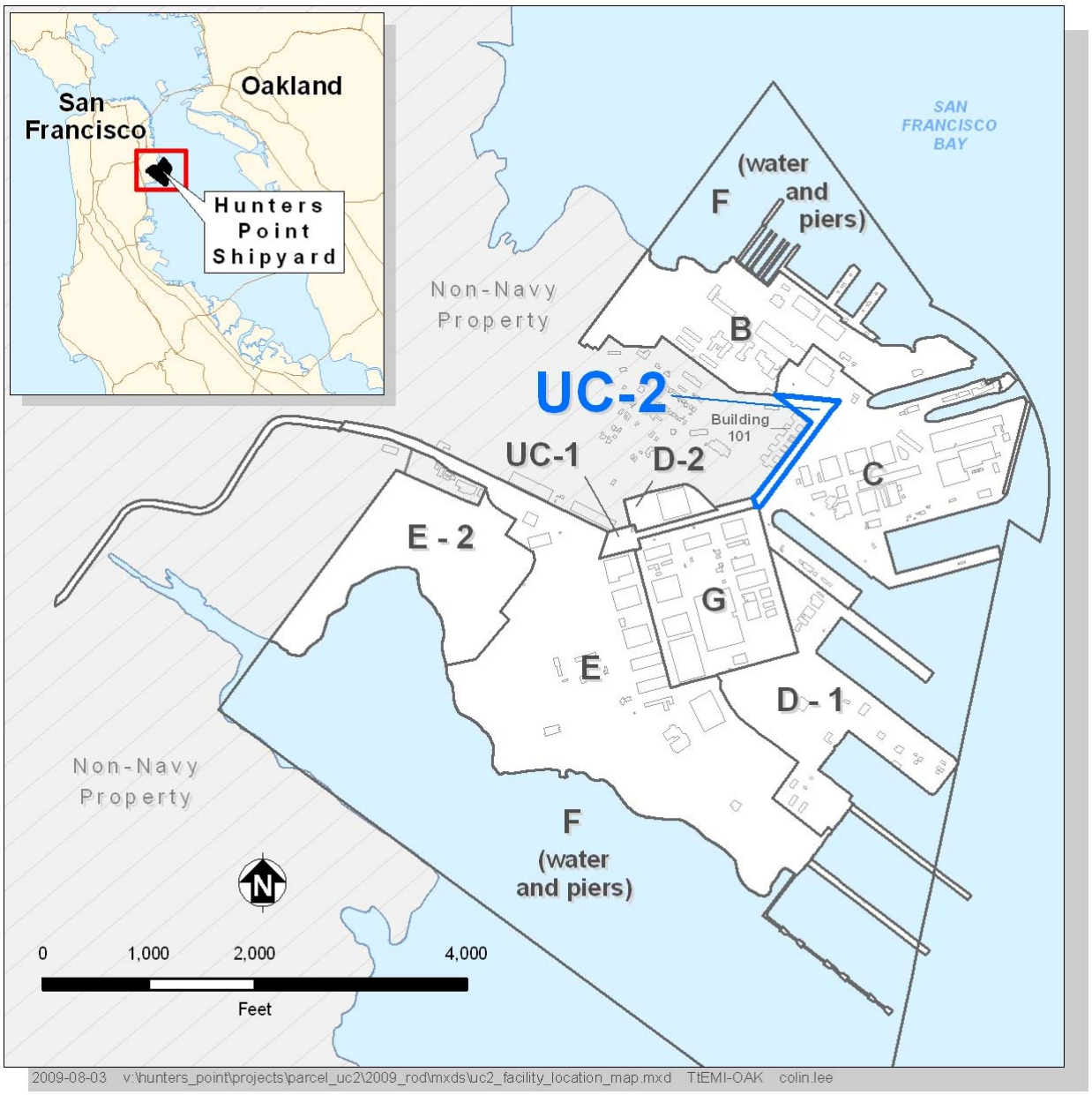


Figure 1. Facility Location Map with the Boundary of Parcel UC-2

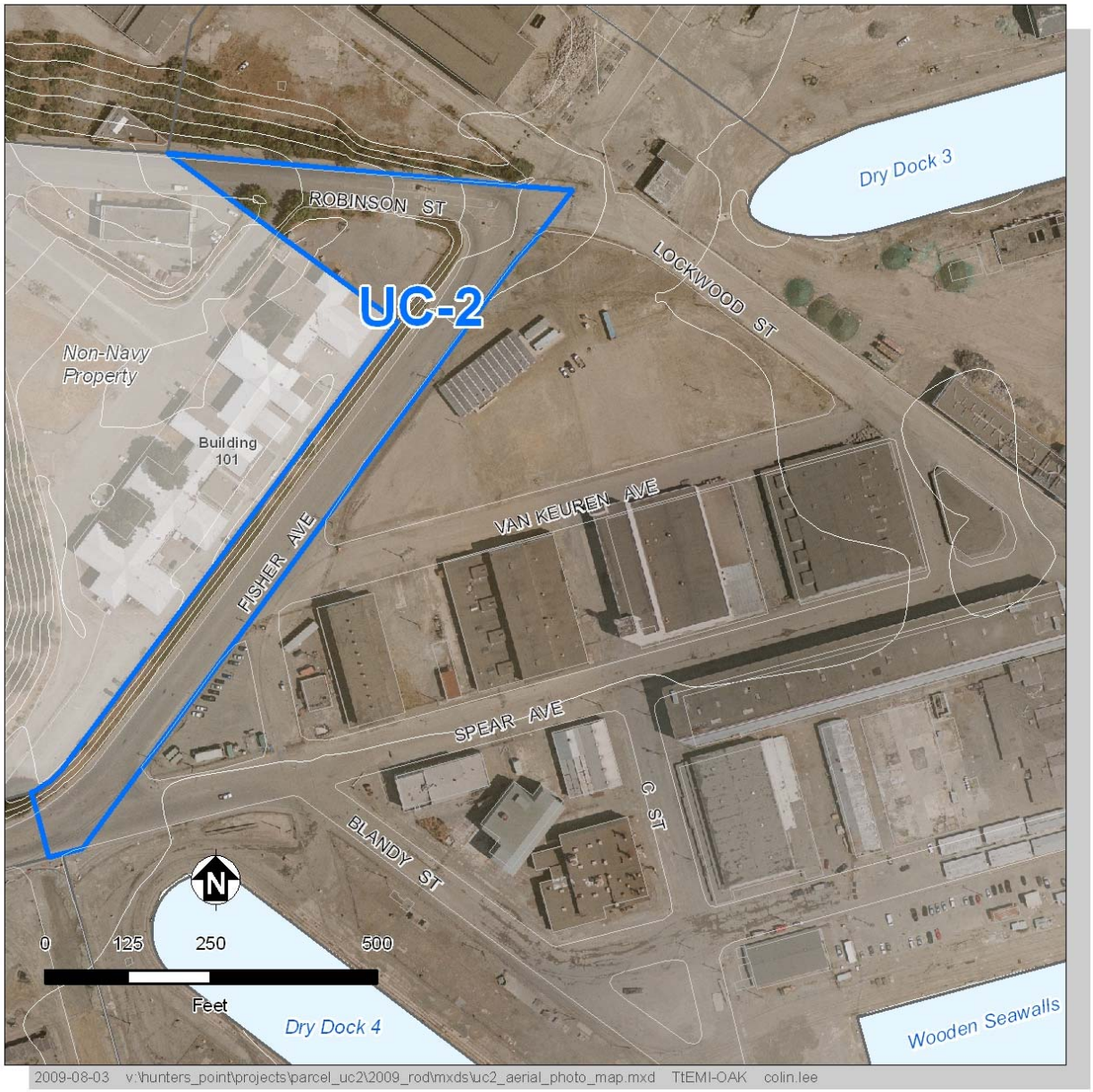


Figure 2. Parcel UC-2 Location Map

The original redevelopment plan developed by the San Francisco Redevelopment Agency in 1997 divided Parcel UC-2 into reuse areas. The reuse areas include mixed use and research and development. The area was divided into redevelopment blocks to facilitate discussion of all areas of the parcel in the context of contamination and cleanup issues. As shown in Figure 3, the redevelopment blocks (and associated reuses) for Parcel UC-2 are 10 (mixed use) and 17 (research and development); unlabelled areas are planned future roads. Figure 4 shows IR-06, the only **IR site$_{(3)}$** that is within Parcel UC-2. The IR-06 plume that crosses into Parcel UC-2 primarily contains low-level carbon tetrachloride; carbon tetrachloride has not been consistently detected in any other area of IR-06 and does not have an identified source.

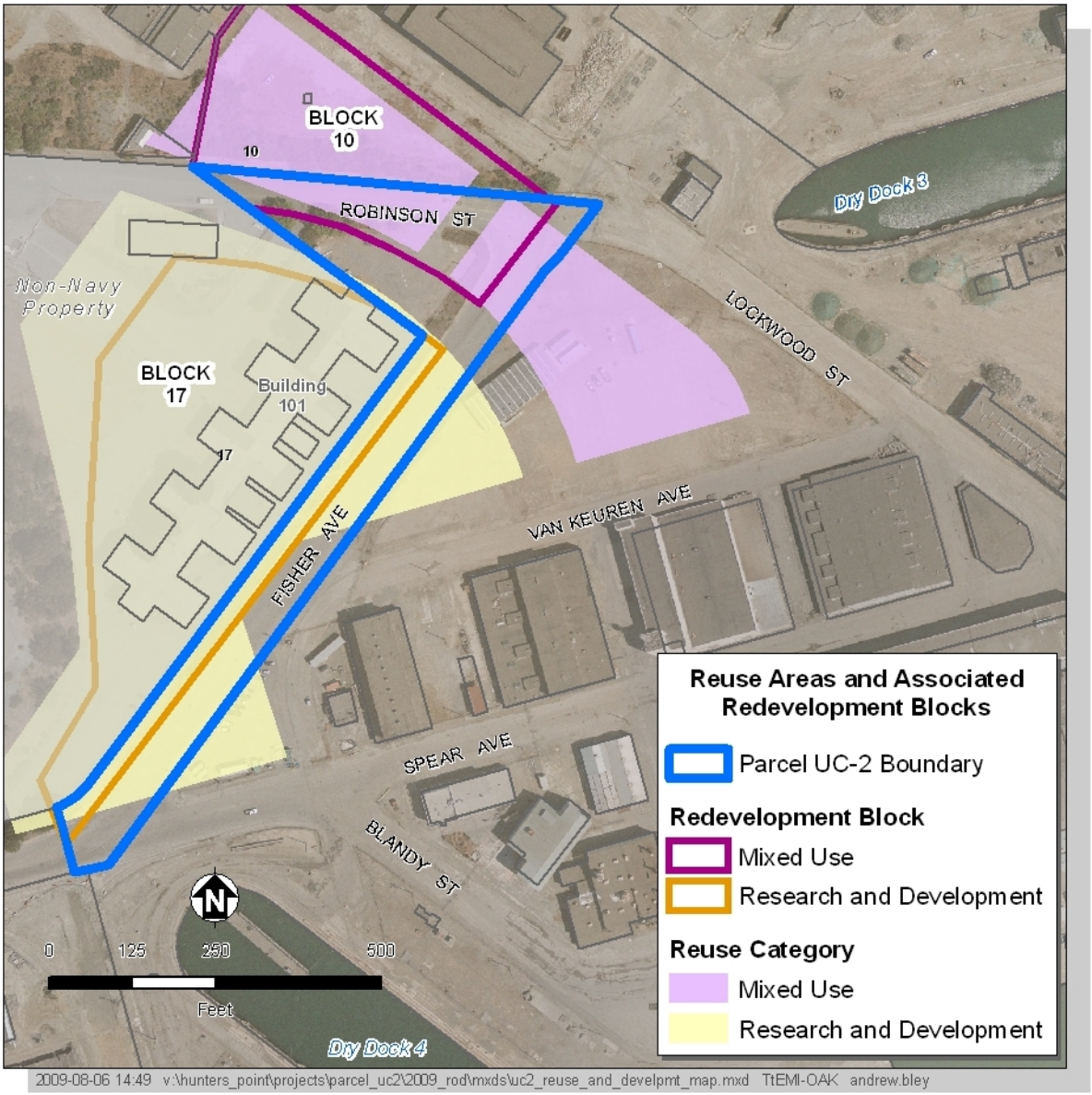


Figure 3. Reuse Areas and Associated Redevelopment Blocks

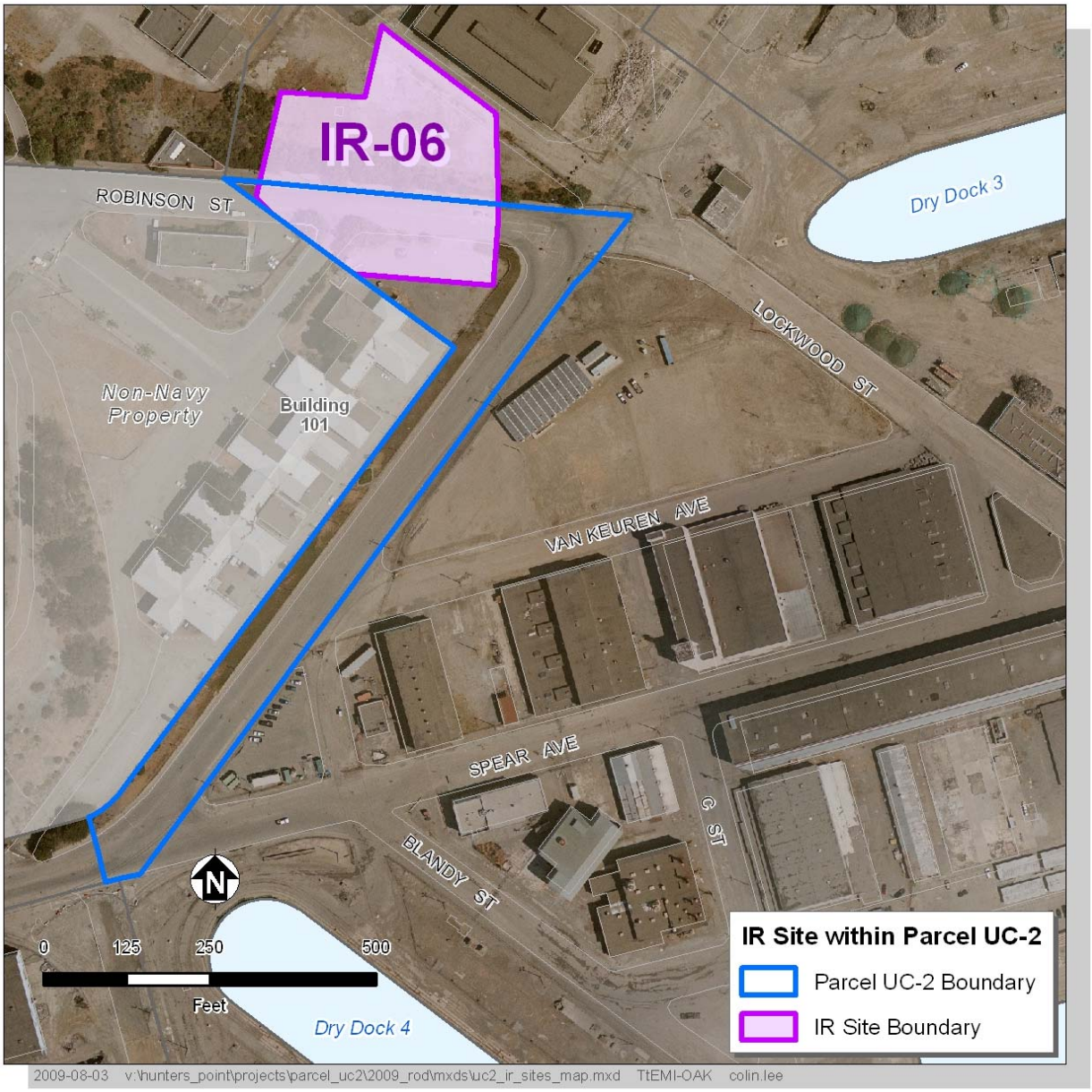


Figure 4. IR Site within Parcel UC-2

2.2 SITE CHARACTERISTICS

The northern and western portions of Parcel UC-2 consist of the original promontory, with native soil over shallow bedrock, while the eastern portion of Parcel UC-2 consists of flat lowlands. The lowlands were constructed by placing borrowed fill material from various sources, including crushed serpentinite bedrock from the adjacent highland. Most surface elevations in Parcel UC-2 are between 5 to 15 feet above mean sea level (msl), although surface elevations in the northern portion are 20 to 30 feet above msl. The serpentinite bedrock and serpentine bedrock-derived fill material consist of minerals that naturally contain asbestos and relatively high concentrations of arsenic, manganese, nickel, and other metals.

The **hydrostratigraphic units**(4) present at Parcel UC-2 include the shallow A-aquifer and an upper bedrock water-bearing zone. The B-aquifer is not present at Parcel UC-2. The shallow A-aquifer at Parcel UC-2 exists primarily within the shallow bedrock. The A-aquifer at Parcel UC-2 is expected to occur between 17.5 feet above msl at the northern end of the parcel, down to 2 feet above msl at the southern end of the parcel. These groundwater elevations are largely inferred from wells surrounding Parcel UC-2 and the topography of the area. Groundwater in the A-aquifer is not suitable as a potential source of **drinking water**(5).

The general pattern of groundwater flow is radially away from the former Parcel A topographic high (west of Parcel UC-2) and toward the shoreline. At Parcel UC-2, the general direction of groundwater flow is to the east, where groundwater discharges into the San Francisco Bay. Leaking storm drains, sewer lines, and water supply lines also influence groundwater movement across the former Parcel C. The principal sources of groundwater recharge for the A-aquifer at the former Parcel C are considered to be the horizontal flow from areas upgradient of Parcel UC-2, precipitation infiltration, and leaking sections of water lines. Discharge from the A-aquifer occurs principally as lateral flow of groundwater to the San Francisco Bay at the shore or through leaking utility corridors.

Parcel UC-2 ecology(6) is limited to those plant and animal species adapted to the industrial environment. The majority of Parcel UC-2 is covered by pavement and with little open space for flora and fauna; therefore, Parcel UC-2 has little habitat value for terrestrial ecological receptors. No threatened or endangered species are known to inhabit Parcel UC-2 or its immediate vicinity.

Although Parcel UC-2 fuel and steam lines were removed or closed in 2002, the storm drains and sanitary sewer lines beneath the parcel remain key site characteristics (Figure 5). Survey and removal of the Parcel UC-2 storm drain and sanitary sewer lines were completed in early October 2009. The draft radiological survey unit report is planned for early spring in 2010.

2.3 PREVIOUS INVESTIGATIONS

Potential contamination at Parcel UC-2 is associated with metals in soil, VOCs in groundwater, and radiologically impacted structures (storm drains and sanitary sewers), and soil associated with these structures. Assessment of contamination and risk for Parcel UC-2 is based on the Final FS Report for Parcel C (July 31, 2008), including the revised human health risk assessment (HHRA), and the radiological addendum to the FS Report (June 20, 2008). The Final FS Report for Parcel C considered new information associated with an interim removal action and groundwater data gaps investigation conducted at the former Parcel C. Both the FS and HHRA are detailed in the Final FS Report for Parcel C. The FS Report and radiological addendum summarize the most recent information available on Parcel UC-2 and provide the basis for the ROD for Parcel UC-2. Table 1 summarizes the previous studies, investigations, and removal actions conducted at the Parcel UC-2.

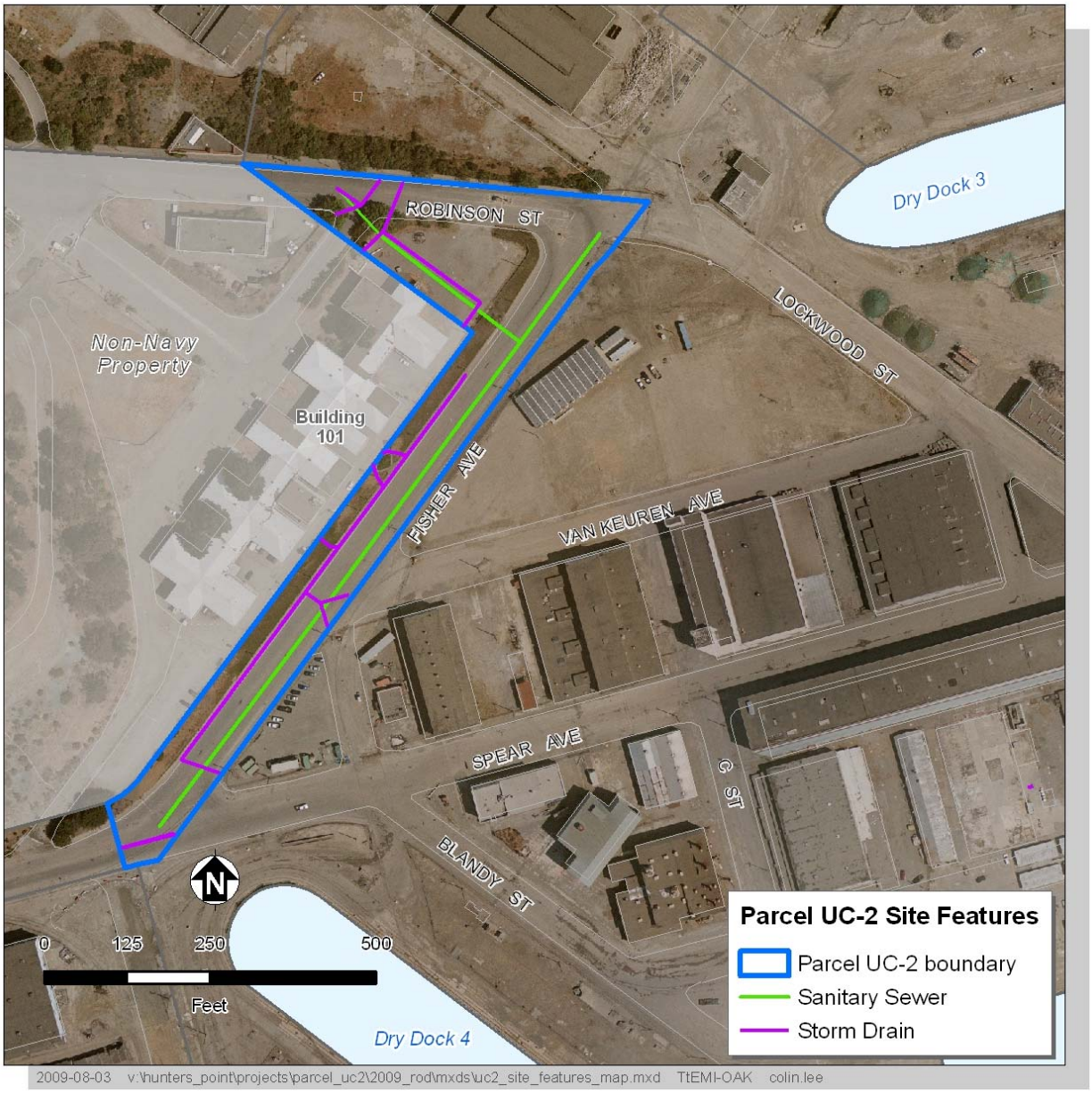


Figure 5. Parcel UC-2 Site Features

TABLE 1: PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Previous Investigation/ Removal Action[a]	Date	Investigation/Removal Action Activities
Investigations and Studies		
Preliminary Assessment (PA)	1984-1990	The 1990 PA for the former Parcel C, including Parcel UC-2, involved record searches, on-site surveys, interviews, and limited field investigations. The PA report concluded that portions of former Parcel C (including IR-06, which partially overlays Parcel UC-2) warranted further investigation because of the potential for contamination of soil and groundwater from past site activities.
Site Inspection (SI)	1994	The SI evaluated whether contamination was present and whether a release to the environment had occurred, evaluated each site for inclusion in the IR program, and eliminated sites that posed no significant threats to public health or the environment. Additional field data were collected, including geophysical surveys of suspected subsurface fuel lines; collection of soil and groundwater samples from borings; installation of monitoring wells and collection of groundwater samples; collection of shallow soil samples; trenching, mapping, inspection, and sample collection from the steam lines and sanitary sewers; video surveys of the sanitary sewers; and sump and floor scrape sampling. Soil and groundwater samples were collected in areas adjacent to the current Parcel UC-2 boundary, but no soil or groundwater samples were collected within the current UC-2 boundary at the SI stage. Based on the results of the SI, nine sites (including IR-06, which partially overlays Parcel UC-2) were recommended for inclusion in RI activities.
Remedial Investigation	1993-1997	Site conditions were further assessed: literature searches; interviews with former on-site employees; geophysical, radiological, and aerial map surveys; installation of soil borings and monitoring wells; aquifer testing; indoor air testing; and storm drain inspection. Soil and groundwater samples were collected in areas adjacent to the current Parcel UC-2 boundary, but no soil or groundwater samples were collected within the current UC-2 boundary at the RI stage. The following **samples**(7) were collected at IR-06, which partially overlays Parcel UC-2: 232 soil and 224 groundwater samples. Samples were analyzed for one or a combination of the following chemicals: metals, VOCs, semivolatile organic compounds, pesticides, polychlorinated biphenyls, and petroleum-related products. Removal actions were conducted, including aboveground storage tanks, tank farm, sandblast grit, and storm drain sediment, as well as asbestos and lead abatement. Based on the RI results, the 12 sites (including IR-06, which partially overlays Parcel UC-2) were recommended for further evaluation in an FS.

TABLE 1: PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Previous Investigation/ Removal Action[a]	Date	Investigation/Removal Action Activities
Investigations and Studies (Continued)		
Feasibility Study – Initial Phase	1996-1998	Results and analyses in the RI Report were used to identify, screen, and evaluate remedial alternatives and to define areas for proposed remedial action. Three different cleanup scenarios and associated cleanup goals were considered: cleanup to the industrial land use scenario (10^{-5} excess lifetime cancer risk [ELCR]); cleanup to the industrial land use scenario (10^{-6} ELCR); and cleanup to the residential land use scenario (10^{-6} ELCR). Each scenario also considered cleanup of soils representing a hazard index (HI) greater than 1 and lead concentrations greater than 1,000 milligrams per kilogram (mg/kg). Areas exceeding different cleanup goals for each reuse scenario and cleanup level were delineated, risk drivers were identified, and the extent of the cleanup areas was defined. Five IR sites and parts of two additional IR sites had cleanup areas based on residential use (including IR-06, which partially overlays Parcel UC-2), one IR site and parts of two more IR sites had cleanup areas based on industrial use, and one IR site and parts of two more IR sites had areas based on recreational use. All soil cleanup areas exceeding at least one of the various cleanup criteria under each reuse scenario were identified.
Risk Management Review (RMR) Process	1999	The RMR process was developed and conducted during a series of meetings held by the Navy and the regulatory agencies from January through April 1999. The process used various criteria and decision rules to reevaluate whether remedial actions were required at all of the 14 IR sites in former Parcel C that were originally identified as requiring remedial actions for soil. Of the 14 IR sites (including IR-06 which partially overlays Parcel UC-2), six were recommended for action after the RMR process. After the review had been completed, all sites fell into one of the following three categories: (1) sites where the team agreed no response action was required, (2) sites where the team agreed response action was required, and (3) sites where the team did not yet agree on the course of action. Based on the **RMR results**(8), the sites and chemicals requiring further evaluation and remedial action were revised.
Groundwater Data Gaps Investigation	2002-2008	A data gaps investigation (including IR-06, which partially overlays Parcel UC-2) was completed to provide additional understanding of the groundwater conditions underlying the parcel. To better define the vertical and horizontal extent of plumes, 17 monitoring wells were installed and groundwater samples were collected from these wells and 120 additional monitoring wells. Groundwater levels in 73 monitoring wells were measured, aquifer testing was conducted, and tidal influence and mixing studies were completed to better understand the groundwater conceptual model. Specifically, Parcel UC-2 monitoring wells IR06MW54F, IR06MW55F, IR06MW57F, and IR06MW58F were monitored as part of this investigation.

TABLE 1: PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Previous Investigation/ Removal Action[a]	Date	Investigation/Removal Action Activities
Investigations and Studies (Continued)		
Historical Radiological Assessment (HRA)	2004	The HRA evaluated and designated sites as radiologically **impacted or non-impacted**(9). A radiologically impacted site is one that has the potential for radioactive contamination based on historical information, or is known to contain or have contained radioactive contamination. A non-impacted site is one, based on historical documentation or results of previous radiological survey information, where there is no reasonable possibility for residual radioactive contamination. Based on the results of the assessment, the storm drains and sanitary sewers at Parcel UC-2 have a potential for radiological contamination, and further investigation is required.
Feasibility Study – Revised	2008	Existing RI data were combined with new data collected after the RI Reports had been completed. The revised FS considered new information associated with several cleanup actions completed within former Parcel C and at other adjacent parcels at HPS. New information considered and incorporated into the revised FS (including IR-06, which partially overlays Parcel UC-2) included (1) quarterly monitoring of groundwater, (2) updates to toxicity criteria used in the 1997 HHRA, and (3) the findings from removal actions conducted to address chemicals identified by the RMR process and radiological contaminants that were identified by the HRA. Data were summarized and evaluated to refine the site conceptual model, further define the nature and extent of contamination, assess potential risks based on existing site conditions, and develop and evaluate revised alternatives. Data evaluation included (1) a comparison of new and existing data with updated screening criteria, (2) a revised evaluation of groundwater beneficial uses and exposure pathways, and (3) a revised assessment of potential risk posed by exposure to soil and groundwater at former Parcel C. Revised remedial action objectives (RAO) were developed, which included a risk range rather than specific concentrations for contaminants. Remedial alternatives were developed and a detailed and comparative analysis of alternatives was performed.
Radiological Addendum	2008	The primary purpose of this addendum was to provide decision makers with the information necessary to select a final remedy for radiologically impacted buildings, former building sites, outdoor areas, and soils and piping associated with remediated storm drains and sanitary sewers (including those storm drains and sanitary sewers in Parcel UC-2). This information was obtained by developing and evaluating appropriate remedial alternatives. Two remedial alternatives were identified after the screening of general response actions (GRA) and process options: no action, and a combination of surveys, decontamination, excavation, disposal, and release. The two alternatives were analyzed against the nine CERCLA evaluation criteria and against each other.

TABLE 1: PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Previous Investigation/ Removal Action[a]	Date	Investigation/Removal Action Activities
Investigations and Studies (Continued)		
Proposed Plan	2009	The Proposed Plan invited the public to review and comment on the Preferred Alternatives for addressing environmental contamination at Parcel UC-2 and the current Parcel C before the final remedy was selected.
Removal Actions		
Removal Action Tank Farm (IR-06)	1990-1993	Ten aboveground storage tanks and associated piping were removed at IR-06, which partially overlays Parcel UC-2. The tanks ranged in size from 12,000 gallons to 2,100,000 gallons and contained diesel fuel, lube oil and solvents.
Storm Drain Sediment Removal	1996-1997	As part of a base-wide removal action, sediments in storm drain lines were removed at Parcel UC-2.
Parcel B Remedial Action (IR-06)	1997-1998	Soil was removed at 19 excavation sites at IR-06, which partially overlays Parcel UC-2. The excavations were sampled and the sites were backfilled.
Facility-Wide Exploratory Excavations	1997-1999	Soil was removed at 18 sites facility-wide, including IR-06, which partially overlays Parcel UC-2. The excavations were sampled, and the sites were backfilled.
Parcel B Remedial Action – Addendum	2000-2001	An industrial drain line between Buildings 123 and 134 (in IR-06, which partially overlays Parcel UC-2) was excavated. About 2,050 cubic yards (cy) of soil was removed, the excavation was sampled, and the site was backfilled.
Parcel B Storm Drain and Sanitary Sewer Removal Action	2008	A total of 1,892 linear feet of pipeline was removed at IR-06 (which partially overlays Parcel UC-2) and IR-25. About 3,086 cy of material was removed. The concrete, clay, and cement pipelines were tested for radiological contamination and disposed of appropriately off site.

Note:

a The documents listed are available in the administrative record and provide detailed information used to support remedy selection at Parcel UC-2.

Because no known sources of chemical contamination are in Parcel UC-2 soil, no soil samples were collected. The Final FS Report for Parcel C concluded that soil conditions in the Parcel UC-2 area can be represented by Hunters Point ambient levels (HPAL). Therefore, the predominant chemicals of concern in Parcel UC-2 soil are **metals(10)**. Elevated concentrations of metals such as arsenic, manganese, and nickel are expected for fill material derived from quarried bedrock that was used to build the shipyard in the 1940s. The final Parcel C FS also recommended applying the cover alternative parcel-wide because of the ubiquity of metals at concentrations that exceed remediation goals throughout the former Parcel C, including Parcel UC-2.

The only groundwater remedial unit (RU) at Parcel UC-2 is a portion of RU-C5 (Figure 6). The predominant chemicals present in Parcel UC-2 groundwater, based on this portion of RU-C5, are **VOCs(11)**, and specifically carbon tetrachloride. The highest concentration of carbon tetrachloride that has been detected in groundwater samples from Parcel UC-2 is 28 micrograms per liter (µg/L) in 1993 from a well that is located in the eastern portion of IR-06. In 2007 and 2008, detections of carbon tetrachloride in this area were between 1 and 5 µg/L. The estimated areal extent of carbon tetrachloride in groundwater at Parcel UC-2, and the well with the highest detection of carbon tetrachloride, is shown on Figure 6.

The Navy identified **radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures(12)**, including infrastructure at Parcel UC-2 associated with the former use of general radioactive materials and decontamination of ships used during the 1946 atomic weapons testing in the South Pacific. Although there are no radiologically impacted buildings, there are radiologically impacted storm drains and sanitary sewers in Parcel UC-2 (Figure 7). The Navy decided to conduct a time-critical removal action (TCRA) to address potential radioactive contamination in storm drains and sanitary sewers at Parcel UC-2. The TCRA at Parcel UC-2 involved (1) excavating radiologically impacted storm drain and sanitary sewer lines; and (2) screening, separating, and disposing of radioactively contaminated excavated materials at an off-site, low-level radioactive waste facility. Survey and removal of the Parcel UC-2 storm drain and sanitary sewer lines were completed in early October 2009. The draft radiological survey unit report is planned for early spring in 2010. Although the TCRA may not be completed by the time the ROD is signed, the TCRA is intended to achieve cleanup goals that are identical to the RAOs identified in this ROD. In the event that the TCRA does not achieve its cleanup goals, cleanup will continue in accordance with the remedial action selected in this ROD until the RAOs are achieved.

2.4 CURRENT AND POTENTIAL FUTURE SITE USES

The Parcel UC-2 **reuses(13)** **(mixed-use and research and development)** specified in the San Francisco Redevelopment Agency's 1997 reuse plan were evaluated for the residential exposure scenario. The groundwater in the A-aquifer, as discussed in the revised FS, is not suitable for use as drinking water. Additionally, drinking water standards do not apply to the A-aquifer or the upper bedrock water bearing zone when it is the uppermost groundwater unit. Exposures to the A-aquifer were evaluated based on indoor air inhalation and transport to the San Francisco Bay.

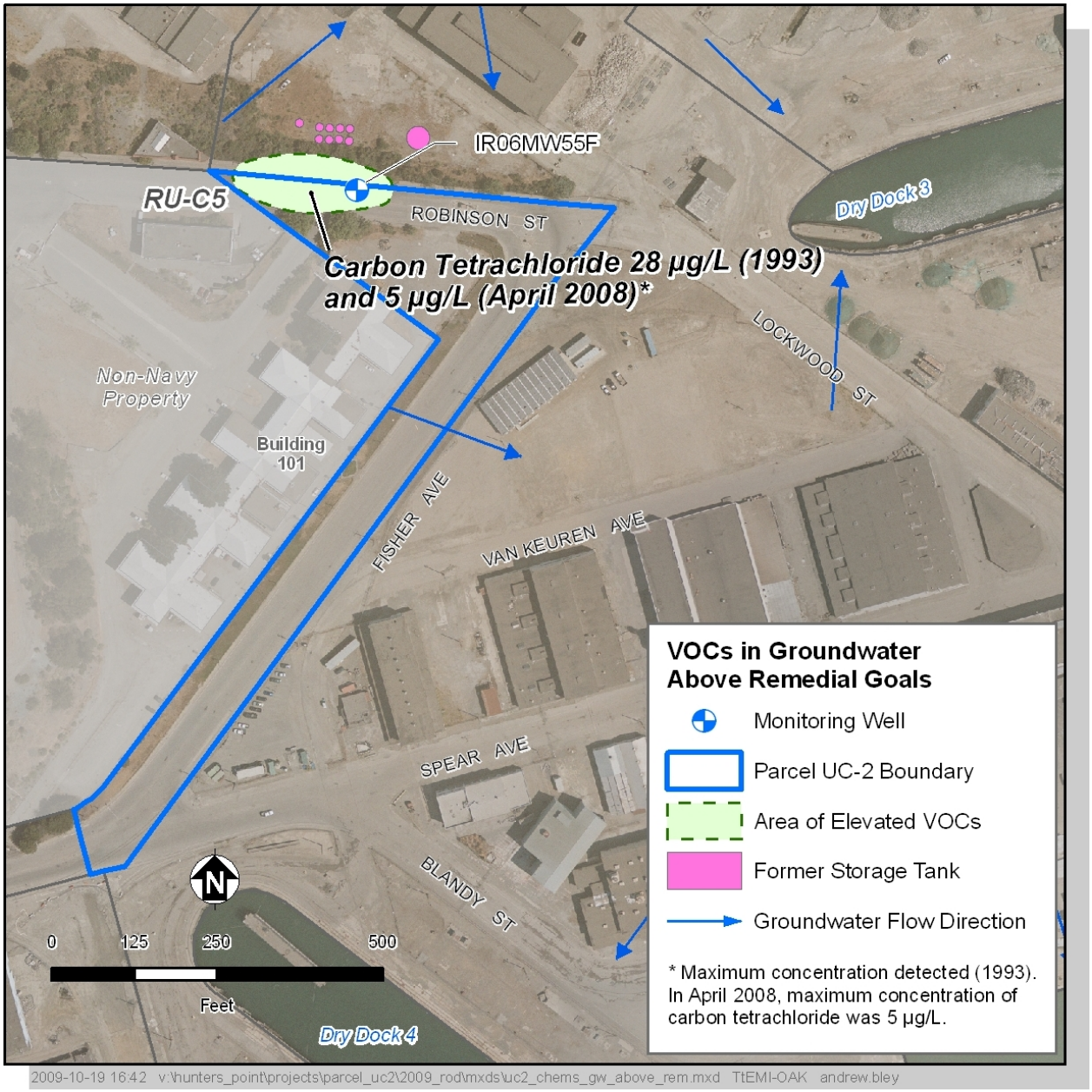


Figure 6. VOCs in Groundwater Above Remedial Goals

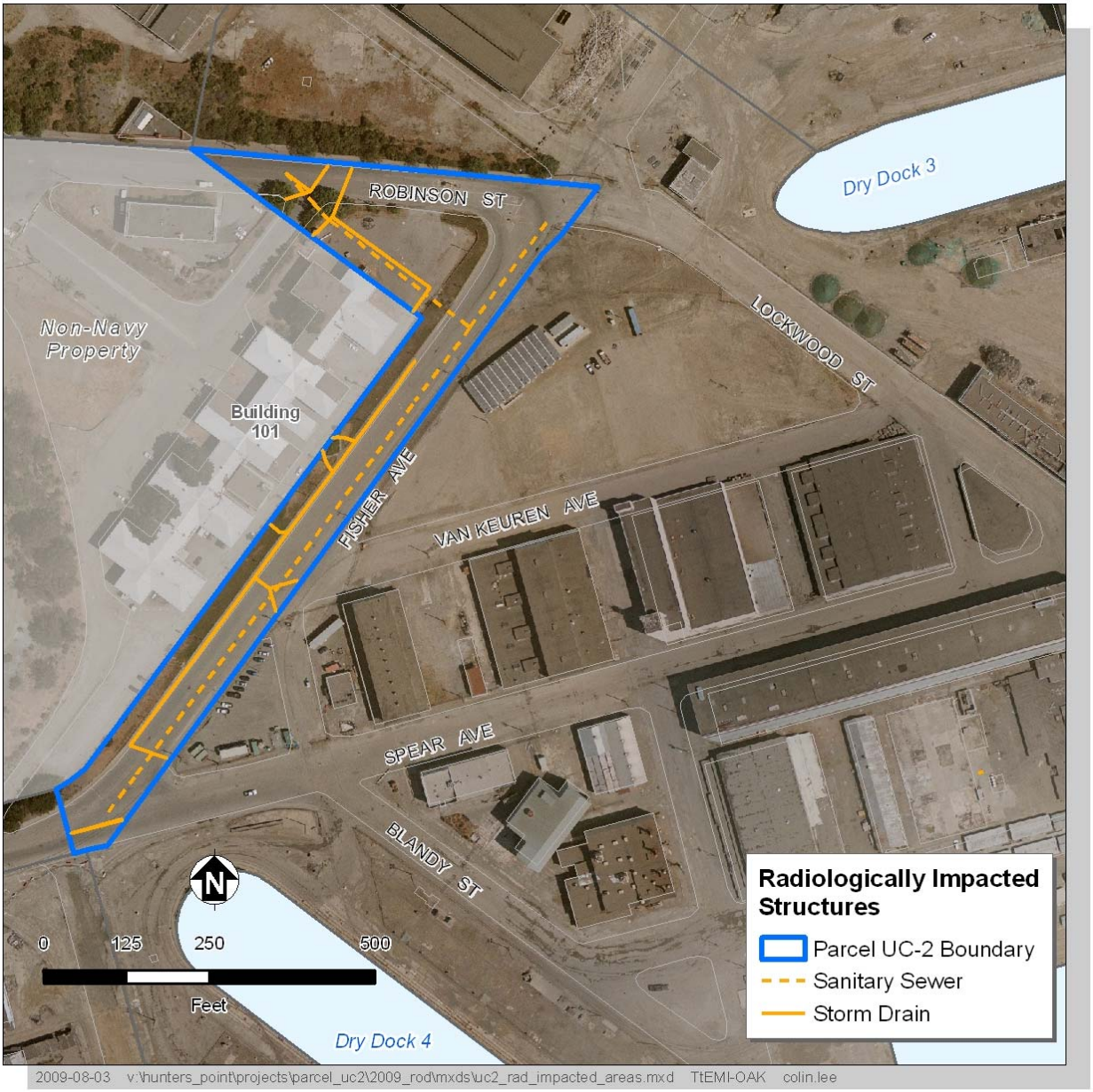


Figure 7. Radiologically Impacted Structures (Storm Drains and Sanitary Sewers)

2.5 SUMMARY OF SITE RISKS

The source of potential contamination at Parcel UC-2 is attributed to industrial and radiological research activities by the Navy or other tenants, and to several metals, such as arsenic, manganese, and nickel, expected at ambient concentrations in the local serpentine bedrock. The primary fate and transport mechanisms include volatilization, wind suspension, migration of contaminants via infiltration and percolation into subsurface soil and groundwater, transport and discharge of metals in groundwater to the San Francisco Bay, and root uptake. A general conceptual site model (CSM) for Parcel UC-2 is provided on Figure 8. Based on the CSM, Parcel UC-2 was evaluated for potential risks to human health and the environment in the Revised FS Report and its radiological addendum. The risk assessment results can be applied by focusing on the redevelopment blocks within the parcel. Results of the HHRA are presented in Section 2.5.1.

During the RI, the Navy concluded that limited viable habitat is available for terrestrial wildlife at Parcel UC-2 because the majority of the site is covered with pavement. Therefore, ecological risk associated with exposure to soil was not evaluated further. Furthermore, even if the future reuse of Parcel UC-2 were to change to open space/recreational, soil covers would protect terrestrial wildlife from risks posed by exposure to contaminants left below the cover. A screening evaluation of groundwater was conducted in the revised Final FS Report to evaluate potential risks to aquatic wildlife in San Francisco Bay. Results of that evaluation are summarized in Section 2.5.2.

2.5.1 Human Health Risk Assessment

Based on a **human health CSM(14)**, a quantitative **HHRA(15)** was completed for former Parcel C for exposure to surface soil, subsurface soil, groundwater, and vapor intrusion via groundwater. Potential **cancer risks and noncancer hazards(16)** were calculated based on reasonable maximum exposure (RME) assumptions recommended by EPA and DTSC. These assumptions are based on an RME rather than an average or medium-range exposure assumption and provide a conservative and protective approach that estimates the highest health risks that are reasonably expected to occur at a site. Actual risks from exposures to chemicals in soil and groundwater at Parcel UC-2 are likely to be lower.

To assess risk, the Base Realignment and Closure Cleanup Team agreed to divide all of HPS into two types of exposure areas (residential and industrial grids) as a method of statistically calculating risk within an area for various future land use scenarios based on RME. The final FS used these exposure areas and the redevelopment blocks as the basis for evaluating the results of the HHRA and developing remedial alternatives to address potential unacceptable risk at Parcel UC-2.

To help characterize cancer risk, the Navy adopted a conservative approach at Parcel UC-2 and evaluated action for risks greater than 10^{-6}. Acceptable exposure levels for known or suspected carcinogens are generally concentration levels that represent an excess upper-bound lifetime cancer risk to an individual between 10^{-4} (a 1 in 10,000 chance of developing cancer) and 10^{-6} (a 1 in 1,000,000 chance of developing cancer) using information on the relationship between dose and response. The 10^{-6} risk level is used as the point of departure for establishing cleanup goals for alternatives when applicable or relevant and appropriate requirements (ARAR) are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

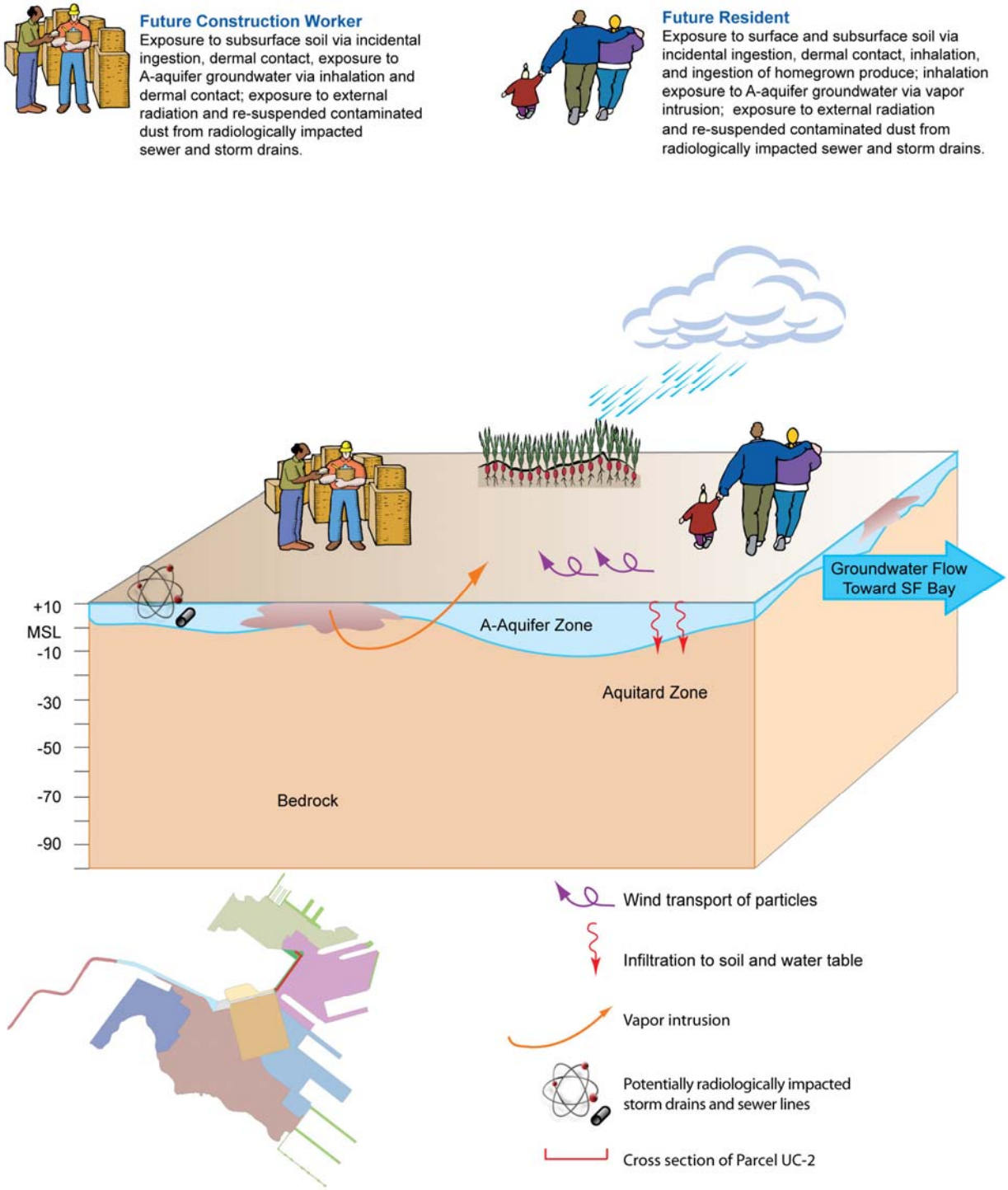


Figure 8. Conceptual Site Model

Both **total and incremental risks(17)** were evaluated for exposure to soil. All detected chemicals, including naturally occurring metals from the serpentine bedrock-derived fill material, were included as chemicals of potential concern for the total risk evaluation, regardless of their concentration. Only the essential nutrients calcium, magnesium, potassium, and sodium were not included as chemicals of potential concern. The total risk evaluation estimates the risks posed by chemicals at the site, including those present at concentrations at or below ambient levels. The essential nutrients were excluded as chemicals of potential concern in soil for the incremental risk evaluation, as well as the detected metals with maximum measured concentrations below the HPAL. The incremental risk evaluation estimates risks posed by metals present at the site that are above the estimated ambient levels.

Potential unacceptable risks include cancer risks and noncancer hazards for future receptors from exposure to soil or groundwater, as discussed below. Potential unacceptable risk is defined as an ELCR of greater than 10^{-6} or a segregated hazard index (HI) greater than 1, as calculated by the incremental risk evaluation.

The CERCLA process did not identify specific impacts to soil in Parcel UC-2. However, elevated concentrations of metals such as arsenic and manganese are found in soil at HPS and may be related to the bedrock fill quarried to build the shipyard in the 1940s. At ambient concentrations (that is, HPALs), some metals at HPS are associated with cancer risks in excess of 10^{-6} and noncancer hazards in excess of 1.0. For example, the cancer risk associated with residential exposure to arsenic at a concentration equal to the HPAL for arsenic (11.1 mg/kg) is 2.9×10^{-4}. The HI associated with residential exposure to manganese at a concentration equal to the HPAL for manganese (1,431 mg/kg) is 1.7. Collectively, all metals at ambient levels contribute to a cancer risk of 3×10^{-4} for a resident and of 3×10^{-5} for industrial workers and recreators. For noncancer hazards, metals at ambient levels collectively contribute to an HI of 11 for residents, 0.2 for industrial workers, and 0.7 for recreators. Although no soil data were collected within Parcel UC-2, some of the risk grids for the construction worker include the northern border of Parcel UC-2. Based on the **revised HHRA results(18)** for soil, these chemical cancer risks are estimated to be greater than 10^{-6} (see Table 2). Potential cancer risks from soil are based on ingestion or contact with arsenic and radionuclides.

The risk assessment for groundwater estimated cancer risk greater than 10^{-6} and a noncancer hazard greater than 1 in the portion of redevelopment block 10 that intersects Parcel UC-2 (see Table 2). Potential risks from groundwater are based on breathing VOC vapors in indoor air that may have migrated through the subsurface from groundwater in the A-aquifer. The primary COC in groundwater from the vapor intrusion pathway is carbon tetrachloride. In addition, the HHRA results for groundwater show that the risk to the construction worker from exposure to the A-aquifer groundwater via dermal exposure and inhalation exceeds the cancer risk threshold of 10^{-6} in areas with elevated concentrations of the COCs.

Additionally, **radiological risk(19)** was calculated based on estimated concentrations of radiological contamination at radiologically impacted sanitary sewer lines and storm drains, using remediation goals for each radionuclide of concern. Actual calculated risk will be based on field measurements after final status survey results have been received for each impacted site. **Combined chemical and radiological risk(20)** was also summed to estimate the overall potential risk to human health associated with a site.

The HHRA specifies the **assumptions and uncertainties**(21) inherent in the risk assessment process based on the number of samples collected or their location, the literature-based exposure and toxicity values used to calculate risk, and risk characterization across multiple media and exposure pathways. The effects of uncertainties are overestimation or underestimation of the actual cancer risk or HI. In general, the risk assessment process is based on the use of conservative (health-protective) assumptions that, when combined, are intended to overestimate the actual risk.

TABLE 2: CANCER RISKS AND NONCANCER HAZARDS
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Exposure Scenario	Cancer Risk[a]		Noncancer Hazard Index
		Chemical	Radiological[b]	
Soil				
10	Residential	Not quantified[c]	5×10^{-5}	Not quantified[c]
17	Residential	Not quantified[c]	5×10^{-5}	Not quantified[c]
10	Construction	4×10^{-4}	Not evaluated[d]	<1
17	Construction	Not quantified[c]	Not evaluated[d]	Not quantified[c]
Redevelopment Block	**Exposure Scenario**		**Chemical Cancer Risk**	**Noncancer Hazard Index**
A-Aquifer: Risk based on Vapor Intrusion				
10	Residential		6×10^{-4}	14

Notes:

a Listed risk value is the maximum in the redevelopment block. The redevelopment block and associated reuse are based on the "Hunters Point Shipyard Redevelopment Plan." Reuse areas and development blocks may change in the future.

b Maximum radiological risk is based on the sanitary sewers and storm drains within Parcel UC-2.

c Although no soil data were collected within Parcel UC-2, elevated concentrations of metals such as arsenic and manganese are found in the soil at HPS.

d The radiological risk assessment did not evaluate construction worker exposure but instead considered residential exposure as the most conservative (protective) scenario.

2.5.2 Ecological Risk Assessment

As previously stated, the Navy concluded during the RI that limited viable habitat is available for terrestrial wildlife at Parcel UC-2 because most of the site is covered with pavement. Specifically, the RI concludes that "Parcels C and D are almost entirely paved except for small pockets of vegetation which are not considered suitable habitat for animal life." Therefore, ecological risk associated with exposure to soil was not evaluated further in the Revised FS Report.

Chemicals present in the A-aquifer groundwater at Parcel UC-2 were evaluated to assess potential **environmental impacts to the San Francisco Bay(22)**. Based on the evaluation results, no chemicals were identified as ecological COCs in the A-aquifer at Parcel UC-2.

2.5.3 Basis for Response Action

The response action selected in this ROD is necessary to protect the public health, welfare, or the environment from actual or potential releases of hazardous substances into the environment. The Navy, in partnership with EPA, DTSC, and the Water Board, considered all pertinent factors in accordance with CERCLA and the NCP remedy selection criteria and concluded that remedial action is necessary to address **soil(23)**, **groundwater(24)**, and **radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures(25)** at Parcel UC-2. This determination was made because:

- Based on the limited HHRA results for soil and the general presence of artificial fill, chemical cancer risks are estimated to be greater than 10^{-6} at Parcel UC-2 (see Table 2).
- Before the affected structures (storm drains and sanitary sewers) were removed, radiological risks for soil and structures (storm drains and sanitary sewers) were greater than 10^{-6} across Parcel UC-2.
- Based on the general presence of artificial fill, the noncancer hazard is estimated to exceed 1 across Parcel UC-2.
- The risk assessment for groundwater estimated cancer risks greater than 10^{-6} and noncancer hazards greater than 1 in the RU-C5 plume that intersects the northern border of Parcel UC-2.
- Potential risks from groundwater are based on breathing VOC vapors in indoor air that may have migrated through the subsurface from groundwater in the A-aquifer.
- HHRA results for groundwater show that the risk from exposure to the A-aquifer groundwater via dermal exposure and inhalation to the construction workers exceeds the cancer risk threshold of 10^{-6} in areas with elevated concentrations of the COCs.

The concentrations of COCs for soil and groundwater that would require a response action are summarized in Table 3. **Radionuclides of concern(26)** for the sanitary sewers and storm drains are cesium-137, radium-226, and strontium-90. Figures 9 and 10 show the areas where remedial actions for soil and groundwater would occur.

TABLE 3: CHEMICALS OF CONCERN IN SOIL AND GROUNDWATER REQUIRING A RESPONSE ACTION
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Exposure Scenario[a]	Chemical of Concern	Maximum Detected Concentration
Soil (mg/kg)		
Residential	Arsenic	11.1[b]
	Manganese	1,431[b]
Construction Worker	Arsenic	11.1[b]
	Manganese	1,431[b]
Groundwater (µg/L)		
Residential – Vapor Intrusion (A-Aquifer)	Carbon Tetrachloride	28[c]
	Chloroform	11[c]
	Trichloroethene	14[c]
Construction Worker (A-Aquifer)	Carbon Tetrachloride	28[c]

Notes:

a Exposures in the residential and construction worker scenarios consider exposure to soil from 0 to 10 feet below ground surface (bgs).

b Although no soil data were collected within Parcel UC-2, soil conditions can be represented by Hunters Point ambient levels (HPAL), which indicate that elevated concentrations of metals such as arsenic (11.1 mg/kg) and manganese (1,431 mg/kg) are present.

c Maximum concentrations in groundwater from the most recent groundwater monitoring event (April 2008) are as follows: carbon tetrachloride (5 µg/L), chloroform (2.5 µg/L), and trichloroethene (0.5 µg/L).

µg/L Micrograms per liter

mg/kg Milligrams per kilogram

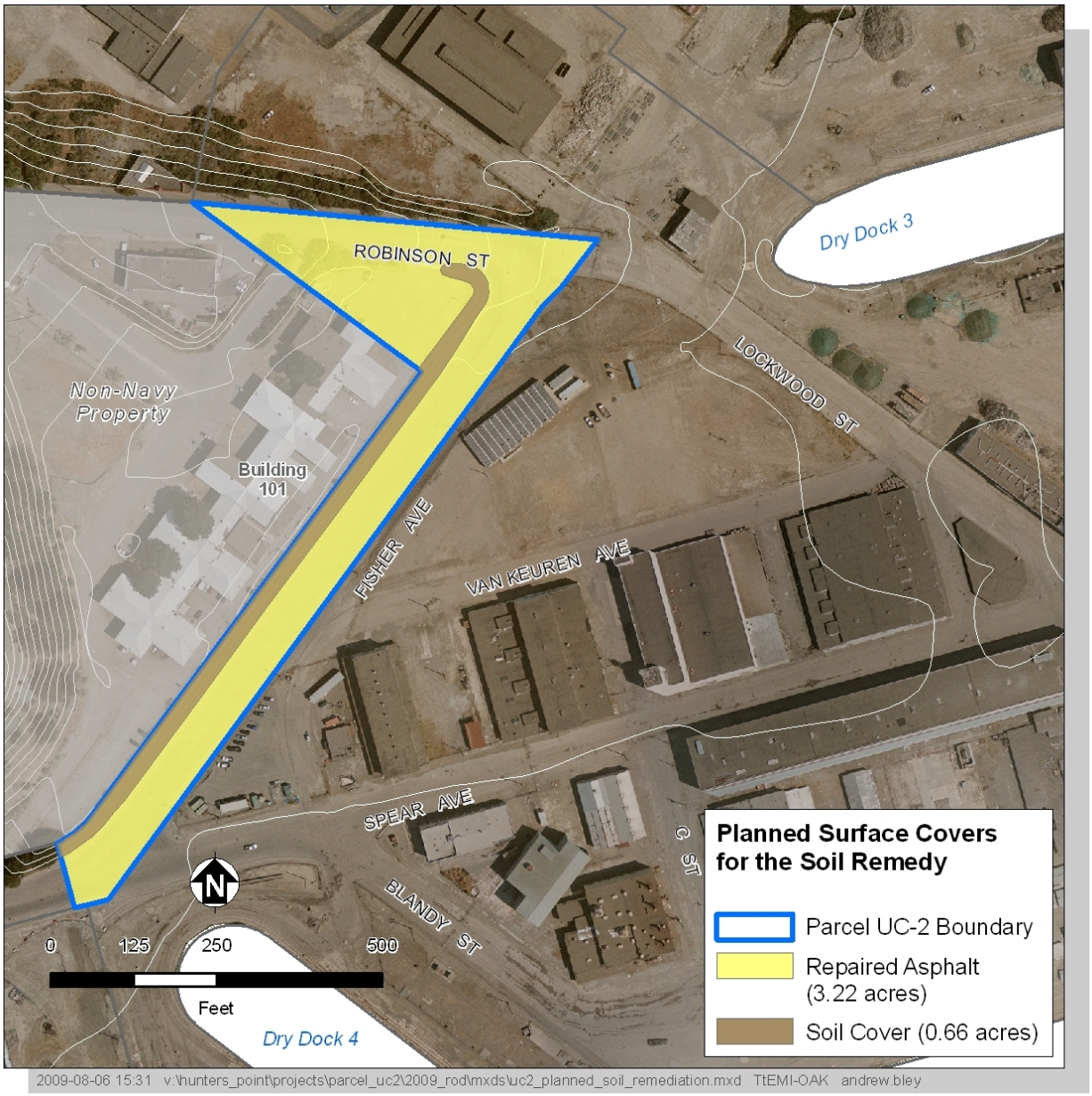


Figure 9. Planned Surface Covers for the Soil Remedy

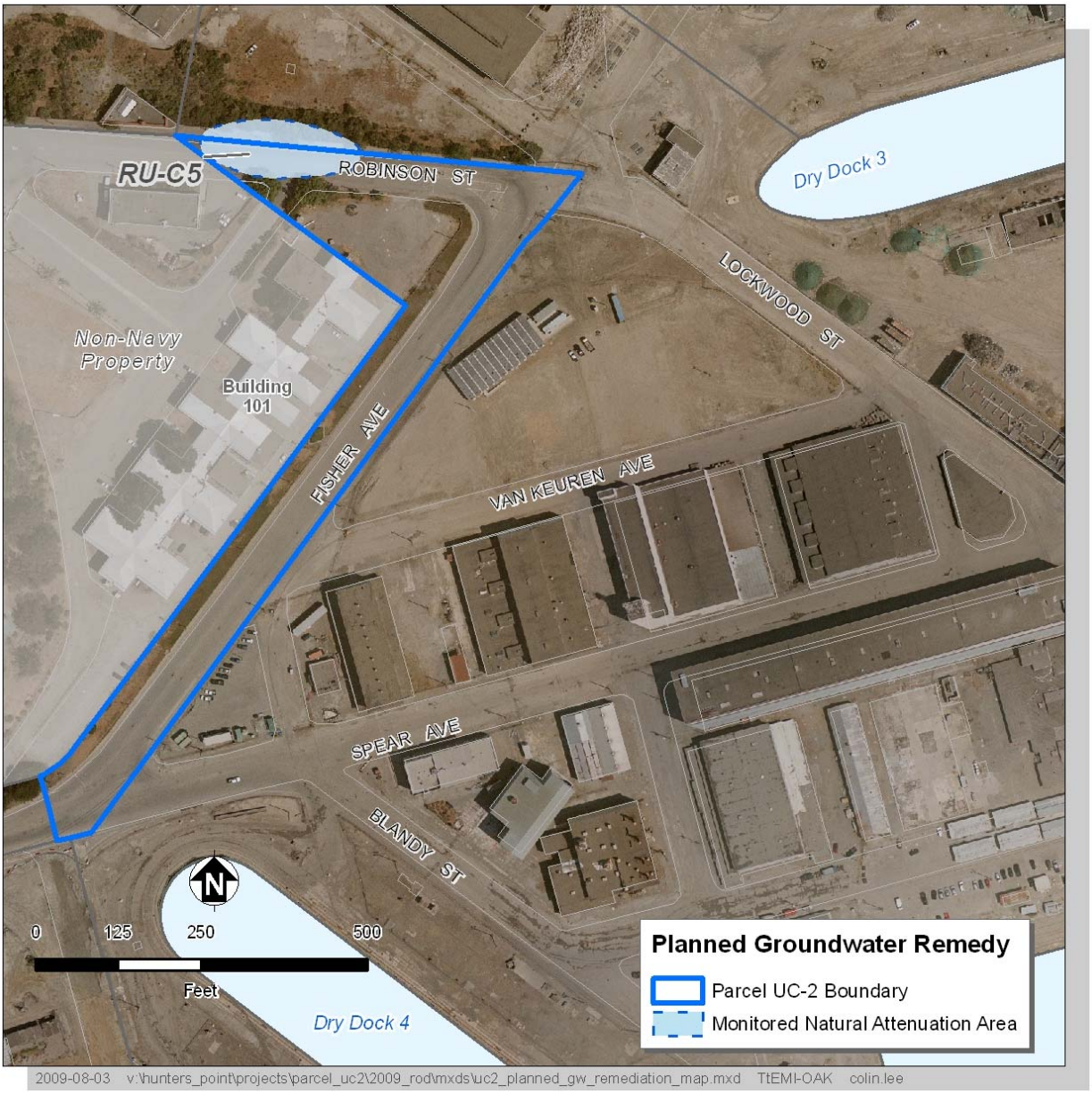


Figure 10. Planned Groundwater Remedy

2.6 PRINCIPAL THREAT WASTE

Although a remedial response action is necessary (Section 2.5.3), there are no wastes in Parcel UC-2 that constitute a "principal threat." Principal threat wastes are hazardous or highly toxic source materials that result in ongoing contamination to surrounding media, that generally cannot be reliably contained, or that present a significant risk to human health or the environment should exposure occur. Although elevated concentrations of some metals and radionuclides are present in soil and structures (storm drains and sanitary sewers), the potential risks do not suggest there is a principal threat waste in soil at Parcel UC-2. Contaminated groundwater is not generally considered source material unless it has the potential to be extremely mobile. Based on a review of the data, VOCs in groundwater at Parcel UC-2 appear to be somewhat stable, showing a minimal expansion of the associated plumes over time. In addition, a variety of processes occur in the subsurface that serve to reduce chemical concentrations in groundwater as groundwater migrates toward a discharge point such as the San Francisco Bay. These processes include hydrodynamic dispersion, sorption, chemical and biological transformation, dilution in the tidal mixing zone, and dilution on discharge to a surface water body. Therefore, VOCs (most significantly carbon tetrachloride) in groundwater at Parcel UC-2 are not considered a principal threat waste.

2.7 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAO)(27) are established based on attainment of regulatory requirements, standards, and guidance; contaminated media; COCs; potential receptors and exposure scenarios; and human health and ecological risks. Ultimately, the success of a remedial action is measured by its ability to meet the RAOs. Planned future land use is an important component in developing RAOs, and the RAOs for Parcel UC-2 are based on the San Francisco Redevelopment Agency's 1997 reuse plan. The RAOs for Parcel UC-2 were developed in conjunction with the regulatory agencies and are listed below by medium.

- **Soil RAOs:**
  1. Prevent or minimize exposure to inorganic chemicals in soil at concentrations above remediation goals developed in the HHRA for the following exposure pathways:
     (a) Ingestion of, outdoor inhalation of, and dermal exposure to surface and subsurface soil
     (b) Ingestion of homegrown produce by residents in mixed-use and research and development blocks
  2. Prevent or minimize exposure to VOCs in soil gas at concentrations that would pose unacceptable risk via indoor inhalation of vapors. Remediation goals for VOCs to address exposure via indoor inhalation of vapors may be superseded based on COC identification information from future soil gas surveys. Future action levels would be established for soil gas, would account for vapors from both soil and groundwater, and would be calculated based on a cumulative risk level of 10^{-6} using the accepted methodology for risk assessments at HPS.

- **Groundwater RAOs:**
  1. Prevent or minimize exposure to VOCs in the A-aquifer groundwater at concentrations above remediation goals via indoor inhalation of vapors from groundwater.
  2. Prevent or minimize direct exposure to the groundwater that may contain COCs through the domestic use pathway (for example, drinking water or showering).
  3. Prevent or minimize exposure of construction workers to VOCs in the A-aquifer groundwater at concentrations above remediation goals from dermal exposure and inhalation of vapors from groundwater.

- **Radiologically Impacted Structures (storm drains and sanitary sewers) and Soil (associated with these structures) RAOs:**
  1. Prevent or minimize exposure to radionuclides of concern in concentrations that exceed remediation goals for all potentially complete exposure pathways (for example, external radiation, soil ingestion, and inhalation of resuspended radionuclides in soil or dust).

Remediation goals for soil and groundwater are listed in Table 4. Remediation goals for radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures are listed in Table 5.

TABLE 4: REMEDIATION GOALS FOR SOIL AND GROUNDWATER
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Exposure Scenario[a]	Chemical of Concern	Remediation Goal / Basis[b,c]
Soil[d]		
Residential	Arsenic	11.1 / HPAL
	Manganese	1,431 / HPAL
Construction Worker	Arsenic	11.1 / HPAL
	Manganese	6,900 / RBC
Groundwater[e]		
Residential – Vapor Intrusion (A-Aquifer)	Carbon Tetrachloride	0.5 / PQL
	Chloroform	1.0 / PQL
	Trichloroethene	2.9 / RBC
Construction Worker (A-Aquifer)	Carbon Tetrachloride	15 / RBC

Notes:
a Exposures in the residential and construction worker scenarios consider exposure to soil from 0 to 10 feet below ground surface.
b Soil remediation goals are in milligrams per kilogram.
c Groundwater remediation goals are in micrograms per liter.
d Although no soil data were collected within Parcel UC-2, soil conditions can be represented by HPAL. Maximum concentrations of metals such as arsenic and manganese are expected to exceed the soil remediation goal.
e Remediation goals for volatile organic compounds to address exposure via indoor inhalation of vapors may be superseded based on chemicals of concern identification information from future soil gas surveys. These future action levels would be established for soil gas, would account for vapors from both soil and groundwater, and would be calculated based on a cumulative risk level of 10^{-6} using the accepted methodology for risk assessments at the HPS.
PQL Practical quantitation limit
RBC Risk-based concentration

TABLE 5: REMEDIATION GOALS FOR RADIONUCLIDES
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Radionuclide[a]	Surfaces (dpm/100 cm^2)		Soil (pCi/g)[d]	Water (pCi/L)
	Equipment and Waste [b]	Structures[c]		
Cesium-137	5,000	5,000	0.113	119
Radium-226	100	100	1[e]	5
Strontium-90	1,000	1,000	0.331	8

Notes:

a	Unless otherwise stated, the radiological remediation goals in this table are based on total activity per sample including the background.
b	Limits for removable surface activity are 20 percent of these values.
c	Structures consist of storm drains and sanitary sewers. Remediation goals are consistent with those issued in the Radiological TCRA Action Memorandum. Remediation goals meet the 25 mrem/yr residual dose level consistent with 10 CFR Section 20.1402. Furthermore, goals meet the 15 mrem/yr residual dose level for most radionuclides of concern, consistent with the 1997 EPA OSWER Directive (OSWER No. 9200.4-18).
d	All radiologically impacted soils will be remediated according to residential remediation goals.
e	Goal is 1 pCi/g above background per agreement with EPA.

CFR	*Code of Federal Regulations*
dpm/100cm^2	Disintegration per minute per one hundred square centimeters
EPA	U.S. Environmental Protection Agency
millirem	One thousandth of a rem (10^{-3})
mrem/yr	Millirem per year
OSWER	Office of Solid Waste and Emergency Response
pCi/g	Picocurie per gram
pCi/L	Picocurie per liter
TCRA	Time-Critical Removal Action

2.8 DESCRIPTION AND EVALUATION OF REMEDIAL ALTERNATIVES

To address contamination in soil and groundwater and radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures, preliminary screening of **GRAs**(28) and process options was completed to refine the remedy selection process, as detailed in the revised Final FS Report. The GRAs were also developed considering the planned future land use of each redevelopment block because the RAOs were developed based on the planned future land use. Five soil, five groundwater, and two radiological remedial approaches were retained as combinations of **preliminary remedial alternatives**(29) and were evaluated with respect to implementability, effectiveness, and relative cost (high, moderate, and low). Detailed cost analysis was not performed as part of this preliminary screening.

Five remedial alternatives for soil, five remedial alternatives for groundwater, and two remedial alternatives for radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures were retained for a detailed comparative analysis in accordance with the NCP.

2.8.1 Description of Remedial Alternatives

The feasibility study was conducted for the former Parcel C, which consisted of the current Parcels UC-2 and C. Parcel UC-2 was a small, non-industrial portion of the former Parcel C. The former Parcel C was subsequently split into the current Parcels C and UC-2 at the proposed plan stage of the CERCLA process. Evaluation of risk, development of remedial action objectives, and evaluation of remedial alternatives as documented in the final feasibility study pertain to both the current Parcel C and UC-2; as such, only a subset of the soil and groundwater remedy components evaluated in the FS are applicable to the Parcel UC-2 portion of the former Parcel C.

The relevant remedy components are as follows:

- ICs, maintained landscaping, and covers for soil
- ICs, long-term monitoring, and MNA for groundwater.

The following remedy components in the soil and groundwater alternatives are not relevant for the Parcel UC-2 portion of the former Parcel C, and therefore are not applicable to Parcel UC-2:

- Excavation, off-site disposal, and soil vapor extraction (SVE) for soil.
- In situ zero-valent iron (ZVI) reduction and bioremediation for groundwater.

Only the relevant remedy components for Parcel UC-2 are presented and evaluated in this ROD. The relevant soil and groundwater remedy components for Parcel UC-2 are summarized in Table 6.

Table 7 provides the major components, details, and cost of each remedial alternative for Parcel UC-2 identified for soil, groundwater, and radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures.

2.8.2 Comparative Analysis of Alternatives

A comparative analysis of alternatives with respect to the **nine evaluation criteria**[30] was completed and is provided below. Table 8 depicts a relative ranking of the alternatives.

Threshold Criteria

Overall Protection of Human Health and the Environment. The no-action alternatives for soil, groundwater, and radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures do not achieve RAOs; therefore, they do not protect human health and the environment and are not considered further in this ROD. For soil, Alternatives S-2/3 and S-4/5 are protective of human health and the environment under the anticipated future land use of the site, although the degree of protection varies between the alternatives. For groundwater, Alternatives GW-2 and GW-3/4 are also protective of human health and the environment, although the degree of protection varies between the alternatives. For radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures, Alternative R-2 is protective of human health and the environment because it includes remediation that reduces exposure to radionuclides of concern.

TABLE 6: SUMMARY OF PARCEL UC-2 REMEDIAL ALTERNATIVES AND REMEDY COMPONENTS
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Medium	UC-2 ROD Alternative	FS Alternative[a]	Relevant Remedy Components for Parcel UC-2	Remedy Components not Relevant for Parcel UC-2 (not evaluated in ROD)
Soil	S-1	S-1	Existing Soil	
	S-2/3	S-2	ICs, Maintained Landscaping	
		S-3	ICs, Maintained Landscaping	~~Excavation, Off-site Disposal~~
	S-4/5	S-4	ICs, Install Covers	
		S-5	ICs, Install Covers	~~Excavation, Off-site Disposal, SVE~~
Groundwater	GW-1	GW-1	Existing Groundwater	
	GW-2	GW-2	ICs, Groundwater Monitoring	
	GW-3/4	GW-3(A&B)	ICs, Monitored Natural Attenuation	~~ZVI reduction, bioremediation~~
		GW-4	ICs, Monitored Natural Attenuation	~~ZVI reduction, plume-wide bioremediation~~
Radiologically Impacted Structures and Soil	R-1	R-1	Existing Structures and Soil	
	R-2	R-2	Survey, Decontamination, Excavation, Disposal	

Note:

a The Feasibility Study (FS) for the former Parcel C developed five soil remedy alternatives (S-1 through S-5) and five groundwater remedy alternatives (GW-1 through GW-4). Only relevant remedy components for Parcel UC-2 were evaluated. The following remedy alternatives for Parcel UC-2 are equivalent and were combined for evaluation: S-2/3 (S-2 and S-3), S-4/5 (S-4 and S-5), and GW-3/4 (GW-3A, GW-3B, and GW-4).

TABLE 7: REMEDIAL ALTERNATIVES
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Remedial Alternative[a]	Components	Details	Cost[b]
Soil Remedial Alternatives			
S-1: No Action *No action for contaminated soil with no restriction on activities.*	Existing soil	No action	No cost
S-2/3: ICs and Maintained Landscaping *Impose ICs to limit land use and maintain landscaping of bare or disturbed areas with no cover.*	▪ ICs ▪ Maintained landscaping	▪ ICs, including proprietary controls, restrictive covenants, restricted land use, restricted activities, and prohibited activities, will be implemented to prevent or minimize exposure to areas where potential unacceptable risk is posed by COCs in soil. The site would be fenced before redevelopment, except for areas that are covered with a building footprint or existing cover (such as a parking lot). ▪ Maintain landscaping for bare or minimally vegetated areas that have been disturbed by excavation or construction and not restored with a cover. ▪ ICs would prohibit construction of new or reuse of buildings over VOC plumes unless sufficient measures are taken to prevent or minimize exposure to VOCs in soil or groundwater.	Capital Cost: $84,000 O&M Cost: $123,000 **Present-Worth Cost: $248,000**(31) (32) Discount Rate: 3.0% Timeframe: 30 years Note: These costs were adapted from the former Parcel C costs and represent approximately 16 percent of the original costs for the former parcel. The present-worth cost includes a 20 percent contingency cost. The actual costs associated with this remedial alternative are within the -30/+50 percent range of the stated present worth cost, as discussed in the original Parcel C FS.

TABLE 7: REMEDIAL ALTERNATIVES (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Remedial Alternative[a]	Components	Details	Cost[b]
S-4/5: Covers and ICs *Install physical barriers, such as covers, to block exposure pathways to contaminated soil, followed by ICs.*	▪ Install covers ▪ ICs (S-2/3)	▪ Install durable covers that will not break, erode, or deteriorate such that the underlying soil becomes exposed. Existing asphalt and concrete surfaces may be used as covers as long as they meet the durability requirement. ▪ All asphalt covers will be sealed at the start of construction and maintained by resealing once every 10 years or as needed to prevent or minimize opening an exposure pathway. ▪ The ground would be covered with a minimum of 4 inches of asphalt paving (industrial areas) or 2 feet of new soil (residential areas). Because of the steep slope, the type and thickness of the soil cover will be established in the remedial design (RD). ▪ Approximately 0.7 acre would be covered with soil and maintained landscaping and 3.2 acres of existing asphalt and concrete surfaces would be used and repaired as necessary. ▪ Impose same ICs as those for Alternative S-2/3.	Capital Cost: $208,000 O&M Cost: $140,000 **Present-Worth Cost: $418,000**(33) (34) Discount Rate: 3.0% Timeframe: 30 years Note: These costs were adapted from the former Parcel C costs and represent approximately 6 percent of the original costs for the former parcel. The present-worth cost includes a 20 percent contingency cost. The actual costs associated with this remedial alternative are within the -30/+50 percent range of the stated present worth cost, as discussed in the original Parcel C FS.

TABLE 7: REMEDIAL ALTERNATIVES (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Remedial Alternative[a]	Components	Details	Cost[b]
Groundwater Remedial Alternatives			
GW-1: No Action *No action for contaminated groundwater with no restriction on activities.*	Existing groundwater	No action	No cost
GW-2: Long-Term Monitoring and ICs *Implement monitoring to assess migration of chemicals and ambient conditions, followed by ICs.*	▪ Groundwater monitoring ▪ ICs	▪ Monitor VOCs at strategically located monitoring wells to evaluate whether plumes are stable or mobile. Frequency and duration will be established at a later date. ▪ ICs, including property controls, restrictive covenants, restricted land use, restricted and prohibited activities, will be implemented to prevent exposure to groundwater where there is potential unacceptable risk posed by COCs in groundwater. ▪ ICs will remain in place until the selected remedial goals are achieved that allow for unlimited use and unrestricted exposure.	Capital Cost: $0 O&M Cost: $423,000 **Present-Worth Cost: $508,000$_{(35)}$**[b] Discount Rate: 3.0% Timeframe: 30 years Note: These costs were adapted from the former Parcel C costs and represent approximately 4 percent of the original costs for the former parcel. The present-worth cost includes a 20 percent contingency cost. The actual costs associated with this remedial alternative are within the -30/+50 percent range of the stated present worth cost, as discussed in the original Parcel C FS.

TABLE 7: REMEDIAL ALTERNATIVES (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Remedial Alternative[a]	Components	Details	Cost[b]
Groundwater Remedial Alternatives (Continued)			
GW-3/4: Monitored Natural Attenuation, and ICs *Monitored natural attenuation (MNA) and ICs*	▪ MNA ▪ ICs (GW-2)	▪ Impose MNA. ▪ Impose same ICs as those for Alternative GW-2. ▪ The cost for implementation of this alternative is the same as for Alternative GW-2.	Capital Cost: $0 O&M Cost: $423,000 **Present-Worth Cost: $508,000 / $508,000**[(36) (37)][b] Discount Rate: 3.0% Timeframe: 30 years Note: These costs were adapted from the former Parcel C costs and represent approximately 2 percent of the original costs for the former parcel. The present-worth cost includes a 20 percent contingency cost. The actual costs associated with this remedial alternative are within the -30/+50 percent range of the stated present worth cost, as discussed in the original Parcel C FS.
Radiologically Impacted Structures (storm drains and sanitary sewers only) and Soil (associated with these structures) Remedial Alternatives			
R-1: No Action *No action for radiologically impacted structures (storm drains and sanitary sewers) and soil (associated with these structures) with no restriction on activities.*	▪ Existing structures (storm drains and sanitary sewers) ▪ Existing soil	No action	No cost

TABLE 7: REMEDIAL ALTERNATIVES (CONTINUED)
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Remedial Alternative[a]	Components	Details	Cost[b]
Radiologically Impacted Structures (storm drains and sanitary sewers only) and Soil (associated with these structures) Remedial Alternatives (Continued)			
R-2: Survey, Decontamination, Excavation, Disposal, and Release *Survey existing structures (storm drains and sanitary sewers), followed by excavation and off-site disposal of contaminated materials and soil.*	▪ Survey ▪ Decontamination ▪ Excavation ▪ Disposal ▪ Release	▪ No buildings are present at Parcel UC-2. ▪ Survey structures (storm drains and sanitary sewers). ▪ Excavate storm drain and sanitary sewer lines and radiologically impacted soil associated with these structures. ▪ Dispose of excavated materials and soils at off-site facilities. ▪ Conduct surveys to ensure that remediation goals are met for all radiologically impacted sites in Parcel UC-2.	Capital Cost:: $758,000 O&M Cost: None **Present-Worth Cost: $1,077,000**(38) Discount Rate: Not applicable Timeframe: Approximately 1 year Note: These costs were adapted from the former Parcel C costs and represent approximately 4 percent of the original costs for the former parcel. The present-worth cost includes a 20 percent contingency cost. The actual costs associated with this remedial alternative are within the -30/+50 percent range of the stated present worth cost, as discussed in radiological addendum to the original Parcel C FS.

Notes:

a The Feasibility Study (FS) for the former Parcel C developed five soil remedy alternatives (S-1 through S-5) and five groundwater remedy alternatives (GW-1 through GW-4). Only relevant remedy components for Parcel UC-2 were evaluated in this ROD. The following remedy alternatives for Parcel UC-2 are equivalent and were combined for evaluation: S-2/3 (S-2 and S-3), S-4/5 (S-4 and S-5), and GW-3/4 (GW-3A, GW-3B, and GW-4).

b Parcel UC-2 represents a small percentage of the original Parcel C acreage (approximately 3 percent), and only a limited set of soil and groundwater response actions applicable at Parcel C are relevant remedy components for Parcel UC-2 (ICs, maintained landscaping, and covers for soil; ICs, long-term monitoring, and monitored natural attenuation [MNA] for groundwater). Based on this understanding, the Parcel UC-2 costs for Alternatives S-2, S-4, and GW-2 were evaluated in detail and were found to be 16 percent for Alternative S-2, 3 percent for Alternative S-4, and 4 percent for Alternative GW-2 of the overall Parcel C costs. The adjusted Parcel UC-2 Alternative S-2 costs were used to adjust the Alternative S-2/3 costs, and the adjusted Parcel UC-2 Alternative S-4 costs were used to adjust the Alternative S-4/5 costs. The adjusted Parcel UC-2 Alternative GW-2 costs were used to adjust the costs for Alternative GW-3/4. These adjusted Parcel UC-2 costs were compared with the original Parcel C cost for each of these alternatives, and a percentage was calculated.

c The present worth costs for implementing Alternatives GW-2 and GW-3/4 ($508,000) are equivalent.

TABLE 8: RELATIVE RANKING OF REMEDIAL ALTERNATIVES
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

	Soil[a]			Groundwater[a]			Radiologically Impacted Structures (storm drains and sanitary sewers) and Soil (associated with these structures)	
CERCLA Criteria	**S-1 No Action**	**S-2/3 ICs and Maintained Landscaping**	**S-4/5* Covers and ICs**	**GW-1 No Action**	**GW-2 Long-Term Monitoring and ICs**	**GW-3/4* Monitored Natural Attenuation, and ICs**	**R-1 No Action**	**R-2* Survey, Decontamination, Excavation, Disposal, and Release**
Threshold Criteria								
Overall Protection of Human Health and the Environment	No	Yes	**Yes**	No	Yes	**Yes**	No	**Yes**
Compliance with ARARs	N/A	Yes	**Yes**	N/A	Yes	**Yes**	N/A	**Yes**
Balancing Criteria								
Long-Term Effectiveness and Permanence	○	◑	◕	○	◔	◑	○	◕
Reduction in Toxicity, Mobility, or Volume through Treatment	◔	◔	◔	◔	◔	◔	○	◔
Short-Term Effectiveness	◕	◑	◕	◕	●	●	◕	◕
Implementability	●	◔	◕	●	●	●	◕	◕
Present-Worth Cost ($)	$0	$248,000	$418,000	$0	$508,000[b]	$508,000[b]	$0	$1,077,000
Modifying Criteria								
State Acceptance	○	○	◑	○	◔	◑	○	●
Community Acceptance	○	◔	◔	○	◔	◔	○	●

Notes: Fill symbol by quarters from open (poor) to full (excellent).

* Indicates preferred alternative

a The Feasibility Study (FS) for the former Parcel C developed five soil remedy alternatives (S-1 through S-5) and five groundwater remedy alternatives (GW-1 through GW-4). Only relevant remedy components for Parcel UC-2 were evaluated in this ROD. The following remedy alternatives for Parcel UC-2 are equivalent and were combined for evaluation: S-2/3 (S-2 and S-3), S-4/5 (S-4 and S-5), and GW-3/4 (GW-3A, GW-3B, and GW-4).

b The present worth costs for implementing Alternatives GW-2 and GW-3/4 ($508,000) are equivalent.

Compliance with ARARs. ARARs do not apply to the no-action alternatives for soil, groundwater, and radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures. The remaining soil, groundwater, and radiological alternatives must either comply with ARARs or provide grounds for a waiver. Alternatives S-2/3 and S-4/5 comply with all ARARs. Alternatives GW-2 and GW-3/4 also meet all the ARARs, but with potentially less certainty. Alternative R-2 fulfills all ARARs related to radiologically impacted structures (storm drains and sanitary sewers) or soil associated with these structures.

Primary Balancing Criteria

Criteria Long-Term Effectiveness and Permanence. Alternative S-4/5 is rated highest with respect to long-term effectiveness and permanence because it includes durable covers and ICs. The long-term effectiveness and permanence is lower for Alternative S-2/3, which includes the same ICs but relies on maintained landscaping rather than durable covers. Alternatives S-2/3 and S-4/5 would also provide long-term effectiveness in meeting the RAOs through reliance on continuous enforcement of covenants to restrict use of property to maintain covers and access restrictions. Alternatives S-2/3 and S-4/5 rely on access restrictions for other COCs until ICs are implemented and do not permanently remove any contamination. Since no action will be taken under Alternative S-1, it does not provide a long-term effective or permanent solution to the risks from soil present at the site.

Alternative GW-3/4 provides the highest level of long-term effectiveness and permanence because it includes MNA and ICs. The conditions for natural degradation of COCs will be monitored under MNA. Alternative GW-2 would provide a moderate level of effectiveness and permanence because groundwater plumes would be addressed only through ICs and monitoring to assess the potential migration of contaminants. All alternatives, except for Alternative GW-1, provide an adequate and reliable level of controls.

Alternative R-2 would provide excellent long-term effectiveness and performance for radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures. Alternative R-1 provides very little long-term effectiveness and performance because it includes no action.

Reduction in Toxicity, Mobility, or Volume through Treatment. None of the alternatives proposed for remediating soils at Parcel UC-2 includes treatment as a GRA; therefore, all of the alternatives (S-1, S-2/3, and S-4/5) are rated poor with respect to reducing the mobility, toxicity, or volume through treatment.

None of the alternatives proposed for remediating groundwater at Parcel UC-2 includes treatment as a GRA; therefore, all of the alternatives (GW-1, GW-2, and GW-3/4) are rated poor with respect to reducing the mobility, toxicity, or volume through treatment.

Alternatives R-1 and R-2 are both rated poor because they do not include treatment that would result in the destruction, transformation, or irreversible reduction in radionuclides of concern mobility.

Short-Term Effectiveness. Alternative S-1 has less effect on the community, remedial workers, or the environment because it includes no actions. Alternatives S-2/3 and S-4/5 introduce less risk to these receptors because they do not include excavation, hauling, and disposal of soil that contains contamination; however, Alternative S-4/5 also includes covers, which make it more effective than Alternative S-2/3.

All of the groundwater alternatives scored well in terms of short-term effectiveness according to the criterion. Alternatives GW-2 and GW-3/4 are equivalent for short-term effectiveness. Alternatives GW-2 and GW-3/4 are slightly better than Alternative GW-1 because they impose ICs. Alternatives GW-2 and GW-3/4 pose a very low risk to workers during implementation of the groundwater monitoring program.

Alternative R-1 has the least effect on the community, remedial workers, or the environment because it includes no actions; therefore, it would not disturb the radionuclides of concern. Alternative R-2 includes removing and hauling contaminated soil and building materials from the site. This alternative would pose a potential risk to the community, remedial workers, or the environment, although this risk is considered low and mitigation measures would be implemented.

Implementability. Distinction among the soil alternatives for implementability is minimal. Alternatives S-2/3 and S-4/5 require implementation of long-term ICs; in terms of ICs, Alternative S-2/3 may be more difficult to implement, as long-term ICs and landscaping would be maintained throughout the parcel. Installing covers (Alternative S-4/5) is a standard technology easy to implement. Alternative S-1 does not involve remedial technologies or ICs and requires no implementation.

Distinction among the groundwater alternatives for implementability is minimal. Alternatives GW-2 and GW-3/4 require implementation of long-term ICs. Long-term monitoring (GW-2) and MNA (GW-3/4) are equally easy to implement. Alternative GW-1 does not involve remedial technologies or ICs and requires no implementation.

Alternative R-2 requires use of standard technologies that are easy to implement. Alternative R-1 does not involve remedial technologies and requires no implementation. Therefore, the distinction between these two alternatives regarding implementability is minimal.

Cost. Alternatives S-1 requires no action; therefore, no costs are associated with this alternative. Alternative S-2/3 is less costly ($248,000) because it includes no active remediation before the property is transferred. The cost of Alternative S-4/5 is moderate (approximately $418,000).

Alternative GW-1 is rated the highest because no cost is associated because no actions would be taken. The costs of Alternatives GW-2 and GW-3/4 are moderate (approximately $508,000) because of the long-term groundwater monitoring or MNA.

Alternative R-1 requires no action; therefore, no costs are associated with this alternative. Alternative R-2 is costly ($1,077,000) but effectively addresses all radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures.

Modifying Criteria

State Acceptance. State involvement has been solicited throughout the CERCLA process. The State of California concurs with the Navy's selected remedial alternatives.

Community Acceptance. Community acceptance is evaluated based on comments received from the public during the public comment period for the proposed plan. The proposed plan was presented to the community and discussed during a public meeting on February 11, 2009. Comments were also gathered during the public comment period from January 29 through February 27, 2009. Attachment 2, the responsiveness summary, of this ROD addresses the public's comments and concerns about the selected remedial alternatives at Parcel UC-2.

2.9 SELECTED REMEDY

2.9.1 Rationale for Selected Remedy

The selected soil remedy for Parcel UC-2 is Alternative S-4/5 (covers and ICs). The selected remedy for groundwater at Parcel UC-2 is Alternative GW-3/4 (MNA and ICs). The selected remedy for radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures at Parcel UC-2 is Alternative R-2 (survey, decontamination, excavation, disposal, and release) for radiologically impacted structures and soil associated with these structures.

The selected remedies provide the best balance of tradeoffs with respect to the nine criteria. The remedy for soil meets the RAOs by covering the entire parcel with covers to cut off potential exposure pathways to arsenic, manganese, and nickel in soils. The remedy for groundwater meets the RAOs by monitoring the natural attenuation of the VOCs for up to 30 years. The remedy for radiologically impacted structures and soil associated with these structures meets the RAOs by excavating and disposing of storm drains and sanitary sewers and impacted soils and disposing of them off site, thereby removing the source of contamination.

ICs, including restrictive covenants regulating restricted land use and restricted and prohibited activities will be implemented to prevent or minimize exposure to areas where potential unacceptable risk is posed by COCs in soil and groundwater. ICs will remain in place as long as contamination remains at the site above levels that allow for unlimited use and unrestricted exposure.

2.9.2 Description of Selected Remedy

Durable covers will be applied as physical barriers for the Parcel UC-2 soil remedy to cut off potential exposure to metals in soil. The RD will include plans for inspection and maintenance to ensure the covers remain intact. Modification of the covers will be governed by the land use control remedial design (LUC RD) report discussed below, and its terms will be enforced by the regulatory agencies. The Navy conducted a site visit on June 30, 2009, to confirm current site conditions and refined the planned cover for Parcel UC-2 as follows:

1. The area southwest of the corner of Robinson Street and Fisher Avenue is a level, paved parking lot. From the parking lot down to Fisher Avenue is a sharp drop varying from 5 to 15 feet, and the slope is vegetated with ice plant and annual grass. The parking lot was identified for a soil cover remedy in the final Parcel C FS; however, based on the current condition, the Navy reclassified the parking lot plus the small amount of property north and west of the lot for pavement cover. The remainder of the area will remain soil cover, as planned.

2. Along the western former Parcel A and Parcel UC-2 boundary, there is a sharp drop of about 15 feet from Parcel A down to Parcel UC-2 that continues along Fisher Avenue to the corner of Robinson Street. This slope is vegetated with ice plant and annual grass and includes a set of concrete stairs leading up to former Parcel A. This area was identified for a pavement cover in the final Parcel C FS, but implementing that remedy on a slope would be difficult. As recommended by the regulatory agencies and others, the Navy reclassified this area for a soil cover remedy.

Details of the design for covers at Parcel UC-2 will be developed in the RD. It is estimated from aerial photographs of Parcel UC-2 that approximately 0.7 acre would be covered with clean, imported soil and maintained landscaping and that 3.2 acres of existing asphalt and concrete surfaces would be used and repaired, as necessary. Because of the steep slope, the type and thickness of the soil cover will be established in the RD.

Under the Parcel UC-2 ROD, MNA will be implemented in and around the VOC plume area in both Parcels UC-2 and C (and also in downgradient locations) for the Parcel UC-2 groundwater remedy. Over the past decade, the level of carbon tetrachloride has decreased by an order of magnitude. The current level of carbon tetrachloride in this area is between 1 and 5 µg/L (as of April 2008), and the Navy expects to meet the remedial goal of 0.5 µg/L within approximately the next 10 to 20 years. Therefore, selecting MNA as a remedy is justified because the remedial goals for groundwater will be achieved in a reasonable amount of time without active treatment. The locations of monitoring points and the monitoring frequency will be specified in the RD. The monitoring plan will be flexible to allow modifications as data are collected.

A soil gas survey may be conducted for the following purposes:

- To evaluate potential vapor intrusion risks,
- To identify COCs for which risk-based numeric action levels for VOCs in soil gas would be established (based on a cumulative risk of 10^{-6}),
- To identify where the initial areas requiring institutional controls (ARIC) for VOCs would be retained and where they would be released, and
- To evaluate the need for additional remedial action to remove ARICs.

The selected remedy for radiologically impacted structures consists of removing and disposing of off site the remaining radiologically impacted storm drains and sanitary sewers and soil associated with these structures while implementing appropriate **dust control measures(39)** to meet the objective of unrestricted release throughout Parcel UC-2. Unrestricted release means that a property can be used for any residential or commercial purpose once regulatory requirements have been met. Residential remedial goals will be used for radiologically impacted storm drains, sewer lines, and soil associated with these structures to meet the objective of unrestricted release.

The Navy will address radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures at Parcel UC-2 under its ongoing Hunters Point Shipyard radiological removal action program. A removal action completion report will summarize all storm drain and sanitary sewer final status survey reports and survey unit package reports. Unrestricted release is to be granted after concurrence is received on the radiological removal action completion report for Parcel UC-2. If the TCRA does not achieve the remedial goals, work will continue until the remedial goals specified in the ROD are met. Each radiologically impacted structure (storm drains and sanitary sewers) and soil associated with this structure will be investigated through the CERCLA process. The classification of "radiologically impacted" may be removed if the final report of the site investigation is approved by the stakeholders and the site is determined to require no further action.

The survey and removals will occur before any covers are installed as part of Alternative S-4/5. Excavated areas will be surveyed after cleanup is completed to ensure that no residual radioactivity is present at levels above the remediation goals. Excavated soil and drain material from radiologically impacted structures (storm drains and sanitary sewers) will be screened and radioactive sources and contaminated soil will be removed and disposed of at an off-site, low-level radioactive waste facility. Survey and removal of the Parcel UC-2 storm drain and sanitary sewer lines were completed in early October 2009. The draft radiological survey unit report is planned for early spring in 2010.

ICs(40) will be implemented to prevent or minimize exposure to areas where potential unacceptable risk is posed by COCs in soil and groundwater. ICs are legal and administrative mechanisms used to implement land use restrictions that are used to limit the exposure of future landowners or users of the property to hazardous substances present on the property, and to ensure the integrity of the remedial action. ICs are required on a property where the selected remedial cleanup levels result in contamination remaining at the property above levels that allow for unlimited use and unrestricted exposure. ICs will be maintained until the concentrations of hazardous substances in soil and groundwater are at such levels to allow for unrestricted use and exposure. Implementation of ICs includes requirements for monitoring and inspections, and reporting to ensure compliance with land use or activity restrictions.

The Navy has concluded that it will rely on proprietary controls in the form of environmental restrictive covenants as provided in the "Memorandum of Agreement between the United States Department of the Navy and the California Department of Toxic Substances Control" and attached covenant models (the "Navy/DTSC MOA").

More specifically, land use and activity restrictions will be incorporated into two separate legal instruments as provided in the Navy/DTSC MOA:

1. Restrictive covenants included in one or more Quitclaim Deeds from the Navy to the property recipient.
2. Restrictive covenants included in one or more "Covenant(s) to Restrict Use of Property" entered into by the Navy and DTSC as provided in the Navy/DTSC MOA and consistent with the substantive provisions of *California Code of Regulations* Title 22 § 67391.1.

The "Covenant(s) to Restrict Use of Property" will incorporate the land use restrictions into environmental restrictive covenants that run with the land and that are enforceable by DTSC, and EPA, as a third-party beneficiary, against future transferees and users. The Quitclaim Deed(s) will include the identical land use and activity restrictions in environmental restrictive covenants that run with the land and that will be enforceable by the Navy against future transferees.

The activity restrictions in the "Covenant(s) to Restrict Use of Property" and Quitclaim Deed(s) shall be addressed in the LUC RD report that would be reviewed and approved by the FFA signatories. The Parcel UC-2 LUC RD shall be referenced in the applicable "Covenant(s) to Restrict Use of Property" and Quitclaim Deed(s). The Parcel UC-2 LUC RD shall specify soil and groundwater management procedures for compliance with the remedy selected in the Parcel UC-2 ROD. The Parcel UC-2 LUC RD shall identify the roles of local, state, and federal government in administering the Parcel UC-2 LUC RD and shall include, but not be limited to, procedures for any necessary inspections, sampling and analysis requirements, worker health and safety requirements, and any necessary site-specific construction or use approvals that may be required. The LUC RD will be submitted in accordance with the FFA schedule.

Land use restrictions will be applied to specified portions of the property and described in findings of suitability to transfer, findings of suitability for early transfer, "Covenant(s) to Restrict Use of Property" between the Navy and DTSC, and any Quitclaim Deed(s) conveying real property containing Parcel UC-2 at HPS.

A Risk Management Plan (RMP) may be prepared by the City and County of San Francisco and approved by the FFA signatories that may set forth certain requirements and protocols for implementing the activity restrictions specified in the ROD.

Access

The Deed and Covenant shall provide that the Navy and FFA signatories and their respective officials, agents, employees, contractors, and subcontractors shall have the right to enter upon HPS Parcel UC-2 for purposes consistent with the Navy IR Program or the FFA.

Implementation

The Navy shall address and describe IC implementation and maintenance actions including periodic inspections and reporting requirements in the preliminary and final LUC RD reports to be developed and submitted to the FFA signatories for review and approval pursuant to the FFA (see "Navy Principles and Procedures for Specifying, Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions" attached to January 16, 2004, Department of Defense memorandum titled "Comprehensive Environmental Response, Compensation and Liability Act [CERCLA] Record of Decision [ROD] and Post-ROD Policy"). The preliminary and final LUC RD reports are primary documents as provided in Section 7.3 of the FFA.

The Navy is responsible for implementing, maintaining, reporting on, and enforcing land use controls. Although the Navy may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Navy shall retain ultimate responsibility for remedy integrity.

Activity Restrictions that Apply throughout Parcel UC-2

The following sections describe the IC objectives to be achieved through activity restrictions throughout Parcel UC-2 to ensure that any necessary measures to protect human health and the environment and the integrity of the remedy have been undertaken.

Restricted Activities

The following restricted activities throughout HPS Parcel UC-2 must be conducted in accordance with the "Covenant(s) to Restrict Use of Property," Quitclaim Deed(s), the RMP, the LUC RD report, and if required, any other work plan or document approved in accordance with these referenced documents and must be further reviewed and approved by the FFA signatories:

1. "Land disturbing activity," which includes but is not limited to: (1) excavation of soil, (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind, (3) demolition or removal of "hardscape" (for example, concrete roadways, parking lots, foundations, and sidewalks), (4) any activity that involves movement of soil to the surface from below the surface of the land, and (5) any other activity that causes or facilitates movement of known contaminated groundwater.

2. Alteration, disturbance, or removal of any component of a response or cleanup action (including but not limited to pump-and-treat facilities and soil cap/containment systems); groundwater extraction, injection, and monitoring wells and associated piping and equipment; or associated utilities.

3. Extraction of groundwater and installation of new groundwater wells with the exception of environmental sampling and monitoring requirements described in this ROD.

4. Removal of or damage to security features (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).

Prohibited Activities

The following activities are prohibited throughout HPS Parcel UC-2:

1. Growing vegetables or fruits in native soil for human consumption
2. Use of groundwater

Proposed Activity Restrictions Relating to VOC Vapors at Specific Locations within Parcel UC-2

Any proposed construction of enclosed structures must be approved in accordance with the "Covenant(s) to Restrict Use of the Property," Quitclaim Deed(s), LUC RD report, and the RMP with approval of the FFA signatories prior to the conduct of such activity within the ARIC for VOC vapors to ensure that the risks of potential exposures to VOC vapors are reduced to acceptable levels that are adequately protective of human health. The reduction in potential risk can be achieved through engineering controls or other design alternatives that meet the specifications set forth in the ROD, RD reports, LUC RD report, and the RMP. Initially, the ARIC will include Redevelopment Block 10 within Parcel UC-2. The remaining areas of Parcel UC-2 are planned roads, with the exception of a small sliver of Redevelopment Block 17. The ARIC for VOC vapors in Redevelopment Block 10 in Parcel UC-2 may be modified by the FFA signatories as the soil contamination areas and groundwater contaminant plumes that are producing unacceptable vapor inhalation risks are reduced over time or in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the ARIC for VOC vapors do not pose unacceptable potential exposure risk to VOC vapors.

2.9.3 Expected Outcomes of the Selected Remedy

The expected outcome for soil is that risk from the artificial fill would be mitigated through the use of durable covers and access restrictions to restrict exposure. After the remedy has been implemented, the property will be suitable for the uses specified in the redevelopment plan.

The groundwater remedy is expected to achieve remediation goals by MNA. Although attenuation is expected to reduce VOC vapors released from groundwater, ARICs for vapor intrusion may be needed at some locations at Parcel UC-2. Furthermore, the Navy intends to permanently prohibit use of groundwater at Parcel UC-2 through the use of ICs.

The remedy for radiological contamination includes surveys, decontamination, excavation, and off-site disposal. The removal of potential radiologically impacted sanitary and storm sewers and soil associated with these structures is expected to result in a reduction of the potential risks to levels below remediation goals associated with exposure to radionuclides of concern. The storm drains and sanitary sewers are considered "radiologically impacted" in Parcel UC-2; each of the radiologically impacted structures (storm drains and sanitary sewers) will be investigated through the CERCLA process. The classification of "radiologically impacted" may be removed if the final report of the site investigation is approved by the stakeholders and the site is determined to require no further action.

2.9.4 Statutory Determinations

In accordance with the NCP, the selected remedy meets the following statutory determinations.

- **Protection of Human Health and the Environment** – The selected remedy for soil will protect human health and the environment by installing durable covers and implementation of ICs. The selected remedy for groundwater will provide long-term protection by reducing concentrations of VOCs through attenuation. The selected remedy for radiologically impacted structures (storm drains and sanitary sewers) will protect human health by screening excavated soil and drain material from radiologically impacted structures and disposing of radioactive sources and contaminated soil at an off-site, low-level radioactive waste facility.

- **Compliance with ARARs** – CERCLA § 121(d)(1) states that remedial actions on CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate. Chemical-specific ARARs are health- or risk-based numerical values or methods that, when applied to site-specific conditions, establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the environment. Location-specific ARARs are restrictions on the concentrations of hazardous substances or on conducting activities solely because they are in specific locations. Specific locations include floodplains, wetlands, historic places, and sensitive ecosystems or habitats. Action-specific ARARs are technology- or activity-based requirements or limitations for remedial activities. These requirements are triggered by the particular remedial activities conducted at the site. The remedial alternatives selected by the Navy will meet all chemical-, location-, and action-specific ARARs. The ARARs that will be met by the preferred alternatives are summarized in Attachment 1.

- **Cost-Effectiveness** – The selected remedy would provide overall protectiveness proportional to their costs and are therefore considered cost-effective.

- **Utilization of Permanent Solution and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable** – The Navy has concluded that a containment remedy represents the maximum extent to which permanent solutions can be used in a cost-effective manner because soil contamination is widely dispersed across the installation. The selected remedy is expected to be permanent and effective in light of the anticipated land use.

- **Preference for Treatment as a Principal Element** – The selected remedy does not satisfy the statutory preference for treatment as a principal element of the remedy because there is no cost-effective means of treating the large quantity of low-level soil contamination and low-level groundwater contamination. The selected remedy for radiologically impacted soil and remediation of radiologically impacted structures and materials does not include treatment as a principal element of the remedy because there is no available technology to reduce the toxicity or volume of radionuclides in contaminated soil or other materials.

- **Five-Year Review Requirements** –The selected remedy will result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unrestricted use. As a result, a statutory review will follow the schedule of the on-going site-wide 5-year review after the remedial action is initiated to ensure the remedy is protective of human health and the environment.

2.10 COMMUNITY PARTICIPATION

Community participation at HPS includes a Community Environmental Forum, public meetings, public information repositories, newsletters and fact sheets, public notices, and an IR Program website. The Community Involvement Plan for HPS provides detailed information on community participation for the IR Program and documents interests, issues, and concerns raised by the community about ongoing investigation and cleanup at HPS.

Documents and relevant information relied on in the remedy selection process will be made available for public review in the public information repositories listed below or on the **IR Program website**(41).

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, California 94102
Phone: (415) 557-4500

Anna E. Waden Bayview Library
5075 Third Street
San Francisco, California 94124
Phone: (415) 355-5757

For access to the administrative record or additional information on the IR Program, contact:

Mr. Keith Forman
Hunters Point Shipyard BRAC Environmental Coordinator
Base Realignment and Closure Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310
Phone: (619) 532-0913
e-mail: keith.s.forman@navy.mil

In accordance with CERCLA §§ 113 and 117, the Navy provided a public comment period from January 29, 2009, to February 27, 2009, for the proposed remedial action described in the Proposed Plan for Parcels UC-2 and C. A public meeting to present the Proposed Plan was held at 6:00 to 8:00 p.m. on February 11, 2009. Public notice of the meeting and availability of documents was placed in the *San Francisco Examiner* on January 29, 2009.

3.0 RESPONSIVENESS SUMMARY

The responsiveness summary is the third component of a ROD; its purpose is to summarize information about the views of the public and support agency on both the remedial alternatives and general concerns about the site submitted during the public comment period. It documents in the record how public comments were integrated into the decision-making process. The participants in the public meeting, held on February 11, 2009, included community members, Restoration Advisory Board members, and representatives of the Navy, EPA, DTSC, and the Water Board. Questions and concerns received during the meeting were addressed at the meeting and are documented in the meeting transcript. Responses to comments provided at the meeting and received during the public comment period by the Navy, EPA, DTSC, or the Water Board are included in the responsiveness summary (Attachment 2). In some cases, the comments made during the meeting did not apply to Parcel UC-2 and only applied to the current Parcel C. Responses to comments pertaining only to Parcel C are not included in this document; these responses are provided in the Parcel C ROD.

ATTACHMENT 1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Federal Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Soil				
Resource Conservation and Recovery Act (Title 42 U.S.C. Chapter 82, §§ 6901-6991[i])				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste	Cal. Code Regs. tit. 22, §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These regulations are applicable to activities that generate waste to determine if the waste is hazardous. The Navy will determine if the excavated soil meets the definition of non-RCRA hazardous waste when it is generated.
Uranium Mill Tailings Radiation Control Act (42 U.S.C., Chapter 88, § 192.02, 192.129[a] and [b], 192.42)[c]				
Standards for Cleanup of Land and Buildings Contaminated with Radium-226, Radium-228, and Thorium from Inactive Uranium Processing Sites. As a result of residual radioactive materials from any designated processing site: The concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than: (1) 5 pCi/g, averaged over the first 15 cm of soil below the surface, and (2) 15 pCi/g, averaged over 15 cm-thick layers of soil more than 15 cm below the surface.	UMTRCA sites (radioactivity above 5 pCi/g).	40 CFR § 192.12(a)	Relevant and appropriate	This requirement is relevant and appropriate.

Federal Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Soil (Continued)				
Radiological Criteria for License Termination				
A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem/y, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to ALARA.	Existing NRC-licensed radiologically contaminated site.	10 CFR § 20.1402	Relevant and appropriate	This ARAR is not applicable because Parcel UC-2 is not an NRC licensed radiologically contaminated site. This ARAR is relevant and appropriate for an unrestricted land-use scenario. EPA does not believe this NRC regulation is protective of human health and the environment, and the HPS cleanup goals are more protective. This regulation is an ARAR only for radiologically impacted sites that are undergoing TCRAs and any additional remedial action required for those sites.
Groundwater				
Resource Conservation and Recovery Act (Title 42 U.S.C. Chapter 82, §§ 6901-6991[i])[c]				
Groundwater protection standards: Owners/operators of RCRA treatment, storage, or disposal facilities must comply with conditions in this section that are designed to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern set forth under Cal. Code Regs. title 22, § 66264.94 in the uppermost aquifer underlying the waste management area of concern at the POC.	A regulated unit that receives or has received hazardous waste before July 26, 1982, or regulated units that ceased receiving hazardous waste prior to July 26, 1982 where constituents in or derived from the waste may pose a threat to human health or the environment.	Cal. Code Regs. title 22, § 66264.94(a)(1), (a)(3), (c), (d), and (e)	Relevant and appropriate	The lowest concentration determined to be technologically and economically achievable is an ARAR for groundwater at Parcel UC-2. The lowest concentration limit greater than the background level that is technologically and economically achievable for the A-aquifer is based on unacceptable risk from the vapor intrusion pathway.

Federal Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Surface Water				
Clean Water Act of 1977, as Amended (33 U.S.C., Chapter 26, §§ 1251–1387)[c]				
Surface water quality standards.	Discharges to waters of the United States.	40 CFR § 131.38	Applicable	These standards, known as the CTR, are applicable surface water ARARs for the bay. The Navy has identified the CTR as ARARs for surface waters downgradient from HPS Parcel UC-2 because groundwater discharges to the bay. The Navy will meet these ARARs for contaminants that do not have a promulgated standard in Table 3-3 of the Basin Plan at the interface of the A-aquifer and the bay.
Air				
Clean Air Act (42 U.S.C., Chapter 85, §§ 7401–7671)[c]				
Emissions of radionuclides into the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/y.	Facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air.	40 CFR § 61.92	Relevant and appropriate	Not applicable because Parcel UC-2 is not a Department of Energy site, but may be relevant and appropriate if there is the potential for airborne emissions of radionuclides other than radon. Only an ARAR until cleanup action is completed. Not an ARAR for residual contamination after cleanup.
Emissions of radionuclides, including iodine, into ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/y. Emissions of iodine into ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/y.	Facilities owned or operated by any federal agency other than the Department of Energy and not licensed by the NRC.	40 CFR § 61.102	Applicable	The requirements are applicable since fugitive dust may be generated during implementation of remedial action at Parcel UC-2. The exposure to the public caused by remedial action operations at Parcel UC-2 is not likely to exceed 10 mrem/y because of the following reasons: (1) The concentrations of any radionuclide in dust are relatively low, as previously measured in air samples, and (2) the concentration of any radionuclide in dust will be reduced by use of engineering controls such as wetting of soils.

Federal Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Notes:

a	Many action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables.
b	Only the substantive provisions of the requirements cited in this table are ARARs.
c	Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered ARARs.
§	Section
§§	Sections
ALARA	As low as reasonably achievable
ARAR	Applicable or relevant and appropriate requirement
Cal. Code Regs.	California Code of Regulations
CFR	Code of Federal Regulations
cm	Centimeter
CTR	California Toxics Rule
EPA	U.S. Environmental Protection Agency
HPS	Hunters Point Shipyard
mrem/y	Millirem per year
NRC	Nuclear Regulatory Commission
pCi/g	Picocurie per gram
POC	Point of compliance
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity characteristic leaching procedure
TEDE	Total effective dose equivalent
tit.	Title
UMTRCA	Uranium Mill Tailings Radiation Control Act
U.S.C.	United States Code

State Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Groundwater				
State and Regional Water Quality Control Boards[c]				
Incorporated into all regional board basin plans. Designates all groundwater and surface waters of the state as drinking water except where the total dissolved solids are greater than 3,000 parts per million, the well yield is less than 200 gallons per day from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonable be treated for domestic use using either best management practices or best economically achievable treatment practices.	Waters of the state	SWRCB Res. 88-63 (Sources of Drinking Water Policy)	Applicable	The Navy has evaluated the groundwater characteristics in the A-aquifer at HPS Parcel UC-2 against the criteria listed in SWRCB Res. 88-63. The Navy has determined that there are no potential sources of drinking water at Parcel UC-2. The Water Board has concurred in the Navy's determination that groundwater in the A-aquifer is not a potential source of drinking water.
Describes the water basins in the San Francisco Bay Region beneficial uses of groundwater and surface water, establishes water quality objectives, including narrative and numerical standards and establishes implementation plans to meet the water quality objectives and protect beneficial uses, and incorporates statewide water quality control plans and policies.	Waters of the state	Comprehensive Water Quality Control Plan for the San Francisco Region (Basin Plan) Chapters 2 and 3 (California Water Code § 13240), except the MUN designation for the A-aquifer	Applicable	The substantive groundwater provisions of Chapters 2 and 3 of the Basin Plan, except the MUN designation, are ARARs. According to the Basin Plan, which incorporates SWRCB Res. 88-63, A-aquifer groundwater at HPS Parcel UC-2 is not a potential source of drinking water.

State Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Groundwater (Continued)				
State and Regional Water Quality Control Boards[c] (Continued)				
Authorizes SWRCB and the Water Board to establish in water quality control plans, beneficial uses and numerical and narrative standards to protect both surface water and groundwater quality.	Waters of the state	California Water Code, div. 7, §§ 13241, 13243, 13263(a), 13269, and 13360 (Porter-Cologne Act)	Applicable	The Navy accepts the substantive provisions of §§ 13241, 13243, 13263(a), 13269, and 13360 of the Porter-Cologne Act enabling legislation as ARARs, as implemented through the beneficial uses, water quality objectives, waste discharge requirements, and promulgated policies of the Basin Plan for the San Francisco Bay Region.
Establishes the policy that high-quality waters of the state "shall be maintained to the maximum extent possible" consistent with the "maximum benefit to the people of the State." It provides that whenever the existing quality of water is better than that required by applicable water quality policies, such existing high-quality water will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than is prescribed in the policies. It also states that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge to existing high-quality waters will be required to meet waste-discharge requirements that will result in the best practicable treatment or control of the discharge.	High-quality waters of the state	Statement of Policy With Respect to Maintaining High Quality of Waters in California, SWRCB Res. 68-16	Not an ARAR	The Navy has determined that SWRCB Res. 68-16 is not a chemical-specific ARAR for selecting remedial action goals, but it is an action-specific ARAR for regulating discharged treated groundwater to surface water. This remedial action does not include discharge of treated groundwater to surface water. The Navy has determined that further migration of VOCs through groundwater is not a discharge governed by the language in SWRCB Res. 68-16. More specifically, the language of SWRCB Res. 68-16 indicates that it is prospective in intent, applying to new discharges to maintain existing high-quality waters. It is not intended to apply to restoration of waters that are already degraded. The state does not agree with the Navy's determination that SWRCB Res. 92-49 and 68-16 are not ARARs for this response action. SWRCB has interpreted the term "discharges" in the California Water Code to include movement of waste from soils to groundwater and from contaminated to uncontaminated water (SWRCB 1994). However, the state agrees that the proposed action would comply with SWRCB Res. 92-49 and 68.16

State Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Groundwater (Continued)				
State and Regional Water Quality Control Boards[c] (Continued)				
				The state does not intend to dispute the ROD, but reserves its rights if implementation of the provisions at Cal. Code Regs. tit. 22 is not as stringent as state implementation of the provisions at Cal. Code Regs. tit. 23. Because Cal. Code Regs. title 22 regulation is part of the state's authorized hazardous waste control program, it is also the state's position that Cal. Code Regs. title 22, § 66264.94 is a state ARAR and not a federal ARAR (*United States v. State of Colorado*, 990 F.2d 1565 [1993]).
Describes requirements for regional board oversight of investigation and cleanup and abatement resulting from discharges of hazardous substances. Regional boards may decide on cleanup and abatement goals and objectives for the protection of water quality and beneficial uses of water within each region. Establishes criteria for "containment zones" where cleanup to established water-quality goals is not economically or technically practicable.	Discharge of hazardous substance into waters of the state.	Policies and procedures for investigation and cleanup and abatement of discharges under California Water Code § 13304, SWRCB Res. 92-49	Not an ARAR	SWRCB Res. 92-49 is not an ARAR for groundwater cleanup because the provisions of Cal. Code Regs. tit. 22, § 66264.94 (a)(1), (a)(3), (c), (d), and (e) have been determined to be a federal ARAR and SWRCB Res. 92-49 is not more stringent. The state does not agree with the Navy's determination that SWRCB Res. 92-49 and 68-16 are not ARARs for this response action. SWRCB has interpreted the term "discharges" in the California Water Code to include movement of waste from soils to groundwater and from contaminated to uncontaminated water (SWRCB 1994). However, the state agrees that the proposed action would comply with SWRCB Res. 92-49 and 68-16. The state does not intend to dispute the ROD, but reserves its rights if implementation of the provisions at Cal. Code Regs. tit. 22 is not as stringent as state implementation of the provisions at Cal. Code Regs. tit. 23. Because Cal. Code Regs. tit. 22 regulation is part of the state's authorized hazardous waste

State Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Groundwater (Continued)				
State and Regional Water Quality Control Boards[c] (Continued)				
				control program, it is also the state's position that Cal. Code Regs. tit. 22, § 66264.94 is a state ARAR and not a federal ARAR (*United States v. State of Colorado*, 990 F.2d 1565 [1993].
Surface Water				
Surface water quality standards.	Marine water with salinities equal to or greater than 10 ppt 95 percent of the time	Basin Plan Table 3-3	Applicable	These standards are applicable to the bay. The Navy has identified Table 3-3 an ARAR for HPS Parcel UC-2 because groundwater discharges to the bay. The Navy will meet these ARARs in the bay at the interface of the A-aquifer and the bay.
Soil				
Department of Toxic Substances Control[b]				
Definition of non-RCRA hazardous waste.	Waste	Cal. Code Regs. tit. 22, §§ 66261.3(a)(2)(C) or (a)(2)(F), 66261.22(a)(3) and (a)(4), 66261.24(a)(2) – (a)(8), and 66261.101	Applicable	These regulations are applicable to activities that generate waste to determine if the waste is non-RCRA hazardous waste. The selected alternative includes excavation and off-site disposal of soil. The Navy will determine if the excavated soil meets the definition of non-RCRA hazardous waste when it is generated.

State Chemical-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Soil (Continued)				
State Water Resources Control Board[b]				
Definition of designated waste, nonhazardous waste, and inert waste.	Waste	Cal. Code Regs. tit. 27, §§ 20210, 20220, and 20230	Applicable	These regulations are applicable to activities that generate waste for classifying waste and determining the status of other ARARs. The selected alternative includes excavation and off-site disposal of soil. The Navy will determine if the excavated soil meets these definitions when it is generated.

Notes:

a	Many action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables.
b	Only the substantive provisions of the requirements cited in this table are ARARs.
c	Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered ARARs.
§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
div.	Division
Cal. Code Regs.	Code of California Regulations
HPS	Hunters Point Shipyard
MUN	Municipal and domestic supply
ppt	Part per thousand
RCRA	Resource Conservation and Recovery Act
Res.	Resolution
ROD	Record of Decision
SWRCB	State Water Resources Control Board
tit.	Title
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board

Reference

SWRCB 1994 State Water Resources Control Board 1994. Application of State Water Board Resolution No. 68-16 to Cleanup of Contaminated Groundwater. February.

Federal Location-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Location	Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Migratory Bird Treaty Act of 1972 (16 U.S.C. §§ 703–712)[b]					
Migratory bird area	Protects almost all species of native migratory birds in the United States from unregulated "take," which can include poisoning at hazardous waste sites.	Presence of migratory birds.	16 U.S.C. § 703	Relevant and appropriate	This section is an ARAR because migratory birds have been observed at Parcel UC-2.

Notes:

a	Only the substantive provisions of the requirements cited in this table are ARARs.
b	Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered ARARs.
§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
U.S.C.	United States Code

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Excavation and Off-Site Disposal of Soil					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a]					
On-site generation of waste	Person who generates waste shall determine if the waste is a hazardous waste.	Generator of waste	Cal. Code Regs. tit. 22, §§ 66262.10(a), and 66262.11	Applicable	These regulations are applicable to any operation that generates waste. The excavation and off-site disposal of the selected remedy contemplates generation of waste to be disposed of off site. The Navy will decide whether the waste in RCRA hazardous waste when it is generated.
On-site generation of waste	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	Applicable	These regulations are applicable to any operation that generates waste. The excavation and off-site disposal of the selected remedy include activities that generate waste to be disposed of off site. The Navy will decide whether the waste is RCRA hazardous waste when it is generated.
Stockpiling soil for off-site disposal	Allows generators to accumulate solid remediation waste in an EPA-designated pile for storage only up to 2 years during remedial operations without triggering land disposal restrictions.	Hazardous remediation waste temporarily stored in piles	40 CFR § 264.554 (d)(1)(i) through (ii), (d)(2), (e), (f), (h), (i), (j), and (k)	Relevant and appropriate	The Navy will temporarily stockpile soil in staging piles for off-site disposal. The Navy does not anticipate that all soil will be RCRA hazardous waste; however, the Navy has determined that these requirements are relevant and appropriate for all stockpiled soil.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Excavation and Off-Site Disposal of Soil (Continued)					
Clean Air Act (Title 42 U.S.C. §§ 7401-7671)[a]					
Excavate soil	Prohibits emission equal or greater to 20 percent opacity.	Emission from a source	Bay Area Air Quality Management District Rule 6-302	Applicable	This requirement is applicable to construction required for installation of the soil cover.
Clean Water Act of 1988 as Amended, § 404 (33 U.S.C., § 1344)[a]					
Stormwater discharge	Owners and operators of construction activities must be in compliance with discharge standards.	Construction activities at least 1 acre in size	Clean Water Act § 402 (33 U.S.C. Chapter 26, § 1342) and 40 CFR Part 122.44(k)(2) and (4)	Applicable	The Navy anticipates disturbing more than 1 acre during excavation. The Navy will use the provisions in the state general storm water discharge permit, Order 99-08-DWQ, for complying with these storm water discharge requirements under the Clean Water Act.
Covering Portions of Soil					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a]					
Construct a cover	The final cover must accommodate lateral and vertical shear forces generated by the maximum credible earthquake so that the integrity of the final cover is maintained.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.310(a)(5)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of Soil (Continued)					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a] (Continued)					
Construct a cover	The integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events throughout the post-closure period.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.310(b)(1)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.
Construct a cover	Run-on and run-off must not erode or otherwise damage the final cover.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.310(b)(4)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.
Construct a cover	Protect and maintain surveyed benchmarks throughout the postclosure period.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.310(b)(5)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of Soil (Continued)					
Clean Water Act (Title 33 U.S.C., Chapter 26, §§ 1251-1387)[a]					
Construct a cover	Owners and operators of construction activities must be in compliance with discharge standards.	Construction activities at least 1 acre in size	Clean Water Act § 402 (33 U.S.C. Chapter 26, § 1342) and 40 CFR § 122.44(k)(2) and (4)	Applicable	The Navy anticipates disturbing more than 1 acre when constructing the soil covers. The Navy will use the provisions in the state general storm water discharge permit, Order 99-08-DWQ, for complying with these storm water discharge requirements under the Clean Water Act.
Clean Air Act (Title 42 U.S.C. §§ 7401-7671)[a]					
Construct a cover	Prohibits emission equal or greater to 20 percent opacity.	Emission from a source	Bay Area Air Quality Management District Rule 6-302	Applicable	This requirement is applicable to construction required for the cover.
Groundwater Monitoring					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a]					
Monitor groundwater	Contaminants of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from the waste contained in the regulated unit.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.93	Relevant and appropriate	These requirements are applicable to RCRA hazardous waste facilities; however, the Navy has determined that they are relevant and appropriate to the monitoring component of the groundwater response action.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Groundwater Monitoring (Continued)					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a] (Continued)					
Monitor groundwater	The owner or operator shall establish a groundwater monitoring system for each regulated unit and include a sufficient number of monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.97(b)(1)(A), (b)(1)(B), (b)(1)(C), (b)(1)(D)(1), and (b)(1)(D)(2)	Relevant and appropriate	These requirements are applicable to RCRA hazardous waste facilities; however, the Navy has determined that they are relevant and appropriate to the monitoring component of the groundwater response action.
Monitor groundwater	Requirements for monitoring well construction and sampling intervals.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.97(b)(4), (5), (6), and (7)	Relevant and appropriate	These requirements are applicable to RCRA hazardous waste facilities; however, the Navy has determined that they are relevant and appropriate to the monitoring component of the groundwater response action.
Monitor groundwater	Requirements for groundwater sample collection.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.97(e)(6), (e)(12)(A), (e)(12)(B), (e)(13), and (e)(15)	Relevant and appropriate	These requirements are applicable to RCRA hazardous waste facilities; however, the Navy has determined that they are relevant and appropriate to the monitoring component of the groundwater response action.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Groundwater Monitoring (Continued)					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a] (Continued)					
Monitor groundwater	In conjunction with corrective action measures, the owner or operator shall establish and implement a water quality monitoring program to demonstrate the effectiveness of the corrective action program. The program shall be effective in determining compliance and in determining the success of the corrective action measures.	Corrective action for groundwater at RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.100(d)	Relevant and appropriate	These requirements are applicable to RCRA hazardous waste facilities; however, the Navy has determined that they are relevant and appropriate to the monitoring component of the groundwater response action.
Disposal of Investigation-Derived Waste Generated in Implementing Groundwater Alternatives					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[a]					
On-site generation of waste	Person who generates waste shall determine if the waste is hazardous waste.	Generator of waste	Cal. Code Regs. tit. 22, §§ 66262.10(a), and 66262.11	Applicable	These regulations are applicable to any operation that generates waste. The Navy will decide whether the waste is RCRA hazardous waste when it is generated.
On-site generation of waste	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	Applicable	These regulations are applicable to any operation that generates waste. The Navy will determine whether the waste is RCRA hazardous waste when it is generated.

Federal Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Notes:

a	Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs follow each general heading, and only substantive requirements of the specific citations are considered ARARs.

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
Cal. Code Regs.	California Code of Regulations
CFR	Code of Federal Regulations
DWQ	Department of Water Quality
EPA	U.S. Environmental Protection Agency
RCRA	Resource Conservation and Recovery Act
TBC	To be considered
tit.	Title
U.S.C.	United States Code

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Institutional Controls					
California Civil Code[a]					
Placing a institutional controls on soil and groundwater	Provides conditions under which land-use restrictions will apply to successive owners of land.	Transfer of property from the Navy to a nonfederal agency	California Civil Code § 1471	Relevant and appropriate	Substantive provisions are the following general narrative standard: "to do or refrain from doing some act on his or her own land … where (c) each such act relates to the use of land and each such act is reasonably necessary to protect present or future human health or safety of the environment as a result of the presence of hazardous materials, as defined in § 25260 of the California Health & Safety Code." This language provides authority for establishing a durable institutional control that will be implemented through incorporation of restrictive environmental covenants that run with the land into both the federal deed at the time of transfer of the property and in the Covenant to Restrict Use of Property with DTSC to be executed at the time of transfer.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Institutional Controls (Continued)					
California Health and Safety Code[a]					
Placing institutional controls on soil and groundwater	Allows DTSC to enter into an agreement with the owner of a hazardous waste facility to restrict present and future land uses.	Transfer of property from the Navy to a nonfederal agency	California Health and Safety Code § 25202.5	Relevant and appropriate	The substantive provisions of this section are the general narrative standards that authorize DTSC to enter into an agreement to restrict "present and future uses of all or part of the land on which the facility …is located."
Placing institutional controls on soil and groundwater	Provides processes and criteria for obtaining written variances from a land use restriction and for the removal of a land use restriction.	Transfer of property from the Navy to a nonfederal agency	California Health and Safety Code § 25233(c)	Relevant and appropriate	California Health and Safety Code § 25233(c) sets forth substantive criteria for granting variances from the uses prohibited in § 25232(b)(1)(A)-(E) based on specific environmental and health criteria.
Placing institutional controls on soil and groundwater	Provides a process and criteria by which DTSC can remove land use restrictions.	Transfer property from the Navy to a nonfederal entity	California Health and Safety Code § 25234	Relevant and appropriate	California Health and Safety Code § 25234 sets forth the following "relevant and appropriate" substantive criteria for the removal of a land use restriction on the grounds that "the waste no longer creates a significant existing or potential hazard to present or future public health or safety."

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Institutional Controls (Continued)					
California Health and Safety Code[a] (Continued)					
Placing institutional controls on soil and groundwater	Provides a streamlined process to be used to enter into an agreement to restrict specific use of property in order to implement the substantive use restrictions of California Health and Safety Code § 25232(b)(1)(A)–(E).	Transfer of property from the Navy to a nonfederal agency	California Health and Safety Code § 25222.1	Relevant and appropriate	California Health and Safety Code § 25222.1 provides the authority for the state to enter into voluntary agreements to establish land use covenants with the owner of the property. The substantive provision of California Health and Safety Code § 25222.1 is the general narrative standard: "restricting specified uses of the property."
Placing institutional controls on soil and groundwater	Authorizes DTSC to enter into an enforceable agreement that imposes restrictions on present and future uses of the property.	Transfer property from the Navy to a nonfederal entity	California Health and Safety Code § 25355.5(a)(1)(C)	Relevant and appropriate	The substantive requirements of the following California Health and Safety Code § 25355.5(a)(1)(C) provisions are relevant and appropriate": "…execution and recording of a written instrument that imposes an easement, covenant, restriction, or servitude, or combination thereof, as appropriate, upon the present and future uses of the site."
Department of Toxic Substances Control[a]					
Placing institutional controls on soil and groundwater	A land use covenant imposing appropriate limitations on land use shall be executed and recorded when facility closure, corrective action, remedial or removal action, or other	Property transfer by federal government to a non-federal entity	Cal. Code Regs. tit. 22, § 67391.1	Relevant and appropriate	The Navy is selecting ICs for soil and groundwater in this ROD. These requirements are ARARs for those ICs. EPA agrees that the substantive portions of the regulations referenced are ARARs. EPA specifically

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Institutional Controls (Continued)					
Department of Toxic Substances Control[a] (Continued)					
	response actions are undertaken and hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels which are not suitable for unrestricted use of the land.				considers sections (a), (d), and (e) of Cal. Code Regs. tit. 22 § 67391.1 to be ARARs for this ROD. DTSC's position is that all of the state regulation is an ARAR.
Excavation and Off-Site Disposal					
State Water Resources Control Board[a]					
Excavating soil and generating investigation-derived waste	Sampling and analysis of discharges shall be used for accurate characterization of wastes.	Waste	Cal. Code Regs. tit. 27, § 20200(c)	Applicable	This requirement is applicable to operations that generate waste. The Navy will accurately characterize waste for off-site disposal.
Off-site disposal of soil and investigation derived waste	Requires that designated waste as defined at California Water Code § 13173 be discharged to Class I or Class II waste management units.	Discharge of designated waste after July 18, 1997 (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal	Cal. Code Regs. tit. 27, § 20210	Applicable	This requirement is applicable to operations that generate waste. The Navy will determine if the waste meets the definition of designated waste for off-site disposal.
Off-site disposal of soil and investigation derived waste	Requires that nonhazardous solid waste as defined at Cal. Code Regs. tit. 27 § 20220(a) be discharged to a classified waste management unit.	Discharge of nonhazardous solid waste after July 18, 1997, to land for treatment, storage, or disposal	Cal. Code Regs. tit. 27, § 20220(b), (c), and (d)	Applicable	This requirement is applicable to operations that generate waste. The Navy will determine if the waste meets the definition of nonhazardous solid waste for off-site disposal.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Excavation and Off-Site Disposal (Continued)					
State Water Resources Control Board[a] (Continued)					
Off-site disposal of soil and investigation derived waste	Inert waste as defined at Cal. Code Regs. tit. 27 § 20230(a) need not be discharged at a classified unit.	Applies to discharges of inert waste to land after July 18, 1997, for treatment, storage, or disposal	Cal. Code Regs. tit. 27 § 20230(b)	Applicable	This requirement is applicable to operations that generate waste. The Navy will determine if the waste meets the definition of inert waste for off-site disposal.
Covering Portions of the Soil					
State Water Resources Control Board[a]					
Covering portions of the soil	Alternatives to construction or prescriptive standards.	Cal. Code Regs. tit. 27 requirements are only applicable for waste discharged after July 18, 1997 unless otherwise noted	Cal. Code Regs. tit. 27, § 20080(b)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
Remediation activities	Actions taken by or at the direction of public agencies to clean up or abate conditions of pollution or nuisance resulting from unintentional or unauthorized releases of waste or pollutants to the environment; provided that wastes, pollutants, or contaminated materials removed from the immediate place of release shall be discharged according to the SWRCB-promulgated sections of Article 2, Subchapter 2, Chapter 3, Subdivision 1 of this division (§ 20200 et seq.); and further provided that remedial actions intended to contain the wastes at the place of release shall implement applicable SWRCB-promulgated provisions of this division to the extent feasible.	Action taken by or at the direction of a public agency to cleanup release of pollutant	Cal. Code Regs. tit. 27 § 20090(d)	Relevant and appropriate	This regulation is relevant and appropriate because “public agency” is not defined in the regulations; therefore, it does not specifically apply to the federal government.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
Covering portions of the soil	Closed units shall be provided with at least two permanent monuments installed by a licensed land surveyor or a registered civil engineer, from which the location and elevation of containment structures can be determined throughout the post-closure maintenance period.	Waste discharged after July 18, 1997	Cal. Code Regs. tit. 27 § 20950(d)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.
Covering portions of the soil	In spite of differential settlement, the final cover of closed landfills (including waste piles and surface impoundments closed as landfills) shall be designed, graded, and maintained to prevent ponding and to prevent soil erosion caused by high run-off velocities. All portions of the final cover shall have a slope of at least 3 percent unless the Water Board allows portions of the final cover to be built with slopes of less than 3 percent when the discharger proposes an effective system for diverting surface drainage from laterally adjacent areas	Waste management unit	Cal. Code Regs. tit. 27 § 21090(b)(1)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
	and preventing ponding in the allowed flatter portion. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist taking into consideration pertinent natural and constructed topographic features (including any related to the proposed post-closure land use), and climate.				
Covering portions of the soil	Throughout the post-closure maintenance period, the discharger shall prevent erosion and related damage of the final cover caused by drainage.	Waste management unit	Cal. Code Regs. tit. 27 § 21090(c)(4)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
Covering portions of the soil	When all closure activities are complete for the unit, the discharger shall conduct an aerial photographic survey, or alternative survey under Cal. Code Regs. tit. 27 § 21090 (e)(3), of the closed portions of the unit and of its immediate surrounding area, including at least the surveying monuments (of § 20950[d]). The data obtained shall be used to produce a topographic map of the site at a scale and contour interval sufficient to depict the as-closed topography of each portion of the unit, and to allow the early identification of any differential settlement. The map produced pursuant to this paragraph shall act as a base-line against which to measure the total settlement, through time, of all portions of the final cover since the date when that landfill, or portion thereof, was closed.	Waste management unit	Cal. Code Regs. tit. 27 § 21090(e)(1) and (3)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
Excavating soil	Construction that disturbs at least 1 acre must use best management practices to control storm water discharges.	Construction activities at least 1 acre in size	SWRCB General Construction Storm Water Permit 99-08	Not an ARAR	Pursuant to CERCLA Section 121 (e) (42 USC Section 9621 (e)), on-site response actions are exempt from permit requirements, including an NPDES Permit. The State of California's General Construction Storm Water Permit (SWRCB Order No. 99-08) is such a permit. Although not an ARAR in itself, the Navy will implement the substantive provisions of this permit to comply with federal Clean Water Act ARARs and water quality State ARARs for discharge to surface water. The federal and State ARARs require BMPs and a storm water plan. The Navy will implement the BMPs and prepare a storm water plan which will include sampling and analysis requirements as required under the State general storm water permit.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
State Water Resources Control Board[a] (Continued)					
Covering portions of the soil	The final cover shall function with minimum maintenance and shall be compatible with post-closure land use. Alternative final cover designs shall meet the performance requirements of Cal. Code Regs. tit. 27 § 21140(a). The Enforcement Authority may require additional thickness, quality, and type of final cover depending on, but not limited to the future reuse of the site.	Waste management unit	Cal. Code Regs. tit. 27 § 21140	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.
California Integrated Waste Management Board[a]					
Covering portions of the soil	The operator shall ensure the integrity of final slopes under both static and dynamic conditions to protect public health and safety and prevent damage to post-closure land uses, roads, structures, utilities, and to prevent exposure of waste.	Waste management unit	Cal. Code Regs. tit. 27 § 21145(a)	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Covering Portions of the Soil (Continued)					
California Integrated Waste Management Board[a]					
Covering portions of the soil	The drainage and erosion control system shall be designed and maintained to ensure integrity of post-closure land uses, roads, and structures; to prevent public contact with waste; to prevent safety hazards; and to prevent exposure of waste. Slopes that are not underlain by waste shall be stabilized to prevent soil erosion. Methods used to protect slopes and control erosion shall include, but are not limited to, terracing, contour furrows, and trenches.	Waste management unit	Cal. Code Regs. tit. 27 § 21150	Relevant and appropriate	The Navy has determined that this regulation is an ARAR for covering portions of the soil. This regulation is relevant and appropriate because the soil cover will not be constructed as a landfill waste management unit. Instead, the cover will be constructed solely to prevent human exposure to contaminants in the soil.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Groundwater Monitoring					
State Water Resources Control Board[a]					
Remediation activities	Actions taken by or at the direction of public agencies to clean up or abate conditions of pollution or nuisance resulting from unintentional or unauthorized releases of waste or pollutants to the environment; provided that wastes, pollutants, or contaminated materials removed from the immediate place of release shall be discharged according to the SWRCB-promulgated sections of Article 2, Subchapter 2, Chapter 3, Subdivision 1 of this division (§ 20200 et seq.); and further provided that remedial actions intended to contain the wastes at the place of release shall implement applicable SWRCB-promulgated provisions of this division to the extent feasible.	Action taken by or at the direction of a public agency to cleanup release of pollutant	Cal. Code Regs. tit. 27 § 20090(d)	Relevant and appropriate	This regulation is relevant and appropriate to the Navy's groundwater remedial action because "public agency" is not defined in the regulations; therefore, it does not specifically apply to the federal government.

State Action-Specific[a] Applicable or Relevant and Appropriate Requirements
Record of Decision for UC-2, Hunters Point Shipyard, San Francisco, California (Continued)

Notes:

a	Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs follow each general heading, and only substantive requirements of the specific citations are considered ARARs.
§	Section
ARAR	Applicable or relevant and appropriate requirement
Cal. Code Regs.	California Code of Regulations
CFR	Code of Federal Regulations
DTSC	Department of Toxic Substances Control
DWQ	Department of Water Quality
EPA	U.S. Environmental Protection Agency
IC	Institutional controls
ROD	Record of Decision
SWRCB	State Water Resources Control Board
TBC	To be considered
tit.	Title
U.S.C.	United States Code
Water Board	San Francisco Bay Regional Water Quality Control Board

ATTACHMENT 2
RESPONSIVENESS SUMMARY

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Spoken Comment by Michael McGowan received at the public meeting held February 11, 2009		
Comment Number	**Comment**	**Response**
1	First, could you please clarify in the document the risk scenarios and the description of residential and industrial and construction worker risk, how that relates to the eventual use of the property, and especially explain if the remedy is going to make all of the area suitable for residential use or are there some areas that won't be suitable for residential use once the remedy is put in place.	The human health risk scenarios and risk to potential residential, industrial, and construction worker receptors are described in the human health risk sections of the Final Parcel C Feasibility Study (SulTech 2008). Each human health risk scenario corresponds to the city's future reuse scenario for the redevelopment block. The applicable remedial goal for an area is based on the future reuse scenario for the redevelopment block. Based on the future reuse, Parcel UC-2 will be remediated to residential cleanup goals.
2	Second, as I understand, Parcel C is going to be an early—transfer parcel. So I'd like the Navy to please explain how the continuity and the consistency in the remediation that's being described here is going to be ensured or carried on once the property is transferred over and some other entity actually does the remedy.	The remedy for Parcel UC-2 will be finalized in the remedial design for Parcel UC-2 after the Parcel UC-2 Record of Decision (ROD) is signed. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, the transferee will be responsible for carrying out the remedy for Parcel UC-2 under continued regulatory agency oversight.
3	And my last comment is: The radiological work appears to be on its own track, separate from the soil and groundwater remediation. So I would just request that there be a little more discussion of how that's going to be coordinated with the soil and groundwater remediation. Especially if there's an early transfer, does the Navy still maintain responsibility for the radiological work, or will that also be transferred over.	The Navy is continuing to address radiological cleanup under CERCLA. The Navy decided to address radiologically impacted storm drains and sanitary sewers at Parcel UC-2 pursuant to a CERCLA time-critical removal action (TCRA). Although the TCRA may not be completed by the time the ROD is signed, the TCRA is intended to achieve cleanup goals that are identical to the remedial action objectives (RAO) identified in the ROD. In the event that the TCRA does not achieve the cleanup goals, cleanup will continue in accordance with the remedial action selected in the ROD until the RAOs are achieved. The Navy will coordinate the radiological surveys and removals with remediation work for Parcel UC-2 so that the radiological surveys and removals are completed before soil and groundwater remedies are put in place.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Spoken Comments by John McCarthy received at the public meeting held February 11, 2009		
Comment Number	**Comment**	**Response**
1	I would like to know how one acquires the information that Mr. McGowan just cited and -- you know, as a follow-on issue. And also, I am still waiting for the information on early—transfer provisions as they differ from regular transfer process. I've been waiting probably for six months now for that information. I was told several times it would be forwarded by email, and I haven't seen anything yet. I have yet to look up the construction report details per IR-07 and 18 from Parcel B, and I'm looking and waiting for whatever detail may be available for the engineering reports that are supposed to be delivered on prospective construction for -- for example, in Parcel D.	The Final Feasibility Study Report for Parcel C (SulTech 2008) is available for review at the public information repositories. Information on the early transfer process also is available by contacting the U.S. Environmental Protection Agency (EPA) and through the Navy website: <http://www.bracpmo.navy.mil/basepage.aspx?baseid=45&state=California&name=hps> This ROD is for Parcel UC-2 only. For information on Installation Restoration (IR) sites in other parcels at Hunters Point Shipyard, please visit the public information repositories or contact Mr. Keith Forman, Navy Base Realignment and Closure (BRAC) Environmental Coordinator.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Spoken Comments by Tom Lanphar, California Department of Toxic Substances Control (DTSC), at the public meeting held February 11, 2009		
Comment Number	**Comment**	**Response**
1	Also, I'd like to point out that Parcel C is one of the more complicated and contaminated areas of the base. And the remedy that is proposed includes soil vapor extraction for VOCs [volatile organic compounds]; it includes groundwater treatment through biological or chemical additives; it includes soil removal; and it includes a cover. I'd like to mention that DTSC strongly supports the placement of the cover as part of the soil remedy. I'd also like to thank the Navy for the work and the struggle that we all at the BCT established and came up with this Proposed Plan on Parcel C.	Comment noted.
2	And finally, in the radiological cleanup and the radiological remediation goals, I would like that the ROD is clear that the radiological cleanup goals are based on residential cleanup and that the table that's often in the RODs not include construction worker as remedial action goals. That's not part of our remedial action goals as construction workers. I would like clarity in the ROD.	All radiologically impacted soils will be remediated according to residential remediation goals. The radiological remediation goals for construction workers were deleted from the ROD.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by Tom Lanphar, California DTSC, received February 27, 2009 by email		
Comment Number	**Comment**	**Response**
1	Page 16, Soil (Alternative S-5) The Parcel C Proposed Plan preferred alternative for soil proposes leaving in place soil exceeding soil remediation goals for metals, PAHs and PCBs. These contaminants are not associated with the ubiquitous metals associated with fill material quarried from local rock and soil. The proposed plans states: "Elevated levels of metals, PAHs and PCB[s] are located in five areas under portions of buildings 134, 231, 272, 275, and 281. These areas are currently covered by concrete slabs which serve as remedial covers. Demolition of the slabs and excavation into the underlying soil must be approved as provided under the "Restricted Activities" provisions of Insert 1." DTSC disagrees with the Navy's proposal to leave contaminated soil in place under existing covers. The reference in the quoted text to the need for future approvals under the "Restricted Activities" provisions of Insert 1 does not provide any additional requirements or protections than are otherwise required for all of Parcel C. Further, "Restricted Activities" does not require that future land owners excavate and dispose of contaminated soil exceeding remediation goals at these five locations. The proposal to leave this contaminated soil in place reduces long-term effectiveness and is inconsistent with the Navy's remedy as stated in the first section of this Proposed Plan: "Installing soil cover to prevent contact with metals (found throughout the fill material quarried from local rock and soil) in areas that were not excavated." DTSC understands that these buildings are slated for demolition during the redevelopment of Hunters Point. Excavation	This comment applies to Parcel C only and will be addressed in the Parcel C ROD.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by Tom Lanphar, California DTSC, received February 27, 2009 by email		
Comment Number	**Comment**	**Response**
1 (Continued)	of this soil after demolition is a practical and protective soil remedial action. In order to obtain DTSC concurrence on the Parcel C Record of Decision (ROD), DTSC requires that the Parcel C ROD include excavation and disposal of soil exceeding remediation goals in these five areas. The excavation and disposal; however, can occur after early transfer of Parcel C and after the buildings are demolished.	
2	Table 7, Preliminary Remediation Goals for Radionuclides In the Parcel C ROD, please do not include Construction Worker remediation goals. Soil must meet residential remediation goals in order for the Navy to obtain 'free release" of soil areas. DTSC's understanding is that there is no application of Construction Worker remedial goals in the preferred radiological remedy.	All radiologically impacted soils will be remediated according to residential remediation goals. The radiological remediation goals for construction workers were deleted from the ROD.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by California Department of Public Health (CDPH), received February 27, 2009 by e-mail		
Comment Number	**Comment**	**Response**
1	Table 7, Addition of the following footnote "a" to the Soil Resident column in the table: "All radiologically impacted soils in this parcel will be remediated according to Residential Remediation Goals."	A note was added in Table 5, Remediation Goals for Radionuclides, in the ROD to state, “All radiologically impacted soils will be remediated according to residential remediation goals.”
2	The California Department of Public Health (CDPH) believes that California Code of Regulations (Cal. Code Regs.) tit. 17 section 30256 meets the criteria for a potential state chemical-specific ARAR and therefore should be included in the list of ARARs for this parcel. The Navy has previously indicated that Cal. Code Regs. tit 17 section 30256 cannot be an ARAR as it is primarily procedural in nature. However, this regulation is also substantive, at least in part. In particular, subdivision (k) does provide a standard for clean up of radioactive material. The text of Cal. Code Regs. tit. 17 30256(k) is as follows: "(k) Specific licenses shall be terminated by written notice to the licensee when the Department determines that: (1) Radioactive material has been properly disposed; (2) Reasonable effort has been made to eliminate residual radioactive contamination, if present; and (3) A radiation survey has been performed which demonstrates that the premises are suitable for release for unrestricted use; or other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release for unrestricted use." THE REGULATION IS ALSO MORE STRINGENT THAN ANY OTHER RADIOLOGIC-SPECIFIC ARAR. In addition, while the title of the regulation is "Vacating Installations: Records and Notices," the regulation meets the criteria of "relevant and appropriate." The Department is aware that the regulation does not provide a numerical standard, however, a state regulation need not contain a numerical standard in order to be considered an	A state requirement must be more stringent than federal requirements to qualify as a state applicable or relevant and appropriate requirement (ARAR) under CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). See Title 40 Code of Federal Regulations (CFR) Sections 300.400(g)(4) and 300.515(h)(2). It is the responsibility of the state to identify any potential state ARARs that it believes are more stringent than federal ARARs and federal risk-based cleanup levels and to demonstrate why they are more stringent. Neither the Department of Toxic Substances Control (DTSC) nor the California Department of Public Health (CDPH) has prepared and submitted such an analysis and demonstration. Furthermore, the requirements in this regulation appear to be procedural, primarily relating to license termination, rather than substantive requirements. A requirement must be substantive rather than procedural to qualify as an ARAR (see definitions of “applicable” and “relevant and appropriate” in the NCP at Section 300.5.) The ROD was not changed as a result of this comment. The ARARs for Parcel UC-2 were not changed as a result of this comment.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by California Department of Public Health (CDPH), received February 27, 2009 by e-mail		
Comment Number	**Comment**	**Response**
2 (Continued)	ARAR. Furthermore, the CDPH has been ordered to use that regulation by a California judge who held that the "the standard in California for decommissioning and termination of licenses for radioactive sites is found in Cal. Code Regs. tit. 17 section 30256 ..." (Committee to Bridge the Gap v. Bonta et. al, Sacramento County Superior Court, Case No 01 CS01445, "Order Requiring Supplemental Return to Amended Peremptory Writ", August 27, 2002.)	A state requirement must be more stringent than federal requirements to qualify as a state ARAR under CERCLA and the NCP. See Title 40 CFR Sections 300.400(g)(4) and 300.515(h)(2). It is the responsibility of the state to identify any potential state ARARs that it believes are more stringent than federal ARARs and federal risk-based cleanup levels and to demonstrate why they are more stringent. Neither DTSC nor CDPH has prepared and submitted such an analysis and demonstration. Furthermore, the requirements in this regulation appear to be procedural, primarily relating to license termination, rather than substantive requirements. A requirement must be substantive rather than procedural to qualify as an ARAR (see definitions of “applicable” and “relevant and appropriate” in the NCP at Section 300.5.) The ROD was not changed as a result of this comment. The ARARs for Parcel UC-2 were not changed as a result of this comment.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by Amy D. Brownell, City and County of San Francisco and Lennar, received February 27, 2009 by email		
Comment Number	**Comment**	**Response**
1	We would like to point out for the record, that once the engineering controls and institutional controls are properly installed and maintained the current design of the proposed remedies will cut off pathways for: a) contact with soil contaminants and b) inhalation of indoor VOC vapors and this means that the entire property will be health protective for all types of uses.	The proposed remedial alternatives are specific to the reuse identified for each area. Future residents would be protected in areas currently identified for industrial or recreational reuse only by consistent enforcement of the activity restrictions described by the proposed institutional controls (IC). For example, the area requiring institutional controls (ARIC) for vapor intrusion would need to be maintained in areas currently identified as open space (unless the ARIC could be modified by new data for soil gas). The Navy believes that the proposed remedy would result in an environment that would not pose health risks for future residents. However, future reuse would not necessarily be unrestricted as a result. The following text was included on the second page of the Proposed Plan to note the general protectiveness of the planned revised remedy: "*The alternatives described in this Proposed Plan, including operation and maintenance and ICs, will be protective of human health and the environment and will meet the specified cleanup objectives.*"
2	Soil gas RAOs should be included in the ROD. If the establishment of chemical-specific soil gas remediation goals is delayed until after the ROD, then the cost for this evaluation and regulatory process needs to be added to the ROD.	The Navy has established remediation goals for indoor inhalation of vapors from groundwater. Numeric action levels for volatile organic compounds (VOC) in soil gas will not be established in the ROD, but rather may be set using information used to identify chemicals of concern (COC) from soil gas surveys that may be conducted in the future. The Navy is preparing a draft approach for developing soil gas action levels for vapor intrusion exposure for review by the BRAC Cleanup Team (BCT). The ROD was not changed as a result of this comment.
3	**Page 5, Previous Removal Actions and Current Conditions, Paragraph 2, second sentence:** Should be referring to SVE at Building 134 not 123, which is on Parcel B.	This comment applies to Parcel C only and will be addressed in the Parcel C ROD.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by Amy D. Brownell, City and County of San Francisco and Lennar, received February 27, 2009 by email		
Comment Number	**Comment**	**Response**
4	**Page 16, Preferred Alternatives, fourth paragraph:** This paragraph discusses elevated levels of metals, PAHs and PCBs under five buildings. The paragraph states "These areas are currently covered by concrete slabs which serve as remedial covers. Demolition of the slabs and excavation into underlying soil must be approved as provided under "Restricted Activities"..." Because these five areas are specifically mentioned in the Proposed Plan, the implication is that these areas are different than the rest of the parcel that also requires approval for any excavation under "Restricted Activities". The statement leaves it unclear what will be required to obtain approval for excavation under these five buildings. If the intent is these areas will require at least sampling and possibly removal and disposal of contaminated soil, then the ROD should make that clear.	This comment applies to Parcel C only and will be addressed in the Parcel C ROD.
5	**Page 18, Groundwater (Alternative GW-3B)** – The proposed plan states "Soil gas surveys will be conducted following completion of the groundwater remedies and the data will be used to refine the vapor intrusion risk calculations." This is a valid statement for areas that contain contaminated groundwater that will undergo groundwater treatment. However, there are other soil gas surveys that will be needed on Parcel C. Since the entire parcel is an ARIC for VOC vapors (as stated on page 23) the only method to remove the restrictions is to either conduct soil gas sampling or get regulatory approval to allow a review of historical information to verify the lack of soil vapor hazards. In addition to your sentence above, please include the following language in the Parcel C ROD that was negotiated for the Parcel B ROD:	The paragraph in question was replaced as follows in Section 2.9.2 Description of Selected Remedy, in the ROD: "A soil gas survey may be conducted for the following purposes: • "To evaluate potential vapor intrusion risks, • "To identify COCs for which risk-based numeric action levels for VOCs in soil gas would be established (based on a cumulative risk of 10^{-6}), • "To identify where the initial areas requiring institutional controls (ARIC) for VOCs would be retained and where they would be released, and • "To evaluate the need for additional remedial action to remove ARICs."

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comments by Amy D. Brownell, City and County of San Francisco and Lennar, received February 27, 2009 by email		
Comment Number	**Comment**	**Response**
5 (Continued)	A soil gas survey may be conducted in the future for the following purposes: • To evaluate potential vapor intrusion risks, • To identify COCs for which risk-based numeric action levels for VOCs in soil gas would be established (based on a cumulative risk of 10-6), • To identify where the initial areas requiring institutional controls (ARIC) for VOCs would be retained and where they would be released, and • To evaluate the need for additional remedial action in order to remove ARICs.	

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comment from Ronald Young, Young Laboratories, received by mail		
Comment Number	**Comment**	**Response**
1	"Why do you not dig canals all thru Parcel C then place bridges and requisite infrastructure so as to make a neighborhood with shops and restaurants much like Vinice [sic], Italy."	The Navy's Proposed Plan addresses environmental cleanup of existing conditions at Parcels UC-2 and C. Please direct questions or comments about redevelopment of Parcels UC-2 and C to the City and County of San Francisco.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comment from Juan Monsanto received by mail		
Comment Number	**Comment**	**Response**
1	"Good morning. Please change my address to 1814 Castro Street, San Francisco, CA 94131, rather than 1815 Egbert (?). Thanks, Juan."	The change was made to the mailing list.

Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard (Responses are for Parcel UC-2 only. Responses for Parcel C will be provided separately in the Parcel C Record of Decision.)		
Written Comment from Bob Craft Sr., Craft Press, Inc., received by mail		
Comment Number	**Comment**	**Response**
1	"Please include me in your bid list for printing this publication, as we have presses that produce these booklets (mail pieces) at a savings to this current booklet of 1-29-09. Thank you."	The comment does not address the content of the proposed plan. No response is provided.

Reference

SulTech. 2008. "Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California." July 31.

ATTACHMENT 3
REFERENCES

(Reference documents provided on CD only)

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
1	**Parcel C**	Section 2.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.1, page 2-9.
2	**Parcel UC-2**	Section 2.1	Draft Final Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard, San Francisco, California. Department of the Navy. January 2009. Page 1.
3	**IR site**	Section 2.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.1.3, page 2-3. Draft Final Parcel B Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California. PRC Environmental Management, Inc., Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). June 3, 1996. Section 4.4, pages 4-28 and 4-29.
4	**Hydrostratigraphic units**	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.8.1, pages 2-13 to 2-15 and Figures 2-13 and 2-14
5	**Drinking water**	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.9, pages 2-17 to 2-21.
6	**Parcel UC-2 ecology**	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.5, page 2-11.
7	**Samples**	Table 1	Draft Final Parcel B Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California. PRC Environmental Management, Inc. (PRC), Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). June 3, 1996. Tables 4.4-1 to 4.4-8.
8	**RMR results**	Table 1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.1.4.2, page 2-6.
9	**Impacted or non-impacted**	Table 1	Final Historical Radiological Assessment, Volume II, History of the Use of General Radioactive Materials, 1939 – 2003, Hunters Point Shipyard, San Francisco, California. Naval Sea Systems Command. August 31, 2004. Section 1.2, Page 1-2 and 1-3.
10	**Metals**	Section 2.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.3.1.1, page 2-23 and 2-24.
11	**VOCs**	Section 2.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.4.4, page 2-38.
12	**Radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures**	Section 2.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Executive Summary, pages ES-2 and ES-3.
13	**Reuses**	Section 2.4	Hunters Point Shipyard Redevelopment Plan. City and County of San Francisco. Section IIB and Map 1. San Francisco Redevelopment Agency. July 14, 1997.
14	**Human health CSM**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C3.0, Figure C-1.
15	**HHRA**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C5.0, pages C-16 to C-24.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
16	**Cancer risks and noncancer hazards**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C7.0, pages C-27 to C-32.
17	**Total and incremental risks**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Sections 3.1.2 and 3.1.3, pages 3-4 to 3-9.
18	**Revised HHRA results**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Tables 3-4, 3-7, 3-10, and 3-13 through 3-15.
19	**Radiological risks**	Section 2.5.1	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Table 3-4.
20	**Combined chemical and radiological risks**	Section 2.5.1	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Tables 3-5 and 3-6.
21	**Assumptions and uncertainties**	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C9.0, pages C-43 to C-46.
22	**Environmental impacts to the San Francisco Bay**	Section 2.5.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix G.
23	**Soil**	Section 2.5.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Figures 3-2 through 3-7.
24	**Groundwater**	Section 2.5.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Figures 3-8 and 3-9.
25	**Radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures**	Section 2.5.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Tables 3-4 to 3-6.
26	**Radionuclides of concern**	Section 2.5.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Table 2-1.
27	**Remedial action objectives (RAO)**	Section 2.7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.1, page 4-1.
28	**GRAs**	Section 2.8	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.3, pages 4-18 to 4-32.
29	**Preliminary remedial alternatives**	Section 2.8	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 5.0, pages 5-1 to 5-18.
30	**Nine evaluation criteria**	Section 2.8.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 6.0, pages 6-1 and 6-2.
31	**Present-Worth Cost: $248,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-2A.
32	**Present-Worth Cost: $248,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-4A.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
33	**Present-Worth Cost: $418,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-6A.
34	**Present-Worth Cost: $418,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-8A.
35	**Present-Worth Cost: $508,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-9 and F-11A.
36	**Present-Worth Cost: $508,000 / $508,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-13A and F-15A.
37	**Present-Worth Cost: $508,000**	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Table F-17A.
38	**Present-Worth Cost: $1,077,000**	Table 7	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Appendix B, Section 6.9, pages B.6-5 and B.6-6.
39	**Dust control measures**	Section 2.9.2	Final Basewide Dust Control Plan, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC Inc. June 12, 2009.
40	**ICs**	Section 2.9.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.3.2.1, pages 4-20 to 4-23.
41	**IR Program website**	Section 2.10	http://www.bracpmo.navy.mil/

Notes

[1]Bold blue text indicates hyperlinks available on reference CD to detailed site information contained in the publicly available Administrative Record.

For access to information contained in the Administrative Record for Hunters Point Shipyard, please contact:

Diane Silva
Code EVR-FISC Bldg. 1, 3rd Floor
Naval Facilities Engineering Command Southwest
937 N. Harbor Drive
San Diego, CA 92312
619-532-3676

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
1	Parcel C	Section 2.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.1, page 2-9.

134 in RU-C5. The objective of the treatability study was to evaluate the potential of this technique for treating chlorinated and nonchlorinated organic compounds in groundwater. The treatability study was conducted in two stages, anaerobic (Stage 1) and aerobic (Stage 2). Stage 1 was conducted from April to December 2004. Stage 2 was conducted from January to May 2005. The purpose of Stage 1 was to evaluate the biological degradation of chlorinated organics, including the chlorinated ethenes, ethanes, and benzenes under anaerobic conditions. The purpose of Stage 2 was to evaluate the biodegradation of potentially reduced residual chlorinated organic and nonchlorinated organic chemicals under aerobic conditions. The treatability study demonstrated that sequential anaerobic and aerobic bioremediation is an effective treatment technology for groundwater plumes of mixed chlorinated organic chemicals, such as that observed at RU-C5 (Shaw Environmental, Inc. 2005).

2.2 HUNTERS POINT SHIPYARD ENVIRONMENTAL SETTING

This section provides information related to HPS's environmental setting, including land use, historical areas, climate, topography and surface water drainage, ecology, soils, geology, hydrogeology and current groundwater use and potential beneficial uses for groundwater.

2.2.1 HPS and Surrounding Land Use

The main portion of HPS is situated on a long headland located in the southeastern part of San Francisco extending eastward into the Bay (see Figure 1-1). The headland is bounded on the north and east by the Bay and on the south and west by the Bayview/Hunters Point district of San Francisco. HPS consists of 866 acres: 420 acres on land and 446 acres under water in the Bay.

Parcel C consists of about 79 acres of shoreline and lowland coast along the east-central portion of HPS (see Figure 1-2). Parcel C is located south of Parcel B and east of Parcel D, and is bounded to the north by Parcel B, east by the Bay, south by Berths 10 and 11, southwest by Dry Dock 4, and west by Fisher Avenue. Parcel C is the oldest portion of the shipyard and was used almost exclusively for industrial purposes since the late 1800s. Seventy buildings, 3 dry docks, 1 wharf, 11 ship berths, and 1 pier are located within the boundaries of Parcel C.

Historically, the dominant land use of Parcel C has been for shipping, ship repair, and office and commercial activities. Parcel C land use and historical areas are discussed below. Figure 2-1 shows the reuse areas and locations of the buildings at Parcel C. According to the redevelopment plan (SFRA 1997), Parcel C is expected to be zoned to accommodate buildings for cultural and institutional uses; buildings for research and development; and mixed-use areas for live/work spaces for artists, studios, galleries, warehouses, and hotels. In addition, the area along the eastern portion of Parcel C bounded by the Bay will be set aside as open space (see Figure 2-1). Section 2.1.3 lists the proposed zoning categories and the redevelopment blocks associated with each category.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
2	Parcel UC-2	Section 2.1	Draft Final Proposed Plan for Parcels C and UC-2, Hunters Point Shipyard, San Francisco, California. Department of the Navy. January 2009. Page 1.

U.S. NAVY ANNOUNCES PROPOSED PLAN

The U.S. Navy encourages the public to comment on its ***Proposed Plan**** for cleanup of Parcel C at Hunters Point Shipyard (HPS) in San Francisco, California (see Figures 1 and 2). This Proposed Plan presents proposals for ***remedial actions*** to be selected in Re***cords of Decision (ROD)***. Parcel UC-2 was formerly part of Parcel C; however, this planned utility corridor is now designated as a separate parcel for remedy selection (see Figures 2 and 3). Two separate RODs will be prepared for Parcel C and Parcel UC-2, although both are discussed in this Proposed Plan.

This Proposed Plan summarizes the alternatives evaluated and explains the basis for choosing the preferred remedial (cleanup) alternatives for soil, structures, and ***groundwater*** contamination at Parcels C and UC-2 at HPS under the ***Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).*** The Navy operated a shipyard to repair ships at HPS from 1939 to 1975. Ship repair and support required the use of fuels, solvents, paints, radiological material, and other substances that may have been spilled on the ground, leaked from underground pipes, or otherwise released to the environment. These potential spills and releases contaminated soil, building structures, and groundwater at Parcels C and UC-2, in the central portion of HPS (Figures 2 and 3).
The ***U.S. Environmental Protection Agency (EPA), Region 9***, the ***California Environmental Protection Agency Department of Toxic Substances Control (DTSC)***, and the ***San Francisco Bay Regional Water Quality Control Board (Water Board)*** worked with the Navy in evaluating the remedial alternatives and in selecting the ***preferred alternatives***.

The Navy proposes the following actions to address contamination in soil, building structures, and groundwater at Parcels C and UC-2:

- Removing soil in selected areas where concentrations of organic chemicals and lead, mercury, and zinc are higher than the levels considered safe for human health.
- Operating a ***soil vapor extraction (SVE)*** system to remove and treat ***volatile organic compounds (VOC)*** in soil.
- Installing soil covers to prevent contact with metals (found throughout the fill material quarried from local rock and soil) in areas that were not excavated.
- Conducting radiological surveys and decontaminating buildings, former building sites, sewer lines, and other areas potentially affected by radiological sources.

- NOTICE -

Public Comment Period
January 29 through February 27, 2009

Public Meeting
February 11, 2009
Alex L. Pitcher, Jr., Room
Southeast Community Facility Commission Building
1800 Oakdale Avenue, San Francisco.
6:00 to 8:00 p.m.

- Screening, separating, and disposing of radioactive sources and radiologically-contaminated building materials and soil at disposal facilities that meet federal and state requirements.
- Transporting excavated contaminated soil off site to an appropriate landfill.
- ***Treating groundwater by injecting chemicals or biological nutrients*** to break down the organic contaminants at RU-C1, RU-C2, RU-C4, and RU-C5 and immobilize metals.
- Implementing a ***groundwater monitoring program*** to verify that remediation efforts meet ***remediation goals*** as defined in the RODs and that metals in groundwater do not impact the bay.
- Using ***engineering controls (EC)*** and ***institutional controls (IC)*** to limit exposure to contaminated soil and groundwater by restricting specified land uses and activities on the parcel (see Insert 1 on page 21 for more details on ICs).

This Proposed Plan summarizes the regulatory process that governs the cleanup; describes the site history, environmental investigations, risk assessments, and remedial alternatives for Parcels C and UC-2; and indicates how the Navy selected the preferred alternatives for cleaning up soil and groundwater. The Navy invites you to provide comments on this Proposed

* Words in bold italic type are defined in the glossary on page 25

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
3	IR site	Section 2.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.1.3, page 2-3. Draft Final Parcel B Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California. PRC Environmental Management, Inc., Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). June 3, 1996. Section 4.4, pages 4-28 and 4-29.

At each parcel, contaminated sites at HPS were designated as IR sites, based on the information developed during the PA, SI, and SA. IR sites were in most cases identified by a two-digit number, for example, IR-28. Site characterization activities and sampling data were mostly planned and organized by IR site. To assess risk, the BCT agreed to divide all of HPS into two different size grids (residential and industrial) as a method of statistically calculating risk within an area for different future land use scenarios. The SFRA designated redevelopment blocks for Parcel C in accordance with the CCSF's planned future reuse. This report uses the risk grids and the redevelopment blocks as the basis for evaluating the results of the revised HHRA and developing remedial alternatives to address potential unacceptable risk present within Parcel C. The Navy acknowledges that the boundaries of the redevelopment blocks may be revised during redevelopment; however, the record of decision (ROD) will list the boundaries of the reuse categories. The chemicals at Parcel C determined to pose a potential unacceptable risk were identified as COCs. COCs are determined when the chemical-specific risk exceeds 1E-06 or the noncancer hazard exceeds 1. IR sites are still referred to in the characterization sections of this Final FS Report as they relate to historical operations and resulting sources of contamination found in Parcel C soil and groundwater.

In 1997, the CCSF's redevelopment plan assigned reuse categories to all of HPS by redevelopment blocks (SFRA 1997). In some cases, IR sites are completely contained within redevelopment blocks, and in other cases, the IR sites cross redevelopment block boundaries. Figure 2-1 shows Parcel C, the redevelopment blocks, and the IR site boundaries. Figure 2-2 shows the IR site boundaries and the RU boundaries. Table 2-1 outlines the correlation between the redevelopment blocks and the IR sites.

Parcel C includes 14 IR sites: IR-06, IR-25, IR-27, IR-28, IR-29, IR-30, IR-45, IR-49, IR-50, IR-51, IR-57, IR-58, IR-63, and IR-64 (see Figure 2-1). IR-06 and IR-25 were initially located in Parcel B and addressed in the Parcel B RI. These sites were transferred to Parcel C in 2002 following the discovery of volatile organic compounds (VOC) in soil and groundwater related to the activities in Building 134 (Navy 2002; SulTech 2007). Sites IR-45, IR-49, IR-50, and IR-51 are facility-wide sites consisting of utilities that cut across other IR sites, or are the locations of former transformer storage areas.

According to the redevelopment plan (SFRA 1997), Parcel C will consist of 15 redevelopment blocks (see Figure 2-1). The blocks and their proposed zoning are listed below.

4.4 IR-06: FORMER BUILDINGS 111 AND 112, AND TANK FARM

IR-06 was one of the 12 sites at HPS identified during the IAS conducted by the Navy in 1984 under NACIP. The site was originally designated as IAS Site 10 and was redesignated IR-06 in 1988 when HPS was incorporated in the Navy's IRP. IR-06 was then included in the Group II (later renamed OU II) SIs. RI activities conducted at IR-06 between 1988 and 1991 were first reported in the "Draft OU II RI Report" (HLA 1992e). IR-06 is an inland site located about 800 feet inland from the shoreline at San Francisco Bay.

IR-06 is the former location of 18 ASTs and former Buildings 111 and 112, which housed the lubrication oil and diesel fuel pumphouses (see Figure 4.4-1). The tank farm was constructed in 1942 along what had been the shoreline in 1935 and was used by the Navy until 1974 to store fuel and lubrication oil (HLA 1992e). From the tank farm, fuel and lubrication oil were distributed to the berths north and northeast of IR-06 through the pumphouses and underground lines. Diesel oil reportedly spilled from a ruptured tank in the early 1940s when apparently, the contents of a 286-barrel (about 12,000-gallon) tank overflowed the berm. The spilled diesel oil was recovered and taken to the oil reclamation ponds at IR-03 in Parcel E. Triple A reportedly used the tank farm from 1976 until 1986. Stoddard Solvent may have been stored in ASTs 7 and 8 during this period (see Figure 4.4-1) (HLA 1992e). Between 0.5 and 6 inches of sandblast grit were found in Berms 1 through 4 in Areas 1 through 4, respectively (EMCON 1987b).

Tank facilities, including the tanks, pumphouses in Buildings 111 and 112, support racks, and associated piping within the bermed areas were removed as part of the removal action conducted at IR-06 (HLA 1994d). Approximately 140 yd^3 of soil were excavated from within Berms 1 through 4 during the removal action and disposed of off site (HLA 1994d). A total of 2,580 yd^3 of soils contaminated with organic compounds, metals, and petroleum hydrocarbon is scheduled to be removed from IR-06 in Fall 1996. The extent of soil excavation to be completed in Fall 1996 at IR-06 is summarized in an EE/CA report for this removal action. The EE/CA is included in Appendix G of this report.

Structures that remain at IR-06 include a truck washout ramp, four berms, and trenches containing fuel distribution and steam lines that run from the former pumphouses to the fueling berths north of IR-06. The ground surface at the tank farm is mostly flat and, except for the berms, paved with asphalt or concrete. Robinson Street, located south of the tank farm, is separated from the tank farm by a steep slope that forms the southern portion of Berms 1, 3, and 4.

Water within the bermed areas currently drains directly to the storm drain system. Until 1993, when the last tanks were removed from the site, water entering the bermed areas was contained within the berms until it was discharged to the storm drain system through manual plug drains. The other utility near IR-06 is the sanitary sewer that runs beneath the southern portion of Lockwood Street at approximately 12 feet bgs (see Figure 4.4-1).

In 1986, as part of the confirmation study verification step, surface soil at IR-06 was visually examined, and petroleum odors and visible contamination were noted (EMCON 1987a); however, soil samples were not collected for chemical analysis.

RI field investigations, physical characteristics, RI analytical results, the nature and extent of contaminants, contaminant fate and transport, the risk assessment, and conclusions and recommendations for IR-06 are discussed below.

4.4.1 RI Field Investigations

Based on the results of the confirmation study verification step, IR-06 was recommended for an RI. RI activities conducted at IR-06 are summarized in the table below.

Field Activities Summary					
Task	Number of Sampling Stations or Wells	Number of Samples			
		Soil	Well Groundwater	Hydropunch Groundwater	Grab Groundwater
Surface Soil Sampling	19	35	NA	NA	NA
Soil Borings	35	140	NA	0	0

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
4	Hydrostratigraphic units	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.8.1, pages 2-13 to 2-15 and Figures 2-13 and 2-14.

The Bay Mud consists of fine-grained Holocene estuarine deposits of silt and clay. The Bay Mud underlies and is interbedded with the undifferentiated upper sands.

Undifferentiated sediments are the oldest unconsolidated sedimentary unit present beneath Parcel C. Undifferentiated sediments consist mostly of clay and silt and isolated sand lenses. The undifferentiated sediments at HPS occur between underlying bedrock and overlying undifferentiated upper sands and Bay Mud. In places, undifferentiated sediments are directly overlain by artificial fill materials. Undifferentiated sediments are thinner below the northern and western portions of the parcel, and are typically absent in those locations where the bedrock surface is shallow and the overburden is thin.

Bedrock at HPS (and in Parcel C) is part of the Franciscan Complex, a mélange of igneous, sedimentary, and metamorphic rocks assembled during subduction related continental-margin accretion (Wakabayashi 1992). Rock types of the complex include basalt (greenstone), serpentinite, chert, sandstones, siltstones, and shales. The bedrock occurs at depths of 0 to 25 feet across much of Parcel C; although in the southeast area near Berth 3, depth to the bedrock surface increases to over 110 feet bgs. The deep bedrock in this area is overlain by sand and clay beds of the Undifferentiated Sediments. Figure 2-12 presents the bedrock surface elevation contours at Parcel C.

2.2.8 Parcel C Hydrogeology

This section presents a brief overview of the Parcel C hydrogeology, and is presented by hydrostratigraphy, aquifer parameters, groundwater flow, and tidal influence. For a more detailed description of the Parcel C hydrogeology, refer to the Phase III GDGI Report (Tetra Tech 2004a).

2.2.8.1 Parcel C Hydrostratigraphy

The hydrostratigraphic units at HPS include (1) the A-aquifer, (2) the Bay Mud aquitard, (3) the B-aquifer, and (4) the F-WBZ. The Navy and the regulatory agencies have agreed to use this designation of the aquifer system at Parcel C. Figure 2-7 presents a map showing cross-section locations for the RU-specific cross sections, and shows the location of borings and wells with lithologic data. Figures 2-8 through 2-11 show the RU-specific cross sections.

The A-aquifer at HPS typically consists of unconsolidated Artificial Fill (Q_{af}) that overlies the Bay Mud aquitard and bedrock and forms a continuous zone of unconfined groundwater. Alluvium and colluvium, Undifferentiated Upper Sands, and shallow bedrock also are part of the A-aquifer at various locations across Parcel C, wherever the additional units are considered hydrologically connected to form a single aquifer unit. The A-aquifer generally thickens from about 10 feet in the southwest to as much as 80 feet in the northeast, but averages between 20 and 25 feet thick over most of Parcel C.

Bay Mud acts as an aquitard that separates the A- and B-aquifers in the central area of the parcel. The Bay Mud consists of highly plastic clay to sandy clay and generally thickens from 0 feet near the historical shoreline in the southwest to 40 feet near the bay margin in the northeast. The Bay Mud is discontinuous at Parcel C resulting in the A-aquifer being in direct hydraulic communication with the units of the B-aquifer.

The B-aquifer is present over an area of approximately 22 acres, or about 28 percent, of Parcel C. B-aquifer only occurs in the east-central area of the parcel from Dry Dock 2 to Building 251 to Berths 3 and 4, and in the area northwest of Building 134 (see Figure 2-13). The B-aquifer consists of the Undifferentiated Sediments; these deposits are typically separated from the A-aquifer by the Bay Mud. In the area north of Berths 3 and 4, these deposits thicken and consist of interbedded sands and clayey silts. The upper sand bed is generally 20 to 30 feet thick, whereas deeper sand beds are only 5 to 8 feet thick. In the area of Building 134, the B-aquifer has a very limited extent and has been characterized as having a low production capacity in the adjacent area of Parcel B. Where the Bay Mud is not present, the upper sand bed of the Undifferentiated Sediments is directly, hydraulically connected to the A-aquifer. The upper sand bed of the Undifferentiated Sediments ranges from about 5 to over 30 feet thick. In areas where this upper bed is relatively thin and Bay Mud is absent, the sediments are included in the A-aquifer.

The water table is within the saturated F-WBZ in about 30 acres (or 38 percent) of Parcel C. Fill material, either unsaturated or with seasonal thin perched water, overlies the F-WBZ across much of the 30-acre area. The F-WBZ is overlain by either saturated fill of the A-aquifer or saturated sediments of the B-aquifer across the other 49 acres of Parcel C. The distribution of the shallow F-WBZ and the A-aquifer are shown on Figure 2-14.

The F-WBZ is *not* considered an aquifer because of its low capacity for water production. The bedrock consists of serpentinite, with lesser amounts of greenstone and chert, and rare shale, sandstone, and siltstone. During the RI, the bedrock borings were usually dry during drilling and coring. The upper 15 to 30 feet are intensely fractured and moderately to deeply weathered, frequently forming a clayey gravel residuum from the serpentinite with calcite-filled fractures. The flow within the bedrock is dependent on the degree and continuity of fracturing, the fracture pattern, the extent of and resistance to weathering, and the amount of secondary precipitation of minerals in fractures. The flow is laminar seepage to turbulent sheet flow similar to water moving between two closely spaced bricks, rather than flow through a porous media such as sand. The bedrock has very limited groundwater storage capacity because most of the bedrock is not a porous medium. The field sampling records from monitoring events show the water production rates are generally low and highly variable, reflecting the low storage capacity. Review of drilling logs and monitoring well sampling records indicated the bedrock cherts and sandstones tend to be better producing areas. The highly weathered clayey gravel residuum of the upper F-WBZ is usually termed part of the overlying hydrostratigraphic unit (either the A-aquifer or B-aquifer, whichever directly overlies the F-WBZ), because the saturated upper F-WBZ clayey gravel residuum is in direct vertical hydraulic continuity with the overlying groundwater unit and behaves somewhat like a porous medium.

Monitoring well name designations (for example, A, B, or F) are generally based on the lithologic unit in which the well is screened. For example, wells screened in the Undifferentiated Sediments are designated "B," whereas the saturated sand of the Undifferentiated Sediments may be labeled part of the "A-aquifer" or "B-aquifer" depending on whether or not the Bay Mud Aquitard is present. The one exception to this well labeling rule is at Building 134 of RU-C5, where treatability study wells were installed in 2000 and mislabeled with the wrong unit designation.

Depth to the top of the A-aquifer occurs at approximately 8 to 10 feet bgs across most of Parcel C. Groundwater flows generally south/southeast across Parcel C toward the Bay, except at northern portions of the parcel where the primary flow direction is toward the dry docks.

2.2.8.2 Hydraulic Characteristics

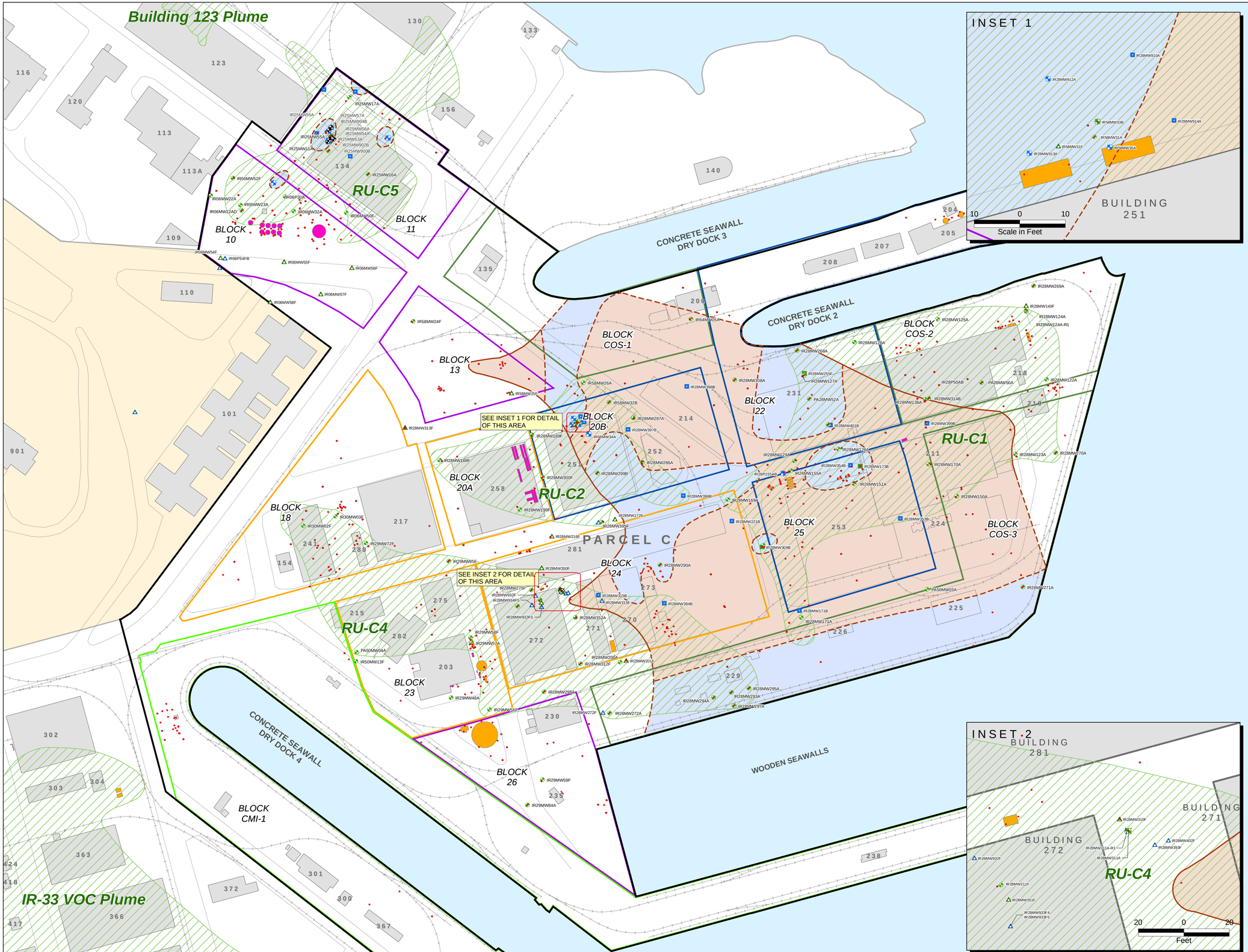
Slug tests were performed in the mid 1990s at Parcel C, and the results were reported in the Parcel C RI Report (PRC, LFR, and U&A 1997). Constant rate discharge pumping tests were conducted at Parcel C between July 2000 and August 2002, and results were reported in the Phase III GDGI Report (Tetra Tech 2004a). The pump tests provide a more representative assessment of aquifer characteristics. Table 2-9 provides the results of the pump tests and slug tests, as well as calculated aquifer parameters, including hydraulic conductivity, transmissivity, and storage coefficient. No discharge tests have been performed in the bedrock at HPS.

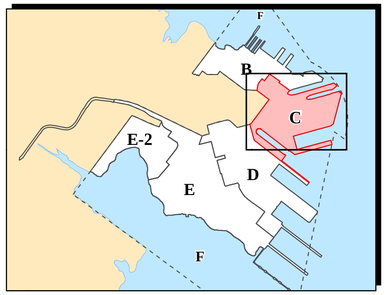
2.2.8.3 Groundwater Flow

Horizontal groundwater flow and groundwater recharge and discharge are discussed below. The horizontal groundwater flow discussion is based on the 2004 fourth quarter water levels measured during HPS basewide quarterly groundwater monitoring at Parcel C (Kleinfelder 2005). Vertical groundwater flow and groundwater recharge and discharge discussions are based on data presented in the Parcel C Phase III GDGI Report (Tetra Tech 2004a). Groundwater flow directions may shift in the future from the directions presented in this section, since the pump at the lift station for storm sewer lines of Parcel C was shut down in May 2007. The groundwater flow directions and chemical distribution in groundwater should be reevaluated prior to preparing the remedial design.

Groundwater flow patterns at HPS are largely determined by the upgradient Parcel A topographic high (west of Parcel C) centrally located at HPS with respect to the Bay shoreline configuration. The general pattern of groundwater flow is radially away from the Parcel A topographic high and toward the shoreline. Figure 2-15 presents a groundwater elevation contour map for the A-aquifer at Parcel C, for measurements collected in November 2004 (Kleinfelder 2005).

At Parcel C, the general direction of groundwater flow is to the east where groundwater discharges into the Bay. Locally, at bayside perimeter locations of the parcel, the groundwater flow direction is southeast or northeast directly toward the Bay or Dry Dock or the nearest surface water. Dry Docks 2 and 3 were constructed with concrete seawalls, and are shown as areas with no groundwater flow on Figure 2-15. Leaking storm drains, sewer lines, and water supply lines influence groundwater movement across Parcel C.





Location Map

- Decommissioned Well
- Soil Borings During or Prior to Remedial Investigation[1]
- Treatability Study Monitoring Well

Remedial Investigation Monitoring Wells

- A-Aquifer Well
- A/B-Aquifer Well
- B-Aquifer Well
- F-WBZ Well

Monitoring Wells

- A/B-Aquifer Well
- B-Aquifer Well
- F-WBZ Well

Extent of B-Aquifer (dashed where inferred)

- B-Aquifer
- Area Where A- and B-Aquifers are in Direct Contact
- Parcel C Boundary
- Former AST
- Former UST

Redevelopment Block

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Rail Line
- Road
- RU Boundary
- Building
- Non-Navy Property

Notes:

1 PRC, Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). 1997. "Draft Final Parcel C Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California." March 13

F-WBZ Bedrock water-bearing zone
RU Remedial Unit

100 50 0 100 200 300
Feet

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 2-13

EXTENT OF B-AQUIFER

Feasibility Study Report for Parcel C

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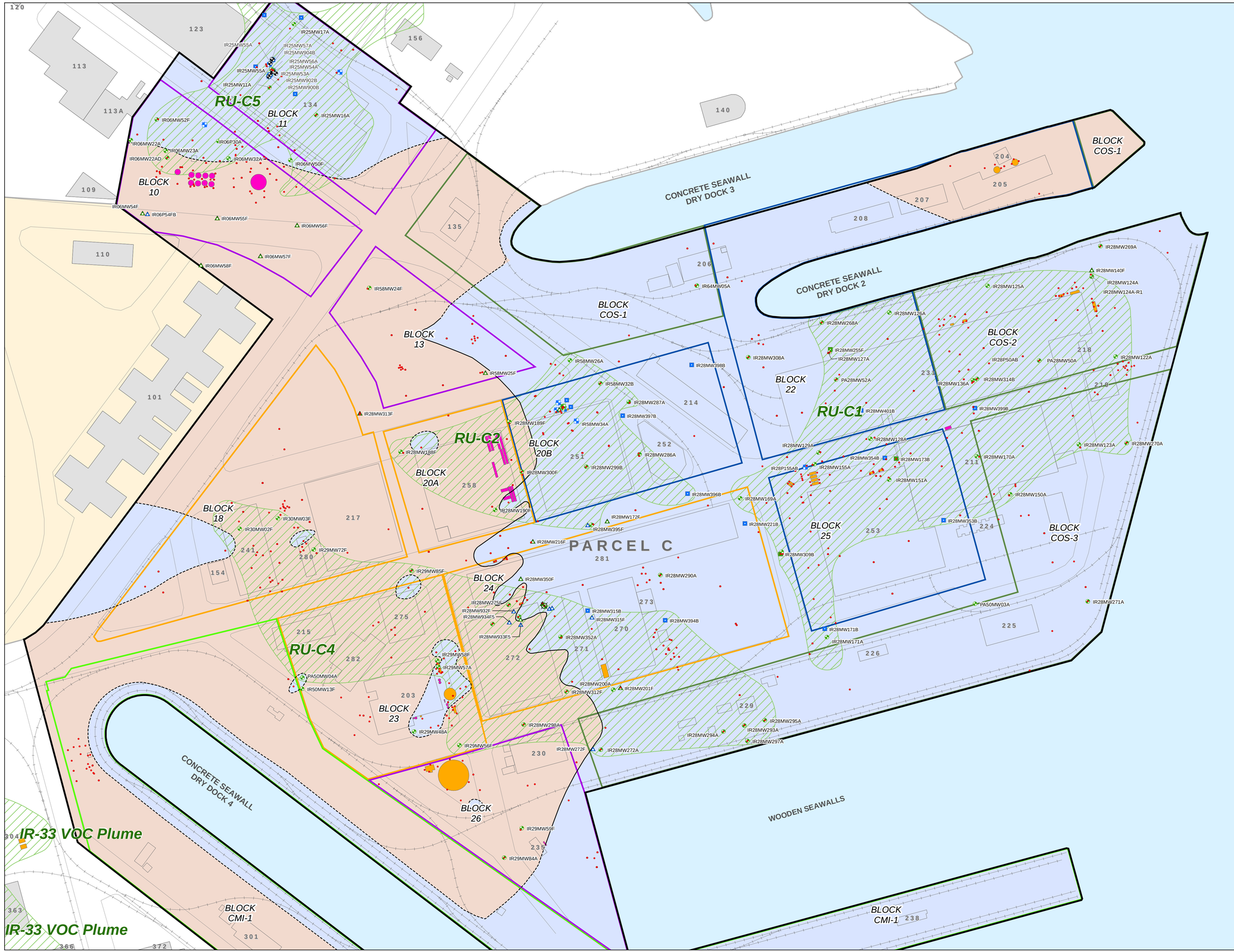
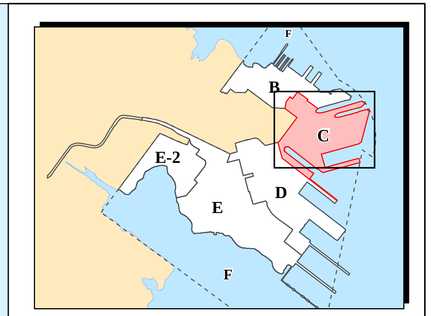




Location Map

- Decommissioned Well
- Soil Borings During or Prior to Remedial Investigation[1]
- Treatability Study Monitoring Well

Remedial Investigation Monitoring Wells

- A-Aquifer Well
- A/B-Aquifer Well
- B-Aquifer Well
- F-WBZ Well

Monitoring Wells

- A/B-Aquifer Well
- B-Aquifer Well
- F-WBZ Well

Extent of A-Aquifer (dashed where inferred)

- A-Aquifer
- Area Where F-WBZ is Within 10-Feet of Ground Surface
- RU Boundary
- Former AST
- Former UST
- Parcel C Boundary

Redevelopment Block

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Non-Navy Property
- Building
- Rail Line
- Road

Notes:
1 PRC, Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). 1997. "Draft Final Parcel C Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California." March 13

F-WBZ Bedrock water-bearing zone
RU Remedial Unit

N

100 50 0 100 200 300
Feet

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 2-14

DISTRIBUTION OF THE A-AQUIFER AND THE F-WBZ AS THE UPPERMOST WATER-BEARING ZONE

Feasibility Study Report for Parcel C

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
5	Drinking water	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.9, pages 2-17 to 2-21.

Tidal studies were conducted at Parcel C during the Phase III GDGI to evaluate the extent of tidal influence and tidal mixing in groundwater. Tidal mixing refers to the influx and mixing of the Bay's saline surface water into near-shore groundwater by daily tidal action; this results in degradation of groundwater with a significant increase of total dissolved solids (TDS) to above 10,000 milligrams per liter (mg/L). Tidal effects on Parcel C groundwater are important because much of Parcel C is adjacent to the Bay with which the shallow aquifer system is hydraulically connected. Tidal effects on groundwater are observed throughout Parcel C, except for the most inland portions.

The maximum fluctuation of Bay water levels during the tidal influence study was about 10 feet. The A-aquifer tidal influence zone, defined as the area where the maximum tidal fluctuation exceeds 0.10 feet, extends about 150 to 500 feet inland from the Bay (not considering Dry Dock 2, which is hydraulically separated from the groundwater by the dock wall). Tidal effects on A-aquifer groundwater are strongest near the eastern and southeastern shoreline of Parcel C and become weaker toward the west and northwest.

The data are insufficient to define the boundary of the B-aquifer tidal influence zone, but at IR28MW401B, located over 200 feet from Dry Dock 2 to the north and over 650 feet from the Bay to the east and south, 1.2 feet of groundwater tidal fluctuations were observed. Tidal influence data indicated that tidal effects are generally stronger in the B-aquifer than in the A-aquifer, which is expected considering the semi-confined to confined nature of the B-aquifer and the generally unconfined nature of the A-aquifer.

The tidal mixing zone is defined as the area in the shallow aquifer near the shoreline where groundwater and seawater mix as a result of tidal fluctuations. Tidal mixing studies conducted at HPS have indicated a tidal mixing zone at least 70 feet wide (Tetra Tech 2004a). Additional information on mixing between Parcel C groundwater and the Bay are outlined in the following subsection.

2.2.9 Groundwater Beneficial Use Evaluation

This section summarizes the evaluation of the potential for groundwater from the A- and B-aquifers at Parcel C to be used for domestic drinking and municipal water supply. The full beneficial use evaluation is presented in Appendix A. A primary purpose of the beneficial use evaluation is to determine if maximum contaminant levels (MCL) as established by EPA under the Safe Drinking Water Act for potential drinking water sources are ARARs for groundwater remediation goals. The results of the beneficial use evaluation are also considered in selection of potential exposure pathways in support of the baseline HHRA.

The hydrostratigraphic units at HPS include (1) the A-aquifer, (2) the Bay Mud aquitard, (3) the B-aquifer, and (4) the F-WBZ. The water table is within the shallow F-WBZ across about 38 percent of Parcel C, and is within the A-aquifer across the remainder of the parcel. The

highly weathered clayey gravel residuum of the upper F-WBZ is usually termed part of the overlying hydrostratigraphic unit (either the A-aquifer or B-aquifer, whichever directly overlies the F-WBZ). The saturated upper sands of the Undifferentiated Sediments (normally comprising the upper B-Aquifer) are also included with the A-aquifer at Parcel C in areas where the Bay Mud either does not exist or is too thin to serve as an aquitard.

The potential beneficial uses of Parcel C groundwater have been referenced in several previous documents (see Appendix A). In an August 11, 2003, letter to the Water Board, the Navy provided their determination that the A-aquifer at HPS is not a municipal or domestic water supply source (Navy 2003). A September 25, 2003, response letter from the Water Board concurred that A-aquifer groundwater at HPS meets the exception criteria in the State Water Resources Control Board (SWRCB) Sources of Drinking Water Resolution No. 88-63 (SWRCB 1988; Water Board 2003). Therefore, the Parcel C beneficial use evaluation for the A-aquifer includes comparison with federal but not state groundwater classification criteria. The evaluation of the B-aquifer includes comparison to both state and federal criteria.

The State of California and EPA have different TDS and well yield criteria for evaluating groundwater as having potential as a municipal or domestic water supply. The state criterion is for TDS concentrations in groundwater to be lower than 3,000 mg/L, and the EPA (federal) criterion is for groundwater TDS concentrations to be lower than 10,000 mg/L. The state well yield criteria specify that an aquifer must be capable of providing an average sustained yield of 200 gallons per day (gpd) from a single well. The federal criteria specify that well yield must be sufficient to supply an average family, which is considered to be a minimum of 150 gpd; this level of production should be possible throughout the year.

Figure A-1 in Appendix A presents the spatial distribution of maximum TDS concentrations for the A-aquifer in Parcel C. Figure A-1 also includes results for wells located in Parcel B, thereby providing continuous spatial coverage for the northern section of Parcel C. As indicated on the figure, approximately 35 percent of Parcel C (the western and northern portions of the parcel) has TDS concentrations less than 3,000 mg/L and 25 percent has TDS concentrations between 3,000 and 10,000 mg/L. The remaining 40 percent of groundwater is near the Bay and is saline with TDS concentrations exceeding 10,000 mg/L; this saline groundwater has only limited industrial uses (see Appendix A).

Based on EPA groundwater classification guidance (EPA 1986), groundwater from the A-aquifer across approximately 60 percent of Parcel C is designated as Class IIB (a potential future source of drinking water or other beneficial use). The A-aquifer groundwater in the remaining 40 percent of Parcel C is designated as Class IIIA (not a potential source of drinking water and interconnected to surface water).

The following beneficial use evaluation is conducted to address federal guidance and determine if MCLs are ARARs for groundwater when developing CERCLA response actions. Differences in cleanup levels can be established depending on whether the groundwater is a current or potential source of drinking water or other beneficial uses. EPA can establish that MCLs are not ARARs on a case-by-case basis (EPA 1984). Where groundwater is not used as a current

drinking water source under Class IIB, EPA can consider site-specific factors (SSF) such as the probability of use, cost of cleanup, and availability of alternative drinking water sources in determining cleanup requirements. In an attachment to a letter to the Navy sent on May 12, 1999, the EPA listed the SSFs that should be considered when determining whether all or portions of an aquifer should be considered a potential drinking water source for making a CERCLA cleanup decision (EPA 1999a). These factors include the following:

- Aquifer thickness
- Actual TDS levels
- Actual groundwater yield
- Proximity to saltwater and the potential for saltwater intrusion
- Quality of underlying water-bearing units
- Existence of institutional controls on well construction or aquifer use
- Information on the historic and current use of the aquifer
- Cost to remediate groundwater to MCLs
- Depth to groundwater

The A-aquifer was evaluated with respect to the above listed SSFs. As detailed in Appendix A, five of the nine SSFs categorize the A-aquifer as having low potential for use as a drinking water source. The remaining four SSFs—aquifer thickness, TDS concentrations, groundwater yield, and quality of underlying water-bearing units—categorize the A-aquifer as having moderate potential as a drinking water source. When these factors are considered together, the A-aquifer groundwater is not a viable potential source of drinking water; therefore, MCLs should not be ARARs for the A-aquifer at Parcel C for a CERCLA action.

The beneficial use evaluation of the B-aquifer was conducted in a similar manner. However, the state concurrence with the Navy's determination that the A-aquifer groundwater at HPS is not a potential drinking water source has not been extended to include the B-aquifer. Therefore, state criteria were also considered in the B-aquifer beneficial use evaluation.

The B-aquifer is present over an area of approximately 22 acres at Parcel C, of which about 6.5 acres exhibit TDS concentrations less than 10,000 mg/L. Figure A-2 shows the maximum TDS concentrations detected in each B-aquifer well. Approximately 70.5 percent of the areal extent of the B-aquifer at Parcel C has TDS concentrations exceeding 10,000 mg/L, giving this saline groundwater area a federal groundwater classification of Class IIIA (not a potential source of drinking water and interconnected to surface water). Only a small area of the B-aquifer (about 200 feet by 530 feet or 2.4 acres) in the vicinity of and to the northwest of Buildings 251 and 252 meets the state TDS criterion of less than 3,000 mg/L for drinking water beneficial use. The B-aquifer in this area is about 30 feet thick. Assuming a porosity of

30 percent, about 22.5 acre-feet of available fresh water meets the state TDS drinking water criterion. The remaining 18.5 percent (roughly 4.1 acres) of the Parcel C B-aquifer area has groundwater with TDS concentrations exceeding 3,000 mg/L and less than 10,000 mg/L (that is, brackish water).

Limited well yield data are available for the B-aquifer. However, well purging and field sampling data indicated the likelihood for sustainable yields exceeding 200 gpd, thus qualifying portions of the B-aquifer as a potential drinking water source according to both state and federal well yield criteria.

An evaluation of the SSFs for the B-aquifer was conducted to evaluate the potential for B-aquifer groundwater within Parcel C to be used as a drinking water source. As detailed in Appendix A, six of the nine SSFs categorize the aquifer to have low potential for use as a drinking water source. When the SSFs are considered together, the B-aquifer groundwater is not a viable potential source of drinking water. The production of B-aquifer wells in the freshwater area will induce the influx of poorer quality groundwater relatively quickly, resulting in the rapid degradation of the B-aquifer freshwater zone to brackish and then saline conditions. This degradation can be expected to occur within 3 weeks to 3 months of the onset of steady production from the B-aquifer. Additionally, the City and County of San Francisco prohibits installation of domestic wells within city boundaries. B-aquifer groundwater at HPS has never been and is not currently used as a drinking water source, nor has the groundwater ever been used for any other beneficial use. The City and County of San Francisco currently obtains its municipal water supply from the Hetch Hetchy watershed in the Sierra Nevada and plans to continue using the Hetch Hetchy watershed as a drinking water source in the future. As a result, the B-aquifer in Parcel C is not considered a viable source for drinking water beneficial use, and MCLs should not be ARARs for the B-aquifer at Parcel C for a CERCLA action. The A- and B-aquifers have potential agricultural and industrial beneficial uses. However, agricultural beneficial use for irrigation is limited by the salinity tolerance of plants and generally requires TDS concentrations of less than 700 mg/L, although some grasses can tolerate up to 1,500 mg/L of TDS. Very little of the A- and B-aquifers meet the TDS constraints for agricultural irrigation beneficial use as shown by the distribution of TDS on Figures A-1 and A-2 in Appendix A. TDS requirements for livestock vary by species, with cattle generally tolerating up to 10,000 mg/L of TDS, although TDS concentrations above 7,000 mg/L typically cause gastrointestinal problems. Water with TDS concentrations above 10,000 mg/L is not considered to have any agricultural use. The City and County of San Francisco's 1997 Reuse Plan does not provide for agricultural reuse (SFRA 1997).

Groundwater with TDS concentrations exceeding 10,000 mg/L has only very limited industrial uses. Water with TDS concentrations exceeding 10,000 mg/L is suitable for boiler and cooling operations at industrial facilities. Other industrial uses generally require treatment to lower TDS concentrations to below at least 7,000 to 8,000 mg/L prior to use. Other than the presence of nonaqueous-phase liquids, the presence of dissolved chemicals does not impede the industrial use of highly saline groundwater (exceeding 10,000 mg/L of TDS).

In conclusion, a beneficial use evaluation was conducted for both the A- and B-aquifers at HPS Parcel C. Based on TDS concentrations exceeding 10,000 mg/L, 40 percent of the A-aquifer area and 65 percent of the B-aquifer area meet groundwater classification Class IIIA and are not considered a potential source for drinking water. The remaining portions of each aquifer meet the TDS and well yield criteria to be Class IIB aquifers. However, the results of SSF evaluations for each aquifer determined that both aquifers are not viable potential sources of drinking water.

The Navy has accepted the substantive provisions of SWRCB Res. No. 88-63 as a State ARAR. The Navy has applied these substantive provisions to the B aquifer and bedrock water bearing zone (F WBZ) across Parcel C at HPS and determined that this groundwater is not a source of municipal and domestic drinking water supply. In a letter dated July 29, 2008, the Water Board stated that they concurred with the Navy's determination for the B-aquifer in the central area of Parcel C, and that they concurred with the inclusion of the upper weathered residuum of the bedrock with the A- and B-aquifer (Appendix A). The Water Board disagrees with the Navy's determination as it applies to the deeper, unweathered bedrock. The Water Board considers the B-aquifer in the area of Building 134 (RU-C5) to be part of the B-aquifer in Parcel B, and the B-aquifer in Parcel B is considered to be a distinct, separate groundwater unit from the B-aquifer in the central area of Parcel C.

The Navy will continue to work with the Water Board regarding the beneficial use of the B-aquifer at RU-C5 and the deeper bedrock zones. For this feasibility study, MCLs will apply at RU-C5 and the bedrock water bearing zone. MCLs are not considered ARARs for either the A- or the B-aquifer at HPS Parcel C for a CERCLA action outside these areas.

2.3 PARCEL C NATURE AND EXTENT OF SOIL CONTAMINATION

During a series of investigations at Parcel C from 1984 to 2002, the Navy collected soil samples from surface locations, shallow test pits, and deeper soil and monitoring well borings to determine whether hazardous substances and petroleum hydrocarbons had been released at Parcel C. These investigations resulted in an analytical data set consisting of thousands of soil samples analyzed for hundreds of chemicals. All analytical data from soil above 10 feet bgs that were collected at Parcel C and that have not been removed by subsequent excavations are presented in Appendix B. Appendix B consists of tables that present the analytical data and maps showing the sampling locations.

This section provides a summary of the evaluation of the nature and extent of soil contamination at Parcel C because several sampling events and removal actions have been conducted since soil contamination was originally evaluated in the 1997 RI Report. The Navy developed statistical tables for chemicals analyzed at Parcel C to focus the updated evaluation on the most significant soil contamination at Parcel C. Table 2-10 provides the statistics for all chemicals analyzed at Parcel C. To focus the discussion by redevelopment block, statistics were also developed for COCs and total petroleum hydrocarbons (TPH) at each redevelopment block (see Table 2-11). The COCs listed in this section were determined during the revised HHRA (see Section 3.1 and Appendix C).

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
6	Parcel UC-2 ecology	Section 2.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.2.5, page 2-11.

2.2.5 Ecology

The aquatic ecology of HPS is characterized by bay sediments disturbed in places by former dredging activities, and a manmade shoreline consisting of either concrete and timber wharfs. Physical structures, such as docks and berths, serve as artificial habitats for estuarine life. The marine environment is disturbed as a result of commercial, industrial, and recreational activities in the Bay. Several hundred species of plants and animals are believed to live at or near HPS, including terrestrial and marine plants and algae; benthic and water column-dwelling marine animals such as clams, mussels, amphipods, and fish; insects; amphibians; reptiles; birds; and mammals.

Threatened or endangered species are not known to inhabit HPS or its vicinity (Environmental Science Associates 1987). Some endangered species have been infrequently observed at HPS, including winter run Chinook salmon, Peregrine falcon, burrowing owls, and California brown pelicans.

More than 90 percent of the ground surface at Parcel C is covered by pavement and former industrial buildings. The ecological risk assessment performed basewide at HPS concluded Parcel C was almost entirely paved except for small pockets of vegetation, which are not considered suitable habitat for animal life (PRC 1994b; Appendix F of the RI Report [PRC, LFR, and U&A 1997]). Exposure pathways to terrestrial species are incomplete because of the predominance of paved areas in Parcel C, which precludes the presence of viable habitats. The ecological risk assessment stated that hazardous substances may migrate to groundwater and affect the Bay (PRC 1994b).

Future use of Parcel C includes 15 acres (less than 20 percent of the parcel) for hard surface open space reuse (SFRA 1997). Open space reuse at Parcel C is planned along the bay front between Dry Dock 2 and Dry Dock 4, adjacent to Berths 1 through 4. The Redevelopment Plan identifies plazas, promenades, and ancillary commercial uses as options for hard surface open space areas (SFRA 1997).

Offshore sediment characterization is discussed in the Parcel F FS Report (Barajas & Associates, Inc. 2007).

2.2.6 Soils

Soils at HPS are derived from underlying rocks and weathered material or were imported as fill. Parcels B through E-2 are primarily covered by lowland soils, which are flat to gently sloped urban land (U.S. Soil Conservation Service 1991). Lowland soils at HPS have a high liquefaction potential, especially in areas that have subsided as a result of the Loma Prieta

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
7	Samples	Table 1	Draft Final Parcel B Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California. PRC Environmental Management, Inc. (PRC), Levine-Fricke-Recon, Inc. (LFR), and Uribe & Associates (U&A). June 3, 1996. Tables 4.4-1 to 4.4-8.

TABLE 4.4-1

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06B001	8944H007				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B001	8944H008				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B001	8944H009				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B002	8943G112				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B002	8943G113				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B002	8943G114				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B002	8943G115							✓									✓	✓		✓
IR06B002	8943G116							✓									✓	✓		✓
IR06B003	8944H004				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B003	8944H005				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B004	8944H001				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B004	8944H002				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B004	8944H003				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B005	8943G085				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B005	8943G086				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B005	8943G087				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B005	8943G088							✓									✓	✓		✓
IR06B006	8943G091				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B006	8943G092				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B006	8943G093				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B006	8943G094							✓									✓	✓		✓
IR06B006	8943G095							✓									✓	✓		✓
IR06B007	8944H012				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B007	8944H013				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B007	8944H014				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B007	8944H015							✓									✓	✓		✓
IR06B008	8944H006				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B008	8944H017				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B009	8944H037				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B009	8944H038				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B009	8944H039				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B009	8944H040							✓									✓	✓		✓
IR06B009	8944H041							✓									✓	✓		✓
IR06B010	8944H023				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B010	8944H024				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B010	8944H025				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B010	8944H026							✓									✓	✓		✓

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06B010	8944H027							✓									✓	✓		✓
IR06B010	8944H028							✓									✓	✓		✓
IR06B011	8944H029				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B011	8944H030				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B011	8944H031				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B011	8944H032							✓									✓	✓		✓
IR06B011	8944H033							✓									✓	✓		✓
IR06B012	8944G122				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B012	8944G123				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B012	8944G124				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B012	8944G125							✓									✓	✓		✓
IR06B013	8945G127				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B013	8945G128				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B013	8945G129				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B013	8945G130							✓									✓	✓		✓
IR06B013	8945G131							✓									✓	✓		✓
IR06B014	8943G096				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B014	8943G097				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B014	8943G098				✓		✓	✓	✓	✓			✓				✓	✓		✓
IR06B014	8943G099							✓									✓	✓		✓
IR06B014	8943G100							✓									✓	✓		✓
IR06B015	8944H018				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B015	8944H019				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B015	8944H020				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B015	8944H021							✓									✓	✓		✓
IR06B015	8944H022							✓									✓	✓		✓
IR06B016	8944G117				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B016	8944G118				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B016	8944G119				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B016	8944G120							✓									✓	✓		✓
IR06B016	8944G121							✓									✓	✓		✓
IR06B017	8944H043				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B017	8944H044				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B017	8944H045				✓		✓	✓	✓	✓	✓		✓				✓	✓		✓
IR06B017	8944H046							✓									✓	✓		✓
IR06B017	8944H047							✓									✓	✓		✓

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06B018	8945G132				√		√	√	√	√	√		√				√	√		√
IR06B018	8945G133				√		√	√	√	√	√		√				√	√		√
IR06B018	8945G134				√		√	√	√	√	√		√				√	√		√
IR06B019	8945H052				√		√	√	√	√	√		√				√	√		√
IR06B019	8945H053				√		√	√	√	√	√		√				√	√		√
IR06B019	8945H054				√		√	√	√	√	√		√				√	√		√
IR06B019	8945H055							√									√	√		√
IR06B020	8945H048				√		√	√	√	√	√		√				√	√		√
IR06B020	8945H049				√		√	√	√	√	√		√				√	√		√
IR06B020	8945H050				√		√	√	√	√	√		√				√	√		√
IR06B020	8945H051							√									√	√		√
IR06B021	8945H057				√		√	√	√	√	√		√				√	√		√
IR06B021	8945H058				√		√	√	√	√	√		√				√	√		√
IR06B021	8945H059							√									√	√		√
IR06B024	8945G135				√		√	√	√	√	√		√				√	√		√
IR06B024	8945G136				√		√	√	√	√	√		√				√	√		√
IR06B024	8945G137				√		√	√	√	√	√		√				√	√		√
IR06B024	8945G138							√									√	√		√
IR06B024	8945G139							√									√	√		√
IR06B024	8945G140							√									√	√		√
IR06B025	9022H234				√		√			√	√		√							√
IR06B025	9022H235				√		√	√		√	√		√				√	√		√
IR06B025	9022H236							√									√	√		√
IR06B026	8945G141				√		√	√	√	√	√		√				√	√		√
IR06B026	8945G142				√		√	√	√	√	√		√				√	√		√
IR06B026	8945G143				√		√	√	√	√	√		√				√	√		√
IR06B026	8945G144							√									√	√		√
IR06B026	8945G145							√									√	√		√
IR06B028	9023G284				√		√	√		√	√		√				√	√		√
IR06B028	9023G285				√		√	√		√	√		√				√	√		√
IR06B028	9023G286							√									√	√		√
IR06B028A	9023G275				√		√	√		√	√		√				√	√		√
IR06B029	9022G265				√		√	√		√	√		√				√	√		√
IR06B029	9022G266				√		√	√		√	√		√				√	√		√
IR06B029	9022G267							√									√	√		√
IR06B031	9022G268				√		√	√		√	√		√				√	√		√

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06B031	9022G269				√		√	√		√	√		√				√	√		√
IR06B031	9022G270							√									√	√		√
IR06B033	8945H060				√		√	√	√	√	√		√				√	√		√
IR06B033	8945H061				√		√	√	√	√	√		√				√	√		√
IR06B033	8945H062				√		√	√	√	√	√		√				√	√		√
IR06B033	8945H063							√									√	√		√
IR06B033	8945H064							√									√	√		√
IR06B033	8945H065							√									√	√		√
IR06B036	8945G146				√		√	√	√	√	√		√				√	√		√
IR06B036	8945G147				√		√	√	√	√	√		√				√	√		√
IR06B036	8945G148				√		√	√	√	√	√		√				√	√		√
IR06B036	8945G149							√									√	√		√
IR06B036	8945G150							√									√	√		√
IR06B036	8945G151							√									√	√		√
IR06B037	8945H066				√		√	√	√	√	√		√				√	√		√
IR06B037	8945H067							√									√	√		√
IR06B037	8945H068							√									√	√		√
IR06B037	8945H069							√									√	√		√
IR06B038	8945H070				√		√	√	√	√	√		√				√	√		√
IR06B038	8945H071				√		√	√	√	√	√		√				√	√		√
IR06B038	8945H072				√		√	√	√	√	√		√				√	√		√
IR06B038	8945H073							√									√	√		√
IR06B038	8945H074							√									√	√		√
IR06B038	8945H075							√									√	√		√
IR06B039	9022H226				√		√	√		√	√		√				√	√		√
IR06B039	9022H227				√		√	√		√	√		√				√	√		√
IR06B039	9022H228							√									√	√		√
IR06B039	9022H229							√									√	√		√
IR06B043	9023H260				√		√	√		√	√		√				√	√		√
IR06B043	9023H261				√					√	√						√	√		√
IR06B043	9023H262							√									√	√		√
IR06MW22A	9022F040				√		√	√		√	√		√				√	√		√
IR06MW22A	9022F041				√		√	√		√	√		√				√	√		√
IR06MW22A	9022F042							√									√	√		√
IR06MW23A	9022F043				√		√	√		√	√		√				√	√		√
IR06MW23A	9022F044				√		√	√		√	√		√				√	√		√

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW23A	9022F045							✓									✓	✓		✓
IR06MW23A	9022F046							✓									✓	✓		✓
IR06MW27A	9022H239				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW27A	9022H240				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW27A	9022H241							✓									✓	✓		✓
IR06MW30A	9022H230				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW30A	9022H231				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW30A	9022H232							✓									✓	✓		✓
IR06MW30A	9022H233							✓									✓	✓		✓
IR06MW32A	9022H242				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW32A	9022H243				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW32A	9022H244							✓									✓	✓		✓
IR06MW32A	9022H245							✓									✓	✓		✓
IR06MW34A	9023H256				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW34A	9023H257				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW34A	9023H258							✓									✓	✓		✓
IR06MW34A	9023H259							✓									✓	✓		✓
IR06MW35A	9023G271				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW35A	9023G272				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW35A	9023G273							✓									✓	✓		✓
IR06MW35A	9023G274							✓									✓	✓		✓
IR06MW40A	9023G277				✓		✓			✓	✓		✓				✓	✓		✓
IR06MW40A	9023G278				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW40A	9023G279							✓									✓	✓		✓
IR06MW40A	9023G280							✓									✓	✓		✓
IR06MW40A	9023G281							✓									✓	✓		✓
IR06MW40A	9023G282							✓									✓	✓		✓
IR06MW40A	9023G283							✓									✓	✓		✓
IR06MW41A	9023H246				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW41A	9023H247				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW41A	9023H248							✓									✓	✓		✓
IR06MW41A	9023H249							✓									✓	✓		✓
IR06MW41A	9023H251							✓									✓	✓		✓
IR06MW42A	9023H252				✓		✓			✓	✓		✓				✓	✓		✓
IR06MW42A	9023H253				✓		✓	✓		✓	✓		✓				✓	✓		✓
IR06MW42A	9023H254							✓									✓	✓		✓

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW42A	9023H255							✓									✓	✓		✓
IR06MW44A	9138M192				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M193				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M194				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M195				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M196				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M197				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M198				✓			✓			✓						✓		✓	✓
IR06MW44A	9138M199				✓			✓			✓						✓		✓	✓
IR06MW45A	9138M186							✓			✓						✓		✓	✓
IR06MW45A	9138M187							✓			✓						✓		✓	✓
IR06MW45A	9138M188							✓			✓						✓		✓	✓
IR06MW46A	9138M183				✓			✓			✓						✓		✓	✓
IR06MW46A	9138M184				✓			✓			✓						✓		✓	✓
IR06MW46A	9138M185				✓			✓			✓						✓		✓	✓
IR06MW49F	9143G635							✓									✓			✓
IR06SS01	8902A127				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS01	8902A128				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS02	8902A129				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS02	8902A130				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS03	8902A131				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS03	8902A132				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS04	8902A133				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS04	8902A134				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS05	8902A135				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS06	8902A136				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS07	8902A137				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS07	8902A138				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS08	8902A139				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS08	8902A140				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS09	8902A141				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS09	8902A142				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS10	8902A143				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS11	8902A144				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS11	8902A145				✓		✓		✓	✓	✓		✓				✓			✓
IR06SS12	8902A146				✓		✓		✓	✓	✓		✓				✓			✓

TABLE 4.4-1 (Continued)

SUMMARY OF SOIL ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06SS12	8902A147				√		√		√	√	√		√				√			√
IR06SS13	8902A148				√		√		√	√	√		√				√			√
IR06SS13	8902A149				√		√		√	√	√		√				√			√
IR06SS14	8902A150				√		√		√	√	√		√				√			√
IR06SS14	8902A151				√		√		√	√	√		√				√			√
IR06SS15	8902A152				√		√		√	√	√		√							√
IR06SS15	8902A153				√		√		√	√	√		√							√
IR06SS16	8902A154				√		√		√	√	√		√							√
IR06SS16	8902A155				√		√		√	√	√		√							√
IR06SS17	8902A156				√		√		√	√	√		√							√
IR06SS17	8902A157				√		√		√	√	√		√							√
IR06SS18	8902A158				√		√		√	√	√		√							√
IR06SS18	8902A159				√		√		√	√	√		√							√
IR06SS19	8902A160				√		√		√	√	√		√							√
IR06SS19	8902A161				√		√		√	√	√		√							√

Notes:

AMMON	Ammonia
CHROM	CHROMIUM VI
CYAN	Cyanide
O&G	Total oil and grease
PCTMST	Percent moisture
PEST	Pesticides/polychlorinated biphenyls
PHYS	Physical characteristic
SALIN	Salinity
SVOC	Semivolatile organic compounds
TDS	Total dissolved solids
TMICROB	Coliform
TOC	Total organic carbon
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
VOC	Volatile organic compounds

TABLE 4.4-2

STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Residential PRG Value	Above[e] Res PRG	Industrial PRG Value	Above[f] Ind PRG	HPAL Value	Above[g] HPAL
METAL	ALUMINUM	2,610	36,400	13,900	MG/KG	4.1	143	143	76,700	0	100,000	0		
	ANTIMONY	4.8	28.9	11.9	MG/KG	7.5	143	22	30.7	0	681	0	9.05	13
	ARSENIC	0.31	56.6	3.1	MG/KG	0.40	143	121	0.32	120	2.0	69	11.10	1
	BARIUM	8.9	834	130	MG/KG	0.21	143	143	5,340	0	100,000	0	314.36	7
	BERYLLIUM	0.18	0.91	0.46	MG/KG	0.13	143	98	0.14	98	1.1	0	0.71	5
	CADMIUM	0.92	2.8	1.5	MG/KG	0.85	143	12	9.0	0	852	0	3.14	0
	CALCIUM	343	121,000	7,680	MG/KG	6.3	143	143						
	CHROMIUM	40.0	1,910	338	MG/KG	0.62	143	143	211	81	1,580	2	h	23
	CHROMIUM VI	0.08	0.11	0.10	MG/KG	0.06	155	5	0.20	0	225	0		
	COBALT	8.2	208	45.3	MG/KG	2.8	143	134					h	18
	COPPER	5.8	140	36.1	MG/KG	0.52	143	141	2,850	0	63,300	0	124.31	3
	IRON	6,560	77,000	31,900	MG/KG	2.9	143	143						
	LEAD	0.67	2,580	153	MG/KG	0.65	143	137	130	19	1,000	7	8.99	64
	MAGNESIUM	3,510	251,000	44,500	MG/KG	5.7	143	143						
	MANGANESE	169	4,640	783	MG/KG	0.15	143	143	382	109	8,300	0	1431.18	10
	MERCURY	0.10	0.98	0.22	MG/KG	0.10	128	37	23.0	0	511	0	2.28	0
	MOLYBDENUM	2.0	2.0	2.0	MG/KG	0	111	1	383	0	8,520	0	2.68	0
	NICKEL	21.7	3,390	650	MG/KG	7.1	143	143	150	119	34,100	0	h	36
	POTASSIUM	231	5,660	1,040	MG/KG	89.6	143	117						
	SELENIUM	0.57	3.3	1.3	MG/KG	0.51	143	4	383	0	8,520	0	1.95	1
	SILVER	0.31	1.5	0.86	MG/KG	0.35	143	14	383	0	8,520	0	1.43	1
	SODIUM	29.2	1,790	344	MG/KG	16.0	143	92						

TABLE 4.4-2 (Continued)

STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection Frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Residential PRG Value	Above[e] Res PRG	Industrial PRG Value	Above[f] Ind PRG	HPAL Value	Above[g] HPAL
	THALLIUM	0.38	0.79	0.48	MG/KG	0.47	143	11					0.81	0
	VANADIUM	7.7	102	52.3	MG/KG	0.44	143	143	537	0	11,900	0	117.17	0
	ZINC	16.7	597	81.1	MG/KG	0.84	143	143	23,000	0	100,000	0	109.86	22
VOC	1,1,2-TRICHLOROETHANE	2	2	2	UG/KG	6	156	1	1,400	0	3,300	0		
	1,2-DICHLOROETHENE (TOTAL)	3	47	22	UG/KG	16	156	7	75,000	0	270,000	0		
	2-BUTANONE	3	82	20	UG/KG	30	156	13	8,700,000	0	34,000,000	0		
	BENZENE	4	140	65	UG/KG	22	232	7	1,400	0	3,200	0		
	BROMOFORM	4	4	4	UG/KG	6	156	1	56,000	0	240,000	0		
	CARBON DISULFIDE	3	7	5	UG/KG	6	156	4	16,000	0	52,000	0		
	ETHYLBENZENE	6	260	72	UG/KG	33	232	24	2,900,000	0	3,100,000	0		
	TETRACHLOROETHENE	2	2,200	350	UG/KG	16	156	7	7,000	0	25,000	0		
	TOLUENE	1	500	35	UG/KG	18	232	85	1,900,000	0	2,700,000	0		
	TRICHLOROETHENE	1	190	46	UG/KG	16	156	5	7,100	0	17,000	0		
	VINYL ACETATE	2	14	8	UG/KG	39	156	2	65,000,000	0	100,000,00	0		
	XYLENE (TOTAL)	1	8,100	640	UG/KG	270	232	28	980,000	0	980,000	0		
SVOC	2,4-DIMETHYLPHENOL	81	13,000	2,500	UG/KG	8,300	140	7	1,300,000	0	14,000,000	0		
	2-METHYLNAPHTHALENE	130	46,000	11,000	UG/KG	13,000	143	37	800,000	0	800,000	0		
	4-METHYLPHENOL	37	290	180	UG/KG	640	139	3	330,000	0	3,400,000	0		
	4-NITROPHENOL	55	55	55	UG/KG	350	143	1						
	ACENAPHTHENE	320	2,400	1,000	UG/KG	780	143	5	360,000	0	360,000	0		
	ACENAPHTHYLENE	52	110	81	UG/KG	560	143	2	360,000	0	360,000	0		
	ANTHRACENE	46	620	170	UG/KG	530	143	5	19,000	0	19,000	0		

TABLE 4.4-2 (Continued)

STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Residential PRG Value	Above[e] Res PRG	Industrial PRG Value	Above[f] Ind PRG	HPAL Value	Above[g] HPAL
	BENZO(A)ANTHRACENE	87	830	310	UG/KG	730	143	9	610	1	2,600	0		
	BENZO(A)PYRENE	91	1,300	330	UG/KG	480	143	7	61	7	260	2		
	BENZO(B)FLUORANTHENE	41	2,500	510	UG/KG	580	143	13	610	3	2,600	0		
	BENZO(G,H,I)PERYLENE	41	830	260	UG/KG	460	143	8	800,000	0	800,000	0		
	BENZO(K)FLUORANTHENE	95	2,500	630	UG/KG	590	143	10	610	3	26,000	0		
	BENZOIC ACID	140	140	140	UG/KG	370	143	1	100,000,00	0	100,000,00	0		
	CHRYSENE	41	1,900	320	UG/KG	660	143	24	6,100	0	24,000	0		
	DI-N-BUTYLPHTHALATE	42	140	77	UG/KG	520	143	6	6,500,000	0	68,000,000	0		
	DIBENZ(A,H)ANTHRACENE	60	84	72	UG/KG	370	143	2	61	1	260	0		
	DIBENZOFURAN	43	3,400	1,400	UG/KG	5,700	143	9	260,000	0	2,700,000	0		
	FLUORANTHENE	53	2,400	730	UG/KG	650	143	16	2,600,000	0	27,000,000	0		
	FLUORENE	37	10,000	2,600	UG/KG	11,000	143	23	300,000	0	300,000	0		
	INDENO(1,2,3-CD)PYRENE	74	570	210	UG/KG	470	143	7	610	0	2,600	0		
	N-NITROSODIPHENYLAMINE	800	800	800	UG/KG	6,400	143	1						
	NAPHTHALENE	130	11,000	3,100	UG/KG	7,900	143	23	800,000	0	800,000	0		
	PENTACHLOROPHENOL	90	90	90	UG/KG	1,800	139	1	2,500	0	7,900	0		
	PHENANTHRENE	54	19,000	2,900	UG/KG	8,500	143	52	800,000	0	800,000	0		
	PYRENE	38	1,700	490	UG/KG	870	143	35	2,000,000	0	20,000,000	0		
PEST	4,4'-DDD	17	19	18	UG/KG	18	111	2	1,900	0	7,900	0		
	ALDRIN	12	130	53	UG/KG	43	111	3	26	1	110	1		
	ENDOSULFAN I	56	56	56	UG/KG	40	111	1	3,300	0	34,000	0		
	AROCLOR-1260	77	150,000	20,000	UG/KG	7,500	144	8	66	8	340	4		

TABLE 4.4-2 (Continued)

STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Residential PRG Value	Above[e] Res PRG	Industrial PRG Value	Above[f] Ind PRG	HPAL Value	Above[g] HPAL
TPHEXT	TPH-DIESEL	9	26,000	4,500	MG/KG	610	221	107	1,000	69i				
TRPH	TRPH	51	52	52	MG/KG	23	14	2	1,000	0i				
O&G	TOTAL OIL & GREASE	58	110,000	3,000	MG/KG	60	193	142	1,000	45i				

TABLE 4.4-2 (Continued)

STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Notes:

AMMON	Ammonia
CYAN	Cyanide
EPA	U.S. Environmental Protection Agency
HPAL	Hunters Point ambient level
MG/KG	Milligram per kilogram
O&G	Total oil and grease
PCTMST	Percent moisture
PEST	Pesticide/polychlorinated biphenyl
PHYS	Physical characteristic
PRG	Preliminary remediation goal
SALIN	Salinity
SVOC	Semivolatile organic compound
TDS	Total dissolved solids
TMICROB	Coliform
TOC	Total organic carbon
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
UG/KG	Microgram per kilogram
VOC	Volatile organic compound

a Organic results of less than 10 are reported to one significant figure, and results of greater than or equal to 10 are reported to two significant figures.
Inorganic results of less than 10 are reported to two significant figures, and results of greater than or equal to 10 are reported to three significant figures.
b Blank boxes indicate that screening critera have not been established for these analytes.
c Total number of samples analyzed
d Total number of samples showing concentrations greater than detection limit
e Total number of samples showing concentrations greater than residential PRG
f Total number of samples showing concentrations greater than industrial PRG
California-modified PRGs were used for the following analytes: 1,2-Dibromo-3-chloropropane, benzo[a]pyrene, benzo[k]fluoranthene, cadmium, chromium VI, chrysene, lead, nickel, and tetrachloroethylene (PCE).
For the analytes listed below, Region IX PRGs are not available; therefore, PRGs for similar chemicals were used as follows:

Analyte:	Similar Analyte:
2-Methylnapthalene	Naphthalene
Acenaphthylene	Acenaphthene
Alpha-chlordane	Chlordane
Aroclor-1260	Polychlorinated biphenyls
Benzo(g,h,i)perylene	Naphthalene
Delta BHC	HCH-technical
Endosulfan I	Endosulfan
Endosulfan sulfate	Endosulfan
Endrin aldehyde	Endrin
Endrin ketone	Endrin
Gamma-chlordane	Chlordane
Phenanthrene	Naphthalene

g Total number of samples showing concentrations greater than HPAL
h HPALs for chromium, cobalt, and nickel are based on the concentration of magnesium in each sample; thus, no single value applies to all samples.
The range of HPAL values for chromium, cobalt, and nickel are 93.943 to 1783.223, 18.248 to 166.769, and 86.865 to 4986.881 mg/kg respectively.
i Total number of samples showing concentrations greater than TPH, TRPH, or O&G screening level, not PRG value

TABLE 4.4-3

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B001	IR06B001	IR06B001	IR06B002	IR06B002	IR06B002	IR06B002
Sampling Depth (feet bgs)	0.75	3.25	5.75	1.25	3.25	5.25	7.75
Sample Number	8944H007	8944H008	8944H009	8943G112	8943G113	8943G114	8943G115
Sample Date	10/31/89	10/31/89	10/31/89	10/27/89	10/27/89	10/27/89	10/27/89
Metal (mg/kg)							
ALUMINUM	18,000	21,500	15,100	17,400	26,400	29,000	NA
ANTIMONY	8.1	ND (7.7)	13.7 α	ND (7.8)	10.4 α	ND (7.7)	NA
ARSENIC	56.6 *#α	3.3 *#	1.2 *	2.0 *	2.7 *#	1.4 *	NA
BARIUM	104	259	118	149	170	249	NA
BERYLLIUM	0.48 *	0.67 *	0.70 *	0.63 *	0.56 *	0.58 *	NA
CADMIUM	ND (0.84)	1.3	ND (1.0)	ND (0.90)	0.94	1.2	NA
CALCIUM	5,320	10,800	3,000	8,910	5,370	7,260	NA
CHROMIUM	491 *	235 *	894 *	360 *	438 *	225 *	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.07)	ND (0.06)	ND (0.06)	ND (0.06)	NA
COBALT	64.8	34.3	100	45.1	43.9	49.1	NA
COPPER	34.7	53.5	33.8	48.4	43.5	69.6	NA
IRON	41,000	37,500	52,700	33,400	42,400	45,900	NA
LEAD	9.6 α	55.6 α	ND (4.9)	102 α	7.3	6.3	NA
MAGNESIUM	137,000	25,900	112,000	43,200	58,100	45,500	NA
MANGANESE	658 *	1,460 *α	880 *	665 *	838 *	960 *	NA
MERCURY	ND (0.10)	ND (0.10)	0.20	0.10	ND (0.10)	0.10	NA
MOLYBDENUM	ND (1.4)	ND (1.4)	ND (1.7)	ND (2.2)	ND (2.3)	ND (2.4)	NA
NICKEL	1,220 *	318 *	1,750 *	699 *	725 *	417 *	NA
POTASSIUM	789	1,040	850	810	837	1,240	NA
SELENIUM	ND (0.50)	0.57	ND (0.61)	ND (0.54)	ND (0.51)	ND (0.53)	NA
SILVER	ND (0.59)	ND (0.62)	0.88	ND (0.64)	ND (0.61)	ND (0.63)	NA
SODIUM	ND (65.8)	ND (250)	ND (432)	179	222	433	NA
THALLIUM	ND (0.52)	ND (0.55)	ND (0.64)	ND (0.56)	ND (0.54)	ND (0.56)	NA
VANADIUM	41.5	94.0	41.5	68.3	67.3	64.0	NA
ZINC	50.1	89.4	54.2	85.0	68.2	84.6	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA
2-BUTANONE	ND (57)	ND (60)	ND (69)	ND (61)	ND (58)	12	NA
BENZENE	ND (28)	ND (30)	15	ND (30)	ND (29)	ND (30)	ND (130)
BROMOFORM	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA
CARBON DISULFIDE	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA
ETHYLBENZENE	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	87	180
TETRACHLOROETHENE	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B001	IR06B001	IR06B001	IR06B002	IR06B002	IR06B002	IR06B002
Sampling Depth (feet bgs)	0.75	3.25	5.75	1.25	3.25	5.25	7.75
Sample Number	8944H007	8944H008	8944H009	8943G112	8943G113	8943G114	8943G115
Sample Date	10/31/89	10/31/89	10/31/89	10/27/89	10/27/89	10/27/89	10/27/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (28)	ND (30)	ND (35)	7	ND (29)	9	ND (130)
TRICHLOROETHENE	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	ND (30)	NA
VINYL ACETATE	ND (57)	ND (60)	ND (69)	ND (61)	ND (58)	ND (60)	NA
XYLENE (TOTAL)	ND (28)	ND (30)	ND (35)	ND (30)	ND (29)	140	330
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
2-METHYLNAPHTHALENE	690	46,000	24,000	ND (24,000)	42,000	12,000	NA
4-METHYLPHENOL	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
4-NITROPHENOL	ND (18,000)	ND (230,000)	ND (140,000)	ND (120,000)	ND (120,000)	ND (120,000)	NA
ACENAPHTHENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
ACENAPHTHYLENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
ANTHRACENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZO(A)ANTHRACENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZO(A)PYRENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZO(B)FLUORANTHENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZO(G,H,I)PERYLENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZO(K)FLUORANTHENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
BENZOIC ACID	ND (18,000)	ND (240,000)	ND (140,000)	ND (120,000)	ND (120,000)	ND (120,000)	NA
CHRYSENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
DI-N-BUTYLPHTHALATE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
DIBENZ(A,H)ANTHRACENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
DIBENZOFURAN	ND (3,700)	ND (240,000)	ND (28,000)	ND (24,000)	3,400	ND (24,000)	NA
FLUORANTHENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
FLUORENE	ND (3,700)	10,000	5,300	ND (24,000)	6,600	2,900	NA
INDENO(1,2,3-CD)PYRENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
N-NITROSODIPHENYLAMINE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
NAPHTHALENE	420	ND (48,000)	ND (28,000)	ND (24,000)	6,300	2,500	NA
PENTACHLOROPHENOL	ND (18,000)	ND (240,000)	ND (140,000)	ND (120,000)	ND (120,000)	ND (120,000)	NA
PHENANTHRENE	ND (3,700)	19,000	11,000	ND (24,000)	14,000	5,700	NA
PYRENE	ND (3,700)	ND (48,000)	ND (28,000)	ND (24,000)	ND (23,000)	ND (24,000)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (180)	ND (290)	ND (330)	ND (15,000)	ND (280)	ND (290)	NA
ALDRIN	ND (91)	ND (140)	ND (170)	ND (730)	ND (140)	ND (140)	NA
ENDOSULFAN I	ND (91)	ND (140)	ND (170)	ND (7,300)	ND (140)	ND (140)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B001	IR06B001	IR06B001	IR06B002	IR06B002	IR06B002	IR06B002
Sampling Depth (feet bgs)	0.75	3.25	5.75	1.25	3.25	5.25	7.75
Sample Number	8944H007	8944H008	8944H009	8943G112	8943G113	8943G114	8943G115
Sample Date	10/31/89	10/31/89	10/31/89	10/27/89	10/27/89	10/27/89	10/27/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (1,800)	ND (2,900)	ND (3,300)	ND (150,000)	ND (2,800)	ND (2,900)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	890	13,000	8,100	2,400	9,500	3,400	2,900
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	3,700	9,400	3,500	9,100	10,000	6,600	2,800
Percent Moisture (%)							
% SOLIDS	88.3	83.5	72.0	81.8	85.7	82.8	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B002	IR06B003	IR06B003	IR06B004	IR06B004	IR06B004	IR06B005
Sampling Depth (feet bgs)	9.75	0.25	2.75	0.25	1.25	2.75	0.75
Sample Number	8943G116	8944H004	8944H005	8944H001	8944H002	8944H003	8943G085
Sample Date	10/27/89	10/30/89	10/31/89	10/30/89	10/30/89	10/30/89	10/25/89
Metal (mg/kg)							
ALUMINUM	NA	4,260	4,680	11,900	9,340	6,060	8,950
ANTIMONY	NA	14.4 α	20.6 α	ND (7.6)	28.9 α	17.3 α	10.2 α
ARSENIC	NA	0.75 *	0.56 *	1.6 *	0.94 *	1.1 *	1.8 *
BARIUM	NA	21.0	8.9	101	45.8	31.8	56.5
BERYLLIUM	NA	0.29 *	0.31 *	0.46 *	0.36 *	0.36 *	0.19 *
CADMIUM	NA	ND (0.90)	ND (0.90)	ND (0.88)	ND (0.99)	ND (0.86)	ND (0.88)
CALCIUM	NA	562	343	3,920	1,630	1,060	3,340
CHROMIUM	NA	912 *	1,370 *	226 *α	1,910 *Nα	1,170 *	816 *
CHROMIUM VI	NA	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.07)	ND (0.06)	ND (0.06)
COBALT	NA	102	85.2	28.7	120 α	95.9	89.3
COPPER	NA	30.0	16.3	47.2	46.0	21.2	25.1
IRON	NA	36,600	36,300	28,700	52,300	38,400	42,700
LEAD	NA	12.3 α	ND (0.45)	6.7	ND (3.0)	16.9 α	4.3
MAGNESIUM	NA	183,000	187,000	11,900	129,000	154,000	135,000
MANGANESE	NA	961 *	806 *	394 *	744 *	811 *	773 *
MERCURY	NA	ND (0.10)	ND (0.10)	ND (0.10)	0.40	0.30	ND (0.10)
MOLYBDENUM	NA	ND (1.5)	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.4)	ND (1.4)
NICKEL	NA	2,360 *	1,890 *	286 *α	2,550 *	1,940 *	1,910 *
POTASSIUM	NA	ND (93.9)	ND (93.9)	534	ND (198)	ND (129)	286
SELENIUM	NA	ND (0.53)	ND (0.53)	ND (0.52)	ND (0.59)	ND (0.51)	ND (0.53)
SILVER	NA	ND (0.63)	1.1	ND (0.62)	ND (0.70)	0.96	ND (0.62)
SODIUM	NA	ND (91.2)	ND (77.4)	ND (197)	ND (179)	ND (119)	79.0
THALLIUM	NA	ND (0.56)	ND (0.56)	ND (0.55)	ND (0.62)	ND (0.54)	ND (0.55)
VANADIUM	NA	37.7	32.9	56.7	31.6	33.0	43.2
ZINC	NA	27.3	23.3	36.5	32.6	30.1	39.1
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
2-BUTANONE	NA	ND (61)	ND (61)	ND (59)	27	ND (58)	ND (12)
BENZENE	ND (71)	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
BROMOFORM	NA	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
CARBON DISULFIDE	NA	ND (30)	ND (30)	ND (30)	4	ND (29)	ND (6)
ETHYLBENZENE	79	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
TETRACHLOROETHENE	NA	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B002	IR06B003	IR06B003	IR06B004	IR06B004	IR06B004	IR06B005
Sampling Depth (feet bgs)	9.75	0.25	2.75	0.25	1.25	2.75	0.75
Sample Number	8943G116	8944H004	8944H005	8944H001	8944H002	8944H003	8943G085
Sample Date	10/27/89	10/30/89	10/31/89	10/30/89	10/30/89	10/30/89	10/25/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (71)	ND (30)	11	ND (30)	4	11	ND (6)
TRICHLOROETHENE	NA	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
VINYL ACETATE	NA	ND (61)	ND (61)	ND (59)	2	ND (58)	ND (12)
XYLENE (TOTAL)	ND (140)	ND (30)	ND (30)	ND (30)	ND (7)	ND (29)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
2-METHYLNAPHTHALENE	NA	ND (24,000)	3,600	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
4-METHYLPHENOL	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
4-NITROPHENOL	NA	ND (120,000)	ND (31,000)	ND (120,000)	ND (270,000)	ND (110,000)	ND (19,000)
ACENAPHTHENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
ACENAPHTHYLENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
ANTHRACENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZO(A)ANTHRACENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZO(A)PYRENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZO(B)FLUORANTHENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZO(G,H,I)PERYLENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZO(K)FLUORANTHENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
BENZOIC ACID	NA	ND (120,000)	ND (31,000)	ND (120,000)	ND (270,000)	ND (110,000)	ND (19,000)
CHRYSENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
DI-N-BUTYLPHTHALATE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
DIBENZ(A,H)ANTHRACENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
DIBENZOFURAN	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
FLUORANTHENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
FLUORENE	NA	ND (24,000)	670	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
INDENO(1,2,3-CD)PYRENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
N-NITROSODIPHENYLAMINE	NA	ND (24,000)	800	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
NAPHTHALENE	NA	ND (24,000)	1,100	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
PENTACHLOROPHENOL	NA	ND (120,000)	ND (31,000)	ND (120,000)	ND (270,000)	ND (110,000)	ND (19,000)
PHENANTHRENE	NA	ND (24,000)	1,500	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
PYRENE	NA	ND (24,000)	ND (6,400)	ND (24,000)	ND (54,000)	ND (23,000)	ND (3,900)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	ND (290)	ND (19)	ND (290)	ND (320)	ND (19)	ND (190)
ALDRIN	NA	ND (150)	ND (10)	ND (140)	ND (160)	ND (9)	ND (96)
ENDOSULFAN I	NA	ND (150)	ND (10)	ND (140)	ND (160)	ND (9)	ND (96)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B002	IR06B003	IR06B003	IR06B004	IR06B004	IR06B004	IR06B005
Sampling Depth (feet bgs)	9.75	0.25	2.75	0.25	1.25	2.75	0.75
Sample Number	8943G116	8944H004	8944H005	8944H001	8944H002	8944H003	8943G085
Sample Date	10/27/89	10/30/89	10/31/89	10/30/89	10/30/89	10/30/89	10/25/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	ND (2,900)	ND (190)	ND (2,900)	ND (3,200)	ND (190)	ND (1,900)
TPH-Extractable (mg/kg)							
TPH-DIESEL	1,200	4,600	1,900	3,800	4,200	1,300	240
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	3,000	1,200	2,500	11,000	4,300	4,700	620
Percent Moisture (%)							
% SOLIDS	NA	82.4	82.4	84.1	74.5	85.9	83.7
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	7.6

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B005	IR06B005	IR06B005	IR06B006	IR06B006	IR06B006	IR06B006
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	7.75
Sample Number	8943G086	8943G087	8943G088	8943G091	8943G092	8943G093	8943G094
Sample Date	10/25/89	10/25/89	10/25/89	10/26/89	10/26/89	10/26/89	10/26/89
Metal (mg/kg)							
ALUMINUM	20,200	14,400	NA	10,300	9,940	8,760	NA
ANTIMONY	ND (7.0)	ND (7.2)	NA	7.7	ND (7.0)	7.8	NA
ARSENIC	2.6 *#	1.9 *	NA	1.8 *	2.3 *#	2.3 *#	NA
BARIUM	102	183	NA	116	73.8	87.7	NA
BERYLLIUM	0.37 *	0.40 *	NA	0.36 *	0.37 *	0.37 *	NA
CADMIUM	ND (0.81)	ND (0.83)	NA	ND (0.80)	ND (0.81)	ND (0.81)	NA
CALCIUM	6,220	4,940	NA	3,210	2,650	2,450	NA
CHROMIUM	451 *	250 *	NA	303 *	321 *	379 *	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	NA	ND (0.05)	ND (0.05)	ND (0.05)	NA
COBALT	50.4	35.0	NA	36.7	22.6	34.7	NA
COPPER	31.3	28.3	NA	45.9	36.1	30.2	NA
IRON	37,800	33,600	NA	27,200	25,500	25,900	NA
LEAD	7.4	18.3 *	NA	6.8	4.7	6.9	NA
MAGNESIUM	111,000	43,900	NA	42,600	25,200	49,700	NA
MANGANESE	723 *	1,080 *	NA	696 *	317	527 *	NA
MERCURY	ND (0.10)	0.10	NA	ND (0.10)	ND (0.10)	ND (0.10)	NA
MOLYBDENUM	ND (1.3)	ND (1.3)	NA	ND (1.5)	ND (1.3)	ND (1.3)	NA
NICKEL	877 *	411 *	NA	641 *	495 *	738 *	NA
POTASSIUM	623	761	NA	529	394	376	NA
SELENIUM	ND (0.48)	ND (0.49)	NA	ND (0.47)	ND (0.48)	ND (0.48)	NA
SILVER	ND (0.57)	ND (0.58)	NA	ND (0.56)	ND (0.57)	ND (0.57)	NA
SODIUM	116	143	NA	120	119	136	NA
THALLIUM	ND (0.50)	ND (0.52)	NA	ND (0.50)	ND (0.50)	ND (0.50)	NA
VANADIUM	48.0	66.9	NA	45.4	46.2	46.4	NA
ZINC	52.2	42.7	NA	38.1	33.4	34.3	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA
2-BUTANONE	ND (11)	ND (56)	NA	ND (11)	ND (11)	ND (11)	NA
BENZENE	ND (6)	ND (28)	ND (61)	ND (5)	ND (5)	ND (5)	ND (120)
BROMOFORM	ND (6)	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA
CARBON DISULFIDE	4	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA
ETHYLBENZENE	8	ND (28)	100	ND (5)	ND (5)	ND (5)	ND (120)
TETRACHLOROETHENE	ND (6)	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B005	IR06B005	IR06B005	IR06B006	IR06B006	IR06B006	IR06B006
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	7.75
Sample Number	8943G086	8943G087	8943G088	8943G091	8943G092	8943G093	8943G094
Sample Date	10/25/89	10/25/89	10/25/89	10/26/89	10/26/89	10/26/89	10/26/89
Volatile Organic Compound (ug/kg)							
TOLUENE	6	ND (28)	ND (61)	13	ND (5)	ND (5)	ND (120)
TRICHLOROETHENE	ND (6)	ND (28)	NA	ND (5)	ND (5)	ND (5)	NA
VINYL ACETATE	ND (11)	ND (56)	NA	ND (11)	ND (11)	ND (11)	NA
XYLENE (TOTAL)	28	ND (28)	240	ND (5)	ND (5)	ND (5)	ND (230)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
2-METHYLNAPHTHALENE	29,000	18,000	NA	ND (350)	ND (3,600)	ND (1,400)	NA
4-METHYLPHENOL	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
4-NITROPHENOL	ND (110,000)	ND (440,000)	NA	ND (1,700)	ND (17,000)	ND (7,000)	NA
ACENAPHTHENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
ACENAPHTHYLENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
ANTHRACENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZO(A)ANTHRACENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZO(A)PYRENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZO(B)FLUORANTHENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZO(G,H,I)PERYLENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZO(K)FLUORANTHENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
BENZOIC ACID	ND (110,000)	ND (440,000)	NA	ND (1,700)	ND (17,000)	ND (7,000)	NA
CHRYSENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
DI-N-BUTYLPHTHALATE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
DIBENZ(A,H)ANTHRACENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
DIBENZOFURAN	2,200	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
FLUORANTHENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
FLUORENE	2,300	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
INDENO(1,2,3-CD)PYRENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
N-NITROSODIPHENYLAMINE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
NAPHTHALENE	4,100	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
PENTACHLOROPHENOL	ND (110,000)	ND (440,000)	NA	ND (1,700)	ND (17,000)	ND (7,000)	NA
PHENANTHRENE	8,900	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
PYRENE	ND (22,000)	ND (90,000)	NA	ND (350)	ND (3,600)	ND (1,400)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (260)	ND (270)	NA	ND (17)	ND (17)	ND (170)	NA
ALDRIN	ND (130)	ND (130)	NA	ND (86)	ND (9)	ND (87)	NA
ENDOSULFAN I	ND (130)	ND (130)	NA	ND (86)	ND (9)	ND (87)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B005	IR06B005	IR06B005	IR06B006	IR06B006	IR06B006	IR06B006
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	7.75
Sample Number	8943G086	8943G087	8943G088	8943G091	8943G092	8943G093	8943G094
Sample Date	10/25/89	10/25/89	10/25/89	10/26/89	10/26/89	10/26/89	10/26/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (2,600)	ND (2,700)	NA	ND (170)	ND (170)	ND (1,700)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	1,300	1,900	6,200	650	460	270	ND (580)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	3,300	4,400	5,300	340	970	470	88
Percent Moisture (%)							
% SOLIDS	91.7	88.9	NA	92.8	91.6	91.3	NA
pH (pH units)							
PH	8.4	7.8	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B006	IR06B007	IR06B007	IR06B007	IR06B007	IR06B008	IR06B008
Sampling Depth (feet bgs)	10.75	0.25	2.75	5.25	7.75	1.25	2.75
Sample Number	8943G095	8944H012	8944H013	8944H014	8944H015	8944H006	8944H017
Sample Date	10/26/89	10/31/89	10/31/89	10/31/89	10/31/89	10/30/89	10/31/89
Metal (mg/kg)							
ALUMINUM	NA	13,400	11,600	16,500	NA	10,300	9,060
ANTIMONY	NA	ND (6.8)	ND (7.1)	ND (6.9)	NA	ND (7.2)	ND (6.9)
ARSENIC	NA	3.0 *#	2.4 *#	3.4 *#	NA	1.8 *	1.6 *
BARIUM	NA	148	55.0	161	NA	62.0	54.9
BERYLLIUM	NA	0.49 *	0.42 *	0.61 *	NA	0.39 *	0.45 *
CADMIUM	NA	ND (0.78)	ND (0.82)	ND (0.80)	NA	ND (0.83)	ND (0.80)
CALCIUM	NA	4,860	2,900	9,700	NA	2,940	2,850
CHROMIUM	NA	369 *	343 *	168	NA	148 α	143
CHROMIUM VI	NA	ND (0.05)	ND (0.06)	ND (0.05)	NA	0.11	ND (0.05)
COBALT	NA	41.1	33.4	26.7	NA	10.9	10.5
COPPER	NA	27.2	15.8	24.2	NA	25.4	11.8
IRON	NA	30,300	27,000	27,300	NA	23,700	23,200
LEAD	NA	12.5 α	9.2 α	18.2 α	NA	15.6 α	ND (2.8)
MAGNESIUM	NA	70,400	63,200	16,800	NA	6,500	6,500
MANGANESE	NA	875 *	413 *	698 *	NA	169	184
MERCURY	NA	ND (0.10)	ND (0.10)	ND (0.10)	NA	ND (0.10)	ND (0.10)
MOLYBDENUM	NA	ND (1.3)	ND (1.3)	ND (1.3)	NA	ND (1.3)	ND (1.3)
NICKEL	NA	661 *	660 *	218 *	NA	101	119
POTASSIUM	NA	641	584	1,030	NA	470	ND (421)
SELENIUM	NA	ND (0.47)	ND (0.49)	ND (0.47)	NA	ND (0.49)	ND (0.48)
SILVER	NA	ND (0.55)	ND (0.58)	ND (0.56)	NA	ND (0.58)	ND (0.56)
SODIUM	NA	ND (110)	ND (118)	ND (198)	NA	ND (201)	ND (206)
THALLIUM	NA	ND (0.49)	ND (0.51)	ND (0.50)	NA	ND (0.51)	ND (0.50)
VANADIUM	NA	45.2	40.4	62.7	NA	46.2	44.1
ZINC	NA	47.2	35.4	62.5	NA	30.6	26.6
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)
2-BUTANONE	NA	ND (11)	ND (56)	36	NA	ND (11)	ND (54)
BENZENE	65	ND (5)	ND (28)	ND (27)	ND (130)	ND (6)	ND (27)
BROMOFORM	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)
CARBON DISULFIDE	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)
ETHYLBENZENE	ND (6)	ND (5)	ND (28)	ND (27)	ND (130)	ND (6)	ND (27)
TETRACHLOROETHENE	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B006	IR06B007	IR06B007	IR06B007	IR06B007	IR06B008	IR06B008
Sampling Depth (feet bgs)	10.75	0.25	2.75	5.25	7.75	1.25	2.75
Sample Number	8943G095	8944H012	8944H013	8944H014	8944H015	8944H006	8944H017
Sample Date	10/26/89	10/31/89	10/31/89	10/31/89	10/31/89	10/30/89	10/31/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	3	6	ND (27)	ND (130)	ND (6)	ND (27)
TRICHLOROETHENE	NA	ND (5)	ND (28)	ND (27)	NA	ND (6)	ND (27)
VINYL ACETATE	NA	ND (11)	ND (56)	ND (54)	NA	ND (11)	ND (54)
XYLENE (TOTAL)	ND (19)	ND (5)	ND (28)	ND (27)	ND (270)	ND (6)	ND (27)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
2-METHYLNAPHTHALENE	NA	ND (350)	ND (1,500)	410	NA	ND (370)	ND (360)
4-METHYLPHENOL	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
4-NITROPHENOL	NA	ND (1,700)	ND (7,100)	ND (14,000)	NA	ND (1,800)	ND (1,700)
ACENAPHTHENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
ACENAPHTHYLENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
ANTHRACENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZO(A)ANTHRACENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZO(A)PYRENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZO(B)FLUORANTHENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZO(G,H,I)PERYLENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZO(K)FLUORANTHENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
BENZOIC ACID	NA	ND (1,700)	ND (7,100)	ND (14,000)	NA	ND (1,800)	ND (1,700)
CHRYSENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
DI-N-BUTYLPHTHALATE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
DIBENZ(A,H)ANTHRACENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
DIBENZOFURAN	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
FLUORANTHENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
FLUORENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
INDENO(1,2,3-CD)PYRENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
N-NITROSODIPHENYLAMINE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
NAPHTHALENE	NA	ND (350)	ND (1,500)	320	NA	ND (370)	ND (360)
PENTACHLOROPHENOL	NA	ND (1,700)	ND (7,100)	ND (14,000)	NA	ND (1,800)	ND (1,700)
PHENANTHRENE	NA	ND (350)	ND (1,500)	930	NA	ND (370)	ND (360)
PYRENE	NA	ND (350)	ND (1,500)	ND (2,800)	NA	ND (370)	ND (360)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	ND (17)	ND (180)	ND (17)	NA	ND (18)	ND (17)
ALDRIN	NA	ND (9)	ND (89)	ND (9)	NA	ND (9)	ND (9)
ENDOSULFAN I	NA	ND (9)	ND (89)	ND (9)	NA	ND (9)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B006	IR06B007	IR06B007	IR06B007	IR06B007	IR06B008	IR06B008
Sampling Depth (feet bgs)	10.75	0.25	2.75	5.25	7.75	1.25	2.75
Sample Number	8943G095	8944H012	8944H013	8944H014	8944H015	8944H006	8944H017
Sample Date	10/26/89	10/31/89	10/31/89	10/31/89	10/31/89	10/30/89	10/31/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	ND (170)	ND (1,800)	ND (170)	NA	ND (180)	ND (170)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (31)	ND (53)	1,000	4,000	1,100	ND (560)	ND (540)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	88	89	810	2,000	ND (67)	ND (56)	ND (54)
Percent Moisture (%)							
% SOLIDS	NA	94.3	90.0	92.9	NA	89.4	92.2
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B009	IR06B009	IR06B009	IR06B010	IR06B010	IR06B010	IR06B010
Sampling Depth (feet bgs)	1.25	2.75	5.25	0.75	3.25	5.75	7.75
Sample Number	8944H037	8944H038	8944H039	8944H023	8944H024	8944H025	8944H026
Sample Date	11/03/89	11/03/89	11/03/89	11/01/89	11/01/89	11/01/89	11/01/89
Metal (mg/kg)							
ALUMINUM	8,600	6,130	11,100	4,750	2,920	14,300	NA
ANTIMONY	8.7	7.9	ND (7.7)	ND (7.3)	ND (7.5)	ND (7.8)	NA
ARSENIC	1.2 *	1.6 *	1.8 *	2.8 *#	1.2 *	1.5 *	NA
BARIUM	81.3	47.5	93.3	76.0	46.1	160	NA
BERYLLIUM	0.61 *	0.54 *	0.68 *	0.24 *	0.23 *	0.41 *	NA
CADMIUM	ND (0.95)	ND (0.87)	ND (0.89)	2.6	ND (0.87)	ND (0.90)	NA
CALCIUM	1,630	1,200	2,130	3,480	784	2,510	NA
CHROMIUM	630 *	506 *	581 *α	80.8	255 *	205	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	NA
COBALT	73.7	81.8	60.7 α	13.5	51.9	19.9	NA
COPPER	65.1	38.0	18.5	68.7	12.7	20.1	NA
IRON	35,800	39,700	35,800	10,800	14,800	27,200	NA
LEAD	3.1	6.9	4.6	1,450 *#α	1.3	42.6 α	NA
MAGNESIUM	101,000	146,000	24,100	10,600	62,900	12,900	NA
MANGANESE	673 *	781 *	716 *	333	1,080 *	300	NA
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	0.20	ND (0.10)	ND (0.10)	NA
MOLYBDENUM	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.5)	NA
NICKEL	1,430 *	1,640 *	846 *α	158 *	793 *	206 *	NA
POTASSIUM	273	241	497	ND (293)	ND (99.6)	559	NA
SELENIUM	ND (0.56)	ND (0.52)	ND (0.53)	ND (0.50)	ND (0.52)	ND (0.54)	NA
SILVER	ND (0.67)	ND (0.61)	ND (0.62)	ND (0.59)	ND (0.61)	ND (0.63)	NA
SODIUM	150	148	210	69.6	35.0	151	NA
THALLIUM	ND (0.59)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.54)	ND (0.56)	NA
VANADIUM	38.6	39.5	63.7	27.8	17.8	57.0	NA
ZINC	41.4	41.0	41.4	159 α	18.3	55.5	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA
2-BUTANONE	ND (64)	ND (2,300)	ND (12)	ND (57)	ND (12)	15	NA
BENZENE	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	ND (61)
BROMOFORM	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA
CARBON DISULFIDE	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA
ETHYLBENZENE	32	ND (1,200)	12	ND (28)	ND (6)	18	91
TETRACHLOROETHENE	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B009	IR06B009	IR06B009	IR06B010	IR06B010	IR06B010	IR06B010
Sampling Depth (feet bgs)	1.25	2.75	5.25	0.75	3.25	5.75	7.75
Sample Number	8944H037	8944H038	8944H039	8944H023	8944H024	8944H025	8944H026
Sample Date	11/03/89	11/03/89	11/03/89	11/01/89	11/01/89	11/01/89	11/01/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (32)	ND (1,200)	ND (6)	ND (28)	6	ND (30)	ND (61)
TRICHLOROETHENE	ND (32)	ND (1,200)	ND (6)	ND (28)	ND (6)	ND (30)	NA
VINYL ACETATE	ND (64)	ND (2,300)	ND (12)	ND (57)	ND (12)	ND (61)	NA
XYLENE (TOTAL)	55	ND (1,200)	5	ND (28)	ND (6)	18	230
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
2-METHYLNAPHTHALENE	7,300	6,100	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
4-METHYLPHENOL	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
4-NITROPHENOL	ND (41,000)	ND (120,000)	ND (120,000)	ND (230,000)	ND (38,000)	ND (970,000)	NA
ACENAPHTHENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
ACENAPHTHYLENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
ANTHRACENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZO(A)ANTHRACENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZO(A)PYRENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZO(B)FLUORANTHENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZO(G,H,I)PERYLENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZO(K)FLUORANTHENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
BENZOIC ACID	ND (41,000)	ND (120,000)	ND (120,000)	ND (230,000)	ND (38,000)	ND (970,000)	NA
CHRYSENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
DI-N-BUTYLPHTHALATE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
DIBENZ(A,H)ANTHRACENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
DIBENZOFURAN	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
FLUORANTHENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
FLUORENE	1,200	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
INDENO(1,2,3-CD)PYRENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
N-NITROSODIPHENYLAMINE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
NAPHTHALENE	1,500	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
PENTACHLOROPHENOL	ND (41,000)	ND (120,000)	ND (120,000)	ND (230,000)	ND (38,000)	ND (970,000)	NA
PHENANTHRENE	2,400	4,100	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
PYRENE	ND (8,500)	ND (23,000)	ND (24,000)	ND (46,000)	ND (7,800)	ND (190,000)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (210)	ND (280)	ND (290)	ND (1,400)	ND (190)	ND (290)	NA
ALDRIN	ND (100)	ND (140)	ND (140)	ND (6,800)	ND (94)	ND (150)	NA
ENDOSULFAN I	ND (100)	ND (140)	ND (140)	ND (6,800)	ND (94)	ND (150)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B009	IR06B009	IR06B009	IR06B010	IR06B010	IR06B010	IR06B010
Sampling Depth (feet bgs)	1.25	2.75	5.25	0.75	3.25	5.75	7.75
Sample Number	8944H037	8944H038	8944H039	8944H023	8944H024	8944H025	8944H026
Sample Date	11/03/89	11/03/89	11/03/89	11/01/89	11/01/89	11/01/89	11/01/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (2,100)	ND (2,800)	ND (2,900)	ND (14,000)	ND (1,900)	ND (2,900)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	2,400	5,500	1,300	3,100	610	7,200	6,400
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	1,600	4,500	230	32,000	850	470	1,300
Percent Moisture (%)							
% SOLIDS	78.0	85.2	83.3	87.9	84.9	82.2	NA
pH (pH units)							
PH	7.6	7.9	8.4	6.8	8.1	8.1	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B010	IR06B010	IR06B011	IR06B011	IR06B011	IR06B011	IR06B011
Sampling Depth (feet bgs)	10.25	14.75	0.75	2.75	5.25	7.75	9.75
Sample Number	8944H027	8944H028	8944H029	8944H030	8944H031	8944H032	8944H033
Sample Date	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Metal (mg/kg)							
ALUMINUM	NA	NA	10,300	11,000	9,630	NA	NA
ANTIMONY	NA	NA	ND (7.0)	ND (7.1)	ND (7.1)	NA	NA
ARSENIC	NA	NA	0.31	2.8 *#	3.5 *#	NA	NA
BARIUM	NA	NA	76.2	77.6	79.7	NA	NA
BERYLLIUM	NA	NA	0.46 *	0.47 *	0.47 *	NA	NA
CADMIUM	NA	NA	2.8	ND (0.82)	ND (0.82)	NA	NA
CALCIUM	NA	NA	3,730	2,550	2,420	NA	NA
CHROMIUM	NA	NA	191	136	195 α	NA	NA
CHROMIUM VI	NA	NA	ND (0.06)	ND (0.06)	ND (0.06)	NA	NA
COBALT	NA	NA	18.7	16.0	19.9	NA	NA
COPPER	NA	NA	47.2	14.7	14.8	NA	NA
IRON	NA	NA	23,800	23,000	23,400	NA	NA
LEAD	NA	NA	326 *α	ND (3.6)	ND (4.1)	NA	NA
MAGNESIUM	NA	NA	13,300	6,470	6,320	NA	NA
MANGANESE	NA	NA	379	299	441 *	NA	NA
MERCURY	NA	NA	0.70	ND (0.10)	ND (0.10)	NA	NA
MOLYBDENUM	NA	NA	ND (1.3)	ND (1.3)	ND (1.3)	NA	NA
NICKEL	NA	NA	246 *	187 *α	186 *α	NA	NA
POTASSIUM	NA	NA	798	737	667	NA	NA
SELENIUM	NA	NA	ND (0.48)	0.62	ND (0.49)	NA	NA
SILVER	NA	NA	ND (0.57)	ND (0.57)	ND (0.58)	NA	NA
SODIUM	NA	NA	ND (129)	ND (148)	ND (192)	NA	NA
THALLIUM	NA	NA	ND (0.50)	ND (0.51)	ND (0.51)	NA	NA
VANADIUM	NA	NA	45.1	42.1	52.3	NA	NA
ZINC	NA	NA	187 α	32.1	31.9	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA
2-BUTANONE	NA	NA	ND (11)	ND (11)	ND (11)	NA	NA
BENZENE	ND (60)	ND (68)	ND (6)	ND (6)	ND (6)	ND (60)	ND (68)
BROMOFORM	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA
CARBON DISULFIDE	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA
ETHYLBENZENE	ND (60)	ND (340)	ND (6)	ND (6)	ND (6)	ND (60)	ND (68)
TETRACHLOROETHENE	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B010	IR06B010	IR06B011	IR06B011	IR06B011	IR06B011	IR06B011
Sampling Depth (feet bgs)	10.25	14.75	0.75	2.75	5.25	7.75	9.75
Sample Number	8944H027	8944H028	8944H029	8944H030	8944H031	8944H032	8944H033
Sample Date	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (60)	160	ND (6)	ND (6)	ND (6)	ND (60)	ND (68)
TRICHLOROETHENE	NA	NA	ND (6)	ND (6)	ND (6)	NA	NA
VINYL ACETATE	NA	NA	ND (11)	ND (11)	ND (11)	NA	NA
XYLENE (TOTAL)	ND (120)	1,300	ND (6)	ND (6)	ND (6)	ND (120)	ND (140)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
2-METHYLNAPHTHALENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
4-METHYLPHENOL	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
4-NITROPHENOL	NA	NA	ND (18,000)	ND (1,800)	ND (1,800)	NA	NA
ACENAPHTHENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
ACENAPHTHYLENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
ANTHRACENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZO(A)ANTHRACENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZO(A)PYRENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
BENZOIC ACID	NA	NA	ND (18,000)	ND (1,800)	ND (1,800)	NA	NA
CHRYSENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
DI-N-BUTYLPHTHALATE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
DIBENZ(A,H)ANTHRACENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
DIBENZOFURAN	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
FLUORANTHENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
FLUORENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
NAPHTHALENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
PENTACHLOROPHENOL	NA	NA	ND (18,000)	ND (1,800)	ND (1,800)	NA	NA
PHENANTHRENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
PYRENE	NA	NA	ND (3,600)	ND (360)	ND (370)	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	ND (180)	ND (18)	ND (18)	NA	NA
ALDRIN	NA	NA	ND (88)	ND (9)	ND (9)	NA	NA
ENDOSULFAN I	NA	NA	ND (88)	ND (9)	ND (9)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B010	IR06B010	IR06B011	IR06B011	IR06B011	IR06B011	IR06B011
Sampling Depth (feet bgs)	10.25	14.75	0.75	2.75	5.25	7.75	9.75
Sample Number	8944H027	8944H028	8944H029	8944H030	8944H031	8944H032	8944H033
Sample Date	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	ND (1,800)	ND (180)	ND (180)	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	9	6,800	ND (550)	ND (550)	ND (560)	320	ND (34)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (60)	110,000	6,400	ND (55)	60	260	90
Percent Moisture (%)							
% SOLIDS	NA	NA	91.3	90.7	89.9	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B012	IR06B012	IR06B012	IR06B012	IR06B013	IR06B013	IR06B013
Sampling Depth (feet bgs)	0.75	2.75	5.25	7.75	0.75	2.75	5.25
Sample Number	8944G122	8944G123	8944G124	8944G125	8945G127	8945G128	8945G129
Sample Date	11/02/89	11/02/89	11/02/89	11/02/89	11/06/89	11/06/89	11/06/89
Metal (mg/kg)							
ALUMINUM	3,720	8,170	4,050	NA	7,220	6,050	7,870
ANTIMONY	ND (7.5)	ND (7.4)	ND (7.4)	NA	ND (7.6)	ND (7.6)	ND (7.5)
ARSENIC	1.3 *	0.62 *	1.3 *	NA	1.9 *	1.1 *	1.9 *
BARIUM	36.0	70.4	66.7	NA	67.4	74.4	76.4
BERYLLIUM	0.18 *	0.25 *	0.21 *	NA	0.54 *	0.54 *	0.48 *
CADMIUM	ND (0.87)	ND (0.85)	ND (0.86)	NA	ND (0.87)	ND (0.88)	ND (0.87)
CALCIUM	1,490	1,890	1,080	NA	2,030	1,430	2,070
CHROMIUM	59.8	130 α	62.1	NA	158	71.9	103
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.06)	NA	ND (0.06)	ND (0.06)	ND (0.06)
COBALT	15.8	16.1	19.5	NA	34.8	18.8	24.5 α
COPPER	9.8	10.2	5.8	NA	10.7	11.6	11.2
IRON	8,200	16,500	6,560	NA	18,100	13,100	18,500
LEAD	12.1 α	1.8	4.2	NA	8.7	2.9	3.1
MAGNESIUM	4,450	5,290	5,270	NA	13,600	4,570	5,460
MANGANESE	256	358	301	NA	250	292	591 *
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	NA	ND (0.10)	ND (0.10)	ND (0.10)
MOLYBDENUM	ND (1.4)	ND (1.4)	ND (1.4)	NA	ND (1.4)	ND (1.4)	ND (1.4)
NICKEL	176 *α	258 *α	188 *α	NA	369 *α	167 *α	185 *α
POTASSIUM	ND (281)	ND (329)	ND (166)	NA	469	450	562
SELENIUM	ND (0.52)	ND (0.51)	ND (0.51)	NA	ND (0.52)	ND (0.52)	ND (0.52)
SILVER	ND (0.61)	ND (0.60)	ND (0.60)	NA	ND (0.61)	ND (0.62)	ND (0.61)
SODIUM	108	416	353	NA	102	146	224
THALLIUM	ND (0.54)	ND (0.53)	ND (0.53)	NA	ND (0.54)	ND (0.55)	ND (0.54)
VANADIUM	17.8	25.8	13.9	NA	38.0	39.7	48.7
ZINC	36.8	24.0	18.7	NA	31.0	28.2	30.3
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)
1,2-DICHLOROETHENE (TOTAL)	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)
2-BUTANONE	82	16	9	NA	ND (59)	ND (60)	ND (59)
BENZENE	ND (29)	ND (6)	ND (6)	ND (150)	ND (30)	ND (30)	ND (29)
BROMOFORM	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)
CARBON DISULFIDE	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)
ETHYLBENZENE	ND (29)	130	15	ND (150)	ND (30)	ND (30)	ND (29)
TETRACHLOROETHENE	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B012	IR06B012	IR06B012	IR06B012	IR06B013	IR06B013	IR06B013
Sampling Depth (feet bgs)	0.75	2.75	5.25	7.75	0.75	2.75	5.25
Sample Number	8944G122	8944G123	8944G124	8944G125	8945G127	8945G128	8945G129
Sample Date	11/02/89	11/02/89	11/02/89	11/02/89	11/06/89	11/06/89	11/06/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (29)	18	1	ND (150)	ND (30)	ND (30)	ND (29)
TRICHLOROETHENE	ND (29)	ND (6)	ND (6)	NA	ND (30)	ND (30)	ND (29)
VINYL ACETATE	ND (59)	ND (12)	ND (12)	NA	ND (59)	ND (60)	ND (59)
XYLENE (TOTAL)	ND (29)	170	30	ND (300)	ND (30)	ND (30)	ND (29)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	13,000	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
2-METHYLNAPHTHALENE	ND (47,000)	44,000	2,900	NA	3,900	240	1,300
4-METHYLPHENOL	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
4-NITROPHENOL	ND (230,000)	ND (180,000)	ND (9,300)	NA	ND (120,000)	ND (3,800)	ND (19,000)
ACENAPHTHENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
ACENAPHTHYLENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
ANTHRACENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZO(A)ANTHRACENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZO(A)PYRENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZO(B)FLUORANTHENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZO(G,H,I)PERYLENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZO(K)FLUORANTHENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
BENZOIC ACID	ND (230,000)	ND (180,000)	ND (9,300)	NA	ND (120,000)	ND (3,800)	ND (19,000)
CHRYSENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
DI-N-BUTYLPHTHALATE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
DIBENZ(A,H)ANTHRACENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
DIBENZOFURAN	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
FLUORANTHENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
FLUORENE	ND (47,000)	5,500	500	NA	ND (24,000)	ND (790)	ND (3,900)
INDENO(1,2,3-CD)PYRENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
N-NITROSODIPHENYLAMINE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
NAPHTHALENE	ND (47,000)	11,000	650	NA	ND (24,000)	ND (790)	480
PENTACHLOROPHENOL	ND (230,000)	ND (180,000)	ND (9,300)	NA	ND (120,000)	ND (3,800)	ND (19,000)
PHENANTHRENE	7,500	8,700	770	NA	2,800	120	740
PYRENE	ND (47,000)	ND (38,000)	ND (1,900)	NA	ND (24,000)	ND (790)	ND (3,900)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (1,400)	ND (18)	ND (19)	NA	ND (280)	ND (19)	ND (19)
ALDRIN	ND (140)	ND (9)	ND (9)	NA	ND (140)	ND (10)	ND (9)
ENDOSULFAN I	ND (700)	ND (9)	ND (9)	NA	ND (140)	ND (10)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B012	IR06B012	IR06B012	IR06B012	IR06B013	IR06B013	IR06B013
Sampling Depth (feet bgs)	0.75	2.75	5.25	7.75	0.75	2.75	5.25
Sample Number	8944G122	8944G123	8944G124	8944G125	8945G127	8945G128	8945G129
Sample Date	11/02/89	11/02/89	11/02/89	11/02/89	11/06/89	11/06/89	11/06/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (2,800)	ND (180)	ND (190)	NA	ND (2,800)	ND (190)	ND (190)
TPH-Extractable (mg/kg)							
TPH-DIESEL	26,000	10,000	1,300	1,300	2,800	ND (60)	1,300
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	20,000	5,600	680	220	3,100	120	370
Percent Moisture (%)							
% SOLIDS	85.3	86.7	86.0	NA	84.7	84.0	85.1
pH (pH units)							
PH	6.7	8.6	8.9	NA	4.9	7.6	8.0

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B013	IR06B013	IR06B014	IR06B014	IR06B014	IR06B014	IR06B015
Sampling Depth (feet bgs)	8.25	10.25	1.25	3.25	5.25	10.75	0.75
Sample Number	8945G130	8945G131	8943G096	8943G097	8943G098	8943G100	8944H018
Sample Date	11/06/89	11/06/89	10/26/89	10/26/89	10/26/89	10/26/89	11/01/89
Metal (mg/kg)							
ALUMINUM	NA	NA	21,700	7,340	17,200	NA	2,610
ANTIMONY	NA	NA	ND (7.5)	8.0	13.8 α	NA	ND (7.7)
ARSENIC	NA	NA	2.0 *	1.5 *	2.5 *#	NA	1.2 *
BARIUM	NA	NA	118	51.8	103	NA	15.0
BERYLLIUM	NA	NA	0.62 *	0.30 *	0.59 *	NA	ND (0.13)
CADMIUM	NA	NA	ND (0.87)	ND (0.86)	ND (0.90)	NA	ND (0.89)
CALCIUM	NA	NA	8,720	1,950	2,580	NA	910
CHROMIUM	NA	NA	414 *	207	482 *α	NA	111
CHROMIUM VI	NA	NA	ND (0.06)	ND (0.06)	ND (0.06)	NA	ND (0.06)
COBALT	NA	NA	47.7	22.7	38.9	NA	27.1
COPPER	NA	NA	71.4	24.8	33.6	NA	21.6
IRON	NA	NA	38,000	17,000	42,900	NA	10,900
LEAD	NA	NA	10.5 α	19.9 α	6.1	NA	91.0 α
MAGNESIUM	NA	NA	87,000	27,100	15,700	NA	20,900
MANGANESE	NA	NA	796 *	290	582 *	NA	382 *
MERCURY	NA	NA	0.20	ND (0.10)	ND (0.10)	NA	ND (0.10)
MOLYBDENUM	NA	NA	ND (2.6)	ND (1.4)	ND (2.2)	NA	ND (1.4)
NICKEL	NA	NA	800 *	468 *	673 *α	NA	284 *
POTASSIUM	NA	NA	818	249	755	NA	ND (93.3)
SELENIUM	NA	NA	ND (0.52)	ND (0.51)	ND (0.53)	NA	ND (0.53)
SILVER	NA	NA	ND (0.61)	ND (0.61)	ND (0.63)	NA	ND (0.63)
SODIUM	NA	NA	169	222	254	NA	29.2
THALLIUM	NA	NA	ND (0.54)	0.79	ND (0.56)	NA	ND (0.55)
VANADIUM	NA	NA	59.0	25.3	74.2	NA	7.7
ZINC	NA	NA	60.5	28.6	46.7	NA	54.3
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	NA	ND (6)	ND (6)	ND (6)	NA	ND (6)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (6)	ND (6)	ND (6)	NA	ND (6)
2-BUTANONE	NA	NA	ND (12)	ND (12)	ND (12)	NA	ND (12)
BENZENE	ND (59)	ND (71)	ND (6)	ND (6)	ND (6)	ND (56)	ND (6)
BROMOFORM	NA	NA	ND (6)	ND (6)	ND (6)	NA	ND (6)
CARBON DISULFIDE	NA	NA	ND (6)	ND (6)	ND (6)	NA	ND (6)
ETHYLBENZENE	ND (59)	ND (71)	ND (6)	ND (6)	ND (6)	ND (56)	ND (6)
TETRACHLOROETHENE	NA	NA	ND (6)	ND (6)	ND (6)	NA	2

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B013	IR06B013	IR06B014	IR06B014	IR06B014	IR06B014	IR06B015
Sampling Depth (feet bgs)	8.25	10.25	1.25	3.25	5.25	10.75	0.75
Sample Number	8945G130	8945G131	8943G096	8943G097	8943G098	8943G100	8944H018
Sample Date	11/06/89	11/06/89	10/26/89	10/26/89	10/26/89	10/26/89	11/01/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (59)	ND (71)	17	19	9	ND (56)	ND (6)
TRICHLOROETHENE	NA	NA	4	ND (6)	ND (6)	NA	ND (6)
VINYL ACETATE	NA	NA	ND (12)	ND (12)	ND (12)	NA	ND (12)
XYLENE (TOTAL)	ND (120)	ND (140)	ND (6)	ND (6)	ND (6)	ND (110)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
2-METHYLNAPHTHALENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
4-METHYLPHENOL	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
4-NITROPHENOL	NA	NA	ND (1,900)	ND (1,900)	ND (1,900)	NA	ND (39,000)
ACENAPHTHENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
ACENAPHTHYLENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
ANTHRACENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZO(A)ANTHRACENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZO(A)PYRENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZO(B)FLUORANTHENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZO(G,H,I)PERYLENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZO(K)FLUORANTHENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
BENZOIC ACID	NA	NA	ND (1,900)	ND (1,900)	ND (1,900)	NA	ND (39,000)
CHRYSENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
DI-N-BUTYLPHTHALATE	NA	NA	50	42	57	NA	ND (8,000)
DIBENZ(A,H)ANTHRACENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
DIBENZOFURAN	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
FLUORANTHENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
FLUORENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
INDENO(1,2,3-CD)PYRENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
N-NITROSODIPHENYLAMINE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
NAPHTHALENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
PENTACHLOROPHENOL	NA	NA	ND (1,900)	ND (1,900)	ND (1,900)	NA	ND (39,000)
PHENANTHRENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
PYRENE	NA	NA	ND (380)	ND (380)	ND (400)	NA	ND (8,000)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	ND (19)	ND (19)	ND (19)	NA	ND (290)
ALDRIN	NA	NA	ND (9)	ND (9)	ND (10)	NA	ND (140)
ENDOSULFAN I	NA	NA	ND (9)	ND (9)	ND (10)	NA	ND (140)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B013	IR06B013	IR06B014	IR06B014	IR06B014	IR06B014	IR06B015
Sampling Depth (feet bgs)	8.25	10.25	1.25	3.25	5.25	10.75	0.75
Sample Number	8945G130	8945G131	8943G096	8943G097	8943G098	8943G100	8944H018
Sample Date	11/06/89	11/06/89	10/26/89	10/26/89	10/26/89	10/26/89	11/01/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	ND (190)	ND (190)	ND (190)	NA	ND (2,900)
TPH-Extractable (mg/kg)							
TPH-DIESEL	540	170	ND (58)	ND (58)	ND (60)	ND (28)	3,700
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	730	170	67	ND (58)	ND (60)	100	580
Percent Moisture (%)							
% SOLIDS	NA	NA	85.1	85.9	82.3	NA	83.0
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	7.1

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B015	IR06B015	IR06B015	IR06B016	IR06B016	IR06B016	IR06B016
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	8.25
Sample Number	8944H019	8944H020	8944H021	8944G117	8944G118	8944G119	8944G120
Sample Date	11/01/89	11/01/89	11/01/89	11/02/89	11/02/89	11/02/89	11/02/89
Metal (mg/kg)							
ALUMINUM	4,550	3,090	NA	5,140	4,190	3,750	NA
ANTIMONY	ND (7.5)	ND (7.4)	NA	ND (7.1)	ND (7.3)	ND (7.5)	NA
ARSENIC	1.9 *	2.6 *#	NA	1.6 *	4.0 *#	2.8 *#	NA
BARIUM	66.1	59.5	NA	63.7	104	61.0	NA
BERYLLIUM	0.25 *	0.27 *	NA	0.23 *	0.31 *	0.29 *	NA
CADMIUM	ND (0.87)	ND (0.85)	NA	ND (0.82)	ND (0.85)	ND (0.86)	NA
CALCIUM	1,180	844	NA	1,550	1,100	1,050	NA
CHROMIUM	66.1	41.2	NA	70.0	64.3	87.4	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	NA	ND (0.06)	ND (0.06)	ND (0.06)	NA
COBALT	16.4	14.6	NA	13.2	22.7 α	38.0 α	NA
COPPER	14.8	11.9	NA	13.2	12.5	9.7	NA
IRON	11,800	8,400	NA	11,700	15,000	10,300	NA
LEAD	2.7	2.8	NA	9.0 α	3.3	3.3	NA
MAGNESIUM	4,330	3,510	NA	4,340	4,690	6,480	NA
MANGANESE	334	374	NA	289	625 *	690 *	NA
MERCURY	ND (0.10)	ND (0.10)	NA	ND (0.10)	ND (0.10)	ND (0.10)	NA
MOLYBDENUM	ND (1.4)	ND (1.4)	NA	ND (1.3)	ND (1.4)	ND (1.4)	NA
NICKEL	139 α	104 α	NA	136 α	162 *α	238 *α	NA
POTASSIUM	ND (305)	ND (254)	NA	ND (438)	ND (353)	ND (247)	NA
SELENIUM	ND (0.51)	ND (0.51)	NA	ND (0.49)	ND (0.50)	ND (0.51)	NA
SILVER	ND (0.61)	ND (0.60)	NA	ND (0.58)	ND (0.60)	ND (0.61)	NA
SODIUM	116	185	NA	139	178	155	NA
THALLIUM	ND (0.54)	ND (0.53)	NA	ND (0.51)	ND (0.53)	ND (0.54)	NA
VANADIUM	29.0	25.4	NA	29.5	42.8	22.2	NA
ZINC	21.7	17.6	NA	29.9	23.9	21.8	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA
2-BUTANONE	ND (58)	ND (12)	NA	ND (11)	ND (11)	ND (12)	NA
BENZENE	ND (29)	ND (6)	ND (62)	ND (6)	ND (6)	ND (6)	ND (66)
BROMOFORM	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA
CARBON DISULFIDE	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA
ETHYLBENZENE	26	ND (6)	120	ND (6)	ND (6)	ND (6)	130
TETRACHLOROETHENE	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B015	IR06B015	IR06B015	IR06B016	IR06B016	IR06B016	IR06B016
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	8.25
Sample Number	8944H019	8944H020	8944H021	8944G117	8944G118	8944G119	8944G120
Sample Date	11/01/89	11/01/89	11/01/89	11/02/89	11/02/89	11/02/89	11/02/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (29)	ND (6)	ND (62)	ND (6)	ND (6)	ND (6)	ND (66)
TRICHLOROETHENE	ND (29)	ND (6)	NA	ND (6)	ND (6)	ND (6)	NA
VINYL ACETATE	ND (58)	ND (12)	NA	ND (11)	ND (11)	ND (12)	NA
XYLENE (TOTAL)	ND (29)	ND (6)	260	ND (6)	ND (6)	ND (6)	320
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
2-METHYLNAPHTHALENE	4,700	2,200	NA	ND (730)	ND (760)	ND (390)	NA
4-METHYLPHENOL	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
4-NITROPHENOL	ND (37,000)	ND (15,000)	NA	ND (3,500)	ND (3,700)	ND (1,900)	NA
ACENAPHTHENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
ACENAPHTHYLENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
ANTHRACENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZO(A)ANTHRACENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZO(A)PYRENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZO(B)FLUORANTHENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZO(G,H,I)PERYLENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZO(K)FLUORANTHENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
BENZOIC ACID	ND (37,000)	ND (15,000)	NA	ND (3,500)	ND (3,700)	ND (1,900)	NA
CHRYSENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
DI-N-BUTYLPHTHALATE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
DIBENZ(A,H)ANTHRACENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
DIBENZOFURAN	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
FLUORANTHENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
FLUORENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
INDENO(1,2,3-CD)PYRENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
N-NITROSODIPHENYLAMINE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
NAPHTHALENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
PENTACHLOROPHENOL	ND (37,000)	ND (15,000)	NA	ND (3,500)	ND (3,700)	ND (1,900)	NA
PHENANTHRENE	1,900	1,300	NA	ND (730)	ND (760)	ND (390)	NA
PYRENE	ND (7,700)	ND (3,000)	NA	ND (730)	ND (760)	ND (390)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (19)	ND (18)	NA	ND (18)	ND (18)	ND (19)	NA
ALDRIN	ND (9)	ND (9)	NA	ND (9)	ND (9)	ND (9)	NA
ENDOSULFAN I	ND (9)	ND (9)	NA	ND (9)	ND (9)	ND (9)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B015	IR06B015	IR06B015	IR06B016	IR06B016	IR06B016	IR06B016
Sampling Depth (feet bgs)	2.75	5.25	7.75	0.75	2.75	5.25	8.25
Sample Number	8944H019	8944H020	8944H021	8944G117	8944G118	8944G119	8944G120
Sample Date	11/01/89	11/01/89	11/01/89	11/02/89	11/02/89	11/02/89	11/02/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (190)	ND (180)	NA	ND (180)	ND (180)	ND (190)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	2,800	1,300	2,300	61	150	ND (44)	130
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	510	140	460	120	220	ND (58)	ND (66)
Percent Moisture (%)							
% SOLIDS	85.5	86.9	NA	90.4	87.2	85.6	NA
pH (pH units)							
PH	6.6	8.0	NA	7.1	8.0	8.2	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B017	IR06B017	IR06B017	IR06B017	IR06B017	IR06B018	IR06B018
Sampling Depth (feet bgs)	1.25	2.25	5.25	7.75	9.75	1.75	3.25
Sample Number	8944H043	8944H044	8944H045	8944H046	8944H047	8945G132	8945G133
Sample Date	11/03/89	11/03/89	11/03/89	11/03/89	11/03/89	11/06/89	11/06/89
Metal (mg/kg)							
ALUMINUM	10,100	8,920	9,890	NA	NA	9,520	10,700
ANTIMONY	ND (7.6)	ND (7.4)	ND (7.5)	NA	NA	ND (7.0)	ND (7.3)
ARSENIC	2.1 *#	2.4 *#	4.2 *#	NA	NA	1.5 *	0.99 *
BARIUM	86.9	65.4	70.9	NA	NA	55.5	126
BERYLLIUM	0.50 *	0.47 *	0.55 *	NA	NA	0.51 *	0.56 *
CADMIUM	ND (0.88)	ND (0.86)	ND (0.87)	NA	NA	ND (0.81)	ND (0.85)
CALCIUM	3,310	2,780	3,230	NA	NA	2,670	2,590
CHROMIUM	275 *a	128	146	NA	NA	160	220 *a
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.06)	NA	NA	ND (0.06)	ND (0.06)
COBALT	25.0	23.3	32.5 a	NA	NA	12.2	48.5 a
COPPER	21.7	13.4	14.2	NA	NA	ND (8.4)	ND (8.2)
IRON	24,200	21,100	24,500	NA	NA	21,100	21,900
LEAD	6.0	3.5	2.9	NA	NA	2.8	3.3
MAGNESIUM	11,100	5,870	7,320	NA	NA	8,510	8,550
MANGANESE	440 *	319	491 *	NA	NA	246	968 *
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	NA	NA	ND (0.10)	ND (0.10)
MOLYBDENUM	ND (1.4)	ND (1.4)	ND (1.4)	NA	NA	ND (1.3)	ND (1.4)
NICKEL	295 *a	185 *a	240 *a	NA	NA	237 *a	405 *a
POTASSIUM	509	633	736	NA	NA	491	420
SELENIUM	ND (0.52)	ND (0.51)	ND (0.52)	NA	NA	ND (0.48)	ND (0.50)
SILVER	ND (0.62)	ND (0.60)	ND (0.61)	NA	NA	ND (0.57)	ND (0.60)
SODIUM	102	108	145	NA	NA	160	192
THALLIUM	ND (0.55)	ND (0.53)	ND (0.54)	NA	NA	ND (0.50)	ND (0.53)
VANADIUM	45.0	47.8	58.0	NA	NA	30.7	29.4
ZINC	35.1	32.2	34.4	NA	NA	28.6	32.2
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)
2-BUTANONE	ND (4,700)	ND (58)	ND (59)	NA	NA	ND (11)	ND (11)
BENZENE	ND (2,400)	ND (29)	ND (29)	ND (59)	ND (57)	ND (6)	ND (6)
BROMOFORM	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)
CARBON DISULFIDE	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)
ETHYLBENZENE	ND (2,400)	ND (29)	ND (29)	ND (59)	ND (57)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B017	IR06B017	IR06B017	IR06B017	IR06B017	IR06B018	IR06B018
Sampling Depth (feet bgs)	1.25	2.25	5.25	7.75	9.75	1.75	3.25
Sample Number	8944H043	8944H044	8944H045	8944H046	8944H047	8945G132	8945G133
Sample Date	11/03/89	11/03/89	11/03/89	11/03/89	11/03/89	11/06/89	11/06/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (2,400)	ND (29)	ND (29)	ND (59)	ND (57)	ND (6)	ND (6)
TRICHLOROETHENE	ND (2,400)	ND (29)	ND (29)	NA	NA	ND (6)	ND (6)
VINYL ACETATE	ND (4,700)	ND (58)	ND (59)	NA	NA	ND (11)	ND (11)
XYLENE (TOTAL)	ND (2,400)	ND (29)	ND (29)	ND (120)	ND (110)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
2-METHYLNAPHTHALENE	10,000	ND (760)	240	NA	NA	ND (360)	ND (380)
4-METHYLPHENOL	NA	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
4-NITROPHENOL	ND (120,000)	ND (3,700)	ND (3,800)	NA	NA	ND (1,700)	ND (1,800)
ACENAPHTHENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
ACENAPHTHYLENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
ANTHRACENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZO(A)ANTHRACENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZO(A)PYRENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZO(B)FLUORANTHENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZO(G,H,I)PERYLENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZO(K)FLUORANTHENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
BENZOIC ACID	ND (120,000)	ND (3,700)	ND (3,800)	NA	NA	ND (1,700)	ND (1,800)
CHRYSENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
DI-N-BUTYLPHTHALATE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
DIBENZ(A,H)ANTHRACENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
DIBENZOFURAN	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
FLUORANTHENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
FLUORENE	2,500	130	ND (780)	NA	NA	ND (360)	ND (380)
INDENO(1,2,3-CD)PYRENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
N-NITROSODIPHENYLAMINE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
NAPHTHALENE	4,600	130	ND (780)	NA	NA	ND (360)	ND (380)
PENTACHLOROPHENOL	NA	ND (3,700)	ND (3,800)	NA	NA	ND (1,700)	ND (1,800)
PHENANTHRENE	5,300	230	210	NA	NA	ND (360)	ND (380)
PYRENE	ND (24,000)	ND (760)	ND (780)	NA	NA	ND (360)	ND (380)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (280)	ND (18)	ND (19)	NA	NA	ND (17)	ND (18)
ALDRIN	ND (140)	ND (9)	ND (9)	NA	NA	ND (9)	ND (9)
ENDOSULFAN I	ND (140)	ND (9)	ND (9)	NA	NA	ND (9)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B017	IR06B017	IR06B017	IR06B017	IR06B017	IR06B018	IR06B018
Sampling Depth (feet bgs)	1.25	2.25	5.25	7.75	9.75	1.75	3.25
Sample Number	8944H043	8944H044	8944H045	8944H046	8944H047	8945G132	8945G133
Sample Date	11/03/89	11/03/89	11/03/89	11/03/89	11/03/89	11/06/89	11/06/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (2,800)	ND (180)	ND (190)	NA	NA	ND (170)	ND (180)
TPH-Extractable (mg/kg)							
TPH-DIESEL	8,400	3,600	1,300	ND (300)	49	ND (550)	ND (570)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	8,900	1,700	400	76	130	ND (55)	ND (57)
Percent Moisture (%)							
% SOLIDS	84.4	86.5	85.1	NA	NA	91.7	87.2
pH (pH units)							
PH	6.9	8.2	8.2	NA	NA	7.7	7.6

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B018	IR06B019	IR06B019	IR06B019	IR06B020	IR06B020	IR06B020
Sampling Depth (feet bgs)	5.25	1.25	2.75	5.25	1.25	2.75	5.25
Sample Number	8945G134	8945H052	8945H053	8945H054	8945H048	8945H049	8945H050
Sample Date	11/06/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89
Metal (mg/kg)							
ALUMINUM	5,200	19,600	23,200	14,000	14,200	13,000	11,200
ANTIMONY	21.2 α	ND (7.1)	ND (7.1)	12.3 α	8.0	7.6	ND (8.7)
ARSENIC	1.7 *	5.0 *#	3.6 *#	2.3 *#	3.6 *#	2.9 *#	1.8 *
BARIUM	25.7	418 α	143	278	154	126	67.4
BERYLLIUM	0.58 *	0.78 *α	0.91 *α	0.71 *	0.65 *	0.68 *	0.65 *
CADMIUM	ND (0.84)	ND (0.82)	ND (0.83)	ND (0.91)	ND (0.84)	ND (0.84)	ND (1.0)
CALCIUM	671	9,750	8,250	3,170	6,290	4,600	2,410
CHROMIUM	1,570 *α	351 *	437 *	744 *α	318 *	307 *	193 α
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.07)
COBALT	157 α	45.1	43.6	208 α	63.5	40.5	20.0
COPPER	21.8	58.9	40.0	13.8	31.1	32.3	13.2
IRON	52,400	38,700	40,900	52,100	36,800	27,100	22,900
LEAD	0.67	40.7 α	23.4 α	3.7	17.7 α	20.7 α	2.9
MAGNESIUM	159,000	69,500	57,500	33,900	54,400	42,100	7,520
MANGANESE	814 *	2,730 *α	905 *	3,030 *α	1,920 *α	901 *	352
MERCURY	ND (0.10)	0.10	0.20	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
MOLYBDENUM	ND (1.4)	ND (1.3)	ND (1.3)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.6)
NICKEL	2,600 *	641 *	699 *	1,730 *α	925 *	614 *	287 *α
POTASSIUM	ND (88.4)	943	720	387	622	430	412
SELENIUM	ND (0.50)	ND (0.49)	ND (0.49)	ND (0.54)	ND (0.50)	ND (0.50)	ND (0.60)
SILVER	ND (0.59)	ND (0.58)	ND (0.58)	ND (0.64)	ND (0.59)	ND (0.59)	ND (0.71)
SODIUM	106	137	118	193	101	80.6	151
THALLIUM	ND (0.53)	ND (0.51)	ND (0.51)	ND (0.57)	ND (0.52)	ND (0.52)	ND (0.62)
VANADIUM	46.1	68.0	76.6	43.9	57.1	50.3	37.3
ZINC	40.5	80.5	68.9	46.5	66.0	73.4	35.2
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
2-BUTANONE	ND (11)	ND (11)	ND (11)	ND (12)	ND (11)	ND (11)	ND (14)
BENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
BROMOFORM	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
CARBON DISULFIDE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B018	IR06B019	IR06B019	IR06B019	IR06B020	IR06B020	IR06B020
Sampling Depth (feet bgs)	5.25	1.25	2.75	5.25	1.25	2.75	5.25
Sample Number	8945G134	8945H052	8945H053	8945H054	8945H048	8945H049	8945H050
Sample Date	11/06/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
TRICHLOROETHENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
VINYL ACETATE	ND (11)	ND (11)	ND (11)	ND (12)	ND (11)	ND (11)	ND (14)
XYLENE (TOTAL)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (7)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (380)	1,100	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
2-METHYLNAPHTHALENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
4-METHYLPHENOL	ND (380)	NA	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
4-NITROPHENOL	ND (1,800)	ND (35,000)	ND (1,800)	ND (2,000)	ND (36,000)	ND (3,600)	ND (2,200)
ACENAPHTHENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
ACENAPHTHYLENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
ANTHRACENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZO(A)ANTHRACENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZO(A)PYRENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZO(B)FLUORANTHENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZO(G,H,I)PERYLENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZO(K)FLUORANTHENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
BENZOIC ACID	ND (1,800)	ND (35,000)	ND (1,800)	ND (2,000)	ND (36,000)	ND (3,600)	ND (2,200)
CHRYSENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
DI-N-BUTYLPHTHALATE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
DIBENZ(A,H)ANTHRACENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
DIBENZOFURAN	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
FLUORANTHENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
FLUORENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
INDENO(1,2,3-CD)PYRENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
N-NITROSODIPHENYLAMINE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
NAPHTHALENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
PENTACHLOROPHENOL	ND (1,800)	NA	ND (1,800)	ND (2,000)	ND (36,000)	ND (3,600)	ND (2,200)
PHENANTHRENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
PYRENE	ND (380)	ND (7,300)	ND (370)	ND (410)	ND (7,500)	ND (740)	ND (450)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (18)	ND (1,800)	ND (18)	ND (20)	ND (270)	ND (180)	ND (22)
ALDRIN	ND (9)	ND (88)	ND (9)	ND (6)	ND (140)	ND (90)	ND (11)
ENDOSULFAN I	ND (9)	ND (880)	ND (9)	ND (10)	ND (140)	ND (90)	ND (11)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B018	IR06B019	IR06B019	IR06B019	IR06B020	IR06B020	IR06B020
Sampling Depth (feet bgs)	5.25	1.25	2.75	5.25	1.25	2.75	5.25
Sample Number	8945G134	8945H052	8945H053	8945H054	8945H048	8945H049	8945H050
Sample Date	11/06/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89	11/07/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (180)	ND (18,000)	ND (180)	ND (200)	ND (2,700)	ND (1,800)	ND (220)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (6)	ND (280)	ND (280)	ND (6)	ND (2,800)	ND (560)	ND (340)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (57)	14,000	210	130	31,000	770	120
Percent Moisture (%)							
% SOLIDS	87.6	90.4	89.6	81.1	88.2	88.6	73.6
pH (pH units)							
PH	7.8	7.1	7.2	7.5	7.7	7.7	6.1

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B020	IR06B021	IR06B021	IR06B021	IR06B024	IR06B024	IR06B024
Sampling Depth (feet bgs)	7.75	0.75	2.75	7.25	1.25	3.25	5.75
Sample Number	8945H051	8945H057	8945H058	8945H059	8945G135	8945G136	8945G137
Sample Date	11/07/89	11/07/89	11/07/89	11/07/89	11/08/89	11/08/89	11/08/89
Metal (mg/kg)							
ALUMINUM	NA	11,300	7,410	NA	16,600	14,200	16,400
ANTIMONY	NA	ND (7.8)	9.9 α	NA	ND (7.7)	9.7 α	ND (7.7)
ARSENIC	NA	1.2 *	1.5 *	NA	2.8 *#	1.9 *	2.3 *#
BARIUM	NA	70.3	49.7	NA	188	113	134
BERYLLIUM	NA	0.55 *	0.55 *	NA	0.75 *α	0.71 *	0.74 *α
CADMIUM	NA	ND (0.91)	ND (0.94)	NA	ND (0.89)	ND (0.86)	ND (0.89)
CALCIUM	NA	3,800	1,580	NA	4,530	3,140	2,700
CHROMIUM	NA	469 *	765 *	NA	329 *	645 *α	260 *
CHROMIUM VI	NA	ND (0.06)	ND (0.06)	NA	ND (0.06)	ND (0.06)	0.09
COBALT	NA	67.6	87.1	NA	54.3	47.7 α	24.1
COPPER	NA	13.1	15.4	NA	27.1	16.1	16.9
IRON	NA	35,700	44,100	NA	35,700	40,500	37,800
LEAD	NA	4.0	2.4	NA	10.6 α	11.0 α	6.9
MAGNESIUM	NA	59,300	171,000	NA	62,100	15,500	18,800
MANGANESE	NA	752 *	869 *	NA	1,020 *	473 *	893 *
MERCURY	NA	ND (0.10)	ND (0.10)	NA	0.20	ND (0.10)	ND (0.10)
MOLYBDENUM	NA	ND (1.5)	ND (1.5)	NA	ND (1.4)	ND (1.4)	ND (1.4)
NICKEL	NA	1,090 *	1,770 *	NA	685 *	830 *α	368 *
POTASSIUM	NA	354	231	NA	718	563	747
SELENIUM	NA	ND (0.54)	ND (0.56)	NA	ND (0.53)	ND (0.51)	ND (0.53)
SILVER	NA	ND (0.64)	ND (0.66)	NA	ND (0.63)	ND (0.61)	ND (0.63)
SODIUM	NA	110	72.6	NA	263	278	179
THALLIUM	NA	ND (0.56)	ND (0.59)	NA	ND (0.55)	ND (0.54)	ND (0.56)
VANADIUM	NA	43.2	49.9	NA	64.6	69.1	85.9
ZINC	NA	37.8	42.1	NA	54.1	45.8	49.1
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)
2-BUTANONE	NA	ND (12)	ND (11)	NA	4	9	3
BENZENE	ND (58)	ND (6)	ND (6)	ND (550)	ND (6)	ND (6)	ND (6)
BROMOFORM	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)
CARBON DISULFIDE	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)
ETHYLBENZENE	ND (58)	ND (6)	ND (6)	ND (2,700)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B020	IR06B021	IR06B021	IR06B021	IR06B024	IR06B024	IR06B024
Sampling Depth (feet bgs)	7.75	0.75	2.75	7.25	1.25	3.25	5.75
Sample Number	8945H051	8945H057	8945H058	8945H059	8945G135	8945G136	8945G137
Sample Date	11/07/89	11/07/89	11/07/89	11/07/89	11/08/89	11/08/89	11/08/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (58)	ND (6)	ND (6)	ND (550)	ND (6)	ND (6)	ND (6)
TRICHLOROETHENE	NA	ND (6)	ND (6)	NA	ND (6)	ND (6)	ND (6)
VINYL ACETATE	NA	ND (12)	ND (11)	NA	ND (12)	ND (12)	ND (12)
XYLENE (TOTAL)	ND (120)	ND (6)	ND (6)	8,100	ND (6)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
2-METHYLNAPHTHALENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
4-METHYLPHENOL	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
4-NITROPHENOL	NA	ND (2,000)	ND (1,800)	NA	ND (1,900)	ND (1,900)	ND (1,900)
ACENAPHTHENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
ACENAPHTHYLENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
ANTHRACENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZO(A)ANTHRACENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZO(A)PYRENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZO(B)FLUORANTHENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZO(G,H,I)PERYLENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZO(K)FLUORANTHENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
BENZOIC ACID	NA	ND (2,000)	ND (1,800)	NA	ND (1,900)	ND (1,900)	ND (1,900)
CHRYSENE	NA	ND (400)	ND (370)	NA	41	ND (390)	ND (400)
DI-N-BUTYLPHTHALATE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
DIBENZ(A,H)ANTHRACENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
DIBENZOFURAN	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
FLUORANTHENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
FLUORENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
INDENO(1,2,3-CD)PYRENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
N-NITROSODIPHENYLAMINE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
NAPHTHALENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
PENTACHLOROPHENOL	NA	ND (2,000)	ND (1,800)	NA	ND (1,900)	ND (1,900)	ND (1,900)
PHENANTHRENE	NA	ND (400)	ND (370)	NA	ND (400)	ND (390)	ND (400)
PYRENE	NA	ND (400)	ND (370)	NA	65	ND (390)	ND (400)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	ND (20)	ND (18)	NA	ND (19)	ND (19)	ND (19)
ALDRIN	NA	ND (10)	ND (9)	NA	ND (10)	ND (9)	ND (10)
ENDOSULFAN I	NA	ND (10)	ND (9)	NA	ND (10)	ND (9)	ND (10)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B020	IR06B021	IR06B021	IR06B021	IR06B024	IR06B024	IR06B024
Sampling Depth (feet bgs)	7.75	0.75	2.75	7.25	1.25	3.25	5.75
Sample Number	8945H051	8945H057	8945H058	8945H059	8945G135	8945G136	8945G137
Sample Date	11/07/89	11/07/89	11/07/89	11/07/89	11/08/89	11/08/89	11/08/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	ND (200)	ND (180)	NA	ND (190)	ND (190)	ND (190)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (58)	ND (61)	ND (28)	2,300	ND (60)	ND (29)	1,100
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	63	140	70	6,700	270	390	200
Percent Moisture (%)							
% SOLIDS	NA	81.6	78.6	NA	82.9	85.6	82.8
pH (pH units)							
PH	NA	7.5	7.8	NA	7.8	7.7	8.2

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B024	IR06B024	IR06B024	IR06B025	IR06B025	IR06B025	IR06B026
Sampling Depth (feet bgs)	7.75	10.25	14.75	1.25	5.25	10.25	1.25
Sample Number	8945G138	8945G139	8945G140	9022H234	9022H235	9022H236	8945G141
Sample Date	11/08/89	11/08/89	11/08/89	05/30/90	05/30/90	05/30/90	11/08/89
Metal (mg/kg)							
ALUMINUM	NA	NA	NA	19,500	19,300	NA	16,600
ANTIMONY	NA	NA	NA	ND (4.4)	ND (4.7)	NA	ND (7.6)
ARSENIC	NA	NA	NA	4.6 *#	2.4 *#	NA	2.2 *#
BARIUM	NA	NA	NA	172	105	NA	161
BERYLLIUM	NA	NA	NA	ND (0.35)	ND (0.25)	NA	0.73 *a
CADMIUM	NA	NA	NA	ND (0.81)	ND (0.86)	NA	ND (0.88)
CALCIUM	NA	NA	NA	12,800	10,100	NA	8,940
CHROMIUM	NA	NA	NA	193	233 *	NA	289 *
CHROMIUM VI	NA	NA	NA	ND (0.05)	ND (0.06)	NA	0.11
COBALT	NA	NA	NA	26.0	30.6	NA	32.4
COPPER	NA	NA	NA	49.2	32.0	NA	19.0
IRON	NA	NA	NA	35,400	33,400	NA	33,100
LEAD	NA	NA	NA	11.4 a	28.0 a	NA	9.3 a
MAGNESIUM	NA	NA	NA	18,400	24,600	NA	22,200
MANGANESE	NA	NA	NA	801 *	708 *	NA	736 *
MERCURY	NA	NA	NA	0.50	NA	NA	0.20
MOLYBDENUM	NA	NA	NA	NA	NA	NA	ND (1.4)
NICKEL	NA	NA	NA	234 *	276 *	NA	373 *
POTASSIUM	NA	NA	NA	1,770	1,570	NA	636
SELENIUM	NA	NA	NA	ND (0.48)	ND (0.51)	NA	ND (0.52)
SILVER	NA	NA	NA	0.59	0.31	NA	ND (0.62)
SODIUM	NA	NA	NA	436	331	NA	309
THALLIUM	NA	NA	NA	ND (0.37)	ND (0.40)	NA	ND (0.55)
VANADIUM	NA	NA	NA	73.7	80.7	NA	73.6
ZINC	NA	NA	NA	69.3	56.9	NA	50.4
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	NA	NA	ND (5)	ND (29)	NA	ND (6)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	ND (5)	ND (29)	NA	ND (6)
2-BUTANONE	NA	NA	NA	ND (11)	ND (58)	NA	23
BENZENE	ND (60)	100	ND (59)	ND (5)	ND (29)	ND (6)	ND (6)
BROMOFORM	NA	NA	NA	ND (5)	ND (29)	NA	ND (6)
CARBON DISULFIDE	NA	NA	NA	ND (5)	ND (29)	NA	3
ETHYLBENZENE	ND (60)	ND (60)	ND (59)	ND (5)	ND (29)	ND (6)	ND (6)
TETRACHLOROETHENE	NA	NA	NA	ND (5)	ND (29)	NA	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B024	IR06B024	IR06B024	IR06B025	IR06B025	IR06B025	IR06B026
Sampling Depth (feet bgs)	7.75	10.25	14.75	1.25	5.25	10.25	1.25
Sample Number	8945G138	8945G139	8945G140	9022H234	9022H235	9022H236	8945G141
Sample Date	11/08/89	11/08/89	11/08/89	05/30/90	05/30/90	05/30/90	11/08/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (60)	ND (60)	ND (59)	72	40	9	2
TRICHLOROETHENE	NA	NA	NA	ND (5)	ND (29)	NA	ND (6)
VINYL ACETATE	NA	NA	NA	ND (11)	ND (58)	NA	ND (12)
XYLENE (TOTAL)	ND (120)	ND (120)	ND (120)	ND (5)	ND (29)	ND (18)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
2-METHYLNAPHTHALENE	NA	NA	NA	ND (360)	670	NA	ND (390)
4-METHYLPHENOL	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
4-NITROPHENOL	NA	NA	NA	ND (1,700)	ND (19,000)	NA	ND (1,900)
ACENAPHTHENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
ACENAPHTHYLENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
ANTHRACENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZO(A)ANTHRACENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZO(A)PYRENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZO(B)FLUORANTHENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZO(G,H,I)PERYLENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZO(K)FLUORANTHENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
BENZOIC ACID	NA	NA	NA	ND (1,700)	ND (19,000)	NA	ND (1,900)
CHRYSENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
DI-N-BUTYLPHTHALATE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
DIBENZ(A,H)ANTHRACENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
DIBENZOFURAN	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
FLUORANTHENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
FLUORENE	NA	NA	NA	ND (360)	720	NA	ND (390)
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
N-NITROSODIPHENYLAMINE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
NAPHTHALENE	NA	NA	NA	ND (360)	ND (3,800)	NA	ND (390)
PENTACHLOROPHENOL	NA	NA	NA	ND (1,700)	ND (19,000)	NA	ND (1,900)
PHENANTHRENE	NA	NA	NA	ND (360)	1,300	NA	ND (390)
PYRENE	NA	NA	NA	38	ND (3,800)	NA	40
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	ND (19)
ALDRIN	NA	NA	NA	NA	NA	NA	ND (10)
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	ND (10)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B024	IR06B024	IR06B024	IR06B025	IR06B025	IR06B025	IR06B026
Sampling Depth (feet bgs)	7.75	10.25	14.75	1.25	5.25	10.25	1.25
Sample Number	8945G138	8945G139	8945G140	9022H234	9022H235	9022H236	8945G141
Sample Date	11/08/89	11/08/89	11/08/89	05/30/90	05/30/90	05/30/90	11/08/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	NA	ND (54)	ND (58)	NA	ND (190)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (6)	ND (60)	ND (30)	NA	11,000	280	ND (30)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	70	200	76	NA	4,300	140	180
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	84.2
pH (pH units)							
PH	NA	NA	NA	7.9	7.3	NA	8.2

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B026	IR06B026	IR06B026	IR06B026	IR06B028	IR06B028	IR06B028
Sampling Depth (feet bgs)	2.75	5.25	7.75	10.25	1.25	5.25	10.25
Sample Number	8945G142	8945G143	8945G144	8945G145	9023G284	9023G285	9023G286
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	06/06/90	06/06/90	06/06/90
Metal (mg/kg)							
ALUMINUM	17,600	23,100	NA	NA	22,500	18,400	NA
ANTIMONY	ND (7.6)	ND (6.4)	NA	NA	ND (4.4)	ND (4.6)	NA
ARSENIC	5.2 *#	1.0 *	NA	NA	3.5 *#	2.0 *	NA
BARIUM	140	94.7	NA	NA	179	96.2	NA
BERYLLIUM	0.69 *	0.71 *	NA	NA	ND (0.82)	ND (0.79)	NA
CADMIUM	ND (0.88)	ND (0.74)	NA	NA	ND (0.81)	ND (0.86)	NA
CALCIUM	7,250	4,010	NA	NA	14,700	4,860	NA
CHROMIUM	186	211 *	NA	NA	164	284 *	NA
CHROMIUM VI	0.10	0.08	NA	NA	ND (0.06)	ND (0.06)	NA
COBALT	36.4	28.7	NA	NA	30.1	24.3	NA
COPPER	31.3	31.8	NA	NA	29.3	27.6	NA
IRON	30,000	30,500	NA	NA	34,400	32,400	NA
LEAD	19.0 *	6.0	NA	NA	4.4	8.5	NA
MAGNESIUM	15,800	43,200	NA	NA	25,000	23,600	NA
MANGANESE	494 *	471 *	NA	NA	745 *	682 *	NA
MERCURY	ND (0.10)	0.10	NA	NA	0.10	ND (0.10)	NA
MOLYBDENUM	ND (1.4)	ND (1.2)	NA	NA	NA	NA	NA
NICKEL	236 *	370 *	NA	NA	268 *	273 *	NA
POTASSIUM	706	600	NA	NA	1,240	915	NA
SELENIUM	ND (0.52)	ND (0.44)	NA	NA	ND (0.48)	ND (0.51)	NA
SILVER	ND (0.62)	ND (0.52)	NA	NA	ND (0.24)	ND (0.42)	NA
SODIUM	267	166	NA	NA	274	217	NA
THALLIUM	ND (0.55)	ND (0.46)	NA	NA	ND (0.37)	ND (0.39)	NA
VANADIUM	73.0	44.7	NA	NA	81.3	74.0	NA
ZINC	71.9	55.7	NA	NA	60.6	45.6	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA
2-BUTANONE	ND (12)	ND (10)	NA	NA	ND (11)	ND (12)	NA
BENZENE	ND (6)	ND (5)	ND (63)	ND (600)	ND (6)	ND (6)	ND (6)
BROMOFORM	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA
CARBON DISULFIDE	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA
ETHYLBENZENE	ND (6)	ND (5)	ND (63)	ND (600)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B026	IR06B026	IR06B026	IR06B026	IR06B028	IR06B028	IR06B028
Sampling Depth (feet bgs)	2.75	5.25	7.75	10.25	1.25	5.25	10.25
Sample Number	8945G142	8945G143	8945G144	8945G145	9023G284	9023G285	9023G286
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	06/06/90	06/06/90	06/06/90
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (5)	ND (63)	ND (600)	8	4	ND (6)
TRICHLOROETHENE	ND (6)	ND (5)	NA	NA	ND (6)	ND (6)	NA
VINYL ACETATE	ND (12)	ND (10)	NA	NA	ND (11)	ND (12)	NA
XYLENE (TOTAL)	ND (6)	ND (5)	ND (130)	ND (1,200)	ND (6)	ND (6)	ND (17)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
2-METHYLNAPHTHALENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
4-METHYLPHENOL	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
4-NITROPHENOL	ND (3,800)	ND (1,600)	NA	NA	ND (1,800)	ND (1,900)	NA
ACENAPHTHENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
ACENAPHTHYLENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
ANTHRACENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZO(A)ANTHRACENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZO(A)PYRENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZO(B)FLUORANTHENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZO(G,H,I)PERYLENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZO(K)FLUORANTHENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
BENZOIC ACID	ND (3,800)	ND (1,600)	NA	NA	ND (1,800)	ND (1,900)	NA
CHRYSENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
DI-N-BUTYLPHTHALATE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
DIBENZ(A,H)ANTHRACENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
DIBENZOFURAN	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
FLUORANTHENE	150	ND (330)	NA	NA	ND (360)	ND (380)	NA
FLUORENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
INDENO(1,2,3-CD)PYRENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
N-NITROSODIPHENYLAMINE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
NAPHTHALENE	ND (790)	ND (330)	NA	NA	ND (360)	ND (380)	NA
PENTACHLOROPHENOL	ND (3,800)	ND (1,600)	NA	NA	ND (1,800)	ND (1,900)	NA
PHENANTHRENE	190	ND (330)	NA	NA	ND (360)	ND (380)	NA
PYRENE	190	ND (330)	NA	NA	ND (360)	ND (380)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (19)	ND (16)	NA	NA	NA	NA	NA
ALDRIN	ND (10)	ND (8)	NA	NA	NA	NA	NA
ENDOSULFAN I	ND (10)	ND (8)	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B026	IR06B026	IR06B026	IR06B026	IR06B028	IR06B028	IR06B028
Sampling Depth (feet bgs)	2.75	5.25	7.75	10.25	1.25	5.25	10.25
Sample Number	8945G142	8945G143	8945G144	8945G145	9023G284	9023G285	9023G286
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	06/06/90	06/06/90	06/06/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (190)	ND (160)	NA	NA	ND (55)	ND (58)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	57	ND (5)	ND (63)	13,000	ND (11)	ND (12)	150
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	110	ND (500)	68	17,000	320	160	58
Percent Moisture (%)							
% SOLIDS	84.0		NA	NA	NA	NA	NA
pH (pH units)							
PH	8.1	7.6	NA	NA	8.4	7.9	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B028A	IR06B029	IR06B029	IR06B029	IR06B031	IR06B031	IR06B031
Sampling Depth (feet bgs)	1.25	1.25	5.25	10.25	0.75	4.75	10.75
Sample Number	9023G275	9022G265	9022G266	9022G267	9022G268	9022G269	9022G270
Sample Date	06/04/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90
Metal (mg/kg)							
ALUMINUM	17,200	21,300	20,900	NA	21,100	15,300	NA
ANTIMONY	ND (4.6)	ND (4.9)	ND (5.1)	NA	ND (4.7)	ND (4.6)	NA
ARSENIC	3.6 *#	2.1 *#	2.9 *#	NA	3.5 *#	2.6 *#	NA
BARIUM	81.4	323 α	228	NA	157	83.6	NA
BERYLLIUM	ND (0.24)	ND (0.21)	ND (0.36)	NA	ND (0.42)	ND (0.37)	NA
CADMIUM	ND (0.85)	ND (0.91)	ND (0.95)	NA	ND (0.87)	ND (0.85)	NA
CALCIUM	2,750	12,400	4,560	NA	11,600	5,450	NA
CHROMIUM	582 *α	559 *	324 *	NA	264 *	210	NA
CHROMIUM VI	ND (0.06)	ND (0.12)	ND (0.13)	NA	ND (0.12)	ND (0.11)	NA
COBALT	28.1 α	63.3	92.6 α	NA	36.8	24.8	NA
COPPER	26.0	72.4	40.4	NA	126 α	49.2	NA
IRON	40,300	47,700	41,300	NA	34,000	33,300	NA
LEAD	3.7	8.2	5.1	NA	24.0 α	21.8 α	NA
MAGNESIUM	7,900	112,000	70,900	NA	54,100	24,500	NA
MANGANESE	396 *	1,430 *	1,760 *α	NA	717 *	563 *	NA
MERCURY	ND (0.10)	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	488 *α	971 *	806 *	NA	515 *	335 *	NA
POTASSIUM	714	1,450	651	NA	2,200	969	NA
SELENIUM	ND (0.50)	ND (0.54)	ND (0.56)	NA	ND (0.52)	ND (0.51)	NA
SILVER	ND (0.66)	1.1	0.60	NA	0.52	0.36	NA
SODIUM	234	386	214	NA	1,030	444	NA
THALLIUM	ND (0.39)	ND (0.42)	ND (0.44)	NA	ND (0.40)	0.39	NA
VANADIUM	75.2	87.8	80.7	NA	70.8	71.3	NA
ZINC	36.3	64.5	50.0	NA	280 α	106	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	2	ND (6)	ND (6)	NA	ND (29)	ND (29)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (6)	NA	41	13	NA
2-BUTANONE	ND (11)	ND (12)	ND (13)	NA	ND (59)	ND (57)	NA
BENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (29)	ND (29)	ND (6)
BROMOFORM	4	ND (6)	ND (6)	NA	ND (29)	ND (29)	NA
CARBON DISULFIDE	ND (6)	ND (6)	ND (6)	NA	ND (29)	ND (29)	NA
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (29)	ND (29)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	140	23	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B028A	IR06B029	IR06B029	IR06B029	IR06B031	IR06B031	IR06B031
Sampling Depth (feet bgs)	1.25	1.25	5.25	10.25	0.75	4.75	10.75
Sample Number	9023G275	9022G265	9022G266	9022G267	9022G268	9022G269	9022G270
Sample Date	06/04/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	17	140	14	10	11	12
TRICHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	20	ND (29)	NA
VINYL ACETATE	ND (11)	ND (12)	ND (13)	NA	ND (59)	ND (57)	NA
XYLENE (TOTAL)	ND (6)	ND (6)	ND (6)	ND (19)	16	29	ND (19)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (380)	ND (400)	ND (420)	NA	2,300	650	NA
2-METHYLNAPHTHALENE	ND (380)	ND (400)	ND (420)	NA	7,600	2,300	NA
4-METHYLPHENOL	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
4-NITROPHENOL	ND (1,800)	ND (2,000)	ND (2,100)	NA	ND (3,800)	ND (3,700)	NA
ACENAPHTHENE	ND (380)	ND (400)	ND (420)	NA	320	ND (760)	NA
ACENAPHTHYLENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
ANTHRACENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZO(A)ANTHRACENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZO(A)PYRENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZO(B)FLUORANTHENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZO(G,H,I)PERYLENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZO(K)FLUORANTHENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
BENZOIC ACID	ND (1,800)	ND (2,000)	ND (2,100)	NA	ND (3,800)	ND (3,700)	NA
CHRYSENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
DI-N-BUTYLPHTHALATE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
DIBENZ(A,H)ANTHRACENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
DIBENZOFURAN	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
FLUORANTHENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
FLUORENE	ND (380)	ND (400)	ND (420)	NA	520	110	NA
INDENO(1,2,3-CD)PYRENE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
N-NITROSODIPHENYLAMINE	ND (380)	ND (400)	ND (420)	NA	ND (770)	ND (760)	NA
NAPHTHALENE	ND (380)	ND (400)	ND (420)	NA	980	390	NA
PENTACHLOROPHENOL	ND (1,800)	ND (2,000)	ND (2,100)	NA	ND (3,800)	ND (3,700)	NA
PHENANTHRENE	ND (380)	ND (400)	ND (420)	NA	620	180	NA
PYRENE	ND (380)	ND (400)	ND (420)	NA	140	ND (760)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B028A	IR06B029	IR06B029	IR06B029	IR06B031	IR06B031	IR06B031
Sampling Depth (feet bgs)	1.25	1.25	5.25	10.25	0.75	4.75	10.75
Sample Number	9023G275	9022G265	9022G266	9022G267	9022G268	9022G269	9022G270
Sample Date	06/04/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90	05/29/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (57)	ND (61)	ND (64)	NA	150,000 **	310 *	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (11)	16	ND (13)	ND (12)	4,600	460	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	83	390	ND (64)	ND (62)	3,300	750	ND (62)
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	7.5	8.2	7.6	NA	8.5	8.5	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B036
Sampling Depth (feet bgs)	1.25	2.75	5.25	7.75	10.25	14.75	1.25
Sample Number	8945H060	8945H061	8945H062	8945H063	8945H064	8945H065	8945G146
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/08/89
Metal (mg/kg)							
ALUMINUM	12,600	11,800	7,760	NA	NA	NA	5,600
ANTIMONY	ND (7.6)	ND (7.3)	ND (7.7)	NA	NA	NA	ND (6.8)
ARSENIC	4.0 *#	2.0 *	1.5 *	NA	NA	NA	4.7 *#
BARIUM	128	239	167	NA	NA	NA	30.2
BERYLLIUM	0.37 *	0.38 *	0.29 *	NA	NA	NA	0.35 *
CADMIUM	ND (0.87)	ND (0.84)	ND (0.89)	NA	NA	NA	ND (0.79)
CALCIUM	6,430	15,300	4,130	NA	NA	NA	121,000
CHROMIUM	169	184	178	NA	NA	NA	40.0
CHROMIUM VI	ND (0.06)	ND (0.06)	ND (0.06)	NA	NA	NA	ND (0.05)
COBALT	47.2	61.5	85.6	NA	NA	NA	8.2
COPPER	54.4	37.4	29.5	NA	NA	NA	19.1
IRON	29,600	33,300	30,400	NA	NA	NA	8,590
LEAD	32.3 *	5.4	3.5	NA	NA	NA	2.9
MAGNESIUM	58,800	75,700	87,600	NA	NA	NA	4,150
MANGANESE	757 *	992 *	1,630 *a	NA	NA	NA	327
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	NA	NA	NA	ND (0.10)
MOLYBDENUM	ND (1.4)	ND (1.4)	ND (1.4)	NA	NA	NA	ND (1.3)
NICKEL	752 *	740 *	1,190 *	NA	NA	NA	21.7
POTASSIUM	583	798	721	NA	NA	NA	692
SELENIUM	ND (0.52)	0.71	ND (0.53)	NA	NA	NA	ND (0.47)
SILVER	ND (0.61)	ND (0.59)	ND (0.63)	NA	NA	NA	ND (0.55)
SODIUM	690	1,430	1,080	NA	NA	NA	1,380
THALLIUM	ND (0.54)	ND (0.52)	ND (0.55)	NA	NA	NA	ND (0.49)
VANADIUM	44.4	61.1	31.9	NA	NA	NA	22.0
ZINC	95.8	62.4	41.7	NA	NA	NA	16.7
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)
2-BUTANONE	ND (12)	ND (11)	ND (12)	NA	NA	NA	ND (11)
BENZENE	ND (6)	ND (6)	ND (6)	ND (60)	ND (55)	ND (67)	ND (5)
BROMOFORM	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)
CARBON DISULFIDE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (60)	ND (55)	ND (67)	ND (5)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B036
Sampling Depth (feet bgs)	1.25	2.75	5.25	7.75	10.25	14.75	1.25
Sample Number	8945H060	8945H061	8945H062	8945H063	8945H064	8945H065	8945G146
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/08/89
Volatile Organic Compound (ug/kg)							
TOLUENE	1	ND (6)	ND (6)	ND (60)	ND (55)	ND (67)	ND (5)
TRICHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (5)
VINYL ACETATE	ND (12)	ND (11)	ND (12)	NA	NA	NA	ND (11)
XYLENE (TOTAL)	ND (6)	ND (6)	ND (6)	230	ND (110)	ND (130)	ND (5)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
2-METHYLNAPHTHALENE	ND (390)	ND (380)	7,500	NA	NA	NA	ND (350)
4-METHYLPHENOL	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
4-NITROPHENOL	ND (1,900)	ND (1,800)	ND (230,000)	NA	NA	NA	ND (1,700)
ACENAPHTHENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
ACENAPHTHYLENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
ANTHRACENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZO(A)ANTHRACENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZO(A)PYRENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZO(B)FLUORANTHENE	41	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZO(G,H,I)PERYLENE	41	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZO(K)FLUORANTHENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
BENZOIC ACID	ND (1,900)	ND (1,800)	ND (230,000)	NA	NA	NA	ND (1,700)
CHRYSENE	54	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
DI-N-BUTYLPHTHALATE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
DIBENZ(A,H)ANTHRACENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
DIBENZOFURAN	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
FLUORANTHENE	53	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
FLUORENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
INDENO(1,2,3-CD)PYRENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
N-NITROSODIPHENYLAMINE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
NAPHTHALENE	ND (390)	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
PENTACHLOROPHENOL	ND (1,900)	ND (1,800)	ND (230,000)	NA	NA	NA	ND (1,700)
PHENANTHRENE	93	ND (380)	7,900	NA	NA	NA	ND (350)
PYRENE	70	ND (380)	ND (48,000)	NA	NA	NA	ND (350)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (19)	ND (18)	ND (290)	NA	NA	NA	ND (17)
ALDRIN	ND (9)	ND (9)	ND (140)	NA	NA	NA	ND (9)
ENDOSULFAN I	ND (9)	ND (9)	ND (140)	NA	NA	NA	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B033	IR06B036
Sampling Depth (feet bgs)	1.25	2.75	5.25	7.75	10.25	14.75	1.25
Sample Number	8945H060	8945H061	8945H062	8945H063	8945H064	8945H065	8945G146
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/08/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	310 *	180 *	ND (2,900)	NA	NA	NA	ND (170)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (300)	ND (280)	6,500	3,000	15,000	230	ND (270)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	230	250	2,700	2,500	27,000	140	410
Percent Moisture (%)							
% SOLIDS	84.7	87.8	83.1	NA	NA	NA	93.8
pH (pH units)							
PH	8.2	8.7	7.8	NA	NA	NA	8.1

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B036	IR06B036	IR06B036	IR06B036	IR06B036	IR06B037	IR06B037
Sampling Depth (feet bgs)	3.75	5.25	7.75	10.75	15.25	0.75	7.75
Sample Number	8945G147	8945G148	8945G149	8945G150	8945G151	8945H066	8945H067
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	11/08/89	11/09/89	11/09/89
Metal (mg/kg)							
ALUMINUM	5,860	10,100	NA	NA	NA	17,000	NA
ANTIMONY	ND (7.0)	ND (7.6)	NA	NA	NA	ND (7.0)	NA
ARSENIC	3.4 *#	2.6 *#	NA	NA	NA	2.1 *#	NA
BARIUM	56.4	113	NA	NA	NA	177	NA
BERYLLIUM	0.27 *	0.36 *	NA	NA	NA	0.48 *	NA
CADMIUM	ND (0.81)	ND (0.88)	NA	NA	NA	ND (0.81)	NA
CALCIUM	50,600	2,730	NA	NA	NA	17,300	NA
CHROMIUM	49.3	222 *	NA	NA	NA	86.9	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	NA	NA	NA	ND (0.06)	NA
COBALT	9.5	30.8	NA	NA	NA	32.5	NA
COPPER	21.1	17.6	NA	NA	NA	24.0	NA
IRON	12,600	24,200	NA	NA	NA	26,300	NA
LEAD	4.2	4.6	NA	NA	NA	4.9	NA
MAGNESIUM	6,290	16,800	NA	NA	NA	21,900	NA
MANGANESE	525 *	311	NA	NA	NA	810 *	NA
MERCURY	ND (0.10)	ND (0.10)	NA	NA	NA	ND (0.10)	NA
MOLYBDENUM	ND (1.3)	ND (1.4)	NA	NA	NA	ND (1.3)	NA
NICKEL	47.2	427 *a	NA	NA	NA	168 *	NA
POTASSIUM	947	673	NA	NA	NA	753	NA
SELENIUM	ND (0.48)	ND (0.52)	NA	NA	NA	ND (0.48)	NA
SILVER	ND (0.57)	ND (0.62)	NA	NA	NA	ND (0.57)	NA
SODIUM	1,130	1,790	NA	NA	NA	321	NA
THALLIUM	ND (0.50)	ND (0.55)	NA	NA	NA	ND (0.51)	NA
VANADIUM	26.8	47.6	NA	NA	NA	54.4	NA
ZINC	25.4	33.1	NA	NA	NA	53.6	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA
2-BUTANONE	ND (55)	ND (59)	NA	NA	NA	ND (11)	NA
BENZENE	ND (27)	ND (30)	ND (60)	ND (60)	ND (67)	ND (6)	ND (62)
BROMOFORM	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA
CARBON DISULFIDE	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA
ETHYLBENZENE	ND (27)	ND (30)	ND (60)	ND (60)	ND (67)	ND (6)	ND (62)
TETRACHLOROETHENE	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B036	IR06B036	IR06B036	IR06B036	IR06B036	IR06B037	IR06B037
Sampling Depth (feet bgs)	3.75	5.25	7.75	10.75	15.25	0.75	7.75
Sample Number	8945G147	8945G148	8945G149	8945G150	8945G151	8945H066	8945H067
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	11/08/89	11/09/89	11/09/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (27)	ND (30)	ND (60)	ND (60)	ND (67)	2	ND (62)
TRICHLOROETHENE	ND (27)	ND (30)	NA	NA	NA	ND (6)	NA
VINYL ACETATE	ND (55)	ND (59)	NA	NA	NA	ND (11)	NA
XYLENE (TOTAL)	ND (27)	ND (30)	ND (120)	ND (120)	ND (130)	ND (6)	ND (120)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
2-METHYLNAPHTHALENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
4-METHYLPHENOL	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
4-NITROPHENOL	ND (8,800)	ND (120,000)	NA	NA	NA	ND (1,800)	NA
ACENAPHTHENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
ACENAPHTHYLENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
ANTHRACENE	ND (1,800)	ND (24,000)	NA	NA	NA	63	NA
BENZO(A)ANTHRACENE	ND (1,800)	ND (24,000)	NA	NA	NA	180	NA
BENZO(A)PYRENE	ND (1,800)	ND (24,000)	NA	NA	NA	140 *	NA
BENZO(B)FLUORANTHENE	ND (1,800)	ND (24,000)	NA	NA	NA	140	NA
BENZO(G,H,I)PERYLENE	ND (1,800)	ND (24,000)	NA	NA	NA	73	NA
BENZO(K)FLUORANTHENE	ND (1,800)	ND (24,000)	NA	NA	NA	110	NA
BENZOIC ACID	ND (8,800)	ND (120,000)	NA	NA	NA	ND (1,800)	NA
CHRYSENE	ND (1,800)	ND (24,000)	NA	NA	NA	220	NA
DI-N-BUTYLPHTHALATE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
DIBENZ(A,H)ANTHRACENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
DIBENZOFURAN	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
FLUORANTHENE	ND (1,800)	ND (24,000)	NA	NA	NA	320	NA
FLUORENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
INDENO(1,2,3-CD)PYRENE	ND (1,800)	ND (24,000)	NA	NA	NA	74	NA
N-NITROSODIPHENYLAMINE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
NAPHTHALENE	ND (1,800)	ND (24,000)	NA	NA	NA	ND (360)	NA
PENTACHLOROPHENOL	ND (8,800)	ND (120,000)	NA	NA	NA	ND (1,800)	NA
PHENANTHRENE	ND (1,800)	3,100	NA	NA	NA	250	NA
PYRENE	ND (1,800)	ND (24,000)	NA	NA	NA	350	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (18)	ND (290)	NA	NA	NA	ND (18)	NA
ALDRIN	ND (88)	ND (140)	NA	NA	NA	ND (9)	NA
ENDOSULFAN I	ND (9)	ND (140)	NA	NA	NA	ND (9)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B036	IR06B036	IR06B036	IR06B036	IR06B036	IR06B037	IR06B037
Sampling Depth (feet bgs)	3.75	5.25	7.75	10.75	15.25	0.75	7.75
Sample Number	8945G147	8945G148	8945G149	8945G150	8945G151	8945H066	8945H067
Sample Date	11/08/89	11/08/89	11/08/89	11/08/89	11/08/89	11/09/89	11/09/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (180)	ND (2,900)	NA	NA	NA	ND (180)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	2,400	3,100	ND (300)	5,000	ND (33)	ND (550)	910
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	2,600	2,100	120	720	120	220	350
Percent Moisture (%)							
% SOLIDS	91.1	84.1	NA	NA	NA	90.9	NA
pH (pH units)							
PH	7.8	8.5	NA	NA	NA	8.7	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B037	IR06B037	IR06B038	IR06B038	IR06B038	IR06B038	IR06B038
Sampling Depth (feet bgs)	10.25	15.25	1.75	3.25	5.25	7.25	15.25
Sample Number	8945H068	8945H069	8945H070	8945H071	8945H072	8945H073	8945H075
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89
Metal (mg/kg)							
ALUMINUM	NA	NA	15,400	14,200	11,200	NA	NA
ANTIMONY	NA	NA	ND (6.8)	ND (7.0)	ND (7.5)	NA	NA
ARSENIC	NA	NA	2.6 *#	3.0 *#	1.7 *	NA	NA
BARIUM	NA	NA	408 α	219	130	NA	NA
BERYLLIUM	NA	NA	0.43 *	0.46 *	0.63 *	NA	NA
CADMIUM	NA	NA	0.92	ND (0.81)	ND (0.86)	NA	NA
CALCIUM	NA	NA	11,200	10,800	3,210	NA	NA
CHROMIUM	NA	NA	58.0	220 *	441 *α	NA	NA
CHROMIUM VI	NA	NA	ND (0.05)	ND (0.06)	ND (0.06)	NA	NA
COBALT	NA	NA	24.9	32.9	36.9 α	NA	NA
COPPER	NA	NA	30.7	36.9	21.2	NA	NA
IRON	NA	NA	24,200	27,500	27,500	NA	NA
LEAD	NA	NA	4.8	17.7 α	13.9 α	NA	NA
MAGNESIUM	NA	NA	14,400	32,200	10,000	NA	NA
MANGANESE	NA	NA	951 *	948 *	321	NA	NA
MERCURY	NA	NA	0.20	0.10	ND (0.10)	NA	NA
MOLYBDENUM	NA	NA	ND (1.3)	ND (1.3)	ND (1.4)	NA	NA
NICKEL	NA	NA	76.1	531 *	497 *α	NA	NA
POTASSIUM	NA	NA	757	839	546	NA	NA
SELENIUM	NA	NA	ND (0.47)	ND (0.48)	ND (0.51)	NA	NA
SILVER	NA	NA	ND (0.56)	ND (0.57)	ND (0.61)	NA	NA
SODIUM	NA	NA	780	552	256	NA	NA
THALLIUM	NA	NA	ND (0.49)	ND (0.51)	ND (0.54)	NA	NA
VANADIUM	NA	NA	60.0	48.4	59.3	NA	NA
ZINC	NA	NA	48.3	55.7	50.4	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA
2-BUTANONE	NA	NA	ND (11)	7	ND (12)	NA	NA
BENZENE	ND (63)	ND (61)	ND (5)	ND (6)	ND (6)	ND (61)	ND (60)
BROMOFORM	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA
CARBON DISULFIDE	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA
ETHYLBENZENE	ND (63)	ND (61)	ND (5)	ND (6)	ND (6)	ND (61)	ND (60)
TETRACHLOROETHENE	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B037	IR06B037	IR06B038	IR06B038	IR06B038	IR06B038	IR06B038
Sampling Depth (feet bgs)	10.25	15.25	1.75	3.25	5.25	7.25	15.25
Sample Number	8945H068	8945H069	8945H070	8945H071	8945H072	8945H073	8945H075
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (63)	ND (61)	2	11	ND (6)	ND (61)	ND (60)
TRICHLOROETHENE	NA	NA	ND (5)	ND (6)	ND (6)	NA	NA
VINYL ACETATE	NA	NA	ND (11)	ND (11)	ND (12)	NA	NA
XYLENE (TOTAL)	ND (130)	ND (120)	ND (5)	ND (6)	ND (6)	ND (120)	ND (120)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
2-METHYLNAPHTHALENE	NA	NA	ND (350)	130	ND (390)	NA	NA
4-METHYLPHENOL	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
4-NITROPHENOL	NA	NA	ND (1,700)	ND (1,800)	ND (1,900)	NA	NA
ACENAPHTHENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
ACENAPHTHYLENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
ANTHRACENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZO(A)ANTHRACENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZO(A)PYRENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
BENZOIC ACID	NA	NA	ND (1,700)	ND (1,800)	ND (1,900)	NA	NA
CHRYSENE	NA	NA	ND (350)	47	ND (390)	NA	NA
DI-N-BUTYLPHTHALATE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
DIBENZ(A,H)ANTHRACENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
DIBENZOFURAN	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
FLUORANTHENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
FLUORENE	NA	NA	ND (350)	37	ND (390)	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
NAPHTHALENE	NA	NA	ND (350)	ND (360)	ND (390)	NA	NA
PENTACHLOROPHENOL	NA	NA	ND (1,700)	ND (1,800)	ND (1,900)	NA	NA
PHENANTHRENE	NA	NA	ND (350)	130	ND (390)	NA	NA
PYRENE	NA	NA	ND (350)	42	ND (390)	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	ND (17)	ND (18)	ND (19)	NA	NA
ALDRIN	NA	NA	ND (9)	ND (9)	ND (9)	NA	NA
ENDOSULFAN I	NA	NA	ND (9)	ND (9)	ND (9)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B037	IR06B037	IR06B038	IR06B038	IR06B038	IR06B038	IR06B038
Sampling Depth (feet bgs)	10.25	15.25	1.75	3.25	5.25	7.25	15.25
Sample Number	8945H068	8945H069	8945H070	8945H071	8945H072	8945H073	8945H075
Sample Date	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89	11/09/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	ND (170)	ND (180)	ND (190)	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	21	ND (310)	ND (270)	ND (550)	ND (6)	ND (61)	ND (60)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	220	220	260	2,200	180	230	300
Percent Moisture (%)							
% SOLIDS	NA	NA	93.6	90.8	85.6	NA	NA
pH (pH units)							
PH	NA	NA	9.0	8.7	7.3	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B039	IR06B039	IR06B039	IR06B039	IR06B043	IR06B043	IR06B043
Sampling Depth (feet bgs)	0.75	5.75	10.25	14.25	1.25	5.25	10.75
Sample Number	9022H226	9022H227	9022H228	9022H229	9023H260	9023H261	9023H262
Sample Date	05/30/90	05/30/90	05/30/90	05/30/90	06/07/90	06/07/90	06/07/90
Metal (mg/kg)							
ALUMINUM	8,510	10,500	NA	NA	21,100	NA	NA
ANTIMONY	ND (4.6)	ND (5.1)	NA	NA	4.8	NA	NA
ARSENIC	1.9 *	0.95 *	NA	NA	5.0 *#	NA	NA
BARIUM	78.7	41.3	NA	NA	156	NA	NA
BERYLLIUM	ND (0.29)	ND (0.09)	NA	NA	ND (0.76)	NA	NA
CADMIUM	ND (0.85)	ND (0.95)	NA	NA	ND (0.76)	NA	NA
CALCIUM	6,270	1,270	NA	NA	15,100	NA	NA
CHROMIUM	66.5	1,190 *	NA	NA	112	NA	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	NA	NA	ND (0.05)	ND (0.05)	NA
COBALT	15.5	159	NA	NA	19.5	NA	NA
COPPER	33.1	36.3	NA	NA	29.5	NA	NA
IRON	14,400	77,000	NA	NA	30,700	NA	NA
LEAD	5.7	1.3	NA	NA	4.2	NA	NA
MAGNESIUM	11,800	251,000	NA	NA	20,800	NA	NA
MANGANESE	471 *	1,250 *	NA	NA	785 *	NA	NA
MERCURY	NA	NA	NA	NA	0.10	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	143	3,390 *	NA	NA	167 *	NA	NA
POTASSIUM	891	325	NA	NA	1,120	NA	NA
SELENIUM	ND (0.50)	ND (0.56)	NA	NA	ND (0.45)	NA	NA
SILVER	ND (0.25)	1.5 *	NA	NA	ND (0.23)	NA	NA
SODIUM	304	319	NA	NA	942	NA	NA
THALLIUM	ND (0.39)	ND (0.44)	NA	NA	ND (0.35)	NA	NA
VANADIUM	31.7	64.5	NA	NA	77.5	NA	NA.
ZINC	33.2	63.7	NA	NA	59.6	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (29)	ND (32)	NA	NA	ND (5)	ND (5)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (29)	47	NA	NA	ND (5)	ND (5)	NA
2-BUTANONE	ND (57)	24	NA	NA	ND (10)	ND (10)	NA
BENZENE	ND (29)	140	32	ND (56)	ND (5)	ND (5)	ND (5)
BROMOFORM	ND (29)	ND (32)	NA	NA	ND (5)	ND (5)	NA
CARBON DISULFIDE	ND (29)	ND (32)	NA	NA	ND (5)	ND (5)	NA
ETHYLBENZENE	ND (29)	180	7	ND (56)	ND (5)	ND (5)	ND (5)
TETRACHLOROETHENE	ND (29)	2,200	NA	NA	ND (5)	ND (5)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B039	IR06B039	IR06B039	IR06B039	IR06B043	IR06B043	IR06B043
Sampling Depth (feet bgs)	0.75	5.75	10.25	14.25	1.25	5.25	10.75
Sample Number	9022H226	9022H227	9022H228	9022H229	9023H260	9023H261	9023H262
Sample Date	05/30/90	05/30/90	05/30/90	05/30/90	06/07/90	06/07/90	06/07/90
Volatile Organic Compound (ug/kg)							
TOLUENE	17	180	11	73	100	38	13
TRICHLOROETHENE	ND (29)	190	NA	NA	ND (5)	ND (5)	NA
VINYL ACETATE	ND (57)	14	NA	NA	ND (10)	ND (10)	NA
XYLENE (TOTAL)	19	1,200	34	290	ND (5)	1	ND (16)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (3,800)	NA	NA	NA	ND (340)	NA	NA
2-METHYLNAPHTHALENE	710	12,000	NA	NA	ND (340)	NA	NA
4-METHYLPHENOL	ND (3,800)	NA	NA	NA	ND (340)	NA	NA
4-NITROPHENOL	ND (18,000)	ND (4,100)	NA	NA	ND (1,600)	NA	NA
ACENAPHTHENE	ND (3,800)	2,400	NA	NA	ND (340)	NA	NA
ACENAPHTHYLENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
ANTHRACENE	ND (3,800)	620	NA	NA	ND (340)	NA	NA
BENZO(A)ANTHRACENE	ND (3,800)	440	NA	NA	ND (340)	NA	NA
BENZO(A)PYRENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
BENZO(B)FLUORANTHENE	ND (3,800)	150	NA	NA	ND (340)	NA	NA
BENZO(G,H,I)PERYLENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
BENZO(K)FLUORANTHENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
BENZOIC ACID	ND (18,000)	ND (4,100)	NA	NA	ND (1,600)	NA	NA
CHRYSENE	ND (3,800)	300	NA	NA	ND (340)	NA	NA
DI-N-BUTYLPHTHALATE	ND (3,800)	140	NA	NA	ND (340)	NA	NA
DIBENZ(A,H)ANTHRACENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
DIBENZOFURAN	ND (3,800)	2,400	NA	NA	ND (340)	NA	NA
FLUORANTHENE	ND (3,800)	2,400	NA	NA	ND (340)	NA	NA
FLUORENE	ND (3,800)	3,000	NA	NA	ND (340)	NA	NA
INDENO(1,2,3-CD)PYRENE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
N-NITROSODIPHENYLAMINE	ND (3,800)	ND (850)	NA	NA	ND (340)	NA	NA
NAPHTHALENE	ND (3,800)	7,400	NA	NA	ND (340)	NA	NA
PENTACHLOROPHENOL	ND (18,000)	NA	NA	NA	ND (1,600)	NA	NA
PHENANTHRENE	800	8,200	NA	NA	ND (340)	NA	NA
PYRENE	ND (3,800)	1,300	NA	NA	ND (340)	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06B039	IR06B039	IR06B039	IR06B039	IR06B043	IR06B043	IR06B043
Sampling Depth (feet bgs)	0.75	5.75	10.25	14.25	1.25	5.25	10.75
Sample Number	9022H226	9022H227	9022H228	9022H229	9023H260	9023H261	9023H262
Sample Date	05/30/90	05/30/90	05/30/90	05/30/90	06/07/90	06/07/90	06/07/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	77 *	4,900 *#	NA	NA	ND (51)	ND (50)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	1,400	1,500	ND (13)	2,000	ND (10)	45	47
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	76	2,100	94	1,800	ND (51)	NA	58
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.8	7.7	NA	NA	7.9	8.1	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	9.75	14.75
Sample Number	9022F040	9022F041	9022F042	9022F043	9022F044	9022F045	9022F046
Sample Date	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90
Metal (mg/kg)							
ALUMINUM	27,000	12,700	NA	12,500	15,400	NA	NA
ANTIMONY	ND (5.0)	ND (5.0)	NA	ND (4.9)	ND (4.9)	NA	NA
ARSENIC	2.0 *	1.8 *	NA	2.0 *	2.0 *	NA	NA
BARIUM	77.4	69.4	NA	104	121	NA	NA
BERYLLIUM	ND (0.22)	ND (0.19)	NA	ND (0.16)	ND (0.27)	NA	NA
CADMIUM	ND (0.93)	ND (0.93)	NA	ND (0.90)	ND (0.90)	NA	NA
CALCIUM	8,050	2,330	NA	17,000	3,050	NA	NA
CHROMIUM	661 *	1,030 *	NA	240 *	496 *	NA	NA
CHROMIUM VI	ND (0.06)	ND (0.06)	NA	ND (0.06)	ND (0.06)	NA	NA
COBALT	95.5	106	NA	87.0	60.8	NA	NA
COPPER	38.7	21.1	NA	82.7	55.9	NA	NA
IRON	58,400	57,700	NA	47,900	42,700	NA	NA
LEAD	3.1	6.1	NA	14.6 α	18.8 α	NA	NA
MAGNESIUM	121,000	125,000	NA	81,700	83,300	NA	NA
MANGANESE	1,040 *	830 *	NA	782 *	786 *	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	1,650 *	1,770 *	NA	1,610 *	1,110 *	NA	NA
POTASSIUM	1,460	639	NA	646	381	NA	NA
SELENIUM	ND (0.55)	ND (0.55)	NA	ND (0.54)	ND (0.54)	NA	NA
SILVER	1.3	1.3	NA	ND (1.2)	ND (1.2)	NA	NA
SODIUM	511	204	NA	185	260	NA	NA
THALLIUM	ND (0.43)	ND (0.43)	NA	ND (0.42)	ND (0.41)	NA	NA
VANADIUM	84.1	74.0	NA	49.1	60.7	NA	NA
ZINC	66.3	48.0	NA	61.6	51.2	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (630)	NA	ND (6)	ND (6)	NA	NA
1,2-DICHLOROETHENE (TOTAL)	4	ND (630)	NA	ND (6)	ND (6)	NA	NA
2-BUTANONE	ND (13)	ND (1,300)	NA	ND (12)	ND (12)	NA	NA
BENZENE	ND (6)	ND (630)	ND (6)	ND (6)	ND (6)	97	ND (6)
BROMOFORM	ND (6)	ND (630)	NA	ND (6)	ND (6)	NA	NA
CARBON DISULFIDE	7	ND (630)	NA	ND (6)	ND (6)	NA	NA
ETHYLBENZENE	ND (6)	ND (630)	ND (6)	ND (6)	ND (6)	10	ND (6)
TETRACHLOROETHENE	ND (6)	ND (630)	NA	ND (6)	ND (6)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	9.75	14.75
Sample Number	9022F040	9022F041	9022F042	9022F043	9022F044	9022F045	9022F046
Sample Date	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90
Volatile Organic Compound (ug/kg)							
TOLUENE	87	500	8	49	6	44	ND (6)
TRICHLOROETHENE	15	ND (630)	NA	ND (6)	ND (6)	NA	NA
VINYL ACETATE	ND (13)	ND (1,300)	NA	ND (12)	ND (12)	NA	NA
XYLENE (TOTAL)	ND (6)	4,100	ND (18)	ND (6)	ND (6)	ND (18)	ND (19)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (410)	NA	NA	ND (810)	ND (400)	NA	NA
2-METHYLNAPHTHALENE	ND (410)	16,000	NA	ND (810)	ND (400)	NA	NA
4-METHYLPHENOL	ND (410)	NA	NA	ND (810)	ND (400)	NA	NA
4-NITROPHENOL	ND (2,000)	ND (40,000)	NA	ND (3,900)	ND (2,000)	NA	NA
ACENAPHTHENE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
ACENAPHTHYLENE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
ANTHRACENE	46	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
BENZO(A)ANTHRACENE	ND (410)	ND (8,300)	NA	ND (810)	87	NA	NA
BENZO(A)PYRENE	ND (410)	ND (8,300)	NA	ND (810)	120 *	NA	NA
BENZO(B)FLUORANTHENE	ND (410)	ND (8,300)	NA	ND (810)	150	NA	NA
BENZO(G,H,I)PERYLENE	ND (410)	ND (8,300)	NA	ND (810)	100	NA	NA
BENZO(K)FLUORANTHENE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
BENZOIC ACID	ND (2,000)	ND (40,000)	NA	ND (3,900)	ND (2,000)	NA	NA
CHRYSENE	ND (410)	ND (8,300)	NA	ND (810)	110	NA	NA
DI-N-BUTYLPHTHALATE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
DIBENZ(A,H)ANTHRACENE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
DIBENZOFURAN	43	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
FLUORANTHENE	63	ND (8,300)	NA	ND (810)	130	NA	NA
FLUORENE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
INDENO(1,2,3-CD)PYRENE	ND (410)	ND (8,300)	NA	ND (810)	77	NA	NA
N-NITROSODIPHENYLAMINE	ND (410)	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
NAPHTHALENE	ND (410)	7,300	NA	ND (810)	ND (400)	NA	NA
PENTACHLOROPHENOL	ND (2,000)	NA	NA	ND (3,900)	ND (2,000)	NA	NA
PHENANTHRENE	130	ND (8,300)	NA	ND (810)	ND (400)	NA	NA
PYRENE	140	ND (8,300)	NA	ND (810)	210	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	9.75	14.75
Sample Number	9022F040	9022F041	9022F042	9022F043	9022F044	9022F045	9022F046
Sample Date	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90	05/31/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (63)	520 **	NA	ND (61)	ND (61)	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	16	1,900	ND (12)	ND (12)	ND (12)	23	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	78	2,400	66	280	100	140	75
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.4	7.9	NA	8.5	8.3	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	10.25	15.25
Sample Number	9022H239	9022H240	9022H241	9022H230	9022H231	9022H232	9022H233
Sample Date	06/01/90	06/01/90	06/01/90	05/30/90	05/30/90	05/30/90	05/30/90
Metal (mg/kg)							
ALUMINUM	36,400	17,300	NA	25,400	18,300	NA	NA
ANTIMONY	ND (5.3)	ND (4.8)	NA	ND (5.2)	ND (5.2)	NA	NA
ARSENIC	ND (2.7)	3.4 *#	NA	2.3 *#	3.1 *#	NA	NA
BARIUM	159	141	NA	154	116	NA	NA
BERYLLIUM	ND (0.09)	ND (0.37)	NA	ND (0.44)	ND (0.25)	NA	NA
CADMIUM	ND (0.99)	ND (0.90)	NA	ND (0.95)	ND (0.96)	NA	NA
CALCIUM	17,000	3,560	NA	14,800	4,990	NA	NA
CHROMIUM	377 *	246 *α	NA	335 *	309 *	NA	NA
CHROMIUM VI	ND (0.07)	ND (0.06)	NA	ND (0.07)	ND (0.07)	NA	NA
COBALT	86.2 α	16.7	NA	82.3 α	36.2	NA	NA
COPPER	74.0	27.0	NA	33.8	27.6	NA	NA
IRON	58,200	36,400	NA	56,700	39,000	NA	NA
LEAD	1.4	5.4	NA	3.4	4.9	NA	NA
MAGNESIUM	66,600	6,020	NA	52,000	44,400	NA	NA
MANGANESE	1,230 *	252	NA	988 *	549 *	NA	NA
MERCURY	NA	NA	NA	0.10	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	1,310 *	143	NA	1,590 *α	568 *	NA	NA
POTASSIUM	307	622	NA	1,570	1,010	NA	NA
SELENIUM	ND (0.59)	ND (0.53)	NA	ND (0.57)	ND (0.57)	NA	NA
SILVER	ND (1.3)	ND (0.60)	NA	1.0	0.51	NA	NA
SODIUM	765	301	NA	393	286	NA	NA
THALLIUM	ND (0.45)	ND (0.41)	NA	ND (0.44)	ND (0.44)	NA	NA
VANADIUM	102	88.8	NA	77.3	71.4	NA	NA
ZINC	61.6	40.9	NA	70.5	78.8	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (33)	ND (30)	NA	ND (7)	ND (7)	NA	NA
1,2-DICHLOROETHENE (TOTAL)	ND (33)	ND (30)	NA	ND (7)	8	NA	NA
2-BUTANONE	ND (67)	ND (61)	NA	ND (13)	ND (13)	NA	NA
BENZENE	ND (33)	ND (30)	ND (6)	ND (7)	ND (7)	ND (6)	ND (7)
BROMOFORM	ND (33)	ND (30)	NA	ND (7)	ND (7)	NA	NA
CARBON DISULFIDE	ND (33)	ND (30)	NA	ND (7)	ND (7)	NA	NA
ETHYLBENZENE	ND (33)	ND (30)	130	ND (7)	ND (7)	ND (6)	ND (7)
TETRACHLOROETHENE	ND (33)	ND (30)	NA	57	ND (7)	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	10.25	15.25
Sample Number	9022H239	9022H240	9022H241	9022H230	9022H231	9022H232	9022H233
Sample Date	06/01/90	06/01/90	06/01/90	05/30/90	05/30/90	05/30/90	05/30/90
Volatile Organic Compound (ug/kg)							
TOLUENE	23	ND (30)	56	2	ND (7)	ND (6)	ND (7)
TRICHLOROETHENE	ND (33)	ND (30)	NA	ND (7)	ND (7)	NA	NA
VINYL ACETATE	ND (67)	ND (61)	NA	ND (13)	ND (13)	NA	NA
XYLENE (TOTAL)	ND (33)	ND (30)	ND (120)	ND (7)	ND (7)	ND (19)	ND (21)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
2-METHYLNAPHTHALENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
4-METHYLPHENOL	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
4-NITROPHENOL	ND (4,300)	ND (1,900)	NA	ND (2,100)	ND (2,100)	NA	NA
ACENAPHTHENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
ACENAPHTHYLENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
ANTHRACENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZO(A)ANTHRACENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZO(A)PYRENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZO(B)FLUORANTHENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZO(G,H,I)PERYLENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZO(K)FLUORANTHENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
BENZOIC ACID	ND (4,300)	ND (1,900)	NA	ND (2,100)	ND (2,100)	NA	NA
CHRYSENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
DI-N-BUTYLPHTHALATE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
DIBENZ(A,H)ANTHRACENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
DIBENZOFURAN	99	ND (400)	NA	ND (430)	ND (430)	NA	NA
FLUORANTHENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
FLUORENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
INDENO(1,2,3-CD)PYRENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
N-NITROSODIPHENYLAMINE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
NAPHTHALENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
PENTACHLOROPHENOL	ND (4,300)	ND (1,900)	NA	ND (2,100)	ND (2,100)	NA	NA
PHENANTHRENE	570	ND (400)	NA	ND (430)	ND (430)	NA	NA
PYRENE	ND (880)	ND (400)	NA	ND (430)	ND (430)	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sampling Depth (feet bgs)	1.25	5.25	10.25	1.25	5.25	10.25	15.25
Sample Number	9022H239	9022H240	9022H241	9022H230	9022H231	9022H232	9022H233
Sample Date	06/01/90	06/01/90	06/01/90	05/30/90	05/30/90	05/30/90	05/30/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (67)	ND (61)	NA	ND (65)	ND (65)	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	470	ND (12)	3,500	ND (13)	ND (13)	ND (13)	ND (14)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	150	73	1,500	70	96	95	110
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.3	7.6	NA	7.6	8.0	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A
Sampling Depth (feet bgs)	0.75	5.75	10.25	15.25	1.25	5.25	10.75
Sample Number	9022H242	9022H243	9022H244	9022H245	9023H256	9023H257	9023H258
Sample Date	06/01/90	06/01/90	06/01/90	06/01/90	06/07/90	06/07/90	06/07/90
Metal (mg/kg)							
ALUMINUM	23,400	29,400	NA	NA	27,300	18,200	NA
ANTIMONY	ND (4.3)	ND (5.2)	NA	NA	ND (4.5)	ND (6.2)	NA
ARSENIC	4.7 *#	ND (2.6)	NA	NA	0.85 *	1.2 *	NA
BARIUM	228	254	NA	NA	136	114	NA
BERYLLIUM	ND (0.39)	ND (0.31)	NA	NA	ND (0.71)	ND (0.50)	NA
CADMIUM	ND (0.79)	ND (0.97)	NA	NA	ND (0.83)	ND (1.1)	NA
CALCIUM	17,600	12,800	NA	NA	5,580	4,980	NA
CHROMIUM	97.4	243 *	NA	NA	438 *	1,780 *#α	NA
CHROMIUM VI	ND (0.05)	ND (0.07)	NA	NA	ND (0.06)	ND (0.08)	NA
COBALT	24.5	41.1	NA	NA	69.6	130 α	NA
COPPER	46.7	95.7	NA	NA	53.9	84.0	NA
IRON	33,500	46,100	NA	NA	53,400	68,900	NA
LEAD	8.9	9.3 α	NA	NA	1.6	9.8 α	NA
MAGNESIUM	23,900	30,100	NA	NA	76,200	49,000	NA
MANGANESE	1,300 *	1,960 *α	NA	NA	1,060 *	1,140 *	NA
MERCURY	0.10	NA	NA	NA	0.10	0.20	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	148	321 *	NA	NA	1,200 *	2,130 *α	NA
POTASSIUM	1,030	1,030	NA	NA	1,090	718	NA
SELENIUM	ND (0.47)	ND (0.58)	NA	NA	ND (0.49)	ND (0.68)	NA
SILVER	ND (0.97)	ND (1.0)	NA	NA	ND (0.25)	ND (0.34)	NA
SODIUM	512	802	NA	NA	505	472	NA
THALLIUM	ND (0.36)	ND (0.44)	NA	NA	ND (0.38)	ND (0.53)	NA
VANADIUM	83.7	79.0	NA	NA	71.5	60.7	NA
ZINC	62.5	78.7	NA	NA	68.0	67.1	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (5)	ND (33)	NA	NA	ND (6)	ND (8)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (5)	ND (33)	NA	NA	ND (6)	ND (8)	NA
2-BUTANONE	ND (11)	ND (65)	NA	NA	ND (11)	ND (16)	NA
BENZENE	ND (5)	ND (33)	ND (7)	ND (8)	ND (6)	ND (8)	ND (6)
BROMOFORM	ND (5)	ND (33)	NA	NA	ND (6)	ND (8)	NA
CARBON DISULFIDE	ND (5)	ND (33)	NA	NA	ND (6)	ND (8)	NA
ETHYLBENZENE	ND (5)	8	ND (7)	ND (8)	ND (6)	ND (8)	ND (6)
TETRACHLOROETHENE	5	ND (33)	NA	NA	ND (6)	ND (8)	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A
Sampling Depth (feet bgs)	0.75	5.75	10.25	15.25	1.25	5.25	10.75
Sample Number	9022H242	9022H243	9022H244	9022H245	9023H256	9023H257	9023H258
Sample Date	06/01/90	06/01/90	06/01/90	06/01/90	06/07/90	06/07/90	06/07/90
Volatile Organic Compound (ug/kg)							
TOLUENE	89	24	9	ND (8)	63	40	71
TRICHLOROETHENE	ND (5)	ND (33)	NA	NA	ND (6)	ND (8)	NA
VINYL ACETATE	ND (11)	ND (65)	NA	NA	ND (11)	ND (16)	NA
XYLENE (TOTAL)	ND (5)	ND (33)	64	ND (24)	ND (6)	ND (8)	ND (18)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
2-METHYLNAPHTHALENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
4-METHYLPHENOL	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
4-NITROPHENOL	ND (5,100)	ND (130,000)	NA	NA	ND (1,800)	ND (2,500)	NA
ACENAPHTHENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
ACENAPHTHYLENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
ANTHRACENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZO(A)ANTHRACENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZO(A)PYRENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZO(B)FLUORANTHENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZO(G,H,I)PERYLENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZO(K)FLUORANTHENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
BENZOIC ACID	ND (5,100)	ND (130,000)	NA	NA	ND (1,800)	ND (2,500)	NA
CHRYSENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
DI-N-BUTYLPHTHALATE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
DIBENZ(A,H)ANTHRACENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
DIBENZOFURAN	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
FLUORANTHENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
FLUORENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
INDENO(1,2,3-CD)PYRENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
N-NITROSODIPHENYLAMINE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
NAPHTHALENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
PENTACHLOROPHENOL	ND (5,100)	ND (130,000)	NA	NA	ND (1,800)	ND (2,500)	NA
PHENANTHRENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
PYRENE	ND (1,100)	ND (26,000)	NA	NA	ND (370)	ND (510)	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A
Sampling Depth (feet bgs)	0.75	5.75	10.25	15.25	1.25	5.25	10.75
Sample Number	9022H242	9022H243	9022H244	9022H245	9023H256	9023H257	9023H258
Sample Date	06/01/90	06/01/90	06/01/90	06/01/90	06/07/90	06/07/90	06/07/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (53)	ND (65)	NA	NA	ND (56)	ND (78)	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (11)	970	2,500	110	ND (11)	ND (16)	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	390	1,100	950	130	ND (56)	ND (78)	ND (59)
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.4	7.5	NA	NA	7.7	7.5	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sampling Depth (feet bgs)	13.75	1.25	5.25	10.75	15.25	1.25	5.75
Sample Number	9023H259	9023G271	9023G272	9023G273	9023G274	9023G277	9023G278
Sample Date	06/07/90	06/04/90	06/04/90	06/04/90	06/04/90	06/06/90	06/06/90
Metal (mg/kg)							
ALUMINUM	NA	26,200	12,700	NA	NA	25,300	16,300
ANTIMONY	NA	ND (4.8)	ND (4.8)	NA	NA	ND (4.4)	ND (4.7)
ARSENIC	NA	3.1 *#	3.3 *#	NA	NA	4.0 *#	5.2 *#
BARIUM	NA	137	67.3	NA	NA	151	135
BERYLLIUM	NA	ND (0.37)	ND (0.22)	NA	NA	ND (0.88)	ND (0.60)
CADMIUM	NA	ND (0.89)	ND (0.89)	NA	NA	ND (0.81)	ND (0.86)
CALCIUM	NA	13,900	2,510	NA	NA	20,100	3,110
CHROMIUM	NA	429 *	366 *α	NA	NA	229 *	349 *α
CHROMIUM VI	NA	ND (0.06)	ND (0.06)	NA	NA	ND (0.06)	ND (0.06)
COBALT	NA	53.0	20.5	NA	NA	40.8	40.2 α
COPPER	NA	45.0	21.5	NA	NA	39.4	36.1
IRON	NA	39,500	35,600	NA	NA	36,600	40,000
LEAD	NA	4.4	3.1	NA	NA	6.5	13.8 α
MAGNESIUM	NA	119,000	22,800	NA	NA	44,000	14,100
MANGANESE	NA	847 *	278	NA	NA	825 *	1,250 *
MERCURY	NA	ND (0.10)	ND (0.10)	NA	NA	ND (0.10)	ND (0.10)
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	848 *	683 *α	NA	NA	404 *	489 *α
POTASSIUM	NA	1,070	437	NA	NA	1,270	703
SELENIUM	NA	ND (0.53)	ND (0.53)	NA	NA	ND (0.48)	ND (0.51)
SILVER	NA	ND (1.4)	ND (0.64)	NA	NA	ND (0.24)	ND (0.26)
SODIUM	NA	484	325	NA	NA	460	333
THALLIUM	NA	ND (0.41)	ND (0.41)	NA	NA	ND (0.37)	ND (0.40)
VANADIUM	NA	68.2	44.1	NA	NA	83.7	82.4
ZINC	NA	54.8	37.2	NA	NA	63.6	48.7
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	ND (6)	ND (6)	NA	NA	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	NA	37	ND (6)	NA	NA	ND (6)	ND (6)
2-BUTANONE	NA	ND (12)	ND (12)	NA	NA	ND (11)	ND (12)
BENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
BROMOFORM	NA	ND (6)	ND (6)	NA	NA	ND (6)	ND (6)
CARBON DISULFIDE	NA	ND (6)	ND (6)	NA	NA	ND (6)	ND (6)
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	NA	ND (6)	ND (6)	NA	NA	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sampling Depth (feet bgs)	13.75	1.25	5.25	10.75	15.25	1.25	5.75
Sample Number	9023H259	9023G271	9023G272	9023G273	9023G274	9023G277	9023G278
Sample Date	06/07/90	06/04/90	06/04/90	06/04/90	06/04/90	06/06/90	06/06/90
Volatile Organic Compound (ug/kg)							
TOLUENE	14	2	ND (6)	ND (6)	ND (6)	190	4
TRICHLOROETHENE	NA	ND (6)	ND (6)	NA	NA	ND (6)	ND (6)
VINYL ACETATE	NA	ND (12)	ND (12)	NA	NA	ND (11)	ND (12)
XYLENE (TOTAL)	ND (17)	ND (6)	ND (6)	ND (19)	ND (18)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
2-METHYLNAPHTHALENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
4-METHYLPHENOL	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
4-NITROPHENOL	NA	ND (1,900)	ND (1,900)	NA	NA	ND (1,700)	ND (1,900)
ACENAPHTHENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
ACENAPHTHYLENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
ANTHRACENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZO(A)ANTHRACENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZO(A)PYRENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZO(B)FLUORANTHENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZO(G,H,I)PERYLENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZO(K)FLUORANTHENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
BENZOIC ACID	NA	ND (1,900)	ND (1,900)	NA	NA	ND (1,700)	ND (1,900)
CHRYSENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
DI-N-BUTYLPHTHALATE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
DIBENZ(A,H)ANTHRACENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
DIBENZOFURAN	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
FLUORANTHENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
FLUORENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
INDENO(1,2,3-CD)PYRENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
N-NITROSODIPHENYLAMINE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
NAPHTHALENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
PENTACHLOROPHENOL	NA	ND (1,900)	ND (1,900)	NA	NA	ND (1,700)	ND (1,900)
PHENANTHRENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
PYRENE	NA	ND (400)	ND (400)	NA	NA	ND (360)	ND (390)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sampling Depth (feet bgs)	13.75	1.25	5.25	10.75	15.25	1.25	5.75
Sample Number	9023H259	9023G271	9023G272	9023G273	9023G274	9023G277	9023G278
Sample Date	06/07/90	06/04/90	06/04/90	06/04/90	06/04/90	06/06/90	06/06/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	ND (60)	ND (60)	NA	NA	ND (55)	ND (58)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	ND (11)	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (58)	87	100	80	83	NA	ND (58)
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	7.9	6.9	NA	NA	8.9	8.2

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sampling Depth (feet bgs)	10.75	15.75	30.75	1.25	5.25	15.25	0.75
Sample Number	9023G279	9023G280	9023G283	9023H246	9023H247	9023H249	9023H252
Sample Date	06/06/90	06/06/90	06/06/90	06/05/90	06/05/90	06/05/90	06/05/90
Metal (mg/kg)							
ALUMINUM	NA	NA	NA	19,100	21,100	NA	27,900
ANTIMONY	NA	NA	NA	ND (4.3)	ND (5.0)	NA	ND (4.2)
ARSENIC	NA	NA	NA	5.8 *#	1.8 *	NA	3.7 *#
BARIUM	NA	NA	NA	834 α	128	NA	444 α
BERYLLIUM	NA	NA	NA	ND (0.50)	ND (0.26)	NA	ND (1.2)
CADMIUM	NA	NA	NA	ND (0.79)	ND (0.92)	NA	ND (0.77)
CALCIUM	NA	NA	NA	17,300	9,110	NA	20,400
CHROMIUM	NA	NA	NA	68.4	621 *	NA	84.3
CHROMIUM VI	NA	NA	NA	ND (0.05)	ND (0.06)	NA	ND (0.05)
COBALT	NA	NA	NA	18.6	63.6	NA	24.7
COPPER	NA	NA	NA	101	84.7	NA	54.6
IRON	NA	NA	NA	31,200	44,200	NA	36,500
LEAD	NA	NA	NA	13.6 α	4.3	NA	8.1
MAGNESIUM	NA	NA	NA	13,700	102,000	NA	16,700
MANGANESE	NA	NA	NA	3,200 *α	753 *	NA	1,290 *
MERCURY	NA	NA	NA	0.10	ND (0.10)	NA	0.10
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	115	1,260 *	NA	107
POTASSIUM	NA	NA	NA	1,690	815	NA	2,000
SELENIUM	NA	NA	NA	ND (0.47)	ND (0.55)	NA	ND (0.46)
SILVER	NA	NA	NA	ND (0.89)	ND (1.2)	NA	ND (0.27)
SODIUM	NA	NA	NA	632	435	NA	648
THALLIUM	NA	NA	NA	ND (0.37)	ND (0.42)	NA	ND (0.35)
VANADIUM	NA	NA	NA	85.0	58.4	NA	97.4
ZINC	NA	NA	NA	81.7	52.8	NA	75.4
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)
2-BUTANONE	NA	NA	NA	ND (11)	ND (12)	NA	ND (10)
BENZENE	ND (6)	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)
BROMOFORM	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)
CARBON DISULFIDE	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)
TETRACHLOROETHENE	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sampling Depth (feet bgs)	10.75	15.75	30.75	1.25	5.25	15.25	0.75
Sample Number	9023G279	9023G280	9023G283	9023H246	9023H247	9023H249	9023H252
Sample Date	06/06/90	06/06/90	06/06/90	06/05/90	06/05/90	06/05/90	06/05/90
Volatile Organic Compound (ug/kg)							
TOLUENE	160	96	61	ND (5)	ND (6)	ND (6)	5
TRICHLOROETHENE	NA	NA	NA	ND (5)	ND (6)	NA	ND (5)
VINYL ACETATE	NA	NA	NA	ND (11)	ND (12)	NA	ND (10)
XYLENE (TOTAL)	ND (19)	ND (19)	ND (18)	ND (5)	ND (6)	ND (18)	ND (5)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
2-METHYLNAPHTHALENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
4-METHYLPHENOL	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
4-NITROPHENOL	NA	NA	NA	ND (1,700)	ND (2,000)	NA	ND (3,300)
ACENAPHTHENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
ACENAPHTHYLENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
ANTHRACENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZO(A)ANTHRACENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZO(A)PYRENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZO(B)FLUORANTHENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZO(G,H,I)PERYLENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZO(K)FLUORANTHENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
BENZOIC ACID	NA	NA	NA	ND (1,700)	ND (2,000)	NA	ND (3,300)
CHRYSENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
DI-N-BUTYLPHTHALATE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
DIBENZ(A,H)ANTHRACENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
DIBENZOFURAN	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
FLUORANTHENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
FLUORENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
N-NITROSODIPHENYLAMINE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
NAPHTHALENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
PENTACHLOROPHENOL	NA	NA	NA	ND (1,700)	ND (2,000)	NA	ND (3,300)
PHENANTHRENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
PYRENE	NA	NA	NA	ND (350)	ND (410)	NA	ND (690)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sampling Depth (feet bgs)	10.75	15.75	30.75	1.25	5.25	15.25	0.75
Sample Number	9023G279	9023G280	9023G283	9023H246	9023H247	9023H249	9023H252
Sample Date	06/06/90	06/06/90	06/06/90	06/05/90	06/05/90	06/05/90	06/05/90
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	NA	ND (54)	ND (62)	NA	ND (52)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (12)	ND (12)	ND (12)	ND (11)	ND (12)	18	ND (10)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (62)	ND (62)	ND (61)	410	92	160	NA
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	8.7	8.0	NA	7.2

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A
Sampling Depth (feet bgs)	5.75	11.25	2.25	6.25	11.25	16.25	21.25
Sample Number	9023H253	9023H254	9138M192	9138M193	9138M194	9138M195	9138M196
Sample Date	06/05/90	06/05/90	09/19/91	09/19/91	09/19/91	09/19/91	09/19/91
Metal (mg/kg)							
ALUMINUM	13,300	NA	NA	NA	NA	NA	NA
ANTIMONY	ND (4.4)	NA	NA	NA	NA	NA	NA
ARSENIC	2.1 *#	NA	NA	NA	NA	NA	NA
BARIUM	161	NA	NA	NA	NA	NA	NA
BERYLLIUM	ND (0.48)	NA	NA	NA	NA	NA	NA
CADMIUM	ND (0.82)	NA	NA	NA	NA	NA	NA
CALCIUM	3,050	NA	NA	NA	NA	NA	NA
CHROMIUM	132	NA	NA	NA	NA	NA	NA
CHROMIUM VI	ND (0.06)	NA	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
COBALT	12.7	NA	NA	NA	NA	NA	NA
COPPER	33.2	NA	NA	NA	NA	NA	NA
IRON	22,800	NA	NA	NA	NA	NA	NA
LEAD	15.9 *	NA	NA	NA	NA	NA	NA
MAGNESIUM	6,430	NA	NA	NA	NA	NA	NA
MANGANESE	314	NA	NA	NA	NA	NA	NA
MERCURY	0.60	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	80.8	NA	NA	NA	NA	NA	NA
POTASSIUM	493	NA	NA	NA	NA	NA	NA
SELENIUM	ND (0.49)	NA	NA	NA	NA	NA	NA
SILVER	ND (0.24)	NA	NA	NA	NA	NA	NA
SODIUM	234	NA	NA	NA	NA	NA	NA
THALLIUM	ND (0.38)	NA	NA	NA	NA	NA	NA
VANADIUM	56.7	NA	NA	NA	NA	NA	NA
ZINC	67.3	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
2-BUTANONE	ND (11)	NA	ND (13)	ND (12)	ND (12)	ND (12)	ND (12)
BENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
BROMOFORM	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
CARBON DISULFIDE	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
ETHYLBENZENE	ND (6)	28	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A
Sampling Depth (feet bgs)	5.75	11.25	2.25	6.25	11.25	16.25	21.25
Sample Number	9023H253	9023H254	9138M192	9138M193	9138M194	9138M195	9138M196
Sample Date	06/05/90	06/05/90	09/19/91	09/19/91	09/19/91	09/19/91	09/19/91
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	23	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
TRICHLOROETHENE	ND (6)	NA	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
VINYL ACETATE	ND (11)	NA	ND (13)	ND (12)	ND (12)	ND (12)	ND (12)
XYLENE (TOTAL)	ND (6)	53	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (370)	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	ND (370)	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	ND (370)	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	ND (1,800)	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	ND (370)	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	ND (370)	NA	NA	NA	NA	NA	NA
ANTHRACENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	ND (370)	NA	NA	NA	NA	NA	NA
BENZOIC ACID	ND (1,800)	NA	NA	NA	NA	NA	NA
CHRYSENE	ND (370)	NA	NA	NA	NA	NA	NA
DI-N-BUTYLPHTHALATE	ND (370)	NA	NA	NA	NA	NA	NA
DIBENZ(A,H)ANTHRACENE	ND (370)	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	ND (370)	NA	NA	NA	NA	NA	NA
FLUORANTHENE	ND (370)	NA	NA	NA	NA	NA	NA
FLUORENE	ND (370)	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	ND (370)	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	ND (370)	NA	NA	NA	NA	NA	NA
NAPHTHALENE	ND (370)	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	ND (1,800)	NA	NA	NA	NA	NA	NA
PHENANTHRENE	ND (370)	NA	NA	NA	NA	NA	NA
PYRENE	ND (370)	NA	NA	NA	NA	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW44A
Sampling Depth (feet bgs)	5.75	11.25	2.25	6.25	11.25	16.25	21.25
Sample Number	9023H253	9023H254	9138M192	9138M193	9138M194	9138M195	9138M196
Sample Date	06/05/90	06/05/90	09/19/91	09/19/91	09/19/91	09/19/91	09/19/91
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (55)	NA	NA	NA	NA	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (11)	130	ND (13)	ND (12)	ND (12)	ND (12)	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	ND (25)	ND (24)	ND (25)	ND (24)	ND (23)
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	73	100	ND (63)	ND (59)	ND (62)	ND (61)	ND (210)
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	7.3	NA	7.4	7.6	7.9	7.4	7.9

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A
Sampling Depth (feet bgs)	26.25	31.25	36.25	2.25	3.25	11.25	2.75
Sample Number	9138M197	9138M198	9138M199	9138M186	9138M187	9138M188	9138M183
Sample Date	09/19/91	09/19/91	09/19/91	09/17/91	09/17/91	09/17/91	09/17/91
Metal (mg/kg)							
ALUMINUM	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA
CHROMIUM VI	ND (0.05)	ND (0.05)	ND (0.05)	NA	NA	NA	ND (0.05)
COBALT	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)
2-BUTANONE	ND (12)	ND (12)	ND (12)	NA	NA	NA	ND (12)
BENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
BROMOFORM	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)
CARBON DISULFIDE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)
ETHYLBENZENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A
Sampling Depth (feet bgs)	26.25	31.25	36.25	2.25	3.25	11.25	2.75
Sample Number	9138M197	9138M198	9138M199	9138M186	9138M187	9138M188	9138M183
Sample Date	09/19/91	09/19/91	09/19/91	09/17/91	09/17/91	09/17/91	09/17/91
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
TRICHLOROETHENE	ND (6)	ND (6)	ND (6)	NA	NA	NA	ND (6)
VINYL ACETATE	ND (12)	ND (12)	ND (12)	NA	NA	NA	ND (12)
XYLENE (TOTAL)	ND (6)	ND (6)	ND (6)	ND (17)	ND (17)	ND (17)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYLPHTHALATE	NA	NA	NA	NA	NA	NA	NA
DIBENZ(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A
Sampling Depth (feet bgs)	26.25	31.25	36.25	2.25	3.25	11.25	2.75
Sample Number	9138M197	9138M198	9138M199	9138M186	9138M187	9138M188	9138M183
Sample Date	09/19/91	09/19/91	09/19/91	09/17/91	09/17/91	09/17/91	09/17/91
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (12)	ND (12)	ND (13)	ND (11)	ND (11)	ND (12)	ND (12)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	ND (24)	ND (24)	ND (25)	51	52	ND (23)	ND (25)
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (60)	ND (60)	ND (63)	ND (68)	ND (150)	ND (58)	ND (94)
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.8	8.1	7.8	8.0	7.9	6.9	7.6

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW49F	IR06SS01	IR06SS01	IR06SS02	IR06SS02
Sampling Depth (feet bgs)	5.75	10.75	5.75	0.25	1.25	0.25	1.12
Sample Number	9138M184	9138M185	9143G635	8902A127	8902A128	8902A129	8902A130
Sample Date	09/17/91	09/17/91	10/22/91	01/09/89	01/09/89	01/09/89	01/09/89
Metal (mg/kg)							
ALUMINUM	NA	NA	NA	11,900	22,400	14,900	14,100
ANTIMONY	NA	NA	NA	ND (10.0)	9.7 α	ND (8.8)	ND (9.6)
ARSENIC	NA	NA	NA	ND (2.9)	5.8 *#	ND (1.7)	3.2 *#
BARIUM	NA	NA	NA	193	428 α	217	200
BERYLLIUM	NA	NA	NA	ND (0.26)	0.56 *	0.50 *	0.28 *
CADMIUM	NA	NA	NA	1.0	ND (0.95)	ND (0.88)	ND (0.96)
CALCIUM	NA	NA	NA	3,550	6,810	1,670	3,300
CHROMIUM	NA	NA	NA	183	326 *	47.0	167
CHROMIUM VI	ND (0.05)	ND (0.05)	NA	ND (0.57)	ND (0.55)	ND (0.52)	ND (0.55)
COBALT	NA	NA	NA	25.0	53.0	ND (9.3)	23.0
COPPER	NA	NA	NA	41.0	50.0	40.0	31.0
IRON	NA	NA	NA	23,400	41,200	27,400	29,600
LEAD	NA	NA	NA	465 *α	43.0 α	744 *α	291 *α
MAGNESIUM	NA	NA	NA	17,300	65,700	8,250	25,200
MANGANESE	NA	NA	NA	697 *	4,640 *α	508 *	656 *
MERCURY	NA	NA	NA	0.17	ND (0.10)	0.10	0.12
MOLYBDENUM	NA	NA	NA	ND (1.7)	ND (1.7)	ND (1.6)	ND (1.7)
NICKEL	NA	NA	NA	325 *	702 *	50.0	357 *
POTASSIUM	NA	NA	NA	ND (551)	1,140	ND (483)	882
SELENIUM	NA	NA	NA	ND (1.6)	ND (1.6)	ND (1.4)	ND (1.5)
SILVER	NA	NA	NA	ND (1.0)	ND (0.95)	ND (0.88)	ND (0.96)
SODIUM	NA	NA	NA	ND (675)	ND (599)	ND (387)	ND (438)
THALLIUM	NA	NA	NA	ND (0.40)	0.40	ND (0.37)	ND (0.39)
VANADIUM	NA	NA	NA	35.0	66.0	40.0	44.0
ZINC	NA	NA	NA	214 α	115 α	287 α	180 α
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
2-BUTANONE	ND (12)	ND (12)	ND (11)	ND (12)	ND (11)	ND (11)	ND (11)
BENZENE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
BROMOFORM	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
CARBON DISULFIDE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
ETHYLBENZENE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW49F	IR06SS01	IR06SS01	IR06SS02	IR06SS02
Sampling Depth (feet bgs)	5.75	10.75	5.75	0.25	1.25	0.25	1.12
Sample Number	9138M184	9138M185	9143G635	8902A127	8902A128	8902A129	8902A130
Sample Date	09/17/91	09/17/91	10/22/91	01/09/89	01/09/89	01/09/89	01/09/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (6)	ND (5)	3	7	23	27
TRICHLOROETHENE	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
VINYL ACETATE	ND (12)	ND (12)	ND (11)	ND (12)	ND (11)	ND (11)	ND (11)
XYLENE (TOTAL)	ND (6)	ND (6)	ND (5)	ND (6)	ND (6)	ND (5)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	NA	NA	NA	270	81	ND (690)	ND (370)
2-METHYLNAPHTHALENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
4-METHYLPHENOL	NA	NA	NA	220	ND (740)	ND (690)	ND (370)
4-NITROPHENOL	NA	NA	NA	ND (3,700)	ND (3,600)	ND (3,400)	ND (1,800)
ACENAPHTHENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
ACENAPHTHYLENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
ANTHRACENE	NA	NA	NA	ND (770)	ND (740)	93	ND (370)
BENZO(A)ANTHRACENE	NA	NA	NA	380	ND (740)	250	ND (370)
BENZO(A)PYRENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	130 *
BENZO(B)FLUORANTHENE	NA	NA	NA	1,200 *	ND (740)	950 *	330
BENZO(G,H,I)PERYLENE	NA	NA	NA	ND (770)	ND (740)	410	160
BENZO(K)FLUORANTHENE	NA	NA	NA	1,200 *	ND (740)	950 *	330
BENZOIC ACID	NA	NA	NA	ND (3,700)	ND (3,600)	ND (3,400)	140
CHRYSENE	NA	NA	NA	530	ND (740)	730	140
DI-N-BUTYLPHTHALATE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
DIBENZ(A,H)ANTHRACENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
DIBENZOFURAN	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
FLUORANTHENE	NA	NA	NA	1,400	ND (740)	1,200	250
FLUORENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	ND (770)	ND (740)	320	120
N-NITROSODIPHENYLAMINE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
NAPHTHALENE	NA	NA	NA	ND (770)	ND (740)	ND (690)	ND (370)
PENTACHLOROPHENOL	NA	NA	NA	ND (3,700)	ND (3,600)	ND (3,400)	90
PHENANTHRENE	NA	NA	NA	670	ND (740)	490	120
PYRENE	NA	NA	NA	1,000	ND (740)	1,600	200
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	NA	NA	NA	19	ND (18)	ND (17)	ND (18)
ALDRIN	NA	NA	NA	ND (9)	ND (9)	ND (8)	ND (9)
ENDOSULFAN I	NA	NA	NA	ND (9)	ND (9)	ND (8)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW49F	IR06SS01	IR06SS01	IR06SS02	IR06SS02
Sampling Depth (feet bgs)	5.75	10.75	5.75	0.25	1.25	0.25	1.12
Sample Number	9138M184	9138M185	9143G635	8902A127	8902A128	8902A129	8902A130
Sample Date	09/17/91	09/17/91	10/22/91	01/09/89	01/09/89	01/09/89	01/09/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	NA	NA	NA	ND (190)	ND (180)	ND (170)	ND (180)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (13)	ND (12)	250	14,000	ND (1,000)	ND (1,000)	ND (1,000)
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	ND (25)	ND (23)	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	ND (78)	ND (63)	210	NA	NA	NA	NA
Percent Moisture (%)							
% SOLIDS	NA	NA	NA	0.86	0.89	0.95	0.89
pH (pH units)							
PH	7.1	8.0	NA	6.5	7.6	5.9	7.4

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS03	IR06SS03	IR06SS04	IR06SS04	IR06SS05	IR06SS06	IR06SS07
Sampling Depth (feet bgs)	0.25	1.25	0.25	1.25	0.25	0.25	0.25
Sample Number	8902A131	8902A132	8902A133	8902A134	8902A135	8902A136	8902A137
Sample Date	01/09/89	01/09/89	01/09/89	01/09/89	01/09/89	01/10/89	01/10/89
Metal (mg/kg)							
ALUMINUM	10,300	19,300	6,660	10,600	6,030	6,050	4,710
ANTIMONY	ND (8.7)	ND (9.9)	ND (9.8)	ND (10.0)	ND (10.0)	ND (9.8)	ND (9.3)
ARSENIC	3.2 *#	5.5 *#	ND (2.6)	ND (2.6)	ND (2.3)	ND (2.9)	ND (1.6)
BARIUM	136	155	52.0	65.0	54.0	52.0	23.0
BERYLLIUM	0.34 *	0.42 *	ND (0.25)	ND (0.27)	ND (0.26)	ND (0.25)	ND (0.24)
CADMIUM	ND (0.87)	ND (0.99)	ND (0.98)	ND (1.0)	ND (1.0)	1.4	ND (0.93)
CALCIUM	1,300	7,210	2,270	3,820	1,950	2,120	1,240
CHROMIUM	48.0	317 *	126	147	247 *α	356 *	468 *α
CHROMIUM VI	ND (0.52)	ND (0.57)	ND (0.56)	ND (0.58)	ND (0.59)	ND (0.57)	ND (0.55)
COBALT	ND (7.9)	48.0	ND (11.0)	24.0	ND (15.0)	19.0	ND (11.0)
COPPER	56.0	35.0	26.0	8.1	23.0	43.0	29.0
IRON	20,500	43,200	17,000	24,000	14,900	20,200	20,000
LEAD	830 *α	140 *α	1,870 *#α	9.9 α	2,300 *#α	973 *α	2,580 *#α
MAGNESIUM	6,290	63,500	6,300	7,660	5,530	26,300	13,400
MANGANESE	368	884 *	236	742 *	207	364	274
MERCURY	0.13	0.28	0.10	ND (0.12)	ND (0.12)	ND (0.10)	ND (0.11)
MOLYBDENUM	ND (1.6)	ND (1.8)	ND (1.7)	ND (1.8)	ND (1.8)	ND (1.7)	ND (1.7)
NICKEL	37.0	916 *	144	250 *α	179 *α	415 *	251 *
POTASSIUM	1,130	2,650	2,410	ND (569)	1,280	ND (541)	ND (509)
SELENIUM	ND (1.4)	ND (1.6)	ND (1.6)	ND (1.6)	3.3 α	ND (0.31)	ND (1.5)
SILVER	ND (0.87)	ND (0.99)	ND (0.98)	ND (1.0)	ND (1.0)	ND (0.98)	ND (0.93)
SODIUM	ND (385)	ND (1,060)	ND (960)	ND (660)	ND (716)	ND (433)	ND (407)
THALLIUM	ND (0.37)	0.43	0.43	0.48	0.48	ND (0.40)	0.48
VANADIUM	32.0	57.0	29.0	43.0	23.0	19.0	13.0
ZINC	185 α	112 α	177 α	46.0	128 α	355 α	227 α
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
2-BUTANONE	ND (11)	ND (12)	ND (11)	ND (12)	ND (12)	ND (12)	ND (11)
BENZENE	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
BROMOFORM	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
CARBON DISULFIDE	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
ETHYLBENZENE	ND (5)	ND (6)	ND (6)	6	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS03	IR06SS03	IR06SS04	IR06SS04	IR06SS05	IR06SS06	IR06SS07
Sampling Depth (feet bgs)	0.25	1.25	0.25	1.25	0.25	0.25	0.25
Sample Number	8902A131	8902A132	8902A133	8902A134	8902A135	8902A136	8902A137
Sample Date	01/09/89	01/09/89	01/09/89	01/09/89	01/09/89	01/10/89	01/10/89
Volatile Organic Compound (ug/kg)							
TOLUENE	6	13	ND (6)	27	3	2	ND (6)
TRICHLOROETHENE	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
VINYL ACETATE	ND (11)	ND (12)	ND (11)	ND (12)	ND (12)	ND (12)	ND (11)
XYLENE (TOTAL)	ND (5)	ND (6)	ND (6)	45	ND (6)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (350)	ND (390)	ND (760)	ND (2,000)	270	ND (770)	ND (740)
2-METHYLNAPHTHALENE	ND (350)	ND (390)	ND (760)	14,000	180	ND (770)	ND (740)
4-METHYLPHENOL	37	ND (390)	ND (760)	ND (2,000)	290	ND (770)	ND (740)
4-NITROPHENOL	55	ND (1,900)	ND (3,700)	ND (9,600)	ND (3,900)	ND (3,700)	ND (3,600)
ACENAPHTHENE	ND (350)	ND (390)	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
ACENAPHTHYLENE	52	ND (390)	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
ANTHRACENE	46	ND (390)	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
BENZO(A)ANTHRACENE	200	ND (390)	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
BENZO(A)PYRENE	310 *#	200 *	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
BENZO(B)FLUORANTHENE	280	550	ND (760)	ND (2,000)	ND (800)	ND (770)	110
BENZO(G,H,I)PERYLENE	350	130	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
BENZO(K)FLUORANTHENE	280	550	ND (760)	ND (2,000)	ND (800)	ND (770)	110
BENZOIC ACID	ND (1,700)	ND (1,900)	ND (3,700)	ND (9,600)	ND (3,900)	ND (3,700)	ND (3,600)
CHRYSENE	350	110	ND (760)	ND (2,000)	ND (800)	240	150
DI-N-BUTYLPHTHALATE	ND (350)	64	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
DIBENZ(A,H)ANTHRACENE	84 *	60	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
DIBENZOFURAN	ND (350)	ND (390)	ND (760)	1,400	ND (800)	ND (770)	ND (740)
FLUORANTHENE	680	120	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
FLUORENE	ND (350)	ND (390)	ND (760)	3,500	ND (800)	ND (770)	ND (740)
INDENO(1,2,3-CD)PYRENE	200	130	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
N-NITROSODIPHENYLAMINE	ND (350)	ND (390)	ND (760)	ND (2,000)	ND (800)	ND (770)	ND (740)
NAPHTHALENE	ND (350)	ND (390)	ND (760)	2,500	ND (800)	ND (770)	ND (740)
PENTACHLOROPHENOL	ND (1,700)	ND (1,900)	ND (3,700)	ND (9,600)	ND (3,900)	ND (3,700)	ND (3,600)
PHENANTHRENE	310	54	ND (760)	4,300	ND (800)	ND (770)	ND (740)
PYRENE	900	190	ND (760)	570	670	590	200
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (17)	ND (19)	ND (18)	ND (19)	ND (20)	ND (19)	ND (18)
ALDRIN	ND (8)	ND (9)	ND (9)	ND (10)	ND (10)	ND (9)	ND (9)
ENDOSULFAN I	ND (8)	ND (9)	ND (9)	ND (10)	ND (10)	ND (9)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS03	IR06SS03	IR06SS04	IR06SS04	IR06SS05	IR06SS06	IR06SS07
Sampling Depth (feet bgs)	0.25	1.25	0.25	1.25	0.25	0.25	0.25
Sample Number	8902A131	8902A132	8902A133	8902A134	8902A135	8902A136	8902A137
Sample Date	01/09/89	01/09/89	01/09/89	01/09/89	01/09/89	01/10/89	01/10/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (170)	ND (190)	ND (180)	ND (190)	ND (200)	ND (190)	ND (180)
TPH-Extractable (mg/kg)							
TPH-DIESEL	ND (1,000)	ND (1,000)	24,000	22,000	22,000	14,000	3,700
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Percent Moisture (%)							
% SOLIDS	0.95	0.85	0.87	0.83	0.82	0.86	0.89
pH (pH units)							
PH	5.6	8.3	5.4	8.3	7.8	6.2	7.8

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS07	IR06SS08	IR06SS08	IR06SS09	IR06SS09	IR06SS10	IR06SS11
Sampling Depth (feet bgs)	1.75	0.25	1.75	0.25	1.25	0.25	0.25
Sample Number	8902A138	8902A139	8902A140	8902A141	8902A142	8902A143	8902A144
Sample Date	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/11/89
Metal (mg/kg)							
ALUMINUM	20,900	21,900	11,000	10,500	5,900	14,500	12,300
ANTIMONY	ND (11.0)	ND (9.5)	ND (10.0)	ND (12.0)	ND (11.0)	ND (11.0)	ND (11.0)
ARSENIC	ND (1.7)	ND (2.7)	ND (2.0)	ND (2.6)	ND (0.78)	ND (2.3)	ND (3.0)
BARIUM	122	172	69.0	118	39.0	100	126
BERYLLIUM	0.47 *	0.51 *	0.28 *	ND (0.31)	ND (0.28)	0.29 *	ND (0.27)
CADMIUM	ND (1.1)	1.4	ND (1.0)	1.8	ND (1.1)	ND (1.1)	1.5
CALCIUM	3,400	14,200	3,820	5,630	845	4,220	5,000
CHROMIUM	243 *α	201	190	210	913 *	962 *α	382 *
CHROMIUM VI	ND (0.61)	ND (0.57)	ND (0.58)	ND (0.64)	ND (0.61)	ND (0.64)	ND (0.60)
COBALT	20.0	38.0	28.0	ND (20.0)	134	75.0	39.0
COPPER	18.0	91.0	7.4	140 α	59.0	27.0	131 α
IRON	41,400	44,400	26,300	26,700	63,200	52,500	28,800
LEAD	4.4	357 *α	3.1	1,900 *#α	12.0 α	164 *α	1,610 *#α
MAGNESIUM	11,900	37,400	15,100	12,600	176,000	57,500	52,800
MANGANESE	381	1,410 *	279	373	1,190 *	799 *	534 *
MERCURY	ND (0.13)	0.11	ND (0.10)	0.98	0.16	ND (0.12)	ND (0.12)
MOLYBDENUM	ND (2.0)	ND (1.7)	ND (1.8)	ND (2.1)	ND (2.0)	ND (2.1)	ND (1.9)
NICKEL	346 *α	419 *	369 *α	281 *	3,100 *	1,580 *α	633 *
POTASSIUM	1,350	1,560	2,690	3,920	4,340	5,660	4,200
SELENIUM	ND (1.8)	ND (1.6)	ND (1.6)	ND (0.39)	ND (0.35)	ND (0.34)	ND (0.34)
SILVER	ND (1.1)	ND (0.95)	ND (1.0)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)
SODIUM	ND (1,140)	ND (633)	ND (1,000)	ND (1,060)	ND (2,240)	ND (2,150)	ND (1,800)
THALLIUM	ND (0.46)	ND (0.40)	ND (0.41)	ND (0.50)	ND (0.45)	ND (0.44)	ND (0.44)
VANADIUM	55.0	79.0	41.0	52.0	29.0	50.0	53.0
ZINC	77.0	476 α	47.0	597 α	69.0	82.0	339 α
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (6)	ND (7)	ND (32)	ND (7)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (6)	ND (6)	ND (7)	ND (32)	ND (7)	ND (6)
2-BUTANONE	ND (13)	ND (12)	ND (12)	ND (14)	ND (65)	ND (14)	ND (13)
BENZENE	ND (6)	ND (6)	4	ND (7)	ND (32)	ND (7)	ND (6)
BROMOFORM	ND (6)	ND (6)	ND (6)	ND (7)	ND (32)	ND (7)	ND (6)
CARBON DISULFIDE	ND (6)	ND (6)	ND (6)	ND (7)	ND (32)	ND (7)	ND (6)
ETHYLBENZENE	ND (6)	ND (6)	260	ND (7)	76	ND (7)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (6)	ND (7)	ND (32)	ND (7)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS07	IR06SS08	IR06SS08	IR06SS09	IR06SS09	IR06SS10	IR06SS11
Sampling Depth (feet bgs)	1.75	0.25	1.75	0.25	1.25	0.25	0.25
Sample Number	8902A138	8902A139	8902A140	8902A141	8902A142	8902A143	8902A144
Sample Date	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/11/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (6)	44	8	12	ND (7)	ND (6)
TRICHLOROETHENE	ND (6)	ND (6)	1	ND (7)	ND (32)	ND (7)	ND (6)
VINYL ACETATE	ND (13)	ND (12)	ND (12)	ND (14)	ND (65)	ND (14)	ND (13)
XYLENE (TOTAL)	ND (6)	ND (6)	570	ND (7)	170	ND (7)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
2-METHYLNAPHTHALENE	ND (430)	ND (1,900)	34,000	ND (4,600)	14,000	ND (460)	ND (4,100)
4-METHYLPHENOL	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
4-NITROPHENOL	ND (2,100)	ND (9,300)	ND (19,000)	ND (22,000)	ND (4,200)	ND (2,300)	ND (20,000)
ACENAPHTHENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
ACENAPHTHYLENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
ANTHRACENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZO(A)ANTHRACENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZO(A)PYRENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZO(B)FLUORANTHENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZO(G,H,I)PERYLENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZO(K)FLUORANTHENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
BENZOIC ACID	ND (2,100)	ND (9,300)	ND (19,000)	ND (22,000)	ND (4,200)	ND (2,300)	ND (20,000)
CHRYSENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
DI-N-BUTYLPHTHALATE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
DIBENZ(A,H)ANTHRACENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
DIBENZOFURAN	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
FLUORANTHENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
FLUORENE	ND (430)	ND (1,900)	6,300	ND (4,600)	2,200	ND (460)	ND (4,100)
INDENO(1,2,3-CD)PYRENE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
N-NITROSODIPHENYLAMINE	ND (430)	ND (1,900)	ND (4,000)	ND (4,600)	ND (860)	ND (460)	ND (4,100)
NAPHTHALENE	ND (430)	ND (1,900)	10,000	ND (4,600)	2,600	ND (460)	ND (4,100)
PENTACHLOROPHENOL	ND (2,100)	ND (9,300)	ND (19,000)	ND (22,000)	ND (4,200)	ND (2,300)	ND (20,000)
PHENANTHRENE	ND (430)	ND (1,900)	8,700	ND (4,600)	3,700	ND (460)	ND (4,100)
PYRENE	ND (430)	620	ND (4,000)	ND (4,600)	240	ND (460)	1,700
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (21)	ND (19)	ND (19)	ND (220)	ND (21)	ND (22)	ND (80)
ALDRIN	ND (10)	ND (9)	ND (10)	130 **	ND (10)	ND (11)	ND (40)
ENDOSULFAN I	ND (10)	ND (9)	ND (10)	ND (110)	ND (10)	ND (11)	56

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS07	IR06SS08	IR06SS08	IR06SS09	IR06SS09	IR06SS10	IR06SS11
Sampling Depth (feet bgs)	1.75	0.25	1.75	0.25	1.25	0.25	0.25
Sample Number	8902A138	8902A139	8902A140	8902A141	8902A142	8902A143	8902A144
Sample Date	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/10/89	01/11/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (210)	ND (190)	ND (190)	ND (2,200)	ND (210)	ND (220)	ND (800)
TPH-Extractable (mg/kg)							
TPH-DIESEL	75	17,000	21,000	24,000	11,000	7,600	21,000
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Percent Moisture (%)							
% SOLIDS	0.77	0.86	0.83	0.72	0.77	0.71	0.80
pH (pH units)							
PH	7.7	6.3	6.6	6.7	8.8	7.9	7.0

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS11	IR06SS12	IR06SS12	IR06SS13	IR06SS13	IR06SS14	IR06SS14
Sampling Depth (feet bgs)	1.50	0.25	1.75	0.25	1.75	0.25	2.25
Sample Number	8902A145	8902A146	8902A147	8902A148	8902A149	8902A150	8902A151
Sample Date	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89
Metal (mg/kg)							
ALUMINUM	18,300	16,300	13,200	14,300	12,600	7,210	14,600
ANTIMONY	ND (10.0)	ND (10.0)	ND (10.0)	ND (9.1)	ND (9.6)	ND (9.4)	ND (10.0)
ARSENIC	ND (3.0)	4.1 *#	ND (1.4)	ND (2.0)	ND (2.2)	ND (2.8)	ND (2.6)
BARIUM	172	114	65.0	229	261	77.0	85.0
BERYLLIUM	0.46 *	0.29 *	0.26 *	0.42 *	0.31 *	ND (0.24)	0.31 *
CADMIUM	ND (1.0)	ND (1.0)	ND (1.0)	1.6	ND (0.96)	ND (0.94)	ND (1.0)
CALCIUM	5,670	6,060	5,870	2,210	2,960	12,400	4,320
CHROMIUM	492 *	292 *	451 *	125	379 *	160	428 *
CHROMIUM VI	ND (0.60)	ND (0.59)	ND (0.59)	ND (0.52)	ND (0.55)	ND (0.56)	ND (0.57)
COBALT	43.0	41.0	71.0	17.0	35.0	ND (12.0)	57.0
COPPER	66.0	51.0	23.0	54.0	22.0	49.0	22.0
IRON	35,400	31,600	46,100	28,000	29,300	16,200	39,200
LEAD	470 *α	218 *α	40.0 α	561 *α	126 α	2,160 *#α	8.0
MAGNESIUM	72,400	36,900	84,600	13,300	50,400	9,300	91,600
MANGANESE	678 *	640 *	824 *	636 *	515 *	260	638 *
MERCURY	0.39	ND (0.10)	ND (0.12)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
MOLYBDENUM	ND (1.9)	ND (1.9)	ND (1.9)	ND (1.6)	ND (1.7)	ND (1.7)	ND (1.7)
NICKEL	712 *	523 *	1,580 *	143	576 *	156 *	1,130 *
POTASSIUM	653	1,270	2,600	1,730	ND (527)	ND (514)	ND (551)
SELENIUM	ND (1.8)	ND (1.7)	ND (0.35)	ND (0.29)	ND (1.5)	ND (1.6)	ND (1.6)
SILVER	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.91)	ND (0.96)	ND (0.94)	ND (1.0)
SODIUM	ND (816)	ND (1,090)	ND (1,350)	ND (841)	ND (594)	ND (412)	ND (693)
THALLIUM	ND (0.45)	ND (0.44)	ND (0.45)	ND (0.37)	ND (0.39)	0.41	ND (0.41)
VANADIUM	58.0	54.0	46.0	41.0	40.0	29.0	45.0
ZINC	207 α	145 α	71.0	472 α	102	287 α	85.0
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	3	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
2-BUTANONE	ND (13)	ND (12)	ND (62)	ND (11)	ND (11)	ND (11)	ND (12)
BENZENE	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
BROMOFORM	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
CARBON DISULFIDE	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
ETHYLBENZENE	7	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS11	IR06SS12	IR06SS12	IR06SS13	IR06SS13	IR06SS14	IR06SS14
Sampling Depth (feet bgs)	1.50	0.25	1.75	0.25	1.75	0.25	2.25
Sample Number	8902A145	8902A146	8902A147	8902A148	8902A149	8902A150	8902A151
Sample Date	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89
Volatile Organic Compound (ug/kg)							
TOLUENE	ND (6)	ND (6)	ND (31)	2	2	10	ND (6)
TRICHLOROETHENE	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
VINYL ACETATE	ND (13)	ND (12)	ND (62)	ND (11)	ND (11)	ND (11)	ND (12)
XYLENE (TOTAL)	ND (6)	ND (6)	ND (31)	ND (5)	ND (6)	ND (6)	ND (6)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
2-METHYLNAPHTHALENE	13,000	ND (810)	8,200	ND (1,700)	ND (730)	ND (760)	ND (380)
4-METHYLPHENOL	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
4-NITROPHENOL	ND (10,000)	ND (4,000)	ND (4,000)	ND (8,400)	ND (3,600)	ND (3,700)	ND (1,900)
ACENAPHTHENE	ND (2,100)	ND (810)	700	ND (1,700)	ND (730)	ND (760)	ND (380)
ACENAPHTHYLENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	110	ND (380)
ANTHRACENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
BENZO(A)ANTHRACENE	ND (2,100)	ND (810)	ND (810)	830 *	280	180	ND (380)
BENZO(A)PYRENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	1,300 *W	ND (380)
BENZO(B)FLUORANTHENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	2,500 *	ND (380)
BENZO(G,H,I)PERYLENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	830	ND (380)
BENZO(K)FLUORANTHENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	2,500 *	ND (380)
BENZOIC ACID	ND (10,000)	ND (4,000)	ND (4,000)	ND (8,400)	ND (3,600)	ND (3,700)	ND (1,900)
CHRYSENE	ND (2,100)	ND (810)	100	1,900	470	940	ND (380)
DI-N-BUTYLPHTHALATE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
DIBENZ(A,H)ANTHRACENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
DIBENZOFURAN	ND (2,100)	ND (810)	760	ND (1,700)	ND (730)	ND (760)	ND (380)
FLUORANTHENE	ND (2,100)	ND (810)	ND (810)	2,300	740	1,400	ND (380)
FLUORENE	820	ND (810)	1,600	ND (1,700)	ND (730)	ND (760)	ND (380)
INDENO(1,2,3-CD)PYRENE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	570	ND (380)
N-NITROSODIPHENYLAMINE	ND (2,100)	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
NAPHTHALENE	2,900	ND (810)	ND (810)	ND (1,700)	ND (730)	ND (760)	ND (380)
PENTACHLOROPHENOL	ND (10,000)	ND (4,000)	ND (4,000)	ND (8,400)	ND (3,600)	ND (3,700)	ND (1,900)
PHENANTHRENE	2,800	ND (810)	2,900	950	320	1,000	ND (380)
PYRENE	690	ND (810)	250	1,300	710	1,700	ND (380)
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (20)	ND (20)	ND (20)	ND (17)	ND (18)	ND (18)	ND (19)
ALDRIN	ND (10)	ND (10)	ND (10)	ND (8)	ND (9)	ND (9)	ND (9)
ENDOSULFAN I	ND (10)	ND (10)	ND (10)	ND (8)	ND (9)	ND (9)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS11	IR06SS12	IR06SS12	IR06SS13	IR06SS13	IR06SS14	IR06SS14
Sampling Depth (feet bgs)	1.50	0.25	1.75	0.25	1.75	0.25	2.25
Sample Number	8902A145	8902A146	8902A147	8902A148	8902A149	8902A150	8902A151
Sample Date	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89	01/11/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (200)	ND (200)	ND (200)	ND (170)	ND (180)	570 **	ND (190)
TPH-Extractable (mg/kg)							
TPH-DIESEL	9,100	10,000	4,100	1,000	1,000	450	100
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Percent Moisture (%)							
% SOLIDS	0.80	0.81	0.81	0.95	0.90	0.87	0.86
pH (pH units)							
PH	8.1	7.5	7.7	6.3	7.1	7.7	8.5

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS15	IR06SS15	IR06SS16	IR06SS16	IR06SS17	IR06SS17	IR06SS18
Sampling Depth (feet bgs)	0.25	1.75	0.25	1.75	0.25	1.75	0.25
Sample Number	8902A152	8902A153	8902A154	8902A155	8902A156	8902A157	8902A158
Sample Date	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89
Metal (mg/kg)							
ALUMINUM	20,500	27,700	17,500	12,200	10,600	12,200	15,200
ANTIMONY	ND (9.2)	ND (10.0)	ND (9.0)	ND (9.6)	ND (9.0)	ND (9.4)	ND (9.1)
ARSENIC	5.0 *#	3.9 *#	3.6 *#	3.4 *#	3.6 *#	6.8 *#	4.5 *#
BARIUM	266	333 α	130	63.0	69.0	163	97.0
BERYLLIUM	0.59 *	0.68 *	0.41 *	ND (0.25)	0.29 *	0.27 *	0.44 *
CADMIUM	ND (0.92)	ND (1.0)	ND (0.90)	ND (0.96)	ND (0.90)	ND (0.94)	ND (0.91)
CALCIUM	14,600	5,930	16,500	46,400	18,500	12,400	10,900
CHROMIUM	151	311 *	117	67.0	97.0	88.0	42.0
CHROMIUM VI	ND (0.53)	ND (0.59)	ND (0.53)	ND (0.56)	ND (0.53)	ND (0.55)	ND (0.52)
COBALT	26.0	180 α	24.0	ND (15.0)	16.0	17.0	17.0
COPPER	35.0	40.0	36.0	37.0	17.0	30.0	25.0
IRON	31,400	44,400	26,700	16,800	19,200	22,300	22,100
LEAD	6.9	6.3	62.0 α	55.0 α	8.9	4.5	6.2
MAGNESIUM	17,900	58,900	21,200	9,680	12,400	12,300	9,540
MANGANESE	1,290 *	2,500 *α	588 *	421 *	507 *	702 *	446 *
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)
MOLYBDENUM	2.0	ND (1.8)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
NICKEL	158 *	919 *	227 *	83.0	150	92.0	57.0
POTASSIUM	990	838	1,230	1,030	840	2,210	2,500
SELENIUM	ND (1.5)	ND (1.7)	ND (1.5)	ND (1.6)	ND (1.4)	ND (1.5)	ND (1.5)
SILVER	ND (0.92)	ND (1.0)	ND (0.90)	ND (0.96)	ND (0.90)	ND (0.94)	ND (0.91)
SODIUM	ND (851)	ND (1,330)	ND (1,810)	ND (1,940)	ND (823)	ND (1,200)	ND (1,400)
THALLIUM	ND (0.38)	ND (0.43)	0.38	ND (0.41)	ND (0.37)	ND (0.39)	ND (0.38)
VANADIUM	66.0	66.0	57.0	37.0	36.0	47.0	49.0
ZINC	90.0	117 α	120 α	108	69.0	64.0	69.0
Volatile Organic Compound (ug/kg)							
1,1,2-TRICHLOROETHANE	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
2-BUTANONE	ND (11)	ND (12)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)
BENZENE	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
BROMOFORM	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
CARBON DISULFIDE	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
ETHYLBENZENE	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
TETRACHLOROETHENE	4	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS15	IR06SS15	IR06SS16	IR06SS16	IR06SS17	IR06SS17	IR06SS18
Sampling Depth (feet bgs)	0.25	1.75	0.25	1.75	0.25	1.75	0.25
Sample Number	8902A152	8902A153	8902A154	8902A155	8902A156	8902A157	8902A158
Sample Date	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89
Volatile Organic Compound (ug/kg)							
TOLUENE	10	ND (6)	9	1	5	ND (6)	9
TRICHLOROETHENE	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
VINYL ACETATE	ND (11)	ND (12)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)
XYLENE (TOTAL)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)	ND (6)	ND (5)
Semivolatile Organic Compound (ug/kg)							
2,4-DIMETHYLPHENOL	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
2-METHYLNAPHTHALENE	ND (710)	ND (400)	820	6,000	ND (710)	4,700	ND (690)
4-METHYLPHENOL	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
4-NITROPHENOL	ND (3,400)	ND (2,000)	ND (3,400)	ND (3,700)	ND (3,400)	ND (3,600)	ND (3,400)
ACENAPHTHENE	ND (710)	ND (400)	ND (710)	720	ND (710)	1,100	ND (690)
ACENAPHTHYLENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
ANTHRACENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
BENZO(A)ANTHRACENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
BENZO(A)PYRENE	ND (710)	ND (400)	ND (710)	91 *	ND (710)	ND (730)	ND (690)
BENZO(B)FLUORANTHENE	ND (710)	ND (400)	ND (710)	170	ND (710)	ND (730)	ND (690)
BENZO(G,H,I)PERYLENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
BENZO(K)FLUORANTHENE	ND (710)	ND (400)	ND (710)	170	ND (710)	ND (730)	ND (690)
BENZOIC ACID	ND (3,400)	ND (2,000)	ND (3,400)	ND (3,700)	ND (3,400)	ND (3,600)	ND (3,400)
CHRYSENE	250	ND (400)	220	200	140	96	330
DI-N-BUTYLPHTHALATE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	110
DIBENZ(A,H)ANTHRACENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
DIBENZOFURAN	ND (710)	ND (400)	ND (710)	900	ND (710)	1,200	ND (690)
FLUORANTHENE	75	ND (400)	ND (710)	ND (760)	ND (710)	360	ND (690)
FLUORENE	ND (710)	ND (400)	ND (710)	1,400	ND (710)	2,000	ND (690)
INDENO(1,2,3-CD)PYRENE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
N-NITROSODIPHENYLAMINE	ND (710)	ND (400)	ND (710)	ND (760)	ND (710)	ND (730)	ND (690)
NAPHTHALENE	ND (710)	ND (400)	180	2,500	ND (710)	1,100	ND (690)
PENTACHLOROPHENOL	ND (3,400)	ND (2,000)	ND (3,400)	ND (3,700)	ND (3,400)	ND (3,600)	ND (3,400)
PHENANTHRENE	130	ND (400)	440	1,400	85	1,400	ND (690)
PYRENE	72	ND (400)	310	430	87	330	78
Pesticide/Polychlorinated Biphenyl (ug/kg)							
4,4'-DDD	ND (17)	ND (20)	17	ND (18)	ND (17)	ND (18)	ND (17)
ALDRIN	ND (9)	ND (10)	12	18	ND (9)	ND (9)	ND (8)
ENDOSULFAN I	ND (9)	ND (10)	ND (9)	ND (9)	ND (9)	ND (9)	ND (8)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS15	IR06SS15	IR06SS16	IR06SS16	IR06SS17	IR06SS17	IR06SS18
Sampling Depth (feet bgs)	0.25	1.75	0.25	1.75	0.25	1.75	0.25
Sample Number	8902A152	8902A153	8902A154	8902A155	8902A156	8902A157	8902A158
Sample Date	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89	01/12/89
Pesticide/Polychlorinated Biphenyl (ug/kg)							
AROCLOR-1260	ND (170)	ND (200)	ND (170)	ND (180)	ND (170)	ND (180)	ND (170)
TPH-Extractable (mg/kg)							
TPH-DIESEL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (mg/kg)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (mg/kg)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Percent Moisture (%)							
% SOLIDS	0.93	0.82	0.93	0.87	0.93	0.90	0.95
pH (pH units)							
PH	8.8	7.8	9.0	9.3	8.5	9.0	8.8

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS18	IR06SS19	IR06SS19
Sampling Depth (feet bgs)	1.75	0.25	1.75
Sample Number	8902A159	8902A160	8902A161
Sample Date	01/12/89	01/12/89	01/12/89
Metal (mg/kg)			
ALUMINUM	8,640	21,100	19,000
ANTIMONY	ND (10.0)	ND (8.9)	ND (9.5)
ARSENIC	4.0 *#	4.3 *#	4.5 *#
BARIUM	61.0	116	143
BERYLLIUM	ND (0.26)	0.52 *	0.64 *
CADMIUM	ND (1.0)	ND (0.89)	ND (0.95)
CALCIUM	53,300	17,500	14,600
CHROMIUM	67.0	77.0	209
CHROMIUM VI	ND (0.57)	ND (0.52)	ND (0.55)
COBALT	ND (16.0)	25.0	38.0
COPPER	24.0	22.0	30.0
IRON	16,400	31,400	34,000
LEAD	4.5	4.7	6.2
MAGNESIUM	10,500	16,500	37,100
MANGANESE	623 *	806 *	922 *
MERCURY	ND (0.10)	ND (0.11)	0.14
MOLYBDENUM	ND (1.8)	ND (1.6)	ND (1.7)
NICKEL	92.0	100	458 *
POTASSIUM	1,790	1,180	ND (519)
SELENIUM	ND (1.6)	ND (1.4)	ND (1.6)
SILVER	ND (1.0)	ND (0.89)	ND (0.95)
SODIUM	ND (1,380)	ND (976)	ND (754)
THALLIUM	ND (0.42)	ND (0.37)	0.57
VANADIUM	38.0	64.0	59.0
ZINC	50.0	89.0	88.0
Volatile Organic Compound (ug/kg)			
1,1,2-TRICHLOROETHANE	ND (6)	ND (5)	ND (6)
1,2-DICHLOROETHENE (TOTAL)	ND (6)	ND (5)	ND (6)
2-BUTANONE	ND (12)	ND (11)	ND (11)
BENZENE	ND (6)	ND (5)	ND (6)
BROMOFORM	ND (6)	ND (5)	ND (6)
CARBON DISULFIDE	ND (6)	ND (5)	ND (6)
ETHYLBENZENE	ND (6)	ND (5)	ND (6)
TETRACHLOROETHENE	ND (6)	ND (5)	ND (6)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS18	IR06SS19	IR06SS19
Sampling Depth (feet bgs)	1.75	0.25	1.75
Sample Number	8902A159	8902A160	8902A161
Sample Date	01/12/89	01/12/89	01/12/89
Volatile Organic Compound (ug/kg)			
TOLUENE	ND (6)	4	2
TRICHLOROETHENE	ND (6)	ND (5)	ND (6)
VINYL ACETATE	ND (12)	ND (11)	ND (11)
XYLENE (TOTAL)	ND (6)	ND (5)	ND (6)
Semivolatile Organic Compound (ug/kg)			
2,4-DIMETHYLPHENOL	ND (780)	ND (690)	ND (730)
2-METHYLNAPHTHALENE	ND (780)	ND (690)	ND (730)
4-METHYLPHENOL	ND (780)	ND (690)	ND (730)
4-NITROPHENOL	ND (3,800)	ND (3,400)	ND (3,600)
ACENAPHTHENE	ND (780)	ND (690)	ND (730)
ACENAPHTHYLENE	ND (780)	ND (690)	ND (730)
ANTHRACENE	ND (780)	ND (690)	ND (730)
BENZO(A)ANTHRACENE	ND (780)	ND (690)	ND (730)
BENZO(A)PYRENE	ND (780)	ND (690)	ND (730)
BENZO(B)FLUORANTHENE	ND (780)	95	ND (730)
BENZO(G,H,I)PERYLENE	ND (780)	ND (690)	ND (730)
BENZO(K)FLUORANTHENE	ND (780)	95	ND (730)
BENZOIC ACID	ND (3,800)	ND (3,400)	ND (3,600)
CHRYSENE	ND (780)	88	ND (730)
DI-N-BUTYLPHTHALATE	ND (780)	ND (690)	ND (730)
DIBENZ(A,H)ANTHRACENE	ND (780)	ND (690)	ND (730)
DIBENZOFURAN	ND (780)	ND (690)	ND (730)
FLUORANTHENE	ND (780)	ND (690)	ND (730)
FLUORENE	ND (780)	ND (690)	ND (730)
INDENO(1,2,3-CD)PYRENE	ND (780)	ND (690)	ND (730)
N-NITROSODIPHENYLAMINE	ND (780)	ND (690)	ND (730)
NAPHTHALENE	ND (780)	ND (690)	ND (730)
PENTACHLOROPHENOL	ND (3,800)	ND (3,400)	ND (3,600)
PHENANTHRENE	ND (780)	ND (690)	98
PYRENE	88	ND (690)	ND (730)
Pesticide/Polychlorinated Biphenyl (ug/kg)			
4,4'-DDD	ND (19)	ND (17)	ND (18)
ALDRIN	ND (9)	ND (8)	ND (9)
ENDOSULFAN I	ND (9)	ND (8)	ND (9)

TABLE 4.4-3 (Continued)

SOIL ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06SS18	IR06SS19	IR06SS19
Sampling Depth (feet bgs)	1.75	0.25	1.75
Sample Number	8902A159	8902A160	8902A161
Sample Date	01/12/89	01/12/89	01/12/89
Pesticide/Polychlorinated Biphenyl (ug/kg)			
AROCLOR-1260	ND (190)	ND (170)	ND (180)
TPH-Extractable (mg/kg)			
TPH-DIESEL	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (mg/kg)			
TRPH	NA	NA	NA
Oil and Grease (mg/kg)			
TOTAL OIL & GREASE	NA	NA	NA
Percent Moisture (%)			
% SOLIDS	0.85	0.95	0.90
pH (pH units)			
PH	7.8	8.6	8.3

Notes:

%	Percent
bgs	Below ground surface
mg/kg	Milligram per kilogram
NA	Not analyzed
ND()	Not detected (detection limit in parentheses)
µg/kg	Microgram per kilogram
*	Detected concentration greater than U.S. Environmental Protection Agency Region IX preliminary remediation goals (PRG) for residential use
#	Detected concentration greater than U.S. Environmental Protection Agency Region IX PRG for industrial use
α	Detected concentration greater than the Hunters Point ambient level.
▒	Detected concentration greater than at least one screening criterion.

TABLE 4.4-4

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW22A	9024J012	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW22A	9101X031																			√
IR06MW22A	9101X032						√													
IR06MW22A	9102G583									√										
IR06MW22A	9102X039		√					√												
IR06MW22A	9102X047												√							
IR06MW22A	9129X109	√	√				√	√		√			√	√			√			√
IR06MW22A	9202X364		√		√		√	√					√	√			√			√
IR06MW22A	9344X034																			√
IR06MW22A	9344X039																√			
IR06MW22A	9344X048				√		√						√							
IR06MW22A	9407X190				√		√						√				√			√
IR06MW22A	9420X300																			√
IR06MW22A	9420X308				√		√						√				√			
IR06MW22A	9434H624																			√
IR06MW22A	9435K060				√		√						√				√			
IR06MW22A	9529X839						√													
IR06MW23A	9024J022	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW23A	9024J024	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW23A	9102X040	√	√				√	√		√			√	√			√			√
IR06MW23A	9102X041	√	√				√	√		√			√	√			√			√
IR06MW23A	9129X116	√	√				√	√		√			√	√			√			√
IR06MW23A	9129X117	√	√				√	√		√			√	√			√			√
IR06MW23A	9141X214											√		√						
IR06MW23A	9141X215											√		√						
IR06MW23A	9202X372		√		√		√	√					√	√			√			√
IR06MW23A	9202X373		√		√		√	√					√	√			√			√
IR06MW23A	9204Z031											√		√						
IR06MW23A	9344X032				√		√						√				√			√
IR06MW23A	9344X033				√		√						√				√			√
IR06MW23A	9407X199				√		√						√				√			√
IR06MW23A	9420X309				√		√						√				√			√
IR06MW23A	9420X310				√		√						√				√			√
IR06MW23A	9433N585				√		√						√				√			√
IR06MW27A	9024J014	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW27A	9101X027																			√
IR06MW27A	9101X033						√	√		√			√				√			

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW27A	9129X110	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW27A	9202X365																			✓
IR06MW27A	9202X374		✓		✓		✓	✓					✓	✓			✓			
IR06MW27A	9344X035																			✓
IR06MW27A	9344X040																✓			
IR06MW27A	9344X049				✓		✓						✓							
IR06MW27A	9407X191																			✓
IR06MW27A	9407X195				✓		✓						✓				✓			
IR06MW27A	9420X299																			✓
IR06MW27A	9420X307				✓		✓						✓				✓			
IR06MW27A	9434H622																			✓
IR06MW27A	9435E161																✓			
IR06MW27A	9435K061				✓		✓						✓							
IR06MW30A	9024J016	✓	✓		✓		✓	✓		✓	✓		✓	✓			✓	✓		✓
IR06MW30A	9024J017	✓	✓		✓		✓	✓		✓	✓		✓	✓			✓	✓		✓
IR06MW30A	9101X034	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW30A	9101X035	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW30A	9129X111	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW30A	9129X112	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW30A	9202X386		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW30A	9202X387		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW30A	9344X036				✓		✓						✓				✓			✓
IR06MW30A	9407X197				✓		✓						✓				✓			✓
IR06MW30A	9407X198				✓		✓						✓				✓			✓
IR06MW30A	9420X317				✓		✓						✓				✓			✓
IR06MW30A	9434K033				✓		✓						✓				✓			✓
IR06MW32A	9024J018	✓	✓		✓		✓	✓		✓	✓		✓	✓			✓	✓		✓
IR06MW32A	9102X042	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW32A	9129X123	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW32A	9202X391		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW32A	9344X041				✓		✓						✓				✓			✓
IR06MW32A	9407X196				✓		✓						✓				✓			✓
IR06MW32A	9420X315				✓		✓						✓				✓			✓
IR06MW32A	9420X316				✓		✓						✓				✓			✓
IR06MW32A	9434K038				✓		✓						✓				✓			✓
IR06MW34A	9024J026	✓	✓		✓		✓	✓		✓	✓		✓	✓			✓	✓		✓

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW34A	9101J134	√	√				√	√		√			√	√			√			√
IR06MW34A	9129X113	√	√				√	√		√			√	√			√			√
IR06MW34A	9202X388		√		√		√	√					√	√			√			√
IR06MW34A	9313J412				√	√	√			√			√		√		√	√	√	√
IR06MW34A	9344X042				√		√						√				√			√
IR06MW34A	9407X210				√		√						√				√			√
IR06MW34A	9420X314				√		√						√				√			√
IR06MW34A	9433N586				√		√						√				√			√
IR06MW35A	9024J007	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW35A	9101J131	√	√				√	√		√			√	√			√			√
IR06MW35A	9129X122	√	√				√	√		√			√	√			√			√
IR06MW35A	9202X384		√		√		√	√					√	√			√			√
IR06MW35A	9344X043				√		√						√				√			√
IR06MW35A	9407X201				√		√						√				√			√
IR06MW35A	9419X292				√		√						√				√			√
IR06MW35A	9433K020				√		√						√				√			√
IR06MW40A	9024J020	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW40A	9101X036	√	√				√	√		√			√	√			√			√
IR06MW40A	9129X120	√	√				√	√		√			√	√			√			√
IR06MW40A	9129X121	√	√				√	√		√			√	√			√			√
IR06MW40A	9141X219											√		√						
IR06MW40A	9202X389		√		√		√	√					√	√			√			√
IR06MW40A	9204Z023											√		√						
IR06MW40A	9345X057				√		√						√				√			√
IR06MW40A	9407X204				√		√						√				√			√
IR06MW40A	9419X290				√		√						√				√			√
IR06MW40A	9433N581				√		√						√				√			√
IR06MW41A	9024J008	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW41A	9024J009	√	√		√		√	√		√	√		√	√			√	√		√
IR06MW41A	9101X029	√	√				√	√		√			√	√			√			√
IR06MW41A	9129X119	√	√				√	√		√			√	√			√			√
IR06MW41A	9202X380		√		√		√	√					√	√			√			√
IR06MW41A	9202X381		√		√		√	√					√	√			√			√
IR06MW41A	9345X059				√		√						√				√			√
IR06MW41A	9407X206				√		√						√				√			√
IR06MW41A	9407X207				√		√						√				√			√

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW41A	9419X291				✓		✓						✓				✓			✓
IR06MW41A	9433K019				✓		✓						✓				✓			✓
IR06MW42A	9024J025	✓	✓		✓		✓	✓		✓	✓		✓	✓			✓	✓		✓
IR06MW42A	9102G584						✓													
IR06MW42A	9102X043		✓																	✓
IR06MW42A	9102X046	✓						✓		✓			✓	✓			✓			
IR06MW42A	9129X114	✓	✓				✓	✓		✓			✓	✓			✓			✓
IR06MW42A	9141M210											✓		✓						
IR06MW42A	9202X392		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW42A	9202X393		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW42A	9204Z030											✓		✓						
IR06MW42A	9345X060				✓		✓						✓				✓			✓
IR06MW42A	9407X192				✓		✓						✓				✓			✓
IR06MW42A	9420X301				✓		✓						✓				✓			✓
IR06MW42A	9434K044																			✓
IR06MW42A	9434K049				✓		✓						✓				✓			
IR06MW44A	9144X236		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW44A	9202X370																			✓
IR06MW44A	9202X375		✓		✓		✓	✓					✓	✓			✓			
IR06MW44A	9434H623				✓		✓						✓				✓			
IR06MW44A	9434K039																			✓
IR06MW45A	9144X237		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW45A	9203X395		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW45A	9434H620				✓		✓						✓				✓			✓
IR06MW46A	9144X244		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW46A	9144X245		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW46A	9202X371																			✓
IR06MW46A	9202X378		✓		✓		✓	✓					✓	✓			✓			
IR06MW46A	9434H621				✓		✓						✓				✓			
IR06MW46A	9434K040																			✓
IR06MW47F	9145H913		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW47F	9202X385		✓		✓		✓	✓					✓	✓			✓			✓
IR06MW47F	9345X058				✓		✓						✓				✓			✓
IR06MW47F	9407X203				✓		✓						✓				✓			✓
IR06MW47F	9420X313				✓		✓						✓				✓			✓
IR06MW47F	9435K054				✓		✓						✓				✓			✓

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW48F	9145H910		√		√		√	√					√	√			√			√
IR06MW48F	9202X379		√		√		√	√					√	√			√			√
IR06MW48F	9345X062				√		√						√				√			√
IR06MW48F	9407X188				√		√						√				√			√
IR06MW48F	9407X189				√		√						√				√			√
IR06MW48F	9420X304				√		√						√				√			√
IR06MW48F	9433K021				√		√						√				√			√
IR06MW49F	9144X243		√		√		√	√					√	√			√			√
IR06MW49F	9202X366		√		√		√	√					√	√			√			√
IR06MW49F	9202X367		√		√		√	√					√	√			√			√
IR06MW49F	9345X061				√		√						√				√			√
IR06MW49F	9407X208				√		√						√				√			√
IR06MW49F	9420X302				√		√						√				√			√
IR06MW49F	9420X303				√		√						√				√			√
IR06MW49F	9433N583				√		√						√				√			√
IR06MW49F	9433N584				√		√						√				√			√
IR06MW50F	9350X097						√			√	√		√				√	√	√	√
IR06MW50F	9350X098						√			√	√		√				√	√	√	√
IR06MW50F	9433K010						√			√	√		√				√	√	√	√
IR06MW50F	9521X613																	√		√
IR06MW50F	9521X620		√				√			√	√		√	√			√		√	
IR06MW51F	9351X107						√			√			√				√	√	√	√
IR06MW51F	9351X108						√			√			√				√	√	√	√
IR06MW51F	9433E118																	√		√
IR06MW51F	9433E119																	√		√
IR06MW51F	9433E121						√			√	√		√				√		√	
IR06MW51F	9433E122						√			√	√		√				√		√	
IR06MW51F	9530X883						√													
IR06MW51F	9531X906																	√		√
IR06MW51F	9531X911		√							√	√		√	√			√		√	
IR06MW52F	9352X114						√			√			√				√	√	√	√
IR06MW52F	9352X115						√			√			√				√	√	√	√
IR06MW52F	9432E109																	√		√
IR06MW52F	9432E113						√			√	√		√				√		√	
IR06MW52F	9521X614																	√		√
IR06MW52F	9521X621		√				√			√	√		√	√			√		√	

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW53F	9411M506						✓			✓	✓		✓				✓	✓	✓	✓
IR06MW53F	9432E110																	✓		✓
IR06MW53F	9432E114						✓			✓	✓		✓				✓		✓	
IR06MW53F	9521X615																	✓		✓
IR06MW53F	9521X622		✓				✓			✓	✓		✓	✓			✓		✓	
IR06MW54F	9350X100						✓			✓	✓		✓				✓	✓	✓	✓
IR06MW54F	9350X101						✓			✓	✓		✓				✓	✓	✓	✓
IR06MW54F	9433K012						✓			✓	✓		✓				✓	✓	✓	✓
IR06MW54F	9521X626		✓				✓			✓	✓		✓	✓			✓	✓	✓	✓
IR06MW55F	9352X116																	✓		✓
IR06MW55F	9352X118						✓			✓			✓				✓		✓	
IR06MW55F	9433E123																	✓		✓
IR06MW55F	9433E124																	✓		✓
IR06MW55F	9433N574						✓			✓	✓		✓				✓		✓	
IR06MW55F	9433N575						✓			✓	✓		✓				✓		✓	
IR06MW55F	9521X617																	✓		✓
IR06MW55F	9521X618																	✓		✓
IR06MW55F	9521X624		✓				✓			✓	✓		✓	✓			✓		✓	
IR06MW55F	9521X625		✓				✓			✓	✓		✓	✓			✓		✓	
IR06MW56F	9401X134																	✓		✓
IR06MW56F	9401X150						✓			✓			✓				✓		✓	
IR06MW56F	9433K011																	✓		✓
IR06MW56F	9433N573						✓			✓	✓		✓				✓		✓	
IR06MW56F	9521X616																	✓		✓
IR06MW56F	9521X623		✓				✓			✓	✓		✓	✓			✓		✓	
IR06MW57F	9437K147																✓			
IR06MW57F	9437K155									✓										
IR06MW57F	9437K172										✓									
IR06MW57F	9437X470																	✓		✓
IR06MW57F	9437X479												✓							
IR06MW57F	9438X486						✓												✓	
IR06MW57F	9521X604																	✓		✓
IR06MW57F	9521X611		✓				✓			✓	✓		✓	✓			✓		✓	
IR06MW57F	9537W018																	✓		✓
IR06MW57F	9538W020				✓		✓			✓	✓		✓				✓		✓	
IR06MW58F	9425E022																	✓		✓

TABLE 4.4-4 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL TESTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

STATION NO.	SAMPLE NO.	AMMON	ANION	ASBESTOS	CHROM	CYAN	METAL	O&G	PCTMST	PEST	PH	SALIN	SVOC	TDS	TMICROB	TOC	TPHEXT	TPHPRG	TRPH	VOC
IR06MW58F	9425E023						✓			✓	✓		✓				✓		✓	
IR06MW58F	9426X390																✓			
IR06MW58F	9426X391																✓			
IR06MW58F	9433E125																	✓		✓
IR06MW58F	9433E130						✓			✓	✓		✓				✓		✓	
IR06MW58F	9521X605																	✓		✓
IR06MW58F	9521X612		✓				✓			✓	✓		✓	✓			✓		✓	

Notes:

AMMON	Ammonia
CHROM	CHROMIUM VI
CYAN	Cyanide
O&G	Total oil and grease
PCTMST	Percent moisture
PEST	Pesticides/polychlorinated biphenyls
PHYS	Physical characteristic
SALIN	Salinity
SVOC	Semivolatile organic compounds
TDS	Total dissolved solids
TMICROB	Coliform
TOC	Total organic carbon
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
VOC	Volatile organic compounds

TABLE 4.4-5A

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER A-AQUIFER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
METAL	ALUMINUM	15.7	23.1	20.4	UG/L	16.9	48	3	37,000	0				
	ANTIMONY	10.8	40.1	25.5	UG/L	23.3	48	8	15.0	7	6.0	8	500	0
	ARSENIC	1.5	14.3	5.6	UG/L	2.1	91	67	0.04	67	50.0	0	36.0	0
	BARIUM	13.9	924	268	UG/L	0.63	48	48	2,600	0	1,000	0		
	BERYLLIUM	0.27	0.56	0.39	UG/L	0.33	91	5	0.02	5	4.0	0		
	CADMIUM	4.0	6.4	5.2	UG/L	3.0	48	2	18.0	0	5.0	1	9.3	0
	CALCIUM	6,770	230,000	77,500	UG/L	22.6	48	48						
	CHROMIUM	0.90	1.3	1.1	UG/L	0.70	91	2			50.0	0		
	COBALT	5.0	16.7	10.2	UG/L	7.7	48	14						
	COPPER	1.3	58.2	9.2	UG/L	1.5	48	9	1,400	0			2.4	3
	IRON	85.6	11,900	3,080	UG/L	12.6	48	30						
	LEAD	1.3	9.9	4.5	UG/L	1.2	48	3	4.0	1	50.0	0	8.1	1
	MAGNESIUM	26,000	915,000	279,000	UG/L	31.0	48	48						
	MANGANESE	26.8	8,860	2,310	UG/L	0.45	48	48	180	43				
	MERCURY	0.14	0.14	0.14	UG/L	0.05	48	1	11.0	0	2.0	0	0.03	1
	MOLYBDENUM	5.1	25.4	17.5	UG/L	3.2	28	5	180	0				
	NICKEL	13.6	117	37.1	UG/L	16.9	49	24	730	0	100	1	8.2	24
	POTASSIUM	1,510	63,800	15,900	UG/L	485	48	48						
	SELENIUM	2.3	3.1	2.6	UG/L	2.3	48	3	180	0	50.0	0	71.0	0
	SODIUM	43,200	2,120,000	506,000	UG/L	73.6	48	48						
	THALLIUM	2.5	2.5	2.5	UG/L	2.0	47	1			2.0	1		
	VANADIUM	1.1	56.7	13.5	UG/L	2.1	48	19	260	0				

TABLE 4.4-5A (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER A-AQUIFER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
	ZINC	5.7	49.8	17.6	UG/L	3.0	48	26	11,000	0			81.0	0
CYAN	CYANIDE	0.76	0.76	0.76	UG/L	0.40	1	1	730	0	200	0		
VOC	1,1-DICHLOROETHANE	2	2	2	UG/L	5	90	1	810	0				
	1,2-DICHLOROETHANE	1	1	1	UG/L	5	90	1	0.1	1	0.5	1		
	1,2-DICHLOROETHENE (TOTAL)	1	130	22	UG/L	5	47	13	55	1				
	2-BUTANONE	6	29	18	UG/L	10	90	2	1,900	0				
	BENZENE	0.7	72	17	UG/L	5	90	32	0.4	32	1	30		
	CHLOROETHANE	81	81	81	UG/L	10	90	1	710	0				
	CHLOROFORM	0.3	24	7	UG/L	4	90	5	0.2	5	100	0		
	CIS-1,2-DICHLOROETHENE	0.6	340	80	UG/L	3	43	13	61	4	6	8		
	ETHYLBENZENE	1	14	7	UG/L	4	90	13	1,300	0	700	0		
	METHYLENE CHLORIDE	1	17	9	UG/L	5	90	3	4	2	5	2		
	STYRENE	1	1	1	UG/L	5	47	1	1,600	0	100	0		
	TETRACHLOROETHENE	1	5	3	UG/L	4	90	4	1	4	5	0		
	TOLUENE	0.6	20	5	UG/L	5	90	15	720	0	150	0		
	TRICHLOROETHENE	0.3	20	5	UG/L	5	90	17	2	11	5	4		
	TRICHLOROFLUOROMETHANE	0.8	120	51	UG/L	1	43	3	1,300	0				
	TRICHLOROTRIFLUOROETHANE	20	73	40	UG/L	7	43	7	59,000	0				
	VINYL CHLORIDE	0.7	62	18	UG/L	5	90	25	0.02	25	0.5	25		
	XYLENE (TOTAL)	0.7	56	19	UG/L	3	90	13	1,400	0	1,800	0		
SVOC	1,2-DICHLOROBENZENE	1	18	5	UG/L	3	100	10	370	0	600	0		
	1,4-DICHLOROBENZENE	5	5	5	UG/L	10	100	1	0.5	1	5	0		

TABLE 4.4-5A (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER A-AQUIFER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
	2,4-DIMETHYLPHENOL	8	35	16	UG/L	13	79	6	730	0				
	2-METHYLNAPHTHALENE	0.5	240	40	UG/L	22	90	15	240	0				
	2-METHYLPHENOL	4	4	4	UG/L	10	79	1	1,800	0				
	4-METHYLPHENOL	1	4	2	UG/L	10	79	3	180	0				
	ACENAPHTHENE	0.6	230	48	UG/L	28	90	38	370	0				
	ACENAPHTHYLENE	3	3	3	UG/L	10	90	1	370	0				
	ANTHRACENE	0.2	21	5	UG/L	15	90	15	1,800	0				
	BENZOIC ACID	15	15	15	UG/L	50	46	1	150,000	0				
	BIS(2-ETHYLHEXYL)PHTHALATE	5	20	13	UG/L	10	90	2	5	2	4	2	360	0
	BUTYLBENZYLPHTHALATE	6	6	6	UG/L	10	90	1	7,300	0				
	CARBAZOLE	3	53	34	UG/L	20	44	4	3	3				
	DIBENZOFURAN	2	140	30	UG/L	17	90	30	150	0				
	DIETHYLPHTHALATE	6	6	6	UG/L	10	90	1	29,000	0				
	FLUORANTHENE	0.9	36	8	UG/L	20	90	21	1,500	0				
	FLUORENE	0.7	160	35	UG/L	18	90	26	240	0				
	NAPHTHALENE	2	1,700	300	UG/L	28	90	19	240	7				
	PENTACHLOROPHENOL	3	3	3	UG/L	50	79	1	0.6	1	1	1	8	0
	PHENANTHRENE	0.5	160	28	UG/L	17	90	31	240	0			5	20
	PYRENE	0.7	16	5	UG/L	21	90	20	1,100	0				
TPHEXT	TPH-DIESEL	86	11,000	1,600	UG/L	430	89	49	100	46i				
	TPH-EXTRACTABLE UNKNOWN HYDRO.	1,600	7,300	3,900	UG/L	630	6	3	100	3i				
	TPH-MOTOR OIL	120	3,100	740	UG/L	170	33	30	100	30i				

TABLE 4.4-5A (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER A-AQUIFER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection Frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
O&G	TOTAL OIL & GREASE	260	6,000	2,100	UG/L	800	46	8	100	8i				
ANION	CHLORIDE	61,600	3,490,000	1,090,000	UG/L	118,000	45	45						
	NITRATE	61.0	3,200	977	UG/L	258	45	13	58,000	0				
	NITRITE	470	470	470	UG/L	50.0	16	1	3,700	0				
	ORTHOPHOSPHATE	330	1,500	965	UG/L	200	45	4						
	SULFATE	1,500	4,340,000	403,000	UG/L	30,700	45	34						
SOLIDS	TOTAL DISSOLVED SOLIDS	440,000	9,300,000	2,700,000	UG/L	19,000	50	50						
AMMON	AMMONIA	120	2,000	960	UG/L	100	28	27						
SALIN	SALINITY	0.35	5.1	1.9	UG/L	0	6	6						

TABLE 4.4-5A (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER A-AQUIFER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Notes:

AMMON	Ammonia
CYAN	Cyanide
EPA	U.S. Environmental Protection Agency
MCL	Maximum contaminant level
NAWQC	National Ambient Water Quality Criteria
O&G	Total oil and grease
PCTMST	Percent moisture
PEST	Pesticide/polychlorinated biphenyl
PRG	Preliminary remediation goal
SALIN	Salinity
SVOC	Semivolatile organic compound
TDS	Total dissolved solids
TMICROB	Coliform
TOC	Total organic carbon
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
UG/L	Microgram per liter
VOC	Volatile organic compound

a Organic results of less than 10 are reported to one significant figure, and results of greater than or equal to 10 are reported to two significant figures.
Inorganic results of less than 10 are reported to two significant figures, and results of greater than or equal to 10 are reported to three significant figures.

b Blank boxes indicate that screening critera have not been established for these analytes.

c Total number of samples analyzed

d Total number of samples showing concentrations greater than detection limit

e Total number of samples showing concentrations greater than tap water PRG
California-modified PRGs were used for the following analytes: 1,2-Dibromo-3-chloropropane, benzo[a]pyrene, benzo[k]fluoranthene, cadmium, chromium VI, chrysene, lead, nickel, and tetrachloroethylene (PCE).
For the analytes listed below, Region IX PRGs are not available; therefore, PRGs for similar chemicals were used as follows:

Analyte:	Similar Analyte:
2-Methylnapthalene	Naphthalene
Acenaphthylene	Acenaphthene
Alpha-chlordane	Chlordane
Aroclor-1260	Polychlorinated biphenyls
Benzo(g,h,i)perylene	Naphthalene
Delta BHC	HCH-technical
Endosulfan I	Endosulfan
Endosulfan sulfate	Endosulfan
Endrin aldehyde	Endrin
Endrin ketone	Endrin
Gamma-chlordane	Chlordane
Phenanthrene	Naphthalene

f EPA Title 40 Code of Federal Regulations or California Code of Regulations Title 22 MCL used, whichever is more stringent

g Total number of samples showing concentrations greater than MCL

h Total number of samples showing concentrations greater than NAWQC;
NAWQC based on 4-day average study of saltwater aquatic life

i Total number of samples showing concentrations greater than TPH, TRPH, or O&G screening level, not PRG value

j Most probable number of organisms per 100 milliliters (mpn/100 mL)

TABLE 4.4-5B

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER BEDROCK WATER-BEARING ZONE ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
METAL	ALUMINUM	36.6	46.5	41.5	UG/L	35.3	33	2	37,000	0				
	ANTIMONY	3.6	10.8	5.2	UG/L	2.2	33	8	15.0	0	6.0	1	500	0
	ARSENIC	1.7	8.2	5.0	UG/L	2.2	45	17	0.04	17	50.0	0	36.0	0
	BARIUM	3.8	115	29.0	UG/L	2.3	33	28	2,600	0	1,000	0		
	CADMIUM	1.1	9.2	4.6	UG/L	0.20	33	3	18.0	0	5.0	1	9.3	0
	CALCIUM	3,090	98,800	21,100	UG/L	45.9	33	30						
	CHROMIUM	2.1	117	50.5	UG/L	1.5	45	22			50.0	12		
	CHROMIUM VI	80.9	115	92.9	UG/L	10.0	19	6	0.16	6			50.0	6
	COBALT	0.71	10.7	5.7	UG/L	5.5	33	2						
	COPPER	1.6	31.2	7.9	UG/L	1.1	33	15	1,400	0			2.4	13
	IRON	29.9	119	64.7	UG/L	21.7	33	3						
	MAGNESIUM	3,160	316,000	82,800	UG/L	35.4	33	33						
	MANGANESE	0.62	728	88.9	UG/L	0.37	33	21	180	5				
	MERCURY	0.12	0.30	0.21	UG/L	0.10	33	3	11.0	0	2.0	0	0.03	3
	MOLYBDENUM	13.1	258	126	UG/L	1.3	33	7	180	3				
	NICKEL	3.5	95.4	23.2	UG/L	4.9	33	5	730	0	100	0	8.2	1
	POTASSIUM	798	45,000	12,300	UG/L	407	33	28						
	SELENIUM	11.7	11.7	11.7	UG/L	27.0	33	1	180	0	50.0	0	71.0	0
	SODIUM	35,800	1,630,000	372,000	UG/L	103	33	33						
	THALLIUM	0.32	2.5	1.4	UG/L	2.0	31	2			2.0	1		
	VANADIUM	1.3	12.7	5.5	UG/L	1.5	33	23	260	0				
	ZINC	3.8	48.1	20.5	UG/L	0.81	33	11	11,000	0			81.0	0

TABLE 4.4-5B (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER BEDROCK WATER-BEARING ZONE ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis Code	Analyte	Detected Results[a]				Detection Limit Average	Detection Frequency[b]							
		Minimum	Maximum	Average	Units		Samples Analyzed[c]	Total Detects[d]	Tap Water PRG Value	Above[e] PRG	MCL Value[f]	Above[g] MCL	NAWQC Value	Above[h] NAWQC
VOC	1,2-DICHLOROETHENE (TOTAL)	2	2	2	UG/L	5	31	1	55	0				
	BENZENE	1	2	1	UG/L	2	45	5	0.4	5	1	1		
	CARBON TETRACHLORIDE	28	28	28	UG/L	10	45	1	0.2	1	0.5	1		
	CHLOROFORM	1	11	3	UG/L	5	45	6	0.2	6	100	0		
	CIS-1,2-DICHLOROETHENE	0.4	3	2	UG/L	0.9	14	4	61	0	6	0		
	TRANS-1,2-DICHLOROETHENE	0.3	0.3	0.3	UG/L	1	14	2	120	0	10	0		
	TRICHLOROETHENE	0.3	14	4	UG/L	3	45	10	2	8	5	1		
	TRICHLOROTRIFLUOROETHANE	2	2	2	UG/L	0.5	14	1	59,000	0				
	VINYL CHLORIDE	6	12	8	UG/L	3	45	5	0.02	5	0.5	5		
SVOC	2-METHYLNAPHTHALENE	4	4	4	UG/L	10	45	2	240	0				
	NAPHTHALENE	0.6	2	1	UG/L	10	45	2	240	0				
	PHENANTHRENE	3	3	3	UG/L	10	45	2	240	0			5	0
PEST	HEPTACHLOR EPOXIDE	0.03	0.03	0.03	UG/L	0.05	27	1	0.007	1	0.01	1		
TPHPRG	TPH-GASOLINE	27	31	29	UG/L	50	27	3	100	0i				
TPHEXT	TPH-DIESEL	84	2,300	910	UG/L	260	46	9	100	7i				
	TPH-MOTOR OIL	70	2,200	550	UG/L	110	31	25	100	23i				
TRPH	TRPH	500	800	650	UG/L	1,000	27	2	100	2i				
ANION	CHLORIDE	61,700	2,230,000	531,000	UG/L	21,000	15	15						
	NITRATE	74.0	9,900	3,310	UG/L	155	15	11	58,000	0				
	ORTHOPHOSPHATE	75.0	470	186	UG/L	71.4	15	7						
	SULFATE	5,950	670,000	143,000	UG/L	9,420	15	15						
SOLIDS	TOTAL DISSOLVED SOLIDS	360,000	5,400,000	1,600,000	UG/L	10,000	15	15						

TABLE 4.4-5B (Continued)

STATISTICAL SUMMARY OF MONITORING WELL GROUNDWATER BEDROCK WATER-BEARING ZONE ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Notes:

AMMON	Ammonia
CYAN	Cyanide
EPA	U.S. Environmental Protection Agency
MCL	Maximum contaminant level
NAWQC	National Ambient Water Quality Criteria
O&G	Total oil and grease
PCTMST	Percent moisture
PEST	Pesticide/polychlorinated biphenyl
PRG	Preliminary remediation goal
SALIN	Salinity
SVOC	Semivolatile organic compound
TDS	Total dissolved solids
TMICROB	Coliform
TOC	Total organic carbon
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
UG/L	Microgram per liter
VOC	Volatile organic compound

a Organic results of less than 10 are reported to one significant figure, and results of greater than or equal to 10 are reported to two significant figures.
Inorganic results of less than 10 are reported to two significant figures, and results of greater than or equal to 10 are reported to three significant figures.

b Blank boxes indicate that screening critera have not been established for these analytes.

c Total number of samples analyzed

d Total number of samples showing concentrations greater than detection limit

e Total number of samples showing concentrations greater than tap water PRG
California-modified PRGs were used for the following analytes: 1,2-Dibromo-3-chloropropane, benzo[a]pyrene, benzo[k]fluoranthene, cadmium, chromium VI, chrysene, lead, nickel, and tetrachloroethylene (PCE).
For the analytes listed below, Region IX PRGs are not available; therefore, PRGs for similar chemicals were used as follows:

Analyte:	Similar Analyte:
2-Methylnapthalene	Naphthalene
Acenaphthylene	Acenaphthene
Alpha-chlordane	Chlordane
Aroclor-1260	Polychlorinated biphenyls
Benzo(g,h,i)perylene	Naphthalene
Delta BHC	HCH-technical
Endosulfan I	Endosulfan
Endosulfan sulfate	Endosulfan
Endrin aldehyde	Endrin
Endrin ketone	Endrin
Gamma-chlordane	Chlordane
Phenanthrene	Naphthalene

f EPA Title 40 Code of Federal Regulations or California Code of Regulations Title 22 MCL used, whichever is more stringent

g Total number of samples showing concentrations greater than MCL

h Total number of samples showing concentrations greater than NAWQC;
NAWQC based on 4-day average study of saltwater aquatic life

i Total number of samples showing concentrations greater than TPH, TRPH, or O&G screening level, not PRG value

TABLE 4.4-6

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9024J012	9101X031	9101X032	9102X039	9129X109	9202X364	9344X034
Sample Date	06/12/90	01/03/91	01/04/91	01/07/91	07/15/91	01/06/92	11/03/93
Metal (ug/L)							
ALUMINUM	ND (21.3)	NA	ND (14.6)	NA	ND (25.7)	ND (15.3)	NA
ANTIMONY	ND (20.1)	NA	ND (23.8)	NA	ND (14.3)	ND (27.6)	NA
ARSENIC	4.9 *	NA	ND (2.9)	NA	12.1 *	5.0 *	NA
BARIUM	61.9	NA	125	NA	67.2	82.9	NA
BERYLLIUM	0.37 *	NA	ND (1.6)	NA	ND (0.24)	ND (0.35)	NA
CADMIUM	ND (3.7)	NA	ND (4.1)	NA	ND (3.4)	ND (2.3)	NA
CALCIUM	33,800	NA	36,300	NA	34,200	31,700	NA
CHROMIUM	ND (1.7)	NA	ND (2.8)	NA	ND (2.1)	ND (3.0)	NA
CHROMIUM VI	ND (10.0)	NA	NA	NA	NA	ND (10.0)	NA
COBALT	ND (7.0)	NA	ND (8.4)	NA	5.3	16.0	NA
COPPER	ND (1.7)	NA	ND (2.3)	NA	ND (2.4)	ND (3.0)	NA
IRON	ND (37.8)	NA	429	NA	1,460	ND (11.3)	NA
LEAD	ND (1.6)	NA	ND (2.1)	NA	2.4	ND (2.0)	NA
MAGNESIUM	129,000	NA	144,000	NA	228,000	196,000	NA
MANGANESE	644 *	NA	1,150 *	NA	1,730 *	1,170 *	NA
MERCURY	ND (0.20)	NA	ND (0.20)	NA	ND (0.20)	ND (0.20)	NA
MOLYBDENUM	NA	NA	NA	NA	ND (3.3)	ND (3.1)	NA
NICKEL	ND (20.2)	NA	ND (22.9)	NA	17.8 B	45.9 B	NA
POTASSIUM	10,300	NA	7,460	NA	5,980	4,500	NA
SELENIUM	ND (2.2)	NA	ND (2.3)	NA	ND (2.9)	ND (2.5)	NA
SODIUM	163,000	NA	262,000	NA	106,000	88,200	NA
THALLIUM	ND (1.7)	NA	ND (2.5)	NA	ND (7.5)	ND (2.0)	NA
VANADIUM	6.9	NA	ND (9.9)	NA	ND (1.6)	ND (3.9)	NA
ZINC	6.9	NA	10.1	NA	ND (12.6)	43.0	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (5)	NA	NA	2	ND (5)	ND (10)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	ND (10)
1,2-DICHLOROETHANE	ND (5)	ND (5)	NA	NA	1 *6	ND (5)	ND (10)
1,2-DICHLOROETHENE (TOTAL)	3	6	NA	NA	8	ND (5)	NA
2-BUTANONE	ND (10)	ND (10)	NA	NA	29	ND (10)	ND (50)
BENZENE	55 *6	42 *6	NA	NA	72 *6	4 *6	32 *6
CARBON TETRACHLORIDE	ND (5)	ND (5)	NA	NA	ND (5)	ND (5)	ND (10)
CHLOROETHANE	ND (10)	ND (10)	NA	NA	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9024J012	9101X031	9101X032	9102X039	9129X109	9202X364	9344X034
Sample Date	06/12/90	01/03/91	01/04/91	01/07/91	07/15/91	01/06/92	11/03/93
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	ND (5)	NA	NA	ND (5)	ND (5)	ND (10)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	ND (10)
ETHYLBENZENE	14	1	NA	NA	12	ND (5)	ND (10)
METHYLENE CHLORIDE	ND (5)	ND (8)	NA	NA	ND (10)	ND (2)	8 *&
STYRENE	ND (5)	ND (5)	NA	NA	ND (5)	ND (5)	NA
TETRACHLOROETHENE	ND (5)	ND (5)	NA	NA	ND (5)	ND (5)	ND (10)
TOLUENE	12	6	NA	NA	20	ND (5)	6
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	ND (10)
TRICHLOROETHENE	1	3 *	NA	NA	3 *	ND (5)	ND (10)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	ND (10)
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	30
VINYL CHLORIDE	ND (10)	12 *&	NA	NA	24 *&	ND (10)	17 *&
XYLENE (TOTAL)	56	35	NA	NA	40	ND (5)	ND (10)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
1,4-DICHLOROBENZENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
2,4-DIMETHYLPHENOL	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
2-METHYLNAPHTHALENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
2-METHYLPHENOL	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
4-METHYLPHENOL	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
ACENAPHTHENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
ACENAPHTHYLENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
ANTHRACENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
BENZOIC ACID	ND (50)	NA	NA	NA	ND (50)	ND (50)	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (6)	NA	NA	NA	ND (4)	ND (10)	NA
BUTYLBENZYLPHTHALATE	ND (7)	NA	NA	NA	ND (10)	ND (10)	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
DIETHYLPHTHALATE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
FLUORANTHENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
FLUORENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
NAPHTHALENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
PENTACHLOROPHENOL	ND (50)	NA	NA	NA	ND (50)	3 *&	NA
PHENANTHRENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA
PYRENE	ND (10)	NA	NA	NA	ND (10)	ND (10)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9024J012	9101X031	9101X032	9102X039	9129X109	9202X364	9344X034
Sample Date	06/12/90	01/03/91	01/04/91	01/07/91	07/15/91	01/06/92	11/03/93
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	ND (500)	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	NA	NA	NA	1,500	ND (3,000)	NA
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	7,300	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	NA	6,000	460	ND (5,000)	NA
Anion (ug/L)							
CHLORIDE	210,000	NA	NA	150,000	81,800	82,800	NA
NITRATE	ND (50.0)	NA	NA	ND (50.0)	ND (50.0)	ND (50.0)	NA
NITRITE	NA	NA	NA	NA	NA	ND (50.0)	NA
ORTHOPHOSPHATE	ND (200)	NA	NA	ND (2,000)	ND (200)	ND (200)	NA
SULFATE	30,800	NA	NA	37,100	1,500	23,300	NA
Ammonia (ug/L)							
AMMONIA	150	NA	NA	NA	350	NA	NA
pH (pH units)							
PH	7.6	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	970,000	NA	NA	NA	1,100,000	950,000	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9344X039	9344X048	9407X190	9420X300	9420X308	9434H624	9435K060
Sample Date	11/04/93	11/05/93	02/14/94	05/16/94	05/17/94	08/25/94	08/30/94
Metal (ug/L)							
ALUMINUM	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	11.9 *	ND (13.4)	NA	7.7 *	NA	14.3 *
BARIUM	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	ND (0.20)	ND (0.20)	NA	ND (0.10)	NA	ND (0.10)
CADMIUM	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	ND (2.5)	ND (2.3)	NA	ND (0.90)	NA	ND (1.4)
CHROMIUM VI	NA	ND (79.2)	ND (11.0)	NA	ND (10.0)	NA	ND (10.0)
COBALT	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA
1,2-DICHLOROBENZENE	NA	NA	ND (5)	ND (5)	NA	4	NA
1,2-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	ND (25)	ND (50)	NA	ND (50)	NA
BENZENE	NA	NA	41 *δ	39 *δ	NA	31 *δ	NA
CARBON TETRACHLORIDE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA
CHLOROETHANE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9344X039	9344X048	9407X190	9420X300	9420X308	9434H624	9435K060
Sample Date	11/04/93	11/05/93	02/14/94	05/16/94	05/17/94	08/25/94	08/30/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	ND (5)	ND (5)	NA	2 *	NA
CIS-1,2-DICHLOROETHENE	NA	NA	5	ND (5)	NA	4	NA
ETHYLBENZENE	NA	NA	6	ND (5)	NA	3	NA
METHYLENE CHLORIDE	NA	NA	ND (6)	ND (3)	NA	ND (13)	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA
TOLUENE	NA	NA	8	8	NA	4	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	ND (5)	ND (5)	NA	ND (2)	NA
TRICHLOROETHENE	NA	NA	ND (5)	ND (5)	NA	2 *	NA
TRICHLOROFLUOROMETHANE	NA	NA	120	ND (5)	NA	ND (2)	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	73	ND (5)	NA	25	NA
VINYL CHLORIDE	NA	NA	46 *6	ND (5)	NA	10 *6	NA
XYLENE (TOTAL)	NA	NA	11	ND (15)	NA	ND (7)	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	ND (20)	NA	NA	ND (5)	NA	ND (5)
1,4-DICHLOROBENZENE	NA	ND (20)	NA	NA	ND (5)	NA	ND (5)
2,4-DIMETHYLPHENOL	NA	ND (20)	10	NA	24	NA	8
2-METHYLNAPHTHALENE	NA	ND (20)	ND (10)	NA	1	NA	ND (10)
2-METHYLPHENOL	NA	ND (20)	ND (10)	NA	4	NA	ND (10)
4-METHYLPHENOL	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
ACENAPHTHENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
ACENAPHTHYLENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
ANTHRACENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	ND (7)	ND (10)	NA	ND (9)	NA	ND (40)
BUTYLBENZYLPHTHALATE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
CARBAZOLE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
DIBENZOFURAN	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
DIETHYLPHTHALATE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
FLUORANTHENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
FLUORENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
NAPHTHALENE	NA	ND (20)	6	NA	5	NA	ND (10)
PENTACHLOROPHENOL	NA	ND (50)	ND (25)	NA	ND (25)	NA	ND (25)
PHENANTHRENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)
PYRENE	NA	ND (20)	ND (10)	NA	ND (10)	NA	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A	IR06MW22A
Sample Number	9344X039	9344X048	9407X190	9420X300	9420X308	9434H624	9435K060
Sample Date	11/04/93	11/05/93	02/14/94	05/16/94	05/17/94	08/25/94	08/30/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	11,000	NA	1,800	NA	2,700	NA	3,100
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	2,200	NA	1,400	NA	1,500
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	NA	NA	NA
NITRATE	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9529X839	9024J022	9024J024	9102X040	9102X041	9129X116	9129X117
Sample Date	07/20/95	06/13/90	06/13/90	01/07/91	01/07/91	07/16/91	07/16/91
Metal (ug/L)							
ALUMINUM	ND (21.5)	ND (21.3)	ND (21.3)	ND (14.6)	ND (14.6)	ND (25.7)	ND (25.7)
ANTIMONY	ND (2.1)	ND (20.1)	23.6 *&	ND (23.8)	ND (23.8)	ND (14.3)	ND (14.3)
ARSENIC	7.7 *	2.1 *	2.6 *	3.9 *	3.4 *	ND (2.5)	2.5 *
BARIUM	100	94.1	94.5	114	114	246	254
BERYLLIUM	ND (0.10)	0.37 *	ND (0.33)	ND (1.6)	ND (1.6)	ND (1.4)	ND (0.56)
CADMIUM	ND (0.20)	ND (3.7)	ND (3.7)	ND (4.1)	ND (4.1)	ND (3.4)	ND (3.4)
CALCIUM	34,400	28,000	28,400	23,400	23,500	31,000	31,500
CHROMIUM	ND (1.8)	ND (2.7)	ND (2.6)	ND (2.8)	ND (2.8)	ND (2.1)	ND (2.1)
CHROMIUM VI	NA	ND (10.0)	ND (10.0)	NA	NA	NA	NA
COBALT	ND (0.50)	ND (7.0)	ND (7.0)	ND (8.4)	ND (8.4)	ND (4.9)	ND (4.9)
COPPER	ND (3.8)	ND (17.5)	ND (12.0)	ND (2.3)	ND (2.3)	ND (1.3)	3.1 &
IRON	2,910	87.4	118	ND (46.4)	ND (33.4)	329	365
LEAD	ND (1.5)	ND (1.6)	ND (1.6)	ND (2.1)	ND (2.1)	1.9	ND (1.2)
MAGNESIUM	290,000	102,000	103,000	78,600	79,400	107,000	110,000
MANGANESE	1,240 *	633 *	638 *	626 *	630 *	770 *	788 *
MERCURY	ND (0.10)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.20)	ND (0.20)	ND (0.40)
MOLYBDENUM	ND (1.6)	NA	NA	NA	NA	ND (3.3)	ND (3.3)
NICKEL	ND (7.9)	ND (20.2)	ND (20.2)	ND (22.9)	ND (22.9)	18.4 &	30.8 &
POTASSIUM	2,790	4,370	4,590	1,680	1,800	1,030	1,990
SELENIUM	ND (3.4)	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.3)	ND (2.9)	ND (2.9)
SODIUM	111,000	65,200	67,000	43,400	43,000	51,300	53,300
THALLIUM	2.5 &	ND (1.7)	ND (1.7)	ND (2.5)	ND (2.5)	ND (7.5)	ND (7.5)
VANADIUM	1.1	5.3	4.9	ND (12.3)	ND (12.0)	ND (7.1)	ND (4.8)
ZINC	ND (20.8)	11.9	11.2	20.4	21.3	15.9	19.0
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (5)	1	ND (5)	ND (5)	2	1
2-BUTANONE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZENE	NA	ND (5)	17 *&	ND (5)	ND (5)	ND (12)	ND (11)
CARBON TETRACHLORIDE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CHLOROETHANE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9529X839	9024J022	9024J024	9102X040	9102X041	9129X116	9129X117
Sample Date	07/20/95	06/13/90	06/13/90	01/07/91	01/07/91	07/16/91	07/16/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
METHYLENE CHLORIDE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (6)	ND (5)
STYRENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TETRACHLOROETHENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TOLUENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	1	2
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	ND (10)	ND (10)	ND (10)	ND (10)	6 *8	5 *8
XYLENE (TOTAL)	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,4-DICHLOROBENZENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (3)	ND (10)
BUTYLBENZYLPHTHALATE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	NA	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
PHENANTHRENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW22A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9529X839	9024J022	9024J024	9102X040	9102X041	9129X116	9129X117
Sample Date	07/20/95	06/13/90	06/13/90	01/07/91	01/07/91	07/16/91	07/16/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	ND (500)	ND (500)	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	ND (500)	ND (500)	ND (500)	ND (500)	500	620
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	ND (5,000)	ND (5,000)	260	250	ND (200)	ND (200)
Anion (ug/L)							
CHLORIDE	NA	104,000	100,000	77,000	76,500	83,600	82,100
NITRATE	NA	230	280	220	270	650	700
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)
SULFATE	NA	10,600	12,300	11,800	13,400	5,400	5,400
Ammonia (ug/L)							
AMMONIA	NA	190	200	170	160	120	130
pH (pH units)							
PH	NA	7.2	7.1	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	630,000	610,000	450,000	430,000	620,000	610,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9141X214	9141X215	9202X372	9202X373	9204Z031	9344X032	9344X033
Sample Date	10/10/91	10/10/91	01/07/92	01/07/92	01/24/92	11/03/93	11/03/93
Metal (ug/L)							
ALUMINUM	NA	NA	ND (15.3)	ND (15.3)	NA	NA	NA
ANTIMONY	NA	NA	ND (27.6)	ND (27.6)	NA	NA	NA
ARSENIC	NA	NA	ND (1.4)	ND (1.4)	NA	4.6 *	3.5 *
BARIUM	NA	NA	210	205	NA	NA	NA
BERYLLIUM	NA	NA	ND (0.35)	ND (0.35)	NA	ND (0.20)	ND (0.20)
CADMIUM	NA	NA	ND (2.3)	ND (2.3)	NA	NA	NA
CALCIUM	NA	NA	27,900	26,800	NA	NA	NA
CHROMIUM	NA	NA	ND (3.0)	ND (3.0)	NA	ND (2.5)	ND (2.5)
CHROMIUM VI	NA	NA	ND (10.0)	ND (10.0)	NA	ND (10.0)	ND (10.0)
COBALT	NA	NA	ND (10.4)	ND (10.4)	NA	NA	NA
COPPER	NA	NA	ND (1.6)	ND (1.6)	NA	NA	NA
IRON	NA	NA	193	151	NA	NA	NA
LEAD	NA	NA	ND (2.0)	ND (2.0)	NA	NA	NA
MAGNESIUM	NA	NA	103,000	99,800	NA	NA	NA
MANGANESE	NA	NA	719 *	689 *	NA	NA	NA
MERCURY	NA	NA	ND (0.20)	ND (0.20)	NA	NA	NA
MOLYBDENUM	NA	NA	ND (3.1)	ND (3.1)	NA	NA	NA
NICKEL	NA	NA	ND (17.8)	ND (17.8)	NA	NA	NA
POTASSIUM	NA	NA	1,910	1,740	NA	NA	NA
SELENIUM	NA	NA	ND (2.5)	ND (2.5)	NA	NA	NA
SODIUM	NA	NA	50,100	48,400	NA	NA	NA
THALLIUM	NA	NA	ND (2.0)	ND (2.0)	NA	NA	NA
VANADIUM	NA	NA	ND (3.9)	ND (3.9)	NA	NA	NA
ZINC	NA	NA	ND (6.1)	8.3	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	ND (1)	ND (1)
1,2-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (5)	NA	NA	NA
2-BUTANONE	NA	NA	ND (10)	ND (10)	NA	ND (5)	ND (5)
BENZENE	NA	NA	7 *δ	7 *δ	NA	5 *δ	4 *δ
CARBON TETRACHLORIDE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
CHLOROETHANE	NA	NA	ND (10)	ND (10)	NA	ND (1)	ND (1)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9141X214	9141X215	9202X372	9202X373	9204Z031	9344X032	9344X033
Sample Date	10/10/91	10/10/91	01/07/92	01/07/92	01/24/92	11/03/93	11/03/93
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (1)	ND (1)
ETHYLBENZENE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
METHYLENE CHLORIDE	NA	NA	ND (5)	ND (5)	NA	1	1
STYRENE	NA	NA	ND (5)	ND (5)	NA	NA	NA
TETRACHLOROETHENE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
TOLUENE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (1)	ND (1)
TRICHLOROETHENE	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	ND (1)	ND (1)
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	ND (1)	ND (1)
VINYL CHLORIDE	NA	NA	ND (10)	ND (10)	NA	3 *δ	3 *δ
XYLENE (TOTAL)	NA	NA	ND (5)	ND (5)	NA	ND (1)	ND (1)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
2-METHYLNAPHTHALENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
2-METHYLPHENOL	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
4-METHYLPHENOL	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
ACENAPHTHENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
ACENAPHTHYLENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
ANTHRACENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
BENZOIC ACID	NA	NA	ND (50)	ND (50)	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	ND (10)	ND (10)	NA	ND (7)	ND (8)
BUTYLBENZYLPHTHALATE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
CARBAZOLE	NA	NA	NA	NA	NA	ND (10)	ND (10)
DIBENZOFURAN	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
DIETHYLPHTHALATE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
FLUORANTHENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
FLUORENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
NAPHTHALENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
PENTACHLOROPHENOL	NA	NA	ND (50)	ND (50)	NA	ND (25)	ND (25)
PHENANTHRENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)
PYRENE	NA	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A
Sample Number	9141X214	9141X215	9202X372	9202X373	9204Z031	9344X032	9344X033
Sample Date	10/10/91	10/10/91	01/07/92	01/07/92	01/24/92	11/03/93	11/03/93
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	NA	ND (500)	ND (500)	NA	540	650
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	ND (5,000)	ND (5,000)	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	83,000	82,000	NA	NA	NA
NITRATE	NA	NA	480	490	NA	NA	NA
NITRITE	NA	NA	ND (50.0)	ND (50.0)	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	ND (200)	ND (200)	NA	NA	NA
SULFATE	NA	NA	8,000	8,100	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	0.52	0.45	NA	NA	0.35	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	440,000	660,000	520,000	540,000	520,000	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9407X199	9420X309	9420X310	9433N585	9024J014	9101X033	9129X110
Sample Date	02/15/94	05/17/94	05/17/94	08/19/94	06/12/90	01/04/91	07/16/91
Metal (ug/L)							
ALUMINUM	NA	NA	NA	NA	ND (21.3)	ND (14.6)	ND (25.7)
ANTIMONY	NA	NA	NA	NA	ND (20.1)	ND (23.8)	ND (14.3)
ARSENIC	ND (3.3)	ND (1.3)	ND (1.3)	1.5 *	3.2 *	5.9 *	11.1 *
BARIUM	NA	NA	NA	NA	198	197	166
BERYLLIUM	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.10)	0.37 *	ND (1.6)	ND (0.24)
CADMIUM	NA	NA	NA	NA	ND (3.7)	ND (4.1)	ND (3.4)
CALCIUM	NA	NA	NA	NA	38,000	32,200	34,100
CHROMIUM	ND (2.3)	ND (0.90)	ND (0.90)	ND (0.70)	ND (3.0)	ND (2.8)	ND (2.1)
CHROMIUM VI	ND (12.1)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	NA	NA
COBALT	NA	NA	NA	NA	ND (7.0)	ND (8.4)	6.6
COPPER	NA	NA	NA	NA	ND (5.3)	ND (2.3)	2.0
IRON	NA	NA	NA	NA	ND (29.3)	987	1,210
LEAD	NA	NA	NA	NA	ND (1.6)	ND (2.1)	ND (1.2)
MAGNESIUM	NA	NA	NA	NA	104,000	109,000	127,000
MANGANESE	NA	NA	NA	NA	997 *	2,380 *	2,480 *
MERCURY	NA	NA	NA	NA	ND (0.20)	ND (0.20)	ND (0.20)
MOLYBDENUM	NA	NA	NA	NA	NA	NA	ND (4.3)
NICKEL	NA	NA	NA	NA	37.2 B	ND (53.2)	71.6 B
POTASSIUM	NA	NA	NA	NA	10,400	3,800	3,650
SELENIUM	NA	NA	NA	NA	2.4	ND (2.3)	ND (2.9)
SODIUM	NA	NA	NA	NA	237,000	215,000	208,000
THALLIUM	NA	NA	NA	NA	ND (8.5)	ND (2.5)	ND (7.5)
VANADIUM	NA	NA	NA	NA	10.7	ND (10.4)	ND (6.8)
ZINC	NA	NA	NA	NA	7.9	15.6	11.0
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
1,2-DICHLOROBENZENE	2	2	NA	2	NA	NA	NA
1,2-DICHLOROETHANE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	ND (5)	NA	ND (5)
2-BUTANONE	ND (5)	ND (10)	ND (5)	ND (10)	ND (10)	NA	ND (10)
BENZENE	12 *6	14 *6	16 *6	7 *6	ND (5)	NA	ND (5)
CARBON TETRACHLORIDE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
CHLOROETHANE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	NA	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9407X199	9420X309	9420X310	9433N585	9024J014	9101X033	9129X110
Sample Date	02/15/94	05/17/94	05/17/94	08/19/94	06/12/90	01/04/91	07/16/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
CIS-1,2-DICHLOROETHENE	0.9	0.6	0.6	0.9	NA	NA	NA
ETHYLBENZENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
METHYLENE CHLORIDE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
STYRENE	NA	NA	NA	NA	ND (5)	NA	ND (5)
TETRACHLOROETHENE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	ND (5)
TOLUENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	NA	4
TRANS-1,2-DICHLOROETHENE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA
TRICHLOROETHENE	ND (1)	0.4	ND (0.5)	0.3	ND (5)	NA	ND (5)
TRICHLOROFLUOROMETHANE	0.8	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA
VINYL CHLORIDE	6 *δ	8 *δ	7 *δ	4 *δ	ND (10)	NA	ND (10)
XYLENE (TOTAL)	ND (1)	ND (3)	ND (1)	ND (1)	ND (5)	NA	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (5)	NA	ND (10)	ND (10)	ND (10)
1,4-DICHLOROBENZENE	NA	ND (5)	ND (5)	NA	ND (10)	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	0.5	0.4	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	0.6	0.5	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	ND (50)	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (0.6)	ND (86)	ND (5)	ND (4)	ND (10)	ND (2)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (8)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	NA
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	0.2	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (25)	ND (25)	ND (50)	ND (50)	ND (50)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	0.2	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW23A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9407X199	9420X309	9420X310	9433N585	9024J014	9101X033	9129X110
Sample Date	02/15/94	05/17/94	05/17/94	08/19/94	06/12/90	01/04/91	07/16/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	ND (500)	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	170	410	430	100	640	ND (500)	1,200
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	ND (100)	420	340	360	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	ND (5,000)	ND (200)	ND (200)
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	207,000	NA	61,600
NITRATE	NA	NA	NA	NA	ND (50.0)	NA	ND (50.0)
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	ND (200)	NA	ND (200)
SULFATE	NA	NA	NA	NA	33,500	NA	ND (1,000)
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	940	NA	1,800
pH (pH units)							
PH	NA	NA	NA	NA	7.4	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	1,200,000	NA	1,100,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9202X374	9344X040	9344X049	9407X195	9420X307	9434H622	9435E161
Sample Date	01/07/92	11/04/93	11/05/93	02/15/94	05/17/94	08/25/94	09/01/94
Metal (ug/L)							
ALUMINUM	ND (15.3)	NA	NA	NA	NA	NA	NA
ANTIMONY	ND (27.6)	NA	NA	NA	NA	NA	NA
ARSENIC	11.4 *	NA	7.7 *	ND (13.4)	11.2 *	NA	NA
BARIUM	191	NA	NA	NA	NA	NA	NA
BERYLLIUM	ND (0.35)	NA	ND (0.20)	ND (0.20)	ND (0.10)	NA	NA
CADMIUM	ND (2.3)	NA	NA	NA	NA	NA	NA
CALCIUM	27,300	NA	NA	NA	NA	NA	NA
CHROMIUM	ND (3.0)	NA	ND (2.5)	ND (4.0)	ND (3.7)	NA	NA
CHROMIUM VI	ND (10.0)	NA	ND (346)	ND (142)	ND (32.6)	NA	NA
COBALT	12.0	NA	NA	NA	NA	NA	NA
COPPER	ND (1.6)	NA	NA	NA	NA	NA	NA
IRON	4,130	NA	NA	NA	NA	NA	NA
LEAD	ND (2.0)	NA	NA	NA	NA	NA	NA
MAGNESIUM	115,000	NA	NA	NA	NA	NA	NA
MANGANESE	1,940 *	NA	NA	NA	NA	NA	NA
MERCURY	ND (0.20)	NA	NA	NA	NA	NA	NA
MOLYBDENUM	ND (4.3)	NA	NA	NA	NA	NA	NA
NICKEL	51.2 B	NA	NA	NA	NA	NA	NA
POTASSIUM	3,550	NA	NA	NA	NA	NA	NA
SELENIUM	ND (2.5)	NA	NA	NA	NA	NA	NA
SODIUM	209,000	NA	NA	NA	NA	NA	NA
THALLIUM	ND (2.0)	NA	NA	NA	NA	NA	NA
VANADIUM	ND (3.9)	NA	NA	NA	NA	NA	NA
ZINC	7.5	NA	NA	NA	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	ND (0.5)	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	ND (0.5)	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	ND (0.5)	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	ND (10)	NA
BENZENE	NA	NA	NA	NA	NA	ND (0.5)	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	ND (0.5)	NA
CHLOROETHANE	NA	NA	NA	NA	NA	ND (0.5)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9202X374	9344X040	9344X049	9407X195	9420X307	9434H622	9435E161
Sample Date	01/07/92	11/04/93	11/05/93	02/15/94	05/17/94	08/25/94	09/01/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	NA	NA	NA	0.3 *	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (0.5)	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	ND (0.5)	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	ND (2)	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	ND (0.5)	NA
TOLUENE	NA	NA	NA	NA	NA	ND (0.5)	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (0.5)	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	ND (0.5)	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	ND (0.5)	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	ND (0.5)	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	ND (0.5)	NA
XYLENE (TOTAL)	NA	NA	NA	NA	NA	ND (1)	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	NA	ND (15)	ND (10)	ND (5)	NA	NA
1,4-DICHLOROBENZENE	ND (10)	NA	ND (15)	ND (10)	ND (5)	NA	NA
2,4-DIMETHYLPHENOL	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
2-METHYLNAPHTHALENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
2-METHYLPHENOL	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
4-METHYLPHENOL	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
ACENAPHTHENE	3	NA	ND (15)	ND (10)	0.6	NA	NA
ACENAPHTHYLENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
ANTHRACENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
BENZOIC ACID	ND (50)	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	NA	ND (15)	ND (3)	ND (8)	NA	NA
BUTYLBENZYLPHTHALATE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
CARBAZOLE	NA	NA	ND (15)	ND (10)	ND (10)	NA	NA
DIBENZOFURAN	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
DIETHYLPHTHALATE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
FLUORANTHENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
FLUORENE	2	NA	ND (15)	ND (10)	ND (10)	NA	NA
NAPHTHALENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA
PENTACHLOROPHENOL	ND (50)	NA	ND (37)	ND (25)	ND (25)	NA	NA
PHENANTHRENE	4	NA	4	ND (10)	1	NA	NA
PYRENE	ND (10)	NA	ND (15)	ND (10)	ND (10)	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A	IR06MW27A
Sample Number	9202X374	9344X040	9344X049	9407X195	9420X307	9434H622	9435E161
Sample Date	01/07/92	11/04/93	11/05/93	02/15/94	05/17/94	08/25/94	09/01/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	1,100	NA	700	1,100	NA	690
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	1,600	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	490	1,700	NA	150
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	69,700	NA	NA	NA	NA	NA	NA
NITRATE	76.0	NA	NA	NA	NA	NA	NA
NITRITE	470	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	ND (200)	NA	NA	NA	NA	NA	NA
SULFATE	3,200	NA	NA	NA	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	1,000,000	NA	NA	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9435K061	9024J016	9024J017	9101X034	9101X035	9129X111	9129X112
Sample Date	08/30/94	06/12/90	06/12/90	01/04/91	01/04/91	07/15/91	07/15/91
Metal (ug/L)							
ALUMINUM	NA	ND (21.3)	ND (37.5)	ND (14.6)	ND (14.6)	ND (25.7)	ND (25.7)
ANTIMONY	NA	ND (20.1)	ND (20.1)	ND (23.8)	ND (23.8)	ND (14.3)	ND (14.3)
ARSENIC	8.1 *	3.2 *	2.8 *	ND (2.9)	ND (2.9)	ND (2.5)	2.6 *
BARIUM	NA	38.2	39.3	121	125	137	138
BERYLLIUM	ND (0.10)	ND (0.33)	ND (0.33)	ND (1.6)	ND (1.6)	ND (0.24)	ND (0.24)
CADMIUM	NA	ND (3.7)	ND (3.7)	ND (4.1)	ND (4.1)	ND (3.4)	ND (3.4)
CALCIUM	NA	23,300	24,200	22,700	23,800	21,800	21,600
CHROMIUM	ND (2.8)	ND (1.7)	ND (1.7)	ND (2.8)	ND (2.8)	ND (2.1)	ND (2.1)
CHROMIUM VI	ND (10.0)	ND (10.0)	ND (10.0)	NA	NA	NA	NA
COBALT	NA	ND (7.0)	ND (7.0)	ND (8.4)	ND (8.4)	7.6	ND (4.9)
COPPER	NA	ND (1.7)	ND (1.7)	ND (2.3)	ND (2.3)	ND (1.3)	ND (1.5)
IRON	NA	ND (21.2)	ND (21.2)	92.7	78.5	109	105
LEAD	NA	ND (1.6)	ND (1.6)	ND (2.1)	ND (2.1)	ND (1.2)	ND (1.2)
MAGNESIUM	NA	117,000	120,000	140,000	146,000	141,000	141,000
MANGANESE	NA	1,160 *	1,190 *	1,820 *	1,890 *	1,860 *	1,850 *
MERCURY	NA	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.20)	ND (0.20)	ND (0.20)
MOLYBDENUM	NA	NA	NA	NA	NA	ND (3.3)	ND (3.3)
NICKEL	NA	21.6 B	ND (20.2)	ND (37.0)	ND (41.7)	43.5 B	17.3 B
POTASSIUM	NA	6,470	7,210	3,780	4,020	3,140	2,980
SELENIUM	NA	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.3)	ND (2.9)	ND (2.9)
SODIUM	NA	125,000	128,000	111,000	114,000	105,000	106,000
THALLIUM	NA	ND (1.7)	ND (1.7)	ND (2.5)	ND (2.5)	ND (7.5)	ND (7.5)
VANADIUM	NA	4.8	6.0	ND (11.0)	ND (12.6)	2.7	ND (1.6)
ZINC	NA	9.2	11.0	ND (4.0)	ND (5.4)	ND (9.3)	ND (7.4)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	5	4	27	29	37 *	39
2-BUTANONE	NA	ND (10)	ND (10)	ND (10)	ND (10)	7	ND (10)
BENZENE	NA	3 *6	3 *6	6 *6	6 *6	6 *6	5 *6
CARBON TETRACHLORIDE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CHLOROETHANE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9435K061	9024J016	9024J017	9101X034	9101X035	9129X111	9129X112
Sample Date	08/30/94	06/12/90	06/12/90	01/04/91	01/04/91	07/15/91	07/15/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
METHYLENE CHLORIDE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (14)	ND (5)
STYRENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TETRACHLOROETHENE	NA	ND (5)	ND (5)	1	2 *	1 *	ND (5)
TOLUENE	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (4)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	ND (5)	ND (5)	3 *	3 *	3 *	2 *
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	ND (10)	ND (10)	24 *δ	28 *δ	30 *δ	18 *δ
XYLENE (TOTAL)	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,4-DICHLOROBENZENE	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
ACENAPHTHENE	ND (10)	17	16	6	7	3	4
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	2	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	ND (50)	5	ND (50)	ND (50)	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (8)	ND (6)	ND (6)	ND (10)	ND (10)	ND (16)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	5	7	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	ND (10)	12	9	4	4	2	3
DIETHYLPHTHALATE	ND (10)	ND (10)	6	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	6	6	3	3	ND (10)	ND (10)
FLUORENE	ND (10)	16	14	4	5	3	3
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	20	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (50)	ND (50)	NA	NA	NA	NA
PHENANTHRENE	ND (10)	13 B	8 B	ND (10)	ND (10)	2	ND (10)
PYRENE	ND (10)	3	4	2	2	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW27A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9435K061	9024J016	9024J017	9101X034	9101X035	9129X111	9129X112
Sample Date	08/30/94	06/12/90	06/12/90	01/04/91	01/04/91	07/15/91	07/15/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	ND (500)	ND (500)	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	ND (500)	ND (500)	ND (500)	ND (500)	530	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	ND (5,000)	ND (5,000)	740	ND (200)	ND (200)	ND (200)
Anion (ug/L)							
CHLORIDE	NA	127,000	128,000	120,000	121,000	114,000	118,000
NITRATE	NA	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)
SULFATE	NA	5,600	5,600	3,200	3,100	3,800	3,700
Ammonia (ug/L)							
AMMONIA	NA	570	590	570	590	840	890
pH (pH units)							
PH	NA	7.7	7.7	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	840,000	880,000	820,000	840,000	810,000	970,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9202X386	9202X387	9344X036	9407X197	9407X198	9420X317	9434K033
Sample Date	01/09/92	01/09/92	11/03/93	02/15/94	02/15/94	05/18/94	08/23/94
Metal (ug/L)							
ALUMINUM	ND (15.3)	ND (15.3)	NA	NA	NA	NA	NA
ANTIMONY	ND (27.6)	ND (27.6)	NA	NA	NA	NA	NA
ARSENIC	2.9 *	2.5 *	6.2 *	ND (5.0)	ND (4.5)	ND (1.3)	2.9 *
BARIUM	132	137	NA	NA	NA	NA	NA
BERYLLIUM	ND (0.35)	ND (0.35)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)
CADMIUM	ND (2.3)	ND (2.3)	NA	NA	NA	NA	NA
CALCIUM	20,300	20,500	NA	NA	NA	NA	NA
CHROMIUM	ND (3.0)	ND (3.0)	ND (2.5)	ND (2.3)	ND (2.3)	ND (0.90)	ND (0.70)
CHROMIUM VI	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (15.6)	ND (10.0)
COBALT	ND (10.4)	ND (10.4)	NA	NA	NA	NA	NA
COPPER	ND (1.6)	ND (1.6)	NA	NA	NA	NA	NA
IRON	ND (10.8)	ND (40.0)	NA	NA	NA	NA	NA
LEAD	ND (4.0)	ND (2.0)	NA	NA	NA	NA	NA
MAGNESIUM	125,000	129,000	NA	NA	NA	NA	NA
MANGANESE	1,720 *	1,750 *	NA	NA	NA	NA	NA
MERCURY	ND (0.20)	ND (0.20)	NA	NA	NA	NA	NA
MOLYBDENUM	ND (3.1)	ND (3.1)	NA	NA	NA	NA	NA
NICKEL	ND (17.8)	ND (17.8)	NA	NA	NA	NA	NA
POTASSIUM	3,530	3,460	NA	NA	NA	NA	NA
SELENIUM	ND (2.5)	ND (2.5)	NA	NA	NA	NA	NA
SODIUM	109,000	106,000	NA	NA	NA	NA	NA
THALLIUM	ND (2.0)	ND (2.0)	NA	NA	NA	NA	NA
VANADIUM	ND (3.9)	ND (3.9)	NA	NA	NA	NA	NA
ZINC	ND (6.1)	ND (6.1)	NA	NA	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	140 *	120 *	NA	NA	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	ND (50)	ND (50)	ND (50)	ND (50)	ND (100)
BENZENE	16 *δ	15 *δ	17 *δ	32 *δ	25 *δ	24 *δ	19 *δ
CARBON TETRACHLORIDE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
CHLOROETHANE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (5)	81

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9202X386	9202X387	9344X036	9407X197	9407X198	9420X317	9434K033
Sample Date	01/09/92	01/09/92	11/03/93	02/15/94	02/15/94	05/18/94	08/23/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	ND (5)	24 *	8 *	ND (10)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	NA	240 *δ	380 *δ	300 *δ	230 *δ	180 *δ
ETHYLBENZENE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
METHYLENE CHLORIDE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (3)	ND (27)
STYRENE	ND (5)	ND (5)	NA	NA	NA	NA	NA
TETRACHLOROETHENE	3 *	2 *	ND (10)	5 *	ND (10)	ND (5)	ND (5)
TOLUENE	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
TRANS-1,2-DICHLOROETHENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
TRICHLOROETHENE	5 *	5 *	10 *δ	23 *δ	17 *δ	14 *δ	10 *δ
TRICHLOROFLUOROMETHANE	NA	NA	ND (10)	42	25	ND (5)	ND (5)
TRICHLOROTRIFLUOROETHANE	NA	NA	20	60	36	50	33
VINYL CHLORIDE	38 *δ	31 *δ	32 *δ	73 *δ	51 *δ	51 *δ	40 *δ
XYLENE (TOTAL)	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (15)	ND (15)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)
1,4-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (5)	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	3	2	ND (10)	ND (10)	ND (10)	2	4
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	5	4	ND (10)	5	5	3	5
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	0.2	0.7
BENZOIC ACID	ND (50)	ND (50)	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (10)	ND (10)	ND (3)	ND (10)	ND (0.4)	ND (4)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	3	3	ND (10)	ND (10)	ND (10)	2	3
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	2	ND (10)	ND (10)	ND (10)	ND (10)	1	2
FLUORENE	4	4	ND (10)	ND (10)	ND (10)	2	3
NAPHTHALENE	43	39	24	ND (10)	2	17	29
PENTACHLOROPHENOL	ND (50)	ND (50)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	2	3	ND (10)	ND (10)	ND (10)	2	5.8
PYRENE	2	ND (10)	ND (10)	ND (10)	ND (10)	0.8	1

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A	IR06MW30A
Sample Number	9202X386	9202X387	9344X036	9407X197	9407X198	9420X317	9434K033
Sample Date	01/09/92	01/09/92	11/03/93	02/15/94	02/15/94	05/18/94	08/23/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (500)	860	460	410	530	570
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	200	210	160	180
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	ND (5,000)	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	99,300	99,200	NA	NA	NA	NA	NA
NITRATE	ND (50.0)	ND (50.0)	NA	NA	NA	NA	NA
NITRITE	ND (50.0)	ND (50.0)	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	ND (200)	ND (200)	NA	NA	NA	NA	NA
SULFATE	2,400	2,400	NA	NA	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	800,000	800,000	NA	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A
Sample Number	9024J018	9102X042	9129X123	9202X391	9344X041	9407X196	9420X315
Sample Date	06/12/90	01/07/91	07/17/91	01/10/92	11/04/93	02/15/94	05/18/94
Metal (ug/L)							
ALUMINUM	ND (21.3)	ND (14.6)	ND (25.7)	ND (15.3)	NA	NA	NA
ANTIMONY	ND (20.1)	ND (23.8)	ND (14.3)	ND (27.6)	NA	NA	NA
ARSENIC	ND (2.0)	5.4 *	3.7 *	6.2 *	7.7 *	ND (4.9)	3.1 *
BARIUM	391	586	638	475	NA	NA	NA
BERYLLIUM	ND (0.33)	ND (1.6)	ND (0.24)	ND (0.35)	ND (0.20)	ND (0.20)	ND (0.10)
CADMIUM	4.0	ND (4.1)	ND (3.4)	ND (2.3)	NA	NA	NA
CALCIUM	118,000	101,000	96,700	71,800	NA	NA	NA
CHROMIUM	ND (2.9)	ND (2.8)	ND (2.1)	ND (3.0)	ND (2.5)	ND (2.3)	ND (0.90)
CHROMIUM VI	ND (10.0)	NA	NA	ND (10.0)	ND (84.1)	ND (82.4)	ND (33.5)
COBALT	8.2	ND (8.4)	ND (4.9)	ND (10.4)	NA	NA	NA
COPPER	ND (1.7)	ND (2.3)	ND (1.3)	1.6	NA	NA	NA
IRON	ND (21.2)	996	2,440	3,630	NA	NA	NA
LEAD	ND (1.6)	ND (2.1)	ND (1.2)	ND (2.0)	NA	NA	NA
MAGNESIUM	330,000	281,000	282,000	205,000	NA	NA	NA
MANGANESE	6,190 *	5,350 *	5,440 *	3,790 *	NA	NA	NA
MERCURY	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	NA	NA	NA
MOLYBDENUM	NA	NA	ND (3.3)	ND (3.1)	NA	NA	NA
NICKEL	29.7 B	25.0 B	41.7 B	ND (17.8)	NA	NA	NA
POTASSIUM	10,200	8,010	7,390	8,120	NA	NA	NA
SELENIUM	ND (2.2)	ND (2.3)	ND (2.9)	ND (2.5)	NA	NA	NA
SODIUM	302,000	260,000	260,000	213,000	NA	NA	NA
THALLIUM	ND (1.7)	ND (2.5)	ND (7.5)	ND (2.0)	NA	NA	NA
VANADIUM	18.1	ND (24.9)	ND (10.4)	ND (3.9)	NA	NA	NA
ZINC	11.9	48.6	ND (4.8)	ND (6.1)	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	ND (5)	ND (1)	ND (1)
1,2-DICHLOROETHANE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
1,2-DICHLOROETHENE (TOTAL)	ND (5)	ND (5)	ND (5)	ND (5)	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	ND (10)	ND (10)	ND (25)	ND (5)	ND (10)
BENZENE	3 *δ	6 *δ	ND (5)	11 *δ	7 *δ	5 *δ	7 *δ
CARBON TETRACHLORIDE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
CHLOROETHANE	ND (10)	ND (10)	ND (10)	ND (10)	ND (5)	ND (1)	ND (1)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A
Sample Number	9024J018	9102X042	9129X123	9202X391	9344X041	9407X196	9420X315
Sample Date	06/12/90	01/07/91	07/17/91	01/10/92	11/04/93	02/15/94	05/18/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (5)	ND (1)	ND (1)
ETHYLBENZENE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
METHYLENE CHLORIDE	ND (5)	ND (5)	ND (12)	ND (5)	17 *B	ND (1)	ND (1)
STYRENE	ND (5)	ND (5)	ND (5)	ND (5)	NA	NA	NA
TETRACHLOROETHENE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
TOLUENE	ND (5)	ND (5)	ND (32)	ND (5)	ND (5)	ND (1)	ND (1)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (5)	ND (1)	ND (1)
TRICHLOROETHENE	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	ND (5)	ND (1)	ND (1)
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	ND (5)	ND (1)	ND (1)
VINYL CHLORIDE	ND (10)	ND (10)	ND (10)	ND (10)	ND (5)	ND (1)	ND (1)
XYLENE (TOTAL)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (3)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	NA
1,4-DICHLOROBENZENE	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	5	ND (10)	ND (10)
2-METHYLPHENOL	NA	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	NA	ND (10)	NA	ND (10)	ND (10)	4	1
ACENAPHTHENE	9	6	6	8	11	11	9
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	0.9
BENZOIC ACID	ND (50)	ND (50)	ND (50)	ND (50)	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (12)	ND (4)	ND (5)	ND (10)	ND (11)	ND (4)	ND (2)
BUTYLBENZYLPHTHALATE	ND (8)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	NA	NA	NA	ND (10)	ND (10)	0.1
DIBENZOFURAN	5	4	3	3	ND (10)	3	2
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	3	ND (10)	ND (10)	ND (10)	2	1	0.8
FLUORENE	11	7	6	8	ND (10)	8	6
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	NA	ND (50)	NA	ND (50)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	6 B	5	3	3	9 B	10 B	7 B
PYRENE	3	ND (10)	ND (10)	ND (10)	3	4	2

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A	IR06MW32A
Sample Number	9024J018	9102X042	9129X123	9202X391	9344X041	9407X196	9420X315
Sample Date	06/12/90	01/07/91	07/17/91	01/10/92	11/04/93	02/15/94	05/18/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	ND (500)	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	650	4,200	4,900	ND (5,000)	2,900	5,400	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	1,600	ND (100)
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	3,400	390	ND (5,000)	NA	NA	NA
Anion (ug/L)							
CHLORIDE	1,180,000	920,000	705,000	319,000	NA	NA	NA
NITRATE	ND (500)	ND (500)	ND (50.0)	ND (50.0)	NA	NA	NA
NITRITE	NA	NA	NA	ND (500)	NA	NA	NA
ORTHOPHOSPHATE	ND (200)	ND (2,000)	ND (200)	ND (200)	NA	NA	NA
SULFATE	6,500	ND (10,000)	ND (1,000)	ND (1,000)	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	180	120	340	NA	NA	NA	NA
pH (pH units)							
PH	7.3	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	2,500,000	1,800,000	2,100,000	1,500,000	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A
Sample Number	9420X316	9434K038	9024J026	9101J134	9129X113	9202X388	9313J412
Sample Date	05/18/94	08/24/94	06/13/90	01/04/91	07/15/91	01/09/92	03/31/93
Metal (ug/L)							
ALUMINUM	NA	NA	ND (21.3)	ND (14.6)	ND (25.7)	ND (15.3)	22.5
ANTIMONY	NA	NA	ND (20.1)	ND (23.8)	15.8 *4	35.6 *4	ND (13.8)
ARSENIC	2.1 *	5.2 *	ND (2.0)	3.6 *	3.7 *	4.5 *	2.6 *
BARIUM	NA	NA	595	758	862	650	320
BERYLLIUM	ND (0.10)	ND (0.10)	0.56 *	ND (1.6)	ND (0.24)	ND (0.35)	ND (0.30)
CADMIUM	NA	NA	ND (3.7)	ND (4.1)	ND (3.4)	ND (2.3)	ND (1.0)
CALCIUM	NA	NA	138,000	154,000	144,000	108,000	60,800
CHROMIUM	ND (0.90)	ND (0.70)	ND (5.4)	ND (2.8)	ND (2.1)	ND (3.0)	ND (1.5)
CHROMIUM VI	ND (32.3)	ND (21.2)	ND (10.0)	NA	NA	ND (10.0)	ND (10.0)
COBALT	NA	NA	7.2	ND (8.4)	ND (4.9)	12.1	ND (2.9)
COPPER	NA	NA	ND (1.9)	ND (2.3)	ND (1.3)	ND (3.3)	ND (4.1)
IRON	NA	NA	6,960	8,970	11,900	11,000	3,660
LEAD	NA	NA	ND (1.6)	ND (2.1)	ND (1.2)	ND (2.0)	9.9 *8
MAGNESIUM	NA	NA	400,000	432,000	422,000	305,000	135,000
MANGANESE	NA	NA	2,540 *	4,460 *	4,080 *	2,750 *	1,160 *
MERCURY	NA	NA	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	0.14 8
MOLYBDENUM	NA	NA	NA	NA	ND (3.3)	ND (3.1)	ND (2.8)
NICKEL	NA	NA	22.8 8	ND (35.8)	21.2 8	ND (17.8)	ND (7.4)
POTASSIUM	NA	NA	39,200	35,300	35,000	26,000	15,700
SELENIUM	NA	NA	ND (2.2)	ND (2.3)	ND (2.9)	ND (2.5)	ND (22.0)
SODIUM	NA	NA	1,220,000	1,310,000	1,240,000	859,000	606,000
THALLIUM	NA	NA	ND (1.7)	ND (2.5)	ND (7.5)	ND (2.0)	NA
VANADIUM	NA	NA	21.8	29.9	2.5	ND (3.9)	2.5
ZINC	NA	NA	16.4	ND (4.1)	ND (5.2)	6.7	ND (1.6)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	0.76
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
1,2-DICHLOROBENZENE	ND (2)	ND (1)	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
2-BUTANONE	ND (25)	ND (20)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZENE	7 *6	7 *6	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
CARBON TETRACHLORIDE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
CHLOROETHANE	ND (2)	ND (1)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A
Sample Number	9420X316	9434K038	9024J026	9101J134	9129X113	9202X388	9313J412
Sample Date	05/18/94	08/24/94	06/13/90	01/04/91	07/15/91	01/09/92	03/31/93
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
CIS-1,2-DICHLOROETHENE	ND (2)	ND (1)	NA	NA	NA	NA	NA
ETHYLBENZENE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
METHYLENE CHLORIDE	ND (1)	ND (3)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
STYRENE	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
TETRACHLOROETHENE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
TOLUENE	ND (2)	ND (1)	ND (5)	ND (5)	ND (3)	ND (5)	ND (10)
TRANS-1,2-DICHLOROETHENE	ND (2)	ND (1)	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND (2)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
TRICHLOROFLUOROMETHANE	ND (2)	ND (1)	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	ND (2)	ND (1)	NA	NA	NA	NA	NA
VINYL CHLORIDE	ND (2)	ND (1)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
XYLENE (TOTAL)	ND (7)	ND (3)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,4-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	6	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
4-METHYLPHENOL	2	ND (10)	NA	NA	NA	ND (10)	ND (10)
ACENAPHTHENE	8	11	56	48	37	40	48
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	0.6	1	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	ND (50)	ND (50)	ND (50)	ND (50)	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (0.9)	ND (4)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (4)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	NA	NA	NA	NA	ND (10)
DIBENZOFURAN	ND (10)	3	12	11	5	4	4
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	0.9	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	5	7	4	4	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	NA	NA	NA	ND (50)	ND (25)
PHENANTHRENE	7 B	10 B	10 B	11 B	6 B	8 B	ND (10)
PYRENE	2	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW32A	IR06MW32A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A
Sample Number	9420X316	9434K038	9024J026	9101J134	9129X113	9202X388	9313J412
Sample Date	05/18/94	08/24/94	06/13/90	01/04/91	07/15/91	01/09/92	03/31/93
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	ND (0.05)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	ND (500)	NA	NA	NA	ND (500)
TPH-Extractable (ug/L)							
TPH-DIESEL	5,700	5,800	ND (500)	ND (500)	ND (500)	ND (500)	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	1,600	1,300	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	ND (5,000)	ND (200)	ND (200)	ND (5,000)	NA
Anion (ug/L)							
CHLORIDE	NA	NA	2,740,000	3,130,000	2,950,000	1,780,000	NA
NITRATE	NA	NA	ND (500)	ND (500)	ND (500)	ND (500)	NA
NITRITE	NA	NA	NA	NA	NA	ND (500)	NA
ORTHOPHOSPHATE	NA	NA	ND (2,000)	ND (2,000)	ND (2,000)	ND (2,000)	NA
SULFATE	NA	NA	33,000	14,800	ND (10,000)	17,200	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	1,400	1,600	1,800	NA	NA
pH (pH units)							
PH	NA	NA	6.6	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	4,700,000	5,000,000	4,900,000	3,700,000	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A
Sample Number	9344X042	9407X210	9420X314	9433N586	9024J007	9101J131	9129X122
Sample Date	11/04/93	02/17/94	05/18/94	08/19/94	06/11/90	01/04/91	07/17/91
Metal (ug/L)							
ALUMINUM	NA	NA	NA	NA	ND (21.3)	ND (14.6)	ND (25.7)
ANTIMONY	NA	NA	NA	NA	ND (20.1)	ND (23.8)	ND (14.3)
ARSENIC	4.5 *	ND (4.5)	ND (1.3)	4.5 *	4.0 *	6.4 *	4.1 *
BARIUM	NA	NA	NA	NA	73.8	66.6	52.6
BERYLLIUM	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.33)	ND (1.6)	ND (0.24)
CADMIUM	NA	NA	NA	NA	ND (3.7)	ND (4.1)	ND (3.4)
CALCIUM	NA	NA	NA	NA	19,600	10,100	7,360
CHROMIUM	ND (2.5)	ND (2.3)	ND (0.90)	ND (0.70)	ND (2.4)	ND (2.8)	ND (2.1)
CHROMIUM VI	ND (58.5)	ND (15.8)	ND (10.0)	ND (10.0)	ND (10.0)	NA	NA
COBALT	NA	NA	NA	NA	ND (7.0)	ND (8.4)	ND (4.9)
COPPER	NA	NA	NA	NA	ND (6.0)	ND (2.3)	3.1 B
IRON	NA	NA	NA	NA	ND (21.2)	ND (27.1)	ND (42.5)
LEAD	NA	NA	NA	NA	ND (1.6)	ND (2.2)	ND (1.2)
MAGNESIUM	NA	NA	NA	NA	71,300	39,200	28,100
MANGANESE	NA	NA	NA	NA	123	282 *	159
MERCURY	NA	NA	NA	NA	ND (0.40)	ND (0.20)	ND (0.20)
MOLYBDENUM	NA	NA	NA	NA	NA	NA	10.2
NICKEL	NA	NA	NA	NA	ND (20.2)	ND (23.6)	ND (15.2)
POTASSIUM	NA	NA	NA	NA	12,900	13,600	15,200
SELENIUM	NA	NA	NA	NA	ND (2.2)	ND (2.3)	ND (2.9)
SODIUM	NA	NA	NA	NA	469,000	639,000	613,000
THALLIUM	NA	NA	NA	NA	ND (1.7)	ND (2.5)	ND (7.5)
VANADIUM	NA	NA	NA	NA	7.0	ND (18.2)	ND (11.8)
ZINC	NA	NA	NA	NA	16.8	ND (1.9)	11.9
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	6	10	ND (0.5)	NA	NA	NA
1,2-DICHLOROETHANE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	22	15	8
2-BUTANONE	ND (5)	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)
BENZENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
CARBON TETRACHLORIDE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
CHLOROETHANE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A
Sample Number	9344X042	9407X210	9420X314	9433N586	9024J007	9101J131	9129X122
Sample Date	11/04/93	02/17/94	05/18/94	08/19/94	06/11/90	01/04/91	07/17/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA	NA
ETHYLBENZENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
METHYLENE CHLORIDE	ND (1)	ND (1)	ND (0.5)	ND (0.6)	ND (5)	ND (5)	ND (16)
STYRENE	NA	NA	NA	NA	ND (5)	ND (5)	ND (5)
TETRACHLOROETHENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
TOLUENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)
TRANS-1,2-DICHLOROETHENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA	NA
TRICHLOROETHENE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	5 *	2	ND (5)
TRICHLOROFLUOROMETHANE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA	NA
VINYL CHLORIDE	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)
XYLENE (TOTAL)	0.7	ND (1)	ND (1)	ND (1)	ND (5)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	NA	NA	NA	18	3	ND (10)
1,4-DICHLOROBENZENE	ND (10)	NA	NA	NA	5 *	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	1	4	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	55	72	40	55	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	2	1	0.9	2	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	ND (50)	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	5 *6	ND (13)	ND (1)	ND (4)	ND (10)	ND (10)	ND (5)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	NA
DIBENZOFURAN	5	5	3	4	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	2	1	2	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	1	0.7	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	2	15	12	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (25)	ND (25)	ND (50)	ND (50)	ND (50)
PHENANTHRENE	5 B	ND (10)	0.5	3	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	0.7	1	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW34A	IR06MW35A	IR06MW35A	IR06MW35A
Sample Number	9344X042	9407X210	9420X314	9433N586	9024J007	9101J131	9129X122
Sample Date	11/04/93	02/17/94	05/18/94	08/19/94	06/11/90	01/04/91	07/17/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	ND (500)	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	590	380	440	130	ND (500)	ND (500)	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	660	230	380	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	ND (5,000)	ND (200)	ND (200)
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	300,000	284,000	210,000
NITRATE	NA	NA	NA	NA	ND (50.0)	ND (500)	170
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	330	730	1,300
SULFATE	NA	NA	NA	NA	103,000	61,200	77,200
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	150	ND (100)	240
pH (pH units)							
PH	NA	NA	NA	NA	8.0	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	1,600,000	1,700,000	1,700,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sample Number	9202X384	9344X043	9407X201	9419X292	9433K020	9024J020	9101X036
Sample Date	01/08/92	11/04/93	02/15/94	05/13/94	08/19/94	06/13/90	01/04/91
Metal (ug/L)							
ALUMINUM	23.1	NA	NA	NA	NA	ND (21.3)	ND (14.6)
ANTIMONY	ND (27.6)	NA	NA	NA	NA	ND (20.1)	ND (23.8)
ARSENIC	5.2 *	ND (3.3)	ND (6.0)	4.0 *	4.9 *	3.2 *	5.1 *
BARIUM	61.6	NA	NA	NA	NA	117	78.8
BERYLLIUM	ND (0.35)	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)	0.37 *	ND (1.6)
CADMIUM	ND (2.3)	NA	NA	NA	NA	ND (3.7)	ND (4.1)
CALCIUM	6,770	NA	NA	NA	NA	83,500	167,000
CHROMIUM	ND (3.0)	ND (2.5)	ND (2.3)	ND (0.90)	0.90	ND (3.9)	ND (2.8)
CHROMIUM VI	ND (10.0)	ND (148)	ND (23.0)	ND (10.0)	ND (11.7)	ND (10.0)	NA
COBALT	ND (10.4)	NA	NA	NA	NA	ND (7.0)	ND (8.4)
COPPER	ND (1.7)	NA	NA	NA	NA	58.2 *	ND (2.3)
IRON	ND (40.3)	NA	NA	NA	NA	ND (21.2)	156
LEAD	ND (2.0)	NA	NA	NA	NA	ND (1.6)	ND (2.1)
MAGNESIUM	26,000	NA	NA	NA	NA	319,000	825,000
MANGANESE	160	NA	NA	NA	NA	551 *	4,110 *
MERCURY	ND (0.20)	NA	NA	NA	NA	ND (0.40)	ND (0.20)
MOLYBDENUM	ND (9.6)	NA	NA	NA	NA	NA	NA
NICKEL	ND (17.8)	NA	NA	NA	NA	ND (20.2)	ND (35.4)
POTASSIUM	13,800	NA	NA	NA	NA	36,800	33,300
SELENIUM	ND (2.5)	NA	NA	NA	NA	ND (2.2)	ND (2.3)
SODIUM	563,000	NA	NA	NA	NA	945,000	931,000
THALLIUM	ND (2.0)	NA	NA	NA	NA	ND (1.7)	ND (2.5)
VANADIUM	11.6	NA	NA	NA	NA	23.8	56.7
ZINC	ND (6.1)	NA	NA	NA	NA	14.3	ND (4.2)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	ND (1)	1	1	NA	NA
1,2-DICHLOROETHANE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	7	NA	NA	NA	NA	ND (5)	ND (5)
2-BUTANONE	ND (10)	ND (5)	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)
BENZENE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
CARBON TETRACHLORIDE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
CHLOROETHANE	ND (10)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sample Number	9202X384	9344X043	9407X201	9419X292	9433K020	9024J020	9101X036
Sample Date	01/08/92	11/04/93	02/15/94	05/13/94	08/19/94	06/13/90	01/04/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	7 δ	9 δ	8 δ	9 δ	NA	NA
ETHYLBENZENE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
METHYLENE CHLORIDE	ND (5)	ND (1)	ND (1)	ND (0.7)	ND (0.5)	ND (5)	ND (5)
STYRENE	ND (5)	NA	NA	NA	NA	ND (5)	ND (5)
TETRACHLOROETHENE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
TOLUENE	ND (5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)	ND (5)
TRANS-1,2-DICHLOROETHENE	NA	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA
TRICHLOROETHENE	ND (5)	ND (1)	ND (1)	0.4	0.7	ND (5)	ND (5)
TRICHLOROFLUOROMETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA	NA
VINYL CHLORIDE	ND (10)	2 *δ	6 *δ	2 *δ	1 *δ	ND (10)	ND (10)
XYLENE (TOTAL)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
1,4-DICHLOROBENZENE	ND (10)	NA	NA	NA	NA	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	ND (50)	NA	NA	NA	NA	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	20 *δ	ND (10)	ND (4)	ND (4)	ND (10)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (50)	ND (25)	ND (25)	ND (25)	ND (25)	ND (50)	NA
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW35A	IR06MW40A	IR06MW40A
Sample Number	9202X384	9344X043	9407X201	9419X292	9433K020	9024J020	9101X036
Sample Date	01/08/92	11/04/93	02/15/94	05/13/94	08/19/94	06/13/90	01/04/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	ND (500)	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	560	100	ND (100)	ND (100)	ND (500)	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	350	510	600	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	NA	NA	NA	ND (5,000)	ND (200)
Anion (ug/L)							
CHLORIDE	223,000	NA	NA	NA	NA	1,880,000	2,290,000
NITRATE	61.0	NA	NA	NA	NA	1,100	ND (500)
NITRITE	ND (50.0)	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	1,500	NA	NA	NA	NA	ND (2,000)	ND (2,000)
SULFATE	67,300	NA	NA	NA	NA	1,170,000	1,670,000
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	1,600	2,000
pH (pH units)							
PH	NA	NA	NA	NA	NA	7.2	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	1,600,000	NA	NA	NA	NA	5,100,000	5,900,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A
Sample Number	9129X120	9129X121	9141X219	9202X389	9204Z023	9345X057	9407X204
Sample Date	07/17/91	07/17/91	10/10/91	01/09/92	01/24/92	11/08/93	02/16/94
Metal (ug/L)							
ALUMINUM	ND (25.7)	ND (25.7)	NA	15.7	NA	NA	NA
ANTIMONY	14.4 B	ND (14.3)	NA	ND (27.6)	NA	NA	NA
ARSENIC	2.8 *	ND (2.5)	NA	2.0 *	NA	7.1 *	ND (4.8)
BARIUM	55.0	49.2	NA	49.2	NA	NA	NA
BERYLLIUM	ND (0.56)	ND (0.56)	NA	ND (0.35)	NA	ND (0.20)	ND (0.20)
CADMIUM	ND (3.4)	ND (3.4)	NA	ND (2.3)	NA	NA	NA
CALCIUM	141,000	125,000	NA	91,800	NA	NA	NA
CHROMIUM	ND (2.1)	ND (2.1)	NA	ND (3.0)	NA	ND (2.3)	ND (2.3)
CHROMIUM VI	NA	NA	NA	ND (10.0)	NA	ND (10.0)	ND (13.4)
COBALT	8.3	11.3	NA	ND (10.4)	NA	NA	NA
COPPER	3.5 B	ND (1.3)	NA	ND (1.6)	NA	NA	NA
IRON	ND (11.9)	ND (11.9)	NA	ND (7.5)	NA	NA	NA
LEAD	ND (1.2)	ND (1.2)	NA	ND (2.0)	NA	NA	NA
MAGNESIUM	796,000	702,000	NA	520,000	NA	NA	NA
MANGANESE	2,760 *	2,430 *	NA	1,370 *	NA	NA	NA
MERCURY	ND (0.20)	ND (0.20)	NA	ND (0.20)	NA	NA	NA
MOLYBDENUM	25.9	24.6	NA	ND (17.4)	NA	NA	NA
NICKEL	39.8 B	32.8 B	NA	ND (17.8)	NA	NA	NA
POTASSIUM	21,800	20,700	NA	22,700	NA	NA	NA
SELENIUM	ND (2.9)	ND (2.9)	NA	ND (2.5)	NA	NA	NA
SODIUM	668,000	657,000	NA	673,000	NA	NA	NA
THALLIUM	ND (7.5)	ND (7.5)	NA	ND (20.0)	NA	NA	NA
VANADIUM	ND (6.2)	ND (9.4)	NA	ND (3.9)	NA	NA	NA
ZINC	ND (6.4)	ND (9.8)	NA	ND (6.1)	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	ND (1)
1,2-DICHLOROETHANE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
1,2-DICHLOROETHENE (TOTAL)	ND (5)	ND (5)	NA	ND (5)	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	NA	ND (10)	NA	ND (5)	ND (5)
BENZENE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
CARBON TETRACHLORIDE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
CHLOROETHANE	ND (10)	ND (10)	NA	ND (10)	NA	ND (1)	ND (1)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A
Sample Number	9129X120	9129X121	9141X219	9202X389	9204Z023	9345X057	9407X204
Sample Date	07/17/91	07/17/91	10/10/91	01/09/92	01/24/92	11/08/93	02/16/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (1)	ND (1)
ETHYLBENZENE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
METHYLENE CHLORIDE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
STYRENE	ND (5)	ND (5)	NA	ND (5)	NA	NA	NA
TETRACHLOROETHENE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
TOLUENE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	ND (1)	ND (1)
TRICHLOROETHENE	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	ND (1)	ND (1)
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	ND (1)	ND (1)
VINYL CHLORIDE	ND (10)	ND (10)	NA	ND (10)	NA	ND (1)	12 *8
XYLENE (TOTAL)	ND (5)	ND (5)	NA	ND (5)	NA	ND (1)	ND (1)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	NA
1,4-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	ND (10)	NA	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
2-METHYLPHENOL	NA	NA	NA	ND (10)	NA	ND (10)	ND (10)
4-METHYLPHENOL	NA	NA	NA	ND (10)	NA	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
BENZOIC ACID	ND (50)	ND (50)	NA	ND (50)	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (4)	ND (10)	NA	ND (10)	NA	ND (7)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
CARBAZOLE	NA	NA	NA	NA	NA	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
PENTACHLOROPHENOL	NA	NA	NA	ND (50)	NA	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A	IR06MW40A
Sample Number	9129X120	9129X121	9141X219	9202X389	9204Z023	9345X057	9407X204
Sample Date	07/17/91	07/17/91	10/10/91	01/09/92	01/24/92	11/08/93	02/16/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (500)	NA	ND (500)	NA	510	200
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	ND (100)
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (200)	ND (200)	NA	ND (5,000)	NA	NA	NA
Anion (ug/L)							
CHLORIDE	1,780,000	1,770,000	NA	1,160,000	NA	NA	NA
NITRATE	ND (500)	ND (500)	NA	ND (500)	NA	NA	NA
NITRITE	NA	NA	NA	ND (500)	NA	NA	NA
ORTHOPHOSPHATE	ND (2,000)	ND (2,000)	NA	ND (2,000)	NA	NA	NA
SULFATE	1,420,000	1,400,000	NA	796,000	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	2,500	1,100	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	5.1	NA	1.5	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	5,700,000	5,600,000	6,500,000	3,800,000	2,000,000	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A
Sample Number	9419X290	9433N581	9024J008	9024J009	9101X029	9129X119	9202X380
Sample Date	05/13/94	08/19/94	06/11/90	06/11/90	01/03/91	07/16/91	01/08/92
Metal (ug/L)							
ALUMINUM	NA	NA	ND (21.3)	ND (21.3)	ND (14.6)	ND (25.7)	ND (15.3)
ANTIMONY	NA	NA	ND (20.1)	ND (20.1)	ND (23.8)	ND (14.3)	ND (27.6)
ARSENIC	2.9 *	2.1 *	2.2 *	2.0 *	10.5 *	9.7 *	12.5 *
BARIUM	NA	NA	377	381	587	901	929
BERYLLIUM	ND (0.10)	ND (0.10)	ND (0.33)	ND (0.33)	ND (1.6)	ND (0.24)	ND (0.35)
CADMIUM	NA	NA	ND (3.7)	ND (3.7)	ND (4.1)	ND (3.4)	ND (2.3)
CALCIUM	NA	NA	62,400	63,200	80,000	110,000	94,600
CHROMIUM	ND (0.90)	ND (0.70)	ND (2.2)	ND (3.9)	ND (2.8)	ND (2.1)	ND (3.0)
CHROMIUM VI	ND (10.0)	ND (15.2)	ND (10.0)	ND (10.0)	NA	NA	ND (10.0)
COBALT	NA	NA	ND (7.0)	ND (7.0)	ND (8.4)	8.8	15.2
COPPER	NA	NA	ND (1.7)	ND (1.7)	ND (2.3)	ND (1.3)	ND (1.6)
IRON	NA	NA	1,490	1,060	1,090	8,250	4,380
LEAD	NA	NA	ND (1.6)	ND (1.6)	ND (1.4)	ND (1.2)	ND (2.0)
MAGNESIUM	NA	NA	228,000	232,000	367,000	659,000	546,000
MANGANESE	NA	NA	735 *	749 *	3,420 *	8,860 *	7,150 *
MERCURY	NA	NA	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.20)	ND (0.20)
MOLYBDENUM	NA	NA	NA	NA	NA	ND (3.3)	ND (3.1)
NICKEL	NA	NA	ND (20.2)	ND (20.2)	ND (35.7)	18.9 B	ND (17.8)
POTASSIUM	NA	NA	28,100	28,600	24,700	11,700	14,500
SELENIUM	NA	NA	ND (2.2)	ND (2.2)	ND (2.1)	ND (2.9)	ND (2.5)
SODIUM	NA	NA	577,000	586,000	612,000	448,000	514,000
THALLIUM	NA	NA	ND (1.7)	ND (1.7)	ND (2.2)	ND (7.5)	ND (2.0)
VANADIUM	NA	NA	11.6	11.2	26.6	ND (1.6)	ND (3.9)
ZINC	NA	NA	11.7	9.9	ND (5.7)	10.8	16.6
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	ND (0.5)	ND (0.5)	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
2-BUTANONE	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZENE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CARBON TETRACHLORIDE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CHLOROETHANE	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A
Sample Number	9419X290	9433N581	9024J008	9024J009	9101X029	9129X119	9202X380
Sample Date	05/13/94	08/19/94	06/11/90	06/11/90	01/03/91	07/16/91	01/08/92
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	ND (0.5)	ND (0.5)	NA	NA	NA	NA	NA
ETHYLBENZENE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
METHYLENE CHLORIDE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (2)	ND (5)	ND (5)
STYRENE	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TETRACHLOROETHENE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TOLUENE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	2	ND (5)
TRANS-1,2-DICHLOROETHENE	ND (0.5)	ND (0.5)	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
TRICHLOROFLUOROMETHANE	ND (0.5)	ND (0.5)	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	ND (0.5)	ND (0.5)	NA	NA	NA	NA	NA
VINYL CHLORIDE	14 *δ	1 *δ	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
XYLENE (TOTAL)	ND (1)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,4-DICHLOROBENZENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	15	16	5	ND (10)	3
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (2)	ND (4)	ND (3)	ND (4)	ND (5)	ND (10)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	NA	NA	NA	NA	NA
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (50)	ND (50)	NA	NA	ND (50)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW40A	IR06MW40A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A
Sample Number	9419X290	9433N581	9024J008	9024J009	9101X029	9129X119	9202X380
Sample Date	05/13/94	08/19/94	06/11/90	06/11/90	01/03/91	07/16/91	01/08/92
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	ND (500)	ND (500)	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	86	120	ND (500)	ND (500)	3,500	730	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	2,500
TPH-MOTOR OIL	120	190	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	ND (10,000)	ND (5,000)	870	ND (200)	6,800
Anion (ug/L)							
CHLORIDE	NA	NA	1,290,000	1,290,000	1,510,000	2,350,000	1,840,000
NITRATE	NA	NA	ND (500)	ND (500)	ND (500)	3,200	ND (500)
NITRITE	NA	NA	NA	NA	NA	NA	ND (500)
ORTHOPHOSPHATE	NA	NA	ND (200)	ND (200)	ND (2,000)	ND (2,000)	ND (2,000)
SULFATE	NA	NA	3,400	3,500	ND (10,000)	ND (10,000)	ND (10,000)
Ammonia (ug/L)							
AMMONIA	NA	NA	1,800	1,700	1,600	1,400	NA
pH (pH units)							
PH	NA	NA	7.5	7.6	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	2,600,000	2,800,000	3,100,000	3,800,000	3,600,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sample Number	9202X381	9345X059	9407X206	9407X207	9419X291	9433K019	9024J025
Sample Date	01/08/92	11/08/93	02/16/94	02/16/94	05/13/94	08/19/94	06/13/90
Metal (ug/L)							
ALUMINUM	ND (15.3)	NA	NA	NA	NA	NA	ND (21.3)
ANTIMONY	31.8 *6	NA	NA	NA	NA	NA	ND (20.1)
ARSENIC	12.3 *	14.1 *	ND (12.1)	ND (12.2)	8.4 *	4.3 *	ND (2.0)
BARIUM	919	NA	NA	NA	NA	NA	359
BERYLLIUM	ND (0.35)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)	ND (0.33)
CADMIUM	ND (2.3)	NA	NA	NA	NA	NA	ND (3.7)
CALCIUM	88,900	NA	NA	NA	NA	NA	113,000
CHROMIUM	ND (3.0)	ND (2.3)	ND (2.3)	ND (2.3)	ND (0.90)	ND (0.70)	ND (3.8)
CHROMIUM VI	ND (10.0)	ND (13.2)	ND (13.4)	ND (15.8)	ND (10.0)	ND (10.0)	ND (10.0)
COBALT	ND (10.4)	NA	NA	NA	NA	NA	11.0
COPPER	ND (1.6)	NA	NA	NA	NA	NA	ND (8.5)
IRON	4,040	NA	NA	NA	NA	NA	1,270
LEAD	ND (2.0)	NA	NA	NA	NA	NA	ND (1.6)
MAGNESIUM	505,000	NA	NA	NA	NA	NA	236,000
MANGANESE	6,340 *	NA	NA	NA	NA	NA	3,040 *
MERCURY	ND (0.20)	NA	NA	NA	NA	NA	ND (0.20)
MOLYBDENUM	ND (3.1)	NA	NA	NA	NA	NA	NA
NICKEL	18.3 B	NA	NA	NA	14.6 B	NA	21.1 B
POTASSIUM	15,700	NA	NA	NA	NA	NA	30,000
SELENIUM	ND (2.5)	NA	NA	NA	NA	NA	2.3
SODIUM	531,000	NA	NA	NA	NA	NA	780,000
THALLIUM	ND (2.0)	NA	NA	NA	NA	NA	ND (1.7)
VANADIUM	ND (3.9)	NA	NA	NA	NA	NA	11.8
ZINC	9.3	NA	NA	NA	NA	NA	21.0
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
1,2-DICHLOROBENZENE	NA	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA
1,2-DICHLOROETHANE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	ND (5)	NA	NA	NA	NA	NA	ND (5)
2-BUTANONE	ND (10)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)	ND (10)
BENZENE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
CARBON TETRACHLORIDE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
CHLOROETHANE	ND (10)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sample Number	9202X381	9345X059	9407X206	9407X207	9419X291	9433K019	9024J025
Sample Date	01/08/92	11/08/93	02/16/94	02/16/94	05/13/94	08/19/94	06/13/90
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (5)	2 *	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA
ETHYLBENZENE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	12
METHYLENE CHLORIDE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
STYRENE	ND (5)	NA	NA	NA	NA	NA	1
TETRACHLOROETHENE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
TOLUENE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	4
TRANS-1,2-DICHLOROETHENE	NA	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA
TRICHLOROETHENE	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (5)
TRICHLOROFLUOROMETHANE	NA	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA
TRICHLOROTRIFLUOROETHANE	NA	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	NA
VINYL CHLORIDE	ND (10)	ND (1)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (10)
XYLENE (TOTAL)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	21
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	NA	NA	NA	NA	NA	ND (40)
1,4-DICHLOROBENZENE	ND (10)	NA	NA	NA	NA	NA	ND (40)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	72
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
ACENAPHTHENE	3	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	150
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	11
BENZOIC ACID	ND (50)	NA	NA	NA	NA	NA	ND (200)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (10)	ND (4)	ND (10)	ND (4)	ND (3)	ND (40)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
CARBAZOLE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	97
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	21
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	95
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	690 *
PENTACHLOROPHENOL	ND (50)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (200)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	62 *
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	14

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW41A	IR06MW42A
Sample Number	9202X381	9345X059	9407X206	9407X207	9419X291	9433K019	9024J025
Sample Date	01/08/92	11/08/93	02/16/94	02/16/94	05/13/94	08/19/94	06/13/90
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	ND (500)
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (750)	850	520	460	520	520	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	3,200	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	170	140	190	ND (100)	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	NA	NA	NA	NA	ND (5,000)
Anion (ug/L)							
CHLORIDE	1,850,000	NA	NA	NA	NA	NA	1,850,000
NITRATE	ND (500)	NA	NA	NA	NA	NA	ND (500)
NITRITE	ND (500)	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	ND (2,000)	NA	NA	NA	NA	NA	ND (2,000)
SULFATE	ND (10,000)	NA	NA	NA	NA	NA	ND (10,000)
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	1,600
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	6.6
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	3,500,000	NA	NA	NA	NA	NA	3,300,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A
Sample Number	9102G584	9102X043	9102X046	9129X114	9141M210	9202X392	9202X393
Sample Date	01/10/91	01/07/91	01/08/91	07/16/91	10/11/91	01/10/92	01/10/92
Metal (ug/L)							
ALUMINUM	ND (14.6)	NA	NA	ND (25.7)	NA	ND (15.3)	ND (15.3)
ANTIMONY	ND (23.8)	NA	NA	ND (14.3)	NA	ND (27.6)	ND (27.6)
ARSENIC	8.3 *	NA	NA	9.5 *	NA	6.6 *	6.5 *
BARIUM	565	NA	NA	397	NA	362	363
BERYLLIUM	ND (1.6)	NA	NA	ND (0.24)	NA	ND (0.35)	ND (0.35)
CADMIUM	ND (4.1)	NA	NA	ND (3.4)	NA	ND (2.3)	ND (2.3)
CALCIUM	125,000	NA	NA	68,800	NA	60,500	61,000
CHROMIUM	ND (2.8)	NA	NA	ND (2.1)	NA	ND (3.0)	ND (3.0)
CHROMIUM VI	NA	NA	NA	NA	NA	ND (10.0)	ND (10.0)
COBALT	ND (8.4)	NA	NA	ND (4.9)	NA	ND (10.4)	ND (10.4)
COPPER	ND (7.2)	NA	NA	ND (1.3)	NA	ND (1.6)	ND (1.6)
IRON	1,870	NA	NA	4,220	NA	7,060	7,400
LEAD	ND (2.1)	NA	NA	ND (1.2)	NA	ND (2.0)	ND (2.0)
MAGNESIUM	299,000	NA	NA	152,000	NA	135,000	136,000
MANGANESE	3,880 *	NA	NA	1,940 *	NA	1,430 *	1,410 *
MERCURY	ND (0.20)	NA	NA	ND (0.20)	NA	ND (0.20)	ND (0.20)
MOLYBDENUM	NA	NA	NA	ND (3.3)	NA	ND (3.1)	ND (3.1)
NICKEL	ND (22.9)	NA	NA	22.3 *	NA	ND (17.8)	ND (17.8)
POTASSIUM	35,100	NA	NA	26,100	NA	23,800	24,000
SELENIUM	ND (2.3)	NA	NA	ND (2.9)	NA	ND (2.5)	ND (2.5)
SODIUM	938,000	NA	NA	640,000	NA	599,000	605,000
THALLIUM	ND (2.5)	NA	NA	ND (7.5)	NA	ND (2.0)	ND (2.0)
VANADIUM	ND (17.3)	NA	NA	1.7	NA	ND (3.9)	ND (3.9)
ZINC	36.6	NA	NA	ND (5.3)	NA	22.5	20.8
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
2-BUTANONE	NA	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
BENZENE	NA	ND (5)	NA	2 *	NA	ND (5)	ND (5)
CARBON TETRACHLORIDE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
CHLOROETHANE	NA	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A
Sample Number	9102G584	9102X043	9102X046	9129X114	9141M210	9202X392	9202X393
Sample Date	01/10/91	01/07/91	01/08/91	07/16/91	10/11/91	01/10/92	01/10/92
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	8	NA	12	NA	9	7
METHYLENE CHLORIDE	NA	ND (5)	NA	ND (12)	NA	ND (5)	ND (5)
STYRENE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
TETRACHLOROETHENE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
TOLUENE	NA	ND (5)	NA	ND (4)	NA	4	2
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (5)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	ND (10)	NA	ND (10)	NA	ND (10)	ND (10)
XYLENE (TOTAL)	NA	19	NA	17	NA	16	14
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
1,4-DICHLOROBENZENE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
2,4-DIMETHYLPHENOL	NA	NA	ND (40)	9	NA	8	7
2-METHYLNAPHTHALENE	NA	NA	ND (40)	140	NA	240	230
2-METHYLPHENOL	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
4-METHYLPHENOL	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
ACENAPHTHENE	NA	NA	170	160	NA	220	230
ACENAPHTHYLENE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
ANTHRACENE	NA	NA	21	10	NA	12	11
BENZOIC ACID	NA	NA	ND (200)	ND (100)	NA	ND (100)	ND (100)
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
BUTYLBENZYLPHTHALATE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	140	140	NA	140	140
DIETHYLPHTHALATE	NA	NA	ND (40)	ND (20)	NA	ND (20)	ND (20)
FLUORANTHENE	NA	NA	36	13	NA	15	17
FLUORENE	NA	NA	130	120	NA	160	160
NAPHTHALENE	NA	NA	810 *	1,200 *	NA	1,600 *	1,600 *
PENTACHLOROPHENOL	NA	NA	ND (200)	ND (100)	NA	ND (100)	ND (100)
PHENANTHRENE	NA	NA	160 B	130 B	NA	130 B	120 B
PYRENE	NA	NA	16	6	NA	7	8

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A
Sample Number	9102G584	9102X043	9102X046	9129X114	9141M210	9202X392	9202X393
Sample Date	01/10/91	01/07/91	01/08/91	07/16/91	10/11/91	01/10/92	01/10/92
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	NA	ND (500)	1,900	NA	ND (1,500)	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	ND (200)	ND (200)	NA	ND (5,000)	ND (5,000)
Anion (ug/L)							
CHLORIDE	NA	1,960,000	NA	1,140,000	NA	920,000	886,000
NITRATE	NA	ND (500)	NA	ND (500)	NA	ND (50.0)	ND (50.0)
NITRITE	NA	NA	NA	NA	NA	ND (500)	ND (500)
ORTHOPHOSPHATE	NA	ND (2,000)	NA	ND (2,000)	NA	ND (200)	ND (200)
SULFATE	NA	10,200	NA	ND (10,000)	NA	ND (1,000)	ND (1,000)
Ammonia (ug/L)							
AMMONIA	NA	NA	890	1,600	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	2.4	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	3,800,000	2,400,000	2,500,000	2,200,000	2,200,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW44A
Sample Number	9204Z030	9345X060	9407X192	9420X301	9434K044	9434K049	9144X236
Sample Date	01/24/92	11/08/93	02/14/94	05/16/94	08/25/94	08/26/94	10/31/91
Metal (ug/L)							
ALUMINUM	NA	NA	NA	NA	NA	NA	ND (53.0)
ANTIMONY	NA	NA	NA	NA	NA	NA	ND (27.6)
ARSENIC	NA	10.5 *	ND (3.6)	3.1 *	NA	5.0 *	ND (1.4)
BARIUM	NA	NA	NA	NA	NA	NA	23.2
BERYLLIUM	NA	ND (0.24)	ND (0.20)	ND (0.10)	NA	ND (0.10)	ND (0.35)
CADMIUM	NA	NA	NA	NA	NA	NA	ND (2.3)
CALCIUM	NA	NA	NA	NA	NA	NA	217,000
CHROMIUM	NA	ND (2.3)	ND (2.6)	ND (0.90)	NA	ND (0.70)	ND (3.0)
CHROMIUM VI	NA	ND (26.5)	ND (10.0)	ND (10.0)	NA	ND (12.5)	ND (10.0)
COBALT	NA	NA	NA	NA	NA	NA	16.7
COPPER	NA	NA	NA	NA	NA	NA	1.9
IRON	NA	NA	NA	NA	NA	NA	794
LEAD	NA	NA	NA	NA	NA	NA	ND (2.0)
MAGNESIUM	NA	NA	NA	NA	NA	NA	915,000
MANGANESE	NA	NA	NA	NA	NA	NA	4,930 *
MERCURY	NA	NA	NA	NA	NA	NA	ND (0.20)
MOLYBDENUM	NA	NA	NA	NA	NA	NA	ND (3.1)
NICKEL	NA	NA	NA	NA	NA	NA	117 B*
POTASSIUM	NA	NA	NA	NA	NA	NA	16,800
SELENIUM	NA	NA	NA	NA	NA	NA	ND (2.5)
SODIUM	NA	NA	NA	NA	NA	NA	793,000
THALLIUM	NA	NA	NA	NA	NA	NA	ND (10.0)
VANADIUM	NA	NA	NA	NA	NA	NA	ND (3.9)
ZINC	NA	NA	NA	NA	NA	NA	ND (6.1)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
1,2-DICHLOROBENZENE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	NA
1,2-DICHLOROETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	NA	NA	ND (5)
2-BUTANONE	NA	ND (5)	ND (5)	ND (5)	ND (50)	NA	ND (10)
BENZENE	NA	1 *	ND (1)	0.7 *	ND (2)	NA	ND (5)
CARBON TETRACHLORIDE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
CHLOROETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW44A
Sample Number	92042030	9345X060	9407X192	9420X301	9434K044	9434K049	9144X236
Sample Date	01/24/92	11/08/93	02/14/94	05/16/94	08/25/94	08/26/94	10/31/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
CIS-1,2-DICHLOROETHENE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	NA
ETHYLBENZENE	NA	5	2	3	1	NA	ND (5)
METHYLENE CHLORIDE	NA	ND (1)	ND (1)	ND (0.5)	ND (10)	NA	ND (5)
STYRENE	NA	NA	NA	NA	NA	NA	ND (5)
TETRACHLOROETHENE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
TOLUENE	NA	2	0.6	1	ND (2)	NA	ND (5)
TRANS-1,2-DICHLOROETHENE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	NA
TRICHLOROETHENE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	ND (5)
TRICHLOROFLUOROMETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	ND (1)	ND (1)	ND (0.5)	ND (2)	NA	NA
VINYL CHLORIDE	NA	ND (1)	0.7 *a	ND (0.5)	ND (2)	NA	ND (10)
XYLENE (TOTAL)	NA	11	4	5	7	NA	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	ND (5)	ND (10)
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	ND (5)	ND (10)
2,4-DIMETHYLPHENOL	NA	ND (50)	ND (100)	35	NA	ND (10)	ND (10)
2-METHYLNAPHTHALENE	NA	42	43	38	NA	ND (10)	ND (10)
2-METHYLPHENOL	NA	ND (50)	ND (100)	ND (10)	NA	ND (10)	ND (10)
4-METHYLPHENOL	NA	ND (50)	ND (100)	1	NA	ND (10)	ND (10)
ACENAPHTHENE	NA	170	120	130	NA	110	ND (10)
ACENAPHTHYLENE	NA	ND (50)	ND (100)	ND (10)	NA	3	ND (10)
ANTHRACENE	NA	ND (50)	ND (100)	8	NA	5	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	NA	ND (43)	ND (100)	ND (0.7)	NA	ND (4)	ND (2)
BUTYLBENZYLPHTHALATE	NA	ND (50)	ND (100)	ND (10)	NA	ND (10)	ND (10)
CARBAZOLE	NA	47 *	ND (100)	33 *	NA	33 *	NA
DIBENZOFURAN	NA	100	58	83	NA	49	ND (10)
DIETHYLPHTHALATE	NA	ND (50)	ND (100)	ND (10)	NA	ND (10)	ND (10)
FLUORANTHENE	NA	17	17	10	NA	11	ND (10)
FLUORENE	NA	110	61	85	NA	54	ND (10)
NAPHTHALENE	NA	380 *	280 *	360 *	NA	30	ND (10)
PENTACHLOROPHENOL	NA	ND (130)	ND (250)	ND (25)	NA	ND (25)	ND (50)
PHENANTHRENE	NA	110 a	74 a	74 a	NA	5 a	ND (10)
PYRENE	NA	8	9	6	NA	6	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW42A	IR06MW44A
Sample Number	9204Z030	9345X060	9407X192	9420X301	9434K044	9434K049	9144X236
Sample Date	01/24/92	11/08/93	02/14/94	05/16/94	08/25/94	08/26/94	10/31/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	3,200	2,100	3,900	NA	1,100	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	ND (500)
TPH-MOTOR OIL	NA	NA	450	540	NA	450	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	ND (5,000)
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	NA	NA	2,500,000
NITRATE	NA	NA	NA	NA	NA	NA	ND (500)
NITRITE	NA	NA	NA	NA	NA	NA	ND (5,000)
ORTHOPHOSPHATE	NA	NA	NA	NA	NA	NA	ND (2,000)
SULFATE	NA	NA	NA	NA	NA	NA	4,340,000
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	1.6	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	1,900,000	NA	NA	NA	NA	NA	9,300,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A	IR06MW46A
Sample Number	9202X375	9434H623	9144X237	9203X395	9434H620	9144X244	9144X245
Sample Date	01/07/92	08/25/94	10/31/91	01/13/92	08/25/94	10/31/91	11/01/91
Metal (ug/L)							
ALUMINUM	ND (15.3)	NA	ND (26.9)	ND (15.3)	NA	ND (36.9)	ND (39.4)
ANTIMONY	40.1 *&	NA	ND (27.6)	33.5 *&	NA	ND (27.6)	ND (27.6)
ARSENIC	ND (1.4)	3.0 *	2.5 *	ND (1.4)	ND (1.5)	3.7 *	3.6 *
BARIUM	13.9	NA	68.0	56.1	NA	35.4	35.4
BERYLLIUM	ND (0.35)	ND (0.10)	ND (0.35)	ND (0.35)	ND (0.10)	ND (0.35)	ND (0.35)
CADMIUM	6.4 &	NA	ND (2.3)	ND (2.3)	NA	ND (2.3)	ND (2.3)
CALCIUM	175,000	NA	111,000	100,000	NA	160,000	161,000
CHROMIUM	ND (3.0)	ND (0.70)	ND (3.0)	ND (3.0)	ND (0.70)	ND (3.0)	ND (3.0)
CHROMIUM VI	ND (10.0)	ND (18.4)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
COBALT	14.4	NA	ND (10.4)	ND (10.4)	NA	ND (10.4)	ND (10.4)
COPPER	ND (1.6)	NA	10.9 &	ND (4.7)	NA	1.8	ND (1.6)
IRON	504	NA	ND (6.3)	ND (6.3)	NA	ND (9.9)	ND (12.1)
LEAD	ND (2.0)	NA	ND (2.0)	ND (2.0)	NA	ND (2.0)	ND (2.0)
MAGNESIUM	748,000	NA	156,000	220,000	NA	392,000	394,000
MANGANESE	5,050 *	NA	370 *	26.8	NA	148	132
MERCURY	ND (0.20)	NA	ND (0.20)	ND (0.20)	NA	ND (0.20)	ND (0.20)
MOLYBDENUM	ND (3.1)	NA	5.1	ND (7.0)	NA	24.4	26.3
NICKEL	89.4 &	NA	35.2 &	ND (17.8)	NA	38.7 &	49.7 &
POTASSIUM	11,800	NA	27,800	63,800	NA	7,180	7,130
SELENIUM	ND (2.5)	NA	3.1	ND (2.5)	NA	ND (2.5)	ND (2.5)
SODIUM	714,000	NA	1,020,000	2,120,000	NA	216,000	215,000
THALLIUM	ND (2.0)	NA	ND (2.0)	ND (2.0)	NA	ND (2.0)	ND (2.0)
VANADIUM	ND (3.9)	NA	ND (3.9)	ND (3.9)	NA	ND (3.9)	ND (3.9)
ZINC	49.8	NA	ND (6.1)	ND (6.1)	NA	ND (6.1)	ND (6.1)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	ND (0.5)	NA	NA
1,2-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (5)	NA	ND (5)	ND (5)
2-BUTANONE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZENE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
CARBON TETRACHLORIDE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
CHLOROETHANE	NA	NA	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A	IR06MW46A
Sample Number	9202X375	9434H623	9144X237	9203X395	9434H620	9144X244	9144X245
Sample Date	01/07/92	08/25/94	10/31/91	01/13/92	08/25/94	10/31/91	11/01/91
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (0.5)	NA	NA
ETHYLBENZENE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
METHYLENE CHLORIDE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
STYRENE	NA	NA	ND (5)	ND (5)	NA	ND (5)	ND (5)
TETRACHLOROETHENE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
TOLUENE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (0.5)	NA	NA
TRICHLOROETHENE	NA	NA	ND (5)	ND (5)	ND (0.5)	ND (5)	ND (5)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	ND (0.5)	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	ND (0.5)	NA	NA
VINYL CHLORIDE	NA	NA	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
XYLENE (TOTAL)	NA	NA	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (5)	ND (10)	ND (10)	NA	ND (10)	ND (10)
1,4-DICHLOROBENZENE	ND (10)	ND (5)	ND (10)	ND (10)	NA	ND (10)	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	ND (50)	NA	ND (50)	ND (50)	NA	ND (50)	ND (50)
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (4)	ND (10)	ND (10)	ND (4)	ND (10)	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	ND (10)	NA	NA	ND (10)	NA	NA
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (50)	ND (25)	ND (50)	ND (50)	ND (25)	ND (50)	ND (50)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW44A	IR06MW44A	IR06MW45A	IR06MW45A	IR06MW45A	IR06MW46A	IR06MW46A
Sample Number	9202X375	9434H623	9144X237	9203X395	9434H620	9144X244	9144X245
Sample Date	01/07/92	08/25/94	10/31/91	01/13/92	08/25/94	10/31/91	11/01/91
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (200)	ND (500)	ND (500)	ND (100)	ND (500)	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	ND (500)	NA	NA	ND (500)	ND (500)
TPH-MOTOR OIL	NA	3,100	NA	NA	1,400	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	ND (5,000)	ND (5,000)	NA	ND (5,000)	ND (5,000)
Anion (ug/L)							
CHLORIDE	1,510,000	NA	1,860,000	3,490,000	NA	1,470,000	806,000
NITRATE	2,400	NA	1,800	1,500	NA	ND (500)	ND (500)
NITRITE	ND (5,000)	NA	ND (5,000)	ND (500)	NA	ND (5,000)	ND (5,000)
ORTHOPHOSPHATE	ND (2,000)	NA	ND (2,000)	ND (2,000)	NA	ND (2,000)	ND (2,000)
SULFATE	2,620,000	NA	272,000	488,000	NA	192,000	146,000
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	6,300,000	NA	4,200,000	6,800,000	NA	2,700,000	2,700,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F
Sample Number	9202X378	9434H621	9145H913	9202X385	9345X058	9407X203	9420X313
Sample Date	01/08/92	08/25/94	11/04/91	01/09/92	11/08/93	02/16/94	05/18/94
Metal (ug/L)							
ALUMINUM	ND (15.3)	NA	ND (15.3)	ND (15.3)	NA	NA	NA
ANTIMONY	28.4 *§	NA	ND (27.6)	ND (27.6)	NA	NA	NA
ARSENIC	2.5 *	2.6 *	2.0 *	2.0 *	ND (3.1)	ND (5.5)	ND (1.3)
BARIUM	59.1	NA	115	85.4	NA	NA	NA
BERYLLIUM	ND (0.35)	ND (0.10)	ND (0.35)	ND (0.35)	ND (0.24)	ND (0.20)	ND (0.10)
CADMIUM	ND (2.3)	NA	ND (2.3)	ND (2.3)	NA	NA	NA
CALCIUM	230,000	NA	44,100	40,100	NA	NA	NA
CHROMIUM	ND (3.0)	1.3	ND (3.0)	3.5	ND (2.3)	ND (3.1)	ND (2.7)
CHROMIUM VI	ND (10.0)	ND (13.8)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
COBALT	ND (10.4)	NA	ND (10.4)	ND (10.4)	NA	NA	NA
COPPER	ND (1.7)	NA	ND (1.6)	ND (1.6)	NA	NA	NA
IRON	ND (6.3)	NA	ND (6.3)	ND (6.3)	NA	NA	NA
LEAD	ND (2.0)	NA	ND (2.0)	ND (2.0)	NA	NA	NA
MAGNESIUM	600,000	NA	191,000	133,000	NA	NA	NA
MANGANESE	187 *	NA	90.4	85.8	NA	NA	NA
MERCURY	ND (0.20)	NA	ND (0.20)	ND (0.20)	NA	NA	NA
MOLYBDENUM	21.8	NA	13.1	ND (14.8)	NA	NA	NA
NICKEL	42.4 §	NA	95.4 §	ND (17.8)	NA	NA	NA
POTASSIUM	9,520	NA	25,000	20,800	NA	NA	NA
SELENIUM	ND (2.5)	NA	ND (2.5)	ND (2.5)	NA	NA	NA
SODIUM	267,000	NA	1,240,000	843,000	NA	NA	NA
THALLIUM	ND (2.0)	NA	ND (2.0)	ND (2.0)	NA	NA	NA
VANADIUM	ND (3.9)	NA	7.7	9.4	NA	NA	NA
ZINC	ND (6.1)	NA	ND (6.1)	ND (6.1)	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROBENZENE	NA	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROETHANE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROETHENE (TOTAL)	NA	NA	ND (5)	ND (5)	NA	NA	NA
2-BUTANONE	NA	NA	ND (10)	ND (10)	ND (5)	ND (5)	ND (5)
BENZENE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
CARBON TETRACHLORIDE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
CHLOROETHANE	NA	NA	ND (10)	ND (10)	ND (1)	ND (1)	ND (0.5)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F
Sample Number	9202X378	9434H621	9145H913	9202X385	9345X058	9407X203	9420X313
Sample Date	01/08/92	08/25/94	11/04/91	01/09/92	11/08/93	02/16/94	05/18/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	[illegible]	ND (5)	ND (1)	ND (1)	ND (0.5)
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
ETHYLBENZENE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
METHYLENE CHLORIDE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
STYRENE	NA	NA	ND (5)	ND (5)	NA	NA	NA
TETRACHLOROETHENE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
TOLUENE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
TRICHLOROETHENE	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
VINYL CHLORIDE	NA	NA	ND (10)	ND (10)	ND (1)	ND (1)	ND (0.5)
XYLENE (TOTAL)	NA	NA	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (5)	ND (10)	ND (10)	NA	NA	NA
1,4-DICHLOROBENZENE	ND (10)	ND (5)	ND (10)	ND (10)	NA	NA	NA
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	ND (50)	NA	ND (50)	ND (50)	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (8)	ND (4)	ND (10)	ND (7)	ND (3)	ND (7)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	ND (10)	NA	NA	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (50)	ND (25)	ND (50)	ND (50)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW46A	IR06MW46A	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F	IR06MW47F
Sample Number	9202X378	9434H621	9145H913	9202X385	9345X058	9407X203	9420X313
Sample Date	01/08/92	08/25/94	11/04/91	01/09/92	11/08/93	02/16/94	05/18/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (100)	ND (500)	ND (500)	1,000	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	ND (500)	NA	NA	NA	NA
TPH-MOTOR OIL	NA	470	NA	NA	NA	390	300
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	ND (5,000)	NA	ND (5,500)	ND (5,000)	NA	NA	NA
Anion (ug/L)							
CHLORIDE	2,150,000	NA	2,230,000	1,470,000	NA	NA	NA
NITRATE	730	NA	690	ND (500)	NA	NA	NA
NITRITE	ND (500)	NA	ND (500)	ND (500)	NA	NA	NA
ORTHOPHOSPHATE	ND (2,000)	NA	ND (2,000)	ND (2,000)	NA	NA	NA
SULFATE	205,000	NA	316,000	269,000	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	3,400,000	NA	4,500,000	3,300,000	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW47F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F
Sample Number	9435K054	9145H910	9202X379	9345X062	9407X188	9407X189	9420X304
Sample Date	08/29/94	11/04/91	01/08/92	11/08/93	02/14/94	02/14/94	05/16/94
Metal (ug/L)							
ALUMINUM	NA	ND (15.3)	ND (15.3)	NA	NA	NA	NA
ANTIMONY	NA	ND (27.6)	ND (27.6)	NA	NA	NA	NA
ARSENIC	ND (1.5)	7.9 *	4.0 *	4.7 *	ND (4.6)	ND (4.5)	ND (1.3)
BARIUM	NA	29.3	57.1	NA	NA	NA	NA
BERYLLIUM	ND (0.10)	ND (0.35)	ND (0.35)	ND (0.35)	ND (0.20)	ND (0.20)	ND (0.10)
CADMIUM	NA	ND (2.3)	ND (2.3)	NA	NA	NA	NA
CALCIUM	NA	17,500	18,000	NA	NA	NA	NA
CHROMIUM	4.0	ND (3.0)	ND (3.0)	ND (2.3)	ND (2.3)	ND (2.3)	ND (0.90)
CHROMIUM VI	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.8)	ND (10.0)	ND (10.0)	ND (10.0)
COBALT	NA	ND (10.4)	ND (10.4)	NA	NA	NA	NA
COPPER	NA	ND (2.7)	ND (2.6)	NA	NA	NA	NA
IRON	NA	ND (6.3)	ND (12.1)	NA	NA	NA	NA
LEAD	NA	ND (2.0)	ND (2.0)	NA	NA	NA	NA
MAGNESIUM	NA	43,800	55,800	NA	NA	NA	NA
MANGANESE	NA	188 *	728 *	NA	NA	NA	NA
MERCURY	NA	ND (0.20)	ND (0.20)	NA	NA	NA	NA
MOLYBDENUM	NA	35.6	ND (8.7)	NA	NA	NA	NA
NICKEL	NA	ND (17.8)	ND (17.8)	NA	NA	NA	NA
POTASSIUM	NA	14,700	11,800	NA	NA	NA	NA
SELENIUM	NA	ND (2.5)	ND (2.5)	NA	NA	NA	NA
SODIUM	NA	344,000	185,000	NA	NA	NA	NA
THALLIUM	NA	ND (2.0)	ND (2.0)	NA	NA	NA	NA
VANADIUM	NA	ND (3.9)	ND (3.9)	NA	NA	NA	NA
ZINC	NA	ND (6.1)	ND (6.1)	NA	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROBENZENE	ND (0.5)	NA	NA	ND (1)	NA	ND (1)	ND (0.5)
1,2-DICHLOROETHANE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (5)	2	NA	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)	ND (5)	ND (5)
BENZENE	ND (0.5)	ND (5)	1 *	2 *4	1 *	1 *	1 *
CARBON TETRACHLORIDE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
CHLOROETHANE	ND (0.5)	ND (10)	ND (10)	ND (1)	ND (1)	ND (1)	ND (0.5)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW47F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F
Sample Number	9435K054	9145H910	9202X379	9345X062	9407X188	9407X189	9420X304
Sample Date	08/29/94	11/04/91	01/08/92	11/08/93	02/14/94	02/14/94	05/16/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (0.5)	ND (5)	1 *	2 *	2 *	2 *	ND (0.5)
CIS-1,2-DICHLOROETHENE	ND (0.5)	NA	NA	3	ND (1)	ND (1)	2
ETHYLBENZENE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
METHYLENE CHLORIDE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
STYRENE	NA	ND (5)	ND (5)	NA	NA	NA	NA
TETRACHLOROETHENE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
TOLUENE	ND (0.5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (0.5)
TRANS-1,2-DICHLOROETHENE	ND (0.5)	NA	NA	ND (1)	ND (1)	ND (1)	0.3
TRICHLOROETHENE	ND (0.5)	4 *	ND (5)	ND (1)	ND (1)	ND (1)	0.3
TRICHLOROFLUOROMETHANE	ND (0.5)	NA	NA	ND (1)	ND (1)	ND (1)	ND (0.5)
TRICHLOROTRIFLUOROETHANE	ND (0.5)	NA	NA	ND (1)	ND (1)	ND (1)	ND (0.5)
VINYL CHLORIDE	ND (0.5)	ND (10)	6 *&	7 *&	11 *&	13 *&	11 *&
XYLENE (TOTAL)	ND (1)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	ND (10)	ND (10)	NA	ND (10)	NA	NA
1,4-DICHLOROBENZENE	NA	ND (10)	ND (10)	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	ND (50)	ND (50)	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (4)	ND (4)	ND (10)	ND (6)	ND (10)	ND (10)	ND (11)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (50)	ND (50)	ND (25)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW47F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F	IR06MW48F
Sample Number	9435K054	9145H910	9202X379	9345X062	9407X188	9407X189	9420X304
Sample Date	08/29/94	11/04/91	01/08/92	11/08/93	02/14/94	02/14/94	05/16/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (100)	ND (500)	ND (500)	760	ND (100)	ND (100)	140
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	ND (500)	NA	NA	NA	NA	NA
TPH-MOTOR OIL	70	NA	NA	NA	750	650	1,100
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	ND (5,000)	ND (5,000)	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	142,000	88,200	NA	NA	NA	NA
NITRATE	NA	1,100	ND (50.0)	NA	NA	NA	NA
NITRITE	NA	ND (50.0)	ND (50.0)	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	ND (200)	470	NA	NA	NA	NA
SULFATE	NA	140,000	29,200	NA	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	1,200,000	720,000	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW48F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F
Sample Number	9433K021	9144X243	9202X366	9202X367	9345X061	9407X208	9420X302
Sample Date	08/19/94	10/31/91	01/06/92	01/06/92	11/08/93	02/16/94	05/16/94
Metal (ug/L)							
ALUMINUM	NA	ND (15.3)	ND (15.3)	ND (15.3)	NA	NA	NA
ANTIMONY	NA	ND (27.6)	ND (27.6)	ND (27.6)	NA	NA	NA
ARSENIC	1.7 *	ND (1.4)	ND (1.4)	ND (1.4)	3.8 *	ND (3.6)	ND (1.3)
BARIUM	NA	12.2	11.9	11.9	NA	NA	NA
BERYLLIUM	ND (0.10)	ND (0.35)	ND (0.35)	ND (0.35)	ND (0.31)	ND (0.25)	ND (0.10)
CADMIUM	NA	ND (2.3)	ND (2.3)	ND (2.3)	NA	NA	NA
CALCIUM	NA	12,700	13,300	12,900	NA	NA	NA
CHROMIUM	ND (0.70)	90.6 δ	101 δ	96.0 δ	81.1 δ	87.8 δ	78.8 δ
CHROMIUM VI	ND (10.0)	100 *δ	120 *δ	110 *δ	87.8 *δ	82.9 *δ	91.1 *δ
COBALT	NA	10.7	ND (10.4)	ND (10.4)	NA	NA	NA
COPPER	NA	ND (1.6)	ND (1.6)	ND (1.6)	NA	NA	NA
IRON	NA	ND (6.3)	ND (6.3)	ND (6.3)	NA	NA	NA
LEAD	NA	ND (2.0)	ND (2.0)	ND (2.0)	NA	NA	NA
MAGNESIUM	NA	71,400	81,200	79,300	NA	NA	NA
MANGANESE	NA	0.69	ND (2.2)	ND (2.3)	NA	NA	NA
MERCURY	NA	ND (0.20)	ND (0.20)	ND (0.20)	NA	NA	NA
MOLYBDENUM	NA	ND (3.1)	ND (3.1)	ND (3.1)	NA	NA	NA
NICKEL	NA	ND (17.8)	ND (17.8)	ND (17.8)	NA	NA	NA
POTASSIUM	NA	1,820	1,720	1,670	NA	NA	NA
SELENIUM	NA	ND (2.5)	ND (2.5)	ND (2.5)	NA	NA	NA
SODIUM	NA	78,600	80,700	78,300	NA	NA	NA
THALLIUM	NA	ND (2.0)	ND (2.0)	ND (2.0)	NA	NA	NA
VANADIUM	NA	ND (3.9)	ND (3.9)	ND (3.9)	NA	NA	NA
ZINC	NA	ND (6.1)	ND (6.1)	ND (6.1)	NA	NA	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROBENZENE	ND (0.5)	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROETHANE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
1,2-DICHLOROETHENE (TOTAL)	NA	ND (5)	ND (5)	ND (5)	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	ND (10)	ND (10)	ND (5)	ND (5)	ND (5)
BENZENE	1 *	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
CARBON TETRACHLORIDE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
CHLOROETHANE	ND (0.5)	ND (10)	ND (10)	ND (10)	ND (1)	ND (1)	ND (0.5)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW48F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F
Sample Number	9433K021	9144X243	9202X366	9202X367	9345X061	9407X208	9420X302
Sample Date	08/19/94	10/31/91	01/06/92	01/06/92	11/08/93	02/16/94	05/16/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
CIS-1,2-DICHLOROETHENE	3	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
ETHYLBENZENE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
METHYLENE CHLORIDE	ND (0.6)	ND (5)	ND (5)	ND (5)	ND (1)	ND (0.5)	ND (0.3)
STYRENE	NA	ND (5)	ND (5)	ND (5)	NA	NA	NA
TETRACHLOROETHENE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
TOLUENE	ND (0.5)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (0.5)
TRANS-1,2-DICHLOROETHENE	0.3	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
TRICHLOROETHENE	0.3	4 *	4 *	4 *	4 *	2 *	3 *
TRICHLOROFLUOROMETHANE	ND (0.5)	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
TRICHLOROTRIFLUOROETHANE	ND (0.5)	NA	NA	NA	ND (1)	ND (1)	ND (0.5)
VINYL CHLORIDE	6 *4	ND (10)	ND (10)	ND (10)	ND (1)	ND (1)	ND (0.5)
XYLENE (TOTAL)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	ND (10)	ND (10)	ND (10)	NA	NA	NA
1,4-DICHLOROBENZENE	NA	ND (10)	ND (10)	ND (10)	NA	NA	NA
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	4
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	ND (50)	ND (50)	ND (50)	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (4)	ND (2)	ND (3)	ND (10)	ND (26)	ND (4)	ND (2)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (0.8)
CARBAZOLE	ND (10)	NA	NA	NA	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	0.6
PENTACHLOROPHENOL	ND (25)	ND (50)	ND (50)	ND (50)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	3
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW48F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW49F
Sample Number	9433K021	9144X243	9202X366	9202X367	9345X061	9407X208	9420X302
Sample Date	08/19/94	10/31/91	01/06/92	01/06/92	11/08/93	02/16/94	05/16/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	87	ND (500)	ND (500)	ND (500)	410	1,300	2,400
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	ND (500)	NA	NA	NA	NA	NA
TPH-MOTOR OIL	550	NA	NA	NA	NA	410	700
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	NA	NA	NA	NA
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	ND (5,000)	ND (5,000)	ND (5,000)	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	150,000	155,000	155,000	NA	NA	NA
NITRATE	NA	9,400	9,900	9,900	NA	NA	NA
NITRITE	NA	ND (500)	ND (50.0)	ND (50.0)	NA	NA	NA
ORTHOPHOSPHATE	NA	ND (200)	ND (200)	ND (200)	NA	NA	NA
SULFATE	NA	11,400	11,800	11,800	NA	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	NA	NA	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	530,000	570,000	540,000	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW50F	IR06MW50F	IR06MW50F	IR06MW50F
Sample Number	9420X303	9433N583	9433N584	9350X097	9350X098	9433K010	9521X620
Sample Date	05/16/94	08/19/94	08/19/94	12/14/93	12/14/93	08/16/94	05/25/95
Metal (ug/L)							
ALUMINUM	NA	NA	NA	ND (11.0)	ND (11.0)	ND (35.3)	ND (39.6)
ANTIMONY	NA	NA	NA	ND (22.0)	ND (28.1)	10.8 J	4.2
ARSENIC	ND (1.3)	ND (1.5)	ND (1.5)	3.5 *	5.3 *	ND (1.5)	ND (1.4)
BARIUM	NA	NA	NA	47.1	46.8	47.6	53.7
BERYLLIUM	ND (0.12)	ND (0.10)	ND (0.10)	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.15)
CADMIUM	NA	NA	NA	ND (1.2)	ND (1.2)	ND (0.63)	ND (0.10)
CALCIUM	NA	NA	NA	28,300	28,000	23,900	23,800
CHROMIUM	80.7 J	83.9 J	78.4 J	118 J	115 J	108 J	113 J
CHROMIUM VI	91.1 *B	83.2 *B	78.5 *B	NA	NA	NA	NA
COBALT	NA	NA	NA	ND (2.5)	ND (2.5)	ND (0.70)	ND (0.40)
COPPER	NA	NA	NA	2.3	ND (1.6)	25.7 B	4.3 B
IRON	NA	NA	NA	ND (6.3)	ND (6.3)	ND (18.8)	ND (10.1)
LEAD	NA	NA	NA	ND (1.1)	ND (1.1)	ND (1.5)	ND (1.3)
MAGNESIUM	NA	NA	NA	115,000	113,000	124,000	148,000
MANGANESE	NA	NA	NA	ND (0.60)	ND (0.60)	ND (3.3)	1.6
MERCURY	NA	NA	NA	0.17 B	0.22 B	0.30 B	0.12 B
MOLYBDENUM	NA	NA	NA	ND (4.6)	ND (4.6)	ND (0.77)	ND (0.80)
NICKEL	NA	NA	NA	ND (6.8)	ND (6.8)	ND (3.3)	ND (1.3)
POTASSIUM	NA	NA	NA	13,200	12,800	25,000	12,800
SELENIUM	NA	NA	NA	ND (2.7)	ND (2.7)	ND (2.3)	ND (3.5)
SODIUM	NA	NA	NA	367,000	359,000	175,000	395,000
THALLIUM	NA	NA	NA	NA	NA	ND (2.0)	ND (2.0)
VANADIUM	NA	NA	NA	ND (4.1)	ND (4.1)	ND (1.1)	1.4
ZINC	NA	NA	NA	ND (2.7)	ND (2.0)	6.8	19.6
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
1,2-DICHLOROBENZENE	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	ND (10)	ND (10)	ND (10)	NA
2-BUTANONE	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
BENZENE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
CARBON TETRACHLORIDE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
CHLOROETHANE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW50F	IR06MW50F	IR06MW50F	IR06MW50F
Sample Number	9420X303	9433N583	9433N584	9350X097	9350X098	9433K010	9521X620
Sample Date	05/16/94	08/19/94	08/19/94	12/14/93	12/14/93	08/16/94	05/25/95
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
CIS-1,2-DICHLOROETHENE	0.5	ND (0.5)	ND (0.5)	NA	NA	NA	NA
ETHYLBENZENE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
METHYLENE CHLORIDE	ND (0.8)	ND (0.5)	ND (0.6)	ND (10)	ND (10)	ND (10)	NA
STYRENE	NA	NA	NA	ND (10)	ND (10)	ND (10)	NA
TETRACHLOROETHENE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
TOLUENE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
TRANS-1,2-DICHLOROETHENE	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA	NA
TRICHLOROETHENE	0.3	4 *	4 *	ND (10)	ND (10)	ND (10)	NA
TRICHLOROFLUOROMETHANE	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	4	ND (0.5)	ND (0.5)	NA	NA	NA	NA
VINYL CHLORIDE	ND (0.5)	ND (0.5)	ND (0.5)	ND (10)	ND (10)	ND (10)	NA
XYLENE (TOTAL)	ND (1)	ND (1)	ND (1)	ND (10)	ND (10)	ND (10)	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	NA	ND (10)	ND (10)	ND (5)	ND (5)
1,4-DICHLOROBENZENE	NA	NA	NA	ND (10)	ND (10)	ND (5)	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	3	2	6	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (1)	ND (9)	ND (8)	ND (47)	ND (43)	ND (12)	ND (4)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	0.5	2	2	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	2	3	2	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW49F	IR06MW49F	IR06MW49F	IR06MW50F	IR06MW50F	IR06MW50F	IR06MW50F
Sample Number	9420X303	9433N583	9433N584	9350X097	9350X098	9433K010	9521X620
Sample Date	05/16/94	08/19/94	08/19/94	12/14/93	12/14/93	08/16/94	05/25/95
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	NA	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	ND (500)	ND (500)	ND (50)	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	2,100	1,600	2,800	ND (500)	ND (500)	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	660	150	4,200	NA	NA	ND (88)	630
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	NA	ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	NA	NA	925,000
NITRATE	NA	NA	NA	NA	NA	NA	5,700
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	NA	NA	ND (50.0)
SULFATE	NA	NA	NA	NA	NA	NA	96,500
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	8.1	8.1	8.0	8.0
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	NA	NA	2,100,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F
Sample Number	9351X107	9351X108	9433E118	9433E121	9433E122	9530X883	9531X911
Sample Date	12/22/93	12/22/93	08/15/94	08/16/94	08/16/94	07/27/95	08/01/95
Metal (ug/L)							
ALUMINUM	ND (11.0)	ND (16.2)	NA	ND (177)	ND (35.3)	ND (16.3)	NA
ANTIMONY	ND (22.0)	ND (22.0)	NA	ND (6.0)	4.4	ND (2.1)	NA
ARSENIC	ND (10.9)	ND (9.6)	NA	ND (7.5)	ND (6.7)	7.9 *	NA
BARIUM	38.6	39.0	NA	45.4	31.5	36.4	NA
BERYLLIUM	ND (0.20)	ND (0.20)	NA	ND (0.50)	ND (0.14)	ND (0.10)	NA
CADMIUM	ND (1.2)	ND (1.2)	NA	ND (1.1)	ND (0.20)	ND (0.71)	NA
CALCIUM	90,800	95,200	NA	83,100	73,600	98,800	NA
CHROMIUM	ND (2.5)	ND (2.5)	NA	ND (3.5)	ND (0.70)	ND (1.8)	NA
CHROMIUM VI	NA	NA	NA	NA	NA	NA	NA
COBALT	ND (2.5)	ND (2.5)	NA	ND (3.5)	ND (0.70)	ND (1.9)	NA
COPPER	ND (1.6)	ND (2.6)	NA	ND (8.5)	ND (1.7)	ND (4.4)	NA
IRON	ND (6.3)	ND (6.3)	NA	ND (94.0)	ND (18.8)	ND (29.1)	NA
LEAD	ND (1.1)	ND (1.1)	NA	ND (5.0)	ND (1.0)	ND (1.5)	NA
MAGNESIUM	250,000	261,000	NA	241,000	211,000	316,000	NA
MANGANESE	219 *	236 *	NA	196 *	174	266 *	NA
MERCURY	ND (0.10)	ND (0.10)	NA	ND (0.10)	ND (0.10)	ND (0.10)	NA
MOLYBDENUM	ND (4.6)	ND (4.6)	NA	ND (6.1)	ND (6.5)	ND (3.9)	NA
NICKEL	ND (6.8)	ND (6.8)	NA	ND (12.5)	ND (2.5)	ND (3.3)	NA
POTASSIUM	13,200	14,100	NA	23,300	34,900	10,800	NA
SELENIUM	ND (2.7)	ND (2.7)	NA	ND (11.5)	ND (2.3)	ND (3.4)	NA
SODIUM	1,350,000	1,340,000	NA	1,450,000	1,450,000	1,630,000	NA
THALLIUM			NA	ND (10.0)	ND (2.0)	ND (2.0)	NA
VANADIUM	ND (4.1)	ND (4.1)	NA	ND (5.5)	3.5	6.1	NA
ZINC	ND (22.6)	ND (20.9)	NA	ND (15.5)	ND (3.1)	28.4	NA
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
1,2-DICHLOROETHENE (TOTAL)	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
BENZENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
CARBON TETRACHLORIDE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
CHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F
Sample Number	9351X107	9351X108	9433E118	9433E121	9433E122	9530X883	9531X911
Sample Date	12/22/93	12/22/93	08/15/94	08/16/94	08/16/94	07/27/95	08/01/95
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
METHYLENE CHLORIDE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
STYRENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
TETRACHLOROETHENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
TOLUENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
XYLENE (TOTAL)	ND (10)	ND (10)	ND (10)	NA	NA	NA	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (5)	ND (5)	NA	ND (5)
1,4-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (5)	ND (5)	NA	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
ANTHRACENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (4)	ND (10)	NA	ND (2)	ND (4)	NA	ND (6)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
CARBAZOLE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
FLUORANTHENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
FLUORENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
NAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	NA	ND (25)	ND (25)	NA	ND (25)
PHENANTHRENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)
PYRENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F	IR06MW51F
Sample Number	9351X107	9351X108	9433E118	9433E121	9433E122	9530X883	9531X911
Sample Date	12/22/93	12/22/93	08/15/94	08/16/94	08/16/94	07/27/95	08/01/95
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	ND (0.05)	ND (0.05)	NA	ND (0.01)	ND (0.01)	NA	ND (0.01)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	ND (500)	ND (500)	36	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (500)	NA	ND (100)	ND (100)	NA	84
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	ND (100)	ND (100)	NA	220
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	ND (1,000)	ND (1,000)	NA	ND (1,000)	ND (1,000)	NA	500
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	NA	NA	2,030,000
NITRATE	NA	NA	NA	NA	NA	NA	ND (20.0)
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	NA	NA	ND (50.0)
SULFATE	NA	NA	NA	NA	NA	NA	670,000
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	7.5	7.5	NA	7.6
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	NA	NA	5,400,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW53F	IR06MW53F
Sample Number	9352X114	9352X115	9432E109	9432E113	9521X621	9411M506	9432E114
Sample Date	12/27/93	12/27/93	08/10/94	08/11/94	05/25/95	03/15/94	08/11/94
Metal (ug/L)							
ALUMINUM	ND (18.2)	ND (24.6)	NA	46.5	ND (51.6)	ND (19.3)	36.6
ANTIMONY	ND (25.5)	ND (25.5)	NA	ND (12.5)	5.4	5.0	ND (8.7)
ARSENIC	7.4 *	8.2 *	NA	5.1 *	ND (5.8)	8.2 *	6.5 *
BARIUM	8.8	9.0	NA	14.0	13.1	3.8	ND (4.1)
BERYLLIUM	ND (0.34)	ND (0.20)	NA	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
CADMIUM	ND (1.2)	ND (1.2)	NA	1.1	ND (0.10)	ND (0.30)	9.2 B
CALCIUM	4,860	4,630	NA	4,070	3,180	7,960	6,040
CHROMIUM	3.1	ND (2.3)	NA	ND (0.70)	ND (1.0)	ND (2.3)	ND (0.70)
CHROMIUM VI	NA	NA	NA	NA	NA	NA	NA
COBALT	ND (2.7)	ND (2.7)	NA	ND (0.70)	ND (0.40)	ND (2.7)	ND (0.70)
COPPER	5.9 B	ND (1.2)	NA	11.8 B	4.5 B	7.3 B	31.2 B
IRON	ND (36.1)	41.7	NA	45.0	ND (24.5)	ND (29.6)	ND (18.8)
LEAD	ND (1.2)	ND (1.9)	NA	ND (1.0)	ND (1.3)	ND (0.60)	ND (1.4)
MAGNESIUM	3,980	3,890	NA	3,270	3,160	9,670	9,560
MANGANESE	15.9	15.9	NA	9.8	1.8	17.8	24.5
MERCURY	ND (0.10)	ND (0.10)	NA	ND (0.10)	ND (0.10)	ND (0.12)	ND (0.10)
MOLYBDENUM	ND (34.5)	ND (31.9)	NA	31.3	28.7	258 *	258 *
NICKEL	ND (7.2)	ND (7.2)	NA	4.0	ND (1.3)	3.5	5.3
POTASSIUM	6,930	6,540	NA	19,900	9,430	20,300	45,000
SELENIUM	ND (3.2)	ND (3.2)	NA	ND (2.3)	ND (3.5)	ND (2.2)	ND (2.3)
SODIUM	359,000	350,000	NA	424,000	333,000	669,000	775,000
THALLIUM	ND (4.2)	ND (4.2)	NA	ND (2.0)	ND (1.5)	ND (1.4)	ND (2.0)
VANADIUM	11.0	9.1	NA	12.7	10.9	8.4	9.7
ZINC	ND (30.5)	ND (25.3)	NA	ND (7.5)	18.7	ND (3.0)	ND (11.6)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
1,2-DICHLOROETHENE (TOTAL)	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
2-BUTANONE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
BENZENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
CARBON TETRACHLORIDE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
CHLOROETHANE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW53F	IR06MW53F
Sample Number	9352X114	9352X115	9432E109	9432E113	9521X621	9411M506	9432E114
Sample Date	12/27/93	12/27/93	08/10/94	08/11/94	05/25/95	03/15/94	08/11/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
METHYLENE CHLORIDE	ND (10)	ND (3)	ND (10)	NA	NA	ND (10)	NA
STYRENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
TETRACHLOROETHENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
TOLUENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
XYLENE (TOTAL)	ND (10)	ND (10)	ND (10)	NA	NA	ND (10)	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (5)	ND (5)	ND (10)	ND (5)
1,4-DICHLOROBENZENE	ND (10)	ND (10)	NA	ND (5)	ND (5)	ND (10)	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (10)	NA	ND (4)	ND (4)	ND (7)	ND (4)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	NA	ND (25)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW52F	IR06MW53F	IR06MW53F
Sample Number	9352X114	9352X115	9432E109	9432E113	9521X621	9411M506	9432E114
Sample Date	12/27/93	12/27/93	08/10/94	08/11/94	05/25/95	03/15/94	08/11/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	ND (0.05)	ND (0.05)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	ND (500)	ND (500)	27	NA	NA	ND (50)	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (500)	ND (500)	NA	ND (100)	ND (100)	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	NA	ND (220)	700	1,000	ND (150)
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	ND (1,000)	ND (1,000)	NA	ND (1,000)	ND (1,000)	800	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	125,000	NA	NA
NITRATE	NA	NA	NA	NA	ND (20.0)	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	160	NA	NA
SULFATE	NA	NA	NA	NA	142,000	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	NA	8.2	8.1	8.7	8.0
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	1,000,000	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW53F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW55F	IR06MW55F
Sample Number	9521X622	9350X100	9350X101	9433K012	9521X626	9352X116	9352X118
Sample Date	05/25/95	12/15/93	12/15/93	08/16/94	05/25/95	12/27/93	12/28/93
Metal (ug/L)							
ALUMINUM	ND (39.3)	ND (13.2)	ND (11.0)	ND (35.3)	ND (20.4)	NA	ND (10.9)
ANTIMONY	ND (1.9)	ND (23.6)	ND (22.0)	3.6	ND (1.9)	NA	ND (25.5)
ARSENIC	7.3 *	ND (3.3)	ND (3.3)	ND (1.5)	ND (1.4)	NA	3.5 *
BARIUM	11.4	45.6	47.6	37.8	50.2	NA	ND (5.6)
BERYLLIUM	ND (0.10)	ND (0.40)	ND (0.20)	ND (0.10)	ND (0.10)	NA	ND (0.26)
CADMIUM	ND (0.10)	ND (1.2)	ND (1.2)	ND (0.20)	ND (0.10)	NA	ND (1.2)
CALCIUM	5,410	23,700	24,600	15,900	14,100	NA	8,650
CHROMIUM	ND (1.0)	51.6 &	51.9 &	55.0 &	62.1 &	NA	10.6
CHROMIUM VI	NA	NA	NA	NA	NA	NA	NA
COBALT	ND (0.40)	ND (2.5)	ND (2.5)	ND (0.70)	ND (1.1)	NA	ND (2.7)
COPPER	9.0 B	2.2	1.6	2.4 B	5.4 B	NA	3.3 B
IRON	ND (10.1)	ND (6.3)	ND (6.3)	ND (18.8)	ND (14.2)	NA	ND (17.9)
LEAD	ND (1.3)	ND (1.1)	ND (1.1)	ND (1.4)	ND (1.3)	NA	ND (1.3)
MAGNESIUM	9,330	66,100	68,000	68,300	68,300	NA	50,900
MANGANESE	2.7	ND (4.2)	ND (3.7)	ND (2.2)	5.1	NA	ND (0.90)
MERCURY	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	NA	ND (0.10)
MOLYBDENUM	256 *	ND (4.6)	ND (4.6)	ND (0.40)	ND (0.80)	NA	ND (5.0)
NICKEL	ND (2.5)	ND (6.8)	ND (6.8)	ND (2.5)	ND (1.3)	NA	ND (7.2)
POTASSIUM	21,400	954	1,040	798	ND (543)	NA	1,710
SELENIUM	ND (3.5)	10.0	ND (27.0)	ND (2.3)	ND (3.5)	NA	ND (3.2)
SODIUM	632,000	53,500	53,500	57,800	50,500	NA	35,800
THALLIUM	ND (1.5)	NA	NA	ND (2.0)	ND (1.5)	NA	ND (4.2)
VANADIUM	9.4	ND (4.1)	ND (4.1)	1.4	1.5	NA	ND (2.7)
ZINC	25.0	ND (2.9)	ND (2.0)	ND (3.1)	48.1	NA	ND (23.2)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
1,2-DICHLOROETHENE (TOTAL)	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
2-BUTANONE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
BENZENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
CARBON TETRACHLORIDE	NA	ND (10)	ND (10)	ND (10)	ND (10)	28 *&	NA
CHLOROETHANE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW53F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW55F	IR06MW55F
Sample Number	9521X622	9350X100	9350X101	9433K012	9521X626	9352X116	9352X118
Sample Date	05/25/95	12/15/93	12/15/93	08/16/94	05/25/95	12/27/93	12/28/93
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	ND (10)	ND (10)	ND (10)	ND (10)	11 *	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
METHYLENE CHLORIDE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
STYRENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
TETRACHLOROETHENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
TOLUENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	ND (10)	ND (10)	ND (10)	ND (10)	14 *#	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
XYLENE (TOTAL)	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (5)	ND (10)	ND (10)	ND (5)	ND (5)	NA	ND (10)
1,4-DICHLOROBENZENE	ND (5)	ND (10)	ND (10)	ND (5)	ND (5)	NA	ND (10)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (4)	ND (10)	ND (5)	ND (7)	ND (18)	NA	ND (10)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
CARBAZOLE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	NA	ND (25)
PHENANTHRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW53F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW54F	IR06MW55F	IR06MW55F
Sample Number	9521X622	9350X100	9350X101	9433K012	9521X626	9352X116	9352X118
Sample Date	05/25/95	12/15/93	12/15/93	08/16/94	05/25/95	12/27/93	12/28/93
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.01)	0.03 *6	NA	ND (0.05)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	ND (500)	ND (500)	ND (50)	ND (50)	ND (500)	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (100)	ND (500)	ND (500)	ND (100)	ND (100)	NA	ND (500)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	270	NA	NA	ND (430)	290	NA	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)	NA	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	218,000	NA	NA	NA	71,300	NA	NA
NITRATE	200	NA	NA	NA	6,100	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	130	NA	NA	NA	ND (50.0)	NA	NA
SULFATE	402,000	NA	NA	NA	19,600	NA	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	8.0	8.1	8.2	8.0	8.0	NA	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	1,900,000	NA	NA	NA	500,000	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW56F
Sample Number	9433E123	9433E124	9433N574	9433N575	9521X624	9521X625	9401X150
Sample Date	08/16/94	08/16/94	08/17/94	08/17/94	05/25/95	05/25/95	01/07/94
Metal (ug/L)							
ALUMINUM	NA	NA	ND (35.3)	ND (35.3)	ND (25.6)	ND (20.5)	ND (10.9)
ANTIMONY	NA	NA	ND (1.9)	ND (1.6)	ND (1.9)	ND (1.9)	ND (25.5)
ARSENIC	NA	NA	ND (1.5)	ND (1.5)	ND (1.7)	ND (1.4)	3.9 *
BARIUM	NA	NA	ND (7.7)	ND (6.6)	4.3	4.4	9.3
BERYLLIUM	NA	NA	ND (0.10)	ND (0.10)	ND (0.13)	ND (0.10)	ND (0.20)
CADMIUM	NA	NA	ND (0.20)	ND (0.20)	ND (0.10)	ND (0.10)	ND (1.2)
CALCIUM	NA	NA	ND (4,530)	ND (4,490)	3,100	3,280	15,500
CHROMIUM	NA	NA	7.5	7.4	6.4	5.9	ND (4.1)
CHROMIUM VI	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	ND (0.70)	ND (0.70)	ND (0.40)	ND (1.1)	ND (2.7)
COPPER	NA	NA	ND (2.5)	ND (2.0)	ND (1.3)	ND (1.1)	ND (1.2)
IRON	NA	NA	ND (18.8)	ND (18.8)	218	ND (41.6)	ND (10.0)
LEAD	NA	NA	ND (1.1)	ND (1.5)	ND (1.3)	ND (1.3)	ND (2.5)
MAGNESIUM	NA	NA	40,900	40,800	41,600	42,200	74,900
MANGANESE	NA	NA	ND (1.0)	ND (1.3)	2.0	2.5	ND (0.90)
MERCURY	NA	NA	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
MOLYBDENUM	NA	NA	ND (5.4)	ND (5.2)	ND (2.3)	ND (2.1)	ND (5.0)
NICKEL	NA	NA	ND (2.5)	ND (2.5)	ND (1.3)	ND (1.3)	ND (7.2)
POTASSIUM	NA	NA	4,940	4,940	ND (2,170)	ND (2,160)	3,140
SELENIUM	NA	NA	ND (2.3)	ND (3.1)	ND (3.5)	ND (3.5)	ND (3.2)
SODIUM	NA	NA	87,100	88,300	57,900	60,000	55,200
THALLIUM	NA	NA	ND (2.0)	ND (2.0)	ND (1.5)	ND (2.0)	ND (4.2)
VANADIUM	NA	NA	3.3	3.0	2.6	2.7	ND (4.3)
ZINC	NA	NA	ND (3.4)	ND (4.1)	ND (22.0)	ND (19.7)	ND (4.0)
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	ND (10)	ND (10)	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	ND (10)	ND (10)	NA	NA	NA	NA	NA
1,2-DICHLOROETHENE (TOTAL)	ND (10)	ND (10)	NA	NA	NA	NA	NA
2-BUTANONE	ND (10)	ND (10)	NA	NA	NA	NA	NA
BENZENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	ND (10)	ND (10)	NA	NA	NA	NA	NA
CHLOROETHANE	ND (10)	ND (10)	NA	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW56F
Sample Number	9433E123	9433E124	9433N574	9433N575	9521X624	9521X625	9401X150
Sample Date	08/16/94	08/16/94	08/17/94	08/17/94	05/25/95	05/25/95	01/07/94
Volatile Organic Compound (ug/L)							
CHLOROFORM	4 *	3 *	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	ND (10)	ND (10)	NA	NA	NA	NA	NA
STYRENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
TETRACHLOROETHENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
TOLUENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND (10)	ND (10)	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	ND (10)	ND (10)	NA	NA	NA	NA	NA
XYLENE (TOTAL)	ND (10)	ND (10)	NA	NA	NA	NA	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
1,4-DICHLOROBENZENE	NA	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (10)
2,4-DIMETHYLPHENOL	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ANTHRACENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	ND (10)	ND (6)	ND (2)	ND (7)	ND (10)
BUTYLBENZYLPHTHALATE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
CARBAZOLE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORANTHENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
FLUORENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
NAPHTHALENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	NA	NA	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
PHENANTHRENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
PYRENE	NA	NA	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW55F	IR06MW56F
Sample Number	9433E123	9433E124	9433N574	9433N575	9521X624	9521X625	9401X150
Sample Date	08/16/94	08/16/94	08/17/94	08/17/94	05/25/95	05/25/95	01/07/94
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	NA	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	32	ND (50)	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	NA	NA	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	NA	NA	630	150	520	650	NA
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	NA	NA	ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	NA	NA	NA	61,700	61,700	NA
NITRATE	NA	NA	NA	NA	1,900	1,800	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	NA	NA	210	130	NA
SULFATE	NA	NA	NA	NA	6,000	5,900	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	NA	NA	8.9	8.9	9.1	9.1	NA
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	NA	NA	NA	360,000	360,000	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW56F	IR06MW56F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F
Sample Number	9433N573	9521X623	9437K147	9437K172	9438X486	9521X611	9538W020
Sample Date	08/17/94	05/25/95	09/13/94	09/16/94	09/20/94	05/24/95	09/21/95
Metal (ug/L)							
ALUMINUM	ND (35.3)	ND (24.2)	NA	NA	ND (35.3)	ND (33.9)	ND (48.8)
ANTIMONY	ND (1.7)	ND (1.9)	NA	NA	ND (8.2)	4.5	ND (3.0)
ARSENIC	ND (1.5)	ND (3.0)	NA	NA	ND (2.1)	ND (1.4)	4.2 *
BARIUM	ND (10.4)	6.2	NA	NA	7.1	5.2	4.5
BERYLLIUM	ND (0.10)	ND (0.10)	NA	NA	ND (0.14)	ND (0.13)	ND (0.19)
CADMIUM	ND (0.20)	ND (0.10)	NA	NA	ND (0.20)	ND (0.10)	3.4
CALCIUM	ND (6,080)	3,090	NA	NA	7,170	3,170	3,280
CHROMIUM	ND (0.70)	3.2	NA	NA	ND (0.70)	ND (1.0)	ND (1.5)
CHROMIUM VI	NA	NA	NA	NA	NA	NA	ND (10.0)
COBALT	ND (0.70)	ND (0.40)	NA	NA	ND (0.70)	ND (0.55)	0.71
COPPER	ND (3.4)	3.6 B	NA	NA	ND (1.9)	ND (1.8)	ND (3.0)
IRON	ND (18.8)	ND (10.1)	NA	NA	ND (23.9)	ND (16.6)	ND (13.8)
LEAD	ND (1.0)	ND (1.3)	NA	NA	ND (1.0)	ND (1.3)	ND (1.2)
MAGNESIUM	77,300	81,200	NA	NA	36,600	47,600	45,600
MANGANESE	ND (3.5)	0.62	NA	NA	ND (0.58)	0.70	10.4
MERCURY	ND (0.10)	ND (0.10)	NA	NA	ND (0.10)	ND (0.10)	ND (0.10)
MOLYBDENUM	ND (0.71)	ND (0.80)	NA	NA	ND (0.96)	ND (0.80)	ND (1.2)
NICKEL	ND (2.5)	ND (1.3)	NA	NA	ND (2.5)	ND (1.3)	ND (1.9)
POTASSIUM	3,760	ND (2,080)	NA	NA	6,640	ND (4,980)	8,170
SELENIUM	ND (2.3)	ND (3.5)	NA	NA	ND (2.3)	ND (3.5)	ND (3.9)
SODIUM	74,500	55,000	NA	NA	89,700	64,400	65,400
THALLIUM	ND (2.0)	ND (1.6)	NA	NA	ND (2.0)	ND (2.0)	2.5 B
VANADIUM	8.8	4.7	NA	NA	3.4	3.1	3.1
ZINC	ND (3.5)	14.7	NA	NA	ND (7.7)	18.8	24.7
Cyanide (ug/L)							
CYANIDE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound (ug/L)							
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW56F	IR06MW56F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F
Sample Number	9433N573	9521X623	9437K147	9437K172	9438X486	9521X611	9538W020
Sample Date	08/17/94	05/25/95	09/13/94	09/16/94	09/20/94	05/24/95	09/21/95
Volatile Organic Compound (ug/L)							
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA
XYLENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compound (ug/L)							
1,2-DICHLOROBENZENE	ND (5)	ND (5)	NA	NA	NA	ND (5)	ND (5)
1,4-DICHLOROBENZENE	ND (5)	ND (5)	NA	NA	NA	ND (5)	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (10)	ND (12)	NA	NA	NA	ND (4)	ND (4)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	NA	NA	NA	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	NA	NA	NA	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW56F	IR06MW56F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F	IR06MW57F
Sample Number	9433N573	9521X623	9437K147	9437K172	9438X486	9521X611	9538W020
Sample Date	08/17/94	05/25/95	09/13/94	09/16/94	09/20/94	05/24/95	09/21/95
Pesticide/Polychlorinated Biphenyl (ug/L)							
HEPTACHLOR EPOXIDE	ND (0.01)	ND (0.01)	NA	NA	NA	ND (0.01)	ND (0.01)
TPH-Purgeable (ug/L)							
TPH-GASOLINE	NA	NA	NA	NA	NA	NA	NA
TPH-Extractable (ug/L)							
TPH-DIESEL	ND (100)	ND (100)	ND (100)	NA	NA	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA	NA	NA	NA	NA
TPH-MOTOR OIL	360	560	460	NA	NA	680	91
Total Recoverable Petroleum Hydrocarbons (ug/L)							
TRPH	ND (1,000)	ND (1,000)	NA	NA	ND (1,000)	ND (1,000)	ND (1,000)
Oil and Grease (ug/L)							
TOTAL OIL & GREASE	NA	NA	NA	NA	NA	NA	NA
Anion (ug/L)							
CHLORIDE	NA	116,000	NA	NA	NA	89,600	NA
NITRATE	NA	350	NA	NA	NA	74.0	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	NA	170	NA	NA	NA	130	NA
SULFATE	NA	6,900	NA	NA	NA	12,300	NA
Ammonia (ug/L)							
AMMONIA	NA	NA	NA	NA	NA	NA	NA
pH (pH units)							
PH	9.0	9.2	NA	9.2	NA	9.1	9.2
Salinity (ug/L)							
SALINITY	NA	NA	NA	NA	NA	NA	NA
Solids (ug/L)							
TOTAL DISSOLVED SOLIDS	NA	470,000	NA	NA	NA	380,000	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW58F	IR06MW58F	IR06MW58F
Sample Number	9425E023	9433E130	9521X612
Sample Date	06/21/94	08/17/94	05/24/95
Metal (ug/L)			
ALUMINUM	ND (21.7)	ND (35.3)	ND (28.5)
ANTIMONY	ND (6.1)	ND (3.6)	4.6
ARSENIC	ND (2.0)	ND (1.5)	ND (1.4)
BARIUM	9.2	ND (11.4)	9.0
BERYLLIUM	ND (0.10)	ND (0.10)	ND (0.13)
CADMIUM	ND (0.20)	ND (0.20)	ND (0.10)
CALCIUM	7,350	ND (5,380)	3,480
CHROMIUM	23.4	17.7	7.0
CHROMIUM VI	NA	NA	NA
COBALT	ND (0.50)	ND (0.70)	ND (0.40)
COPPER	ND (2.9)	ND (2.4)	3.2 B
IRON	ND (12.6)	ND (18.8)	ND (12.1)
LEAD	ND (0.89)	ND (1.0)	ND (1.3)
MAGNESIUM	86,900	82,000	64,800
MANGANESE	ND (1.4)	ND (1.1)	1.3
MERCURY	ND (0.04)	ND (0.10)	ND (0.10)
MOLYBDENUM	ND (1.7)	ND (1.6)	ND (0.80)
NICKEL	7.9	ND (3.2)	ND (1.7)
POTASSIUM	ND (4,430)	5,350	7,380
SELENIUM	ND (2.7)	ND (2.3)	ND (3.5)
SODIUM	61,500	89,000	73,100
THALLIUM	ND (1.0)	ND (2.0)	ND (1.5)
VANADIUM	1.3	1.8	2.0
ZINC	3.8	ND (12.9)	16.8
Cyanide (ug/L)			
CYANIDE	NA	NA	NA
Volatile Organic Compound (ug/L)			
1,1-DICHLOROETHANE	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA
2-BUTANONE	NA	NA	NA
BENZENE	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA
CHLOROETHANE	NA	NA	NA

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW58F	IR06MW58F	IR06MW58F
Sample Number	9425E023	9433E130	9521X612
Sample Date	06/21/94	08/17/94	05/24/95
Volatile Organic Compound (ug/L)			
CHLOROFORM	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA
ETHYLBENZENE	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA
STYRENE	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA
TOLUENE	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA
TRICHLOROTRIFLUOROETHANE	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA
XYLENE (TOTAL)	NA	NA	NA
Semivolatile Organic Compound (ug/L)			
1,2-DICHLOROBENZENE	ND (5)	ND (5)	ND (5)
1,4-DICHLOROBENZENE	ND (5)	ND (5)	ND (5)
2,4-DIMETHYLPHENOL	ND (10)	ND (10)	ND (10)
2-METHYLNAPHTHALENE	ND (10)	ND (10)	ND (10)
2-METHYLPHENOL	ND (10)	ND (10)	ND (10)
4-METHYLPHENOL	ND (10)	ND (10)	ND (10)
ACENAPHTHENE	ND (10)	ND (10)	ND (10)
ACENAPHTHYLENE	ND (10)	ND (10)	ND (10)
ANTHRACENE	ND (10)	ND (10)	ND (10)
BENZOIC ACID	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	ND (6)	ND (3)	ND (4)
BUTYLBENZYLPHTHALATE	ND (10)	ND (10)	ND (10)
CARBAZOLE	ND (10)	ND (10)	ND (10)
DIBENZOFURAN	ND (10)	ND (10)	ND (10)
DIETHYLPHTHALATE	ND (10)	ND (10)	ND (10)
FLUORANTHENE	ND (10)	ND (10)	ND (10)
FLUORENE	ND (10)	ND (10)	ND (10)
NAPHTHALENE	ND (10)	ND (10)	ND (10)
PENTACHLOROPHENOL	ND (25)	ND (25)	ND (25)
PHENANTHRENE	ND (10)	ND (10)	ND (10)
PYRENE	ND (10)	ND (10)	ND (10)

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Station Number	IR06MW58F	IR06MW58F	IR06MW58F
Sample Number	9425E023	9433E130	9521X612
Sample Date	06/21/94	08/17/94	05/24/95
Pesticide/Polychlorinated Biphenyl (ug/L)			
HEPTACHLOR EPOXIDE	ND (0.01)	ND (0.01)	ND (0.01)
TPH-Purgeable (ug/L)			
TPH-GASOLINE	NA	NA	NA
TPH-Extractable (ug/L)			
TPH-DIESEL	ND (100)	ND (100)	ND (100)
TPH-EXTRACTABLE UNKNOWN HYDROCARBON	NA	NA	NA
TPH-MOTOR OIL	120	560	410
Total Recoverable Petroleum Hydrocarbons (ug/L)			
TRPH	ND (380)	ND (1,000)	ND (1,000)
Oil and Grease (ug/L)			
TOTAL OIL & GREASE	NA	NA	NA
Anion (ug/L)			
CHLORIDE	NA	NA	88,100
NITRATE	NA	NA	1,100
NITRITE	NA	NA	NA
ORTHOPHOSPHATE	NA	NA	75.0
SULFATE	NA	NA	18,700
Ammonia (ug/L)			
AMMONIA	NA	NA	NA
pH (pH units)			
PH	9.2	9.1	9.1
Salinity (ug/L)			
SALINITY	NA	NA	NA
Solids (ug/L)			
TOTAL DISSOLVED SOLIDS	NA	NA	470,000

TABLE 4.4-6 (Continued)

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Notes:

NA	Not analyzed
ND()	Not detected (detection limit in parentheses)
µg/L	Microgram per liter
*	Detected concentration greater than U.S. Environmental Protection Agency Region IX preliminary remediation goals (PRG) for tap water
B	Detected concentration greater than National Ambient Water Quality Criteria (NAWQC) based on 4-day average study of saltwater aquatic life
δ	Detected concentration greater than maximum contaminant level (MCL) U.S. Environmental Protection Agency Title 40 Code of Federal Regulations or California Code of Regulations Title 22 MCL used, whichever is more stringent
▒	Detected concentration greater than at least one screening criterion.

TABLE 4.4-7

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
ANTIMONY	IR06B001	5.75	13.7	30.7		9.05	√	MG/KG
	IR06B002	3.25	10.4				√	MG/KG
	IR06B003	0.25	14.4				√	MG/KG
	IR06B003	2.75	20.6				√	MG/KG
	IR06B004	1.25	28.9				√	MG/KG
	IR06B004	2.75	17.3				√	MG/KG
	IR06B005	0.75	10.2				√	MG/KG
	IR06B014	5.25	13.8				√	MG/KG
	IR06B018	5.25	21.2				√	MG/KG
	IR06B019	5.25	12.3				√	MG/KG
	IR06B021	2.75	9.9				√	MG/KG
	IR06B024	3.25	9.7				√	MG/KG
	IR06SS01	1.25	9.7				√	MG/KG
ARSENIC	IR06B001	0.75	56.6	0.32	√	11.10	√	MG/KG
	IR06B001	3.25	3.3		√			MG/KG
	IR06B001	5.75	1.2		√			MG/KG
	IR06B002	1.25	2.0		√			MG/KG
	IR06B002	3.25	2.7		√			MG/KG
	IR06B002	5.25	1.4		√			MG/KG
	IR06B003	0.25	0.75		√			MG/KG
	IR06B003	2.75	0.56		√			MG/KG
	IR06B004	0.25	1.6		√			MG/KG
	IR06B004	1.25	0.94		√			MG/KG
	IR06B004	2.75	1.1		√			MG/KG
	IR06B005	0.75	1.8		√			MG/KG
	IR06B005	2.75	2.6		√			MG/KG
	IR06B005	5.25	1.9		√			MG/[illegible]
	IR06B006	0.75	1.9		√			MG/[illegible]
	IR06B006	2.75	1.8		√			MG/KG
	IR06B006	5.25	2.3		√			MG/KG
	IR06B007	0.25	3.0		√			MG/KG
	IR06B007	2.75	2.4		√			MG/KG
	IR06B007	5.25	3.4		√			MG/KG
	IR06B008	1.25	1.8		√			MG/KG
	IR06B008	2.75	1.6		√			MG/KG
	IR06B009	1.25	1.2		√			MG/KG
	IR06B009	2.75	1.6		√			MG/KG
	IR06B009	5.25	1.8		√			MG/KG
	IR06B010	0.75	2.8		√			MG/KG
	IR06B010	3.25	1.2		√			MG/KG
	IR06B010	5.75	1.5		√			MG/KG
	IR06B011	2.75	2.8		√			MG/KG
	IR06B011	5.25	3.3		√			MG/KG
	IR06B012	0.75	1.3		√			MG/KG
	IR06B012	2.75	0.62		√			MG/KG
	IR06B012	5.25	1.3		√			MG/KG
	IR06B013	0.75	1.9		√			MG/KG
	IR06B013	2.75	1.1		√			MG/KG
	IR06B013	5.25	1.9		√			MG/KG
	IR06B014	1.25	2.0		√			MG/KG
	IR06B014	3.25	1.5		√			MG/KG
	IR06B014	5.25	2.5		√			MG/KG
	IR06B015	0.75	1.2		√			MG/KG
	IR06B015	2.75	1.9		√			MG/KG
	IR06B015	5.25	2.6		√			MG/KG
	IR06B016	0.75	1.6		√			MG/KG
	IR06B016	2.75	4.0		√			MG/KG
	IR06B016	5.25	2.8		√			MG/KG
	IR06B017	1.25	2.1		√			MG/KG
	IR06B017	2.25	2.4		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
ARSENIC	IR06B017	5.25	4.2	0.32	√	11.10		MG/KG
	IR06B018	1.75	1.5		√			MG/KG
	IR06B018	3.25	0.99		√			MG/KG
	IR06B018	5.25	1.7		√			MG/KG
	IR06B019	1.25	5.0		√			MG/KG
	IR06B019	2.75	3.6		√			MG/KG
	IR06B019	5.25	2.3		√			MG/KG
	IR06B020	1.25	3.6		√			MG/KG
	IR06B020	2.75	2.9		√			MG/KG
	IR06B020	5.25	1.8		√			MG/KG
	IR06B021	0.75	1.2		√			MG/KG
	IR06B021	2.75	1.5		√			MG/KG
	IR06B024	1.25	2.8		√			MG/KG
	IR06B024	3.25	1.9		√			MG/KG
	IR06B024	5.75	2.3		√			MG/KG
	IR06B025	1.25	4.6		√			MG/KG
	IR06B025	5.25	2.4		√			MG/KG
	IR06B026	1.25	2.2		√			MG/KG
	IR06B026	2.75	5.2		√			MG/KG
	IR06B026	5.25	1.0		√			MG/KG
	IR06B028	1.25	3.5		√			MG/KG
	IR06B028	5.25	2.0		√			MG/KG
	IR06B028A	1.25	3.6		√			MG/KG
	IR06B029	1.25	2.1		√			MG/KG
	IR06B029	5.25	2.9		√			MG/KG
	IR06B031	0.75	3.5		√			MG/KG
	IR06B031	4.75	2.6		√			MG/KG
	IR06B033	1.25	4.0		√			MG/KG
	IR06B033	2.75	2.0		√			MG/KG
	IR06B033	5.25	1.5		√			MG/KG
	IR06B036	1.25	4.7		√			MG/KG
	IR06B036	3.75	3.4		√			MG/KG
	IR06B036	5.25	2.6		√			MG/KG
	IR06B037	0.75	2.1		√			MG/KG
	IR06B038	1.75	2.6		√			MG/KG
	IR06B038	3.25	3.0		√			MG/KG
	IR06B038	5.25	1.7		√			MG/KG
	IR06B039	0.75	1.9		√			MG/KG
	IR06B039	5.75	0.95		√			MG/KG
	IR06B043	1.25	5.0		√			MG/KG
	IR06MW22A	1.25	2.0		√			MG/KG
	IR06MW22A	5.25	1.8		√			MG/KG
	IR06MW23A	1.25	2.0		√			MG/KG
	IR06MW23A	5.25	2.0		√			MG/KG
	IR06MW27A	5.25	3.4		√			MG/KG
	IR06MW30A	1.25	2.3		√			MG/KG
	IR06MW30A	5.25	3.1		√			MG/KG
	IR06MW32A	0.75	4.7		√			MG/KG
	IR06MW34A	1.25	0.85		√			MG/KG
	IR06MW34A	5.25	1.2		√			MG/KG
	IR06MW35A	1.25	3.1		√			MG/KG
	IR06MW35A	5.25	3.3		√			MG/KG
	IR06MW40A	1.25	4.0		√			MG/KG
	IR06MW40A	5.75	5.2		√			MG/KG
	IR06MW41A	1.25	5.8		√			MG/KG
	IR06MW41A	5.25	1.8		√			MG/KG
	IR06MW42A	0.75	3.7		√			MG/KG
	IR06MW42A	5.75	2.1		√			MG/KG
	IR06SS01	1.25	5.8		√			MG/KG
	IR06SS02	1.12	3.2		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
ARSENIC	IR06SS03	0.25	3.2	0.32	√	11.10		MG/KG
	IR06SS03	1.25	5.5		√			MG/KG
	IR06SS12	0.25	4.1		√			MG/KG
	IR06SS15	0.25	5.0		√			MG/KG
	IR06SS15	1.75	3.9		√			MG/KG
	IR06SS16	0.25	3.6		√			MG/KG
	IR06SS16	1.75	3.4		√			MG/KG
	IR06SS17	0.25	3.6		√			MG/KG
	IR06SS17	1.75	6.8		√			MG/KG
	IR06SS18	0.25	4.5		√			MG/KG
	IR06SS18	1.75	4.0		√			MG/KG
	IR06SS19	0.25	4.3		√			MG/KG
	IR06SS19	1.75	4.5		√			MG/KG
BARIUM	IR06B019	1.25	418	5,340		314.36	√	MG/KG
	IR06B029	1.25	323				√	MG/KG
	IR06B038	1.75	408				√	MG/KG
	IR06MW41A	1.25	834				√	MG/KG
	IR06MW42A	0.75	444				√	MG/KG
	IR06SS01	1.25	428				√	MG/KG
	IR06SS15	1.75	333				√	MG/KG
BERYLLIUM	IR06B001	0.75	0.48	0.14	√	0.71		MG/KG
	IR06B001	3.25	0.67		√			MG/KG
	IR06B001	5.75	0.70		√			MG/KG
	IR06B002	1.25	0.63		√			MG/KG
	IR06B002	3.25	0.56		√			MG/KG
	IR06B002	5.25	0.58		√			MG/KG
	IR06B003	0.25	0.29		√			MG/K
	IR06B003	2.75	0.31		√			MG/K
	IR06B004	0.25	0.46		√			MG/KG
	IR06B004	1.25	0.36		√			MG/KG
	IR06B004	2.75	0.36		√			MG/KG
	IR06B005	0.75	0.19		√			MG/KG
	IR06B005	2.75	0.37		√			MG/KG
	IR06B005	5.25	0.40		√			MG/KG
	IR06B006	0.75	0.36		√			MG/KG
	IR06B006	2.75	0.37		√			MG/KG
	IR06B006	5.25	0.37		√			MG/KG
	IR06B007	0.25	0.49		√			MG/KG
	IR06B007	2.75	0.42		√			MG/KG
	IR06B007	5.25	0.61		√			MG/KG
	IR06B008	1.25	0.39		√			MG/KG
	IR06B008	2.75	0.45		√			MG/KG
	IR06B009	1.25	0.61		√			MG/KG
	IR06B009	2.75	0.54		√			MG/KG
	IR06B009	5.25	0.68		√			MG/KG
	IR06B010	0.75	0.24		√			MG/KG
	IR06B010	3.25	0.23		√			MG/KG
	IR06B010	5.75	0.41		√			MG/KG
	IR06B011	0.75	0.46		√			MG/KG
	IR06B011	2.75	0.47		√			MG/KG
	IR06B011	5.25	0.47		√			MG/KG
	IR06B012	0.75	0.18		√			MG/KG
	IR06B012	2.75	0.25		√			MG/KG
	IR06B012	5.25	0.21		√			MG/KG
	IR06B013	0.75	0.54		√			MG/KG
	IR06B013	2.75	0.54		√			MG/KG
	IR06B013	5.25	0.48		√			MG/KG
	IR06B014	1.25	0.62		√			MG/KG
	IR06B014	3.25	0.30		√			MG/KG
	IR06B014	5.25	0.59		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
BERYLLIUM	IR06B015	2.75	0.25	0.14	√	0.71		MG/KG
	IR06B015	5.25	0.27		√			MG/KG
	IR06B016	0.75	0.23		√			MG/KG
	IR06B016	2.75	0.31		√			MG/KG
	IR06B016	5.25	0.29		√			MG/KG
	IR06B017	1.25	0.50		√			MG/KG
	IR06B017	2.25	0.47		√			MG/KG
	IR06B017	5.25	0.55		√			MG/KG
	IR06B018	1.75	0.51		√			MG/KG
	IR06B018	3.25	0.56		√			MG/KG
	IR06B018	5.25	0.58		√			MG/KG
	IR06B019	1.25	0.78		√		√	MG/KG
	IR06B019	2.75	0.91		√		√	MG/KG
	IR06B019	5.25	0.71		√			MG/KG
	IR06B020	1.25	0.65		√			MG/KG
	IR06B020	2.75	0.68		√			MG/KG
	IR06B020	5.25	0.65		√			MG/KG
	IR06B021	0.75	0.55		√			MG/KG
	IR06B021	2.75	0.55		√			MG/KG
	IR06B024	1.25	0.75		√		√	MG/KG
	IR06B024	3.25	0.71		√			MG/KG
	IR06B024	5.75	0.74		√		√	MG/KG
	IR06B026	1.25	0.73		√		√	MG/KG
	IR06B026	2.75	0.69		√			MG/KG
	IR06B026	5.25	0.71		√			MG/KG
	IR06B033	1.25	0.37		√			MG/KG
	IR06B033	2.75	0.38		√			MG/KG
	IR06B033	5.25	0.29		√			MG/KG
	IR06B036	1.25	0.35		√			MG/KG
	IR06B036	3.75	0.27		√			MG/KG
	IR06B036	5.25	0.36		√			MG/KG
	IR06B037	0.75	0.48		√			MG/KG
	IR06B038	1.75	0.43		√			MG/KG
	IR06B038	3.25	0.46		√			MG/KG
	IR06B038	5.25	0.43		√			MG/KG
	IR06SS01	1.25	0.56		√			MG/KG
	IR06SS02	0.25	0.50		√			MG/KG
	IR06SS02	1.12	0.28		√			MG/KG
	IR06SS03	0.25	0.34		√			MG/KG
	IR06SS03	1.25	0.42		√			MG/KG
	IR06SS07	1.75	0.47		√			MG/KG
	IR06SS08	0.25	0.51		√			MG/KG
	IR06SS08	1.75	0.28		√			MG/KG
	IR06SS10	0.25	0.29		√			MG/KG
	IR06SS11	1.50	0.46		√			MG/KG
	IR06SS12	0.25	0.29		√			MG/KG
	IR06SS12	1.75	0.26		√			MG/KG
	IR06SS13	0.25	0.42		√			MG/KG
	IR06SS13	1.75	0.31		√			MG/KG
	IR06SS14	2.25	0.31		√			MG/KG
	IR06SS15	0.25	0.59		√			MG/KG
	IR06SS15	1.75	0.68		√			MG/KG
	IR06SS16	0.25	0.41		√			MG/KG
	IR06SS17	0.25	0.29		√			MG/KG
	IR06SS17	1.75	0.27		√			MG/KG
	IR06SS18	0.25	0.44		√			MG/KG
	IR06SS19	0.25	0.52		√			MG/KG
	IR06SS19	1.75	0.64		√			MG/KG
CHROMIUM	IR06B001	0.75	491	211	√	1,174.48		MG/KG
	IR06B001	3.25	235		√	372.44		MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
CHROMIUM	IR06B001	5.75	894	211	✓	1,022.12		MG/KG
	IR06B002	1.25	360		✓	529.94		MG/KG
	IR06B002	3.25	438		✓	650.06		MG/KG
	IR06B002	5.25	225		✓	549.23		MG/KG
	IR06B003	0.25	912		✓	1,434.03		MG/KG
	IR06B003	2.75	1,370		✓	1,455.58		MG/KG
	IR06B004	0.25	226		✓	217.90	✓	MG/KG
	IR06B004	1.25	1,910		✓	1,126.75	✓	MG/KG
	IR06B004	2.75	1,170		✓	1,273.15		MG/KG
	IR06B005	0.75	816		✓	1,162.63		MG/KG
	IR06B005	2.75	451		✓	1,015.82		MG/KG
	IR06B005	5.25	250		✓	535.84		MG/KG
	IR06B006	0.75	303		✓	524.85		MG/KG
	IR06B006	2.75	321		✓	365.47		MG/KG
	IR06B006	5.25	379		✓	583.70		MG/KG
	IR06B007	0.25	369		✓	742.09		MG/KG
	IR06B007	2.75	343		✓	688.89		MG/KG
	IR06B008	1.25	148			143.63	✓	MG/KG
	IR06B009	1.25	630		✓	951.79		MG/KG
	IR06B009	2.75	506		✓	1,227.17		MG/KG
	IR06B009	5.25	581		✓	354.40	✓	MG/KG
	IR06B010	3.25	255		✓	686.63		MG/KG
	IR06B011	5.25	195			140.88	✓	MG/KG
	IR06B012	2.75	130			124.63	✓	MG/KG
	IR06B014	1.25	414		✓	858.73		MG/KG
	IR06B014	5.25	482		✓	263.75	✓	MG/K
	IR06B017	1.25	275		✓	207.69	✓	MG/K
	IR06B018	3.25	220		✓	173.50	✓	MG/KG
	IR06B018	5.25	1,570		✓	1,301.52	✓	MG/KG
	IR06B019	1.25	351		✓	735.53		MG/KG
	IR06B019	2.75	437		✓	645.42		MG/KG
	IR06B019	5.25	746		✓	448.37	✓	MG/KG
	IR06B020	1.25	318		✓	621.22		MG/KG
	IR06B020	2.75	307		✓	520.60		MG/KG
	IR06B020	5.25	193			158.81	✓	MG/KG
	IR06B021	0.75	469		✓	659.29		MG/KG
	IR06B021	2.75	765		✓	1,368.50		MG/KG
	IR06B024	1.25	329		✓	680.60		MG/KG
	IR06B024	3.25	645		✓	261.43	✓	MG/KG
	IR06B024	5.75	260		✓	298.63		MG/KG
	IR06B025	5.25	233		✓	359.45		MG/KG
	IR06B026	1.25	289		✓	334.89		MG/KG
	IR06B026	5.25	211		✓	529.94		MG/KG
	IR06B028	5.25	284		✓	349.31		MG/KG
	IR06B028A	1.25	582		✓	164.30	✓	MG/KG
	IR06B029	1.25	559		✓	1,022.12		MG/KG
	IR06B029	5.25	324		✓	745.72		MG/KG
	IR06B031	0.75	264		✓	618.86		MG/KG
	IR06B036	5.25	222		✓	276.36		MG/KG
	IR06B038	3.25	220		✓	432.75		MG/KG
	IR06B038	5.25	441		✓	193.28	✓	MG/KG
	IR06B039	5.75	1,190		✓	1,783.22		MG/KG
	IR06MW22A	1.25	661		✓	1,078.08		MG/KG
	IR06MW22A	5.25	1,030		✓	1,102.53		MG/KG
	IR06MW23A	1.25	240		✓	822.30		MG/KG
	IR06MW23A	5.25	496		✓	833.38		MG/KG
	IR06MW27A	1.25	377		✓	714.23		MG/KG
	IR06MW27A	5.25	246		✓	136.24	✓	MG/KG
	IR06MW30A	1.25	335		✓	602.20		MG/KG
	IR06MW30A	5.25	309		✓	540.04		MG/K

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
CHROMIUM	IR06MW32A	5.75	243	211	√	413.09		MG/KG
	IR06MW34A	1.25	438		√	783.72		MG/KG
	IR06MW34A	5.25	1,780		√	578.02	√	MG/KG
	IR06MW35A	1.25	429		√	1,065.76		MG/KG
	IR06MW35A	5.25	366		√	341.10	√	MG/KG
	IR06MW40A	1.25	229		√	536.68		MG/KG
	IR06MW40A	5.75	349		√	244.92	√	MG/KG
	IR06MW41A	5.25	621		√	958.28		MG/KG
	IR06SS01	1.25	326		√	707.56		MG/KG
	IR06SS03	1.25	317		√	691.14		MG/KG
	IR06SS05	0.25	247		√	128.50	√	MG/KG
	IR06SS06	0.25	356		√	376.39		MG/KG
	IR06SS07	0.25	468		√	236.47	√	MG/KG
	IR06SS07	1.75	243		√	217.90	√	MG/KG
	IR06SS09	1.25	913		√	1,395.97		MG/KG
	IR06SS10	0.25	962		√	645.42	√	MG/KG
	IR06SS11	0.25	382		√	608.57		MG/KG
	IR06SS11	1.50	492		√	756.56		MG/KG
	IR06SS12	0.25	292		√	475.37		MG/KG
	IR06SS12	1.75	451		√	842.32		MG/KG
	IR06SS13	1.75	379		√	589.36		MG/KG
	IR06SS14	2.25	428		√	889.79		MG/KG
	IR06SS15	1.75	311		√	656.22		MG/KG
COBALT	IR06B004	1.25	120			118.10	√	MG/KG
	IR06B009	5.25	60.7			49.51	√	MG/KG
	IR06B013	5.25	24.5			22.94	√	MG/KG
	IR06B016	2.75	22.7			21.20	√	MG/KG
	IR06B016	5.25	38.0			25.07	√	MG/KG
	IR06B017	5.25	32.5			26.70	√	MG/KG
	IR06B018	3.25	48.5			28.94	√	MG/KG
	IR06B018	5.25	157			131.62	√	MG/KG
	IR06B019	5.25	208			59.08	√	MG/KG
	IR06B024	3.25	47.7			39.39	√	MG/KG
	IR06B028A	1.25	28.1			27.78	√	MG/KG
	IR06B029	5.25	92.6			86.60	√	MG/KG
	IR06B038	5.25	36.9			31.39	√	MG/KG
	IR06MW27A	1.25	86.2			83.84	√	MG/KG
	IR06MW30A	1.25	82.3			73.75	√	MG/KG
	IR06MW34A	5.25	130			71.51	√	MG/KG
	IR06MW40A	5.75	40.2			37.50	√	MG/KG
	IR06SS15	1.75	100			78.67	√	MG/KG
COPPER	IR06B031	0.75	126	2,850		124.31	√	MG/KG
	IR06SS09	0.25	140				√	MG/KG
	IR06SS11	0.25	131				√	MG/KG
LEAD	IR06B001	0.75	9.6	130		8.99	√	MG/KG
	IR06B001	3.25	55.6				√	MG/KG
	IR06B002	1.25	102				√	MG/KG
	IR06B003	0.25	12.3				√	MG/KG
	IR06B004	2.75	16.9				√	MG/KG
	IR06B005	5.25	18.3				√	MG/KG
	IR06B007	0.25	12.5				√	MG/KG
	IR06B007	2.75	9.2				√	MG/KG
	IR06B007	5.25	18.2				√	MG/KG
	IR06B008	1.25	15.6				√	MG/KG
	IR06B010	0.75	1,450		√		√	MG/KG
	IR06B010	5.75	42.6				√	MG/KG
	IR06B011	0.75	326		√		√	MG/KG
	IR06B012	0.75	12.1				√	MG/KG
	IR06B014	1.25	10.5				√	MG/KG
	IR06B014	3.25	19.9				√	MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
LEAD	IR06B015	0.75	91.0	130		8.99	✓	MG/KG
	IR06B016	0.75	9.0				✓	MG/KG
	IR06B019	1.25	40.7				✓	MG/KG
	IR06B019	2.75	23.4				✓	MG/KG
	IR06B020	1.25	17.7				✓	MG/KG
	IR06B020	2.75	20.7				✓	MG/KG
	IR06B024	1.25	10.6				✓	MG/KG
	IR06B024	3.25	11.0				✓	MG/KG
	IR06B025	1.25	11.4				✓	MG/KG
	IR06B025	5.25	28.0				✓	MG/KG
	IR06B026	1.25	9.3				✓	MG/KG
	IR06B026	2.75	19.0				✓	MG/KG
	IR06B031	0.75	24.0				✓	MG/KG
	IR06B031	4.75	21.8				✓	MG/KG
	IR06B033	1.25	52.5				✓	MG/KG
	IR06B038	3.25	17.7				✓	MG/KG
	IR06B038	5.25	13.9				✓	MG/KG
	IR06MW23A	1.25	14.6				✓	MG/KG
	IR06MW23A	5.25	18.8				✓	MG/KG
	IR06MW32A	5.75	9.3				✓	MG/KG
	IR06MW34A	5.25	9.8				✓	MG/KG
	IR06MW40A	5.75	13.8				✓	MG/KG
	IR06MW41A	1.25	13.6				✓	MG/KG
	IR06MW42A	5.75	15.9				✓	MG/KG
	IR06SS01	0.25	465		✓		✓	MG/KG
	IR06SS01	1.25	43.0				✓	MG/K
	IR06SS02	0.25	746		✓		✓	MG/K
	IR06SS02	1.12	291		✓		✓	MG/KG
	IR06SS03	0.25	830		✓		✓	MG/KG
	IR06SS03	1.25	140		✓		✓	MG/KG
	IR06SS04	0.25	1,870		✓		✓	MG/KG
	IR06SS04	1.25	9.9				✓	MG/KG
	IR06SS05	0.25	2,300		✓		✓	MG/KG
	IR06SS06	0.25	973		✓		✓	MG/KG
	IR06SS07	0.25	2,580		✓		✓	MG/KG
	IR06SS08	0.25	357		✓		✓	MG/KG
	IR06SS09	0.25	1,900		✓		✓	MG/KG
	IR06SS09	1.25	12.0				✓	MG/KG
	IR06SS10	0.25	164		✓		✓	MG/KG
	IR06SS11	0.25	1,610		✓		✓	MG/KG
	IR06SS11	1.50	470		✓		✓	MG/KG
	IR06SS12	0.25	218		✓		✓	MG/KG
	IR06SS12	1.75	40.0				✓	MG/KG
	IR06SS13	0.25	561		✓		✓	MG/KG
	IR06SS13	1.75	126				✓	MG/KG
	IR06SS14	0.25	2,160		✓		✓	MG/KG
	IR06SS16	0.25	62.0				✓	MG/KG
	IR06SS16	1.75	55.0				✓	MG/KG
MANGANESE	IR06B001	0.75	658	382	✓	1,431.18		MG/KG
	IR06B001	3.25	1,460		✓		✓	MG/KG
	IR06B001	5.75	880		✓			MG/KG
	IR06B002	1.25	665		✓			MG/KG
	IR06B002	3.25	838		✓			MG/KG
	IR06B002	5.25	960		✓			MG/KG
	IR06B003	0.25	961		✓			MG/KG
	IR06B003	2.75	806		✓			MG/KG
	IR06B004	0.25	394		✓			MG/KG
	IR06B004	1.25	744		✓			MG/KG
	IR06B004	2.75	811		✓			MG/KG
	IR06B005	0.75	773		✓			MG/K

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
MANGANESE	IR06B005	2.75	723	382	√	1,431.18		MG/KG
	IR06B005	5.25	1,080		√			MG/KG
	IR06B006	0.75	696		√			MG/KG
	IR06B006	5.25	527		√			MG/KG
	IR06B007	0.25	875		√			MG/KG
	IR06B007	2.75	413		√			MG/KG
	IR06B007	5.25	698		√			MG/KG
	IR06B009	1.25	673		√			MG/KG
	IR06B009	2.75	781		√			MG/KG
	IR06B009	5.25	716		√			MG/KG
	IR06B010	3.25	1,080		√			MG/KG
	IR06B011	5.25	441		√			MG/KG
	IR06B013	5.25	591		√			MG/KG
	IR06B014	1.25	796		√			MG/KG
	IR06B014	5.25	582		√			MG/KG
	IR06B015	0.75	382		√			MG/KG
	IR06B016	2.75	625		√			MG/KG
	IR06B016	5.25	690		√			MG/KG
	IR06B017	1.25	440		√			MG/KG
	IR06B017	5.25	491		√			MG/KG
	IR06B018	3.25	968		√			MG/KG
	IR06B018	5.25	814		√			MG/KG
	IR06B019	1.25	2,730		√		√	MG/KG
	IR06B019	2.75	905		√			MG/KG
	IR06B019	5.25	3,030		√		√	MG/KG
	IR06B020	1.25	1,920		√		√	MG/KG
	IR06B020	2.75	901		√			MG/KG
	IR06B021	0.75	752		√			MG/KG
	IR06B021	2.75	869		√			MG/KG
	IR06B024	1.25	1,020		√			MG/KG
	IR06B024	3.25	473		√			MG/KG
	IR06B024	5.75	893		√			MG/KG
	IR06B025	1.25	801		√			MG/KG
	IR06B025	5.25	708		√			MG/KG
	IR06B026	1.25	736		√			MG/KG
	IR06B026	2.75	494		√			MG/KG
	IR06B026	5.25	471		√			MG/KG
	IR06B028	1.25	745		√			MG/KG
	IR06B028	5.25	682		√			MG/KG
	IR06B028A	1.25	396		√			MG/KG
	IR06B029	1.25	1,430		√			MG/KG
	IR06B029	5.25	1,760		√		√	MG/KG
	IR06B031	0.75	717		√			MG/KG
	IR06B031	4.75	563		√			MG/KG
	IR06B033	1.25	757		√			MG/KG
	IR06B033	2.75	992		√			MG/KG
	IR06B033	5.25	1,630		√		√	MG/KG
	IR06B036	3.75	525		√			MG/KG
	IR06B037	0.75	810		√			MG/KG
	IR06B038	1.75	951		√			MG/KG
	IR06B038	3.25	948		√			MG/KG
	IR06B039	0.75	471		√			MG/KG
	IR06B039	5.75	1,250		√			MG/KG
	IR06B043	1.25	785		√			MG/KG
	IR06MW22A	1.25	1,040		√			MG/KG
	IR06MW22A	5.25	830		√			MG/KG
	IR06MW23A	1.25	782		√			MG/KG
	IR06MW23A	5.25	786		√			MG/KG
	IR06MW27A	1.25	1,230		√			MG/KG
	IR06MW30A	1.25	988		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
MANGANESE	IR06MW30A	5.25	549	382	✓	1,431.18		MG/KG
	IR06MW32A	0.75	1,300		✓			MG/KG
	IR06MW32A	5.75	1,960		✓		✓	MG/KG
	IR06MW34A	1.25	1,060		✓			MG/KG
	IR06MW34A	5.25	1,140		✓			MG/KG
	IR06MW35A	1.25	847		✓			MG/KG
	IR06MW40A	1.25	825		✓			MG/KG
	IR06MW40A	5.75	1,250		✓			MG/KG
	IR06MW41A	1.25	3,200		✓		✓	MG/KG
	IR06MW41A	5.25	753		✓			MG/KG
	IR06MW42A	0.75	1,290		✓			MG/KG
	IR06SS01	0.25	697		✓			MG/KG
	IR06SS01	1.25	4,640		✓		✓	MG/KG
	IR06SS02	0.25	508		✓			MG/KG
	IR06SS02	1.12	656		✓			MG/KG
	IR06SS03	1.25	884		✓			MG/KG
	IR06SS04	1.25	742		✓			MG/KG
	IR06SS08	0.25	1,410		✓			MG/KG
	IR06SS09	1.25	1,190		✓			MG/KG
	IR06SS10	0.25	799		✓			MG/KG
	IR06SS11	0.25	534		✓			MG/KG
	IR06SS11	1.50	678		✓			MG/KG
	IR06SS12	0.25	640		✓			MG/KG
	IR06SS12	1.75	824		✓			MG/KG
	IR06SS13	0.25	636		✓			MG/KG
	IR06SS13	1.75	515		✓			MG/K
	IR06SS14	2.25	638		✓			MG/K
	IR06SS15	0.25	1,290		✓			MG/KG
	IR06SS15	1.75	2,500		✓		✓	MG/KG
	IR06SS16	0.25	588		✓			MG/KG
	IR06SS16	1.75	421		✓			MG/KG
	IR06SS17	0.25	507		✓			MG/KG
	IR06SS17	1.75	702		✓			MG/KG
	IR06SS18	0.25	446		✓			MG/KG
	IR06SS18	1.75	623		✓			MG/KG
	IR06SS19	0.25	806		✓			MG/KG
	IR06SS19	1.75	922		✓			MG/KG
NICKEL	IR06B001	0.75	1,220	150	✓	2,807.40		MG/KG
	IR06B001	3.25	318		✓	578.08		MG/KG
	IR06B001	5.75	1,750		✓	2,318.87		MG/KG
	IR06B002	1.25	699		✓	939.19		MG/KG
	IR06B002	3.25	725		✓	1,244.05		MG/KG
	IR06B002	5.25	417		✓	986.56		MG/KG
	IR06B003	0.25	2,360		✓	3,694.96		MG/KG
	IR06B003	2.75	1,890		✓	3,771.56		MG/KG
	IR06B004	0.25	286		✓	276.47	✓	MG/KG
	IR06B004	1.25	2,550		✓	2,651.61		MG/KG
	IR06B004	2.75	1,940		✓	3,136.95		MG/KG
	IR06B005	0.75	1,910		✓	2,768.49		MG/KG
	IR06B005	2.75	877		✓	2,299.22		MG/KG
	IR06B005	5.25	411		✓	953.62		MG/KG
	IR06B006	0.75	641		✓	926.81		MG/KG
	IR06B006	2.75	495		✓	563.25		MG/KG
	IR06B006	5.25	738		✓	1,072.75		MG/KG
	IR06B007	0.25	661		✓	1,492.65		MG/KG
	IR06B007	2.75	660		✓	1,347.43		MG/KG
	IR06B007	5.25	218		✓	383.43		MG/KG
	IR06B009	1.25	1,430		✓	2,102.22		MG/KG
	IR06B009	2.75	1,640		✓	2,982.11		MG/KG
	IR06B009	5.25	846		✓	539.91	✓	MG/K

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
NICKEL	IR06B010	0.75	158	150	√	247.74		MG/KG
	IR06B010	3.25	793		√	1,341.36		MG/KG
	IR06B010	5.75	206		√	298.46		MG/KG
	IR06B011	0.75	246		√	307.23		MG/KG
	IR06B011	2.75	187		√	155.13	√	MG/KG
	IR06B011	5.25	186		√	151.71	√	MG/KG
	IR06B012	0.75	176		√	108.78	√	MG/KG
	IR06B012	2.75	258		√	128.16	√	MG/KG
	IR06B012	5.25	188		√	127.70	√	MG/KG
	IR06B013	0.75	369		√	313.80	√	MG/KG
	IR06B013	2.75	167		√	111.56	√	MG/KG
	IR06B013	5.25	185		√	132.06	√	MG/KG
	IR06B014	1.25	800		√	1,824.71		MG/KG
	IR06B014	3.25	468		√	603.46		MG/KG
	IR06B014	5.25	673		√	359.58	√	MG/KG
	IR06B015	0.75	284		√	471.67		MG/KG
	IR06B015	2.75	139			106.00	√	MG/KG
	IR06B015	5.25	104			86.86	√	MG/KG
	IR06B016	0.75	136			106.23	√	MG/KG
	IR06B016	2.75	162		√	114.34	√	MG/KG
	IR06B016	5.25	238		√	155.35	√	MG/KG
	IR06B017	1.25	295		√	258.81	√	MG/KG
	IR06B017	2.25	185		√	141.45	√	MG/KG
	IR06B017	5.25	240		√	174.39	√	MG/KG
	IR06B018	1.75	237		√	201.16	√	MG/KG
	IR06B018	3.25	405		√	202.06	√	MG/KG
	IR06B018	5.25	2,600		√	3,233.51		MG/KG
	IR06B019	1.25	641		√	1,474.54		MG/KG
	IR06B019	2.75	699		√	1,231.86		MG/KG
	IR06B019	5.25	1,730		√	746.24	√	MG/KG
	IR06B020	1.25	925		√	1,168.77		MG/KG
	IR06B020	2.75	614		√	916.49		MG/KG
	IR06B020	5.25	287		√	178.90	√	MG/KG
	IR06B021	0.75	1,090		√	1,268.42		MG/KG
	IR06B021	2.75	1,770		√	3,464.65		MG/KG
	IR06B024	1.25	685		√	1,325.17		MG/KG
	IR06B024	3.25	830		√	355.23	√	MG/KG
	IR06B024	5.75	368		√	426.59		MG/KG
	IR06B025	1.25	234		√	417.98		MG/KG
	IR06B025	5.25	276		√	550.53		MG/KG
	IR06B026	1.25	373		√	499.45		MG/KG
	IR06B026	2.75	236		√	361.75		MG/KG
	IR06B026	5.25	370		√	939.19		MG/KG
	IR06B028	1.25	268		√	559.01		MG/KG
	IR06B028	5.25	273		√	529.28		MG/KG
	IR06B028A	1.25	488		√	187.46	√	MG/KG
	IR06B029	1.25	971		√	2,318.87		MG/KG
	IR06B029	5.25	806		√	1,502.71		MG/KG
	IR06B031	0.75	515		√	1,162.65		MG/KG
	IR06B031	4.75	335		√	548.40		MG/KG
	IR06B033	1.25	752		√	1,258.27		MG/KG
	IR06B033	2.75	740		√	1,599.06		MG/KG
	IR06B033	5.25	1,190		√	1,836.65		MG/KG
	IR06B036	5.25	427		√	383.43	√	MG/KG
	IR06B037	0.75	168		√	493.04		MG/KG
	IR06B038	3.25	531		√	710.69		MG/KG
	IR06B038	5.25	497		√	234.42	√	MG/KG
	IR06B039	5.75	3,390		√	4,986.88		MG/KG
	IR06B043	1.25	167		√	469.52		MG/KG
	IR06MW22A	1.25	1,650		√	2,495.32		MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
NICKEL	IR06MW22A	5.25	1,770	150	√	2,573.53		MG/KG
	IR06MW23A	1.25	1,610		√	1,719.07		MG/KG
	IR06MW23A	5.25	1,110		√	1,751.00		MG/KG
	IR06MW27A	1.25	1,310		√	1,416.10		MG/KG
	IR06MW30A	1.25	1,590		√	1,119.79	√	MG/KG
	IR06MW30A	5.25	568		√	963.92		MG/KG
	IR06MW32A	5.75	321		√	666.65		MG/KG
	IR06MW34A	1.25	1,200		√	1,609.08		MG/KG
	IR06MW34A	5.25	2,130		√	1,058.41	√	MG/KG
	IR06MW35A	1.25	848		√	2,456.17		MG/KG
	IR06MW35A	5.25	683		√	512.24	√	MG/KG
	IR06MW40A	1.25	404		√	955.68		MG/KG
	IR06MW40A	5.75	489		√	324.73	√	MG/KG
	IR06MW41A	5.25	1,260		√	2,121.96		MG/KG
	IR06SS01	0.25	325		√	394.24		MG/KG
	IR06SS01	1.25	702		√	1,397.94		MG/KG
	IR06SS02	1.12	357		√	563.25		MG/KG
	IR06SS03	1.25	916		√	1,353.49		MG/KG
	IR06SS04	1.25	250		√	182.06	√	MG/KG
	IR06SS05	0.25	179		√	133.67	√	MG/KG
	IR06SS06	0.25	415		√	586.55		MG/KG
	IR06SS07	0.25	251		√	309.42		MG/KG
	IR06SS07	1.75	346		√	276.47	√	MG/KG
	IR06SS08	0.25	419		√	819.14		MG/KG
	IR06SS08	1.75	369		√	346.53	√	MG/KG
	IR06SS09	0.25	281		√	291.87		MG/K
	IR06SS09	1.25	3,100		√	3,560.71		MG/K
	IR06SS10	0.25	1,580		√	1,231.86	√	MG/KG
	IR06SS11	0.25	633		√	1,136.13		MG/KG
	IR06SS11	1.50	712		√	1,532.85		MG/KG
	IR06SS12	0.25	523		√	808.75		MG/KG
	IR06SS12	1.75	1,580		√	1,776.92		MG/KG
	IR06SS13	1.75	576		√	1,087.08		MG/KG
	IR06SS14	0.25	156		√	218.83		MG/KG
	IR06SS14	2.25	1,130		√	1,916.13		MG/KG
	IR06SS15	0.25	158		√	407.20		MG/KG
	IR06SS15	1.75	919		√	1,260.30		MG/KG
	IR06SS16	0.25	227		√	478.08		MG/KG
	IR06SS19	1.75	458		√	812.90		MG/KG
SELENIUM	IR06SS05	0.25	3.3	383		1.95	√	MG/KG
SILVER	IR06B039	5.75	1.5	383		1.43	√	MG/KG
ZINC	IR06B010	0.75	159	23,000		109.86	√	MG/KG
	IR06B011	0.75	187				√	MG/KG
	IR06B031	0.75	280				√	MG/KG
	IR06SS01	0.25	214				√	MG/KG
	IR06SS01	1.25	115				√	MG/KG
	IR06SS02	0.25	287				√	MG/KG
	IR06SS02	1.12	180				√	MG/KG
	IR06SS03	0.25	185				√	MG/KG
	IR06SS03	1.25	112				√	MG/KG
	IR06SS04	0.25	177				√	MG/KG
	IR06SS05	0.25	128				√	MG/KG
	IR06SS06	0.25	355				√	MG/KG
	IR06SS07	0.25	227				√	MG/KG
	IR06SS08	0.25	476				√	MG/KG
	IR06SS09	0.25	597				√	MG/KG
	IR06SS11	0.25	339				√	MG/KG
	IR06SS11	1.50	207				√	MG/KG
	IR06SS12	0.25	145				√	MG/KG
	IR06SS13	0.25	472				√	MG/K

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
METAL								
ZINC	IR06SS14	0.25	207	23,000		109.86	√	MG/KG
	IR06SS15	1.75	117				√	MG/KG
	IR06SS16	0.25	120				√	MG/KG
SVOC								
BENZO(A)ANTHRACENE	IR06SS13	0.25	830	0.6	√			UG/KG
BENZO(A)PYRENE	IR06B037	0.75	140	0.06	√			UG/KG
	IR06MW23A	5.25	120		√			UG/KG
	IR06SS02	1.12	130		√			UG/KG
	IR06SS03	0.25	310		√			UG/KG
	IR06SS03	1.25	200		√			UG/KG
	IR06SS14	0.25	1,300		√			UG/KG
	IR06SS16	1.75	91		√			UG/KG
BENZO(B)FLUORANTHENE	IR06SS01	0.25	1,200	0.6	√			UG/KG
	IR06SS02	0.25	950		√			UG/KG
	IR06SS14	0.25	2,500		√			UG/KG
BENZO(K)FLUORANTHENE	IR06SS01	0.25	1,200	0.6	√			UG/KG
	IR06SS02	0.25	950		√			UG/KG
	IR06SS14	0.25	2,500		√			UG/KG
DIBENZ(A,H)ANTHRACENE	IR06SS03	0.25	84	0.06	√			UG/KG
PEST								
ALDRIN	IR06SS09	0.25	130	0.03	√			UG/KG
AROCLOR-1260	IR06B031	0.75	150,000	0.07	√			UG/KG
	IR06B031	4.75	310		√			UG/KG
	IR06B033	1.25	310		√			UG/KG
	IR06B033	2.75	180		√			UG/KG
	IR06B039	0.75	77		√			UG/KG
	IR06B039	5.75	4,900		√			UG/KG
	IR06MW22A	5.25	520		√			UG/KG
	IR06SS14	0.25	570		√			UG/KG
TPHEXT								
TPH-DIESEL	IR06B001	3.25	13,000	1,000a	√			MG/KG
	IR06B001	5.75	8,100		√			MG/KG
	IR06B002	1.25	2,400		√			MG/KG
	IR06B002	3.25	9,500		√			MG/KG
	IR06B002	5.25	3,400		√			MG/KG
	IR06B002	7.75	2,900		√			MG/KG
	IR06B002	9.75	1,200		√			MG/KG
	IR06B003	0.25	4,600		√			MG/KG
	IR06B003	2.75	1,900		√			MG/KG
	IR06B004	0.25	3,800		√			MG/KG
	IR06B004	1.25	4,200		√			MG/KG
	IR06B004	2.75	1,300		√			MG/KG
	IR06B005	2.75	1,300		√			MG/KG
	IR06B005	5.25	1,900		√			MG/KG
	IR06B005	7.75	6,200		√			MG/KG
	IR06B007	5.25	4,000		√			MG/KG
	IR06B007	7.75	1,100		√			MG/KG
	IR06B009	1.25	2,400		√			MG/KG
	IR06B009	2.75	5,500		√			MG/KG
	IR06B009	5.25	1,300		√			MG/KG
	IR06B010	0.75	3,100		√			MG/KG
	IR06B010	5.75	7,200		√			MG/KG
	IR06B010	7.75	6,400		√			MG/KG
	IR06B010	14.75	6,800		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
TPHEXT								
TPH-DIESEL	IR06B012	0.75	26,000	1,000a	√			MG/KG
	IR06B012	2.75	10,000		√			MG/KG
	IR06B012	5.25	1,300		√			MG/KG
	IR06B012	7.75	1,300		√			MG/KG
	IR06B013	0.75	2,800		√			MG/KG
	IR06B013	5.25	1,300		√			MG/KG
	IR06B015	0.75	3,700		√			MG/KG
	IR06B015	2.75	2,800		√			MG/KG
	IR06B015	5.25	1,300		√			MG/KG
	IR06B015	7.75	2,300		√			MG/KG
	IR06B017	1.25	8,400		√			MG/KG
	IR06B017	2.25	3,600		√			MG/KG
	IR06B017	5.25	1,300		√			MG/KG
	IR06B021	7.25	2,300		√			MG/KG
	IR06B024	5.75	1,100		√			MG/KG
	IR06B025	5.25	11,000		√			MG/KG
	IR06B026	10.25	13,000		√			MG/KG
	IR06B031	0.75	4,600		√			MG/KG
	IR06B033	5.25	6,500		√			MG/KG
	IR06B033	7.75	3,000		√			MG/KG
	IR06B033	10.25	15,000		√			MG/KG
	IR06B036	3.75	2,400		√			MG/KG
	IR06B036	5.25	3,100		√			MG/KG
	IR06B036	10.75	5,000		√			MG/KG
	IR06B039	0.75	1,400		√			MG/KG
	IR06B039	5.75	1,500		√			MG/KG
	IR06B039	14.25	2,000		√			MG/KG
	IR06MW22A	5.25	1,900		√			MG/KG
	IR06MW27A	10.25	3,500		√			MG/KG
	IR06MW32A	10.25	2,500		√			MG/KG
	IR06SS01	0.25	14,000		√			MG/KG
	IR06SS04	0.25	24,000		√			MG/KG
	IR06SS04	1.25	22,000		√			MG/KG
	IR06SS05	0.25	22,000		√			MG/KG
	IR06SS06	0.25	14,000		√			MG/KG
	IR06SS07	0.25	3,700		√			MG/KG
	IR06SS08	0.25	17,000		√			MG/KG
	IR06SS08	1.75	21,000		√			MG/KG
	IR06SS09	0.25	24,000		√			MG/KG
	IR06SS09	1.25	11,000		√			MG/KG
	IR06SS10	0.25	7,600		√			MG/KG
	IR06SS11	0.25	21,000		√			MG/KG
	IR06SS11	1.50	9,100		√			MG/KG
	IR06SS12	0.25	10,000		√			MG/KG
	IR06SS12	1.75	4,100		√			MG/KG
O&G								
TOTAL OIL & GREASE	IR06B001	0.75	3,700	1,000a	√			MG/KG
	IR06B001	3.25	9,400		√			MG/KG
	IR06B001	5.75	3,500		√			MG/KG
	IR06B002	1.25	9,100		√			MG/KG
	IR06B002	3.25	10,000		√			MG/KG
	IR06B002	5.25	6,600		√			MG/KG
	IR06B002	7.75	2,800		√			MG/KG
	IR06B002	9.75	3,000		√			MG/KG
	IR06B003	0.25	1,200		√			MG/KG
	IR06B003	2.75	2,500		√			MG/KG
	IR06B004	0.25	11,000		√			MG/KG
	IR06B004	1.25	4,300		√			MG/KG

TABLE 4.4-7 (Continued)

SUMMARY OF SOIL ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Depth (feet bgs)	Concentration	Res. PRG Value	Exceeds PRG	HPAL Value	Exceeds HPAL	Units
O&G								
TOTAL OIL & GREASE	IR06B004	2.75	4,700	1,000a	√			MG/KG
	IR06B005	2.75	3,300		√			MG/KG
	IR06B005	5.25	4,400		√			MG/KG
	IR06B005	7.75	5,300		√			MG/KG
	IR06B007	5.25	2,000		√			MG/KG
	IR06B009	1.25	1,600		√			MG/KG
	IR06B009	2.75	4,500		√			MG/KG
	IR06B010	0.75	32,000		√			MG/KG
	IR06B010	7.75	1,300		√			MG/KG
	IR06B010	14.75	110,000		√			MG/KG
	IR06B011	0.75	6,400		√			MG/KG
	IR06B012	0.75	20,000		√			MG/KG
	IR06B012	2.75	5,600		√			MG/KG
	IR06B013	0.75	3,100		√			MG/KG
	IR06B017	1.25	8,900		√			MG/KG
	IR06B017	2.25	1,700		√			MG/KG
	IR06B019	1.25	14,000		√			MG/KG
	IR06B020	1.25	31,000		√			MG/KG
	IR06B021	7.25	6,700		√			MG/KG
	IR06B025	5.25	4,300		√			MG/KG
	IR06B026	10.25	17,000		√			MG/KG
	IR06B031	0.75	3,300		√			MG/KG
	IR06B033	5.25	2,700		√			MG/KG
	IR06B033	7.75	2,500		√			MG/KG
	IR06B033	10.25	27,000		√			MG/KG
	IR06B036	3.75	2,600		√			MG/KG
	IR06B036	5.25	2,100		√			MG/KG
	IR06B038	3.25	2,200		√			MG/KG
	IR06B039	5.75	2,100		√			MG/KG
	IR06B039	14.25	1,800		√			MG/KG
	IR06MW22A	5.25	2,400		√			MG/KG
	IR06MW27A	10.25	1,500		√			MG/KG
	IR06MW32A	5.75	1,100		√			MG/KG

Notes:

bgs	Below ground surface
HPAL	Hunters Point ambient level
MG/KG	Milligram per kilogram
O&G	Total oil and grease
PEST	Pesticides/polychlorinated biphenyls
PRG	Preliminary remediation goal
Res.	Residential
SVOC	Semivolatile organic compounds
TPHEXT	Total petroleum hydrocarbons-extractable
TPHPRG	Total petroleum hydrocarbons-purgeable
TRPH	Total recoverable petroleum hydrocarbons
UG/KG	Microgram per kilogram
VOC	Volatile organic compounds

a TPH, TRPH, or O&G screening level, not PRG value

TABLE 4.4-8

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
ANTIMONY	IR06MW23A	06/13/90	16.8	15.0	√	6.0	√	500		UG/L
	IR06MW34A	07/15/91	15.8		√		√			UG/L
	IR06MW34A	01/09/92	35.6		√		√			UG/L
	IR06MW40A	07/17/91	10.8				√			UG/L
	IR06MW41A	01/08/92	22.8		√		√			UG/L
	IR06MW44A	01/07/92	40.1		√		√			UG/L
	IR06MW45A	01/13/92	33.5		√		√			UG/L
	IR06MW46A	01/08/92	28.4		√		√			UG/L
	IR06MW50F	08/16/94	10.8				√			UG/L
ARSENIC	IR06MW22A	06/12/90	4.9	0.04	√	50.0		36.0		UG/L
	IR06MW22A	07/15/91	12.1		√					UG/L
	IR06MW22A	01/06/92	5.0		√					UG/L
	IR06MW22A	11/05/93	11.9		√					UG/L
	IR06MW22A	05/17/94	7.7		√					UG/L
	IR06MW22A	08/30/94	14.3		√					UG/L
	IR06MW22A	07/20/95	7.7		√					UG/L
	IR06MW23A	06/13/90	2.4		√					UG/L
	IR06MW23A	01/07/91	3.7		√					UG/L
	IR06MW23A	07/16/91	1.9		√					UG/L
	IR06MW23A	11/03/93	4.1		√					UG/L
	IR06MW23A	08/19/94	1.5		√					UG/L
	IR06MW27A	06/12/90	3.2		√					UG/L
	IR06MW27A	01/04/91	5.9		√					UG/L
	IR06MW27A	07/16/91	11.1		√					UG/L
	IR06MW27A	01/07/92	11.4		√					UG/L
	IR06MW27A	11/05/93	7.7		√					UG/L
	IR06MW27A	05/17/94	11.2		√					UG/L
	IR06MW27A	08/30/94	8.1		√					UG/L
	IR06MW30A	06/12/90	3.0		√					UG/L
	IR06MW30A	07/15/91	1.9		√					UG/L
	IR06MW30A	01/09/92	2.7		√					UG/L
	IR06MW30A	11/03/93	6.2		√					UG/L
	IR06MW30A	08/23/94	2.9		√					UG/L
	IR06MW32A	01/07/91	5.4		√					UG/L
	IR06MW32A	07/17/91	3.7		√					UG/L
	IR06MW32A	01/10/92	4.2		√					UG/L
	IR06MW32A	11/04/93	7.7		√					UG/L
	IR06MW32A	05/18/94	2.6		√					UG/L
	IR06MW32A	08/24/94	5.2		√					UG/L
	IR06MW34A	01/04/91	3.6		√					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
ARSENIC	IR06MW34A	07/15/91	3.7	0.04	√	50.0		36.0		UG/L
	IR06MW34A	01/09/92	4.5		√					UG/L
	IR06MW34A	03/31/93	2.6		√					UG/L
	IR06MW34A	11/04/93	4.5		√					UG/L
	IR06MW34A	08/19/94	4.5		√					UG/L
	IR06MW35A	06/11/90	4.0		√					UG/L
	IR06MW35A	01/04/91	6.4		√					UG/L
	IR06MW35A	07/17/91	4.1		√					UG/L
	IR06MW35A	01/08/92	5.2		√					UG/L
	IR06MW35A	05/13/94	4.0		√					UG/L
	IR06MW35A	08/19/94	4.9		√					UG/L
	IR06MW40A	06/13/90	3.2		√					UG/L
	IR06MW40A	01/04/91	5.1		√					UG/L
	IR06MW40A	07/17/91	2.0		√					UG/L
	IR06MW40A	01/09/92	2.0		√					UG/L
	IR06MW40A	11/08/93	7.1		√					UG/L
	IR06MW40A	05/13/94	2.9		√					UG/L
	IR06MW40A	08/19/94	2.1		√					UG/L
	IR06MW41A	06/11/90	2.1		√					UG/L
	IR06MW41A	01/03/91	10.5		√					UG/L
	IR06MW41A	07/16/91	9.7		√					UG/L
	IR06MW41A	01/08/92	12.4		√					UG/L
	IR06MW41A	11/08/93	14.1		√					UG/L
	IR06MW41A	05/13/94	8.4		√					UG/L
	IR06MW41A	08/19/94	4.3		√					UG/L
	IR06MW42A	01/10/91	8.3		√					UG/L
	IR06MW42A	07/16/91	9.5		√					UG/L
	IR06MW42A	01/10/92	6.6		√					UG/L
	IR06MW42A	11/08/93	10.5		√					UG/L
	IR06MW42A	05/16/94	3.1		√					UG/L
	IR06MW42A	08/26/94	5.0		√					UG/L
	IR06MW44A	08/25/94	3.0		√					UG/L
	IR06MW45A	10/31/91	2.5		√					UG/L
	IR06MW46A	10/31/91	3.7		√					UG/L
	IR06MW46A	01/08/92	2.5		√					UG/L
	IR06MW46A	08/25/94	2.6		√					UG/L
	IR06MW47F	11/04/91	2.0		√					UG/L
	IR06MW47F	01/09/92	2.0		√					UG/L
	IR06MW48F	11/04/91	7.9		√					UG/L
	IR06MW48F	01/08/92	4.0		√					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
ARSENIC	IR06MW48F	11/08/93	4.7	0.04	√	50.0		36.0		UG/L
	IR06MW48F	08/19/94	1.7		√					UG/L
	IR06MW49F	11/08/93	3.8		√					UG/L
	IR06MW50F	12/14/93	4.4		√					UG/L
	IR06MW51F	07/27/95	7.9		√					UG/L
	IR06MW52F	12/27/93	7.8		√					UG/L
	IR06MW52F	08/11/94	5.1		√					UG/L
	IR06MW53F	03/15/94	8.2		√					UG/L
	IR06MW53F	08/11/94	6.5		√					UG/L
	IR06MW53F	05/25/95	7.3		√					UG/L
	IR06MW55F	12/28/93	3.5		√					UG/L
	IR06MW56F	01/07/94	3.9		√					UG/L
	IR06MW57F	09/21/95	4.2		√					UG/L
BERYLLIUM	IR06MW22A	06/12/90	0.37	0.02	√	4.0				UG/L
	IR06MW23A	06/13/90	0.27		√					UG/L
	IR06MW27A	06/12/90	0.37		√					UG/L
	IR06MW34A	06/13/90	0.56		√					UG/L
	IR06MW40A	06/13/90	0.37		√					UG/L
CADMIUM	IR06MW44A	01/07/92	6.4	18.0		5.0	√	9.3		UG/L
	IR06MW53F	08/11/94	9.2				√			UG/L
CHROMIUM	IR06MW49F	10/31/91	90.6			50.0	√			UG/L
	IR06MW49F	01/06/92	98.5				√			UG/L
	IR06MW49F	11/08/93	81.1				√			UG/L
	IR06MW49F	02/16/94	87.8				√			UG/L
	IR06MW49F	05/16/94	79.8				√			UG/L
	IR06MW49F	08/19/94	81.1				√			UG/L
	IR06MW50F	12/14/93	117				√			UG/L
	IR06MW50F	08/16/94	108				√			UG/L
	IR06MW50F	05/25/95	113				√			UG/L
	IR06MW54F	12/15/93	51.7				√			UG/L
	IR06MW54F	08/16/94	55.0				√			UG/L
	IR06MW54F	05/25/95	62.1				√			UG/L
CHROMIUM VI	IR06MW49F	10/31/91	100	0.16	√			50.0	√	UG/L
	IR06MW49F	01/06/92	115		√				√	UG/L
	IR06MW49F	11/08/93	87.8		√				√	UG/L
	IR06MW49F	02/16/94	82.9		√				√	UG/L
	IR06MW49F	05/16/94	91.1		√				√	UG/L
	IR06MW49F	08/19/94	80.9		√				√	UG/L
COPPER	IR06MW35A	07/17/91	3.1	1,400				2.4	√	UG/L
	IR06MW40A	06/13/90	58.2						√	UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
COPPER	IR06MW45A	10/31/91	10.9	1,400				2.4	√	UG/L
	IR06MW50F	08/16/94	25.7						√	UG/L
	IR06MW50F	05/25/95	4.3						√	UG/L
	IR06MW52F	12/27/93	3.3						√	UG/L
	IR06MW52F	08/11/94	11.8						√	UG/L
	IR06MW52F	05/25/95	4.5						√	UG/L
	IR06MW53F	03/15/94	7.3						√	UG/L
	IR06MW53F	08/11/94	31.2						√	UG/L
	IR06MW53F	05/25/95	9.0						√	UG/L
	IR06MW54F	08/16/94	2.4						√	UG/L
	IR06MW54F	05/25/95	5.4						√	UG/L
	IR06MW55F	12/28/93	3.3						√	UG/L
	IR06MW56F	05/25/95	3.6						√	UG/L
	IR06MW58F	05/24/95	3.2						√	UG/L
LEAD	IR06MW34A	03/31/93	9.9	4.0	√	50.0		8.1	√	UG/L
MANGANESE	IR06MW22A	06/12/90	644	180	√					UG/L
	IR06MW22A	01/04/91	1,150		√					UG/L
	IR06MW22A	07/15/91	1,730		√					UG/L
	IR06MW22A	01/06/92	1,170		√					UG/L
	IR06MW22A	07/20/95	1,240		√					UG/L
	IR06MW23A	06/13/90	636		√					UG/L
	IR06MW23A	01/07/91	628		√					UG/L
	IR06MW23A	07/16/91	779		√					UG/L
	IR06MW23A	01/07/92	704		√					UG/L
	IR06MW27A	06/12/90	997		√					UG/L
	IR06MW27A	01/04/91	2,380		√					UG/L
	IR06MW27A	07/16/91	2,480		√					UG/L
	IR06MW27A	01/07/92	1,940		√					UG/L
	IR06MW30A	06/12/90	1,180		√					UG/L
	IR06MW30A	01/04/91	1,860		√					UG/L
	IR06MW30A	07/15/91	1,860		√					UG/L
	IR06MW30A	01/09/92	1,740		√					UG/L
	IR06MW32A	06/12/90	6,190		√					UG/L
	IR06MW32A	01/07/91	5,350		√					UG/L
	IR06MW32A	07/17/91	5,440		√					UG/L
	IR06MW32A	01/10/92	3,790		√					UG/L
	IR06MW34A	06/13/90	2,540		√					UG/L
	IR06MW34A	01/04/91	4,460		√					UG/L
	IR06MW34A	07/15/91	4,080		√					UG/L
	IR06MW34A	01/09/92	2,730		√					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
MANGANESE	IR06MW34A	03/31/93	1,160	180	√					UG/L
	IR06MW35A	01/04/91	282		√					UG/L
	IR06MW40A	06/13/90	551		√					UG/L
	IR06MW40A	01/04/91	4,110		√					UG/L
	IR06MW40A	07/17/91	2,600		√					UG/L
	IR06MW40A	01/09/92	1,370		√					UG/L
	IR06MW41A	06/11/90	742		√					UG/L
	IR06MW41A	01/03/91	3,420		√					UG/L
	IR06MW41A	07/16/91	8,860		√					UG/L
	IR06MW41A	01/08/92	6,750		√					UG/L
	IR06MW42A	06/13/90	3,040		√					UG/L
	IR06MW42A	01/10/91	5,880		√					UG/L
	IR06MW42A	07/16/91	1,940		√					UG/L
	IR06MW42A	01/10/92	1,420		√					UG/L
	IR06MW44A	10/31/91	4,930		√					UG/L
	IR06MW44A	01/07/92	5,050		√					UG/L
	IR06MW45A	10/31/91	370		√					UG/L
	IR06MW46A	01/08/92	187		√					UG/L
	IR06MW48F	11/04/91	188		√					UG/L
	IR06MW48F	01/08/92	728		√					UG/L
	IR06MW51F	12/22/93	227		√					UG/L
	IR06MW51F	08/16/94	185		√					UG/L
	IR06MW51F	07/27/95	266		√					UG/L
MERCURY	IR06MW34A	03/31/93	0.14	11.0		2.0		0.03	√	UG/L
	IR06MW50F	12/14/93	0.20						√	UG/L
	IR06MW50F	08/16/94	0.30						√	UG/L
	IR06MW50F	05/25/95	0.12						√	UG/L
MOLYBDENUM	IR06MW53F	03/15/94	258	180	√					UG/L
	IR06MW53F	08/11/94	258		√					UG/L
	IR06MW53F	05/25/95	256		√					UG/L
NICKEL	IR06MW22A	07/15/91	17.8	730		100		8.2	√	UG/L
	IR06MW22A	01/06/92	45.9						√	UG/L
	IR06MW23A	07/16/91	24.6						√	UG/L
	IR06MW27A	06/12/90	37.2						√	UG/L
	IR06MW27A	07/16/91	71.6						√	UG/L
	IR06MW27A	01/07/92	51.2						√	UG/L
	IR06MW30A	06/12/90	15.9						√	UG/L
	IR06MW30A	07/15/91	30.4						√	UG/L
	IR06MW32A	06/12/90	29.7						√	UG/L
	IR06MW32A	01/07/91	25.0						√	UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
METAL										
NICKEL	IR06MW32A	07/17/91	41.7	730		100		8.2	✓	UG/L
	IR06MW34A	06/13/90	22.8						✓	UG/L
	IR06MW34A	07/15/91	21.2						✓	UG/L
	IR06MW40A	07/17/91	36.3						✓	UG/L
	IR06MW41A	07/16/91	18.9						✓	UG/L
	IR06MW41A	01/08/92	13.6						✓	UG/L
	IR06MW41A	05/13/94	14.6						✓	UG/L
	IR06MW42A	06/13/90	21.1						✓	UG/L
	IR06MW42A	07/16/91	22.3						✓	UG/L
	IR06MW44A	10/31/91	117				✓		✓	UG/L
	IR06MW44A	01/07/92	89.4						✓	UG/L
	IR06MW45A	10/31/91	35.2						✓	UG/L
	IR06MW46A	10/31/91	44.2						✓	UG/L
	IR06MW46A	01/08/92	42.4						✓	UG/L
	IR06MW47F	11/04/91	95.4						✓	UG/L
THALLIUM	IR06MW22A	07/20/95	2.5			2.0	✓			UG/L
	IR06MW57F	09/21/95	2.5				✓			UG/L
VOC										
1,2-DICHLOROETHANE	IR06MW22A	07/15/91	1	0.1	✓	0.5	✓			UG/L
1,2-DICHLOROETHENE (TOTAL)	IR06MW30A	01/09/92	130	55	✓					UG/L
BENZENE	IR06MW22A	06/12/90	55	0.4	✓	1	✓			UG/L
	IR06MW22A	01/03/91	42		✓		✓			UG/L
	IR06MW22A	07/15/91	72		✓		✓			UG/L
	IR06MW22A	01/06/92	4		✓		✓			UG/L
	IR06MW22A	11/03/93	32		✓		✓			UG/L
	IR06MW22A	02/14/94	41		✓		✓			UG/L
	IR06MW22A	05/16/94	39		✓		✓			UG/L
	IR06MW22A	08/25/94	31		✓		✓			UG/L
	IR06MW23A	06/13/90	10		✓		✓			UG/L
	IR06MW23A	01/07/92	7		✓		✓			UG/L
	IR06MW23A	11/03/93	5		✓		✓			UG/L
	IR06MW23A	02/15/94	12		✓		✓			UG/L
	IR06MW23A	05/17/94	15		✓		✓			UG/L
	IR06MW23A	08/19/94	7		✓		✓			UG/L
	IR06MW30A	06/12/90	3		✓		✓			UG/L
	IR06MW30A	01/04/91	6		✓		✓			UG/L
	IR06MW30A	07/15/91	5		✓		✓			UG/L
	IR06MW30A	01/09/92	16		✓		✓			UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
VOC										
BENZENE	IR06MW30A	11/03/93	17	0.4	√	1	√			UG/L
	IR06MW30A	02/15/94	29		√		√			UG/L
	IR06MW30A	05/18/94	24		√		√			UG/L
	IR06MW30A	08/23/94	19		√		√			UG/L
	IR06MW32A	06/12/90	3		√		√			UG/L
	IR06MW32A	01/07/91	6		√		√			UG/L
	IR06MW32A	01/10/92	11		√		√			UG/L
	IR06MW32A	11/04/93	7		√		√			UG/L
	IR06MW32A	02/15/94	5		√		√			UG/L
	IR06MW32A	05/18/94	7		√		√			UG/L
	IR06MW32A	08/24/94	7		√		√			UG/L
	IR06MW42A	07/16/91	2		√		√			UG/L
	IR06MW42A	11/08/93	1		√					UG/L
	IR06MW42A	05/16/94	0.7		√					UG/L
	IR06MW48F	01/08/92	1		√					UG/L
	IR06MW48F	11/08/93	2		√		√			UG/L
	IR06MW48F	02/14/94	1		√					UG/L
	IR06MW48F	05/16/94	1		√					UG/L
	IR06MW48F	08/19/94	1		√					UG/L
CARBON TETRACHLORIDE	IR06MW55F	12/27/93	28	0.2	√	0.5	√			UG/L
CHLOROFORM	IR06MW22A	08/25/94	2	0.2	√	100				UG/L
	IR06MW27A	08/25/94	0.3		√					UG/L
	IR06MW30A	11/03/93	24		√					UG/L
	IR06MW30A	02/15/94	7		√					UG/L
	IR06MW41A	11/08/93	2		√					UG/L
	IR06MW47F	11/04/91	1		√					UG/L
	IR06MW48F	01/08/92	1		√					UG/L
	IR06MW48F	11/08/93	2		√					UG/L
	IR06MW48F	02/14/94	2		√					UG/L
	IR06MW55F	12/27/93	11		√					UG/L
	IR06MW55F	08/16/94	4		√					UG/L
CIS-1,2-DICHLOROETHENE	IR06MW30A	11/03/93	240	61	√	6	√			UG/L
	IR06MW30A	02/15/94	340		√		√			UG/L
	IR06MW30A	05/18/94	230		√		√			UG/L
	IR06MW30A	08/23/94	180		√		√			UG/L
	IR06MW35A	11/04/93	7				√			UG/L
	IR06MW35A	02/15/94	9				√			UG/L
	IR06MW35A	05/13/94	8				√			UG/L
	IR06MW35A	08/19/94	9				√			UG/L
METHYLENE CHLORIDE	IR06MW22A	11/03/93	8	4	√	5	√			UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
VOC										
METHYLENE CHLORIDE	IR06MW32A	11/04/93	17	4	√	5	√			UG/L
TETRACHLOROETHENE	IR06MW30A	01/04/91	1	1	√	5				UG/L
	IR06MW30A	07/15/91	2		√					UG/L
	IR06MW30A	01/09/92	3		√					UG/L
	IR06MW30A	02/15/94	5		√					UG/L
TRICHLOROETHENE	IR06MW22A	01/03/91	3	2	√	5				UG/L
	IR06MW22A	07/15/91	3		√					UG/L
	IR06MW22A	08/25/94	2		√					UG/L
	IR06MW30A	01/04/91	3		√					UG/L
	IR06MW30A	07/15/91	3		√					UG/L
	IR06MW30A	01/09/92	5		√					UG/L
	IR06MW30A	11/03/93	10		√		√			UG/L
	IR06MW30A	02/15/94	20		√		√			UG/L
	IR06MW30A	05/18/94	14		√		√			UG/L
	IR06MW30A	08/23/94	10		√		√			UG/L
	IR06MW35A	06/11/90	5		√					UG/L
	IR06MW48F	11/04/91	4		√					UG/L
	IR06MW49F	10/31/91	4		√					UG/L
	IR06MW49F	01/06/92	4		√					UG/L
	IR06MW49F	11/08/93	4		√					UG/L
	IR06MW49F	02/16/94	2		√					UG/L
	IR06MW49F	05/16/94	2		√					UG/L
	IR06MW49F	08/19/94	4		√					UG/L
	IR06MW55F	12/27/93	14		√		√			UG/L
VINYL CHLORIDE	IR06MW22A	01/03/91	12	0.02	√	0.5	√			UG/L
	IR06MW22A	07/15/91	24		√		√			UG/L
	IR06MW22A	11/03/93	17		√		√			UG/L
	IR06MW22A	02/14/94	46		√		√			UG/L
	IR06MW22A	08/25/94	10		√		√			UG/L
	IR06MW23A	07/16/91	6		√		√			UG/L
	IR06MW23A	11/03/93	3		√		√			UG/L
	IR06MW23A	02/15/94	6		√		√			UG/L
	IR06MW23A	05/17/94	8		√		√			UG/L
	IR06MW23A	08/19/94	4		√		√			UG/L
	IR06MW30A	01/04/91	26		√		√			UG/L
	IR06MW30A	07/15/91	24		√		√			UG/L
	IR06MW30A	01/09/92	35		√		√			UG/L
	IR06MW30A	11/03/93	32		√		√			UG/L
	IR06MW30A	02/15/94	62		√		√			UG/L
	IR06MW30A	05/18/94	51		√		√			UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
VOC										
VINYL CHLORIDE	IR06MW30A	08/23/94	40	0.02	√	0.5	√			UG/L
	IR06MW35A	11/04/93	2		√		√			UG/L
	IR06MW35A	02/15/94	6		√		√			UG/L
	IR06MW35A	05/13/94	2		√		√			UG/L
	IR06MW35A	08/19/94	1		√		√			UG/L
	IR06MW40A	02/16/94	12		√		√			UG/L
	IR06MW40A	05/13/94	14		√		√			UG/L
	IR06MW40A	08/19/94	1		√		√			UG/L
	IR06MW42A	02/14/94	0.7		√		√			UG/L
	IR06MW48F	01/08/92	6		√		√			UG/L
	IR06MW48F	11/08/93	7		√		√			UG/L
	IR06MW48F	02/14/94	12		√		√			UG/L
	IR06MW48F	05/16/94	11		√		√			UG/L
	IR06MW48F	08/19/94	6		√		√			UG/L
SVOC										
1,4-DICHLOROBENZENE	IR06MW35A	06/11/90	5	0.5	√	5				UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	IR06MW34A	11/04/93	5	5	√	4	√	360		UG/L
	IR06MW35A	11/04/93	20		√		√			UG/L
CARBAZOLE	IR06MW42A	11/08/93	47	3	√					UG/L
	IR06MW42A	05/16/94	53		√					UG/L
	IR06MW42A	08/26/94	33		√					UG/L
NAPHTHALENE	IR06MW42A	06/13/90	690	240	√					UG/L
	IR06MW42A	01/08/91	810		√					UG/L
	IR06MW42A	07/16/91	1,200		√					UG/L
	IR06MW42A	01/10/92	1,700		√					UG/L
	IR06MW42A	11/08/93	380		√					UG/L
	IR06MW42A	02/14/94	280		√					UG/L
	IR06MW42A	05/16/94	360		√					UG/L
PENTACHLOROPHENOL	IR06MW22A	01/06/92	3	0.6	√	1	√	8		UG/L
PHENANTHRENE	IR06MW30A	06/12/90	10	240				5	√	UG/L
	IR06MW30A	08/23/94	5						√	UG/L
	IR06MW32A	06/12/90	6						√	UG/L
	IR06MW32A	11/04/93	9						√	UG/L
	IR06MW32A	02/15/94	10						√	UG/L
	IR06MW32A	05/18/94	7						√	UG/L
	IR06MW32A	08/24/94	10						√	UG/L
	IR06MW34A	06/13/90	10						√	UG/L
	IR06MW34A	01/04/91	11						√	UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
SVOC										
PHENANTHRENE	IR06MW34A	07/15/91	6	240				5	√	UG/L
	IR06MW34A	01/09/92	8						√	UG/L
	IR06MW34A	11/04/93	5						√	UG/L
	IR06MW42A	06/13/90	62						√	UG/L
	IR06MW42A	01/08/91	160						√	UG/L
	IR06MW42A	07/16/91	130						√	UG/L
	IR06MW42A	01/10/92	130						√	UG/L
	IR06MW42A	11/08/93	110						√	UG/L
	IR06MW42A	02/14/94	74						√	UG/L
	IR06MW42A	05/16/94	74						√	UG/L
	IR06MW42A	08/26/94	5						√	UG/L
PEST										
HEPTACHLOR EPOXIDE	IR06MW54F	05/25/95	0.03	0.01	√	0.01	√			UG/L
TPHEXT										
TPH-DIESEL	IR06MW22A	07/15/91	1,500	100a	√					UG/L
	IR06MW22A	11/04/93	11,000		√					UG/L
	IR06MW22A	02/14/94	1,800		√					UG/L
	IR06MW22A	05/17/94	2,700		√					UG/L
	IR06MW22A	08/30/94	3,100		√					UG/L
	IR06MW23A	07/16/91	560		√					UG/L
	IR06MW23A	11/03/93	600		√					UG/L
	IR06MW23A	02/15/94	170		√					UG/L
	IR06MW23A	05/17/94	420		√					UG/L
	IR06MW27A	06/12/90	640		√					UG/L
	IR06MW27A	07/16/91	1,200		√					UG/L
	IR06MW27A	11/04/93	1,100		√					UG/L
	IR06MW27A	02/15/94	700		√					UG/L
	IR06MW27A	05/17/94	1,100		√					UG/L
	IR06MW27A	09/01/94	690		√					UG/L
	IR06MW30A	07/15/91	390		√					UG/L
	IR06MW30A	11/03/93	860		√					UG/L
	IR06MW30A	02/15/94	440		√					UG/L
	IR06MW30A	05/18/94	530		√					UG/L
	IR06MW30A	08/23/94	570		√					UG/L
	IR06MW32A	06/12/90	650		√					UG/L
	IR06MW32A	01/07/91	4,200		√					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
TPHEXT										
TPH-DIESEL	IR06MW32A	07/17/91	4,900	100a	✓					UG/L
	IR06MW32A	11/04/93	2,900		✓					UG/L
	IR06MW32A	02/15/94	5,400		✓					UG/L
	IR06MW32A	05/18/94	2,900		✓					UG/L
	IR06MW32A	08/24/94	5,800		✓					UG/L
	IR06MW34A	11/04/93	590		✓					UG/L
	IR06MW34A	02/17/94	380		✓					UG/L
	IR06MW34A	05/18/94	440		✓					UG/L
	IR06MW34A	08/19/94	130		✓					UG/L
	IR06MW35A	11/04/93	560		✓					UG/L
	IR06MW40A	11/08/93	510		✓					UG/L
	IR06MW40A	02/16/94	200		✓					UG/L
	IR06MW40A	08/19/94	120		✓					UG/L
	IR06MW41A	01/03/91	3,500		✓					UG/L
	IR06MW41A	07/16/91	730		✓					UG/L
	IR06MW41A	11/08/93	850		✓					UG/L
	IR06MW41A	02/16/94	490		✓					UG/L
	IR06MW41A	05/13/94	520		✓					UG/L
	IR06MW41A	08/19/94	520		✓					UG/L
	IR06MW42A	07/16/91	1,900		✓					UG/L
	IR06MW42A	11/08/93	3,200		✓					UG/L
	IR06MW42A	02/14/94	2,100		✓					UG/L
	IR06MW42A	05/16/94	3,900		✓					UG/L
	IR06MW42A	08/26/94	1,100		✓					UG/L
	IR06MW47F	11/08/93	1,000		✓					UG/L
	IR06MW48F	11/08/93	760		✓					UG/L
	IR06MW48F	05/16/94	140		✓					UG/L
	IR06MW49F	11/08/93	410		✓					UG/L
	IR06MW49F	02/16/94	1,300		✓					UG/L
	IR06MW49F	05/16/94	2,300		✓					UG/L
	IR06MW49F	08/19/94	2,200		✓					UG/L
TPH-EXTRACTABLE UNKNOWN HYDRO.	IR06MW22A	01/06/92	7,300	100a	✓					UG/L
	IR06MW27A	01/07/92	1,600		✓					UG/L
	IR06MW41A	01/08/92	2,900		✓					UG/L
TPH-MOTOR OIL	IR06MW22A	02/14/94	2,200	100a	✓					UG/L
	IR06MW22A	05/17/94	1,400		✓					UG/L
	IR06MW22A	08/30/94	1,500		✓					UG/L
	IR06MW23A	05/17/94	380		✓					UG/L
	IR06MW23A	08/19/94	360		✓					UG/L
	IR06MW27A	02/15/94	490		✓					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
TPHEXT										
TPH-MOTOR OIL	IR06MW27A	05/17/94	1,700	100a	√					UG/L
	IR06MW27A	09/01/94	150		√					UG/L
	IR06MW30A	02/15/94	210		√					UG/L
	IR06MW30A	05/18/94	160		√					UG/L
	IR06MW30A	08/23/94	180		√					UG/L
	IR06MW32A	02/15/94	1,600		√					UG/L
	IR06MW32A	05/18/94	830		√					UG/L
	IR06MW32A	08/24/94	1,300		√					UG/L
	IR06MW34A	02/17/94	660		√					UG/L
	IR06MW34A	05/18/94	230		√					UG/L
	IR06MW34A	08/19/94	380		√					UG/L
	IR06MW35A	02/15/94	350		√					UG/L
	IR06MW35A	05/13/94	510		√					UG/L
	IR06MW35A	08/19/94	600		√					UG/L
	IR06MW40A	05/13/94	120		√					UG/L
	IR06MW40A	08/19/94	190		√					UG/L
	IR06MW41A	02/16/94	160		√					UG/L
	IR06MW41A	05/13/94	190		√					UG/L
	IR06MW42A	02/14/94	450		√					UG/L
	IR06MW42A	05/16/94	540		√					UG/L
	IR06MW42A	08/26/94	450		√					UG/L
	IR06MW44A	08/25/94	3,100		√					UG/L
	IR06MW45A	08/25/94	1,400		√					UG/L
	IR06MW46A	08/25/94	470		√					UG/L
	IR06MW47F	02/16/94	390		√					UG/L
	IR06MW47F	05/18/94	300		√					UG/L
	IR06MW48F	02/14/94	700		√					UG/L
	IR06MW48F	05/16/94	1,100		√					UG/L
	IR06MW48F	08/19/94	550		√					UG/L
	IR06MW49F	02/16/94	410		√					UG/L
	IR06MW49F	05/16/94	680		√					UG/L
	IR06MW49F	08/19/94	2,200		√					UG/L
	IR06MW50F	05/25/95	630		√					UG/L
	IR06MW51F	08/01/95	220		√					UG/L
	IR06MW52F	05/25/95	700		√					UG/L
	IR06MW53F	03/15/94	1,000		√					UG/L
	IR06MW53F	05/25/95	270		√					UG/L
	IR06MW54F	05/25/95	290		√					UG/L
	IR06MW55F	08/17/94	390		√					UG/L
	IR06MW55F	05/25/95	590		√					UG/L

TABLE 4.4-8 (Continued)

SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS EXCEEDING SCREENING CRITERION - IR-06
HUNTERS POINT SHIPYARD, PARCEL B REMEDIAL INVESTIGATION

Analysis/Analyte	Sample Location	Sample Date	Concentration	Tap Water PRG Value	Exceeds PRG	MCL Value	Exceeds MCL	NAWQC Value	Exceeds NAWQC	Units
TPHEXT										
TPH-MOTOR OIL	IR06MW56F	08/17/94	360	100a	√					UG/L
	IR06MW56F	05/25/95	560		√					UG/L
	IR06MW57F	09/13/94	460		√					UG/L
	IR06MW57F	05/24/95	680		√					UG/L
	IR06MW58F	06/21/94	120		√					UG/L
	IR06MW58F	08/17/94	560		√					UG/L
	IR06MW58F	05/24/95	410		√					UG/L
TRPH										
TRPH	IR06MW51F	08/01/95	500	100a	√					UG/L
	IR06MW53F	03/15/94	800		√					UG/L
O&G										
TOTAL OIL & GREASE	IR06MW22A	01/07/91	6,000	100a	√					UG/L
	IR06MW22A	07/15/91	460		√					UG/L
	IR06MW23A	01/07/91	260		√					UG/L
	IR06MW30A	01/04/91	420		√					UG/L
	IR06MW32A	01/07/91	3,400		√					UG/L
	IR06MW32A	07/17/91	390		√					UG/L
	IR06MW41A	01/03/91	870		√					UG/L
	IR06MW41A	01/08/92	4,700		√					UG/L

Notes:

MCL Maximum contaminant level
NAWQC National Ambient Water Quality Criteria
O&G Total oil and grease
PEST Pesticides/polychlorinated biphenyls
PRG Preliminary remediation goal
SVOC Semivolatile organic compounds
TPHEXT Total petroleum hydrocarbons-extractable
TPHPRG Total petroleum hydrocarbons-purgeable
TRPH Total recoverable petroleum hydrocarbons
UG/L Microgram per liter
VOC Volatile organic compounds

a TPH, TRPH, or O&G screening level, not PRG value

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
8	RMR results	Table 1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.1.4.2, page 2-6.

The basis of the excavation areas for the TCRA was the RMR. The RMR process was developed and conducted during a series of meetings held by the Navy and the regulatory agencies beginning in 1999 through July 2000. The process employed various criteria and decision rules to reevaluate whether response actions were required at the IR sites in Parcel C.

At the conclusion of the RMR process, the review team confirmed or eliminated sites from proposed response action based on current risk. After completion of the review, all sites fell into one of the following three categories: (1) sites for which the team agreed no response action was required, (2) sites for which the team agreed response action was required, and (3) sites for which the team did not yet agree on the course of action. The team produced a table summarizing their analysis and recommendations. The results of the RMR process and the TCRA cleanup goals are provided in the "Final Sampling and Analysis Plan, Parcel C Soil Site Delineation" (Tetra Tech and Washington Group International 2001).

Approximately 3,000 soil samples were collected during the Parcel C TCRA. Some sites recommended for action during the RMR process were delineated but not excavated. The revised HHRA evaluates all of the data from samples that have not been excavated. Table 2-8 briefly summarizes the RMR recommendations and the current status of the TCRA sites.

In 2002 through 2004, the Navy completed activities to consolidate and remove waste throughout Parcel C. Industrial process equipment was decontaminated, sumps cleaned, and waste was consolidated, including removal of waste material stored in or near buildings and removal or encapsulation of asbestos-containing material (Tetra Tech FW, Inc. 2004).

Storm drains and sewer lines were removed in 2007 at portions of redevelopment blocks 10 and 11 in Parcel C to address radiological concerns. Storm drains and sewer lines were addressed in these locations because they were connected to lines in Parcel B. Storm drain and sewer lines at the remainder of Parcel C are planned for removal in 2010.

2.1.4.3 Treatability Studies

This section summarizes the groundwater treatability studies that have been conducted at Parcel C. These studies include chemical oxidation, zero-valent iron (ZVI) injection, and anaerobic-aerobic bioremediation techniques. The studies are organized below by RU. Groundwater treatability studies have not been conducted at RU-C2.

RU-C1. A soil vapor extraction (SVE) system that included 14 SVE wells, 36 vapor monitoring wells and an extraction system was installed and operated for over 3 months inside Building 231 beginning in March 2001. Analytical results for soil vapor samples collected during operation of the SVE system indicated low concentrations of VOCs in the vadose zone, primarily cis-1,2-dichloroethene (DCE), tetrachloroethene (PCE), and trichloroethene (TCE). The

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
9	Impacted or non-impacted	Table 1	Final Historical Radiological Assessment, Volume II, History of the Use of General Radioactive Materials, 1939 – 2003, Hunters Point Shipyard, San Francisco, California. Naval Sea Systems Command. August 31, 2004. Section 1.2, Page 1-2 and 1-3.

1.2 HRA METHODOLOGY

The primary purpose of the HRA is to designate sites as impacted or non-impacted. An impacted site is one that has potential for radioactive contamination based on historical information, or is know to contain or have contained radioactive contamination. In many instances, designation as impacted does not confirm that radioactive contamination is present; only that the possibility exists and must be investigated. If contamination is found at an HPS-impacted site, measures will be taken to remove the contamination to below release levels. Because of the extensive use of radioactive materials by the Naval Radiological Defense Laboratory (NRDL), former NRDL facilities have been included as impacted sites. Once a site is designated as impacted, it remains "impacted" even after any residual contamination is removed.

A non-impacted site is one, based on historical documentation or results of previous radiological survey information, where there is no reasonable possibility for residual radioactive contamination. If new historical information becomes available or contamination is found at a non-impacted site, the site would be redesignated as "impacted."

To designate sites as impacted or non-impacted, the HRA defines the extent of past radiological operations, assesses the likelihood of potential contamination and potential contamination migration pathways, and recommends future actions. As well as being used to designate impacted sites, this information can be used to support removal actions within the context of the U.S. Environmental Protection Agency's (EPA) CERCLA process. As such, this HRA includes:

- Initial classification of areas that are impacted by radiological operations
- Historical information about radiological operations, investigations, and surveys
- Identification of potential, likely or known sources of radioactive material, radioactive contamination, and areas of use
- Assessments of the likelihood of areas of residual contamination

- Assessments of the likelihood of contamination migration
- Identification of sites that need further action as opposed to those posing no risk to human health or the environment from radiological operations
- Recommendations for future radiological investigations and remediation processes

The Navy researched multiple federal and personal archives to obtain information for preparation of the HRA. This research was supplemented by interviews of personnel with knowledge of radiological operations at HPS. Historical information was compared with evaluations made during site reconnaissance.

1.3 HISTORY

This HRA covers 64 years of radiological history at HPS from 1939 through June 2003. However, the shipyard only functioned as an active Navy-run repair facility from 1939 through 1974. After HPS ceased to function as an operational Navy shipyard in 1974, some HPS buildings and structures were leased to private tenants and Navy-related entities, the largest of which was Triple A Machine Shop, Inc. (Triple A), for ship repair operations. Buildings at HPS have also been leased for maritime and non-maritime industrial and artistic purposes. In addition, the Navy continued to use some buildings and structures for on-site oversight activities. The Navy resumed operation of the shipyard in 1986, when HPS was assigned as an annex to Naval Station Treasure Island. Throughout its history, HPS has been the subject of many radiological investigations. These investigations continue today.

Shipyard operations were permanently terminated on 29 December 1989. In 1991, HPS was placed on the Navy's BRAC list and its mission as a Navy shipyard ended on 1 April 1994. Engineering Field Activity West, Naval Facilities Engineering Command (EFA WEST), San Bruno, California, had initial oversight of base closure management of HPS. After closure of EFA WEST, this oversight authority was transferred to Southwest Division, Naval Facilities Engineering Command (SWDIV) in San Diego, California. SWDIV continues to manage the site today.

Details of the radiological history of HPS are provided in Section 6.0. Historical radiological operations included the following:

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
10	Metals	Section 2.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.3.1.1, page 2-23 and 2-24.

2.3.1.1 Metals

Soil samples were collected and analyzed for 26 individual metals (including chromium VI and organic lead) at Parcel C, and 1,865 soil samples were analyzed for at least one metal at Parcel C. Twelve of these metals—aluminum, barium, calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, vanadium, and zinc—were detected in more than 90 percent of the soil samples collected and analyzed for metals at Parcel C. Similarly, arsenic, lead, and mercury were detected in more than 60 percent of the samples analyzed for these metals. The high frequency of detections indicates that metals are widespread across the site.

The results of the revised HHRA identified 12 metals as COCs: antimony, arsenic, cadmium, copper, iron, lead, manganese, mercury, nickel, thallium, vanadium, and zinc. Organic lead was also determined to be a COC. The analytical method for organic lead does not provide results for a specific chemical, but rather is a wet chemistry method that indicates the presence of some form of organic lead.

The Navy has evaluated potential sources of metals at Parcel C to assess where Navy activities may have contributed to metals concentrations in soil. For example, zinc concentrations detected near Building 258 may be associated with metal finishing activities. Lead may be associated with industrial activities. Organic lead is associated with former fuel sites. Marine paint and abrasive sandblast material also contain metals. Sources of metals contamination are discussed with each redevelopment block (see Section 2.3.2). Section 3.0 and Appendix C present the risk associated with all these metals based on the samples that remain in place. Figures 2-17, 2-18, and 2-19 show the distribution of metals across Parcel C.

In addition to identified industrial sources, the presence of metals across Parcel C is likely related to the fill and naturally occurring bedrock material. A group of metals related to the bedrock fill quarried to build HPS in the 1940s consistently exceeded RBCs across Parcel C. These metals occur in the local HPS bedrock and were distributed throughout all parcels as HPS was built. The highest concentrations of metals are in the areas where bedrock is close to the surface; for example, near Buildings 272 and 203 in redevelopment blocks 23 and 24. In areas where fill is present, the resulting distribution of ubiquitous metals concentrations in soil is nearly random. In this report, the term “ubiquitous” refers to metals that are naturally occurring or are in the same concentration ranges as naturally occurring metals in the source material (including material from the same geologic formations in the San Francisco area) that was used for filling operations at HPS. The Navy acknowledges that industrial sources of metals exist at HPS and that there is a potential that some concentrations of metals could have sources other than naturally occurring materials. The Navy has worked to remove these sources during the removal actions taken to date.

The distribution of arsenic and manganese in soil are used to illustrate the widespread occurrence of naturally occurring metals in the fill used to create Parcel C. Arsenic is a naturally occurring semi-metal associated with bedrock at HPS. Potential sources of arsenic include paints and abrasive sandblast material. Figure 2-17 illustrates the distribution of arsenic in post-excavation soil samples collected between 0 and 10 feet bgs. The data ranges on Figure 2-17 were selected

to illustrate concentrations above and below the HPAL (11.1 milligrams per kilogram [mg/kg]) for arsenic. Although apparent clusters of higher arsenic concentrations appear in redevelopment blocks 22, 23 and 24, most arsenic concentrations are distributed across Parcel C with no apparent pattern to indicate their presence due to a release. The area where bedrock is closest to the surface in redevelopment blocks 23 and 24 also has significant concentrations of arsenic. Similarly, the distribution of manganese is presented on Figure 2-18, showing a high frequency of detections above the HPAL in areas where the bedrock is close to the surface. The Navy believes that arsenic and manganese are ubiquitous in the local bedrock that was used for fill or is present in the native soil, and that this is the source of these metals present throughout Parcel C. This same condition is true for most other metals at Parcel C.

Lead, mercury, organic lead, and zinc concentrations are presented on Figure 2-19. The presence of these metals may be due to industrial activities. Lead and organic lead are most frequently detected in the vicinity of former USTs. Mercury detections, however, are associated with the areas where bedrock is close to the surface in redevelopment blocks 23 and 24, similar to other metals present throughout Parcel C. In one location in redevelopment block 26, mercury was found where the potential exists for industrial contamination. This area will be addressed in the remedial alternatives. Zinc concentrations are clustered in the former pickling and degreasing area at Building 258, which is indicative of industrial contamination.

Antimony, cadmium, and thallium are detected infrequently at Parcel C. Antimony is found at redevelopment block 10 in the vicinity of the former tank farm. Cadmium and thallium detections were found in redevelopment blocks 23, 24, and 26 in the vicinity of Buildings 203 and 272, where bedrock is close to the surface. Cadmium was also detected adjacent to Building 258 in redevelopment block 20A, where cadmium may be related to the former metal machining and pickling activities.

2.3.1.2 Volatile Organic Compounds

In total, 1,428 soil samples were analyzed for VOCs at Parcel C, with analysis for 71 VOCs. In the revised HHRA, seven VOCs were determined to be COCs: 1,2-dichloroethane (DCA), 1,4-dichlorobenzene (DCB), benzene, naphthalene, PCE, TCE, and vinyl chloride.

VOCs in soil are associated with historic spills and releases. Figure 2-20 shows the location of the chlorinated VOCs most frequently detected above criteria (PCE, TCE, and vinyl chloride). The chlorinated VOC detections in soil are generally associated with former dip tanks or solvent USTs and where groundwater contamination has been identified: in RU-C1 near Building 231 and 253, RU-C2 near Buildings 258 and 251, RU-C4 in or near Buildings 272 and 281, and RU-C5 in or near Building 134. DCA was detected at RU-C5 and DCB is present at RU-C5 and RU-C2.

Benzene detections are associated primarily with the former foundry, Building 241, as shown on Figure 2-21. Benzene has historically been identified as a risk driver in soil at Parcel C (PRC, LFR, and U&A 1997; Tetra Tech and Washington Group International 2002). Although not a risk driver in this area, benzene was also detected in soil at concentrations exceeding criteria near the former fuel station location by Building 253.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
11	VOCs	Section 2.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 2.4.4, page 2-38.

High concentrations, ranging from 2,120 to 54,000 µg/L, of 1,2-DCA have been detected in groundwater samples collected from the A-aquifer at RU-C5. These concentrations were detected in samples collected from wells about the degreaser pits and separator in Building 134. These are the same wells that have high concentrations of PCE and TCE at Building 134. The areal extent of 1,2-DCA in groundwater at RU-C5 is shown on Figure 2-43.

High concentrations, ranging from 2,120 to 13,000 µg/L, of 1,4-DCB have been detected in groundwater samples collected from the A-aquifer at RU-C5. These concentrations were detected in samples collected from wells about the degreaser pits and separator in Building 134. The areal extent of 1,4-DCB in groundwater at RU-C5 is shown on Figure 2-44.

High concentrations, ranging from 4,300 to 39,000 µg/L, of 1,2-DCB have been detected in groundwater samples collected from the A-aquifer at RU-C5. These concentrations were detected in samples collected from wells about the degreaser pits and separator in Building 134. The areal extent of 1,2-DCB in groundwater at RU-C5 is shown on Figure 2-45.

High concentrations, ranging from 110 to 3,970 µg/L, of chlorobenzene have been detected in groundwater samples collected from the A-aquifer at RU-C5. These concentrations were detected in samples collected from wells about the degreaser pits and separator in Building 134. The areal extent of chlorobenzene in groundwater at RU-C5 is shown on Figure 2-46.

High concentrations, ranging from 510 to 5,900 µg/L, of trichlorofluoromethane (Freon 11) have been detected in samples collected from one monitoring well in the A-aquifer at RU-C5. These concentrations were detected in groundwater samples collected from well IR25MW52A since 2002. This well is located north of Building 134 (Figure 2-26).

The highest concentration of carbon tetrachloride that has been detected in groundwater samples collected from RU-C5 is 28 µg/L from well IR06MW55F in 1993. This well is located in the eastern portion of IR06. Detections of carbon tetrachloride in this area in 2007 and 2008 are less than 1 µg/L at IR06MW55F and between 4 and 5 µg/L at IR06MW54F. A concentration of 13 µg/L was reported for samples collected in 2005 from wells IR25MW53A, IR25MW56A, and IR25MW902B from about the sump location in the north end of Building 134. A concentration of 11 µg/L was detected during May 2007 in a sample from well IR06MW59A1; analyses of samples from this well both before and since have not detected carbon tetrachloride. The estimated areal extent of carbon tetrachloride in groundwater at RU-C5 is shown on Figure 2-47.

LNAPL has been historically reported at RU-C5, as discussed in Appendix G and shown in the table below. Residual LNAPL will be addressed under the TPH program.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
12	Radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures	Section 2.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Executive Summary, pages ES-2 and ES-3.

HPS is a former DON shipyard located in the extreme southeast of the City and County of San Francisco, California on a promontory extending eastward into San Francisco Bay. Currently, HPS property includes approximately 866 acres, about 446 of which are offshore.

The shipyard is divided into six parcels: B, C, D, E, E-2, and F. The shipyard property previously included Parcel A, which was transferred to the San Francisco Redevelopment Agency in December 2004 and is no longer DON property. This Addendum focuses on Parcel C only.

Parcel C is located in the northeast-central quadrant of Hunters Point Shipyard. Multiple buildings (203, 205 and its discharge channel, 211, 214, 224, 241, 253, 271, and 272), storm drains and sanitary sewer piping are considered radiologically-impacted. Radiological operations within these areas included suspected burning of radiologically-contaminated fuel from OPERATION CROSSROADS ships, pumping potentially contaminated water from Drydock 2, storage of low-level radioactive waste by a contractor, Naval Radiological Defense Laboratory Health Physics counting room, storage of samples from atomic weapons testing, use of firebrick containing naturally radioactive material, radiography source operations, potential radium paint use and disposal, and maintenance and storage of radioluminescent devices. Drydocks 2, 3, 4, and the ships' berths are not part of Parcel C, having been reassigned to Parcel F. The table below shows the various Parcel C structures, their impacted redevelopment block number, planned reuses, and exposure scenario.

Building/Site Number	Impacted Redevelopment Block	Planned Reuse	Reuse Scenario[a]
203	23	Research and Development	Residential
205 and Discharge Channel	22	Educational/Cultural	Industrial
211	25 and COS-3	Educational/Cultural and Open Space	Industrial and Recreational
214	20B	Educational/Cultural	Industrial
224	25	Educational/Cultural	Industrial
241	18	Research and Development	Residential
253	25	Educational/Cultural	Industrial
271	24	Research and Development	Residential
272	24	Research and Development	Residential
Sanitary Sewers	All Blocks	Industrial, Maritime-Industrial, Mixed Use, and Research and Development	Residential
Storm Drains	All Blocks	Industrial, Maritime-Industrial, Mixed Use, and Research and Development	Residential

Notes:

[a] The most conservative risk model appropriate for the given planned reuse was utilized.

Most of Parcel C is situated in the lowlands, with surface elevations between zero and ten feet above mean sea level (SulTech, 2007). No threatened or endangered species are known to inhabit Parcel C whose ecology is limited to plant and animal species adapted to an industrial environment. Viable terrestrial habitat is inhibited at Parcel C because more than 90 percent of the ground surface is covered by pavement and former industrial buildings (SulTech, 2007).

The radionuclides of concern associated with Parcel C buildings include cesium-137, cobalt-60, plutonium-239, radium-226, strontium-90, thorium-232, potassium-40, and naturally occurring radioactive materials found in firebrick (primarily thorium-232). The radionuclides of concern associated with the Parcel C storm water and sanitary sewers are cesium-137, radium-226, and strontium-90 (Naval Sea Systems Command, 2004).

Radioluminescent devices were commonly used on Navy ships and shore installations through the late 1960s. The radionuclides associated with these devices are radium-226 and strontium-90. In addition to being used as a Department of the Navy shipyard, Hunters Point Shipyard was home to the nascent Radiation Safety Section and its Radiation Laboratory and their successor the Naval Radiological Defense Laboratory whose primary mission was to study the effects of atomic weapons. Numerous ships that participated in atomic weapons testing from 1946 through the early 1960s were returned to Hunters Point Shipyard for storage before disposal, decontamination and experimentation with decontamination techniques. Many of these ships participated in the two original atomic weapons tests at Bikini Atoll during OPERATION CROSSROADS in 1946. Ships' berths (piers) are known locations of decontamination operations, and residues from these operations were potentially discharged into both San Francisco Bay and the sanitary and storm drain system. Only discharges into the sanitary and storm drain system in Parcel C are considered in this addendum.

Originally, the sanitary and storm water sewer systems were combined with outfalls to San Francisco Bay. The DON attempted to separate these systems at various times during HPS operations, but the lines were never completely separated. Therefore, some lines remain combined today. The lines are considered radiologically-impacted because operations at HPS resulted in the disposal of radioactive materials through these systems. These included materials from ship and personnel decontamination, fallout samples, and radioactive materials from the refurbishment of radioluminescent devices, including radium-bearing paint.

The geologic setting at Parcel C includes the following geologic units, from youngest (shallowest) to oldest (deepest): Artificial Fill, Undifferentiated Upper Sand Deposits, Bay Mud Deposits, Undifferentiated Sediments, and Bedrock. The hydrostratigraphic units at Parcel C are the A-aquifer, the Bay Mud aquitard zone, the B-aquifer, and a bedrock water-bearing zone (SulTech, 2007). Parcel C groundwater has not been analyzed for radiological constituents.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
13	Reuses	Section 2.4	Hunters Point Shipyard Redevelopment Plan. City and County of San Francisco. Section IIB and Map 1. San Francisco Redevelopment Agency. July 14, 1997.

II. PROJECT PLAN

A. Objectives

The objectives of the actions proposed by the Plan are to:

1. Foster employment, business, and entrepreneurial opportunities in the rehabilitation, construction, operations, and maintenance of facilities in the Project Area.

2. Stimulate and attract private investments, thereby improving the City's economic health, tax base, and employment opportunities.

3. Provide for the development of economically vibrant and environmentally sound districts for mixed use; cultural, educational and arts activities; research, industrial and training activities; and hilltop housing.

4. Provide for the development of mixed-income housing:

   With regard to this objective, the project-wide aggregate income-mix goal includes 15% of the housing for persons and families of low or moderate income.

   The term "persons and families of low or moderate income" has the same meaning as defined in Section 50093 of the California Health and Safety Code.

5. Retain, improve, and re-use historic structures as part of a program to feature the history of people, buildings, and uses at the Shipyard.

6. Provide for infrastructure improvements, including: streets and transportation facilities; open space and recreation areas; and utilities for water, sewer, gas, and electricity.

7. Remove conditions of blight in the form of buildings, site improvements, and infrastructure systems which are substandard and serve as impediments to land development.

8. Encourage use of the most cost-effective, energy-efficient measures feasible.

9. Retain those existing viable industries and businesses currently located in the Project Area.

B. Land Use Plan

The Project Area shall be redeveloped in accordance with the text and maps of this Plan. The use of land and buildings shall be in accordance with this Plan and with the standards and guidelines which may be set from time to time and set forth by the Agency.

The maximum basic height of buildings shall range between 32 and 60 feet. Building types shall be those permitted by the San Francisco Building Code. The total number of buildings within the Project Area shall not exceed 500. The number of land parcels will determine the size of the buildings in the Project Area.

The specific use of the buildings will be controlled by the Land Use Plan and the Land Use Map.

If fully developed under this Plan, the residential areas will contain approximately 800 to 1,300 dwelling units. Public rights-of-way and land use boundaries shall be generally as indicated on Map 1, **Land Use Plan**, and are subject to adjustment by the Agency at the time of detailed engineering studies.

The location of planned land uses are identified on Map 1. The categories of land use include the following:

1. **Industrial**

Uses permitted shall be limited to light industrial development and may include the following and similar uses:

manufacturing, processing, fabricating, and assembly of:

* medicinal and botanical products
* biological products
* food products
* chemicals and allied products
* primary and fabricated metal products
* electrical/electronic equipment and parts

trucking and courier services
wholesale sales
equipment leasing
airport-related ground transportation services
auto-related services
motion picture production
printing and publishing
warehousing and distribution
artist and artisan studios

2. **Research and Development**

Uses permitted shall be limited to research and development firms and to light industrial development and may include the following and similar uses:

manufacturing, processing, fabricating, and assembly of:

* surgical and medical appliances and supplies
* ophthalmic goods
* X-ray apparatus and tubes
* diagnostic substances
* electromedical equipment
* precision instruments

data processing
telecommunication services
artist and artisan studios
live/work spaces

3. **Mixed Use**

Uses permitted shall be limited to a mix of the following and similar uses:

artist studios
live/work spaces
residential
galleries
recording studios
research and development firms
education and health services
warehousing and distribution
business and arts services
real estate and insurance offices
hotel and conference facilities
local-serving retail sales

4. **Cultural and Educational**

Uses permitted shall be limited to the following cultural and educational, and similar uses:

education and training facilities
museums
theaters
specialty retail sales
restaurants
galleries
conference facilities
artist studios

5. **Residential**

Uses permitted shall be limited to the following:

mixed-income housing ranging from single-family to multi-family residential developments

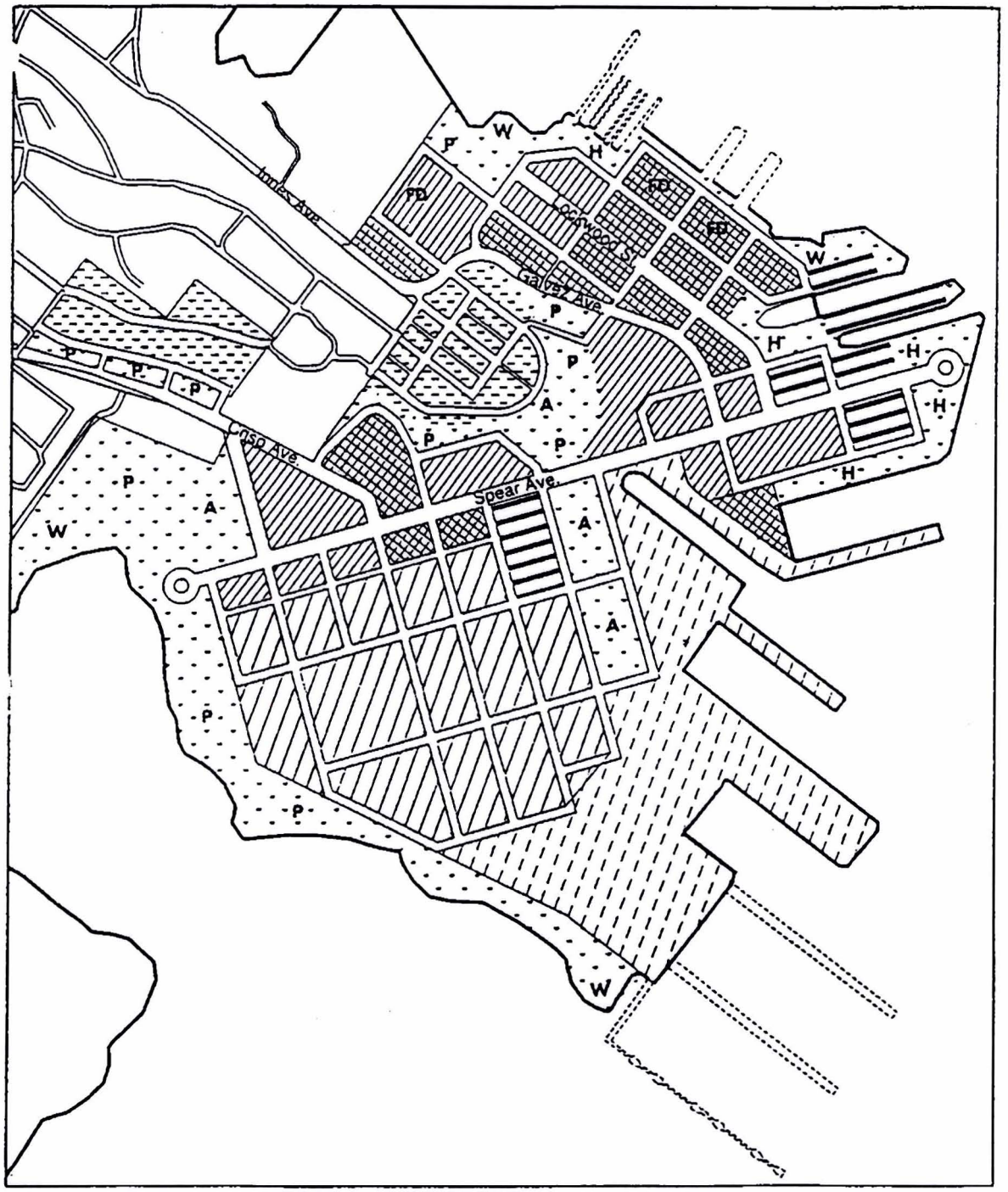
neighborhood commercial, to be concentrated at the street corners along Innes Avenue

6. **Open Space**

Uses permitted shall be limited to the following:

active recreation
passive recreation
plazas and promenades
wetlands restoration
ancillary commercial uses

MAP 1: Land Use Plan



Educational/Cultural

Mixed Use

Open Space

P Passive

A Active

H Hard Surface

W Possible Wetland Restoration

Industrial

Maritime Industrial

Research & Development

Residential

FD Future Development

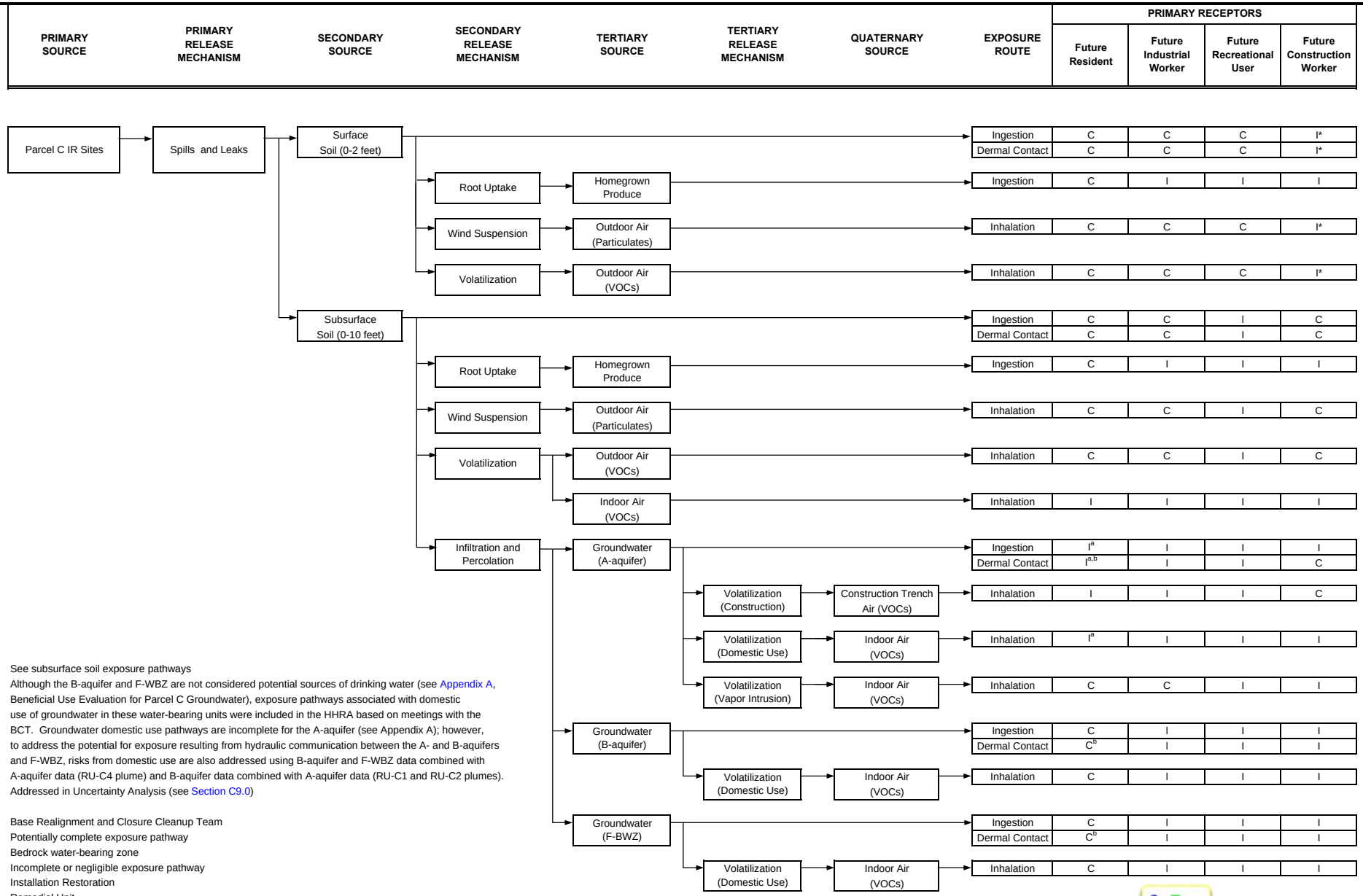
SCALE: 1"=1000'

NORTH

HUNTERS POINT SHIPYARD REDEVELOPMENT PROJECT

January 7, 1997

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
14	Human health CSM	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C3.0, Figure C-1.



Notes:

*	See subsurface soil exposure pathways
a	Although the B-aquifer and F-WBZ are not considered potential sources of drinking water (see Appendix A, Beneficial Use Evaluation for Parcel C Groundwater), exposure pathways associated with domestic use of groundwater in these water-bearing units were included in the HHRA based on meetings with the BCT. Groundwater domestic use pathways are incomplete for the A-aquifer (see Appendix A); however, to address the potential for exposure resulting from hydraulic communication between the A- and B-aquifers and F-WBZ, risks from domestic use are also addressed using B-aquifer and F-WBZ data combined with A-aquifer data (RU-C4 plume) and B-aquifer data combined with A-aquifer data (RU-C1 and RU-C2 plumes).
b	Addressed in Uncertainty Analysis (see Section C9.0)

BCT	Base Realignment and Closure Cleanup Team
C	Potentially complete exposure pathway
F-WBZ	Bedrock water-bearing zone
I	Incomplete or negligible exposure pathway
IR	Installation Restoration
RU	Remedial Unit
VOC	Volatile organic compound

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE C-1
CONCEPTUAL SITE MODEL

Feasibility Study Report for Parcel C

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
15	HHRA	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C5.0, pages C-16 to C-24.

Hunters Point groundwater ambient levels (HGAL) have been developed for groundwater in the A-aquifer at HPS (PRC 1996), and are likely applicable for groundwater in the B-aquifer. However, data for inorganic chemicals in the B-aquifer were not compared with HGALs in the HHRA as a conservative approach and incremental risks were not assessed for the groundwater domestic use evaluation.

Two sets of COPCs for groundwater were identified for each of the A-aquifer plume-based exposure areas, and for each residential and industrial grid associated with nonplume wells. The first set of COPCs for groundwater was limited to all detected volatile chemicals to evaluate the groundwater vapor intrusion exposure pathway for residential and industrial receptors. Volatile chemicals are defined for this HHRA as chemicals with a molecular weight less than 200 grams per mole and Henry's law constant greater than 10^{-5} atmosphere-cubic meters per mole (EPA 2004d). A second set of COPCs for groundwater was also identified using the first two steps outlined above and includes both volatile and nonvolatile chemicals to evaluate exposures to groundwater by the construction worker in the A-aquifer.

As recommended by Cal/EPA (1993), data for specific total petroleum hydrocarbon indicator chemicals (for example, benzene, benzo[a]pyrene, and toluene) were used to assess potential human health risk from total petroleum hydrocarbons contamination. Nonchemical-specific data for total petroleum hydrocarbons should be excluded from evaluation in the risk assessment because they are considered inadequate and insufficient to evaluate risk from total petroleum hydrocarbon contamination (Cal/EPA 1993); therefore, nonspecific total petroleum hydrocarbon compounds were not identified as COPCs for this HHRA.

Tables C1-1, C1-2, C1-3, and C1-4 of Attachment C1 present analytical data summary statistics for each COPC in soil evaluated for total risk. Tables C2-1, C2-2, C2-3, and C2-4 of Attachment C2 present analytical data summary statistics for each COPC in soil evaluated for incremental risk. Tables C3-1 through C3-16 of Attachment C3 list the COPCs for groundwater and present summary statistics for analytical data for each groundwater COPC.

C5.0 EXPOSURE ASSESSMENT

An exposure assessment identifies potential human receptors that could be exposed to site-related chemicals, as well as the routes, magnitude, frequency, and duration of the potential exposures. The principal objective of this evaluation is to identify reasonable maximum exposures (RME). As defined by EPA (1989), the RME is the maximum exposure that is reasonably expected to occur at a site. The potential human receptors and potentially complete exposure pathways for the receptors identified were presented in Section C3.0, Conceptual Site Model. The remainder of this section describes the process used to estimate EPCs and to quantify pathway-specific RME chemical intakes for each receptor. Central tendency exposures, as defined in EPA (1989), were not evaluated in this baseline HHRA.

C5.1 EXPOSURE POINTS AND EXPOSURE POINT CONCENTRATIONS

Potential exposure points are identified on the basis of anticipated population activity patterns and the relationship of the activities to the presence of contaminated media. A location is identified as an exposure point if a human might contact (for example, ingest) a contaminated medium (for example, soil) at that location. Each residential and industrial grid was considered a separate exposure point for this HHRA to evaluate exposures to soil and exposure to groundwater not associated with plumes. The area encompassed by each plume (see Attachment C3 to this appendix) was considered a separate groundwater exposure point for each of the groundwater plumes (RU-C1, RU-C2, RU-C4, and RU-C5). Potential exposure to COPCs is assumed to occur uniformly throughout each exposure point.

The concentration in the medium (for example, subsurface soil) that a human receptor may be exposed to is called the EPC. EPCs were calculated for all COPCs in all media sampled: surface soils (0 to 2 feet bgs), subsurface soils (0 to 10 feet bgs), A-aquifer groundwater, B-aquifer groundwater, and F-WBZ groundwater. The methods used to calculate EPCs for soil and groundwater are described below in Sections C5.1.1 and C5.1.2, respectively.

As shown in the conceptual site model (see Figure C-1), chemicals in soil may be transferred to outdoor air from wind erosion or volatilization, or to vegetation from root uptake. Chemicals in groundwater may be transferred to outdoor air in a construction trench from volatilization, indoor air from vapor intrusion, and indoor air from volatilization of groundwater during domestic use. Data for outdoor and indoor air and vegetation were not available for Parcel C. EPCs in outdoor air (from volatile and particulate chemicals in soil), outdoor air in a construction trench (from volatile chemicals in groundwater), indoor air (from groundwater vapor intrusion), and homegrown produce (from root uptake of chemicals in soil) were therefore estimated using the methods described in Section C5.1.3.

C5.1.1 EPCs for Soil

The 95 percent upper confidence limit (95UCL) of the arithmetic mean was used as the EPC for each COPC in soil unless the maximum value was less than the 95UCL, in which case the maximum concentration was used as the EPC. The 95UCL for each COPC in soil in each grid was calculated using the following methods. These methods are consistent with the approach used for the HHRA for soil in the Draft Final RI Report for Parcel C (PRC and others 1997) and follow the methods established for soil HHRAs for HPS (Tetra Tech 2003; Navy 2004):

- Statistical testing was conducted to determine data distribution for sample sizes with a minimum of four samples and four detections. The Shapiro-Wilk W-test was used to determine the distribution of the data for samples sizes less than 50 with at least 4 detections. Conversely, the D'Agostino test was used to determine the distribution of the data for sample sizes greater than or equal to 50 with at least 4 detections.

- The 95UCLs were calculated using EPA (1992) guidance for data found to be normally or lognormally distributed.

- If distribution testing showed that data followed a nonparametric distribution, then a 95UCL was calculated for both a normal and lognormal distribution in accordance with EPA guidance (EPA 1992). In this case, the higher of the two 95UCLs was selected as the representative 95UCL. Nondetected results for COPCs were incorporated into the calculation of 95 UCL concentrations by using one-half of the sample quantitation limit as a proxy concentration for nondetected results (EPA 1989).

- Distribution testing was not conducted for samples sizes with less than four samples, and the maximum concentration was used as the EPC.

EPCs for each COPC in surface soil and subsurface soil in the total risk assessment are shown in Tables C1-1, C1-2, C1-3, and C1-4 of Attachment C1. EPCs for each COPC in surface soil and subsurface soil for the incremental risk assessment are shown in Tables C2-1, C2-2, C2-3, and C2-4 of Attachment C2. These tables also present the results of the distribution testing for each COPC and the calculated 95UCLs.

Although more recent guidance on calculation of EPCs is available (see Section C5.1.2), the previous guidance provided by EPA (1992) was used to calculate EPCs for soil in this HHRA in accordance with the methods established for soil HHRAs for HPS (Tetra Tech 2003; Navy 2004). In many cases, the maximum concentration is used as the EPC because of the relatively few sample locations and detections for each grid (that is, less than four samples and four detected results), resulting in a conservative estimate of potential risks.

C5.1.2 EPCs for Groundwater

Separate EPCs for groundwater were developed to evaluate exposure grids associated with plumes and exposure grids that are not associated with plumes (see Section C4.3.2). The lesser of the 95UCL or maximum concentration was used as the EPC for each COPC in each plume to evaluate exposures associated with the RU-C1, RU-C2, RU-C4, and RU-C5 plumes. The methods used to calculate 95UCLs for each plume are described below. Tables C3-1 through C3-4, C3-7, C3-8, C3-10 and C3-11 of Attachment C3 present summary statistics for analytical data for each plume-based exposure area.

The maximum detected concentration was used as the EPC for exposure grids that are not associated with plumes (that is, for areas with monitoring wells that do not fall within the plume boundaries delineated in Attachment C3). Tables C3-12 through C3-16 of Attachment C3 present summary statistics for analytical data, including maximum concentrations (EPCs), for exposure grids that are not associated with plumes.

The methods used to calculate EPCs for groundwater associated with plumes is based on a more recent EPA method (*ProUCL Version 3.0 User Guide* [EPA 2004a]). This method incorporates

the Lilliefors Test, rather than the D'Agostino Test, to evaluate distributions for data sets exceeding 50 samples. Only detected results were used to calculate the EPCs for groundwater associated with plumes. Nondetected results (that is, U- and UJ-qualified data), were not included in the EPC calculation.

Statistical estimations lack statistical power and cannot be confidently estimated for data sets with fewer than six samples (EPA 2000). As discussed above, only detected results were used to calculate EPCs for groundwater for plume-based exposure areas; the maximum detected concentration was used as the EPC for data sets with fewer than six detections, rather than with six samples. A 95UCL was used as the EPC for COPCs in groundwater associated with plumes for data sets consisting of six or more detections. The following methods were used to calculate the underlying distribution for each chemical, population summary statistics, and EPCs.

Distribution tests: Distribution testing was conducted for all samples with at least six detections. Formal tests were conducted using well-established goodness-of-fit tests. The Shapiro-Wilk W-Test ($n < 50$) and Lilliefors Test ($n > 50$) were used to evaluate normal and lognormal distributions. The Anderson-Darling and Kolmogorov-Smirnov Test were used to evaluate gamma distributions (EPA 2004a, 2002b). A Type I error rate (α) of 0.05 (equivalent to 5 percent) was used to interpret the significance of each test. A Type I error rate of 0.05 means that there is a 5 percent chance that the null hypothesis will be rejected when it is true, leading to the false conclusion.

Chemical data confirmed as following a normal, lognormal, or gamma distribution based on the outcome of the two goodness-of-fit tests are listed as "normal (N)", "lognormal (L)," or "gamma (G)" in the summary tables (see Tables C3-1, C3-2, C3-3, and C3-4 of Attachment C3). Chemical data that were not confirmed as following one of these three distributions are listed as "nonparametric (NP)" in the summary tables.

Calculation of Population Parameters and Selection of the EPC: The one-sided UCLs on the mean were calculated for chemicals with at least six samples. Recommendations in EPA (2004a) are based on three properties measured for individual samples: (1) best-fit distribution, (2) relative degree of skewness, and (3) relative sample size. The recommendations for calculating an EPC for normal, gamma, lognormal, and nonparametric distributions are provided by the ProUCL software (EPA 2004a). EPCs for data that follow a normal distribution or that exhibit low skewness (standard deviation of the natural logarithms of the data less than 0.50) are based on a UCL calculated using the Student's t-statistic. After a sample-by-sample evaluation of the three properties described above, a UCL is calculated based on one of the parametric or nonparametric methods listed below.

Parametric Methods	Nonparametric Methods	
Student's t UCL	Chebyshev inequality UCL	Central limit theorem
Approximate gamma UCL	Bootstrap t UCL	Modified-t statistic
Adjusted gamma UCL	Hall's bootstrap UCL	Adjusted-CLT
Land's H-UCL	Modified-t UCL	Percentile bootstrap
Minimum variance	Standard bootstrap UCL	Jackknife UCL
Unbiased estimator (MVUE) Chebyshev UCL		

Notes:

MVUE Minimum variance unbiased estimator

The UCL calculated using the MVUE Chebyshev or nonparametric Chebyshev method can be based on a 95, 97.5, or 99 percent one-sided UCL. The 95UCLs calculated for groundwater for plume-based exposure areas are shown in Tables C3-1 through C3-11 of Attachment C3. These tables also present the results of the distribution testing for each chemical. If the calculated 95UCL was greater than the maximum concentration, then the maximum concentration was used as the EPC.

C5.1.3 Exposure Point Concentrations for Media Not Sampled

As discussed in Sections C3.0 and C5.1, COPCs in soil and groundwater may be transferred to outdoor air, indoor air, and vegetation (homegrown produce) from the following mechanisms:

- Wind erosion of particulate chemicals from soil to outdoor air
- Volatilization from soil to outdoor air
- Vapor intrusion from groundwater to indoor air
- Volatilization from groundwater to indoor air during domestic use
- Volatilization from groundwater to outdoor air in a construction trench
- Uptake of chemicals in soil through plant roots into homegrown produce

Samples were not collected of outdoor air, indoor air, or vegetation at Parcel C. In the absence of direct measurements of chemical concentrations in air and vegetation, models were used to estimate EPCs in outdoor air, indoor air, and homegrown produce as a result of the transfer mechanisms. These models are discussed below. EPCs for indoor air as a result of vapor intrusion of groundwater and volatilization from domestic use of groundwater were not calculated because a risk-based screening assessment was used to quantify risks from exposure to COPCs in groundwater (see Section C7.2).

C5.1.3.1 Outdoor Air – Particulate COPCs Released from Soil

EPCs of particulates released from soil to outdoor air were estimated using EPCs for soil as the source term and the methodology provided by EPA Region 9 in its memorandum that describes the derivation of PRGs (EPA 2004d). To derive the EPCs in outdoor air, the EPC for soil was multiplied by the reciprocal of the EPA (2004d) default particulate emission factor of 1.316E+09 cubic meters per kilogram, which is a nonchemical-specific value that relates chemical concentrations in soil to airborne concentrations that may be inhaled.

C5.1.3.2 Outdoor Air – Volatile COPCs Released from Soil

Chemical-specific volatilization factors, which relate concentrations of volatile chemicals in soil to airborne concentrations that may be inhaled, were used to estimate concentrations in outdoor air from volatile COPCs in soil. Volatilization factors were taken from EPA Region 9 guidance (EPA 2004d) and are summarized in Table C-2. The EPC for soil was multiplied by the reciprocal of the volatilization factor to estimate EPCs in outdoor air.

C5.1.3.3 Indoor Air – Vapor Intrusion of Volatile COPCs in Groundwater

Subsurface vapor intrusion of volatile COPCs in groundwater into a hypothetical residential or standard industrial building was evaluated for the industrial and residential exposure scenarios. A risk-based screening assessment was used to calculate risks from groundwater vapor intrusion, based on EPCs for groundwater developed for each A-aquifer plume and nonplume exposure area and risk-based screening levels (RBSL) for groundwater vapor intrusion provided in EPA (2002a). Section C7.2 provides further details on this approach. EPCs were not modeled for indoor air from EPCs in groundwater because a risk-based screening assessment approach was used to evaluate groundwater vapor intrusion.

C5.1.3.4 Indoor Air – Volatilization of COPCs in Groundwater during Domestic Use

Volatilization of COPCs in groundwater into household air during domestic use of groundwater was evaluated for the residential exposure scenario based on EPCs for groundwater developed for the B-aquifer. A risk-based screening assessment was used to calculate risks from domestic use of groundwater based on EPCs for groundwater and PRGs for tap water developed by EPA Region 9 (EPA 2004d). Section C7.2 provides further details on this approach. EPCs were not developed for indoor air based on volatilization of COPCs in groundwater during domestic use because a risk-based screening assessment approach was used to evaluate risks from domestic use of groundwater.

C5.1.3.5 Outdoor Air – Volatile COPCs Released from Groundwater in a Construction Trench

Chemical-specific volatilization factors that relate concentrations of volatile chemicals in groundwater accumulated in a construction trench to airborne concentrations that may be inhaled

by construction workers were used to estimate EPCs from volatile COPCs in groundwater. The volatilization factors for this scenario were calculated based on guidance from the Virginia Department of Environmental Quality (2005). This guidance combines a vadose zone model to estimate volatilization of gaseous COPCs from groundwater into a trench and a box model to estimate dispersion of the COPCs from the air inside the trench into aboveground air. A full description of the models used to estimate volatilization into a construction trench is provided in Attachment C5 to this appendix.

C5.1.3.6 Homegrown Produce – Uptake of COPCs in Soil through Plant Roots

Ingestion of COPCs that are transferred from soil to homegrown produce via uptake through plant roots was evaluated for the residential exposure scenario. Direct measurements of chemical concentrations in homegrown produce are not available for Parcel C because homegrown produce is not currently grown there. EPCs for homegrown produce were calculated based on EPCs for COPCs in soil and soil-to-plant uptake factors that estimate the root uptake of inorganic and organic chemicals in soil and translocation of chemicals to edible plant parts (U.S. Department of Energy 1984). Table C-3 lists the uptake factors for each COPC in soil.

Uptake factors for inorganic COPCs were obtained from U.S. Department of Energy (1984). The EPC for soil was multiplied by the uptake factor to estimate EPCs in homegrown produce from inorganic COPCs.

Equations from Cal/EPA were used to derive the uptake factors for nonvolatile organic COPCs (Cal/EPA 2003a). These equations relate the octanol-water partition coefficient (K_{ow}) and the organic carbon-water partition coefficient (K_{oc}) of the contaminant and the fraction of organic carbon (F_{oc}) in the soil to calculate the uptake factor. The equation used to calculate the uptake factor is as follows:

$$UF = \frac{(0.03 \times K_{ow}^{0.77}) + 0.82}{(K_{oc})(F_{oc})} \qquad \text{(C-1)}$$

where:

UF	=	Soil-to-plant uptake factor
K_{ow}	=	Octanol-water partition coefficient (cubic centimeters per gram)
K_{oc}	=	Organic carbon-water partition coefficient (cubic centimeters per gram)
F_{oc}	=	Fraction organic carbon in soil (unitless)

F_{oc} was assumed to be 0.1, a value appropriate to soil used for the production of food crops (Cal/EPA 2003a). If K_{oc} values are unavailable, they were estimated based on chemical-specific K_{ow} values using the following equation (Lyman and others 1990):

$$Log\ K_{oc} = log\ K_{ow} - 0.21 \qquad \text{(C-2)}$$

Consistent with EPA guidance, a correction factor was applied to lipophilic COPCs (EPA 1998). Lipophilic chemicals were defined for this HHRA as PCBs, PAHs, pesticides, and SVOCs. EPA (1998) recommends a correction factor of 0.01 for lipophilic COPCs (log K_{ow} greater than 4); that is, the uptake factor calculated for lipophilic COPCs using Equation C-1 should be multiplied by the correction factor of 0.01 to calculate a corrected uptake factor. EPA does not recommend use of a correction factor for COPCs with a log K_{ow} less than 4. Table C-3 lists the uptake factors for nonvolatile organic COPCs derived using the above equations and the values and sources of the chemical data used to derive the uptake factors.

Risks associated with VOCs were not evaluated in the homegrown produce pathway. VOCs are typically low-molecular-weight chemicals that do not persist or bioaccumulate in the environment (EPA 1994b). In addition, VOCs are expected to be lost during soil tilling, planting, and food preparation, such as peeling, cleaning, and cooking.

C5.2 CHEMICAL INTAKE ESTIMATES

Estimates of exposure are based on the EPCs (as described in Section C5.1) and scenario-specific assumptions and intake parameters. Consistent with EPA guidance (EPA 1995), exposure estimates (intakes) were calculated for an RME scenario for each human receptor and exposure pathway and are expressed in terms of milligrams of chemical per kilogram body weight per day (mg/kg-day). The RME represents the highest exposure reasonably expected to occur and is calculated using the 95UCL and the RME exposure parameters.

EPA-derived exposure algorithms were used to estimate the chemical intakes for each route of exposure. Equation C-3 is a generic equation for calculating chemical intake, as follows (EPA 1989):

$$I = \frac{C \times CR \times EF \times ED}{BW \times AT} \qquad \text{(C-3)}$$

where:

I	=	Intake: the amount of chemical at the exchange boundary (mg/kg-day)
C	=	Chemical concentration: the EPC (for example, mg/kg for soil)
CR	=	Contact rate: the amount of contaminated medium contacted per unit of time or event; may be the ingestion rate, inhalation rate, or dermal contact rate (for example, milligram per day for the ingestion rate of soil)
EF	=	Exposure frequency: how often the exposure occurs (days per year)
ED	=	Exposure duration: the number of years in which a receptor comes in contact with the contaminated medium (years)

BW	=	Body weight: the average body weight of the receptor over the exposure period (kilograms)
AT	=	Averaging time: the period over which exposure is averaged (days); for carcinogens, the averaging time is 25,550 days on the basis of a lifetime exposure of 70 years (average life expectancy), and for noncarcinogens, the averaging time is equal to the exposure duration multiplied by the number of days in a year (365 days)

Pathway-specific variations of Equation C-3 were used to calculate intakes of COPCs in soil for residents, industrial/construction workers, and recreators, and COPCs in groundwater for construction workers. Tables C-4 through C-9 present the pathway-specific equations and receptor-specific exposure assumptions used to calculate intakes. The calculation of chemical intake for the dermal contact with soil exposure pathway (all human receptors) requires chemical-specific dermal absorption factors; these factors are shown in Table C-2. The calculation of chemical intake for the dermal contact with groundwater exposure pathway (construction worker) requires chemical-specific permeability constants; these factors are shown in Table C-10.

Chemical intakes from groundwater exposure pathways for residents (ingestion, inhalation during household use, and vapor intrusion) and industrial workers (vapor intrusion) were not calculated because a risk-based screening assessment was used to quantify risks from exposure to COPCs in groundwater for these receptors (see Section C7.2).

C6.0 TOXICITY ASSESSMENT

The toxicity assessment identifies toxicity values used to quantify potential adverse health effects associated with exposure to COPCs at Parcel C. These toxicity values include references doses (RfD) for noncancer health effects and slope factors (SF) for estimating cancer risks. An RfD represents an estimated daily intake of a COPC that is expected to pose no appreciable risk of harmful effects to human health, including sensitive populations, over a lifetime. RfDs are specific to each chemical and exposure route such as inhalation or ingestion.

The SF is an upper-bound estimate of the probability of a cancer response per unit dose of a carcinogen over a lifetime. The cancer risk estimate associated with a given intake of a cancer COPC was estimated by multiplying the intake by the SF for each COPC. SFs assume that no threshold exists for the initiation of cancer and are specific to each chemical and exposure route.

Toxicity values were obtained from the following hierarchy of sources. If the SF from an EPA source (Tiers 2 through 6) was higher than the Cal/EPA SF (Tier 1), then the more conservative (higher) SF was used in the HHRA.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
16	Cancer risks and noncancer hazards	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C7.0, pages C-27 to C-32.

C7.0 RISK CHARACTERIZATION METHODS

The final step in this baseline HHRA is characterization of the potential risks associated with exposure to COPCs. Risks from exposure to soil for all human receptors and from construction worker exposure to groundwater were characterized using the methods provided in EPA (1989); Section C7.1 details these methods. Risks from residential and industrial exposure to groundwater were characterized using risk-based screening assessment methods; Section C7.2 presents these methods. Section C7.3 discusses the interpretation of hazard and risk levels. Section C7.4 discusses the risk characterization approach for lead. The results of the risk characterization for Parcel C are presented in Section C8.0.

C7.1 RISK CHARACTERIZATION FOR SOIL EXPOSURES AND CONSTRUCTION WORKER EXPOSURE TO GROUNDWATER

The general methods for estimating cancer risks and HIs for soil exposures for all receptors and construction worker exposure to groundwater follow EPA (1989) and are presented in Section C7.1.1 for cancer risks and in Section C7.1.2 for noncancer health hazards.

C7.1.1 Characterization of Cancer Risks

Risks associated with exposure to chemicals classified as carcinogens are estimated as the incremental probability that an individual will develop cancer over a lifetime as a direct result of an exposure (EPA 1989). The estimated risk is expressed as a unitless probability.

Three steps are used in estimating cancer risks for chemicals classified as carcinogens. First, the chemical intake is multiplied by the chemical-specific SF to derive a cancer risk estimate for a single chemical and pathway. The calculation is based on the following relationship:

$$\textit{Chemical-Specific Cancer Risk} = \textit{Intake (mg/kg-day)} \times \textit{SF (mg/kg-day)}^{-1} \qquad \text{(C-4)}$$

Second, the individual chemical cancer risks are assumed to be additive to estimate the cancer risk associated with exposure to multiple carcinogens for a single exposure pathway, as follows:

$$\textit{Pathway-Specific Cancer Risk} = \sum \textit{Chemical-Specific Cancer Risk} \qquad \text{(C-5)}$$

Third, pathway-specific risks are summed for each receptor to estimate the total cancer risk. For exposures scenarios for which both an adult and child receptor are evaluated (that is, residential and recreational), the estimated cancer risk is based on the sum of the risk estimated for the adult receptor plus the child receptor. Hence, for the residential receptor, the estimated cancer risk is based on the sum of the risk estimated for the adult resident and the child resident. Likewise, for the recreational receptor, the estimated cancer risk is based on the sum of the risk estimated for the adult recreational user and the child recreational user.

C7.1.2 Characterization of Noncancer Hazards

The potential for exposure that may result in adverse health effects other than cancer is evaluated by comparing the intake with an RfD for chemicals that are not classified as carcinogens and for those carcinogens known to cause adverse health effects other than cancer. A three-step approach is used as described below:

Calculate a chemical-specific hazard quotient (HQ) based on the following equation:

$$\textit{Hazard Quotient} = \frac{\textit{Intake (mg/kg-day)}}{\textit{RfD (mg/kg-day)}} \qquad \text{(C-6)}$$

Next, sum the HQs for all chemicals to evaluate the potential for noncancer health effects from simultaneous exposure to multiple chemicals, yielding an HI as follows:

$$\textit{Hazard Index} = \sum HQ \qquad \text{(C-7)}$$

Third, sum pathway-specific HIs to estimate a total HI for each receptor.

The total noncancer HI for residents and recreators is based on the total HI estimated for the child receptor because the intake for children of soil, groundwater, and air per unit body mass is higher. (Hence, noncancer HIs for a child receptor are always higher than noncancer HIs for an adult receptor for similar exposures.)

C7.2 Risk Characterization for Residential and Industrial Exposure to Groundwater

Residential and industrial receptors were evaluated for exposure to groundwater from vapor intrusion. Residential receptors were also evaluated for exposure to groundwater from domestic use. Based on agreement among the EPA, DTSC, and Navy, the risks from these exposure pathways are based on a risk-based screening assessment.

The risk-based screening assessment is a streamlined approach that uses the ratio of EPCs to RBSLs. The EPA Region 9 PRGs for tap water were used as RBSLs to calculate cancer risks and noncancer HIs from residential exposure to B-aquifer groundwater from domestic use (EPA 2004d). Screening levels for groundwater vapor intrusion were used to estimate cancer risks and HIs from residential and industrial exposure to A-aquifer groundwater (EPA 2002a). Both the EPA tap water PRGs and screening levels for groundwater vapor intrusion are RBSLs that correspond to a cancer risk of 10^{-6} or an HI of 1 based on standardized equations that combine standard exposure assumptions and EPA toxicity values.

The risk estimates developed using the risk-based screening approach represent the risk for all exposure pathways evaluated by the RBSLs (that is, the tap water PRGs for domestic use and

groundwater screening levels for groundwater vapor intrusion). These risk estimates are numerically equivalent to the estimates obtained using the EPA (1989) "forward calculation methodology," which involves calculating risks using chemical concentrations, exposure assumptions, and toxicity values (see Section C6.0). They are numerically equivalent if the exposure pathways and assumptions used to derive the RBSLs are the same as are used in the forward calculations.

The EPA tap water PRGs were used as RBSLs in this HHRA to evaluate domestic use of groundwater for the residential receptor (EPA 2004d). The tap water PRGs were used to evaluate residential exposure to groundwater from ingestion and from inhalation of VOCs released from groundwater to indoor air during household use. The PRGs do not account for exposure from dermal contact with groundwater; Section C9.4 addresses the uncertainties associated with excluding this exposure pathway on the risk results.

Screening levels for groundwater vapor intrusion provided in Table 2c of EPA's "Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)" (EPA 2002a) were used to evaluate cancer risks and noncancer hazards from groundwater vapor intrusion. The following factors were considered in using the EPA (2002a) screening levels for groundwater vapor intrusion in the risk-based screening assessment for groundwater:

- The screening levels provided in Table 2c of EPA (2002a) are based on generic attenuation factors that assume minimum reduction of chemical concentrations caused by diffusive, advective, and other attenuating mechanisms. These conditions are similar to conditions in groundwater and soil at HPS, where groundwater is relatively shallow and vadose zone soils are fairly coarse (see Section 2.0 of the Final FS Report for Parcel C).

- The screening levels provided in Table 2c of EPA (2002a) for some chemicals are based on federal maximum contaminant levels; an RBSL was calculated for these chemicals in accordance with the methods provided in EPA (2002a) for deriving screening levels for vapor intrusion, and the calculated screening level was used instead of the maximum contaminant level.

- The screening levels provided in Table 2c of EPA (2002a) are considered protective of residential exposure. For evaluation of industrial exposures, vapor intrusion screening levels were calculated using the methods provided in EPA (2002a) and the assumptions provided in Table C-6 of this appendix for industrial worker exposure to air.

Section C6.0 discusses the hierarchy toxicity criteria used in the HHRA; Tables C-11 and C-12 list the toxicity criteria for each COPC. The EPA (2004d) Region 9 PRGs for tap water and EPA (2002a) screening levels for groundwater vapor intrusion for vapor intrusion were recalculated for this HHRA to be based on the same toxicity criteria listed in these tables; methods provided by EPA (2004d) and EPA (2002a) were used for the calculations. Table C-13 lists the RBSLs for groundwater used for this HHRA.

Cancer risks and noncancer hazards were calculated by comparing site EPCs of each COPC with the corresponding RBSL, as detailed in the following subsections.

C7.2.1 Characterization of Cancer Risks

The cancer risk associated with exposure to a single chemical for COPCs that are carcinogens is calculated as follows:

$$Cancer\ risk = (EPC/RBSL) \times 10^{-6} \quad \text{(C-8)}$$

where:

EPC = Exposure point concentration (microgram per liter [µg/L])

RBSL = Risk-based screening level (µg/L)

Individuals may be exposed to more than one chemical at a given site. The total risk from exposure to multiple chemicals is calculated using the following equation:

$$Total\ risk = 10^{-6} \times \{EPC_1/RBSL_1 + EPC_2/RBSL_2 + \ldots EPC_n/RBSL_n\} \quad \text{(C-9)}$$

where:

Total risk = Total cancer risk from exposure to all chemicals (unitless)

EPC_n = Exposure point concentration of chemical *n* (µg/L)

$RBSL_n$ = Risk-based screening level for chemical *n* (µg/L)

C7.2.2 Characterization of Noncancer Hazards

The potential for receptors to develop adverse health effects for COPCs not classified as carcinogens and for carcinogens known to cause adverse health effects other than cancer is evaluated by comparing EPCs with noncancer RBSLs as follows:

$$Hazard\ Quotient = EPC/RBSL \quad \text{(C-10)}$$

where:

EPC = Exposure point concentration (µg/L)

RBSL = Risk-based screening level (µg/L)

The HQs for all chemicals are summed to evaluate the potential for noncancer effects from exposure to multiple chemicals, yielding an HI as follows:

$$Hazard\ Index = EPC_1/RBSL_1 + EPC_2/RBSL_2 + \ldots + EPC_n/RBSL_n \quad \text{(C-11)}$$

where:

EPC_n = Exposure point concentration of chemical *n* (µg/L)

$RBSL_n$ = Risk-based screening level for chemical *n* (µg/L)

C7.3 INTERPRETATION OF HAZARD AND RISK LEVELS

EPA guidance on exposure levels considered protective of human health is presented to aid in interpreting the results of the risk assessment. In the National Oil and Hazardous Substances Pollution Contingency Plan, EPA defined general remedial action goals for sites on the National Priorities List (Title 40 of the *Code of Federal Regulations* Part 300.430). The goals include a range for residual cancer risk, which is "an excess upper-bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6}," or 1 in 10,000 to 1 in 1,000,000. The goals set out in the National Oil and Hazardous Substances Pollution Contingency Plan are applied once a decision to remediate a site has been made. A subsequent EPA directive provides additional guidance on the role of the HHRA in supporting risk management decisions, and in particular, determining whether remedial action is necessary (EPA 1991). Specifically, the guidance states, "Where cumulative carcinogenic risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the noncancer HQ is less than 1, action generally is not warranted unless there are adverse environmental impacts." EPA Region 9 has stated, however, that action may be taken to address risks between 10^{-4} and 10^{-6}. In addition, DTSC has stated that it considers 10^{-6} as the point of departure for risk management decisions. To be protective of human health, therefore, the BCT has chosen to use 10^{-6}, the lower end of the residual 10^{-4} to 10^{-6} risk range set out in the National Oil and Hazardous Substances Pollution Contingency Plan, as a threshold level for cancer risks for HPS.

An HI of less than 1 indicates that adverse noncancer health effects are not expected. In accordance with EPA guidance (EPA 1989), the HHRA further evaluated exposure areas with total HIs that exceeded 1. Noncancer health effects associated with exposure to multiple COPCs may not be cumulative if the COPCs affect different target organs or systems within the body. Therefore, the HHRA segregates the HI by target organ or system and assumes that the potential for noncancer health effects exists only if the highest total segregated HI for a target organ or system exceeded 1. Table C-14 identifies the target organs affected by each COPC for Parcel C; this information was used, as necessary, to segregate HIs by target organ. Information on target organs was obtained from Integrated Risk Information System (EPA 2005), Health Effects Assessment Summary Tables (EPA 1997), Provisional Peer Reviewed Toxicity Values for Superfund database (EPA 2004b), and the Agency for Toxic Substances and Disease Registry (2005).

C7.4 EVALUATION OF LEAD

The HHRA evaluated the potential for human health effects from exposure to lead by comparing EPCs for lead with an HPS-specific risk-based concentration for lead (155 mg/kg) for residential and recreational receptors and the EPA (2004d) Region 9 industrial PRG for lead (800 mg/kg) for industrial and construction worker receptors. The HPS risk-based concentration for lead was

developed using the Cal/EPA (1999b) LeadSpread model and EPA's Integrated Exposure Uptake Biokinetic model. The methodology for development of the HPS risk-based concentration for lead is presented in Attachment C6 to this appendix. The Region 9 industrial PRG for lead was developed by EPA using EPA's adult lead model (EPA 1996). These models are designed to predict the concentration of lead in soil associated with a target blood lead level of 10 micrograms per deciliter, the EPA threshold level of concern (EPA 1994a). Adverse health effects are not expected to occur from exposure to lead below the risk-based concentration or PRG.

C8.0 RESULTS OF THE HUMAN HEALTH RISK ASSESSMENT

This section summarizes the results of this baseline HHRA for Parcel C. Future residents, industrial/construction workers, and recreators were evaluated in the HHRA. Both total and incremental risks were evaluated in the HHRA for soil exposures. Results of the total risk evaluation for soil include risks and hazards for metals present at or below background levels (that is, HPALs). Results of the incremental risk evaluation for soil do not include the risk or hazard contribution for metals where the maximum concentrations are at or below HPALs.

As discussed in Section C4.0, HGALs have been developed for groundwater in the A-aquifer at HPS, and are likely applicable for groundwater in the B-aquifer. However, data for inorganic chemicals in the B-aquifer were not compared with HGALs in the HHRA as a conservative approach and incremental risks were not assessed for the groundwater domestic use evaluation.

As discussed in Section C3.4, risks from exposure to soil and groundwater were evaluated for each redevelopment block both for the specific exposure scenario associated with the planned reuse and for the other potential exposure scenarios identified for Parcel C, regardless of the planned reuse. Using this approach, risks for each redevelopment block were evaluated for residential, industrial/construction workers, and recreational exposures. The HHRA results based on the specific planned reuse of each redevelopment block are presented in Section C8.1. Section C8.1 also identifies the chemicals of concern (COC) in soil and the A-aquifer for Parcel C; that is, the chemical-specific risks exceed 10^{-6} or the chemical-specific HIs exceed 1.0.

Domestic use of groundwater in the B-aquifer and F-WBZ was evaluated in the HHRA for the residential exposure scenario. The beneficial use evaluation of the B-aquifer and F-WBZ indicates that with the exception of the B-aquifer in the area of Building 134 at RUC5, these aquifers should not be considered a potential source of drinking water (see Section C3.5.2). However, exposure pathways associated with residential domestic use of groundwater in all B-aquifer and F-WBZ exposure areas were considered complete and were evaluated in the HHRA based on agreements with the BCT on the HHRA methodology. Chemicals associated with the B-aquifer at the RU-C5 plume were identified as COCs if the chemical-specific risks for the domestic use evaluation exceeded 10^{-6} or the chemical-specific HIs exceeded 1.0. Chemicals in the B-aquifer that are not associated with the RU-C5 plume and chemicals in the F-WBZ for which chemical-specific risks for the domestic use evaluation exceeded 10^{-6} or the chemical-specific HIs exceeded 1.0 were identified in this HHRA as groundwater chemicals of interest (COI). This distinction is made to separate risk results for the B-aquifer in the area of the RU-

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
17	Total and incremental risks	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Sections 3.1.2 and 3.1.3, pages 3-4 to 3-9.

a worst-case scenario of groundwater contamination. Current conditions differ somewhat from the risk plumes and are discussed in Section 2.4. Chemical concentrations detected in samples from some groundwater monitoring locations at Parcel C were not associated with risk plumes; these nonplume-based locations were evaluated on a grid-by-grid basis, using the same grid system that was used in the HHRA to evaluate soil exposures as an efficient mechanism to locate each nonplume risk evaluation.

Risks from exposure to COPCs in soil and groundwater for each redevelopment block were evaluated both for the specific exposure scenario associated with the planned reuse of the redevelopment block, and for the other potential exposure scenarios identified for Parcel C, regardless of the planned reuse of the redevelopment block. Using this approach, risks for each redevelopment block were evaluated for resident, industrial worker, recreational user, and construction worker exposures. The HHRA results and COCs (that is, the chemicals for which the chemical-specific cancer risk exceeds 1E-06 or the chemical-specific HI exceeds 1) summarized in this section are the results associated with the specific planned reuse of each redevelopment block.

Domestic use risk evaluation results for the B-aquifer and F-WBZ, exclusive of the B-aquifer at RU-C5, are provided in the HHRA (Appendix C), but are not summarized in this section. These results are excluded from this section because, with the exception of the B-aquifer at RU-C5, the B-aquifer and F-WBZ at Parcel C should not be considered a potential source of drinking water (see discussion above and Section 2.2.9). The B-aquifer at RU-C5 may have beneficial use as drinking water. This section includes a summary of the risk results and COCs for the B-aquifer, based on the risk evaluation for domestic use of the B-aquifer at RU-C5.

3.1.2 Total and Incremental Risks for Exposure to Soil

Both total and incremental risks were evaluated for exposure to soil at Parcel C. All detected chemicals were included as COPCs for the total risk evaluation, regardless of concentration, except for the essential nutrients calcium, magnesium, potassium, and sodium. The total risk evaluation provides an estimate of the risks posed by all chemicals at the site, including any present at concentrations at or below HPALs. Conversely, the essential nutrients and metals with maximum measured concentrations below HPALs were excluded as COPCs for the incremental risk evaluation. The incremental risk evaluation provides an estimate of risks posed by all chemicals at the site, except those that do not exceed HPALs.

3.1.3 Risk Summary for Soil

This section summarizes the results of the total and incremental risk evaluations for soil based on planned reuse.

3.1.3.1 Total Risk Evaluation

Risks from exposure to COPCs in soil were assessed for the total risk evaluation for both surface soil (0 to 2 feet bgs) and subsurface soil (0 to 10 feet bgs). Figures 3-2 and 3-3 summarize the grid-specific total risk results for surface and subsurface soil based on the planned reuse of the redevelopment block associated with each grid. Figure 3-4 summarizes the grid-specific total risk results for construction worker exposure to soil. The results for each grid are shown relative to the cancer risk threshold of 1E-06, highest segregated noncancer hazard index (HI) threshold of 1, and HPS risk-based concentration for lead (155 mg/kg for residents and recreational users and 800 mg/kg for industrial and construction workers; see Section C7.4 and Attachment C6 of Appendix C for the basis of RBCs for lead). The specific calculated total cancer risk and noncancer HI results for each grid are listed in Tables 3-2, 3-3, and 3-4.

The risk results shown in the above-referenced figures and tables represent total risk; that is, all detected chemicals not considered to be essential human nutrients were included in the total risk evaluation. For surface soil (0 to 2 feet bgs) exposures, total risks were assessed for 30 grids in the industrial reuse areas, 159 grids in the residential reuse areas, and 26 grids in the open space reuse areas. Results of the total risk evaluation for surface soil showed that of these grids, 24 grids in the industrial reuse areas, 136 grids in the residential reuse areas, and 20 grids in the open space reuse areas exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1.

For subsurface soil (0 to 10 feet bgs) exposures, total risks were assessed for 34 grids in the industrial reuse areas and 228 grids in the residential reuse areas. Results of the subsurface soil evaluation showed that of these grids, 31 grids in the industrial reuse areas and 204 grids in the residential reuse areas exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1. For the construction worker exposure scenario, risks were assessed for 115 grids; 94 of these grids exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1.

Tables 3-5, 3-6, and 3-7 present a risk characterization analysis for each grid for which the total cancer risk or segregated noncancer HI exceeds thresholds. For each of these grids, the tables identify the total risk COCs (that is, the chemicals for which the chemical-specific cancer risk exceeds 1E-06 or the chemical-specific HI exceeds 1) and show the percent contribution of the COCs to the calculated total risks and hazards for each exposure pathway evaluated.

The following chemicals are identified as COCs in at least one grid based on planned reuse and results of the total risk evaluation for soil.

Exposure Scenario	Chemicals of Concern in Surface Soil (0 to 2 feet bgs), Total Risk	Chemicals of Concern in Subsurface Soil (0 to 10 feet bgs), Total Risk
Industrial	Aroclor-1260, Arsenic, Benzo(a)pyrene, and Lead	1,4-DCB, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Organic Lead, PCE, TCE, and Vinyl Chloride
Recreational	Arsenic, Benzo(a)pyrene, and Lead	Not applicable
Residential	3,3'-Dichlorobenzidine, Antimony, Aroclor-1254, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Cadmium, Copper, Dibenz(a,h)anthracene, Dieldrin, Gamma-BHC (Lindane), Heptachlor Epoxide, Indeno(1,2,3-cd)pyrene, Iron, Lead, Manganese, Mercury, Naphthalene, Nickel, Organic Lead, Thallium, Vanadium, and Zinc	1,2-Dichloroethane, 1,4-DCB, 2-Methylnaphthalene, 3,3'-Dichlorobenzidine, Antimony, Aroclor-1254, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Cadmium, Chrysene, Copper, Dibenz(a,h)anthracene, Dieldrin, Gamma-BHC (Lindane), Heptachlor Epoxide, Heptachlor Epoxide B, Hexachlorobenzene, Indeno(1,2,3-cd)pyrene, Iron, Lead, Manganese, Mercury, Naphthalene, Nickel, n-Nitroso-di-n-Propylamine, Organic Lead, PCE, Thallium, TCE, Vanadium, Vinyl Chloride, and Zinc
Construction Worker[1]	Not applicable	Aroclor-1260, Arsenic, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Manganese, Organic Lead, and Thallium

Note:

1 The construction worker exposure scenario is not associated with a specific planned reuse for Parcel C. Based on discussions and an agreement with the BCT, evaluation of construction worker exposure to soil was based on subsurface soil from 0 to 10 feet bgs; this depth range includes surface soil (0 to 2 feet bgs) exposure.

Of these chemicals, the following most frequently occur as COCs for each exposure scenario for the total risk evaluation:

- For industrial exposure (educational/cultural and maritime/industrial reuse areas) to surface and subsurface soil, arsenic and benzo(a)pyrene were the most frequently occurring COCs. Arsenic was a COC for surface and subsurface soil in 80 and 91 percent, respectively, of the grids evaluated for industrial exposure. Benzo(a)pyrene was a COC for surface and subsurface soil in 27 and 38 percent, respectively, of the grids evaluated for industrial exposure.

- For residential exposure (mixed-use and research and development reuse areas) to surface and subsurface soil, benzo(a)pyrene and metals (arsenic, copper, iron, manganese, nickel, and vanadium) were the most frequently occurring COCs. Benzo(a)pyrene was a COC for surface and subsurface soil in 19 and 27 percent, respectively, of the grids evaluated for residential exposure. For residential surface soil exposure, the frequency of arsenic, copper, iron, manganese, nickel, and vanadium as COCs ranged from 15 percent (copper) to 71 percent (arsenic) for the grids evaluated. For residential subsurface soil exposure, the frequency of these metals as COCs ranged from 15 percent (copper) to 76 percent (arsenic) for the grids evaluated.

- For recreational exposure (open space reuse areas), arsenic and benzo(a)pyrene were the most frequently occurring COCs for surface soil exposure. Arsenic was a COC in 77 percent and benzo(a)pyrene was a COC in 15 percent of the grids evaluated for recreational exposure.

- For construction worker exposure (evaluated parcel-wide), arsenic was identified as a COC in 81 percent of the grids evaluated.

3.1.3.2 Incremental Risk Evaluation

Risks from exposure to COPCs in soil were assessed for both surface soil (0 to 2 feet bgs) and subsurface soil (0 to 10 feet bgs) for the incremental risk evaluation. Figures 3-5 and 3-6 summarize the grid-specific incremental risk results for surface and subsurface soil based on the planned reuse of the redevelopment block associated with each grid. Figure 3-7 summarizes the grid-specific incremental risk results for construction worker exposure to soil. The specific calculated incremental cancer risk and noncancer HI results for each grid are listed in Tables 3-8, 3-9, and 3-10.

The risk results shown in the above-referenced figures and tables represent incremental risk; that is, all detected chemicals except essential human nutrients and metals below HPALs were included in the risk evaluation. For surface soil (0 to 2 feet bgs) exposures, incremental risks were assessed for 29 grids in the industrial reuse areas, 146 grids in the residential reuse areas, and 26 grids in the open space reuse areas. Results of the incremental risk evaluation for surface soil showed that of these grids, 9 grids in the industrial reuse areas, 86 grids in the residential reuse areas, and 8 grids in the open space reuse areas exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1.

For subsurface soil (0 to 10 feet bgs) exposures, incremental risks were assessed for 34 grids in the industrial reuse areas and 222 grids in the residential reuse areas. Results of the subsurface soil evaluation showed that of these grids, 18 grids in the industrial reuse areas and 156 grids in the residential reuse areas exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1. For the construction worker exposure scenario, risks were assessed for 114 grids; of these grids, 38 exceeded the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1.

Compared with the total risk evaluation for surface soil, under the incremental risk evaluation, there is on average a 42 percent reduction in the number of exposure areas that do not exceed the cancer risk threshold of 1E-06 or the noncancer threshold HI of 1 (based on highest segregated HI) for the planned reuses of Parcel C. For subsurface soil exposures, the reduction is approximately 26 percent.

Tables 3-11, 3-12, and 3-13 present a risk characterization analysis for each grid for which the incremental cancer risk or segregated noncancer HI exceeds thresholds. For each of these grids, the tables identify the incremental risk COCs (that is, the chemicals for which the chemical-specific cancer risk exceeds 1E-06 or the chemical-specific HI exceeds 1) and show

the percent contribution of the COCs to the calculated total risks and hazards for each exposure pathway evaluated.

The following chemicals are identified as COCs in at least one grid based on planned reuse and the results of the incremental risk evaluation for soil.

Exposure Scenario	Chemicals of Concern in Surface Soil (0 to 2 feet bgs), Incremental Risk	Chemicals of Concern in Subsurface Soil (0 to 10 feet bgs), Incremental Risk
Industrial	Aroclor-1260, Arsenic, Benzo(a)pyrene, and Lead	1,4-DCB, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Organic Lead, PCE, TCE, and Vinyl Chloride
Recreational	Arsenic, Benzo(a)pyrene, and Lead	Not applicable
Residential	3,3'-Dichlorobenzidine, Antimony, Aroclor-1254, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Cadmium, Copper, Dibenz(a,h)anthracene, Dieldrin, Gamma-BHC (Lindane), Heptachlor Epoxide, Indeno(1,2,3-cd)pyrene, Iron, Lead, Manganese, Mercury, Naphthalene, Organic Lead, Thallium, Vanadium, and Zinc	1,2-DCA, 1,4-DCB, 2-Methylnaphthalene, 3,3'-Dichlorobenzidine, Antimony, Aroclor-1254, Aroclor-1260, Arsenic, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Cadmium, Chrysene, Copper, Dibenz(a,h)anthracene, Dieldrin, Gamma-BHC (Lindane), Heptachlor Epoxide, Heptachlor Epoxide B, Hexachlorobenzene, Indeno(1,2,3-cd)pyrene, Iron, Lead, Manganese, Mercury, Naphthalene, Nickel, n-Nitroso-di-n-Propylamine, Organic Lead, PCE, Thallium, TCE, Vanadium, Vinyl Chloride, and Zinc
Construction Worker[1]	Not applicable	Aroclor-1260, Arsenic, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Manganese, Organic Lead, and Thallium

Note:

1 The construction worker exposure scenario is not associated with a specific planned reuse for Parcel C. Based on discussions and an agreement with the BCT, evaluation of construction worker exposure to soil was based on subsurface soil from 0 to 10 feet bgs; this depth range includes surface soil (0 to 2 feet bgs) exposure.

Of these chemicals, the following most frequently occur as COCs for each exposure scenario for the incremental risk evaluation:

- For industrial exposure (educational/cultural and maritime/industrial reuse areas) to surface and subsurface soil, arsenic and benzo(a)pyrene were the most frequently occurring COCs. Arsenic was a COC for surface and subsurface soil in 17 and 29 percent, respectively, of the grids evaluated for industrial exposure. Benzo(a) pyrene was a COC for surface and subsurface soil in 27 and 38 percent, respectively, of the grids evaluated for industrial exposure.

- For residential exposure (mixed-use and research and development reuse areas) to surface and subsurface soil, benzo(a)pyrene and metals (arsenic, copper, and manganese) were the most frequently occurring COCs. Benzo(a)pyrene was a COC for surface and subsurface soil in 21 and 28 percent, respectively, of the grids evaluated for residential exposure. For residential surface soil exposure, the frequency of arsenic, copper, and manganese as COCs ranged from 14 percent (arsenic) to 40 percent (manganese) for the grids evaluated. For residential subsurface soil exposure, the frequency of these metals as COCs ranged from 15 percent (copper) to 47 percent (manganese) for the grids evaluated.

- For recreational exposure (open space reuse areas), arsenic and benzo(a)pyrene were the most frequently occurring COCs for surface soil exposure. Both of these chemicals were COCs in 15 percent of the grids evaluated for recreational exposure.

- For construction worker exposure (evaluated parcel-wide), arsenic was identified as a COC in 30 percent of the grids evaluated.

3.1.4 Risk Summary for Groundwater

Risk results for groundwater are based on exposure to the A-aquifer in the RU-C1, RU-C2, RU-C4, and RU-C5 plume-based exposure areas and several nonplume exposure areas. Risk from exposure to the A-aquifer was based on inhalation of volatile COPCs that migrate through the subsurface to indoor air (vapor intrusion); this pathway is the most likely complete exposure pathway for the planned reuses of Parcel C. Although not specifically associated with the planned reuse for Parcel C, exposure to A-aquifer groundwater may also occur during trenching for the construction worker scenario. Figure 3-8 shows the risk results for groundwater for each of the identified plumes and nonplume exposure areas in the A-aquifer based on the planned reuse for each redevelopment block. Figure 3-9 shows the risk results for construction worker exposure to groundwater for both plume- and nonplume-based exposures. The results in the figures are shown compared with the cancer risk threshold of 1E-06 and the highest segregated noncancer HI of 1.

Table 3-14 presents a groundwater risk characterization analysis for the exposure areas where the cancer risk from vapor intrusion of the A-aquifer exceeds 1E-06 or the highest segregated HI exceeds 1, based on the planned reuses for Parcel C. Table 3-15 presents a groundwater risk characterization analysis for the construction worker exposure scenario. Both of these tables identify the groundwater COCs associated with each plume- and nonplume-based exposure area at Parcel C and the percent contribution of each COC to the total cancer risk and HI calculated for each plume. The following chemicals are identified as COCs in groundwater in the A-aquifer.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
18	Revised HHRA results	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Tables 3-4, 3-7, 3-10, and 3-13 through 3-15.

TABLE 3-4: TOTAL RISK - SUMMARY OF CANCER RISKS AND HAZARD INDICES BY PLANNED REUSE, SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER SCENARIO

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Grid Number	RME Cancer Risk	RME Hazard Index	RME Segregated Hazard Index
10	MU	AQ09	**4E-06**	<1	<1
10	MU	AQ10	**3E-06**	2E+00	<1
10	MU	AQ11	1E-06	<1	<1
10	MU	AR10	**5E-06**	<1	<1
10	MU	AR11	1E-06	2E+00	<1
10	MU	AS10	**4E-06**	<1	<1
11	MU	AQ08	2E-09	<1	<1
11	MU	AR07	2E-07	<1	<1
11	MU	AR08	**5E-06**	<1	<1
11	MU	AR09	**2E-06**	<1	<1
11	MU	AS07	**2E-06**	<1	<1
11	MU	AS08	**2E-06**	2E+00	<1
11	MU	AS09	**2E-06**	<1	<1
11	MU	AT07	3E-09	<1	<1
11	MU	AT09	**3E-06**	<1	<1
13	MU	AU10	**3E-06**	2E+00	<1
13	MU	AV10	**2E-06**	<1	<1
13	MU	AV11	1E-06	2E+00	<1
13	MU	AW10	**2E-06**	2E+00	<1
18	RD	AU12	**2E-06**	<1	<1
18	RD	AU14	**4E-06**	<1	<1
18	RD	AU15	**4E-06**	<1	<1
18	RD	AU16	3E-10	<1	<1
18	RD	AV12	3E-07	<1	<1
18	RD	AV13	**6E-06**	<1	<1
18	RD	AV14	**4E-06**	<1	<1
18	RD	AW13	**5E-06**	<1	<1
18	RD	AW14	**5E-06**	<1	<1
20A	RD	AW11	1E-06	<1	<1
20A	RD	AW12	6E-09	<1	<1
20A	RD	AX11	**3E-06**	2E+00	<1
20A	RD	AX12	**7E-06**	2E+00	<1
23	RD	AX13	**5E-06**	2E+00	<1
23	RD	AX14	**6E-06**	2E+00	<1
23	RD	AX15	**1E-05**	2E+00	<1
23	RD	AY14	**1E-05**	4E+01	**4E+01**
23	RD	AY15	**5E-06**	7E+01	**7E+01**
23	RD	AZ14	**8E-06**	1E+02	**1E+02**
23	RD	AZ15	**6E-06**	3E+01	**3E+01**
24	RD	AY12	**4E-06**	2E+00	<1
24	RD	AY13	**1E-05**	3E+00	<1
24	RD	AZ12	**4E-06**	2E+00	<1
24	RD	AZ13	**1E-05**	3E+00	<1
24	RD	BA11	**1E-05**	2E+00	<1

TABLE 3-7: TOTAL RISK - RISK CHARACTERIZATION ANALYSIS FOR SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER SCENARIO
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Grid Number	Total RME Cancer Risk	Total RME HI	RME Segregated HI	COC		Basis for COC	Range of Detected Concentrations	RME EPC	DF	Chemical-Specific Cancer Risk	Contribution by Exposure Pathway to Total RME Cancer Risk: Incidental Ingestion	Dermal Contact	Inhalation (Releases to Ambient Air)	Home-grown Produce Ingestion	Chemical-Specific HI	Contribution by Exposure Pathway to Total RME HI: Incidental Ingestion	Dermal Contact	Inhalation (Releases to Ambient Air)	Home-grown Produce Ingestion	Metals: HPAL	Maximum Concentration Exceeds HPAL?
10	MU	AQ09	4E-06	<1	<1	Metal	Arsenic	C	1.6 - 6.8	5.20E+00	7/7	3.20E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
10	MU	AQ10	3E-06	2E+00	<1	Metal	Arsenic	C	3.1 - 3.3	3.30E+00	2/2	2.03E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
10	MU	AR10	5E-06	<1	<1	Metal	Arsenic	C	1 - 8.1	4.31E+00	37/50	2.66E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
						PAH	Benzo(a)pyrene	C	0.008 - 1.9	1.22E+00	25/74	1.89E-06	35.8 %	64.2 %	0 %		--	--	--	--		--	--
10	MU	AS10	4E-06	<1	<1	Metal	Arsenic	C	1.2 - 11.3	5.78E+00	33/52	3.56E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
11	MU	AR08	5E-06	<1	<1	Metal	Arsenic	C	1.6 - 5.5	3.71E+00	15/24	2.29E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
11	MU	AR09	2E-06	<1	<1	Metal	Arsenic	C	1.6 - 7.1	2.93E+00	23/42	1.80E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
11	MU	AS07	2E-06	<1	<1	Metal	Arsenic	C	2.5 - 2.5	2.50E+00	1/3	1.54E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
11	MU	AS08	2E-06	2E+00	<1	Metal	Arsenic	C	1.9 - 3.5	3.35E+00	5/5	2.06E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
11	MU	AS09	2E-06	<1	<1	Metal	Arsenic	C	0.81 - 4.6	2.66E+00	27/32	1.64E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
11	MU	AT09	3E-06	<1	<1	Metal	Arsenic	C	5 - 5	5.00E+00	1/1	3.08E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
13	MU	AU10	3E-06	2E+00	<1	Metal	Arsenic	C	1.5 - 4.4	4.40E+00	2/2	2.71E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
13	MU	AV10	2E-06	<1	<1	Metal	Arsenic	C	1 - 3	2.44E+00	5/6	1.51E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
13	MU	AW10	2E-06	2E+00	<1	Metal	Arsenic	C	0.61 - 5.7	3.74E+00	9/11	2.31E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AU12	2E-06	<1	<1	Metal	Arsenic	C	3 - 3	3.00E+00	1/1	1.85E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AU14	4E-06	<1	<1	Metal	Arsenic	C	4.1 - 6.1	6.10E+00	2/2	3.76E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AU15	4E-06	<1	<1	Metal	Arsenic	C	2.5 - 6.5	5.98E+00	4/4	3.69E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AV13	6E-06	<1	<1	Metal	Arsenic	C	2.3 - 16.4	8.21E+00	16/18	5.06E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
18	RD	AV14	4E-06	<1	<1	Metal	Arsenic	C	2.1 - 9.8	5.98E+00	20/20	3.69E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AW13	5E-06	<1	<1	Metal	Arsenic	C	3.2 - 8.3	8.30E+00	2/2	5.12E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
18	RD	AW14	5E-06	<1	<1	Metal	Arsenic	C	1.3 - 8.8	7.07E+00	4/5	4.36E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
20A	RD	AX11	3E-06	2E+00	<1	Metal	Arsenic	C	0.73 - 3.9	3.43E+00	7/7	2.12E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
20A	RD	AX12	7E-06	2E+00	<1	Metal	Arsenic	C	4.4 - 11.1	1.11E+01	2/5	6.84E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AX13	5E-06	2E+00	<1	Metal	Arsenic	C	1.7 - 9.6	8.62E+00	5/6	5.31E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
23	RD	AX14	6E-06	2E+00	<1	Metal	Arsenic	C	0.255 - 16.1	7.89E+00	21/38	4.86E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AX15	1E-05	2E+00	<1	Metal	Arsenic	C	2.2 - 21.1	1.86E+01	4/4	1.14E-05	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AY14	1E-05	4E+01	4E+01	OrgLead	Organic Lead	NC	0.4325 - 2.5	4.84E-01	9/48	--	--	--	--		3.72E+01	42 %	58 %	0 %		--	--
						Metal	Arsenic	C	0.86 - 70.5	1.88E+01	54/78	1.16E-05	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AY15	5E-06	7E+01	7E+01	OrgLead	Organic Lead	NC	0.31 - 0.94	9.40E-01	3/30	--	--	--	--		7.23E+01	42 %	58 %	0 %		--	--
						Metal	Arsenic	C	0.91 - 18.3	6.44E+00	18/35	3.97E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AZ14	8E-06	1E+02	1E+02	OrgLead	Organic Lead	NC	0.5075 - 62	1.86E+00	9/124	--	--	--	--		1.43E+02	42 %	58 %	0 %		--	--
						Metal	Arsenic	C	0.6 - 86	1.15E+01	147/172	7.12E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
23	RD	AZ15	6E-06	3E+01	3E+01	OrgLead	Organic Lead	NC	0.36 - 0.36	3.60E-01	1/43	--	--	--	--		2.77E+01	42 %	58 %	0 %		--	--
						Metal	Arsenic	C	0.6175 - 6.9	5.57E+00	23/32	3.43E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
						Pest/PCB	Aroclor-1260	NC	0.019 - 67	2.21E+00	32/87	5.98E-07	--	--	--		1.05E+00	34.1 %	65.9 %	0 %		--	--
24	RD	AY12	4E-06	2E+00	<1	Metal	Arsenic	C	1.1 - 9	5.04E+00	7/10	3.11E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
24	RD	AY13	1E-05	3E+00	<1	Metal	Arsenic	C	0.95 - 110	2.13E+01	47/61	1.31E-05	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
24	RD	AZ12	4E-06	2E+00	<1	Metal	Arsenic	C	0.31 - 59.6	6.27E+00	58/71	3.87E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
24	RD	AZ13	1E-05	3E+00	<1	Metal	Arsenic	C	0.178 - 116	1.58E+01	84/97	9.73E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
24	RD	BA11	1E-05	2E+00	<1	Metal	Arsenic	C	1.1 - 16.9	1.69E+01	8/13	1.04E-05	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
24	RD	BA12	6E-06	3E+02	3E+02	OrgLead	Organic Lead	NC	3.9 - 3.9	3.90E+00	1/6	--	--	--	--		3.00E+02	42 %	58 %	0 %		--	--
						Metal	Arsenic	C	0.84 - 13	8.43E+00	7/9	5.20E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
							Manganese	NC	184 - 8100	7.44E+03	9/9	--	--	--	--		1.08E+00	92.7 %	0 %	7.3 %		1431.18	Yes
24	RD	BB10	2E-06	<1	<1	Metal	Arsenic	C	3.1 - 3.1	3.10E+00	1/3	1.91E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
24	RD	BB11	3E-06	2E+00	<1	Metal	Arsenic	C	4.9 - 4.9	4.90E+00	1/5	3.02E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
26	MU	BA14	4E-06	2E+00	<1	Metal	Arsenic	C	0.87 - 11.4	6.63E+00	13/18	4.09E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
26	MU	BA15	3E-06	<1	<1	Metal	Arsenic	C	0.4 - 6.1	3.29E+00	10/17	2.03E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
20B	E/C	AX10	3E-06	<1	<1	Metal	Arsenic	C	2.4 - 6.2	3.42E+00	11/14	2.11E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
20B	E/C	AY09	4E-06	2E+00	<1	Metal	Arsenic	C	1.8 - 9.3	5.17E+00	6/8	3.19E-06	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	No
20B	E/C	AY10	3E-05	2E+01	2E+01	Metal	Arsenic	C	0.93 - 245	2.42E+01	34/36	1.49E-05	70.7 %	29.3 %	0 %		<1	--	--	--		11.1	Yes
						Pest/PCB	Aroclor-1260	C,NC	0.026 - 270	3.93E+01	25/45	1.06E-05	34.1 %	65.9 %	0 %		1.86E+01	34.1 %	65.9 %	0 %		--	--

TABLE 3-10: INCREMENTAL RISK - SUMMARY OF CANCER RISKS AND HAZARD INDICES BY PLANNED REUSE, SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER SCENARIO

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Grid Number	RME Cancer Risk	RME Hazard Index	RME Segregated Hazard Index
10	MU	AQ09	6E-07	<1	<1
10	MU	AQ10	5E-07	<1	<1
10	MU	AQ11	--	<1	<1
10	MU	AR10	**3E-06**	<1	<1
10	MU	AR11	4E-09	<1	<1
10	MU	AS10	**4E-06**	<1	<1
11	MU	AQ08	2E-09	<1	<1
11	MU	AR07	2E-07	<1	<1
11	MU	AR08	**3E-06**	<1	<1
11	MU	AR09	4E-07	<1	<1
11	MU	AS07	9E-09	<1	<1
11	MU	AS08	4E-07	<1	<1
11	MU	AS09	4E-07	<1	<1
11	MU	AT07	4E-10	<1	<1
11	MU	AT09	--	<1	<1
13	MU	AU10	2E-09	<1	<1
13	MU	AV10	5E-09	<1	<1
13	MU	AV11	--	2E+00	<1
13	MU	AW10	1E-07	<1	<1
18	RD	AU12	--	<1	<1
18	RD	AU14	6E-07	<1	<1
18	RD	AU15	8E-09	<1	<1
18	RD	AU16	--	<1	<1
18	RD	AV12	--	<1	<1
18	RD	AV13	**6E-06**	<1	<1
18	RD	AV14	7E-07	<1	<1
18	RD	AW13	7E-11	<1	<1
18	RD	AW14	2E-07	<1	<1
20A	RD	AW11	5E-07	<1	<1
20A	RD	AW12	--	<1	<1
20A	RD	AX11	4E-07	<1	<1
20A	RD	AX12	6E-08	<1	<1
23	RD	AX13	2E-09	<1	<1
23	RD	AX14	**6E-06**	2E+00	<1
23	RD	AX15	**1E-05**	2E+00	<1
23	RD	AY14	**1E-05**	4E+01	**4E+01**
23	RD	AY15	**5E-06**	7E+01	**7E+01**
23	RD	AZ14	**8E-06**	1E+02	**1E+02**
23	RD	AZ15	**2E-06**	3E+01	**3E+01**
24	RD	AY12	6E-07	<1	<1
24	RD	AY13	**1E-05**	2E+00	<1
24	RD	AZ12	**4E-06**	2E+00	<1
24	RD	AZ13	**1E-05**	3E+00	<1

TABLE 3-13: INCREMENTAL RISK - RISK CHARACTERIZATION ANALYSIS FOR SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER SCENARIO
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Grid Number	Total RME Cancer Risk	Total RME HI	RME Segregated HI	COC		Basis for COC	Range of Detected Concentrations	RME EPC	DF	Chemical-Specific Cancer Risk	Contribution by Exposure Pathway to Total RME Cancer Risk: Incidental Ingestion	Dermal Contact	Inhalation (Releases to Ambient Air)	Home-grown Produce Ingestion	Chemical-Specific HI	Contribution by Exposure Pathway to Total RME HI: Incidental Ingestion	Dermal Contact	Inhalation (Releases to Ambient Air)	Home-grown Produce Ingestion
10	MU	AR10	3E-06	<1	<1	PAH	Benzo(a)pyrene	C	0.008 - 1.9	1.22E+00	25/74	1.89E-06	35.8 %	64.2 %	0 %		--	--	--	--	
10	MU	AS10	4E-06	<1	<1	Metal	Arsenic	C	1.2 - 11.3	5.78E+00	33/52	3.56E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
18	RD	AV13	6E-06	<1	<1	Metal	Arsenic	C	2.3 - 16.4	8.21E+00	16/18	5.06E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AX14	6E-06	2E+00	<1	Metal	Arsenic	C	0.255 - 16.1	7.89E+00	21/38	4.86E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AX15	1E-05	2E+00	<1	Metal	Arsenic	C	2.2 - 21.1	1.86E+01	4/4	1.14E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AY14	1E-05	4E+01	4E+01	OrgLead	Organic Lead	NC	0.4325 - 2.5	4.84E-01	9/48	--	--	--	--		3.72E+01	42 %	58 %	0 %	
						Metal	Arsenic	C	0.86 - 70.5	1.88E+01	54/78	1.16E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AY15	5E-06	7E+01	7E+01	OrgLead	Organic Lead	NC	0.31 - 0.94	9.40E-01	3/30	--	--	--	--		7.23E+01	42 %	58 %	0 %	
						Metal	Arsenic	C	0.91 - 18.3	6.44E+00	18/35	3.97E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AZ14	8E-06	1E+02	1E+02	OrgLead	Organic Lead	NC	0.5075 - 62	1.86E+00	9/124	--	--	--	--		1.43E+02	42 %	58 %	0 %	
						Metal	Arsenic	C	0.6 - 86	1.15E+01	147/172	7.12E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
23	RD	AZ15	2E-06	3E+01	3E+01	OrgLead	Organic Lead	NC	0.36 - 0.36	3.60E-01	1/43	--	--	--	--		2.77E+01	42 %	58 %	0 %	
						Pest/PCB	Aroclor-1260	NC	0.019 - 67	2.21E+00	32/87	5.98E-07	--	--	--		1.05E+00	34.1 %	65.9 %	0 %	
24	RD	AY13	1E-05	2E+00	<1	Metal	Arsenic	C	0.95 - 110	2.13E+01	47/61	1.31E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
24	RD	AZ12	4E-06	2E+00	<1	Metal	Arsenic	C	0.31 - 59.6	6.27E+00	58/71	3.87E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
24	RD	AZ13	1E-05	3E+00	<1	Metal	Arsenic	C	0.178 - 116	1.58E+01	84/97	9.73E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
24	RD	BA11	1E-05	2E+00	<1	Metal	Arsenic	C	1.1 - 16.9	1.69E+01	8/13	1.04E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
24	RD	BA12	6E-06	3E+02	3E+02	OrgLead	Organic Lead	NC	3.9 - 3.9	3.90E+00	1/6	--	--	--	--		3.00E+02	42 %	58 %	0 %	
						Metal	Arsenic	C	0.84 - 13	8.43E+00	7/9	5.20E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
							Manganese	NC	184 - 8100	7.44E+03	9/9	--	--	--	--		1.08E+00	92.7 %	0 %	7.3 %	
26	MU	BA14	4E-06	<1	<1	Metal	Arsenic	C	0.87 - 11.4	6.63E+00	13/18	4.09E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
20B	E/C	AY10	3E-05	2E+01	2E+01	Metal	Arsenic	C	0.93 - 245	2.42E+01	34/36	1.49E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
						Pest/PCB	Aroclor-1260	C,NC	0.026 - 270	3.93E+01	25/45	1.06E-05	34.1 %	65.9 %	0 %		1.86E+01	34.1 %	65.9 %	0 %	
20B	E/C	AZ10	1E-05	3E+00	2E+00	Metal	Arsenic	C	17.5 - 17.5	1.75E+01	1/2	1.08E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
							Manganese	NC	600 - 10200	1.02E+04	2/2	--	--	--	--		1.48E+00	92.7 %	0 %	7.3 %	
20B	E/C	BA09	1E-05	<1	<1	Metal	Arsenic	C	7.1 - 14	1.40E+01	3/8	8.63E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
							Lead	NC	8.6 - 1700	1.70E+03	6/8	--	--	--	--		--	--	--	--	
						PAH	Benzo(a)pyrene	C	0.022 - 5.52	2.02E+00	4/8	3.13E-06	35.8 %	64.2 %	0 %		--	--	--	--	
22	E/C	BA07	3E-05	2E+00	<1	Metal	Arsenic	C	2.5 - 40	4.00E+01	12/16	2.47E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
							Lead	NC	1.11 - 675	6.75E+02	13/16	--	--	--	--		--	--	--	--	
22	E/C	BA08	3E-05	4E+00	3E+00	Metal	Arsenic	C	0.31 - 200	3.62E+01	95/139	2.24E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
							Lead	NC	0.45 - 2000	1.37E+03	122/143	--	--	--	--		--	--	--	--	
							Thallium	NC	1.42 - 60.9	6.09E+01	4/7	--	--	--	--		2.98E+00	100 %	0 %	0 %	
						PAH	Benzo(a)pyrene	C	0.013 - 21	1.35E+00	88/136	2.09E-06	35.8 %	64.2 %	0 %		--	--	--	--	
22	E/C	BB03	2E-07	7E+01	7E+01	OrgLead	Organic Lead	NC	0.93 - 0.93	9.30E-01	1/1	--	--	--	--		7.15E+01	42 %	58 %	0 %	
22	E/C	BB06	8E-06	<1	<1	Metal	Arsenic	C	1.5 - 30.4	1.14E+01	16/25	7.02E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
25	E/C	BB08	2E-06	<1	<1	Metal	Arsenic	C	0.437 - 30.1	2.62E+00	30/87	1.62E-06	70.7 %	29.3 %	0 %		<1	--	--	--	
25	E/C	BC09	6E-07	<1	<1	Metal	Lead	NC	7.5 - 939	9.39E+02	7/7	--	--	--	--		--	--	--	--	
25	E/C	BD08	1E-05	2E+00	2E+00	Metal	Arsenic	C	6.6 - 17.9	1.79E+01	3/3	1.10E-05	70.7 %	29.3 %	0 %		<1	--	--	--	
							Manganese	NC	2970 - 11300	1.13E+04	3/3	--	--	--	--		1.64E+00	92.7 %	0 %	7.3 %	
CMI-1	MI	AV15	1E-05	<1	<1	Metal	Arsenic	C	5.5 - 15.8	1.58E+01	3/3	9.74E-06	70.7 %	29.3 %	0 %		<1	--	--	--	

TABLE 3-14: RISK CHARACTERIZATION ANALYSIS FOR A-AQUIFER GROUNDWATER BASED ON PLANNED REUSE (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Exposure Area	Total RME Cancer Risk	Total RME HI	RME Segregated HI	Exposure Pathway	Source Aquifer for Exposure Pathway	Total RME Cancer Risk for Exposure Pathway	Total RME HI for Exposure Pathway		COC	Basis for COC	DF	RME Concentration (µg/L)	Chemical-Specific Cancer Risk	Contribution to Total RME Cancer Risk for Exposure Pathway	Chemical-Specific HI	Percent Contribution to Total RME HI for Exposure Pathway
20B	E/C	RU-C4 Plume	1.20E-02	1.32E+02	1.30E+02	Vapor Intrusion	A-Aquifer	1.20E-02	1.32E+02	VOC	1,1,2,2-TETRACHLOROETHANE	C	1 / 188	1.2E+02	2.4E-05	0.2%	8.1E-03	0.01%
											1,1,2-TRICHLOROETHANE	C	12 / 188	8.2E+01	1.2E-05	0.1%	2.2E-01	0.2%
											1,2,3-TRICHLOROPROPANE	C	2 / 78	1.6E+01	3.1E-05	0.3%	4.6E-02	0.03%
											1,2-DICHLOROETHANE	C	20 / 195	5.9E+01	1.5E-05	0.1%	4.8E-01	0.4%
											1,2-DICHLOROPROPANE	C	5 / 188	3.9E+00	2.1E-06	0.02%	1.2E-01	0.1%
											1,4-DICHLOROBENZENE	C	13 / 187	4.5E+01	1.3E-05	0.1%	5.6E-03	0.004%
											BENZENE	C	15 / 188	3.1E+00	4.9E-06	0.04%	2.3E-02	0.02%
											CARBON TETRACHLORIDE	C,NC	47 / 195	2.2E+02	2.9E-03	23.8%	1.1E+02	84.4%
											CHLOROFORM	C	93 / 195	2.7E+02	2.3E-04	1.9%	8.4E-01	0.6%
											CIS-1,3-DICHLOROPROPENE	C	1 / 188	4.0E-01	1.1E-06	0.01%	1.4E-02	0.01%
											METHYLENE CHLORIDE	C	7 / 188	2.7E+02	5.9E-06	0.05%	8.1E-03	0.01%
											NAPHTHALENE	C	6 / 101	1.8E+01	3.0E-06	0.02%	1.2E-01	0.1%
											TETRACHLOROETHENE	C,NC	51 / 195	7.2E+01	7.9E-05	0.7%	1.5E+00	1.2%
											TRICHLOROETHENE	C,NC	121 / 195	1.9E+04	4.0E-03	33.0%	1.4E+01	10.3%
											VINYL CHLORIDE	C,NC	13 / 195	2.3E+02	4.8E-03	39.7%	2.5E+00	1.9%
10, 11	MU	RU-C5 Plume	9.94E-02	7.07E+02	3.37E+02	Vapor Intrusion	A-Aquifer	9.94E-02	7.07E+02	VOC	1,2,4-TRIMETHYLBENZENE	NC	7 / 36	9.1E+01	--	--	3.6E+00	0.5%
											1,2-DICHLOROBENZENE	NC	79 / 286	1.1E+04	--	--	4.4E+00	0.6%
											1,2-DICHLOROETHANE	C,NC	59 / 284	2.6E+04	1.1E-02	11.4%	2.2E+02	30.5%
											1,2-DICHLOROETHENE (TOTAL)	NC	25 / 79	9.1E+03	--	--	4.4E+01	6.2%
											1,2-DICHLOROPROPANE	C,NC	16 / 284	2.2E+02	2.0E-04	0.2%	6.5E+00	0.9%
											1,3,5-TRIMETHYLBENZENE	NC	4 / 36	2.2E+01	--	--	1.2E+00	0.2%
											1,4-DICHLOROBENZENE	C	61 / 286	3.9E+03	1.8E-03	1.8%	4.8E-01	0.1%
											BENZENE	C	78 / 288	1.1E+02	3.0E-04	0.3%	8.3E-01	0.1%
											BROMODICHLOROMETHANE	C	3 / 284	1.3E+02	1.3E-04	0.1%	1.2E-01	0.02%
											CHLOROBENZENE	NC	37 / 284	1.6E+03	--	--	4.0E+00	0.6%
											CHLOROETHANE	C	10 / 284	5.3E+01	8.1E-06	0.01%	2.4E-03	0.0003%
											CHLOROFORM	C	15 / 284	1.8E+01	2.6E-05	0.03%	5.6E-02	0.01%
											CIS-1,2-DICHLOROETHENE	NC	104 / 226	1.6E+04	--	--	7.4E+01	10.5%
											METHYLENE CHLORIDE	C	10 / 284	2.0E+02	7.4E-06	0.01%	6.0E-03	0.001%
											NAPHTHALENE	C	52 / 198	9.5E+01	2.7E-05	0.03%	6.3E-01	0.1%
											TETRACHLOROETHENE	C,NC	65 / 284	1.4E+04	2.6E-02	26.6%	3.1E+02	43.3%
											TRANS-1,2-DICHLOROETHENE	NC	52 / 226	8.1E+02	--	--	4.5E+00	0.6%
											TRICHLOROETHENE	C,NC	108 / 284	3.8E+03	1.3E-03	1.3%	2.7E+00	0.4%
											TRICHLOROFLUOROMETHANE	NC	17 / 192	3.0E+03	--	--	1.7E+01	2.4%
											VINYL CHLORIDE	C,NC	97 / 284	1.6E+03	5.8E-02	58.2%	1.8E+01	2.6%
10	MU	065030	9.58E-05	2.14E+00	2.14E+00	Vapor Intrusion	A-Aquifer	9.58E-05	2.14E+00	VOC	CARBON TETRACHLORIDE	C,NC	4 / 7	4.2E+00	9.2E-05	96.3%	2.1E+00	99.6%
											CHLOROFORM	C	3 / 7	2.5E+00	3.6E-06	3.7%	7.7E-03	0.4%
10	MU	068029	6.35E-04	1.43E+01	1.43E+01	Vapor Intrusion	A-Aquifer	6.35E-04	1.43E+01	VOC	CARBON TETRACHLORIDE	C,NC	5 / 7	2.8E+01	6.1E-04	96.8%	1.4E+01	99.7%
											CHLOROFORM	C	4 / 7	1.1E+01	1.6E-05	2.5%	3.4E-02	0.2%
											TRICHLOROETHENE	C	5 / 7	1.4E+01	4.9E-06	0.8%	9.9E-03	0.1%

Notes: All concentrations shown in micrograms per liter (µg/L).

--	Not applicable or chemical is not a COC for this endpoint
C	Cancer effect
COC	Chemical of concern
DF	Detection frequency
E/C	Educational/cultural (industrial exposure scenario)
HI	Hazard index
MI	Maritime industrial (industrial exposure scenario)
MU	Mixed use (residential exposure scenario)
NC	Noncancer effect
RD	Research and development (residential exposure scenario)
RME	Reasonable maximum exposure
RU	Remedial Unit
VOC	Volatile organic compound

TABLE 3-15: RISK CHARACTERIZATION ANALYSIS FOR A-AQUIFER GROUNDWATER, CONSTRUCTION WORKER SCENARIO (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Redevelopment Block	Planned Reuse	Exposure Area	Total RME Cancer Risk	Total RME HI	RME Segregated HI	Exposure Pathway	Source Aquifer for Exposure Pathway	Total RME Cancer Risk for Exposure Pathway	Total RME HI for Exposure Pathway		COC	Basis for COC	DF	RME Concentration (µg/L)	Chemical-Specific Cancer Risk	Contribution to Total RME Cancer Risk for Exposure Pathway	Chemical-Specific HI	Percent Contribution to Total RME HI for Exposure Pathway
10, 11	MU	RU-C5 Plume	3.22E-03	8.35E+02	6.39E+02	Trench Dermal Contact	A-Aquifer	1.55E-03	4.07E+01	PAH	Benzo(a)anthracene	C	6 / 174	2.3E+00	3.5E-06	0.2%	--	--
											Benzo(a)pyrene	C	1 / 173	2.1E-01	4.7E-06	0.3%	--	--
											Chrysene	C	4 / 175	2.0E+02	3.0E-05	1.9%	--	--
										SVOC	2,4-Dimethylphenol	NC	18 / 150	1.4E+04	--	--	1.4E+00	3.4%
											2,4-Dinitrotoluene	C,NC	1 / 161	4.9E+03	2.7E-05	1.8%	1.4E+00	3.5%
											3,4-Methylphenol	NC	2 / 12	3.2E+03	--	--	4.6E+00	11.2%
											4-Methylphenol	NC	12 / 138	4.2E+03	--	--	1.2E+00	3.0%
											Pentachlorophenol	C,NC	3 / 151	6.1E+03	7.6E-04	48.7%	1.5E+01	36.1%
										VOC	1,2-Dichloroethane	C,NC	59 / 284	2.6E+04	2.7E-05	1.7%	1.0E+00	2.5%
											1,2-Dichloroethene (Total)	NC	25 / 79	9.1E+03	--	--	1.3E+00	3.2%
											1,4-Dichlorobenzene	C,NC	61 / 286	3.9E+03	1.0E-05	0.7%	1.0E+00	2.5%
											cis-1,2-Dichloroethene	NC	104 / 226	1.6E+04	--	--	2.2E+00	5.4%
											Naphthalene	C	52 / 198	9.5E+01	1.4E-06	0.1%	4.2E-02	0.1%
											Tetrachloroethene	C,NC	65 / 284	1.4E+04	6.7E-04	43.2%	8.7E+00	21.4%
											Trichloroethene	C	108 / 284	3.8E+03	1.6E-06	0.1%	--	--
											Vinyl Chloride	C	97 / 284	1.6E+03	1.8E-05	1.2%	5.7E-01	1.4%
10	MU	AS11	2.45E-06	1.30E+00	1.30E+00	Trench Vapor Inhalation	A-Aquifer	2.17E-06	1.18E+00	VOC	Carbon Tetrachloride	C,NC	5 / 11	2.8E+01	1.7E-06	79.2%	1.1E+00	97.6%
						Trench Dermal Contact	A-Aquifer	2.78E-07	1.25E-01	VOC	Carbon Tetrachloride	C,NC	5 / 11	2.8E+01	1.8E-07	64.1%	1.2E-01	94.9%

Notes: All concentrations shown in micrograms per liter (µg/L).

--	Not applicable or chemical is not a COC for this endpoint
COC	Chemical of concern
C	Cancer effect
COC	Chemical of concern
DF	Detection frequency
E/C	Educational/cultural (industrial exposure scenario)
HI	Hazard index
MI	Maritime industrial (industrial exposure scenario)
MU	Mixed use (residential exposure scenario)
NC	Noncancer effect
OS	Open space (recreational exposure scenario)
PAH	Polycyclic aromatic hydrocarbon
RD	Research and development (residential exposure scenario)
RME	Reasonable maximum exposure
RU	Remedial Unit
SVOC	Semivolatile organic compound
VOC	Volatile organic compound

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
19	Radiological risks	Section 2.5.1	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Table 3-4.

TABLE 3-4

RESRAD RESULTS

Total Dose and Risk		
Impacted Areas	**Radiological Risk[a]**	**Dose[bc]**
Storm Water Sewer System	6.75×10^{-5}	3.09
Sanitary Sewer System	6.75×10^{-5}	3.09
Incremental Dose and Risk		
Impacted Areas	**Radiological Risk[a]**	**Dose[bc]**
Storm Water Sewer System	4.54×10^{-5}	2.08
Sanitary Sewer System	4.54×10^{-5}	2.08

Notes:

[a] Total excess lifetime carcinogen risk.
[b] millirems per year.
[c] Dose is calculated using DCGLs. Actual dose will be determined after remediation.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
20	Combined chemical and radiological risks	Section 2.5.1	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Tables 3-5 and 3-6.

TABLE 3-5

COMBINED TOTAL RISK FROM CHEMICAL AND RADIOLOGICAL RISKS

Parcel C Impacted Sites	Radiological Risk[b]	Chemical Risk[a,b,c]	Redevelopment Block	Parcel C Grid(s)	Risk Combination Results
Building 203	1.44×10^{-6}	5.00×10^{-4}	23	089040	5.01×10^{-4}
Building 205 and Discharge Channel	1.44×10^{-6}	4.00×10^{-6}	22	BB03	5.40×10^{-6}
Building 211	1.30×10^{-6}	5.00×10^{-5}	25 and COS-3	BE06	5.13×10^{-5}
Building 214	1.44×10^{-6}	5.00×10^{-5}	20B	BA09	5.14×10^{-5}
Building 224	1.48×10^{-6}	4.00×10^{-5}	25	BD08	4.14×10^{-5}
Building 241	8.70×10^{-7}	4.00×10^{-4}	18	079041	4.08×10^{-4}
Building 253	1.29×10^{-6}	4.00×10^{-4}	25	BD08	4.01×10^{-4}
Building 271	1.34×10^{-6}	4.00×10^{-4}	24	093035, 094035	4.01×10^{-4}
Building 272	3.09×10^{-6}	2.00×10^{-3}	24	088036	2.00×10^{-3}
Sanitary Sewer System	6.75×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.72×10^{-3}
Storm Water Sewer System	6.75×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.72×10^{-3}

Notes:

a Chemical risk was taken from Revised Feasibility Study Report for Parcel C, Tables 3-2 and 3-3.

b Excess lifetime carcinogenic risk.

c. The worst case chemical risk was chosen from the girds that the radiologically-impacted buildings or sites overlay.

TABLE 3-6

COMBINED INCREMENTAL RISK FROM CHEMICAL AND RADIOLOGICAL RISKS

Parcel C Impacted Sites	Radiological Risk[b]	Chemical Risk[a,b, c]	Redevelopment Block	Parcel C Grid(s)	Risk Combination Results
Building 203	1.44×10^{-6}	5.00×10^{-4}	23	089040	5.01×10^{-4}
Building 205 and Discharge Channel	1.44×10^{-6}	6.00×10^{-7}	22	BA03, BB03	2.00×10^{-6}
Building 211	1.30×10^{-6}	5.00×10^{-5}	25 and COS-3	BE06	5.13×10^{-5}
Building 214	1.44×10^{-6}	5.00×10^{-5}	20B	BA09	5.14×10^{-5}
Building 224	1.48×10^{-6}	3.00×10^{-5}	25	BD08	3.14×10^{-5}
Building 241	8.70×10^{-7}	4.00×10^{-4}	18	079041	4.00×10^{-4}
Building 253	1.29×10^{-6}	4.00×10^{-5}	25	BD08	4.12×10^{-5}
Building 271	1.34×10^{-6}	4.00×10^{-4}	24	093035, 094035	4.01×10^{-4}
Building 272	3.09×10^{-6}	2.00×10^{-3}	24	088036	2.00×10^{-3}
Sanitary Sewer System	4.54×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.04×10^{-3}
Storm Water Sewer System	4.54×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.04×10^{-3}

Notes:

[a] Chemical risk was taken from Revised Feasibility Study Report for Parcel C, Tables 3-8 and 3-9.

[b] Excess lifetime carcinogenic risk.

[c.] The worst case chemical risk was chosen from the girds that the radiologically-impacted buildings overlay.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
21	Assumptions and uncertainties	Section 2.5.1	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix C, Section C9.0, pages C-43 to C-46.

Tables C2-10 and C2-16 of Attachment C2 present the incremental risk and hazard results by exposure pathway for construction worker exposure to subsurface soil for each industrial grid. (Exposures to soil for a construction worker are evaluated using the industrial-sized grid; see Section C4.3.1.) Table C2-22 summarizes the incremental cancer risks and HIs for subsurface soil by grid. Table C2-24 presents the results of the evaluation of lead in subsurface soil. Figure C2-6 of Attachment C2 summarizes the results of the incremental risk evaluation for construction worker exposure to subsurface soil.

C8.5.3 Groundwater

Risk and hazard results for construction worker exposure to the A-aquifer from dermal contact and inhalation of volatile chemicals that are released to air in a construction trench are presented in Table C3-19 for the RU-C1 plume, Table C3-24 for the RU-C2 plume, Table C3-30 for the RU-C4 plume, Table C3-35 for the RU-C5 plume, and Table C3-39 for nonplume exposure areas. Figure C-12 and Figure C3-8 of Attachment C3 show the results of the evaluation of A-aquifer evaluation for the construction worker receptor. An analysis of the risk results for and summary of the A-aquifer COCs for the construction worker scenario is provided in Table C-29.

C9.0 UNCERTAINTY ANALYSIS

Varying degrees of uncertainty at each stage of the HHRA arise from assumptions made in the risk assessment and the limitations of the data used to calculate risks. Uncertainty and variability are also inherent in the exposure assessment, toxicity values, and risk characterization. Table C-30 lists both general and site-specific uncertainties associated with this HHRA.

The effect of uncertainties is overestimation or underestimation of the actual cancer risk or HI. In general, the risk assessment process is based on use of conservative (health-protective) assumptions that, when combined, are intended to overestimate the actual risk. However, a small possibility exists that risks were underestimated.

The remainder of this discussion focuses on the following uncertainties specific to this HHRA:

- The influence of metals in soil at or below ambient levels on this HHRA
- Use of a SF for TCE developed by Cal/EPA, rather than the EPA provisional SF for TCE
- Assumption that the exposure area for vapor intrusion risks from groundwater is consistent with the plume boundaries delineated for COPCs in groundwater
- Dermal contact with groundwater for the residential exposure scenario
- Use of generic, non-site-specific RBSLs to calculate risks from groundwater vapor intrusion

C9.1 METALS IN SOIL BELOW AMBIENT LEVELS

Both total and incremental risks were assessed for exposure to soil to account for the contribution of naturally occurring concentrations of metals at HPS. The evaluation of total risk for soil included all chemicals, regardless of concentration, except for the essential nutrients calcium, magnesium, potassium, and sodium. The essential nutrients and metals with maximum measured concentrations below HPALs were excluded as COPCs for the evaluation of incremental risk.

The differences in risk and hazard results between the evaluation of total and incremental risk are attributed to the risks and hazards associated with ambient levels of metals at HPS. At ambient concentrations (that is, HPALs), some metals at HPS are associated with cancer risks in excess of 10^{-6} and noncancer hazards in excess of 1.0. Table C-31 presents the cancer risks and noncancer hazards associated with exposure to metals at concentrations equal to HPALs; risks and hazards are presented in this table for each of the exposure scenarios associated with planned reuse (residential, industrial, and recreational). As shown in Table C-31, the contribution of ambient levels of metals to cancer risk and HI estimates is significant. For example, the cancer risk associated with residential exposure to arsenic at a concentration equal to the HPAL for arsenic (11.1 mg/kg) is 0.00029. The HI associated with residential exposure to manganese at a concentration equal to the HPAL for manganese (1,431 mg/kg) is 1.7. Collectively, all metals at ambient levels contribute to a cancer risk of 0.0003 for a resident and of 0.00003 for industrial workers and recreators. For noncancer hazards, metals at ambient levels collectively contribute to an HI of 11 for residents, 0.2 for industrial workers, and 0.7 for recreators.

This evaluation shows that total risk, which includes metals present at concentrations at or below HPALs, likely overestimates risks and hazards associated with Navy releases of chemicals because concentrations of metals are at or below HPALs in many exposure areas at Parcel C. The incremental risk evaluation excludes risks and hazards from metals where the maximum concentrations do not exceed HPALs. Still, the results of the incremental evaluation should be considered with the information contained in Table C-31 because the contribution of ambient levels to risks and hazards at HPS is significant for some metals.

C9.2 SLOPE FACTOR FOR TRICHLOROETHENE

As discussed in Section C6.0, the provisional cancer SFs derived by EPA (2001) for TCE, although more conservative than the SFs derived by Cal/EPA (2005a), were not used in the HHRA. The draft risk assessment that is the basis for the provisional EPA SFs for TCE is being reviewed currently by the National Academy of Sciences and, as such, does not represent EPA policy. The SFs developed by Cal/EPA were used to evaluate cancer risks from exposure to TCE. Uncertainties specific to the provisional cancer SFs for TCE were analyzed in this HHRA because the difference between the provisional SFs for TCE and the Cal/EPA SFs for TCE is significant and can affect the risk results. Attachment C7 contains a detailed discussion of the uncertainties associated with the SFs for TCE.

C9.3 BOUNDARIES FOR VAPOR INTRUSION RISKS

As discussed in Section C4.3.2, plume boundaries for evaluation of groundwater vapor intrusion were established based on delineation of volatile COPCs in the A-aquifer to nondetectable (below reporting limit) levels. Then, vapor intrusion risks were applied to each residential and industrial grid encompassed by the boundaries of the plumes. This approach assumes that the exposure area for groundwater vapor intrusion risks is consistent with the plume boundaries; however; EPA states that it is reasonable to assume that subsurface vapors may migrate laterally up to 100 feet (EPA 2002a). Figure C-13 shows the potential lateral extent, or 100-foot "inhalation risk buffer zone," that the calculated groundwater vapor intrusion risks may extend, with respect to the redevelopment blocks and planned reuses for Parcel C. On the figure, the plume boundaries delineated in Section C4.3.2 were expanded laterally in each direction by 100 feet to account for the distance vapors may travel laterally from a source in groundwater. This buffer zone for inhalation risk was also applied to nonplume wells with volatile COPCs (see Figure C-13).

Preferential pathways, which consist of utility conduits, subsurface drains, and buried pipelines that intersect vapor sources or vapor migration pathways, may allow subsurface vapors to migrate more than 100 feet laterally (EPA 2002a). These preferential pathways are considered significant if they are associated with high gas permeability and are of sufficient volume and proximity to a building such that the pathways may influence vapor intrusion into the building (EPA 2002a). Figure C-14 shows the subsurface utilities at Parcel C; these utilities may influence the extent that subsurface vapors may migrate beyond the 100-foot inhalation risk buffer zone shown on Figure C-13.

C9.4 DERMAL CONTACT WITH GROUNDWATER FOR RESIDENTIAL SCENARIO

As discussed in Section C7.2, tap water PRGs were used in this HHRA to evaluate domestic use of groundwater for the residential exposure scenario. The tap water PRGs are used to evaluate residential exposure to groundwater from ingestion and from inhalation of VOCs released from groundwater to indoor air during household use. The tap water PRGs are limited to an assessment of exposure to groundwater from the oral and inhalation exposure pathways and do not account for exposure from the dermal exposure pathway.

The potential for intake of nonvolatile COPCs from the dermal exposure pathway relative to intake of COPCs from the oral exposure pathway was evaluated using information provided in EPA (2004c) on the relative percentage of dermal exposure compared with oral exposures for non-volatile COPCs. Although a number of volatile COPCs were identified, partitioning risks between oral and dermal exposures for volatile COPCs is not necessary because the tap water PRGs account for the inhalation route of exposure. As a result, this evaluation addresses the uncertainties associated with exclusion of the dermal exposure pathway on the risk results for residential domestic use of groundwater for nonvolatile COCs.

Plume-based exposure areas (RU-C1, RU-C2, RU-C4, and RU-C5) and multiple nonplume exposure areas were evaluated for potential risks from domestic use of groundwater (see Attachment C3). Table C-32 lists the nonvolatile COPCs evaluated for domestic use exposure

for each of these exposure areas and the relative percentage of potential dermal exposure compared with oral exposure for each COPC. Exposure from the oral route is represented in this table by ingestion of 2 liters of water per day (EPA 2004c). Information was not available for 10 of the nonvolatile COPCs evaluated for domestic use.

Table C-32 shows that risks from domestic use of groundwater at Parcel C, which were calculated using a risk-based screening assessment and EPA Region 9 tap water PRGs, may be slightly to moderately underestimated for some metals, slightly to significantly underestimated for SVOCs and some pesticides, and significantly underestimated for PAHs. Of all the exposure areas evaluated for risks from residential domestic use of groundwater, all but one area exceeded the cancer risk threshold of 10^{-6} or the noncancer hazard threshold of 1. For these areas, the inclusion of the dermal pathway would not change the overall risk and hazard results; that is, risk and hazards would continue to exceed threshold levels in these areas. Domestic use of groundwater in the B-aquifer at exposure grid 089021 is associated with a noncancer HI less than 1 (see Table C3-40). None of the COPCs in grid 089021 are volatile; therefore, dermal exposure from domestic use of groundwater is not considered significant for this exposure area. A cancer risk was not calculated for grid 089021 because none of the COPCs for this exposure area are associated with cancer effects.

C9.5 SCREENING LEVELS FOR GROUNDWATER VAPOR INTRUSION

Based on agreements between the EPA, DTSC, and Navy, the generic RBSLs provided in Table 2c of EPA (2002a) were used in this HHRA to calculate risks for the groundwater vapor intrusion exposure pathway. This approach was used instead of site-specific modeling with the Johnson-Ettinger (1991) vapor model because the EPA (2002a) model assumptions (such a depth to groundwater and soil physical properties) used to calculate the generic screening criteria are similar to the properties of soil and groundwater at HPS. Site conditions at HPS (shallow depth to groundwater and coarse soils; see Section 2.0 of the Final FS Report for Parcel C) do not differ from the conditions assumed for the generic screening values to warrant detailed modeling using the Johnson-Ettinger model.

The Navy evaluated risks from vapor intrusion for selected groundwater plumes at HPS using generic EPA (2002a) risk-based screening values for vapor intrusion and site-specific modeling. These two approaches were used to evaluate whether the generic values would represent conditions at HPS and would not result in a significant overestimate of potential risks. The results of this evaluation showed that risks calculated ratiometrically using generic EPA risk-based vapor intrusion screening values are comparable to site-specific risks calculated using the Johnson-Ettinger model adjusted for HPS-specific values for depth to groundwater and physical properties of the soil. Risks calculated using the generic EPA screening values were higher than the modeled results by approximately a factor of two. The difference results from an assumed basement exposure scenario in the generic EPA screening values, whereas the modeled results were based on a slab-on-grade exposure scenario because of the shallow depth to groundwater at HPS (roughly 9 to 10 feet bgs). This difference is not considered significant for risk results, which are represented by order-of-magnitude estimates.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
22	Environmental impacts to the San Francisco Bay	Section 2.5.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix G.

APPENDIX G
PRELIMINARY SCREENING OF GROUNDWATER EFFECTS TO SAN FRANCISCO BAY AT PARCEL C

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ACRONYMS AND ABBREVIATIONS

µg/L	Microgram per liter
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BHC	Benzene hexachloride
CAP	Corrective Action Plan
CCC	Criterion continuous concentration
CMC	Criterion maximum concentration
COEC	Chemical of ecological concern
COPEC	Chemical of potential ecological concern
CTR	California Toxics Rule
DCB	Dichlorobenzene
DNAPL	Dense nonaqueous-phase liquid
EPA	U.S. Environmental Protection Agency
FAV	Final acute values
FCV	Final chronic values
FPV	Final plant values
FRV	Final residue values
F-WBZ	Bedrock water-bearing zone
HGAL	Hunters Point groundwater ambient level
HPS	Hunters Point Shipyard
LNAPL	Light nonaqueous-phase liquid
Navy	U.S. Department of the Navy
NAWQC	National Ambient Water Quality Criteria
NRWQC	National Recommended Water Quality Criteria
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
RU	Remedial Unit
SVOC	Semivolatile organic compound
TCE	Trichloroethene
TPH	Total petroleum hydrocarbons
TTPH	Sum of the fractions of total petroleum hydrocarbons
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board

G1.0 INTRODUCTION

This appendix summarizes the screening evaluation of chemicals detected in groundwater at Parcel C. This evaluation was developed because chemicals in groundwater at Hunters Point Shipyard (HPS) have the potential to affect surface waters if they migrate and discharge to San Francisco Bay at sufficiently high concentrations. Surface water quality criteria, such as the National Ambient Water Quality Criteria (NAWQC) and the California Toxics Rule (CTR), have been developed to protect the environment, including marine organisms, from effects caused by chemicals in surface water. The beneficial uses of groundwater do not include maintenance of freshwater or marine organisms because these organisms do not live in groundwater. No water quality criteria for the protection of organisms exist for groundwater; therefore, alternative water quality criteria for groundwater must be developed to evaluate the potential for chemicals in groundwater at HPS to result in effects to San Francisco Bay.

There are no surface water bodies on Parcel C; however, the U.S. Department of the Navy (Navy) evaluated federal and state surface water quality criteria as potential applicable or relevant and appropriate requirements (ARAR) for Parcel C because groundwater discharges to San Francisco Bay. For the A- and B-aquifers and the bedrock water-bearing zone (F-WBZ), the Navy has determined that the state standards promulgated in Table 3-3 of the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) and the federal standards promulgated in the CTR are potential ARARs for Parcel C to be met at the interface of groundwater and the bay. Conversely, the Navy has determined that the guidelines in the National Recommended Water Quality Criteria (NRWQC) (U.S. Environmental Protection Agency [EPA] 2006) and NAWQC are not ARARs for the interface of the A- and B-aquifer groundwater and San Francisco Bay because there are other standards (such as Table 3-3 and CTR) better suited to Parcel C. (Refer to Section D2.1.3 in Appendix D for detailed discussion of ARARs for surface water.) All of these standards apply to surface water; none of them apply to groundwater. Therefore, these potential surface water ARARs would be applied to the surface water at the interface of A- and B-aquifer groundwater and would not be used to set cleanup standards for in situ A- or B-aquifer groundwater at Parcel C.

The evaluations in this appendix consider both ARAR-based surface water quality criteria (Table 3-3 and CTR) and non-ARAR-based criteria (NRWQC and NAWQC) for screening data at Parcel C to provide a comprehensive analysis based on agreements with the regulatory agencies. However, chemicals of ecological concern (COEC) are determined based on ARARs (Table 3-3 and CTR), as well as on the screening evaluation. These COECs will be considered in the remedial design during preparation of the groundwater monitoring plan.

The nearest surface water body to Parcel C, where CTR are applicable, is San Francisco Bay. Chemicals in groundwater at Parcel C could affect surface water quality as the contaminated groundwater migrates and discharges to the bay. To prevent discharging chemicals to the bay at concentrations sufficient to affect the surface water quality, the Navy developed trigger levels at various inland locations to ensure surface water quality criteria are not exceeded if groundwater at Parcel C discharges to the bay. The trigger levels are intended to serve as comparison values for groundwater to identify when additional evaluation may be necessary. The development of

the trigger levels is discussed in Appendix H; however, before the inland concentrations could be developed, the appropriate surface water quality criteria to use for the bay near Parcel C had to be selected. Once that was accomplished, the surface water quality criteria were screened against the chemical concentrations in groundwater to identify which chemicals are chemicals of potential ecological concern (COPEC) for surface water quality. Site-specific data were then evaluated to identify COECs in groundwater.

Section G2.0 of this appendix identifies the appropriate surface water quality criteria that are protective of marine organisms in San Francisco Bay under long-term (chronic) exposure scenarios. Section G3.0 summarizes the results of the screening of groundwater concentrations at Parcel C with the appropriate surface water quality criteria, highlighting chemicals for which maximum concentrations in groundwater exceeded the surface water quality criteria for San Francisco Bay. These chemicals were then further evaluated, considering frequency of detection and location to select COECs. A series of tables presents this evaluation. Section G4.0 summarizes the review of uncertainty related to the use of promulgated surface water criteria for San Francisco Bay. Section G5.0 presents the results of the evaluation, listing the COECs. Documents reviewed to prepare this appendix are provided in Section G6.0.

G2.0 SELECTION OF SURFACE WATER QUALITY SCREENING CRITERIA

Surface water quality criteria are not applicable to groundwater; however, potential impacts to San Francisco Bay could occur if concentrations of chemicals in groundwater that exceed surface water quality criteria were to discharge to surface waters. This highly conservative screening method minimizes the potential that discharge of groundwater from Parcel C would affect marine organisms in the bay.

As directed by Section 304(a) of the Clean Water Act, EPA develops and publishes NRWQC as guidance to states and tribes for the promulgation of their respective surface water quality standards (EPA 2006). The law requires that these criteria be based on the latest scientific knowledge. State and regional regulatory agencies responsible for monitoring and maintaining beneficial use of the waters of the state often adopt national criteria, with modifications that reflect regional conditions, including naturally occurring (ambient) concentrations of metals or other variables.

Surface water quality criteria selected for consideration at HPS were compiled through a review of published regulatory standards, goals, and guidance, including those established by the San Francisco Bay Regional Water Quality Control Board (Water Board) in "Water Quality Control Plan, San Francisco Bay Basin Region" (Water Board 1995) and "A Compilation of Water Quality Goals" (Marshack 2007); the EPA in the CTR (EPA 2000) and NRWQC (EPA 2006); and other sources, as appropriate (Water Board 1998). Although only the Basin Plan and the CTR are applicable, this wider screening evaluation was completed at the request of the Base Realignment and Closure Cleanup Team. Table G-1 presents this compilation of surface water quality criteria and the relevant sources for each criterion.

The compilation and selection of surface water criteria to be used for a preliminary screening of the groundwater data is described in Section G2.1. Because the only available criterion for chromium was based on chromium VI, the Navy derived a surface water criterion for chromium III for this project; the methods and rationale for the derivation of the chromium III value are presented in Section G2.2. Groundwater samples at Parcel C also were compared with the Hunters Point groundwater ambient levels (HGAL) to distinguish site-related chemicals from those present at ambient concentrations, as discussed in Section G2.3.

G2.1 COMPILATION AND SELECTION OF SURFACE WATER QUALITY CRITERIA

Two levels of protectiveness, differentiated by estimates of exposure duration, are addressed by surface water quality criteria. Acute exposure is generally defined as less than 96 hours, while chronic exposure is a period of time longer than acute exposure, and includes durations up to the organism's entire lifetime. In general, the acute exposure criteria are much higher than the chronic exposure criteria because of the much shorter exposure duration under the acute scenario. The surface water quality criteria are not simply numerical targets; the criteria specify a magnitude, duration, and frequency to be met in order to provide protection of marine organisms. For example, chronic criteria are applied as a limit on the 4-day average concentration in the environment. Both the acute and chronic criteria are values that are not to be exceeded more than once in 3 years.

The connection between groundwater at Parcel C to San Francisco Bay is assumed to be complete. However, selection of appropriate surface water quality criteria (acute or chronic) for the protection of marine organisms at a given site requires that the exposure scenario be defined. Normally, short-term exposure to a groundwater discharge prior to dilution in the receiving waters would be considered an acute exposure. This acute exposure could only occur very close to the discharge point. The longer-term exposures that occur within the receiving water, after dilution and mixing have occurred, are considered chronic exposures. Chronic exposure is considered the most appropriate scenario to represent the exposure of organisms to a continuous discharge of chemicals in undiluted groundwater at the interface. For selecting COPECs, (1) the chronic (long-term) surface water criteria were used as screening criteria and (2) no dilution of the groundwater within the bay was assumed. Although these two conditions cannot realistically co-occur, because as chronic exposure occurs (more than 96 hours) mixing of groundwater and the bay must occur, both assumptions are used initially to select COPECs. Although the Navy and the regulatory agencies debated the merits and drawbacks of adopting a conservative approach, the regulatory agencies' opinion was that a very high level of conservatism was required and the Navy agreed to pursue this evaluation using several highly conservative assumptions.

Available surface water quality criteria are shown in Table G-1. For some chemicals, no chronic laboratory tests have been conducted, so the acute test results were adjusted to estimate a chronic value (by lowering the value by 80 percent [EPA 1986]). Acute exposure is represented by the criterion maximum concentration (CMC), which is an estimate of the highest concentration of a chemical in surface water to which an aquatic community can be exposed briefly (generally from 48 to 96 hours) without resulting in an unacceptable effect (EPA 2006).

Chronic exposure is represented by the criterion continuous concentration (CCC), which is an estimate of the highest concentration of a chemical in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect (EPA 2006).

As a practical matter, marine organisms in San Francisco Bay will be exposed to undiluted groundwater only briefly at the precise point of its entry to the bay. Even at the point of entry into the bay, some dilution of groundwater will already have occurred within the tidal mixing zone that extends landward from the sediment-to-water interface. The acute exposure scenario best represents the actual exposure of organisms to chemicals in the groundwater plume living at the sediment-water interface because of the short time before groundwater mixes with the surrounding surface water. Once the expected mixing of discharged groundwater with receiving waters occurs, a chronic exposure scenario is more representative of conditions experienced by marine organisms.

The Water Board (2006) has requested that the Navy focus on the point at which groundwater enters San Francisco Bay rather than on the post-mixing conditions that prevail more generally; elimination of mixing within the bay adds a significant conservative element to the evaluation. Therefore, the acute exposure scenario, represented by the CMCs, is the most relevant and appropriate set of surface water criteria for this evaluation. However, the chronic surface water quality criteria (CCC) were used for this evaluation to maintain consistency with agreements between the Navy and the Water Board to provide a highly conservative approach. Use of chronic instead of acute criteria adds a further degree of conservatism to the assessment. Uncertainties associated with use of the chronic criteria in an acute exposure scenario are discussed in Section G4.0.

A set of surface water quality criteria was selected for use in the screening-level evaluation from available regional, state, and federal surface water criteria, as shown in Table G-1. Individual toxicity criteria were selected using a methodology that sorts and selects criteria according to applicability and quality of data. First, criteria were sorted by applicability and quality of data into one of four tiers. Chronic exposure toxicity criteria were identified as most applicable for the exposure scenario at Parcel C and more protective (lower concentration values) than short duration acute or instantaneous exposure toxicity criteria (higher concentration values). As a result, applicable chronic exposure toxicity criteria were placed in the first tier of applicability. Where more than one applicable toxicity value was available in the same tier, the most protective (lowest) value was selected for screening purposes.

If no first tier criterion was available for a specific chemical, an acute value was selected as a second tier criterion. Each acute criterion was made more protective by lowering the value by 80 percent to make acute criteria more appropriate for use in chronic exposure scenarios (EPA 1986). Where no first or second tier criteria were available, instantaneous criteria were used as third tier criteria. Each instantaneous criterion was made more protective by lowering the value by 90 percent to make instantaneous criteria more appropriate for use in chronic exposure scenarios (EPA 1986).

For total petroleum hydrocarbons (TPH), surface water criteria were established in the "Revised Draft Petroleum Hydrocarbons Corrective Action Plan [CAP] for Parcels C, D, and E" (Tetra Tech EM Inc. and Washington Group 2002). These criteria are based upon total TPH (TTPH), defined as the sum of gasoline-, diesel-, and motor oil-range hydrocarbons, with an increase in the criteria concentrations as distance from the shoreline increases. The screening criteria for TTPH are explained more fully below.

As documented in the Revised Draft CAP Report (Tetra Tech EM Inc. and Washington Group 2002), and a subsequent letter to the Water Board (Navy 2004) with which the Water Board concurred (Water Board 2004), two groundwater criteria are available for HPS to protect San Francisco Bay from petroleum contamination. One criterion provides specific limits for dissolved-phase total TTPH in groundwater as a function of distance from the shoreline, as summarized in the table below.

TTPH and Distance from Shoreline Parameters

Distance From Shoreline (feet)	TTPH Groundwater Criteria (µg/L)
0 to 50	1,400
50 to 100	2,100
100 to 150	4,800
150 to 200	9,500
200 to 250	16,000
>250	20,000

Note:

µg/L Microgram per liter

The second criterion developed by the Navy is the removal of any recoverable free product encountered, regardless of its location. Recoverable free product is defined as any measurable thickness of free product (Tetra Tech EM Inc. and Washington Group 2002).

Surface water criteria that were selected as screening criteria for all other chemicals in groundwater are shown in the last column of Table G-1.

G2.2 DERIVATION OF CHROMIUM III WATER QUALITY CRITERIA

No marine chronic value for chromium III has been derived by the regulatory agencies responsible for maintaining water quality because chromium III is not considered a major environmental threat. As discussed later in this section, EPA (1980) found that data were not sufficient to justify setting a marine criterion for chromium III. Attention has been focused on chromium VI, for which toxic effects have been well demonstrated. Likewise, during the groundwater assessments at HPS, chromium III is not considered of great concern; however, chromium III concentrations may increase as a byproduct of natural or induced degradation of the chromium VI plumes. Chromium III concentrations in groundwater will be screened against

a derived chromium III surface water criterion. The chromium VI criteria are generally the only standards for chromium in marine surface water (EPA 2006). Instead of surface water criteria for chromium III in marine waters, states often use the chromium VI value as a default, with an acknowledgement that chromium III is considerably less toxic.

Although a wide variety of procedures has been used to derive surface water criteria, most of these procedures have been developed using some variation of the theoretical toxicological approach, which is an effects-based approach that relies on published toxicity data from the scientific literature.

The EPA's formal protocol for deriving surface water criteria for the protection of marine organisms and their uses requires information on the physical and chemical properties of the substance under consideration, on its toxicity to aquatic plants and animals, on its bioaccumulation in marine organisms, and on its potential effects on consumers of aquatic biota (Stephan and others 1985). The formalized protocol includes specific procedures for calculating final acute values (FAV), final chronic values (FCV), final plant values (FPV), and final residue values (FRV) from the available data, provided that the minimum data requirements have been met. For example, derivation of a FAV for marine and estuarine waters requires acute toxicity data on at least eight families of marine organisms, including at least two families of chordates, five families of invertebrates, and one other family (such as a plant). The short-term CMC of the substance is then calculated by applying a safety factor (0.5) to the FAV. The lowest of the FCV, FPV, and FRV is used directly to establish the long-term mean CCC. The criteria are then subjected to critical review to evaluate the completeness of the data and the appropriateness of the results.

When EPA developed surface water criteria in the 1980s, it was known that chromium VI was the form in which chromium was most readily absorbed by living organisms, and that chromium III had low solubility and toxicity in saltwater. Chromium III is stable under conditions in San Francisco Bay and is unlikely to alter to chromium VI. Conversion of chromium III to chromium VI is controlled by the concentrations of photochemically produced iron as Fe II and hydrogen peroxide. Iron and organic substances reduce chromium VI to chromium III in biologically mediated processes. Additionally, chromium III tends to either precipitate or complex with ligands and absorb to solids, removing it from the water column (Gianguzza, Pelizzetti, and Sammartano 2000). A review of the literature on toxicity of chromium III to marine organisms in EPA (1980) listed no chronic studies and only two acute studies (oyster and crab zoea). The data were considered insufficient at that time to support the development of an acute or chronic marine criterion for chromium III. A review of toxicity of chromium III to marine organisms yielded no new studies conducted since the original surface water criteria were developed. The available toxicity data are reviewed below.

The mean acute toxicity value for the oyster was 10,300 µg/L of total recoverable chromium III (Calabrese 1973, as cited in EPA 1980); for crab zoea, the mean acute value was 56,000 µg/L. Based on these data, EPA (1980, page B-7) concluded that "…probably because of precipitation, a large amount of trivalent chromium must be added to saltwater to kill aquatic organisms." For example, polychaete worms exposed to 50,400 µg/L were killed, likely because of a drop in

pH (4.5) from chromium precipitation. When pH was held stable, the worms survived and reproduced at the 50,400 µg/L exposure concentration (Mearns and others 1976, as cited in EPA 1980).

In a review of chromium III hazards to marine organisms, Eisler (1986) listed a range of acute toxicity values from 3,300 µg/L (fish 96 hours) to 56,000 µg/L (crab 96 hours). The only chronic value available (12,500 µg/L) was based on a 21-day test of the polychaete worm *Neanthes arenaceodentata*. In acute tests, this polychaete was the most sensitive species tested.

The lack of chronic marine data for chromium III requires that some assumptions be made to derive a surface water criterion for this metal. Acute criteria are typically reduced by 80 percent to make acute water criteria more appropriate for use in chronic exposure scenarios (EPA 1986). The table below presents acute toxicity data for marine species exposed to chromium III with adjustments for chronic exposure. The lowest chronic value for chromium III in marine water (400 µg/L) was selected as the surface water criterion for Parcel C. Use of chronic instead of acute criteria and use of the lowest estimated chronic value add a further degree of conservatism to the assessment, as agreed to with the regulatory agencies.

Chromium III Toxicity to Marine Organisms

Exposure		Effect	Reference
Acute (µg/L)	**Estimated Chronic* (µg/L)**		
2,000 to 105,000	400 to 21,000	Mean acute toxicity, multiple Species	EPA 1980
3,300 to 56,000	660 to 11,200	Acute (96 hours) toxicity, multiple species	Eisler 1986
10,300	2,060	Acute toxicity to American oyster	Calabrese 1973, as cited in EPA 1980
None	12,500 (actual chronic exposure)	Toxicity to *Neanthes arenaceodentata*	Eisler 1986
100,800	Not applicable	No effect on survival or reproduction in polychaete	Mearns and others, as cited in EPA 1980

Note:

* Acute–to-chronic adjustment defined as a reduction of the acute level by 80 percent (EPA 1986)

G2.3 CONSIDERATION OF AMBIENT GROUNDWATER CONCENTRATIONS

Navy policy requires that regional background or ambient concentrations of chemicals be explicitly considered during the selection of COPECs (Navy 2004). To avoid selecting chemicals for which the allowable concentration in groundwater is less than the background concentration, the selected surface water criteria (see Table G-1) were compared with the HGAL and the higher of the two was selected as the surface water screening criterion that was used to select COPECs. HGALs were developed for the A-aquifer; however, they also are applicable for the B-aquifer at Parcel C because HGALs were developed for fill conditions, which are similar

in both A- and B-aquifers at Parcel C. Furthermore, at Parcel C there is interconnection between the A- and B-aquifers, as shown on Figure 2-14 of the Final Parcel C Feasibility Study Report, at those locations where the B-aquifer occurs and there is no aquitard present to hydraulically separate them. Similarly, the HGALs are applicable for the F-WBZ because of the frequent interconnection of the A-aquifer and the F-WBZ.

G3.0 GROUNDWATER SCREENING RESULTS

Maximum concentrations of chemicals detected in the A-aquifer, B-aquifer, and F-WBZ groundwater at Parcel C were screened against the surface water quality criteria identified in Section G2.0 and Table G-1 to identify potential releases that might exceed water quality goals in surface waters. When no surface water quality criteria were available, the chemicals were eliminated from the analysis. The lack of an established criterion for surface water quality is interpreted to indicate the regulatory agencies do not consider these chemicals to be significant threats to environmental receptors and justifies elimination of these chemicals from the analysis. The chemicals in the following table were eliminated based on the lack of an established criterion for surface water quality.

Chemical Eliminated Because No Established Criterion for Surface Water Quality was Available	
1,1,2-Trichloro-1,2,2-trifluoroethane	Chloroethane
1,1-Dichloroethane	Cobalt
2,4,6-Trichlorophenol	Delta-BHC
2-Hexanone	Dichlorodifluoromethane
2-Methylnaphthalene	Endrin ketone
Acetone	Iron
Acetophenone	m,p-Xylene
Alpha-BHC	Magnesium
Aluminum	Manganese
Antimony	Molybdenum
Barium	Potassium
Beryllium	Sodium
Beta-BHC	Trichlorofluoromethane
Bis(2-ethylhexyl)phthalate	Vanadium
Calcium	Vinyl acetate
Caprolactam	Vinyl chloride
Carbon disulfide	Xylene (total)

Note:

BHC Benzene hexachloride

Chemicals detected at maximum concentrations that exceeded surface water quality criteria were identified as COPECs. Nine metals, 11 volatile organic compounds (VOC), 7 semivolatile organic compounds (SVOC), 8 pesticides, 2 polychlorinated biphenyls (PCB), TPH, and cyanide were selected as COPECs in the A-aquifer samples because they exceeded surface water quality criteria in samples with detected results (see Table G-2).

One metal (zinc) and two VOCs were selected as COPECs in the B-aquifer samples, and two metals (chromium VI and mercury), four VOCs, one pesticide, and TPH were selected as COPECs in the F-WBZ samples because they exceeded surface water quality criteria (see Tables G-3 and G-4).

Concentrations of each of the selected COPECs were further evaluated using the following criteria to determine the likelihood that they would affect San Francisco Bay:

1. Do measured concentrations consistently exceed surface water quality criteria during subsequent sampling events?

2. When was the most recent sample collected that exceeded the surface water quality criterion?

3. Can concerns about the COPEC be eliminated based on professional judgment of the extent and degree of the interpreted effect to the groundwater? The extent and degree of effect was assessed by reviewing the locations of recently detected concentrations, the likelihood that recently detected concentrations pose a threat to San Francisco Bay, and concentration trends on a well-by-well basis.

Finally, ARARs were reviewed to determine where chemical-specific ARARs are potentially applicable (see Appendix D). The Navy has identified the substantive provisions of the CTR (Title 40 of the Code of Federal Regulations Section 131.38) as potentially applicable federal chemical-specific ARARs and Table 3-3 of the Basin Plan as potentially applicable state chemical-specific ARARs for surface water, at the interface of the groundwater and San Francisco Bay.

These evaluation criteria were applied on a well-by-well basis for each well with detected concentrations of COPECs (see Tables G-5 and G-6). Figures G-1 through G-8 show the locations of the wells.

G3.1 CHEMICALS OF ECOLOGICAL CONCERN

Based on the chemical-specific ARARs and the well-by-well analysis, chromium VI and zinc were selected as COECs for the A-aquifer at Parcel C (see Table G-2). No chemicals were selected as COECs in the B-aquifer (see Table G-3) or the F-WBZ at Parcel C (see Table G-4). Table G-5 shows the well-by-well evaluation for chromium VI and zinc.

G3.1.1 Chromium VI

Chromium VI was selected as a COEC because of the detection frequency (17 of 266 samples) at concentrations exceeding the surface water criterion (50 µg/L) in selected wells in Remedial Unit (RU)-C1 and RU-C5 (see Figure G-1).

G3.1.2 Zinc

Zinc was selected as a COEC because it was detected (13 of 337 samples) at concentrations exceeding the surface water criterion (81 µg/L) (see Figure G-2). Although zinc was not frequently detected, a cluster of exceedances occurred in the Building 253 region of RU-C1, approximately 500 feet from San Francisco Bay. Groundwater samples collected from wells IR28MW921A and IR28MW930A had zinc concentrations of 180 µg/L and 350 µg/L during the last sampling event for these wells (July 2002). One other concern is the zinc concentration of 1,300 µg/L detected during the July 2002 sampling event in well IR28MW170A located in the center of Building 211 (RU-C1). However, zinc was not detected in five previous samples collected from this well. This well is located approximately 300 feet from the bay and is not currently sampled under the basewide groundwater monitoring program.

G3.2 CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN

Table G-6 shows the well-by-well evaluation of COPECs. Based on the evaluation results, 35 COPECs from the A-aquifer and all of the COPECs from the B-aquifer and F-WBZ were eliminated from further consideration. Table G-7 lists the chemicals eliminated as a result of this evaluation. Figures G-9 and G-10 show the wells where concentrations of COPECs exceeded water quality criteria. Figure G-9 shows locations where metal concentrations exceeded criteria, and Figure G-10 shows locations where organic chemical concentrations exceeded criteria.

Metals were eliminated from further consideration because they were not detected at concentrations exceeding screening criteria since at least 2002. SVOCs were eliminated from further consideration because no chemical-specific ARARs require remediation of these chemicals. Pesticides and cyanide were eliminated from further consideration based on infrequent detections. Water quality criteria for pesticides were generally below the detection limits of the analytical method; professional judgment was used to evaluate these chemicals. Detected pesticides were nearly always qualified because the detections were below the method detection limits. PCBs were also detected relatively infrequently, at wells distant from the shoreline.

Five VOCs (chlorobenzene, 1,4-dichlorobenzene [DCB], 1,2-DCB, tetrachloroethene [PCE], and trichloroethene [TCE]) are discussed in additional detail below. These VOCs were eliminated from further consideration because no chemical-specific ARARs require remediation of these chemicals. However, these VOCs will be addressed at Parcel C based on vapor intrusion risk. Free-phase TPH has been detected at Parcel C; TPH will be addressed under the TPH program.

G3.2.1 Chlorobenzene

Chlorobenzene was detected (38 of 1,067 samples) at concentrations above its surface water criterion (129 µg/L). The exceedances occurred in samples collected from five wells in RU-C2 and four wells in RU-C5 (see Figure G-3). Samples from these wells have consistently exhibited chlorobenzene at concentrations exceeding the surface water criterion. The wells with elevated concentrations of chlorobenzene in RU-C2 are located just north of Building 251 in the vicinity of two former underground storage tanks that contained solvents. The highest chlorobenzene concentration detected in this area was 9,900 µg/L in a sample collected from well IR28MW909A during in February 2001. Wells with elevated concentrations of chlorobenzene in RU-C5 are located in the vicinity of the sump and dip tank area adjacent to the north end of Building 134. The highest chlorobenzene concentration detected in this area was 2,300 µg/L in a sample collected from well IR25MW15A1 in January 2001.

G3.2.2 1,4-Dichlorobenzene

1,4-DCB was detected (69 of 1,064 samples) at concentrations exceeding the surface water criterion (129 µg/L). The distribution of the exceedances is similar to that of chlorobenzene (that is, Building 251 of RU-C2 and Building 134 of RU-C5) (see Figure G-4). Three wells in the RU-C2 area have consistently exhibited 1,4-DCB concentrations exceeding the surface water criterion. The highest 1,4-DCB concentration detected in this area was 940 µg/L in a sample collected in February 2001 from well IR28MW909A. This sample also had the highest chlorobenzene concentration reported in RU-C2. Eight wells in the Building 134 portion of RU-C5 have samples with 1,4-DCB concentrations that persistently exceeded the surface water criterion. In general, concentrations detected in RU-C5 were higher than those in RU-C2. The highest 1,4-DCB concentration from RU-C5 was 15,000 µg/L in the sample collected from well IR25MW19A in January 1998. This well was subsequently sampled three times in 2001, and the last concentration detected was 4,000 µg/L. Other wells in RU-C5 with 1,4-DCB concentrations persistently exceeding the surface water criterion are IR25MW15A1, IR25MW15A2, IR25MW901B, and IR25MW902B.

G3.2.3 1,2-Dichlorobenzene

1,2-DCB was detected (80 of 1,065 samples) at concentrations exceeding its surface water criterion (129 µg/L). The distribution of the exceedances is similar to that of chlorobenzene and 1,4-DCB (see Figure G-5). The wells with one or more exceedances included eight in RU-C5, five in RU-C2, and one in RU-C4. The highest concentrations were in the Building 134 of RU-C5, with eight wells exhibiting 1,2-DCB concentrations exceeding the surface water criterion. These are the same eight wells in RU-C5 that have 1,4-DCB exceedances. The highest concentration of 1,2-DCB in RU-C5 was 59,000 µg/L detected in a sample collected from well IR25MW19A in 2001. Five wells in RU-C2 exhibited 1,2-DCB concentrations exceeding the surface water criterion. The highest concentration of 3,300 µg/L was reported in a sample collected from well IR58MW31A in 1998. This well was also sampled three times in 2004 as part of the basewide groundwater monitoring program, and concentrations ranged from 140 to 270 µg/L. The single well in RU-C4 where 1,2-DCB exceedances occurred is

IR28MW407. This well was sampled three times in 2004, with concentrations ranging from 92 to 200 µg/L.

G3.2.4 Tetrachloroethene

PCE was detected (51 of 1,083 samples) at concentrations exceeding its surface water criterion (450 µg/L). All of the exceedances were in samples from eight wells located in the vicinity of the former dip tank and sump in Building 134 in RU-C5 (see Figure G-6). The highest PCE concentration detected was 72,000 µg/L in a sample collected from well IR25MW19A in January 2001. In 2002, dense nonaqueous-phase liquid (DNAPL) was observed in this well and also in wells IR25MW15A2 and IR25MW902B. A sample of the product collected from well IR25MW19A indicated the presence of multiple VOCs, dominated by 1,2-DCB, 1,4-DCB, PCE, and TCE.

G3.2.5 Trichloroethene

TCE was detected (108 of 1,082 samples) at concentrations exceeding its surface water criterion (400 µg/L). TCE exceeded the screening criteria in samples from 12 wells in RU-C4, 7 wells in RU-C5, and 1 well in RU-C1 (see Figure G-7). The highest TCE concentrations detected in RU-C4 were in samples from wells located in the northeastern portion of Building 272. The maximum TCE concentration reported in RU-C4 was 76,000 µg/L in a sample collected from well IR28MW211F in November 2002. This concentration is 6.9 percent of the aqueous solubility of TCE (1,100,000 µg/L), which may indicate the presence of DNAPL. In general, the high TCE concentrations detected in RU-C4 were during sampling events in 2001 and 2002. Subsequent to 2002, these concentrations have decreased markedly. For example, TCE concentrations in three rounds of sampling of well IR28MW211F in 2004 ranged from 7.7 to 150 µg/L. The occurrence of TCE concentrations exceeding the surface water criterion in RU-C5 is similar to that of PCE described above. The highest TCE concentration detected in samples from this area was 18,000 µg/L during the January 2001 sampling event at well IR25MW19A. For RU-C1, only well IR28MW151A exhibited TCE concentrations exceeding the surface water criterion. The sample collected from this well in January 2002 had a TCE concentration of 1,400 µg/L. However, TCE concentrations in samples collected in 2004 ranged from 24 to 55 µg/L, which is well below the surface water criterion.

G3.2.6 Total Petroleum Hydrocarbons

TPH was detected in groundwater and observed as a light nonaqueous-phase liquid (LNAPL) in RU-C5 (see Figure G-8). As documented in the Revised Draft CAP for Parcels C, D, and E (Tetra Tech EM Inc. and Washington Group 2002), and a subsequent letter from the Navy to the Water Board (Navy 2004) with which the Water Board concurred, two groundwater criteria are available for HPS to protect the Bay from petroleum contamination. One criterion provides specific limits for dissolved-phase TTPH in groundwater as a function of distance from the shoreline, as summarized in Section G2.0.

The second criterion developed by the Navy is the removal of any recoverable free product encountered, regardless of its location. Recoverable free product is defined as any measurable thickness of free product (Tetra Tech EM Inc. and Washington Group 2002); visible sheen is not considered free product.

Only one well near the shoreline at Parcel C exhibited a TTPH concentration above the criterion of 1,400 µg/L. Well IR28MW269A is located in RU-C1, approximately 30 feet from Dry Dock 2. A sample collected from this well in May 1996 exhibited a TTPH concentration of 2,070 µg/L. This well was subsequently sampled three times (April 1999, August 2000, and February 2001), and TTPH was not detected during any of these sampling events. A sample collected in 1995 from well IR28MW129A in RU-C1 had a TTPH concentration of 22,300 µg/L. Several feet of LNAPL was noted in this well in August 2000. This well is located over 500 feet from San Francisco Bay, thus the maximum concentration allowable under the screening criteria is 20,000 µg/L. TTPH concentrations in samples from several wells in the Building 134 portion of RU-C5 exceeded 20,000 µg/L. The distance to the Bay from this area is approximately 600 feet. Examples of elevated TPH concentrations include 970,000 and 290,000 µg/L detected in samples collected from wells IR25MW19A and IR25MW15A1, respectively. Most of the TPH in samples from well IR25MW19A is in the motor oil range, while most TPH in samples from well IR2515A1 is in the gasoline range. Both of these wells have been decommissioned; new wells were installed in nearby areas as part of bioremediation treatability study. LNAPL has historically been reported in several Parcel C wells. There are several possible sources for petroleum hydrocarbon contamination in groundwater at RU-C5, including a tank farm, fuel lines, dip tank, and machine shop operations.

The reported thickness of historic product in these wells is presented in the table below.

Reported Historical Free Product Thickness in Parcel C Wells

RU	Well	Reported Thickness (feet)	Date
RU-C1	IR28MW129A	Reported as visual and not measured	11/02/1995
		>1	6/14/2000
		13.05	8/1/2002
	IR28MW353A	0.02	4/2000
		0.02	8/9/2002
RU-C4	IR28MW275F	0.02	8/9/2002
RU-C5	IR25MW11A	Reported as visual and not measured	11/02/1995
		0.2	8/15/2000
		0.37	2002
	IR25MW19A	Reported as visual and not measured	3/31/01
	IR25MW22A	Reported as visual and not measured	8/16/2000

G3.2.7 B-Aquifer and F-WBZ Chemicals of Potential Ecological Concern

Evaluation of COPECs for the B-aquifer and F-WBZ followed the same methodology as that used for the A-aquifer. No chemicals were selected as COECs in the B-aquifer or in the F-WBZ.

G4.0 UNCERTAINTY

Uncertainty plays an important role in risk-based decision-making; therefore, uncertainty is incorporated explicitly into the characterization of potential risk posed by chromium VI and zinc at Parcel C. By design, this screening-level evaluation is centered on conservative default assumptions that result in overestimates of risk (EPA 1997). This section describes the magnitude and directional bias in known sources of uncertainty in this evaluation.

Uncertainty is generally defined as a component of risk or degree of hazard resulting from imperfect knowledge of the present or future state of the system under consideration (Suter 1993). Most uncertainty in environmental assessments can be categorized as follows:

- Mistakes in execution of assessment
- Imperfect knowledge of factors that could be known
- Inherent randomness of the natural environment

Compared with the strict numerical criteria that dominate human health evaluations, the use of ecological models and criteria tends to increase the level of uncertainty associated with a groundwater investigation. The sections below include brief reviews of some sources of uncertainty associated with the use of surface water criteria in relation to Parcel C groundwater.

G4.1 UNCERTAINTY IN DEVELOPMENT OF SURFACE WATER CRITERIA

For marine organisms, the NRWQC are derived using a methodology published in "Guidelines for Deriving Numeric National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses" (Stephan and others 1985). Under these guidelines, criteria are developed from data quantifying the sensitivity of species to toxic compounds in controlled studies. Almost all of the data used to derive the criteria are from studies on animals and plants under controlled laboratory conditions. No adjustment for laboratory to field variance is typically made.

It is possible to conduct long-term sublethal laboratory tests to derive chronic water quality criteria. In reality, though, chronic toxicity tests are much more expensive than acute tests and are not as frequently conducted. For many chemicals, chronic toxicity testing data are inadequate to meet the minimum requirement of eight families of marine organisms to develop surface water criteria. In such instances, EPA allows the estimation of a chronic criterion from the FAV using ratios derived from studies in which both acute and chronic tests have been conducted simultaneously for the same species. Acute-to-chronic ratios are calculated for each set of parallel tests, then averaged (using the geometric mean) to arrive at the final

acute-to-chronic ratio. The acute-to-chronic ratio is the ratio of the acute toxicity to chronic toxicity of a chemical or sample that can be used to predict acute toxicity from chronic data and vice-versa. Three studies with parallel testing are required to calculate a valid final ratio. The chronic criterion is then calculated from the FAV (not the acute criterion) by dividing it by the final acute-to-chronic ratio. Although the protocol is well-defined, the resulting chronic criterion may bear little relation to actual toxicity experienced by marine organisms in the field.

The saltwater criteria for metals are expressed in terms of dissolved metal in the water column, following EPA protocols. The chronic chromium VI criterion of 50 µg/L was back-calculated from the published dissolved value, which was derived by multiplying the total recoverable concentration by a conversion factor, such as the acute-to-chronic ratio.

G4.1.1 Speciation and Bioavailability of Chromium III in Receiving Water

Because local, state, and federal applicable or relevant and appropriate requirements do not provide criteria for chromium III in marine waters, most regulatory agencies, including those in California, default to using the chromium VI criteria for all species of chrome. However, chromium III is dramatically less toxic than chromium VI to polychaetes and crustaceans (but not to molluscs or teleosts) in saltwater (Eisler 1986). Given that chromium exists in two major valence states, depending upon the presence of oxygen in the sediment and the water column of the receiving water body, it is essential to distinguish between chromium III and chromium VI. Also, natural and induced degradation of chromium VI may result in increased chromium III concentrations. In saltwater, chromium III is relatively non-toxic and chromium VI is highly toxic. The current science indicates that reduction/oxidation conditions present within the water column and sediment govern the chemistry of chromium, as a recent investigation in Baltimore Harbor has demonstrated (Maryland Department of the Environment 2004). In Baltimore Harbor, low dissolved oxygen in the water column and high biological oxygen demand in the sediment pushed the conversion of chromium VI to chromium III (Maryland Department of the Environment 2004). Much of the chromium III adsorbed to the sediment, where it was involved in reactions that created stable oxides and hydroxides that were unavailable for partitioning into porewater (Maryland Department of Environment 2004).

Uncertainty related to speciation of chromium in receiving waters is by no means a trivial variable. Sensitivity of marine organisms to chromium VI and chromium III varies by several orders of magnitude. *Neanthes arenaceodentata*, a marine polychaete worm, is the most sensitive marine organism reported in the literature (Eisler 1986). Concentrations of chromium VI of less than 100 µg/L interfered with feeding, reproduction, and larval development (Eisler 1986). Yet this same marine species demonstrated no adverse reaction whatsoever to concentrations of chromium III more than 3 orders of magnitude greater than the effect level of chromium VI.

The two forms of chromium differ markedly in their availability to marine organisms. Because of its very low solubility in seawater, chromium III is not readily taken up by organisms. Barnacles (*Balanus* sp.) accumulated chromium VI in their tissues at concentrations up to 1,000 times greater

than ambient concentrations. In contrast, chromium III was quickly removed by the filtering activity of the barnacle and was not concentrated in soft tissues. Instead, the barnacle eliminated chromium III via the digestive system, according to studies reported in Eisler (1986).

Studies such as these illustrate the technical flaws in adopting surface water criteria for chromium III developed using test results for chromium VI. The two chemicals are similar in name, but not in toxicity.

G4.1.2 Speciation and Bioavailability of Chromium and Zinc in Receiving Water

The ultimate fates of chromium and zinc in San Francisco Bay are controlled by physical and chemical properties of the surface water, including pH, oxidation/reduction potential, hardness, alkalinity, organic and inorganic ligands, and other cations that compete for binding sites, water temperature, and other factors.

The actual bioavailability and toxicity of dissolved chromium and zinc released in groundwater to San Francisco Bay cannot be predicted using available data. For chromium and zinc, the surface water criteria concentrations are higher than ambient concentrations in groundwater at Parcel C. No site-specific tests of chromium or zinc toxicity were conducted.

G5.0 CONCLUSIONS

Based on the screening of chemical concentrations with surface water criteria and the well-by-well evaluation, chromium VI and zinc were selected as COECs. The Navy has established trigger levels to protect against effects on marine organisms in San Francisco Bay (see Appendix H).

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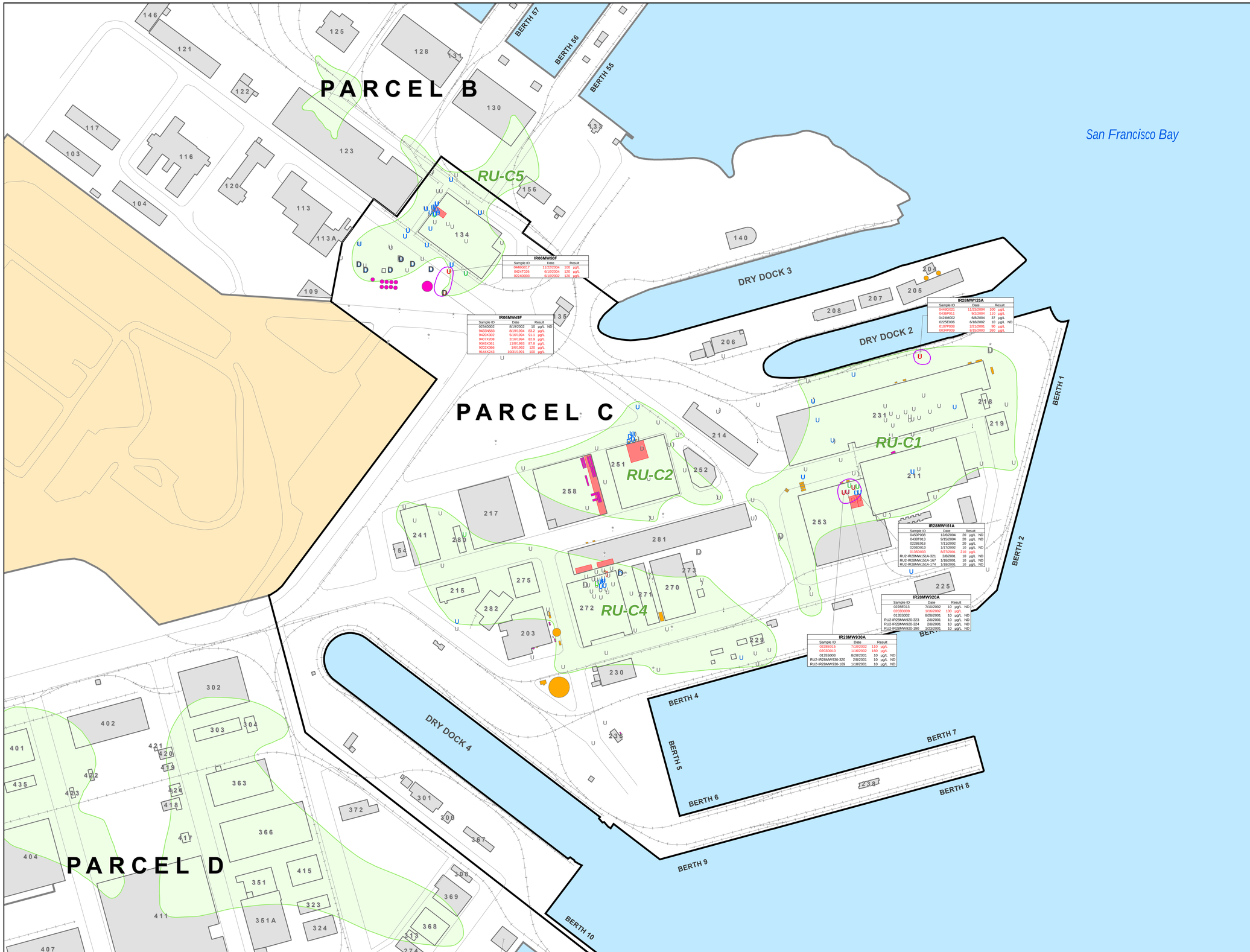
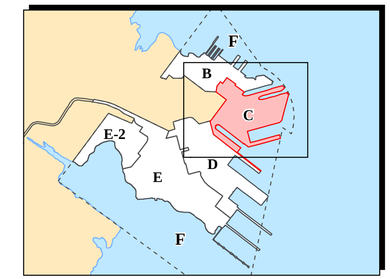
FIGURES





Location Map

Monitoring Well Types

- Active A-Aquifer Monitoring Well
- Active A/B-Aquifer Monitoring Well
- A-Aquifer Piezometer
- Decommissioned A-Aquifer Well
- Decommissioned A/B-Aquifer Well
- Active B-Aquifer Monitoring Well
- Active F-WBZ Monitoring Well

Color-Coding for Chromium VI Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for Chromium VI
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- Remedial Unit (RU) Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for Chromium VI is 50 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
ND	Result not detected at the associated reporting limit
RU	Remedial unit

N

150 0 150 300 450

Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-1

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR CHROMIUM VI IN THE A-AQUIFER

Feasibility Study Report for Parcel C

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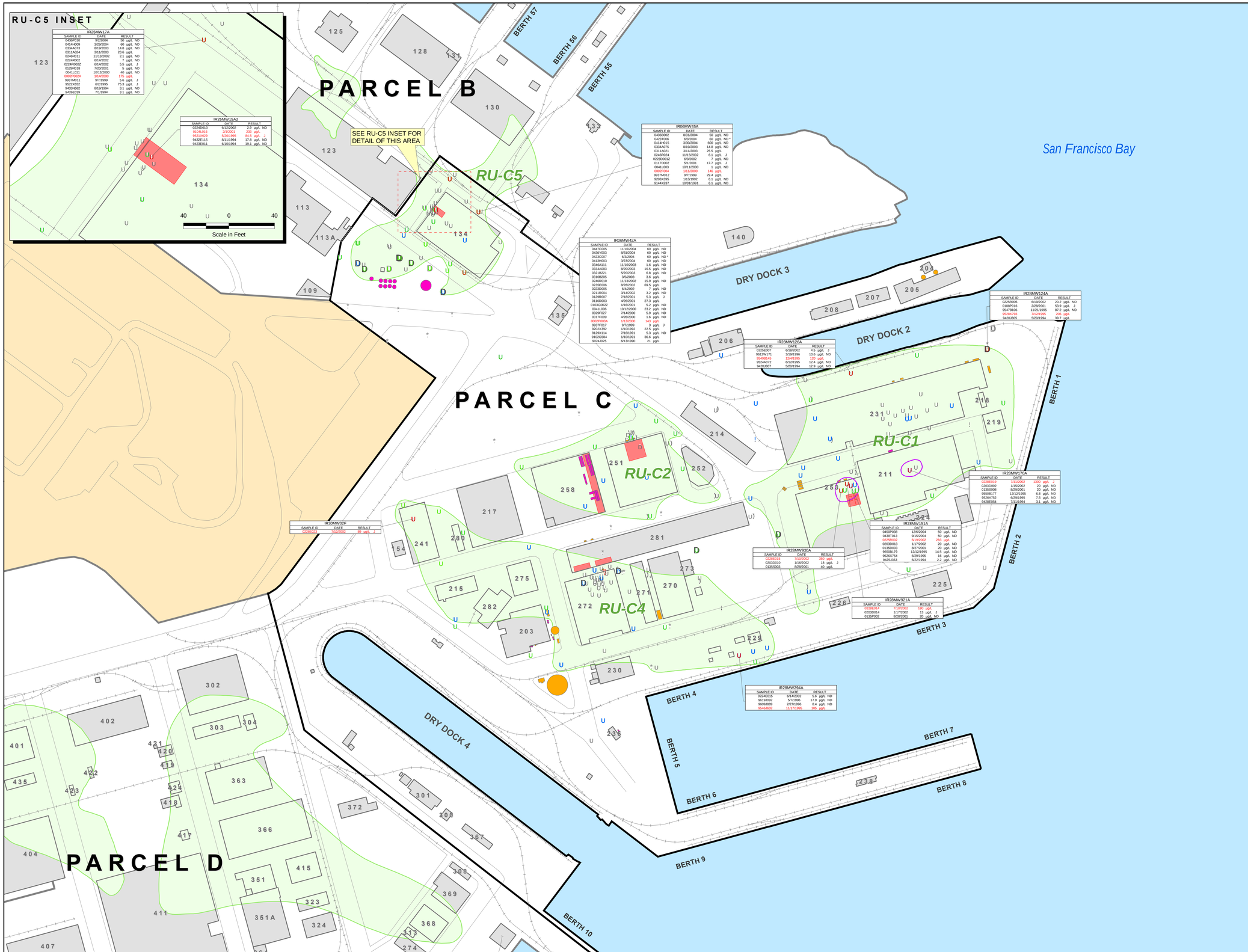

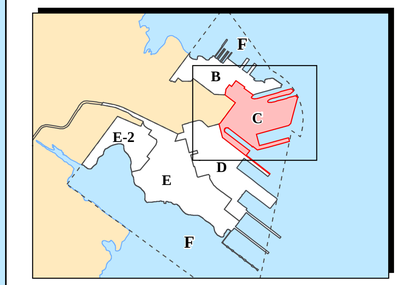

Location Map

Monitoring Well Types

- Active A-Aquifer Monitoring Well
- Active A/B-Aquifer Monitoring Well
- A-Aquifer Piezometer
- Decommissioned A-Aquifer Well
- Decommissioned A/B-Aquifer Well
- Active B-Aquifer Monitoring Well
- Active F-WBZ Monitoring Well

Color-Coding for Zinc Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for Zinc
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for Zinc is 81 µg/L.

*	Unfiltered result
µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
J	Estimated concentration
ND	Result not detected at the associated reporting limit
RU	Remedial unit

150 0 150 300 450

Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-2

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR ZINC IN THE A-AQUIFER

Feasibility Study Report for Parcel C

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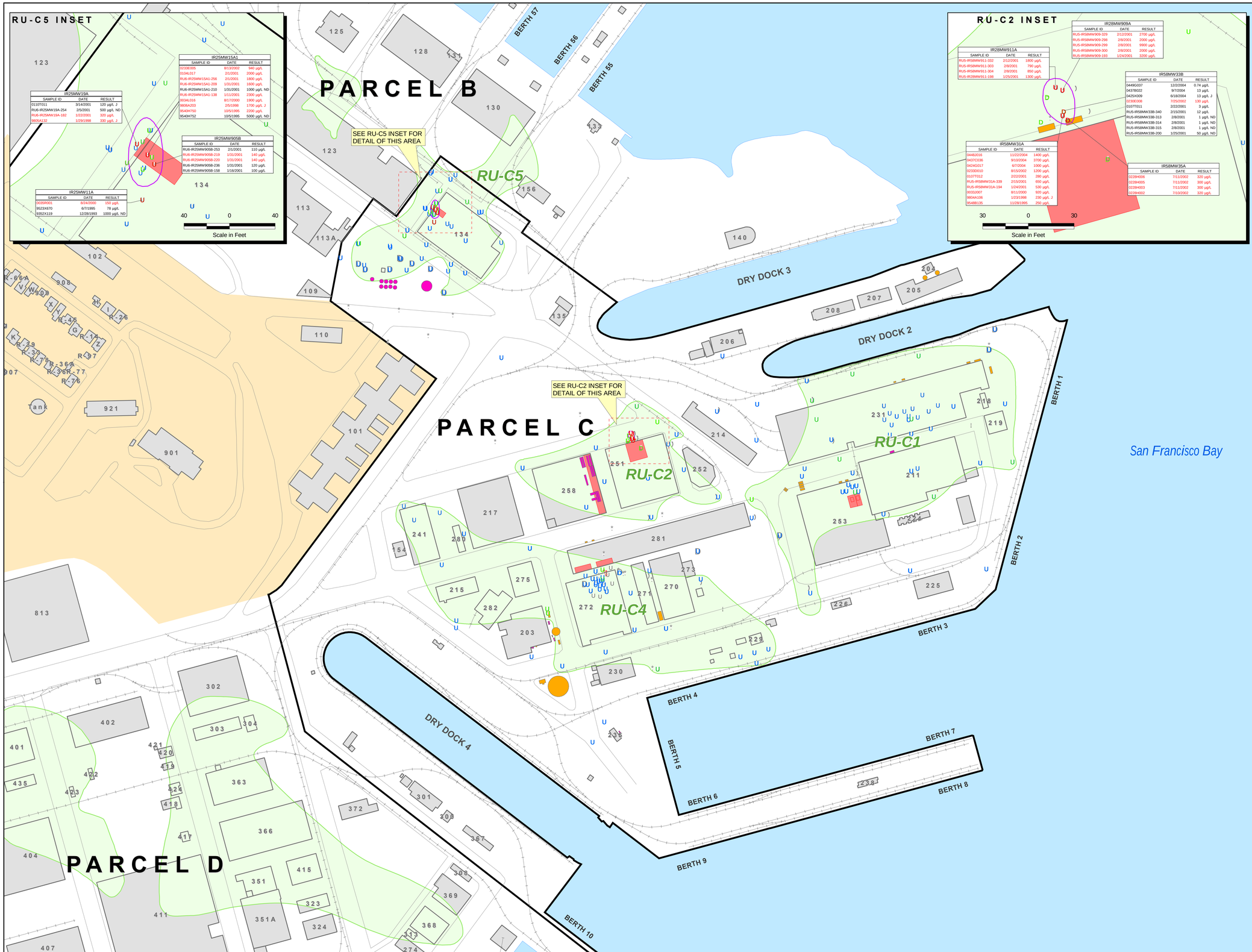

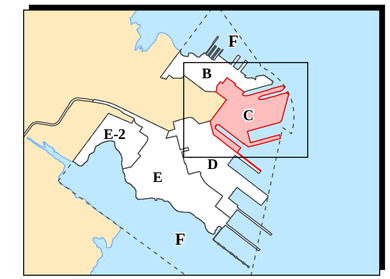

Location Map

Monitoring Well Types

- Active A-Aquifer Monitoring Well
- Active A/B-Aquifer Monitoring Well
- A-Aquifer Piezometer
- Decommissioned A-Aquifer Well
- Decommissioned A/B-Aquifer Well
- Active B-Aquifer Monitoring Well
- Active F-WBZ Monitoring Well

Color-Coding for Chlorobenzene Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for Chlorobenzene
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for Chlorobenzene is 129 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
J	Estimated concentration
ND	Result not detected at the associated reporting limit
RU	Remedial unit

N

150 0 150 300 450

Scale in Feet

SulTech

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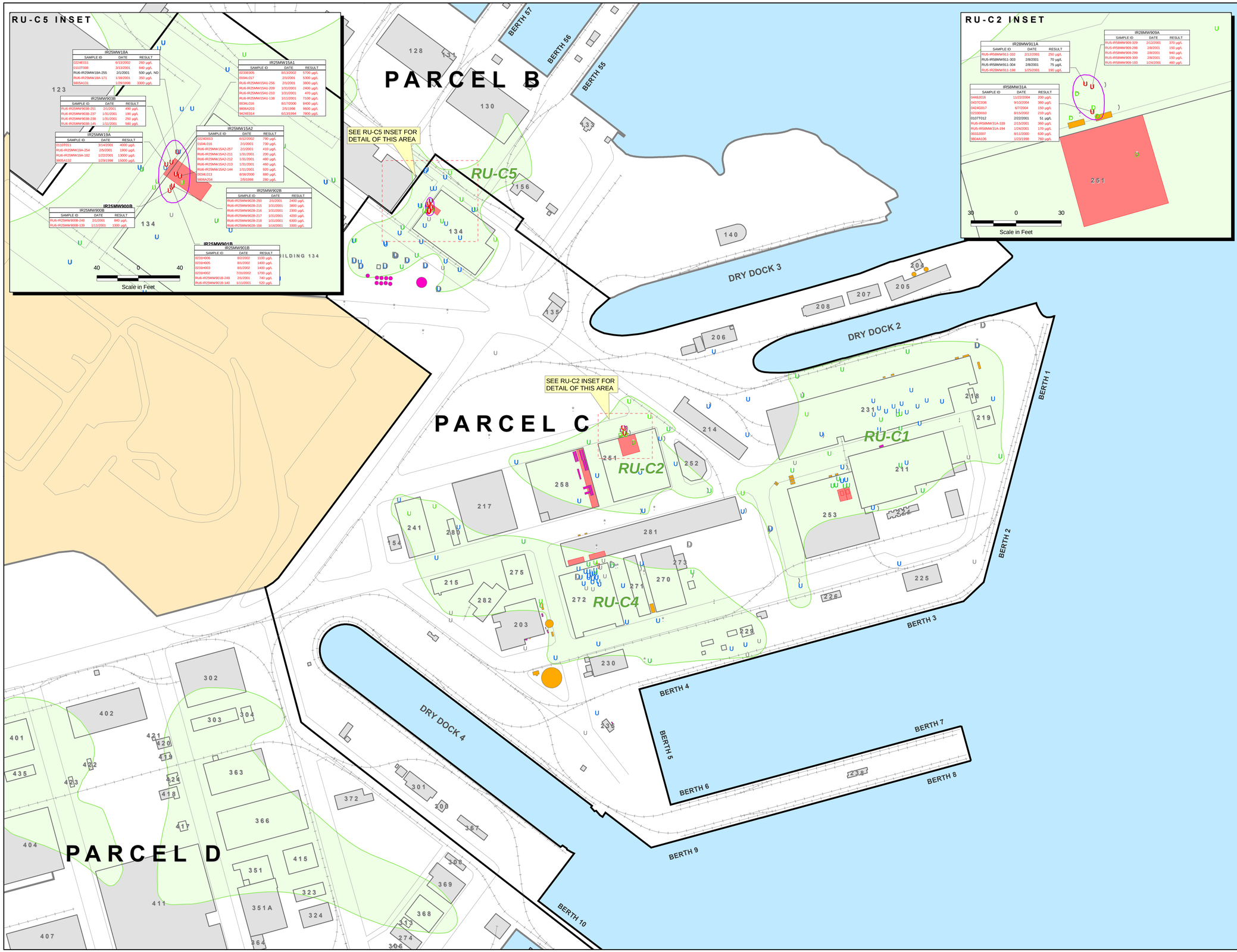
U.S. Department of the Navy, BRAC PMO West, San Diego, California

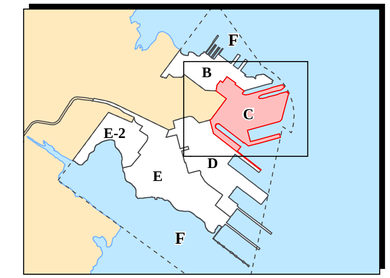
FIGURE G-3

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR CHLOROBENZENE IN THE A-AQUIFER

Feasibility Study Report for Parcel C

2008-07-16 V:\Hunters_Point\Projects\Parcel_C\FS_2005\Nature and Extent\Groundwater\GW_Results\VOC's\Chlorobenzene_szD.mxd TtEMI-SF Kevin Ernst





Location Map

Monitoring Well Types

- U Active A-Aquifer Monitoring Well
- D Active A/B-Aquifer Monitoring Well
- ! A-Aquifer Piezometer
- Ḍ Decommissioned A-Aquifer Well
- Đ Decommissioned A/B-Aquifer Well
-) Active B-Aquifer Monitoring Well
- * Active F-WBZ Monitoring Well

Color-Coding for 1,4-Dichlorobenzene Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for 1,4-Dichlorobenzene
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for 1,4-Dichlorobenzene is 129 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
ND	Result not detected at the associated reporting limit
RU	Remedial unit

N

150 0 150 300 450
Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

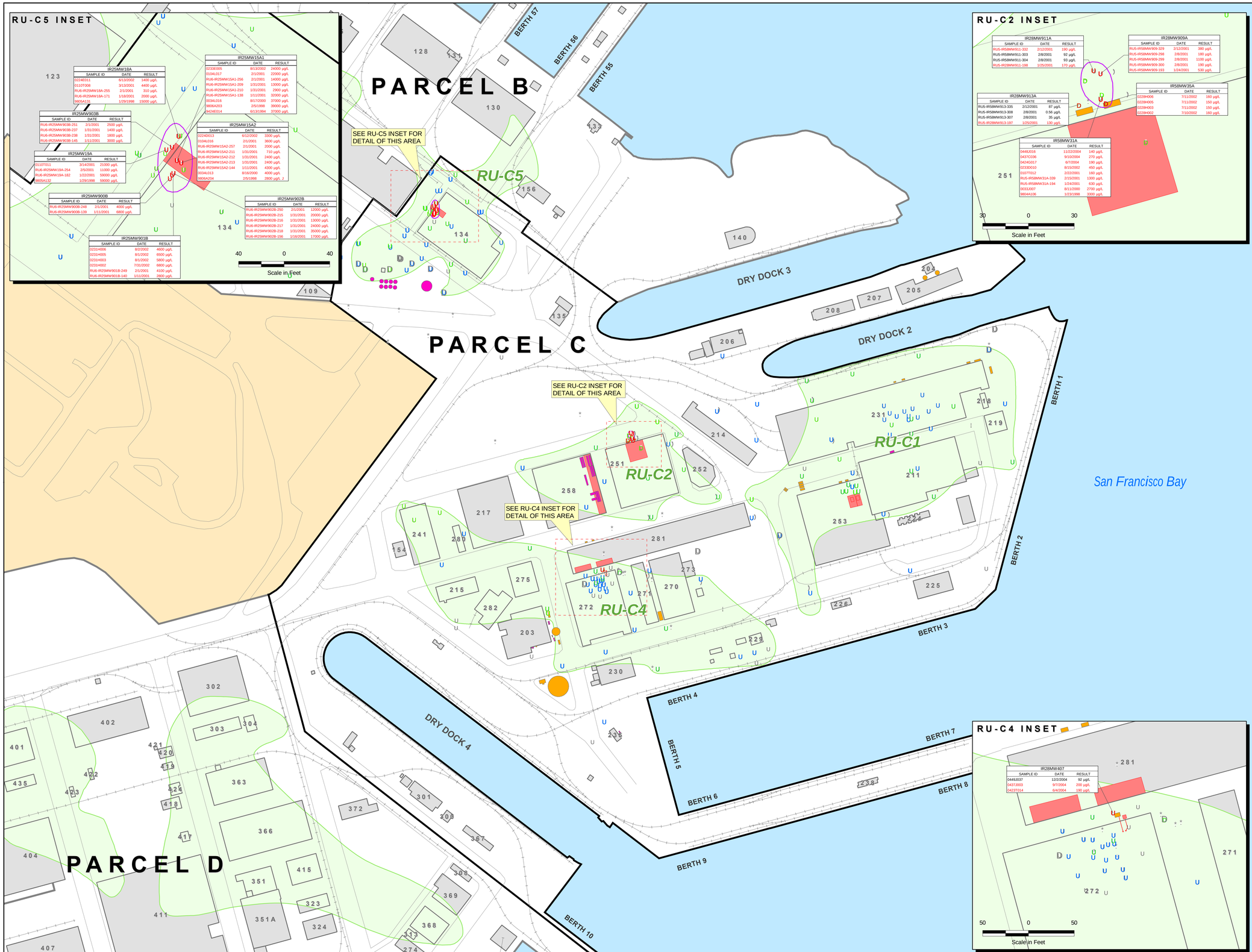
U.S. Department of the Navy, BRAC PMO West, San Diego, California

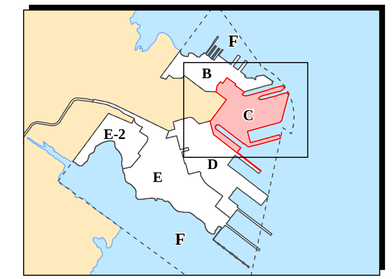
FIGURE G-4

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR 1,4-DICHLOROBENZENE IN THE A-AQUIFER

Feasibility Study Report for Parcel C

2008-07-16 V:\Hunters_Point\Projects\Parcel_C\FS_2005\Nature and Extent\Groundwater\GW_Results\VOC's\1_4_Dichlorobenzene_szD.mxd TtEMI-SF Kevin Ernst





Location Map

Monitoring Well Types

- Active A-Aquifer Monitoring Well
- Active A/B-Aquifer Monitoring Well
- A-Aquifer Piezometer
- Decommissioned A-Aquifer Well
- Decommissioned A/B-Aquifer Well
- Active B-Aquifer Monitoring Well
- Active F-WBZ Monitoring Well

Color-Coding for 1,2-Dichlorobenzene Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for 1,2-Dichlorobenzene
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for 1,2-Dichlorobenzene is 129 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
J	Estimated concentration
RU	Remedial unit

150 0 150 300 450
Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

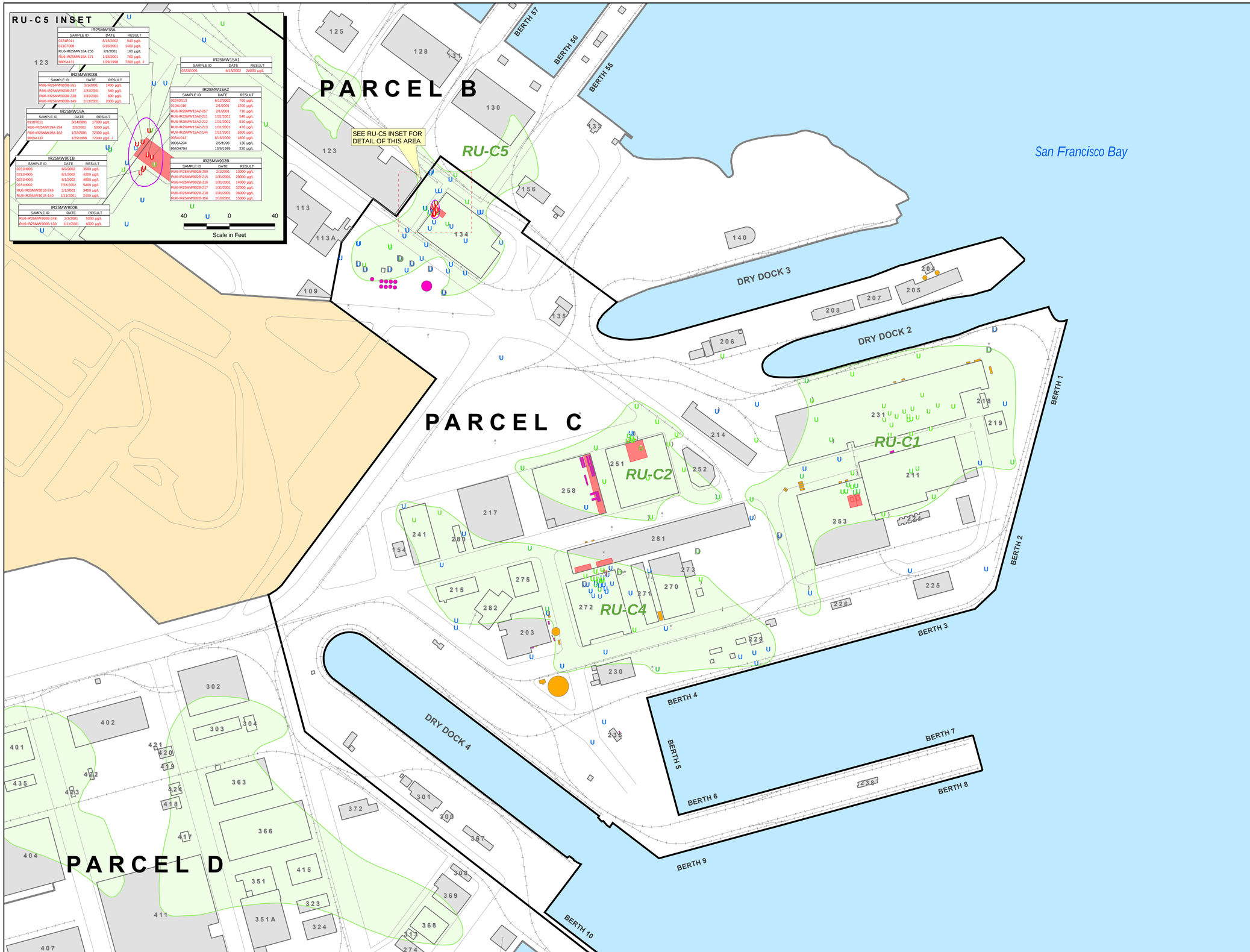
U.S. Department of the Navy, BRAC PMO West, San Diego, California

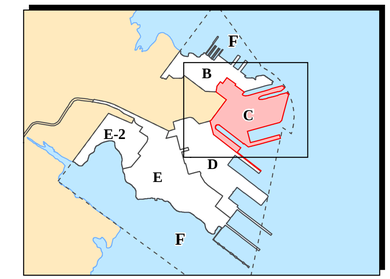
FIGURE G-5

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR 1,2-DICHLOROBENZENE IN THE A-AQUIFER

Feasibility Study Report for Parcel C

2008-07-16
V:\Hunters_Point\Projects\Parcel_C\FS_2005\Nature and Extent\Groundwater\GW_Results\VOC's\1_2_Dichlorobenzene_szD.mxd TtEMI-SF Kevin Ernst





Location Map

Monitoring Well Types

- Active A-Aquifer Monitoring Well
- Active A/B-Aquifer Monitoring Well
- A-Aquifer Piezometer
- Decommissioned A-Aquifer Well
- Decommissioned A/B-Aquifer Well
- Active B-Aquifer Monitoring Well
- Active F-WBZ Monitoring Well

Color-Coding for Tetrachloroethene Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for Tetrachloroethene
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for Tetrachloroethene is 450 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
J	Estimated concentration
RU	Remedial unit

N

150 0 150 300 450

Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

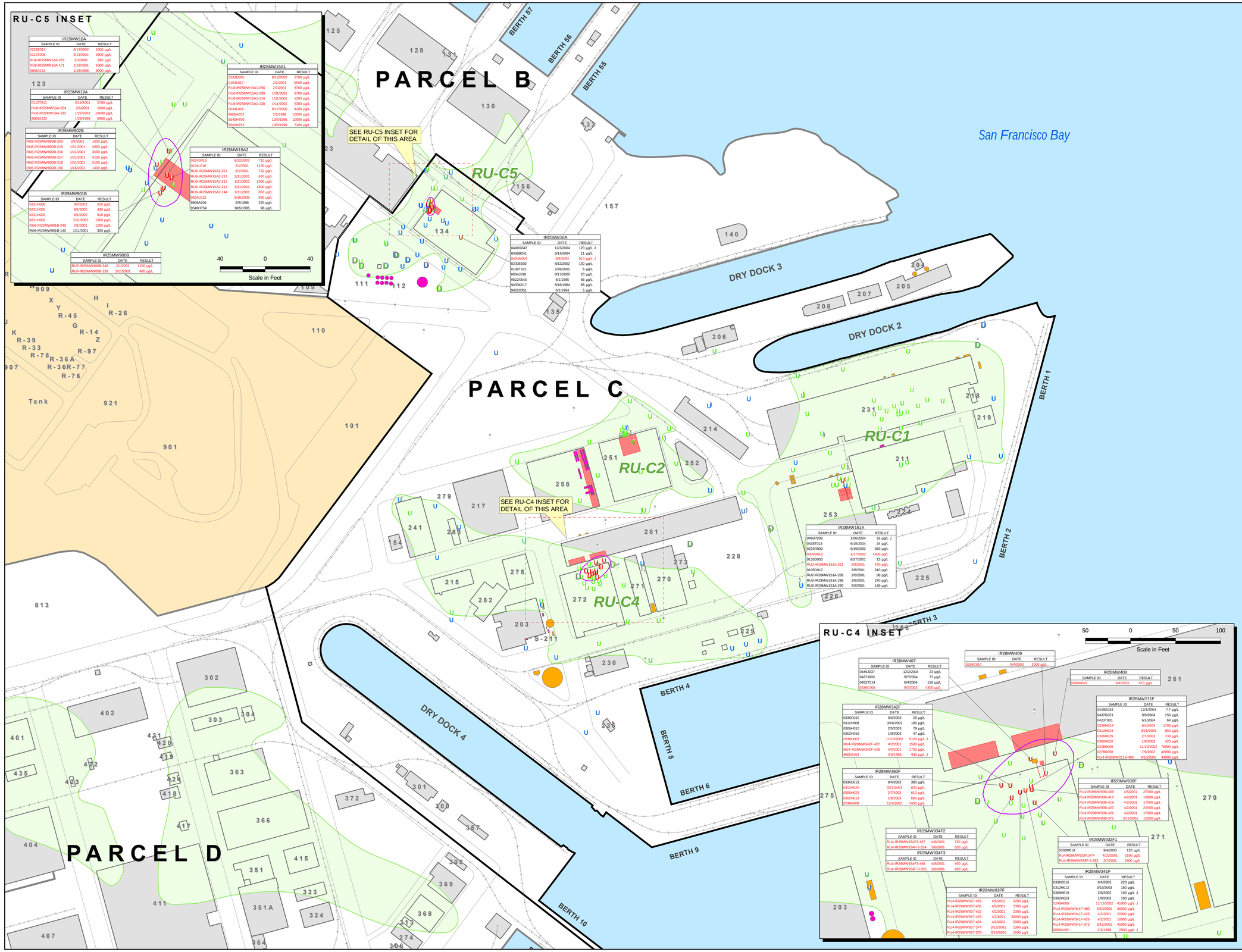
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-6

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR TETRACHLOROETHENE IN THE A-AQUIFER

Feasibility Study Report for Parcel C

2008-07-16 V:\Hunters_Point\Projects\Parcel_C\FS_2005\Nature and Extent\Groundwater\GW_Results\VOC's\Tetrachloroethene_szD.mxd TtEMI-SF Kevin Ernst



IR25MW18A		
SAMPLE ID	DATE	RESULT
0224E011	6/13/2002	1500 µg/L
0110T008	3/13/2001	2600 µg/L
RU6-IR25MW18A-255	2/1/2001	890 µg/L
RU6-IR25MW18A-171	1/18/2001	1900 µg/L
9805A131	1/29/1998	9000 µg/L

IR25MW19A		
SAMPLE ID	DATE	RESULT
0110T011	3/14/2001	5700 µg/L
RU6-IR25MW19A-254	2/5/2001	1600 µg/L
RU6-IR25MW19A-182	1/22/2001	18000 µg/L
9805A132	1/29/1998	8800 µg/L

IR25MW902B		
SAMPLE ID	DATE	RESULT
RU6-IR25MW902B-250	2/1/2001	1600 µg/L
RU6-IR25MW902B-215	1/31/2001	4900 µg/L
RU6-IR25MW902B-216	1/31/2001	3000 µg/L
RU6-IR25MW902B-217	1/31/2001	5100 µg/L
RU6-IR25MW902B-218	1/31/2001	5100 µg/L
RU6-IR25MW902B-156	1/16/2001	1400 µg/L

IR25MW901B		
SAMPLE ID	DATE	RESULT
0231H006	8/2/2002	520 µg/L
0231H005	8/1/2002	430 µg/L
0231H003	8/1/2002	810 µg/L
0231H002	7/31/2002	1300 µg/L
RU6-IR25MW901B-249	2/1/2001	1200 µg/L
RU6-IR25MW901B-140	1/11/2001	300 µg/L

IR25MW900B		
SAMPLE ID	DATE	RESULT
RU6-IR25MW900B-248	2/1/2001	1100 µg/L
RU6-IR25MW900B-139	1/11/2001	480 µg/L

IR25MW15A1		
SAMPLE ID	DATE	RESULT
0233E005	8/13/2002	2700 µg/L
0104L017	2/1/2001	5000 µg/L
RU6-IR25MW15A1-256	2/1/2001	3700 µg/L
RU6-IR25MW15A1-209	1/31/2001	3700 µg/L
RU6-IR25MW15A1-210	1/31/2001	1200 µg/L
RU6-IR25MW15A1-138	1/11/2001	5300 µg/L
0034L016	8/17/2000	4200 µg/L
9806A203	2/5/1998	10000 µg/L
9540H750	10/5/1995	10000 µg/L
9540H752	10/5/1995	7200 µg/L

IR25MW15A2		
SAMPLE ID	DATE	RESULT
0224D013	6/12/2002	710 µg/L
0104L016	2/1/2001	1100 µg/L
RU6-IR25MW15A2-257	2/1/2001	750 µg/L
RU6-IR25MW15A2-211	1/31/2001	670 µg/L
RU6-IR25MW15A2-212	1/31/2001	1500 µg/L
RU6-IR25MW15A2-213	1/31/2001	1600 µg/L
RU6-IR25MW15A2-144	1/11/2001	850 µg/L
0034L013	8/16/2000	920 µg/L
9806A204	2/5/1998	220 µg/L
9540H754	10/5/1995	98 µg/L

IR25MW16A		
SAMPLE ID	DATE	RESULT
0449G047	12/3/2004	120 µg/L J
0438B041	9/14/2004	11 µg/L
0424M004	6/8/2004	510 µg/L J
0233E002	8/12/2002	150 µg/L
0108T021	2/26/2001	6 µg/L
0034J018	8/17/2000	20 µg/L
9522X645	6/1/1995	66 µg/L
9433K017	8/18/1994	86 µg/L
9422X351	6/1/1994	5 µg/L

IR28MW151A		
SAMPLE ID	DATE	RESULT
0450P038	12/6/2004	55 µg/L J
0438T013	9/15/2004	24 µg/L
0225R002	6/19/2002	360 µg/L
0203D013	1/17/2002	1400 µg/L
0135D003	8/27/2001	13 µg/L
RU2-IR28MW151A-321	2/8/2001	470 µg/L
0105D012	2/8/2001	310 µg/L
RU2-IR28MW151A-288	2/6/2001	98 µg/L
RU2-IR28MW151A-289	2/6/2001	240 µg/L
RU2-IR28MW151A-290	2/6/2001	140 µg/L

IR28MW407		
SAMPLE ID	DATE	RESULT
0449J037	12/2/2004	23 µg/L
0437J003	9/7/2004	77 µg/L
0423T014	6/4/2004	110 µg/L
0336C005	9/2/2003	4300 µg/L

IR28MW409		
SAMPLE ID	DATE	RESULT
0336C017	9/4/2003	1000 µg/L

IR28MW408		
SAMPLE ID	DATE	RESULT
0336M015	9/4/2003	570 µg/L

IR28MW342F		
SAMPLE ID	DATE	RESULT
0336C015	9/4/2003	20 µg/L
0312H008	3/18/2003	180 µg/L
0306H010	2/5/2003	79 µg/L
0302H019	1/9/2003	47 µg/L
0246H003	11/12/2002	5100 µg/L J
RU4-IR28MW342F-427	4/2/2001	1500 µg/L
RU4-IR28MW342F-428	4/2/2001	1700 µg/L
9806A153	2/3/1998	930 µg/L J

IR28MW211F		
SAMPLE ID	DATE	RESULT
0449G034	12/1/2004	7.7 µg/L
0437G021	9/9/2004	150 µg/L
0423T001	6/1/2004	69 µg/L
0336M018	9/4/2003	1700 µg/L
0312H024	3/21/2003	850 µg/L
0306H025	2/7/2003	730 µg/L
0302H022	1/9/2003	420 µg/L
0246H009	11/13/2002	78000 µg/L
0228D008	7/9/2002	42000 µg/L
RU4-IR28MW211B-482	4/10/2001	44000 µg/L

IR28MW360F		
SAMPLE ID	DATE	RESULT
0336C013	9/4/2003	380 µg/L
0312H020	3/21/2003	630 µg/L
0306H023	2/7/2003	610 µg/L
0302H013	1/9/2003	690 µg/L
0246H009	12/4/2002	7400 µg/L

IR28MW936F		
SAMPLE ID	DATE	RESULT
RU4-IR28MW936-459	4/5/2001	27000 µg/L
RU4-IR28MW936-418	4/2/2001	19000 µg/L
RU4-IR28MW936-419	4/2/2001	17000 µg/L
RU4-IR28MW936-420	4/2/2001	22000 µg/L
RU4-IR28MW936-421	4/2/2001	17000 µg/L
RU4-IR28MW936-375	3/12/2001	15000 µg/L

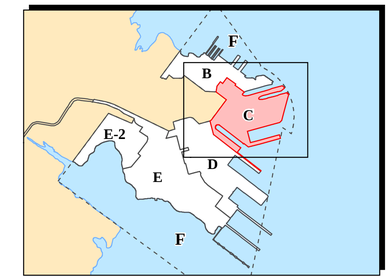
IR28MW934F2		
SAMPLE ID	DATE	RESULT
RU4-IR28MW934F2-467	4/9/2001	730 µg/L
RU4-IR28MW934F-2-354	3/6/2001	630 µg/L

IR28MW934F3		
SAMPLE ID	DATE	RESULT
RU4-IR28MW934F3-468	4/9/2001	450 µg/L
RU4-IR28MW934F-3-355	3/6/2001	450 µg/L

IR28MW933F1		
SAMPLE ID	DATE	RESULT
0336M019	9/4/2003	120 µg/L
RU4IR28MW933F1474	4/10/2001	2100 µg/L
RU4-IR28MW933F-1-363	3/7/2001	1800 µg/L

IR28MW937F		
SAMPLE ID	DATE	RESULT
RU4-IR28MW937-455	4/5/2001	2200 µg/L
RU4-IR28MW937-456	4/5/2001	2300 µg/L
RU4-IR28MW937-422	4/2/2001	2300 µg/L
RU4-IR28MW937-423	4/2/2001	30000 µg/L
RU4-IR28MW937-424	4/2/2001	2000 µg/L
RU4-IR28MW937-374	3/12/2001	1300 µg/L
RU4-IR28MW937-379	3/12/2001	1500 µg/L

IR28MW341F		
SAMPLE ID	DATE	RESULT
0336C016	9/4/2003	220 µg/L
0312H012	3/18/2003	160 µg/L
0306H019	2/6/2003	160 µg/L J
0302H023	1/9/2003	100 µg/L
0246H008	11/13/2002	41000 µg/L J
RU4-IR28MW341F-480	4/10/2001	40000 µg/L
RU4-IR28MW341F-425	4/2/2001	20000 µg/L
RU4-IR28MW341F-426	4/2/2001	16000 µg/L
RU4-IR28MW341F-373	3/12/2001	41000 µg/L
9806A152	2/3/1998	2900 µg/L J



Location Map

Monitoring Well Types

- U Active A-Aquifer Monitoring Well
- D Active A/B-Aquifer Monitoring Well
- I A-Aquifer Piezometer
- D Decommissioned A-Aquifer Well
- D Decommissioned A/B-Aquifer Well
-) Active B-Aquifer Monitoring Well
- * Active F-WBZ Monitoring Well

Color-Coding for Trichloroethene Results

- " Detected Result Exceeding Surface Water Quality Criterion
- " Result Not Exceeding Surface Water Quality Criterion
- " Undetected Result
- " Well Not Analyzed
- Area of Concern for Trichloroethene
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Surface water quality criterion for Trichloroethene is 400 µg/L.

µg/L	Microgram per liter
F-WBZ	Bedrock water-bearing zone
J	Estimated concentration
RU	Remedial unit

N

150 0 150 300 450

Scale in Feet

SulTech

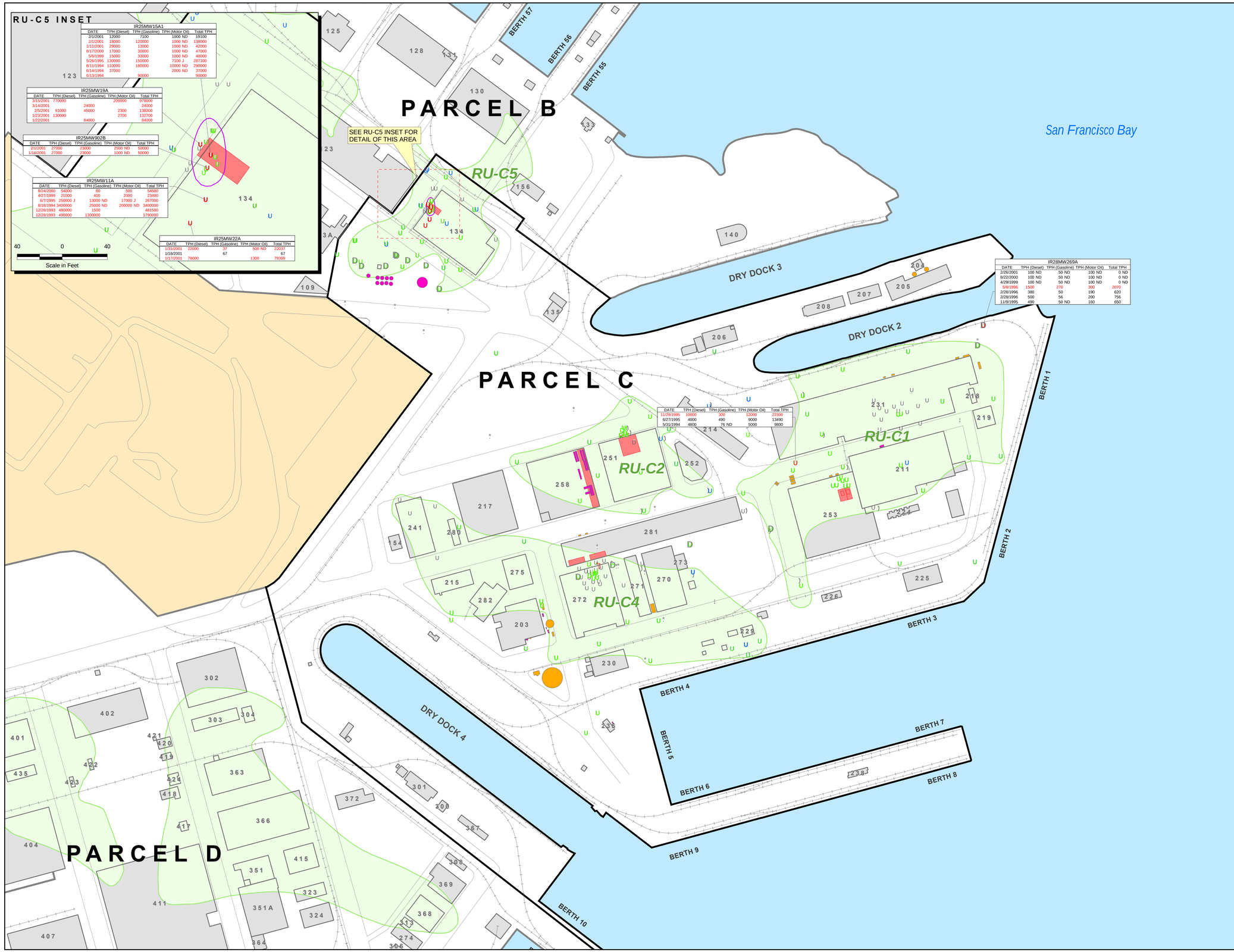
Hunters Point Shipyard, San Francisco, California

U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-7

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERION FOR TRICHLORETHENE IN THE A-AQUIFER

Feasibility Study Report for Parcel C



IR25MW15A1

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
2/1/2001	12000	7100	1000 ND	19100
2/1/2001	18000	120000	1000 ND	138000
1/11/2001	29000	13000	1000 ND	42000
8/17/2000	17000	30000	1000 ND	47000
5/6/1999	15000	33000	1000 ND	48000
5/26/1995	130000	150000	7100 J	287100
8/11/1994	110000	180000	10000 ND	290000
6/14/1994	37000		2000 ND	37000
6/13/1994		90000		90000

IR25MW19A

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
3/15/2001	770000		200000	970000
3/14/2001		24000		24000
2/5/2001	91000	45000	2300	138300
1/23/2001	130000		2700	132700
1/22/2001		84000		84000

IR25MW902B

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
2/1/2001	27000	23000	2500 ND	50000
1/16/2001	27000	23000	1000 ND	50000

IR25MW11A

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
8/24/2000	54000	80	500	54580
4/27/1999	21000	400	2000	23400
6/7/1995	250000 J	13000 ND	17000 J	267000
8/18/1994	3400000	25000 ND	200000 ND	3400000
12/28/1993	480000	1500		481500
12/28/1993	490000	1300000		1790000

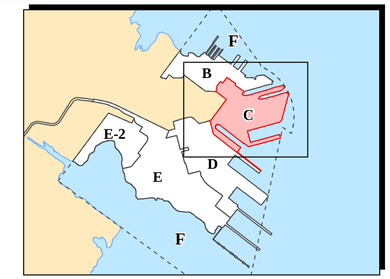
IR25MW22A

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
1/31/2001	22000	37	500 ND	22037
1/18/2001		67		67
1/17/2001	78000		1300	79300

IR28MW269A

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
2/26/2001	100 ND	50 ND	100 ND	0 ND
8/22/2000	100 ND	50 ND	100 ND	0 ND
4/28/1999	100 ND	50 ND	100 ND	0 ND
5/8/1996	1500	270	300	2070
2/28/1996	380	50	190	620
2/28/1996	500	56	200	756
11/9/1995	490	50 ND	160	650

DATE	TPH (Diesel)	TPH (Gasoline)	TPH (Motor Oil)	Total TPH
11/29/1995	10000	300	12000	22300
6/27/1995	4000	490	9000	13490
5/31/1994	4800	76 ND	5000	9800



Location Map

Monitoring Well Types

- U Active A-Aquifer Monitoring Well
- D Active A/B-Aquifer Monitoring Well
- ! A-Aquifer Piezometer
- D Decommissioned A-Aquifer Well
- D Decommissioned A/B-Aquifer Well
-) Active B-Aquifer Monitoring Well
- * Active F-WBZ Monitoring Well

Color-Coding for Total TPH Results

- Detected Result Exceeding Surface Water Quality Criterion
- Result Not Exceeding Surface Water Quality Criterion
- Undetected Result
- Well Not Analyzed
- Approximate Area of Concern for Total TPH
- Potential Source Area
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- RU Boundary
- Parcel C Boundary
- Other Parcels
- Non-Navy Property
- Building
- Road
- Rail Line

Notes:

Historical analytical results are only shown for sampling locations with one or more exceedances of surface water quality criteria.

Total TPH Screening Criteria

Distance from Shoreline	TTPH Concentration
< 50 feet	1,400 µg/L
50 to 100 feet	2,100 µg/L
100 to 150 feet	4,800 µg/L
150 to 200 feet	9,500 µg/L
200 to 250 feet	16,000 µg/L
>250 feet	20,000 µg/L

µg/L	Microgram per liter
J	Estimated concentration
ND	Result not detected at the associated reporting limit
RU	Remedial unit
TPH	Total petroleum hydrocarbons
TTPH	Total TPH

N

150 0 150 300 450

Scale in Feet

SulTech

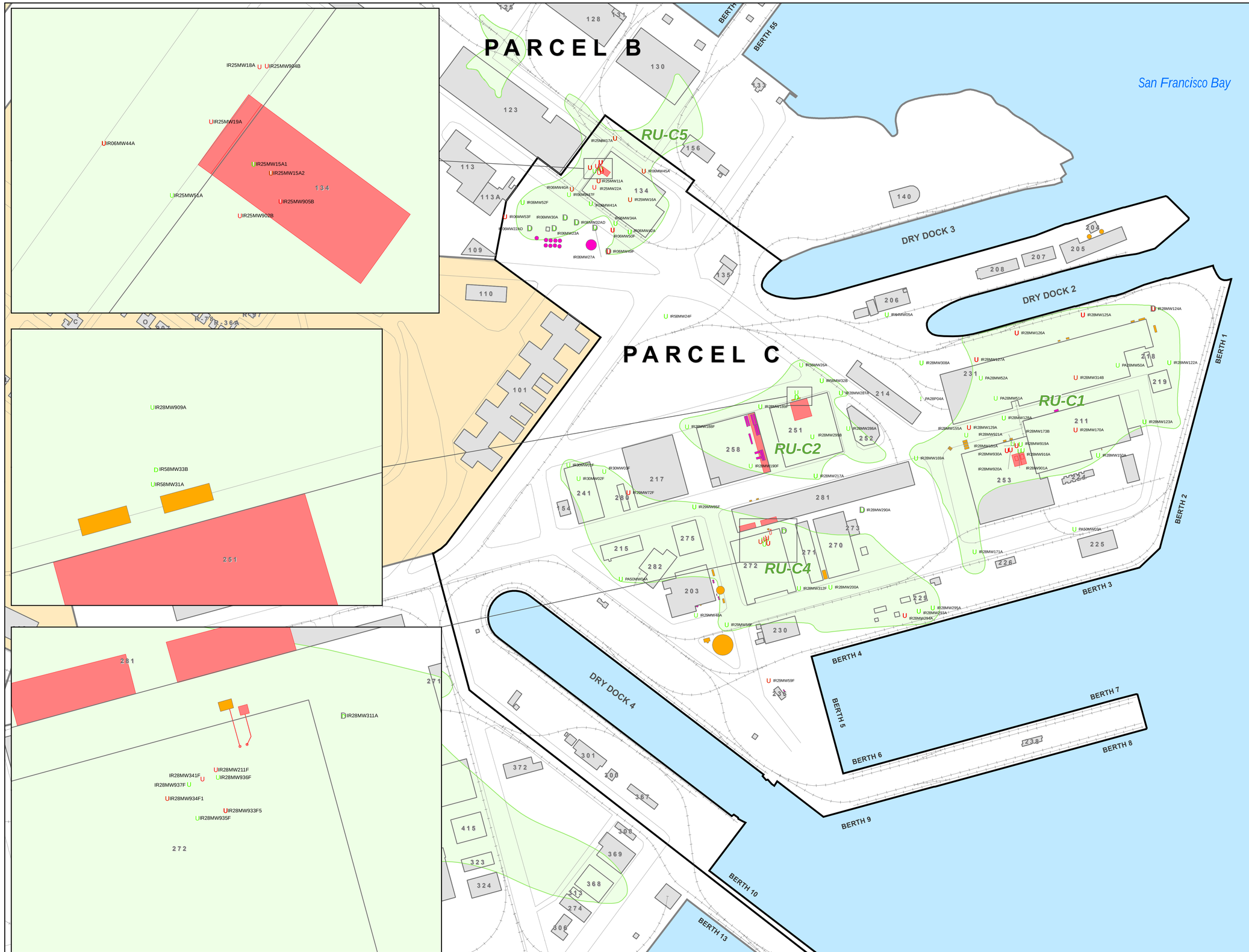
Hunters Point Shipyard, San Francisco, California

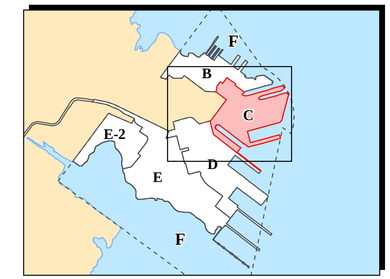
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-8

GROUNDWATER EXCEEDANCES OF SURFACE WATER QUALITY CRITERIA FOR TOTAL TPH IN THE A-AQUIFER

Feasibility Study Report for Parcel C





Location Map

Color Coding for Metals Results

- At Least One Historical Detection (through 2004) Exceeding Surface Water Criterion or HGAL (see notes)
- No Historical Detections Exceeding Surface Water Criterion or HGAL

Monitoring Well Types

- U A-Aquifer Monitoring Well Active
- D A/B-Aquifer Monitoring Well Active
- D A-Aquifer Well, Decommissioned
- D A/B-Aquifer Well Decommissioned

- Remedial Unit (RU) Boundary
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- Parcel C Boundary
- Potential Source Area
- Building
- Other Parcels
- Non-Navy Property
- Road
- Rail Line

Notes:

This figure shows the monitoring well locations (in red) where historical detections (through 2004) of metals above surface water criteria have been observed. Surface water criteria are listed in Table G-1. Where HGALs exceed surface water criteria for copper, lead, mercury, nickel, silver, zinc, HGALs are used as screening criteria.

150 0 150 300 450

Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California

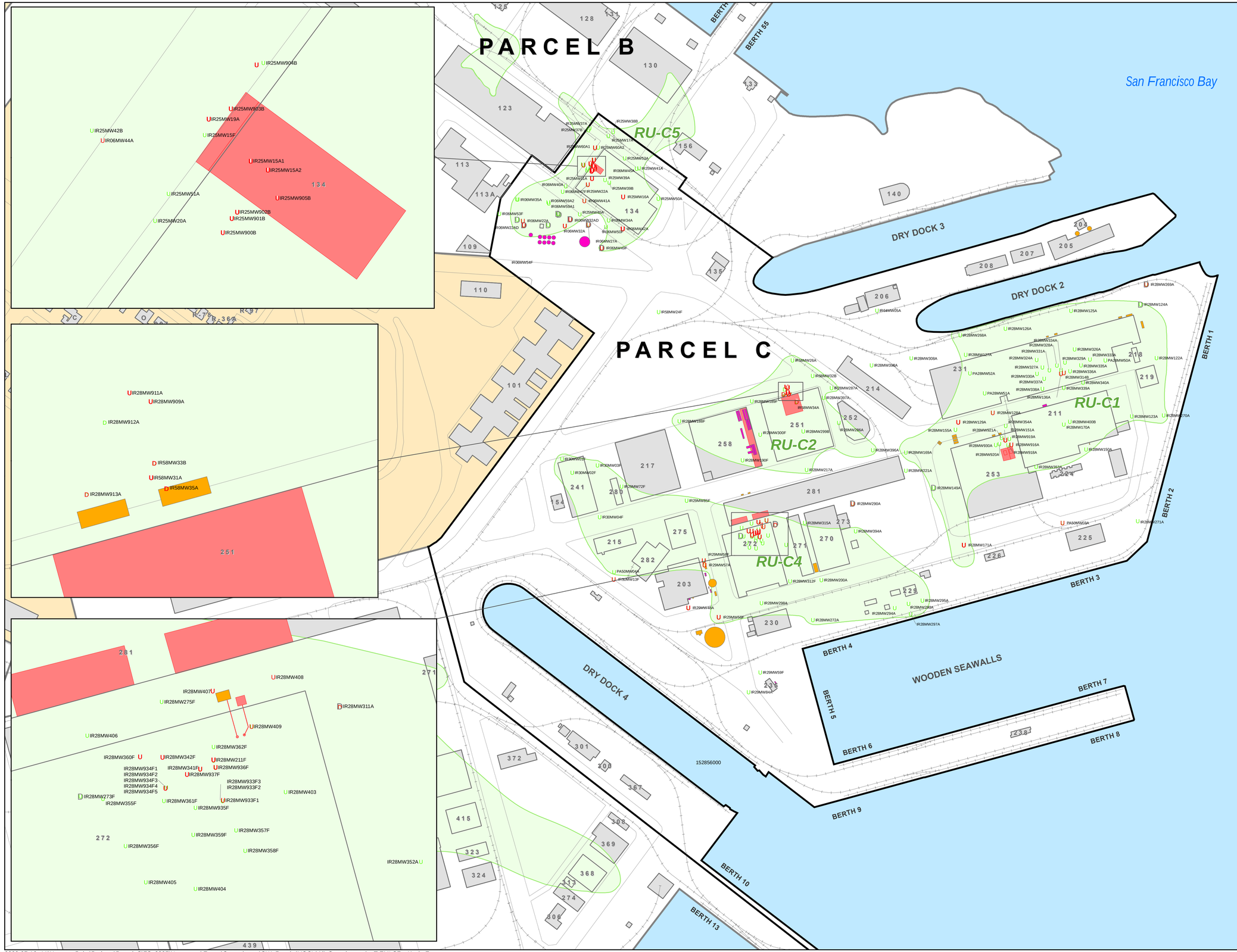
U.S. Department of the Navy, BRAC PMO West, San Diego, California

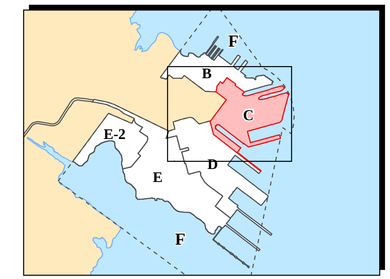
FIGURE G-9
LOCATIONS OF GROUNDWATER EXCEEDANCES OF SURFACE WATER OR HGAL CRITERIA FOR METALS IN THE A-AQUIFER

Feasibility Study Report for Parcel C

2008-07-16

V:\Hunters_Point\Projects\Parcel_C\FS_2005\Nature and Extent\Groundwater\GW_Results\Metals\All_Metals.mxd TtEMI-SF Kevin Ernst





Location Map

Color Coding for Organic Chemicals Results

- At Least One Historical Detection (through 2004) Exceeding Surface Water Criterion
- No Historical Detections Exceeding Surface Water Criterion

Monitoring Well Types

- U A-Aquifer Monitoring Well Active
- D A/B-Aquifer Monitoring Well Active
- A-Aquifer Piezometer
- Ū A-Aquifer Well Decommissioned
- Đ A/B-Aquifer Well Decommissioned
- / B-Aquifer Monitoring Well
- 0 F-WBZ Monitoring Well

- Remedial Unit (RU) Boundary
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- Potential Source Area
- Parcel C Boundary
- Other Parcels
- Building
- Non-Navy Property
- Road
- Rail Line

Notes:

This figure shows the monitoring well locations (in red) where historical detections (through 2004) of organic chemicals above surface water crtieria have been observed. Surface water criteria are listed in Table G-1.

F-WBZ Bedrock water-bearing zone
RU Remedial Unit

N

150 0 150 300 450
Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE G-10
LOCATIONS OF GROUNDWATER EXCEEDANCES OF SURFACE WATER CRITERIA FOR ORGANIC CHEMICALS IN THE A-AQUIFER

Feasibility Study Report for Parcel C

TABLES

TABLE G-1: SURFACE WATER QUALITY CRITERIA FOR THE SAN FRANCISCO BAY
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Chemical	Pseudonym	San Francisco Bay Basin Plan[a] (µg/L)		California Toxics Rule Criteria for Enclosed Bays and Estuaries[e] (µg/L)								National Recommended Water Quality Criteria[k] (µg/L) Saltwater Aquatic Life					National Ambient Water Quality Criteria (AWQC) for Protection of Saltwater Aquatic Life[i] (µg/L) Lowest Observed Effect Level (LOEL)							Other Criteria (footnotes indicate source) (µg/L)		Selected Water Quality Criteria (µg/L)
				Chronic[g]		Acute[g]			Instantaneous Maximum			Chronic[g]		Acute[g]			Chronic[h]		Acute[i]			Other[j]				
		Concentration	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	10% of Concentration[f]	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	Footnotes	Other	Footnotes	
1,1,1-Trichloroethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	31,200	6,240	--	--	--	--	--	6,240
1,1,2,2-Tetrachloroethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9,020	1,804	--	--	--	--	--	1804
1,1-Dichloroethene	1,1-Dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224,000	44800	(27)	--	--	--	--	44,800
1,2,4,5-Tetrachlorobenzene		--	--	--	--	--	--	--	--	--	--						--	--	250	50	(22)	50	(22.23)	--	--	50
1,2,4-Trichlorobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	129	(22)	160	--	(22)	--	--	--	--	129
1,2-Dichlorobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	129	(22)	1,970	--	(24)	--	--	--	--	129
1,2-Dichloroethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	113,000	22,600	--	--	--	--	--	22,600
1,2-Dichloroethene (total)	1,2-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224,000	44,800	(27)	--	--	--	--	44,800
1,2-Dichloropropane	Propylene dichloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,040	(28)	10,300	--	(28)			--	--	3,040
1,3-Dichlorobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	129	(22)	1,970	--	(24)			--	--	129
1,3-Dichloropropene (total)		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	790	158	(29)	--	--	--	--	158
1,4-Dichlorobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	129	(22)	1,970	--	(24)	--	--	--	--	129
2,4-Dinitrophenol		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	230	46	(88)	150	(38,88)	--	--	46
2,4-Dinitrotoluene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	590	118	(53)	370	(53, 82)	--	--	118
2,6-Dinitrotoluene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	590	118	(53)	370	(53, 82)	--	--	118
2-Chloronaphthalene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.5	1.5	(48)	--	--	--	--	1.5
2-Nitrophenol	Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4,850	970	(88)	--	--	--	--	970
4,4'-DDD	2,4-DDD; DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6	0.72	--	--	--	--	--	.72
4,4'-DDE	2,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	2.8	--	--	--	--	--	2.8
4,4'-DDT		--	--	0.001	(114)	0.13	--	--	--	--	--	0.001	G,aa,ii	0.13	--	G,ii	--	--	--	--	--	--	--	--	--	.001
4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4,850	970	(88)	--	--	--	--	970
4-Amino-2,6-dinitrotoluene	Dinitrotoluenes; 4-Methyl-3,5-dinitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	590	118	--	370	(82)	--	--	118
4-Nitrophenol		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4,850	970	(88)	--	--	--	--	970
Acenaphthene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	710	--	970	--	--	500	(38)	--	--	710
Acenaphthylene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Aldrin		--	--	--	--	--	--	--	1.3	--	ll	--	--	1.3	0.26	G	--	--	--	--	--	--	--	--	--	.26
Alpha-chlordane	Chlordane	--	--	0.004	(114)	--	--	--	0.09	--	--	0.004	G,aa,o	0.09	--	G,o	--	--	--	--	--	--	--	--	--	.004
Anthracene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Aroclor 1016	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1221	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1232	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1242	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1248	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1254	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Aroclor 1260	Polychlorinated biphenyls (PCBs)	--	--	0.03	rr	--	--	--	--	--	--	0.03	N,aa	--	--	--	--	--	10	--	--	--	--	--	--	.03
Arsenic		36	b	36	mm, oo	69	--	mm, oo	--	--	--	36	A,D,bb	69	--	A,D,bb	--	--	2,319	--	(95)	13	(6)	--	--	36
Atrazine		--	--	--	--	--	--	--	--	--	--	11	r,(68)	310	--	r,(68)	--	--	--	--	--	--	--	--	--	11
Benzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5,100	--	--	700	--	--	--	700
Benzo(a)anthracene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Benzo(a)pyrene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Benzo(b)fluoranthene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Benzo(k)fluoranthene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Bromochloromethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 83)	--	--	6,400
Bromodichloromethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 83)	--	--	6,400
Bromoform		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 83)	--	--	6,400
Bromomethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 83)	--	--	6,400
Butylbenzylphthalate	n-Butyl benzyl phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,944	588.8	(45)	3.4	(38, 45)	--	--	588.8
Cadmium		9.3	b	9.3	(1, 142)	42	--	(1, 142)	--	--	--	8.8	D,bb,gg	40	--	D,bb,gg	--	--	--	--	--	--	--	--	--	8.8
Carbon tetrachloride		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	50,000	--	--	11,500	(20, 82)	--	--	6,400
Chlordane				0.004	(114)	--	--	--	0.09	0.009	--	0.004	G,aa	0.09	0.009	G	--	--	--	--	--	--	--	--	--	.004
Chlorobenzene	Monochlorobenzene	--	--	--	--	--		--				--	--	--	--	--	129	(22)	160	--	(22)	--	--	--	--	129
Chloroform		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 82)	--	--	6,400
Chloromethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 82)	--	--	6,400
Chromium (total)		50 (VI)	b,o	50 (VI)	o	1100 (VI)	--	--	--	--	--	50 (VI)	D,bb,o	1100 (VI)	--	D,bb,o	--	--	--	--	--	--	--	400	s	400

TABLE G-1: SURFACE WATER QUALITY CRITERIA FOR THE SAN FRANCISCO BAY (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Chemical	Pseudonym	San Francisco Bay Basin Plan[a] (µg/L)		California Toxics Rule Criteria for Enclosed Bays and Estuaries[e] (µg/L)								National Recommended Water Quality Criteria[k] (µg/L) Saltwater Aquatic Life					National Ambient Water Quality Criteria (AWQC) for Protection of Saltwater Aquatic Life[i] (µg/L) Lowest Observed Effect Level (LOEL)							Other Criteria (footnotes indicate source) (µg/L)		Selected Water Quality Criteria (µg/L)
				Chronic[g]		Acute[g]			Instantaneous Maximum			Chronic[g]		Acute[g]			Chronic[h]		Acute[i]			Other[j]				
		Concentration	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	10% of Concentration[f]	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	Footnotes	Concentration	20% of Concentration[f]	Footnotes	Concentration	Footnotes	Other	Footnotes	
Chrysene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Cis-1,2-dichloroethene	Cis-1,2-dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224,000	44,800	(27)	--	--	--	--	44,800
Copper		4.9	c	3.1	nn, oo	4.8	--	oo	--	--	--	3.1	D,cc,ff	4.8	--	D,cc,ff	--	--	--	--	--	--	--	--	--	3.1
Cyanide		5	c	1	pp	1	--	pp	--	--	--	1	Q,bb	1	--	Q,bb	--	--	--	--	--	--	--			1
Dibenz(a,h)anthracene	1,2:5,6-Dibenzanthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Dibromochloromethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 83)	--	--	6,400
Dieldrin		--	--	0.0019	(114), II	--	--	--	0.71	--	II	0.0019	G,aa	0.71	.142	G	--	--	--	--	--	--	--	--	--	.142
Diethylphthalate		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,944	588.8	(45)	3.4	(38, 45)	--	--	588.8
Dimethylphthalate		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,944	--	(45)	3.4	(38, 45)	--	--	3.4
Di-n-butylphthalate	Dibutyl phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,944	588.8	(45)	3.4	(38, 45)	--	--	588.8
Di-n-octylphthalate	Bis-n-octyl phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,944	588.8	(45)	3.4	(38, 45)	--	--	588.8
Endosulfan I	Endosulfan (alpha)	--	--	0.0087	II	--	--	--	0.034	--	(115), II	0.0087	G,Y,o	0.034	--	G,Y,o	--	--	--	--	--	--	--	--	--	0.0087
Endosulfan II	Endosulfan (beta)	--	--	0.0087	II	--	--	--	0.034	--	(115), II	0.0087	G,Y,o	0.034	--	G,Y,o	--	--	--	--	--	--	--	--	--	0.0087
Endrin		--	--	0.0023	(114), II	--	--	--	0.037	--	II	0.0023	G,aa	0.037	--	G	--	--	--	--	--	--	--	--	--	0.0023
Ethylbenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	430	86	--	--	--	--	--	86
Fluoranthene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	--	40	--	--	--	--	--	--	16
Fluorene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Gamma-BHC (lindane)	Gamma-Benzene hexachloride	--	--	--	--	--	--	--	0.16	--	II	--	--	0.16	0.032	G	--	--	--	--	--	--	--	--	--	.032
Gamma-chlordane	Chlordane	--	--	0.004	(114)	--	--	--	0.09	--	--	0.004	G,aa,o	0.09	--	G,o	--	--	--	--	--	--	--	--	--	.004
Heptachlor		--	--	0.0036	(114)	II	--	--	0.053	--	II	0.0036	G,aa	0.053	--	G	--	--	--	--	--	--	--	--	--	.0036
Heptachlor epoxide		--	--	0.0036	(114)	II		--	0.053	--	II	0.0036	G,V,aa	0.053	--	G,V	--	--	--	--	--	--	--	--	--	.0036
Hexachlorobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	129	(22)	160	--	(22)	--	--	--	--	129
Hexachlorobutadiene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	6.4	--	--	--	--	--	6.4
Hexachlorocyclopentadiene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.0	1.4	--	--	--	--	--	1.4
Hexachloroethane		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	940	188	--	--	--	--	--	188
Indeno(1,2,3-cd)pyrene	Ideno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Isophorone		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12,900	2,580	--	--	--	--	--	2,580
Lead		5.6	b	8.1	(1, 142), m	210	--	(1, 142), m	--	--	--	8.1	D,bb	210	--	D,bb	--	--	--	--	--	--	--	--	--	5.6
Mercury	Mercury, inorganic	0.025	b	--	--	--	--	--	--	--	--	0.94	D,ee,hh	1.8	--	D,ee,hh	--	--	--	--	--	--	--	--	--	0.025
Methoxychlor		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.003	(51),f	0.003
Methyl-tert-butyl-ether	butylether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8,000	p	8,000
Methylene chloride	Dichloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,400	(20)	12,000	--	(20)	11,500	(20, 82)	--	--	6,400
Mirex		--	--	--	--	--	--	--	--	--	--	0.001	F	--	--	--	--	--	--	--	--	--	--	--	--	0.001
Naphthalene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,350	470	--	--	--	--	--	470
Nickel		8.3	b	8.2	(2, 142), oo	74	--	(1, 142), oo	--	--	--	8.2	D,bb	74	--	D,bb	--	--	--	--	--	--	--	--	--	8.2
Nitrobenzene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,680	1,336	--	--	--	--	--	1,336
N-Nitroso-di-n-propylamine	propylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,300,000	660,000	(56)	--	--	--	--	660,000
N-nitrosodiphenylamine		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,300,000	660,000	(56)	--	--	--	--	660,000
Pentachlorophenol		--	--	7.9	--	13	--	--	--	--	--	7.9	bb	13	--	bb	--	--	--	--	--	--	--	--	--	7.9
Phenanthrene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Phenol		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5,800	1,160	--	--	--	--	--	1,160
Pyrene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	60	(52)	--	--	--	--	60
Selenium		--	--	71	(1, 142)	290	--	(1, 142)	--	--	--	71	D,bb,dd	290	--	D,bb,dd	--	--	--	--	--	--	--	--	--	71
Silver		2.3	d	--	--	1.9	0.38	(1, 142)	--	--	--	--	--	1.9	0.38	D,G	--	--	--	--	--	--	--	--	--	0.38
Sulfide	Sulfide-Hydrogen Sulfide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	(51),f	0.2
Tetrachloroethene	Tetrachloroethylene (PCE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	450	--	10,200	--	--	--	--	--	--	450
Thallium		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,130	426	--	--	--	--	--	426
Toluene		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5,000	--	6,300	--	--	--	--	--	--	5,000
Toxaphene		--	--	0.0002	--	0.21	--	--	--	--	--	0.0002	aa	0.21	--	--	--	--	--	--	--	--	--	--	--	0.0002
TPH-Diesel	Diesel range organics; Diesel Fuel; Diesel	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400	q	1,400
TPH-Gasoline	Gasoline range organics; Gasoline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400	q	1,400
TPH-Motor Oil	Motor oil; motor oil range organics	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400	q	1,400
trans-1,2-Dichloroethene	trans-1,2-Dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224,000	44,800	(27)	--	--	--	--	44,800
Trichloroethene	Trichloroethylene (TCE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,000	400	--	--	--	--	--	400
Zinc		58	c	81	mm, oo	90	--	oo	--	--	--	81	D,bb	90	--	D,bb	--	--	--	--	--	--	--	--	--	81

TABLE G-1: SURFACE WATER QUALITY CRITERIA FOR THE SAN FRANCISCO BAY (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, CA

Notes: **Values shaded are those selected as screening criteria.**
Footnotes and references are detailed below.

--	No criterion available
ug/L	Microgram per liter
BHC	Benzene Hexachloride (Lindane)
DDD	Dichlorodiphenyldichloroethane
DDE	1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene
DDT	1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane
TPH	Total petroleum hydrocarbons

Footnotes:

a California Environmental Protection Agency, Regional Water Quality Control Board, San Francisco Bay Area Region (Water Board). 1995. "San Francisco Bay Basin Plan Water Quality Control Plan." June 21. Table 3-3 Water Quality Objectives for Toxic Pollutants for Surface Water with Salinities Greater Than 5 Parts Per Billion.

b From Water Board "Basin Plan" 4-Day Average (Chronic)

c From Water Board "Basin Plan" 24-Hour and 1-Hour Average (Acute)

d From Water Board "Basin Plan" Instantaneous Maximum

e From "Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (CTR) (EPA 2000) and "Water Quality Control Plan, San Francisco Bay Basin Region" (Water Board 1995). The most appropriate criteria were used.

f Criterion made more suitably protective by means of standard convention of lowering acute values by 80 percent and instantaneous values by 90 percent to make them more appropriate for use under chronic exposure scenarios.

g An acute criterion (EPA identified as Criteria Maximum Concentration [CMC]) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The chronic concentration (EPA identified as Criterion Continuous Concentration [CCC]) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect. The CMC and CCC are just two if the six parts of an aquatic life criterion; the other four parts are the acute averaging period, chronic averaging period, acute frequency of allowed exceedance, and chronic frequency of allowed exceedance. Because 304(a) aquatic life criteria are national guidance, they are intended to be protective of the vast majority of the aquatic communities in the United States (EPA 2002a).

h EPA National "AWQC Lowest Observed Effect Level (Chronic)" (Water Board 2000)

i EPA National "AWQC Lowest Observed Effect Level (Acute)" (Water Board 2000)

j EPA National "AWQC Lowest Observed Effect Level (Other)" (Water Board 2000)

k From "National Recommended Water Quality Criteria: 2002" (EPA 2002a) and "Revision of National Recommended Water Quality Criteria." (EPA 2002b), unless otherwise noted.

l From "Final Technical Memorandum Estimation of Ambient Concentrations of Metals in Groundwater" (Tetra Tech 2001).

m In instances where criteria from "Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (EPA 2000) refer to the "Water Quality Control Plan, San Francisco Bay Basin Region" (Water Board 1995), Water Board 1995 criteria were used. The Water Board 1995 criteria are distinguished by an "m" in the footnote column.

o Detailed application of this toxicity criterion may require the review and/or summation of analyte isomer, congener, or speciation results, as applicable. Please see applicable regulatory agency source document for additional detail.

p Water Board 1998

q Tetra Tech EM Inc. 1999

r Water Board 2000

s Value derived in Appendix G; based on EPA "Ambient Water Quality Criteria for Chromium" EPA 440/5-80-035 with adjustment for chronic from acute criterion.

The following lettered footnotes are derived from EPA "National Recommended Water Quality Criteria: 2002" (EPA 2002a), Table 1 - Priority Toxic Pollutants:

A This recommended water quality criterion was derived from data for arsenic (III), but is applied here to total arsenic, which might imply that arsenic (III) and arsenic (V) are equally toxic to aquatic life and that their toxicities are additive. In the arsenic criteria document (EAP 440/5-84-033, January 1985), Species Mean Acute Values (SMAVs) are given for both arsenic (III) and arsenic (V) for five species, and the ratios of the SMAVs for each species range from 0.6 to 1.7. Chronic values are available for both arsenic (III) and arsenic (V) for one species; for the fathead minnow the chronic value for arsenic (V) is 0.29 times the chronic value for arsenic (III). No data are known to be available concerning whether the toxicities of the forms of arsenic to aquatic organisms are additive.

D Freshwater and saltwater criteria for metals are expressed in terms of the dissolved metal in the water column. The recommended water quality criteria value was calculated by using the previous 304(a) aquatic life criteria expressed in terms of total recoverable metal, and mulitplying it by a conversion factor (CF). The term "Conversion Factor" (CF) represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. (Conversion Factors for saltwater CCCs are currently unavailable. Conversion factors derived for saltwater CMCs have been used for both saltwater CMCs and CCCs). See "Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria," October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource center, USEPA, 401 M St., SW, mail code RC4100, Washington DC 20460; and 40CFR 131.36(b)(1). Conversion Factors applied in the table can be found in Appendix A to the Preamble - Conversion Factors for Dissolved Metals.

F The deviation of this value is presented in the Red Book (EPA 440/9-76-023, July 1976).

G The criterion is based on 304(a) aquatic life criterion issued in 1980 and was issued in one of the following documents: Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), Dichlorodiphenyltrichloroethane (DDT) (EPA 440/5-80-38), Endosulfan (EPA 440/5-80-046), Endrin (EPA 440/5-80-047), Heptachlor (EPA 440/5-80-052), Hexachlorocyclohexane (EPA 440/5-80-054), Silver (EPA 440/5-80-071). The minimum data requirements and derivation procedures were different in the 1980 Guidelines than in the 1985 Guidelines. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

N This criterion applies to total polychlorinated biphenyls (e.g. the sum of all congener or all isomer or homolog or Aroclor analyses).

Q This recommended water quality criterion is expressed as mg free cyanide (as CN)/L.

V This value was derived from data for heptachlor, and the criteria document provides insufficient data to estimate the relative toxicities of heptachlor and heptachlor epoxide.

Y This value was derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.

aa This criterion is based on a 304(a) aquatic life criterion issued in 1980 or 1986, and was issued in one of the following documents : Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endrin (EPA 4405-80-047), Heptachlor (EPA 440/5-80-052), Polychlorinated biphenyls (EPA 440/5-80-068), Toxaphene (EPA 440/5-86-006). This CCC is currently based on the Final Residue Value (FRV) procedure. Since the publication of the Great Lakes Aquatic Life Criteria Guidelines in 1995 (60 FR 15393-15399, March 23, 1995), the EPA no longer uses the Final Residue Value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria. Therefore, the EPA anticipates that future revisions of this CCC will not be based on FRV procedure.

bb This water quality criterion is based on a 304(a) aquatic life criterion that was derived using the 1985 Guidelines (*Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, PB85-227046, January 1985) and was issued in one of the following criteria documents: Arsenic (EPA 440/5-84-033), Cadmium (EPA 882-R-01-001), Chromium (EPA 440/5-84-029), Copper (EPA 440/5-84-031), Cyanide (EPA 440/5-84-028), Lead (EPA 440/5-84-027), Nickel (EPA 440/5-86-004), Pentachlorophenol (EPA 440/5-86-009), Toxaphene (EPA 440/5-86-006), Zinc (EPA 440/5-87-003).

cc When the concentration of dissolved organic carbon is elevated, copper is substantially less toxic, and use of Water-Effect Rations might be appropriate.

dd The selenium criteria document (EPA 440/5-87-006, September 1987) provides that if selenium is as toxic to saltwater fishes in the field as it is to freshwater fish in the field, the status of the fish community should be monitored whenever the concentration of selenium exceeds 5.0 mg/L in saltwater because the saltwater CCC does not take into account uptake via the food chain.

ee This recommended water quality criterion was derived on page 43 of the mercury document (EPA 440/5-84-026, January 1985). The saltwater CCC of 0.025µg/L given on page 23 of the criteria document is based on the Final Residue Value procedure in the 1985 Guidelines. Since the publication of the Great Lakes Aquatic Life Criteria Guidelines in 1995 (60 FR 15393-15399, March 23, 1995), the Agency no longer uses the Final Residue Value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria.

ff This recommended water quality criterion was derived in Ambient Water Quality Criteria Saltwater Copper Addendum (draft, April 14, 1995) and was promulgated in the Interim final National Toxics Rule (60 FR 22228-222237, May 4, 1995).

gg EPA is actively working on this criterion, and so this recommended water quality criterion may change substantially in the near future.

hh This recommended water quality criterion was derived from data for inorganic mercury (II), but is applied here to total mercury. If a substantial portion of the mercury in the water column is methylmercury, this criterion will probably be under protective. In addition, even though inorganic mercury is converted to methylmercury, and methylmercury bioaccumulates to a great extent, this criterion does not account for uptake via the food chain because sufficient data were not available when the criterion was derived.

ii This criterion applies to DDT and its metabolites (that is, the total concentration of DDT and its metabolites should not exceed this value).

Notes: (Continued)

The following lettered footnotes are derived from EPA "Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (EPA 2000):

ll This criterion is based on 304(a) aquatic life criterion issued in 1980, and was issued in one of the following documents: Aldrin/ Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endosulfan (EPA 440/5-80-046), Endrin (EPA 440/5-80-047), Heptochlor (440/5-80-025), Hexachlorocyclohexane (EPA 440/5/80/054), Silver (EPA 440/5-80-071) (originally footnote g in CTR).

mm Criteria for these metals are expressed as a function of the water-effect ratio (WER) (originally footnote I in the CTR).

nn No criterion for protection of human health from consumption of aquatic organisms (excluding water) was presented in the 1980 criteria document or in the 1986 Quality Criteria for Water. Nevertheless, sufficient information was presented in the 1980 document to allow a calculation of a criterion, even though the results of such calculations were not shown in the document.

oo These freshwater and saltwater criteria for metals are expressed in terms of dissolved fraction of the metal in the water column. Criterion values were calculated by using EPA's Clean Water Act 304(a) guidance values (described in the total recoverable fraction) and then applying the conversion factors in 131.36(b)() and (2).

pp These criteria were promulgated for specific waters in California in the National Toxics Rule (NTR). The specific waters to which the NTR criteria apply include Waters of the State defined as bays or estuaries, including the San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. This section does not apply instead of the NTR for these criteria.

rr PCBs are a class of chemicals that include Aroclors 1242,1254,1221,1232,1248,1260, and 1016. The aquatic life criteria apply to the sum of this set of seven Aroclors.

The following numbered footnotes are derived from "A Compilation of Water Quality Goals" (Water Board 2000). These footnotes directly correlate with the source document:

1 Expressed as dissolved
2 Expressed as total recoverable
6 Pentavalent arsenic [As(V)] effects on plants
20 For halomethanes
22 For chlorinated benzenes
23 Toxicity to a fish species exposed for 7.5 days
24 For dichlorobenzenes
27 For dichloroethylenes
28 For dichloropropanes
29 For dichloropropenes
38 Toxicity to algae occurs
45 For phthalate esters
48 For chlorinated naphthalenes
51 From U.S. Environmental Protection Agency, *Quality Criteria for Water* (1976) "The Red Book."
52 For polycyclic aromatic hydrocarbons
53 For dinitrotoluenes
56 For nitrosamines
68 Draft/tentative/provisional; applies only to second value if more than one value is listed.
82 A decrease in the number of algal cells occurs.
83 Adverse effects on a fish species exposed for 168 days.
88 For nitrophenols
95 For the pentavalent form
114 Developed as 24-hour average using 1980 EPA guidelines, but applied as 4-day average in the National Toxics Rule and/or Proposed California Toxics Rule.
115 Criterion most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.
116 Applies separately to Aroclors 1242, 1254, 1221, 1232, 1248, 1260, and 1016; based on carcinogenicity at 1-in-a-million risk level.
142 Criteria do not apply to waters subject to water quality objectives in Tables III-2A and III-2B of the San Francisco Bay Regional Water Quality Control Board's 1986 Basin Plan.
143 These criteria were promulgated for specific California waters in the National Toxics Rule.
144 The ambient level was set at or below the minimum reported detection limit.
145 The ambient concentraton represents the 95th percentile of the distribution. Additionally, the 95th percentile of the distribution was calculated using distribution dependent formulae. For normal and lognormal distributions, the 95th percentile calculation used the parameters of the best-fitted regression line drawn through the detected values on the probability plot. For nonparametric distribution, the analytical formula was used (Gilbert 1987).

References:

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EPA. 2002b. "Revision of National Recommended Water Quality Criteria." FRL-OW-7431-3. December 27.

TABLE G-2: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN A-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Laboratory Practical Quantitation Limit	Minimum Detected Conc.	Maximum Detected Conc.	Location(s) of Maximum Detected Concentration	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Fraction Detects Greater than Laboratory Practical Quantitation Limit	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
CHROM	Chromium VI	µg/L	266	26	9.77	NA	50	NA	5	260	IR28MW125A (15-AUG-2000)	86.08	90.55	60.66	NA	0.65	NA	50	17 / 266	COEC
METAL	Aluminum	µg/L	335	37	11.04	NA	NA	NA	15.7	26,300	IR28MW294A (17-NOV-1995)	1,085	82.8	4,284	NA	NA	NA	NA	NA	-
METAL	Antimony	µg/L	332	37	11.14	43.26	NA	NA	0.21	40.1	IR06MW44A (07-JAN-1992)	9.54	5.4	10.13	0.00	NA	NA	43.26	0 / 332	-
METAL	Arsenic	µg/L	403	166	41.19	27.34	36	NA	1.2	27.6	PA28MW52A (13-DEC-1995)	5.83	4.3	4.72	0.01	0.00	NA	36	0 / 403	-
METAL	Barium	µg/L	332	314	94.58	504.2	NA	NA	3.8	929	IR06MW41A (08-JAN-1992)	128	74.95	151	0.04	NA	NA	504.2	12 / 332	-
METAL	Beryllium	µg/L	386	16	4.15	1.4	NA	NA	0.2	1.1	IR06MW45A (11-OCT-2000)	0.54	0.37	0.27	0.00	NA	NA	1.4	0 / 386	-
METAL	Cadmium	µg/L	337	20	5.93	5.08	8.8	NA	0.26	9.2	IR06MW53F (11-AUG-1994)	2.34	1.3	2.36	0.15	0.05	NA	8.8	1 / 337	COPEC
METAL	Calcium	µg/L	445	426	95.73	NA	NA	NA	2,220	730,000	IR29MW56F (22-JUN-1995)	94,947	56,900	104,516	NA	NA	NA	NA	NA	-
METAL	Chromium	µg/L	405	108	26.67	15.66	400	8	0.74	1,200	IR28MW920A (28-AUG-2001)	62.64	11.2	149	0.44	0.03	0.56	400	3 / 405	COPEC
METAL	Cobalt	µg/L	332	127	38.25	20.8	NA	NA	0.41	98.4	IR25MW15A2 (26-MAY-1995)	6.04	2	10.77	0.04	NA	NA	20.8	5 / 332	-
METAL	Copper	µg/L	337	84	24.93	28.04	3.1	NA	1.1	270	IR28MW170A (11-JUL-2002)	16.71	5.05	34.09	0.17	0.79	NA	28.04	14 / 337	COPEC
METAL	Iron	µg/L	499	213	42.69	2,380	NA	NA	8.5	550,000	IR25MW19A (29-JAN-1998)	6,143	468	38,760	0.29	NA	NA	2,380	61 / 499	-
METAL	Lead	µg/L	331	24	7.25	14.44	5.6	NA	0.79	29.7	IR28MW127A (27-NOV-1995)	6.65	3.5	7.50	0.13	0.33	NA	14.44	3 / 331	COPEC
METAL	Magnesium	µg/L	448	447	99.78	1,440,000	NA	NA	2,950	1,150,000	IR25MW17A (14-JUN-2002)	317,426	234,000	283,448	0.00	NA	NA	1,440,000	0 / 448	-
METAL	Manganese	µg/L	381	339	88.98	8140	NA	NA	0.69	10,500	IR28MW311A (28-MAY-1996)	1,221	366	2,055	0.02	NA	NA	8,140	7 / 381	-
METAL	Mercury	µg/L	417	60	14.39	0.6	0.025	NA	0.046	54	IR28MW170A (23-JAN-2001)	1.79	0.29	6.94	0.35	1.00	NA	0.6	21 / 417	COPEC
METAL	Molybdenum	µg/L	308	77	25.00	61.9	NA	NA	0.95	360	IR30MW01F (12-JUL-2002)	37.87	7	73.43	0.17	NA	NA	61.9	13 / 308	-
METAL	Nickel	µg/L	341	175	51.32	96.48	8.2	NA	1.4	384	IR28MW294A (17-NOV-1995)	30.73	14.9	47.11	0.05	0.67	NA	96.48	9 / 341	COPEC
METAL	Potassium	µg/L	448	430	95.98	448,000	NA	NA	258	710,000	IR28MW920A (28-AUG-2001)	79,126	33,800	112,187	0.01	NA	NA	448,000	6 / 448	-
METAL	Selenium	µg/L	329	45	13.68	14.5	71	NA	2.2	64.2	IR06MW45A (30-MAR-2004)	10.54	4.4	13.40	0.22	0.00	NA	71	0 / 329	-
METAL	Silver	µg/L	331	10	3.02	7.43	0.38	NA	0.55	24.1	IR28MW314B (03-JUL-1996)	3.59	0.92	6.90	0.10	1.00	NA	7.43	1 / 331	COPEC
METAL	Sodium	µg/L	448	446	99.55	9,242,000	NA	NA	980	9,700,000	IR28MW123A (18-MAY-1994)	1,629,632	712,500	2,176,934	0.01	NA	NA	9,242,000	3 / 448	-
METAL	Thallium	µg/L	327	39	11.93	12.97	426	NA	0.103	52.7	IR25MW17A (14-JUN-2002)	6.54	4	8.66	0.08	0.00	NA	426	0 / 327	-
METAL	Vanadium	µg/L	329	189	57.45	26.62	NA	NA	0.55	71.6	IR28MW294A (17-NOV-1995)	6.00	4.1	7.77	0.02	NA	NA	26.62	3 / 329	-
METAL	Zinc	µg/L	337	97	28.78	75.68	81	10	3	1,300	IR28MW170A (11-JUL-2002)	56.24	21	140	0.14	0.13	0.81	81	13 / 337	COEC
VOA	1,1,1,2-Tetrachloroethane	µg/L	382	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,1,1-Trichloroethane	µg/L	1,067	8	0.75	NA	6,240	NA	0.14	720	IR25MW15A1 (13-JUN-1994)	98.97	4.5	235	NA	0.00	NA	6,240	0 / 1067	-
VOA	1,1,2,2-Tetrachloroethane	µg/L	1,067	2	0.19	NA	1,804	0.5	6	120	IR28MW211F (13-NOV-2002)	63.00	63	57.00	NA	0.00	1.00	1,804	0 / 1067	-
VOA	1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	469	47	10.02	NA	NA	NA	0.14	140	IR25MW52A (17-JUN-2002)	13.73	0.95	27.15	NA	NA	NA	NA	NA	-
VOA	1,1,2-Trichloroethane	µg/L	1,067	34	3.19	NA	NA	0.5	0.2	170	IR28MW211F (09-JUL-2002)	24.34	3	39.14	NA	NA	0.91	NA	NA	-
VOA	1,1-Dichloroethane	µg/L	1,067	59	5.53	NA	NA	0.5	0.17	38	IR28MW916A (23-JAN-2001)	5.25	0.6	10.15	NA	NA	0.54	NA	NA	-
VOA	1,1-Dichloroethene	µg/L	1,067	72	6.75	NA	44,800	NA	0.14	42	IR25MW15A1 (11-JAN-2001)	3.82	0.975	7.48	NA	0.00	NA	44,800	0 / 1067	-
VOA	1,1-Dichloropropene	µg/L	207	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,3-Trichlorobenzene	µg/L	352	8	2.27	NA	NA	NA	0.5	1.4	IR58MW35A (11-JUL-2002)	0.94	0.98	0.33	NA	NA	NA	NA	NA	-
VOA	1,2,3-Trichloropropane	µg/L	382	2	0.52	NA	NA	0.5	1.5	16	IR28MW934F2 (06-MAR-2001)	8.75	8.75	7.25	NA	NA	1.00	NA	NA	-
VOA	1,2,4-Trichlorobenzene	µg/L	1,051	56	5.33	NA	129	0.5	0.32	200	IR25MW19A (29-JAN-1998)	18.30	4.85	36.95	NA	0.04	0.89	129	2 / 1051	COPEC
VOA	1,2,4-Trimethylbenzene	µg/L	207	29	14.01	NA	NA	0.5	0.2	220	IR28MW909A (08-FEB-2001, 12-FEB-2001)	45.06	13	67.23	NA	NA	0.97	NA	NA	-
VOA	1,2-Dibromo-3-Chloropropane	µg/L	707	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dibromoethane	µg/L	545	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dichlorobenzene	µg/L	1,065	206	19.34	NA	129	0.5	0.09	62,000	IR25MW15A1 (14-JUN-1994)	3,577	37	10,039	NA	0.39	0.90	129	80 / 1065	COPEC
VOA	1,2-Dichloroethane	µg/L	1,083	125	11.54	NA	22,600	0.5	0.17	150,000	IR25MW15A1 (26-MAY-1995)	8,263	93	23,217	NA	0.10	0.94	22,600	13 / 1083	COPEC
VOA	1,2-Dichloroethene (Total)	µg/L	287	89	31.01	NA	44,800	0.5	0.3	57,000	IR25MW15A1 (11-AUG-1994)	2,304	14	9,200	NA	0.01	0.94	44,800	1 / 287	COPEC
VOA	1,2-Dichloropropane	µg/L	1,067	38	3.56	NA	3,040	0.5	0.2	350	IR25MW19A (29-JAN-1998)	53.04	2.85	99.82	NA	0.00	0.79	3,040	0 / 1067	-
VOA	1,3,5-Trimethylbenzene	µg/L	207	10	4.83	NA	NA	0.5	0.79	28	IR28MW909A (24-JAN-2001)	9.44	5.7	9.30	NA	NA	1.00	NA	NA	-
VOA	1,3-Dichlorobenzene	µg/L	1,064	87	8.18	NA	129	NA	0.1	630	IR25MW19A (22-JAN-2001)	44.70	10	97.11	NA	0.10	NA	129	9 / 1064	COPEC
VOA	1,3-Dichloropropane	µg/L	207	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,4-Dichlorobenzene	µg/L	1,064	175	16.45	NA	129	0.5	0.12	15,000	IR25MW19A (29-JAN-1998)	983	31	2,488	NA	0.39	0.89	129	69 / 1064	COPEC
VOA	2,2'-Oxybis(1-Chloropropane)	µg/L	2	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2,2-Dichloropropane	µg/L	207	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Butanone	µg/L	785	3	0.38	NA	NA	NA	0.7	29	IR06MW22AD (15-JUL-1991)	12.23	7	12.13	NA	NA	NA	NA	NA	-
VOA	2-Chloroethyl Vinyl Ether	µg/L	60	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Chlorotoluene	µg/L	207	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Hexanone	µg/L	582	1	0.17	NA	NA	NA	0.4	0.4	IR28MW342F (18-MAR-2003)	0.40	0.4	NA	NA	NA	NA	NA	NA	-
VOA	4-Chlorotoluene	µg/L	207	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	4-Methyl-2-Pentanone	µg/L	758	5	0.66	NA	NA	NA	0.2	9	IR25MW15A1 (26-MAY-1995)	2.44	1.1	3.31	NA	NA	NA	NA	NA	-
VOA	Acetone	µg/L	708	26	3.67	NA	NA	NA	4.3	6,900	IR28MW936F (05-APR-2001)	428	22	1,359	NA	NA	NA	NA	NA	-
VOA	Benzene	µg/L	1,076	223	20.72	NA	700	0.5	0.1	400	IR25MW19A (22-JAN-2001)	17.74	2	51.86	NA	0.00	0.80	700	0 / 1076	-
VOA	Bromobenzene	µg/L	382	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Bromochloromethane	µg/L	504	0	0.00	NA	6,400	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 504	-
VOA	Bromodichloromethane	µg/L	1,067	11	1.03	NA	6,400	0.5	0.15	130	IR25MW19A (22-JAN-2001)	17.86	0.9	37.98	NA	0.00	0.64	6,400	0 / 1067	-
VOA	Bromoform	µg/L	1,067	4	0.37	NA	6,400	NA	1	33	IR28MW930A (28-AUG-2001)	10.75	4.5	13.15	NA	0.00	NA	6,400	0 / 1067	-
VOA	Bromomethane	µg/L	1,067	6	0.56	NA	6,400	NA	0.3	8.1	IR58MW34A (08-JUL-2002)	2.98	1.995	2.82	NA	0.00	NA	6,400	0 / 1067	-

TABLE G-2: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN A-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Laboratory Practical Quantitation Limit	Minimum Detected Conc.	Maximum Detected Conc.	Location(s) of Maximum Detected Concentration	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Fraction Detects Greater than Laboratory Practical Quantitation Limit	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
VOA	Carbon Disulfide	µg/L	832	59	7.09	NA	NA	NA	0.16	39	IR29MW56F (10-AUG-1994)	3.08	0.94	6.10	NA	NA	NA	NA	NA	-
VOA	Carbon Tetrachloride	µg/L	1,083	95	8.77	NA	6,400	0.5	0.15	520	IR28MW937F (02-APR-2001)	40.89	12	81.99	NA	0.00	0.89	6,400	0 / 1083	-
VOA	Chlorobenzene	µg/L	1,067	118	11.06	NA	129	0.5	0.13	9,900	IR28MW909A (08-FEB-2001)	456	28.5	1,140	NA	0.32	0.86	129	38 / 1067	COPEC
VOA	Chloroethane	µg/L	1,066	44	4.13	NA	NA	0.5	0.52	81	IR06MW30A (23-AUG-1994)	12.97	5	18.36	NA	NA	1.00	NA	NA	-
VOA	Chloroform	µg/L	1,083	246	22.71	NA	6,400	0.5	0.09	1,000	IR28MW937F (02-APR-2001)	49.15	3	133	NA	0.00	0.88	6,400	0 / 1083	-
VOA	Chloromethane	µg/L	1,067	15	1.41	NA	6,400	NA	0.2	3.8	IR58MW34A (08-JUL-2002)	0.75	0.3	1.05	NA	0.00	NA	6,400	0 / 1067	-
VOA	Cis-1,2-Dichloroethene	µg/L	796	443	55.65	NA	44,800	0.5	0.12	58,000	IR25MW15A1 (05-FEB-1998)	1,342	21	6,111	NA	0.00	0.87	44,800	2 / 796	COPEC
VOA	Cis-1,3-Dichloropropene	µg/L	1,067	2	0.19	NA	NA	0.5	0.54	4	IR58MW33B (23-MAY-1996)	2.27	2.27	1.73	NA	NA	1.00	NA	NA	-
VOA	Cyclohexane	µg/L	123	6	4.88	NA	NA	NA	0.26	1.6	IR28MW128A (09-AUG-2002)	0.73	0.585	0.43	NA	NA	NA	NA	NA	-
VOA	Dibromochloromethane	µg/L	1,067	5	0.47	NA	6,400	0.5	0.2	3	IR58MW33B (23-MAY-1996)	0.85	0.32	1.08	NA	0.00	0.40	6,400	0 / 1067	-
VOA	Dibromomethane	µg/L	382	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Dichlorodifluoromethane	µg/L	628	11	1.75	NA	NA	NA	0.22	4.2	IR25MW52A (08-JUN-2004)	1.74	1.8	1.12	NA	NA	NA	NA	NA	-
VOA	Ethylbenzene	µg/L	1,076	67	6.23	NA	86	NA	0.1	79	IR28MW155A (31-MAY-1994)	6.17	3	10.47	NA	0.00	NA	86	0 / 1076	-
VOA	Isopropylbenzene	µg/L	393	34	8.65	NA	NA	0.5	0.11	15	IR28MW909A (24-JAN-2001)	2.13	0.92	3.24	NA	NA	0.74	NA	NA	-
VOA	M,P-Xylenes	µg/L	125	13	10.40	NA	NA	NA	0.23	28	IR25MW15A1 (13-AUG-2002)	6.27	1.7	8.02	NA	NA	NA	NA	NA	-
VOA	Methyl Acetate	µg/L	121	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Methylcyclohexane	µg/L	123	4	3.25	NA	NA	NA	0.22	0.73	IR28MW128A (09-AUG-2002)	0.50	0.515	0.23	NA	NA	NA	NA	NA	-
VOA	Methylene Chloride	µg/L	1,067	33	3.09	NA	6,400	0.5	0.3	270	IR28MW936F (05-APR-2001)	40.13	12	66.42	NA	0.00	0.82	6,400	0 / 1067	-
VOA	N-Butylbenzene	µg/L	207	4	1.93	NA	NA	NA	1.1	6.5	IR58MW35A (11-JUL-2002)	4.43	5.05	2.17	NA	NA	NA	NA	NA	-
VOA	Naphthalene	µg/L	603	103	17.08	NA	470	0.05	0.06	1,800	IR06MW42A (10-JAN-1992)	110	25	242	NA	0.04	1.00	470	4 / 603	COPEC
VOA	O-Xylene	µg/L	125	23	18.40	NA	NA	NA	0.08	16	IR25MW15A1 (13-AUG-2002)	2.32	0.47	3.66	NA	NA	NA	NA	NA	-
VOA	Para-Isopropyl Toluene	µg/L	207	12	5.80	NA	NA	NA	0.52	34	IR25MW19A (22-JAN-2001)	6.60	2.75	9.28	NA	NA	NA	NA	NA	-
VOA	Propylbenzene	µg/L	207	9	4.35	NA	NA	NA	0.46	27	IR28MW909A (12-FEB-2001)	7.12	2.7	8.97	NA	NA	NA	NA	NA	-
VOA	Sec-Butylbenzene	µg/L	207	13	6.28	NA	NA	NA	0.2	4.8	IR28MW913A (25-JAN-2001)	1.88	1.5	1.52	NA	NA	NA	NA	NA	-
VOA	Styrene	µg/L	832	3	0.36	NA	NA	NA	1	7.9	IR25MW15A1 (11-JAN-2001)	4.30	4	2.82	NA	NA	NA	NA	NA	-
VOA	Tert-Butyl Methyl Ether	µg/L	716	67	9.36	NA	8,000	NA	0.09	25	IR28MW155A (18-JUN-2002)	3.00	1.2	4.19	NA	0.00	NA	8,000	0 / 716	-
VOA	Tert-Butylbenzene	µg/L	207	1	0.48	NA	NA	NA	0.4	0.4	IR58MW34A (08-JUL-2002)	0.40	0.4	NA	NA	NA	NA	NA	NA	-
VOA	Tetrachloroethene	µg/L	1,083	334	30.84	NA	450	0.5	0.1	72,000	IR25MW19A (29-JAN-1998, 22-JAN-2001)	2,031	5.15	8,612	NA	0.15	0.79	450	51 / 1083	COPEC
VOA	Toluene	µg/L	1,076	105	9.76	NA	5,000	NA	0.1	66	IR25MW19A (29-JAN-1998)	6.79	1	12.69	NA	0.00	NA	5,000	0 / 1076	-
VOA	Trans-1,2-Dichloroethene	µg/L	796	215	27.01	NA	44,800	0.5	0.14	2,400	IR25MW19A (22-JAN-2001)	59.51	5	236	NA	0.00	0.88	44,800	0 / 796	-
VOA	Trans-1,3-Dichloropropene	µg/L	1,067	1	0.09	NA	NA	0.5	3	3	IR58MW33B (23-MAY-1996)	3.00	3	NA	NA	NA	1.00	NA	NA	-
VOA	Trichloroethene	µg/L	1,082	578	53.42	NA	400	0.5	0.12	76,000	IR28MW211F (13-NOV-2002)	1,950	13	7,820	NA	0.19	0.89	400	108 / 1082	COPEC
VOA	Trichlorofluoromethane	µg/L	628	82	13.06	NA	NA	0.5	0.24	5,900	IR25MW52A (17-JUN-2002)	122	3.35	661	NA	NA	0.80	NA	NA	-
VOA	Vinyl Acetate	µg/L	98	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Vinyl Chloride	µg/L	1,083	318	29.36	NA	NA	0.5	0.28	6,600	IR25MW15A1 (05-OCT-1995)	286	62	669	NA	NA	0.94	NA	NA	-
VOA	Xylene (Total)	µg/L	951	77	8.10	NA	NA	NA	0.2	150	IR25MW19A (22-JAN-2001)	14.11	3	28.84	NA	NA	NA	NA	NA	-
SVOA	1,4-Dioxane	µg/L	13	2	15.38	NA	NA	NA	0.66	1.4	IR28MW151A (06-DEC-2004)	1.03	1	0.37	NA	NA	NA	NA	NA	-
SVOA	1-Methylnaphthalene	µg/L	4	2	50.00	NA	NA	NA	0.02	4	IR06MW22A (18-AUG-2000)	2.01	2	1.99	NA	NA	NA	NA	NA	-
SVOA	2-Chloronaphthalene	µg/L	402	2	0.50	NA	1.5	NA	1	1	IR25MW15A2 (26-MAY-1995), IR28MW129A (27-JUN-1995)	1.00	1	0.00	NA	0.00	NA	1.5	0 / 402	-
SVOA	2-Chlorophenol	µg/L	398	2	0.50	NA	NA	NA	1	24	IR25MW15A1 (13-AUG-2002)	12.50	13	11.50	NA	NA	NA	NA	NA	-
SVOA	2-Methylnaphthalene	µg/L	413	55	13.32	NA	NA	NA	0.5	920	IR25MW11A (18-AUG-1994)	49.04	9.8	137	NA	NA	NA	NA	NA	-
SVOA	2-Methylphenol	µg/L	392	11	2.81	NA	NA	NA	0.2	3,800	IR25MW15A1 (11-AUG-1994)	774	63	1,235	NA	NA	NA	NA	NA	-
SVOA	2-Nitroaniline	µg/L	379	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Nitrophenol	µg/L	398	0	0.00	NA	970	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	970	0 / 398	-
SVOA	2,4-Dichlorophenol	µg/L	393	4	1.02	NA	NA	NA	1.7	37	IR25MW15A1 (13-AUG-2002)	10.93	3	15.06	NA	NA	NA	NA	NA	-
SVOA	2,4-Dimethylphenol	µg/L	393	25	6.36	NA	NA	10	0.6	16,000	IR25MW15A1 (11-AUG-1994)	1,225	32	3,345	NA	NA	0.68	NA	NA	-
SVOA	2,4-Dinitrophenol	µg/L	388	0	0.00	NA	46	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	46	0 / 388	-
SVOA	2,4-Dinitrotoluene	µg/L	403	1	0.25	NA	118	10	4,900	4,900	IR25MW11A (07-JUN-1995)	4,900	4,900	NA	NA	1.00	1.00	118	1 / 403	COPEC
SVOA	2,4,5-Trichlorophenol	µg/L	375	1	0.27	NA	NA	NA	0.57	0.57	IR25MW15A1 (13-AUG-2002)	0.57	1	NA	NA	NA	NA	NA	NA	-
SVOA	2,4,6-Trichlorophenol	µg/L	393	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,6-Dinitrotoluene	µg/L	402	0	0.00	NA	118	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	118	0 / 402	-
SVOA	3,3'-Dichlorobenzidine	µg/L	402	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	3,4-Methylphenol	µg/L	13	2	15.38	NA	NA	10	380	3,200	IR25MW19A (24-JAN-2001)	1,790	1,790	1,410	NA	NA	1.00	NA	NA	-
SVOA	3-Nitroaniline	µg/L	377	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4,6-Dinitro-2-Methylphenol	µg/L	391	0	0.00	NA	970	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	970	0 / 391	-
SVOA	4-Bromophenyl-Phenylether	µg/L	402	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloro-3-Methylphenol	µg/L	393	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloroaniline	µg/L	384	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chlorophenyl-Phenylether	µg/L	402	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Methylphenol	µg/L	380	15	3.95	NA	NA	10	0.7	9,100	IR25MW15A1 (11-AUG-1994)	703	10	2,251	NA	NA	0.47	NA	NA	-
SVOA	4-Nitroaniline	µg/L	384	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Nitrophenol	µg/L	399	0	0.00	NA	970	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	970	0 / 399	-

TABLE G-2: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN A-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Laboratory Practical Quantitation Limit	Minimum Detected Conc.	Maximum Detected Conc.	Location(s) of Maximum Detected Concentration	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Fraction Detects Greater than Laboratory Practical Quantitation Limit	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
SVOA	Acenaphthene	µg/L	417	85	20.38	NA	710	NA	0.1	230	IR06MW42A (10-JAN-1992)	42.24	17	48.58	NA	0.00	NA	710	0 / 417	-
SVOA	Acenaphthylene	µg/L	417	14	3.36	NA	60	NA	0.07	10	IR06MW42A (16-JAN-2001, 01-MAY-2001)	2.34	0.9	3.21	NA	0.00	NA	60	0 / 417	-
SVOA	Acetophenone	µg/L	13	3	23.08	NA	NA	NA	2	24	IR06MW42A (28-AUG-2002)	10.67	6	9.57	NA	NA	NA	NA	NA	-
SVOA	Aniline	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Anthracene	µg/L	417	45	10.79	NA	60	NA	0.074	21	IR06MW42A (08-JAN-1991)	4.00	3	4.06	NA	0.00	NA	60	0 / 417	-
SVOA	Atrazine	µg/L	13	0	0.00	NA	11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	0 / 13	-
SVOA	Azobenzene	µg/L	12	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Benzaldehyde	µg/L	14	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Benzo(a)anthracene	µg/L	417	10	2.40	NA	60	0.05	0.01	10	IR06MW42A (16-JAN-2001)	2.14	0.6	2.91	NA	0.00	0.80	60	0 / 417	-
SVOA	Benzo(a)pyrene	µg/L	415	3	0.72	NA	60	0.05	0.21	3	IR28MW311A (19-APR-1996)	1.74	2	1.15	NA	0.00	1.00	60	0 / 415	-
SVOA	Benzo(b)fluoranthene	µg/L	415	3	0.72	NA	60	0.05	0.055	4	IR28MW311A (19-APR-1996)	2.02	2	1.61	NA	0.00	1.00	60	0 / 415	-
SVOA	Benzo(e)pyrene	µg/L	4	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Benzo(g,h,i)perylene	µg/L	415	0	0.00	NA	60	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	0 / 415	-
SVOA	Benzo(k)fluoranthene	µg/L	415	2	0.48	NA	60	0.05	1	1	IR28MW311A (19-APR-1996), PA28MW52A (23-FEB-1993)	1.00	1	0.00	NA	0.00	1.00	60	0 / 415	-
SVOA	Benzoic Acid	µg/L	92	2	2.17	NA	NA	NA	5	10	IR25MW15A1 (13-AUG-2002)	7.50	7.5	2.50	NA	NA	NA	NA	NA	-
SVOA	Benzyl Alcohol	µg/L	75	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Biphenyl	µg/L	17	4	23.53	NA	NA	NA	0.1	10	IR06MW42A (16-JAN-2001, 01-MAY-2001)	5.28	5.5	4.74	NA	NA	NA	NA	NA	-
SVOA	Bis(2-chloroethoxy)methane	µg/L	402	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-chloroethyl)ether	µg/L	402	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-ethylhexyl)phthalate	µg/L	402	6	1.49	NA	NA	NA	1	99	PA50MW03A (11-JUL-1994)	53.67	56.5	31.55	NA	NA	NA	NA	NA	-
SVOA	Butylbenzylphthalate	µg/L	402	1	0.25	NA	588.8	NA	7	7	IR06MW30A (12-JUN-1990)	7.00	7	NA	NA	0.00	NA	588.8	0 / 402	-
SVOA	Caprolactam	µg/L	15	2	13.33	NA	NA	NA	10	25	IR06MW42A (12-OCT-2000)	17.50	17.5	7.50	NA	NA	NA	NA	NA	-
SVOA	Carbazole	µg/L	308	30	9.74	NA	NA	NA	0.1	53	IR06MW42A (16-MAY-1994)	8.29	4.35	12.68	NA	NA	NA	NA	NA	-
SVOA	Chrysene	µg/L	418	7	1.67	NA	60	0.05	0.02	200	IR25MW11A (07-JUN-1995)	31.05	3	69.05	NA	0.14	0.71	60	1 / 418	COPEC
SVOA	Di-N-Butylphthalate	µg/L	402	2	0.50	NA	588.8	NA	0.9	1	IR28MW128A (25-MAY-1994)	0.95	0.95	0.05	NA	0.00	NA	588.8	0 / 402	-
SVOA	Di-N-Octylphthalate	µg/L	400	0	0.00	NA	588.8	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 400	-
SVOA	Dibenz(a,h)anthracene	µg/L	415	0	0.00	NA	60	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	0 / 415	-
SVOA	Dibenzofuran	µg/L	403	56	13.90	NA	NA	NA	0.42	140	IR06MW42A (08-JAN-1991, 16-JUL-1991, 10-JAN-1992)	23.68	7.1	35.56	NA	NA	NA	NA	NA	-
SVOA	Dibenzothiophene	µg/L	4	2	50.00	NA	NA	NA	0.09	0.1	IR06MW22A (18-AUG-2000)	0.10	0.095	0.01	NA	NA	NA	NA	NA	-
SVOA	Diethylphthalate	µg/L	402	2	0.50	NA	588.8	NA	6	10	IR06MW42A (03-JUN-2004)	8.00	8	2.00	NA	0.00	NA	588.8	0 / 402	-
SVOA	Dimethylphthalate	µg/L	402	0	0.00	NA	3.4	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.4	0 / 402	-
SVOA	Fluoranthene	µg/L	417	55	13.19	NA	16	NA	0.06	36	IR06MW42A (08-JAN-1991)	8.37	8	7.42	NA	0.16	NA	16	9 / 417	COPEC
SVOA	Fluorene	µg/L	418	65	15.55	NA	60	NA	0.2	180	IR25MW11A (28-DEC-1993)	25.73	7	41.17	NA	0.14	NA	60	9 / 418	COPEC
SVOA	Hexachlorobenzene	µg/L	402	0	0.00	NA	129	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	129	0 / 402	-
SVOA	Hexachlorobutadiene	µg/L	587	0	0.00	NA	6.4	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.4	0 / 587	-
SVOA	Hexachlorocyclopentadiene	µg/L	402	0	0.00	NA	1.4	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	0 / 402	-
SVOA	Hexachloroethane	µg/L	402	1	0.25	NA	188	NA	8	8	IR25MW16A (01-JUN-1995)	8.00	8	NA	NA	0.00	NA	188	0 / 402	-
SVOA	Indeno(1,2,3-cd)pyrene	µg/L	415	0	0.00	NA	60	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	0 / 415	-
SVOA	Isophorone	µg/L	402	0	0.00	NA	2,580	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,580	0 / 402	-
SVOA	N-Nitroso-Di-N-Propylamine	µg/L	402	0	0.00	NA	660,000	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	660,000	0 / 402	-
SVOA	N-Nitrosodimethylamine	µg/L	31	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	N-Nitrosodiphenylamine	µg/L	402	1	0.25	NA	660,000	NA	6.4	6.4	IR29MW56F (13-SEP-2004)	6.40	6.4	NA	NA	0.00	NA	660,000	0 / 402	-
SVOA	Naphthalene, 1,6,7-Trimethyl-	µg/L	4	2	50.00	NA	NA	NA	0.4	0.4	IR06MW22A (18-AUG-2000), IR25MW16A (17-AUG-2000)	0.40	0.4	0.00	NA	NA	NA	NA	NA	-
SVOA	Naphthalene, 2,6-Dimethyl-	µg/L	4	2	50.00	NA	NA	NA	0.2	2	IR06MW22A (18-AUG-2000)	1.10	1.1	0.90	NA	NA	NA	NA	NA	-
SVOA	Nitrobenzene	µg/L	402	0	0.00	NA	1,336	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,336	0 / 402	-
SVOA	Pentachlorophenol	µg/L	393	4	1.02	NA	7.9	50	0.3	6,100	IR25MW11A (07-JUN-1995)	1,526	1.75	2,641	NA	0.25	0.25	7.9	1 / 393	COPEC
SVOA	Perylene	µg/L	4	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Phenacetin	µg/L	7	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Phenanthrene	µg/L	418	78	18.66	NA	60	NA	0.08	590	IR25MW11A (18-AUG-1994)	27.42	5.5	78.76	NA	0.13	NA	60	10 / 418	COPEC
SVOA	Phenanthrene, 1-Methyl-	µg/L	4	2	50.00	NA	NA	NA	0.01	0.05	IR06MW22A (18-AUG-2000)	0.03	0.03	0.02	NA	NA	NA	NA	NA	-
SVOA	Phenol	µg/L	393	10	2.54	NA	1,160	NA	1.5	2,300	IR25MW15A1 (11-AUG-1994)	414	80.5	671	NA	0.10	NA	1,160	1 / 393	COPEC
SVOA	Pyrene	µg/L	417	55	13.19	NA	60	NA	0.1	16	IR06MW42A (08-JAN-1991)	5.26	5	3.75	NA	0.00	NA	60	0 / 417	-
PEST	4,4'-DDD	µg/L	247	3	1.21	NA	0.72	NA	0.01	0.06	IR58MW33B (23-MAY-1996)	0.04	0	0.02	NA	0.00	NA	0.72	0 / 247	-
PEST	4,4'-DDE	µg/L	247	5	2.02	NA	2.8	NA	0.006	0.2	IR29MW48A (06-JUN-1994)	0.05	0	0.07	NA	0.00	NA	2.8	0 / 247	-
PEST	4,4'-DDT	µg/L	247	7	2.83	NA	0.001	NA	0.0094	0.5	IR58MW31A (22-FEB-2001)	0.11	0	0.16	NA	1.00	NA	0.001	7 / 247	COPEC
PEST	Aldrin	µg/L	247	4	1.62	NA	0.26	NA	0.01	0.08	IR28MW124A (02-AUG-1995), IR29MW48A (06-JUN-1994)	0.05	0	0.03	NA	0.00	NA	0.26	0 / 247	-
PEST	alpha-BHC	µg/L	247	2	0.81	NA	NA	NA	0.02	0.02	IR25MW15A1 (17-AUG-2000, 01-FEB-2001)	0.02	0	0.00	NA	NA	NA	NA	NA	-
PEST	alpha-Chlordane	µg/L	247	7	2.83	NA	0.004	NA	0.0079	1	IR29MW48A (06-JUN-1994)	0.15	0	0.35	NA	1.00	NA	0.004	7 / 247	COPEC
PEST	Azinphos Methyl	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	beta-BHC	µg/L	247	6	2.43	NA	NA	NA	0.005	0.04	IR58MW32B (17-APR-1996)	0.02	0	0.01	NA	NA	NA	NA	NA	-
PEST	Bolstar	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Chlorpyrifos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-

TABLE G-2: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN A-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Laboratory Practical Quantitation Limit	Minimum Detected Conc.	Maximum Detected Conc.	Location(s) of Maximum Detected Concentration	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Fraction Detects Greater than Laboratory Practical Quantitation Limit	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
PEST	Coumaphos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	delta-BHC	µg/L	247	8	3.24	NA	NA	NA	0.0018	0.03	IR06MW42A (16-JAN-2001), IR25MW15A1 (17-AUG-2000)	0.01	0	0.01	NA	NA	NA	NA	NA	-
PEST	Demeton	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Diazinon	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Dichlorvos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Dieldrin	µg/L	247	7	2.83	NA	0.142	NA	0.006	0.09	IR58MW31A (22-FEB-2001)	0.05	0	0.03	NA	0.00	NA	0.142	0 / 247	-
PEST	Dimethoate	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Disulfoton	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Endosulfan I	µg/L	247	0	0.00	NA	0.0087	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0087	0 / 247	-
PEST	Endosulfan II	µg/L	247	2	0.81	NA	0.0087	NA	0.02	0.07	IR29MW48A (06-JUN-1994)	0.05	0	0.03	NA	1.00	NA	0.0087	2 / 247	COPEC
PEST	Endosulfan Sulfate	µg/L	247	3	1.21	NA	NA	NA	0.01	0.1	IR25MW16A (02-JUN-1994)	0.04	0	0.04	NA	NA	NA	NA	NA	-
PEST	Endrin	µg/L	247	5	2.02	NA	0.0023	NA	0.0041	0.02	IR58MW31A (11-AUG-2000)	0.01	0	0.01	NA	1.00	NA	0.0023	5 / 247	COPEC
PEST	Endrin Aldehyde	µg/L	247	6	2.43	NA	NA	NA	0.007	0.1	IR58MW31A (01-JUL-1994)	0.05	0	0.04	NA	NA	NA	NA	NA	-
PEST	Endrin Ketone	µg/L	243	2	0.82	NA	NA	NA	0.01	0.1	IR25MW15A1 (26-MAY-1995)	0.06	0	0.05	NA	NA	NA	NA	NA	-
PEST	EPN	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Ethion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Ethoprop	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Famphur	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Fensulfothion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Fenthion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	gamma-BHC (Lindane)	µg/L	247	2	0.81	NA	0.032	NA	0.01	0.01	IR25MW15A1 (17-AUG-2000, 01-FEB-2001)	0.01	0	0.00	NA	0.00	NA	0.032	0 / 247	-
PEST	gamma-Chlordane	µg/L	247	5	2.02	NA	0.004	NA	0.006	1	IR29MW48A (06-JUN-1994)	0.21	0	0.40	NA	1.00	NA	0.004	5 / 247	COPEC
PEST	Heptachlor	µg/L	247	4	1.62	NA	0.0036	NA	0.002	0.013	IR06MW42A (05-MAR-2003)	0.01	0	0.00	NA	0.50	NA	0.0036	2 / 247	COPEC
PEST	Heptachlor Epoxide	µg/L	243	6	2.47	NA	0.0036	NA	0.002	0.03	IR25MW15A1 (14-JUN-1994), IR28MW311A (27-JUN-1996)	0.02	0	0.01	NA	0.83	NA	0.0036	5 / 243	COPEC
PEST	Heptachlor Epoxide A	µg/L	4	1	25.00	NA	NA	NA	0.055	0.055	IR25MW15A1 (13-AUG-2002)	0.06	0	NA	NA	NA	NA	NA	NA	-
PEST	Heptachlor Epoxide B	µg/L	4	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Malathion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Merphos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Methoxychlor	µg/L	247	1	0.40	NA	0.003	NA	0.0084	0.0084	IR06MW42A (20-MAY-2003)	0.01	0	NA	NA	1.00	NA	0.003	1 / 247	COPEC
PEST	Methyl Parathion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Mevinphos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Naled	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Parathion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Phorate	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Ronnel	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Sulfotep	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Tetrachlorvinphos	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Tokuthion	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Toxaphene	µg/L	247	0	0.00	NA	0.0002	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0002	0 / 247	-
PEST	Trichloronate	µg/L	1	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PCB	Aroclor-1016	µg/L	291	0	0.00	NA	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 291	-
PCB	Aroclor-1221	µg/L	291	0	0.00	NA	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 291	-
PCB	Aroclor-1232	µg/L	291	0	0.00	NA	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 291	-
PCB	Aroclor-1242	µg/L	291	0	0.00	NA	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 291	-
PCB	Aroclor-1248	µg/L	291	1	0.34	NA	0.03	NA	2	2	IR29MW48A (06-JUN-1994)	2.00	2	NA	NA	1.00	NA	0.03	1 / 291	COPEC
PCB	Aroclor-1254	µg/L	291	0	0.00	NA	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 291	-
PCB	Aroclor-1260	µg/L	291	31	10.65	NA	0.03	NA	0.06	23	IR28MW129A (27-JUN-1995)	2.79	1	4.47	NA	1.00	NA	0.03	31 / 291	COPEC
TPHEXT	Diesel-Range Organics	µg/L	643	295	45.88	NA	1,400	NA	39	3,400,000	IR25MW11A (18-AUG-1994)	20,299	500	205,051	NA	0.24	NA	1,400	71 / 643	COPEC
TPHEXT	Motor Oil-Range Organics	µg/L	571	265	46.41	NA	1,400	NA	20	200,000	IR25MW19A (15-MAR-2001)	1,383	240	12,321	NA	0.08	NA	1,400	22 / 571	COPEC
TPHEXT	TPH-Extractable Unknown Hydrocarbon	µg/L	17	5	29.41	NA	NA	NA	310	7,000	IR06MW22AD (06-JAN-1992)	2,544	2,000	2,446	NA	NA	NA	NA	NA	-
TPHEXT	TPH-Kerosene	µg/L	4	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
TPHPRG	Diesel-Range Organics	µg/L	3	1	33.33	NA	1,400	NA	920	920	IR06MW42A (23-MAR-2004)	920	920	NA	NA	0.00	NA	1,400	0 / 3	-
TPHPRG	Gasoline-Range Organics	µg/L	553	220	39.78	NA	1,400	NA	8.5	1,300,000	IR25MW11A (28-DEC-1993)	10,759	170	89,358	NA	0.20	NA	1,400	45 / 553	COPEC
TPHPRG	Motor Oil-Range Organics	µg/L	3	0	0.00	NA	1,400	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,400	0 / 3	-
TPHPRG	TPH-Purgeable Unknown Hydrocarbons	µg/L	9	2	22.22	NA	NA	NA	17	68	IR28MW124A (20-MAY-1994)	42.50	42.5	25.50	NA	NA	NA	NA	NA	-
ORGAN	Tributyltin	µg/L	11	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	-
TOC	Total Organic Carbon	µg/L	50	40	80.00	NA	NA	NA	720	50,000	IR25MW15A1 (06-MAY-1999)	5,508	2,650	8,044	NA	NA	NA	NA	NA	-
ALKALN	Bicarbonate Alkalinity	µg/L	126	126	100.00	NA	NA	NA	44,000	1,430,000	IR28MW170A (22-FEB-2001)	403,751	353,500	250,490	NA	NA	NA	NA	NA	-
ALKALN	Carbonate Alkalinity	µg/L	126	24	19.05	NA	NA	NA	40,000	229,000	IR28MW330A (28-JAN-1998)	131,900	139,500	52,212	NA	NA	NA	NA	NA	-
ALKALN	Hydroxide Alkalinity	µg/L	101	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Total Alkalinity	µg/L	219	219	100.00	NA	NA	NA	14,000	1,430,000	IR28MW170A (22-FEB-2001)	346,329	287,000	253,020	NA	NA	NA	NA	NA	-
AMMON	Ammonia	µg/L	28	27	96.43	NA	NA	NA	120	2,500	IR06MW40A (17-JUL-1991)	986	890	722	NA	NA	NA	NA	NA	-

TABLE G-2: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN A-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Laboratory Practical Quantitation Limit	Minimum Detected Conc.	Maximum Detected Conc.	Location(s) of Maximum Detected Concentration	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Fraction Detects Greater than Laboratory Practical Quantitation Limit	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
ANION	Chloride	µg/L	386	385	99.74	NA	NA	NA	7,700	17,400,000	IR28MW270A (06-MAY-1996)	2,810,272	1,290,000	4,035,306	NA	NA	NA	NA	NA	-
ANION	Fluoride	µg/L	79	46	58.23	NA	NA	NA	110	3,700	IR25MW20A (29-JAN-1998)	569	405	624	NA	NA	NA	NA	NA	-
ANION	Nitrate as Nitrogen	µg/L	322	197	61.18	NA	NA	NA	10	104,000	IR29MW56F (22-JUN-1995)	3,139	710	9,409	NA	NA	NA	NA	NA	-
ANION	Nitrate/Nitrite as Nitrogen	µg/L	161	110	68.32	NA	NA	NA	10	30,900	IR28MW217A (28-APR-1999)	1,646	425	4,003	NA	NA	NA	NA	NA	-
ANION	Nitrite as Nitrogen	µg/L	229	27	11.79	NA	NA	NA	6	870	IR06MW44A (28-JAN-1998)	84.52	15	196	NA	NA	NA	NA	NA	-
ANION	Orthophosphate	µg/L	142	24	16.90	NA	NA	NA	64	29,000	IR29MW85F (24-MAY-1996)	2,222	530	5,766	NA	NA	NA	NA	NA	-
ANION	Sulfate	µg/L	335	320	95.52	NA	NA	NA	1,300	6,580,000	IR28MW297A (07-MAY-1996)	452,637	172,000	679,947	NA	NA	NA	NA	NA	-
CEC	Calcium	µg/L	32	32	100.00	NA	NA	NA	2,300	330,000	IR28MW150A (03-AUG-2000), IR28MW270A (04-AUG-2000), IR29MW57A (23-JUN-1995)	79,150	35,500	88,793	NA	NA	NA	NA	NA	-
CEC	Iron	µg/L	32	7	21.88	2,380	NA	NA	590	16,000	IR25MW15A2 (16-AUG-2000)	5,459	5,600	5,046	0.57	NA	NA	2,380	4 / 32	-
CEC	Magnesium	µg/L	32	32	100.00	1,440,000	NA	NA	2,800	1,100,000	IR25MW17A (29-MAR-2004), IR28MW270A (04-AUG-2000), IR28MW297A (20-NOV-1995)	335,784	255,000	307,068	0.00	NA	NA	1,440,000	0 / 32	-
CEC	Potassium	µg/L	32	31	96.88	448,000	NA	NA	370	360,000	IR28MW270A (04-AUG-2000)	68,117	41,000	85,398	0.00	NA	NA	448,000	0 / 32	-
CEC	Sodium	µg/L	32	31	96.88	9,242,000	NA	NA	12,000	11,000,000	IR28MW270A (04-AUG-2000)	1,812,710	860,000	2,555,009	0.03	NA	NA	9,242,000	1 / 32	-
CYAN	Cyanide	µg/L	9	2	22.22	NA	1	NA	0.76	1.2	PA50MW03A (25-MAR-1996)	0.98	0.98	0.22	NA	0.50	NA	1	1 / 9	COPEC
DGASES	Carbon Dioxide in Water	µg/L	33	14	42.42	NA	NA	NA	16,000	406,000	IR28MW217A (28-APR-1999)	146,000	146,500	107,038	NA	NA	NA	NA	NA	-
DGASES	Ethane	µg/L	118	31	26.27	NA	NA	NA	0.3	77	IR28MW211F (21-MAR-2003)	20.77	7.2	24.07	NA	NA	NA	NA	NA	-
DGASES	Ethene	µg/L	118	28	23.73	NA	NA	NA	0.4	620	IR25MW15A1 (06-MAY-1999)	54.53	10.5	123	NA	NA	NA	NA	NA	-
DGASES	Hydrogen in Water	µg/L	84	4	4.76	NA	NA	NA	35.9	226	IR28MW362F (06-FEB-2003)	117	102.45	80.95	NA	NA	NA	NA	NA	-
DGASES	Methane	µg/L	67	45	67.16	NA	NA	NA	2	8,500	IR06MW34A (27-APR-1999)	625	160	1,475	NA	NA	NA	NA	NA	-
DO	Dissolved Oxygen	µg/L	227	227	100.00	NA	NA	NA	50	8,660	IR29MW56F (22-AUG-2000)	3,101	2,860	2,488	NA	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Bottom	µg/L	157	157	100.00	NA	NA	NA	50	6,300	IR28MW275F (17-AUG-2000)	1,117	510	1,282	NA	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Middle	µg/L	160	160	100.00	NA	NA	NA	80	8,400	IR28MW169A (23-FEB-2001)	1,683	965	1,608	NA	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Top	µg/L	164	164	100.00	NA	NA	NA	250	9,000	IR28MW298A (14-AUG-2000)	2,503	1,905	1,907	NA	NA	NA	NA	NA	-
FTK-METAL	Dissolved Iron (II)	µg/L	1	1	100.00	NA	NA	NA	0	0	IR29MW56F (02-MAR-2001)	0.00	0	NA	NA	NA	NA	NA	NA	-
FTK-METAL	Dissolved Managanese (II)	µg/L	3	3	100.00	NA	NA	NA	100	800	IR28MW398A (01-MAR-2001)	500	600	294	NA	NA	NA	NA	NA	-
FTK-METAL	Total Iron (II)	µg/L	117	117	100.00	NA	NA	NA	0	7,200	IR25MW15A2 (16-AUG-2000)	503	0	1,227	NA	NA	NA	NA	NA	-
FTK-METAL	Total Manganese (II)	µg/L	92	92	100.00	NA	NA	NA	0	14,000	IR06MW41A (14-AUG-2002)	1,440	300	2,637	NA	NA	NA	NA	NA	-
H2S	Hydrogen Sulfide	µg/L	30	0	0.00	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
HARD	Hardness	µg/L	25	25	100.00	NA	NA	NA	140	4,500,000	IR25MW18A (29-JAN-1998)	1,099,109	970,000	927,443	NA	NA	NA	NA	NA	-
IRON_ION	Iron (II)	µg/L	34	2	5.88	NA	NA	NA	180	510	IR25MW15A2 (27-APR-1999)	345	345	165	NA	NA	NA	NA	NA	-
IRON_ION	Iron (III)	µg/L	1	1	100.00	NA	NA	NA	110	110	IR25MW37A (11-JUN-2002)	110	110	NA	NA	NA	NA	NA	NA	-
MEE	Ethane	µg/L	183	5	2.73	NA	NA	NA	3.4	13	IR28MW916A (08-FEB-2001)	6.76	5.9	3.44	NA	NA	NA	NA	NA	-
MEE	Ethene	µg/L	183	46	25.14	NA	NA	NA	3.9	570	IR25MW15A1 (01-FEB-2001)	144	32.5	175	NA	NA	NA	NA	NA	-
MEE	Methane	µg/L	183	124	67.76	NA	NA	NA	2	16,000	IR28MW918A (08-FEB-2001)	762	165	2,239	NA	NA	NA	NA	NA	-

Notes:

µg/L	Microgram per liter
BHC	Benzene hexachloride
CEC	Cation exchange capacity
COEC	Chemical of ecological concern
COPEC	Chemical of potential ecological concern
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
DGASES	Dissolved gases
BHC	Benzene hexachloride
CEC	Cation exchange capacity
COEC	Chemical of ecological concern
CONC.	Concentration
COPEC	Chemical of potential ecological concern
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
DGASES	Dissolved gases
DO	Dissolved oxygen
FTK	Field test kit
HGAL	Hunters Point groundwater ambient level
MEE	Methane, ethane, ethene
NA	Not applicable or not available
ND	Nondetect
PAH	Polynuclear aromatic hydrocarbon
PEST	Pesticides
SVOA	Semivolatile organic compound
TOC	Total organic carbon
VOA	Volatile organic compound

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
CHROM	Chromium VI	µg/L	10	0	0.00	NA	50	ND	ND	ND	ND	ND	ND	ND	50	0 / 10	-
METAL	Aluminum	µg/L	12	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
METAL	Antimony	µg/L	12	2	16.67	43.26	NA	3.4	5.3	4.4	4.4	1.0	0.00	NA	43.26	0 / 12	-
METAL	Arsenic	µg/L	12	2	16.67	27.34	36	1.9	2.8	2.4	2.4	0.5	0.00	0.00	36	0 / 12	-
METAL	Barium	µg/L	12	12	100.00	504.2	NA	65.8	730	435	467	243	0.50	NA	504.2	6 / 12	-
METAL	Beryllium	µg/L	12	0	0.00	1.4	NA	ND	ND	ND	ND	ND	ND	ND	1.4	0 / 12	-
METAL	Cadmium	µg/L	12	2	16.67	5.08	8.8	0.37	0.63	0.50	0.5	0.13	0.00	0.00	8.8	0 / 12	-
METAL	Calcium	µg/L	21	21	100.00	NA	NA	7,700	1,070,000	270,148	123,000	279,349	NA	NA	NA	NA	-
METAL	Chromium	µg/L	12	1	8.33	15.66	400	5.9	5.9	5.9	5.9	NA	0.00	0.00	400	0 / 12	-
METAL	Cobalt	µg/L	12	9	75.00	20.8	NA	0.82	6.3	2.7	2.1	1.8	0.00	NA	20.8	0 / 12	-
METAL	Copper	µg/L	12	2	16.67	28.04	3.1	3.6	4	3.8	3.8	0.2	0.00	1.00	28.04	0 / 12	-
METAL	Iron	µg/L	21	5	23.81	2380	NA	10.1	429	131	70	152	0.00	NA	2,380	0 / 21	-
METAL	Lead	µg/L	12	1	8.33	14.44	5.6	2	2	2.0	2.0	NA	0.00	0.00	14.44	0 / 12	-
METAL	Magnesium	µg/L	21	21	100.00	1,440,000	NA	14,700	3,640,000	884,224	657,000	804,047	0.24	NA	1,440,000	5 / 21	-
METAL	Manganese	µg/L	12	12	100.00	8,140	NA	30	1,480	823	767	461	0.00	NA	8,140	0 / 12	-
METAL	Mercury	µg/L	19	1	5.26	0.6	0.025	0.18	0.18	0.18	0.18	NA	0.00	1.00	0.6	0 / 19	-
METAL	Molybdenum	µg/L	12	1	8.33	61.9	NA	1.7	1.7	1.7	1.7	NA	0.00	NA	61.9	0 / 12	-
METAL	Nickel	µg/L	12	11	91.67	96.48	8.2	15.9	49.6	27.1	24.5	9.4	0.00	1.00	96.48	0 / 12	-
METAL	Potassium	µg/L	21	21	100.00	448,000	NA	765	295,000	56,075	27,000	78,460	0.00	NA	448,000	0 / 21	-
METAL	Selenium	µg/L	12	4	33.33	14.5	71	2.8	4.6	3.9	4.2	0.7	0.00	0.00	71	0 / 12	-
METAL	Silver	µg/L	12	0	0.00	7.43	0.38	ND	ND	ND	ND	ND	ND	ND	7.43	0 / 12	-
METAL	Sodium	µg/L	21	21	100.00	9,242,000	NA	193,000	8,000,000	3,027,667	2,400,000	1,989,383	0.00	NA	9,242,000	0 / 21	-
METAL	Thallium	µg/L	12	1	8.33	12.97	426	3	3	3.0	3.0	NA	0.00	0.00	426	0 / 12	-
METAL	Vanadium	µg/L	12	9	75.00	26.62	NA	0.72	11	5.4	5.9	3.4	0.00	NA	26.62	0 / 12	-
METAL	Zinc	µg/L	13	5	38.46	75.68	81	11.3	143	50.6	28.0	49.1	0.20	0.20	81	1 / 13	COPEC
VOA	1,1,1,2-Tetrachloroethane	µg/L	50	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,1,1-Trichloroethane	µg/L	77	0	0.00	NA	6,240	ND	ND	ND	ND	ND	ND	ND	6,240	0 / 77	-
VOA	1,1,2,2-Tetrachloroethane	µg/L	77	0	0.00	NA	1,804	ND	ND	ND	ND	ND	ND	ND	1,804	0 / 77	-
VOA	1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	46	4	8.70	NA	NA	0.4	2.6	1.2	0.8	0.9	NA	NA	NA	NA	-
VOA	1,1,2-Trichloroethane	µg/L	77	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,1-Dichloroethane	µg/L	77	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,1-Dichloroethene	µg/L	77	0	0.00	NA	44,800	ND	ND	ND	ND	ND	ND	ND	44,800	0 / 77	-
VOA	1,1-Dichloropropene	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,3-Trichlorobenzene	µg/L	22	1	4.55	NA	NA	0.77	0.77	0.77	0.77	NA	NA	NA	NA	NA	-
VOA	1,2,3-Trichloropropane	µg/L	50	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,4-Trichlorobenzene	µg/L	77	3	3.90	NA	129	0.35	0.94	0.56	0.4	0.27	NA	0.00	129	0 / 77	-
VOA	1,2,4-Trimethylbenzene	µg/L	14	7	50.00	NA	NA	8	48	31.0	25.0	14.5	NA	NA	NA	NA	-
VOA	1,2-Dibromo-3-Chloropropane	µg/L	68	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dibromoethane	µg/L	32	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dichlorobenzene	µg/L	77	12	15.58	NA	129	0.17	100	50.0	57.5	28.8	NA	0.00	129	0 / 77	-
VOA	1,2-Dichloroethane	µg/L	77	0	0.00	NA	22,600	ND	ND	ND	ND	ND	ND	ND	22,600	0 / 77	-
VOA	1,2-Dichloroethene (Total)	µg/L	9	0	0.00	NA	44,800	ND	ND	ND	ND	ND	ND	ND	44,800	0 / 9	-
VOA	1,2-Dichloropropane	µg/L	77	0	0.00	NA	3,040	ND	ND	ND	ND	ND	ND	ND	3,040	0 / 77	-
VOA	1,3,5-Trimethylbenzene	µg/L	14	3	21.43	NA	NA	1.8	3.7	2.5	1.9	0.9	NA	NA	NA	NA	-

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
VOA	1,3-Dichlorobenzene	µg/L	77	12	15.58	NA	129	0.2	84	29.9	21.0	30.6	NA	0.00	129	0 / 77	-
VOA	1,3-Dichloropropane	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,4-Dichlorobenzene	µg/L	77	13	16.88	NA	129	0.37	180	62.3	25.0	65.6	NA	0.23	129	3 / 77	COPEC
VOA	2,2-Dichloropropane	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Butanone	µg/L	33	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Chlorotoluene	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Hexanone	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	4-Chlorotoluene	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	4-Methyl-2-Pentanone	µg/L	33	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Acetone	µg/L	34	4	11.76	NA	NA	16	120	58.8	49.5	44.7	NA	NA	NA	NA	-
VOA	Benzene	µg/L	77	4	5.19	NA	700	0.24	9	4.6	4.5	4.2	NA	0.00	700	0 / 77	-
VOA	Bromobenzene	µg/L	50	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Bromochloromethane	µg/L	32	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 32	-
VOA	Bromodichloromethane	µg/L	77	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 77	-
VOA	Bromoform	µg/L	77	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 77	-
VOA	Bromomethane	µg/L	77	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 77	-
VOA	Carbon Disulfide	µg/L	41	4	9.76	NA	NA	0.25	6	2.8	2.5	2.1	NA	NA	NA	NA	-
VOA	Carbon Tetrachloride	µg/L	77	6	7.79	NA	6,400	0.31	11	5.0	5.2	3.4	NA	0.00	6,400	0 / 77	-
VOA	Chlorobenzene	µg/L	77	11	14.29	NA	129	0.1	1000	365	300	405	NA	0.55	129	6 / 77	COPEC
VOA	Chloroethane	µg/L	77	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Chloroform	µg/L	77	17	22.08	NA	6,400	0.17	7.3	1.9	1.4	1.8	NA	0.00	6,400	0 / 77	-
VOA	Chloromethane	µg/L	77	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 77	-
VOA	cis-1,2-Dichloroethene	µg/L	68	17	25.00	NA	44,800	0.15	870	217	55	294	NA	0.00	44,800	0 / 68	-
VOA	cis-1,3-Dichloropropene	µg/L	77	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Cyclohexane	µg/L	8	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Dibromochloromethane	µg/L	77	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 77	-
VOA	Dibromomethane	µg/L	50	1	2.00	NA	NA	0.25	0.25	0.25	0.25	NA	NA	NA	NA	NA	-
VOA	Dichlorodifluoromethane	µg/L	58	3	5.17	NA	NA	0.28	0.6	0.41	0.34	0.14	NA	NA	NA	NA	-
VOA	Ethylbenzene	µg/L	77	6	7.79	NA	86	0.19	16	3.0	0.4	5.8	NA	0.00	86	0 / 77	-
VOA	Isopropylbenzene	µg/L	22	2	9.09	NA	NA	0.12	0.59	0.36	0.355	0.24	NA	NA	NA	NA	-
VOA	m,p-Xylenes	µg/L	10	2	20.00	NA	NA	0.74	2.1	1.4	1.4	0.7	NA	NA	NA	NA	-
VOA	Methyl Acetate	µg/L	8	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Methylcyclohexane	µg/L	8	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Methylene Chloride	µg/L	77	2	2.60	NA	6,400	0.66	21	10.8	10.8	10.2	NA	0.00	6,400	0 / 77	-
VOA	n-Butylbenzene	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Naphthalene	µg/L	29	7	24.14	NA	470	2.6	42	21.9	19.0	11.3	NA	0.00	470	0 / 29	-
VOA	o-Xylene	µg/L	10	1	10.00	NA	NA	1.1	1.1	1.1	1.1	NA	NA	NA	NA	NA	-
VOA	Para-Isopropyl Toluene	µg/L	14	1	7.14	NA	NA	0.62	0.62	0.62	0.62	NA	NA	NA	NA	NA	-
VOA	Propylbenzene	µg/L	14	1	7.14	NA	NA	0.74	0.74	0.74	0.74	NA	NA	NA	NA	NA	-
VOA	Sec-Butylbenzene	µg/L	14	1	7.14	NA	NA	0.55	0.55	0.55	0.55	NA	NA	NA	NA	NA	-
VOA	Styrene	µg/L	41	1	2.44	NA	NA	0.8	0.8	0.80	0.8	NA	NA	NA	NA	NA	-
VOA	Tert-Butyl Methyl Ether	µg/L	68	0	0.00	NA	8,000	ND	ND	ND	ND	ND	ND	ND	8,000	0 / 68	-

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
VOA	Tert-Butylbenzene	µg/L	14	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Tetrachloroethene	µg/L	77	12	15.58	NA	450	1.7	55	12.2	2.8	18.6	NA	0.00	450	0 / 77	-
VOA	Toluene	µg/L	77	3	3.90	NA	5,000	0.2	0.87	0.55	0.58	0.27	NA	0.00	5,000	0 / 77	-
VOA	Total LMW PAH	µg/L	29	7	24.14	NA	NA	5.2	84	43.9	38.0	22.5	NA	NA	NA	NA	-
VOA	Total PAH	µg/L	29	7	24.14	NA	NA	5.2	84	43.9	38.0	22.5	NA	NA	NA	NA	-
VOA	trans-1,2-Dichloroethene	µg/L	68	2	2.94	NA	44,800	0.52	0.83	0.68	0.675	0.16	NA	0.00	44,800	0 / 68	-
VOA	trans-1,3-Dichloropropene	µg/L	77	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Trichloroethene	µg/L	77	23	29.87	NA	400	0.2	28	6.1	3.5	7.0	NA	0.00	400	0 / 77	-
VOA	Trichlorofluoromethane	µg/L	58	10	17.24	NA	NA	0.14	16	5.1	1.8	6.1	NA	NA	NA	NA	-
VOA	Vinyl Acetate	µg/L	2	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Vinyl Chloride	µg/L	77	13	16.88	NA	NA	0.29	84	33.6	34.0	29.8	NA	NA	NA	NA	-
VOA	Xylene (Total)	µg/L	67	6	8.96	NA	NA	0.57	31	6.9	2.2	10.9	NA	NA	NA	NA	-
SVOA	1,4-Dioxane	µg/L	3	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,2'-Oxybis(1-chloropropane)	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4,5-Trichlorophenol	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4,6-Trichlorophenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4-Dichlorophenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4-Dimethylphenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4-Dinitrophenol	µg/L	15	0	0.00	NA	46	ND	ND	ND	ND	ND	ND	ND	46	0 / 15	-
SVOA	2,4-Dinitrotoluene	µg/L	15	0	0.00	NA	118	ND	ND	ND	ND	ND	ND	ND	118	0 / 15	-
SVOA	2,6-Dinitrotoluene	µg/L	15	0	0.00	NA	118	ND	ND	ND	ND	ND	ND	ND	118	0 / 15	-
SVOA	2-Chloronaphthalene	µg/L	15	0	0.00	NA	1.5	ND	ND	ND	ND	ND	ND	ND	1.5	0 / 15	-
SVOA	2-Chlorophenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Methylnaphthalene	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Methylphenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Nitroaniline	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Nitrophenol	µg/L	15	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 15	-
SVOA	3,3'-Dichlorobenzidine	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	3-Nitroaniline	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4,6-Dinitro-2-Methylphenol	µg/L	15	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 15	-
SVOA	4-Bromophenyl-Phenylether	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloro-3-Methylphenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloroaniline	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chlorophenyl-Phenylether	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Methylphenol	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Nitroaniline	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Nitrophenol	µg/L	15	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 15	-
SVOA	Acenaphthene	µg/L	15	0	0.00	NA	710	ND	ND	ND	ND	ND	ND	ND	710	0 / 15	-
SVOA	Acenaphthylene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Anthracene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Benzo(a)anthracene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Benzo(a)pyrene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Benzo(b)fluoranthene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
SVOA	Benzo(g,h,i)perylene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Benzo(k)fluoranthene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Benzoic Acid	µg/L	6	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Benzyl Alcohol	µg/L	6	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-chloroethoxy)methane	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-chloroethyl)ether	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-ethylhexyl)phthalate	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Butylbenzylphthalate	µg/L	15	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 15	-
SVOA	Carbazole	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Chrysene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Di-N-Butylphthalate	µg/L	15	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 15	-
SVOA	Di-N-Octylphthalate	µg/L	15	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 15	-
SVOA	Dibenz(a,h)anthracene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Dibenzofuran	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Diethylphthalate	µg/L	15	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 15	-
SVOA	Dimethylphthalate	µg/L	15	0	0.00	NA	3.4	ND	ND	ND	ND	ND	ND	ND	3.4	0 / 15	-
SVOA	Fluoranthene	µg/L	15	1	6.67	NA	16	1	1	1.0	1.0	NA	NA	0.00	16	0 / 15	-
SVOA	Fluorene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Hexachlorobenzene	µg/L	15	0	0.00	NA	129	ND	ND	ND	ND	ND	ND	ND	129	0 / 15	-
SVOA	Hexachlorobutadiene	µg/L	29	0	0.00	NA	6.4	ND	ND	ND	ND	ND	ND	ND	6.4	0 / 29	-
SVOA	Hexachlorocyclopentadiene	µg/L	15	0	0.00	NA	1.4	ND	ND	ND	ND	ND	ND	ND	1.4	0 / 15	-
SVOA	Hexachloroethane	µg/L	15	0	0.00	NA	188	ND	ND	ND	ND	ND	ND	ND	188	0 / 15	-
SVOA	Indeno(1,2,3-cd)pyrene	µg/L	15	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 15	-
SVOA	Isophorone	µg/L	15	0	0.00	NA	2,580	ND	ND	ND	ND	ND	ND	ND	2,580	0 / 15	-
SVOA	n-Nitroso-Di-N-Propylamine	µg/L	15	0	0.00	NA	660,000	ND	ND	ND	ND	ND	ND	ND	660,000	0 / 15	-
SVOA	n-Nitrosodimethylamine	µg/L	6	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	n-Nitrosodiphenylamine	µg/L	15	0	0.00	NA	660,000	ND	ND	ND	ND	ND	ND	ND	660,000	0 / 15	-
SVOA	Nitrobenzene	µg/L	15	0	0.00	NA	1,336	ND	ND	ND	ND	ND	ND	ND	1,336	0 / 15	-
SVOA	Pentachlorophenol	µg/L	15	0	0.00	NA	7.9	ND	ND	ND	ND	ND	ND	ND	7.9	0 / 15	-
SVOA	Phenanthrene	µg/L	15	1	6.67	NA	60	0.8	0.8	0.80	0.8	NA	NA	0.00	60	0 / 15	-
SVOA	Phenol	µg/L	15	0	0.00	NA	1,160	ND	ND	ND	ND	ND	ND	ND	1,160	0 / 15	-
SVOA	Pyrene	µg/L	15	1	6.67	NA	60	1	1	1.0	1.0	NA	NA	0.00	60	0 / 15	-
SVOA	Total Chlordane	µg/L	15	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PCB	Aroclor-1016	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1221	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1232	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1242	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1248	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1254	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-
PCB	Aroclor-1260	µg/L	9	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 9	-

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analyte Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
PCB	Total Aroclor	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	4,4'-DDD	µg/L	9	0	0.00	NA	0.72	ND	ND	ND	ND	ND	ND	ND	0.72	0 / 9	-
PEST	4,4'-DDE	µg/L	9	0	0.00	NA	2.8	ND	ND	ND	ND	ND	ND	ND	2.8	0 / 9	-
PEST	4,4'-DDT	µg/L	9	0	0.00	NA	0.001	ND	ND	ND	ND	ND	ND	ND	0.001	0 / 9	-
PEST	Aldrin	µg/L	9	0	0.00	NA	0.26	ND	ND	ND	ND	ND	ND	ND	0.26	0 / 9	-
PEST	alpha-BHC	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	alpha-Chlordane	µg/L	9	0	0.00	NA	0.004	ND	ND	ND	ND	ND	ND	ND	0.004	0 / 9	-
PEST	beta-BHC	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	delta-BHC	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Dieldrin	µg/L	9	0	0.00	NA	0.142	ND	ND	ND	ND	ND	ND	ND	0.142	0 / 9	-
PEST	Endosulfan I	µg/L	9	0	0.00	NA	0.0087	ND	ND	ND	ND	ND	ND	ND	0.0087	0 / 9	-
PEST	Endosulfan II	µg/L	9	0	0.00	NA	0.0087	ND	ND	ND	ND	ND	ND	ND	0.0087	0 / 9	-
PEST	Endosulfan Sulfate	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Endrin	µg/L	9	0	0.00	NA	0.0023	ND	ND	ND	ND	ND	ND	ND	0.0023	0 / 9	-
PEST	Endrin Aldehyde	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Endrin Ketone	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	gamma-BHC (Lindane)	µg/L	9	0	0.00	NA	0.032	ND	ND	ND	ND	ND	ND	ND	0.032	0 / 9	-
PEST	Gamma-Chlordane	µg/L	9	0	0.00	NA	0.004	ND	ND	ND	ND	ND	ND	ND	0.004	0 / 9	-
PEST	Heptachlor	µg/L	9	0	0.00	NA	0.0036	ND	ND	ND	ND	ND	ND	ND	0.0036	0 / 9	-
PEST	Heptachlor Epoxide	µg/L	9	0	0.00	NA	0.0036	ND	ND	ND	ND	ND	ND	ND	0.0036	0 / 9	-
PEST	Methoxychlor	µg/L	9	0	0.00	NA	0.003	ND	ND	ND	ND	ND	ND	ND	0.003	0 / 9	-
PEST	Total Chlordane	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Total DDT	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Toxaphene	µg/L	9	0	0.00	NA	0.0002	ND	ND	ND	ND	ND	ND	ND	0.0002	0 / 9	-
SOLIDS	Total Dissolved Solids	µg/L	44	44	100.00	NA	NA	620,000	30,700,000	11,030,455	10,600,000	7,675,599	NA	NA	NA	NA	-
SOLIDS	Total Suspended Solids	µg/L	1	1	100.00	NA	NA	11,000	11,000	11,000	11,000	NA	NA	NA	NA	NA	-
TOC	Total Organic Carbon	µg/L	3	2	66.67	NA	NA	1,300	2,300	1,800	1,800	500	NA	NA	NA	NA	-
TPHEXT	Diesel-Range Organics	µg/L	28	8	28.57	NA	1,400	75	660	302	185	242	NA	0.00	1,400	0 / 28	-
TPHEXT	Motor Oil-Range Organics	µg/L	28	10	35.71	NA	1,400	22	900	242	87	272	NA	0.00	1,400	0 / 28	-
TPHPRG	Gasoline-Range Organics	µg/L	28	9	32.14	NA	1,400	24	420	167	60	166	NA	0.00	1,400	0 / 28	-
ALKALN	Bicarbonate Alkalinity	µg/L	9	9	100.00	NA	NA	250,000	1,090,000	480,222	428,000	230,326	NA	NA	NA	NA	-
ALKALN	Carbonate Alkalinity	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Hydroxide Alkalinity	µg/L	9	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Total Alkalinity	µg/L	10	10	100.00	NA	NA	250,000	1,090,000	481,800	440,000	218,558	NA	NA	NA	NA	-
ANION	Chloride	µg/L	15	15	100.00	NA	NA	192,000	19,000,000	7,913,933	6,660,000	5,762,438	NA	NA	NA	NA	-
ANION	Fluoride	µg/L	3	1	33.33	NA	NA	160	160	160	160	NA	NA	NA	NA	NA	-
ANION	Nitrate As Nitrogen	µg/L	15	7	46.67	NA	NA	20	23,000	5,051	420	7,809	NA	NA	NA	NA	-
ANION	Nitrate/Nitrite As Nitrogen	µg/L	10	8	80.00	NA	NA	20	23,000	4,465	330	7,500	NA	NA	NA	NA	-
ANION	Nitrite As Nitrogen	µg/L	13	4	30.77	NA	NA	17	210	82.3	51.0	75.5	NA	NA	NA	NA	-
ANION	Orthophosphate	µg/L	5	1	20.00	NA	NA	26,700	26,700	26,700	26,700	NA	NA	NA	NA	NA	-
ANION	Sulfate	µg/L	15	15	100.00	NA	NA	37,200	1,810,000	616,080	343,000	550,174	NA	NA	NA	NA	-
CEC	Calcium	µg/L	1	1	100.00	NA	NA	98,000	98,000	98,000	98,000	NA	NA	NA	NA	NA	-

TABLE G-3: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN B-AQUIFER GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

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CEC	Iron	µg/L	1	1	100.00	2,380	NA	310	310	310	310	NA	0.00	NA	2,380	0 / 1	-
CEC	Magnesium	µg/L	1	1	100.00	1,440,000	NA	390,000	390,000	390,000	390,000	NA	0.00	NA	1,440,000	0 / 1	-
CEC	Potassium	µg/L	1	1	100.00	448,000	NA	34,000	34,000	34,000	34,000	NA	0.00	NA	448,000	0 / 1	-
CEC	Sodium	µg/L	1	1	100.00	9,242,000	NA	2,200,000	2,200,000	2,200,000	2,200,000	NA	0.00	NA	9,242,000	0 / 1	-
DGASES	Ethane	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
DGASES	Ethene	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
DGASES	Methane	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
DO	Dissolved Oxygen	µg/L	17	17	100.00	NA	NA	40	6,670	2,269	1,380	2,148	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Bottom	µg/L	10	10	100.00	NA	NA	400	1,560	794	755	349	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Middle	µg/L	11	11	100.00	NA	NA	190	2,980	1,379	1,100	854	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Top	µg/L	10	10	100.00	NA	NA	740	5,280	2,255	1,740	1,366	NA	NA	NA	NA	-
FTK-METAL	Dissolved Iron (II)	µg/L	3	3	100.00	NA	NA	0	1,000	333	0	471	NA	NA	NA	NA	-
FTK-METAL	Dissolved Manganese (II)	µg/L	3	3	100.00	NA	NA	0	11,000	4,033	1,100	4,947	NA	NA	NA	NA	-
FTK-METAL	Total Iron (II)	µg/L	10	10	100.00	NA	NA	0	2,080	698	300	786	NA	NA	NA	NA	-
FTK-METAL	Total Manganese (II)	µg/L	9	9	100.00	NA	NA	0	11,000	3,119	600	4,296	NA	NA	NA	NA	-
MEE	Ethane	µg/L	16	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
MEE	Ethene	µg/L	16	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
MEE	Methane	µg/L	16	11	68.75	NA	NA	4	7,000	1,949	410	2,622	NA	NA	NA	NA	-

Notes:

µg/L	Microgram per liter	FTK	Field test kit
BHC	Benzene hexachloride	HGAL	Hunters Point groundwater ambient level
CEC	Cation exchange capacity	MEE	Methane, ethane, ethene
COPEC	Chemical of potential ecological concern	ND	Nondetect
COEC	Chemical of ecological concern	NA	Not applicable or not available
DDD	Dichlorodiphenyldichloroethane	PAH	Polynuclear aromatic hydrocarbon
DDE	Dichlorodiphenyldichloroethene	PEST	Pesticides
DDT	Dichlorodiphenyltrichloroethane	SVOA	Semi-volatile organic compound
DGASES	Dissolved gases	TOC	Total organic carbon
DO	Dissolved oxygen	VOA	Volatile organic compound

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA

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Analytical Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
CHROM	Chromium VI	µg/L	26	13	50.00	NA	50	12.0	70.0	50.7	50.0	14.5	NA	0.46	50	6 / 26	COPEC
METAL	Aluminum	µg/L	39	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
METAL	Antimony	µg/L	39	4	10.26	43.26	NA	3.6	4.6	4.1	4.2	0.4	0.00	NA	43.26	0 / 39	-
METAL	Arsenic	µg/L	47	12	25.53	27.34	36	1.5	6.3	3.2	3.4	1.3	0.00	0.00	36	0 / 47	-
METAL	Barium	µg/L	39	33	84.62	504.2	NA	1.5	732.0	92.1	26.1	166.3	0.06	NA	504.2	2 / 39	-
METAL	Beryllium	µg/L	39	0	0.00	1.4	NA	ND	ND	ND	ND	ND	ND	ND	1.4	0 / 39	-
METAL	Cadmium	µg/L	39	1	2.56	5.08	8.8	3.4	3.4	3.4	3.4	NA	0.00	0.00	8.8	0 / 39	-
METAL	Calcium	µg/L	49	44	89.80	NA	NA	3,090	285,000	56,768	25,200	69,086	NA	NA	NA	NA	-
METAL	Chromium	µg/L	49	33	67.35	15.66	400	3.2	76.2	37.6	36.1	25.6	0.70	0.00	400	0 / 49	-
METAL	Cobalt	µg/L	39	7	17.95	20.8	NA	0.7	3.4	1.7	1.1	1.0	0.00	NA	20.8	0 / 39	-
METAL	Copper	µg/L	39	10	25.64	28.04	3.1	1.2	12.1	4.4	3.3	3.1	0.00	0.70	28.04	0 / 39	-
METAL	Iron	µg/L	66	23	34.85	2,380	NA	16	5,980	886	238	1,360	0.09	NA	2,380	2 / 66	-
METAL	Lead	µg/L	39	0	0.00	14.44	5.6	ND	ND	ND	ND	ND	ND	ND	14.44	0 / 39	-
METAL	Magnesium	µg/L	49	49	100.00	1,440,000	NA	25,600	946,000	154,110	68,300	215,219	0.00	NA	1,440,000	0 / 49	-
METAL	Manganese	µg/L	48	26	54.17	8,140	NA	1	1,900	370	92	559	0.00	NA	8140	0 / 48	-
METAL	Mercury	µg/L	51	6	11.76	0.6	0.025	0.16	0.87	0.41	0.36	0.24	0.17	1.00	0.6	1 / 51	COPEC
METAL	Molybdenum	µg/L	37	1	2.70	61.9	NA	7.6	7.6	7.6	7.6	NA	0.00	NA	61.9	0 / 37	-
METAL	Nickel	µg/L	39	8	20.51	96.48	8.2	1.2	11.6	5.8	6.1	3.9	0.00	0.25	96.48	0 / 39	-
METAL	Potassium	µg/L	49	37	75.51	448,000	NA	692	488,000	44,168	3,760	103,821	0.03	NA	448,000	1 / 49	-
METAL	Selenium	µg/L	39	2	5.13	14.5	71	5.7	8.3	7.0	7.0	1.3	0.00	0.00	71	0 / 39	-
METAL	Silver	µg/L	39	0	0.00	7.43	0.38	ND	ND	ND	ND	ND	ND	ND	7.43	0 / 39	-
METAL	Sodium	µg/L	49	48	97.96	9,242,000	NA	31,000	8,790,000	785,923	74,200	1,999,917	0.00	NA	9,242,000	0 / 49	-
METAL	Thallium	µg/L	38	4	10.53	12.97	426	1.7	3.3	2.5	2.5	0.6	0.00	0.00	426	0 / 38	-
METAL	Vanadium	µg/L	37	29	78.38	26.62	NA	0.7	21.3	5.7	3.4	5.9	0.00	NA	26.62	0 / 37	-
METAL	Zinc	µg/L	39	9	23.08	75.68	81	3.8	63.5	24.8	17.6	17.7	0.00	0.00	81	0 / 39	-
VOA	1,1,1,2-Tetrachloroethane	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,1,1-Trichloroethane	µg/L	130	0	0.00	NA	6,240	ND	ND	ND	ND	ND	ND	ND	6,240	0 / 130	-
VOA	1,1,2,2-Tetrachloroethane	µg/L	130	0	0.00	NA	1,804	ND	ND	ND	ND	ND	ND	ND	1,804	0 / 130	-
VOA	1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	68	5	7.35	NA	NA	0.6	2.6	1.4	1.0	0.7	NA	NA	NA	NA	-
VOA	1,1,2-Trichloroethane	µg/L	130	11	8.46	NA	NA	0.2	10.0	1.8	1.0	2.6	NA	NA	NA	NA	-
VOA	1,1-Dichloroethane	µg/L	130	4	3.08	NA	NA	1.0	4.0	2.0	1.5	1.2	NA	NA	NA	NA	-
VOA	1,1-Dichloroethene	µg/L	130	4	3.08	NA	44,800	0.4	6.2	1.9	0.5	2.5	NA	0.00	44,800	0 / 130	-
VOA	1,1-Dichloropropene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,3-Trichlorobenzene	µg/L	46	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,3-Trichloropropane	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2,4-Trichlorobenzene	µg/L	130	1	0.77	NA	129	4.1	4.1	4.1	4.1	NA	NA	0.00	129	0 / 130	-
VOA	1,2,4-Trimethylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dibromo-3-Chloropropane	µg/L	94	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dibromoethane	µg/L	58	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,2-Dichlorobenzene	µg/L	132	3	2.27	NA	129	0.6	2.6	1.3	0.8	0.9	NA	0.00	129	0 / 132	-
VOA	1,2-Dichloroethane	µg/L	130	16	12.31	NA	22,600	0.2	170.0	34.2	0.8	53.1	NA	0.00	22,600	0 / 130	-
VOA	1,2-Dichloroethene (Total)	µg/L	34	0	0.00	NA	44,800	ND	ND	ND	ND	ND	ND	ND	44,800	0 / 34	-
VOA	1,2-Dichloropropane	µg/L	130	9	6.92	NA	3,040	0.20	3.80	0.79	0.40	1.08	NA	0.00	3,040	0 / 130	-
VOA	1,3,5-Trimethylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,3-Dichlorobenzene	µg/L	132	0	0.00	NA	129	ND	ND	ND	ND	ND	ND	ND	129	0 / 132	-

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analytical Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
VOA	1,3-Dichloropropane	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	1,4-Dichlorobenzene	µg/L	132	5	3.79	NA	129	0.19	0.84	0.34	0.22	0.25	NA	0.00	129	0 / 132	-
VOA	2,2-Dichloropropane	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Butanone	µg/L	81	2	2.47	NA	NA	2	36,000	18,001	18,001	17,999	NA	NA	NA	NA	-
VOA	2-Chloroethyl Vinyl Ether	µg/L	2	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Chlorotoluene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	2-Hexanone	µg/L	66	1	1.52	NA	NA	0.40	0.40	0.40	0.40	NA	NA	NA	NA	NA	-
VOA	4-Chlorotoluene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	4-Methyl-2-Pentanone	µg/L	84	1	1.19	NA	NA	1,800	1,800	1,800	1,800	NA	NA	NA	NA	NA	-
VOA	Acetone	µg/L	80	6	7.50	NA	NA	4	220,000	36,757	81	81,949	NA	NA	NA	NA	-
VOA	Benzene	µg/L	130	6	4.62	NA	700	0	8,100	1,353	5	3,017	NA	0.17	700	1 / 130	COPEC
VOA	Bromobenzene	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Bromochloromethane	µg/L	58	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 58	-
VOA	Bromodichloromethane	µg/L	130	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 130	-
VOA	Bromoform	µg/L	130	1	0.77	NA	6,400	0.65	0.65	0.65	0.65	NA	NA	0.00	6,400	0 / 130	-
VOA	Bromomethane	µg/L	130	2	1.54	NA	6,400	0.20	0.40	0.30	0.30	0.10	NA	0.00	6,400	0 / 130	-
VOA	Carbon Disulfide	µg/L	92	4	4.35	NA	NA	0.2	25.0	6.6	0.5	10.7	NA	NA	NA	NA	-
VOA	Carbon Tetrachloride	µg/L	130	56	43.08	NA	6,400	0.3	200.0	19.1	4.1	34.9	NA	0.00	6,400	0 / 130	-
VOA	Chlorobenzene	µg/L	130	0	0.00	NA	129	ND	ND	ND	ND	ND	ND	ND	129	0 / 130	-
VOA	Chloroethane	µg/L	130	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Chloroform	µg/L	130	56	43.08	NA	6,400	0.2	500.0	47.7	7.0	102.6	NA	0.00	6,400	0 / 130	-
VOA	Chloromethane	µg/L	130	2	1.54	NA	6,400	0.30	0.50	0.40	0.40	0.10	NA	0.00	6,400	0 / 130	-
VOA	cis-1,2-Dichloroethene	µg/L	96	47	48.96	NA	44,800	0.2	620.0	45.1	5.7	129.4	NA	0.00	44,800	0 / 96	-
VOA	cis-1,3-Dichloropropene	µg/L	130	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Cyclohexane	µg/L	10	1	10.00	NA	NA	2.1	2.1	2.1	2.1	NA	NA	NA	NA	NA	-
VOA	Dibromochloromethane	µg/L	130	0	0.00	NA	6,400	ND	ND	ND	ND	ND	ND	ND	6,400	0 / 130	-
VOA	Dibromomethane	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Dichlorodifluoromethane	µg/L	84	1	1.19	NA	NA	0.27	0.27	0.27	0.27	NA	NA	NA	NA	NA	-
VOA	Ethylbenzene	µg/L	130	2	1.54	NA	86	1	200	100	100	100	NA	0.50	86	1 / 130	COPEC
VOA	Isopropylbenzene	µg/L	46	3	6.52	NA	NA	0	1,100	367	0	518	NA	NA	NA	NA	-
VOA	m,p-Xylenes	µg/L	14	1	7.14	NA	NA	9.6	9.6	9.6	9.6	NA	NA	NA	NA	NA	-
VOA	Methyl Acetate	µg/L	10	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Methylcyclohexane	µg/L	10	1	10.00	NA	NA	0.59	0.59	0.59	0.59	NA	NA	NA	NA	NA	-
VOA	Methylene Chloride	µg/L	130	6	4.62	NA	6,400	7	1,200	217	17	440	NA	0.00	6,400	0 / 130	-
VOA	n-Butylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Naphthalene	µg/L	56	0	0.00	NA	470	ND	ND	ND	ND	ND	ND	ND	470	0 / 56	-
VOA	o-Xylene	µg/L	14	1	7.14	NA	NA	4.1	4.1	4.1	4.1	NA	NA	NA	NA	NA	-
VOA	Para-Isopropyl Toluene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Propylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Sec-Butylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Styrene	µg/L	92	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Tert-Butyl Methyl Ether	µg/L	93	1	1.08	NA	8,000	0.22	0.22	0.22	0.22	NA	NA	0.00	8,000	0 / 93	-
VOA	Tert-Butylbenzene	µg/L	20	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Tetrachloroethene	µg/L	130	15	11.54	NA	450	0.2	250.0	39.1	0.5	83.7	NA	0.00	450	0 / 130	-
VOA	Toluene	µg/L	130	5	3.85	NA	5,000	0.3	370.0	74.7	0.4	147.7	NA	0.00	5,000	0 / 130	-

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analytical Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
VOA	Total LMW PAH	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Total PAH	µg/L	56	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	trans-1,2-Dichloroethene	µg/L	96	11	11.46	NA	44,800	0.21	1.80	0.59	0.50	0.41	NA	0.00	44,800	0 / 96	-
VOA	trans-1,3-Dichloropropene	µg/L	130	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Trichloroethene	µg/L	130	64	49.23	NA	400	0	8,700	485	35	1,614	NA	0.19	400	12 / 130	COPEC
VOA	Trichlorofluoromethane	µg/L	84	18	21.43	NA	NA	0.3	7.2	1.6	0.5	1.9	NA	NA	NA	NA	-
VOA	Vinyl Acetate	µg/L	4	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
VOA	Vinyl Chloride	µg/L	130	6	4.62	NA	NA	0.3	36.0	12.2	2.5	15.2	NA	NA	NA	NA	-
VOA	Xylene (Total)	µg/L	116	2	1.72	NA	NA	0.3	180.0	90.2	90.2	89.9	NA	NA	NA	NA	-
SVOA	2,2'-Oxybis(1-chloropropane)	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4,5-Trichlorophenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4,6-Trichlorophenol	µg/L	36	1	2.78	NA	NA	40.0	40.0	40.0	40.0	NA	NA	NA	NA	NA	-
SVOA	2,4-Dichlorophenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4-Dimethylphenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2,4-Dinitrophenol	µg/L	35	0	0.00	NA	46	ND	ND	ND	ND	ND	ND	ND	46	0 / 35	-
SVOA	2,4-Dinitrotoluene	µg/L	36	0	0.00	NA	118	ND	ND	ND	ND	ND	ND	ND	118	0 / 36	-
SVOA	2,6-Dinitrotoluene	µg/L	36	0	0.00	NA	118	ND	ND	ND	ND	ND	ND	ND	118	0 / 36	-
SVOA	2-Chloronaphthalene	µg/L	36	0	0.00	NA	1.5	ND	ND	ND	ND	ND	ND	ND	1.5	0 / 36	-
SVOA	2-Chlorophenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Methylnaphthalene	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Methylphenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Nitroaniline	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	2-Nitrophenol	µg/L	36	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 36	-
SVOA	3,3'-Dichlorobenzidine	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	3-Nitroaniline	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4,6-Dinitro-2-Methylphenol	µg/L	35	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 35	-
SVOA	4-Bromophenyl-Phenylether	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloro-3-Methylphenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chloroaniline	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Chlorophenyl-Phenylether	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Methylphenol	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Nitroaniline	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	4-Nitrophenol	µg/L	36	0	0.00	NA	970	ND	ND	ND	ND	ND	ND	ND	970	0 / 36	-
SVOA	Acenaphthene	µg/L	36	0	0.00	NA	710	ND	ND	ND	ND	ND	ND	ND	710	0 / 36	-
SVOA	Acenaphthylene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Anthracene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Benzo(a)anthracene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Benzo(a)pyrene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Benzo(b)fluoranthene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Benzo(g,h,i)perylene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Benzo(k)fluoranthene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Bis(2-chloroethoxy)methane	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-chloroethyl)ether	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Bis(2-ethylhexyl)phthalate	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Butylbenzylphthalate	µg/L	36	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 36	-

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
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SVOA	Carbazole	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Chrysene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Di-N-Butylphthalate	µg/L	36	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 36	-
SVOA	Di-N-Octylphthalate	µg/L	35	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 35	-
SVOA	Dibenz(a,h)anthracene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Dibenzofuran	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
SVOA	Diethylphthalate	µg/L	36	0	0.00	NA	588.8	ND	ND	ND	ND	ND	ND	ND	588.8	0 / 36	-
SVOA	Dimethylphthalate	µg/L	36	0	0.00	NA	3.4	ND	ND	ND	ND	ND	ND	ND	3.4	0 / 36	-
SVOA	Fluoranthene	µg/L	36	0	0.00	NA	16	ND	ND	ND	ND	ND	ND	ND	16	0 / 36	-
SVOA	Fluorene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Hexachlorobenzene	µg/L	36	0	0.00	NA	129	ND	ND	ND	ND	ND	ND	ND	129	0 / 36	-
SVOA	Hexachlorobutadiene	µg/L	56	0	0.00	NA	6.4	ND	ND	ND	ND	ND	ND	ND	6.4	0 / 56	-
SVOA	Hexachlorocyclopentadiene	µg/L	36	0	0.00	NA	1.4	ND	ND	ND	ND	ND	ND	ND	1.4	0 / 36	-
SVOA	Hexachloroethane	µg/L	36	0	0.00	NA	188	ND	ND	ND	ND	ND	ND	ND	188	0 / 36	-
SVOA	Indeno(1,2,3-cd)pyrene	µg/L	35	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 35	-
SVOA	Isophorone	µg/L	36	0	0.00	NA	2,580	ND	ND	ND	ND	ND	ND	ND	2,580	0 / 36	-
SVOA	n-Nitroso-Di-N-Propylamine	µg/L	36	0	0.00	NA	660,000	ND	ND	ND	ND	ND	ND	ND	660,000	0 / 36	-
SVOA	n-Nitrosodiphenylamine	µg/L	36	0	0.00	NA	660,000	ND	ND	ND	ND	ND	ND	ND	660,000	0 / 36	-
SVOA	Nitrobenzene	µg/L	36	0	0.00	NA	1,336	ND	ND	ND	ND	ND	ND	ND	1,336	0 / 36	-
SVOA	Pentachlorophenol	µg/L	36	0	0.00	NA	7.9	ND	ND	ND	ND	ND	ND	ND	7.9	0 / 36	-
SVOA	Phenanthrene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
SVOA	Phenol	µg/L	36	0	0.00	NA	1,160	ND	ND	ND	ND	ND	ND	ND	1,160	0 / 36	-
SVOA	Pyrene	µg/L	36	0	0.00	NA	60	ND	ND	ND	ND	ND	ND	ND	60	0 / 36	-
PEST	4,4'-DDD	µg/L	41	0	0.00	NA	0.72	ND	ND	ND	ND	ND	ND	ND	0.72	0 / 41	-
PEST	4,4'-DDE	µg/L	41	0	0.00	NA	2.8	ND	ND	ND	ND	ND	ND	ND	2.8	0 / 41	-
PEST	4,4'-DDT	µg/L	41	0	0.00	NA	0.001	ND	ND	ND	ND	ND	ND	ND	0.001	0 / 41	-
PEST	Aldrin	µg/L	41	0	0.00	NA	0.26	ND	ND	ND	ND	ND	ND	ND	0.26	0 / 41	-
PEST	alpha-BHC	µg/L	41	1	2.44	NA	NA	0.08	0.08	0.08	0.08	NA	NA	NA	NA	NA	-
PEST	alpha-Chlordane	µg/L	41	0	0.00	NA	0.004	ND	ND	ND	ND	ND	ND	ND	0.004	0 / 41	-
PEST	beta-BHC	µg/L	41	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	delta-BHC	µg/L	41	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Dieldrin	µg/L	41	0	0.00	NA	0.142	ND	ND	ND	ND	ND	ND	ND	0.142	0 / 41	-
PEST	Endosulfan I	µg/L	41	0	0.00	NA	0.0087	ND	ND	ND	ND	ND	ND	ND	0.0087	0 / 41	-
PEST	Endosulfan II	µg/L	41	0	0.00	NA	0.0087	ND	ND	ND	ND	ND	ND	ND	0.0087	0 / 41	-
PEST	Endosulfan Sulfate	µg/L	41	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Endrin	µg/L	41	0	0.00	NA	0.0023	ND	ND	ND	ND	ND	ND	ND	0.0023	0 / 41	-
PEST	Endrin Aldehyde	µg/L	41	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Endrin Ketone	µg/L	40	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	gamma-BHC (Lindane)	µg/L	41	0	0.00	NA	0.032	ND	ND	ND	ND	ND	ND	ND	0.032	0 / 41	-
PEST	gamma-Chlordane	µg/L	41	0	0.00	NA	0.004	ND	ND	ND	ND	ND	ND	ND	0.004	0 / 41	-
PEST	Heptachlor	µg/L	41	0	0.00	NA	0.0036	ND	ND	ND	ND	ND	ND	ND	0.0036	0 / 41	-
PEST	Heptachlor Epoxide	µg/L	40	1	2.50	NA	0.0036	0.03	0.03	0.03	0.03	NA	NA	1.00	0.0036	1 / 40	COPEC
PEST	Heptachlor Epoxide A	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Heptachlor Epoxide B	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Methoxychlor	µg/L	41	0	0.00	NA	0.003	ND	ND	ND	ND	ND	ND	ND	0.003	0 / 41	-

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analytical Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
PEST	Total Chlordane	µg/L	41	1	2.44	NA	NA	0.21	0.21	0.21	0.21	NA	NA	NA	NA	NA	-
PEST	Total DDT	µg/L	41	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
PEST	Toxaphene	µg/L	41	0	0.00	NA	0.0002	ND	ND	ND	ND	ND	ND	ND	0.0002	0 / 41	-
PCB	Aroclor-1016	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1221	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1232	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1242	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1248	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1254	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Aroclor-1260	µg/L	36	0	0.00	NA	0.03	ND	ND	ND	ND	ND	ND	ND	0.03	0 / 36	-
PCB	Total Aroclor	µg/L	36	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
TPHEXT	Diesel-Range Organics	µg/L	54	9	16.67	NA	1400	50	370	146	90	106	NA	0.00	1,400	0 / 54	-
TPHEXT	Motor Oil-Range Organics	µg/L	51	27	52.94	NA	1400	46	1,400	395	340	303	NA	0.00	1,400	0 / 51	-
TPHPRG	Gasoline-Range Organics	µg/L	53	16	30.19	NA	1400	10	3,300	435	52	960	NA	0.13	1,400	2 / 53	COPEC
TPHPRG	TPH-Purgeable Unknown Hydrocarbon	µg/L	2	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Alkalinity, Total (As CaCO3)	µg/L	1	1	100.00	NA	NA	164,000	164,000	164,000	164,000	NA	NA	NA	NA	NA	-
ALKALN	Bicarbonate Alkalinity	µg/L	13	13	100.00	NA	NA	125,000	307,000	193,308	168,000	63,127	NA	NA	NA	NA	-
ALKALN	Carbonate	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Carbonate Alkalinity	µg/L	12	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Hydroxide Alkalinity	µg/L	11	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Hydroxide As CaCO3	µg/L	1	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
ALKALN	Total Alkalinity	µg/L	31	31	100.00	NA	NA	49,000	307,000	142,387	125,000	66,854	NA	NA	NA	NA	-
ANION	Chloride	µg/L	47	47	100.00	NA	NA	54,500	14,000,000	891,060	195,000	2,187,763	NA	NA	NA	NA	-
ANION	Fluoride	µg/L	7	3	42.86	NA	NA	220	240	230	230	8	NA	NA	NA	NA	-
ANION	Nitrate As Nitrogen	µg/L	35	33	94.29	NA	NA	74	7,800	3,935	4,400	2,216	NA	NA	NA	NA	-
ANION	Nitrate/Nitrite As Nitrogen	µg/L	14	13	92.86	NA	NA	1,900	7,800	4,300	3,900	1,698	NA	NA	NA	NA	-
ANION	Nitrite As Nitrogen	µg/L	20	4	20.00	NA	NA	6.0	35.0	22.3	24.0	11.8	NA	NA	NA	NA	-
ANION	Orthophosphate	µg/L	16	9	56.25	NA	NA	75	300	185	210	74	NA	NA	NA	NA	-
ANION	Sulfate	µg/L	31	31	100.00	NA	NA	5,500	1,760,000	119,297	28,200	326,913	NA	NA	NA	NA	-
CEC	Calcium	µg/L	2	2	100.00	NA	NA	21,000	120,000	70,500	70,500	49,500	NA	NA	NA	NA	-
CEC	Iron	µg/L	2	0	0.00	2380	NA	ND	ND	ND	ND	ND	ND	ND	2,380	0 / 2	-
CEC	Magnesium	µg/L	2	2	100.00	1,440,000	NA	50,000	210,000	130,000	130,000	80,000	0.00	NA	1,440,000	0 / 2	-
CEC	Potassium	µg/L	2	1	50.00	448,000	NA	48,000	48,000	48,000	48,000	NA	0.00	NA	448,000	0 / 2	-
CEC	Sodium	µg/L	2	2	100.00	9,242,000	NA	91,000	890,000	490,500	490,500	399,500	0.00	NA	9,242,000	0 / 2	-
DGASES	Ethane	µg/L	19	7	36.84	NA	NA	0.6	89.0	26.9	5.6	31.4	NA	NA	NA	NA	-
DGASES	Ethene	µg/L	19	4	21.05	NA	NA	1.1	49.0	28.8	32.5	17.4	NA	NA	NA	NA	-
DGASES	Hydrogen In Water	µg/L	16	1	6.25	NA	NA	27.6	27.6	27.6	27.6	NA	NA	NA	NA	NA	-
DGASES	Methane	µg/L	3	0	0.00	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	-
DO	Dissolved Oxygen	µg/L	26	26	100.00	NA	NA	110	8,570	4,148	3,895	2,468	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Bottom	µg/L	16	16	100.00	NA	NA	250	5,300	2,947	3,780	1,833	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Middle	µg/L	19	19	100.00	NA	NA	470	8,500	3,537	4,030	2,056	NA	NA	NA	NA	-
DO	Downhole Dissolved Oxygen Top	µg/L	18	18	100.00	NA	NA	640	8,300	3,989	4,665	2,124	NA	NA	NA	NA	-
FTK-METAL	Dissolved Iron (II)	µg/L	3	3	100.00	NA	NA	0	2,000	667	0	943	NA	NA	NA	NA	-
FTK-METAL	Dissolved Manganese (II)	µg/L	4	4	100.00	NA	NA	0	5,300	2,325	2,000	2,250	NA	NA	NA	NA	-
FTK-METAL	Total Iron (II)	µg/L	11	11	100.00	NA	NA	0	2,900	500	0	954	NA	NA	NA	NA	-

TABLE G-4: PARCEL-WIDE COMPARISON OF CHEMICAL CONCENTRATIONS IN F-WBZ GROUNDWATER WITH SURFACE WATER QUALITY SCREENING CRITERIA (CONTINUED)
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Analytical Group	Chemical	Unit	Number of Analyses	Number of Detections	Percent Detections	HGAL	Surface Water Criteria	Minimum Detected Conc.	Maximum Detected Conc.	Average Detected Conc.	Median Detected Conc.	Standard Deviation Detected Conc.	Fraction Detects Greater than HGAL	Fraction Detects Greater than Surface Water Criteria	Selected Criteria	Frequency of Analyses Above Criteria	COPEC/ COEC
FTK-METAL	Total Manganese (II)	µg/L	9	9	100.00	NA	NA	0	6,100	1,700	700	2,304	NA	NA	NA	NA	-
HARD	Hardness	µg/L	1	1	100.00	NA	NA	230,000	230,000	230,000	230,000	NA	NA	NA	NA	NA	-
MEE	Ethane	µg/L	24	2	8.33	NA	NA	3.3	3.3	3.3	3.3	0.0	NA	NA	NA	NA	-
MEE	Ethene	µg/L	24	1	4.17	NA	NA	2.7	2.7	2.7	2.7	NA	NA	NA	NA	NA	-
MEE	Methane	µg/L	24	8	33.33	NA	NA	3	1,300	313	62	466	NA	NA	NA	NA	-

Notes:

µg/L	Microgram per liter	FTK	Field test kit
BHC	Benzene hexachloride	HGAL	Hunters Point groundwater ambient level
CEC	Cation exchange capacity	MEE	Methane, ethane, ethene
COPEC	Chemical of potential ecological concern	ND	Nondetect
COEC	Chemical of ecological concern	NA	Not applicable or not available
DDD	Dichlorodiphenyldichloroethane	PAH	Polynuclear aromatic hydrocarbon
DDE	Dichlorodiphenyldichloroethene	PEST	Pesticides
DDT	Dichlorodiphenyltrichloroethane	SVOA	Semivolatile organic compound
DGASES	Dissolved gases	TOC	Total organic carbon
DO	Dissolved oxygen	VOA	Volatile organic compound

TABLE G-5: COEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chromium VI (Surface Water Screening Criteria = 50 µg/L) A-Aquifer					
IR06MW49F	ORIG	31-Oct-91	100	10	**Yes**
IR06MW49F	DUP	06-Jan-92	110	10	**Yes**
IR06MW49F	ORIG	06-Jan-92	**120**	10	**Yes**
IR06MW49F	ORIG	08-Nov-93	87.8	10	**Yes**
IR06MW49F	ORIG	16-Feb-94	82.9	10	**Yes**
IR06MW49F	ORIG	16-May-94	91.1	10	**Yes**
IR06MW49F	DUP	16-May-94	91.1	10	**Yes**
IR06MW49F	ORIG	19-Aug-94	83.2	10	**Yes**
IR06MW49F	DUP	19-Aug-94	78.5	10	**Yes**
IR06MW49F	ORIG	19-Aug-02	*10* ^{U}	10	No
IR06MW50F	ORIG	10-Jun-02	**120**	10	**Yes**
IR06MW50F	DUP	10-Jun-02	**120**	10	**Yes**
IR06MW50F	ORIG	10-Jun-04	**120**	20	**Yes**
IR06MW50F	DUP	10-Jun-04	**120**	20	**Yes**
IR06MW50F	ORIG	22-Nov-04	*100*	20	**Yes**
IR28MW125A	ORIG	15-Aug-00	**260**	10	**Yes**
IR28MW125A	ORIG	21-Feb-01	90	10	**Yes**
IR28MW125A	ORIG	18-Jun-02	*10* ^{U}	10	No
IR28MW125A	ORIG	08-Jun-04	37	20	No
IR28MW125A	ORIG	02-Sep-04	110	20	**Yes**
IR28MW125A	ORIG	23-Nov-04	100	20	**Yes**
IR28MW151A	ORIG	18-Jan-01	*10* ^{U}	10	No
IR28MW151A	ORIG	18-Jan-01	*10* ^{U}	10	No
IR28MW151A	ORIG	08-Feb-01	*10* ^{U}	10	No
IR28MW151A	ORIG	27-Aug-01	**210**	10	**Yes**
IR28MW151A	ORIG	17-Jan-02	*10* ^{U}	10	No
IR28MW151A	ORIG	11-Jul-02	20	10	No
IR28MW151A	ORIG	15-Sep-04	20^{U}	20	No
IR28MW151A	ORIG	06-Dec-04	20^{U}	20	No
IR28MW920A	ORIG	23-Jan-01	*10* ^{U}	10	No
IR28MW920A	ORIG	08-Feb-01	*10* ^{U}	10	No
IR28MW920A	ORIG	08-Feb-01	*10* ^{U}	10	No
IR28MW920A	ORIG	28-Aug-01	*10* ^{U}	10	No
IR28MW920A	ORIG	16-Jan-02	**100**	10	**Yes**
IR28MW920A	ORIG	10-Jul-02	*10* ^{U}	10	No
IR28MW930A	ORIG	18-Jan-01	*10* ^{U}	10	No
IR28MW930A	ORIG	08-Feb-01	*10* ^{U}	10	No

TABLE G-5: COEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chromium VI (Surface Water Screening Criteria = 50 µg/L) A-Aquifer (Continued)					
IR28MW930A	ORIG	28-Aug-01	*10* ^{U}	10	No
IR28MW930A	DUP	28-Aug-01	*10* ^{U}	10	No
IR28MW930A	ORIG	16-Jan-02	**160**	10	**Yes**
IR28MW930A	ORIG	10-Jul-02	110	10	**Yes**
Zinc (Surface Water Criteria = 81 µg/L) A-Aquifer					
IR06MW42A	ORIG	13-Jun-90	21	2	No
IR06MW42A	ORIG	10-Jan-91	36.6	1.9	No
IR06MW42A	ORIG	16-Jul-91	5.3^{U}	5.3	No
IR06MW42A	ORIG	10-Jan-92	22.5	6.1	No
IR06MW42A	DUP	10-Jan-92	20.8	6.1	No
IR06MW42A	ORIG	07-Sep-99	3^{J}	3	No
IR06MW42A	ORIG	13-Jan-00	**143**	1.9	**Yes**
IR06MW42A	ORIG	26-Apr-00	*1.6* ^{U}	1.6	No
IR06MW42A	ORIG	14-Jul-00	5.9^{U}	5.9	No
IR06MW42A	ORIG	12-Oct-00	23.2^{U}	1	No
IR06MW42A	ORIG	16-Jan-01	5.2^{UJ3}	3	No
IR06MW42A	ORIG	26-Apr-01	27.3	2	No
IR06MW42A	ORIG	18-Jul-01	5.3^{J}	5	No
IR06MW42A	ORIG	14-Mar-02	3.2^{U}	3.2	No
IR06MW42A	ORIG	04-Jun-02	7^{U}	7	No
IR06MW42A	DUP	04-Jun-02	7^{U}	7	No
IR06MW42A	ORIG	28-Aug-02	69.5	4.2	No
IR06MW42A	DUP	28-Aug-02	62.2	4.2	No
IR06MW42A	ORIG	13-Nov-02	15.9^{U}	2.1	No
IR06MW42A	ORIG	05-Mar-03	3.6^{B}	20	No
IR06MW42A	ORIG	20-May-03	6.8^{U}	200	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	16.5^{U}	200	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	*1.6* ^{U}	20	No
IR06MW42A	ORIG	23-Mar-04	60^{U}	60	No
IR06MW42A	ORIG	03-Jun-04	60^{U}	60	No
IR06MW42A	ORIG	31-Aug-04	60^{U}	60	No
IR06MW42A	ORIG	16-Nov-04	60^{UJ3}	60	No
IR06MW45A	ORIG	31-Oct-91	6.1^{U}	6.1	No
IR06MW45A	ORIG	13-Jan-92	6.1^{U}	6.1	No
IR06MW45A	ORIG	07-Sep-99	29.4	3	No
IR06MW45A	ORIG	11-Jan-00	**146**	1.9	**Yes**
IR06MW45A	ORIG	11-Jan-00	81.8	1.9	**Yes**
IR06MW45A	ORIG	11-Oct-00	*1* ^{U}	1	No
IR06MW45A	ORIG	01-May-01	17.7^{J}	2	No
IR06MW45A	ORIG	03-Jun-02	7^{U}	7	No

TABLE G-5: COEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Zinc (Surface Water Criteria = 81 µg/L) A-Aquifer (Continued)					
IR06MW45A	ORIG	15-Nov-02	6.1[J]	2.1	No
IR06MW45A	ORIG	11-Mar-03	25.5[B]	200	Limit > criteria
IR06MW45A	ORIG	19-Aug-03	14.8[U]	200	Limit > criteria
IR06MW45A	ORIG	30-Mar-04	600[U]	600	Limit > criteria
IR06MW45A	ORIG	03-Jun-04	60[U]	60	No
IR06MW45A	ORIG	31-Aug-04	50[U]	50	No
IR25MW15A2	ORIG	10-Jun-94	33.9[UJ9]	33.9	No
IR25MW15A2	DUP	10-Jun-94	19.1[U]	19.1	No
IR25MW15A2	ORIG	11-Aug-94	17.8[U]	17.8	No
IR25MW15A2	ORIG	26-May-95	84.5[J4]	0.3	**Yes**
IR25MW15A2	DUP	26-May-95	50.3[J4]	0.3	No
IR25MW15A2	ORIG	01-Feb-01	**233**	0.8	**Yes**
IR25MW15A2	ORIG	12-Jun-02	*2.9* [U]	2	No
IR25MW17A	ORIG	01-Jul-94	3.1[U]	3.1	No
IR25MW17A	ORIG	19-Aug-94	3.1[U]	3.1	No
IR25MW17A	ORIG	02-Jun-95	75.3[J234]	0.3	No
IR25MW17A	ORIG	07-Sep-99	5.6[J]	3	No
IR25MW17A	ORIG	14-Jan-00	**175**	1.9	**Yes**
IR25MW17A	ORIG	13-Oct-00	40[U]	40	No
IR25MW17A	ORIG	20-Jul-01	5[U]	5	No
IR25MW17A	ORIG	14-Jun-02	7[U]	7	No
IR25MW17A	ORIG	14-Jun-02	5.5[J]	2	No
IR25MW17A	ORIG	13-Nov-02	*2.1* [U]	2.1	No
IR25MW17A	ORIG	11-Mar-03	20.6[B]	200	Limit > criteria
IR25MW17A	ORIG	19-Aug-03	14.8[U]	200	Limit > criteria
IR25MW17A	ORIG	29-Mar-04	60[UJ3]	60	No
IR25MW17A	ORIG	02-Sep-04	50[U]	50	No
IR28MW124A	ORIG	20-May-94	39.7	1	No
IR28MW124A	DUP	20-May-94	34.9	1	No
IR28MW124A	ORIG	12-Jul-95	**206**	0.3	**Yes**
IR28MW124A	ORIG	21-Nov-95	89.4[U]	89.4	Limit > criteria
IR28MW124A	DUP	21-Nov-95	87.2[U]	87.2	Limit > criteria
IR28MW124A	ORIG	28-Feb-01	53.9[J4]	0.8	No
IR28MW124A	ORIG	19-Jun-02	*20.2* [U]	2	No
IR28MW126A	ORIG	20-May-94	12.9[U]	12.9	No
IR28MW126A	ORIG	12-Jun-95	12.4[UJ2]	12.4	No
IR28MW126A	DUP	12-Jun-95	14.2[UJ2]	14.2	No

TABLE G-5: COEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Zinc (Surface Water Criteria = 81 µg/L) A-Aquifer (Continued)					
IR28MW126A	ORIG	04-Dec-95	18.9[UJ9]	18.9	No
IR28MW126A	DUP	04-Dec-95	**120**	1.2	**Yes**
IR28MW126A	ORIG	19-Mar-96	13.6[U]	13.6	No
IR28MW126A	ORIG	18-Jun-02	*4.5*[J]	2	No
IR28MW151A	ORIG	22-Jun-94	*2.2*[U]	2.2	No
IR28MW151A	DUP	22-Jun-94	*2.2*[U]	2.2	No
IR28MW151A	ORIG	29-Jun-95	16[UJ4]	16	No
IR28MW151A	ORIG	12-Dec-95	14.5[U]	14.5	No
IR28MW151A	ORIG	27-Aug-01	20[U]	20	No
IR28MW151A	ORIG	17-Jan-02	20[U]	20	No
IR28MW151A	ORIG	19-Jun-02	**283**	2	**Yes**
IR28MW151A	ORIG	15-Sep-04	50[U]	50	No
IR28MW151A	ORIG	06-Dec-04	50[U]	50	No
IR28MW170A	ORIG	11-Jul-94	*3.1*[U]	3.1	No
IR28MW170A	ORIG	29-Jun-95	7.5[UJ4]	7.5	No
IR28MW170A	DUP	29-Jun-95	11.6[UJ4]	11.6	No
IR28MW170A	ORIG	12-Dec-95	11.9[U]	11.9	No
IR28MW170A	DUP	12-Dec-95	6.8[U]	6.8	No
IR28MW170A	ORIG	29-Aug-01	20[U]	20	No
IR28MW170A	ORIG	15-Jan-02	20[U]	20	No
IR28MW170A	ORIG	11-Jul-02	**1,300[J3]**	20	**Yes**
IR28MW294A	ORIG	17-Nov-95	**105**	1.2	**Yes**
IR28MW294A	ORIG	27-Feb-96	8.4[U]	8.4	No
IR28MW294A	ORIG	07-May-96	17.9[U]	17.9	No
IR28MW294A	ORIG	14-Jun-02	*5.6*[U]	2	No
IR28MW921A	ORIG	28-Aug-01	20[U]	20	No
IR28MW921A	ORIG	17-Jan-02	*13*[J]	20	No
IR28MW921A	ORIG	10-Jul-02	**180**	20	**Yes**
IR28MW930A	ORIG	28-Aug-01	34	20	No
IR28MW930A	DUP	28-Aug-01	40	20	No
IR28MW930A	ORIG	16-Jan-02	*18*[J]	20	No
IR28MW930A	ORIG	10-Jul-02	**350**	20	**Yes**
IR30MW02F	ORIG	12-Jul-02	89[J3]	20	**Yes**

TABLE G-5: COEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Notes:	**Bold** results indicate the maximum detected concentration for each well.
	Italicized results indicate the lowest concentration identified for each well.
	Surface water criteria derivation discussed in Section G2.0 of this appendix, and listed in Table G-1.
	The listed detection limit for cyanide reflects the maximum sensitivity of current, routinely used analytical methods. The listed detection limit will be used as the project screening criterion unless reasonable grounds are established for pursuing non-routine methods.
--	Not applicable
µg/L	Microgram gram per liter
HGAL	Hunters Point groundwater ambient level
J	Estimated concentration
U	Nondetected concentration

Qualifier Comment Code:

B	The reported value was obtained from an instrument reading that was less than the sample quantitation limit
J1	Instrument/system performance
J2	Matrix duplicate
J3	Accuracy - blank spike, surrogate spike, matrix spike
J4	Serial dilution
J5	Holding time
J6	Results estimated due to field duplicate precision violations
J7	Initial and continuing calibration
J8	Exceeds calibration range
J9	Metals - interference check sample/Organic chemicals - percent different between columns
J0	Internal standards

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Cadmium (Surface Water Screening Criteria = 8.8 µg/L) A-Aquifer					
IR06MW53F	ORIG	15-Mar-94	0.3^{U}	0.3	No
IR06MW53F	ORIG	11-Aug-94	**9.2**	0.2	**Yes**
IR06MW53F	ORIG	25-May-95	*0.1* ^{U}	0.1	No
IR06MW53F	ORIG	07-Jun-04	5^{U}	5	No
IR06MW53F	ORIG	10-Sep-04	5^{U}	5	No
IR06MW53F	DUP	10-Sep-04	5^{U}	5	No
IR06MW53F	ORIG	23-Nov-04	5^{U}	5	No
Chromium (Surface Water Screening Criteria = 400 µg/L) A-Aquifer					
IR06MW49F	ORIG	31-Oct-91	90.6	3	No
IR06MW49F	ORIG	6-Jan-92	**101**	3	No
IR06MW49F	DUP	6-Jan-92	96	3	No
IR06MW49F	ORIG	8-Nov-93	81.1	2.3	No
IR06MW49F	ORIG	16-Feb-94	87.8	2.3	No
IR06MW49F	DUP	16-May-94	80.7	0.9	No
IR06MW49F	ORIG	16-May-94	78.8	0.9	No
IR06MW49F	DUP	19-Aug-94	78.4	0.7	No
IR06MW49F	ORIG	19-Aug-94	83.9	0.7	No
IR06MW49F	ORIG	19-Aug-02	*7*	3	No
IR06MW50F	ORIG	14-Dec-93	118	2.5	No
IR06MW50F	DUP	14-Dec-93	115	2.5	No
IR06MW50F	ORIG	16-Aug-94	108	0.7	No
IR06MW50F	ORIG	25-May-95	113	1	No
IR06MW50F	ORIG	10-Jun-02	100	0.1	No
IR06MW50F	DUP	10-Jun-02	*97.1*	0.1	No
IR06MW50F	ORIG	10-Jun-04	**119**	5	No
IR06MW50F	DUP	10-Jun-04	118	5	No
IR06MW50F	ORIG	22-Nov-04	115	5	No
IR25MW11A	ORIG	28-Dec-93	2.3^{U}	2.3	No
IR25MW11A	DUP	28-Dec-93	2.3^{U}	2.3	No
IR25MW11A	ORIG	18-Aug-94	*0.7* ^{U}	0.7	No
IR25MW11A	ORIG	07-Jun-95	1^{U}	1	No
IR25MW11A	ORIG	24-Aug-00	1.5	0.33	No
IR25MW11A	ORIG	24-Aug-00	**95.7**	0.33	No
IR25MW17A	ORIG	01-Jul-94	0.7^{U}	0.7	No
IR25MW17A	ORIG	19-Aug-94	0.7^{U}	0.7	No
IR25MW17A	ORIG	02-Jun-95	1^{U}	1	No
IR25MW17A	ORIG	07-Sep-99	1.7^{J}	1.3	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chromium (Surface Water Screening Criteria = 400 µg/L) A-Aquifer (Continued)					
IR25MW17A	ORIG	14-Jan-00	2.6^{U}	2.6	No
IR25MW17A	ORIG	13-Oct-00	1^{U}	1	No
IR25MW17A	ORIG	20-Jul-01	**92.2**	2	No
IR25MW17A	ORIG	14-Jun-02	1.1^{U}	1.1	No
IR25MW17A	ORIG	13-Nov-02	*0.41* ^{U}	0.41	No
IR25MW17A	ORIG	11-Mar-03	2^{U}	10	No
IR25MW17A	ORIG	19-Aug-03	1.8^{U}	10	No
IR25MW17A	ORIG	29-Mar-04	10^{U}	10	No
IR25MW17A	ORIG	02-Sep-04	5^{U}	5	No
IR28MW125A	ORIG	26-May-94	**286**	3	No
IR28MW125A	DUP	26-May-94	275	3	No
IR28MW125A	ORIG	13-Jun-95	177	1	No
IR28MW125A	ORIG	04-Dec-95	250	0.5	No
IR28MW125A	ORIG	22-Aug-00	213	1.1	No
IR28MW125A	ORIG	21-Feb-01	99.1	0.5	No
IR28MW125A	ORIG	18-Jun-02	*20.9*	0.1	No
IR28MW125A	ORIG	08-Jun-04	48.4	5	No
IR28MW125A	ORIG	02-Sep-04	107	5	No
IR28MW125A	ORIG	23-Nov-04	95.1	5	No
IR28MW126A	ORIG	20-May-94	3^{U}	3	No
IR28MW126A	ORIG	12-Jun-95	1^{U}	1	No
IR28MW126A	DUP	12-Jun-95	1^{U}	1	No
IR28MW126A	ORIG	04-Dec-95	3.5^{U}	3.5	No
IR28MW126A	DUP	04-Dec-95	**88**	0.5	No
IR28MW126A	ORIG	19-Mar-96	*0.4* ^{U}	0.4	No
IR28MW126A	ORIG	18-Jun-02	1.98^{J}	0.25	No
IR28MW127A	ORIG	23-May-94	2.8	0.4	No
IR28MW127A	DUP	23-May-94	2.9	0.4	No
IR28MW127A	ORIG	08-Jun-95	1^{U}	1	No
IR28MW127A	ORIG	27-Nov-95	*0.5* ^{U}	0.5	No
IR28MW127A	DUP	27-Nov-95	**71.6**	0.5	No
IR28MW127A	ORIG	22-Aug-00	1.1^{U}	1.1	No
IR28MW127A	ORIG	21-Feb-01	8.2^{J}	0.5	No
IR28MW127A	ORIG	19-Jun-02	3^{U}	3	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chromium (Surface Water Screening Criteria = 400 µg/L) A-Aquifer (Continued)					
IR28MW129A	ORIG	31-May-94	*0.9* ^{U}	0.9	No
IR28MW129A	ORIG	27-Jun-95	1.8^{U}	1.8	No
IR28MW129A	ORIG	29-Nov-95	**50.6**	0.5	No
IR28MW151A	ORIG	22-Jun-94	0.71^{U}	0.71	No
IR28MW151A	DUP	22-Jun-94	*0.4* ^{U}	0.4	No
IR28MW151A	ORIG	29-Jun-95	1.8^{U}	1.8	No
IR28MW151A	ORIG	12-Dec-95	*0.4* ^{U}	0.4	No
IR28MW151A	ORIG	27-Aug-01	**69**^{J4}	10	No
IR28MW151A	ORIG	17-Jan-02	11	10	No
IR28MW151A	ORIG	19-Jun-02	11.1	3	No
IR28MW151A	ORIG	15-Sep-04	5^{U}	5	No
IR28MW151A	ORIG	06-Dec-04	5^{U}	5	No
IR28MW294A	ORIG	17-Nov-95	**267**	0.5	No
IR28MW294A	ORIG	27-Feb-96	*0.4* ^{U}	0.4	No
IR28MW294A	ORIG	07-May-96	1.5	0.7	No
IR28MW294A	ORIG	14-Jun-02	3^{U}	3	No
IR28MW920A	ORIG	28-Aug-01	**1,200**^{J4}	10	**Yes**
IR28MW920A	ORIG	16-Jan-02	120^{J4}	10	No
IR28MW920A	ORIG	10-Jul-02	*10* ^{U}	10	No
IR28MW930A	ORIG	28-Aug-01	**820**^{J4}	10	**Yes**
IR28MW930A	DUP	28-Aug-01	790^{J4}	10	**Yes**
IR28MW930A	ORIG	16-Jan-02	350^{J4}	10	No
IR28MW930A	ORIG	10-Jul-02	*93*	10	No
IR29MW72F	ORIG	25-Jul-94	33.8	0.7	No
IR29MW72F	DUP	25-Jul-94	55	0.7	No
IR29MW72F	ORIG	22-Jun-95	**195**	1.8	No
IR29MW72F	ORIG	07-Dec-95	101	0.5	No
IR29MW72F	ORIG	08-Jul-02	19	5	No
IR29MW72F	ORIG	09-Jun-04	*5* ^{U}	5	No
IR29MW72F	ORIG	07-Sep-04	*5* ^{U}	5	No
IR29MW72F	ORIG	22-Nov-04	*5* ^{U}	5	No
IR29MW72F	DUP	22-Nov-04	*5* ^{U}	5	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Copper (HGAL = 28.04 µg/L) A-Aquifer					
IR06MW40A	ORIG	13-Jun-90	**58.2**	1.7	**Yes**
IR06MW40A	ORIG	04-Jan-91	2.3^{U}	2.3	No
IR06MW40A	ORIG	17-Jul-91	3.5	1.3	No
IR06MW40A	DUP	17-Jul-91	*1.3^{U}*	1.3	No
IR06MW40A	ORIG	09-Jan-92	1.6^{U}	1.6	No
IR06MW40A	ORIG	20-Aug-02	8^{U}	8	No
IR06MW45A	ORIG	31-Oct-91	10.9	1.6	No
IR06MW45A	ORIG	13-Jan-92	4.7^{U}	4.7	No
IR06MW45A	ORIG	07-Sep-99	2.2^{U}	2.2	No
IR06MW45A	ORIG	11-Jan-00	19.1^{J1}	1.6	No
IR06MW45A	ORIG	11-Jan-00	**32.8^{J1}**	1.6	**Yes**
IR06MW45A	ORIG	11-Oct-00	2.3^{U}	1	No
IR06MW45A	ORIG	01-May-01	*1.6^{J1}*	1	No
IR06MW45A	ORIG	03-Jun-02	2^{UJ23}	2	No
IR06MW45A	ORIG	15-Nov-02	4.2^{U}	0.8	No
IR06MW45A	ORIG	11-Mar-03	12.6^{B}	25	No
IR06MW45A	ORIG	19-Aug-03	2.4^{U}	25	No
IR06MW45A	ORIG	30-Mar-04	250^{U}	250	Limit > criteria
IR06MW45A	ORIG	03-Jun-04	25^{U}	25	No
IR06MW45A	ORIG	31-Aug-04	5.2	5	No
IR06MW53F	ORIG	15-Mar-94	*7.3*	0.5	No
IR06MW53F	ORIG	11-Aug-94	**31.2**	1.7	**Yes**
IR06MW53F	ORIG	25-May-95	9	0.5	No
IR28MW124A	ORIG	20-May-94	10.7^{U}	10.7	No
IR28MW124A	DUP	20-May-94	17.6^{U}	17.6	No
IR28MW124A	ORIG	12-Jul-95	**36.8**	0.8	**Yes**
IR28MW124A	ORIG	21-Nov-95	29.5	0.8	**Yes**
IR28MW124A	DUP	21-Nov-95	30.3	0.8	**Yes**
IR28MW124A	ORIG	28-Feb-01	*8.3^{J}*	1.5	No
IR28MW124A	ORIG	19-Jun-02	18.7	8	No
IR28MW126A	ORIG	20-May-94	2.1^{U}	2.1	No
IR28MW126A	DUP	12-Jun-95	1.5^{U}	1.5	No
IR28MW126A	ORIG	12-Jun-95	0.88^{U}	0.88	No
IR28MW126A	DUP	04-Dec-95	**35.8**	0.8	**Yes**
IR28MW126A	ORIG	04-Dec-95	*0.8^{UJ9}*	0.8	No
IR28MW126A	ORIG	19-Mar-96	1.3^{U}	1.3	No
IR28MW126A	ORIG	18-Jun-02	3.96^{J}	0.25	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Copper (HGAL = 28.04 µg/L) A-Aquifer (Continued)					
IR28MW127A	ORIG	23-May-94	1.7^{U}	1.7	No
IR28MW127A	DUP	23-May-94	3.6	0.4	No
IR28MW127A	ORIG	08-Jun-95	0.81^{U}	0.81	No
IR28MW127A	ORIG	27-Nov-95	*0.8* ^{U}	0.8	No
IR28MW127A	DUP	27-Nov-95	**43**	0.8	**Yes**
IR28MW127A	ORIG	22-Aug-00	1.9^{U}	1.9	No
IR28MW127A	ORIG	21-Feb-01	4.5^{U}	1.5	No
IR28MW127A	ORIG	19-Jun-02	8^{U}	8	No
IR28MW151A	ORIG	22-Jun-94	*0.5* ^{U}	0.5	No
IR28MW151A	DUP	22-Jun-94	*0.5* ^{U}	0.5	No
IR28MW151A	ORIG	29-Jun-95	0.8^{U}	0.8	No
IR28MW151A	ORIG	12-Dec-95	*0.5* ^{U}	0.5	No
IR28MW151A	ORIG	27-Aug-01	**89**	10	**Yes**
IR28MW151A	ORIG	17-Jan-02	10^{U}	10	No
IR28MW151A	ORIG	19-Jun-02	68.7	8	**Yes**
IR28MW151A	ORIG	15-Sep-04	4.5^{J}	5	No
IR28MW151A	ORIG	06-Dec-04	1.1^{J}	5	No
IR28MW170A	ORIG	11-Jul-94	1.7^{UJ9}	1.7	No
IR28MW170A	ORIG	29-Jun-95	0.8^{U}	0.8	No
IR28MW170A	DUP	29-Jun-95	0.8^{U}	0.8	No
IR28MW170A	ORIG	12-Dec-95	*0.5* ^{U}	0.5	No
IR28MW170A	DUP	12-Dec-95	*0.5* ^{U}	0.5	No
IR28MW170A	ORIG	29-Aug-01	10^{U}	10	No
IR28MW170A	ORIG	15-Jan-02	10^{U}	10	No
IR28MW170A	ORIG	11-Jul-02	**270^{J3}**	10	**Yes**
IR28MW294A	ORIG	17-Nov-95	**36.6**	0.8	**Yes**
IR28MW294A	ORIG	27-Feb-96	*0.58* ^{U}	0.58	No
IR28MW294A	ORIG	07-May-96	2.2^{U}	2.2	No
IR28MW294A	ORIG	14-Jun-02	8^{U}	8	No
IR28MW930A	ORIG	28-Aug-01	72	10	**Yes**
IR28MW930A	DUP	28-Aug-01	**120**	10	**Yes**
IR28MW930A	ORIG	16-Jan-02	*10* ^{U}	10	No
IR28MW930A	ORIG	10-Jul-02	35^{J3}	10	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Copper (HGAL = 28.04 µg/L) A-Aquifer (Continued)					
IR29MW59F	ORIG	14-Nov-94	1.8^{U}	0.3	No
IR29MW59F	DUP	14-Nov-94	*0.3^{U}*	0.3	No
IR29MW59F	ORIG	21-Jun-95	4^{U}	4	No
IR29MW59F	ORIG	06-Dec-95	**46.9**	0.8	**Yes**
IR29MW59F	ORIG	16-Aug-02	8^{U}	8	No
Lead (HGAL = 14.44 µg/L) A-Aquifer					
IR06MW45A	ORIG	31-Oct-91	2^{U}	2	No
IR06MW45A	ORIG	13-Jan-92	2^{U}	2	No
IR06MW45A	ORIG	07-Sep-99	0.8^{UJ13}	0.8	No
IR06MW45A	ORIG	11-Jan-00	**17**	1.3	**Yes**
IR06MW45A	ORIG	11-Jan-00	1.3^{U}	1.3	No
IR06MW45A	ORIG	01-May-01	2^{UJ3}	2	No
IR06MW45A	ORIG	03-Jun-02	2.4^{U}	2.4	No
IR06MW45A	ORIG	15-Nov-02	*0.7^{U}*	0.7	No
IR06MW45A	ORIG	11-Mar-03	2^{U}	3	No
IR06MW45A	ORIG	19-Aug-03	1.4^{U}	3	No
IR06MW45A	ORIG	30-Mar-04	100^{U}	100	Limit > criteria
IR06MW45A	ORIG	03-Jun-04	10^{U}	10	No
IR06MW45A	ORIG	31-Aug-04	8.2	5	No
IR28MW126A	ORIG	20-May-94	3.9^{UJ3}	3.9	No
IR28MW126A	ORIG	12-Jun-95	1.3^{U}	1.3	No
IR28MW126A	DUP	12-Jun-95	1.3^{U}	1.3	No
IR28MW126A	ORIG	04-Dec-95	1.2^{U}	1.2	No
IR28MW126A	DUP	04-Dec-95	**25.6**	1.2	**Yes**
IR28MW126A	ORIG	19-Mar-96	*0.8^{U}*	0.8	No
IR28MW126A	ORIG	18-Jun-02	0.866	0.02	No
IR28MW127A	ORIG	23-May-94	0.79^{U}	0.79	No
IR28MW127A	DUP	23-May-94	0.79^{U}	0.79	No
IR28MW127A	ORIG	08-Jun-95	1.3^{U}	1.3	No
IR28MW127A	ORIG	27-Nov-95	1.2^{U}	1.2	No
IR28MW127A	DUP	27-Nov-95	**29.7**	1.2	**Yes**
IR28MW127A	ORIG	22-Aug-00	1.7^{U}	1.7	No
IR28MW127A	ORIG	21-Feb-01	1.6^{U}	1.6	No
IR28MW127A	ORIG	19-Jun-02	*0.223^{U}*	0.02	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Mercury (HGAL = 0.6 µg/L) A-Aquifer					
IR06MW44A	ORIG	31-Oct-91	0.2[U]	0.2	No
IR06MW44A	ORIG	07-Jan-92	0.2[UJ3]	0.2	No
IR06MW44A	ORIG	17-Aug-00	*0.1* [U]	0.1	No
IR06MW44A	ORIG	16-Jan-01	0.34	0.5	No
IR06MW44A	ORIG	16-Jan-01	**8**	2.5	**Yes**
IR06MW44A	ORIG	01-Feb-01	2	0.5	**Yes**
IR06MW44A	ORIG	01-Feb-01	*0.1* [U]	0.1	No
IR25MW18A	ORIG	16-Jan-01	0.69	0.5	**Yes**
IR25MW19A	ORIG	17-Jan-01	1.7	0.5	**Yes**
IR25MW22A	ORIG	16-Jan-01	1	0.5	**Yes**
IR25MW902B	ORIG	16-Jan-01	**0.66**	0.5	**Yes**
IR25MW902B	ORIG	01-Feb-01	*0.5* [U]	0.5	No
IR25MW904B	ORIG	16-Jan-01	**2.5**	0.5	**Yes**
IR25MW904B	ORIG	01-Feb-01	*0.5* [U]	0.5	No
IR25MW904B	ORIG	01-Feb-01	*0.5* [U]	0.5	No
IR25MW905B	ORIG	16-Jan-01	**4.6**	0.5	**Yes**
IR25MW905B	ORIG	01-Feb-01	*0.5* [U]	0.5	No
IR28MW124A	ORIG	20-May-94	0.52	0.1	No
IR28MW124A	DUP	20-May-94	0.57	0.1	No
IR28MW124A	ORIG	12-Jul-95	*0.1* [U]	0.1	No
IR28MW124A	ORIG	21-Nov-95	1.1	0.1	**Yes**
IR28MW124A	DUP	21-Nov-95	0.99	0.1	**Yes**
IR28MW124A	ORIG	28-Feb-01	**1.7**	0.1	**Yes**
IR28MW124A	ORIG	19-Jun-02	0.16[U]	0.1	No
IR28MW126A	ORIG	20-May-94	0.11	0.1	No
IR28MW126A	ORIG	12-Jun-95	*0.1* [U]	0.1	No
IR28MW126A	DUP	12-Jun-95	*0.1* [U]	0.1	No
IR28MW126A	ORIG	04-Dec-95	0.14	0.1	No
IR28MW126A	DUP	04-Dec-95	**3**	0.1	**Yes**
IR28MW126A	ORIG	19-Mar-96	*0.1* [U]	0.1	No
IR28MW126A	ORIG	18-Jun-02	*0.1* [U]	0.1	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Mercury (HGAL = 0.6 µg/L) A-Aquifer (Continued)					
IR28MW127A	ORIG	23-May-94	0.11^{U}	0.11	No
IR28MW127A	DUP	23-May-94	*0.09* ^{U}	0.09	No
IR28MW127A	ORIG	08-Jun-95	0.1^{U}	0.1	No
IR28MW127A	ORIG	27-Nov-95	0.16	0.1	No
IR28MW127A	DUP	27-Nov-95	**4.8**	0.1	**Yes**
IR28MW127A	ORIG	22-Aug-00	0.1^{U}	0.1	No
IR28MW127A	ORIG	21-Feb-01	0.1^{U}	0.1	No
IR28MW127A	ORIG	19-Jun-02	0.1^{U}	0.1	No
IR28MW211F	ORIG	07-Jul-94	0.1^{U}	0.1	No
IR28MW211F	DUP	07-Jul-94	0.1^{U}	0.1	No
IR28MW211F	ORIG	28-Jun-95	0.1^{U}	0.1	No
IR28MW211F	DUP	28-Jun-95	0.1^{U}	0.1	No
IR28MW211F	ORIG	12-Dec-95	0.1^{U}	0.1	No
IR28MW211F	ORIG	20-Mar-96	0.1^{U}	0.1	No
IR28MW211F	ORIG	07-Mar-01	**0.78**	0.5	**Yes**
IR28MW211F	ORIG	10-Apr-01	0.5^{U}	0.5	No
IR28MW211F	ORIG	10-Apr-01	0.5^{U}	0.5	No
IR28MW211F	ORIG	09-Sep-04	0.08^{U}	0.2	No
IR28MW211F	DUP	09-Sep-04	*0.044* ^{U}	0.2	No
IR28MW211F	ORIG	01-Dec-04	0.13^{U}	0.2	No
IR28MW211F	DUP	01-Dec-04	0.2^{U}	0.2	No
IR28MW341F	ORIG	12-Mar-01	**0.77**	0.5	**Yes**
IR28MW341F	ORIG	10-Apr-01	*0.5* ^{U}	0.5	No
IR28MW920A	ORIG	23-Jan-01	0.5^{U}	0.5	No
IR28MW920A	ORIG	08-Feb-01	0.5^{U}	0.5	No
IR28MW920A	ORIG	08-Feb-01	0.5^{U}	0.5	No
IR28MW920A	ORIG	28-Aug-01	**2.3**	0.2	**Yes**
IR28MW920A	ORIG	16-Jan-02	0.28^{U}	0.2	No
IR28MW920A	ORIG	10-Jul-02	*0.2* ^{U}	0.2	No
IR28MW930A	ORIG	18-Jan-01	0.5^{U}	0.5	No
IR28MW930A	ORIG	08-Feb-01	0.5^{U}	0.5	No
IR28MW930A	ORIG	28-Aug-01	**1.9**	0.2	**Yes**
IR28MW930A	DUP	28-Aug-01	**1.9**	0.2	**Yes**
IR28MW930A	ORIG	16-Jan-02	*0.2* ^{U}	0.2	No
IR28MW930A	ORIG	10-Jul-02	*0.2* ^{U}	0.2	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Mercury (HGAL = 0.6 µg/L) A-Aquifer (Continued)					
IR28MW933F1	ORIG	07-Mar-01	**0.84**	0.5	**Yes**
IR28MW933F1	ORIG	10-Apr-01	*0.25*	0.5	No
IR28MW933F2	ORIG	07-Mar-01	*1.5*	0.5	**Yes**
IR28MW933F2	ORIG	10-Apr-01	**3.9**	0.5	**Yes**
IR28MW934F1	ORIG	07-Mar-01	**1.2**	0.5	**Yes**
IR28MW934F1	ORIG	10-Apr-01	*0.31*	0.5	No
Nickel (HGAL = 96.48 µg/L) A-Aquifer					
IR06MW44A	ORIG	31-Oct-91	**117**	17.8	**Yes**
IR06MW44A	ORIG	07-Jan-92	89.4	17.8	No
IR06MW44A	ORIG	17-Aug-00	41	2.1	No
IR06MW44A	ORIG	01-Feb-01	*16* [J]	1.7	No
IR06MW44A	ORIG	13-Jun-02	92.8	0.9	No
IR25MW11A	ORIG	28-Dec-93	9.5	7.2	No
IR25MW11A	DUP	28-Dec-93	7.2[U]	7.2	No
IR25MW11A	ORIG	18-Aug-94	6.6[U]	6.6	No
IR25MW11A	ORIG	07-Jun-95	*3.8*	1.3	No
IR25MW11A	ORIG	24-Aug-00	5	1.3	No
IR25MW11A	ORIG	24-Aug-00	**232**	1.3	**Yes**
IR25MW15A2	ORIG	10-Jun-94	33.4[J39]	1.8	No
IR25MW15A2	DUP	10-Jun-94	*29.9* [J3]	1.8	No
IR25MW15A2	ORIG	11-Aug-94	61	2.5	No
IR25MW15A2	ORIG	26-May-95	**113**	1.3	**Yes**
IR25MW15A2	DUP	26-May-95	92.1	1.3	No
IR25MW15A2	ORIG	01-Feb-01	48.7	1.7	No
IR25MW15A2	ORIG	12-Jun-02	54.4	0.9	No
IR25MW16A	ORIG	02-Jun-94	**122**[J4]	0.7	**Yes**
IR25MW16A	DUP	02-Jun-94	19.5[J4]	0.7	No
IR25MW16A	ORIG	19-Aug-94	7.9[UJ3]	7.9	No
IR25MW16A	ORIG	01-Jun-95	*7.4* [UJ9]	7.4	No
IR25MW16A	DUP	01-Jun-95	7.5[U]	7.5	No
IR25MW16A	ORIG	12-Aug-02	14.8[U]	0.9	No
IR25MW17A	ORIG	01-Jul-94	77.8[J9]	2.5	No
IR25MW17A	ORIG	19-Aug-94	86.7[J3]	2.5	No
IR25MW17A	ORIG	02-Jun-95	70.1[J4]	1.3	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Nickel (HGAL = 96.48 µg/L) A-Aquifer (Continued)					
IR25MW17A	ORIG	07-Sep-99	15.3[J]	2.3	No
IR25MW17A	ORIG	14-Jan-00	80.6	1.7	No
IR25MW17A	ORIG	13-Oct-00	89.3	1	No
IR25MW17A	ORIG	20-Jul-01	**260**	2	**Yes**
IR25MW17A	ORIG	14-Jun-02	84	4.6	No
IR25MW17A	ORIG	13-Nov-02	68.2	0.79	No
IR25MW17A	ORIG	11-Mar-03	83.7[N]	40	No
IR25MW17A	ORIG	19-Aug-03	85.6	40	No
IR25MW17A	ORIG	29-Mar-04	70.8	40	No
IR25MW17A	ORIG	02-Sep-04	*12.4*	5	No
IR28MW126A	ORIG	20-May-94	13.8[U]	13.8	No
IR28MW126A	ORIG	12-Jun-95	*5 [U]*	5	No
IR28MW126A	DUP	12-Jun-95	5.1[U]	5.1	No
IR28MW126A	ORIG	04-Dec-95	6.3[UJ9]	6.3	No
IR28MW126A	DUP	04-Dec-95	**187**	1.3	**Yes**
IR28MW126A	ORIG	19-Mar-96	*5*	0.7	No
IR28MW126A	ORIG	18-Jun-02	6.5[U]	0.9	No
IR28MW127A	ORIG	23-May-94	5.9[U]	5.9	No
IR28MW127A	DUP	23-May-94	6.1[U]	6.1	No
IR28MW127A	ORIG	08-Jun-95	4.8	1.3	No
IR28MW127A	ORIG	27-Nov-95	5.6	1.3	No
IR28MW127A	DUP	27-Nov-95	**146**	1.3	**Yes**
IR28MW127A	ORIG	22-Aug-00	*3.1 [J]*	2.1	No
IR28MW127A	ORIG	21-Feb-01	3.5[U]	1.7	No
IR28MW127A	ORIG	19-Jun-02	8.2[U]	0.9	No
IR28MW129A	ORIG	31-May-94	*4.9 [UJ3]*	4.9	No
IR28MW129A	ORIG	27-Jun-95	5	3.3	No
IR28MW129A	ORIG	29-Nov-95	**117**	1.3	**Yes**
IR28MW294A	ORIG	17-Nov-95	**384**	1.3	**Yes**
IR28MW294A	ORIG	27-Feb-96	*5*	0.7	No
IR28MW294A	ORIG	07-May-96	7	0.9	No
IR28MW294A	ORIG	14-Jun-02	5.8[U]	0.9	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Silver (HGAL = 7.43 µg/L) A-Aquifer					
IR25MW17A	ORIG	01-Jul-94	0.6^{U}	0.6	No
IR25MW17A	ORIG	19-Aug-94	0.6^{U}	0.6	No
IR25MW17A	ORIG	02-Jun-95	0.5^{U}	0.5	No
IR25MW17A	ORIG	07-Sep-99	1.5^{U}	1.5	No
IR25MW17A	ORIG	14-Jan-00	1.3^{U}	1.3	No
IR25MW17A	ORIG	13-Oct-00	7.6^{UJ3}	1	**Yes**
IR25MW17A	ORIG	20-Jul-01	2^{U}	2	No
IR25MW17A	ORIG	14-Jun-02	0.9^{U}	0.9	No
IR25MW17A	ORIG	13-Nov-02	*0.42* ^{U}	0.42	No
IR25MW17A	ORIG	11-Mar-03	1^{UN}	10	Limit > criteria
IR25MW17A	ORIG	19-Aug-03	0.6^{UJ}	10	Limit > criteria
IR25MW17A	ORIG	29-Mar-04	10^{U}	10	Limit > criteria
IR25MW17A	ORIG	02-Sep-04	1^{U}	1	No
Aroclor-1248 (Surface Water Screening Criteria = 0.03 µg/L) A-Aquifer					
IR29MW48A	ORIG	06-Jun-94	**2^{J3}**	1	**Yes**
IR29MW48A	ORIG	02-Aug-95	0.5^{U}	0.5	Limit > criteria
IR29MW48A	ORIG	27-Nov-95	0.5^{U}	0.5	Limit > criteria
IR29MW48A	ORIG	23-Jul-02	*0.19* ^{U}	0.19	Limit > criteria
Aroclor-1260 (Surface Water Screening Criteria = 0.03 µg/L) A-Aquifer					
IR25MW15A1	ORIG	14-Jun-94	**2^{J3}**	1	**Yes**
IR25MW15A1	ORIG	11-Aug-94	0.5^{U}	0.5	Limit > criteria
IR25MW15A1	ORIG	26-May-95	0.5^{U}	0.5	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	*0.05* ^{U}	0.05	Limit > criteria
IR25MW15A1	DUP	17-Aug-00	0.3	0.05	**Yes**
IR25MW15A1	ORIG	01-Feb-01	0.7	0.1	**Yes**
IR25MW15A1	ORIG	13-Aug-02	0.19^{U}	0.19	Limit > criteria
IR25MW15A2	ORIG	10-Jun-94	5^{J3}	1	**Yes**
IR25MW15A2	DUP	10-Jun-94	3	1	**Yes**
IR25MW15A2	ORIG	11-Aug-94	**11^{J3}**	1	**Yes**
IR25MW15A2	ORIG	26-May-95	4^{J3}	1	**Yes**
IR25MW15A2	DUP	26-May-95	9^{J3}	1	**Yes**
IR25MW15A2	ORIG	16-Aug-00	*0.06* ^{J9}	0.05	**Yes**
IR25MW15A2	ORIG	01-Feb-01	0.7	0.1	**Yes**
IR25MW15A2	ORIG	12-Jun-02	0.38^{U}	0.38	Limit > criteria
IR25MW16A	ORIG	02-Jun-94	0.5^{U}	0.5	Limit > criteria
IR25MW16A	DUP	02-Jun-94	0.5^{U}	0.5	Limit > criteria
IR25MW16A	ORIG	19-Aug-94	0.5^{U}	0.5	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Aroclor-1260 (Surface Water Screening Criteria = 0.03 µg/L) A-Aquifer (Continued)					
IR25MW16A	ORIG	01-Jun-95	0.6[J]	1	**Yes**
IR25MW16A	DUP	01-Jun-95	**1**	1	**Yes**
IR25MW16A	ORIG	17-Aug-00	**1[J5]**	0.1	**Yes**
IR25MW16A	ORIG	26-Feb-01	*0.1 [U]*	0.1	Limit > criteria
IR25MW16A	ORIG	12-Aug-02	0.19[U]	0.19	Limit > criteria
IR25MW16A	ORIG	08-Jun-04	0.5[U]	0.5	Limit > criteria
IR25MW16A	ORIG	14-Sep-04	0.29[J]	0.5	**Yes**
IR25MW16A	ORIG	03-Dec-04	0.5[U]	0.5	Limit > criteria
IR25MW18A	ORIG	08-Aug-02	1.6	0.2	**Yes**
IR25MW60A1	ORIG	08-Jun-04	**1.5**	0.5	**Yes**
IR25MW60A1	DUP	08-Jun-04	1.5	0.5	**Yes**
IR25MW60A1	ORIG	10-Sep-04	0.36[J]	0.5	**Yes**
IR25MW60A1	ORIG	01-Dec-04	*0.2 [J]*	0.5	**Yes**
IR28MW129A	ORIG	31-May-94	*0.5 [UJ3]*	0.5	Limit > criteria
IR28MW129A	ORIG	27-Jun-95	**23**	10	**Yes**
IR28MW129A	ORIG	29-Nov-95	*0.5 [U]*	0.5	Limit > criteria
IR28MW171A	ORIG	03-Jun-94	3[J3]	1	**Yes**
IR28MW171A	ORIG	09-Jun-95	**0.9[J]**	1	**Yes**
IR28MW171A	DUP	09-Jun-95	0.8[J]	1	**Yes**
IR28MW171A	ORIG	20-Nov-95	0.4[J]	0.5	**Yes**
IR28MW171A	ORIG	04-Aug-00	0.5[U]	0.05	Limit > criteria
IR28MW171A	DUP	04-Aug-00	0.5[U]	0.05	Limit > criteria
IR28MW171A	ORIG	27-Feb-01	*0.3*	0.1	**Yes**
IR28MW171A	ORIG	17-Jun-02	0.38[U]	0.38	Limit > criteria
IR28MW171A	ORIG	02-Jun-04	0.5[U]	0.5	Limit > criteria
IR28MW171A	ORIG	01-Sep-04	0.5[U]	0.5	Limit > criteria
IR28MW171A	ORIG	19-Nov-04	0.43[J]	0.5	**Yes**
IR50MW13F	ORIG	07-Sep-94	**1[J3]**	1	**Yes**
IR50MW13F	ORIG	16-Jun-95	0.5[U]	0.5	Limit > criteria
IR50MW13F	ORIG	06-Dec-95	0.5[U]	0.5	Limit > criteria
IR50MW13F	ORIG	25-Jul-02	*0.19 [U]*	0.19	Limit > criteria
IR58MW31A	ORIG	01-Jul-94	0.5[U]	0.5	Limit > criteria
IR58MW31A	ORIG	21-Jun-95	3	1	**Yes**
IR58MW31A	ORIG	29-Nov-95	4	0.5	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Aroclor-1260 (Surface Water Screening Criteria = 0.03 µg/L) A-Aquifer (Continued)					
IR58MW31A	ORIG	11-Aug-00	3	0.05	**Yes**
IR58MW31A	ORIG	22-Feb-01	**6**	1	**Yes**
IR58MW31A	ORIG	15-Aug-02	1.1	0.2	**Yes**
IR58MW31A	ORIG	07-Jun-04	2.3	0.5	**Yes**
IR58MW31A	ORIG	10-Sep-04	2.3	0.5	**Yes**
IR58MW31A	ORIG	22-Nov-04	*0.44* ^{J}	0.5	**Yes**
4,4'-DDT (Surface Water Screening Criteria = 0.001 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.1^{UJ1}	0.1	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.02^{UJ3}	0.02	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	*0.004* ^{UJ3}	0.004	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	01-May-01	0.1^{UJ9}	0.02	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	**0.0094**^{J}	0.1	**Yes**
IR06MW42A	ORIG	20-May-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.02^{U}	0.02	Limit > criteria
IR25MW15A1	ORIG	14-Jun-94	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	26-May-95	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	0.02^{J3}	0.01	**Yes**
IR25MW15A1	DUP	17-Aug-00	*0.01* ^{J9}	0.01	**Yes**
IR25MW15A1	ORIG	01-Feb-01	**0.05**^{J9}	0.02	**Yes**
IR25MW15A1	ORIG	13-Aug-02	0.19^{U}	0.19	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
4,4'-DDT (Surface Water Screening Criteria = 0.001 µg/L) A-Aquifer (Continued)					
IR25MW15A2	ORIG	10-Jun-94	0.1 UJ3	0.1	Limit > criteria
IR25MW15A2	DUP	10-Jun-94	0.1 U	0.1	Limit > criteria
IR25MW15A2	ORIG	11-Aug-94	0.1 UJ3	0.1	Limit > criteria
IR25MW15A2	ORIG	26-May-95	0.1 U	0.1	Limit > criteria
IR25MW15A2	DUP	26-May-95	0.1 U	0.1	Limit > criteria
IR25MW15A2	ORIG	16-Aug-00	*0.01 UJ9*	0.01	Limit > criteria
IR25MW15A2	ORIG	01-Feb-01	**0.06 J9**	0.02	**Yes**
IR28MW171A	ORIG	03-Jun-94	0.1 U	0.1	Limit > criteria
IR28MW171A	ORIG	09-Jun-95	0.1 U	0.1	Limit > criteria
IR28MW171A	DUP	09-Jun-95	0.1 U	0.1	Limit > criteria
IR28MW171A	ORIG	20-Nov-95	0.1 U	0.1	Limit > criteria
IR28MW171A	ORIG	04-Aug-00	*0.01 U*	0.01	Limit > criteria
IR28MW171A	DUP	04-Aug-00	*0.01 U*	0.01	Limit > criteria
IR28MW171A	ORIG	27-Feb-01	**0.02**	0.01	**Yes**
IR28MW171A	ORIG	02-Jun-04	0.05 U	0.05	Limit > criteria
IR28MW171A	ORIG	01-Sep-04	0.05 U	0.05	Limit > criteria
IR28MW171A	ORIG	19-Nov-04	0.05 U	0.05	Limit > criteria
IR58MW31A	ORIG	01-Jul-94	0.1 U	0.1	Limit > criteria
IR58MW31A	ORIG	21-Jun-95	0.1 U	0.1	Limit > criteria
IR58MW31A	ORIG	29-Nov-95	0.1 U	0.1	Limit > criteria
IR58MW31A	ORIG	11-Aug-00	*0.01 U*	0.01	Limit > criteria
IR58MW31A	ORIG	22-Feb-01	0.5	0.1	**Yes**
IR58MW31A	ORIG	07-Jun-04	**0.11**	0.05	**Yes**
IR58MW31A	ORIG	10-Sep-04	0.25 U	0.25	Limit > criteria
IR58MW31A	ORIG	22-Nov-04	0.05 UJ7	0.05	Limit > criteria
Alpha-Chlordane (Surface Water Screening Criteria = 0.004 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.05 UJ1	0.05	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.01 UJ3	0.01	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.01 U	0.01	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.01 U	0.01	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	*0.002 UJ3*	0.002	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	**0.02**	0.01	**Yes**
IR06MW42A	ORIG	01-May-01	0.05 UJ9	0.01	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.01 U	0.01	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.01 U	0.01	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.014	0.01	**Yes**
IR06MW42A	DUP	04-Jun-02	0.01 U	0.01	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Alpha-Chlordane (Surface Water Screening Criteria = 0.004 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	28-Aug-02	0.013^{J9}	0.01	**Yes**
IR06MW42A	DUP	28-Aug-02	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.005^{U}	0.005	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	20-May-03	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.0079^{J}	0.05	**Yes**
IR06MW42A	ORIG	23-Mar-04	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.01^{U}	0.01	Limit > criteria
IR25MW15A1	ORIG	14-Jun-94	0.05^{U}	0.05	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	0.05^{U}	0.05	Limit > criteria
IR25MW15A1	ORIG	26-May-95	0.05^{U}	0.05	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	**0.01^{J3}**	0.005	**Yes**
IR25MW15A1	DUP	17-Aug-00	*0.006 ^{J9}*	0.005	**Yes**
IR25MW15A1	ORIG	01-Feb-01	**0.01**	0.01	**Yes**
IR25MW15A1	ORIG	13-Aug-02	0.094^{U}	0.094	Limit > criteria
IR29MW48A	ORIG	6/6/1994	**1^{J3}**	0.05	**Yes**
IR29MW48A	ORIG	8/2/1995	*0.05 ^{U}*	0.05	Limit > criteria
IR29MW48A	ORIG	11/27/1995	*0.05 ^{U}*	0.05	Limit > criteria
Endosulfan II (Surface Water Screening Criteria = 0.0087 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.1^{UJ1}	0.1	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.02^{UJ3}	0.02	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	*0.004 ^{UJ3}*	0.004	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	01-May-01	**0.02^{J}**	0.02	**Yes**
IR06MW42A	ORIG	18-Jul-01	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	0.1^{U}	0.1	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Endosulfan II (Surface Water Screening Criteria = 0.0087 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	20-May-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.02^{U}	0.02	Limit > criteria
IR29MW48A	ORIG	06-Jun-94	**0.07^{J3}**	0.1	**Yes**
IR29MW48A	ORIG	02-Aug-95	*0.1^{U}*	0.1	Limit > criteria
IR29MW48A	ORIG	27-Nov-95	*0.1^{U}*	0.1	Limit > criteria
Endrin (Surface Water Screening Criteria = 0.0023 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.1^{UJ1}	0.1	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.02^{UJ3}	0.02	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	0.004^{UJ3}	0.004	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	01-May-01	0.1^{UJ9}	0.02	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.1^{UJ9}	0.02	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	04-Jun-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	DUP	28-Aug-02	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	*0.01^{U}*	0.01	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	20-May-03	**0.0041^{J}**	0.1	**Yes**
IR06MW42A	ORIG	20-Aug-03	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.02^{U}	0.02	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.02^{U}	0.02	Limit > criteria
IR25MW15A1	ORIG	14-Jun-94	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	26-May-95	0.1^{U}	0.1	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	*0.01^{U}*	0.01	Limit > criteria
IR25MW15A1	DUP	17-Aug-00	*0.01^{U}*	0.01	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Endrin (Surface Water Screening Criteria = 0.0023 µg/L) A-Aquifer (Continued)					
IR25MW15A1	ORIG	01-Feb-01	**0.01^{J}**	0.02	**Yes**
IR25MW15A1	ORIG	13-Aug-02	0.19^{U}	0.19	Limit > criteria
IR25MW15A2	ORIG	10-Jun-94	0.1^{UJ3}	0.1	Limit > criteria
IR25MW15A2	DUP	10-Jun-94	0.1^{U}	0.1	Limit > criteria
IR25MW15A2	ORIG	11-Aug-94	0.1^{UJ3}	0.1	Limit > criteria
IR25MW15A2	ORIG	26-May-95	0.1^{U}	0.1	Limit > criteria
IR25MW15A2	DUP	26-May-95	0.1^{U}	0.1	Limit > criteria
IR25MW15A2	ORIG	16-Aug-00	*0.01 ^{U}*	0.01	Limit > criteria
IR25MW15A2	ORIG	01-Feb-01	**0.01^{J}**	0.02	**Yes**
IR58MW31A	ORIG	01-Jul-94	0.1^{U}	0.1	Limit > criteria
IR58MW31A	ORIG	21-Jun-95	0.1^{U}	0.1	Limit > criteria
IR58MW31A	ORIG	29-Nov-95	0.1^{U}	0.1	Limit > criteria
IR58MW31A	ORIG	11-Aug-00	*0.02 ^{J9}*	0.01	**Yes**
IR58MW31A	ORIG	22-Feb-01	**0.01^{J9}**	0.01	**Yes**
IR58MW31A	ORIG	07-Jun-04	0.05^{U}	0.05	Limit > criteria
IR58MW31A	ORIG	10-Sep-04	0.25^{U}	0.25	Limit > criteria
IR58MW31A	ORIG	22-Nov-04	*0.05 ^{U}*	0.05	Limit > criteria
Gamma-Chlordane (Surface Water Screening Criteria = 0.004 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.02^{UJ9}	0.02	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.01^{UJ3}	0.01	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	*0.002 ^{UJ39}*	0.002	No
IR06MW42A	ORIG	16-Jan-01	0.01^{UJ3}	0.01	Limit > criteria
IR06MW42A	ORIG	01-May-01	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.018^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.01^{U}	0.01	Limit > criteria
IR06MW42A	DUP	04-Jun-02	**0.0062^{J}**	0.01	**Yes**
IR06MW42A	ORIG	28-Aug-02	0.016^{U}	0.01	Limit > criteria
IR06MW42A	DUP	28-Aug-02	0.012^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.005^{U}	0.005	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	20-May-03	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	0.01^{U}	0.01	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.01^{U}	0.01	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Gamma-Chlordane (Surface Water Screening Criteria = 0.004 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	03-Jun-04	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.01[U]	0.01	Limit > criteria
IR25MW15A1	ORIG	14-Jun-94	0.05[U]	0.05	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	0.05[U]	0.05	Limit > criteria
IR25MW15A1	ORIG	26-May-95	0.05[U]	0.05	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	0.006[J39]	0.005	**Yes**
IR25MW15A1	DUP	17-Aug-00	*0.005* [UJ9]	0.005	Limit > criteria
IR25MW15A1	ORIG	01-Feb-01	**0.01**	0.01	**Yes**
IR25MW15A1	ORIG	13-Aug-02	0.094[U]	0.094	Limit > criteria
IR25MW18A	ORIG	08-Aug-02	**0.011**	0.0099	**Yes**
IR29MW48A	ORIG	06-Jun-94	**1**[J3]	0.05	**Yes**
IR29MW48A	ORIG	02-Aug-95	*0.05* [U]	0.05	Limit > criteria
IR29MW48A	ORIG	27-Nov-95	*0.05* [U]	0.05	Limit > criteria
Heptachlor (Surface Water Screening Criteria = 0.0036 µg/L) A-Aquifer					
IR58MW31A	ORIG	01-Jul-94	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	21-Jun-95	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	29-Nov-95	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	11-Aug-00	*0.003* [J97]	0.001	No
IR58MW31A	ORIG	22-Feb-01	0.005[U]	0.005	Limit > criteria
IR58MW31A	ORIG	07-Jun-04	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	10-Sep-04	**0.0096**[J]	0.05	**Yes**
IR58MW31A	ORIG	22-Nov-04	0.05[U]	0.05	Limit > criteria
IR06MW42A	ORIG	09-Sep-99	0.05[UJ37]	0.05	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	*0.002* [UJ3]	0.002	No
IR06MW42A	ORIG	26-Apr-00	*0.002* [UJ7]	0.002	No
IR06MW42A	ORIG	14-Jul-00	*0.002* [U]	0.002	No
IR06MW42A	ORIG	12-Oct-00	0.01[UJ3]	0.002	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	0.03[U]	0.01	Limit > criteria
IR06MW42A	ORIG	01-May-01	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.022[U]	0.01	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.01[U]	0.01	Limit > criteria
IR06MW42A	DUP	04-Jun-02	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	28-Aug-02	0.035[U]	0.01	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Heptachlor (Surface Water Screening Criteria = 0.0036 µg/L) A-Aquifer (Continued)					
IR06MW42A	DUP	28-Aug-02	0.021[U]	0.01	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.005[U]	0.005	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	**0.013[J]**	0.05	**Yes**
IR06MW42A	ORIG	20-May-03	0.0088[UJ7]	0.05	Limit > criteria
IR06MW42A	ORIG	20-Aug-03	0.0087[UJ]	0.01	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.01[U]	0.05	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.01[U]	0.01	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.01[U]	0.01	Limit > criteria
Heptachlor Epoxide (Surface Water Screening Criteria = 0.0036 µg/L) A-Aquifer					
IR25MW15A1	ORIG	14-Jun-94	0.03[J3]	0.05	**Yes**
IR25MW15A1	ORIG	11-Aug-94	*0.01 [U]*	0.01	Limit > criteria
IR25MW15A1	ORIG	26-May-95	*0.01 [U]*	0.01	Limit > criteria
IR25MW15A1	ORIG	17-Aug-00	*0.01 [J37]*	0.001	**Yes**
IR25MW15A1	DUP	17-Aug-00	**0.006[J79]**	0.001	**Yes**
IR25MW15A1	ORIG	01-Feb-01	0.002[UJ7]	0.002	No
IR58MW31A	ORIG	01-Jul-94	*0.01 [U]*	0.01	Limit > criteria
IR58MW31A	ORIG	21-Jun-95	*0.01 [U]*	0.01	Limit > criteria
IR58MW31A	ORIG	29-Nov-95	*0.01 [U]*	0.01	Limit > criteria
IR58MW31A	ORIG	11-Aug-00	**0.009[J97]**	0.001	**Yes**
IR58MW31A	ORIG	22-Feb-01	**0.009[J9]**	0.005	**Yes**
IR58MW31A	ORIG	07-Jun-04	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	10-Sep-04	0.05[U]	0.05	Limit > criteria
IR58MW31A	ORIG	22-Nov-04	0.05[U]	0.05	Limit > criteria
Methoxychlor (Surface Water Screening Criteria = 0.003 µg/L) A-Aquifer					
IR06MW42A	ORIG	09-Sep-99	0.5[UJ1]	0.5	Limit > criteria
IR06MW42A	ORIG	13-Jan-00	0.1[UJ3]	0.1	Limit > criteria
IR06MW42A	ORIG	26-Apr-00	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	14-Jul-00	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	12-Oct-00	*0.02 [UJ3]*	0.02	Limit > criteria
IR06MW42A	ORIG	16-Jan-01	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	01-May-01	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	18-Jul-01	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	14-Mar-02	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	04-Jun-02	0.1[U]	0.1	Limit > criteria
IR06MW42A	DUP	04-Jun-02	0.1[U]	0.1	Limit > criteria
IR06MW42A	ORIG	28-Aug-02	0.1[U]	0.1	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Methoxychlor (Surface Water Screening Criteria = 0.003 µg/L) A-Aquifer (Continued)					
IR06MW42A	DUP	28-Aug-02	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	13-Nov-02	0.05^{U}	0.05	Limit > criteria
IR06MW42A	ORIG	05-Mar-03	0.5^{U}	0.5	Limit > criteria
IR06MW42A	ORIG	20-May-03	**0.0084^{J}**	0.1	**Yes**
IR06MW42A	ORIG	20-Aug-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	10-Nov-03	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	23-Mar-04	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	03-Jun-04	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	31-Aug-04	0.1^{U}	0.1	Limit > criteria
IR06MW42A	ORIG	16-Nov-04	0.1^{U}	0.1	Limit > criteria
2,4-Dinitrotoluene (Surface Water Screening Criteria = 118 µg/L) A-Aquifer					
IR25MW11A	ORIG	18-Aug-94	*$1{,}000^{U}$*	1,000	Limit > criteria
IR25MW11A	ORIG	07-Jun-95	**$4{,}900^{J03}$**	10	**Yes**
Chrysene (Surface Water Screening Criteria = 60 µg/L) A-Aquifer					
IR25MW11A	ORIG	18-Aug-94	$1{,}000^{U}$	1,000	Limit > criteria
IR25MW11A	ORIG	07-Jun-95	**200^{J03}**	10	**Yes**
IR25MW11A	ORIG	24-Aug-00	200^{U}	200	Limit > criteria
Fluoranthene (Surface Water Screening Criteria = 16 µg/L) A-Aquifer					
IR06MW42A	ORIG	13-Jun-90	21^{J}	40	**Yes**
IR06MW42A	ORIG	08-Jan-91	36^{J}	40	**Yes**
IR06MW42A	ORIG	16-Jul-91	13^{J}	20	Limit > criteria
IR06MW42A	ORIG	10-Jan-92	15^{J}	20	Limit > criteria
IR06MW42A	DUP	10-Jan-92	17^{J}	20	**Yes**
IR06MW42A	ORIG	08-Nov-93	17^{J}	50	**Yes**
IR06MW42A	ORIG	14-Feb-94	17^{J}	100	**Yes**
IR06MW42A	ORIG	16-May-94	10	10	No
IR06MW42A	ORIG	26-Aug-94	11	10	No
IR06MW42A	ORIG	09-Sep-99	*1^{J}*	11	No
IR06MW42A	ORIG	13-Jan-00	15	14	No
IR06MW42A	ORIG	26-Apr-00	14^{J}	31	Limit > criteria
IR06MW42A	ORIG	19-Jun-00	19^{J}	40	**Yes**
IR06MW42A	ORIG	14-Jul-00	17	10	**Yes**
IR06MW42A	ORIG	12-Oct-00	9^{J}	10	No
IR06MW42A	ORIG	16-Jan-01	14	10	No
IR06MW42A	ORIG	01-May-01	11	10	No
IR06MW42A	ORIG	18-Jul-01	12	10	No
IR06MW42A	ORIG	14-Mar-02	8^{J}	10	No
IR06MW42A	ORIG	04-Jun-02	12	10	No
IR06MW42A	DUP	04-Jun-02	10	10	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Fluoranthene (Surface Water Screening Criteria = 16 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	21-Aug-02	13	4.8	No
IR06MW42A	DUP	21-Aug-02	9.6	4.8	No
IR06MW42A	ORIG	28-Aug-02	10	10	No
IR06MW42A	DUP	28-Aug-02	4^{J}	10	No
IR06MW42A	ORIG	13-Nov-02	7^{J}	10	No
IR06MW42A	ORIG	05-Mar-03	15	10	No
IR06MW42A	ORIG	20-May-03	**19**	10	**Yes**
IR06MW42A	ORIG	20-Aug-03	12	10	No
IR06MW42A	ORIG	10-Nov-03	17	10	**Yes**
IR06MW42A	ORIG	23-Mar-04	12	10	No
IR06MW42A	ORIG	03-Jun-04	14	10	No
IR06MW42A	ORIG	31-Aug-04	12^{J5}	10	No
IR06MW42A	ORIG	16-Nov-04	4.8^{J}	10	No
Fluorene (Surface Water Screening Criteria = 60 µg/L) A-Aquifer					
IR06MW42A	ORIG	13-Jun-90	95	40	**Yes**
IR06MW42A	ORIG	08-Jan-91	130	40	**Yes**
IR06MW42A	ORIG	16-Jul-91	120	20	**Yes**
IR06MW42A	ORIG	10-Jan-92	**160**	20	**Yes**
IR06MW42A	DUP	10-Jan-92	**160**	20	**Yes**
IR06MW42A	ORIG	08-Nov-93	110	50	**Yes**
IR06MW42A	ORIG	14-Feb-94	61^{J}	100	**Yes**
IR06MW42A	ORIG	16-May-94	85	10	**Yes**
IR06MW42A	ORIG	26-Aug-94	54	10	No
IR06MW42A	ORIG	09-Sep-99	11^{U}	11	No
IR06MW42A	ORIG	13-Jan-00	12^{J}	14	No
IR06MW42A	ORIG	26-Apr-00	3^{J}	31	No
IR06MW42A	ORIG	19-Jun-00	41	40	No
IR06MW42A	ORIG	14-Jul-00	38	10	No
IR06MW42A	ORIG	12-Oct-00	4^{J}	10	No
IR06MW42A	ORIG	16-Jan-01	36	10	No
IR06MW42A	ORIG	01-May-01	23	10	No
IR06MW42A	ORIG	18-Jul-01	19	10	No
IR06MW42A	ORIG	14-Mar-02	16	10	No
IR06MW42A	ORIG	04-Jun-02	24	10	No
IR06MW42A	DUP	04-Jun-02	28	10	No
IR06MW42A	ORIG	21-Aug-02	4.1^{J}	4.8	No
IR06MW42A	DUP	21-Aug-02	5.4	4.8	No
IR06MW42A	ORIG	28-Aug-02	10	10	No
IR06MW42A	DUP	28-Aug-02	2^{J}	10	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Fluorene (Surface Water Screening Criteria = 60 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	13-Nov-02	8^{J}	10	No
IR06MW42A	ORIG	05-Mar-03	30	10	No
IR06MW42A	ORIG	20-May-03	27	10	No
IR06MW42A	ORIG	20-Aug-03	*2* ^{J}	10	No
IR06MW42A	ORIG	10-Nov-03	7^{J}	10	No
IR06MW42A	ORIG	23-Mar-04	30	10	No
IR06MW42A	ORIG	03-Jun-04	25	10	No
IR06MW42A	ORIG	31-Aug-04	10^{UJ5}	10	No
IR06MW42A	ORIG	16-Nov-04	27	10	No
IR25MW11A	DUP	28-Dec-93	**180^{J3}**	200	**Yes**
IR25MW11A	ORIG	18-Aug-94	$1{,}000^{U}$	1,000	Limit > criteria
IR25MW11A	ORIG	24-Aug-00	*130* ^{J}	200	**Yes**
Pentachlorophenol (Surface Water Screening Criteria = 7.9 µg/L) A-Aquifer					
IR25MW11A	ORIG	18-Aug-94	*2,500* ^{U}	2,500	Limit > criteria
IR25MW11A	ORIG	07-Jun-95	**$6{,}100^{J037}$**	25	**Yes**
Phenanthrene (Surface Water Screening Criteria = 60 µg/L) A-Aquifer					
IR06MW42A	ORIG	13-Jun-90	62	40	**Yes**
IR06MW42A	ORIG	08-Jan-91	**160**	40	**Yes**
IR06MW42A	ORIG	16-Jul-91	130	20	**Yes**
IR06MW42A	ORIG	10-Jan-92	130	20	**Yes**
IR06MW42A	DUP	10-Jan-92	120	20	**Yes**
IR06MW42A	ORIG	08-Nov-93	110	50	**Yes**
IR06MW42A	ORIG	14-Feb-94	74^{J}	100	**Yes**
IR06MW42A	ORIG	16-May-94	74	10	**Yes**
IR06MW42A	ORIG	26-Aug-94	5^{J}	10	No
IR06MW42A	ORIG	09-Sep-99	2^{J}	11	No
IR06MW42A	ORIG	13-Jan-00	2^{J}	14	No
IR06MW42A	ORIG	26-Apr-00	31^{U}	31	No
IR06MW42A	ORIG	19-Jun-00	17^{J}	40	No
IR06MW42A	ORIG	14-Jul-00	13	10	No
IR06MW42A	ORIG	12-Oct-00	10^{U}	10	No
IR06MW42A	ORIG	16-Jan-01	14	10	No
IR06MW42A	ORIG	01-May-01	10	10	No
IR06MW42A	ORIG	18-Jul-01	10	10	No
IR06MW42A	ORIG	14-Mar-02	11	10	No
IR06MW42A	ORIG	04-Jun-02	6^{J}	10	No
IR06MW42A	DUP	04-Jun-02	10	10	No
IR06MW42A	ORIG	21-Aug-02	0.84^{J}	4.8	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Phenanthrene (Surface Water Screening Criteria = 60 µg/L) A-Aquifer (Continued)					
IR06MW42A	DUP	21-Aug-02	*0.78*[J]	4.8	No
IR06MW42A	ORIG	28-Aug-02	1[J]	10	No
IR06MW42A	DUP	28-Aug-02	10[U]	10	No
IR06MW42A	ORIG	13-Nov-02	10[U]	10	No
IR06MW42A	ORIG	05-Mar-03	16	10	No
IR06MW42A	ORIG	20-May-03	10	10	No
IR06MW42A	ORIG	20-Aug-03	10[U]	10	No
IR06MW42A	ORIG	10-Nov-03	1[J]	10	No
IR06MW42A	ORIG	23-Mar-04	12	10	No
IR06MW42A	ORIG	03-Jun-04	10	10	No
IR06MW42A	ORIG	31-Aug-04	2.8[J5]	10	No
IR06MW42A	ORIG	16-Nov-04	9.6[J]	10	No
IR25MW11A	ORIG	28-Dec-93	190[J3]	500	**Yes**
IR25MW11A	DUP	28-Dec-93	300[J3]	200	**Yes**
IR25MW11A	ORIG	18-Aug-94	**590[J]**	1,000	**Yes**
IR25MW11A	ORIG	24-Aug-00	*120*[J]	200	**Yes**
Phenol (Surface Water Screening Criteria = 1,160 µg/L) A-Aquifer					
IR25MW15A1	ORIG	14-Jun-94	500[J0]	1,000	No
IR25MW15A1	ORIG	11-Aug-94	**2,300**	200	**Yes**
IR25MW15A1	ORIG	26-May-95	680[J03]	10	No
IR25MW15A1	ORIG	11-Jan-01	1,000[U]	1,000	No
IR25MW15A1	ORIG	13-Aug-02	*97*[J0]	4.8	No
1,2,4-Trichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer					
IR25MW19A	ORIG	29-Jan-98	**200[J03]**	10	**Yes**
IR25MW19A	ORIG	22-Jan-01	160	100	**Yes**
IR25MW19A	ORIG	24-Jan-01	2,000[U]	2,000	Limit > criteria
IR25MW19A	ORIG	05-Feb-01	500[U]	500	Limit > criteria
IR25MW19A	ORIG	14-Mar-01	*52*[J]	200	No
1,2-Dichloroethane (Surface Water Screening Criteria = 22,600 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	30,000	2,000	**Yes**
IR25MW15A1	ORIG	11-Aug-94	140,000	10,000	**Yes**
IR25MW15A1	ORIG	26-May-95	**150,000**	10,000	**Yes**
IR25MW15A1	ORIG	05-Oct-95	12,000	2,000	No
IR25MW15A1	ORIG	05-Oct-95	100,000	5,000	**Yes**
IR25MW15A1	DUP	05-Oct-95	11,000	2,000	No
IR25MW15A1	ORIG	05-Feb-98	13,000	500	No
IR25MW15A1	ORIG	17-Aug-00	12,000	1,200	No
IR25MW15A1	ORIG	11-Jan-01	2,600	10	No
IR25MW15A1	ORIG	31-Jan-01	3,800	1,000	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,2-Dichloroethane (Surface Water Screening Criteria = 22,600 µg/L) A-Aquifer (Continued)					
IR25MW15A1	ORIG	31-Jan-01	54,000	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	*1,500*	1,000	No
IR25MW15A1	ORIG	01-Feb-01	3,100	82	No
IR25MW15A1	ORIG	13-Aug-02	28,000	500	**Yes**
IR25MW18A	ORIG	29-Jan-98	**43,000**[J3]	1,200	**Yes**
IR25MW18A	ORIG	18-Jan-01	14,000	500	No
IR25MW18A	ORIG	01-Feb-01	13,000	500	No
IR25MW18A	ORIG	13-Mar-01	15,000	370	No
IR25MW18A	ORIG	13-Jun-02	*9,200*	130	No
IR25MW19A	ORIG	29-Jan-98	**91,000**[J3]	2,500	**Yes**
IR25MW19A	ORIG	22-Jan-01	50,000	100	**Yes**
IR25MW19A	ORIG	05-Feb-01	*14,000*	500	No
IR25MW19A	ORIG	14-Mar-01	32,000	1,000	**Yes**
IR25MW902B	ORIG	16-Jan-01	*11,000*	250	No
IR25MW902B	ORIG	31-Jan-01	33,000	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	13,000	250	No
IR25MW902B	ORIG	31-Jan-01	33,000	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	**36,000**	1,000	**Yes**
IR25MW902B	ORIG	01-Feb-01	15,000	500	No
1,2-Dichloroethene (Total) (Surface Water Screening Criteria = 44,800 µg/L) A-Aquifer					
IR25MW15A1	ORIG	11-Aug-94	**57,000**	10,000	**Yes**
IR25MW15A1	ORIG	26-May-95	*36,000*	10,000	No
IR25MW15A1	ORIG	05-Oct-95	40,000	5,000	No
IR25MW15A1	DUP	05-Oct-95	40,000	2,000	No
IR25MW15A1	ORIG	05-Oct-95	42,000	2,000	No
1,3-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	14-Jun-94	520[UJ0]	520	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	**260**	200	**Yes**
IR25MW15A1	ORIG	26-May-95	210[J03]	10	**Yes**
IR25MW15A1	ORIG	05-Feb-98	240[J03]	100	**Yes**
IR25MW15A1	ORIG	17-Aug-00	250[U]	250	Limit > criteria
IR25MW15A1	ORIG	11-Jan-01	*10*[U]	10	No
IR25MW15A1	ORIG	11-Jan-01	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	31-Jan-01	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	31-Jan-01	1,000[U]	1,000	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,3-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR25MW15A1	ORIG	01-Feb-01	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	01-Feb-01	160[U]	160	Limit > criteria
IR25MW15A1	ORIG	13-Aug-02	190	50	**Yes**
IR25MW19A	ORIG	29-Jan-98	360[J3]	200	**Yes**
IR25MW19A	ORIG	22-Jan-01	**630**	100	**Yes**
IR25MW19A	ORIG	24-Jan-01	2,000[U]	2,000	Limit > criteria
IR25MW19A	ORIG	05-Feb-01	500[U]	500	Limit > criteria
IR25MW19A	ORIG	14-Mar-01	*200* [U]	200	Limit > criteria
IR28MW909A	ORIG	24-Jan-01	190	50	**Yes**
IR28MW909A	ORIG	08-Feb-01	60	100	No
IR28MW909A	ORIG	08-Feb-01	**380**	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	*59*	100	No
IR28MW909A	ORIG	12-Feb-01	170	50	**Yes**
Cis-1,2-Dichloroethene (Surface Water Screening Criteria = 44,800 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	*25,000*	2,000	No
IR25MW15A1	ORIG	05-Feb-98	**58,000**	5,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	46,000	2,500	**Yes**
IR25MW15A1	ORIG	11-Jan-01	40,000	10	No
IR25MW15A1	ORIG	31-Jan-01	33,000	1,000	No
IR25MW15A1	ORIG	31-Jan-01	33,000	1,000	No
IR25MW15A1	ORIG	01-Feb-01	27,000	1,000	No
IR25MW15A1	ORIG	01-Feb-01	33,000	1,600	No
IR25MW15A1	ORIG	13-Aug-02	36,000	500	No
Chlorobenzene (Surface Water Criteria = 129 µg/L) A-Aquifer					
IR25MW11A	ORIG	28-Dec-93	10,000[U]	10,000	Limit > criteria
IR25MW11A	DUP	28-Dec-93	1,000[U]	1,000	Limit > criteria
IR25MW11A	ORIG	07-Jun-95	*78*	10	No
IR25MW11A	ORIG	24-Aug-00	**150**	50	**Yes**
IR25MW15A1	ORIG	13-Jun-94	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	10,000[U]	10,000	Limit > criteria
IR25MW15A1	ORIG	26-May-95	*420* [J3]	10	**Yes**
IR25MW15A1	ORIG	05-Oct-95	5,000[U]	5,000	Limit > criteria
IR25MW15A1	ORIG	05-Oct-95	2,200	2,000	**Yes**
IR25MW15A1	DUP	05-Oct-95	2,200	2,000	**Yes**
IR25MW15A1	ORIG	05-Feb-98	1,700[J3]	100	**Yes**
IR25MW15A1	ORIG	17-Aug-00	1,900	250	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chlorobenzene (Surface Water Criteria = 129 µg/L) A-Aquifer (Continued)					
IR25MW15A1	ORIG	11-Jan-01	**2,300**	10	**Yes**
IR25MW15A1	ORIG	31-Jan-01	1,600	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	01-Feb-01	1,800	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	2,000	160	**Yes**
IR25MW15A1	ORIG	13-Aug-02	940	50	**Yes**
IR25MW19A	ORIG	29-Jan-98	**330[J3]**	200	**Yes**
IR25MW19A	ORIG	22-Jan-01	320	100	**Yes**
IR25MW19A	ORIG	05-Feb-01	500[U]	500	Limit > criteria
IR25MW19A	ORIG	14-Mar-01	*120 [J]*	200	Limit > criteria
IR25MW905B	ORIG	16-Jan-01	*100*	1	No
IR25MW905B	ORIG	31-Jan-01	**140**	5	**Yes**
IR25MW905B	ORIG	31-Jan-01	**140**	5	**Yes**
IR25MW905B	ORIG	31-Jan-01	120	5	No
IR25MW905B	ORIG	01-Feb-01	110	10	No
IR28MW909A	ORIG	24-Jan-01	3,200	50	**Yes**
IR28MW909A	ORIG	08-Feb-01	*2,000*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	*2,000*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	**9,900**	100	**Yes**
IR28MW909A	ORIG	12-Feb-01	2,700	50	**Yes**
IR28MW911A	ORIG	25-Jan-01	1,300	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	*790*	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	850	50	**Yes**
IR28MW911A	ORIG	12-Feb-01	**1,800**	50	**Yes**
IR58MW31A	ORIG	30-Jun-94	500[U]	500	Limit > criteria
IR58MW31A	ORIG	20-Jun-95	*110*	10	No
IR58MW31A	ORIG	28-Nov-95	250	200	**Yes**
IR58MW31A	ORIG	23-Jan-98	230[J3]	10	**Yes**
IR58MW31A	ORIG	11-Aug-00	920	53	**Yes**
IR58MW31A	DUP	11-Aug-00	890	140	**Yes**
IR58MW31A	ORIG	24-Jan-01	530	10	**Yes**
IR58MW31A	ORIG	15-Feb-01	650	50	**Yes**
IR58MW31A	ORIG	22-Feb-01	280	15	**Yes**
IR58MW31A	ORIG	15-Aug-02	1,200	25	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chlorobenzene (Surface Water Criteria = 129 µg/L) A-Aquifer (Continued)					
IR58MW31A	ORIG	07-Jun-04	1,000	12.5	**Yes**
IR58MW31A	ORIG	10-Sep-04	**3,700**	125	**Yes**
IR58MW31A	ORIG	22-Nov-04	1,400	12.5	**Yes**
1,2-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	37,000	2,000	**Yes**
IR25MW15A1	ORIG	14-Jun-94	**62,000**[J0]	520	**Yes**
IR25MW15A1	ORIG	11-Aug-94	19,000	200	**Yes**
IR25MW15A1	ORIG	26-May-95	*2,700* [J03]	10	**Yes**
IR25MW15A1	ORIG	05-Feb-98	39,000	5,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	37,000	2,500	**Yes**
IR25MW15A1	ORIG	11-Jan-01	10,000	1,000	**Yes**
IR25MW15A1	ORIG	11-Jan-01	32,000	10	**Yes**
IR25MW15A1	ORIG	31-Jan-01	2,900	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	13,000	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	14,000	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	22,000	1,600	**Yes**
IR25MW15A1	ORIG	13-Aug-02	24,000	500	**Yes**
IR25MW15A2	DUP	10-Jun-94	1,000	10	**Yes**
IR25MW15A2	ORIG	10-Jun-94	1,000	10	**Yes**
IR25MW15A2	ORIG	11-Aug-94	2,700	50	**Yes**
IR25MW15A2	DUP	26-May-95	1,100	10	**Yes**
IR25MW15A2	ORIG	26-May-95	810	10	**Yes**
IR25MW15A2	ORIG	05-Feb-98	2,800[J3]	250	**Yes**
IR25MW15A2	ORIG	16-Aug-00	4,000	170	**Yes**
IR25MW15A2	ORIG	11-Jan-01	**4,300**	1	**Yes**
IR25MW15A2	ORIG	11-Jan-01	830	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	2,400	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	2,400	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	*710*	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	2,000	100	**Yes**
IR25MW15A2	ORIG	01-Feb-01	3,600	160	**Yes**
IR25MW15A2	ORIG	12-Jun-02	3,300	100	**Yes**
IR25MW18A	ORIG	29-Jan-98	**15,000**	2,500	**Yes**
IR25MW18A	ORIG	18-Jan-01	2,000	500	**Yes**
IR25MW18A	ORIG	18-Jan-01	2,400	10	**Yes**
IR25MW18A	ORIG	01-Feb-01	*310*	500	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,2-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR25MW18A	ORIG	13-Mar-01	4,400	730	**Yes**
IR25MW18A	ORIG	13-Jun-02	1,400	25	**Yes**
IR25MW19A	ORIG	29-Jan-98	**59,000**	5,000	**Yes**
IR25MW19A	ORIG	22-Jan-01	**59,000**	100	**Yes**
IR25MW19A	ORIG	24-Jan-01	39,000	2,000	**Yes**
IR25MW19A	ORIG	05-Feb-01	*11,000*	500	**Yes**
IR25MW19A	ORIG	14-Mar-01	21,000	2,000	**Yes**
IR25MW900B	ORIG	11-Jan-01	*3,100*	400	**Yes**
IR25MW900B	ORIG	11-Jan-01	**6,800**	100	**Yes**
IR25MW900B	ORIG	01-Feb-01	4,000	200	**Yes**
IR25MW901B	ORIG	11-Jan-01	2,800	100	**Yes**
IR25MW901B	ORIG	11-Jan-01	*1,100*	200	**Yes**
IR25MW901B	ORIG	01-Feb-01	4,100	100	**Yes**
IR25MW901B	ORIG	31-Jul-02	**6,800**	50	**Yes**
IR25MW901B	ORIG	31-Jul-02	4,200	310	**Yes**
IR25MW901B	ORIG	01-Aug-02	5,800	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	3,400	310	**Yes**
IR25MW901B	ORIG	01-Aug-02	6,500	40	**Yes**
IR25MW901B	ORIG	01-Aug-02	3,400	320	**Yes**
IR25MW901B	ORIG	02-Aug-02	2,900	240	**Yes**
IR25MW901B	ORIG	02-Aug-02	4,600	33	**Yes**
IR25MW902B	ORIG	16-Jan-01	17,000	250	**Yes**
IR25MW902B	ORIG	16-Jan-01	*8,100*	10	**Yes**
IR25MW902B	ORIG	31-Jan-01	20,000	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	**35,000**	1,000	**Yes**
IR25MW902B	ORIG	31-Jan-01	13,000	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	24,000	500	**Yes**
IR25MW902B	ORIG	01-Feb-01	12,000	500	**Yes**
IR25MW903B	ORIG	11-Jan-01	*690*	100	**Yes**
IR25MW903B	ORIG	11-Jan-01	**3,000**	1	**Yes**
IR25MW903B	ORIG	31-Jan-01	1,400	50	**Yes**
IR25MW903B	ORIG	31-Jan-01	1,800	50	**Yes**
IR25MW903B	ORIG	01-Feb-01	2,500	100	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,2-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR28MW407	ORIG	04-Jun-04	190	5	**Yes**
IR28MW407	ORIG	07-Sep-04	**200**	2.5	**Yes**
IR28MW407	ORIG	02-Dec-04	*92*	0.5	No
IR28MW909A	ORIG	24-Jan-01	530	50	**Yes**
IR28MW909A	ORIG	08-Feb-01	*180*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	**1,100**	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	190	100	**Yes**
IR28MW909A	ORIG	12-Feb-01	380	50	**Yes**
IR28MW911A	ORIG	25-Jan-01	170	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	*92*	50	No
IR28MW911A	ORIG	08-Feb-01	93	50	No
IR28MW911A	ORIG	12-Feb-01	**190**	50	**Yes**
IR58MW31A	ORIG	01-Jul-94	1,700	10	**Yes**
IR58MW31A	ORIG	21-Jun-95	610	10	**Yes**
IR58MW31A	ORIG	29-Nov-95	540	50	**Yes**
IR58MW31A	ORIG	23-Jan-98	**3,300**	500	**Yes**
IR58MW31A	DUP	11-Aug-00	2,700	140	**Yes**
IR58MW31A	ORIG	11-Aug-00	920	53	**Yes**
IR58MW31A	ORIG	24-Jan-01	630	10	**Yes**
IR58MW31A	ORIG	15-Feb-01	1,300	50	**Yes**
IR58MW31A	ORIG	22-Feb-01	160	15	**Yes**
IR58MW31A	ORIG	15-Aug-02	450	25	**Yes**
IR58MW31A	ORIG	07-Jun-04	190	12.5	**Yes**
IR58MW31A	ORIG	10-Sep-04	270	125	**Yes**
IR58MW31A	ORIG	22-Nov-04	*140*	12.5	**Yes**
1,4-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	7,800	2,000	**Yes**
IR25MW15A1	ORIG	14-Jun-94	**14,000**[J0]	520	**Yes**
IR25MW15A1	ORIG	11-Aug-94	5,900	200	**Yes**
IR25MW15A1	ORIG	26-May-95	8,100[J03]	10	**Yes**
IR25MW15A1	ORIG	05-Feb-98	9,600	1,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	8,400	2,500	**Yes**
IR25MW15A1	ORIG	11-Jan-01	7,100	10	**Yes**
IR25MW15A1	ORIG	11-Jan-01	2,600	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	2,400	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	*470*	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	3,800	1,000	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,4-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR25MW15A1	ORIG	01-Feb-01	5,300	1,600	**Yes**
IR25MW15A1	ORIG	13-Aug-02	5,700	50	**Yes**
IR25MW15A2	ORIG	10-Jun-94	340	10	**Yes**
IR25MW15A2	DUP	10-Jun-94	360	10	**Yes**
IR25MW15A2	ORIG	11-Aug-94	680	50	**Yes**
IR25MW15A2	ORIG	26-May-95	*200*	10	**Yes**
IR25MW15A2	DUP	26-May-95	270	10	**Yes**
IR25MW15A2	ORIG	05-Feb-98	280	25	**Yes**
IR25MW15A2	ORIG	16-Aug-00	880	170	**Yes**
IR25MW15A2	ORIG	11-Jan-01	**920**	1	**Yes**
IR25MW15A2	ORIG	11-Jan-01	*200*	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	460	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	480	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	*200*	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	410	100	**Yes**
IR25MW15A2	ORIG	01-Feb-01	730	160	**Yes**
IR25MW15A2	ORIG	12-Jun-02	790	10	**Yes**
IR25MW18A	ORIG	29-Jan-98	**3,300**	200	**Yes**
IR25MW18A	ORIG	18-Jan-01	430	10	**Yes**
IR25MW18A	ORIG	18-Jan-01	350	500	**Yes**
IR25MW18A	ORIG	01-Feb-01	500[U]	500	**Yes**
IR25MW18A	ORIG	13-Mar-01	840	73	**Yes**
IR25MW18A	ORIG	13-Jun-02	*260*	25	**Yes**
IR25MW19A	ORIG	29-Jan-98	**15,000**	5,000	**Yes**
IR25MW19A	ORIG	22-Jan-01	13,000	100	**Yes**
IR25MW19A	ORIG	24-Jan-01	7,900	2,000	**Yes**
IR25MW19A	ORIG	05-Feb-01	*1,900*	500	**Yes**
IR25MW19A	ORIG	14-Mar-01	4,000	200	**Yes**
IR25MW900B	ORIG	11-Jan-01	*680*	400	**Yes**
IR25MW900B	ORIG	11-Jan-01	**1,300**	100	**Yes**
IR25MW900B	ORIG	01-Feb-01	840	200	**Yes**
IR25MW901B	ORIG	11-Jan-01	520	100	**Yes**
IR25MW901B	ORIG	11-Jan-01	*170*	200	**Yes**
IR25MW901B	ORIG	01-Feb-01	740	100	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,4-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR25MW901B	ORIG	31-Jul-02	**1,700**	50	**Yes**
IR25MW901B	ORIG	31-Jul-02	1,000	310	**Yes**
IR25MW901B	ORIG	01-Aug-02	1,400	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	810	310	**Yes**
IR25MW901B	ORIG	01-Aug-02	1,400	40	**Yes**
IR25MW901B	ORIG	01-Aug-02	850	190	**Yes**
IR25MW901B	ORIG	02-Aug-02	700	240	**Yes**
IR25MW901B	ORIG	02-Aug-02	1,100	33	**Yes**
IR25MW902B	ORIG	16-Jan-01	3,300	250	**Yes**
IR25MW902B	ORIG	16-Jan-01	*1,800*	10	**Yes**
IR25MW902B	ORIG	31-Jan-01	3,800	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	**6,300**	1,000	**Yes**
IR25MW902B	ORIG	31-Jan-01	2,300	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	4,200	500	**Yes**
IR25MW902B	ORIG	01-Feb-01	2,400	500	**Yes**
IR25MW903B	ORIG	11-Jan-01	*160*	100	**Yes**
IR25MW903B	ORIG	11-Jan-01	**580**	1	**Yes**
IR25MW903B	ORIG	31-Jan-01	190	50	**Yes**
IR25MW903B	ORIG	31-Jan-01	250	50	**Yes**
IR25MW903B	ORIG	01-Feb-01	490	100	**Yes**
IR28MW909A	ORIG	24-Jan-01	460	50	**Yes**
IR28MW909A	ORIG	08-Feb-01	*150*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	**940**	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	*150*	100	**Yes**
IR28MW909A	ORIG	12-Feb-01	370	50	**Yes**
IR28MW911A	ORIG	25-Jan-01	190	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	75	50	No
IR28MW911A	ORIG	08-Feb-01	*70*	50	No
IR28MW911A	ORIG	12-Feb-01	**250**	50	**Yes**
IR58MW31A	ORIG	01-Jul-94	320	10	**Yes**
IR58MW31A	ORIG	21-Jun-95	170	10	**Yes**
IR58MW31A	ORIG	29-Nov-95	160	50	**Yes**
IR58MW31A	ORIG	23-Jan-98	**760**	500	**Yes**
IR58MW31A	ORIG	11-Aug-00	270	53	**Yes**
IR58MW31A	DUP	11-Aug-00	630	140	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,4-Dichlorobenzene (Surface Water Screening Criteria = 129 µg/L) A-Aquifer (Continued)					
IR58MW31A	ORIG	24-Jan-01	170	10	**Yes**
IR58MW31A	ORIG	15-Feb-01	360	50	**Yes**
IR58MW31A	ORIG	22-Feb-01	*51*	15	No
IR58MW31A	ORIG	15-Aug-02	210	2.5	**Yes**
IR58MW31A	ORIG	07-Jun-04	150	12.5	**Yes**
IR58MW31A	ORIG	10-Sep-04	360	125	**Yes**
IR58MW31A	ORIG	22-Nov-04	200	12.5	**Yes**
Naphthalene (Surface Water Screening Criteria = 470 µg/L) A-Aquifer					
IR06MW42A	ORIG	13-Jun-90	690	40	**Yes**
IR06MW42A	ORIG	08-Jan-91	810	40	**Yes**
IR06MW42A	ORIG	16-Jul-91	1,200	80	**Yes**
IR06MW42A	ORIG	10-Jan-92	**1,800**	80	**Yes**
IR06MW42A	DUP	10-Jan-92	1,600	80	**Yes**
IR06MW42A	ORIG	08-Nov-93	380	50	No
IR06MW42A	ORIG	14-Feb-94	280	100	No
IR06MW42A	ORIG	16-May-94	360	10	No
IR06MW42A	ORIG	26-Aug-94	30	10	No
IR06MW42A	ORIG	09-Sep-99	*11* [U]	11	No
IR06MW42A	ORIG	13-Jan-00	97	14	No
IR06MW42A	ORIG	26-Apr-00	31[U]	31	No
IR06MW42A	ORIG	19-Jun-00	290	40	No
IR06MW42A	ORIG	14-Jul-00	340	50	No
IR06MW42A	ORIG	12-Oct-00	82	10	No
IR06MW42A	ORIG	16-Jan-01	150	40	No
IR06MW42A	ORIG	01-May-01	180	50	No
IR06MW42A	ORIG	18-Jul-01	120	20	No
IR06MW42A	ORIG	14-Mar-02	23	10	No
IR06MW42A	ORIG	04-Jun-02	240	50	No
IR06MW42A	DUP	04-Jun-02	310	50	No
IR06MW42A	ORIG	21-Aug-02	65	4.8	No
IR06MW42A	DUP	21-Aug-02	100	4.8	No
IR06MW42A	ORIG	28-Aug-02	*11*	10	No
IR06MW42A	DUP	28-Aug-02	*11*	10	No
IR06MW42A	ORIG	13-Nov-02	*11*	10	No
IR06MW42A	ORIG	05-Mar-03	130[E]	10	No
IR06MW42A	ORIG	20-May-03	120	10	No
IR06MW42A	ORIG	20-Aug-03	71	10	No
IR06MW42A	ORIG	10-Nov-03	120	20	No
IR06MW42A	ORIG	23-Mar-04	270	100	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Naphthalene (Surface Water Screening Criteria = 470 µg/L) A-Aquifer (Continued)					
IR06MW42A	ORIG	03-Jun-04	160	40	No
IR06MW42A	ORIG	31-Aug-04	15[J5]	10	No
IR06MW42A	ORIG	16-Nov-04	53	10	No
PCE (Surface Water Criteria = 450 µg/L) A-Aquifer					
IR25MW15A1	ORIG	13-Jun-94	30,000	2,000	**Yes**
IR25MW15A1	ORIG	11-Aug-94	50,000	10,000	**Yes**
IR25MW15A1	ORIG	26-May-95	54,000	10,000	**Yes**
IR25MW15A1	ORIG	05-Oct-95	**56,000**	5,000	**Yes**
IR25MW15A1	ORIG	05-Oct-95	30,000	2,000	**Yes**
IR25MW15A1	DUP	05-Oct-95	28,000	2,000	**Yes**
IR25MW15A1	ORIG	05-Feb-98	18,000	1,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	15,000	2,500	**Yes**
IR25MW15A1	ORIG	11-Jan-01	9,500	10	**Yes**
IR25MW15A1	ORIG	31-Jan-01	*2,200*	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	3,900	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	5,100	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	7,200	1,600	**Yes**
IR25MW15A1	ORIG	13-Aug-02	20,000	500	**Yes**
IR25MW15A2	ORIG	10-Jun-94	4,000	100	**Yes**
IR25MW15A2	DUP	10-Jun-94	3,700	100	**Yes**
IR25MW15A2	ORIG	11-Aug-94	**5,200**	500	**Yes**
IR25MW15A2	ORIG	26-May-95	600	50	**Yes**
IR25MW15A2	DUP	26-May-95	580	50	**Yes**
IR25MW15A2	ORIG	05-Oct-95	720	500	**Yes**
IR25MW15A2	ORIG	05-Oct-95	220	20	No
IR25MW15A2	ORIG	05-Feb-98	*130*	25	No
IR25MW15A2	ORIG	16-Aug-00	1,800	170	**Yes**
IR25MW15A2	ORIG	11-Jan-01	1,600	1	**Yes**
IR25MW15A2	ORIG	31-Jan-01	470	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	510	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	540	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	710	100	**Yes**
IR25MW15A2	ORIG	01-Feb-01	1,200	160	**Yes**
IR25MW15A2	ORIG	12-Jun-02	760	10	**Yes**
IR25MW18A	ORIG	29-Jan-98	**7,300**[J3]	2,500	Limit > criteria
IR25MW18A	ORIG	18-Jan-01	760	500	Limit > criteria
IR25MW18A	ORIG	01-Feb-01	*160*	500	Limit > criteria

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
PCE (Surface Water Criteria = 450 µg/L) A-Aquifer (Continued)					
IR25MW18A	ORIG	13-Mar-01	1,400	73	**Yes**
IR25MW18A	ORIG	13-Jun-02	540	25	**Yes**
IR25MW19A	ORIG	29-Jan-98	**72,000**[J3]	5,000	**Yes**
IR25MW19A	ORIG	22-Jan-01	**72,000**	100	**Yes**
IR25MW19A	ORIG	05-Feb-01	*5,000*	500	**Yes**
IR25MW19A	ORIG	14-Mar-01	17,000	2,000	**Yes**
IR25MW900B	ORIG	11-Jan-01	**6,300**	100	**Yes**
IR25MW900B	ORIG	01-Feb-01	*5,300*	200	**Yes**
IR25MW901B	ORIG	11-Jan-01	*2,400*	100	**Yes**
IR25MW901B	ORIG	01-Feb-01	3,400	100	**Yes**
IR25MW901B	ORIG	31-Jul-02	**5,400**	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	4,800	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	4,200	40	**Yes**
IR25MW901B	ORIG	02-Aug-02	3,500	33	**Yes**
IR25MW902B	ORIG	16-Jan-01	15,000	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	14,000	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	32,000	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	**36,000**	1,000	**Yes**
IR25MW902B	ORIG	31-Jan-01	28,000	500	**Yes**
IR25MW902B	ORIG	01-Feb-01	*13,000*	500	**Yes**
IR25MW903B	ORIG	11-Jan-01	**2,300**	1	**Yes**
IR25MW903B	ORIG	31-Jan-01	*540*	50	**Yes**
IR25MW903B	ORIG	31-Jan-01	600	50	**Yes**
IR25MW903B	ORIG	01-Feb-01	1,400	100	**Yes**
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ					
IR25MW15A1	ORIG	13-Jun-94	4,200	2,000	**Yes**
IR25MW15A1	ORIG	11-Aug-94	4,100[J]	10,000	**Yes**
IR25MW15A1	ORIG	26-May-95	6,400[J]	10,000	**Yes**
IR25MW15A1	ORIG	05-Oct-95	7,200	5,000	**Yes**
IR25MW15A1	ORIG	05-Oct-95	**10,000**	2,000	**Yes**
IR25MW15A1	DUP	05-Oct-95	9,800	2,000	**Yes**
IR25MW15A1	ORIG	05-Feb-98	**10,000**	1,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	4,200	250	**Yes**
IR25MW15A1	ORIG	11-Jan-01	5,300	10	**Yes**
IR25MW15A1	ORIG	31-Jan-01	*1,200*	1,000	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR25MW15A1	ORIG	31-Jan-01	3,700	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	3,700	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	5,000	1,600	**Yes**
IR25MW15A1	ORIG	13-Aug-02	2,700	50	**Yes**
IR25MW15A2	ORIG	10-Jun-94	71	100	No
IR25MW15A2	DUP	10-Jun-94	*67*	100	No
IR25MW15A2	ORIG	11-Aug-94	350[J]	500	Limit > criteria
IR25MW15A2	ORIG	26-May-95	170	50	No
IR25MW15A2	DUP	26-May-95	160	50	No
IR25MW15A2	ORIG	05-Oct-95	98	20	No
IR25MW15A2	ORIG	05-Oct-95	1,200	500	**Yes**
IR25MW15A2	ORIG	05-Feb-98	220	25	No
IR25MW15A2	ORIG	16-Aug-00	920	170	**Yes**
IR25MW15A2	ORIG	11-Jan-01	850	1	**Yes**
IR25MW15A2	ORIG	31-Jan-01	**1,600**	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	1,500	100	**Yes**
IR25MW15A2	ORIG	31-Jan-01	670	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	750	100	**Yes**
IR25MW15A2	ORIG	01-Feb-01	1,100	160	**Yes**
IR25MW15A2	ORIG	12-Jun-02	710	10	**Yes**
IR25MW16A	ORIG	01-Jun-94	*6*	1	No
IR25MW16A	DUP	01-Jun-94	*6*	1	No
IR25MW16A	ORIG	18-Aug-94	86	10	No
IR25MW16A	ORIG	01-Jun-95	63	10	No
IR25MW16A	DUP	01-Jun-95	66	10	No
IR25MW16A	ORIG	17-Aug-00	20	1	No
IR25MW16A	DUP	17-Aug-00	14	1	No
IR25MW16A	ORIG	26-Feb-01	*6*	1	No
IR25MW16A	ORIG	12-Aug-02	150	2.5	No
IR25MW16A	ORIG	08-Jun-04	**510[J3]**	5	**Yes**
IR25MW16A	ORIG	14-Sep-04	11	0.5	No
IR25MW16A	ORIG	03-Dec-04	120[J3]	2.5	No
IR25MW18A	ORIG	29-Jan-98	**9,000**	2,500	**Yes**
IR25MW18A	ORIG	18-Jan-01	1,900	500	**Yes**
IR25MW18A	ORIG	01-Feb-01	*890*	500	**Yes**
IR25MW18A	ORIG	13-Mar-01	2,600	730	Limit > criteria
IR25MW18A	ORIG	13-Jun-02	1,500	25	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR25MW19A	ORIG	29-Jan-98	8,900	5,000	**Yes**
IR25MW19A	ORIG	22-Jan-01	**18,000**	100	**Yes**
IR25MW19A	ORIG	05-Feb-01	*1,600*	500	**Yes**
IR25MW19A	ORIG	14-Mar-01	5,700	2,000	**Yes**
IR25MW900B	ORIG	11-Jan-01	*480*	100	**Yes**
IR25MW900B	ORIG	01-Feb-01	**1,100**	200	**Yes**
IR25MW901B	ORIG	11-Jan-01	*300*	100	No
IR25MW901B	ORIG	01-Feb-01	1,200	100	**Yes**
IR25MW901B	ORIG	31-Jul-02	**1,300**	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	810	50	**Yes**
IR25MW901B	ORIG	01-Aug-02	430	40	**Yes**
IR25MW901B	ORIG	02-Aug-02	520	33	**Yes**
IR25MW902B	ORIG	16-Jan-01	*1,400*	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	4,900	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	3,000	250	**Yes**
IR25MW902B	ORIG	31-Jan-01	**5,100**	500	**Yes**
IR25MW902B	ORIG	31-Jan-01	**5,100**	1,000	**Yes**
IR25MW902B	ORIG	01-Feb-01	1,600	500	**Yes**
IR28MW151A	ORIG	22-Jun-94	500	50	**Yes**
IR28MW151A	DUP	22-Jun-94	490	50	**Yes**
IR28MW151A	ORIG	29-Jun-95	42	10	No
IR28MW151A	ORIG	12-Dec-95	700	50	**Yes**
IR28MW151A	ORIG	11-Aug-00	160	14	No
IR28MW151A	ORIG	18-Jan-01	740	50	**Yes**
IR28MW151A	ORIG	18-Jan-01	730	50	**Yes**
IR28MW151A	ORIG	06-Feb-01	41	2	No
IR28MW151A	ORIG	06-Feb-01	470	100	**Yes**
IR28MW151A	ORIG	06-Feb-01	140	10	No
IR28MW151A	ORIG	06-Feb-01	240	25	No
IR28MW151A	ORIG	06-Feb-01	98	10	No
IR28MW151A	ORIG	08-Feb-01	470	20	**Yes**
IR28MW151A	ORIG	08-Feb-01	310	44	No
IR28MW151A	ORIG	27-Aug-01	*13*	1	No
IR28MW151A	ORIG	17-Jan-02	**1,400**	14	**Yes**
IR28MW151A	ORIG	19-Jun-02	360	25	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR28MW151A	DUP	19-Jun-02	360	25	No
IR28MW151A	ORIG	15-Sep-04	24	0.5	No
IR28MW151A	ORIG	06-Dec-04	55[J3]	25	No
IR28MW211F	ORIG	06-Jul-94	19,000	1,000	**Yes**
IR28MW211F	DUP	06-Jul-94	19,000	1,000	**Yes**
IR28MW211F	ORIG	27-Jun-95	40,000	2,500	**Yes**
IR28MW211F	DUP	27-Jun-95	39,000	2,500	**Yes**
IR28MW211F	ORIG	27-Oct-95	30,000	2,500	**Yes**
IR28MW211F	ORIG	27-Oct-95	61,000	5,000	**Yes**
IR28MW211F	DUP	27-Oct-95	30,000	2,500	**Yes**
IR28MW211F	DUP	27-Oct-95	40,000	2,500	**Yes**
IR28MW211F	ORIG	11-Dec-95	18,000	2,000	**Yes**
IR28MW211F	ORIG	20-Mar-96	10,000	250	**Yes**
IR28MW211F	ORIG	03-Feb-98	15,000	1,000	**Yes**
IR28MW211F	ORIG	22-Aug-00	62,000	4,400	**Yes**
IR28MW211F	ORIG	06-Mar-01	39,000	3,100	**Yes**
IR28MW211F	ORIG	07-Mar-01	36,000	20	**Yes**
IR28MW211F	ORIG	02-Apr-01	30,000	250	**Yes**
IR28MW211F	ORIG	02-Apr-01	29,000	250	**Yes**
IR28MW211F	ORIG	10-Apr-01	48,000	5	**Yes**
IR28MW211F	ORIG	10-Apr-01	44,000	5	**Yes**
IR28MW211F	ORIG	09-Jul-02	42,000	250	**Yes**
IR28MW211F	ORIG	13-Nov-02	**76,000**	10,000	**Yes**
IR28MW211F	ORIG	09-Jan-03	420	40	**Yes**
IR28MW211F	ORIG	07-Feb-03	730	20	**Yes**
IR28MW211F	ORIG	21-Mar-03	850	50	**Yes**
IR28MW211F	ORIG	04-Sep-03	1,700	--	**Yes**
IR28MW211F	ORIG	01-Jun-04	69	0.5	No
IR28MW211F	ORIG	09-Sep-04	150	5	No
IR28MW211F	DUP	09-Sep-04	150	5	No
IR28MW211F	ORIG	01-Dec-04	*6.7*	0.5	No
IR28MW211F	DUP	01-Dec-04	7.7	0.5	No
IR28MW341F	ORIG	03-Feb-98	2,900[J3]	500	**Yes**
IR28MW341F	ORIG	12-Mar-01	**41,000**	1	**Yes**
IR28MW341F	ORIG	02-Apr-01	16,000	250	**Yes**
IR28MW341F	ORIG	02-Apr-01	20,000	250	**Yes**
IR28MW341F	ORIG	10-Apr-01	40,000	5	**Yes**
IR28MW341F	ORIG	13-Nov-02	**41,000[J3]**	2,000	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR28MW341F	ORIG	09-Jan-03	*100*	5	No
IR28MW341F	ORIG	06-Feb-03	160[J3]	8	No
IR28MW341F	ORIG	19-Mar-03	160	10	No
IR28MW341F	ORIG	04-Sep-03	220	--	No
IR28MW342F	ORIG	03-Feb-98	860[J3]	100	**Yes**
IR28MW342F	DUP	03-Feb-98	930	100	**Yes**
IR28MW342F	ORIG	02-Apr-01	1,700	20	**Yes**
IR28MW342F	ORIG	02-Apr-01	1,500	20	**Yes**
IR28MW342F	ORIG	12-Nov-02	**5,100[J3]**	500	**Yes**
IR28MW342F	ORIG	09-Jan-03	47	2	No
IR28MW342F	ORIG	05-Feb-03	79	5	No
IR28MW342F	ORIG	18-Mar-03	180	10	No
IR28MW342F	ORIG	04-Sep-03	*20*	--	No
IR28MW360F	ORIG	04-Dec-02	**7,400**	250	**Yes**
IR28MW360F	DUP	04-Dec-02	6,300	500	**Yes**
IR28MW360F	ORIG	08-Jan-03	690	25	**Yes**
IR28MW360F	ORIG	07-Feb-03	610	20	**Yes**
IR28MW360F	ORIG	21-Mar-03	630	40	**Yes**
IR28MW360F	ORIG	04-Sep-03	*380*	--	No
IR28MW407	ORIG	02-Sep-03	**4,300**	--	**Yes**
IR28MW407	ORIG	04-Jun-04	110	5	No
IR28MW407	ORIG	07-Sep-04	77	0.5	No
IR28MW407	ORIG	02-Dec-04	*23*	0.5	No
IR28MW408	ORIG	04-Sep-03	570	--	**Yes**
IR28MW409	ORIG	04-Sep-03	1,000	--	**Yes**
IR28MW933F1	ORIG	07-Mar-01	1,800	20	**Yes**
IR28MW933F1	ORIG	10-Apr-01	**2,100**	5	**Yes**
IR28MW933F1	ORIG	04-Sep-03	*120*	--	No
IR28MW934F2	ORIG	06-Mar-01	*630*	5	**Yes**
IR28MW934F2	ORIG	09-Apr-01	**730**	5	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR28MW934F3	ORIG	06-Mar-01	450	5	**Yes**
IR28MW934F3	ORIG	09-Apr-01	450	5	**Yes**
IR28MW936F	ORIG	12-Mar-01	*15,000*	1	**Yes**
IR28MW936F	ORIG	02-Apr-01	22,000	250	**Yes**
IR28MW936F	ORIG	02-Apr-01	17,000	250	**Yes**
IR28MW936F	ORIG	02-Apr-01	17,000	250	**Yes**
IR28MW936F	ORIG	02-Apr-01	19,000	250	**Yes**
IR28MW936F	ORIG	05-Apr-01	**27,000**	250	**Yes**
IR28MW937F	ORIG	12-Mar-01	*1,300*	10	**Yes**
IR28MW937F	ORIG	12-Mar-01	1,500	1	**Yes**
IR28MW937F	ORIG	02-Apr-01	2,300	20	**Yes**
IR28MW937F	ORIG	02-Apr-01	**30,000**	250	**Yes**
IR28MW937F	ORIG	02-Apr-01	2,000	20	**Yes**
IR28MW937F	ORIG	05-Apr-01	2,300	25	**Yes**
IR28MW937F	ORIG	05-Apr-01	2,200	25	**Yes**
IR28MW310F	ORIG	22-Apr-96	*34*	0.5	No
IR28MW310F	ORIG	28-May-96	64	1	No
IR28MW310F	ORIG	02-Jul-96	58	1	No
IR28MW310F	ORIG	10-Aug-00	500	37	**Yes**
IR28MW310F	DUP	10-Aug-00	500	37	**Yes**
IR28MW310F	ORIG	01-Mar-01	420	29	**Yes**
IR28MW310F	ORIG	07-Mar-01	350	10	No
IR28MW310F	ORIG	02-Apr-01	390	5	No
IR28MW310F	ORIG	02-Apr-01	280	5	No
IR28MW310F	ORIG	02-Apr-01	380	5	No
IR28MW310F	ORIG	05-Apr-01	**660**	10	**Yes**
IR28MW310F	ORIG	26-Jun-02	420	5	**Yes**
IR28MW932F	ORIG	12-Mar-01	**8,700**	1	**Yes**
IR28MW932F	ORIG	09-Apr-01	8,600	5	**Yes**
IR28MW932F	ORIG	12-Nov-02	5,300	500	**Yes**
IR28MW932F	ORIG	09-Jan-03	120	5	No
IR28MW932F	ORIG	07-Feb-03	110	10	No
IR28MW932F	ORIG	21-Mar-03	*84*	8	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TCE (Surface Water Criteria = 400 µg/L) A-Aquifer/F-WBZ (Continued)					
IR28MW934F4	ORIG	06-Mar-01	*350*	5	No
IR28MW934F4	ORIG	09-Apr-01	**420**	5	**Yes**
IR28MW934F5	ORIG	06-Mar-01	*200* [U]	200	No
IR28MW934F5	ORIG	09-Apr-01	540	5	**Yes**
IR28MW934F5	ORIG	13-Nov-02	**1,100**	50	**Yes**
IR28MW934F5	ORIG	08-Jan-03	400	20	No
IR28MW934F5	ORIG	06-Feb-03	490	20	**Yes**
IR28MW934F5	ORIG	21-Mar-03	480	40	**Yes**
TPH (Surface Water Criteria = 1,400 µg/L) A-Aquifer					
IR25MW11A	ORIG	28-Dec-93	1,500	500	**Yes**
IR25MW11A	DUP	28-Dec-93	**1,300,000**	120,000	**Yes**
IR25MW11A	ORIG	18-Aug-94	25,000[U]	25,000	**Yes**
IR25MW11A	ORIG	07-Jun-95	13,000[U]	13,000	**Yes**
IR25MW11A	ORIG	27-Apr-99	400[YJ7]	50	No
IR25MW11A	ORIG	24-Aug-00	*80*	50	No
IR25MW15A1	ORIG	13-Jun-94	90,000	12,000	**Yes**
IR25MW15A1	ORIG	11-Aug-94	**180,000**	12,000	**Yes**
IR25MW15A1	ORIG	26-May-95	150,000	12,000	**Yes**
IR25MW15A1	ORIG	06-May-99	33,000[Y]	25,000	**Yes**
IR25MW15A1	ORIG	17-Aug-00	30,000[Z]	2,000	**Yes**
IR25MW15A1	ORIG	11-Jan-01	13,000	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	*7,100*	250	**Yes**
IR25MW15A1	ORIG	01-Feb-01	120,000[Z]	5,000	**Yes**
IR25MW15A2	ORIG	10-Jun-94	8,600[Z]	1,200	**Yes**
IR25MW15A2	DUP	10-Jun-94	7,300[Z]	1,200	**Yes**
IR25MW15A2	ORIG	11-Aug-94	**11,000**	1,200	**Yes**
IR25MW15A2	ORIG	26-May-95	3,100	250	**Yes**
IR25MW15A2	DUP	26-May-95	3,200	250	**Yes**
IR25MW15A2	DUP	27-Apr-99	*1,000* [YJ7]	50	No
IR25MW15A2	ORIG	27-Apr-99	*1,000* [YJ7]	50	No
IR25MW15A2	ORIG	16-Aug-00	4,000[Z]	200	**Yes**
IR25MW15A2	ORIG	11-Jan-01	2,100	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	2,100	50	**Yes**
IR25MW15A2	ORIG	01-Feb-01	3,000[Z]	200	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TPH (Surface Water Criteria = 1,400 µg/L) A-Aquifer (Continued)					
IR25MW18A	ORIG	18-Jan-01	**12,000**	500	**Yes**
IR25MW18A	ORIG	01-Feb-01	**12,000**	500	**Yes**
IR25MW18A	ORIG	13-Mar-01	*5,000* [Z]	500	**Yes**
IR25MW900B	ORIG	11-Jan-01	**4,100**	250	**Yes**
IR25MW900B	ORIG	01-Feb-01	*3,900*	250	**Yes**
IR25MW19A	ORIG	22-Jan-01	**84,000**	5,000	**Yes**
IR25MW19A	ORIG	05-Feb-01	45,000	2,500	**Yes**
IR25MW19A	ORIG	14-Mar-01	*24,000* [Z]	2,000	**Yes**
IR25MW901B	ORIG	11-Jan-01	*3,600*	250	**Yes**
IR25MW901B	ORIG	01-Feb-01	6,100	250	**Yes**
IR25MW901B	ORIG	31-Jul-02	**13,000** [GZ]	500	**Yes**
IR25MW901B	ORIG	01-Aug-02	11,000 [GZ]	500	**Yes**
IR25MW901B	ORIG	01-Aug-02	8,100 [Z]	250	**Yes**
IR25MW901B	ORIG	02-Aug-02	7,200 [Z]	250	**Yes**
IR25MW902B	ORIG	16-Jan-01	23,000	500	**Yes**
IR25MW902B	ORIG	01-Feb-01	23,000	500	**Yes**
IR28MW211F	ORIG	06-Jul-94	550	50	No
IR28MW211F	DUP	06-Jul-94	5,100	500	**Yes**
IR28MW211F	DUP	27-Jun-95	14,000 [Z]	2,500	**Yes**
IR28MW211F	ORIG	27-Jun-95	**16,000** [Z]	2,500	**Yes**
IR28MW211F	ORIG	11-Dec-95	8,800 [Z]	500	**Yes**
IR28MW211F	ORIG	20-Mar-96	6,200 [Z]	500	**Yes**
IR28MW211F	ORIG	07-Mar-01	*180*	50	No
IR28MW211F	ORIG	10-Apr-01	190	50	No
IR28MW211F	ORIG	10-Apr-01	200	50	No
IR28MW936F	ORIG	12-Mar-01	*5,000*	50	**Yes**
IR28MW936F	ORIG	05-Apr-01	**5,800**	250	**Yes**
IR58MW31A	ORIG	30-Jun-94	**12,000** [J3]	1,200	**Yes**
IR58MW31A	ORIG	20-Jun-95	7,000 [Z]	500	**Yes**
IR58MW31A	ORIG	28-Nov-95	5,400 [Z]	500	**Yes**
IR58MW31A	ORIG	28-Apr-99	900 [YJ7]	50	No
IR58MW31A	ORIG	11-Aug-00	2,000 [DZ]	200	**Yes**

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
TPH (Surface Water Criteria = 1,400 µg/L) A-Aquifer (Continued)					
IR58MW31A	DUP	11-Aug-00	5,000[DZ]	500	**Yes**
IR58MW31A	ORIG	24-Jan-01	*130*	50	No
IR58MW31A	ORIG	15-Feb-01	430	50	No
IR58MW31A	ORIG	22-Feb-01	400[Z]	50	No
IR58MW31A	ORIG	07-Jun-04	1,200	200	No
IR58MW31A	ORIG	10-Sep-04	4,500	100	**Yes**
IR58MW31A	ORIG	22-Nov-04	1,800	100	**Yes**
Chlorobenzene (Surface Water Criteria = 129 µg/L) A-Aquifer					
IR25MW11A	ORIG	28-Dec-93	10,000[U]	10,000	Limit > criteria
IR25MW11A	DUP	28-Dec-93	1,000[U]	1,000	Limit > criteria
IR25MW11A	ORIG	07-Jun-95	*78*	10	No
IR25MW11A	ORIG	24-Aug-00	**150**	50	**Yes**
IR25MW15A1	ORIG	13-Jun-94	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	11-Aug-94	10,000[U]	10,000	Limit > criteria
IR25MW15A1	ORIG	26-May-95	*420* [J3]	10	**Yes**
IR25MW15A1	ORIG	05-Oct-95	5,000[U]	5,000	Limit > criteria
IR25MW15A1	ORIG	05-Oct-95	2,200	2,000	**Yes**
IR25MW15A1	DUP	05-Oct-95	2,200	2,000	**Yes**
IR25MW15A1	ORIG	05-Feb-98	1,700[J3]	100	**Yes**
IR25MW15A1	ORIG	17-Aug-00	1,900	250	**Yes**
IR25MW15A1	ORIG	11-Jan-01	**2,300**	10	**Yes**
IR25MW15A1	ORIG	31-Jan-01	1,600	1,000	**Yes**
IR25MW15A1	ORIG	31-Jan-01	1,000[U]	1,000	Limit > criteria
IR25MW15A1	ORIG	01-Feb-01	1,800	1,000	**Yes**
IR25MW15A1	ORIG	01-Feb-01	2,000	160	**Yes**
IR25MW15A1	ORIG	13-Aug-02	940	50	**Yes**
IR25MW19A	ORIG	29-Jan-98	**330**[J3]	200	**Yes**
IR25MW19A	ORIG	22-Jan-01	320	100	**Yes**
IR25MW19A	ORIG	05-Feb-01	500[U]	500	Limit > criteria
IR25MW19A	ORIG	14-Mar-01	*120* [J]	200	Limit > criteria
IR25MW905B	ORIG	16-Jan-01	*100*	1	No
IR25MW905B	ORIG	31-Jan-01	**140**	5	**Yes**
IR25MW905B	ORIG	31-Jan-01	**140**	5	**Yes**
IR25MW905B	ORIG	31-Jan-01	120	5	No
IR25MW905B	ORIG	01-Feb-01	110	10	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chlorobenzene (Surface Water Criteria = 129 µg/L) A-Aquifer (Continued)					
IR28MW909A	ORIG	24-Jan-01	3,200	50	**Yes**
IR28MW909A	ORIG	08-Feb-01	*2,000*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	*2,000*	100	**Yes**
IR28MW909A	ORIG	08-Feb-01	**9,900**	100	**Yes**
IR28MW909A	ORIG	12-Feb-01	2,700	50	**Yes**
IR28MW911A	ORIG	25-Jan-01	1,300	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	*790*	50	**Yes**
IR28MW911A	ORIG	08-Feb-01	850	50	**Yes**
IR28MW911A	ORIG	12-Feb-01	**1,800**	50	**Yes**
IR58MW31A	ORIG	30-Jun-94	500^{U}	500	Limit > criteria
IR58MW31A	ORIG	20-Jun-95	*110*	10	No
IR58MW31A	ORIG	28-Nov-95	250	200	**Yes**
IR58MW31A	ORIG	23-Jan-98	230^{J3}	10	**Yes**
IR58MW31A	ORIG	11-Aug-00	920	53	**Yes**
IR58MW31A	DUP	11-Aug-00	890	140	**Yes**
IR58MW31A	ORIG	24-Jan-01	530	10	**Yes**
IR58MW31A	ORIG	15-Feb-01	650	50	**Yes**
IR58MW31A	ORIG	22-Feb-01	280	15	**Yes**
IR58MW31A	ORIG	15-Aug-02	1,200	25	**Yes**
IR58MW31A	ORIG	07-Jun-04	1,000	12.5	**Yes**
IR58MW31A	ORIG	10-Sep-04	**3,700**	125	**Yes**
IR58MW31A	ORIG	22-Nov-04	1,400	12.5	**Yes**
Cyanide (Surface Water Criteria = 1 µg/L) A-Aquifer					
PA50MW03A	ORIG	17-Mar-93	10^{U}	10	Limit > criteria
PA50MW03A	DUP	17-Mar-93	10^{U}	10	Limit > criteria
PA50MW03A	ORIG	25-Mar-96	*1.2*	1	**Yes**
PA50MW03A	ORIG	08-Jul-02	10^{U}	10	Limit > criteria
PA50MW03A	DUP	08-Jul-02	10^{U}	10	Limit > criteria
PA50MW03A	ORIG	08-Jun-04	10^{U}	10	Limit > criteria
PA50MW03A	ORIG	01-Sep-04	10^{U}	10	Limit > criteria
PA50MW03A	ORIG	19-Nov-04	10^{U}	10	Limit > criteria
PA50MW03A	DUP	19-Nov-04	10^{U}	10	Limit > criteria
1,4-Dichlorobenzene (Surface Water Criteria = 129 µg/L) B-Aquifer					
IR28MW914A	ORIG	1/25/2001	170	50	**Yes**
IR28MW914A	ORIG	2/8/2001	72	50	No
IR28MW914A	ORIG	2/8/2001	71	50	No
IR28MW914A	ORIG	2/8/2001	66	50	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
1,4-Dichlorobenzene (Surface Water Criteria = 129 µg/L) B-Aquifer (Continued)					
IR28MW914A	ORIG	2/15/2001	180	50	**Yes**
IR28MW914A	ORIG	2/15/2001	170	50	**Yes**
Chromium (Surface Water Screening Criteria = 50 µg/L) F-WBZ					
IR06MW54F	ORIG	15-Dec-93	51.6	2.5	**Yes**
IR06MW54F	DUP	15-Dec-93	51.9	2.5	**Yes**
IR06MW54F	ORIG	16-Aug-94	55	0.7	**Yes**
IR06MW54F	ORIG	25-May-95	62.1	1	**Yes**
IR06MW54F	ORIG	07-Jun-02	*45.1* [U]	0.05	No
IR06MW54F	ORIG	08-Jun-04	73.7	5	**Yes**
IR06MW54F	ORIG	02-Sep-04	69.7	5	**Yes**
IR06MW54F	ORIG	09-Sep-04	66.7	5	**Yes**
IR06MW54F	ORIG	22-Nov-04	**76.2**	5	**Yes**
IR58MW25F	ORIG	12-Jul-94	60.6 [J2]	0.7	**Yes**
IR58MW25F	ORIG	21-Jun-95	60.8	1.8	**Yes**
IR58MW25F	ORIG	05-Dec-95	63.1	0.5	**Yes**
IR58MW25F	ORIG	16-Aug-00	**68.5**	1.7	**Yes**
IR58MW25F	ORIG	05-Mar-01	64	0.7	**Yes**
IR58MW25F	ORIG	26-Jun-02	*36.1*	3	No
IR58MW25F	ORIG	08-Jun-04	58.2	5	**Yes**
IR58MW25F	ORIG	02-Sep-04	59.1	5	**Yes**
IR58MW25F	DUP	02-Sep-04	55.4	5	**Yes**
IR58MW25F	ORIG	09-Sep-04	55.5	5	**Yes**
IR58MW25F	DUP	09-Sep-04	54.8	5	**Yes**
IR58MW25F	ORIG	23-Nov-04	61.2	5	**Yes**
Chromium VI (Surface Water Screening Criteria = 50 µg/L) F-WBZ					
IR06MW54F	ORIG	07-Jun-02	60	10	**Yes**
IR06MW54F	ORIG	08-Jun-04	63	20	**Yes**
IR06MW54F	ORIG	02-Sep-04	*50*	20	No
IR06MW54F	ORIG	09-Sep-04	60	20	**Yes**
IR06MW54F	ORIG	22-Nov-04	**70**	20	**Yes**
IR58MW25F	ORIG	16-Aug-00	**60**	10	**Yes**
IR58MW25F	ORIG	05-Mar-01	50	10	No
IR58MW25F	ORIG	26-Jun-02	*30*	10	No
IR58MW25F	ORIG	08-Jun-04	54	20	**Yes**
IR58MW25F	ORIG	02-Sep-04	50	20	No
IR58MW25F	DUP	02-Sep-04	50	20	No
IR58MW25F	ORIG	09-Sep-04	50	20	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Sampling Location	Sample Type	Sample Date	Result (µg/L)	Reporting Limit (µg/L)	Exceeded Criteria
Chromium VI (Surface Water Screening Criteria = 50 µg/L) F-WBZ (Continued)					
IR58MW25F	DUP	09-Sep-04	50	20	No
IR58MW25F	ORIG	23-Nov-04	50	20	No
Zinc (Surface Water Criteria = 81 µg/L) F-WBZ					
IR28MW173B	ORIG	30-Nov-94	24.5^{UJ4}	24.5	No
IR28MW173B	DUP	30-Nov-94	14.1^{UJ4}	14.1	No
IR28MW173B	ORIG	23-Jun-95	**143^{J9}**	0.3	**Yes**
IR28MW173B	DUP	23-Jun-95	53.1^{U}	53.1	No
IR28MW173B	ORIG	07-Dec-95	57.5	1.2	No
IR28MW173B	ORIG	29-Aug-01	20^{U}	20	No
IR28MW173B	ORIG	16-Jan-02	28	20	No
IR28MW173B	ORIG	11-Jul-02	13^{J3}	20	No
IR28MW173B	ORIG	08-Aug-02	*11.3*	2	No
TPH (Surface Water Criteria = 1,400 µg/L) F-WBZ					
IR28MW932F	ORIG	12-Mar-01	**3,300**	50	**Yes**
IR28MW932F	ORIG	09-Apr-01	*2,600*	50	**Yes**
Benzene (Surface Water Criteria = 700 µg/L) F-WBZ					
IR28MW934F5	ORIG	06-Mar-01	**8,100**	200	**Yes**
IR28MW934F5	ORIG	09-Apr-01	5^{U}	5	No
IR28MW934F5	ORIG	13-Nov-02	5^{U}	5	No
IR28MW934F5	ORIG	08-Jan-03	*1^{U}*	1	No
IR28MW934F5	ORIG	06-Feb-03	*1^{U}*	1	No
IR28MW934F5	ORIG	21-Mar-03	*1^{U}*	1	No
Chlorobenzene (Surface Water Criteria = 129 µg/L) F-WBZ					
IR28MW914A	ORIG	25-Jan-01	990	50	**Yes**
IR28MW914A	ORIG	08-Feb-01	320	50	**Yes**
IR28MW914A	ORIG	08-Feb-01	310	50	**Yes**
IR28MW914A	ORIG	08-Feb-01	*300*	50	**Yes**
IR28MW914A	ORIG	15-Feb-01	**1,000**	50	**Yes**
IR28MW914A	ORIG	15-Feb-01	**1,000**	50	**Yes**
Ethylbenzene (Surface Water Criteria = 86 µg/L) F-WBZ					
IR28MW934F5	ORIG	06-Mar-01	**200**	200	**Yes**
IR28MW934F5	ORIG	09-Apr-01	5^{U}	5	No
IR28MW934F5	ORIG	13-Nov-02	5^{U}	5	No
IR28MW934F5	ORIG	08-Jan-03	*1^{U}*	1	No
IR28MW934F5	ORIG	06-Feb-03	*1^{U}*	1	No
IR28MW934F5	ORIG	21-Mar-03	*1^{U}*	1	No

TABLE G-6: COPEC SURFACE WATER CRITERIA EXCEEDANCE EVALUATION (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Notes:	**Bold** results indicate the maximum detected concentration for each well.
	Italicized results indicate the lowest concentration identified for each well.
	Surface water criteria derivation discussed in Section G2.0 of this appendix, and listed in Table G-1.
	The listed detection limit for cyanide reflects the maximum sensitivity of current, routinely used analytical methods. The listed detection limit will be used as the project screening criterion unless reasonable grounds are established for pursuing non-routine methods.
--	Not applicable
µg/L	Microgram gram per liter
G	Pattern resembles gasoline
HGAL	Hunters Point groundwater ambient level
J	Estimated value
U	Nondetected concentration
PCB	Polychlorinated biphenyl
TPH	Total petroleum hydrocarbons

Qualifier Comment Code:

J1	Instrument/system performance
J2	Matrix duplicate
J3	Accuracy - blank spike, surrogate spike, matrix spike
J4	Serial dilution
J5	Holding time
J6	Results estimated due to field duplicate precision violations
J7	Initial and continuing calibration
J8	Exceeds calibration range
J9	Metals - interference check sample/Organics - percent different between columns
J0	Internal standards
Y	Chromatogram indicates the presence of petroleum fuel
Z	Other peak(s); chromatogram does not suggest the presence of a fuel

TABLE G-7: CHEMICALS ELIMINATED AS CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Chemical	Frequency Exceeding Screening Criteria	Location of Chemical (Aquifer/Remedial Unit)	Table Reference	Date of Most Recent Exceedance[b]
Metals				
Cadmium	1/337	A-Aquifer/C5	G-2	11-Aug-94
Chromium	16/49	F-WBZ	G-3	23-Nov-04
Chromium VI	6/26	F-WBZ	G-3	22-Nov-04
Copper	14/337	A-Aquifer/C1,C4,C5	G-2	11-Jul-02
Cyanide	1/9	A-Aquifer/(C1)[a]	G-2	25-Mar-96
Lead	3/331	A-Aquifer/C1,C5	G-2	11-Jan-00
Mercury	21/417	A-Aquifer/C1,C4,C5	G-2	28-Aug-01
	1/51	F-WBZ	G-3	7-Mar-2001
Nickel	9/341	A-Aquifer/C1,C4,C5	G-2	20-Jul-01
Silver	1/331	A-Aquifer/C5	G-2	13-Oct-00
Zinc	1/13	B-Aquifer	G-6	23-Jun-95
Volatile Organic Compounds				
1,2,4-Trichlorobenzene	2/1051	A-Aquifer/C5	G-2	22-Jan-01
1,2-Dichlorobenzene	80/1065	A-Aquifer/ C2, C5	G-2	22-Nov-04
1,3-Dichlorobenzene	9/1064	A-Aquifer/C2, C5	G-2	13-Aug-02
1,4-Dichlorobenzene	69/1064	A-Aquifer/ C2, C4, C5	G-2	22-Nov-04
	3/77	B-Aquifer	G-3	15-Feb-01
1,2-Dichloroethane	13/1083	A-Aquifer/C5	G-2	13-Aug-02
1,2-Dichloroethene (Total)	1/287	A-Aquifer/C5	G-2	11-Aug-94
Chlorobenzene	38/1067	A-Aquifer/C2, C5	G-2	22-Nov-04
	6/77	B-Aquifer	G-3	15-Feb-01
cis-1,2-Dichloroethene	2/796	A-Aquifer/C5	G-2	17-Aug-00
Benzene	1/130	F-WBZ	G-3	6-Mar-01
Ethylbenzene	1/130	F-WBZ	G-3	6-Mar-01
Tetrachloroethene	51/1083	A-Aquifer/C2, C5	G-2	13-Aug-02
Trichloroethene	108/1082	A-Aquifer/C2, C5	G-2	2-Sept-03
Semivolatile Organic Compounds				
2,4-Dinitrotoluene	1/403	A-Aquifer/C5	G-2	7-Jun-95
Chrysene	1/418	A-Aquifer/C5	G-2	7-Jun-95
Fluoranthene	9/417	A-Aquifer/C5	G-2	10-Nov-03
Fluorene	9/418	A-Aquifer/C5	G-2	24-Aug-00
Naphthalene	4/603	A-Aquifer/C5	G-2	10-Jan-92

TABLE G-7: CHEMICALS ELIMINATED AS CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Chemical	Frequency Exceeding Screening Criteria	Location of Chemical (Aquifer/Remedial Unit)	Table Reference	Date of Most Recent Exceedance[b]
Semivolatile Organic Compounds (Continued)				
Pentachlorophenol	1/393	A-Aquifer/C5	G-2	7-Jun-95
Phenanthrene	10/418	A-Aquifer/C5	G-2	24-Aug-00
Phenol	1/393	A-Aquifer/C5	G-2	11-Aug-94
Pesticides and Polychlorinated Biphenyls				
4,4'-DDT	7/247	A-Aquifer/C1,C2,C5,(C4)[a]	G-2	7-Jun-04
alpha-Chlordane	7/247	A-Aquifer/C5,(C4)[a]	G-2	10-Nov-03
Aroclor-1248	1/291	A-Aquifer/(C4)[a]	G-2	6-Jun-94
Aroclor-1260	31/291	A-Aquifer/C1,C2,C5,(C4)[a]	G-2	1-Dec-04
Endosulfan II	2/247	A-Aquifer/C5,(C4)[a]	G-2	1-May-01
Endrin	5/247	A-Aquifer/C2, C5	G-2	20-May-03
Gamma-Chlordane	5/247	A-Aquifer/C5,(C4)[a]	G-2	8-Aug-02
Heptachlor	2/247	A-Aquifer/C2,C5	G-2	10-Sep-04
Heptachlor Epoxide	5/243	A-Aquifer/C2, C5	G-2	22-Feb-01
Heptachlor Epoxide	1/40	F-WBZ	G-3	25-May-95
Methoxychlor	1/247	A-Aquifer/C5	G-2	20-May-03
Total Petroleum Hydrocarbons				
TPH	2/53	F-WBZ	G-3	9-Apr-01

Notes:

a Well not located in area classified as a remedial unit. Closest remedial unit is in parentheses.

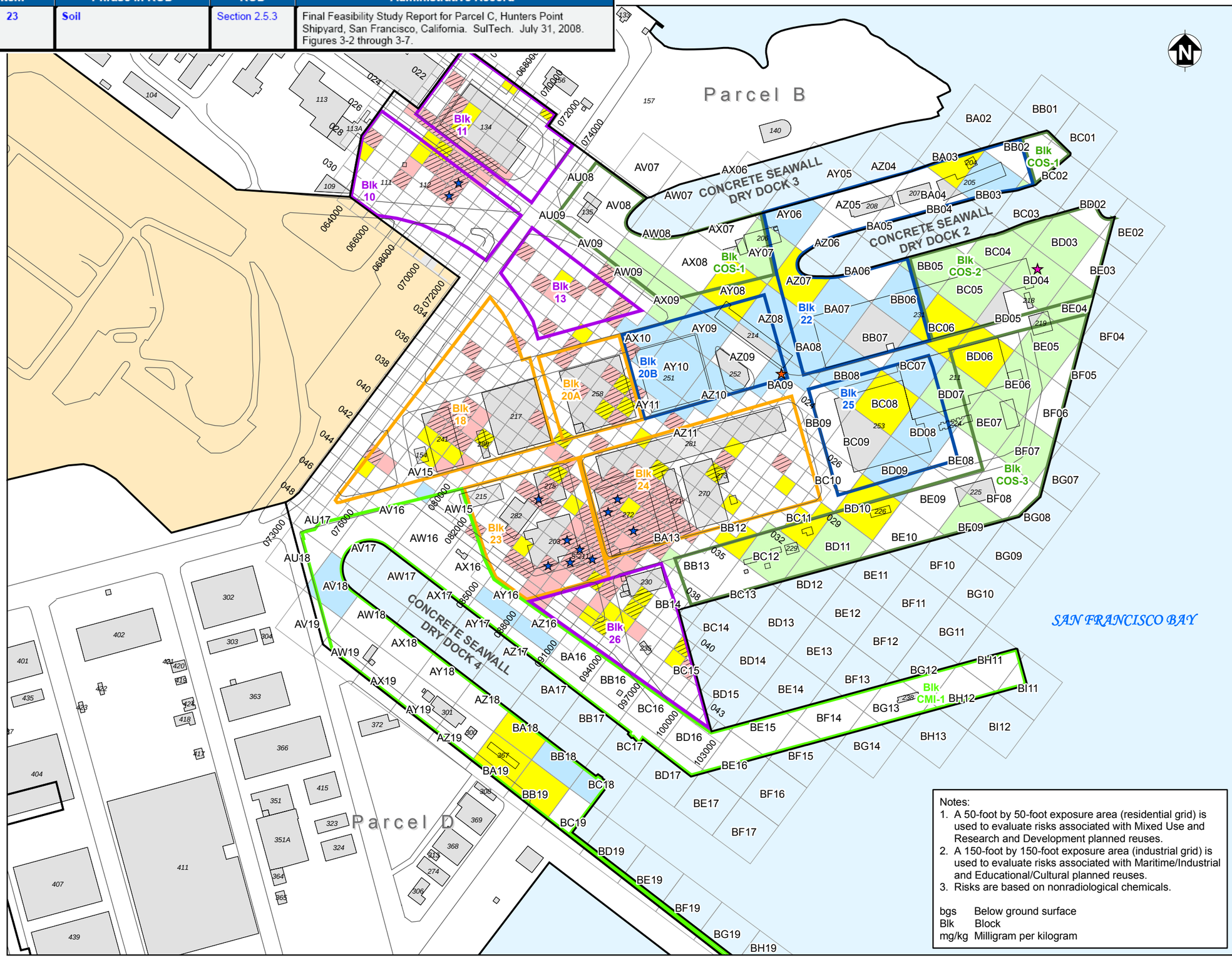
b See Table G-6 for exceedances of criteria. This is the most recent exceedance through 2004.

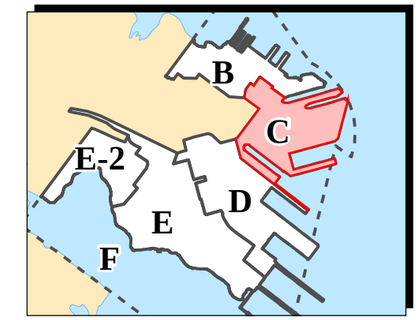
DDT Dichlorodiphenyltrichloroethane

F-WBZ Bedrock water-bearing zone

TPH Total petroleum hydrocarbons

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
23	Soil	Section 2.5.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Figures 3-2 through 3-7.





Location Map

- Residential Lead Concentration > 155 mg/kg
- Industrial Lead Concentration > 800 mg/kg
- Recreational Lead Concentration > 155 mg/kg
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Recreational Cancer Risk > 1E-06
- Residential, Industrial, and Recreational Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- No Data

Parcel C Redevelopment Blocks:

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

0 300 600
Scale in Feet

Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Risks are based on nonradiological chemicals.

bgs Below ground surface
Blk Block
mg/kg Milligram per kilogram

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-2
TOTAL RISK - SURFACE SOIL (0 TO 2 FEET BGS) RISKS BASED ON PLANNED REUSE
Feasibility Study Report for Parcel C

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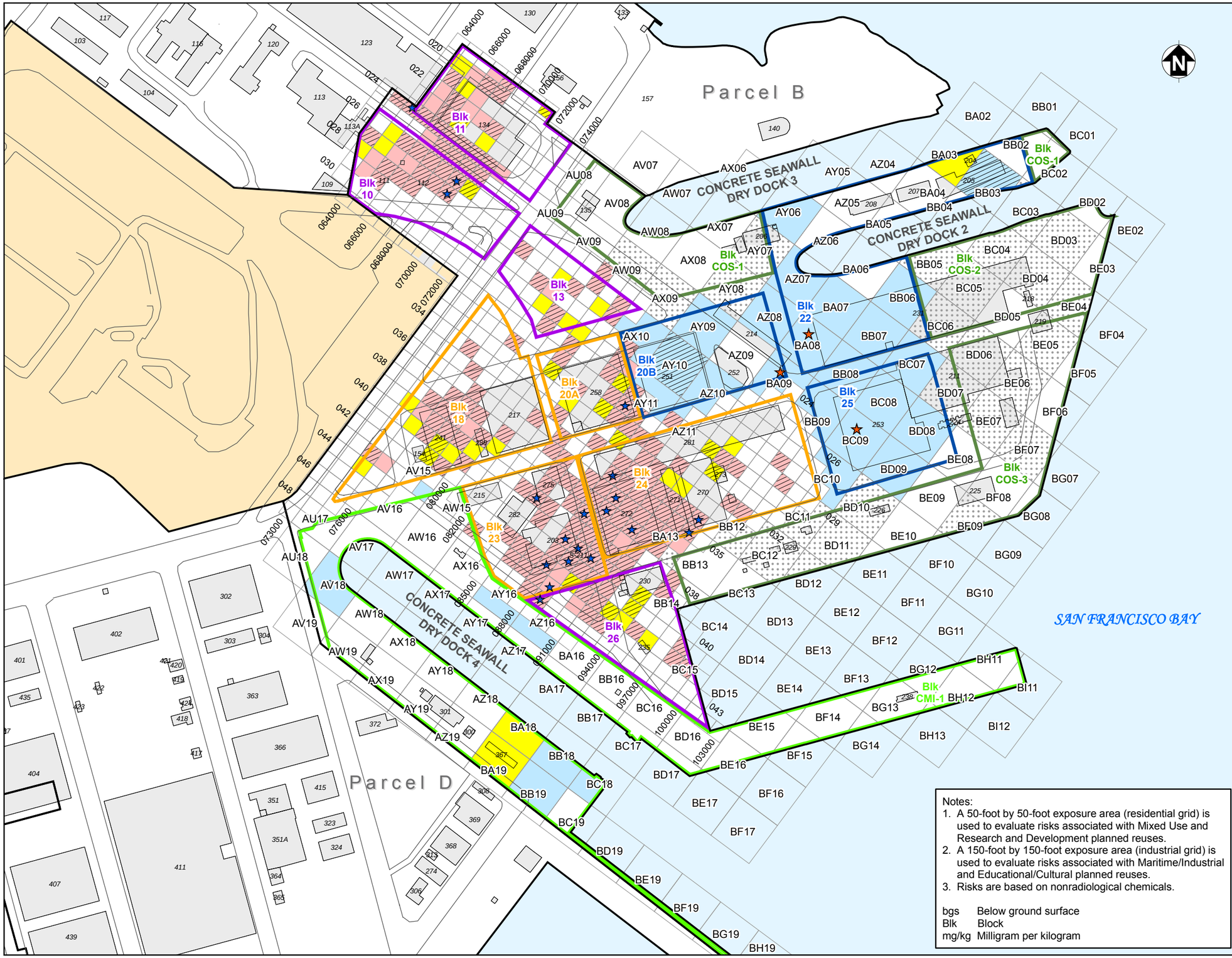

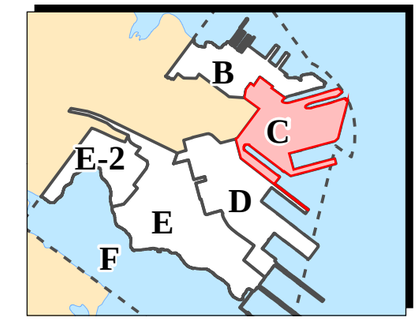

Location Map

- Residential Lead Concentration > 155 mg/kg
- Industrial Lead Concentration > 800 mg/kg
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Residential and Industrial Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- Data Available; Recreational Scenario Not Evaluated for Subsurface Soil
- No Data

Parcel C Redevelopment Blocks:

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

0 300 600
Scale in Feet

SulTech

Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Risks are based on nonradiological chemicals.

bgs Below ground surface
Blk Block
mg/kg Milligram per kilogram

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-3
TOTAL RISK - SUBSURFACE SOIL (0 TO 10 FEET BGS) RISKS BASED ON PLANNED REUSE
Feasibility Study Report for Parcel C

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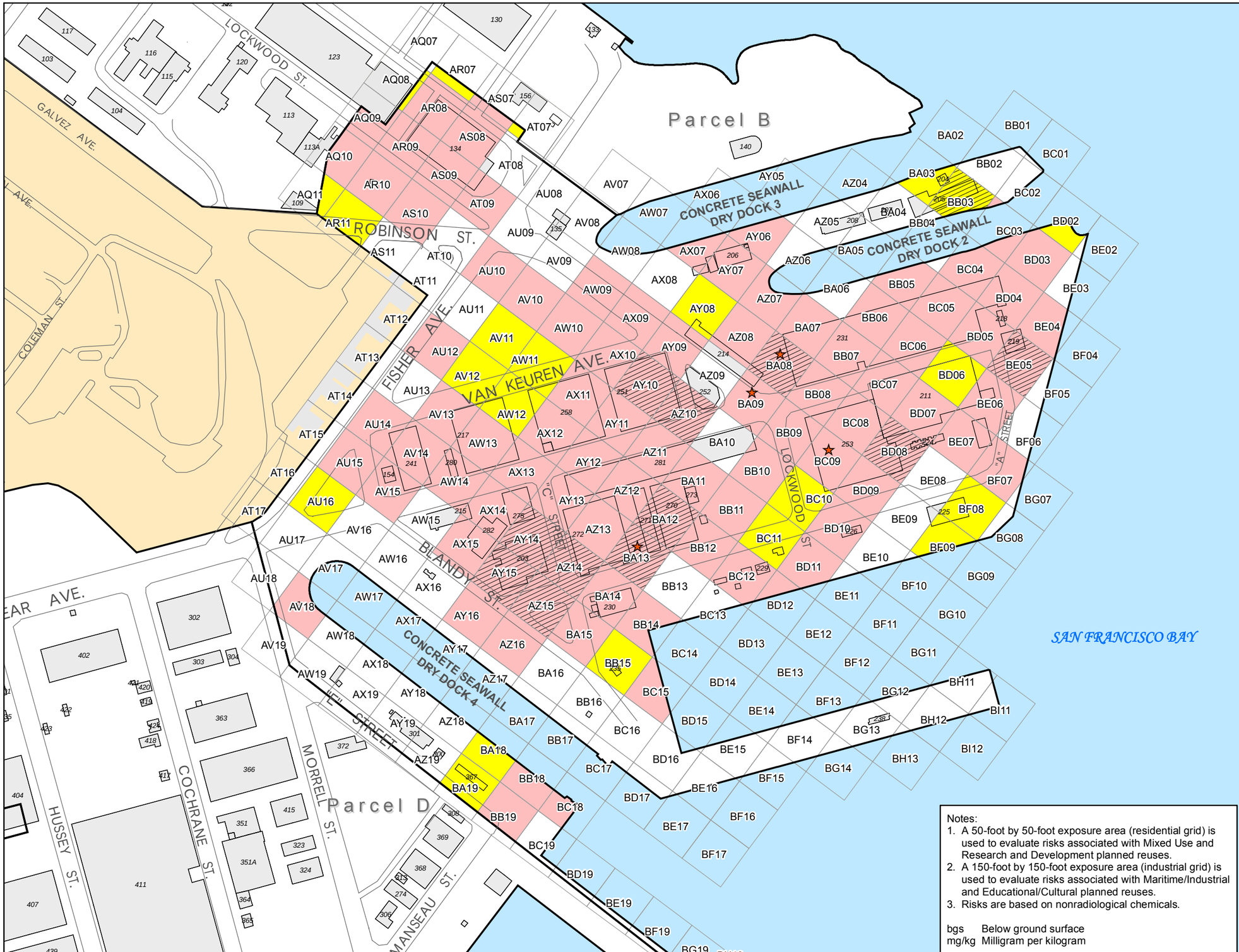
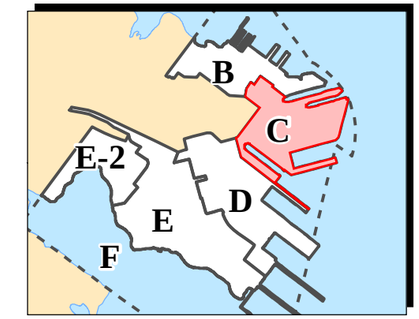




Location Map

- Industrial Lead Concentration > 800 mg/kg
- Construction Worker Cancer Risk > 1E-06
- Construction Worker Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- No Data
- Parcel Boundary
- Non-Navy Property
- Building
- Road

0 300 600

Scale in Feet

SulTech

Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Risks are based on nonradiological chemicals.

bgs Below ground surface
mg/kg Milligram per kilogram

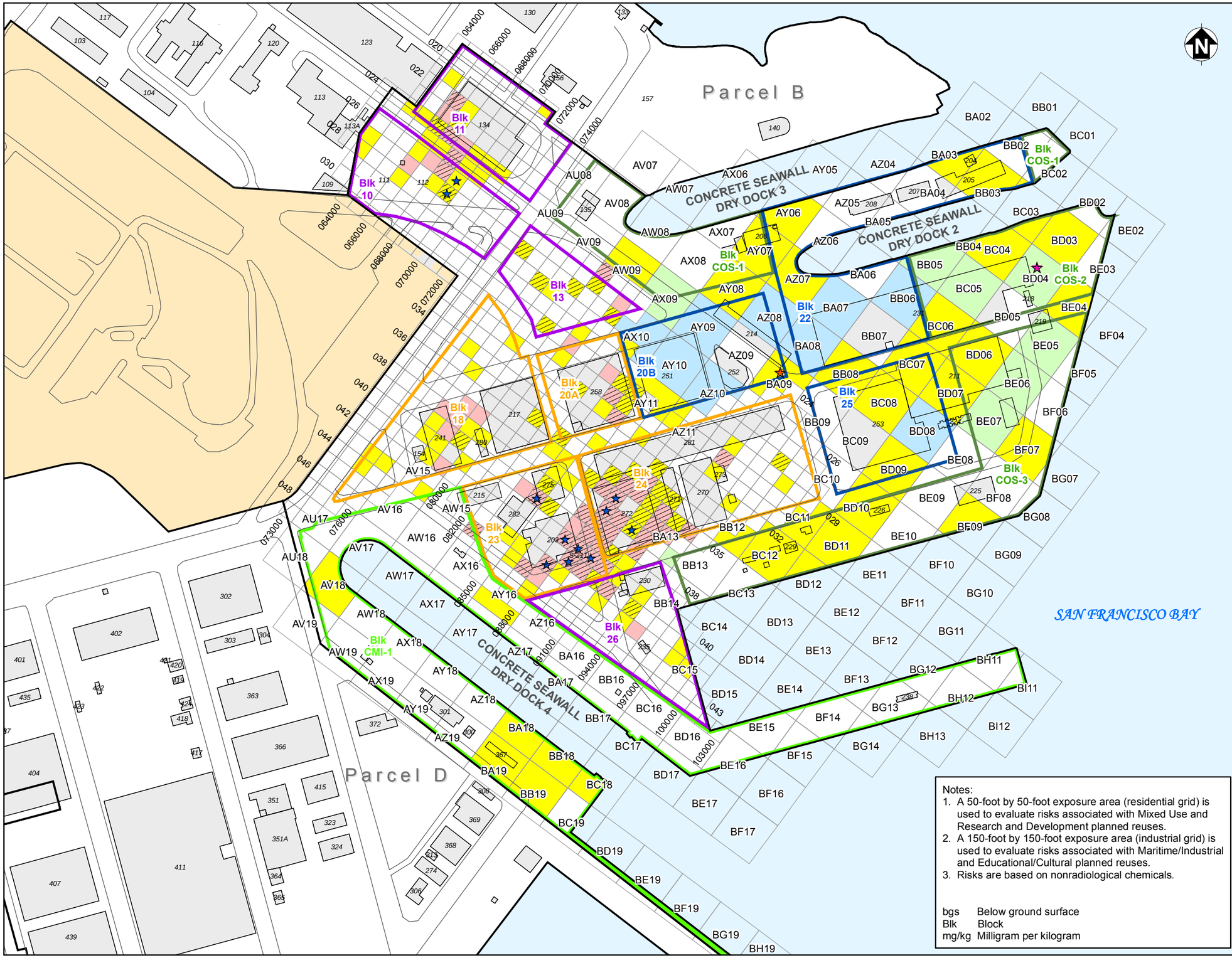
Hunters Point Shipyard, San Francisco, California

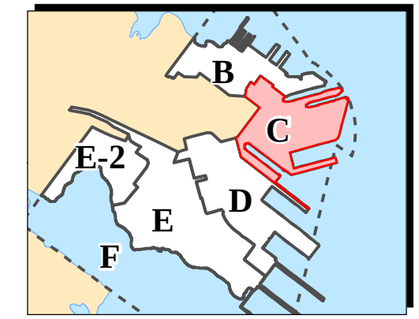
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-4
TOTAL RISK - SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER EXPOSURE SCENARIO

Feasibility Study Report for Parcel C

07/29/2008 O:\Hunters Point\Projects\Parcel_C\ParcelC FS\risk\May2007\Fig3-4_TR010ConStruct.mxd TtEMI-DN Kurt.Cholak





Location Map

- Residential Lead Concentration > 155 mg/kg
- Industrial Lead Concentration > 800 mg/kg
- Recreational Lead Concentration > 155 mg/kg
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Recreational Cancer Risk > 1E-06
- Residential, Industrial, and Recreational Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- No Data

Parcel C Redevelopment Blocks:

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

0 300 600

Scale in Feet

SulTech

Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Risks are based on nonradiological chemicals.

bgs Below ground surface
Blk Block
mg/kg Milligram per kilogram

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-5
INCREMENTAL RISK - SURFACE SOIL (0 TO 2 FEET BGS) RISKS BASED ON PLANNED REUSE

Feasibility Study Report for Parcel C

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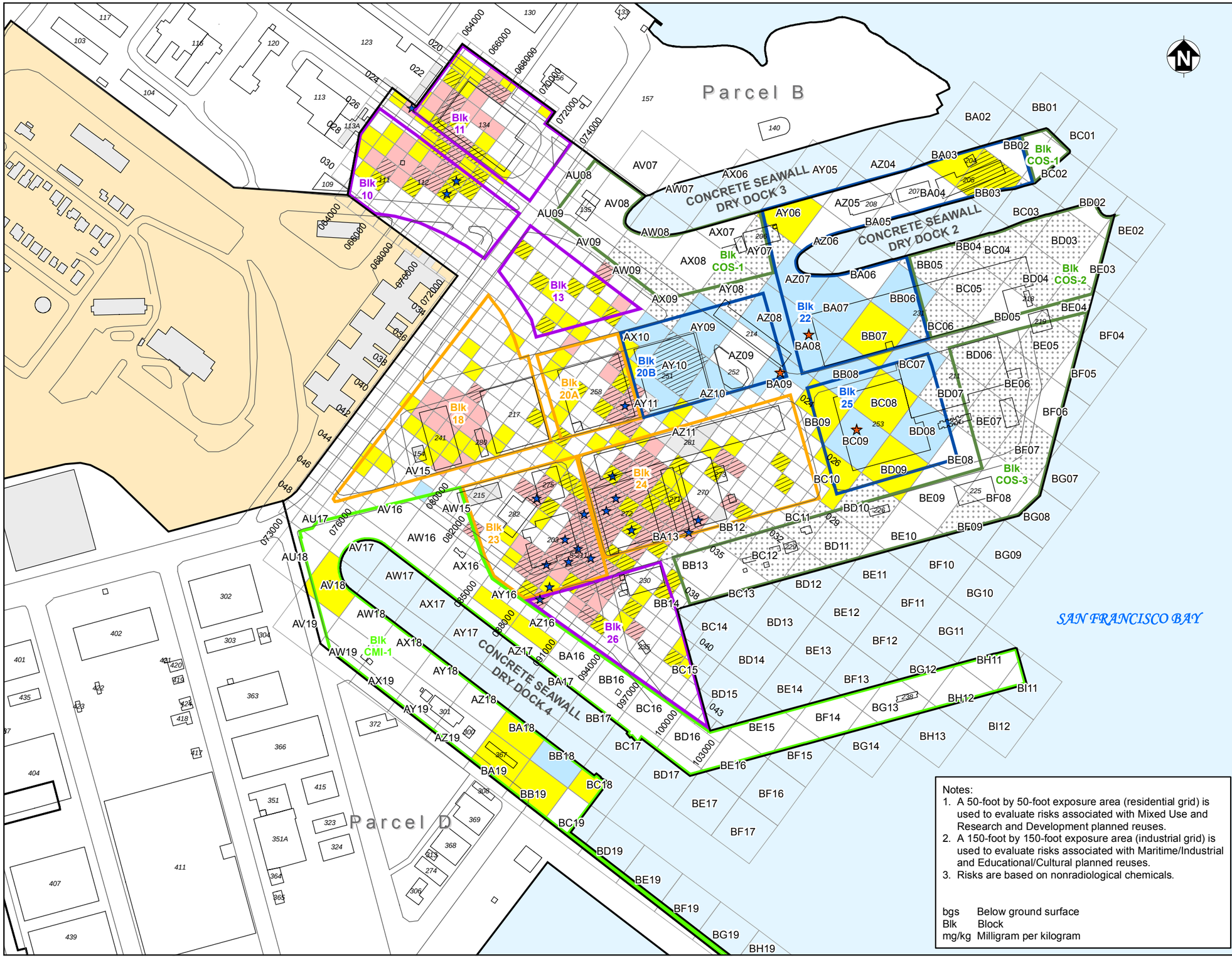

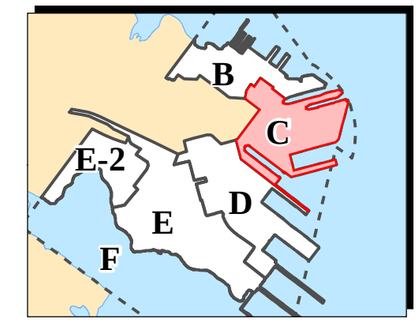

Location Map

- Residential Lead Concentration > 155 mg/kg
- Industrial Lead Concentration > 800 mg/kg
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Residential and Industrial Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- Data Available; Recreational Scenario Not Evaluated for Subsurface Soil
- No Data

Parcel C Redevelopment Blocks:

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Parcel Boundary
- Non-Navy Property
- Building
- Road

0 300 600

Scale in Feet

SulTech

Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Risks are based on nonradiological chemicals.

bgs Below ground surface
Blk Block
mg/kg Milligram per kilogram

Hunters Point Shipyard, San Francisco, California

U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-6
INCREMENTAL RISK - SUBSURFACE SOIL (0 TO 10 FEET BGS) RISKS BASED ON PLANNED REUSE

Feasibility Study Report for Parcel C

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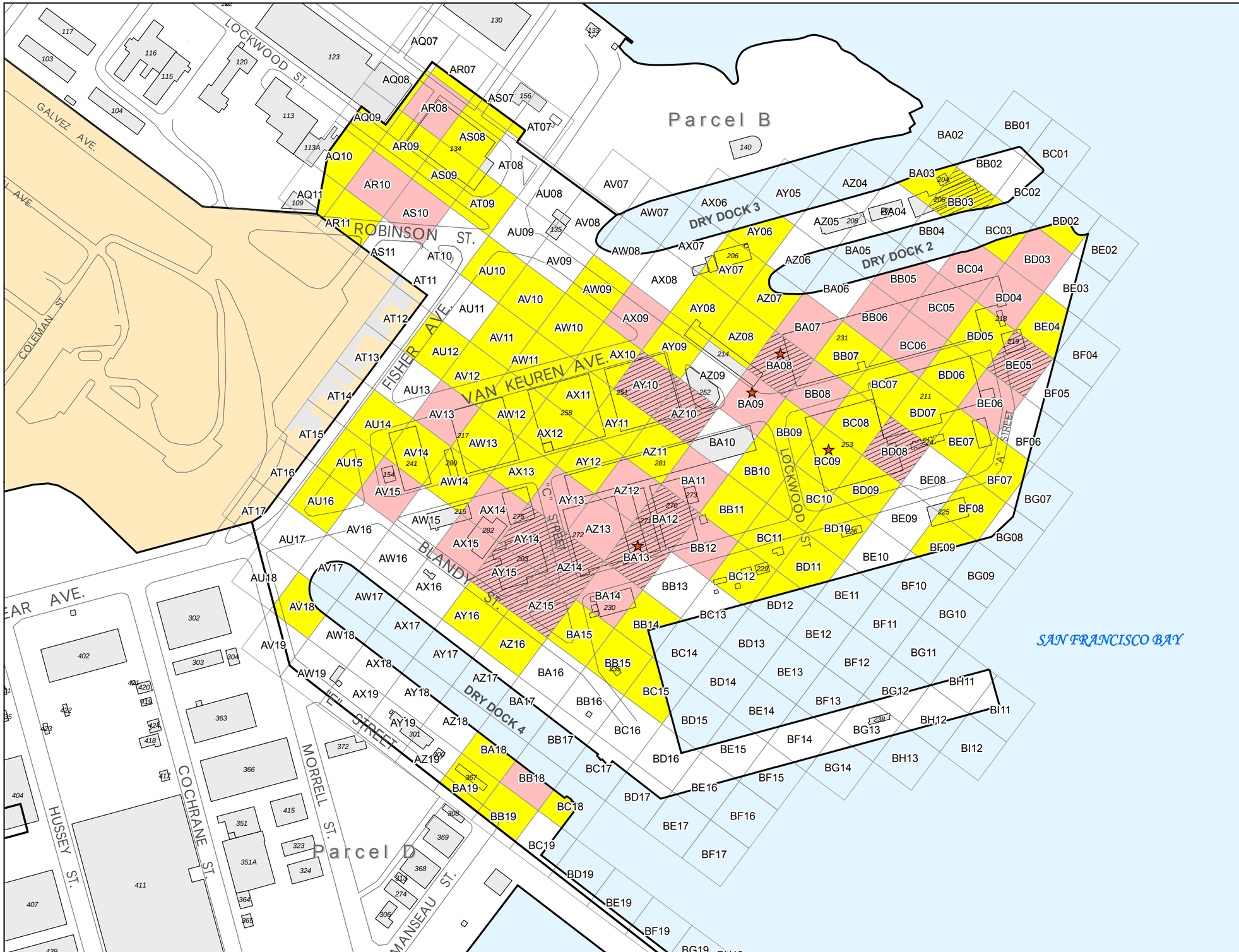

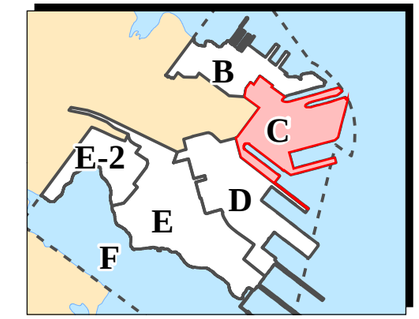

Location Map

- Industrial Lead Concentration > 800 mg/kg
- Construction Worker Cancer Risk > 1E-06
- Construction Worker Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- No Data
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

Notes:
1. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with construction worker exposures.
2. Risks are based on nonradiological chemicals.

bgs Below ground surface
mg/kg Milligram per kilogram

0 300 600
Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-7
INCREMENTAL RISK - SUBSURFACE SOIL (0 TO 10 FEET BGS), CONSTRUCTION WORKER EXPOSURE SCENARIO
Feasibility Study Report for Parcel C

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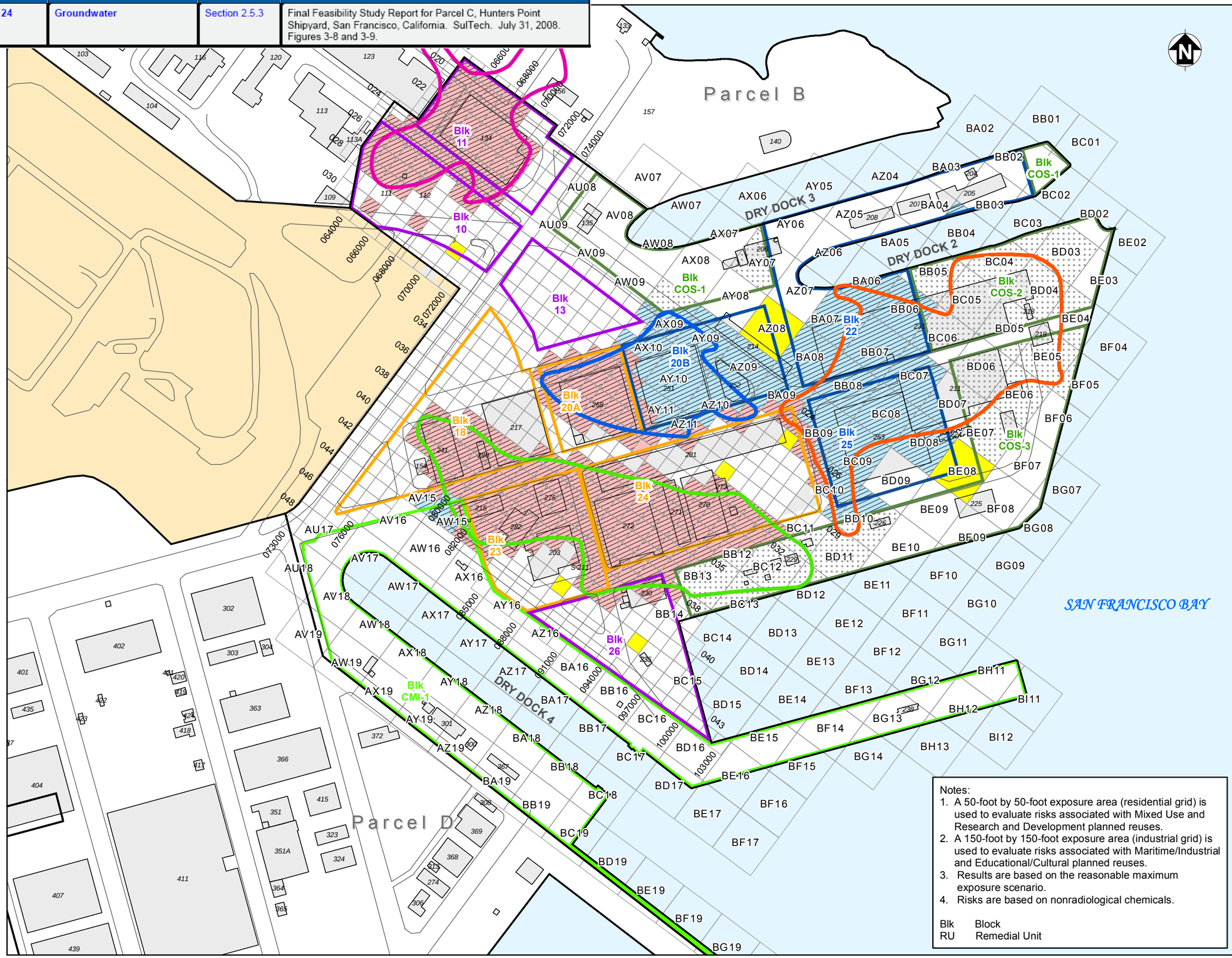
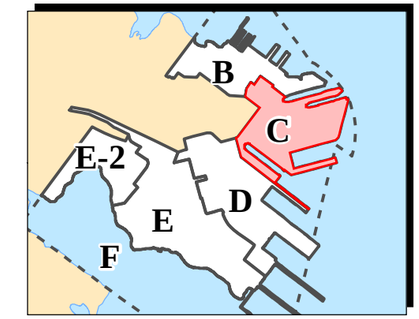
Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
24	Groundwater	Section 2.5.3	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Figures 3-8 and 3-9.





Location Map

- RU-C1 Risk Plume
- RU-C2 Risk Plume
- RU-C4 Risk Plume
- RU-C5 Risk Plume
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- Recreational Scenario Not Evaluated for Vapor Intrusion
- No Data

Parcel C Redevelopment Blocks:

- Research and Development
- Mixed Use
- Open Space
- Maritime/Industrial
- Educational/Cultural
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

0 300 600
Scale in Feet

SulTech

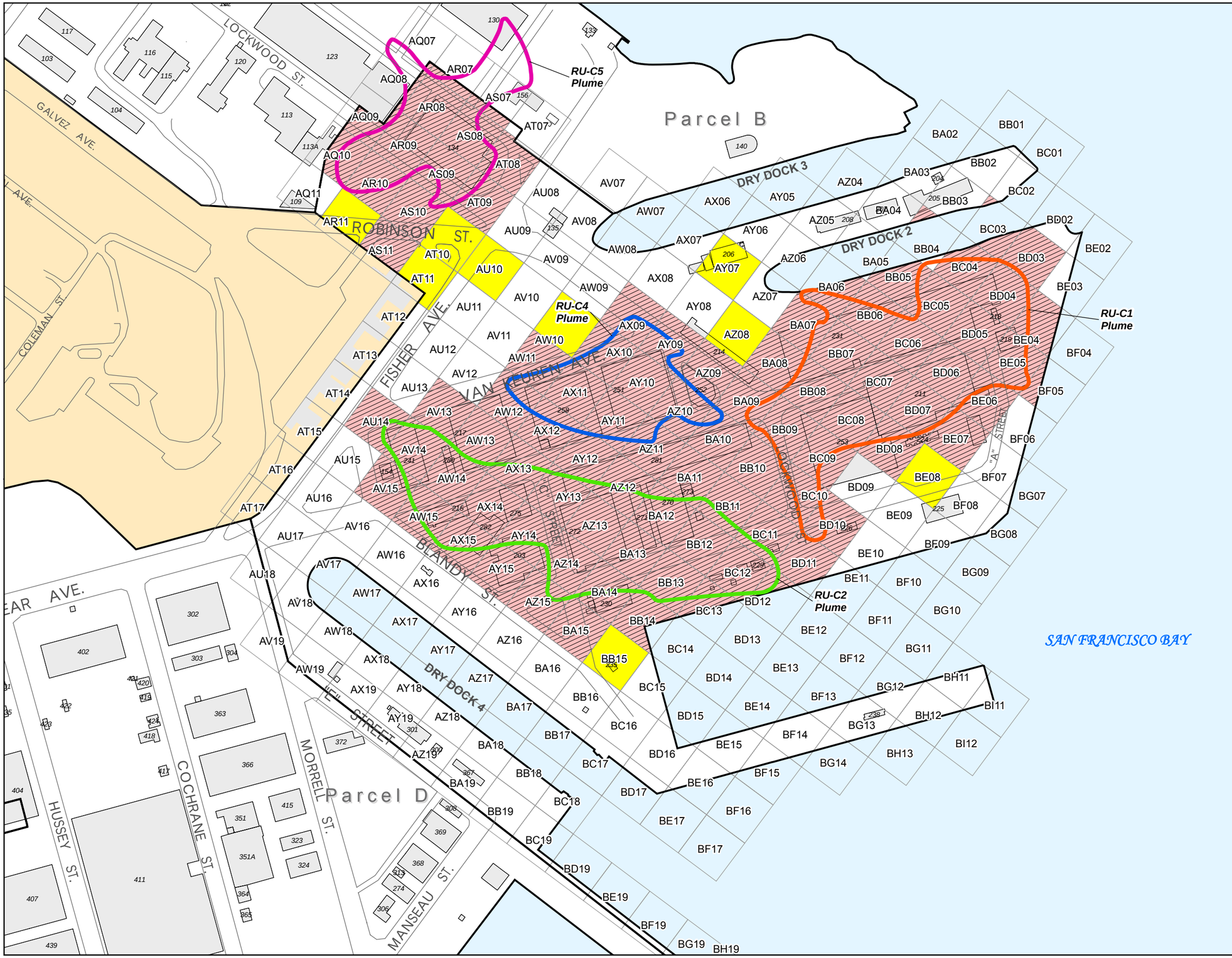
Notes:
1. A 50-foot by 50-foot exposure area (residential grid) is used to evaluate risks associated with Mixed Use and Research and Development planned reuses.
2. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with Maritime/Industrial and Educational/Cultural planned reuses.
3. Results are based on the reasonable maximum exposure scenario.
4. Risks are based on nonradiological chemicals.

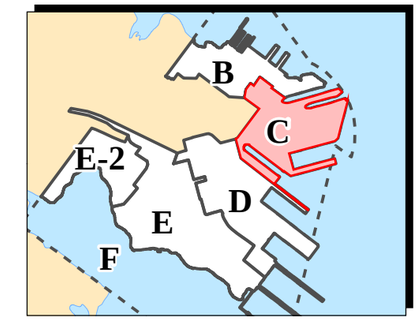
Blk Block
RU Remedial Unit

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-8
GROUNDWATER VAPOR INTRUSION RISKS IN THE A-AQUIFER BASED ON PLANNED REUSE
Feasibility Study Report for Parcel C

07/29/2008 O:\Hunters Point\Projects\Parcel_C\Parcel C FS\risk\May2007\Fig3-8_VaporIntrusionReuse.mxd TtEMI-DN Kurt.Cholak





Location Map

- RU-C1 Risk Plume
- RU-C2 Risk Plume
- RU-C4 Risk Plume
- RU-C5 Risk Plume
- Vapor Intrusion Cancer Risk > 1E-06
- Vapor Intrusion Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index > 1
- No Data
- Parcel Boundary
- Non-Navy Property
- 253 Building
- Road

Notes:
1. A 150-foot by 150-foot exposure area (industrial grid) is used to evaluate risks associated with construction worker exposures.
2. Risks are based on nonradiological chemicals.
3. Results are based on the reasonable maximum exposure scenario.

RU Remedial Unit

0 300 600
Scale in Feet

SulTech

Hunters Point Shipyard, San Francisco, California
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3-9
TRENCH GROUNDWATER RISKS IN A-AQUIFER, CONSTRUCTION WORKER EXPOSURE SCENARIO

Feasibility Study Report for Parcel C

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Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
25	Radiologically impacted structures (storm drains and sanitary sewers) and soil associated with these structures	Section 2.5.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Tables 3-4 to 3-6.

TABLE 3-4

RESRAD RESULTS

Total Dose and Risk		
Impacted Areas	**Radiological Risk[a]**	**Dose[bc]**
Storm Water Sewer System	6.75×10^{-5}	3.09
Sanitary Sewer System	6.75×10^{-5}	3.09
Incremental Dose and Risk		
Impacted Areas	**Radiological Risk[a]**	**Dose[bc]**
Storm Water Sewer System	4.54×10^{-5}	2.08
Sanitary Sewer System	4.54×10^{-5}	2.08

Notes:

[a] Total excess lifetime carcinogen risk.
[b] millirems per year.
[c] Dose is calculated using DCGLs. Actual dose will be determined after remediation.

TABLE 3-5

COMBINED TOTAL RISK FROM CHEMICAL AND RADIOLOGICAL RISKS

Parcel C Impacted Sites	Radiological Risk[b]	Chemical Risk[a,b,c]	Redevelopment Block	Parcel C Grid(s)	Risk Combination Results
Building 203	1.44×10^{-6}	5.00×10^{-4}	23	089040	5.01×10^{-4}
Building 205 and Discharge Channel	1.44×10^{-6}	4.00×10^{-6}	22	BB03	5.40×10^{-6}
Building 211	1.30×10^{-6}	5.00×10^{-5}	25 and COS-3	BE06	5.13×10^{-5}
Building 214	1.44×10^{-6}	5.00×10^{-5}	20B	BA09	5.14×10^{-5}
Building 224	1.48×10^{-6}	4.00×10^{-5}	25	BD08	4.14×10^{-5}
Building 241	8.70×10^{-7}	4.00×10^{-4}	18	079041	4.08×10^{-4}
Building 253	1.29×10^{-6}	4.00×10^{-4}	25	BD08	4.01×10^{-4}
Building 271	1.34×10^{-6}	4.00×10^{-4}	24	093035, 094035	4.01×10^{-4}
Building 272	3.09×10^{-6}	2.00×10^{-3}	24	088036	2.00×10^{-3}
Sanitary Sewer System	6.75×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.72×10^{-3}
Storm Water Sewer System	6.75×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.72×10^{-3}

Notes:

[a] Chemical risk was taken from Revised Feasibility Study Report for Parcel C, Tables 3-2 and 3-3.

[b] Excess lifetime carcinogenic risk.

[c.] The worst case chemical risk was chosen from the girds that the radiologically-impacted buildings or sites overlay.

TABLE 3-6

COMBINED INCREMENTAL RISK FROM CHEMICAL AND RADIOLOGICAL RISKS

Parcel C Impacted Sites	Radiological Risk[b]	Chemical Risk[a,b, c]	Redevelopment Block	Parcel C Grid(s)	Risk Combination Results
Building 203	1.44×10^{-6}	5.00×10^{-4}	23	089040	5.01×10^{-4}
Building 205 and Discharge Channel	1.44×10^{-6}	6.00×10^{-7}	22	BA03, BB03	2.00×10^{-6}
Building 211	1.30×10^{-6}	5.00×10^{-5}	25 and COS-3	BE06	5.13×10^{-5}
Building 214	1.44×10^{-6}	5.00×10^{-5}	20B	BA09	5.14×10^{-5}
Building 224	1.48×10^{-6}	3.00×10^{-5}	25	BD08	3.14×10^{-5}
Building 241	8.70×10^{-7}	4.00×10^{-4}	18	079041	4.00×10^{-4}
Building 253	1.29×10^{-6}	4.00×10^{-5}	25	BD08	4.12×10^{-5}
Building 271	1.34×10^{-6}	4.00×10^{-4}	24	093035, 094035	4.01×10^{-4}
Building 272	3.09×10^{-6}	2.00×10^{-3}	24	088036	2.00×10^{-3}
Sanitary Sewer System	4.54×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.04×10^{-3}
Storm Water Sewer System	4.54×10^{-5}	2.00×10^{-3}	All Blocks	088036	2.04×10^{-3}

Notes:

[a] Chemical risk was taken from Revised Feasibility Study Report for Parcel C, Tables 3-8 and 3-9.

[b] Excess lifetime carcinogenic risk.

[c.] The worst case chemical risk was chosen from the girds that the radiologically-impacted buildings overlay.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
26	Radionuclides of concern	Section 2.5.3	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Table 2-1.

TABLE 2-1

PARCEL C IMPACTED AREAS, RADIONUCLIDES OF CONCERN, HISTORICAL USES, AND PLANNED REUSE

Building Number or Area Title	Radionuclides of Concern	Building or Area Use	Planned Reuse
Sanitary Sewer System	Strontium-90 Cesium-137 Radium-226	Radiological liquid wastes from ship decontaminations and buildings	Educational/Cultural, Research and Development, Mixed Use, and Open Space
Storm Water Sewer System	Strontium-90 Cesium-137 Radium-226	Radiological liquid wastes from ship decontaminations and buildings	Educational/Cultural, Research and Development, Mixed Use, and Open Space

Abbreviations and Acronyms:

LLRW – low level radioactive waste
NRDL – Naval Radiological Defense Laboratory

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
27	Remedial action objectives (RAO)	Section 2.7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.1, page 4-1.

This section presents (1) site-specific RAOs, including remediation goals, for soil and groundwater at Parcel C based on the COCs derived in Section 3.0 (see Section 4.1); (2) identifies ARARs (see Section 4.2); and (3) presents a range of GRAs and associated process options that will satisfy the RAOs (see Section 4.3). The GRAs and process options retained through the screening process will then be used in later sections as the basis for developing remedial alternatives.

4.1 REMEDIAL ACTION OBJECTIVES

RAOs are medium-specific goals for protecting human health and the environment. Each RAO should specify (1) the COCs, (2) the exposure route and receptors, and (3) an acceptable chemical concentration or range of concentrations for each medium of concern (such as soil and groundwater). RAOs include both an exposure pathway and a chemical concentration in a given medium because protectiveness may be achieved in two ways: limiting or eliminating the exposure pathway, or reducing chemical concentrations.

The RAO evaluation for this Final Parcel C FS Report is based on information from the 1997 RI Report, subsequent environmental investigations, and risk evaluations for human health and the environment. The NCP details the expectations for remedy selection in 40 CFR § 300.430 (a)(1)(iii). These expectations were used to evaluate RAOs for Parcel C. In addition, the Department of Defense integrates these NCP expectations with the objectives of the BRAC program for expediting transfer of Department of Defense property for reuse and development.

An important component of developing RAOs is the determination of future land use. According to EPA's land-use directive (EPA 1995), RAOs "should reflect the reasonably anticipated future land use or uses...," thereby allowing for the development of "alternatives that would achieve cleanup levels associated with the reasonably anticipated future land use..." of the site. The EPA land-use directive states that "in cases where future land use is relatively certain, the RAOs generally should reflect this land use..." and "...need not include alternative land use scenarios..." (EPA 1995). RAOs developed for Parcel C are based on the city's planned reuse for each redevelopment block, which are considered the reasonable anticipated end use of the property, as described in the HHRA. In accordance with the EPA land-use directive, this report develops remedial alternatives based on the planned reuse only. Other reuse scenarios were developed in the HHRA and are included in Appendix C. These additional reuse scenarios are provided as a basis for implementing the remedial design (RD) if the currently proposed land use changes before the final ROD and to aid in risk management decision-making.

4.1.1 Remedial Action Objectives for Soil

Separate RAOs are typically developed for human health receptors and for ecological receptors. No ecological RAOs were developed for soil at Parcel C because the parcel contains no identified terrestrial habitat (PRC 1994b). The proposed future land use is research and development, maritime/industrial, educational/cultural, mixed use, and active recreational open

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
28	GRAs	Section 2.8	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.3, pages 4-18 to 4-32.

4.3 General Response Actions and Process Options Analyses

GRAs are categories of actions that are made up of technologies. More than process options may be available for each technology. These GRAs are responses or remedies that would meet the RAOs to protect human health and the environment from the known contamination at Parcel C. Process options are specific technologies used to carry out a GRA. Section 4.3.1 describes the GRAs for Parcel C soil and groundwater, and Section 4.3.2 presents the results of the analysis for the proposed GRAs. Options related to remediation of soil gas are discussed together with the other options for soil because of the similarity of the actions and technologies.

4.3.1 Development of General Response Actions

GRAs were derived from engineering judgment and experience with response actions proven successful for the COCs at Parcel C. Because the RAOs were developed based on the planned future land use, the GRAs were also developed considering the planned future land use of each redevelopment block. The GRAs and the process options for Parcel C are presented in Table 4-6 for soil and in Table 4-7 for groundwater. The following GRAs were identified to ensure that the RAOs for soil and groundwater are met.

4.3.1.1 Soil

- No action – Required GRA for CERCLA evaluation
- Institutional controls – Includes land use restrictions and access restrictions
- Removal – Includes excavation and off-site disposal of excavated soil
- Treatment – Includes in-situ and/or ex-situ treatment of soil to reduce the toxicity, mobility and/or volume of the chemicals
- Containment – Includes covering contaminated soil to prevent direct exposure of receptors through the dermal contact, inhalation, and ingestion exposure pathways

4.3.1.2 Groundwater

- No action – Required GRA for CERCLA evaluation
- Institutional controls – Includes land use restrictions and access restrictions
- Treatment – Includes in-situ and/or on-site ex-situ treatment of contaminated groundwater
- Removal – Includes pumping to remove the groundwater and off-site treatment or disposal
- Containment – Includes installing a barrier to control groundwater flow and/or barriers or controls to prevent vapor intrusion

4.3.2 Analysis of General Response Actions and Process Options

Technologies and process options for each of the GRAs selected for this report were initially screened. During the initial screening, the range of technology types and process options were evaluated in terms of technical implementability, site conditions, waste characteristics, chemical properties, and the ability to meet NCP requirements and RAOs. Section 4.3.2.1 presents the analysis for the applicable process options for soil, and Section 4.3.2.2 presents the analysis for the applicable process options for groundwater. Tables 4-6 through 4-9 provide a summary of this evaluation.

4.3.2.1 Screening of Soil Process Options

Potentially applicable GRAs identified for soil at Parcel C consist of (1) no action, (2) institutional controls, (3) removal, (4) treatment, and (5) containment. The initial screening of technologies and process options for the remedial technology types for these GRAs is shown in Table 4-6. This table presents the various technology types, process options, and results of the screening analysis for each GRA for soil. The rationale for those options eliminated from further evaluation is presented in Table 4-6; these technologies and process options are not discussed further.

All five GRAs are retained for further evaluation, including no action. Most of the technologies and process options for treatment were eliminated during the initial screening for soil at Parcel C; only soil vapor extraction was retained for evaluation. Several process options were considered to achieve the RAOs. However, none of them is implementable for the ubiquitous metals that are present in fill at Parcel C at concentrations above remediation goals. Treatment is not cost-effective or as implementable as excavation, particularly for recalcitrant compounds such as PAHs and PCBs.

Those technologies and process options retained during the initial screening were evaluated for effectiveness, implementability, and cost, and are discussed in this section. Tables 4-6 and 4-8 summarize the results from this evaluation.

No Action

The NCP requires that the no-action option be carried through the detailed analysis of alternatives. Under the no-action option, no response action is implemented. Soil would be left as is without implementing any institutional controls, containment, removal, treatment, or other mitigating actions. Because soil at Parcel C poses a risk to human health and the environment under the anticipated future land-use scenario, the no-action option would not be an effective response action that meets the requirements of CERCLA. No cost is associated with this option because no action is taken. The no-action option will be retained for further evaluation as a remedial alternative for comparison only, as required under the NCP.

Institutional Controls in General

Institutional controls will be implemented to prevent exposure to areas where potential unacceptable risk is posed by COCs in soil and groundwater. Institutional controls are legal and administrative mechanisms used to implement land use restrictions that are used to limit the exposure of future landowner(s) or user(s) of the property to hazardous substances present on the property, and to ensure the integrity of the remedial action. Institutional controls are required on a property where the selected remedial cleanup levels result in contamination remaining at the property above levels that allow for unlimited use and unrestricted exposure. Institutional controls will remain in place unless the remedial action taken will allow for unlimited use of the property and unrestricted exposure. Implementation of institutional controls includes requirements for monitoring and inspections, and reporting to ensure compliance with land use or activity restrictions.

Legal mechanisms include proprietary controls such as restrictive covenants, negative easements, equitable servitudes, and deed notices. Administrative mechanisms include notices, adopted local land use plans and ordinances, construction permitting, or other existing land use management systems that are intended to ensure compliance with land use or activity restrictions.

The Navy has determined that it will rely upon proprietary controls in the form of environmental restrictive covenants as provided in the "Memorandum of Agreement Between the United States Department of the Navy and the California Department of Toxic Substances Control" and attached covenant models (Navy and DTSC 2000) (hereinafter referred to as "Navy/DTSC MOA"). More specifically, land use and activity restrictions will be incorporated into two separate legal instruments as provided in the Navy/DTSC MOA:

1. Restrictive covenants included in one or more Quitclaim Deeds from the Navy to the property recipient.

2. Restrictive covenants included in one or more "Covenant to Restrict Use of Property" entered into by the Navy and DTSC as provided in the Navy/DTSC MOA and consistent with the substantive provisions of Cal. Code Regs. tit. 22 § 67391.1.

The "Covenant(s) to Restrict Use of Property" will incorporate the land use restrictions into environmental restrictive covenants that run with the land and that are enforceable by DTSC against future transferees. The Quitclaim Deed(s) will include the identical land use and activity restrictions in environmental restrictive covenants that run with the land and that will be enforceable by the Navy against future transferees.

The activity restrictions in the "Covenant(s) to Restrict Use of Property" and Quitclaim Deed(s) shall be implemented through the Parcel C Risk Management Plan ("Parcel C RMP") to be prepared by the City of San Francisco and approved by the Navy and FFA Signatories. The Parcel C RMP shall be discussed in the Parcel C ROD and shall be attached to and incorporated by reference into the Covenant(s) to Restrict Use of Property and Deed(s) as an enforceable part

thereof. It shall specify soil and groundwater management procedures for compliance with the remedy selected in the Parcel C ROD. The Parcel C RMP shall identify the roles of local, state, and federal government in administering the Parcel C RMP and shall include, but not be limited to, procedures for any necessary sampling and analysis requirements, worker health and safety requirements, and any necessary site-specific construction and/or use approvals that may be required.

In addition to being set forth in the "Covenant(s) to restrict Use of Property" and Quitclaim Deed(s) as described above, restrictions applied to specified portions of the property will be described in findings of suitability of transfer and findings of suitability for early transfer.

Access

The Deed and Covenant shall provide that the Navy and FFA Signatories and their authorized agents, employees, contractors and subcontractors shall have the right to enter upon HPS Parcel C to conduct investigations, tests, or surveys; inspect field activities; or construct, operate, and maintain any response or remedial action as required or necessary under the cleanup program, including but not limited to monitoring wells, pumping wells, treatment facilities, and cap/containment systems.

Implementation

The Navy shall address and describe institutional control implementation and maintenance actions including periodic inspections and reporting requirements in the preliminary and final RD reports to be developed and submitted to the FFA Signatories for review pursuant to the FFA (see "Navy Principles and Procedures for Specifying, Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions" attached to January 16, 2004 Department of Defense memorandum titled "Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Record of Decision (ROD) and Post-ROD Policy"). The preliminary and final RD reports are primary documents as provided in Section 7.3 of the FFA.

Activity Restrictions that Apply Throughout Parcel C

The following sections describe the institutional control objectives to be achieved through activity restrictions throughout Parcel C in order to ensure that any necessary measures to protect human health and the environment and the integrity of the remedy have been undertaken.

Restricted Activities

The following restricted activities throughout HPS Parcel C must be conducted in accordance with the "Covenant(s) to Restrict Use of Property", Quitclaim Deed(s), and the Parcel C RMP, and, if required, any other work plan or document approved in accordance with these referenced documents:

1. "Land disturbing activity," which includes but is not limited to: (1) excavation of soil, (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind, (3) demolition or removal of "hardscape" (for example, concrete roadways, parking lots, foundations, and sidewalks), (4) any activity that involves movement of soil to the surface from below the surface of the land, and (5) any other activity that causes or facilitates the movement of known contaminated groundwater.

2. Alteration, disturbance, or removal of any component of a response or cleanup action (including but not limited to pump-and-treat facilities, and soil cap/containment systems); groundwater extraction, injection, and monitoring wells and associated piping and equipment; or associated utilities.

3. Extraction of groundwater and installation of new groundwater wells.

4. Removal of or damage to security features (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).

Prohibited Activities

The following activities are prohibited throughout HPS Parcel C:

1. Growing vegetables or fruits in native soil for human consumption

2. Use of groundwater

Activity Restrictions Relating to Soil and Associated VOC Vapors at Specific Locations Within Parcel C

Any proposed construction of enclosed structures must be approved in accordance with the "Covenant to Restrict Use of the Property," Quitclaim Deed, and Parcel C RMP prior to the conduct of such activity within the area requiring institutional controls (ARIC) for VOC vapors in order to ensure that the risks of potential exposures to VOC vapors are reduced to acceptable levels that are adequately protective of human health. Initially, the ARIC will include all of Parcel C. This can be achieved through engineering controls or other design alternatives that meet the specifications set forth in the ROD, RD reports, land use control (LUC) RD report, and Parcel C RMP. The ARIC may be modified by the FFA Signatories as the soil contamination areas and groundwater contaminant plumes that are producing unacceptable vapor inhalation risks are reduced over time or in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the ARIC do not pose unacceptable potential exposure risk to VOC vapors.

Additional Land Use Restrictions for Areas Designated Open Space, Educational/Cultural, and Maritime/Industrial

The following restricted land uses for property areas designated for open space, educational/cultural and maritime/industrial land uses in the "Hunters Point Shipyard Redevelopment Plan" dated July 14, 1997 must be reviewed and approved by the FFA Signatories in accordance with the "Covenant(s) to Restrict Use of the Property," Quitclaim Deed(s), and Parcel C RMP prior to use of the property for any of the restricted uses:

1. A residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation
2. A hospital for humans
3. A school for persons under 21 years of age
4. A daycare facility for children

The process options related to institutional controls will be retained for development and evaluation of remedial alternatives.

Access Restrictions

Access restrictions will include physical barriers such as fences and informational devices such as warning signs. Fences would be installed around the perimeter of the site to restrict public access. Signs warning of the presence and potential danger of hazardous materials would be posted on the fence to further discourage unauthorized access.

Removal

Removal is an effective GRA for all contaminant groups associated with soil at Parcel C. The technologies applicable to this GRA are excavation and disposal, involving removing and transporting contaminated material off site to a permitted treatment and disposal facility. Some pretreatment such as stabilization may be required or preferred to meet land disposal restrictions so that the most economical disposal option can be applied. Important considerations with the excavation and disposal technologies include excavation volume, fugitive emissions, hauling distance, and type of treatment and disposal facility for final deposition. The excavation cleanup criteria would be specific to the reuse type and chemical-specific remediation goals specified in Section 4.1.1.1.

The technology of excavation is effective and implementable for many of the COCs found in soil at Parcel C. Most of the near-surface soil at Parcel C is fill that was placed without documentation. The mineral content in the fill, the locations where the fill was placed, the method of placement, and the concentrations of metals in the fill are not documented. The Navy believes that arsenic is naturally occurring in local bedrock that was used for fill, and that this is

the primary source of arsenic present throughout Parcel C. This same condition is true for a group of commonly detected metals—including aluminum, antimony, cadmium, chromium, copper, iron, magnesium, manganese, nickel, vanadium, and zinc—and for less commonly observed metals such as barium, beryllium, molybdenum, selenium, silver, and thallium detected at Parcel B. The Navy acknowledges that industrial sources for metals exist, and that there is a potential that some concentrations of metals could have sources other than naturally occurring rock. The Navy has worked to remove these sources during the response actions taken to date. However, with a few exceptions, the widespread distribution of metals remaining in soil is consistent with the concentrations present in native rock.

Excavation is not practical to address removal of these ubiquitous metals at concentrations above remediation goals. Excavation of ubiquitous metals could involve excavating most of Parcel C to 10 feet or to the top of bedrock surface where it is shallower than 10 feet. Excavation is implementable in the case of lead, which is detected frequently above the HPAL but infrequently above the remediation goal. In addition, these higher concentrations are more likely associated with spills or releases. Excavation of some metals, notably arsenic, at concentrations exceeding those present in native rock is proposed for hot spots, with locations listed in Table 4-10. Excavation of organic chemicals, which are assumed to be associated with releases, is an effective approach to reach RAOs for areas outside of buildings that are to remain in place.

Approximately 32 excavations are proposed at Parcel C to address elevated concentrations of lead, mercury, zinc, and organic chemicals. Soil containing metal COCs will be excavated from locations where risk is identified, metal COCs are above remediation goals, and a source other than fill has been identified. In addition, excavations are proposed in limited areas where metal concentrations in soil exceed the concentration ranges found for naturally occurring metals in similar geologic formations. Metal COCs not addressed by excavation will be addressed by other process options, such as institutional controls or covers. Excavation for metals has not proven to be a practical option at HPS, except for limited hot spots, because the widespread distribution of metals remaining in soil is consistent with the concentrations present in native rock. Soil containing organic chemicals will be excavated from locations where risk is identified and COC concentrations are above remediation goals.

Table 4-10 lists the individual sampling locations identified as exhibiting COCs above remediation goals in the HHRA (see Tables 4-2 and 4-3). Table 4-10 also lists the proposed excavation names associated with each location. For samples with concentrations exceeding remediation goals where excavation is not included in remedial alternatives, an explanation is provided. Because excavation under buildings may not be practical, Table 4-10 also identifies areas under buildings that would be identified under a Risk Management Plan as potentially containing contaminated soil.

Costs for the excavation process option would be high because approximately 41,000 cy of soil would require excavation. This technology will be retained for development and evaluation of remedial alternatives.

Treatment

Treatment processes directly reduce the toxicity, mobility, or volume of chemicals. SVE is widely recognized as an effective technology for removal of VOCs from unsaturated soil. Pilot testing of SVE at Building 123 in Parcel B has shown this process option to be effective for reducing the mass of VOCs in soil. Similar pilot SVE tests at Parcel C in 2001 were less effective. SVE is not recommended in the vicinity of Building 241 because of the tight clay soil observed during excavation in this vicinity. However, SVE will likely be effective at addressing residual concentrations of VOCs in soil and soil vapor following or in conjunction with groundwater remediation. Treatments of the extracted VOCs using granular activated carbon or a permanganate-impregnated zeolite (for vinyl chloride) are also proven technologies that can be employed at Parcel C. The pilot tests of SVE at HPS have shown that this technology is implementable and of moderate cost. Further soil vapor studies, such as passive soil gas sampling, would be performed prior to the RD. The studies would form the basis for determining the areas where SVE treatment would be used. The SVE process option will be retained for development and evaluation of remedial alternatives.

Containment

Containment processes are intended to isolate the contaminated soil to prevent direct exposure and contaminant migration. The most appropriate containment process options for soil at Parcel C are surface covers. Cover materials used to prevent direct exposure may include clean soil, asphalt, or concrete, and the material to be used will depend on the planned reuse associated with each redevelopment block.

The general approach for implementing soil covers includes:

- Existing asphalt and concrete surfaces and buildings would be considered existing covers so long as they block the exposure pathway from the soil to the potential surface receptors. Existing asphalt can be renovated with an asphalt seal coat, and concrete surfaces and building floors can be patched so long as the patches and seals adequately break the pathway. Rehabilitation of existing covers would be designed to meet the same minimum requirements as new covers.

- Where covers are needed, areas would be covered with a durable material that would be maintained to minimize breakage, erosion, or deterioration such that the underlying soil becomes exposed. Standard construction practices for roads, sidewalks, and buildings would likely be adequate to meet this performance standard. Other examples of covers could include a minimum 4 inches of asphalt (or 2 inches of asphalt over a 4- to 6-inch base) or a minimum 2 feet of clean imported soil. All covers must achieve a full cover over the entire redevelopment block. The exact nature and specifications for covers can vary from block to block, but all covers must meet the performance standard of preventing exposure to soil and being durable. The cover design, including details on how the cover will be finished at the seawalls, will be provided in the RD.

- Drainage for asphalt and concrete covers would be consistent with the adjacent existing covers. Drainage for soil covers would be engineered so as not to promote erosion and prevent standing water.

- All existing or newly installed covers would need to be maintained. The ROD will include language concerning cover maintenance and integrity. The language will reference the LUCs or activity restrictions that control human intrusions of the cover. Maintenance includes inspections and repairs for covers that are left in place during the future land use. If the future land use requires excavation or demolition of the covers during construction, equivalent barriers would need to be installed in exposed areas. Any modification of existing hardscape would be subject to the institutional controls described earlier.

- Covers would be maintained to laterally contain the soil up to the seawalls. The RD will include plans for a performance standard for completion near the seawalls, as well as inspection, maintenance, and problem identification.

- Sampling requirements associated with disturbance of covers will be in accordance with the Parcel C RMP.

The technology of covers and the process options of asphalt and soil covers are effective, so long as the covers are properly installed and maintained and are replaced after excavation or demolition during redevelopment. The implementability and cost of covers are expected to be moderate because they are already in place at most of the redevelopment blocks at Parcel C.

The soil and asphalt cover process option will be retained for development and evaluation of remedial alternatives.

Maintained landscaping is another process option for the cover technology. Maintained landscaping includes seeding of bare soil disturbed through excavation or other activities. Although less effective than soil or asphalt covers, maintained landscaping would minimize the transport of soil and reduce the potential for exposure to soil that may contain asbestos. Maintained landscaping is retained for development and evaluation of remedial alternatives.

4.3.2.2 Screening of Applicable Groundwater Process Options

Potentially applicable GRAs identified for groundwater at Parcel C consist of (1) no action, (2) institutional controls, (3) monitoring, (4) treatment, (5) removal, and (6) containment. The initial screening of process options for the remedial technology types for these groundwater GRAs is shown in Table 4-7. This table presents the various technology types, process options, and results of the screening analysis for each groundwater process option. Removal and containment of groundwater were not retained after the initial screening based on difficulty of implementation and poor effectiveness of the various technologies and process options. The rationale for the technologies and process options eliminated from further evaluation is presented in Table 4-7; these are not discussed further.

The technologies and process options retained during the initial screening were evaluated for effectiveness, implementability, and cost and are discussed in this section. Tables 4-7 and 4-9 summarize the results of this evaluation.

The goal of the process options screening is to provide a "toolbox" of available technologies that can be applied as needed in the selected alternative to best achieve the RAOs. The language in the ROD needs to be performance based rather than specifying a specific technology for each RU. The Navy proposes to conduct a final characterization immediately prior to the remedial design as the chemical distribution within each RU may change from present conditions due to excavation actions, shutdown of the sewer lift stations, implementation of new surface runoff controls, and continued degradation of the COCs.

No Action

The NCP requires that the no-action option be carried through the detailed analysis of alternatives. Under the no-action option, no response action is taken. Groundwater would be left as is without implementation of any institutional controls, containment, removal, treatment, monitoring, or other mitigating actions. Groundwater at Parcel C poses a risk to human health and the environment based on the current HHRA and ecological evaluation. Therefore, the no-action option would not be an effective alternative that meets the requirements of CERCLA. No cost is associated with this option because no action is taken. The no-action option will be retained for further evaluation as a remedial alternative for comparison only, as required under the NCP.

Institutional Controls

As discussed under the evaluation of soil process options, the Navy will use proprietary controls in the form of environmental restrictive covenants as provided in the Navy/DTSC MOA (Navy and DTSC 2000).

Land use and activity restrictions will be incorporated into and implemented through two separate legal instruments as provided in the Navy/DTSC MOA:

- Restrictive covenants included in one or more Quitclaim Deeds from the Navy to the property recipient.
- Restrictive covenants included in one or more "Covenant to Restrict Use of Property" entered into by the Navy and DTSC as provided in the Navy/DTSC MOA and consistent with the substantive provisions of Cal. Code Regs. tit. 22 § 67391.1.

The Navy and FFA signatories and their authorized agents, employees, contractors and subcontractors shall have the right to enter upon HPS Parcel C to conduct investigations, tests, or surveys; inspect field activities; or construct, operate, and maintain any response or remedial action as required or necessary under the cleanup program, including but not limited to

monitoring wells, pumping wells, treatment facilities, and cap/containment systems. The Navy shall address institutional control implementation and maintenance actions, including periodic inspections and reporting requirements, in the preliminary and final RD reports to be developed and submitted to the FFA Signatories for review pursuant to the FFA.

Land Use and Activity Restrictions

Land use and activity restrictions, including restricted land uses, restricted activities, and prohibited activities are discussed under the evaluation of soil process options in Section 4.3.2.1.

Additional Land Use Restrictions Relating to Groundwater and Associated VOC Vapors at Specific Locations within Parcel C

The restricted land uses set forth above must be approved by the FFA Signatories in accordance with the 'Covenant to Restrict Use of Property," Quitclaim Deed, and Parcel C RMP prior to such use of the property within the ARIC for groundwater and associated VOC vapors in order to ensure that the risks of potential exposures to VOC vapors are reduced to acceptable levels that are adequately protective of human health. This can be achieved through engineering controls or other design alternatives which meet the specifications set forth in the ROD, RD reports, LUC RD report, and Parcel C RMP. Initially, the ARIC will include all of Parcel C. Institutional controls will be required for an entire redevelopment block if any portion of that block is affected by the potential lateral extent of vapor intrusion. The ARIC may be modified by the FFA Signatories as the groundwater contaminant plume that is producing unacceptable vapor inhalation risks is reduced over time or in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the ARIC do not pose an unacceptable potential exposure risk to VOC vapors.

The process options related to institutional controls will be retained for development and evaluation of remedial alternatives.

Groundwater Monitoring

Groundwater monitoring is an effective technology for assessing changes in the concentrations of chemicals in groundwater. Groundwater monitoring can detect potential increases in concentrations or migration of chemicals that could increase the risk of exposure of humans or marine organisms in the Bay. Reductions in concentrations of VOCs have been observed over time at Parcel C, most likely as the result of natural attenuation and treatability studies (such as ZVI injection). Given the contamination at Parcel C, long-term groundwater monitoring would likely be necessary, depending on the effectiveness of the remedial alternative. The groundwater monitoring parameters will be determined in the remedial design. Focused sampling at wells or areas where water quality criteria have been exceeded will be evaluated at that time. Monitoring would occur in all water-bearing zones, including new wells installed to evaluate groundwater quality in the deep bedrock water-bearing zone. The monitoring option is easy to implement at moderate cost. The long-term groundwater monitoring process option will be retained for development and evaluation of remedial alternatives.

Removal and Disposal

Technologies used to address free-phase DNAPL generally use some form of extraction. Extraction technologies aid mass transfer of DNAPL into a carrier fluid (liquid or gas). When the carrier fluid is a gas, the primary mass transfer mechanism is volatilization. When the carrier fluid is a liquid, the primary mass transfer mechanism is dissolution. In both cases, secondary mechanisms may also be involved, such as mobilization of free-phase DNAPL or accelerated chemical or biological destruction of some chemicals (Interstate Technology and Regulatory Cooperation Work Group 2000).

These technologies extract DNAPL from the aquifer and process the carrier fluid above ground to recover DNAPL. Recovered DNAPL is then disposed of at a licensed waste management facility. Other solid, liquid, or gaseous waste streams may also result from carrier fluid processing. These waste streams are typically treated or disposed of off site.

Thermally Enhanced Extraction

Thermally enhanced extraction is a technology type that imparts heat to the contaminated medium to volatilize DNAPL. Some process options under this technology type include steam stripping, resistive heating, and conductive heating. Steam stripping involves aboveground production of steam and injection into the subsurface; resistive heating involves the passage of an electric current through saturated media; and conductive heating uses buried heater elements to transfer heat to the subsurface. Each of these process options primarily volatilize DNAPL and collect it through vapor extraction. Collected vapor is condensed, nonaqueous phases are separated, and the aqueous phase is reused or treated and disposed of off site. These process options usually also include some form of vapor treatment such as thermal or catalytic oxidation.

Surfactant/Cosolvent Extraction

Surfactant/cosolvent extraction uses cosolvents (such as alcohols) or surfactants to increase the solubility of DNAPL in groundwater. The source zone is flooded with a surfactant or cosolvent solution, and groundwater containing dissolved DNAPL is subsequently extracted by pumping. Extracted groundwater is treated for chemical removal and the surfactant recovery. Liquid-phase waste concentrates are disposed of, off site and treated groundwater is reinjected with recovered surfactant.

This remedial option was eliminated because it would be difficult to implement, there would be risk associated with increased chemical mobility in a complex formation, and it is anticipated that costs to remediate would be high (see Table 4-9).

Treatment

The contaminated groundwater at Parcel C that exceeds remediation goals is present in the A-aquifer. VOCs are COCs for groundwater based on the human health risk; the exposure pathway is from vapor intrusion into indoor air. Metals (chromium VI and zinc) and VOCs are also COECs for groundwater based on the potential for migration to surface water. Table 4-7 provides a first screening of multiple treatment technologies, resulting in two types of treatment technologies that are retained: (1) in-situ biological treatment, and (2) in-situ chemical treatment.

In-Situ Biological Groundwater Treatment

The in-situ biological treatment technology type consists of aerobic and anaerobic reaction process options in the aquifer that degrade the dissolved-phase organic chemicals to less toxic compounds. These in-situ processes tend to be more economical than ex-situ processes because no removal or handling of groundwater is required for these methods. In-situ biodegradation is generally implemented by injecting into the contaminant plume a nutrient substrate that may be infused with microorganisms specific for degrading COCs. This process option may also be implemented by injecting only a nutrient substrate to enhance the growth of naturally occurring microorganisms.

Under both aerobic and anaerobic process options, the microorganisms metabolize and mineralize the COCs into less toxic byproducts. Some organisms degrade specific compounds anaerobically, while others degrade compounds aerobically. In-situ biological groundwater treatments are not effective for extremely high concentrations or nonaqueous-phase products of VOCs, but these processes are effective for moderate concentrations of VOCs found at Parcel C, assuming the optimal species and nutrients are applied.

Recent treatability studies at Parcel C have demonstrated that native microorganisms are present in the A-aquifer that are capable of degrading VOCs using anaerobic processes (Shaw Environmental, Inc. 2005). This study also demonstrated that aerobic bioremediation is effective for fuel-related products such as naphthalene and for chlorobenzenes, as well as for the less-chlorinated VOCs (such as vinyl chloride) that are present at Parcel C (Shaw Environmental, Inc. 2005). Oxygen sparging or introduction of a proprietary substrate such as oxygen release compounds could be used to generate the aerobic conditions.

DNAPL at RU-C5, if it is still present, would not be addressed directly by this technology, but bioremediation at the DNAPL fringe would gradually reduce and eliminate pockets of DNAPL that may exist. LNAPL present at RU-C1 would not be addressed effectively by aerobic bioremediation. However, if the LNAPL area was excavated prior to in-situ treatment, residual petroleum products would be removed through aerobic bioremediation.

Although it is not effective for most metals in groundwater, in-situ biodegradation is effective for VOCs. Metal mobility may be decreased as a byproduct of the induced reductive groundwater conditions.

The in-situ biological groundwater treatment process option is fairly easy to implement as a standard, proven technology, and has been found to be implementable; although, costs are likely to be high at Parcel C because of the number of chemicals and the probability of addressing pockets of DNAPL. The other major challenge to the in-situ groundwater treatment technology is to achieve effective mass transfer of the substrate throughout the treatment zone. The aerobic and anaerobic bioremediation process options will be retained for development and evaluation of remedial alternatives.

In-Situ Chemical Groundwater Treatment

The in-situ chemical groundwater treatment technology type consists of oxidation and reduction reaction process options in the aquifer either that degrade the dissolved-phase chemicals to less toxic compounds or that precipitate chemicals within the aquifer. As with in-situ biological remediation, no removal or handling of groundwater is required. This factor tends to make these in-situ processes more economical than the ex-situ processes.

A reduction reaction would be most effective for the VOCs present at Parcel C. Chemical oxidation is known to be effective for VOCs such as chlorinated ethenes and vinyl chloride (EPA 2006). However, pilot tests using chemical oxidation with permanganate at Parcel C were found to be difficult to implement. Therefore, the oxidation processes are eliminated and not discussed further.

Chemical degradation through injection of reduction reagents is generally initiated by injecting reactive chemicals, such as ZVI or other compounds, to create a reduced condition in the aquifer. The injected reagents chemically degrade the chemicals into less toxic byproducts by dechlorinating the VOCs. These reactions usually stimulate biodegradation from naturally occurring microorganisms that further enhances the degradation of VOCs. This type of reaction is therefore effective for the VOCs found at Parcel C and would be effective reducing both high and low concentrations of these chemicals in groundwater. Mobility of metals is likely to decrease based on the reducing conditions. The in-situ groundwater ZVI treatment process option reduces the toxicity, mobility, and volume of hazardous substances in groundwater and satisfies the RAOs. This treatment process option is fairly easy to implement as a standard, proven technology. In addition, ZVI has been evaluated to be implementable at moderate to high costs, depending on the type of additives used, the volume of additive needed, and the number of inoculations. As with bioremediation, achieving effective mass transfer of ZVI throughout the treatment zone is a key factor in the successful implementation of this technology. The reduction reaction process option will be retained for development and evaluation of remedial alternatives.

Monitored Natural Attenuation

This response action involves natural subsurface processes such as dilution, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials that are allowed to reduce chemical concentrations to acceptable levels. Consideration of this option usually requires modeling and evaluation of chemical degradation rates and pathways and predicting chemical concentrations at downgradient receptor points, especially when the plume is still expanding and migrating. The primary objective of site modeling is to demonstrate that natural processes of chemical degradation will reduce chemical concentrations below regulatory standards or risk-based levels before potential exposure pathways are completed. In addition, long-term monitoring must be conducted throughout the process to confirm that degradation is proceeding at rates consistent with meeting the RAOs.

A number of factors may limit the applicability and effectiveness of monitored natural attenuation (MNA): (1) extensive amounts of data must be collected and analyzed to determine plume behavior, (2) MNA should be used only where there are no effects on potential receptors, and (3) subsurface conditions may not allow for MNA of the chemical. MNA is not sufficiently effective as a single response action to achieve the RAO. If institutional controls are implemented, however, and/or other response actions are undertaken to reduce contamination in the source area, MNA is likely to be an effective tool to manage residual contamination.

Extensive guidance is available in support of the MNA approach and extensive field testing demonstrates its effectiveness (EPA 1999b). A review of data at Parcel C indicates that MNA may be occurring at RU-C5. This suggests that MNA may be appropriate following remediation of source areas. MNA was retained for further consideration in this Final FS Report.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
29	Preliminary remedial alternatives	Section 2.8	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 5.0, pages 5-1 to 5-18.

5.0 DEVELOPMENT AND DESCRIPTION OF REMEDIAL ALTERNATIVES

This section presents potential remedial alternatives developed for soil and groundwater at Parcel C based on the technologies and process options retained in Section 4.0. The NCP states that development and evaluation of remedial alternatives will reflect the scope and complexity of the response actions under consideration concerning the environmental issues defined at the site. The number and types of alternatives to be analyzed will be identified for each site by taking into account these scope and characteristics of the environmental issues at Parcel C.

5.1 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Technologies and process options were developed and screened as described in Section 4.0. The retained process options were combined into remedial alternatives to meet RAOs and to satisfy ARARs. The remedial alternatives were derived using experience and engineering judgment to formulate process options into the most plausible site-specific response actions. The alternatives developed for further analysis for both soil and groundwater are presented in the following sections.

5.2 DESCRIPTION OF SOIL REMEDIAL ALTERNATIVES

Soil at Parcel C presents a potential unacceptable risk to human health under the anticipated future land-use scenario evaluated in the HHRA for this Final FS Report (see Appendix C and Section 3.0). Five remedial alternatives were developed for soil:

- Alternative S-1: No Action
- Alternative S-2: Institutional Controls and Maintained Landscaping
- Alternative S-3: Excavation, Disposal, Institutional Controls, and Maintained Landscaping
- Alternative S-4: Covers and Institutional Controls
- Alternative S-5: Excavation, Disposal Covers, Soil Vapor Extraction, and Institutional Controls

All of these alternatives are designed to address potential unacceptable risk associated with the planned reuse for each of the redevelopment blocks in the HHRA. These alternatives are described in the following sections, including notes on the major design assumptions that were used to estimate costs and action-specific ARARs unique to each alternative. Appendix F contains a more complete description of design assumptions and detailed estimates of alternative costs. Table 5-1 presents the major components of each alternative to be implemented in each redevelopment block.

5.2.1 Alternative S-1: No Action

Under Alternative S-1, no response action would be taken. Soil would be left in place as is, without implementing any institutional controls, containment, removal, treatment, or other mitigating actions. The no-action alternative is retained throughout the evaluation process as required by the NCP to provide a baseline for comparison with other alternatives.

5.2.2 Alternative S-2: Institutional Controls and Maintained Landscaping

Alternative S-2 uses institutional controls to meet all ARARs and RAOs. Institutional controls, including proprietary controls, restrictive covenants, restricted land uses, restricted activities, and prohibited activities, are described in detail in Section 4.3 and would be implemented parcel-wide for all of the redevelopment blocks to prevent exposure to potential unacceptable risks posed by COCs in soil. In particular, this alternative would restrict access to the site prior to redevelopment; the site would be fenced. Institutional controls would require preparation and approval of plans and specifications for all construction activities that may pose unacceptable exposure to construction workers. Plans and specifications would be required to evaluate and help reduce exposure risks posed by the soil COCs for all human receptors. Alternative 2 would require fencing and signs to prevent access to contaminated soils. Land use controls also would prohibit construction of new or reuse of buildings over VOC plumes unless sufficient measures are taken to prevent the exposure of residents to VOCs in soil or groundwater, possibly through the use of vapor barriers or other vapor control systems. Vapor control (such as vapor barriers) is an engineered solution that prevents a complete pathway to the receptor, thereby eliminating the risk. This interim measure, if used, would be required until institutional termination goals are met or as long as soil vapor concentrations exist that may pose an unacceptable risk through vapor intrusion. The Navy will conduct a comprehensive soil gas survey across the parcel after completing the bulk of the groundwater remediation to evaluate the potential for vapor intrusion and assess the need for further monitoring, remediation or institutional controls. An LUC RD document would be prepared to identify specific implementation actions to ensure compliance with the institutional controls and to specify roles and responsibilities for implementing, monitoring, and enforcing the institutional controls.

Maintained landscaping would prevent windblown dust and would be required for areas that are currently bare or that have minimally vegetated soil that would be disturbed by excavation or construction activities and not restored with a cover (for example, clean imported soil, asphalt, or concrete). In addition, fencing would be required to prevent direct access to contaminated soil. Maintained landscaping would rely on seeding and maintaining a vegetative cover; no soil or asphalt would be added. The maintained landscaping would serve to reduce exposure to asbestos that may be present in surface soil and that would not be addressed by institutional controls alone. Fencing and maintained landscaping are engineering controls.

5.2.3 Alternative S-3: Excavation, Disposal, Institutional Controls, and Maintained Landscaping

Alternative S-3 consists of soil excavation and off-site disposal at a permitted disposal facility, as well as the institutional controls and maintained landscaping discussed in Alternative S-2. Soil containing organic chemicals and lead, mercury, and zinc at concentration above remediation goals would be excavated where feasible to reduce the concentrations of these COCs. This alternative provides a permanent remedy for chemicals where excavation is feasible. The institutional controls under this alternative would be used to prevent exposure to potential unacceptable risk posed by other COCs in soil (that is, the ubiquitous metals at concentrations above remediation goals). The institutional controls would be the same as Alternative S-2, would be implemented parcel wide, and would be more fully described in an LUC RD document. Areas of bare or minimally vegetated soil that have been disturbed by excavation or construction activities and not restored with a cover would require maintained landscaping.

Soil would be excavated in specific areas within selected areas at Parcel C. Figure 5-1 shows the excavations that are the basis of the cost estimate; detailed excavation plans would be developed in the RD. Table 4-10 lists the sampling locations where chemicals were detected above remediation goals, and lists proposed excavation names. Table 4-10 also notes where excavation is not the appropriate technology for remediation. Table 4-10 lists the risk associated with the soil locations and grids where COCs exceed remediation goals, and provides a rationale for excavation or other process options. Table 5-2 lists the estimated volumes and depths for each of these excavations. The rationale for selecting areas for excavation is provided below.

- Soil contaminated with lead, mercury, zinc, and organic chemicals at concentrations exceeding remediation goals based on the planned reuse would be excavated.
- Excavations for zinc are focused on redevelopment block 20A, where zinc is likely present due to industrial activities. Zinc detected in soil outside this area is not known to be associated with a spill or release, and will be addressed along with other ubiquitous metals. In the area between Building 203 and 272, zinc is planned for excavation because other COCs show elevated risk.
- Excavations for arsenic are included where the concentrations significantly exceed the HPAL, and are outside of concentration ranges found in naturally occurring metals in the same geologic formations in the San Francisco area.
- Excavation would occur to a maximum depth of 10 feet bgs, except in the case of excavations that encounter LNAPL. Where LNAPL is present, the excavation would be completed to the depth necessary to remove it.
- Excavation is included as an option at IR06MW59A1 in RU-C5 to remove the source to groundwater.
- The combined volume of soil for all excavations is estimated to be approximately 42,000 cy.

- The open excavations would be backfilled with clean soil, and the excavated soil containing COCs would be removed from the site and transported to an appropriate permitted disposal facility for disposal.

- Areas of bare or minimally vegetated soil that have been disturbed by excavation or construction activities and not restored with a cover would be covered by maintained landscaping.

- All other areas that present potential unacceptable incremental risk from potential exposure to COCs in soil (see Figure 5-1) would be left in place and addressed through the use of institutional controls. Specific examples are provided below.

  – With a few exceptions, excavation is not proposed beneath existing buildings; building slabs and foundations act as adequate covers. Excavation is proposed in Building 251 where the foundation was disturbed during waste consolidation activities. Excavation is proposed at Building 241 to remove benzene following radiological activities.

  – Excavation is not proposed to remove chemicals present at or deeper than 10 feet bgs; the overlying soil acts as an adequate cover.

  – Excavation is not proposed at areas previously excavated to bedrock during removal actions. This includes the TCRA excavations 290301, 290302 (west of Building 203), and 290601 (south of Building 203).

  – Excavations required under the TPH program would be conducted under that program and are not further discussed in this report.

In the event that TPH and CERCLA excavations are adjacent, coordination between the two programs would be managed by the Navy. At IR-06, for example, both programs may be considering areas that require excavation. At the time of the remedial design, the Navy will review areas planned for excavation under the TPH program to ensure all areas are addressed as required.

Under this alternative, institutional controls would prevent exposure to potential unacceptable risk posed by the soil left in place outside of excavated locations. Institutional controls are described in detail in Section 4.3. For this alternative, the institutional controls would also include designation in the RMP of areas below buildings that have been identified with soil contamination. Buildings 134, 231, 272, 275 and portions of 281 would be identified (see Figure 5-1). The RMP would specify soil segregation requirements should the soil be disturbed during redevelopment.

5.2.4 Alternative S-4: Covers and Institutional Controls

Alternative S-4 consists of soil and asphalt covers or existing concrete or asphalt covers to ensure that the exposure pathway to chemicals in soil remains blocked and institutional controls similar to Alternatives S-2 and S-3. This alternative provides physical barriers to cut off the exposure pathways to soil at Parcel C. Based on the ubiquitous nature of metal at concentrations

exceeding remediation goals at Parcel C, the cover alternative would be applied parcel-wide. Existing covers, such as buildings and asphalt parking lots, are considered adequate for this alternative. New covers are considered for construction only in areas where there are no existing covers. The need for ongoing maintenance, upgrades, or repairs to the existing covers would be assessed in the RD and implemented for this alternative as necessary. The institutional controls are discussed in Section 4.3, would be implemented parcel-wide, and would be more fully described in an LUC RD document. In addition, groundwater alternatives would be paired with Alternative S-4 to prevent uncontrolled release of VOCs from groundwater.

Redevelopment blocks with soil that contains metals and organic chemicals that pose a potential unacceptable risk would be covered to allow for currently planned land uses. Covers would be required at all redevelopment blocks to prevent human exposure to ubiquitous metals in soil that may pose an unacceptable risk.

Covers would be achieved in two ways:

- **Use of Existing Covers:** Existing asphalt and concrete surfaces and buildings would be considered existing covers. These may include existing building footprints, roads, parking lots, and maintained landscaping. These existing covers may require rehabilitation, such as sealing or repairing cracks.

- **New Covers:** Where covers are needed, areas would be covered with a durable material that would minimize breakage, erosion, or deterioration and prevent the exposure of underlying soil. Standard construction practices for roads, sidewalks, and buildings would likely be adequate to meet this performance standard. Other examples of covers could include a minimum 4 inches of asphalt, a minimum 2 inches of asphalt over 6 inches of base material, or a minimum 2 feet of clean imported soil. The asphalt covers would be maintained at least every 10 years or as determined based on the 5-year reviews, and soil covers would require maintained landscaping on top of the cover. All covers must achieve a full cover over the entire redevelopment block. The exact nature and specifications for covers can vary from block to block, but all covers must meet the performance standard of preventing exposure to soil and being durable. Backfill for soil covers would be analyzed and confirmed to be below remediation goals and to contain less than 0.25 percent asbestos as required for clean backfill over soils that may contain asbestos (see Appendix D, Table D-6). The soil cover may overlay existing grades. Appropriate covers for the open space reuse blocks would depend on the details of redevelopment.

It is estimated from aerial photographs of Parcel C that approximately 3 acres would be covered with soil and maintained landscaping, 36 acres would be covered with new asphalt, and 38 acres of existing asphalt and concrete surfaces (including buildings) would be used and repaired, as necessary (see Figure 5-2). The estimates are listed in the cost tables in Appendix F. Actual extent of cover types would be identified in the RD.

Institutional controls for all blocks would be based on the intended reuse for each redevelopment block and designed to meet the RAOs and ARARs. Institutional controls are described in detail in Section 4.3. As in Alternatives S-2 and S-3, the institutional controls would include proprietary controls, restrictive covenants, restricted land uses, restricted activities, and prohibited activities. However, signs and fences would not be required and access to the site would be easily available because the covers would be implemented over all soils.

5.2.5 Alternative S-5: Excavation, Disposal, Covers, Soil Vapor Extraction, and Institutional Controls

Alternative S-5 consists of a combination of soil excavation and off-site disposal at a permitted disposal facility, covers, SVE for VOCs, and institutional controls. This alternative was developed as a combined alternative to (1) remove and dispose of lead, mercury, zinc, and organic chemicals, as described for Alternative S-3; (2) implement and maintain block-wide covers, as described for Alternative S-4; (3) remove and treat VOCs in soil using SVE; and (4) implement the institutional controls as described for Alternative S-2. Alternative S-5 combines the excavation and cover actions and adds SVE for VOCs to comply with all of the RAOs and ARARs and to be more protective.

Soil for Alternative S-5 would be excavated in those specific areas described for Alternative S-3. Covers would be provided for redevelopment blocks as described for Alternative S-4.

SVE would be implemented as a source reduction measure to address VOC-contaminated soil. The SVE areas bounded soil sampling locations where VOCs were detected above remediation goals and where soil characteristics are appropriate for SVE. Additionally, SVE is included to address soil vapor above the groundwater plumes. SVE would not be used as the sole remedy in areas where VOCs are commingled with chemicals that do not readily volatilize. The areas where SVE would be applied are shown on Figure 5-1.

As with Alternative S-3, this alternative contains institutional controls. Institutional controls would be based on the intended reuse for each redevelopment block and designed to meet the RAOs and ARARs. Institutional controls are described in detail in Section 4.3.

5.3 DESCRIPTION OF GROUNDWATER REMEDIAL ALTERNATIVES

Groundwater in the A-aquifer at Parcel C presents a potential unacceptable risk to human health under the vapor inhalation scenario evaluated in the HHRA for this Final FS Report (see Appendix C and Section 3.0). Therefore, VOCs were identified as COCs that require a response action. In addition to VOCs, the ecological evaluation identified chromium VI and zinc as COECs that pose a potential risk to marine organisms in the Bay.

Five remedial alternatives were developed for groundwater; Alternative GW-3 has two options:

- Alternative GW-1: No Action
- Alternative GW-2: Institutional Controls and Long-Term Groundwater Monitoring
- Alternative GW-3A: In-Situ Bioremediation, Monitored Natural Attenuation, and Institutional Controls
- Alternative GW-3B: In-Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls
- Alternative GW-4: In-Situ Zero-Valent Iron Reduction, Plume-Wide Bioremediation, Monitored Natural Attenuation, and Institutional Controls

These alternatives are described in the following sections. Table 5-3 presents the major components of each alternative to be implemented for each plume.

5.3.1 Alternative GW-1: No Action

Under Alternative GW-1, there would be no response action. Groundwater would be left as is without implementing any institutional controls, containment, removal, treatment, monitoring, or other mitigating actions. The no-action alternative is retained throughout the evaluation process as required by the NCP to provide a baseline for comparison with other alternatives.

5.3.2 Alternative GW-2: Institutional Controls and Long-Term Groundwater Monitoring

Alternative GW-2 would meet RAOs by controlling the exposure pathways that cause human health risk. Ecological risk is addressed by groundwater monitoring and evaluation of trigger levels. This alternative does not intend to restore affected groundwater to beneficial use. The following paragraphs describe this alternative.

Alternative GW-2 consists of institutional controls and long-term groundwater monitoring. Institutional controls would be implemented in areas where humans could be exposed to COCs at concentrations that pose a risk to human health. Long-term groundwater monitoring would serve a two-fold purpose. It would (1) provide awareness of the size and behavior of COC risk plumes and ensure they do not outgrow controlled areas without warning; and (2) provide awareness of the size and behavior of COEC plumes and warn against their discharge into the Bay.

Institutional controls would involve the use of administrative mechanisms to restrict activities that could expose potential receptors to chemicals in groundwater at the parcel. Land use restrictions would include prohibitions on the use of existing buildings or other enclosures where there is

potential unacceptable risk from the vapor intrusion pathway. In addition, institutional controls would require future owners to install vapor reduction controls on any new building that might be constructed in redevelopment blocks where groundwater plumes present potential unacceptable risk through vapor intrusion. Vapor reduction controls would be enforced on an entire block even if only a portion of that block bore an unacceptable risk through vapor intrusion. Figure 3-8 presents the potential lateral extent of groundwater plume areas where vapor intrusion could pose risk to indoor air. The figure also shows that all redevelopment blocks, except blocks CMI-1 and COS-1, would require institutional controls for vapor intrusion. The Navy proposes to implement institutional controls for vapor intrusion across all of Parcel C based on ease and efficiency of implementation, consistency in long-term enforcement, and effectiveness of long-term maintenance. Institutional controls for vapor intrusion would remain in place for as long as chemical concentrations in underlying groundwater exceed institutional control termination goals or soil vapor concentrations are found to pose an unacceptable risk through vapor intrusion. Further explanation of institutional controls is provided in Section 4.3. If Alternative GW-2 is selected, institutional controls would be described in greater detail in an LUC RD document. Under conditions defined in the LUC RD, areas where vapor controls apply may be modified where soil-gas concentrations are demonstrated not to pose an unacceptable risk.

Groundwater monitoring would involve periodic groundwater sampling and analysis for all of the COCs and COECs identified in Section 4.1.2.1. It would provide the means to monitor the protectiveness of the remedy over time and evaluate the need for further action.

The general objectives for groundwater monitoring for Alternative GW-2 include:

- Monitoring for the migration of COCs and COECs into previously uncontaminated areas and toward the Bay
- Monitoring to verify the results of the trigger level attenuation models (Appendix H)
- Monitoring for changes in concentrations within plumes
- Monitoring concentrations in and near individual wells where the revised HHRA indicated potential risk

Groundwater in the A-aquifer, B-aquifer, and F-WBZ would be monitored; approximately 170 wells are included for monitoring in the cost estimate. Most of these wells would be inside COC plumes (that is, where groundwater exhibits chemical concentrations exceeding institutional control termination goals). The remainder (approximately 40 wells) would be located outside the COC plumes to evaluate chemical migration. New wells may be installed to monitor the A-aquifer; for the purpose of the cost estimate, 28 wells were added to provide complete coverage of the site. An additional 4 wells will be installed along the boundary of Parcel B to determine if the RU-C5 plume is migrating toward the Parcel B boundary. Four wells were also included to monitor groundwater quality in the deep bedrock zone. Figure 5-3 presents the locations of the existing wells in the plume areas.

Groundwater monitoring would continue until institutional control termination goals are met or until the plumes are stable. At RU-C5, monitoring would include B-aquifer wells where COCs were identified for the domestic use exposure pathway; montoring would continue until remedial goals are met or until the Navy determines that this aquifer is not a municipal or domestic drinking water supply pursuant to the substantive criteria of SWRCB Resolution 88-63. For the purpose of estimating cost, it is assumed that monitoring would occur only for 30 years. Groundwater would be monitored quarterly for the first 2 years, semiannually for the next 2 years, and annually thereafter.

Appendix E provides more information on the rationale and plume areas to be sampled. Details of groundwater monitoring (such as wells to be monitored, chemicals to be analyzed for, laboratory analytical methods, sample collection procedures, and quality control requirements) would be included in the RD if this alternative is selected. Results of groundwater monitoring would be used during 5-year reviews to assess the monitoring program, adjust the data collection and analysis requirements, and evaluate the need for other response actions.

5.3.3 Alternative GW-3A: In-Situ Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Alternative GW-3A consists primarily of three retained process options: (1) sequential anaerobic and aerobic ISB of groundwater in the source area, (2) MNA of the remaining plumes, and (3) institutional controls. This alternative is a source control remedy and is not intended to achieve institutional control termination goals across the entire parcel. The intent of this alternative is to significantly reduce COCs in the source area and then allow residual chemicals to attenuate naturally. Groundwater would be monitored during the bioremediation and natural attenuation phases of this alternative.

Institutional controls for this alternative would be similar to those discussed for Alternative GW-2. Institutional controls would be implemented prior to active remediation and would remain in effect for as long as COC concentrations exceed their institutional control termination goals. Further explanation of institutional controls is provided in Section 4.3. If Alternative GW-3A is selected, institutional controls specific to this alternative would be described in greater detail in an LUC RD document. Figure 5-4 shows the area of impacted groundwater and the targeted treatment areas in RU-C1, RU-C2, RU-C4, and RU-C5. The impacted groundwater is defined by the areas where the COCs exceed institutional control termination goals and COECs exceed their trigger levels; the plumes are based on an evaluation of chemical concentrations detected in groundwater through the second quarter of 2007. Only the most contaminated parts of the plumes would be treated. The chlorinated ethenes plumes are the most predominant. The targeted treatment areas may be generally described as areas where the concentrations of select COCs in groundwater exceed their institutional control termination goal by a factor of 10 to 50 and COECs exceed their trigger levels. Figure 5-4 provides the list of COCs and concentrations used to delineate the treatment areas. This list of COCs, although not comprehensive, includes the most significant COCs. If this alternative is selected, the extent of other COCs would be evaluated during the RD. Figure 5-4 also identifies the type of treatment that would be applied to each treatment area. The distribution of chemicals in the RUs is discussed in Section 2.4.

Due to the presence of a mixture of chemicals (some of which are more amenable to anaerobic and others to aerobic degradation), bioremediation at this site would be implemented sequentially. Anaerobic and aerobic bioremediation would alternate until the targeted COC and COEC concentrations are permanently reduced to below the remediation endpoints. Remediation endpoints are intermediate goals that mark the end of active remediation and the beginning of MNA. Remediation endpoints would be developed during the RD.

Prior to or during the RD, source zone characterization would be conducted to refine the extent of the most contaminated areas. Passive soil gas sampling would be used to map the horizontal distribution of chemicals. Membrane interface probe technology would then be used in select areas to estimate the vertical extent of contamination. The results of these investigations would be used to guide the installation of new monitoring wells planned for this alternative. Remediation areas would be further refined in the RD. DNAPL is currently believed to exist on site only as distributed pockets of immobile liquid (which is amenable to ISB). Therefore, treatment or removal of free-phase DNAPL, although included as a contingency, is not a part of this alternative and is not included in the cost estimate. If free-phase DNAPL is discovered during predesign studies of source areas, the contingency measure would be implemented. Thermally enhanced extraction would be used to remove DNAPL from the source area. The efficiency of mass removal (as opposed to in-situ COC concentrations) would dictate the endpoint of such a remedial effort. Further remediation would then be implemented as described below.

Samples would be collected from all wells in the monitoring program to establish a baseline before implementing ISB. Samples would also be collected from 4 new wells along the Parcel B boundary. Currently the plume is not migrating toward the Parcel B boundary near RU-C5, and therefore containment of the plume at the Parcel B boundary is not anticipated to be necessary. If the plume begins to migrate toward the Parcel B boundary, adjustment of the treatment area will likely be applied to prevent migration. Containment is included as a contingency, but is not included in the cost estimate and is not part of this alternative.

The following description of bioremediation activities is not intended to identify a sequence to be followed during implementation. The RD would allow for dynamic decision-making in the field. While it would be possible to attain remediation endpoints for one phase of bioremediation (such as aerobic) before proceeding to the next, some sites have shown benefits in alternating these phases, switching from one to the other, whenever progress slows. This alternative allows for such flexibility. The assumptions on sequencing presented below are primarily for the sake of estimating cost and simplifying estimation of remediation timeframes.

Anaerobic ISB

Anaerobic ISB would target the chlorinated alkenes (such as TCE) and alkanes (such as 1,2-DCA) by stimulating dechlorinating microorganisms. Anaerobic conditions would be produced by introducing a substrate (or food source). The substrate would fuel aerobic microorganisms and cause them to quickly deplete the oxygen. Anaerobic microorganisms would then multiply in this anoxic environment and destroy the targeted chemicals through a variety of mechanisms, including direct metabolism, cometabolism, and halorespiration. Some

aromatic compounds (such as benzene) may also be destroyed because they can be used by microorganisms as a food source. In addition, chromium VI that has been detected at a few locations in RU-C1 and RU-C5 (see Appendix G) would be reduced to the less-soluble chromium III, and some other metals (such as zinc) would be precipitated as sulfides (produced by the reduction of sulfate in groundwater). Sequential anaerobic treatment may be necessary following aerobic treatment if metals are remobilized during the aerobic phase.

Under this alternative, the substrate would be delivered via direct injection. In this method, substrate would be injected into the formation under pressure through an injection tool that could target specific vertical intervals of the borehole. The system would be capable of generating sufficient pressure to fracture the formation. As a result, hydraulic fracturing could be conducted in any injection interval as necessary.

Substrate would be injected into the saturated zone of the A-aquifer within the lateral extents shown on Figure 5-4. The average thickness of this aquifer (and the treatment zone) across the site is estimated at 25 feet, and the aquitard may be encountered as deep as 65 feet bgs. Well depth is planned for 25 feet for A-aquifer wells and 65 feet for the B-aquifer wells. The lateral extent of the treatment zone in the three RUs is estimated at 3 acres. After a predetermined mass of substrate is delivered from the bottom up through the targeted length of a borehole, the hole would be plugged and the injection rig moved to the next location. No aboveground remediation infrastructure would remain after injection at any location. Injection would follow a grid pattern based on an achievable radius of influence (to be determined by pilot tests in each RU preceding or as part of the RD). For the purpose of estimating costs, it is assumed that injection would be conducted on a 15-foot staggered square grid; this equates to a radius of influence of approximately 9 feet, which is reasonable for the Parcel C lithology. Furthermore, it is assumed that the substrate would be mixed or chased with enough water to fill 20 percent of the pore volume of the treatment zone. This would help to adequately distribute the substrate without unacceptable displacement of the chemicals. The specific substrate to be used would best be determined after bench-scale testing prior to or during the RD. Sodium lactate performed well during the treatability study (Shaw Environmental, Inc. 2005). However, because lactate is rapidly consumed, it may have to be reinjected at least once every quarter. Given that the anaerobic phase of bioremediation could potentially take several years, this treatment could prove expensive. For the sake of estimating cost, it is assumed that slow-release substrates such as emulsified vegetable oil would be used. With such substrates, injection would be required only once every 3 to 5 years. It is also assumed that one round of bioaugmentation would be conducted in the early stages of bioremediation. Bioaugmentation would include the injection of proprietary blends of the halorespiring microorganism *dehalococcoides ethenogenes*. Bioaugmentation could be conducted along with one of the substrate injection events.

Based on degradation rates of chlorinated VOCs observed during the treatability study (Shaw Environmental, Inc. 2005), it is estimated that use of anaerobic bioremediation would meet the remediation endpoints within 6 years (see Appendix F). However, the likelihood of rebound at the end of this period is difficult to estimate. PCE or TCE concentrations in groundwater at RU-C1, RU-C4, and RU-C5 exceed 1 percent their aqueous solubility. Therefore, distributed pockets of capillary DNAPLs may be present at these RUs. Such DNAPL, although hard to locate

and difficult to quantify, would affect the duration of bioremediation. DNAPL that remains after the cessation of bioremediation would leach into the aquifer and raise the chemical concentrations. To account for this unknown factor with a reasonable margin of safety, it is assumed that anaerobic bioremediation would be conducted for a maximum of 15 years. Anaerobic remediation in RU-C1 and RU-C2 may proceed for less than 10 years.

Groundwater monitoring to observe the progress of bioremediation would begin a few months after the first substrate injection event. For the purpose of estimating cost, it is assumed that monitoring the progress of bioremediation would proceed quarterly for the first 2 years, semiannually for the next 2 years, and annually until the end of the anaerobic phase. However, after any injection event in an annual monitoring period, monitoring would temporarily shift to a semiannual schedule for 1 year. Monitoring bioremediation would be similar to the long-term groundwater monitoring described in Alternative GW-2. However, this monitoring program would include more wells and natural attenuation parameters; the cost estimate includes over 290 wells for monitoring, including nearly 130 new wells. Some of the B-aquifer wells would be located beneath the treatment zones to warn against bioremediation-driven intrusion of chemicals into the lower water-bearing units. The primary function of the dense network of A-aquifer wells would be to gauge substrate distribution during anaerobic injection events. Following baseline groundwater monitoring, only half the total number of wells would be monitored until the start of the aerobic remediation phase.

Aerobic ISB

Aerobic ISB would target the aromatic COCs (such as benzene and chlorobenzene). It would work by stimulating oxygen-respiring microorganisms that are able to use the targeted COCs as a food source. Saturating the aquifer with oxygen would create favorable conditions for such microorganisms. The method of oxygen delivery could significantly influence the efficiency of aerobic bioremediation. The method of oxygen delivery used in the treatability study did not work as well as desired, thus it is not recommended for further use at Parcel C (Shaw Environmental, Inc. 2005). The two options that were considered are oxygen sparging and oxygen release compounds. Both options are promising and would be examined more closely during the RD. However, for the purpose of estimating cost, oxygen release compounds were chosen as the representative process option for aerobic bioremediation.

The technique for delivering oxygen release compounds to the aquifer would be much the same as that used for substrate delivery in the anaerobic phase. The injection point spacing and the targeted treatment zone would also be similar. Figure 5-4 shows the areas for aerobic and anaerobic treatment; approximately 0.4 acre is planned for aerobic treatment. Once injected, oxygen release compounds hydrolyze to maintain a steady concentration of dissolved oxygen in the aquifer for about 1 year. Therefore, oxygen release compounds would need to be injected at least once a year for the duration of the aerobic bioremediation phase. COC degradation rates observed in areas of high dissolved oxygen concentration (greater than 8 mg/L) during the treatability study were used to derive apparent half-lives for some COCs for the cost estimate. Generic half-lives were used for other COCs. Based on maximum observed concentrations and half-lives for the target COCs, it is estimated that aerobic bioremediation would meet the

remediation endpoints in about 2 years (see Appendix F). However, the unquantified presence of nonaqueous-phase liquid could significantly increase duration of aerobic bioremediation. For the purpose of estimating cost, this duration has been assumed at 3 years.

Monitoring the progress of bioremediation during the aerobic phase would be similar to that during the anaerobic phase: quarterly for the first year, semiannually for the next 2 years, and annually thereafter. For the purpose of estimating cost, the monitoring well network has been assumed to be identical to the anaerobic phase. However, about 5 years after completion of aerobic remediation the number of wells monitored would be further reduced to a third of the total number.

When remediation endpoints have been met and no rebound is observed even after depletion of amendments, bioremediation activities would cease.

Monitored Natural Attenuation

MNA would follow bioremediation and would continue until the institutional control termination goals are met. At RU-C5, MNA would continue until remedial goals are met in the B-aquifer for COCs identified for the domestic use exposure pathway or until the Navy determines that this aquifer is not a municipal or domestic drinking water supply pursuant to the substantive criteria of SWRCB Resolution 88-63 determines that drinking water beneficial use does not apply.

As part of the monitoring, post-remediation characterization data would be collected and the CSM for each RU would be refined. Annual groundwater monitoring would include COCs, their daughter products, and several other indicator parameters of natural attenuation (such as redox potential and dissolved hydrogen). Monitoring data collected during the MNA phase would assist in refining the trigger level monitoring previously performed by including more site-specific attenuation factors. It is currently hard to predict when COC plumes will naturally attenuate to institutional control termination goals. This is because the speed of this process depends on initial conditions (that is the state of the aquifer following bioremediation), and those initial conditions are not known. For the purpose of estimating cost, it is assumed that long-term groundwater monitoring would proceed until the end of year 30. Proof-period monitoring in years 29 and 30 would include all wells used in the baseline monitoring event. Proof-period monitoring is designed to demonstrate that the remedy is operating properly and successfully. The groundwater monitoring plan is discussed conceptually in Appendix E; it would include many of the same wells and chemicals as described for Alternative GW-2, but would require additional parameters. However, as remediation proceeds and the COC plumes shrink, fewer wells may be required. The detailed MNA plan would be developed as part of the RD. Approximately 11 acres at Parcel C would require MNA (see Figure 5-4).

The natural attenuation occurring at the site would be evaluated periodically according to EPA protocols (EPA 1998d) after completion of all active remediation.

The following considerations apply for Alternative GW-3A:

- Plume conditions may continue to change over time as a result of the continued effects of treatability studies and natural processes. Delineation of areas requiring treatment may require revision.

- The possible presence of unquantified DNAPL has a significant effect on the estimated duration of bioremediation. The durations estimated for this alternative are considered conservative, but are not a worst-case estimate.

- Mobilization of metals was not factored into the estimation of bioremediation durations. Some metals, such as arsenic and manganese, may become more soluble under reducing conditions produced by anaerobic bioremediation. However, these metals are expected to stabilize when the aquifer's redox potential returns to its background levels. This stabilization was observed during the treatability study (Shaw Environmental, Inc. 2005). Metals such as chromium VI that would precipitate under reducing conditions could resolubilize under oxidizing conditions. However, chromium VI concentrations did not increase significantly during the aerobic phase of the treatability study. Metals COECs such as chromium VI and zinc would be immobilized because of the reduction of dissolved sulfates to sulfide during anaerobic bioremediation. If determined necessary during the RD, metals could be further immobilized by the use of special substrates. Sulfur-containing compounds in these substrates would react with dissolved metals to form stable insoluble complexes.

- Oxygen or ozone sparging may prove to be a more effective process option for aerobic bioremediation. It should be considered during the RD.

- The RD phase should consider ending bioremediation with the anaerobic phase because it would leave the aquifer in a condition favorable to natural attenuation of the most predominant COCs.

- Injection of substrate or other amendments under pressure could fracture the formation and consequently enhance permeability. This is the only type of permeability enhancement planned. The benefit of a dedicated permeability enhancement event may be explored during the RD.

5.3.4 Alternative GW-3B: In-Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Alternative GW-3B consists of four retained process options: (1) in-situ chemical reduction using ZVI, (2) sequential anaerobic and aerobic ISB, (3) MNA, and (4) institutional controls. This alternative attempts to reduce the duration of bioremediation relative to Alternative GW-3A by further accelerating the transformation of COCs to innocuous compounds.

Alternative GW-3B includes focused treatment of the most contaminated plume areas with ZVI to quickly treat the highest concentrations, followed by ISB to address the residual concentrations in the targeted treatment area. MNA would follow active remediation, as discussed for Alternative GW-3A.

Institutional controls for this alternative would be the same as those discussed for Alternative GW-3A. They would be implemented prior to active remediation and would remain in effect for as long as COC concentrations exceed institutional control termination goals. Further explanation of institutional controls is provided in Section 4.3. If Alternative GW-3B is selected, institutional controls specific to this alternative would be described in greater detail in an LUC RD document.

The following description of remedial activities is not intended to identify a sequence to be followed during implementation. The RD would allow for dynamic decision-making in the field. While it would be possible to attain remediation endpoints for one phase of remediation (such as aerobic) before proceeding to the next, some sites have shown benefits in alternating these phases, switching from one to the other, whenever progress slows. This alternative allows for such flexibility. The assumptions on sequencing presented below are primarily for the sake of estimating cost and simplifying estimation of remediation timeframes. Better decisions on the extent of use of these technologies may be made during the RD.

The targeted hotspot treatment areas in RU-C1, RU-C2, RU-C4, and RU-C5 are shown on Figure 5-5. Only the most contaminated parts of the plumes would be treated. The plumes of chlorinated ethenes are the most predominant. As a result, the targeted ZVI treatment areas may be generally defined as areas where the concentrations of PCE and TCE in groundwater exceed 0.1 percent of the aqueous solubility of these chemicals, 15 µg/L and 110 µg/L, respectively. The targeted bioremediation areas were based on the areas where select COCs in groundwater exceed their institutional control termination goal by a factor of 10 to 50, and COECs exceed their trigger levels. Figure 5-5 provides the list of COCs and concentrations used to delineate the treatment areas. This list of COCs, although not comprehensive, includes the most significant COCs. If this alternative is selected, the extent of other COCs would be evaluated during the RD. Figure 5-5 also identifies the type of treatment that would be applied to each treatment area. Section 2.4 discusses chemical distribution in groundwater at the RUs.

ZVI is known to rapidly degrade chlorinated ethenes and ethanes through direct chemical reduction. Reaction half-lives for the degradation of such compounds are usually in the range of a few hours. This makes it much faster than bioremediation, which is usually characterized by reaction half-lives ranging from a few days to several months.

Prior to or during the RD, characterization of source areas would be conducted to refine the extent of the most contaminated areas as described in Alternative GW-3A. Like Alternative GW-3A, this alternative does not include removal of free-phase DNAPL because DNAPL is currently believed to exist on site only as distributed pockets of immobile liquid (which is amenable to ISB). However, if free-phase DNAPL is discovered during characterization of source areas, a contingency measure would be implemented as described in Alternative GW-3A.

The cost of this contingency measure is not included. Further remediation would follow as described below.

ZVI treatment would target chlorinated ethenes and ethanes in parts of the plumes with the highest potential of containing immobile DNAPL. For the purpose of the cost estimate, it was conservatively assumed that ZVI treatment would be conducted in areas where chlorinated ethenes (PCE and TCE) are currently at concentrations above 0.1 percent their aqueous solubility. ZVI treatment would accelerate the removal of immobile DNAPL containing DCE and TCE through rapid destruction in the dissolved-phase. However, the rate of mass removal would still be limited by the kinetics of dissolution from DNAPL. It should be noted that the attainment of low dissolved-phase concentrations may not imply the absence of DNAPL. Such an observation during the early stages of treatment would instead imply that destruction of chemicals in the dissolved phase is occurring faster than dissolution from DNAPL. This complicates recognition of when remediation endpoints are met. The production of ethene, ethane, and methane, as well as evidence of ongoing iron corrosion reactions, would provide some indication that chemical degradation is still in progress. Based on the treatability study (ITSI 2005), dissolved-phase COC concentrations can be expected to meet remediation endpoints in several months. However, removal of immobile DNAPL may take significantly longer.

Since the method of ZVI injection used in the treatability study proved successful (ITSI 2005), a similar approach would be used for full-scale implementation, as follows. The lateral extent of the ZVI treatment zone is shown on Figure 5-5 is estimated at 0.8 acre. The average thickness of the treatment zone across the site is estimated at 25 feet and may lie anywhere between 20 and 65 feet bgs. A drill rig would bore a hole to the desired depth. A packer assembly would then be inserted into the borehole and inflated to isolate a specific vertical interval. A slurry of ZVI particles in a suitable carrier fluid would then be pressure-injected into the formation. After the predetermined dose of ZVI is delivered, the packer assembly would be raised to target the next vertical interval, and the process would be repeated until the entire depth of the treatment zone is addressed. Injection would proceed in a similar fashion from one location to the next. Radii of influence during the treatability study were observed to range from 10 to 20 feet (ITSI 2005). As a result, it is assumed that injection may proceed on a 15-foot staggered square grid. The radius of influence in each RU would be determined through pilot tests preceding the RD. Only one ZVI injection event is planned.

Groundwater monitoring to observe the progress of remediation would begin a few months after the first ZVI injection event. For the purpose of estimating cost, it is assumed that remediation monitoring would proceed quarterly during and for 1 year after ZVI treatment. Only half the number of wells in the monitoring program would be used.

Anaerobic bioremediation would begin after dissolved-phase chemical concentrations meet the intermediate remediation endpoints for ZVI treatment. It is estimated this would happen within 2 years of ZVI injection (see Appendix F). Unreacted ZVI would continue to degrade target chemicals and augment anaerobic bioremediation. From this point on, anaerobic bioremediation would proceed as described for Alternative GW-3A. Based on degradation rates observed during the bioremediation treatability study (Shaw Environmental, Inc. 2005), it is estimated that anaerobic bioremediation could meet remediation endpoints within 1 year after it begins.

However, given the unknown quantity of DNAPL present on site, this duration is assumed to be a maximum of 10 years for the cost estimate. During anaerobic bioremediation, groundwater would be monitored quarterly for the first 2 years, semiannually for the next 2 years, and annually thereafter. Only half the number of wells in the monitoring program would be used compared to Alternative GW-3A.

Since ZVI is an oxygen scavenger, the quantity of unreacted iron would need to be quantified before beginning the aerobic bioremediation phase. The RD team may even consider completing aerobic bioremediation before ZVI injection. Core samples would be collected and analyzed in a laboratory. The aerobic bioremediation phase would then be designed and implemented. Implementation of this phase of remediation would be identical to the aerobic phase described for Alternative GW-3A.

Monitoring bioremediation during the aerobic phase would be similar to that during the anaerobic phase: quarterly for the first year, semiannually for the next 2 years, and annually thereafter. For the purpose of estimating cost, the monitoring well network is assumed to be identical to that of the anaerobic phase.

MNA would continue for as long as COC concentrations exceed their institutional control termination goals or until a vapor intrusion risk evaluation concludes risk to future users is acceptable. At RU-C5, MNA would continue until remedial goals are met in the B-aquifer for COCs identified for the domestic use exposure pathway or until the Navy determines that drinking water beneficial use does not apply.

About 5 years after the end of bioremediation, the number of wells to be monitored would be reduced to a third of the total. Overall, Alternative GW-3B may take fewer years to implement than Alternative GW-3A. For the purpose of estimating cost, it is assumed that MNA would proceed until the end of year 30. Proof-period monitoring in years 29 and 30 would include all wells used in the baseline monitoring event. The groundwater monitoring plan is discussed conceptually in Appendix E.

In addition to those mentioned under Alternative GW-3A, the following consideration applies to Alternative GW-3B:

- Excessive amounts of ZVI in the aquifer could elevate pH to levels that could be unfavorable to anaerobic microorganisms. If such is the case, pH should be adjusted before bioremediation begins.

5.3.5 Alternative GW-4: In-Situ Zero-Valent Iron Reduction, Plume-Wide Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Alternative GW-3B consists of four retained process options: (1) in-situ chemical reduction using ZVI, (2) sequential anaerobic and aerobic ISB, (3) MNA, and (4) institutional controls.

This alternative is similar to Alternative GW-3B except that the bioremediation phase of this alternative would treat the entire plume.

Alternative GW-4 includes focused treatment of the most contaminated plume areas with ZVI to quickly treat the highest concentrations, followed by ISB over the entire plume to address residual chemical concentrations. Anaerobic ISB would treat an area of approximately 12 acres, and aerobic ISB would treat an area of approximately 1 acre. Figure 5-6 presents details on the delineation of treatment areas, the extent, and type of remediation.

MNA would follow active remediation as discussed in Alternative GW-3B (see Section 5.3.4).

Institutional controls for this alternative would be the same as those discussed for Alternative GW-3B. They would be implemented prior to active remediation and would remain in effect for as long as COC concentrations exceed institutional control termination goals. Further explanation of institutional controls is provided in Section 4.3. If Alternative GW-4 is selected, institutional controls specific to this alternative would be described in greater detail in a LUC RD document.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
30	Nine evaluation criteria	Section 2.8.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 6.0, pages 6-1 and 6-2.

6.0 DETAILED AND COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

This section provides a detailed analysis of each remedial alternative developed in Section 5.0, followed by comparative analysis. This information will be used to help select a final remedy for Parcel C. The alternatives are evaluated using criteria based on statutory requirements of CERCLA as amended by the Superfund Amendments and Reauthorization Act, Section 121; the NCP; and "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988).

The NCP specifies nine criteria to be used in the detailed analysis. The first two criteria are threshold criteria that must be satisfied in order for a remedy to be eligible for selection; the next five criteria are balancing criteria used to evaluate the comparative advantages and disadvantages of the remedial alternatives; and the final two criteria are modifying criteria generally considered after regulatory agency and public comments are received on the Proposed Plan. The nine criteria are listed below.

Overall Protection of Human Health and the Environment: This criterion describes how each alternative, as a whole, protects human health and the environment and indicates how each hazardous substance source is to be eliminated, reduced, or controlled.

Compliance with ARARs: This criterion evaluates each alternative's compliance with ARARs, or, if an ARAR waiver is required, how the waiver is justified. ARARs consider location-specific, chemical-specific, and cleanup action-specific concerns.

Long-Term Effectiveness and Permanence: This criterion evaluates the effectiveness of each alternative in protecting human health and the environment after the response action is complete. Factors considered include magnitude of residual risks and adequacy and reliability of release controls.

Reduction of Toxicity, Mobility, or Volume Through Treatment: This criterion evaluates the anticipated capability of each alternative's specific treatment technology to reduce the toxicity, mobility, or volume of hazardous substances.

Short-Term Effectiveness: This criterion addresses the effectiveness of each alternative in protecting human health and the environment during the construction and implementation phase. Factors considered include:

- Exposure of the community during implementation
- Exposure of the workers during construction
- Effects to the environment
- Time required to meet the RAOs

Implementability: This criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of the required services and materials during its implementation. Factors considered include:

- Ability to construct the technology
- Reliability of the technology
- Monitoring considerations
- Availability of equipment and specialists

Cost: This criterion evaluates the capital and operation and maintenance (O&M) costs for each alternative. Capital and O&M cost estimates are order-of-magnitude-level estimates and have an expected accuracy of minus 30 to plus 50 percent (EPA 2000b). Table 6-1 summarizes the capital cost for each alternative.

Community Acceptance: This criterion evaluates issues and concerns the public may have regarding each alternative. This criterion will be assessed following receipt of public comments on the FS Report and the Proposed Plan.

State Acceptance: This criterion evaluates technical and administrative issues and concerns the state regulatory agencies may have about each alternative. This criterion will be assessed following receipt of regulatory agency comments on the FS Report and the Proposed Plan.

In the following sections, each remedial alternative is compared with the two threshold and five balancing NCP criteria, and subsequently compared with the other alternatives to assess their relative performance with respect to the NCP criteria. Comparison with the two modifying criteria of community and state acceptance will be included in the Proposed Plan; further discussion of these criteria is not included in this Final FS Report. Soil remedial alternatives are evaluated individually in Section 6.1 and compared with each other in Section 6.2. Groundwater remedial alternatives are evaluated individually in Section 6.3 and compared with each other in Section 6.4.

6.1 INDIVIDUAL ANALYSIS OF SOIL REMEDIAL ALTERNATIVES

This section evaluates each soil alternative in comparison with the two threshold and five balancing NCP evaluation criteria. Table 6-1 presents the cost summary for each alternative, and Table 6-2 provides a summary of each alternative's rating under the seven evaluation criteria. The ranking categories used in Table 6-2 and in the discussion of the alternatives are: (1) protective or not protective, and meets ARARs or does not meet ARARs, for the two threshold criteria; and (2) excellent, very good, good, poor, and not acceptable for the five balancing criteria.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
31	Present-Worth Cost: $248,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-2A.

TABLE F-1: SOIL ALTERNATIVES COST ESTIMATE SUMMARY

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Description	Alternative S-1 No Action	Alternative S-2 Institutional Controls and Maintained Landscaping	Alternative S-3 Excavation, Disposal, Institutional Controls, and Maintained Landscaping	Alternative S-4 Covers and Institutional Controls	Alternative S-5 Excavation, Disposal, Covers, Soil Vapor Extraction, and Institutional Controls
Total Project Duration (Years)		**30**	**30**	**30**	**30**
Capital and Labor Cost	$0	$645,121	$12,833,170	$4,042,751	$17,236,479
Present Value of Periodic Costs	$0	$673,653	$854,494	$1,734,236	$3,552,364
20% Contingency	$0	$263,755	$2,737,533	$1,155,397	$4,157,769
Total Present Value of Alternative	**$0**	**$1,582,528**	**$16,425,197**	**$6,932,384**	**$24,946,612**
(Rounded)	**$0**	**$1,580,000**	**$16,430,000**	**$6,930,000**	**$24,950,000**

TABLE F-2A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-2

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-2: Institutional Controls and Maintained Landscaping

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	2.0 Months or 44 working days	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site Wide Costs													
Distributive Costs											**Distributive Costs Subtotal =**	**$ 105,292**	
1 Project Manager 50% on project; location factor N/A	176	hour	$ 34.00	$ 9,574	$ -	$ -	$ -	$ -	$ -	$ -	$ 54.40	$ 9,574	
1 Superintendent 100% on project; location factor N/A	352	hour	$ 34.00	$ 19,149	$ -	$ -	$ -	$ -	$ -	$ -	$ 54.40	$ 19,149	
1 Engineer 100% on project; location factor N/A	352	hour	$ 34.00	$ 19,149	$ -	$ -	$ -	$ -	$ -	$ -	$ 54.40	$ 19,149	
1 Health & Safety Office 100% on project; location factor N/A	352	hour	$ 34.00	$ 19,149	$ -	$ -	$ 200.00 /day	$ 9,548	$ -	$ -	$ 81.53	$ 28,697	
1 Quality Control Office 100% on project; location factor N/A	352	hour	$ 34.00	$ 19,149	$ -	$ -	$ -	$ -	$ -	$ -	$ 54.40	$ 19,149	
1 Procurement Spec. 50% on project; location factor N/A	176	hour	$ 34.00	$ 9,574	$ -	$ -	$ -	$ -	$ -	$ -	$ 54.40	$ 9,574	
Mobilization											**Mobilization Subtotal =**	**$ 1,271**	***Assume that these will be used overall (not calculated for every excavation).**
Tractor Loader	1	each	$ 55.00	$ 94	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 637.00	$ 637	Estimate based on United Rentals quote
Graders	1	each	$ 53.00	$ 91	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 634.00	$ 634	Means 2004 Heavy Construction. Pg. 139. 03110 420 1000
Demobilization											**Demobilization Subtotal =**	**$ 1,271**	***Assume that these will be used overall (not calculated for every excavation).**
Tractor Loader	1	each	$ 55.00	$ 94	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 637.00	$ 637	Estimate based on United Rentals quote
Graders	1	each	$ 53.00	$ 91	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 634.00	$ 634	Estimate based on United Rentals quote
Landscaping											**Landscaping Subtotal =**	**$ 57,885**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Soil Cover Borrow, Fill, Compact 6" cover	2,260	cubic yard	$ 1.68	$ 6,500	$ 2.63	$ 6,449	$ 7.15	$ 17,533	$ -	$ -	$ 13.49	$ 30,482	2 ft. thick, Means 17, 03, 04, 23
Soil Cover Sampling and Analytical	10	each	$ 170.00	$ 2,910	$ -	$ -	$ 150.00	$ 1,628	$ -	$ -	$ -	$ 4,538	Assumes 0.5 hours Engineer for each sample (1 per 1,000 cubic yards)
Hydroseeding	2.8	acre	$ 1,002.02	$ 4,803	$ 610.97	$ 1,856	$ 2,157.79	$ 6,555	$ -	$ -	$ 4,719.29	$ 13,214	2006 RACER
Hydrofertilizer	2.8	acre	$ 205.01	$ 983	$ 38.37	$ 117	$ 151.61	$ 461	$ -	$ -	$ 557.50	$ 1,561	2006 RACER
Water - 12 times	33.6	acre	$ 92.95	$ 5,347	$ 73.86	$ 2,693	$ 1.37	$ 50	$ -	$ -	$ 240.77	$ 8,090	2006 RACER
Temporary Facilities											**Temporary Facilities Subtotal =**	**$ 9,888**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Portable Toilets (2)	2	month	$ -	$ -	$ -	$ -	$ 1,006.40	$ 2,184	$ -	$ -	$ 1,092.00	$ 2,184	Means 2004 Constructio 01590 400 6410
Rental Trucks (5) (for supervisory staff)	2	month	$ -	$ -	$ -	$ -	$ 3,550.00	$ 7,704	$ -	$ -	$ 3,852.00	$ 7,704	Assuming rental from Enterprise
Oversight											**Oversight Subtotal =**	**$ 28,697**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
1 Engineer 100% on project; location factor N/A	352	hour	$ 34.00	$ 19,149	$ -	$ -	$ 200.00 /day	$ 9,548	$ -	$ -	$ 81.53	$ 28,697	
Total Site-Wide Costs											**Total Site-Wide Costs Subtotal =**	**$ 204,304**	
Construction Cost Summary													
Total Construction Capital Costs											**Total Construction Capital Costs Subtotal =**	**$ 204,304**	
Design Cost											**Design Cost Subtotal =**	**$ 24,516**	*Calculated as overall cost - not per individual excavation. Unit cost numbers same as previous.
Assume 12% of construction cost													
Access Restrictions													
Signage and Fencing Capital Costs											**Signage and Fencing Capital Costs Subtotal =**	**$ 295,590**	
Signage	157	each	$ 33.88	$ 9,117	$ -	$ -	$ 30.66	$ 5,229	$ -	$ -	$ 91.27	$ 14,346	One sign per 50 ft perimeter of excavation areas; Means 18, 01, 04, 11
5' Galvanized Chain Link Fence - High Fabric Security Fence	10,000	lf	$ 1.49	$ 25,509	$ -	$ -	$ 23.57	$ 255,735	$ -	$ -	$ 28.12	$ 281,244	2006 ECHOS. 18 04 0106
Total Access Restrictions Capital Costs											**Total Access Restrictions Capital Costs Subtotal =**	**$ 295,590**	
Institutional Controls													
Land Use Control Implementation and Certification											**Land Use Control Implementation and Certification Subtotal =**	**$74,566.00**	
LUCIP scoping meeting	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for subsistence.
Prepare draft LUCIP	120	hour	$ 75.00	$ 15,408	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 15,408	Tetra Tech 2002.
Submit draft LUCIP	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for printing.
BCT review period	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
BCT comments due	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
RTC meeting and BCT concurrence	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ 500	$ 8,680	$ -		$ 670.88	$ 10,734	Tetra Tech 2002. ODCs for printing.
Prepare draft final LUCIP	72	hour	$ 75.00	$ 9,245	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 9,245	Tetra Tech 2002.
Submit draft final LUCIP	8	hour	$ 75.00	$ 1,027	$ -	$ -	$ 100	$ 868	$ -		$ 236.88	$ 1,895	Tetra Tech 2002. ODCs for printing.
BCT review and concurrence period	48	hour	$ 75.00	$ 6,163	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 6,163	Tetra Tech 2002.
BCT concurrence letters due	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ -	$ -	$ -		$ 128.41	$ 4,109	Tetra Tech 2002.
Prepare final LUCIP with RTC	40	hour	$ 75.00	$ 5,136	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 5,136	Tetra Tech 2002.
Submit final LUCIP with RTC	11	hour	$ 75.00	$ 1,412	$ -	$ -	$ 100	$ 1,194	$ -		$ 236.91	$ 2,606	Tetra Tech 2002. ODCs for printing.
Covenant to Restrict Use of Property											**Covenant to Restrict Use of Property Subtotal =**	**$40,061.00**	
Prepare draft covenant	80	hour	$ 234.00	$ 32,049	$ -	$ -	$ -	$ -	$ -		$ 400.61	$ 32,049	Tetra Tech 2002. ODCs for printing.
File covenant	20	hour	$ 234.00	$ 8,012	$ -	$ -	$ -	$ -	$ -		$ 400.60	$ 8,012	Tetra Tech 2002. ODCs for travel fees.
Deed Restrictions											**Deed Restrictions Subtotal =**	**$23,400.00**	
Prepare draft deed restrictions	80	hour	$ 234.00	$ 18,720	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 18,720	
File deed restrictions	20	hour	$ 234.00	$ 4,680	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 4,680	
Risk Management Plan											**Risk Management Plan Subtotal =**	**$7,200.00**	

TABLE F-2A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-2 (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-2: Institutional Controls and Maintained Landscaping

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	2.0 Months or	
	44 working days	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Navy review draft RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Navy review draft final RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft final RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Total Institutional Controls Capital Costs											**Total Legal Controls Capital Costs Subtotal**	**$145,227.00**	

Total Institutional Controls Capital Costs — **Total Institutional Controls Capital Costs Subtotal = $440,817.00**

Total Project Capital Cost =	**$ 645,121**
Present Value of 30 Years of Periodic Costs =	**$ 673,653**
SubTotal =	**$ 1,318,774**
20% Contingency =	**$ 263,755**
Total Project Cost =	**$ 1,582,528**

Notes: Unloaded costs taken from Means and adjusted for San Francisco labor, materials and equipment costs as well as Class D Safety Requirements

"	Inch
BCT	Base Realignment and Closure Cleanup Team
ea	Each
FOST	Finding of suitability to transfer
hr	Hour
LUCIP	Land Use Control Implementation Plan
Means	RS Means Company, Inc.
mo	Month
N/A	Not applicable
O&P	Overhead and profit
ODC	Other direct cost
Pg	Page
RACER	Remedial Action Cost Engineering and Requirements System
RMP	Risk Management Plan
RTC	Responses to comments
t/hr	Ton per hour
Tetra Tech	Tetra Tech EM Inc.

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Tetra Tech. 2002. "Draft Revised Parcel D Feasibility Study Report, Hunters Point Shipyard San Francisco, California." March 8.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
32	Present-Worth Cost: $248,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-4A.

TABLE F-1: SOIL ALTERNATIVES COST ESTIMATE SUMMARY

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Description	Alternative S-1 No Action	Alternative S-2 Institutional Controls and Maintained Landscaping	Alternative S-3 Excavation, Disposal, Institutional Controls, and Maintained Landscaping	Alternative S-4 Covers and Institutional Controls	Alternative S-5 Excavation, Disposal, Covers, Soil Vapor Extraction, and Institutional Controls
Total Project Duration (Years)		**30**	**30**	**30**	**30**
Capital and Labor Cost	$0	$645,121	$12,833,170	$4,042,751	$17,236,479
Present Value of Periodic Costs	$0	$673,653	$854,494	$1,734,236	$3,552,364
20% Contingency	$0	$263,755	$2,737,533	$1,155,397	$4,157,769
Total Present Value of Alternative	**$0**	**$1,582,528**	**$16,425,197**	**$6,932,384**	**$24,946,612**
(Rounded)	**$0**	**$1,580,000**	**$16,430,000**	**$6,930,000**	**$24,950,000**

TABLE F-4A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-3

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-3: Excavation, Disposal, Institutional Controls, and Maintained Landscaping

Location Factors
Assembly: 124.0%
Professional Labor Multiplier: 1.6 (RACER 2006)
Labor Overhead & Profit Multiplier.: 1.712
Material and Equipment Profit: 9% (RACER 2006)

Project Duration: 24.0 Months or
531 working days

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Costs													
Distributive Costs											**Distributive Costs Subtotal =**	**$ 146,746**	
1 Project Manager 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
1 Superintendent 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Health & Safety Office 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Quality Control Office 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Procurement Spec. 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
Mobilization											**Mobilization Subtotal =**	**$ 9,972**	***Assume that these will be used overall (not calculated for every excavation).**
Crawler Mounted Backhoes	5	each	$ 55.00	$ 471	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 636.80	$ 3,184	RACER 2006
Tractor Loader	5	each	$ 55.00	$ 471	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 636.80	$ 3,184	
Graders	5	each	$ 53.00	$ 454	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 633.40	$ 3,167	Means 2004 Heavy Construction. Pg. 139. 03110 420 1000
100,000 Gallon Modular Storage Tank	3	each	$ 85.00	$ 437	$ -	$ -	$ -	$ -	$ -	$ -	$ 145.67	437	Baker Tanks vendor quote
	1	each	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*Means 33, 18, 04, 02
Demobilization											**Demobilization Subtotal =**	**$ 9,972**	***Assume that these will be used overall (not calculated for every excavation).**
Crawler Mounted Backhoes	5	each	$ 55.00	$ 471	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 636.80	$ 3,184	RACER 2006
Tractor Loader	5	each	$ 55.00	$ 471	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 636.80	$ 3,184	
Graders	5	each	$ 53.00	$ 454	$ 500.00	$ 2,713	$ -	$ -	$ -	$ -	$ 633.40	$ 3,167	
100,000 Gallon Modular Storage Tank	3	each	$ 85.00	$ 437	$ -	$ -	$ -	$ -	$ -	$ -	$ 145.67	437	Baker Tanks vendor quote
Radiological Screening	0	each	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*Means 33, 18, 04, 03 per Jim H
Equipment											**Equipment Subtotal =**	**$ 196,363**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Tractor Loader	55	days	$ 260.00	$ 24,677	$ 850.00	$ 51,128	$ -	$ -	$ -	$ -	$ 1,367.37	75,805	Cat 966G daily rate obtained from United Rentals, labor rate based on $32.50/hour for 8 hour field days
Grader	45	days	$ 260.00	$ 20,030	$ 875.00	$ 42,722	$ -	$ -	$ -	$ -	$ 1,394.49	62,752	Deere 670D daily rate obtained from United Rentals, labor rate based on $32.50/hour for 8 hour field days
20 ton Dump Truck	55	days	$ 200.00	$ 18,982	$ 400.00	$ 24,060	$ -	$ -	$ -	$ -	$ 776.39	43,042	Labor rate based on $25.00/hour for 8 hour field days
100,000 gallon Modular Storage Tank	55	days	$ -	$ -	$ 175.00	$ 10,526	$ -	$ -	$ -	$ -	$ 189.87	10,526	Baker Tanks vendor quote
Radiological Screening		month	$ -	$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 04
Trash Pump	55	days	$ 15.64	$ 1,484	$ 45.78	$ 2,754	$ -	$ -	$ -	$ -	$ 76.44	4,238	RACER 2006 for dewatering excavations
Temporary Facilities											**Temporary Facilities Subtotal =**	**$ 118,649**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Portable Toilets (2)	24	month	$ -	$ -	$ -	$ -	$ 1,006.40	$ 26,207	$ -	$ -	$ 1,091.96	26,207	Means 2004 Constructio 01590 400 6410
Rental Trucks (5) (for supervisory staff)	24	month	$ -	$ -	$ -	$ -	$ 3,550.00	$ 92,442	$ -	$ -	$ 3,851.75	92,442	Assuming rental from Enterprise
Oversight											**Oversight Subtotal =**	**$ 29,349**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	29,349	
Total Site Wide Costs											**Total Site Wide Costs Subtotal =**	**$ 511,051**	
Excavation Costs													
Concrete Cutting and Repaving											**Concrete Cutting and Repaving Subtotal =**	**$ 38,209**	
Saw Cutting Asphalt	6515	linear feet	0.53	$ 5,911	0.3	$ 2,121	0.44	$ 3,110	$ -	$ -	$ 1.71	11,142	Up to 3" deep
Paving 4" Asphalt	12505	square yard	$ 0.32	$ 6,851	$ 0.24	$ 3,256	$ 1.25	$ 16,960	$ -	$ -	$ 2.16	27,067	Means 2004 Heavy Construction. Pg. 105. 02785 250 1910
Excavation and Backfill											**Excavation and Backfill Subtotal =**	**$ 3,421,478**	
Tarpaulins	12,505	square feet	$ -	$ -	$ -	$ -	0.54	$ 7,327	$ -	$ -	$ 0.59	7,327	reinforced woven polyethylene, 6 mils thick
Excavation	41683	cubic yard	$ 1.35	$ 96,338	$ 1.71	$ 77,337	$ -	$ -	$ -	$ -	$ 4.17	173,675	Means 2004 17, 03, 02, 77
Excavation With Building Shoring	7245	cubic yard	$ 34.93	$ 433,257	$ 4.14	$ 32,544	$ 10.76	$ 84,583	$ -	$ -	$ 75.97	550,384	Means 2004 17, 03, 09, 01
Excavation With Utility Shoring	1764	cubic yard	$ 34.05	$ 102,835	$ 2.47	$ 4,728	$ 5.22	$ 9,991	$ -	$ -	$ 66.64	117,554	Means 2004 17, 03, 09, 01
Boundary Fence	6515	linear feet	$ 4.78	$ 53,315	2.34	$ 16,541	1.78	$ 12,582	$ 1	$ 8,079	$ 13.89	90,517	2006 RACER (5' galvanized)
Erosion Control, Drainage Filter Fabric	12505	square yard	$ 0.83	$ 17,769	0.03	$ 407	0.82	$ 11,126	$ 2	$ 31,012	$ 4.82	60,314	2006 RACER, 8oz/syd
Dewatering	55	days	$ 113.00	$ 10,725	$ 23.00	$ 1,383	$ 136.00	$ 8,181	$ -	$ -	$ 365.97	20,289	Means 2006 312319200650, attended 2 hours per day, 4" discharge pump used for 8 hours, includes 20 linear feet of suction hose and 100 linear feet of discharge hose
Confirmation Sampling	1385	each	$ 23,545.00	$ 40,309	$ -	$ -	$ 1,048.00	$ 1,574,856	$ -	$ -	$ 1,166.18	1,615,165	Means 33, 02, 06. Sample minimum of 2 on each side plus 1 at bottom; otherwise every 15 ft along perimeter and every 225 feet at bottom
Disposal of Water	1,250	100 cubic feet	$ -	$ -	$ -	$ -	$ 16.54	$ 22,432	$ -	$ -	$ 17.95	22,432	Highest non-resident cost cited on San Francisco Public Utilities website.
Gravel Delivered and Dumped	4168	cubic yard	$ 3.52	$ 25,119	$ 1.72	$ 7,779	$ 23.74	$ 107,367	$ -	$ -	$ 33.65	140,265	2006 RACER, 1 ft of drain rock
Dry Roll Gravel, Steel Roller	12505	square yard	$ 0.82	$ 17,555	$ 0.28	$ 3,799	$ -	$ -	$ -	$ -	$ 1.71	21,354	2006 RACER
Unclassified Fill Delivered, Spread and Compacted	37515	cubic yard	$ 2.42	$ 155,426	$ 1.92	$ 78,151	$ 6.82	$ 277,599	$ 1.00	$ 46,518	$ 14.87	557,694	2006 RACER, 6" lifts
Nuclear Density Gauge Soil Compaction Testing	160	hour	$ 82.00	$ 22,461	$ 2.92	$ 507	$ 7.82	$ 1,358	$ 1.00	$ 198	$ 153.28	24,524	Earth Systems vendor quote
Compaction Reports	21	each	$ -	$ -	$ -	$ -	$ 350.00	$ 7,975	$ 1.00	$ 26	$ 381.00	8,001	Earth Systems vendor quote
Signs	130	each	$ 30.63	$ 6,833	$ -	$ -	$ 36.43	$ 5,150	$ -	$ -	$ 91.96	11,983	2006 RACER (Stock, reflectorize, UTMCD standard, guide and directional, 12" x 18", with posts)
Storm Water Control											**Storm Water Control Subtotal =**	**$ 12,947**	
2 -foot high (and 2-feet wide) berm around open excavation	931	cubic yard	$ -	$ -	$ -	$ -	$ -	$ -	$ 6.12	$ 7,063	$ 7.59	7,063	Means 2004 17, 0, 99, 11

TABLE F-4A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-3 (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-3: Excavation, Disposal, Institutional Controls, and Maintained Landscaping

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	24.0 Months or	
	531 working days	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Erosion Control, Silt Fence	1600	linear feet	0.3	$ 822	$ -	$ -	0.63	$ 1,094	$ 2	$ 3,968	$ 3.68	$ 5,884	2006 RACER Polypropylene, ideal conditions, 3' high
Waste Hauling and Disposal											**Waste Hauling and Disposal Subtotal =**	**$ 7,025,221**	
Characterization Sampling and Analysis	35	each	$17.00	$ 1,019	$ -	$ -	$ 200.00	$ 7,595				$ 8,614	
Bulk Waste Loading	41683	cubic yard	$ 1.27	$ 90,629	$ 1.64	$ 74,171	$ -	$ -	$ -	$ -	$ 3.95	$ 164,800	2006 RACER
Non-hazardous Material Transportation and Disposal	29178	cubic yard	$ -	$ -	$ -	$ -	$ 111.35	$ 3,525,161	$ -	$ -	$ 120.81	$ 3,525,161	Nonhazardous disposal rate at $22/ton + $1610/load, plus 11% tax and recovery fee transportation to Buttonwillow Landfill (quote by Clean Harbors)
RCRA-Hazardous Material Haul (20 cyd Dump, 200 miles)	16632	cubic yard	$ -	$ -	$ -	$ -	$ 89.35	$ 1,612,345	$ -	$ -	$ 96.94	$ 1,612,345	Transportation to Buttonwillow Landfill @ $1610/load plus 11% tax and recovery fee
RCRA-Hazardous Material Disposal	16632	cubic yard	$ -	$ -	$ -	$ -	$ 95.00	$ 1,714,301	$ -	$ -	$ -	$ 1,714,301	RCRA-hazazardous disposal cost for treatment of metals (standard recipe)
Total Excavation Costs											**Total Excavation Costs Subtotal =**	**$ 10,497,855**	
Cover Costs													
Cover													
Soil Cover Borrow, Fill, Compact 6" cover	2,260	cubic yard	$ 1.68	$ 6,500	$ 2.63	$ 6,449	$ 7.15	$ 17,533	$ -	$ -	$ 13.49	$ 30,482	2 ft. thick, Means 17, 03, 04, 23
Soil Cover Sampling and Analytical	10	each	$ 170.00	$ 2,910	$ -	$ -	$ 150.00	$ 1,628	$ -	$ -	$ -	$ 4,538	Assumes 0.5 hours Engineer for each sample (1 per 1,000 cubic yards)
Hydroseeding	2.8	acre	$ 1,002.02	$ 4,803	$ 610.97	$ 1,856	$ 2,157.79	$ 6,555	$ -	$ -	$ 4,719.29	$ 13,214	2006 RACER
Hydrofertilizer	2.8	acre	$ 205.01	$ 983	$ 38.37	$ 117	$ 151.61	$ 461	$ -	$ -	$ 557.50	$ 1,561	2006 RACER
Water - 12 times	33.6	acre	$ 92.95	$ 5,347	$ 73.86	$ 2,693	$ 1.37	$ 50	$ -	$ -	$ 240.77	$ 8,090	2006 RACER
Total Covering Capital Costs											**Total Covering Capital Costs Subtotal =**	**$ 57,885**	
Construction Cost Summary													
Total Construction Capital Costs											**Total Construction Capital Costs Subtotal =**	**$ 11,066,791**	
Design Cost											**Design Cost Subtotal =**	**$ 1,328,015**	*Calculated as overall cost - not per individual excavation. Unit cost numbers same as previous.
Assume 12% of construction cost													
Access Restrictions													
Signage and Fencing Capital Costs											**Signage and Fencing Capital Costs Subtotal =**	**$ 293,137**	
Signage	130	each	$ 33.88	$ 7,558	$ -	$ -	$ 30.66	$ 4,335	$ -	$ -	$ 91.27	$ 11,893	One sign per 50 ft perimeter of excavation areas; Means 18, 01, 04, 11
5' Galvanized Chain Link Fence - High Fabric Security Fence	10,000	lf	$ 1.49	$ 25,509	$ -	$ -	$ 23.57	$ 255,735	$ -	$ -	$ 28.12	$ 281,244	2006 ECHOS. 18 04 0106
Total Access Restrictions Capital Costs											**Total Access Restrictions Capital Costs Subtotal =**	**$ 293,137**	
Institutional Controls													
Land Use Control Implementation and Certification											**Land Use Control Implementation and Certification Subtotal =**	**$74,566.00**	
LUCIP scoping meeting	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for subsistence.
Prepare draft LUCIP	120	hour	$ 75.00	$ 15,408	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 15,408	Tetra Tech 2002.
Submit draft LUCIP	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for printing.
BCT review period	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
BCT comments due	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
RTC meeting and BCT concurrence	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ 500	$ 8,680	$ -		$ 670.88	$ 10,734	Tetra Tech 2002. ODCs for printing.
Prepare draft final LUCIP	72	hour	$ 75.00	$ 9,245	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 9,245	Tetra Tech 2002.
Submit draft final LUCIP	8	hour	$ 75.00	$ 1,027	$ -	$ -	$ 100	$ 868	$ -		$ 236.88	$ 1,895	Tetra Tech 2002. ODCs for printing.
BCT review and concurrence period	48	hour	$ 75.00	$ 6,163	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 6,163	Tetra Tech 2002.
BCT concurrence letters due	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ -	$ -	$ -		$ 128.41	$ 4,109	Tetra Tech 2002.
Prepare final LUCIP with RTC	40	hour	$ 75.00	$ 5,136	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 5,136	Tetra Tech 2002.
Submit final LUCIP with RTC	11	hour	$ 75.00	$ 1,412	$ -	$ -	$ 100	$ 1,194	$ -		$ 236.91	$ 2,606	Tetra Tech 2002. ODCs for printing.
Covenant to Restrict Use of Property											**Covenant to Restrict Use of Property Subtotal =**	**$40,061.00**	
Prepare draft covenant	80	hour	$ 234.00	$ 32,049	$ -	$ -	$ -	$ -	$ -		$ 400.61	$ 32,049	Tetra Tech 2002. ODCs for printing.
File covenant	20	hour	$ 234.00	$ 8,012	$ -	$ -	$ -	$ -	$ -		$ 400.60	$ 8,012	Tetra Tech 2002. ODCs for travel fees.
Deed Restrictions											**Deed Restrictions Subtotal =**	**$23,400.00**	
Prepare draft deed restrictions	80	hour	$ 234.00	$ 18,720	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 18,720	
File deed restrictions	20	hour	$ 234.00	$ 4,680	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 4,680	
Risk Management Plan											**Risk Management Plan Subtotal =**	**$7,200.00**	
Navy review draft RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Navy review draft final RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft final RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Total Institutional Controls Capital Costs											**Total Legal Controls Capital Costs Subtotal**	**$145,227.00**	
Total Institutional Controls and Access Restrictions Capital Costs											**Total Institutional Controls and Access Restrictions Capital Costs Subtotal =**	**$438,364.00**	

Total Project Capital Cost =	**$**	**12,833,170**
Present Value of 30 Years of Periodic Costs =	**$**	**854,494**
SubTotal =	**$**	**13,687,664**
20% Contingency =	**$**	**2,737,533**
Total Project Cost =	**$**	**16,425,197**

TABLE F-4A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-3 (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-3: Excavation, Disposal, Institutional Controls, and Maintained Landscaping

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	24.0	Months or
	531	working days

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments

Notes: Unloaded costs taken from Means and adjusted for San Francisco labor, materials and equipment costs as well as Class D Safety Requirements

"	Inch
BCT	Base Realignment and Closure Cleanup Team
FOST	Finding of suitability to transfer
LUCIP	Land Use Control Implementation Plan
Means	RS Means Company, Inc.
N/A	Not applicable
O&P	Overhead and profit
ODC	Other direct cost
RACER	Remedial Action Cost Engineering and Requirements System
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
RTC	Responses to comments
Tetra Tech	Tetra Tech EM Inc.

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

RS Means Company, Inc. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Tetra Tech. 2002. "Draft Revised Parcel D Feasibility Study Report, Hunters Point Shipyard San Francisco, California." March 8.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
33	Present-Worth Cost: $418,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-6A.

TABLE F-1: SOIL ALTERNATIVES COST ESTIMATE SUMMARY

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Description	Alternative S-1 No Action	Alternative S-2 Institutional Controls and Maintained Landscaping	Alternative S-3 Excavation, Disposal, Institutional Controls, and Maintained Landscaping	Alternative S-4 Covers and Institutional Controls	Alternative S-5 Excavation, Disposal, Covers, Soil Vapor Extraction, and Institutional Controls
Total Project Duration (Years)		**30**	**30**	**30**	**30**
Capital and Labor Cost	$0	$645,121	$12,833,170	$4,042,751	$17,236,479
Present Value of Periodic Costs	$0	$673,653	$854,494	$1,734,236	$3,552,364
20% Contingency	$0	$263,755	$2,737,533	$1,155,397	$4,157,769
Total Present Value of Alternative	**$0**	**$1,582,528**	**$16,425,197**	**$6,932,384**	**$24,946,612**
(Rounded)	**$0**	**$1,580,000**	**$16,430,000**	**$6,930,000**	**$24,950,000**

TABLE F-6A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-4

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-4: Covers and Institutional Controls

Location Factors

Assembly:	124.0%	122.0% Level D
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	12.0 Months or 266 working days	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Costs													
Distributive Costs											**Distributive Costs Subtotal =**	**$ 146,746**	
1 Project Manager 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
1 Superintendent 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Health & Safety Offic 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Quality Control Office 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Procurement Spec. 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
Mobilization											**Mobilization Subtotal =**	**$ 2,537**	***Assume that these will be used overall (not calculated for every excavation).**
Tractor Loader	1	each	$ 55.00	$ 94	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 637.00	$ 637	
Graders	1	each	$ 53.00	$ 91	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 634.00	$ 634	Means 2004 Heavy Construction. Pg. 139. 03110 420 1000
Misc. Equipment	2	each	$ 53.00	$ 181	$ 500.00	$ 1,085	$ -	$ -	$ -	$ -	$ 633.00	$ 1,266	
		each	$ -	$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 02
Demobilization											**Demobilization Subtotal =**	**$ 1,271**	***Assume that these will be used overall (not calculated for every excavation).**
Tractor Loader	1	each	$ 55.00	$ 94	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 637.00	$ 637	
Graders	1	each	$ 53.00	$ 91	$ 500.00	$ 543	$ -	$ -	$ -	$ -	$ 634.00	$ 634	
		each	$ -	$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 03 per Jim H
Equipment											**Equipment Subtotal =**	**$ 3,666**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Tractor Loader	7	day	$ 100.00	$ 1,198	$ 325.00	$ 2,468	$ -	$ -	$ -	$ -	$ 523.71	$ 3,666	Cat 966G daily rate obtained from United Rentals, labor rate based on $32.50/hour for 8 hour field days
		day		$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 04
Temporary Facilities											**Temporary Facilities Subtotal =**	**$ 59,324**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Portable Toilets (2)	12	month	$ -	$ -	$ -	$ -	$ 1,006.40	$ 13,103	$ -	$ -	$ 1,091.92	$ 13,103	Means 2004 Construction 01590 400 6410
Rental Trucks (5) (for supervisory staff)	12	month	$ -	$ -	$ -	$ -	$ 3,550.00	$ 46,221	$ -	$ -	$ 3,851.75	$ 46,221	Assuming rental from Enterprise
Oversight											**Oversight Subtotal =**	**$ 29,349**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	
Total Site Wide Costs											**Total Site Wide Costs Subtotal =**	**$ 242,893**	
Cover Costs													
Cover													
Sealcoating, Rubberized Asphalt	99220	square yard	$ 0.10	$ 16,986	$ 0.11	$ 11,842	$ 0.44	$ 47,368	$ -	$ -	$ 0.77	$ 76,196	Means 2004 Heavy Construction. Pg. 105. 02785 250 0012
Rough grade	1250	square yard	$ 0.29	$ 621	$ 0.51	$ 692	$ -	$ -	$ -	$ -	$ 1.05	$ 1,313	Means 200417, 03, 01, 03
Fine grade	1250	square yard	$ 0.20	$ 428	$ 0.21	$ 285	$ -	$ -	$ -	$ -	$ 0.57	$ 713	2006 Means CSI 312216109100 Machine grading, includes compaction, minimum labor/equipment charge
Asphalt cover - bituminous (4 inch thick)	1707552	square feet	$ 0.15	$ 438,499.00	$ 0.18	$ 333,485.00	$ 1.21	$ 2,241,760	$ -	$ -	$ 1.76	$ 3,013,744	Means 18 03 03 06, adjusted for 4-inch thickness
Soil Cover Borrow, Fill, Compact	9,026	cubic yard	$ 1.68	$ 25,959	$ 2.63	$ 25,755	$ 7.15	$ 70,019	$ -	$ -	$ 13.49	$ 121,733	2 feet thick, Means 17, 03, 04, 23
Soil Cover Sampling and Analytical	10	each	$ 170.00	$ 2,910	$ -	$ -	$ 150.00	$ 1,628	$ -	$ -	$ -	$ 4,538	Assumes 0.5 hours Engineer for each sample (1 per 1,000 cubic yards)
Hydroseeding	136	00 cubic yard	$ 2.59	$ 601	$ 2.25	$ 331	$ 9.37	$ 1,378	$ -	$ -	$ 17.05	$ 2,310	Means 18, 05, 04, 01
Hydrofertilizer	136	00 cubic yard	$ 1.03	$ 239	$ 0.75	$ 110	$ 2.18	$ 321	$ -	$ -	$ 4.94	$ 670	Means 18, 05, 04, 08
Water - 10 times	136	00 cubic yard	$ 8.89	$ 2,063	$ 7.69	$ 1,131	$ 0.98	$ 144	$ -	$ -	$ 24.63	$ 3,338	Means 18, 05, 04, 13
Total Covering Capital Costs											**Total Covering Capital Costs Subtotal =**	**$ 3,224,555**	
Construction Cost Summary													
Total Construction Capital Costs											**Total Construction Capital Costs Subtotal =**	**$ 3,467,448**	
Design Cost											**Design Cost Subtotal =**	**$ 416,094**	*Calculated as overall cost - not per individual excavation. Unit cost numbers same as previous.
Assume 12% of construction cost													
Access Restrictions													
Signage Capital Costs											**Signage Capital Costs Subtotal =**	**$ 13,982**	
Signage	153	each	$ 33.88	$ 8,886	$ -	$ -	$ 30.66	$ 5,096	$ -	$ -	$ 91.27	$ 13,982	One sign per 50 feet perimeter of excavation areas; Means 18, 01, 04, 11
Total Access Restrictions Capital Costs											**Total Access Restrictions Capital Costs Subtotal =**	**$ 13,982**	

TABLE F-6A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-4 (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-4: Covers and Institutional Controls

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	12.0 Months or 266 working days	

122.0% Level D

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Institutional Controls													
Land Use Control Implementation and Certification										**Land Use Control Implementation and Certification Subtotal =**		**$74,566.00**	
LUCIP scoping meeting	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for subsistence.
Prepare draft LUCIP	120	hour	$ 75.00	$ 15,408	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 15,408	Tetra Tech 2002.
Submit draft LUCIP	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for printing.
BCT review period	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
BCT comments due	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
RTC meeting and BCT concurrence	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ 500	$ 8,680	$ -		$ 670.88	$ 10,734	Tetra Tech 2002. ODCs for printing.
Prepare draft final LUCIP	72	hour	$ 75.00	$ 9,245	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 9,245	Tetra Tech 2002.
Submit draft final LUCIP	8	hour	$ 75.00	$ 1,027	$ -	$ -	$ 100	$ 868	$ -		$ 236.88	$ 1,895	Tetra Tech 2002. ODCs for printing.
BCT review and concurrence period	48	hour	$ 75.00	$ 6,163	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 6,163	Tetra Tech 2002.
BCT concurrence letters due	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ -	$ -	$ -		$ 128.41	$ 4,109	Tetra Tech 2002.
Prepare final LUCIP with RTC	40	hour	$ 75.00	$ 5,136	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 5,136	Tetra Tech 2002.
Submit final LUCIP with RTC	11	hour	$ 75.00	$ 1,412	$ -	$ -	$ 100	$ 1,194	$ -		$ 236.91	$ 2,606	Tetra Tech 2002. ODCs for printing.
Covenant to Restrict Use of Property										**Covenant to Restrict Use of Property Subtotal =**		**$40,061.00**	
Prepare draft covenant	80	hour	$ 234.00	$ 32,049	$ -	$ -	$ -	$ -	$ -		$ 400.61	$ 32,049	Tetra Tech 2002. ODCs for printing.
File covenant	20	hour	$ 234.00	$ 8,012	$ -	$ -	$ -	$ -	$ -		$ 400.60	$ 8,012	Tetra Tech 2002. ODCs for travel fees.
Deed Restrictions										**Deed Restrictions Subtotal =**		**$23,400.00**	
Prepare draft deed restrictions	80	hour	$ 234.00	$ 18,720	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 18,720	
File deed restrictions	20	hour	$ 234.00	$ 4,680	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 4,680	
Risk Management Plan										**Risk Management Plan Subtotal =**		**$7,200.00**	
Navy review draft RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Navy review draft final RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft final RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Total Institutional Controls Capital Costs										**Total Legal Controls Capital Costs Subtotal**		**$145,227.00**	
Total Institutional Controls and Access Restrictions Capital Costs										**Total Institutional Controls and Access Restrictions Capital Costs Subtotal =**		**$159,209.00**	

Total Project Capital Cost =	**$**	**4,042,751**
Present Value of 30 Years of Periodic Costs =	**$**	**1,734,236**
SubTotal =	**$**	**5,776,986**
20% Contingency =	**$**	**1,155,397**
Total Project Cost =	**$**	**6,932,384**

Notes:

BCT	Base Realignment and Closure Cleanup Team
csy	Hundred square yards
FOST	Finding of suitability to transfer
LUCIP	Land Use Control Implementation Plan
Means	RS Means Company, Inc.
N/A	Not applicable
O&P	Overhead and profit
ODC	Other direct cost
RACER	Remedial Action Cost Engineering and Requirements System
RMP	Risk Management Plan
RTC	Responses to comments
t/hr	Ton per hour
Tetra Tech	Tetra Tech EM Inc.

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Tetra Tech. 2002. "Draft Revised Parcel D Feasibility Study Report, Hunters Point Shipyard San Francisco, California." March 8.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
34	Present-Worth Cost: $418,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-1 and F-8A.

TABLE F-1: SOIL ALTERNATIVES COST ESTIMATE SUMMARY

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Description	Alternative S-1 No Action	Alternative S-2 Institutional Controls and Maintained Landscaping	Alternative S-3 Excavation, Disposal, Institutional Controls, and Maintained Landscaping	Alternative S-4 Covers and Institutional Controls	Alternative S-5 Excavation, Disposal, Covers, Soil Vapor Extraction, and Institutional Controls
Total Project Duration (Years)		**30**	**30**	**30**	**30**
Capital and Labor Cost	$0	$645,121	$12,833,170	$4,042,751	$17,236,479
Present Value of Periodic Costs	$0	$673,653	$854,494	$1,734,236	$3,552,364
20% Contingency	$0	$263,755	$2,737,533	$1,155,397	$4,157,769
Total Present Value of Alternative	**$0**	**$1,582,528**	**$16,425,197**	**$6,932,384**	**$24,946,612**
(Rounded)	**$0**	**$1,580,000**	**$16,430,000**	**$6,930,000**	**$24,950,000**

TABLE F-8A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-5

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-5: Excavation, Disposal, Covers, SVE, and Institutional Controls

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	24.0	
	531	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Costs													
Distributive Costs											**Distributive Costs Subtotal =**	**$ 146,746**	
1 Project Manager 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
1 Superintendent 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Health & Safety Offic 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Quality Control Office 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
1 Procurement Spec. 50% on project; location factor N/A	180	hour	$ 34.00	$ 9,792	$ -	$ -	$ 200.00 /day	$ 4,883	$ -	$ -	$ 81.53	$ 14,675	Includes $200 per day per diem
Mobilization											**Mobilization Subtotal =**	**$ 3,960**	***Assume that these will be used overall (not calculated for every excavation).**
Crawler Mounted Backhoes	5	each	$ 55.00	$ 471	$ 112.00	$ 608	$ -	$ -	$ -	$ -	$ 215.80	$ 1,079	RACER 2006
Tractor Loader	5	each	$ 55.00	$ 471	$ 112.00	$ 608	$ -	$ -	$ -	$ -	$ 215.80	$ 1,079	
Graders	5	each	$ 53.00	$ 454	$ 168.00	$ 911	$ -	$ -	$ -	$ -	$ 273.00	$ 1,365	Means 2004 Heavy Construction. Pg. 139. 03110 420 1000
100,000-Gallon Modular Storage Tank	3	each	$ 85.00	$ 437	$ -	$ -	$ -	$ -	$ -	$ -	$ 145.67	$ 437	Baker Tanks vendor quote
13 t/hr Radiological Screening	0	each	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ --	$ -	*Means 33, 18, 04, 02
Demobilization											**Demobilization Subtotal =**	**$ 3,960**	***Assume that these will be used overall (not calculated for every excavation).**
Crawler Mounted Backhoes	5	each	$ 55.00	$ 471	$ 112.00	$ 608	$ -	$ -	$ -	$ -	$ 215.80	$ 1,079	RACER 2006
Tractor Loader	5	each	$ 55.00	$ 471	$ 112.00	$ 608	$ -	$ -	$ -	$ -	$ 215.80	$ 1,079	
Graders	5	each	$ 53.00	$ 454	$ 168.00	$ 911	$ -	$ -	$ -	$ -	$ 273.00	$ 1,365	
100,000-Gallon Modular Storage Tank	3	each	$ 85.00	$ 437	$ -	$ -	$ -	$ -	$ -	$ -	$ 145.67	$ 437	Baker Tanks vendor quote
	0	each	$ -	$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 03 per Jim H
Equipment											**Equipment Subtotal =**	**$ 41,505**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Tractor Loader	55	day	$ 100.00	$ 9,491	$ 58.00	$ 3,489	$ -	$ -	$ -	$ -	$ 234.13	$ 12,980	
20-ton Dump Truck	55	day	$ 83.00	$ 7,878	$ 92.00	$ 5,534	$ -	$ -	$ -	$ -	$ 241.93	$ 13,412	
100,000-gallon Modular Storage Tank	55	day	$ -	$ -	$ 175.00	$ 10,526	$ -	$ -	$ -	$ -	$ 189.87	$ 10,526	Baker Tanks vendor quote
		month		$ -	$ -	$ -		$ -	$ -	$ -		$ -	*Means 33, 18, 04, 04
Trash Pump	60	day	$ 15.64	$ 1,607	$ 45.78	$ 2,980	$ -	$ -	$ -	$ -	$ 76.45	$ 4,587	RACER 2006 for dewatering excavations. Assumes additional 15 days for backfilling.
Temporary Facilities											**Temporary Facilities Subtotal =**	**$ 118,649**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
Portable Toilets (2)	24	month	$ -	$ -	$ -	$ -	$ 1,006.40	$ 26,207	$ -	$ -	$ 1,091.96	$ 26,207	Means 2004 Constructio 01590 400 6410
Rental Trucks (5) (for supervisory staff)	24	month	$ -	$ -	$ -	$ -	$ 3,550.00	$ 92,442	$ -	$ -	$ 3,851.75	$ 92,442	Assuming rental from Enterprise
Oversight											**Oversight Subtotal =**	**$ 29,349**	***Assume that we will not be setting up buildings/work areas/etc. Numbers same as previous.**
1 Engineer 100% on project; location factor N/A	360	hour	$ 34.00	$ 19,584	$ -	$ -	$ 200.00 /day	$ 9,765	$ -	$ -	$ 81.53	$ 29,349	Includes $200 per day per diem
Total Site Wide Costs											**Total Site Wide Costs Subtotal =**	**$ 344,169**	
Excavation Costs													
Concrete Cutting and Repaving											**Concrete Cutting and Repaving Subtotal =**	**$ 38,209**	
Saw Cutting Asphalt	6515	linear feet	0.53	$ 5,911	0.3	$ 2,121	0.44	$ 3,110	$ -	$ -	$ 1.71	$ 11,142	Up to 3" deep
Paving 4" Asphalt	12505	square yard	$ 0.32	$ 6,851	$ 0.24	$ 3,256	$ 1.25	$ 16,960	$ -	$ -	$ 2.16	$ 27,067	Means 2004 Heavy Construction. Pg. 105. 02785 250 1910
Excavation and Backfill											**Excavation and Backfill Subtotal =**	**$ 3,422,792**	
Tarpaulins	12,505	square feet	$ -	$ -	$ -	$ -	0.54	$ 7,327	$ -	$ -	$ 0.59	$ 7,327	reinforced woven polyethylene, 6 mils thick
Excavation	41683	cubic yard	$ 1.35	$ 96,338	$ 1.71	$ 77,337	$ -	$ -	$ -	$ -	$ 4.17	$ 173,675	Means 2004 17, 03, 02, 77
Excavation With Building Shoring	7245	cubic yard	$ 34.93	$ 433,257	$ 4.14	$ 32,544	$ 10.76	$ 84,583	$ -	$ -	$ 75.97	$ 550,384	Means 2004 17, 03, 09, 01
Excavation With Utility Shoring	1764	cubic yard	$ 34.05	$ 102,835	$ 2.47	$ 4,728	$ 5.22	$ 9,991	$ -	$ -	$ 66.64	$ 117,554	Means 2004 17, 03, 09, 01
Boundary Fence	6515	linear feet	$ 4.78	$ 53,315	2.34	$ 16,541	1.78	$ 12,582	$ 1	$ 8,079	$ 13.89	$ 90,517	2006 RACER (5' galvanized)
Erosion Control, Drainage Filter Fabric	12505	square yard	$ 0.83	$ 17,769	0.03	$ 407	0.82	$ 11,126	$ 2	$ 31,012	$ 4.82	$ 60,314	2006 RACER, 8oz/syd
Dewatering	55	day	$ 113.00	$ 10,725	$ 23.00	$ 1,383	$ 136.00	$ 8,181	$ -	$ -	$ 365.97	$ 20,289	Means 2006 312319200650, attended 2 hours per day, 4" discharge pump used for 8 hours, includes 20 L.F. of suction hose and 100 L.F. of discharge hose
Confirmation Sampling	1385	each	$ 17.00	$ 40,309	$ -	$ -	$ 1,048.00	$ 1,574,856	$ -	$ -	$ 1,166.18	$ 1,615,165	Means 33, 02, 06. Sample minimum of 2 on each side plus 1 at bottom; otherwise every 15 ft along perimeter and every 225 ft at bottom. Assumes 0.5 hours per confirmation sample for Engineer.
Disposal Of Water	1,250	100 cubic feet	$ -	$ -	$ -	$ -	$ 16.54	$ 22,432	$ -	$ -	$ 17.95	$ 22,432	Highest non-resident cost cited on San Francisco Public Utilities website.
Sampling and Analysis of Water	6	each	$ 17.00	$ 175	$ -	$ -	$ 175.00	$ 1,139	$ -	$ -	$ -	$ 1,314	
Gravel Delivered and Dumped	4168	cubic yard	$ 3.52	$ 25,119	$ 1.72	$ 7,779	$ 23.74	$ 107,367	$ -	$ -	$ 33.65	$ 140,265	2006 RACER, 1 ft of drain rock
Dry Roll Gravel, Steel Roller	12505	square yard	$ 0.82	$ 17,555	$ 0.28	$ 3,799	$ -	$ -	$ -	$ -	$ 1.71	$ 21,354	2006 RACER
Unclassified Fill Delivered, Spread and Compacted	37515	cubic yard	$ 2.42	$ 155,426	$ 1.92	$ 78,151	$ 6.82	$ 277,599	$ 1.00	$ 46,518	$ 14.87	$ 557,694	2006 RACER, 6" lifts
Nuclear Density Gauge Soil Compaction Testing	160	hour	$ 82.00	$ 22,461	$ 2.92	$ 507	$ 7.82	$ 1,358	$ 1.00	$ 198	$ 153.28	$ 24,524	Earth Systems vendor quote
Compaction Reports	21	each	$ -	$ -	$ -	$ -	$ 350.00	$ 7,975	$ 1.00	$ 26	$ 381.00	$ 8,001	Earth Systems vendor quote
Signs	130	each	$ 30.63	$ 6,833	$ -	$ -	$ 36.43	$ 5,150	$ -	$ -	$ 91.96	$ 11,983	2006 RACER (Stock, reflectorize, UTMCD standard, guide and directional, 12" x 18", with posts)
Storm Water Control											**Storm Water Control Subtotal =**	**$ 12,947**	
2 -foot high (and 2 feet wide) berm around open excavation	931	cubic yard	$ -	$ -	$ -	$ -	$ -	$ -	$ 6.12	$ 7,063	$ 7.59	$ 7,063	Means 2004 17, 0, 99, 11
Erosion Control, Silt Fence	1600	linear feet	0.3	$ 822	$ -	$ -	0.63	$ 1,094	$ 2	$ 3,968	$ 3.68	$ 5,884	2006 RACER Polypropylene, ideal conditions, 3' high
Waste Hauling and Disposal											**Waste Hauling and Disposal Subtotal =**	**$ 8,188,523**	
Characterization Sampling and Analysis	35	each	$17.00	$ 1,019	$ -	$ -	$ 200.00	$ 7,595				$ 8,614	
Bulk Waste Loading	41683	cubic yard	$ 1.27	$ 90,629	$ 1.64	$ 74,171	$ -	$ -	$ -	$ -	$ 3.95	$ 164,800	2006 RACER
Nonhazardous Material Transportation and Disposal	38807	cubic yard	$ -	$ -	$ -	$ -	$ 111.35	$ 4,688,463	$ -	$ -	$ 120.81	$ 4,688,463	Nonhazardous disposal rate at $22/ton + $1610/load, plus 11% tax and recovery fee transportation to Buttonwillow Landfill (quote by Clean Harbors)
RCRA-Hazardous Material Haul (20 cubic yards Dump, 200 miles)	16632	cubic yard	$ -	$ -	$ -	$ -	$ 89.35	$ 1,612,345	$ -	$ -	$ 96.94	$ 1,612,345	Transportation to Buttonwillow Landfill @ $1610/load plus 11% tax and recovery fee
RCRA-Hazardous Material Disposal	16632	cubic yard	$ -	$ -	$ -	$ -	$ 95.00	$ 1,714,301	$ -	$ -	$ -	$ 1,714,301	RCRA-hazardous disposal cost for treatment of metals (standard recipe)
Total Excavation Costs											**Total Excavation Costs Subtotal =**	**$ 11,662,471**	

TABLE F-8A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE S-5 (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative S-5: Excavation, Disposal, Covers, SVE, and Institutional Controls

Location Factors

Assembly:	124.0%	
Professional Labor Multiplier:	1.6	(RACER 2006)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(RACER 2006)
Project Duration:	24.0	
	531	

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including Profit)	Unloaded Assembly Unit Cost	Total Assembly Cost (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Cover Costs													
Cover													
Sealcoating, Rubberized Asphalt	99220	square yard	$ 0.10	$ 16,986	$ 0.11	$ 11,842	$ 0.44	$ 47,368	$ -	$ -	$ 0.77	$ 76,196	Means 2004 Heavy Construction. Pg. 105. 02785 250 0012
Rough grade	12505	square yard	$ 0.29	$ 6,208	$ 0.51	$ 6,920	$ -	$ -	$ -	$ -	$ 1.05	$ 13,128	Means 200417, 03, 01, 03
Fine grade	12505	square yard	$ 0.20	$ 4,282	$ 0.21	$ 2,849	$ -	$ -	$ -	$ -	$ 0.57	$ 7,131	2006 Means CSI 312216109100 Machine grading, includes compaction, minimum labor/equipment charge
Asphalt cover - bituminous (4 " thick)	1707552	square feet	$ 0.15	$ 438,499.00	$ 0.18	$ 333,485.00	$ 1.21	$ 2,241,760	$ -	$ -	$ 1.76	$ 3,013,744	Means 18 03 03 06, adjusted for 4-" thickness
Soil Cover Borrow, Fill, Compact	9,026	cubic yard	$ 1.68	$ 25,959	$ 2.63	$ 25,755	$ 7.15	$ 70,019	$ -	$ -	$ 13.49	$ 121,733	2 ft. thick, Means 17, 03, 04, 23
Soil Cover Sampling and Analytical	10	each	$ 170.00	$ 2,910	$ -	$ -	$ 150.00	$ 1,628	$ -	$ -	$ -	$ 4,538	Assumes 0.5 hours Engineer for each sample (1 per 1,000 cubic yards)
Hydroseeding	136	100 square yards	$ 2.59	$ 601	$ 2.25	$ 331	$ 9.37	$ 1,378	$ -	$ -	$ 17.05	$ 2,310	Means 18, 05, 04, 01
Hydrofertilizer	136	100 square yards	$ 1.03	$ 239	$ 0.75	$ 110	$ 2.18	$ 321	$ -	$ -	$ 4.94	$ 670	Means 18, 05, 04, 08
Water - 10 times	136	100 square yards	$ 8.89	$ 2,063	$ 7.69	$ 1,131	$ 0.98	$ 144	$ -	$ -	$ 24.63	$ 3,338	Means 18, 05, 04, 13
Total Covering Capital Costs										**Total Covering Capital Costs Subtotal =**		**$ 3,242,788**	
Construction Cost Summary													
Total Construction Capital Costs										**Total Construction Capital Costs Subtotal =**		**$ 15,249,428**	
Design Cost										**Design Cost Subtotal =**		**$ 1,829,931**	*Calculated as overall cost - not per individual excavation. Unit cost numbers same as previous.
Assume 12% of construction cost													
Access Restrictions													
Signage Capital Costs										**Signage Capital Costs Subtotal =**		**$ 11,893**	
Signage	130	each	$ 33.88	$ 7,558	$ -	$ -	$ 30.66	$ 4,335	$ -	$ -	$ 91.27	$ 11,893	One sign per 50 ft perimeter of excavation areas; Means 18, 01, 04, 11
Total Access Restrictions Capital Costs										**Total Access Restrictions Capital Costs Subtotal =**		**$ 11,893**	
Institutional Controls													
Land Use Control Implementation and Certification										**Land Use Control Implementation and Certification Subtotal =**		**$74,566.00**	
LUCIP scoping meeting	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for subsistence.
Prepare draft LUCIP	120	hour	$ 75.00	$ 15,408	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 15,408	Tetra Tech 2002.
Submit draft LUCIP	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ 100	$ 3,472	$ -		$ 236.91	$ 7,581	Tetra Tech 2002. ODCs for printing.
BCT review period	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
BCT comments due	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ -	$ -	$ -		$ 128.38	$ 2,054	Tetra Tech 2002.
RTC meeting and BCT concurrence	16	hour	$ 75.00	$ 2,054	$ -	$ -	$ 500	$ 8,680	$ -		$ 670.88	$ 10,734	Tetra Tech 2002. ODCs for printing.
Prepare draft final LUCIP	72	hour	$ 75.00	$ 9,245	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 9,245	Tetra Tech 2002.
Submit draft final LUCIP	8	hour	$ 75.00	$ 1,027	$ -	$ -	$ 100	$ 868	$ -		$ 236.88	$ 1,895	Tetra Tech 2002. ODCs for printing.
BCT review and concurrence period	48	hour	$ 75.00	$ 6,163	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 6,163	Tetra Tech 2002.
BCT concurrence letters due	32	hour	$ 75.00	$ 4,109	$ -	$ -	$ -	$ -	$ -		$ 128.41	$ 4,109	Tetra Tech 2002.
Prepare final LUCIP with RTC	40	hour	$ 75.00	$ 5,136	$ -	$ -	$ -	$ -	$ -		$ 128.40	$ 5,136	Tetra Tech 2002.
Submit final LUCIP with RTC	11	hour	$ 75.00	$ 1,412	$ -	$ -	$ 100	$ 1,194	$ -		$ 236.91	$ 2,606	Tetra Tech 2002. ODCs for printing.
Covenant to Restrict Use of Property										**Covenant to Restrict Use of Property Subtotal =**		**$40,061.00**	
Prepare draft covenant	80	hour	$ 234.00	$ 32,049	$ -	$ -	$ -	$ -	$ -		$ 400.61	$ 32,049	Tetra Tech 2002. ODCs for printing.
File covenant	20	hour	$ 234.00	$ 8,012	$ -	$ -	$ -	$ -	$ -		$ 400.60	$ 8,012	Tetra Tech 2002. ODCs for travel fees.
Deed Restrictions										**Deed Restrictions Subtotal =**		**$23,400.00**	
Prepare draft deed restrictions	80	hour	$ 234.00	$ 18,720	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 18,720	
File deed restrictions	20	hour	$ 234.00	$ 4,680	$ -	$ -	$ -	$ -	$ -	$ -	$ 234.00	$ 4,680	
Risk Management Plan										**Risk Management Plan Subtotal =**		**$7,200.00**	
Navy review draft RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Navy review draft final RMP	40	hour	$ 75.00	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 3,000	
Discuss comments on draft final RMP	8	hour	$ 75.00	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.00	$ 600	
Total Institutional Controls Capital Costs										**Total Legal Controls Capital Costs Subtotal**		**$145,227.00**	
Total Institutional Controls and Access Restrictions Capital Costs										**Total Institutional Controls and Access Restrictions Capital Costs Subtotal =**		**$157,120.00**	

Total Project Capital Cost =	**$ 17,236,479**
Present Value of 30 Years of Periodic Costs =	**$ 3,552,364**
SubTotal =	**$ 20,788,844**
20% Contingency =	**$ 4,157,769**
Total Project Cost =	**$ 24,946,612**

Notes:

BCT	Base Realignment and Closure Cleanup Team	Means	RS Means Company, Inc.	RACER	Remedial Action Cost Engineering and Requirements System	t/hr	Ton per hour
csy	Hundred square yards	N/A	Not applicable	RCRA	Resource Conservation and Recovery Act	TCLP	Toxicity characteristic leaching procedure
FOST	Finding of suitability to transfer	O&P	Overhead and profit	RMP	Risk Management Plan	Tetra Tech	Tetra Tech EM Inc.
GAC	Granular activated carbon	ODC	Other direct cost	RTC	Responses to comments	VOC	Volatile organic compound
Hg	Mercury	PCB	Polychlorinated biphenyl	SVE	Soil vapor extraction	WET	Waste extraction test
LUCIP	Land Use Control Implementation Plan	PVC	Polyvinyl chloride	SVOC	Semivolatile organic compound		

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.
Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.
Tetra Tech. 2002. "Draft Revised Parcel D Feasibility Study Report, Hunters Point Shipyard San Francisco, California." March 8.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
35	Present-Worth Cost: $508,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-9 and F-11A.

TABLE F-9: GROUNDWATER ALTERNATIVES COST ESTIMATE SUMMARY

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Site: Parcel C
Location: Hunters Point Shipyard, San Francisco, California
Phase: Feasibility Study
Base Year: 2006

Description	Alternative 1	Alternative 2	Alternative 3		Alternative 4
	No Action	Long-Term Groundwater Monitoring and Institutional Controls	Alternative GW-3A: In-Situ Bioremediation, Monitored Natural Attenuation, and Institutional Controls	Alternative GW-3B: In Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls	Alternative GW-4: In-Situ Zero Valent Iron Reduction, Plume-Wide Bioremediation, Monitored Natural Attenuation, and Institutional Controls
	GW-1	GW-2	GW-3A	GW-3B	GW-4
Total Project Duration (Years)		**30**	**30**	**30**	**25**
Capital and Labor Cost	$0	$948,431	$3,611,722	$4,573,382	$5,507,893
Total O&M and Periodic Cost	**$0**	$9,531,750	$14,644,227	$18,984,904	$33,823,131
Contingency	$0	$2,096,036	$3,651,190	$4,711,657	$7,866,205
Total Present Value of Alternative	**$0**	**$12,576,218**	**$21,907,139**	**$28,269,944**	**$47,197,229**
(Rounded)	**$0**	**$12,580,000**	**$21,910,000**	**$28,270,000**	**$47,200,000**

TABLE F-11A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-2

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-2: Institutional Controls and Long-Term Groundwater Monitoring

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	31	working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Costs												
A- Aquifer, B-Aquifer and Deep Well Monitoring Well Installation										**Subtotal =**	**$ 890,685**	Rounded average based on typical loaded professional unit costs
Subcontracting and Procurement												
Project Manager		20	hour	$ 34.00	$ 1,088	$ -	$ -	$ -	$ -	$ 54.40	$ 1,088	
Health & Safety Officer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Engineer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Equipment											$ 310,685.00	
Drill Rig Mobilization/Demobilization		3	LS	$ 1,640.29	$ 8,425	$ 990.00	$ 3,237	$ -	$ -	$ 3,887.33	$ 11,662	2006 RACER
Move Rig/Equipment Around Site		97	each	$ 235.79	$ 39,156	$ 142.31	$ 15,046	$ 64.09	$ 6,776	$ 628.64	$ 60,978	2006 RACER
Air Rotary, 6-inch Diameter Borehole		3,393	linear feet	$ 18.94	$ 110,019	$ 29.96	$ 110,803	$ -	$ -	$ 65.08	$ 220,822	2006 RACER, consolidated, Depth <= 100 ft
Drill Rig Decontamination		11	day	$ 640.10	$ 12,054	$ -	$ -	$ 19.24	$ 231	$ 1,116.82	$ 12,285	2006 RACER, assume once per week.
Vehicles (2)		31	day	$ -	$ -	$ -	$ -	$ 40.00	$ 1,352	$ 43.61	$ 1,352	
Organic Vapor Analyzer		11	day	$ -	$ -	$ 132.08	$ 1,584.00	$ -	$ -	$ 144.00	$ 1,584	RACER 2006
Well Development Equipment		3	week	$ 78.20	$ 375.00	$ -	$ -	$ 497.60	$ 1,627	$ 667.33	$ 2,002	RACER 2006
Materials												
Well Plug		97	each	$ 6.91	$ 1,148	$ 10.93	$ 1,156	$ 6.32	$ 668	$ 30.64	$ 2,972	2006 RACER
Well Casing		2,286	linear feet	$ 4.60	$ 18,003	$ 7.28	$ 18,140	$ 1.30	$ 3,239	$ 17.23	$ 39,382	2006 RACER
2-inch PVC Well Screen		1,010	linear feet	$ 5.94	$ 10,271	$ 9.40	$ 10,348	$ 3.00	$ 3,303	$ 23.69	$ 23,922	2006 RACER
Filter Pack		1,204	linear feet	$ 3.91	$ 8,059	$ 6.19	$ 8,124	$ 3.37	$ 4,423	$ 17.11	$ 20,606	2006 RACER
Portland Cement Grout		2,035	linear feet	$ -	$ -	$ -	$ -	$ 1.26	$ 2,795	$ 1.37	$ 2,795	2006 RACER
Bentonite Seal		97	each	$ 15.54	$ 2,581	$ 24.59	$ 2,600	$ 10.02	$ 1,059	$ 64.33	$ 6,240	2006 RACER
PVC bailers, disposable		97	each	$ -	$ -	$ -	$ -	$ 6.92	$ 732	$ 7.55	$ 732	2006 RACER
Surface Pad, Concrete, 2' x 2' x 4"		97	each	$ 21.58	$ 3,584	$ 1.80	$ 190	$ 41.82	$ 4,422	$ 84.49	$ 8,196	2006 RACER
DOT Steel Drums, 55 gallon (Soil Cuttings)		53	each	$ -	$ -	$ -	$ -	$ 94.49	$ 5,407	$ 102.99	$ 5,407	2006 RACER
DOT Steel Drums, 55 gallon (Purge Water)		50	each	$ -	$ -	$ -	$ -	$ 94.49	$ 5,143	$ 102.98	$ 5,143	2006 RACER
Oversight												
Project Manager	50% on project; location factor N/A	124	hour	$ 34.00	$ 6,746	$ -	$ -	$ -	$ -	$ 54.40	$ 6,746	
Superintendent	50% on project; location factor N/A	124	hour	$ 34.00	$ 6,746	$ -	$ -	$ -	$ -	$ 54.40	$ 6,746	
Engineer	50% on project; location factor N/A	124	hour	$ 34.00	$ 6,746	$ -	$ -	$ -	$ -	$ 54.40	$ 6,746	
Health & Safety Officer	25% on project; location factor N/A	62	hour	$ 34.00	$ 3,373	$ -	$ -	$ -	$ -	$ 54.40	$ 3,373	
Quality Control Officer	25% on project; location factor N/A	62	hour	$ 34.00	$ 3,373	$ -	$ -	$ -	$ -	$ 54.40	$ 3,373	
Field Technician	100% on project; location factor N/A	744	hour	$ 34.00	$ 40,474	$ -	$ -	$ 200.00 /day	$ 20,274	$ 81.65	$ 60,748	
Geologist	100% on project; location factor N/A	744	hour	$ 34.00	$ 40,474	$ -	$ -	$ 200.00 /day	$ 20,274	$ 81.65	$ 60,748	
Monitoring Well Installation Waste Handling and Disposal Costs												
Waste Handling and Disposal										**Subtotal =**	**$ 57,746**	
5,000 Gallon Bulk Tank Truck Secondary Containment, Storage and Loading Waste Liquid		3	each	$ 559.30	$ 2,685	$ 253.34	$ 828	$ -	$ -	$ 1,171.14	$ 3,513	2006 RACER, Well development water
Transport of 5,000-Gallons Nonhazardous Liquid		50	mile	$ -	$ -	$ -	$ -	$ 3.26	$ 178	$ 3.56	$ 178	2006 RACER, Well development water
Liquid Waste Stream Evaluation		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER, Well development water
Liquid Nonhazardous Disposal, Commercial RCRA Landfill		11,165	gallon	$ -	$ -	$ -	$ -	$ 2.39	$ 29,086	$ 2.61	$ 29,086	2006 RACER, Well development water
Soil Waste Characterization		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER
Nonhazardous Drummed Soil Transport		187	each	$ -	$ -	$ -	$ -	$ 50.00	$ 10,192	$ 54.50	$ 10,192	2006 RACER
Nonhazardous Drummed Soil Waste Disposal		187	each	$ -	$ -	$ -	$ -	$ 67.00	$ 13,657	$ 73.03	$ 13,657	2006 RACER

TABLE F-11A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-2 (CONTINUED)

Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-2: Institutional Controls and Long-Term Groundwater Monitoring

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	31	working days

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Institutional Controls (no additional cost; included in Soil Alternatives)											
									Total Project Capital Cost =	**$ 948,431**	
									Present Value of 30 Years of Periodic Costs =	**$ 9,531,750**	
									SubTotal =	**$ 10,480,182**	
									20% Contingency =	**$ 2,096,036**	
									Total Project Cost =	**$ 12,576,218**	

Notes:

BCT	Base Realignment and Closure Cleanup Team
DOT	U.S. Department of Transportation
LUC RD	Land Use Control Remedial Design
LS	Lump Sum
Means	RS Means Company, Inc.
N/A	Not applicable
O&P	Overhead and profit
ODC	Other direct cost
PVC	Polyvinyl chloride
RACER	Remedial Action Cost Engineering and Requirements System
RCRA	Resource Conservation and Recovery Act
RTC	Responses to comments

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
36	Present-Worth Cost: $508,000 / $508,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Tables F-13A and F-15A.

TABLE F-13A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-3A

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-3A: In-Situ Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	46	working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Costs												
A-Aquifer and B-Aquifer Monitoring Well Installation										**A-Aquifer and B-Aquifer Monitoring Well Installation Subtotal =**	**$ 978,500**	Rounded average based on typical loaded professional unit costs
Subcontracting and Procurement												
Project Manager		20	hour	$ 34.00	$ 1,088	$ -	$ -	$ -	$ -	$ 54.40	$ 1,088	
Health & Safety Officer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Engineer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Equipment												
Drill Rig Mobilization/Demobilization		3	LS	$ 1,640.29	$ 8,425	$ 990.00	$ 3,237	$ -	$ -	$ 3,887.33	$ 11,662	2006 RACER
Move Rig/Equipment Around Site		182	each	$ 235.79	$ 73,468	$ 142.31	$ 28,231	$ 64.09	$ 12,714	$ 628.64	$ 114,413	2006 RACER
Air Rotary, 6-Inch-Diameter Borehole		7,089	linear feet	$ 18.94	$ 229,863	$ 29.96	$ 231,501	$ -	$ -	$ 65.08	$ 461,364	2006 RACER, consolidated, Depth <= 100 ft
Drill Rig Decontamination		26	day	$ 640.10	$ 28,492	$ -	$ -	$ 19.24	$ 545	$ 1,116.81	$ 29,037	2006 RACER, assume once per week.
Vehicles (2)		46	day	$ -	$ -	$ -	$ -	$ 40.00	$ 4,012	$ 87.22	$ 4,012	
Organic Vapor Analyzer		26	day	$ -	$ -	$ 132.08	$ 3,743.00	$ -	$ -	$ 143.96	$ 3,743	RACER 2006
Well Development Equipment		6	week	$ 78.20	$ 751	$ -	$ -	$ 497.60	$ 3,254	$ 667.50	$ 4,005	RACER 2006
Materials												
Well Plug		182	each	$ 6.91	$ 2,153	$ 10.93	$ 2,168	$ 6.32	$ 1,254	$ 30.63	$ 5,575	2006 RACER
Well Casing		5,087	linear feet	$ 4.60	$ 40,061	$ 7.28	$ 40,366	$ 1.30	$ 7,208	$ 17.23	$ 87,635	2006 RACER
2-Inch PVC Well Screen		1,820	linear feet	$ 5.94	$ 18,508	$ 9.40	$ 18,648	$ 3.00	$ 5,951	$ 23.69	$ 43,107	2006 RACER
Filter Pack		2,184	linear feet	$ 3.91	$ 14,620	$ 6.19	$ 14,736	$ 3.37	$ 8,022	$ 17.11	$ 37,378	2006 RACER
Portland Cement Grout		4,541	linear feet	$ -	$ -	$ -	$ -	$ 1.26	$ 6,237	$ 1.37	$ 6,237	2006 RACER
Bentonite Seal		182	each	$ 15.54	$ 4,842	$ 24.59	$ 4,878	$ 10.02	$ 1,988	$ 64.33	$ 11,708	2006 RACER
PVC bailers, disposable		182	each	$ -	$ -	$ -	$ -	$ 6.92	$ 1,373	$ 7.54	$ 1,373	2006 RACER
Surface Pad, Concrete, 2 feet x 2 feet x 4 inches		182	each	$ 21.58	$ 6,724	$ 1.80	$ 357	$ 41.82	$ 8,296	$ 84.49	$ 15,377	2006 RACER
DOT Steel Drums, 55 gallons (Soil Cuttings)		109	each	$ -	$ -	$ -	$ -	$ 94.49	$ 11,175	$ 103.00	$ 11,175	2006 RACER
DOT Steel Drums, 55 gallons (Purge Water)		50	each	$ -	$ -	$ -	$ -	$ 94.49	$ 5,143	$ 102.98	$ 5,143	2006 RACER
Oversight												
Project Manager	50% on project; location factor N/A	184	hour	$ 34.00	$ 10,010	$ -	$ -	$ -	$ -	$ 54.40	$ 10,010	
Superintendent	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Health & Safety Officer	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Quality Control Officer	50% on project; location factor N/A	184	hour	$ 34.00	$ 10,010	$ -	$ -	$ -	$ -	$ 54.40	$ 10,010	
Geologist (3)	100% on project; location factor N/A	1,104	hour	$ 34.00	$ 60,058	$ -	$ -	$ -	$ -	$ 54.40	$ 60,058	
Source Zone Delineation										**Source Zone Delineation Subtotal =**	**$ 84,465**	Rounded average based on typical loaded professional unit costs
Passive Gas Sampling												
Equipment												
Handheld drill		1	each	$ -	$ -	$ 990.00	$ 1,079	$ -	$ -	$ 1,079.00	$ 1,079	2006 RACER
Vehicle		2	day	$ -	$ -	$ -	$ -	$ 40.00	$ 174	$ 87.00	$ 174	
Analytical												
Passive Gas Samplers		173	each	$ -	$ -	$ -	$ -	$ 50.00	$ 9,411	$ 54.50	$ 9,411	Cost Estimate from Gore Surveys
Shipping		1	LS	$ -	$ -	$ 32.00	$ 35	$ -	$ -	$ 35.00	$ 35	Cost Estimate from Gore Surveys
Analysis and Reporting		50	each	$ 210.00	$ 17,976	$ -	$ -	$ -	$ -	$ 359.52	$ 17,976	Cost Estimate from Gore Surveys
Sampling labor												
Geologist	0.5 hrs per location	86	hour	$ 34.00	$ 4,697	$ -	$ -	$ -	$ -	54.40435513	$ 4,697	
Membrane Interface Probe (MIP)												
Lumpsum charges (reporting, coring mob/demob,)		1	ls	$ 4,500.00	$ 7,200						$ 7,200	2007. Quote from Frank Stolfi, Vironex. Jan 2.
MIP Services (incl. mob/demob)		3	day	$ 5,190.00	$ 23,874						$ 23,874	2007. Quote from Frank Stolfi, Vironex. Jan 2.
Oversight (geologist)	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Bioremediation												
Remedial Design										**Remedial Design Subtotal =**	**$ 194,752**	
Project Manager		700	hour	$ 34.00	$ 38,080	$ -	$ -	$ -	$ -	$ 54.40	$ 38,080	
Health & Safety Officer		80	hour	$ 34.00	$ 4,352	$ -	$ -	$ -	$ -	$ 54.40	$ 4,352	
Engineer (2), Geologist and CAD		2,800	hour	$ 34.00	$ 152,320	$ -	$ -	$ -	$ -	$ 54.40	$ 152,320	

TABLE F-13A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-3A (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-3A: In-Situ Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	46	working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site-Wide Distributive Costs										**Site-Wide Distributive Costs Subtotal =**	**$ 131,485**	
Project Manager	25% on project; location factor N/A	247	hour	$ 34.00	$ 13,437	$ -	$ -	$ -	$ -	$ 54.40	$ 13,437	
Superintendent	0% on project; location factor N/A	0	hour	$ 34.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Health & Safety Officer	100% on project; location factor N/A	986	hour	$ 34.00	$ 53,638	$ -	$ -	$ -	$ -	$ 54.40	$ 53,638	
Quality Control Officer	10% on project; location factor N/A	99	hour	$ 34.00	$ 5,386	$ -	$ -	$ -	$ -	$ 54.40	$ 5,386	
Procurement Spec.	10% on project; location factor N/A	99	hour	$ 34.00	$ 5,386	$ -	$ -	$ -	$ -	$ 54.40	$ 5,386	
Oversight geologist (1)	100% on project; location factor N/A	986	hour	$ 34.00	$ 53,638	$ -	$ -	$ -	$ -	$ 54.40	$ 53,638	
Pilot Tests										**Pilot Tests Subtotal =**	**$ 28,870**	
Injection Pilot Testing, Soil ROI Coring and Sampling (Includes Mobe/Demobe)		3	day		$ -	$ -	$ -	$ 5,885.00	$ 19,244	$ 6,414.67	$ 19,244	Vendor Quote: Vironex, John MacAssey (510)568-7676
HRC-A		19,725	lb	$ -	$ -	$ -	$ -	$ 0.24	$ 5,160	$ 0.26	$ 5,160	Vendor Quote: Regenesis
ORC-A		15	lb	$ -	$ -	$ -	$ -	$ 7.00	$ 114	$ 7.60	$ 114	Vendor Quote: Regenesis
Data Summary Tables		80	hour	$ 34.00	$ 4,352	$ -	$ -	$ -	$ -	$ 54.40	$ 4,352	
Reagent Injection										**Reagent Injection Subtotal =**	**$ 1,374,331**	
RU-C1 HRC-A Injection	2 DPT rigs, 1 rig with 2 injection pumps	59	day	$ -	$ -	$ -	$ -	$ 6,405.00	$ 414,320	$ 6,981.46	$ 414,320	Vendor Quote: Vironex, Eliot Cooper (303) 277-9776
RU-C2 HRC-A Injection	2 DPT rigs, 1 rig with 2 injection pumps	12	day	$ -	$ -	$ -	$ -	$ 5,880.00	$ 78,991	$ 6,409.20	$ 78,991	Mobe/demobe, coring, waste handling, decon, per diems included
RU-C4 HRC-A Injection	2 DPT rigs, 1 rig with 2 injection pumps	37	day	$ -	$ -	$ -	$ -	$ 6,425.00	$ 256,328	$ 7,003.26	$ 256,328	2 DPT rigs, 1 rig with 2 injection pumps
RU-C5 HRC-A Injection	2 DPT rigs, 1 rig with 2 injection pumps	12	day	$ -	$ -	$ -	$ -	$ 5,710.00	$ 74,290	$ 6,223.88	$ 74,290	
RU-C5 ORC-A Injection	2 DPT rigs, 1 rig with 2 injection pumps	1	day	$ -	$ -	$ -	$ -	$ 5,710.00	$ 4,168	$ 6,224.21	$ 4,168	
HRC-A		1,788,130	lb	$ -	$ -	$ -	$ -	$ 0.24	$ 467,775	$ 0.26	$ 467,775	Vendor Quote: JRW Technologies, Donovan Smith (913)438-5544
Process Water, Supplied by Water Line KGAL		1,401	Kgal					$ 3.56	$ 5,437	$ 3.88	$ 5,437	
ORC-A		9,000	lb	$ -	$ -	$ -	$ -	$ 7.00	$ 68,670	$ 7.63	$ 68,670	
Data Summary Tables		80	hour	$ 34.00	$ 4,352	$ -	$ -	$ -	$ -	$ 54.40	$ 4,352	
Bioaugmentation										**Bioaugmentation Subtotal =**	**$ 784,800**	
Injection (no separate injection cost; will be injected along with substrate during second event)		0	day		$ -	$ -	$ -	$ -	$ -	$ -	$ -	Vendor Quote: Vironex, John MacAssey (510)568-7676
BDI		4,800	liter	$ -	$ -	$ -	$ -	$ 150.00	$ 784,800	$ 163.50	$ 784,800	Vendor Quote: Regenesis
Monitoring Well Installation Waste Handling and Disposal Costs												
Waste Handling and Disposal										**Waste Handling and Disposal Subtotal =**	**$ 34,519**	
5,000 Gallon Bulk Tank Truck Secondary Containment, Storage and Loading Waste Liquid		1	each	$ 559.30	$ 895	$ 253.34	$ 276.00	$ -	$ -	$ 1,171.00	$ 1,171	2006 RACER, Well development water
Transport of 5,000-Gallons Nonhazardous Liquid		50	mile	$ -	$ -	$ -	$ -	$ 3.26	$ 178	$ 3.56	$ 178	2006 RACER, Well development water
Liquid Waste Stream Evaluation		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER, Well development water
Liquid Non Hazardous Disposal, Commercial RCRA Landfill		50	drum	$ -	$ -	$ -	$ -	$ 150.66	$ 8,201	$ 164.22	$ 8,201	2006 ECHOS. 33 19 7214
Soil Waste Characterization		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER
Nonhazardous Drummed Soil Transport		187	each	$ -	$ -	$ -	$ -	$ 50.00	$ 10,192	$ 54.50	$ 10,192	2006 RACER
Nonhazardous Drummed Soil Waste Disposal		187	each	$ -	$ -	$ -	$ -	$ 67.00	$ 13,657	$ 73.03	$ 13,657	2006 RACER
Institutional Controls (no additional cost; included in Soil Alternatives)												

Total Project Capital Cost =	**$ 3,611,722**
Present Value of 30 Years of Periodic Costs =	**$ 14,644,227**
SubTotal =	**$ 18,255,949**
20% Contingency =	**$ 3,651,190**
Total Project Cost =	**$ 21,907,139**

Notes:

BCT	Base Realignment and Closure Cleanup Team	O&P	Overhead and profit
CAD	Computer-aided design	ODC	Other direct cost
DOT	U.S. Department of Transportation	ORC	Oxygen-reducing compound
DPT	Direct-push technology	PVC	Polyvinyl chloride
HRC	Hydrogen-reducing compound	RACER	Remedial Action Cost Engineering and Requirements System
LS	Lump Sum	RCRA	Resource Conservation and Recovery Act
LUC RD	Land Use Control Remedial Design	ROI	Radius of influence
Means	RS Means Company, Inc.	RTC	Responses to comments
N/A	Not applicable	RU	Remedial Unit

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

TABLE F-15A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-3B

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-3B: In-Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	46	working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site Wide Costs												
A- Aquifer and B-Aquifer Monitoring Well Installation										**Subtotal =**	**$ 981,542**	Rounded average based on typical loaded professional unit costs
Subcontracting and Procurement												
Project Manager		20	hour	$ 34.00	$ 1,088	$ -	$ -	$ -	$ -	$ 54.40	$ 1,088	
Health & Safety Officer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Engineer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Equipment												
Drill Rig Mobilization/Demobilization		3	LS	$ 1,640.29	$ 8,425	$ 990.00	$ 3,237	$ -	$ -	$ 3,887.33	$ 11,662	2006 RACER
Move Rig/Equipment Around Site		183	each	$ 235.79	$ 73,872	$ 142.31	$ 28,387	$ 64.09	$ 12,784	$ 628.65	$ 115,043	2006 RACER
Air Rotary, 6-inch-diameter Borehole		7,122	linear feet	$ 18.94	$ 230,933	$ 29.96	$ 232,579	$ -	$ -	$ 65.08	$ 463,512	2006 RACER, consolidated, Depth <= 100 ft
Drill Rig Decontamination		26	day	$ 640.10	$ 28,492	$ -	$ -	$ 19.24	$ 545	$ 1,116.81	$ 29,037	2006 RACER, assume once per week.
Vehicles (2)		46	day	$ -	$ -	$ -	$ -	$ 40.00	$ 4,011	$ 87.20	$ 4,011	
Organic Vapor Analyzer		26	day	$ -	$ -	$ 132.08	$ 3,743.00	$ -	$ -	$ 143.96	$ 3,743	RACER 2006
Well Development Equipment		6	week	$ 78.20	$ 751	$ -	$ -	$ 497.60	$ 3,254	$ 667.50	$ 4,005	RACER 2006
Materials												
Well Plug		183	each	$ 6.91	$ 2,165	$ 10.93	$ 2,180	$ 6.32	$ 1,261	$ 30.63	$ 5,606	2006 RACER
Well Casing		5,109	linear feet	$ 4.60	$ 40,234	$ 7.28	$ 40,541	$ 1.30	$ 7,239	$ 17.23	$ 88,014	2006 RACER
2-inch PVC Well Screen		1,830	linear feet	$ 5.94	$ 18,610	$ 9.40	$ 18,750	$ 3.00	$ 5,984	$ 23.69	$ 43,344	2006 RACER
Filter Pack		2,148	linear feet	$ 3.91	$ 14,379	$ 6.19	$ 14,493	$ 3.37	$ 7,890	$ 17.11	$ 36,762	2006 RACER
Portland Cement Grout		4,560	linear feet	$ -	$ -	$ -	$ -	$ 1.26	$ 6,263	$ 1.37	$ 6,263	2006 RACER
Bentonite Seal		183	each	$ 15.54	$ 4,869	$ 24.59	$ 4,905	$ 10.02	$ 1,999	$ 64.33	$ 11,773	2006 RACER
PVC bailers, disposable		183	each	$ -	$ -	$ -	$ -	$ 6.92	$ 1,380	$ 7.54	$ 1,380	2006 RACER
Surface Pad, Concrete, 2' x 2' x 4"		183	each	$ 21.58	$ 6,761	$ 1.80	$ 359	$ 41.82	$ 8,342	$ 84.49	$ 15,462	2006 RACER
DOT Steel Drums, 55 gal. (Soil Cuttings)		109	each	$ -	$ -	$ -	$ -	$ 94.49	$ 11,226	$ 102.99	$ 11,226	2006 RACER
DOT Steel Drums, 55 gal. (Purge Water)		50	each	$ -	$ -	$ -	$ -	$ 94.49	$ 5,143	$ 102.98	$ 5,143	2006 RACER
Oversight												
Project Manager	50% on project; location factor N/A	184	hour	$ 34.00	$ 10,010	$ -	$ -	$ -	$ -	$ 54.40	$ 10,010	
Superintendent	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Health & Safety Officer	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Quality Control Officer	50% on project; location factor N/A	184	hour	$ 34.00	$ 10,010	$ -	$ -	$ -	$ -	$ 54.40	$ 10,010	
Geologist (3)	100% on project; location factor N/A	1,104	hour	$ 34.00	$ 60,058	$ -	$ -	$ -	$ -	$ 54.40	$ 60,058	
Source Zone Delineation										**Source Zone Delineation Subtotal =**	**$ 203,976**	Rounded average based on typical loaded
Passive Gas Sampling												
Equipment												
Handheld drill		1	each	$ -	$ -	$ 990.00	$ 1,079	$ -	$ -	$ 1,079.00	$ 1,079	2006 RACER
Vehicle		2	day	$ -	$ -	$ -	$ -	$ 40.00	$ 174	$ 87.00	$ 174	
Analytical												
Passive Gas Samplers		173	each	$ -	$ -	$ -	$ -	$ 50.00	$ 9,411	$ 54.50	$ 9,411	Cost Estimate from Gore Surveys
Shipping		1	LS	$ -	$ -	$ 32.00	$ 35	$ -	$ -	$ 35.00	$ 35	Cost Estimate from Gore Surveys
Analysis and Reporting		50	each	$ 210.00	$ 17,976	$ -	$ -	$ -	$ -	$ 359.52	$ 17,976	Cost Estimate from Gore Surveys
Sampling labor												
Geologist	0.5 hrs per location	86	hour	$ 34.00	$ 4,697	$ -	$ -	$ -	$ -	54.40435513	$ 4,697	
Membrane Interface Probe (MIP)												
Mobilization/Demobilization		1	LS	$ 4,500.00	$ 7,200						$ 7,200	2007. Quote from Frank Stolfi, Vironex. Jan 2.
MIP Subcontractor		17	day	$ 5,190.00	$ 143,385						$ 143,385	2007. Quote from Frank Stolfi, Vironex. Jan 2.
Oversight (geologist)	100% on project; location factor N/A	368	hour	$ 34.00	$ 20,019	$ -	$ -	$ -	$ -	$ 54.40	$ 20,019	
Total Site Wide Capital Costs										**Total Site Wide Capital Costs Subtotal =**	**$ 1,185,518**	

TABLE F-15A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-3B (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-3B: In-Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	46	working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
ZVI Injection												
Remedial Design										**Subtotal =**	**$ 113,152**	
Project Manager		400	hour	$ 34.00	$ 21,760	$ -	$ -	$ -	$ -	$ 54.40	$ 21,760	
Health & Safety Officer		80	hour	$ 34.00	$ 4,352	$ -	$ -	$ -	$ -	$ 54.40	$ 4,352	
Engineer (2), Geologist and CAD		1,600	hour	$ 34.00	$ 87,040	$ -	$ -	$ -	$ -	$ 54.40	$ 87,040	
ZVI Injection Distributive Costs										**Subtotal =**	**$ 134,910**	
Project Manager	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Superintendent	0% on project; location factor N/A	0	hour	$ 34.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Health & Safety Officer	100% on project; location factor N/A	901	hour	$ 34.00	$ 49,014	$ -	$ -	$ -	$ -	$ 54.40	$ 49,014	
Quality Control Officer	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Procurement Specialist	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Oversight Geologist (1)	100% on project; location factor N/A	901	hour	$ 34.00	$ 49,014	$ -	$ -	$ -	$ -	$ 54.40	$ 49,014	
Pilot Tests										**Subtotal =**	**$ 486,764**	
RU-C1		5	point	$ -	$ -	$ -	$ -	$ 23,016.00	$ 125,437	$ 25,087.40	$ 125,437	
RU-C2		5	point	$ -	$ -	$ -	$ -	$ 26,921.40	$ 146,722	$ 29,344.40	$ 146,722	
RU-C4		5	point	$ -	$ -	$ -	$ -	$ 23,069.70	$ 125,730	$ 25,146.00	$ 125,730	
RU-C5 (TCE)		5	point	$ -	$ -	$ -	$ -	$ 15,908.00	$ 86,699	$ 17,339.80	$ 86,699	
Data Summary Tables		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
ZVI Injection										**Subtotal =**	**$ 2,633,959**	
RU-C1		61	point	$ -	$ -	$ -	$ -	$ 23,016.00	$ 1,530,334	$ 25,087.44	$ 1,530,334	Vendor Quote: ARS Technologies
RU-C2		11	point	$ -	$ -	$ -	$ -	$ 26,921.40	$ 322,788	$ 29,344.36	$ 322,788	Vendor Quote: ARS Technologies
RU-C4		26	point	$ -	$ -	$ -	$ -	$ 23,069.70	$ 653,795	$ 25,145.96	$ 653,795	Vendor Quote: ARS Technologies
RU-C5		5	point	$ -	$ -	$ -	$ -	$ 22,611.83	$ 123,234	$ 24,646.80	$ 123,234	Vendor Quote: ARS Technologies
Data Summary Tables		70	hour	$ 34.00	$ 3,808	$ -	$ -	$ -	$ -	$ 54.40	$ 3,808	
Total ZVI Injection Capital Costs										**Total ZVI Injection Capital Costs Subtotal =**	**$ 3,368,785**	
Monitoring Well Installation Waste Handling and Disposal Costs												
Waste Handling and Disposal										**Waste Handling and Disposal Subtotal =**	**$ 34,529**	
5,000-Gallon Bulk Tank Truck Secondary Containment, Storage and Loading Waste Liquid		1	each	$ 559.30	$ 895	$ 253.34	$ 276.00	$ -	$ -	$ 1,171.00	$ 1,171	2006 RACER, Well development water
Transport of 5,000-Gallons Nonhazardous Liquid		50	mile	$ -	$ -	$ -	$ -	$ 3.26	$ 178	$ 3.56	$ 178	2006 RACER, Well development water
Liquid Waste Stream Evaluation		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER, Well development water
Liquid Nonhazardous Disposal, Commercial RCRA Landfill		50	drum	$ -	$ -	$ -	$ -	$ 150.66	$ 8,211	$ 164.22	$ 8,211	2006 ECHOS. 33 19 7214
Soil Waste Characterization		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER
Nonhazardous Drummed Soil Transport		187	each	$ -	$ -	$ -	$ -	$ 50.00	$ 10,192	$ 54.50	$ 10,192	2006 RACER
Nonhazardous Drummed Soil Waste Disposal		187	each	$ -	$ -	$ -	$ -	$ 67.00	$ 13,657	$ 73.03	$ 13,657	2006 RACER
Monitoring Well Installation Waste Handling and Disposal Costs										**Monitoring Well Installation Waste Handling and Disposal Costs Subtotal =**	**$ 34,529**	

TABLE F-15A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-3B (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-3B: In-Situ Zero-Valent Iron Reduction, Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6	(2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712	
Material and Equipment Profit:	9%	(2006 RACER)
Project Duration:	46	working days

Description	Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Institutional Controls (no additional cost; included in Soil Alternatives)											
									Total Project Capital Cost =	**$ 4,588,832**	
									Present Value of 30 Years of Periodic Costs =	**$ 18,986,334**	
									SubTotal =	**$ 23,575,166**	
									20% Contingency =	**$ 4,715,033**	
									Total Project Cost =	**$ 28,290,199**	

Notes:

BCT	Base Realignment and Closure Cleanup Team	ORC	Oxygen-reducing compound
CAD	Computer-aided design	PVC	Polyvinyl chloride
DOT	U.S. Department of Transportation	RACER	Remedial Action Cost Engineering and Requirements System
HRC	Hydrogen-reducing compound	RCRA	Resource Conservation and Recovery Act
LUC RD	Land Use Control Remedial Design	ROI	Radius of influence
Means	RS Means Company, Inc.	RTC	Responses to comments
N/A	Not applicable	RU	Remedial Unit
O&P	Overhead and profit	ZVI	Zero-valent iron
ODC	Other direct cost		

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
37	Present-Worth Cost: $508,000	Table 7	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Appendix F, Table F-17A.

TABLE F-17A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-4
Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-4: Zero-Valent Iron Reduction, Plume-Wide Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6 (2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712
Material and Equipment Profit:	9% (2006 RACER)
Project Duration:	71 working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
Site Wide Costs												
A- Aquifer and B-Aquifer Monitoring Well Installation										**Subtotal =**	**$ 1,944,992**	Rounded average based on typical loaded professional unit costs
Subcontracting and Procurement												
Project Manager		20	hour	$ 34.00	$ 1,088	$ -	$ -	$ -	$ -	$ 54.40	$ 1,088	
Health & Safety Officer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Engineer		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
Equipment												
Drill Rig Mobilization/Demobilization		3	LS	$ 1,640.29	$ 8,425	$ 990.00	$ 3,237	$ -	$ -	$ 3,887.33	$ 11,662	2006 RACER
Move Rig/Equipment Around Site		406	each	$ 235.79	$ 163,891	$ 142.31	$ 62,978	$ 64.09	$ 28,362	$ 628.65	$ 255,231	2006 RACER
Air Rotary, 6-inch-diameter Borehole		14,481	near fee	$ 18.94	$ 469,550	$ 29.96	$ 472,897	$ -	$ -	$ 65.08	$ 942,447	2006 RACER, consolidated, Depth <= 100 ft
Drill Rig Decontamination		51	day	$ 640.10	$ 55,888	$ -	$ -	$ 19.24	$ 1,070	$ 1,116.82	$ 56,958	2006 RACER, assume once per week.
Vehicles (2)		71	day	$ -	$ -	$ -	$ -	$ 40.00	$ 6,191	$ 87.20	$ 6,191	
Organic Vapor Analyzer		51	day	$ -	$ -	$ 132.08	$ 7,342.00	$ -	$ -	$ 143.96	$ 7,342	RACER 2006
Well Development Equipment		11	week	$ 78.20	$ 1,376	$ -	$ -	$ 497.60	$ 5,966	$ 667.45	$ 7,342	RACER 2006
Materials												
Well Plug		406	each	$ 6.91	$ 4,803	$ 10.93	$ 4,837	$ 6.32	$ 2,797	$ 30.63	$ 12,437	2006 RACER
Well Casing		10,015	near fee	$ 4.60	$ 78,870	$ 7.28	$ 79,471	$ 1.30	$ 14,191	$ 17.23	$ 172,532	2006 RACER
2-inch PVC Well Screen		4,020	near fee	$ 5.94	$ 40,881	$ 9.40	$ 41,189	$ 3.00	$ 13,145	$ 23.69	$ 95,215	2006 RACER
Filter Pack		4,872	near fee	$ 3.91	$ 32,613	$ 6.19	$ 32,872	$ 3.37	$ 17,896	$ 17.11	$ 83,381	2006 RACER
Portland Cement Grout		8,797	near fee	$ -	$ -	$ -	$ -	$ 1.26	$ 12,082	$ 1.37	$ 12,082	2006 RACER
Bentonite Seal		406	each	$ 15.54	$ 10,801	$ 24.59	$ 10,882	$ 10.02	$ 4,434	$ 64.33	$ 26,117	2006 RACER
PVC bailers, disposable		406	each	$ -	$ -	$ -	$ -	$ 6.92	$ 3,062	$ 7.54	$ 3,062	2006 RACER
Surface Pad, Concrete, 2' x 2' x 4"		406	each	$ 21.58	$ 15,000	$ 1.80	$ 797	$ 41.82	$ 18,507	$ 84.49	$ 34,304	2006 RACER
DOT Steel Drums, 55 gal. (Soil Cuttings)		221	each	$ -	$ -	$ -	$ -	$ 94.49	$ 22,710	$ 102.99	$ 22,710	2006 RACER
DOT Steel Drums, 55 gal. (Purge Water)		50	each	$ -	$ -	$ -	$ -	$ 94.49	$ 5,143	$ 102.98	$ 5,143	2006 RACER
Oversight												
Project Manager	50% on project; location factor N/A	284	hour	$ 34.00	$ 15,450	$ -	$ -	$ -	$ -	$ 54.40	$ 15,450	
Superintendent	100% on project; location factor N/A	568	hour	$ 34.00	$ 30,899	$ -	$ -	$ -	$ -	$ 54.40	$ 30,899	
Health & Safety Officer	100% on project; location factor N/A	568	hour	$ 34.00	$ 30,899	$ -	$ -	$ -	$ -	$ 54.40	$ 30,899	
Quality Control Officer	50% on project; location factor N/A	284	hour	$ 34.00	$ 15,450	$ -	$ -	$ -	$ -	$ 54.40	$ 15,450	
Geologist (3)	100% on project; location factor N/A	1,704	hour	$ 34.00	$ 92,698	$ -	$ -	$ -	$ -	$ 54.40	$ 92,698	
Source Zone Delineation										**Source Zone Delineation Subtotal =**	**$ 214,856**	Rounded average based on typical loaded
Passive Gas Sampling												
Equipment												
Handheld drill		1	each	$ -	$ -	$ 990.00	$ 1,079	$ -	$ -	$ 1,079.00	$ 1,079	2006 RACER
Vehicle		2	day	$ -	$ -	$ -	$ -	$ 40.00	$ 174	$ 87.00	$ 174	
Analytical												
Passive Gas Samplers		173	each	$ -	$ -	$ -	$ -	$ 50.00	$ 9,411	$ 54.50	$ 9,411	Cost Estimate from Gore Surveys
Shipping		1	LS	$ -	$ -	$ 32.00	$ 35	$ -	$ -	$ 35.00	$ 35	Cost Estimate from Gore Surveys
Analysis and Reporting		50	each	$ 210.00	$ 17,976	$ -	$ -	$ -	$ -	$ 359.52	$ 17,976	Cost Estimate from Gore Surveys
Sampling labor												
Geologist	0.5 hrs per location	86	hour	$ 34.00	$ 4,697	$ -	$ -	$ -	$ -	54.40435513	$ 4,697	
Membrane Interface Probe (MIP)												
Lumpsum charges (reporting, coring mob/demob,)		1	LS	$ 4,500.00	$ 7,200						$ 7,200	2007. Quote from Frank Stolfi, Vironex. Jan 2.
MIP Services (incl. mob/demob)		17	day	$ 5,190.00	$ 143,385						$ 143,385	2007. Quote from Frank Stolfi, Vironex. Jan 2.
Oversight (geologist)	100% on project; location factor N/A	568	hour	$ 34.00	$ 30,899	$ -	$ -	$ -	$ -	$ 54.40	$ 30,899	
Total Site Wide Capital Costs										**Total Site Wide Capital Costs Subtotal =**	**$ 2,159,848**	

TABLE F-17A: CAPITAL AND LABOR COST ESTIMATE, ALTERNATIVE GW-4 (CONTINUED)

Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California

Alternative GW-4: Zero-Valent Iron Reduction, Plume-Wide Bioremediation, Monitored Natural Attenuation, and Institutional Controls

Professional Labor Multiplier:	1.6 (2006 RACER)
Labor Overhead & Profit Multiplier.:	1.712
Material and Equipment Profit:	9% (2006 RACER)
Project Duration:	71 working days

Description		Quantity	Unit	Unloaded Labor Unit Cost	Total Labor (including O&P)	Unloaded Equipment Unit Cost	Total Equipment (including profit)	Unloaded Material Unit Cost	Total Material (including profit)	Total Unit Cost (including O&P)	Total Cost (including O&P)	Comments
ZVI Injection												
Remedial Design										**Subtotal =**	**$ 113,152**	
Project Manager		400	hour	$ 34.00	$ 21,760	$ -	$ -	$ -	$ -	$ 54.40	$ 21,760	
Health & Safety Officer		80	hour	$ 34.00	$ 4,352	$ -	$ -	$ -	$ -	$ 54.40	$ 4,352	
Engineer (2), Geologist and CAD		1,600	hour	$ 34.00	$ 87,040	$ -	$ -	$ -	$ -	$ 54.40	$ 87,040	
ZVI Injection Distributive Costs										**Subtotal =**	**$ 134,910**	
Project Manager	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Superintendent	0% on project; location factor N/A	0	hour	$ 34.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Health & Safety Officer	100% on project; location factor N/A	901	hour	$ 34.00	$ 49,014	$ -	$ -	$ -	$ -	$ 54.40	$ 49,014	
Quality Control Officer	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Procurement Specialist	25% on project; location factor N/A	226	hour	$ 34.00	$ 12,294	$ -	$ -	$ -	$ -	$ 54.40	$ 12,294	
Oversight Geologist (1)	100% on project; location factor N/A	901	hour	$ 34.00	$ 49,014	$ -	$ -	$ -	$ -	$ 54.40	$ 49,014	
Pilot Tests										**Subtotal =**	**$ 486,764**	
RU-C1		5	point	$ -	$ -	$ -	$ -	$ 23,016.00	$ 125,437	$ 25,087.40	$ 125,437	
RU-C2		5	point	$ -	$ -	$ -	$ -	$ 26,921.40	$ 146,722	$ 29,344.40	$ 146,722	
RU-C4		5	point	$ -	$ -	$ -	$ -	$ 23,069.70	$ 125,730	$ 25,146.00	$ 125,730	
RU-C5 (TCE)		5	point	$ -	$ -	$ -	$ -	$ 15,908.00	$ 86,699	$ 17,339.80	$ 86,699	
Data Summary Tables		40	hour	$ 34.00	$ 2,176	$ -	$ -	$ -	$ -	$ 54.40	$ 2,176	
ZVI Injection										**Subtotal =**	**$ 2,633,959**	
RU-C1		61	point	$ -	$ -	$ -	$ -	$ 23,016.00	$ 1,530,334	$ 25,087.44	$ 1,530,334	Vendor Quote: ARS Technologies
RU-C2		11	point	$ -	$ -	$ -	$ -	$ 26,921.40	$ 322,788		$ 322,788	Vendor Quote: ARS Technologies
RU-C4		26	point	$ -	$ -	$ -	$ -	$ 23,069.70	$ 653,795	$ 25,145.96	$ 653,795	Vendor Quote: ARS Technologies
RU-C5		5	point	$ -	$ -	$ -	$ -	$ 22,611.83	$ 123,234	$ 24,646.80	$ 123,234	Vendor Quote: ARS Technologies
Data Summary Tables		70	hour	$ 34.00	$ 3,808	$ -	$ -	$ -	$ -	$ 54.40	$ 3,808	
Total ZVI Injection Capital Costs										**Total ZVI Injection Capital Costs Subtotal =**	**$ 3,368,785**	
Monitoring Well Installation Waste Handling and Disposal Costs												
Waste Handling and Disposal										**Waste Handling and Disposal Subtotal =**	**$ 34,529**	
5,000-Gallon Bulk Tank Truck Secondary Containment, Storage and Loading Waste Liquid		1	each	$ 559.30	$ 895	$ 253.34	$ 276.00	$ -	$ -	$ 1,171.00	$ 1,171	2006 RACER, Well development water
Transport of 5,000-Gallons Nonhazardous Liquid		50	mile	$ -	$ -	$ -	$ -	$ 3.26	$ 178	$ 3.56	$ 178	2006 RACER, Well development water
Liquid Waste Stream Evaluation		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER, Well development water
Liquid Nonhazardous Disposal, Commercial RCRA Landfill		50	drum	$ -	$ -	$ -	$ -	$ 150.66	$ 8,211	$ 164.22	$ 8,211	2006 ECHOS. 33 19 7214
Soil Waste Characterization		1	each	$ -	$ -	$ -	$ -	$ 513.39	$ 560	$ 560.00	$ 560	2006 RACER
Nonhazardous Drummed Soil Transport		187	each	$ -	$ -	$ -	$ -	$ 50.00	$ 10,192	$ 54.50	$ 10,192	2006 RACER
Nonhazardous Drummed Soil Waste Disposal		187	each	$ -	$ -	$ -	$ -	$ 67.00	$ 13,657	$ 73.03	$ 13,657	2006 RACER
Monitoring Well Installation Waste Handling and Disposal Costs										**Monitoring Well Installation Waste Handling and Disposal Costs Subtotal =**	**$ 34,529**	
Institutional Controls (no additional cost; included in Soil Alternatives)												

Total Project Capital Cost =	**$ 5,563,162**
Present Value of 30 Years of Periodic Costs =	**$ 34,811,670**
SubTotal =	**$ 40,374,832**
20% Contingency =	**$ 8,074,966**
Total Project Cost =	**$ 48,449,799**

Notes:

BCT	Base Realignment and Closure Cleanup Team	N/A	Not applicable	RCRA	Resource Conservation and Recovery Act
CAD	Computer-aided design	O&P	Overhead and profit	ROI	Radius of influence
DOT	U.S. Department of Transportation	ODC	Other direct cost	RTC	Responses to comments
HRC	Hydrogen-reducing compound	ORC	Oxygen-reducing compound	RU	Remedial Unit
LUC RD	Land Use Control Remedial Design	PVC	Polyvinyl chloride	ZVI	Zero-valent iron
Means	RS Means Company, Inc.	RACER	Remedial Action Cost Engineering and Requirements System		

Sources:

Earth Tech. 2006. "Remedial Action Cost Engineering and Requirements System Parametric Cost-Estimating Software for Remediation and Restoration Projects". RACER. Version 8.1.

Means. 2004. "Environmental Remediation Cost Data – Unit Price, 10th Annual Edition, Environmental Cost Handling Options and Solutions." Kingston, Massachusetts. October.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
38	Present-Worth Cost: $1,077,000	Table 7	Final Radiological Addendum to the Revised Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC, Inc. June 20, 2008. Appendix B, Section 6.9, pages B.6-5 and B.6-6.

6.9 COST ASSUMPTION ASSOCIATED WITH ALTERNATIVE R-2: SURVEY, DECONTAMINATION, DISPOSAL, RELEASE, AND INSTITUTIONAL CONTROLS

Alternative R-2 consists of decontamination of radiologically-impacted buildings and dismantlement if necessary. Surveys would be performed on buildings except Building 205, trenches resulting from sewer and storm line removal, and remediated storm drain and sanitary sewer piping to meet the remedial action objectives and use of ICs.

The above-grade portions of Building 205, the discharge tunnel, and the first 10 feet of the Building 205 shaft would be surveyed to verify that no residual radioactivity is present above the remediation goals. The Building 205 Shaft below 10 feet would be abandoned as is due to the unsound condition of the building, health and safety hazards associated with field conditions, as well as many other unknowns. Institutional controls would be implemented to minimize inadvertent contact with radiologically-impacted media.

The following assumptions apply to Alternative R-2:

1. Each building (203, 211, 214, 224, 241, 253, 271, and 272) will be divided into 31 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (Department of Defense et al., 2000) survey units. The cost for developing the survey plans, performing the survey, and drafting the report is $6,500 per survey unit. This cost is based on the San Francisco 49ers Parcel D proposal summary.
2. Each building (203, 211, 214, 224, 241, 253, 271, and 272) is assumed to generate one waste disposal bin of material (e.g., flooring, ventilation piping, etc.). The assumed disposal cost of $11,880 per bin results in a total cost of $95,040. It is assumed that one-half of a disposal bin is filled when surveying Building 205 for a total of $5,940 plus $95,040 or $100,980.
3. Building 205 will be divided into 15 MARSSIM survey units, except for the shaft below 10 feet. The Building 205 shaft below 10 feet will not be surveyed due to the unsound condition of the building, health and safety hazards, as well as many other unknowns. This portion of the building will be abandoned in-place and ICs will be implemented to minimize inadvertent contact with radiologically-impacted media. The ICs for Building 205 are assumed to add no additional cost to the ICs already proposed for Parcel C. The cost for developing the survey plans, performing the survey, and drafting the report is $6,500 per survey unit for a total of $97,500.
4. Removal of the Parcel C sewer and storm drain system piping is estimated to result in 60,000 cy of material to be excavated at an estimated cost of $330 per cy. This results in a total excavation cost of $19,800,000.
5. It is assumed that 5 percent of the material excavated during the Parcel C sewer and storm drain system removal will be radiologically-impacted resulting in approximately 3,000 cy of impacted material. The cost of disposal is assumed to be $11,880 per bin, and based on 14 cy of soil per bin; the total disposal cost is estimated to be $2,542,714. Note this does not include cost associated with disposal of

Comprehensive Environmental Restoration and Compensation Liability Act (CERCLA)-impacted materials.

The table below provides a breakdown of the derivation of the estimated cost for Alternative R-2.

Legal Controls	**Cost**
Impacted Parcel C Building Surveys/Release	$ 1,709,500
Radiological waste disposal for building sites	$ 100,980
Parcel C sewer and storm drain removal and disposal	**$** 22,345,714
20% Contingency	**$** 4,831,239
Total Estimated Cost for Alternative R-2	**$ 28,987,000***

Notes:

* Total estimated additional cost has been rounded to the nearest thousand.

6.10 COST ASSUMPTIONS ASSOCIATED WITH ALTERATIVE R-3: SURVEY, DECONTAMINATION, DISPOSAL, RELEASE, CLOSE IN-PLACE, AND INSTITUTIONAL CONTROLS

Alternative R-3 consists of decontamination of impacted buildings, except for Building 205, dismantlement if necessary, and radiological surveys to ensure the remedial action objectives are met. This alternative assumes that the Building 205 shaft below 10 feet would be closed in-place with backfilled stone and a concrete cap and ICs will be assigned. This alternative assumes that trenches resulting from sewer and storm line removal, and remediated storm drain and sanitary sewer piping will be surveyed to meet the remediation goals.

The following assumptions apply to Alternative R-3:

1. Each building (203, 211, 214, 224, 241, 253, 271, and 272) will be divided into 31 MARSSIM survey units. Building 205 will be divided into 15 MARSSIM survey units except for the shaft below 10 feet. The Building 205 shaft below 10 feet will not be released. It will be closed in-place with stone and a concrete cap with ICs implemented. The ICs for Building 205 are assumed to add no additional cost to the ICs already proposed for Parcel C. The cost for developing the survey plans, performing the survey, and drafting the report is $6,500 per survey unit.
2. Each building (203, 211, 214, 224, 241, 253, 271, and 272) is assumed to generate one disposal bin of material (e.g., flooring, ventilation piping, etc.). The assumed disposal cost of $11,880 per bin results in a total cost of $95,400.

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
39	Dust control measures	Section 2.9.2	Final Basewide Dust Control Plan, Hunters Point Shipyard, San Francisco, California. Tetra Tech EC Inc. June 12, 2009.

Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

CONTRACT NO. N62473-07-D-3211
CTO NO. 0018

FINAL

BASEWIDE DUST CONTROL PLAN

June 12, 2009

DCN: ECSD-3211-0018-0002

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

CONTRACT NO. N62473-07-D-3211
CTO NO. 0018

FINAL

BASEWIDE DUST CONTROL PLAN

June 12, 2009

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

DCN: ECSD-3211-0018-0002

Prepared by:

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ABBREVIATIONS AND ACRONYMS

ALI	annual limit
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
CCR	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
DAC	derived airborne concentration
DON	Department of the Navy
EPA	U.S. Environmental Protection Agency
ft^3/min	cubic feet per minute
HPS	Hunters Point Shipyard
L/min	liters per minute
mg/m^3	milligrams per cubic meter
mph	miles per hour
NIOSH	National Institute for Occupational Safety and Health
NOA	naturally occurring asbestos
PESM	Project Environmental Safety Manager
PM_{10}	particulate matter smaller than 10 microns in diameter
QC	quality control
RASO	Radiological Affairs Support Office
ROC	radionuclide of concern
SHSS	Site Health and Safety Specialist
TCRA	time-critical removal action
TSP	total suspended particulates

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1.0 INTRODUCTION

1.1 DUST CONTROL PLAN FOR TIME-CRITICAL REMOVAL ACTIONS

This Basewide Dust Control Plan was prepared for all work performed by contractors during the time-critical removal actions (TCRAs) at Hunters Point Shipyard (HPS) in San Francisco, California (Figure 1-1). This plan was developed to ensure that the Department of the Navy (DON) maintains a coordinated approach for dust control and air monitoring activities across multiple contracts. At a minimum, all contactors will be required to adhere to the requirements set forth in this document.

This document will be evaluated as new contracts are awarded to ensure that the dust mitigation requirements meet the substantive dust mitigation requirements presented in the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, *California Code of Regulations* (CCR) Title 17, Section 93105. Contractors may be required to submit addenda to address work activities not presented in this plan.

1.2 REGULATORY BASIS

The TCRAs at HPS are being conducted in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Regulatory oversight and guidance are provided by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency, and the Regional Water Quality Control Board. The project areas are located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). However, as TCRAs under CERCLA, the projects are not required to have permits from the BAAQMD. Nevertheless, the projects need to meet the substantive aspects of BAAQMD air quality requirements.

This Basewide Dust Control Plan specifically identifies the steps that will be taken to reduce fugitive dust emissions during excavation, transportation of soil and debris, and installation/removal of construction site infrastructure. This plan describes measures to address the substantive requirements of the following applicable regulations:

- CCR Title 17, Section 93105 (e), ATCM for Construction Grading, Quarrying, and Surface Mining Operations – Requirements for Construction and Grading Operations – Areas Greater Than One Acre.
- BAAQMD Regulation 6, Particulate Matter and Visible Emissions, 6-301 Ringelmann No. 1 Limitation, 6-302 Opacity Limitation, and 6-305 Visible Particles

1.3 REPORT ORGANIZATION

Section 2.0 of this Basewide Dust Control Plan provides site background and history. Section 3.0 describes potential sources of fugitive dust. Section 4.0 discusses control measures for dust generated by general construction activities. Section 5.0 describes air monitoring requirements. Section 6.0 presents references cited in this plan. Tables and figures follow the text.

2.0 BACKGROUND

2.1 SITE DESCRIPTION AND HISTORY

HPS is located in the City and County of San Francisco, California, on a long promontory in the southeastern part of San Francisco that extends east into San Francisco Bay (Bay) (Figure 1-1). HPS encompasses 848 acres, including 416 acres on land. The land portion of HPS was purchased by the DON in 1939 and leased to Bethlehem Steel Corporation. At the start of World War II in 1941, the DON took possession of the property and operated it as a shipbuilding, repair, and maintenance facility until 1974. Throughout the 1940s, 1950s, and 1960s, the DON excavated the hills surrounding the shipyard, and used the resulting spoils along with available dredge material and engineered fill material to expand the shipyard's shoreline into San Francisco Bay. The DON deactivated HPS in 1974. From 1976 to 1986, the DON leased HPS to Triple A Machine Shop, Inc., a private ship repair company. In 1986, Triple A Machine Shop ceased operations at HPS, and the DON resumed occupancy through 1989.

Because of previous hazardous operations on the site, HPS was placed on the National Priorities List in 1989 as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986. HPS then came under the administrative jurisdiction of the Treasure Island Naval Station in April 1990.

In 1991, HPS was placed on the Navy's Base Realignment and Closure list, and its mission as a Navy shipyard ended in April 1994. Closure activities at HPS involve environmental remediation activities and making the property available for non-defense use. On March 31, 1994, control of HPS was transferred from the Treasure Island Naval Station to the Naval Facilities Engineering Command, Western Division (now Engineering Field Activity West) in San Bruno, California. In October 1999, Naval Facilities Engineering Command Southwest assumed management of HPS.

2.2 SCOPE OF WORK

The DON has various active contracts at HPS. The contracts cover the removal and remediation of potentially radiologically impacted sanitary sewer and storm drain lines, radiological and nonradiological waste disposal, long-term monitoring, site investigations, and other remedial actions.

In general, work activities may consist of one or more of the following: removal of asphalt pavement, geophysical investigations and utility clearance of excavation areas, establishment of soil and debris stockpile areas, excavation of impacted soil and piping, building demolition, soil/groundwater sampling, and site restoration.

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3.0 POTENTIAL SOURCES OF FUGITIVE DUST

Site activities have the potential to generate air emissions in the form of fugitive dust. Possible sources of emissions include the following activities:

- Construction Traffic – Movement of construction equipment around the construction areas is capable of creating construction emissions in excavated or cleared areas.
- Site Preparation – Asphalt and vegetation removal will increase the potential for fugitive dust emissions through wind erosion.
- Excavation – Removal of soil from the ground and loading it either onto screening pads or into waiting vehicles could cause fugitive dust emissions.
- Material Stockpiles – Soil that has been cleared of radioactivity may be stockpiled prior to being used as backfill or shipped to appropriate disposal facilities. Soil will be loaded into trucks for final disposal. Fugitive emissions during stockpiling and truck loading, as well as wind erosion, are possible.
- Building Demolition – Demolition of buildings may produce fugitive dust emissions. Structures will be evaluated for lead and asbestos contamination by a California-certified consultant. Based on the resulting data, site-specific Demolition Plans will be developed that describe the controls necessary to minimize fugitive dust.
- Transportation of Solid Bulk Material – Soil will be transported for radiological screening and/or disposal. If soil is left uncovered, fugitive emissions could occur.
- Site Restoration – Backfilling and revegetating/restoration of the excavated areas may produce fugitive dust emissions.
- Recycling – Asphalt and concrete are typically recycled on-site, which may produce fugitive dust emissions.

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4.0 GENERAL CONSTRUCTION DUST CONTROL METHODS

Control methods for fugitive dust are described for the following emissions generated from the construction activities at the project sites:

- Dust entrained during on-site travel on paved and unpaved surfaces
- Dust entrained during vegetation removal, excavation, material screening, use of conveyors, backfill, and final grading at the construction site
- Dust entrained during soil stockpiling, and loading and unloading operations
- Wind erosion of areas disturbed during construction activities
- Vehicle emissions associated with construction equipment

4.1 CONSTRUCTION TRAFFIC

4.1.1 Track-out Prevention

Track-out of loose materials will be controlled by use of tire-cleaning rumble grid plates at the access point from project sites to the paved road to prevent track-out of mud or loose soils onto roadways. These track-out prevention control points have been established at the three primary site access points. These locations are the entrance to the Radiological Screening Yard 2 (RSY2), the Main Parcel E gate, and on Lockwood Street exiting Parcel C (shown on Figure 4-1). To ensure that the tires are free from mud or loose soils prior to leaving the site, the bulk-loaded trucks and commercial vehicles will be required to pass over a gravel pad (at least 50 feet in length) and over the rumble grid plates where the soil residue from the tires will be removed.

Any visible track-out onto a paved road where vehicles exit the work site will be removed by wet sweeping at the end of the work day or at least once per day.

All bulk-loaded trucks used to transport naturally occurring asbestos (NOA)-containing material off-site will be cleaned by a wheel wash station before leaving the site.

4.1.2 Traffic Control

Fugitive dust emissions from construction traffic traveling on unpaved surfaces will be controlled through the following mitigation methods:

- Actively used unpaved roads in the project construction sites will be watered every 2 hours or frequently enough to maintain adequate wetness. The frequency of watering can be reduced or eliminated during periods of precipitation. Watering frequency may be increased during hotter periods or windy conditions.

- No vehicle will exceed 15 miles per hour (mph) within the construction site and 5 mph in work areas.

The following mitigation measures will be followed for fugitive dust emissions from construction traffic traveling on paved streets:

- Bulk-loaded trucks used for transportation of soil and other heavy earth-moving equipment will not be allowed to exit the construction sites, except through one of the track-out prevention control points.
- Construction areas adjacent to any paved roadway will be treated with best management practices, as specified in the Stormwater Pollution Prevention Plan.
- Roadways within the site will be swept with a wet sweeper or washed down to remove soils. The accumulated soils will be routinely removed from non-traffic areas such as gutters and curbs.
- No vehicle will exceed 15 mph within the construction site and 5 mph in work areas.

If any of the preceding mitigation methods fail to properly control fugitive dust emissions, one or more of the following reasonably available control measures will be applied:

- Unpaved active portions of the construction sites will be watered or treated with dust control solutions to minimize windblown dust and dust generated by vehicle traffic.
- Paved portions of the construction sites will be cleaned more frequently to control windblown dust and dust generated by vehicle traffic. Water may also be applied to the paved roads if necessary.
- Gravel, recrushed/recycled asphalt, or other material of low silt content (less than 5 percent) will be applied to a depth of 3 or more inches, if necessary. Serpentine-containing material will not be used for this purpose.
- Vehicle trips will be reduced if necessary.

4.2 SITE PREPARATION AND REMEDIATION ACTIVITIES

Fugitive dust emissions from site preparation, excavation, loading, spreading, stockpiling, backfill, and compaction activities will be controlled using the following methods:

- During asphalt removal, surface soils will be pre-wetted in the area to be removed prior to commencing the activity. Soil moisture content will be sufficiently maintained to minimize fugitive dust creation.
- All unpaved, inactive portions of the work area and inactive storage piles that are inactive for more than 7 days will be watered or chemical soil stabilizer applied to minimize fugitive dust creation.

4.3 EXCAVATION ACTIVITIES

Fugitive dust emissions from excavation and loading activities will be controlled using the following methods:

- Soil will be wetted prior to excavation activities to reduce dust migration. Additional water will be added during active excavation, material handling, and loading on an as-needed basis. Active excavation areas will be wetted every 2 hours during periods of dry weather or in windy conditions. A water truck or water buffalo shall be dedicated to excavation and removal operations.
- The area subject to excavation and other construction activity will be limited at any one time. A chemical soil stabilizer will be applied to on-site storage piles of soil or sand.
- The height from which excavated soil is dropped either to trucks, stockpiles, or pads will be minimized.
- Trucks moving potentially radiologically impacted soils will be loaded over a plastic liner to assist in the cleanup of any soil from the loading process.
- Trucks shall be equipped with tarping systems to cover loads during soil transport.
- Truck traffic shall be minimized to the shortest haul routes from the work areas, screening yard, and stockpile areas.
- Chemical soil stabilizer will be applied in sufficient quantities to disturbed areas so as to create a stabilized surface.
- Backfill materials will be wetted on an as-needed basis to maintain moisture. Loader buckets will be emptied slowly and drop height from loader bucket minimized. A water truck or water buffalo will be dedicated to backfilling operations.
- A chemical soil stabilizer will be applied to backfill material and storage piles when not actively handled (i.e., no activity in 7 days).

4.4 MATERIAL STOCKPILES

Fugitive dust emissions from soil storage piles will be controlled by using a temporary cover, water, or a chemical soil stabilizer.

4.5 BUILDING DEMOLITION

Structures will be evaluated for lead and asbestos contamination by a California-certified consultant. Based on the resulting data, site-specific Demolition Plans will be developed that describe the controls necessary to minimize fugitive dust

4.6 BULK SOIL TRANSPORT

- All trucks that are used to transport solid bulk material will be covered (tarped) prior to leaving the site.
- Vehicles will be checked to ensure that they are tarped to prevent any spillage, and any spillage material on the shelf, on exterior surfaces of the cargo compartment, or on wheels will be removed prior to leaving the site.
- Trucks used for bulk soil transport will be inspected to ensure that no spillage can occur from holes or other openings in the cargo compartment.
- Bulk loaded trucks will exit the work site via an established track-out control point.

4.7 POST-CONSTRUCTION STABILIZATION OF DISTURBED AREAS

Unpaved areas disturbed during excavation, grading, and/or construction activities will be covered with one of the following to reduce dust generation on the site:

- An approved vegetative cover
- Surface swales to control stormwater
- Coverage with a minimum of 3 inches of non-asbestos-containing material
- Hard surface paving

4.8 RECYCLING

Nonimpacted asphalt and concrete are typically recycled on-site and may produce fugitive dust emissions. Fugitive dust emissions from recycling activities will be controlled using the following methods:

- Asphalt and concrete will be wetted prior to handling to reduce dust migration. A water truck or water buffalo shall be dedicated to this activity.
- Additional water will be added during active grinding, sorting, material handling, and loading, as needed, to control fugitive dust.
- The height from which crushed material is dropped either to trucks, stockpiles, or pads will be minimized.
- Trucks shall be equipped with tarping systems to cover loads during transport.
- Truck traffic shall be minimized to the shortest haul routes from the work areas, screening yard, and stockpile areas.
- A chemical soil stabilizer will be applied in sufficient quantities to stockpiles so as to create a stabilized surface.

5.0 AIR MONITORING

Air monitoring is performed to ensure worker and community safety in accordance with NIOSH approved air sampling methodology. Figure 5-1 presents a map of known sensitive community receptors within 1 mile of HPS. Three types of air monitoring are conducted during construction activities:

- Air quality monitoring (total suspended particulates [TSP], manganese, lead, particulate matter smaller than 10 microns in diameter [PM_{10}], and asbestos)
- Radionuclides of concern (ROCs) air monitoring
- Personnel monitoring

During prolonged precipitation events (greater than 8 hours of precipitation in a 24-hour period), the air monitoring units will not be operated. An air monitoring station or individual units being inoperable shall not preclude construction activities at the associated work site.

5.1 AIR QUALITY MONITORING

The air monitoring for HPS will include ambient air quality monitoring stations that will be established to perform monitoring during field activities. Air samples will be collected at the monitoring stations and will be analyzed for the airborne chemicals of concern, which include TSP, manganese, lead, PM_{10}, and asbestos. The air quality sampling will be used to assess the status of air quality compliance and to evaluate modifications to basewide activities in the event of compliance concerns. The meteorological data for the general work areas, specifically wind speed and direction, will be used to identify the most appropriate locations for the air monitoring stations. Air samplers and monitoring stations will be located upwind and downwind of work areas, using wind direction data, and in the most practical locations.

Analytical results for TSP will be compared with a standard of 0.5 milligram per cubic meter (mg/m^3) (level chosen to minimize overall permissible dust release from site), 0.2 microgram per cubic meter for manganese (California Office of Environmental Health Hazard Assessment's lifetime reference concentration), 1.5 mg/m^3 averaged over 1 month for lead, and 50 mg/m^3 for $PM_{10.}$ If HPS activities are the cause of exceedances, additional control measures may be considered.

During prolonged precipitation events (greater than 8 hours of precipitation in a 24-hour period), the air monitoring units will not be operated. An air monitoring station or individual units being inoperable shall not preclude construction activities at the associated work site.

5.1.1 Monitoring Site Locations

Air monitoring stations will be installed to collect air samples upwind and downwind of work areas for the duration of the activities. The predominant wind direction at HPS is from the west. Locations of air monitoring stations are shown on Figure 5-2. Air monitoring is performed to estimate and assess the impact of the field activities. The locations of the air monitoring stations will be determined based on the prevailing wind direction and may be modified as needed. Monitoring stations will not be moved while they are sampling. Radiological air monitoring will be conducted both upwind and downwind of the excavations and in the immediate vicinity of each excavation site in accordance with the applicable radiation work permit requirements and the Hunters Point Standard Operating Procedure, HPO-Tt-008, Air Sampling and Sample Analysis (TtEC 2005). In addition, a windsock will be set up at each site to show wind direction.

Each monitoring station will include three different monitoring systems: one each for TSP (that will be analyzed for manganese and lead), PM_{10}, and asbestos. Descriptions of these samplers are provided below. Sampling frequency and monitoring methods are listed in Table 5-1.

5.1.2 Total Suspended Particulates, Manganese, and Lead

TSP will be sampled with a high-volume (39 to 60 cubic feet per minute [ft^3/min]) air sampler in accordance with EPA's reference sampling method for TSP, described in Title 40 *Code of Federal Regulations* (CFR), Part 50, Subpart B. Each sample will be collected on a filter over the course of a period not to exceed 54 hours; the filter is then weighed to determine the amount of TSP collected. Once the filter weight has been determined, the sample will be analyzed for manganese in accordance with one of the IO-3 methods identified in EPA's Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air (EPA 1999) and lead in accordance with a modified EPA Method 12. The equipment specifications and sampling procedures will comply with the specifications provided in the regulations for the sampler, filter, accuracy, calibration, and quality assurances.

The flow of the high-volume air sampler will be properly calibrated to establish traceability of the field measurement. Calibrations shall follow the guidelines specified in 40 CFR, Part 50, Section 9.3, and Section 2.6 of the EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods (EPA 1998).

Field logs should be used to properly record information after collecting the samples. Appropriate field data, such as date, time, sample identification, calibration data, sample location, ambient temperature and pressure, and any additional information or observations that could influence analyses of the results, will be entered on the field logs.

5.1.3 PM_{10}

PM_{10} will be sampled in accordance with EPA's reference sampling method for PM_{10}, described in 40 CFR 50, Subpart J. Each sample be collected on a filter over a period not to exceed 54 hours; the filter is then weighed to determine the amount of PM_{10} collected.

5.1.4 Asbestos

Asbestos will be sampled and analyzed in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7400, from the NIOSH Manual of Analytical Methods (NIOSH 1994). Method 7400 requires that samples be collected on three-piece cellulose ester filters fitted with conductive cowlings at a sampling rate of between 0.5 liter per minute (L/min) and 16 L/min. Each sample will be collected over a period not to exceed 54 hours.

5.2 AIR SAMPLING FOR RADIONUCLIDES OF CONCERN

As specified in the Base-wide Project Work Plan (TtEC 2008), airborne radioactivity monitoring (continuous or grab samples) will be conducted during the course of work. To control occupational exposures, establish personal protective equipment, and determine respiratory protection requirements, monitoring and trending for airborne radioactive material will be performed as necessary. Each ROC, as specified in 10 CFR 20, Appendix B, has a derived airborne concentration (DAC) value. DAC is defined as the concentration in air that will result in an intake of 1 annual limit (ALI) if breathed for a working year under high working conditions (inhalation rate of 1.2 cubic meters of air per hour). ALI is the derived limit for the quantity of radioactive material intake into the body of a worker by inhalation or ingestion in a year.

Engineered controls will be developed in conjunction with the Radiological Affairs Support Office (RASO). They will be implemented if required to maintain airborne concentrations below 10 percent of the applicable DAC value for the ROCs at the sites. Table 5-2 shows the ROCs and their respective DAC values.

5.3 PERSONNEL MONITORING

The Site Health and Safety Specialist (SHSS) will conduct monitoring to ensure that each site worker is adequately protected. Site monitoring and sampling includes real-time air monitoring and perimeter monitoring. In consultation with the Project Environmental Safety Manager (PESM), the SHSS will determine if personal or addition perimeter monitoring is required to evaluate the potential for personnel exposure. All air quality monitoring results that exceed the California Occupational Safety and Health Administration permissible exposure limits (asbestos – 0.1 fiber/cubic centimeter, PM_{10} – 5,000 mg/m^3, TSP – 10 mg/m^3, manganese – 200 mg/m^3, lead – 50 mg/m^3) will be immediately reported to the PESM, who will evaluate the results. If the

evaluation finds elevated results, personnel monitoring may be required. Depending on the elevated results, addition sampling may be conducted for asbestos, particulate matter, or lead.

5.4 QUALITY CONTROL PROCEDURES

A quality control (QC) program will be implemented to ensure that collected data are accurate and precise in order to effectively characterize both the magnitude and variations in ambient conditions at the monitoring stations. Complete documentation of the results of routine operations and QC aspects of the program, including all log notes, calibration forms, and certifications, will be maintained on file. Key elements of the routine field QC program will include:

- Routine visits to each sampling station over the sampling period to check sampler pump flow rates, verify operation and sample conditions, and note any ambient conditions that could affect the accuracy or representativeness of the sample
- Calibration of the sampling pumps and flow devices
- Routine preventive maintenance of all equipment components

The analytical laboratory performing the sample analyses will establish a QC program that will also ensure the accuracy of the data as the data are being analyzed. Key elements of the routine QC procedures implemented during the sample analyses will include analysis of laboratory blanks and spikes and calibration of the analytical instruments, as specified in the appropriate methodology.

Dust control activities will be documented during construction activities and included in the Daily Contractor Production Reports. Available air data will be submitted monthly to the DON for distribution to interested parties and will be posted online to the Base Realignment and Closure Program Management Office web page at:

- http://www.bracpmo.navy.mil/basepage.aspx?baseid=45&state=California&name=hps

6.0 REFERENCES

EPA (U.S. Environmental Protection Agency). 1998. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods.

——————. 1999. Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air. EPA/625/R-96/010a. June.

NIOSH (National Institute for Occupational Safety and Health). 1994. NIOSH Manual of Analytical Methods. Method 7400. August.

TtEC (Tetra Tech EC Inc.). 2005. Standard Operating Procedure PO-TtFW-008, Air Sampling and Sample Analysis.

——————. 2008. Final Project Work Plan, Base-wide Storm Drain and Sanitary Sewer Removal, Revision 3, Hunters Point Shipyard, San Francisco, California. May.

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TABLES

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TABLE 5-1

SAMPLING FREQUENCY AND MONITORING METHODS

Test Scenario	Type of Analysis	Monitoring Method	Frequency
Excavation and soil handling (upwind and downwind)	TSP	40 CFR, Part 50, Appendix B Analysis Method IO-3 (Mn) Analysis Method 12 (Pb)	1 sample per workday 2–3 samples per workweek
	PM_{10}	40 CFR, Part 50, Appendix J	1 sample per workday 2–3 samples per workweek
	Asbestos	NIOSH Method 7400	1 sample per workday 2–3 samples per workweek
	ROCs	HPO-TtFW-008*	1 sample per workday 2–3 samples per workweek
Backfill and site restoration (upwind and downwind)	TSP	40 CFR, Part 50, Appendix B Analysis Method IO-3 (Mn) Analysis Method 12 (Pb)	1 sample per workday 2–3 samples per workweek
	PM_{10}	40 CFR, Part 50, Appendix J	1 sample per workday 2–3 samples per workweek
	Asbestos	NIOSH Method 7400	1 sample per workday 2–3 samples per workweek
	ROCs	HPO-TtFW-008*	1 sample per workday 2–3 samples per workweek

Notes:

* PO-TtFW-008, Air Sampling and Sample Analysis (TtEC 2005), is a standard operating procedure used for radiological air sampling activities supporting Hunters Point Shipyard field projects.

Abbreviations and Acronyms:

CFR – *Code of Federal Regulations*
Mn – manganese
NIOSH – National Institute for Occupational Safety and Health
Pb – lead
PM_{10} – particulate matter smaller than 10 microns in diameter
ROC – radionuclide of concern
TSP – total suspended particulates

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TABLE 5-2

RADIONUCLIDE AIRBORNE CONCENTRATION GUIDELINES

Radionuclide	Worker*	
	DAC (μCi/mL)	10% DAC (μCi/mL)
Radium-226	3.0E-10	3.0E-11
Strontium-90	2.0E-9	2.0E-10
Cesium-137	6.0E-8	6.0E-9

Notes:

* The guideline values were determined using the NRC's 10 CFR, Part 20, Appendix B.

Abbreviations and Acronyms:

μCi/mL – microcuries per milliliter (activity)
CFR – *Code of Federal Regulations*
DAC – derived airborne concentration
NRC – Nuclear Regulatory Commission

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FIGURES

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LEGEND

- STATE HIGHWAY
- US HIGHWAY
- INTERSTATE HIGHWAY
- HUNTERS POINT SHIPYARD
- WATER

2.5 0 2.5 5 Miles

Scale: 1" = 5 Miles

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

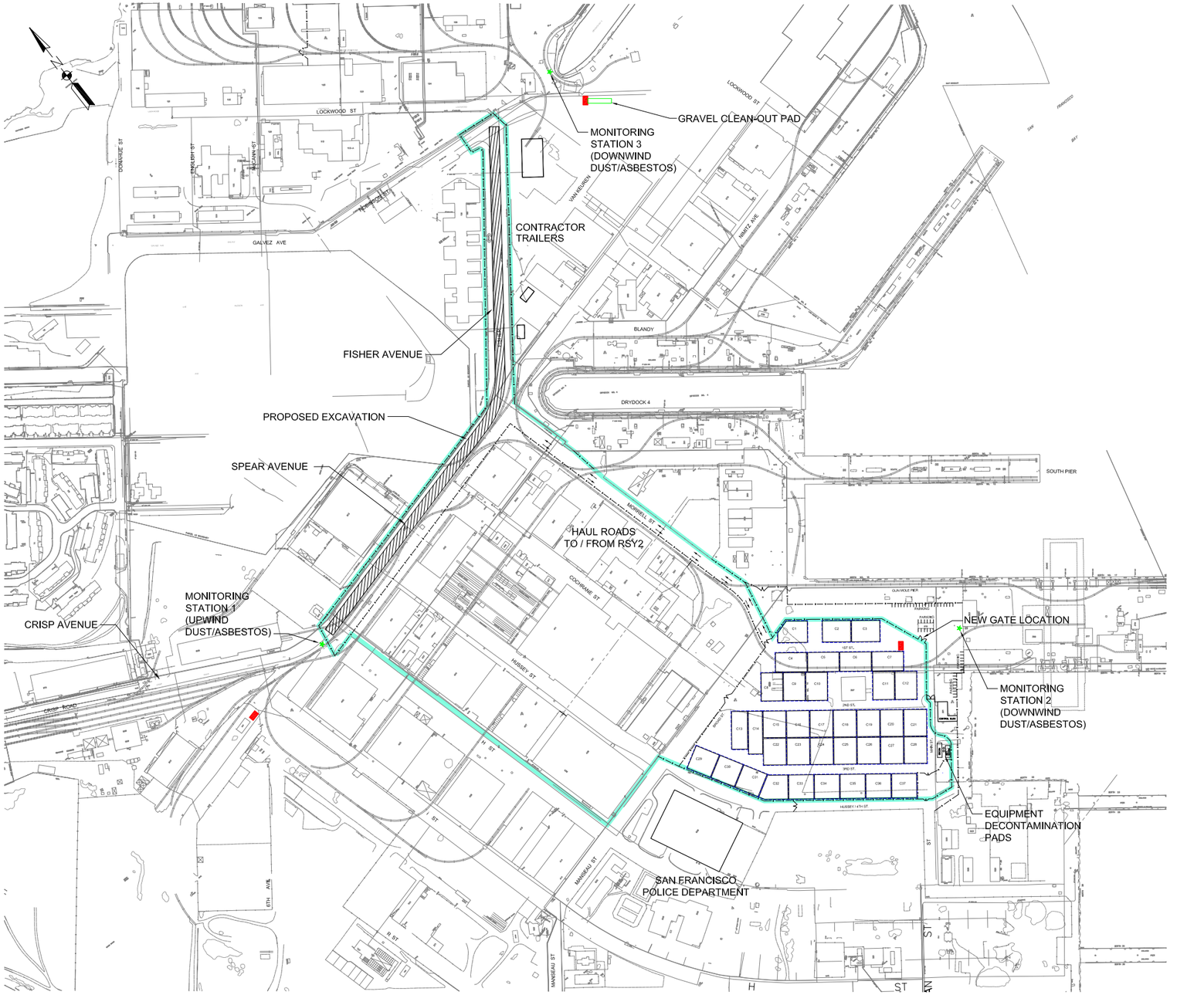
FIGURE 1-1

HUNTERS POINT SHIPYARD LOCATION MAP

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0018-0002
FILE NUMBER: 090544R4748.mxd

TETRA TECH EC, INC.



LEGEND

—— x —— x ——	FENCE
↘	TRAFFIC FLOW DIRECTION
	RCA BOUNDARY
	PROPOSED LOCATION OF 10'X16' RUMBLE STRIP
	PROPOSED LOCATION OF 10'X50' GRAVEL CLEAN-OUT PAD

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

FIGURE 4-1

HUNTERS POINT SHIPYARD FISHER AND SPEAR AVENUES EXCAVATION AND TRAFFIC CONTROL PLANS

HUNTERS POINT SHIPYARD, SAN FRANCISCO, CA.

REVISION: 0
AUTHOR: A. CRABTREE
PROJECT NO: ECSD-3211-0018-0002
FILE: SEE BELOW

TETRA TECH EC, INC.

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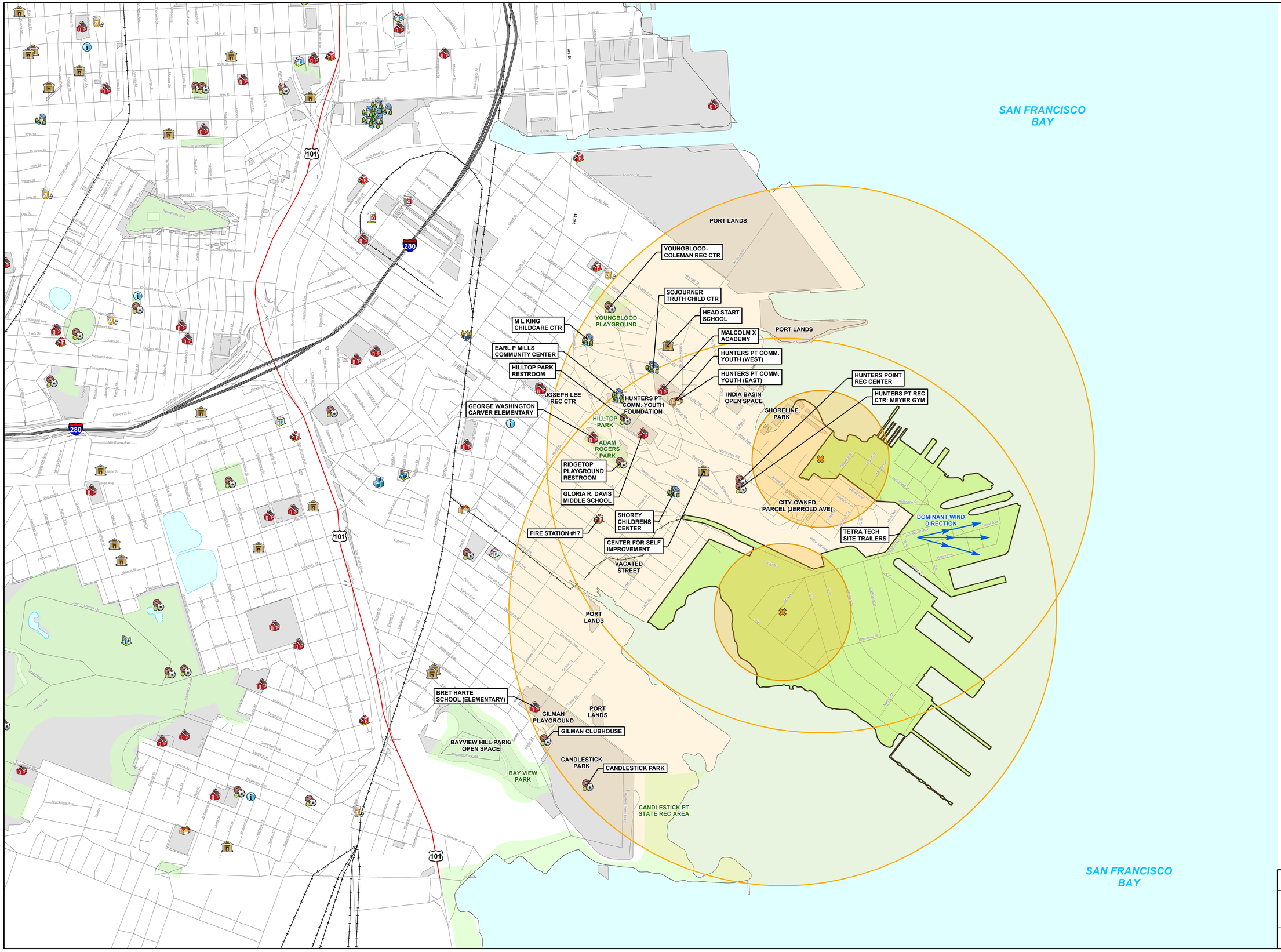


LEGEND

- FIRE DEPARTMENT
- HUMAN SERVICES
- JUVENILE PROBATION
- MAYOR/COMMUNITY DEVELOPMENT
- MENTAL HEALTH
- POLICE STATION
- PUBLIC HEALTH
- PUBLIC LIBRARY
- PUBLIC WORKS
- REAL ESTATE/ADMINISTRATIVE SERVICES
- RECREATION AND PARK
- SAN FRANCISCO COMMUNITY COLLEGE DISTRICT
- SAN FRANCISCO PRIVATE SCHOOL
- SAN FRANCISCO UNIFIED SCHOOL DISTRICT
- SHERIFF
- RADIUS CENTERPOINT
- ROAD
- HIGHWAY
- INTERSTATE HIGHWAY
- RAILROAD
- PARK
- WATER
- SAN FRANCISCO PUBLIC LAND
- QUARTER MILE BUFFER
- ONE MILE BUFFER
- HUNTERS POINT SHIPYARD BOUNDARY

SOURCE:

WIND DIRECTION
AS PER SOUTHWEST DIVISION NAVAL FACILITIES ENGINEERING COMMAND WIND ROSE PLOTS OF HUNTERS POINT SHIPYARD 08/06/00 - 10/12/00

SAN FRANCISCO FACILITIES LOCATIONS
RETRIEVED FROM THE CITY AND COUNTY OF SAN FRANCISCO ONLINE WEBSITE (SFGIS DATA DOWNLOAD).

N

400 0 400 800 Feet

Scale: 1" = 400'

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

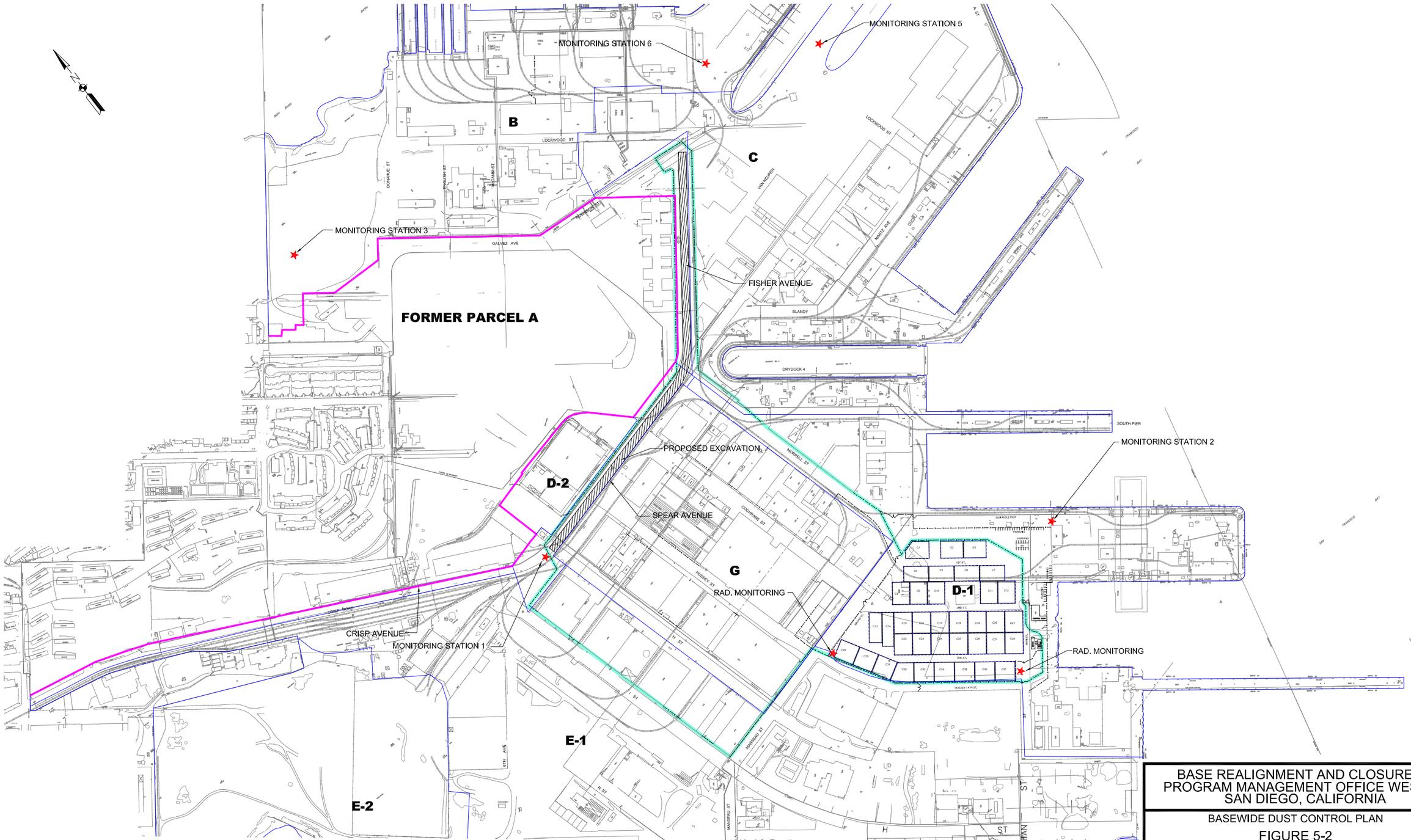
FIGURE 5-1

HUNTERS POINT POTENTIAL COMMUNITY RECEPTORS AND BUFFER AREAS

HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

REVIEW: 0
AUTHOR: GFG
DCN: ECSD-3211-0018-0002
FILE NUMBER: 090544L4747.mxd

TETRA TECH EC, INC.



LEGEND

FENCE

PARCEL BOUNDARY

FORMER PARCEL A BOUNDARY

MONITORING STATION LOCATION (TETRA TECH CONTROLLED)

250 0 250 500

(feet)

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

BASEWIDE DUST CONTROL PLAN

FIGURE 5-2

HUNTERS POINT SHIPYARD
AIR MONITORING LOCATIONS

HUNTERS POINT SHIPYARD, SAN FRANCISCO, CA.

REVISION: 0
AUTHOR: A. CRABTREE
PROJECT NO: ECSD-3211-0018-0002
FILE: SEE BELOW

TETRA TECH EC, INC.

\\Ecisfofile1\projects\CTO 006\CAD\TO 70 Parcel D\Parcel D working Files\Traffic Control Plans\PDTCP0010A.dwg

Item	Reference or Phrase in ROD	Location in ROD	Identification of Referenced Document Available in the Administrative Record[1]
40	ICs	Section 2.9.2	Final Feasibility Study Report for Parcel C, Hunters Point Shipyard, San Francisco, California. SulTech. July 31, 2008. Section 4.3.2.1, pages 4-20 to 4-23.

Institutional Controls in General

Institutional controls will be implemented to prevent exposure to areas where potential unacceptable risk is posed by COCs in soil and groundwater. Institutional controls are legal and administrative mechanisms used to implement land use restrictions that are used to limit the exposure of future landowner(s) or user(s) of the property to hazardous substances present on the property, and to ensure the integrity of the remedial action. Institutional controls are required on a property where the selected remedial cleanup levels result in contamination remaining at the property above levels that allow for unlimited use and unrestricted exposure. Institutional controls will remain in place unless the remedial action taken will allow for unlimited use of the property and unrestricted exposure. Implementation of institutional controls includes requirements for monitoring and inspections, and reporting to ensure compliance with land use or activity restrictions.

Legal mechanisms include proprietary controls such as restrictive covenants, negative easements, equitable servitudes, and deed notices. Administrative mechanisms include notices, adopted local land use plans and ordinances, construction permitting, or other existing land use management systems that are intended to ensure compliance with land use or activity restrictions.

The Navy has determined that it will rely upon proprietary controls in the form of environmental restrictive covenants as provided in the "Memorandum of Agreement Between the United States Department of the Navy and the California Department of Toxic Substances Control" and attached covenant models (Navy and DTSC 2000) (hereinafter referred to as "Navy/DTSC MOA"). More specifically, land use and activity restrictions will be incorporated into two separate legal instruments as provided in the Navy/DTSC MOA:

1. Restrictive covenants included in one or more Quitclaim Deeds from the Navy to the property recipient.

2. Restrictive covenants included in one or more "Covenant to Restrict Use of Property" entered into by the Navy and DTSC as provided in the Navy/DTSC MOA and consistent with the substantive provisions of Cal. Code Regs. tit. 22 § 67391.1.

The "Covenant(s) to Restrict Use of Property" will incorporate the land use restrictions into environmental restrictive covenants that run with the land and that are enforceable by DTSC against future transferees. The Quitclaim Deed(s) will include the identical land use and activity restrictions in environmental restrictive covenants that run with the land and that will be enforceable by the Navy against future transferees.

The activity restrictions in the "Covenant(s) to Restrict Use of Property" and Quitclaim Deed(s) shall be implemented through the Parcel C Risk Management Plan ("Parcel C RMP") to be prepared by the City of San Francisco and approved by the Navy and FFA Signatories. The Parcel C RMP shall be discussed in the Parcel C ROD and shall be attached to and incorporated by reference into the Covenant(s) to Restrict Use of Property and Deed(s) as an enforceable part

thereof. It shall specify soil and groundwater management procedures for compliance with the remedy selected in the Parcel C ROD. The Parcel C RMP shall identify the roles of local, state, and federal government in administering the Parcel C RMP and shall include, but not be limited to, procedures for any necessary sampling and analysis requirements, worker health and safety requirements, and any necessary site-specific construction and/or use approvals that may be required.

In addition to being set forth in the "Covenant(s) to restrict Use of Property" and Quitclaim Deed(s) as described above, restrictions applied to specified portions of the property will be described in findings of suitability of transfer and findings of suitability for early transfer.

Access

The Deed and Covenant shall provide that the Navy and FFA Signatories and their authorized agents, employees, contractors and subcontractors shall have the right to enter upon HPS Parcel C to conduct investigations, tests, or surveys; inspect field activities; or construct, operate, and maintain any response or remedial action as required or necessary under the cleanup program, including but not limited to monitoring wells, pumping wells, treatment facilities, and cap/containment systems.

Implementation

The Navy shall address and describe institutional control implementation and maintenance actions including periodic inspections and reporting requirements in the preliminary and final RD reports to be developed and submitted to the FFA Signatories for review pursuant to the FFA (see "Navy Principles and Procedures for Specifying, Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions" attached to January 16, 2004 Department of Defense memorandum titled "Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Record of Decision (ROD) and Post-ROD Policy"). The preliminary and final RD reports are primary documents as provided in Section 7.3 of the FFA.

Activity Restrictions that Apply Throughout Parcel C

The following sections describe the institutional control objectives to be achieved through activity restrictions throughout Parcel C in order to ensure that any necessary measures to protect human health and the environment and the integrity of the remedy have been undertaken.

Restricted Activities

The following restricted activities throughout HPS Parcel C must be conducted in accordance with the "Covenant(s) to Restrict Use of Property", Quitclaim Deed(s), and the Parcel C RMP, and, if required, any other work plan or document approved in accordance with these referenced documents:

1. "Land disturbing activity," which includes but is not limited to: (1) excavation of soil, (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind, (3) demolition or removal of "hardscape" (for example, concrete roadways, parking lots, foundations, and sidewalks), (4) any activity that involves movement of soil to the surface from below the surface of the land, and (5) any other activity that causes or facilitates the movement of known contaminated groundwater.

2. Alteration, disturbance, or removal of any component of a response or cleanup action (including but not limited to pump-and-treat facilities, and soil cap/containment systems); groundwater extraction, injection, and monitoring wells and associated piping and equipment; or associated utilities.

3. Extraction of groundwater and installation of new groundwater wells.

4. Removal of or damage to security features (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).

Prohibited Activities

The following activities are prohibited throughout HPS Parcel C:

1. Growing vegetables or fruits in native soil for human consumption

2. Use of groundwater

Activity Restrictions Relating to Soil and Associated VOC Vapors at Specific Locations Within Parcel C

Any proposed construction of enclosed structures must be approved in accordance with the "Covenant to Restrict Use of the Property," Quitclaim Deed, and Parcel C RMP prior to the conduct of such activity within the area requiring institutional controls (ARIC) for VOC vapors in order to ensure that the risks of potential exposures to VOC vapors are reduced to acceptable levels that are adequately protective of human health. Initially, the ARIC will include all of Parcel C. This can be achieved through engineering controls or other design alternatives that meet the specifications set forth in the ROD, RD reports, land use control (LUC) RD report, and Parcel C RMP. The ARIC may be modified by the FFA Signatories as the soil contamination areas and groundwater contaminant plumes that are producing unacceptable vapor inhalation risks are reduced over time or in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the ARIC do not pose unacceptable potential exposure risk to VOC vapors.

Additional Land Use Restrictions for Areas Designated Open Space, Educational/Cultural, and Maritime/Industrial

The following restricted land uses for property areas designated for open space, educational/cultural and maritime/industrial land uses in the "Hunters Point Shipyard Redevelopment Plan" dated July 14, 1997 must be reviewed and approved by the FFA Signatories in accordance with the "Covenant(s) to Restrict Use of the Property," Quitclaim Deed(s), and Parcel C RMP prior to use of the property for any of the restricted uses:

1. A residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation
2. A hospital for humans
3. A school for persons under 21 years of age
4. A daycare facility for children

The process options related to institutional controls will be retained for development and evaluation of remedial alternatives.

Access Restrictions

Access restrictions will include physical barriers such as fences and informational devices such as warning signs. Fences would be installed around the perimeter of the site to restrict public access. Signs warning of the presence and potential danger of hazardous materials would be posted on the fence to further discourage unauthorized access.

Removal

Removal is an effective GRA for all contaminant groups associated with soil at Parcel C. The technologies applicable to this GRA are excavation and disposal, involving removing and transporting contaminated material off site to a permitted treatment and disposal facility. Some pretreatment such as stabilization may be required or preferred to meet land disposal restrictions so that the most economical disposal option can be applied. Important considerations with the excavation and disposal technologies include excavation volume, fugitive emissions, hauling distance, and type of treatment and disposal facility for final deposition. The excavation cleanup criteria would be specific to the reuse type and chemical-specific remediation goals specified in Section 4.1.1.1.

The technology of excavation is effective and implementable for many of the COCs found in soil at Parcel C. Most of the near-surface soil at Parcel C is fill that was placed without documentation. The mineral content in the fill, the locations where the fill was placed, the method of placement, and the concentrations of metals in the fill are not documented. The Navy believes that arsenic is naturally occurring in local bedrock that was used for fill, and that this is

ATTACHMENT 4
ADMINISTRATIVE RECORD INDEX

DRAFT ENVIRONMENTAL RESTORATION RECORD INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

REQUESTED INDEX

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000230 2176,121.02 REPORT NONE 132	11-18-1999 **03-03-1988** NONE 00.0	HARDING LAWSON ASSOCIATES S. FARLEY NAVFAC - EFA WEST	SCOPING DOCUMENT FOR THE REMEDIAL INVESTIGATIONS/FEASIBILITY STUDIES (RI/FS), VOLUME I (SEE AR #231 - VOLUME II)	ADMIN RECORD	005 006 007 008 009 010 011 012 013 014 015 016 017 018 PARCEL A PARCEL B SITE 00001 SITE 00002 SITE 00003 SITE 00004	FRC - PERRIS IMAGED HPNT_026	181-07-0027 30093199	BOX 0004

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000229 SWDIV SER 1146/HP/DOHS CORRESPONDENC NONE 20	11-18-1999 **03-08-1988** NONE 00.0	NAVFAC - SOUTHWEST DIVISION P. DRENNON DHS D. HOENIG	RESPONSE TO COMMENTS ON THE DRAFT SCOPING DOCUMENT	ADMIN RECORD	005 006 007 008 009 011 PARCEL A PARCEL B SITE 00001 SITE 00002 SITE 00003 SITE 00004	FRC - PERRIS IMAGED HPNT_026	181-07-0027 30093199	BOX 0004
N00217 / 000817 NONE INFO NONE 8	11-18-1999 **04-14-1989** NONE 00.0	NAVFAC - EFA WEST PUBLIC INTEREST	RELEASE NO. 11 - COMMUNITY MEETING NOTICE, REMOVAL ACTIONS (RM) FOR TANK S-505, PICKLING AND PLATE YARD, TANK FARM, AND BUILDING 521 POWER PLANT	ADMIN RECORD	006 009 011 PARCEL B SITE 00002	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0032
N00217 / 001154 NONE REPORT NONE 500	11-18-1999 **02-01-1990** NONE 00.0	CARVER, J.	DRAFT AIR MODELING AND RISK ASSESSMENT OF AIRBORNE CONTAMINANTS DURING PROPOSED REMOVAL ACTIONS (RA) AT THE TANK FARM AND PICKLING AND PLATE YARD	ADMIN RECORD	006 009 PARCEL A PARCEL B	CHOICE IMAGING SOLUTIONS SW06020901		
N00217 / 001235 JOB NO. 02176,256.02 REPORT NONE 50	11-18-1999 **04-05-1990** NONE 00.0	HARDING LAWSON ASSOCIATES MICHELSEN, C. NAVFAC - WESTERN DIVISION	DRAFT INTERIM REPORT, PHASE 1, PRIMARY REMEDIAL INVESTIGATION TANK FARM	ADMIN RECORD	PARCEL B SITE 00006	CHOICE IMAGING SOLUTIONS SW-20090522-6/7		

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N00217 / 001261 SER 181RP/00296 CORRESPONDENC NONE 0	11-18-1999 **04-09-1990** NONE 00.0	NAVY MICHLIN, L. DTSC - BERKELEY, CA HATAYAMA, H.	TRANSMITTAL OF THE DRAFT INTERIM REPORT, PHASE 1, PRIMARY REMEDIAL INVESTIGATION (W/OUT ENCLOSURE)	ADMIN RECORD	PARCEL B SITE 00006	CHOICE IMAGING SOLUTIONS SW-20090522-6/7		
N00217 / 001270 HLA NO. 02176, 248.02 REPORT NONE 434	11-18-1999 **04-16-1990** NONE 00.0	HARDING LAWSON ASSOCIATES NAVFAC - EFA WEST	DRAFT REMOVAL ACTION FOR TANK FARM, VOLUME I - WORK PLAN (SEE AR #1533 - DRAFT ADDENDUM AND AR #1789 - DRAFT ADDENDUM NO. 1)	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_028	181-07-0027 30093199	BOX 0034
N00217 / 001280 WDIV SER 1811RP/00286 CORRESPONDENC NONE 0	11-18-1999 **04-18-1990** NONE 00.0	NAVFAC - WESTERN DIVISION MICHLIN, L. DHS - BERKELEY, CA HATAYAMA, H.	TRANSMITTAL OF THE DRAFT REMOVAL ACTION AT THE TANK FARM, VOLUME 1 - WORK PLAN (W/OUT ENCLOSURE)	ADMIN RECORD	PARCEL B SITE 00006	CHOICE IMAGING SOLUTIONS SW-20090619-1/9		
N00217 / 001304 NONE REPORT N62474-88-D-5086 135	11-18-1999 **05-29-1990** CTO 0031 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC. WALD, S. NAVFAC - WESTERN DIVISION	DRAFT CLOSURE PLAN / REMOVAL ACTION PLAN FOR 23 UNDERGROUND STORAGE TANKS (UST)	ADMIN RECORD	BASEWIDE PARCEL A PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0034
N00217 / 001465 SER 1811JC/00486 & HLA JOB NO. 02176, 248.02 REPORT NONE 459	11-18-1999 **09-13-1990** NONE 00.0	HARDING LAWSON ASSOCIATES LUCAS, M. NAVFAC - EFA WEST	REMOVAL ACTION FOR TANK FARM , VOLUME I - WORK PLAN (INCLUDES EFAW TRANSMITTAL LETTER BY M. MIGUEL)	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0035

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N00217 / 001483 NONE CORRESPONDENC NONE 1	11-18-1999 **09-18-1990** NONE 00.0	BAAQMD S. LUTZ NAVFAC - EFA WEST R. POWELL	COMMENTS ON THE AIR MODELING AT THE TANK FARM AND PICKLING AND PLATE YARD	ADMIN RECORD	006 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0035
N00217 / 001485 SER 1811JC/00486 CORRESPONDENC NONE 3	11-18-1999 **09-18-1990** NONE 00.0	NAVFAC - EFA WEST M. MIGUEL DHS H. HATAYAMA	SUBMISSION OF WORK PLAN (WP) FOR REMOVAL ACTION (RM) AT TANK FARM (W/OUT ENCLOSURE)	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0035
N00217 / 001573 NONE CORRESPONDENC NONE 2	11-18-1999 **10-30-1990** NONE 00.0	DHS - BERKELEY, CA COX, D. NAVFAC - EFA WEST SARMIENTO, E.	APPROVAL OF VOLUME 1 - FINAL WORK PLAN REMOVAL ACTION FOR TANK FARM	ADMIN RECORD	006 PARCEL B	CHOICE IMAGING SOLUTIONS SW06022301		
N00217 / 001619 NONE CORRESPONDENC NONE 22	11-18-1999 **11-23-1990** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA FLIPPO, C. NAVFAC - EFA WEST SARMIENTO, E.	COMMENTS ON DRAFT ADDENDUM TO REMOVAL ACTION WORK PLAN FOR TANK S-505 AND DRAFT ADDENDUM TO REMOVAL ACTION WORK PLAN FOR TANK FARM	ADMIN RECORD	006 PARCEL B TANK S-505	CHOICE IMAGING SOLUTIONS SW06022302		
N00217 / 001666 NONE REPORT NONE 61	11-18-1999 **12-06-1990** NONE 00.0	HARDING LAWSON ASSOCIATES C. MICHELSEN NAVFAC - EFA WEST J. CARVER	DRAFT SUMMARIES 1ST GROUNDWATER SAMPLING	ADMIN RECORD	006 008 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0036

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N00217 / 001725 NONE CORRESPONDENC NONE 0	11-18-1999 **12-11-1990** NONE 00.0	NAVY	DRAFT SUMMARIES 1ST GROUNDWATER SAMPLING AT SITES IR-6, IR-8 AND 9	MISSING @ SWDIV	006 008 009	NAVFAC SOUTHWEST - BLDG. 1		
N00217 / 001771 NONE CORRESPONDENC NONE 8	11-18-1999 **12-20-1990** NONE 00.0	DHS M. MALINOWSKI NAVFAC - EFA WEST E. SARMIENTO	COMMENTS ON THE 1ST ROUND GROUNDWATER SAMPLING	ADMIN RECORD	006 008 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0036
N00217 / 001790 SER 1811RP/00580 CORRESPONDENC NONE 13	11-18-1999 **01-02-1991** NONE 00.0	NAVFAC - EFA WEST M. MIGUEL U.S. EPA C. FLIPPO	RESPONSE TO COMMENTS ON THE INTERIM REPORTS	ADMIN RECORD	006 008 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0036
N00217 / 002035 SER 1811JC/00661 CORRESPONDENC NONE 5	11-18-1999 **04-17-1991** NONE 00.0	NAVFAC - EFA WEST M. MIGUEL U.S. EPA C. FLIPPO	RESPONSE TO COMMENTS ON THE AIR MODEL/RISK ASSESSMENT REMEDIAL ACTION PLAN PICKLNG AND PLATE YARD, TANK FARM	ADMIN RECORD	006 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0037
N00217 / 002080 NONE CORRESPONDENC NONE 5	11-18-1999 **05-08-1991** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA FILIPPO, C. NAVFAC - EFA WEST LEW, L.	COMMENTS DRAFT PLANS AND SPECIFICATIONS FOR REMOVAL ACTION AT THE TANK FARM	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0037

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N00217 / 002119 WDIV SER 1811RP/00715 CORRESPONDENC NONE 0	11-18-1999 **05-31-1991** NONE 00.0	NAVFAC - WESTERN DIVISION MIGUEL, M. VARIOUS AGENCIES	TRANSMITTAL OF 1) IDENTIFICATION OF EXPOSURE PATHWAYS, BASELINE PUBLIC HEALTH AND ENVIRONMENTAL EVALUATION, 2) IDENTIFICATION OF EXPOSURE PATHWAYS FOR OPERABLE UNIT II, BASELINE PUBLIC HEALTH AND ENVIRONMENTAL EVALUATION, AND ***SEE COMMENTS	ADMIN RECORD	OU II PARCEL A PARCEL B SITE 00006 SITE 00009 SITE 00010	CHOICE IMAGING SOLUTIONS SW-20090702-1/7		
N00217 / 002148 NONE CORRESPONDENC NONE 1	11-18-1999 **06-11-1991** NONE 00.0	DHS W. BROWN NAVFAC - EFA WEST E. SARMIENTO	COMMENTS ON RESPONSE AIR MODEL FOR TANK FARM, PICKLING AND PLATE YARD	ADMIN RECORD	006 009 PARCEL B	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0037
N00217 / 002215 NONE REPORT N62474-88-D-5086 300	11-18-1999 **07-08-1991** 00101 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC. WALD, S. NAVFAC - EFA WEST	DRAFT FINAL REMOVAL ACTION/TANK ABANDONMENT PLAN	ADMIN RECORD	BASEWIDE PARCEL A PARCEL B	CHOICE IMAGING SOLUTIONS SW06022302		
N00217 / 002566 SER 1811WW/L3023 CORRESPONDENC NONE 17	11-18-1999 **10-16-1992** NONE 00.0	NAVFAC - EFA WEST MIGUEL, M. TAKATA, K.	SUBMISSION OF PROPOSED SCHEDULES, PARCELS A, B, C, D, E AND ASSUMPTIONS; INTERIM ACTION SCHEDULES FOR OPERABLE UNIT (OU) II AND GROUP V SITES	ADMIN RECORD	GROUP V OU 0002 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_003	181-07-0027 30093199	BOX 0040
N00217 / 002582 EFAW SER 1811WW/L3107 CORRESPONDENC NONE 21	11-18-1999 **12-04-1992** NONE 00.0	NAVFAC - EFA WEST G. KATZ U.S. EPA - SAN FRANCISCO K. TAKATA	POINT BY POINT RESPONSE TO AGENCIES' COMMENTS, REVISED SCHEDULING ASSUMPTIONS, REVISED SCHEDULES FOR PARCELS A, B, C, D, E	ADMIN RECORD	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_014	181-07-0027 30093199	BOX 0040

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N00217 / 002926 NONE CORRESPONDENC NONE 3	11-18-1999 **09-27-1993** NONE 00.0	DTSC	COMMENTS ON PARCEL C DATA PRESENTATION OF 31 AUGUST 1993	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0047
N00217 / 002927 NONE CORRESPONDENC NONE 27	11-18-1999 **10-19-1993** NONE 00.0	HARDING LAWSON ASSOCIATES	PARCEL C SITE INSPECTION (SI) VOLUME III AND UST DATA PRESENTATION	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0047
N00217 / 002896 HLA PROJECT NO. 11400 0706 REPORT NONE 522	11-18-1999 **10-22-1993** NONE 00.0	HARDING LAWSON ASSOCIATES NAVFAC - EFA WEST	DRAFT CONSTRUCTION SUMMARY REPORT TANK FARM REMOVAL ACTION	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0045
N00217 / 002909 NONE CORRESPONDENC NONE 10	11-18-1999 **11-05-1993** NONE 00.0	NAVY	SUBMISSION OF FEDERAL FACILITY AGREEMENT (FFA) REMEDIAL INVESTIGATION (RI)/FEASIBILITY STUDY (FS) SCHEDULES FOR PARCELS B/DRY DOCK 4 AND C (W/ ENCLOSURE)	ADMIN RECORD	057 DRY DOCK 4 PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0046
N00217 / 000127 NONE CORRESPONDENC N62474-88-D-5086 74	08-30-2000 **11-30-1993** 00276	PRC ENVIRONMENTAL MANAGEMENT NAVFAC - SOUTHWEST DIVISION	REMEDIAL INVESTIGATION (RI)/FEASIBILITY STUDY (FS) FIELD WORK AND ANALYSIS WORK PLAN	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002

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N00217 / 002935 NONE REPORT NONE 72	11-18-1999 **12-17-1993** NONE 00.0	NAVY	RI WORK PLANS FOR PARCEL B AND C INCLUDING UST SITES MINUTES, ATTENDEES, RI WORK PLANS (WP)	ADMIN RECORD	PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0047
N00217 / 002936 NONE CORRESPONDENC NONE 0	11-18-1999 **12-29-1993** NONE 00.0	NAVY	SUBMISSION OF RI WORK PLANS FOR PARCEL B AND C INCLUDING UST SITES MINUTES, ATTENDEES, RI WORK PLAN (WP)	ADMIN RECORD	PARCEL B PARCEL C	NAVFAC SOUTHWEST - BLDG. 110 TO BE DELETED		
N00217 / 002937 NONE CORRESPONDENC NONE 6	11-18-1999 **12-29-1993** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA SEID, R. NAVFAC - EFA WEST MCCLELLAND, M.	COMMENTS ON THE UNDERGROUND UTILITIES SITE INSPECTION (SI) DATA PRESENTATION	ADMIN RECORD	PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0047
N00217 / 002916 NONE REPORT NONE 172	11-18-1999 **01-20-1994** NONE 00.0	HARDING LAWSON ASSOCIATES	DRAFT PARCEL C SITE INSPECTION (SI) REPORT VOLUME I: TEXT, TABLES, PLATES	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0046
N00217 / 002917 NONE REPORT NONE 572	11-18-1999 **01-25-1994** NONE 00.0	HARDING LAWSON ASSOCIATES	DRAFT PARCEL C SITE INSPECTION (SI) REPORT VOLUME II: APPENDICES A-J	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0046

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N00217 / 002951 SER T4AIWM/L4116 CORRESPONDENC NONE 3	11-18-1999 **01-27-1994** NONE 00.0	CALF&G J. TURNER NAVFAC - EFA WEST M. MCCLELLAND	RESPONSES TO COMMENTS ON THE PARCEL C SITE INSPECTION VOLUME III DATA PRESENTATION (SI)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0047
N00217 / 002953 NONE CORRESPONDENC NONE 8	11-18-1999 **03-11-1994** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA SEID, R. NAVFAC - EFA WEST MCAVOY, W.	COMMENTS ON THE DRAFT PARCEL C SITE INSPECTION REPORT (SI)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0047
N00217 / 002975 NONE CORRESPONDENC NONE 3	11-18-1999 **04-15-1994** NONE 00.0	NAVY	SUBMISSION OF SITE ASSESSMENT REPORT, POTENTIALLY CONTAMINATED SITES, PARCELS B, C, D AND E	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0048
N00217 / 003027 NONE REPORT NONE 282	11-18-1999 **04-15-1994** NONE 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL SITE ASSESSMENT REPORT, POTENTIALLY CONTAMINATED SITES, PARCELS B, C, D, AND E	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0050
N00217 / 002979 NONE CORRESPONDENC NONE 3	11-18-1999 **05-02-1994** NONE 00.0	NAVFAC - EFA WEST	SUBMISSION OF DRAFT FINAL PARCEL C SITE INSPECTION (SI) REPORT; VOLUME I, TEXT, TABLES, AND PLATES AND VOLUME II, APPENDICES A THRU L (SEE AR #2980 - VOLUME I AND 2981 - VOLUME II)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0048

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N00217 / 002980 NONE REPORT NONE 216	11-18-1999 **05-02-1994** NONE 00.0	PRC ENVIRONMENTAL MANAGEMENT	DRAFT FINAL PARCEL C SITE INSPECTION REPORT (SI); VOLUME I, TEXT, TABLES, AND PLATES [INCLUDES PUBLIC SUMMARY] (SEE AR #2981 - VOLUME II)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0048
N00217 / 002981 NONE REPORT NONE 623	11-18-1999 **05-02-1994** NONE 00.0	PRC ENVIRONMENTAL MANAGEMENT	DRAFT FINAL PARCEL C SITE INSPECTION REPORT(SI); VOLUME II, APPENDICES A THRU L (SEE AR #2980 - VOLUME I)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0048
N00217 / 003000 NONE CORRESPONDENC NONE 17	11-18-1999 **06-03-1994** NONE 00.0	ARC D. MEYERS NAVFAC - EFA WEST W. RADZEVICH	COMMENTS ON SITE INVESTIGATION (SI) REPORTS FOR PARCELS C, D, AND E (SITE INVESTIGATION REPORTS FOR PARCELS C, D, AND E WERE NOT SUBMITTED TO THE ADMINISTRATIVE RECORD)	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0049
N00217 / 003001 NONE CORRESPONDENC NONE 10	11-18-1999 **06-03-1994** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA MANGLESDORF, A. NAVFAC - EFA WEST MCAVOY, W.	COMMENTS ON DRAFT FINAL PARCEL C SITE INSPECTION REPORT (SI)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0049
N00217 / 003029 NONE CORRESPONDENC NONE 3	11-18-1999 **06-24-1994** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA MANGLESDORF, A. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE FINAL SITE ASSESSMENT REPORT, POTENTIALLY CONTAMINATED SITES PARCELS B, C, D, AND E	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0051

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N00217 / 003030 NONE CORRESPONDENC NONE 2	11-18-1999 **07-05-1994** NONE 00.0	DTSC - BERKELEY C. SHABAHARI NAVFAC - EFA WEST R. POWELL	COMMENTS ON THE FINAL SITE ASSESSMENT REPORT, POTENTIALLY CONTAMINATED SITES PARCELS B, C, D, AND E	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0051

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N00217 / 003038 NONE CORRESPONDENC NONE 0	11-18-1999 **08-19-1994** NONE 00.0	ARMS CONTROL RESEARCH CENTER MEYERS, D. NAVFAC - WESTERN DIVISION POWELL, R.	COMMENTS ON DRAFT SUMMARY REPORT OF PHASE I AND PHASE II UST REMOVALS AND CLOSURES IN PLACE	ADMIN RECORD	PARCEL A PARCEL B SITE 00004 SITE 00005 SITE 00006 SITE 00009 SITE 00011 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 UST HPA-02 UST HPA-03 UST HPA-14 UST S-209 UST S-210 UST S-211 UST S-212 UST S-213 UST S-219 UST S-711 UST S-712 UST S-713 UST S-714 UST S-715	CHOICE IMAGING SOLUTIONS SW-20090702-1/7	

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N00217 / 003039 EFAW SER 09ER1WR/L4360 CORRESPONDENC NONE 2	11-18-1999 **08-19-1994** NONE 00.0	NAVFAC - EFA WEST R. POWELL ARMS CONTROL RESEARCH CENTER D. MEYERS	RESPONSE TO COMMENTS DRAFT SITE INSPECTION (SI) REPORT, PARCEL C, D, AND E AND DRAFT FINAL SITE INSPECTION REPORT, PARCEL D	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0051
N00217 / 003059 EFAW SER 09ER1DS/L5054 CORRESPONDENC NONE 8	11-18-1999 **11-21-1994** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	RESPONSE TO COMMENTS ON FINAL SITE ASSESSMENT REPORT, POTENTIALLY COMTAMINATED SITES PARCELS B, C, D, AND E	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0051
N00217 / 003244 NONE REPORT NONE 80	11-18-1999 **11-13-1995** NONE 00.0	NAVFAC - EFA WEST	ENGINEERING EVALUATION/COST ANALYSIS (EE/CA), NON-TIME CRITICAL REMOVAL ACTION (RM), TANK FARM IR-6	ADMIN RECORD	006 PARCEL B	FRC - PERRIS IMAGED HPNT_028	181-07-0027 30093199	BOX 0054
N00217 / 003211 NONE REPORT N62474-94-D-7609 350	11-18-1999 **11-27-1995** 00026 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST R. POWELL	DRAFT FACILITY-WIDE GROUNDWATER MONITORING PLAN (GWMP)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_028	181-07-0027 30093199	BOX 0054
N00217 / 003183 SER EP/HE:4110/03010 CORRESPONDENC NONE 7	11-18-1999 **12-04-1995** NONE 00.0	NEHC - NORFOLK W. LUTTRELL NAVFAC - EFA WEST D. SONG	COMMENTS ON BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP) PRELIMINARY DRAFT (VOLUMES I AND II)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0053

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N00217 / 003185 NONE REPORT N62474-88-D-5086 210	11-18-1999 **12-11-1995** CTO 0310 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC. SICKLES, J. NAVFAC - EFA WEST POWELL, R.	DRAFT BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP), REVISION 1	ADMIN RECORD	BASEWIDE PARCEL B	CHOICE IMAGING SOLUTIONS SW-20090717-4/8		
N00217 / 003191 SER EP/WE:4119/03424 CORRESPONDENC NONE 7	11-18-1999 **01-02-1996** NONE 00.0	NEHC - NORFOLK W. LUTTRELL NAVFAC - EFA WEST D. SONG	RESPONSE TO COMMENTS ON THE PRELIMINARY DRAFT BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0053
N00217 / 003391 NONE CORRESPONDENC NONE 10	11-18-1999 **01-08-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - WESTERN DIVISION POWELL, R.	COMMENTS ON THE DRAFT ENGINEERING EVALUATION/COST ANALYSIS (EE/CA) FOR EXPLORATORY EXCAVATION SITES AND THE TANK FARM (W/ENCLOSURE)	ADMIN RECORD	PARCEL B SITE 00006	CHOICE IMAGING SOLUTIONS SW-20090717-4/8		
N00217 / 003198 NONE CORRESPONDENC NONE 5	11-18-1999 **01-29-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST SONG, D.	COMMENTS ON THE DRAFT BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0053
N00217 / 003252 EFAW SER 1832.3/L6158 REPORT NONE 10	11-18-1999 **03-26-1996** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF FEBRUARY 1996 MONTHLY PROGRESS REPORT (MPR) (W/ ENCLOSURE)	ADMIN RECORD	006 009 PARCEL B PARCEL C PARCEL E SITE 00002	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0055

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N00217 / 003234 NONE REPORT N62474-94-D-7609 383	11-18-1999 **04-05-1996** 00026 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST R. POWELL	FINAL FACILITY-WIDE GROUNDWATER MONITORING PLAN [INCLUDES PUBLIC SUMMARY]	ADMIN RECORD	BASEWIDE PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0054
N00217 / 003279 NONE REPORT NONE 150	11-18-1999 **04-08-1996** NONE 00.0	NAVY	ENGINEERING EVALUATION/COST ANALYSIS (EE/CA), NON-TIME CRITICAL REMOVAL ACTION (RM), TANK FARM IR-6	ADMIN RECORD	006 PARCEL B	NAVFAC SOUTHWEST - BLDG. 110 TO BE DELETED		
N00217 / 003260 NONE CORRESPONDENC NONE 2	11-18-1999 **04-26-1996** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF FINAL FACILITY-WIDE GROUNDWATER MONITORING PLAN (W/OUT ENCLOSURE) (SEE AR #3234 - FINAL MONITORING PLAN)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0055
N00217 / 003285 NONE REPORT N62474-88-D-5086 132	11-18-1999 **05-01-1996** 00310 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST R. POWELL	DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN (CRP)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0055
N00217 / 003268 HLA PROJ NO. 11400 1004 REPORT N62474-88-D-5086 437	11-18-1999 **05-22-1996** 00244 00.0	HARDING LAWSON ASSOCIATES J. FENTON NAVFAC - EFA WEST R. POWELL	DRAFT OPERABLE UNIT II (OU2) ANNUAL GROUNDWATER MONITORING REPORT [INCLUDES PUBLIC SUMMARY]	ADMIN RECORD	006 008 009 010 PARCEL B PARCEL D	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0055

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N00217 / 003294 NONE REPORT N62474-88-D-5086 54	11-18-1999 **06-05-1996** 00142 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST R. POWELL	TECHNICAL MEMORANDUM (TM), REVIEW OF POLYCHLORINATED BIPHENYL (PCB) OCCURRENCES IN SOIL AND GROUNDWATER - 31 MAY 1996 (HARDING LAWSON ASSOCIATES)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0056
N00217 / 003289 NONE CORRESPONDENC NONE 2	11-18-1999 **06-06-1996** NONE 00.0	DTSC - BERKELEY C. SHABAHARI NAVFAC - EFA WEST R. POWELL	COMMENTS ON FINAL FACILITY-WIDE GROUNDWATER MONITORING PLAN	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0056
N00217 / 003284 EFAW SER 1832.4/L6261 CORRESPONDENC N62474-88-D-5086 2	11-18-1999 **06-11-1996** 00310 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN (CRP), MAY 1996 (W/OUT ENCLOSURE) (SEE AR #3285 - DRAFT FINAL CRP)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_020	181-07-0027 30093199	BOX 0055
N00217 / 003293 EFAW SER 1832/L6282 CORRESPONDENC N62474-88-D-5086 3	11-18-1999 **06-26-1996** 00142 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF TECHNICAL MEMORANDUM (TM), REVIEW OF POLYCHLORINATED BIPHENYL (PCB) OCCURRENCES IN SOIL AND GROUNDWATER (SEE AR #3294 - TECHNICAL MEMORANDUM)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0056
N00217 / 003397 NONE CORRESPONDENC NONE 2	11-18-1999 **10-09-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA COOK, A. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT ACTION MEMORANDUM (AM) SOIL REMOVAL ACTION (RM) FOR TANK FARM (LETTER RECEIVED IN THE RESTORATION RECORD FILE W/OUT ENCLOSURE)	ADMIN RECORD	PARCEL B SITE 00006	CHOICE IMAGING SOLUTIONS SW-20090717-4/8		

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N00217 / 003398 NONE CORRESPONDENC NONE 1	11-18-1999 **10-09-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA COOK, A. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE FINAL ENGINEEEING EVALUATION/COST ANALYSIS (EE/CA) FOR A NON-TIME CRITICAL REMOVAL ACTION (RM), TANK FARM IR-6	ADMIN RECORD	006 PARCEL B	NAVFAC SOUTHWEST - BLDG. 110	
N00217 / 003441 NONE CORRESPONDENC NONE 1	11-18-1999 **10-09-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA COOK, A. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE FINAL ENGINEERING EVALUATION/COST ANALYSIS (EE/CA) FOR A NON-TIME CRITICAL REMOVAL ACTION (RM) TANK FARM IR-6	ADMIN RECORD	006 PARCEL B	NAVFAC SOUTHWEST - BLDG. 110 TO BE DELETED	
N00217 / 003442 NONE CORRESPONDENC NONE 5	11-18-1999 **10-09-1996** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA COOK, A. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT ACTION MEMORANDUM (AM) SOIL REMOVAL ACTION (RM) FOR TANK FARM IR-6 SITE	ADMIN RECORD	006 PARCEL B	NAVFAC SOUTHWEST - BLDG. 110 TO BE DELETED	

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N00217 / 003386 EFAW SER 1832.4/L7017 REPORT N62474-88-D-5086 70	11-18-1999 **10-15-1996** CTO 0285 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC. PRESTON, D. NAVFAC - EFA WEST TETIRICK, L.	DRAFT FINAL FIELD WORK PLAN (WP), PHASE III RADIATION INVESTIGATION (INCLUDES EFAW TRANSMITTAL LETTER)	ADMIN RECORD	BLDG 00113 BLDG 00113A BLDG 00114 BLDG 00123 BLDG 00146 BLDG 00211 BLDG 00214 BLDG 00253 BLDG 00274 BLDG 00313 BLDG 00313A BLDG 00351A BLDG 00364 BLDG 00506 BLDG 00507 BLDG 00509 BLDG 00510 BLDG 00510A BLDG 00517 BLDG 00529 BLDG 00707 BLDG 00815 BLDG 00816 BLDG 00820 BLDG 00830 BLDG 00831 PARCEL B PARCEL C SITE 00001 SITE 00002 SITE 00007 SITE 00008	CHOICE IMAGING SOLUTIONS SW-20090717-4/8	

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N00217 / 003856 EFAW SER 1832.3/17044 CORRESPONDENC NONE 2	11-18-1999 **11-29-1996** NONE 00.0	NAVFAC - EFA WEST R. POWELL U.S. EPA - SAN FRANCISCO S. LAUTH	SUBMISSION OF THE DRAFT PARCEL C REMEDIAL INVESTIGATION (RI) REPORT, VOLUMES 1 THROUGH 13 (SEE AR #3645-3659 - DRAFT RI DATED 11/29/1996 WAS CONVERTED TO DRAFT FINAL ON 03/13/1997, VOLUME I-XV OF XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0078

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N00217 / 003459 NONE REPORT N62474-88-D-5086 74	11-18-1999 **12-01-1996** CTO 0310 00.0	PRC ENVIRONMENTAL MANAGEMENT, INC. SICKLES, J. NAVFAC - EFA WEST POWELL, R.	DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN (CRP)	ADMIN RECORD	PARCEL A PARCEL B PARCEL C PARCEL D SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033	CHOICE IMAGING SOLUTIONS SW-20090717-4/8	

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					SITE 00034		
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					SITE 00072 SITE 00073 SITE 00074 SITE 00075 SITE 00076			
N00217 / 003857 EFAW SER 1832.3/L7048 CORRESPONDENC NONE 7	11-18-1999 **12-10-1996** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF THE PUBLIC SUMMARY FOR DRAFT PARCEL C REMEDIAL INVESTIGATION (RI) REPORT (W/ ENCLOSURES)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003451 EFAW SER 1832.4/L7053 REPORT NONE 11	11-18-1999 **12-16-1996** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF NOVEMBER 1996 MONTHLY PROGRESS REPORT (MPR) (W/ ENCLOSURES)	ADMIN RECORD	BASEWIDE	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0062
N00217 / 003453 EFAW SER 1832.2/L7075 REPORT NONE 11	11-18-1999 **01-15-1997** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF DECEMBER 1996 MONTHLY PROGRESS REPORT (MPR) (W/ ENCLOSURES)	ADMIN RECORD	BASEWIDE	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0062
N00217 / 003858 NONE CORRESPONDENC NONE 20	11-18-1999 **01-21-1997** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT PARCEL C REMEDIAL INVESTIGATION (RI) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078

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N00217 / 003859 NONE CORRESPONDENC NONE 10	11-18-1999 **01-27-1997** NONE 00.0	DTSC - BERKELEY, CA SHABAHARI, C. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT PARCEL C REMEDIAL INVESTIGATION (RI) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003458 EFAW SER 1832.4/L7085 CORRESPONDENC NONE 1	11-18-1999 **01-31-1997** NONE 00.0	NAVFAC - EFA WEST POWELL, R. VARIOUS AGENCIES	TRANSMITTAL OF 1) DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN (CRP), AND 2) RESPONSE TO COMMENTS ON THE DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN (CRP) {W/OUT ENCLOSURES}	ADMIN RECORD	BASEWIDE PARCEL B	CHOICE IMAGING SOLUTIONS SW-20090717-4/8		
N00217 / 003643 SWDIV SER 1832.3/1L7117 REPORT N62474-94-D-7609 421	11-18-1999 **02-27-1997** 00005 00.0	PRC ENVIRONMENTAL MANAGEMENT M. KNOX NAVFAC - EFA WEST G. CLARK	DRAFT FEASIBILITY STUDY (FS) REPORT VOLUME I OF II (SEE AR #3644 - VOLUME II OF II)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0069
N00217 / 003644 NONE REPORT N62474-94-D-7609 271	11-18-1999 **02-27-1997** 00005 00.0	PRC ENVIRONMENTAL MANAGEMENT M. KNOX NAVFAC - EFA WEST G. CLARK	DRAFT FEASIBILITY STUDY (FS) REPORT, VOLUME II OF II (SEE AR #3643 - VOLUME I OF II)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0069
N00217 / 003860 NONE CORRESPONDENC NONE 2	11-18-1999 **02-27-1997** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF THE DRAFT PARCEL C FEASIBILITY STUDY (FS) REPORT, VOLUMES I-II OF II (W/OUT ENCLOSURES) (SEE AR #3643 - VOLUME I AND 3644 - VOLUME II)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078

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N00217 / 003476 EFAW SER 1831/L7106 CORRESPONDENC NONE 3	11-18-1999 **03-07-1997** NONE 00.0	NAVFAC - EFA WEST GEE, H. VARIOUS AGENCIES	TRANSMITTAL OF THE BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP PLAN (BCP), REVISION 3 {LETTER RECEIVED IN THE RESTORATION RECORD FILE W/OUT ENCLOSURE}	ADMIN RECORD	BASEWIDE PARCEL B	CHOICE IMAGING SOLUTIONS SW-20090717-4/8		
N00217 / 003645 EFAW SER 1833.2/L7126 REPORT N62474-94-D-7609 439	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), TEXT, VOLUME I OF XV (SEE AR #3646 THROUGH 3659 - VOLUMES II - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070
N00217 / 003646 NONE REPORT N62474-94-D-7609 581	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), TEXT, VOLUME II OF XV (SEE AR #3645 - VOLUME I AND 3647 THROUGH 3659 - VOLUMES III - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070
N00217 / 003647 NONE REPORT N62474-94-D-7609 424	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), TEXT, VOLUME III OF XV (SEE AR #3645 - 3646 - VOLUMES I - II AND 3648 - 3659 - VOLUMES IV - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070
N00217 / 003648 NONE REPORT N62474-94-D-7609 33	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), FIGURES, VOLUME IV OF XV (SEE AR #3645 THROUGH 3647 - VOLUMES I THROUGH III AND 3649 THROUGH 3659 - VOLUMES VI THROUGH XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070

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N00217 / 003649 NONE REPORT N62474-94-D-7609 38	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), FIGURES, VOLUME V OF XV (SEE AR #3645 - 3648 - VOLUMES I - IV AND 3650 - 3659 - VOLUMES VII - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070
N00217 / 003650 NONE REPORT N62474-94-D-7609 62	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), FIGURES, VOLUME VI OF XV (SEE AR #3645 - 3649 - VOLUMES I - V AND 3651 - 3659 - VOLUMES VIII - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0070
N00217 / 003651 NONE REPORT N62474-94-D-7609 790	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX A - I, VOLUME VII OF XV (SEE AR #3645 - 3650 - VOLUMES I - VI AND 3652 - 3659 - VOLUMES IX - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0071
N00217 / 003652 NONE REPORT N62474-94-D-7609 722	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX J - K, VOLUME VIII OF XV (SEE AR #3645 - 3652 - VOLUMES I - VII AND 3653 - 3659 - VOLUMES X - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0071
N00217 / 003653 NONE REPORT N62474-94-D-7609 392	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX L - M, VOLUME IX OF XV (SEE AR #3645 - 3654 - VOLUMES I - VIII AND 3654 - 3659 - VOLUMES X - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0071

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N00217 / 003654 NONE REPORT N62474-94-D-7609 718	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX M (CONTINUED), VOLUME X OF XV (SEE AR #3645 - 3653 - VOLUMES I - IX AND 3655 - 3659 - VOLUMES XII - XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0071
N00217 / 003655 NONE REPORT N62474-94-D-7609 722	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX M (CONTINUED), VOLUME XI OF XV (SEE AR #3645 THROUGH 3654 - VOLUMES I THROUGH X AND 3656 THROUGH 3659 - VOLUMES XII THROUGH XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0071
N00217 / 003656 NONE REPORT N62474-94-D-7609 825	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX N, VOLUME XII OF XV (SEE AR #3645 THROUGH 3655 - VOLUMES I THROUGH XI AND 3657 THROUGH 3659 - VOLUMES XIII THROUGH XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0072
N00217 / 003657 NONE REPORT N62474-94-D-7609 1194	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX N (CONTINUED), VOLUME XIII OF XV (SEE AR #3645 THROUGH 3656 - VOLUMES I THROUGH XII AND 3658 THROUGH 3659 - VOLUMES XIV THROUGH XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0072
N00217 / 003658 NONE REPORT N62474-94-D-7609 1187	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX N (CONTINUED), VOLUME XIV OF XV (SEE AR #3645 THROUGH 3657 - VOLUMES I THROUGH XIII AND 3659 - VOLUME XV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0072

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N00217 / 003659 NONE REPORT N62474-94-D-7609 355	11-18-1999 **03-13-1997** 00011 00.0	PRC ENVIRONMENTAL MANAGEMENT J. SICKLES NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C REMEDIAL INVESTIGATION (RI), APPENDIX O - R, VOLUME XV OF XV (SEE AR #3645 THROUGH 3659 - VOLUMES I THROUGH XIV)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0072
N00217 / 003861 EFAW SER 1833.2/L7126 CORRESPONDENC NONE 2	11-18-1999 **03-13-1997** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF THE DRAFT FINAL PARCEL C REMEDIAL INVESTIGATION (RI) REPORT, VOLUMES 1 - 11 AND 15 - 13 MARCH 1997 (W/O ENCLOSURES)(SEE AR #3645 - 3655 FOR VOLUMES I - XI, AR #3659 FOR VOLUME XV)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003473 EFAW SER 1832.2/L7129 CORRESPONDENC N62474-94-D-7609 119	11-18-1999 **03-17-1997** 00009 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF PHASE 1B ECOLOGICAL RISK ASSESSMENT (ERA) - 17 MARCH 1997, RESPONSE TO AGENCY COMMENTS ON DRAFT, AND PRC EMI LETTER DATED 14 MARCH 1997 (W/ ENCLOSURES)	ADMIN RECORD	BASEWIDE PARCEL B	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0063
N00217 / 003474 NONE REPORT N62474-94-D-7609 113	11-18-1999 **03-17-1997** CTO 0009 00.0	PRC ENVIRONMENTAL MANAGEMENT BAKER, J. NAVFAC - EFA WEST POWELL, R.	PHASE 1B ECOLOGICAL RISK ASSESSMENT (ERA), RESPONSE TO AGENCY COMMENTS ON DRAFT	ADMIN RECORD	BASEWIDE PARCEL B	NAVFAC SOUTHWEST - BLDG. 1		
N00217 / 003862 NONE CORRESPONDENC NONE 4	11-18-1999 **04-15-1997** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT FINAL PARCEL C REMEDIAL INVESTIGATION (RI) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078

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N00217 / 003863 NONE CORRESPONDENC NONE 1	11-18-1999 **04-18-1997** NONE 00.0	ARC ECOLOGY C. SHIRLEY NAVFAC - EFA WEST R. POWELL	COMMENTS ON THE DRAFT FEASIBILITY STUDY (FS) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003864 NONE CORRESPONDENC NONE 5	11-18-1999 **05-14-1997** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT PARCEL C FEASIBILITY STUDY (FS) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003865 EFAW SER 1832.3/L7185 CORRESPONDENC NONE 2	11-18-1999 **06-05-1997** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF THE RESPONSE TO COMMENTS ON THE DRAFT FINAL PARCEL C REMEDIAL INVESTIGATION (RI) REPORT (W/O ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 004159 NONE CORRESPONDENC NONE 1	08-16-2005 **08-05-1997** NONE	PRC ENVIRONMENTAL MANAGEMENT GOULD, J. ARC ECOLOGY SHIRLEY, C.	RESPONSE TO 04/18/97 COMMENTS REGARDING DRAFT FEASIBILITY STUDY (FS)	ADMIN RECORD	PARCEL C	NAVFAC SOUTHWEST - BLDG. 1 BX-032 IMAGED HPNT_025		
N00217 / 003669 EFAW SER 62210LT/L8022 CORRESPONDENC NONE 64	11-18-1999 **10-21-1997** NONE 00.0	NAVFAC - EFA WEST R. POWELL DTSC - BERKELEY C. KAO	REQUEST FOR IDENTIFICATION OF STATE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) FOR PARCEL C, E, AND F STUDIES	ADMIN RECORD	PARCEL C PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0073

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N00217 / 003723 NONE REPORT N62474-94-D-7609 55	11-18-1999 **10-22-1997** 00178 00.0	LEVINE-FRICKE RECON K. MOREY NAVFAC - EFA WEST G. CLARK	DRAFT WORK PLAN (WP), PARCEL C TREATABILITY STUDY (TS) ACTIVITIES (SEE AR #3724 - AMENDMENT A - RESPONSE TO EPA COMMENTS)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0075
N00217 / 003866 NONE CORRESPONDENC NONE 5	11-18-1999 **10-28-1997** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST MCCLELLAND, M.	COMMENTS ON THE TREATABILITY STUDY (TS) FOR PARCEL C WORK PLAN (WP)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078

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N00217 / 000794 EFAW SER 622JT/L8044 REPORT N62474-94-D-7609 30	02-04-2004 **11-07-1997** CTO 0174	TETRA TECH EM INC. TOBIAS, S. NAVFAC - EFA WEST	DRAFT BASEWIDE FINDING OF SUITABILITY TO LEASE (INCLUDES NAVFAC EFA WEST TRANSMITTAL LETTER]	ADMIN RECORD	BLDG 0007 BLDG 00140 BLDG 00204 BLDG 00205 BLDG 00364 BLDG 00520 BLDG 00707 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024	CHOICE IMAGING SOLUTIONS SW-20090424-1/8	

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					SITE 00025		
					SITE 00026		
					SITE 00027		
					SITE 00028		
					SITE 00029		
					SITE 00030		
					SITE 00031		
					SITE 00032		
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					SITE 00068		

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					SITE 00069 SITE 00070 SITE 00071 SITE 00072 SITE 00073			
N00217 / 003724 NONE CORRESPONDENC NONE 34	11-18-1999 **11-20-1997** NONE 00.0	LEVINE-FRICKE RECON M. MARSDEN U.S. EPA - SAN FRANCISCO S. LAUTH	SUBMISSION OF AMENDMENT A - RESPONSE TO COMMENTS ON THE DRAFT WORK PLAN (WP), PARCEL C TREATABILITY STUDY (TS) ACTIVITIES (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0075
N00217 / 000793 NONE REPORT N62474-94-D-7609 243	02-04-2004 **01-07-1998** 00174	TETRA TECH EM INC. S. TOBIAS NAVFAC - SOUTHWEST DIVISION J. TUAN	DRAFT FINAL BASEWIDE FINDING OF SUITABILITY TO LEASE (EXCLUDING PARCEL A)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0030
N00217 / 003688 EFAW SER 6222JT/L8085 CORRESPONDENC NONE 3	11-18-1999 **01-12-1998** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES B. BEASLEY	SUBMISSION OF THE DRAFT FINAL BASEWIDE FINDING OF SUITABILITY TO LEASE (FOSL) (EXCLUDING PARCEL A)(W/O ENCLOSURE)(SEE AR #793 FOR DRAFT FINAL FOSL)	ADMIN RECORD	BASEWIDE	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0074

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N00217 / 003700 NONE REPORT N62474-93-D-2151 500	11-18-1999 **02-01-1998** DO 0109 00.0	IT CORPORATION NAVFAC - EFA WEST POWELL, R	DRAFT WORK PLAN (WP), CONTRACTOR QUALITY CONTROL PLAN (CQCP), SAMPLING AND ANALYSIS (SAP), REVISION C - VOLUME 1	ADMIN RECORD	BLDG 00100I BLDG 00111 BLDG 00112 BLDG 00113 BLDG 00113A BLDG 00117 BLDG 00121 BLDG 00122 BLDG 00123 BLDG 00124 BLDG 00125 BLDG 00128 BLDG 00130 BLDG 00140 BLDG 00141 BLDG 00142A BLDG 00145 BLDG 00146 BLDG 00156 BLDG 00157 BLDG 00162 PARCEL B SITE 00006 SITE 00007 SITE 00008 SITE 00010 SITE 00020 SITE 00023 SITE 00024 SITE 00026 SITE 00042 SITE 00045 SITE 00046 SITE 00050 SITE 00060	CHOICE IMAGING SOLUTIONS SW-20090424-6/8	

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					SITE 00061 UST S-136			
N00217 / 003726 NONE REPORT N62474-94-D-7609 294	11-18-1999 **04-06-1998** 00178 00.0	TETRA TECH EM INC. K. MOREY NAVFAC - SOUTHWEST DIVISION G. CLARK	DRAFT TECHNICAL MEMORANDUM (TM), PARCEL C TREATABILITY STUDY (TS) ACTIVITIES	INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0075
N00217 / 003869 EFAW SER 6223/L8149 CORRESPONDENC NONE 2	11-18-1999 **04-06-1998** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF THE PARCEL C TREATABILITY STUDY (TS) TECHNICAL MEMORANDUM (TM) - 06 APRIL 1998 (W/O ENCLOSURE)(SEE AR #3726 - PARCEL C TREATABILITY STUDY)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003743 NONE REPORT NONE 16	11-18-1999 **04-18-1998** NONE 00.0	NAVFAC - EFA WEST R. POWELL VARIOUS AGENCIES	SUBMISSION OF APRIL 1998 MONTHLY PROGRESS REPORT (MPR) AND SCHEDULES FOR PARCELS A THROUGH F AND BASEWIDE (W/ ENCLOSURE)	ADMIN RECORD	BASEWIDE PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0076
N00217 / 003870 NONE CORRESPONDENC NONE 3	11-18-1999 **05-13-1998** NONE 00.0	DTSC - BERKELEY, CA HEUSINKVELD, V. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE PARCEL C TREATABILITY STUDY (TS) TECHNICAL MEMORANDUM (TM)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003740 EFAW SER 62A223/L8194-1 REPORT N62474-94-D-7609 476	11-18-1999 **07-15-1998** 00011 00.0	TETRA TECH M. KNOX NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C FEASIBILITY STUDY (FS) VOLUME I OF III (SEE AR #3741 - VOLUME II AND #3742 - VOLUME III) [INCLUDES EFA WEST TRANSMITTAL LETTER BY R. POWELL]	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0076

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N00217 / 003741 NONE REPORT N62474-94-D-7609 330	11-18-1999 **07-15-1998** 00011 00.0	TETRA TECH M. KNOX NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C FEASIBILITY STUDY (FS) VOLUME II OF III (SEE AR #3740 - VOLUME I AND #3742 - VOLUME III)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0076
N00217 / 003742 EFAW SER 6223/L8149 REPORT N62474-94-D-7609 364	11-18-1999 **07-15-1998** 00011 00.0	TETRA TECH M. KNOX NAVFAC - EFA WEST	DRAFT FINAL REPORT, PARCEL C FEASIBILITY STUDY (FS) VOLUME III OF III (SEE AR #3740 - VOLUME I AND #3741 - VOLUME II) [INCLUDES EFA WEST TRANSMITTAL LETTER BY R. POWELL]	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_008	181-07-0027 30093199	BOX 0076
N00217 / 003750 NONE CORRESPONDENC NONE 4	11-18-1999 **07-20-1998** NONE 00.0	NAVFAC - EFA WEST POWELL, R. U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C.	DRAFT FINAL BASEWIDE QUALITY ASSURANCE PROJECT PLANS (QAPP), REVISED PAGES 133 AND 184	INFO REPOSITORY	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090717-5/8		
N00217 / 003882 NONE CORRESPONDENC NONE 5	11-18-1999 **07-20-1998** NONE 00.0	NAVFAC - EFA WEST POWELL, R. U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C.	BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP), REPLACEMENT PAGES TO ADDRESS UNRESOLVED CONCERNS	ADMIN RECORD	BASEWIDE	NAVFAC SOUTHWEST - BLDG. 110		
N00217 / 003871 NONE CORRESPONDENC NONE 29	11-18-1999 **08-27-1998** NONE 00.0	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST POWELL, R.	COMMENTS ON THE DRAFT FINAL PARCEL C FEASIBILITY STUDY (FS) REPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078

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N00217 / 003872 NONE CORRESPONDENC NONE 19	11-18-1999 **08-31-1998** NONE 00.0	DTSC - BERKELEY V. HEUSINKVELD NAVFAC - EFA WEST M. MCCLELLAND	SUBMISSION OF COMMENTS ON THE DRAFT FINAL PARCEL C FEASIBILITY STUDY (FS) REPORT (W/ ENCLOSURE)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 BOX 0078 30093199
N00217 / 000933 NONE PUBLIC NOTICE NONE 6	06-21-2006 **01-01-1999** NONE	TETRA TECH EM INC. NAVFAC - EFA WEST	CLEAN TIPS - WINTER 1999 (NEWSLETTER OF TETRA TECH EM INC.'S CLEAN PROGRAM)	ADMIN RECORD	PARCEL A SITE 00001 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00012 SITE 00014 SITE 00017	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 003701 NONE REPORT N62474-93-D-2151 3000	11-18-1999 **04-19-1999** DO 0109 00.0	IT CORPORATION NAVFAC - EFA WEST	REMEDIAL ACTION WORK PLANS: WORK PLAN, REVISION 9 (JULY 1999); CONTRACTOR QUALITY CONTROL PLAN (MAY 1998); SAMPLING AND ANALYSIS PLAN, REVISION 4 (APRIL 1999) - VOLUME 1 AND HEALTH AND SAFETY PLAN (HASP), REVISION 6 (JUNE 1999) - VOLUME 2 [**SEE COMMENTS]	ADMIN RECORD SENSITIVE	PARCEL B SITE 00006 SITE 00007 SITE 00010 SITE 00018 SITE 00020 SITE 00023 SITE 00024 SITE 00026 SITE 00042 SITE 00045 SITE 00046 SITE 00050 SITE 00060 SITE 00061 SITE 00062	CHOICE IMAGING SOLUTIONS SW-20090424-6/8	

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N00217 / 000541 EFAW SER 622/L117-1 CORRESPONDENC NONE 8	12-20-2001 **04-27-1999** NONE	NAVFAC - EFA WEST M. MCCLELLAND U.S. EPA - SAN FRANCISCO C. TROMBADORE	RESPONSE TO VARIOUS COMMENTS REGARDING NAVY'S REQUEST FOR SCHEDULE REVISIONS (WITH ENCLOSURES)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0013
N00217 / 003846 EFAW SER 702P3/L9173-1 CORRESPONDENC NONE 2	11-18-1999 **06-22-1999** NONE 00.0	NAVFAC - EFA WEST R. POWELL U.S. EPA - SAN FRANCISCO C. TROMBADORE	BASEWIDE QUALITY ASSURANCE PROJECT PLAN (QAPP), RESPONSE TO CONCERNS	ADMIN RECORD INFO REPOSITORY	BASEWIDE	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0078
N00217 / 003920 EFAW SER 6223/L0305-1 REPORT N62474-94-D-7609 608	01-05-2000 **11-01-1999** 00011 01.1	TETRA TECH EM INC. J. MICHAELS NAVFAC - EFA WEST	PARCEL C RISK MANAGEMENT REVIEW TECHNICAL MEMORANDUM (PARTIAL SUBMITTAL) [INCLUDES EFAWEST TRANSMITTAL BY M. MCCLELLAND]	ADMIN RECORD INFO REPOSITORY	025 027 028 029 030 057 058 064 PARCEL C	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0080
N00217 / 000245 CTO-007/0178 MINUTES N68711-95-D-7526 69	11-08-2000 **02-24-2000** CTO 0007	BECHTEL NATIONAL, INC. TAIT, R. NAVFAC - SOUTHWEST DIVISION SELBY, R.	24 FEBRUARY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS [INCLUDES AGENDA, RAB LISTING, MEETING MINUTES OF 10/21/99, 12/09/99, 01/18/00 AND 01/27/00 AND VARIOUS HANDOUTS] {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005

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N00217 / 003928 NONE REPORT N62474-94-D-7609 344	03-27-2000 **03-14-2000** 00005	TETRA TECH EM INC. M. WANTA VARIOUS AGENCIES	DRAFT FINAL - ECOLOGICAL RISK ASSESSMENT VALIDATION STUDY REPORT (SEE AR #3948 FOR UNDATED ERRATA SHEET)	ADMIN RECORD	006 007 011 012 013 014 015 016 018 019 021 BLDG. 505 BLDG. 506 BLDG. 507 BLDG. 509 BLDG. 510 BLDG. 510A BLDG. 513 BLDG. 516 BLDG. 518 BLDG. 520 BLDG. 521 BLDG. 529 BLDG. 531 PARCEL E SITE 00001 SITE 00002	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0080
N00217 / 003939 WBB-65622 CORRESPONDENC NONE 21	04-20-2000 **03-24-2000** NONE	SHEPPARD, MULLIN, RICHTER, HAM M. E. MCDANIEL NAVFAC - SOUTHWEST DIVISION	COMMENTS ON DRAFT RISK MANAGEMENT TECHNICAL MEMORANDUM	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0081

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N00217 / 003935 EFAW SER 06CH.RM/277 MINUTES NONE 17	04-14-2000 **04-12-2000** NONE	NAVFAC - EFA WEST MACH, R. U.S. EPA - SAN FRANCISCO, CA LAUTH, S.	TRANSMITTAL OF 23 MARCH 2000 PARCEL C GROUNDWATER EVALUATION MEETING MINUTES (W/ENCLOSURE)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0080
N00217 / 000247 CTO-007/0178 MINUTES N68711-95-D-7526 72	11-08-2000 **04-27-2000** CTO 0007	BECHTEL NATIONAL, INC. TAIT, R. NAVFAC - SOUTHWEST DIVISION SELBY, R.	27 APRIL 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS - INCLUDES AGENDA, MEETING MINUTES OF 3/23/00 & BCT MEETING MINUTES OF 3/3/00, PARCEL UPDATES, OVERHEADS & DRAFT EXPLANATION OF SIGNIFICANT DIFFERENCES, PARCEL B - (4/10/00)]	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00001	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 003945 NONE CORRESPONDENC NONE 2	06-06-2000 **05-05-2000** NONE	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST MACH, R.	EPA'S REQUEST TO ASSIST IN CALCULATING REALISTIC COST TO COMPLETE ESTIMATE	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0081
N00217 / 003946 SWDIV SER 06CH.RM/361 CORRESPONDENC NONE 11	06-06-2000 **05-12-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	SUBMISSION OF FINAL COST TO COMPLETE TECHNICAL ASSUMPTIONS MEETING MINUTES OF 25 APRIL 2000 (W/ ENCLOSURE)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0081
N00217 / 003947 SWDIV SER 06CH.RM/360 CORRESPONDENC NONE 13	06-06-2000 **05-12-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	SUBMISSION OF 27 APRIL 2000 BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM (BCT) MEETING MINUTES (W/ ENCLOSURE)	ADMIN RECORD	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0081

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N00217 / 003960 EFAW SER O5CH.RM/375 REPORT N62474-94-D-7609 128	06-07-2000 **05-12-2000** 00270	TETRA TECH EM INC. T. SHOFF VARIOUS AGENCIES	DRAFT JANUARY-MARCH 2000 SECOND QUARTERLY GROUNDWATER SAMPLING REPORT	ADMIN RECORD	006 007 010 018 PARCEL B	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 000224 CTO-007/0097 MINUTES N68711-95-D-7526 19	10-27-2000 **05-25-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES OF 25 MAY 2000	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0004
N00217 / 000251 CTO-007/0178 MINUTES N68711-95-D-7526 20	11-08-2000 **05-25-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	25 MAY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS [INCLUDES AGENDA, 04/27/00 MEETING MINUTES & VARIOUS HANDOUTS]	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000257 NONE MISC NONE 12	11-08-2000 **06-01-2000** NONE	NAVFAC - SOUTHWEST DIVISION NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLEANUP NEWSLETTER: "WHAT IS HUNTERS POINT SHIPYARD?"	ADMIN RECORD INFO REPOSITORY	006 021 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E SITE 00001 SITE 00003	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 003955 NONE REPORT N62474-94-D-7609 354	06-07-2000 **06-01-2000** 00005 & 00011	TETRA TECH EM INC. D. BIELSKIS VARIOUS AGENCIES	DRAFT FIELD SAMPLING PLAN FOR PHASE I GROUNDWATER DATA GAPS INVESTIGATION	ADMIN RECORD	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_021	181-07-0027 30093199	BOX 0081

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N00217 / 003956 NONE REPORT N62474-94-D-7609 126	06-07-2000 **06-01-2000** 00005 & 00011	TETRA TECH EM INC. D. BIELSKIS VARIOUS AGENCIES	DRAFT QUALITY ASSURANCE PROJECT PLAN FOR PHASE I GROUNDWATER DATA GAPS INVESTIGATION	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003980 NONE CORRESPONDENC NONE 3	07-14-2000 **06-13-2000** NONE	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST MACH, R.	COMMENTS ON THE DRAFT FIELD SAMPLING PLAN FOR PHASE I GROUNDWATER DATA GAPS INVESTIGATION (W/ ENCLOSURE)	ADMIN RECORD	025 028 PARCEL C	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003979 CRWQCB FILE NO. 2169.6032 (LBJ) CORRESPONDENC NONE 3	07-14-2000 **06-16-2000** NONE	CRWQCB - SAN FRANCISCO, CA JOB, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON DRAFT FIELD SAMPLING PLAN FOR PHASE I DATA GAPS INVESTIGATION	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003978 NONE CORRESPONDENC NONE 5	07-14-2000 **06-19-2000** NONE	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENT ON THE DRAFT FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN FOR PHASE I GROUNDWATER DATA GAPS	ADMIN RECORD	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003965 EFAW SER 06CH.RM/473 CORRESPONDENC NONE 9	07-14-2000 **06-20-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	SUBMISSION OF FINAL COST TO COMPLETE ANALYSIS IN SUPPORT OF EARLY TRANSFER MEETING MINUTES OF 18 MAY 2000	ADMIN RECORD	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081

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N00217 / 003977 NONE CORRESPONDENC NONE 7	07-14-2000 **06-20-2000** NONE	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST MACH, R.	EPA REVIEW AND COMMENT ON THE DRAFT FIELD SAMPLING PLAN AND QUALITY ASURANE PROJECT PLAN FOR PHASE I GROUNDWATER DATA GAPS (WITH FOCUS ON PARCEL D GROUNDWATER SAMPLING EFFORT)	ADMIN RECORD	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081

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N00217 / 000054 SWDIV SER 06CH.RM/475 REPORT N62474-93-D-2151 550	08-09-2000 **06-23-2000** DO 0091	IT CORPORATION GRAY, J. NAVFAC - SOUTHWEST DIVISION	WORK PLAN, CONTRACTOR QUALITY CONTROL PLAN (CQCP), SAMPLING AND ANALYSIS PLAN (SAP), SITE HEALTH & SAFETY PLAN (SHSP), ENVIRONMENTAL PROTECTION PLAN (EPP) FOR ABOVEGROUND / UNDERGROUND TANK CLEANING AND REMOVAL [PORTIONS OF MAILING LIST ARE SENSITIVE]	ADMIN RECORD SENSITIVE	AST 000001 AST 000002 AST 000003 AST 000004 AST 000005 AST 000006 AST 000007 AST 000008 AST 000009 AST 000010 AST 000011 AST 000521-1 AST 000521-2 AST 000521-3 AST A203-1A AST A203-1B AST A203-2A AST A203-2B AST A203-5 AST A203-6 AST A203-7 AST A211 AST A235 AST A302-2 AST A302-5 AST A302-6 AST A521-8 BLDG 00203 BLDG 00211 BLDG 00235 BLDG 00253 BLDG 00258 BLDG 00302 BLDG 00439 BLDG 00521	CHOICE IMAGING SOLUTIONS SW-20090313-3/7	

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					PARCEL C SITE 00028 SITE 00029 SITE 00067 UST U302 UST U302-1 UST U302-3 UST U439-1 UST U439-2 WELL IR67-MW04A			
N00217 / 000072 EFAW SER 06CH.RM/474 CORRESPONDENC NONE 13	08-09-2000 **06-23-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	SOIL REMEDIATION AREAS, PARCEL C (W/ ENCLOSURE)	ADMIN RECORD	025 027 028 029 030 057 058 064 PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002
N00217 / 003962 EFAW SER 06CH.RM/480 CORRESPONDENC NONE 12	07-14-2000 **06-23-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	TRANSMITTAL OF TREATABILITY STUDY WORK PLAN MODIFICATIONS REGARDING THE PHASE II SOIL VAPOR EXTRACTION (SVE)	ADMIN RECORD	010 025 028 036 BLDG. 134 BLDG. 211 BLDG. 231 BLDG. 253 BLDG. 272 PARCEL B PARCEL C PARCEL E	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081

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N00217 / 003976 NONE CORRESPONDENC NONE 11	07-14-2000 **06-23-2000** NONE	DTSC - BERKELEY, CA KAO, C. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON THE DRAFT QUALITY ASSURANCE PROJECT PLAN AND DRAFT FIELD SAMPLING PLAN FOR PHASE I GROUNDWATER DATA GAPS INVESTIGATION	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E SITE 00009 SITE 00018 SITE 00025 SITE 00028	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003972 EFAW SER 06CH.RM/478 CORRESPONDENC NONE 11	07-14-2000 **06-30-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	TRANSMITTAL OF THE 08 JUNE 2000 FINAL BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM (BCT) MEETING MINUTES	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 003973 EFAW SER 06CH.RM/477 CORRESPONDENC NONE 7	07-14-2000 **06-30-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	TRANSMITTAL OF 31 MAY 2000 FINAL PETROLEUM HYDROCARBON PROGRAM	ADMIN RECORD	BLDG. 439 PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0081
N00217 / 000063 NONE CORRESPONDENC NONE 2	08-09-2000 **07-03-2000** NONE	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST MACH, R.	COMMENTS ON THE PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY WORK PLAN	ADMIN RECORD	010 025 BLDG. 123 PARCEL B PARCEL C PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0001
N00217 / 000102 NONE CORRESPONDENC NONE 2	08-10-2000 **07-05-2000** NONE	DTSC - BERKELEY C. KAO NAVFAC - EFA WEST R. MACH	SOIL REMEDIATION AREAS, PARCEL C LTR DATED 6/23/00-PROVIDING INFORMATION FOR DISCUSSIONS AT THE 6/29/00 MEETING. AS NOTED AT THE MTG, THE INFORMATION FROM THE 6/23/00 LTR DOES NOT COMPLETELY REFLECT DTSC'S COMMENTS & REMAINING ISSUES NEED TO BE RESOLVED	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002

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N00217 / 000017 NONE REPORT N62474-94-D-7609 192	08-08-2000 **07-14-2000** 00270	TETRA TECH EM INC. T. SHOFF NAVFAC - SOUTHWEST DIVISION D. DEMARS	DRAFT APRIL TO JUNE 2000 THIRD QUARTERLY GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	006 007 010 018 024 PARCEL B	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0001
N00217 / 000055 NONE CORRESPONDENC N62474-94-D-7609 49	08-09-2000 **07-14-2000** CTO 0005 & 0011	TETRA TECH EM INC. BIELSKIS, D. NAVFAC - SOUTHWEST DIVISION	PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY WORK PLAN [INCLUDES TRANSMITTAL LETTER] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD SENSITIVE	BLDG 00123 BLDG 00134 PARCEL B PARCEL C SITE 00010 SITE 00025 SITE 00028 SITE 00036	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0001
N00217 / 000069 TC.0011.10394-1 MISC N62474-94-D-7609 11	08-09-2000 **07-21-2000** 00011	TETRA TECH EM INC. D. CHOW NAVFAC - SOUTHWEST DIVISION	SOIL REMEDIATION AREAS IN PARCEL C, SUMMARY OF RECOMMENDATIONS FROM RISK MANAGEMENT REVIEW PROCESS [INCLUDES TRANSMITTAL LETTER BY R. MACH]	ADMIN RECORD	025 027 028 029 030 057 058 064 PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002
N00217 / 000234 CTO-007/0154 MINUTES N68711-95-D-7526 19	10-27-2000 **07-27-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	27 JULY 2000 RESTORATION ADVISORY BOARD MEETING MINUTES REPORTER'S TRANSCRIPT	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0004

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N00217 / 000252 CTO-007/0178 MINUTES N68711-95-D-7526 30	11-08-2000 **07-27-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	27 JULY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS [INCLUDES AGENDA, 05/25/00 MEETING MINUTES AND VARIOUS HANDOUTS]	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000051 DS.0011.14744 CORRESPONDENC N62474-94-D-7609 599	08-08-2000 **07-31-2000** 00011	TETRA TECH EM INC. BIELSKIS, D. NAVFAC - SOUTHWEST DIVISION DEMARS, E.	FINAL FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN - PHASE I GROUNDWATER DATA GAPS INVESTIGATION [INCLUDES SWDIV TRANSMITTAL LETTER] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	006 021 022 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00001	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0001
N00217 / 000179 NONE CORRESPONDENC NONE 2	09-27-2000 **08-01-2000** NONE	DTSC - SACRAMENTO, CA KENNING, M. DTSC - BERKELEY, CA KAO, C.	REVIEW AND COMMENTS ON THE DRAFT APRIL TO JUNE 2000 THIRD QUARTERLY GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	006 007 010 025 026 PARCEL B	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000105 EFAW SER 06CH.RM/635 MINUTES NONE 9	08-10-2000 **08-02-2000** NONE	NAVFAC - EFA WEST MACH, R. VARIOUS AGENCIES	MEETING MINUTES OF FINAL PARCEL C SOIL REMEDIAL AREAS DATED JUNE 29, 2000 (W/ ENCLOSURE) {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002
N00217 / 000180 NONE CORRESPONDENC NONE 3	09-28-2000 **08-10-2000** NONE	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS OF THE DRAFT APRIL TO JUNE 2000 THIRD QUARTERLY GROUNDWATER SAMPLING REPORT (W/ ATTACHMENT)	ADMIN RECORD INFO REPOSITORY	006 007 010 018 026 PARCEL B	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003

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N00217 / 000114 EFAW SER 06CH.RM/522 MINUTES NONE 15	08-29-2000 **08-15-2000** NONE	NAVFAC - EFA WEST MACH, R. VARIOUS AGENCIES	BRAC CLEANUP TEAM (BCT) MEETING MINUTES OF 13 JULY 2000 (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0002
N00217 / 000171 450-03000-190 CORRESPONDENC NONE 18	09-27-2000 **08-15-2000** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA RHETT, B. NAVFAC - EFA WEST MACH, R.	COMMENTS BY THE CITY & COUNTY OF SAN FRANCISCO ON THE REMEDIAL DESIGN AMENDMENT - PREPARED BY TREADWELL & ROLLO. SFRA CONCURS WITH COMMENTS BY DTSC & CRWQCB REGARDING APPENDICES 5 & 6. (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	006 007 010 020 024 026 046 060 061 PARCEL B	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000126 SWDIV SER 06CH.RM/672 CORRESPONDENC N62474-93-D-2151 276	08-29-2000 **08-21-2000** DO 0109	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT CHEMICAL OXIDATION TREATABILITY STUDIES WORK PLAN FOR REMEDIAL UNITS 2, 4, 5, AND 6 - PARCEL C, REVISION C (INCLUDES TRANSMITTAL LETTER BY R. MACH & RESPONSE TO COMMENTS ON DRAFT SAMPLING & ANALYSIS PLAN GROUNDWATER TREATABILITY STUDIES)	ADMIN RECORD INFO REPOSITORY	PARCEL C RU 2 RU 4 RU 5 RU 6	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0002
N00217 / 000159 NONE CORRESPONDENC NONE 8	09-07-2000 **08-21-2000** NONE	DTSC - BERKELEY C. KAO NAVFAC - EFA WEST R. MACH	COMMENTS ON DRAFT ACTION MEMORANDUM FOR THE TIME CRITICAL REMOVAL ACTION (TCRA) FOR STEAM LINES, FUEL LINES, AND NON VOLATILE ORGANIC COMPOUNDS (VOC) SOIL SITES (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_026	181-07-0027 30093199	BOX 0003

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N00217 / 000235 CTO-007/0158 MINUTES N68711-95-D-7526 31	10-27-2000 **08-24-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	24 AUGUST 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES REPORTER'S TRANSCRIPT	ADMIN RECORD INFO REPOSITORY	BLDG. 411 PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0004
N00217 / 000253 CTO-007/0178 MINUTES N68711-95-D-7526 33	11-08-2000 **08-24-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	24 AUGUST 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS [INCLUDES AGENDA, 07/27/00 MEETING MINUTES , VARIOUS HANDOUTS AND TETRA TECH EMPLOYMENT APPLICATION]	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000151 2169.6032 CORRESPONDENC NONE 3	09-07-2000 **08-25-2000** NONE	CRWQCB - OAKLAND, CA JOB, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON THE DRAFT ACTION MEMORANDUM, TIME CRITICAL REMOVAL ACTION FOR STEAM LINES, FUEL LINES, AND NON-VOC SOIL SITES	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000163 450-03100-190 CORRESPONDENC NONE 4	09-26-2000 **08-28-2000** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA RHETT, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON SWDIV'S LETTER DATED 21 JULY 2000 REGARDING RECOMMENDATIONS FOR CLEANUP LEVELS AT SOIL SITES	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000269 NONE CORRESPONDENC NONE 2	11-22-2000 **08-28-2000** NONE	SHEPPARD, MULLIN, RICHTER E. MCDANIEL NAVFAC - EFA WEST R. MACH	REVIEW AND COMMENTS OF THE DRAFT ACTION MEMORANDUM, TIME-CRITICAL REMOVAL ACTION FOR STEAM LINES, FUEL LINES, AND NON-VOLATILE ORGANIC COMPOUND SOIL SITES	ADMIN RECORD	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0005

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N00217 / 000270 NONE CORRESPONDENC NONE 3	11-22-2000 **08-28-2000** NONE	SHEPPARD, MULLIN, RICHTER & HA E. MCDANIEL NAVFAC - EFA WEST R. MACH	REVIEW AND COMMENTS OF THE FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN, PHASE I GROUNDWATER DATA GAPS INVESTIGATION (WITH ENCLOSURE)	ADMIN RECORD	PARCEL C PARCEL D WELL IR 09MW38A WELL IR09MW36A WELL IR09MW37A WELL IR09MW39A WELL IR09MW45F WELL IR09P041A WELL IR09P140A WELL IR28MW313F WELL IR29MW56F WELL IR29MW58F WELL IR29MW85F WELL IR33MW116A WELL IR33MW63A WELL IR36MW16A WELL IR44MW08A WELL PA50MW12A	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0005
N00217 / 000160 NONE CORRESPONDENC NONE 2	09-07-2000 **08-30-2000** NONE	ARC ECOLOGY C. SHIRLEY NAVFAC - EFA WEST R. MACH	COMMENTS ON DRAFT ACTION MEMORANDUM, TIME CRITICAL REMOVAL ACTION FOR STEAM LINES, AND NON-VOC SOIL SITES	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003

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N00217 / 000161 450-03200-190 CORRESPONDENC NONE 4	09-07-2000 **08-30-2000** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA RHETT, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON DRAFT ACTION MEMORANDUM, TIME CRITICAL REMOVAL ACTION FOR STEAM LINES, FUEL LINES, AND NON-VOC SOIL SITES (WITH ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000149 DS.0270.15168 REPORT N62474-94-D-7609 204	09-06-2000 **08-31-2000** 00270	TETRA TECH EM INC. T. SHOFF NAVFAC - SOUTHWEST DIVISION	FINAL APRIL TO JUNE 2000 THIRD QUARTERLY GROUNDWATER (GW) SAMPLING REPORT [INCLUDES RESPONSE TO REGULATORY AGENCY COMMENTS ON DRAFT THIRD QUARTERLY GW SAMPLING REPORT]{CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY	006 007 010 018 024 PARCEL B	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0003
N00217 / 000399 EFAW SER 06CH.RM/705 CORRESPONDENC NONE 9	04-13-2001 **08-31-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	NAVY'S ENVIRONMENTAL RESTORATION JULY 2000 MONTHLY PROGRESS REPORT (MPR) (WITH ENCLOSURE) [PORTION OF MAILING LIST IS CONFIDENTIAL]	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0008
N00217 / 000258 NONE MISC NONE 10	11-08-2000 **09-01-2000** NONE	NAVFAC - SOUTHWEST DIVISION NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLEANUP NEWSLETTER: "PARCEL B CLEANUP MOVING FORWARD"	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005

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N00217 / 000166 DS.0201.15251-1 REPORT N62474-94-D-7609 300	09-26-2000 **09-07-2000** 00201	TETRA TECH EM INC. SHOFF, T. VARIOUS AGENCIES	DRAFT FINAL PARCEL B REMEDIAL DESIGN DOCUMENTS AMENDMENT, FIELD SAMPLING PLAN & QUALITY ASSURANCE PROJECT PLAN FOR CONFIRMATION SAMPLING & ANALYSIS PLAN, PARCEL B REMEDIAL ACTION, REVISION 1 {CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY	006 007 010 018 020 023 024 026 046 050 BLDG. 123 PARCEL B	CHOICE IMAGING SOLUTIONS SW-20090717-1/8		
N00217 / 000168 DS.0011.14917 REPORT N62474-94-D-7609 67	09-26-2000 **09-13-2000** 00011	TETRA TECH EM INC. VARIOUS AGENCIES	FINAL TIME-CRITICAL REMOVAL ACTION FOR STEAM LINES, FUEL LINES AND NON-VOLATILE ORGANIC COMPOUND SOIL SITES {CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_026	181-07-0027 30093199	BOX 0003
N00217 / 000239 NONE CORRESPONDENC NONE 2	10-27-2000 **10-18-2000** NONE	DTSC - BERKELEY C. KAO NAVFAC - EFA WEST R. MACH	REVIEW AND COMMENTS ON THE FINAL ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL ACTION AT PARCELS C AND D STEAM LINES, FUEL LINES, AND NON-VOLATILE ORGANIC COMPOUND SITES	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0004
N00217 / 000240 EFAW SER 06CH.RM/851 REPORT NONE 8	10-27-2000 **10-19-2000** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	TECHNICAL JUSTIFICATION FOR THE PARCEL B THROUGH F INTERFACE, BEACH ARMORIZATION CONCEPTUAL DESIGN {PORTION OF MAILING LIST IS CONFIDENTIAL} (WITH ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0004

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N00217 / 000409 SWDIV SER 06CH.RM/796 REPORT N62474-93-D-2151 227	05-04-2001 **10-20-2000** DO 0109	IT CORPORATION GARANT, M. NAVFAC - SOUTHWEST DIVISION	FINAL CHEMICAL OXIDATION TREATABILITY STUDIES WORK PLAN FOR REMEDIAL UNITS 2, 4, 5, & 6 - PARCEL C [INCLUDES SWDIV TRANSMITTAL LETTER BY R. MACH AND RESPONSE TO COMMENTS ON THE DRAFT DATED 09/05/00 AND 10/16/00] {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C RU-2 RU-4 RU-5 RU-6	FRC - PERRIS IMAGED HPNT_019	181-07-0027 30093199	BOX 0008
N00217 / 000242 EFAW SER 06CH.RM/853 MINUTES NONE 6	10-27-2000 **10-24-2000** NONE	NAVFAC - EFA WEST MACH, R. VARIOUS AGENCIES	03 OCTOBER 2000 FINAL PARCEL C TIME-CRITICAL REMOVAL ACTION (TCRA) COPC MEETING MINUTES (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000256 CTO-007/0178 MINUTES N68711-95-D-7526 19	11-08-2000 **10-26-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	26 OCTOBER 2000 RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS [INCLUDES AGENDA, MEETING MINUTES, VARIOUS HANDOUTS, SEPTEMBER 2000 MONTHLY PROGRESS REPORT AND FACT SHEET NO. 3]	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000289 NONE CORRESPONDENC NONE 2	11-22-2000 **10-31-2000** NONE	U.S. EPA - SAN FRANCISCO, CA TROMBADORE, C. NAVFAC - EFA WEST MACH, R.	REVIEW OF NAVY TECHNICAL JUSTIFCATION FOR THE PARCEL B THROUGH F INTERFACE, BEACH AMORIZATION CONCEPTUAL DESIGN {SEE AR #240 & 290 - TECHNICAL JUSTIFICATION & COMMENTS BY SFRA}	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0005
N00217 / 000297 NONE CORRESPONDENC NONE 2	12-18-2000 **10-31-2000** NONE	CRWQCB - SAN FRANCISCO, CA JOB, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON TECHNICAL JUSTIFICATION FOR THE PARCEL B THROUGH F INTERFACE BEACH ARMORIZATION CONCEPTUAL DESIGN (SEE AR #240 - DOCUMENT)	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0006

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N00217 / 000290 450-04400-190 CORRESPONDENC NONE 5	11-22-2000 **11-02-2000** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA RHETT, B. NAVFAC - EFA WEST MACH, R.	COMMENTS ON THE NAVY TECHNICAL JUSTIFICATION FOR THE PARCEL B THROUGH F INTERFACE, BEACH ARMORIZATION CONCEPTUAL DESIGN [PORTION OF MAILING LIST IS CONFIDENTIAL] {SEE AR #240 - TECHNICAL JUSTIFICATION AND #289 - COMMENTS}	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0005
N00217 / 000267 DS.0011.15693 & SWDIV SER 06CH.RM/938 CORRESPONDENC N62474-94-D-7609 633	11-22-2000 **11-16-2000** 00011	TETRA TECH EM INC. D. BIELSKIS NAVFAC - SOUTHWEST DIVISION	DRAFT SAMPLING AND ANALYSIS PLAN OVERVIEW, PARCEL C - SOIL SITE DELINEATION [INCLUDES TRANSMITTAL LETTER BY R. MACH] {CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0005
N00217 / 000302 DS.0011.14441 & SWDIV SER 06CH.RM/860 REPORT N62474-94-D-7609 33	12-18-2000 **11-17-2000** CTO 0011	TETRA TECH EM INC. LI, T. NAVFAC - SOUTHWEST DIVISION	GROUNDWATER BENEFICIAL USE EVALUATION, PARCELS C, D AND E [INCLUDES TRANSMITTAL LETTER FROM R. MACH (SWDIV), PORTION OF MAILING LIST IS CONFIDENTIAL] (SEE AR #325, 326 & 342 - COMMENTS & #359 - RESPONSE TO COMMENTS)	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0006
N00217 / 000325 NONE CORRESPONDENC NONE 2	12-26-2000 **11-29-2000** NONE	CRWQCB - SAN FRANCISCO, CA JOB, B. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON GROUNDWATER BENEFICIAL USE EVALUATION, PARCELS C,D, AND E (SEE AR #302 - EVALUATION, #326 & 342 - COMMENTS & #359 - RESPONSE TO COMMENTS)	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0006
N00217 / 000313 DS.0011.15701 & SWDIV SER06CH.RM/964 REPORT N62474-94-D-7609 476	12-19-2000 **12-01-2000** 00011	TETRA TECH EM INC. T. LI NAVFAC - SOUTHWEST DIVISION D. DEMARS	TECHNICAL MEMORANDUM INFORMATION PACKAGE FOR THE PHASE I GROUNDWATER DATA GAPS INVESTIGATION {PORTION OF MAILING LIST IS CONFIDENTIAL;CD COPY ENCLOSED} (SEE AR #339 - REVISED INFORMATION PACKAGE)	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0006

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N00217 / 000326 NONE CORRESPONDENC NONE 4	12-26-2000 **12-05-2000** NONE	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON GROUNDWATER BENEFICIAL USE EVALUATION PARCELS C,D, AND E (SEE AR #302 - EVALUATION, #325 & 342 - COMMENTS & RESPONSE TO COMMENTS)	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0006
N00217 / 000358 CTO-007/0197 MINUTES N68711-95-D-7526 78	02-07-2001 **12-07-2000** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	REPORTER'S TRANSCRIPT OF THE 07 DECEMBER 2000 RESTORATION ADVISORY BOARD (RAB) MEETING - INCLUDES RAB MEETING MINUTES OF 26 OCTOBER 2000, AGENDA, PUBLIC NOTICE, AND HANDOUTS	ADMIN RECORD	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00003	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000329 NONE CORRESPONDENC NONE 3	12-26-2000 **12-08-2000** NONE	U.S. EPA - SAN FRANCISCO, CA LAUTH, S. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON DRAFT SAMPLING AND ANALYSIS PLAN PARCEL C SOIL SITE DELINEATION (SEE AR #267 - DOCUMENT, #343 - COMMENTS BY SFRA & #344 - COMMENTS BY DTSC)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0006
N00217 / 000342 WBB-65622 CORRESPONDENC NONE 3	01-22-2001 **12-18-2000** NONE	SHEPPARD, MULLIN, RICHTER & HA M. MCDANIEL NAVFAC - EFA WEST R. MACH	COMMENTS ON THE GROUNDWATER BENEFICIAL USE EVALUATION FOR PARCELS C, D, & E (WITH ENLCOSURE) {SEE AR #302 - EVALUATION, #325 - COMMENTS BY CRWQCB, & #326 - COMMENTS BY EPA & #359 - RESPONSE TO COMMENTS}	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000343 NONE CORRESPONDENC NONE 6	01-22-2001 **12-18-2000** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA CAPOBRES, D. NAVFAC - EFA WEST MACH, R.	COMMENTS OF THE DRAFT SAMPLING AND ANALYSIS PLAN FOR PARCEL C, SOIL SITE DELINEATION	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007

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N00217 / 000344 NONE CORRESPONDENC NONE 12	01-22-2001 **12-18-2000** NONE	DTSC - BERKELEY C. KAO NAVFAC - EFA WEST R. MACH	REVIEW AND COMMENTS OF THE DRAFT SAMPLING AND ANALYSIS PLAN FOR PARCEL C, SOIL SITE DELINEATION {SEE AR #267 - PLAN, #329 - COMMENTS BY EPA, #343 - COMMENTS BY SFRA}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000332 DS.0011.15702; 15702-1 & SWDIV SER 06CH.RM/033&390 CORRESPONDENC N62474-94-D-7609 249	01-11-2001 **01-08-2001** 00011	TETRA TECH EM INC. LI, T. NAVFAC - SOUTHWEST DIVISION	FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR PHASE II GROUNDWATER DATA GAPS INVESTIGATION [INCLUDES SWDIV TRANSMITTAL LETTERS BY R. MACH] {CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY	006 021 022 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00001	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0006
N00217 / 000339 DS.0011.15701-1 & SWDIV SER 06CH.RM/032 & 0390 REPORT N62474-94-D-7609 560	01-22-2001 **01-08-2001** 00011	TETRA TECH EM INC. T. LI NAVFAC - SOUTHWEST DIVISION	TECHNICAL MEMORANDUM, REVISED INFORMATION PACKAGE FOR THE PHASE I GROUNDWATER DATA GAPS INVESTIGATION [INCLUDES SWDIV TRANSMITTAL LETTER BY R. MACH] (PORTION OF MAILING LIST IS CONFIDENTIAL) [CD COPY ENCLOSED] {SEE AR #313 - INFORMATION PACKAGE}	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_001	181-07-0027 30093199	BOX 0007
N00217 / 000367 DS.0011.15694 & 15694-1 & SWDIV SER 06CH.RM/0076 CORRESPONDENC N62474-94-D-7609 666	03-02-2001 **01-18-2001** 00011	TETRA TECH EM INC. M. WANTA NAVFAC - SOUTHWEST DIVISION	FINAL SAMPLING AND ANALYSIS PLAN OVERVIEW, PARCEL C - SOIL SITE DELINEATION [INCLUDES SWDIV TRANSMITTAL LETTER BY R. MACH, FSP, QUALITY ASSURANCE PROJECT PLAN (QAPP) AND REPLACEMENT PAGES FOR APPENDICES A & B ISSUED 06/25/01]	ADMIN RECORD	025 028 029 030 058 064 PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000363 CTO-007/0203 & 0207 MISC N68711-95-D-7526 64	02-19-2001 **01-25-2001** 00007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIAL PACKAGE FOR THE 25 JANUARY 2001 RESTORATION ADVISORY BOARD (RAB) MEETING - INCLUDES REPORTER'S TRANSCRIPT OF 25 JANUARY 2001 MEETING	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007

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N00217 / 000384 NONE MISC NONE 35	04-03-2001 **02-07-2001** NONE	DTSC - BERKELEY C. PING KAO NAVFAC - EFA WEST R. MACH	DTSC REVIEW OF AND COMMENTS ON THE REVISED INFORMATION PACKAGE FOR THE PHASE I GROUNDWATER DATA GAP INVESTIGATION AND FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDA FOR PHASE II GROUNDWATER DATA GAP INVESTIGATION	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0008
N00217 / 000359 TC.0011.10845 & SWDIV SER 06CH.RM/0156 CORRESPONDENC N62474-94-D-7609 16	02-12-2001 **02-08-2001** 00011	NAVFAC - SOUTHWEST DIVISION VARIOUS AGENCIES	RESPONSE TO COMMENTS ON THE GROUNDWATER BENEFICIAL USE EVALUATION FOR PARCELS C, D, AND E [INCLUDES SWDIV TRANSMITTAL LETTER BY R.MACH]	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000364 CTO-007/0205 MISC N68711-95-D-7526 13	02-19-2001 **02-15-2001** 00007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLEANUP NEWSLETTER: PARCEL E CAPPING AND FIRE UPDATE; OCTOBER THROUGH DECEMBER 2000	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007
N00217 / 000387 NONE CORRESPONDENC NONE 4	04-04-2001 **02-21-2001** NONE	DTSC - BERKELEY C. KAO NAVFAC - EFA WEST R. MACH	DTSC COMMENTS OF THE FINAL SAMPLING AND ANALYSIS PLAN TIME-CRITICAL REMOVAL ACTION, PARCEL C SITE DELINEATION	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0008
N00217 / 000362 CTO-007/0202 & 0213 MISC N68711-95-D-7526 61	02-19-2001 **02-22-2001** 00007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIAL PACKAGE FOR THE 22 FEBRUARY 2001 RESTORATION ADVISORY BOARD (RAB) MEETING - INCLUDES REPORTER'S TRANSCRIPT OF 22 FEBRUARY 2001 MEETING (MAILING LIST IS CONFIDENTIAL)	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0007

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000388 EFAW SER 06CH.RM/0166 CORRESPONDENC NONE 7	04-04-2001 **02-22-2001** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	NAVY PROPOSAL TO PREPARE AN EXPLANATION OF SIGNIFICANT DIFFERENCES TO THE RECORD OF DECISION AND RESPONSE TO EPA, CRWQCB & CITY OF SAN FRANCISCO COMMENTS	ADMIN RECORD	007 010-1 025 BLDG. 123 PARCEL B PARCEL C PARCEL F	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0008
N00217 / 000411 450-00401-190 CORRESPONDENC NONE 4	05-04-2001 **03-02-2001** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA CAPOBRES, D. NAVFAC - EFA WEST MACH, R.	RESPONSE TO NAVY'S RESPONSE TO COMMENTS ON THE FINAL SAMPLING AND ANALYSIS PLAN, PARCEL C SOIL SITE DELINEATION {SEE AR #367 - FINAL SAP}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0009
N00217 / 000393 EFAW SER 06CH.RM/0249 CORRESPONDENC NONE 4	04-04-2001 **03-16-2001** NONE	NAVFAC - EFA WEST R. MACH VARIOUS AGENCIES	LETTER TO STATE NAVY'S POSITION REGARDING SIX ISSUES RELATED TO THE PARCEL B RECORD OF DECISION (ROD)	ADMIN RECORD	010 025 BLDG. 123 PARCEL B PARCEL C PARCEL F	FRC - PERRIS IMAGED HPNT_004	181-07-0027 30093199	BOX 0008
N00217 / 000379 1171 CORRESPONDENC N62474-98-D-2076 143	04-03-2001 **03-26-2001** 00030	IT CORPORATION M. GARANT NAVFAC - SOUTHWEST DIVISION	FINAL SITE HEALTH AND SAFETY PLAN, CHEMICAL OXIDATION TREATABILITY STUDY, REMEDIAL UNITS 2, 4, 5, AND 6 AT PARCEL C, REVISION 0	ADMIN RECORD	PARCEL C REMEDIAL UNIT 2 REMEDIAL UNIT 4 REMEDIAL UNIT 5 REMEDIAL UNIT 6	FRC - PERRIS IMAGED HPNT_028	181-07-0027 30093199	BOX 0008
N00217 / 000726 1199 REPORT N62474-98-D-2076 47	06-19-2003 **04-05-2001** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	PROGRESS REPORT FOR SOIL VAPOR EXTRACTION (SVE) AT PARCEL C INSTALLATION RESTORATION SITES, REVISION 0	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0026

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N00217 / 000430 DS.0011.14442 REPORT N62474-94-D-7609 44	05-04-2001 **04-12-2001** 00011	TETRA TECH EM INC. T. LI NAVFAC - SOUTHWEST DIVISION	FINAL GROUNDWATER BENEFICIAL USE DETERMINATION FOR A-AQUIFER {SEE AR #493 - REVISED FINAL GROUNDWATER BENEFICIAL USE}	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0009
N00217 / 000437 CTO-007/0225 MINUTES N68711-95-D-7526 105	06-05-2001 **04-26-2001** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FOR THE 26 APRIL 2001 RESTORATION ADVISORY BOARD MEETING - INCLUDES AGENDA, MEETING TRANSCRIPT FROM THE 4/26/01 MEETING, MINUTES FROM THE 3/22/01 MEETING, HANDOUTS, RAB APPLICATIONS & MAILING LIST	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0009
N00217 / 000456 450-01401-190 CORRESPONDENC NONE 2	07-26-2001 **05-02-2001** NONE	SF REDEVELOPMENT AGENCY - SAN FRANCISCO, CA CAPOBRES, A. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON THE DRAFT PETROLEUM HYDROCARBON CORRECTIVE ACTION PLAN FOR PARCELS C, D, AND E {SEE AR #465 - COMMENTS BY CRWQCB}	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0010
N00217 / 000436 CTO-007/0224 & 0228 MINUTES N68711-95-D-7526 73	06-05-2001 **05-24-2001** CTO 0007	BECHTEL NATIONAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIAL PACKAGE FOR THE 24 MAY 2001 RESTORATION ADVISORY BOARD (RAB) MEETING - INCLUDES REPORTER'S TRANSCRIPT OF 5/24/01 MEETING, AGENDA, PUBLIC NOTICE, MINUTES FROM THE 04/26/01 MEETING, LIST OF ATTENDEES, HANDOUTS, [*SEE COMMENTS]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0009
N00217 / 000723 1532 REPORT N62474-98-D-2076 57	06-19-2003 **06-05-2001** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	PROGRESS REPORT FOR SOIL VAPOR EXTRACTION (SVE) PILOT TEST	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0026

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N00217 / 000465 2169.6032 CORRESPONDENC NONE 3	07-26-2001 **06-14-2001** NONE	CRWQCB - OAKLAND, CA JOB, B. NAVFAC - EFA WEST MACH, R.	REVIEW AND COMMENTS ON THE DRAFT PETROLEUM HYDROCARBON CORRECTIVE ACTION PLAN FOR PARCELS C, D, AND E {SEE AR #456 - COMMENTS BY SFRA}	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0010
N00217 / 000491 TC.0011.11067 & SWDIV SER 06CH.RM/0537 MISC N62474-94-D-7609 57	08-10-2001 **06-21-2001** 00011	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	RESPONSE TO DTSC, SFRA, AND EPA COMMENTS ON THE FINAL SAMPLING AND ANALYSIS PLAN & QUALITY ASSURANCE PROJECT PLAN FOR PARCEL C, SOIL SITE DELINEATION - INCLUDES ATTACHMENTS & SWDIV TRANSMITTAL LETTER BY R. MACH	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0011
N00217 / 000483 CTO-007/0234 MINUTES N68711-95-D-7526 114	07-26-2001 **06-28-2001** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	MEETING MATERIALS FOR THE RESTORATION ADVISORY BOARD MEETING HELD ON 28 JUNE 2001 - INCLUDES AGENDA, PUBLIC NOTICE, REPORTER'S TRANSCRIPT OF 6/28/01 & MEETING MINUTES OF 5/24/01, FACT SHEET DATED 6/19/01 FOR PARCEL B SANDBLAST GRIT & HANDOUTS	ADMIN RECORD SENSITIVE	007 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0010
N00217 / 000489 DS.0011.15703 & SWDIV SER 06CH.RM/0744 REPORT N62474-94-D-7609 687	08-10-2001 **08-03-2001** 00011	TETRA TECH EM INC. R. LANTZ NAVFAC - SOUTHWEST DIVISION	PARCEL C INFORMATION PACKAGE - PHASE II GROUNDWATER DATA GAPS INVESTIGATION (VOLUMES I-II OF II) [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY R. MACH] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	025 028 029 BLDG. 134 PARCEL C	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0010

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N00217 / 000493 DS.0011.17266 & SWDIV SER 06CH.RM/0745 REPORT N62474-94-D-7609 42	08-13-2001 **08-10-2001** 00011	TETRA TECH EM INC. T. LI NAVFAC - SOUTHWEST DIVISION	REVISED FINAL GROUNDWATER BENEFICIAL USE DETERMINATION FOR A-AQUIFER FOR PARCELS C, D, AND E - INCLUDES SWDIV TRANSMITTAL LETTER BY R. MACH & PUBLIC SUMMARY [A PORTION OF THE MAILING LIST IS CONFIDENTIAL] {SEE AR #430 - FINAL GROUNDWATER BENEFICIAL USE}	ADMIN RECORD SENSITIVE	006 008 011 012 025 028 029 030 033 039 058 BLDG. 217 BLDG. 241 BLDG. 258 BLDG. 275 PARCEL C PARCEL D PARCEL E SITE 00002	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0011
N00217 / 000728 2045 REPORT N62474-98-D-2076 20	06-19-2003 **09-17-2001** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT EVALUATION SOIL VAPOR EXTRACTION (SVE) TREATMENT EFFECTIVESS, PARCEL C, REVISION 0	ADMIN RECORD	BLDG. 134 PARCEL C	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0026
N00217 / 000724 2072 REPORT N62474-98-D-2076 60	06-19-2003 **09-19-2001** CTO 0033	IT CORPORATION OHANNESSIAN, K. NAVFAC - SOUTHWEST DIVISION	DRAFT SOIL VAPOR TREATABILITY STUDY WORK PLAN ADDENDUM FOR BUILDING SITES	ADMIN RECORD	BLDG 00123 BLDG 00134 PARCEL B PARCEL C SITE 00010 SITE 00025 SITE 00028 SITE 00036	CHOICE IMAGING SOLUTIONS SW-20090424-1/8		

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N00217 / 001444 NONE CORRESPONDENC NONE 4	10-29-2008 **10-02-2001** NONE	REDEVELOPMENT AGENCY - SAN FRANCISCO, CA CAPOBRES, D. NAVFAC - SOUTHWEST DIVISION MACH, R.	REVIEW AND COMMENTS ON THE REVISED DRAFT PETROLEUM HYDROCARBON SOIL AND GROUNDWATER SAMPLING PLAN	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-1/7		
N00217 / 001473 NONE CORRESPONDENC NONE 3	11-28-2008 **10-08-2001** NONE	DTSC - BERKELEY, CA HAO, C. NAVFAC - SOUTHWEST DIVISION MACH, R.	REVIEW AND COMMENTS ON THE EMERGENCY REMOVAL ACTION NOTIFICATIONS	ADMIN RECORD	DRY DOCK 4 PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090702-1/7		
N00217 / 000531 CTO-007/0265 & 0270 MINUTES N68711-95-D-7526 107	11-29-2001 **11-29-2001** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	29 NOVEMBER 2001 PUBLIC INFORMATION MATERIAL PACKAGE FOR THE RESTORATION ADVISORY BOARD MEETING - INCLUDES AGENDA, PUBLIC NOTICE, MEETING MINUTES FROM MEETING HELD ON 10/24/01, REPORTERS TRANSCRIPT FROM 11/29/01 MEETING AND HANDOUTS	ADMIN RECORD SENSITIVE	DRY DOCK 4 PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_019	181-07-0027 30093199	BOX 0013
N00217 / 000534 DS.0270.17393 & SWDIV SER 06CH.RM/1236 REPORT N62474-94-D-7609 180	12-20-2001 **11-30-2001** 00270	TETRA TECH EM INC. R. LANTZ NAVFAC - SOUTHWEST DIVISION	DRAFT TECHNICAL MEMORANDUM, PARCEL B GROUNDWATER EVALUATION [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY R. MACH] {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD SENSITIVE	006 007 010 018 020 023 024 026 042 060 061 062 PARCEL B	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0013

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N00217 / 000856 2045 REPORT N62474-98-D-2076 586	12-30-2005 **12-03-2001** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT SOIL VAPOR EXTRACTION TREATABILITY STUDY REPORT, PARCEL C, REVISION 0	ADMIN RECORD	025 BLDG. 134 PARCEL C	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0032
N00217 / 000539 DS.0011.17531 & SWDIV SER 06CH.RM/1238 REPORT N62474-94-D-7609 24	12-20-2001 **12-04-2001** CTO 0011	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	SUBMISSION OF FINAL ACTION MEMORANDUM FOR THE EMERGENCY REMOVAL ACTION ENCAPSULATION OF DRAINAGE CULVERT SEDIMENT (W/ENCLOSURE) [PORTION OF MAILING LIST IS SENSITIVE] {CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	DRY DOCK 4 PARCEL C SITE 00057	FRC - PERRIS IMAGED HPNT_018	181-07-0027 30093199	BOX 0013
N00217 / 001449 FILE NO. 2169.6032 (MBR) CORRESPONDENC NONE 2	10-29-2008 **12-20-2001** NONE	CRWQCB - OAKLAND, CA ROCHETTE, M. NAVFAC - SOUTHWEST DIVISION MACH, R.	REVIEW AND COMMENTS ON THE REVISED DRAFT PETROLEUM HYDROCARBON SOIL AND GROUNDWATER SAMPLING PLAN	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-1/7		
N00217 / 000552 TC.0201.11016 & SWDIV SER 06CH.RM/1244 REPORT N62474-94-D-7609 241	01-04-2002 **12-21-2001** 00201	TETRA TECH EM INC. T. SHOFF NAVFAC - SOUTHWEST DIVISION	FINAL EVALUATION OF AMBIENT MANGANESE CONDITIONS {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0013
N00217 / 000734 3278 REPORT N62474-98-D-2076 618	06-19-2003 **12-31-2001** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY REPORT, BUILDING 134, INSTALLATION RESTORATION SITE 25, PARCEL C, REVISION 0	ADMIN RECORD	025 BLDG. 134 PARCEL C	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0027

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N00217 / 000557 CTO-007/0275 & 0282 MINUTES N68711-95-D-7526 91	04-02-2002 **01-24-2002** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS PACKAGE FOR THE 24 JANUARY 2002 RESTORATION ADVISORY BOARD MEETING - INCLUDES AGENDA, PUBLIC NOTICE, ATTENDANCE LIST, MEETING MINUTES FROM 11/29/01 MEETING, REPORTERS TRANSCRIPT OF 01/24/02 MEETING & HANDOUTS	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0014
N00217 / 000580 DS.0011.17267 & SWDIV SER 06CH.RM/0109 REPORT N62474-94-D-7609 336	04-05-2002 **02-05-2002** 00011	TETRA TECH EM INC. LI, T. NAVFAC - SOUTHWEST DIVISION	FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR PHASE III GROUNDWATER DATA GAPS INVESTIGATION (ADDENDUM II) [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	006 021 022 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00001	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0014
N00217 / 000662 TC-0201-11411 & SWDIV SER 06CC.KF/0113 CORRESPONDENC N62474-94-D-7609 9	01-03-2003 **02-19-2002** CTO 0201	NAVFAC - EFA WEST FORMAN, K. NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF MEMORANDUM, DEFINITION OF THE INSTALLATION RESTORATION SITE BOUNDARY (W/ ENCLOSURE) {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD SENSITIVE	PARCEL C SITE 00025	CHOICE IMAGING SOLUTIONS SW-20090313-3/7		
N00217 / 000589 CTO-007/0285 & 0291 MINUTES N68711-95-D-7526 79	04-09-2002 **02-28-2002** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIAL PACKAGE FOR THE 28 FEBRUARY 2002 RESTORATION ADVISORY BOARD MEETING - INCLUDES AGENDA, PUBLIC NOTICE, MEETING MINUTES FROM 01/24/02 MEETING, REPORTERS TRANSCRIPT OF 02/28/02 MEETING, ATTENDANCE SHEET AND HANDOUTS	ADMIN RECORD SENSITIVE	010 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0015
N00217 / 000732 2049 REPORT N62474-98-D-2076 437	06-19-2003 **02-28-2002** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY REPORT, BUILDING 272, INSTALLATION RESTORATION SITE 28, PARCEL C, REVISION 0	ADMIN RECORD	028 BLDG. 272 PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0026

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N00217 / 000583 CTO-007/0281 MISC N68711-95-D-7526 11	04-05-2002 **03-07-2002** 00007	BECHTEL ENVIRONMENTAL, INC. J. BAILEY NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLEANUP NEWSLETTER: BAY AREA RAB MEMBERS PARTICIPATE AT WORKSHOP, OCTOBER-DECEMBER 2001 - INCLUDES E-MAIL AND MAILING LIST {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD SENSITIVE	010 026 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0015
N00217 / 000596 DS.A002.10000 & SWDIV SER 06KF/0214 REPORT N68711-00-D-0005 5607	04-16-2002 **03-15-2002** DO 0002	TETRA TECH EM INC. M. WANTA NAVFAC - SOUTHWEST DIVISION P. BROOKS	DRAFT TIME-CRITICAL REMOVAL ACTION CLOSEOUT REPORT, PARCEL C (VOLUMES I - VI OF VI) - INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN AND PUBLIC SUMMARY [THE MAILING LIST IS CONFIDENTIAL]	ADMIN RECORD SENSITIVE	PARCEL C	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0016 BOX 0017
N00217 / 000590 DS.A003.10001 REPORT N68711-00-D-0005 141	04-09-2002 **03-21-2002** DO 0003	TETRA TECH EM INC. WANTA, M. NAVFAC - SOUTHWEST DIVISION DEMARS, D.	BASEWIDE HEALTH AND SAFETY PLAN {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0015
N00217 / 000729 2046 REPORT N62474-98-D-2076 612	06-19-2003 **03-21-2002** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY REPORT, BUILDING 211/253, INSTALLATION RESTORATION SITE 28, PARCEL C, REVISION 0	ADMIN RECORD	028 BLDG. 211 BLDG. 253 PARCEL C	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0026
N00217 / 000603 CTO-007/0299 MISC N68711-95-D-7526 108	06-27-2002 **03-28-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FROM THE 28 MARCH 2002 RESTORATION ADVISORY BOARD MEETING INCLUDING: AGENDA, PUBLIC NOTICE, MINUTES FROM 02/28/02 MEETING, TRANSCRIPT OF 28 MARCH MEETING, PROPOSED AMENDED RAB BYLAWS, MONTHLY PROGRESS REPORT, AND HANDOUTS	ADMIN RECORD	PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000595 FWSD-RAC-02-0687 & SWDIV SER 06CH.KF/0322 CORRESPONDENC N68711-98-D-5713 294	04-10-2002 **04-03-2002** 00046	FOSTER WHEELER G. STARR NAVFAC - SOUTHWEST DIVISION	DRAFT WORK PLAN - INDUSTRIAL PROCESS EQUIPMENT SURVEY, SAMPLING, DECONTAMINATION, AND WASTE CONSOLIDATION PARCELS C, D, AND E, REV. 0 - INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN [PORTION OF MAILING LIST IS CONFIDENTIAL]	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_010	181-07-0027 30093199	BOX 0016
N00217 / 004089 FWSD-RAC-02-0834 REPORT N68711-98-D-5713 150	01-13-2005 **04-19-2002** CTO 0046	FOSTER WHEELER MARGOTTO, R. NAVFAC - SOUTHWEST DIVISION	FINAL HEALTH AND SAFETY PLAN FOR THE INDUSTRIAL PROCESS EQUIPMENT SURVEY, SAMPLING , DECONTAMINATION, AND WASTE CONSOLIDATION	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-2/7		
N00217 / 004150 NONE CORRESPONDENC NONE 13	06-21-2005 **04-19-2002** NONE	FOSTER WHEELER TYAHLA, S. NAVFAC - EFA WEST	RESPONSE TO COMMENTS ON THE DRAFT HEALTH AND SAFETY PLAN INDUSTRIAL PROCESS EQUIPMENT SURVEY, SAMPLING, DECONTAMINATION, AND WASTE CONSOLIDATION	ADMIN RECORD	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-5/7		
N00217 / 000615 CTO-007/0311 MISC N68711-95-D-7526 77	08-09-2002 **04-25-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FOR THE 25 APRIL 2002 RESTORATION ADVISORY BOARD MEETING WHICH INCLUDES: AGENDA, PUBLIC NOTICE, MINUTES FROM 28 MARCH 2002 MEETING, TRANSCRIPT OF MINUTES FROM 25 APRIL 2002 MEETING, MONTHLY PROGRESS REPORT, AND HANDOUTS	ADMIN RECORD INFO REPOSITORY	007 018 029 BLDG. 123 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0019

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000733 2048 REPORT N62474-98-D-2076 488	06-19-2003 **04-29-2002** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY REPORT, BUILDING 251, INSTALLATION RESTORATION SITE 28, PARCEL C, REVISION 0	ADMIN RECORD	028 BLDG. 251 PARCEL C	FRC - PERRIS IMAGED HPNT_028	181-07-0027 30093199	BOX 0026
N00217 / 000736 2047 REPORT N62474-98-D-2076 516	06-19-2003 **05-23-2002** 00033	IT CORPORATION NAVFAC - SOUTHWEST DIVISION	DRAFT PHASE II SOIL VAPOR EXTRACTION (SVE) TREATABILITY STUDY REPORT, PARCEL C, REVISION 0 (INCLUDES ELECTRONIC MAIL CORRESPONDENCE)	ADMIN RECORD	028 BLDG. 231 PARCEL C	FRC - PERRIS IMAGED HPNT_027	181-07-0027 30093199	BOX 0027
N00217 / 000605 DS.A011.10011 CORRESPONDENC N68711-00-D-0005 395	06-27-2002 **05-28-2002** DO 0011	TETRA TECH EM INC. WANTA, M. NAVFAC - SOUTHWEST DIVISION	REVISED FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDA FOR THE PHASE III GROUNDWATER DATA GAPS INVESTIGATION (ADDENDUM II) {SEE AR #580 - ORIGINAL VERSION)	ADMIN RECORD	PARCEL C PARCEL D PARCEL E RU-C1 RU-C2 RU-C5 SITE 00003	FRC - PERRIS IMAGED HPNT_002	181-07-0027 30093199	BOX 0017
N00217 / 000606 TC.0011.11581 & SWDIV SER 06CH.KF/0554 MISC N62474-94-D-7609 39	06-27-2002 **05-29-2002** 00011	NAVFAC - SOUTHWEST DIVISION K. FORMAN VARIOUS AGENCIES	TRANSMITTAL OF COMPILED RESPONSES TO COMMENTS ON THE PARCEL C INFORMATION PACKAGE - PHASE II GROUNDWATER DATA GAPS INVESTIGATION {COMMENTS BY EPA & DTSC} (W/ ENCLOSURE 1) [SEE AR #607 - ENCLOSURE 2 AND #609 - ENCLOSURE 3]	ADMIN RECORD SENSITIVE	025 028 029 BLDG. 134 PARCEL C	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000609 TC.0011.11581 & SWDIV SER 06CH.KF/0554 MISC N62474-94-D-7609 9	06-27-2002 **05-29-2002** 00011	NAVFAC - SOUTHWEST DIVISION K. FORMAN VARIOUS AGENCIES	TRANSMITTAL OF COMPILED RESPONSE TO COMMENTS ON THE REVISED FINAL GROUNDWATER BENEFICIAL USE DETERMINATION FOR A-AQUIFER FOR PARCELS C, D, AND E {COMMENTS BY EPA} (W/ ENCLOSURE 3) [SEE AR #606 - ENCLOSURE 1 AND #607 - ENCLOSURE 2]	ADMIN RECORD SENSITIVE	006 011 012 028 029 030 033 039 058 BLDG. 217 BLDG. 241 BLDG. 258 BLDG. 275 PARCEL C PARCEL D PARCEL E SITE 00002	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017
N00217 / 000620 CTO-007/0305 MISC N68711-95-D-7526 62	08-09-2002 **05-30-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FOR THE 30 MAY 2002 RESTORATION ADVISORY BOARD MEETING WHICH INCLUDES: AGENDA, PUBLIC NOTICE, MINUTES FROM 25 APRIL 2002 MEETING, TRANSCRIPT OF MINUTES FROM 30 MAY 2002 MEETING, MONTHLY PROGRESS REPORT, AND HANDOUTS	ADMIN RECORD INFO REPOSITORY	007 012 018 021 059 BLDG. 815 BLDG. 830 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00001 SITE 00003	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0019

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000602 3873.0 REPORT N62474-98-D-2076 64	06-27-2002 **06-06-2002** 00082	IT CORPORATION W. SCHAAL NAVFAC - SOUTHWEST DIVISION	DRAFT CHEMICAL OXIDATION BENCH-SCALE TEST REPORT FOR REMEDIAL UNIT 6, PARCEL C - INCLUDES SWDIV TRANSMITTAL LETTER FROM K. FORMAN	ADMIN RECORD SENSITIVE	025 BLDG. 134 PARCEL C RU-6	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017
N00217 / 000598 TC.0201.11606 & SWDIV SER 06CH.KF/0604 CORRESPONDENC N62474-94-D-7609 54	06-27-2002 **06-11-2002** 00201	NAVFAC - SOUTHWEST DIVISION K. FORMAN U.S. EPA - SAN FRANCISCO C. TROMBADORE	COMPILED RESPONSE TO COMMENTS ON THE FINAL EVALUATION OF AMBIENT MANGANESE CONDITIONS - INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN [COMMENTS BY EPA, DTSC, & SAN FRANCISCO REDEVELOPMENT AGENCY] (SEE AR #552 - FINAL EVAUATION)	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017
N00217 / 000621 CTO-007/0312 MISC N68711-95-D-7526 82	08-09-2002 **06-27-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FOR THE 27 JUNE 2002 RESTORATION ADVISORY BOARD MEETING WHICH INCLUDES: AGENDA, PUBLIC NOTICE, MINUTES FROM 30 MAY 2002 MEETING, TRANSCRIPT OF MINUTES FROM 27 JUNE 2002 MEETING, MONTHLY PROGRESS REPORT, AND HANDOUTS	ADMIN RECORD INFO REPOSITORY	007 018 059 BLDG. 123 BLDG. 816 BLDG. 821 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0019
N00217 / 000613 TC.0201.11547 & SWDIV SER 06CH.KF/0701 CORRESPONDENC N62474-94-D-7609 137	07-20-2002 **07-12-2002** 00201	TETRA TECH EM INC. T. O'CONNOR NAVFAC - SOUTHWEST DIVISION	SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FOR BASEWIDE GROUNDWATER SAMPLING FOR PETROLEUM HYDROCARBONS [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN]	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0018

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000614 DS.A002.10027 & SWDIV SER 06CH.KF/0699 REPORT N68711-00-D-0005 3868	07-20-2002 **07-12-2002** DO 0002	TETRA TECH EM INC. WANTA, M. NAVFAC - SOUTHWEST DIVISION DEMARS, D.	FINAL PARCEL C, TIME-CRITICAL REMOVAL ACTION CLOSEOUT REPORT (VOLUME I-IV OF IV) [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN] {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0018
N00217 / 000623 DS.A013.10023 & SWDIV SER 06CH.KF/0733 CORRESPONDENC N68711-00-D-0005 177	08-09-2002 **07-24-2002** DO 0013	TETRA TECH EM INC. FOSTER, M. NAVFAC - SOUTHWEST DIVISION	DRAFT WORK PLAN AND SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FOR FEROX INJECTION TECHNOLOGY DEMONSTRATION, PARCEL C REMEDIAL UNIT C4 (INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN)	ADMIN RECORD SENSITIVE	028 BLDG. 272 BLDG. 281 PARCEL C RU-C4	FRC - PERRIS IMAGED HPNT_013	181-07-0027 30093199	BOX 0019

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000641 CTO-007/0317 & 0319 MISC N68711-95-D-7526 102	09-26-2002 **07-25-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIAL PACKAGE FOR THE 25 JULY 2002 RESTORATION ADVISORY BOARD (RAB) MEETING - INCLUDES REPORTER'S TRANSCRIPT OF 25 JULY 2002 MEETING, AGENDA, MINUTES FROM 27 JUNE 2002 MEETING, MONTHLY PROGRESS REPORT, PRESENTATION MATERIALS, ETC.	ADMIN RECORD INFO REPOSITORY SENSITIVE	007 018 021 BLDG. 103 BLDG. 113 BLDG. 123 BLDG. 130 BLDG. 134 BLDG. 146 BLDG. 211 BLDG. 214 BLDG. 224 BLDG. 241 BLDG. 253 BLDG. 272 BLDG. 274 BLDG. 313 BLDG. 317 BLDG. 322 BLDG. 351 BLDG. 364 BLDG. 365 BLDG. 366 BLDG. 406 BLDG. 414 BLDG. 506 BLDG. 507 BLDG. 509 BLDG. 510 BLDG. 517 BLDG. 520 BLDG. 529 BLDG. 707 BLDG. 708 BLDG. 810	FRC - PERRIS IMAGED HPNT_013	181-07-0027 30093199	BOX 0020

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
					BLDG. 815 BLDG. 816 BLDG. 820 BLDG. 821 BLDG. 830 BLDG. 831 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E SITE 00001 SITE 00002			
N00217 / 000610 DS.0270.17728 & DS.0191.17780 REPORT N62474-94-D-7609 255	07-20-2002 **08-16-2002** 00270	TETRA TECH EM INC. R. LANTZ NAVFAC - SOUTHWEST DIVISION	JANUARY TO MARCH 2002 - NINTH QUARTERLY GROUNDWATER SAMPLING REPORT, PARCEL B [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN (SER 06CH.KF/0657)] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	006 007 010 018 024 026 046 BLDG. 123 PARCEL B	FRC - PERRIS IMAGED HPNT_005	181-07-0027 30093199	BOX 0017
N00217 / 000631 FWSD-RACIII-02-1273 & SWDIV SER 06CH.KF/0820 CORRESPONDENC N68711-98-D-5713 328	09-05-2002 **08-16-2002** 00046	FOSTER WHEELER G. STARR NAVFAC - SOUTHWEST DIVISION	FINAL WORK PLAN - INDUSTRIAL PROCESS EQUIPMENT SURVEY, SAMPLING, DECONTAMINATION, AND WASTE CONSOLIDATION PARCELS C, D, AND E, REVISION 0 - (SEE AR #702 - ADDENDUM TO THE SAP)	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_010	181-07-0027 30093199	BOX 0019

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000646 CTO-007/0326 MINUTES N68711-95-D-7526 98	11-12-2002 **08-22-2002** CTO 0007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	PUBLIC INFORMATION MATERIALS FROM THE 22 AUGUST 2002 PUBLIC MEETING/ RESTORATION ADVISORY BOARD MEETING INCLUDES: AGENDA & PUBLIC NOTICE, MINUTES FROM MEETING OF 25 JULY 2002, PRESENTATION MATERIALS, FACT SHEET, MINUTES FROM VARIOUS OTHER MEETINGS	ADMIN RECORD INFO REPOSITORY SENSITIVE	007 018 BLDG. 815 BLDG. 820 BLDG. 821 PARCEL A PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_013	181-07-0027 30093199	BOX 0020
N00217 / 000647 DS.A013.10107 & SWDIV SER 06CH.KF/0104 CORRESPONDENC N68711-00-D-0005 215	11-12-2002 **10-29-2002** DO 0013	TETRA TECH EM INC. FOSTER, M. NAVFAC - SOUTHWEST DIVISION BROOKS, G.	FINAL WORK PLAN AND SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/ QUALITY ASSURANCE PROJECT PLAN) FOR FEROX INJECTION TECHNOLOGY DEMONSTRATION, PARCEL C, REMEDIAL UNIT C4	ADMIN RECORD SENSITIVE	028 BLDG. 272 PARCEL C RU-C4	FRC - PERRIS IMAGED HPNT_013	181-07-0027 30093199	BOX 0020
N00217 / 000636 DS.0191.17786 & SWDIV SER 06CH.RP/0958, KF/0139 REPORT N62474-94-D-7609 194	09-18-2002 **11-08-2002** 00191	TETRA TECH EM INC. R. MOEZZI NAVFAC - SOUTHWEST DIVISION	APRIL TO JUNE 2002 - TENTH QUARTERLY GROUNDWATER SAMPLING REPORT FOR PARCEL B [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN] (PORTION OF MAILING LIST IS CONFIDENTIAL) {CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	006 007 010 025 026 046 061 PARCEL B	FRC - PERRIS IMAGED HPNT_013	181-07-0027 30093199	BOX 0019
N00217 / 000652 DS.A004.10117 & SWDIV SER 06CH.JP/0172 CORRESPONDENC N68711-00-D-0005 400	11-26-2002 **11-22-2002** DO 0004	TETRA TECH EM INC. VETROMILE, J. NAVFAC - SOUTHWEST DIVISION PAYNE, J.	REVISED DRAFT PETROLEUM HYDROCARBONS CORRECTIVE ACTION PLAN, PARCELS C, D, & E (INCLUDES SWDIV TRANSMITTAL LETTER) {PORTION OF THE MAILING LIST IS SENSITIVE}	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090313-3/7		

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N00217 / 000657 CTO-007/0335 MISC N68711-95-D-7526 15	12-19-2002 **12-12-2002** 00007	BECHTEL ENVIRONMENTAL, INC. NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLEANUP NEWSLETTER SUMMER/FALL EXPANDED ISSUE: "AMBIENT AIR AND SOIL GAS SURVEYS CONDUCTED AT PARCEL E LANDFILL - REMOVAL ACTION UNDERWAY", APRIL-SEPTEMBER 2002 {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD INFO REPOSITORY SENSITIVE	007 018 BLDG. 123 BLDG. 364 BLDG. 406 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0021
N00217 / 000654 TC.A047.10035 & 10044 & SER 06CH.KF/0190 & 0325 REPORT N68711-00-D-0005 221	11-27-2002 **01-07-2003** DO 0047	TETRA TECH EM INC. EARLY, V. NAVFAC - SOUTHWEST DIVISION	JULY TO SEPTEMBER 2002 ELEVENTH QUARTERLY GROUNDWATER SAMPLING REPORT FOR PARCEL B [INCLUDES PUBLIC SUMMARY, RESPONSE TO COMMENTS, AND SWDIV TRANSMITTAL LETTERS BY K. FORMAN] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	006 007 008 010 018 020 025 026 046 060 061 062 PARCEL B	FRC - PERRIS IMAGED HPNT_010	181-07-0027 30093199	BOX 0020
N00217 / 000674 TC.A013.10051 & SWDIV SER 06CH.KF/0360 CORRESPONDENC N68711-00-D-0005 12	02-07-2003 **01-17-2003** DO 0013	NAVFAC - SOUTHWEST DIVISION FORMAN, K. VARIOUS AGENCIES	RESPONSE TO COMMENTS ON THE FINAL WORK PLAN AND SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FOR THE FEROX INJECTION TECHNOLOGY DEMONSTRATION, PARCEL C, REMEDIAL UNIT 4	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D REMEDIAL UNIT 4	FRC - PERRIS IMAGED HPNT_015	181-07-0027 30093199	BOX 0021

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000622 TC.0191.11659 & DS.A500.10651 REPORT N68711-02-D-8213 & N62474-94-D-7609 88	08-09-2002 **02-20-2003** DO 0002 & 00191	TETRA TECH EM INC. HUITING, J. NAVFAC - SOUTHWEST DIVISION	FINAL EMERGENCY REMOVAL ACTION CLOSEOUT REPORT, ENCAPSULATION OF DRAINAGE CULVERT SEDIMENT (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT DATED 23 JULY 2002 TO FINAL, RESPONSE TO COMMENTS, SWDIV TRANSMITTAL LETTERS, AND CD COPY]	ADMIN RECORD SENSITIVE	DRY DOCK 4 PARCEL C SITE 00057	FRC - PERRIS IMAGED HPNT_006	181-07-0027 30093199	BOX 0019
N00217 / 000687 DS.A011.10108 & SWDIV SER06CH.KF/0565 REPORT N68711-00-D-0005 5390	04-01-2003 **03-19-2003** DO 0011	TETRA TECH EM INC. ADAIR, T. NAVFAC - SOUTHWEST DIVISION	DRAFT PARCEL C GROUNDWATER SUMMARY REPORT FOR PHASE III GROUNDWATER DATA GAPS INVESTIVATION [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER BY K. FORMAN] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	PARCEL C	FRC - PERRIS BX-004, BX-005 IMAGED HPNT_007	181-07-0027 30093199	BOX 0022 BOX 0023
N00217 / 000690 DS.A013.10173 CORRESPONDENC N68711-00-D-0005 270	04-23-2003 **04-04-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	LETTER REGARDING USER DATA PACKAGE 3 - RESULTS OF THE POST-INJECTION ROUND 1 GROUNDWATER SAMPLING, PARCEL C TREATABILITY STUDY SUPPORT (W/ ENCLOSURES) {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0023
N00217 / 000691 DS.A013.10172 CORRESPONDENC N68711-00-D-0005 244	04-23-2003 **04-04-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	LETTER REGARDING USER DATA PACKAGE 2 - RESULTS OF THE BASELINE GROUNDWATER SAMPLING, PARCEL C TREATABILITY STUDY SUPPORT (W/ ENCLOSURES) {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0023
N00217 / 000692 DS.A013.10171 CORRESPONDENC N68711-00-D-0005 17	04-23-2003 **04-04-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	LETTER REGARDING USER DATA PACKAGE 1 - BORING LOGS AND WELL CONSTRUCTION DETAILS, PARCEL C TREATABILITY STUDY SUPPORT (W/ ENCLOSURES) {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0023

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000702 FWSD-RAC-1046 & SWDIV SER 06CH.KF/0593 CORRESPONDENC N68711-98-D-5713 36	05-15-2003 **04-08-2003** 00046	FOSTER WHEELER M. SCHNEIDER NAVFAC - SOUTHWEST DIVISION	ADDENDUM TO THE SAMPLING AND ANALYSIS PLAN - INDUSTRIAL PROCESS EQUIPMENT SURVEY, SAMPLING, DECONTAMINATION, AND WASTE CONSOLIDATION PARCELS C, D, AND E, REVISION 0 [SEE AR #631 - SAP (APPENDIX A) OF FINAL WORK PLAN]	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_010	181-07-0027 30093199	BOX 0024
N00217 / 000698 DS.A013.10834 REPORT N68711-00-D-0005 6	05-15-2003 **04-28-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	QUARTERLY STATUS REPORT - FIELD MEASUREMENTS, PARCEL C TREATABILITY STUDY SUPPORT (WITH ENCLOSURES AND CD COPY ENCLOSED)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0024
N00217 / 000697 DS.A013.10174 REPORT N68711-00-D-0005 257	05-15-2003 **05-05-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	USER DATA PACKAGE 4 - RESULTS OF THE POST-INJECTION ROUND 2 SAMPLING, PARCEL C TREATABILITY STUDY SUPPORT (WITH ENCLOSURES AND CD COPY ENCLOSED)	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_007	181-07-0027 30093199	BOX 0024
N00217 / 000715 TC.A015.10104 REPORT N68711-00-D-0005 828	06-10-2003 **06-03-2003** DO 0015	TETRA TECH EM INC. VETROMILE, J. NAVFAC - SOUTHWEST DIVISION BROOKS, G.	INTERNAL DRAFT PARCEL C HUMAN HEALTH RISK ASSESSMENT SUMMARY (CD COPY ENCLOSED)	ADMIN RECORD	PARCEL C	NAVFAC SOUTHWEST - BLDG. 110		
N00217 / 000743 DS.A013.10835 REPORT N68711-00-D-0005 8	07-09-2003 **06-19-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	QUARTERLY STATUS REPORT FOR THE GROUNDWATER ELEVATION MAPS, PARCEL C TREATABILITY STUDY SUPPORT {CD COPY ENCLOSED}	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_023	181-07-0027 30093199	BOX 0027

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N00217 / 000803 28066607.20000 & SWDIV SER 06CH.KF/1035 REPORT N68711-02-D-8304 313	03-11-2004 **07-10-2003** DO 0003	ENGINEERING/REMEDIATION RESOURCES GROUP, INC. NAVFAC - SOUTHWEST DIVISION BROOKS, G.	DRAFT WORK PLAN AND SAMPLING ANALYSIS PLAN FOR ZERO-VALENT IRON INJECTION TREATABILITY STUDY, PARCELS B AND C [INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN] {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD SENSITIVE	010 028 PARCEL B PARCEL C	FRC - PERRIS IMAGED HPNT_020	181-07-0027 30093199	BOX 0031
N00217 / 000745 DS.A013.10177 & SWDIV SER 06CH.KF/1034 REPORT N68711-00-D-0005 67	07-24-2003 **07-11-2003** DO 0013	TETRA TECH EM INC. LANTZ, R. NAVFAC - SOUTHWEST DIVISION BROOKS, G.	FINAL COST AND PERFORMANCE REPORT FEROX INJECTION TECHNOLOGY DEMONSTRATION, PARCEL C, REMEDIAL UNIT C4 [INCLUDES PUBLIC SUMMARY AND SWDIV TRANSMITTAL LETTER] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	PARCEL C RU C4	FRC - PERRIS IMAGED HPNT_023	181-07-0027 30093199	BOX 0027
N00217 / 000752 DS.A013.10836 REPORT N68711-00-D-0005 3	08-26-2003 **07-24-2003** DO 0013	TETRA TECH EM INC. J. MCCALL NAVFAC - SOUTHWEST DIVISION G. BROOKS	QUARTERLY STATUS REPORT FOR THE PARCEL C TREATABILITY STUDY SUPPORT	ADMIN RECORD	PARCEL C	FRC - PERRIS IMAGED HPNT_023	181-07-0027 30093199	BOX 0028
N00217 / 004079 DS.A011.10114 & SWDIV SER 06CH.KF/1216 REPORT N68711-00-D-0005 5414	12-01-2004 **09-02-2003** DO 0011	TETRA TECH EM INC. ADAIR, T. NAVFAC - SOUTHWEST DIVISION BROOKS, G.	FINAL GROUNDWATER SUMMARY REPORT PHASE III GROUNDWATER DATA GAPS INVESTIGATION, VOLUME I-VI OF VI [INCLUDES PUBLIC SUMMARY] {PORTION OF MAILING LIST IS CONFIDENTIAL; CD COPY ENCLOSED}	ADMIN RECORD SENSITIVE	PARCEL C	FRC - PERRIS IMAGED HPNT_024	181-07-0027 30093199	BOX 0087 BOX 0088

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N00217 / 004035 02.125.02.29-09 MINUTES NONE 30	07-21-2004 **12-04-2003** NONE	INNOVATIVE TECHNICAL SOLUTIONS, INC NAVFAC - SOUTHWEST DIVISION	04 DECEMBER 2003 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, 23 OCTOBER 2003 MEETING MINUTES, 04 DECEMBER 2003 REPORTER'S TRANSCRIPT, AND VARIOUS HANDOUTS)	ADMIN RECORD	BLDG 00134 BLDG 00231 BLDG 00253 BLDG 00272 BLDG 00281 BLDG 00366 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00002	CHOICE IMAGING SOLUTIONS SW-20090702-2/7		
N00217 / 004000 04-1414 & SWDIV SER 06CH.KF/0320 REPORT N68711-98-D-5713 149	03-30-2004 **03-24-2004** 00070	TETRA TECH EM INC. G. STARR NAVFAC - SOUTHWEST DIVISION	DRAFT POST - CONSTRUCTION REPORT REVISION 0 DECONTAMINATE PROCESS EQUIPMENT, CONDUCT WASTE CONSOLIDATION AND PROVIDE ASBESTOS SERVICES IN PARCELS B,C, D	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_023	181-07-0027 30093199	BOX 0083
N00217 / 000809 SWDIV SER 06CH.KF/0378 REPORT N68711-02-D-8310 323	04-30-2004 **04-09-2004** 00003	TPA-CKY JOINT VENTURE T. YU NAVFAC - SOUTHWEST DIVISION	DRAFT WORK PLAN FOR THE TOTAL PETROLEUM HYDROCARBON PROGRAM IMPLEMENTATION OF CORRECTIVE ACTION PLAN - SOIL REMOVAL, PARCELS B, C, D, AND E [INCLUDES SAMPLING AND ANALYSIS PLAN AND HEALTH AND SAFETY PLAN]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_020	181-07-0027 30093199	BOX 0031
N00217 / 004031 02.125.02.29-14 MINUTES NONE 60	07-16-2004 **05-27-2004** NONE	INNOVATIVE TECHNICAL SOLUTIONS, INC NAVFAC - SOUTHWEST DIVISION	27 MAY 2004 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, MEETING HANDOUTS, AND PUBLIC INFORMATION MATERIALS PACKAGE FOR 27 MAY 2004 PUBLIC MEETING/RESTORATION ADVISORY BOARD (RAB) MEETING)	ADMIN RECORD INFO REPOSITORY	BLDG 00322 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL F SITE 00002	CHOICE IMAGING SOLUTIONS SW-20090702-2/7		

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N00217 / 000932 FILE NO. 2169.6032(JDP) CORRESPONDENC NONE 4	06-06-2006 **06-10-2004** NONE	CRWQCB - OAKLAND, CA PONTON, J. NAVFAC - SOUTHWEST FORMAN, K.	COMMENTS ON THE DRAFT WORK PLAN FOR TOTAL PETROLEUM HYDROCARBON PROGRAM - IMPLEMENTATION OR CORRECTIVE ACTION PLAN (CAP) SOIL REMOVAL [W/ ENCLOSURE] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-3/6		
N00217 / 004041 PROJ NO. 02-125.13 & SWDIV SER 06CH.KF/0595 REPORT NONE 225	07-28-2004 **06-11-2004** 02-125.13.0007	INNOVATIVE TECHNICAL SOLUTIONS, INC. GILMORE, C. NAVFAC - SOUTHWEST DIVISION	DRAFT WORKPLAN ZERO-VALENT IRON INJECTION TREATABILITY STUDY [INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN] {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	FRC - PERRIS IMAGED HPNT_016	181-07-0027 30093199	BOX 0085
N00217 / 004095 SWDIV SER 06CH.KF/0698 & PROJECT NO. JV-13 REPORT N68711-02-D-8310 500	02-02-2005 **06-23-2004** CTO 0003	TPA-CKY JOINT VENTURE YU, T. NAVFAC - SOUTHWEST DIVISION	DRAFT FINAL WORK PLAN TOTAL PETROLEUM HYDROCARBON PROGRAM CORRECTIVE ACTION IMPLEMENTATION PLAN - SOIL REMOVAL (PORTION OF MAILING LIST IS SENSITIVE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-5/6		
N00217 / 004033 02-125.13.0034 REPORT N68711-01-D-8213 18	07-21-2004 **07-13-2004** 00012	INNOVATIVE TECHNICAL SOLUTIONS, INC. HESS, J. NAVFAC - SOUTHWEST DIVISION	ADDENDUM 01 TO THE SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) ZERO-VALENT IRON INJECTION TREATABILITY STUDY [SEE AR# 800 - FINAL WORKPLAN AND SAMPLING PLAN/QUALITY ASSURANCE]	ADMIN RECORD INFO REPOSITORY	PARCEL C	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0084

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N00217 / 000849 NONE MINUTES NONE 50	12-05-2005 **07-22-2004** NONE	TETRA TECH EM INC. HUNTER, C RAB MEMBERS	22 JULY 2004 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, JUNE 2004 MONTHLY PROGRESS REPORT, 14 JULY 2004 RAB SUBCOMITTEE MEETING MINUTES, 22 JULY 2004 MEETING REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD	BLDG 00103 BLDG 00123 BLDG 00134 BLDG 00272 BLDG 00322 BLDG 00813 BLDG 00815 BLDG 00819 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

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N00217 / 000848 NONE MINUTES NONE 65	12-05-2005 **08-26-2004** NONE	TETRA TECH EM INC. HUNTER, C RAB MEMBERS	26 AUGUST 2004 RESTORATION ADVISORY BOARD MEETING MINUTES (INCLUDES AGENDA, 22 JULY 2004 MEETING MINUTES, JULY 2004 MONTHLY PROGRESS REPORT, 11 AUGUST 2004 RAB SUBCOMMITTEE MEETING MINUTES, 18 AUGUST 2004 TECHNICAL REVIEW SUBCOMMITTEE MEETING SUMMARY,	ADMIN RECORD	BLDG 00101 BLDG 00103 BLDG 00114 BLDG 00123 BLDG 00130 BLDG 00134 BLDG 00140 BLDG 00142 BLDG 00146 BLDG 00203 BLDG 00211 BLDG 00253 BLDG 00272 BLDG 00322 BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00521 BLDG 00813 BLDG 00816 BLDG 00819 BLDG 00821 BLDG 00901 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00002 SITE 00004 SITE 00007 SITE 00018	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 004060 02-125.13.0002 & SWDIV SER 06CH.KF/0960 REPORT N68711-02-D-8213 281	09-21-2004 **09-14-2004** 00012	INNOVATIVE TECHNICAL SOLUTIONS, INC. GILMORE, C. NAVFAC - SOUTHWEST DIVISION	FINAL WORKPLAN ZERO-VALENT IRON INJECTION TREATABILITY STUDY [INCLUDES SWDIV TRANSMITTAL LETTER BY K. FORMAN] {PORTION OF MAILING LIST IS CONFIDENTIAL}	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG. 272 PARCEL C	FRC - PERRIS IMAGED HPNT_022	181-07-0027 30093199	BOX 0086

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N00217 / 000847 NONE MINUTES NONE 80	12-05-2005 **09-23-2004** NONE	TETRA TECH EM INC. HUNTER, C RAB MEMBERS	23 SEPTEMBER 2004 RESTORATION ADVISORY BOARD (RAB) MEETING (INCLUDES AGENDA, 26 AUGUST 2004 MEETING MINUTES, AUGUST 2004 MONTHLY PROGRESS REPORT, 15 SEPTEMBER 2004 RAB SUBCOMMITTEE MEETING MINUTES,	ADMIN RECORD	BLDG 00101 BLDG 00114 BLDG 00123 BLDG 00130 BLDG 00134 BLDG 00142 BLDG 00146 BLDG 00203 BLDG 00211 BLDG 00253 BLDG 00272 BLDG 00322 BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00408 BLDG 00521 BLDG 00813 BLDG 00816 BLDG 00819 BLDG 00821 BLDG 00901 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E SITE 00002 SITE 00007 SITE 00018	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 000846 NONE MINUTES NONE 65	12-05-2005 **10-21-2004** NONE	SULTECH HUNTER, C. RAB MEMBERS	21 OCTOBER 2004 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, 23 SEPTEMBER 2004 MEETING MINUTES, ECONOMIC SUBCOMMITTEE MEETING MINUTES, TECHNICAL REVIEW SUBCOMMITTEE SUMMARY, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD SENSITIVE	BLDG 00101 BLDG 00114 BLDG 00130 BLDG 00140 BLDG 00142 BLDG 00146 BLDG 00211 BLDG 00253 BLDG 00322 BLDG 00364 BLDG 00366 BLDG 00408 BLDG 00521 BLDG 00813 BLDG 00819 BLDG 00820 BLDG 00901 PARCEL A PARCEL C PARCEL E-2 SITE 00001 SITE 00002 SITE 00007 SITE 00018 SITE 00021	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	
N00217 / 004030 FWSD-RAC-05-0092 & BRAC SER BPMOW.KSF/0075 REPORT N68711-98-D-5713 80	07-14-2004 **11-02-2004** CTO 0070	TETRA TECH FW INC. SLATTERY, G. NAVFAC - SOUTHWEST DIVISION	FINAL POST-CONSTRUCTION REPORT - DECONTAMINATE PROCESS EQUIPMENT, CONDUCT WASTE CONSOLIDATION AND ASBESTOS SERVICES [INCLUDES SWDIV TRANSMITTAL LETTERS, AND REPLACEMENT PAGES CONVERTING DRAFT FINAL DATED 09 JULY 2004 TO FINAL] (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-2/7	

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N00217 / 004078 FWSD-RAC-05-0092 & BRAC SER BPMOW.KSF/0114 REPORT N68711-98-D-5713 10	11-24-2004 **11-02-2004** CTO 0070	TETRA TECH FW, INC. NAVFAC - SOUTHWEST DIVISION	REVIEW OF THE DRAFT FINAL POST-CONSTRUCTION REPORT, REVISION 0, DECONTAMINATE PROCESS EQUIPMENT, CONDUCT WASTE CONSOLIDATION, AND PROVIDE ASBESTOS SERVICES DATED 11/09/04 [INCLUDES SWDIV TRANSMITTAL LETTER BY M. AVERY]	ADMIN RECORD INFO REPOSITORY	BLDG. 231 BLDG. 600 PARCEL B PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_025	181-07-0027 30093199	BOX 0087

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N00217 / 000840 NONE MINUTES NONE 65	12-05-2005 **12-09-2004** NONE	SULTECH HUNTER, C. RAB MEMBERS	09 DECEMBER 2004 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, 21 OCTOBER 2004 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT, TECHNICAL REVIEW SUBCOMMITTEE MEETING MINUTES, AND VARIOUS HANDOUTS)	ADMIN RECORD SENSITIVE	BLDG 00101 BLDG 00114 BLDG 00123 BLDG 00134 BLDG 00146 BLDG 00253 BLDG 00272 BLDG 00322 BLDG 00351A BLDG 00364 BLDG 00366 BLDG 00408 BLDG 00500 BLDG 00503 BLDG 00521 BLDG 00529 BLDG 00813 BLDG 00815 BLDG 00819 BLDG 00839 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00001 SITE 00002 SITE 00007 SITE 00018 SITE 00021	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

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N00217 / 004087 PROJ NO. 41330-2.09 & BRAC SER BPMOW.GWC/0281 REPORT N68711-00-D-0004 1000	01-13-2005 **01-07-2005** DO 0074	KLEINFELDER VALDOVINOS, M. BRAC PMO WEST	DRAFT SECOND QUARTER (APRIL-JUNE) 2004 GROUNDWATER SAMPLING REPORT, [INCLUDES BRAC PMO WEST TRANSMITTAL LETTER AND CD COPY] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-5/7	
N00217 / 004092 BRAC SER BPMOW.KSF/0307 CORRESPONDENC NONE 20	01-25-2005 **01-13-2005** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF RESPONSES TO COMMENTS ON THE DRAFT ZERO-VALENT IRON TREATABILITY STUDY WORK PLAN (W/ ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG. 272 PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090702-2/7	
N00217 / 000841 NONE MINUTES NONE 50	12-05-2005 **01-27-2005** NONE	SULTECH HUNTER, C. RAB MEMBERS	27 JANUARY 2005 RESTORATION ADVISORY BOARD (RAB) MEETING (INCLUDES AGENDA, 27 JANUARY 2008 MEETING MINUTES, NOVEMBER AND DECEMBER 2004 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00103 BLDG 00113 BLDG 00113A BLDG 00114 BLDG 00123 BLDG 00130 BLDG 00134 BLDG 00142 BLDG 00146 BLDG 00157 BLDG 00272 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

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N00217 / 000842 NONE MINUTES NONE 50	12-05-2005 **03-23-2005** NONE	SULTECH HUNTER, C. RAB MEMBERS	23 MARCH 2005 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, APRIL 2005 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00123 BLDG 00134 BLDG 00272 PARCEL A PARCEL A-1 PARCEL A-2 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00002	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	
N00217 / 004125 02-125.13.0077 & BRAC SER BPMOW.RNA/0644 REPORT N68711-02-D-8213 100	04-28-2005 **04-20-2005** CTO 0012	INNOVATIVE TECHNICAL SOLUTIONS, INC. HESS, R. BRAC PMO WEST	FINAL ZERO-VALENT IRON INJECTION TREATABILITY STUDY REPORT [INCLUDES SWDIV TRANSMITTAL LETTER] {CD COPY OF APPENDICES A - P ENCLOSED}	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00272 PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090702-3/7	
N00217 / 000839 NONE MINUTES NONE 50	12-05-2005 **04-27-2005** NONE	SULTECH HUNTER, C. RAB MEMBERS	27 APRIL 2005 RESTORATION ADVISORY BOARD (RAB) MEETING (INCLUDES AGENDA, 27 APRIL 2008 MEETING MINUTES, RAB SUB COMMITTEE MEETING MINUTES, MAY 2005 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00002 SITE 00007 SITE 00018	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

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N00217 / 004144 BRAC SER BPMOW.GWC/0763 REPORT N68711-00-D-0004 1007	06-03-2005 **05-20-2005** DO 0074	KLEINFELDER VALDOVINOS, M. BRAC PMO WEST	DRAFT THIRD QUARTER (JULY - SEPTEMBER) 2004 GROUNDWATER SAMPLING REPORT [CD COPY OF APPENDIX D ENCLOSED] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00134 BLDG 00156 BLDG 00228 BLDG 00253 BLDG 00406 BLDG 00413 BLDG 00414 PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00006 SITE 00009 SITE 00025 SITE 00071	CHOICE IMAGING SOLUTIONS SW-20090413-5/5	

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N00217 / 000821 BRAC SER BPMOW.JEP/0955 & PROJ. NO JV-13 REPORT N68711-02-D-8310 250	07-20-2005 **06-01-2005** CTO 0003	TPA-CKY JOINT VENTURE NAVFAC - SOUTHWEST DIVISION	DRAFT, FINAL SITE CLOSE OUT REPORT, FOR THE TOTAL PETROLEUM HYDROCARBON PROGRAM CORRECTIVE ACTION IMPLEMENTATION SOIL REMOVAL [PORTION OF MAILING LIST IS SENSITIVE] (INCLUDES BRAC PMO WEST TRANSMITTAL LETTER)	ADMIN RECORD INFO REPOSITORY SENSITIVE	CAA 0000001 CAA 0000002 CAA 0000002R CAA 0000003 CAA 0000003R CAA 0000004 CAA 0000006 CAA 0000008 CAA 0000008R CAA 0000009 CAA 0000009R CAA 0000011 CAA 0000012 CAA 0000013 CAA 0000014 CAA 0000015 CAA 0000016 CAA 0000019 CAA 0000021 CAA 0000022 PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 000838 NONE MINUTES NONE 150	12-05-2005 **06-22-2005** NONE	HUNTERS POINT, CA RAB MEMBERS	22 JUNE 2005 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES [INCLUDES AGENDA, LIST OF ATTENDEES, ACTION ITEMS, 22 JUNE 2005 NAVY MONTHLY PROGRESS REPORT, AND 22 JUNE 2005 REPORTER'S TRANSCRIPT] {PORTIONS OF DOCUMENT ARE SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00103 BLDG 00113 BLDG 00113A BLDG 00114 BLDG 00123 BLDG 00128 BLDG 00130 BLDG 00131A BLDG 00134 BLDG 00140 BLDG 00142 BLDG 00146 BLDG 00157 BLDG 00203 BLDG 00211 BLDG 00214 BLDG 00224 BLDG 00231 BLDG 00241 BLDG 00251 BLDG 00253 BLDG 00271 BLDG 00272 BLDG 00274 BLDG 00313 BLDG 00317 BLDG 00322 BLDG 00351 BLDG 00351A BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00383 BLDG 00406 BLDG 00408	CHOICE IMAGING SOLUTIONS SW-20090401-1/6	

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					BLDG 00411		
					BLDG 00414		
					BLDG 00500		
					BLDG 00503		
					BLDG 00523		
					BLDG 00701		
					BLDG 00707		
					BLDG 00708		
					BLDG 00709		
					BLDG 00808		
					BLDG 00813		
					BLDG 00819		
					DRYDOCK 2		
					DRYDOCK 3		
					DRYDOCK 4		
					DRYDOCK 5		
					DRYDOCK 6		
					DRYDOCK 7		
					PARCEL A		
					PARCEL B		
					PARCEL C		
					PARCEL D		
					PARCEL E		
					PARCEL F		
					SHACK 79		
					SHACK 80		
					SITE 00001		
					SITE 00007		
					SITE 00010		
					SITE 00018		
					SITE 00021		
					SITE 00506		
					SITE 00507		
					SITE 00508		
					SITE 00509		

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					SITE 00510		
					SITE 00510A		
					SITE 00517		
					SITE 00520		
					SITE 00529		
					SITE 00707		
					WELL EW01		
					WELL IR01MW366A		
					WELL IR01MW38A		
					WELL IR01MW43A		
					WELL IR03MW218A2		
					WELL IR03MW342A		
					WELL IR03MW373B		
					WELL IR04MW13A		
					WELL IR09MW61A		
					WELL IR09MW62A		
					WELL IR09MW63A		
					WELL IR10MW13A1		
					WELL IR25MW02A		
					WELL IR25MW53A		
					WELL IR25MW54A		
					WELL IR28MW136A		
					WELL IR28MW140F		

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					WELL IR28MW150A		
					WELL IR28MW151A		
					WELL IR28MW211F		
					WELL IR28MW221A		
					WELL IR28MW221B		
					WELL IR28MW270A		
					WELL IR28MW341F		
					WELL IR28MW396B		
					WELL IR28MW397B		
					WELL IR28MW403A		
					WELL IR28MW407A		
					WELL IR28MW408A		
					WELL IR28MW409A		
					WELL IR28MW410A		
					WELL IR28MW412A		
					WELL IR58MW31A		
					WELL IR58MW33B		
					WELL IR70MW07A		
					WELL IR71MW03A		
					WELL IR71MW12B		

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					WELL IR91MW04A WELL IW02 WELL MW33A WELL MW53A WELL MW54A WELL MW61A WELL MW62A WELL PA50MW07A		
N00217 / 000835 NONE MINUTES NONE 50	12-05-2005 **07-28-2005** NONE	SULTECH HUNTER, C. RAB MEMBERS	28 JULY 2005 RESTORATION ADVISORY BOARD (RAB) MEETING (INCLUDES AGENDA, 20 JULY 2005 MEETING MINUTES, JUNE 2005 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00366 PARCEL B PARCEL C PARCEL E PARCEL E-2 PARCEL F SITE 00002	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	
N00217 / 000834 NONE MINUTES NONE 57	12-05-2005 **08-25-2005** NONE	SULTECH HUNTER, C. RAB MEMBERS	25 AUGUST 2005 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, AUGUST 2005 MONTHLY PROGRESS REPORT, REPORTER'S TRANSCRIPT AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00103 BLDG 00104 BLDG 00115 BLDG 00116 BLDG 00600 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00002	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

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N00217 / 000851 NONE MINUTES NONE 100	12-05-2005 **09-22-2005** NONE	TETRA TECH EM INC. HUNTER, C RAB MEMBERS	22 SEPTEMBER 2005 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA, 22 SEP 2005 REPORTER'S TRANSCRIPT, SEP 2005 MONTHLY PROGRESS REPORT, 16 SEP 2005 SUBCOMMITTEE MEETING MINUTES, AND VARIOUS HANDOUTS)	ADMIN RECORD INFO REPOSITORY	BLDG 00134 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E-2 PARCEL F SITE 00007 SITE 00018 WELL EW01 WELL IW02A WELL MW53A WELL MW54A WELL MW902A	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 004167 BRAC SER BPMOW.RNA/1229 REPORT N68711-00-D-0004 500	10-12-2005 **09-23-2005** DO 0074	KLEINFELDER JOHNSON, C. BRAC PMO WEST	DRAFT FOURTH QUARTER (OCTOBER-DECEMBER) 2004 GROUNDWATER SAMPLING REPORT (INCLUDES BRAC PMO WEST TRANSMITTAL LETTER AND CD COPY ENCLOSED) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-6/7	
N00217 / 004179 BRAC SER BPMOW.JEP/1242 REPORT N68711-02-D-8310 175	11-30-2005 **09-23-2005** CTO 0003	TPA-CKY JOINT VENTURE BRAC PMO WEST GILKEY, D.	FINAL SITE CLOSE OUT REPORT, TOTAL PETROLEUM HYDROCARBON PROGRAM CORRECTIVE ACTION IMPLEMENTATION SOIL REMOVAL (INCLUDES RESPONSES TO AGENCY COMMENTS ON DRAFT FINAL REPORT AND BRAC PMO WEST TRANSMITTAL LETTER) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-6/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 004175 FWSD-RAC-06-0071 & BRAC SER BPMOW.REP/1350 REPORT N68711-98-D-5713 300	11-03-2005 **11-01-2005** CTO 0072	TETRA TECH EC, INC. SLATTERY, G. BRAC PMO WEST	DRAFT DESIGN PLAN, STORM DRAIN AND SANITARY SEWER REMOVAL, REVISION 0 (CD COPY ENCLOSED) [PORTION OF MAILING LIST IS SENSITIVE] (INCLUDES BRAC PMO WEST TRANSMITTAL LETTER)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00103 BLDG 00104 BLDG 00113 BLDG 00113A BLDG 00115 BLDG 00116 BLDG 00117 BLDG 00125 BLDG 00130 BLDG 00134 BLDG 00140 BLDG 00142 BLDG 00146 BLDG 00157 DRYDOCK 5 DRYDOCK 6 DRYDOCK 7 PARCEL B PARCEL C PARCEL E PARCEL E-2 SITE 00007	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	

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N00217 / 004176 FWSD-RAC-06-0070 & BRAC SER BPMOW.REP/1355 REPORT N68711-98-D-5713 500	11-03-2005 **11-01-2005** CTO 0072	TETRA TECH EC, INC. SLATTERY, G. BRAC PMO WEST	DRAFT PROJECT WORK PLAN, BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL (CD COPY ENCLOSED) [PORTION OF MAILING LIST IS SENSITIVE] {INCLUDE BRAC PMO WEST TRANSMITTAL LETTER}	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00113A BLDG 00114 BLDG 00130 BLDG 00134 BLDG 00364 BLDG 00815 BLDG 00816 BLDG 00819 DRYDOCK 2 DRYDOCK 3 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 004178 BRAC SER BPMOW.MA/1404 REPORT N68711-05-C-6406 175	11-30-2005 **11-01-2005** NONE	CE2 - KLEINFELDER FERRY, R. BRAC PMO WEST	FINAL WORK PLAN FOR CONTAMINATION DELINEATION AT (INCLUDES BRAC PMO WEST TRANSMITTAL LETTER AND REVISED FIGURE A-14) [CD COPY ENCLOSED] (PORTION OF THE MAILING LIST IS SENSITIVE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00108 BLDG 00130 BLDG 00134 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F RU C5 SITE 00006 SITE 00025 WELL IR06MW34A WELL IR06MW46A WELL IR25MW37B WELL IR25MW38B WELL IR25MW39B	CHOICE IMAGING SOLUTIONS SW-20090508-6/7	
N00217 / 000830 BRAC SER BPMOW.RNA/0984 & PROJECT NO. 41330-2.09 REPORT N68711-00-D-0004 700	08-01-2005 **12-01-2005** DO 0074	KLEINFELDER SKELTON, C. BRAC PMO WEST	REVISED FINAL SECOND QUARTER (APRIL - JUNE) 2004 GROUNDWATER SAMPLING REPORT (INCLUDES REPLACEMENT PAGES REVISING THE DATE OF 29 JULY 2005 TO 01 DECEMBER 2005, CD COPY, AND BRAC PMO WEST TRANSMITTAL LETTER) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	
N00217 / 001457 BRAC SER BPMOW.MA/1431 CORRESPONDENC NONE 3	11-06-2008 **12-01-2005** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE 1) FINAL APRIL - JUNE 2004, EIGHTEENTH QUARTERLY GROUNDWATER SAMPLING REPORT, 2) FINAL JULY - SEPTEMBER 2004, NINETEENTH QUARTERLY GROUNDWATER SAMPLING REPORT, (***SEE COMMENTS)	ADMIN RECORD SENSITIVE	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-5/7	

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N00217 / 000871 NONE REPORT NONE 100	03-13-2006 **12-05-2005** NONE	STANFORD UNIVERSITY BRAC PMO WEST	FINAL DEMONSTRATION PLAN FOR FIELD TESTING OF ACTIVATED CARBON MIXING AND IN SITU STABILIZATION OF PCBS IN SEDIMENT [SEE RECORD # 872 - BRAC PMO WEST TRANSMITTAL LETTER] {PORTION OF THE MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090508-1/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 004180 BRAC SER BPMOW.MA/1451 REPORT N68711-00-D-0004 250	12-12-2005 **12-06-2005** DO 0074	KLINEFELDER BRAC PMO WEST	DRAFT 0CTOBER - DECEMBER 2004 TWENTIETH QUARTERLY/FIFTH ANNUAL GROUNDWATER SAMPLING REPORT (INCLUDES BRAC TRANSMITTAL LETTER) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00123 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00006 SITE 00007 SITE 00010 SITE 00018 SITE 00024 SITE 00026 WELL IR03MW11A WELL IR06MW45A WELL IR07MW19A WELL IR07MW20A1 WELL IR07MW21A1 WELL IR07MW23A WELL IR07MW24A WELL IR07MW25A WELL IR07MW26A WELL IR07MW27A WELL IR07MWS-4 WELL IR10MW12A WELL IR10MW28A WELL IR10MW61A	CHOICE IMAGING SOLUTIONS SW-20090508-6/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR10MW62A WELL IR10MW71A WELL IR10MW76A WELL IR10MW79A WELL IR10MW80A WELL IR25MW17A WELL IR26MW46A WELL IR26MW47A WELL IR26MW48A WELL IR61MW05A WELL PA05MW01A		
N00217 / 001459 BRAC SER BPMOW.MA/1468 CORRESPONDENC NONE 2	11-06-2008 **12-14-2005** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE FINAL FOURTH QUARTER (OCTOBER - DECEMBER) 2004 GROUNDWATER SAMPLING REPORT (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-5/6	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 004181 PROJECT NO. 41330-2.09 REPORT N68711-00-D-0004 500	12-16-2005 **12-14-2005** DO 0074	KLEINFELDER BRAC PMO WEST	FINAL FOURTH QUARTER (OCTOBER - DECEMBER) 2004 GROUNDWATER SAMPLING REPORT (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00156 BLDG 00228 BLDG 00253 BLDG 00400 BLDG 00405 BLDG 00406 BLDG 00411 BLDG 00413 BLDG 00414 DRYDOCK 2 PARCEL C PARCEL D PARCEL E WELL IR02MW114A2 WELL IR06MW45A WELL IR06MW54F WELL IR06MW55F WELL IR06MW57F WELL IR-09 WELL IR-71 VOC WELL RU-C1 VOC WELL RU-C2 VOC WELL RU-C4 VOC	CHOICE IMAGING SOLUTIONS SW-20090401-5/6	

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N00217 / 000937 BAI.TC.016.00012 MINUTES NONE 11	06-21-2006 **01-26-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	26 JANUARY 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES AND ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	BLDG 00211 BLDG 00231 BLDG 00253 PARCEL B PARCEL C PARCEL E-2 RU C1 RU C5	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 000938 NONE MINUTES NONE 25	06-21-2006 **01-26-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	26 JANUARY 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING REPORTER'S TRANSCRIPT	ADMIN RECORD INFO REPOSITORY	BLDG 00211 BLDG 00231 BLDG 00253 PARCEL C RU C1 RU C5	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 000857 FWSD-RAC-06-0355 REPORT N68711-98-D-5713 200	02-14-2006 **02-14-2006** 00072	TETRA TECH EC, INC. SLATTERY, G. BRAC PMO WEST	DRAFT FINAL PROJECT WORK PLAN, BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00113A BLDG 00130 BLDG 00134 BLDG 00271 BLDG 00406 BLDG 00819 DRYDOCK 2 DRYDOCK 3 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00001 SITE 00021	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

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N00217 / 000859 FWSD-RAC-06-0356 REPORT N68711-98-D-5713 146	02-14-2006 **02-14-2006** CTO 0072	TETRA TECH EC, INC. BRAC PMO WEST	DRAFT FINAL PARCEL B DESIGN PLAN, STORM DRAIN AND SANITARY SEWER REMOVAL (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00103 BLDG 00104 BLDG 00113 BLDG 00113A BLDG 00115 BLDG 00116 BLDG 00117 BLDG 00125 BLDG 00130 BLDG 00134 BLDG 00140 BLDG 00142 BLDG 00146 BLDG 00157 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00007	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

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N00217 / 000865 06-0506 REPORT N68711-98-D-5713 52	02-22-2006 **02-14-2006** CTO 0072	TETRA TECH EC, INC NAVFAC - SOUTHWEST DIVISION	REVISED FINAL BASEWIDE RADIOLOGICAL REMOVAL ACTION, ACTION MEMORANDUM (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BASEWIDE BLDG 00114 BLDG 00146 BLDG 00322 BLDG 00364 BLDG 00509 BLDG 00517 BLDG 00529 BLDG 00707 BLDG 00819 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00001 SITE 00003 SITE 00011 SITE 00014 SITE 00015 SITE 00021	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 000866 BRAC SER BPMOW.CPA/0132 CORRESPONDENC NONE 3	02-22-2006 **02-14-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REVISED FINAL BASEWIDE RADIOLOGICAL REMOVAL ACTION, ACTION MEMORANDUM [W/OUT ENCLOSURE] (PORTION OF THE MAILING LIST IS SENSITIVE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)	
N00217 / 000873 NONE REPORT N68711-00-D-0004 8536	03-23-2006 **03-22-2006** DO 0074	KLEINFELDER BRAC PMO WEST	DRAFT JANUARY TO MARCH 2005 FIFTH QUARTERLY/FIRST ANNUAL GROUNDWATER SAMPLING REPORT, VOLUMES I AND II OF II [CD COPY ENCLOSED] (INCLUDES ANALYTICAL DATA - PAPER ONLY)	ADMIN RECORD INFO REPOSITORY	BLDG 00211 BLDG 00231 BLDG 00251 BLDG 00253 BLDG 00351A BLDG 00400 BLDG 00402 BLDG 00406 BLDG 00408 BLDG 00411 BLDG 00437 BLDG 00438 BLDG 00439 BLDG 00505 BLDG 00521 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00009 SITE 00022 SITE 00028 SITE 00033 SITE 00058 SITE 00078 WELL IR01MW09B WELL IR01MW1-9 WELL IR01MW366B WELL IR01MW403A WELL IR01MW403B	FRC - PERRIS IMAGED HPNT_033	181-09-4128	BOX 0001 BOX 0002 BOX 0003

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					WELL IR01MW42A		
					WELL IR01MWLF1A		
					WELL IR01MWLF2B		
					WELL IR01MWLF4A		
					WELL IR01MWLF4B		
					WELL IR02MW101A1		
					WELL IR02MW101A2		
					WELL IR02MW114A1		
					WELL IR02MW114A2		
					WELL IR02MW114A3		
					WELL IR02MW209A		
					WELL IR06MW32A		
					WELL IR06MW35A		
					WELL IR06MW41A		
					WELL IR06MW44A		
					WELL IR06MW45A		
					WELL IR06MW46A		
					WELL IR06MW50F		
					WELL IR06MW54F		
					WELL IR06MW55F		

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					WELL IR06MW58F		
					WELL IR06MW59A1		
					WELL IR09MW31A		
					WELL IR09MW36A		
					WELL IR09MW44A		
					WELL IR09MW52A		
					WELL IR09MW55F		
					WELL IR09P040A		
					WELL IR09PPY1		
					WELL IR11MW26A		
					WELL IR11MW27A		
					WELL IR12MW14A		
					WELL IR12MW16A		
					WELL IR15MW10F		
					WELL IR25MW11A		
					WELL IR25MW16A		
					WELL IR25MW17A		
					WELL IR25MW37B		
					WELL IR25MW38B		
					WELL IR25MW39A		
					WELL IR25MW39B		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR25MW42B		
					WELL IR25MW52A		
					WELL IR25MW60A1		
					WELL IR25MW60A2		
					WELL IR25MW611A2		
					WELL IR28MW126A		
					WELL IR28MW127A		
					WELL IR28MW133A		
					WELL IR28MW136A		
					WELL IR28MW140F		
					WELL IR28MW151A		
					WELL IR28MW155A		
					WELL IR28MW170A		
					WELL IR28MW188F		
					WELL IR28MW189F		
					WELL IR28MW201F		
					WELL IR28MW211F		
					WELL IR28MW216F		
					WELL IR28MW221B		
					WELL IR28MW255F		

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					WELL IR28MW270A		
					WELL IR28MW272A		
					WELL IR28MW272F		
					WELL IR28MW298A		
					WELL IR28MW300F		
					WELL IR28MW309B		
					WELL IR28MW311A-R1		
					WELL IR28MW312F		
					WELL IR28MW334A		
					WELL IR28MW350F		
					WELL IR28MW353B		
					WELL IR28MW355F		
					WELL IR28MW398B		
					WELL IR28MW401B		
					WELL IR28MW406		
					WELL IR28MW407		
					WELL IR29MW57A		
					WELL IR29MW58F		
					WELL IR29MW85F		
					WELL IR33MW116A		

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					WELL IR33MW62A		
					WELL IR33MW64A		
					WELL IR33MW66A		
					WELL IR33MWU5A		
					WELL IR34MW36A		
					WELL IR34MW36B		
					WELL IR36MW09A		
					WELL IR36MW11A		
					WELL IR36MW125A		
					WELL IR36MW127A		
					WELL IR36MW97A		
					WELL IR58MW25F		
					WELL IR58MW31A		
					WELL IR58MW32B		
					WELL IR58MW33B		
					WELL IR76MW13A		
					WELL PA36MW01A		
					WELL PA38MW51A		
					WELL PA50MW11A		

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N00217 / 000874 BRAC SER BPMOW.MA/0271 CORRESPONDENC NONE 5	03-23-2006 **03-22-2006** NONE	BRAC PMO WEST FORMAN, K. BCT MEMBERS	TRANSMITTAL OF DRAFT JANUARY TO MARCH 2005 FIFTH QUARTERLY/FIRST ANNUAL GROUNDWATER MONITORING REPORT (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	FRC - PERRIS IMAGED HPNT_033	181-09-4128 BOX 0003
N00217 / 000943 NONE MINUTES NONE 26	06-21-2006 **03-23-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	23 MARCH 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING REPORTER'S TRANSCRIPT	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00134 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00010 SITE 00026	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 004186 BAI.TC.016.0019 MINUTES NONE 11	06-21-2006 **03-23-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	23 MARCH 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES & ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	BLDG 00153 PARCEL B PARCEL C PARCEL E SITE 00007 SITE 00010 SITE 00026 WELL IR26MW47A	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	
N00217 / 000889 BRAC SER BPMOW.KF/0313 CORRESPONDENC NONE 60	04-07-2006 **03-31-2006** NONE	BRAC PMO WEST FORMAN, K. BCT MEMBERS	TRANSMITTAL OF 1) FEDERAL FACILITY AGREEMENT (FFA) SCHEDULE, 2) PROJECT SCHEDULE, AND RESPONSE TO COMMENTS ON THE FFA SCHEDULE, DATED 23 SEPTEMBER 2005 (W/ENCLOSURES)	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090717-2/8	

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N00217 / 000947 BRAC SER BPMOW.GB/0297 CORRESPONDENC NONE 11	06-26-2006 **03-31-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF ADDITIONAL RESPONSE TO COMMENTS AND REPLACEMENT PAGES FOR 1) FINAL Q18 (APRIL TO JUNE 2004) PARCEL B; 2) FINAL Q19 (JULY TO SEPT. 2004) PARCEL B; & 3) FINAL Q3 (JULY TO SEPT. 2004) PARCELS C, D & E GROUNDWATER MONITORING REPORTS	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-2/7	

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N00217 / 004161 BRAC SER BPMOW.RNA/1201 & PROJECT NO. 41330-2.09 REPORT N68711-00-D-0004 962	09-12-2005 **03-31-2006** DO 0074	KLEINFELDER JOHNSON, C. BRAC PMO WEST	REVISED FINAL THIRD QUARTER (JULY - SEPTEMBER) 2004 GROUNDWATER SAMPLING REPORT (INCLUDES REPLACEMENT PAGES, REVISED CD COPY, AND BRAC PMO WEST TRANSMITTAL LETTERS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00134 BLDG 00156 BLDG 00228 BLDG 00253 BLDG 00406 BLDG 00408 BLDG 00413 BLDG 00414 BLDG 00439 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00006 SITE 00007 SITE 00018 SITE 00025 SITE 00071 WELL IR01MW12A WELL IR02MW114A2 WELL IR06MW50F WELL IR06MW57F WELL IR06P54F WELL IR25MW39A WELL IR26MW41A WELL IR28MW155A WELL IR28MW311A WELL IR30MW01F	CHOICE IMAGING SOLUTIONS SW-20090413-5/5	

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					WELL PA50MW06A		
N00217 / 000909 NONE REPORT N62473-06-C-2001 250	05-02-2006 **04-01-2006** NONE	CE2-KLEINFELDER JOINT VENTURE KILDUFF, E. BRAC PMO WEST	DRAFT QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER TO DECEMBER 2005)	ADMIN RECORD INFO REPOSITORY	BLDG 00819 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F RU C1 RU C2 RU C4 RU C5 WELL IR02MW114A1 WELL IR02MW126A WELL IR02MW294A WELL IR02MW373A	CHOICE IMAGING SOLUTIONS SW-20090605-1/9	

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N00217 / 000899 KLEINFELDER PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 200	04-20-2006 **04-05-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	DRAFT APRIL TO JUNE 2005 TWENTY-SECOND QUARTERLY GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	BLDG 00123 DRYDOCK 3 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00007 WELL IR06MW42A WELL IR06MW46A WELL IR07MW19A WELL IR07MW24A WELL IR07MWS-3 WELL IR10MW12A WELL IR10MW13A1 WELL IR10MW28A WELL IR10MW33A WELL IR10MW59A WELL IR10MW61A WELL IR10MW62A WELL IR10MW71A WELL IR10MW76A WELL IR10MW79A WELL IR10MW80A	CHOICE IMAGING SOLUTIONS SW-20090401-2/6	

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							WELL IR25EW01A WELL IR26MW46A WELL IR26MW47A WELL IR26MW48A WELL IR46MW39A WELL PA24MW02A WELL PA50MW01A		

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N00217 / 000901 PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 802	04-20-2006 **04-17-2006** DO 0074	KLEINFELDER BRAC PMO WEST	DRAFT SIXTH QUARTER APRIL TO JUNE 2005 GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00270 BLDG 00307 BLDG 00383 BLDG 00400 BLDG 00401 BLDG 00406 BLDG 00408 BLDG 00437 BLDG 00438 BLDG 00500 BLDG 00505 BLDG 00521 PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00009 SITE 00022 SITE 00033 SITE 00071 WELL IR01MW114A1 WELL IR02MW114A1 WELL IR06MW34A WELL IR06MW42A WELL IR06MW54F WELL IR06MW55F WELL IR06MW57F WELL IR11MW27A	CHOICE IMAGING SOLUTIONS SW-20090424-1/8	

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					WELL IR36MW125A WELL IR38MW02A WELL IR38MW03A WELL IR38MW37A WELL IR38MW52A WELL IR38MW62A WELL IR38MW63A WELL IR55MW01A WELL PA16MW17A WELL PA33MW37A WELL PA50MW06A WELL PA50MW09A WELL PA50MW10A		
N00217 / 000902 BRAC SER BPMOW.MA/0356 CORRESPONDENC NONE 3	04-20-2006 **04-17-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF DRAFT APRIL TO JUNE 2005 SIXTH QUARTER GROUNDWATER MONITORING REPORT (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-1/8	
N00217 / 000904 BRAC SER BPMOW.RNA/0357 CORRESPONDENC NONE 3	04-20-2006 **04-19-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF DRAFT JULY TO SEPTEMBER 2005 SEVENTH QUARTER GROUNDWATER MONITORING REPORT (W/OUT ENCLOSURE) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	

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N00217 / 000974 PROJECT NO. 06-0676 REPORT N68711-98-D-5713 30	08-08-2006 **04-21-2006** CTO 0072	TETRA TECH EC, INC. NAVFAC - SOUTHWEST	FINAL BASEWIDE RADIOLOGICAL REMOVAL ACTION, ACTION MEMORANDUM - REVISION 2006 (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00114 BLDG 00146 BLDG 00322 BLDG 00364 BLDG 00506 BLDG 00509 BLDG 00517 BLDG 00529 BLDG 00707 BLDG 00819 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090522-2/7	
N00217 / 000910 BRAC SER BPMOW.KF\0394 CORRESPONDENC NONE 2	05-02-2006 **04-27-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF DRAFT OCTOBER TO DECEMBER 2005 GROUNDWATER MONITORING REPORT (PORTION OF THE MAILING LIST IS SENSITIVE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090605-1/9	

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N00217 / 000944 BAI.TC.016.00022 MINUTES NONE 11	06-21-2006 **04-27-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	27 APRIL 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES AND ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	BLDG 00272 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E RU C1 RU C4 RU C5 SITE 00010 WELL IR10MW71A WELL IR25MW544	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 000945 NONE MINUTES NONE 23	06-21-2006 **04-27-2006** NONE	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	27 APRIL 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING REPORTER'S TRANSCRIPT	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00134 BLDG 00272 DRYDOCK 4 PARCEL B PARCEL C PARCEL D PARCEL E RU C4 RU C5 RU CA WELL 00054A WELL 00071A WELL 00211F	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	

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N00217 / 000903 KLEINFELDER PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 1500	04-20-2006 **05-01-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	DRAFT JULY TO SEPTEMBER 2005 SEVENTH QUARTER GROUNDWATER MONITORING REPORT (INCLUDES REPLACEMENT REVISING THE DATE FROM 19 APRIL 2006 TO 01 MAY 2006) [REPLACEMENT PAGES ISSUED ON 01 MAY 2006 INCLUDE: COVER PAGE AND TABLE 1]	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00270 BLDG 00400 BLDG 00401 BLDG 00402 BLDG 00406 BLDG 00408 BLDG 00437 BLDG 00438 DRYDOCK 2 DRYDOCK 4 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 WELL IR01MW02B WELL IR01MW42A WELL IR01MWLF4A WELL IR02MW114A1 WELL IR02MW179A WELL IR06MW34A WELL IR06MW42A WELL IR06MW54F WELL IR06MW55F WELL IR06MW56F WELL IR06MW58F	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	

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					WELL IR07MWS-2 WELL IR09MW45F WELL IR09MW62A WELL IR09PPY1 WELL IR12MW11A WELL IR17MW12A WELL IR25MW62F WELL IR28MW155A WELL IR29MW59F WELL IR38MW02A WELL IR38MW03A WELL IR58MW34A WELL IR71MW12B WELL IR76MW13A WELL PA50MW09A		
N00217 / 000917 BRAC SER BPMOW.PB/0413 CORRESPONDENC NONE 2	05-31-2006 **05-08-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REVISED FINAL FOURTH QUARTER (OCTOBER - DECEMBER) 2004 GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	

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N00217 / 001015 BAI.TC.016.00027 MINUTES N68711-03-D-5106 14	10-31-2006 **05-25-2006** CTO 0016	BARAJAS & ASSOCIATES, INC. SARAVANAN, V. NAVFAC - SOUTHWEST	25 MAY 2006 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES AND ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	BLDG 00813 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00007 SITE 00018	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 001017 BAI.TC.016.00029 MINUTES N68711-03-D-5106 12	10-31-2006 **06-22-2006** CTO 0016	BARAJAS & ASSOCIATES, INC. NAVFAC - SOUTHWEST	22 JUNE 2006 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES AND ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00813 BLDG 00815 PARCEL B PARCEL C PARCEL D SITE 00010 SITE 00026	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 000991 NONE REPORT N62473-06-C-2001 950	09-07-2006 **08-01-2006** NONE	CE2 - KLEINFELDER KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER-DECEMBER 2005), REVISION 1	ADMIN RECORD INFO REPOSITORY	BLDG 00819 PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090605-1/9	
N00217 / 001021 BAI.TC.016.00036 MINUTES N68711-03-D-5106 11	10-31-2006 **08-24-2006** CTO 0016	BARAJAS & ASSOCIATES, INC. NAVFAC - SOUTHWEST	24 AUGUST 2006 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES LIST OF ATTENDEES AND ACTION ITEMS)	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 000990 BRAC SER BPMOW.MLW/0726 CORRESPONDENC NONE 2	09-07-2006 **08-31-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE QUARTERLY GROUNDWATER MONITORING REPORT, (OCTOBER-DECEMBER 2005), REVISION 1 [W/OUT ENCLOSURE] {PORTION OF THE MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090605-1/9	

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N00217 / 000992 BRAC SER BPMOW.KF/0772 & BAI.TC.016.00037 CORRESPONDENC NONE 45	09-11-2006 **09-08-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF 1) FEDERAL FACILITY AGREEMENT (FFA) SCHEDULE, AND 2) PROJECT SCHEDULE (W/ENCLOSURES)	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090717-2/8	
N00217 / 000999 BRAC SER BPMOW.MLW/0806 CORRESPONDENC NONE 4	09-28-2006 **09-27-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF QUARTERLY GROUNDWATER MONITORING REPORT, JANUARY - MARCH 2006 AND ANNUAL REPORT (W/OUT ENCLOSURE) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090313-3/7	
N00217 / 000916 PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 400	05-31-2006 **09-29-2006** DO 0074	KLEINFELDER BRAC PMO WEST	REVISED FINAL FOURTH QUARTER (OCTOBER - DECEMBER) 2004 GROUNDWATER SAMPLING REPORT (INCLUDES REPLACEMENT PAGES REVISING THE DATE OF 28 APRIL 2006 TO 29 SEPTEMBER 2006 AND CD COPY) [***SEE COMMENTS]	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	
N00217 / 001458 BRAC SER BPMOW.MLW/0819 CORRESPONDENC NONE 3	11-06-2008 **09-29-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES REVISING THE DATE ON THE FINAL FOURTH QUARTER (OCTOBER-DECEMBER) 2004 GROUNDWATER SAMPLING REPORT (W/OUT ENCLOSURE) [REPLACEMENT PAGES WERE INSERTED IN THE DOCUMENT] {PORTION OF THE MAILING LIST IS SENSITIVE}	ADMIN RECORD SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090401-5/6	

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N00217 / 001004 KLEINFELDER PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 500	10-10-2006 **10-06-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	FINAL JANUARY TO MARCH 2005, TWENTY-FIRST QUARTERLY GROUNDWATER SAMPLING REPORT	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00134 PARCEL B PARCEL C PARCEL D PARCEL E SITE 00007 WELL IR06MW42A WELL IR06MW46A WELL IR07MW19A WELL IR07MW23A WELL IR07MW24A WELL IR07MW25A WELL IR07MWMW5-4 WELL IR07MWWS-3 WELL IR10MW12A WELL IR10MW13A1 WELL IR10MW28A WELL IR10MW33A WELL IR10MW61A WELL IR10MW62A WELL IR10MW71A WELL IR10MW74A	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	

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					WELL IR10MW76A		
					WELL IR10MW79A		
					WELL IR10MW80A		
					WELL IR23MW14A		
					WELL IR25EW01A		
					WELL IR25MW37A		
					WELL IR25MW63A2		
					WELL IR26MW41A		
					WELL IR26MW47A		
					WELL IR46MW37A		
					WELL IR46MW40A		
					WELL IR46MW42A		
					WELL IR46MW47A		
					WELL IR46MW48A		
					WELL IR60MW04A		
					WELL IRMW39A		
					WELL PA24MW02A		
					WELL PA50MW01A		
					WELL UT03MW11A		

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N00217 / 001010 BRAC SER BPMOW.MLW/0046 CORRESPONDENC NONE 2	10-26-2006 **10-11-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF FINAL (APRIL - JUNE) 2005, SIXTH QUARTER GROUNDWATER MONITORING REPORT, PARCELS C, D, AND E (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-1/8	
N00217 / 001011 PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 1000	10-26-2006 **10-11-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	FINAL (APRIL - JUNE) 2005, SIXTH QUARTER GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 001008 ECSD-RACIV-06-0340 REPORT N62473-06-D-2201 96	10-16-2006 **10-13-2006** CTO 0001	TETRA TECH EC, INC. AHLERSMEYER, R. BRAC PMO WEST	FINAL SAMPLING AND ANALYSIS PLAN (SAP) (FIELD SAMPLING PLAN (FSP) AND QUALITY ASSURANCE PROJECT PLAN (QAPP)) TREATABILITY STUDY FOR VARIOUS ORGANIC COMPOUNDS (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00253 PARCEL C RU C1	CHOICE IMAGING SOLUTIONS SW-20090424-1/8	
N00217 / 001012 BRAC SER BPMOW.MLW/0047 CORRESPONDENC NONE 2	10-26-2006 **10-17-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF FINAL (JULY - SEPTEMBER) 2005, SEVENTH QUARTER GROUNDWATER MONITORING REPORT, PARCELS C, D, AND E (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 001013 KLEINFELDER PROJECT NO. 41330-2.10 REPORT N68711-00-D-0004 3966	10-26-2006 **10-17-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	FINAL JULY TO SEPTEMBER 2005, SEVENTH QUARTER, GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED) {SEE COMMENTS}	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090401-3/6	

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N00217 / 001028 ECSD-RACIV-07-0006 REPORT N62473-06-D-2201 15	11-02-2006 **10-23-2006** CTO 0006	TETRA TECH EC INC. DOUGHERTY, W. BRAC PMO WEST	AIR MONITORING PLAN (AMP), BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090424-2/8	
N00217 / 001065 BRAC SER BPMOW.MLW/0139 CORRESPONDENC NONE 4	12-20-2006 **11-17-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE FINAL JANUARY TO MARCH 2005 FIFTH QUARTERLY/FIRST ANNUAL GROUNDWATER MONITORING REPORT, VOLUMES I - II OF II (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-3/8	
N00217 / 001066 NONE REPORT N68711-00-D-0004 6000	12-20-2006 **11-17-2006** DO 0074	KLEINFELDER SRINIVASAN, L. BRAC PMO WEST	FINAL JANUARY TO MARCH 2005, FIFTH QUARTERLY/FIRST ANNUAL GROUNDWATER SAMPLING REPORT, VOLUMES I - II OF II, FOLDERS 1 - 6 OF 6 (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00231 BLDG 00251 BLDG 00253 BLDG 00272 BLDG 00406 PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00028	CHOICE IMAGING SOLUTIONS SW-20090424-3/8	
N00217 / 001055 BRAC SER BPMOW.MLW/0125 CORRESPONDENC NONE 2	11-30-2006 **11-21-2006** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE QUARTERLY GROUNDWATER MONITORING REPORT (APRIL - JUNE 2006) (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090522-2/7	
N00217 / 004191 BRAC SER BPMOW.MLW/0312 CORRESPONDENC NONE 2	03-21-2007 **01-31-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF QUARTERLY GROUNDWATER MONITORING REPORT, JULY-SEPTEMBER 2006 (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-5/7	

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N00217 / 004212 BAI.TC.016.00058 MINUTES N68711-03-D-5106 17	04-16-2007 **02-22-2007** CTO 0016	BARAJAS & ASSOCIATES, INC. NAVFAC - SOUTHWEST	22 FEBRUARY 2007 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES AGENDA AND ATTACHMENTS A AND B)	ADMIN RECORD INFO REPOSITORY	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 RU C1 RU C5 SITE 00009	CHOICE IMAGING SOLUTIONS SW-20090702-6/7	
N00217 / 001000 NONE REPORT N62473-06-C-2001 3000	09-28-2006 **03-01-2007** NONE	CE2 - KLEINFELDER KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT AND ANNUAL REPORT, JANUARY - MARCH 2006, REVISION 1 (INCLUDES REPLACEMENT PAGES CONVERTING REPORT DATED 01 AUGUST 2006 TO REVISION 1)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090313-4/7	
N00217 / 004232 BRAC SER BPMOW.MLW/0425 CORRESPONDENC NONE 2	08-31-2007 **03-30-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING THE QUARTERLY GROUNDWATER MONITORING REPORT (JANUARY-MARCH 2006) DATED 01 AUGUST 2006 TO REVISION 1 (W/OUT ENCLOSURE) {SEE COMMENTS}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090702-6/7	
N00217 / 001056 NONE REPORT N62473-06-C-2001 1000	11-30-2006 **04-01-2007** NONE	CE2 - KLEINFELDER KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT (APRIL - JUNE 2006), REVISION 1 [CD COPY ENCLOSED] (INCLUDES REPLACEMENT PAGES CONVERTING ORIGINAL DATED 01 OCTOBER 2006 TO REVISION 1) (REPLACEMENT PAGES ISSUED ON 05 MAY 2007)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090522-2/7	

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N00217 / 001091 NONE REPORT N62473-06-C-2001 3630	07-10-2007 **04-01-2007** NONE	CE2 - KLEINFELDER KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER - DECEMBER 2006) AND ANNUAL REPORT, REVISION 1 (***SEE COMMENTS)	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00130 BLDG 00141 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00010 SITE 00025 SITE 00026 WELL IR07MW22A1 WELL IR10MW12A WELL IR10MW13A1 WELL IR10MW33A WELL IR10MW59A WELL IR10MW61A WELL IR10MW62A WELL IR10MW71A WELL IR24MW06A WELL IR26MW47A WELL IR26MW48A WELL IR26MW49A WELL IR26MW50A	CHOICE IMAGING SOLUTIONS SW-20090508-3/7	

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N00217 / 004190 NONE REPORT N62473-06-C-2001 4000	03-21-2007 **05-01-2007** NONE	CE2-KLEINFELDER JOINT VENTURE KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT, JULY-SEPTEMBER 2006, REVISION 1 (INCLUDES REPLACEMENT PAGES CONVERTING THE DOCUMENT, DATED 01 JANUARY 2007, TO REVISION 1, AND CD COPY) [***SEE COMMENTS]	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00134 BLDG 00141 PARCEL A PARCEL B PARCEL C PARCEL E PARCEL E-2 PARCEL F SITE 00010 SITE 00026 WELL IR05MW50A WELL IR06MW49A WELL IR07MW19A WELL IR07MW20A1 WELL IR10MW12A WELL IR10MW82A WELL IR26MW46A WELL IR26MW47A WELL IR26MW48A WELL IR26MW49A WELL IR26MW50A WELL IR60MW08A	CHOICE IMAGING SOLUTIONS SW-20090508-6/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 004192 NONE REPORT N62473-06-C-2001 4000	03-21-2007 **05-01-2007** NONE	CE2-KLEINFELDER JOINT VENTURE KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT, JULY-SEPTEMBER 2006, REVISION 1 [INCLUDES REPLACEMENT PAGES CONVERTING REVISION 0 DATED 01 JANUARY 2007 TO REVISION 1, AND CD COPY] {***SEE COMMENTS}	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00211 BLDG 00231 BLDG 00251 BLDG 00253 BLDG 00272 BLDG 00281 BLDG 0058 BLDG 00600 PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00001 SITE 00002 SITE 00003 SITE 00006 SITE 00009 SITE 00012 SITE 00025 SITE 00033 SITE 00036 SITE 00056 SITE 00072 WELL IR09PPY1 WELL IR12MW21A WELL IR28MW151A WELL IR33MW61A WELL IR39MW21A WELL PA36MW08A	CHOICE IMAGING SOLUTIONS SW-20090424-6/8	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001565 BRAC SER BPMOW.MLW/0536 CORRESPONDENC NONE 2	05-12-2009 **05-08-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING THE QUARTERLY GROUNDWATER MONITORING REPORT, APRIL - JUNE 2006, TO REVISION 1 (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	
N00217 / 001099 BRAC SER BPMOW.MLW/0663 CORRESPONDENC NONE 2	07-12-2007 **06-03-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF QUARTERLY GROUNDWATER MONITORING REPORT (JANUARY - MARCH 2007) AND ANNUAL REPORT {PORTION OF MAILING LIST IS SENSITIVE} (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090522-2/7	
N00217 / 001082 BRAC SER BPMOW.MLW/0599 CORRESPONDENC NONE 2	06-21-2007 **06-07-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING REVISION 0 TO REVISION 1 FOR PARCELS C, D, AND E QUARTERLY GROUNDWATER MONITORING REPORT, JULY-SEPTEMBER 2006 (W/OUT ENCLOSURE) [PORTION OF THE DOCUMENT IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090424-4/8	
N00217 / 001088 BRAC SER BPMOW.MLW/0605 CORRESPONDENC NONE 2	07-10-2007 **06-07-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER - DECEMBER 2006) {PORTION OF MAILING LIST IS SENSITIVE} (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-2/7	
N00217 / 001106 BAI-5106-0016-0001 REPORT N68711-03-D-5106 100	07-25-2007 **07-06-2007** CTO 0016	BARAJAS & ASSOCIATES, INC. VEDAGIRI, S. BRAC PMO WEST FORMAN, K.	FEDERAL FACILITIES AGREEMENT (FFA) SCHEDULE	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F	CHOICE IMAGING SOLUTIONS SW-20090717-2/8	

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N00217 / 001132 SULT-5104-0019-0002 REPORT N68711-03-D-5104 12049	08-22-2007 **07-06-2007** CTO 0019	SULTECH KNIGHT, J. BRAC PMO WEST	DRAFT FINAL REVISED FEASIBILITY STUDY (FS) {PORTION OF THE DOCUMENT IS SENSITIVE	ADMIN RECORD INFO REPOSITORY	BLDG 00274 BLDG 00304 BLDG 00313 BLDG 00313A BLDG 00317 BLDG 00322 BLDG 00351 BLDG 00351A BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00383 BLDG 00408 BLDG 00411 BLDG 00436 BLDG 00813 BLDG 00819 DRYDOCK 4 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00008 SITE 00016 SITE 00017 SITE 00022 SITE 00032 SITE 00033 SITE 00034 SITE 00035 SITE 00036 SITE 00037	CHOICE IMAGING SOLUTIONS SW-20090413-1/5 AND SW-20090413-2/5	

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					SITE 00038		
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					SITE 00070		
					SITE 00071		
					SITE EE-12		
					SITE EE-14		
					SITE EE-15		
					SITE EE-16		
					SITE EE-17		
					V09		
					WELL IR09MW35A		
					WELL IR09MW63A		
					WELL IR09PO43A		
					WELL IR09PPY1		
					WELL IR33MW61A		

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N00217 / 001137 BAI-5106-0005-0002 REPORT N68711-03-D-5106 28000	08-24-2007 **07-27-2007** CTO 0005	BARAJAS & ASSOCIATES, INC. VEDAGIRI, S. BRAC PMO WEST	DRAFT REVISED REMEDIAL INVESTIGATION REPORT (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00130 BLDG 00241 BLDG 00371 BLDG 00400 BLDG 00404A BLDG 00405 BLDG 00406 BLDG 00408 BLDG 00413 BLDG 00414 BLDG 00500 BLDG 00503 BLDG 00505 BLDG 00506 BLDG 00507 BLDG 00508 BLDG 00509 BLDG 00510 BLDG 00510A BLDG 00511A BLDG 00514 BLDG 00518 BLDG 00521 BLDG 00524 BLDG 00527 BLDG 00529 BLDG 00600 BLDG 00606 BLDG 00704 BLDG 00707 BLDG 00708 BLDG 00709 BLDG 00803 BLDG 00809 BLDG 00810	CHOICE IMAGING SOLUTIONS SW-20090401-4/6 AND SW-20090401-5/6	

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					BLDG 00811		
					BLDG 00815		
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					CAA-11		
					CAA-12		
					CAA-15		
					CAA-16		
					CAA-19		
					CAA-5		
					CAA-6		
					CAA-7		
					CAA-8		
					CAA-8A		
					CAA-9		
					CAA-9A		
					PARCEL A		
					PARCEL B		
					PARCEL C		
					PARCEL D		
					PARCEL E		
					PARCEL E-2		
					PARCEL F		
					SITE 00001		
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					SITE 00003		
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					SITE 00014		
					SITE 00015		
					SITE 00017		
					SITE 00018		
					SITE 00036		
					SITE 00038		
					SITE 00039		
					SITE 00040		
					SITE 00045		
					SITE 00050		
					SITE 00051		
					SITE 00054		
					SITE 00056		
					SITE 00072		
					SITE 00073		
					UST 0S-505		
					UST 0S-508		
					UST 0S-711		
					UST 0S-712		
					UST 0S-713		
					UST 0S-714		
					UST 0S-715		
					UST 0S-801		
					UST 0S-802		
					WELL IR02MW101A1		
					WELL IR02MW101A2		
					WELL IR02MW114A1		
					WELL IR02MW114A2		
					WELL IR02MW114A3		
					WELL IR02MW126A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR02MW127B		
					WELL IR02MW141A		
					WELL IR02MW146A		
					WELL IR02MW149A		
					WELL IR02MW173A		
					WELL IR02MW175A		
					WELL IR02MW183A		
					WELL IR02MW18A		
					WELL IR02MW196A		
					WELL IR02MW206A1		
					WELL IR02MW206A2		
					WELL IR02MW210B		
					WELL IR02MW298A		
					WELL IR02MW300A		
					WELL IR02MW372A		
					WELL IR02MW373A		
					WELL IR02MW93A		
					WELL IR02MW97A		
					WELL IR02MW98A		
					WELL IR02MWB-1		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR02MWB-2		
					WELL IR02MWB-3		
					WELL IR02MWB-5		
					WELL IR03MW218A1		
					WELL IR03MW218A2		
					WELL IR03MW224A		
					WELL IR03MW225A		
					WELL IR03MW226A		
					WELL IR03MW228B		
					WELL IR03MW342A		
					WELL IR03MW371A		
					WELL IR03MW372A		
					WELL IR03MW373B		
					WELL IR03MWO-1		
					WELL IR04MW37A		
					WELL IR04MW39A		
					WELL IR04MW40A		
					WELL IR05MW73A		
					WELL IR05MW76A		
					WELL IR05MW77A		

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Doc. Control No.	Prc. Date	Author Affil.							
Record Type	Record Date	Author						Location	FRC Accession No.
Contr./Guid. No.	CTO No.	Recipient Affil.						SWDIV Box No(s)	FRC Warehouse
Approx. # Pages	EPA Cat. #	Recipient		Subject		Classification	Sites	CD No.	FRC Box No(s)
							WELL IR05MW85A		
							WELL IR08MW37A		
							WELL IR08MW38A		
							WELL IR08MW42A		
							WELL IR11MW25A		
							WELL IR11MW26A		
							WELL IR11MW27A		
							WELL IR12MW13A		
							WELL IR12MW14A		
							WELL IR12MW15A		
							WELL IR12MW17A		
							WELL IR12MW18A		
							WELL IR12MW19A		
							WELL IR12MW20A		
							WELL IR12MW21A		
							WELL IR14MW09A		
							WELL IR14MW10A		
							WELL IR14MW12A		
							WELL IR14MW13A		
							WELL IR15MW06A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR15MW07A		
					WELL IR15MW08A		
					WELL IR15MW09F		
					WELL IR15MW10F		
					WELL IR36MW11A		
					WELL IR36MW120B		
					WELL IR36MW122A		
					WELL IR36MW1239B		
					WELL IR36MW123B		
					WELL IR36MW125A		
					WELL IR36MW127A		
					WELL IR36MW129B		
					WELL IR36MW12A		
					WELL IR36MW135A		
					WELL IR36MW17A		
					WELL IR38MW02A		
					WELL IR39MW21A		
					WELL IR39MW23A		
					WELL IR39MW33A		
					WELL IR39MW35A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR39MW36A WELL IR56MW39A WELL IR72MW32A WELL IR74MW01A WELL PA36MW03A WELL PA36MW04A WELL PA36MW06A WELL PA36MW07A WELL PA50MW05A WELL PA50MW09A WELL PA50MW10A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001089 NONE REPORT N62473-06-C-2001 1200	07-10-2007 **08-01-2007** NONE	CE2 - KLEINFELDER KILDUFF, E. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER - DECEMBER 2006) REVISION 1 (INCLUDES REPLACEMENT PAGES CONVERTING THE QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER - DECEMBER 2006) DATED APRIL 2007 TO REVISION 1)	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00211 BLDG 00231 NORTH BLDG 00231 SOUTH BLDG 00251 BLDG 00253 BLDG 00258 BLDG 00272 BLDG 00281 BLDG 00600 PARCEL C PARCEL D PARCEL E PARCEL E-2 SITE 00001 SITE 00002 SITE 00003 SITE 00009 SITE 00012 SITE 00025 SITE 00028 SITE 00032 SITE 00033 SITE 00036 SITE 00056 SITE 00071 SITE 00072 WELL IR02MW179A WELL IR02MW209A WELL IR06MW35A1 WELL IR06MW40A	CHOICE IMAGING SOLUTIONS SW-20090508-2/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR06MW59A1		
					WELL IR09MW51F		
					WELL IR09MWPPY1		
					WELL IR12MW21A		
					WELL IR25MW11A		
					WELL IR25MW16A		
					WELL IR25MW54A		
					WELL IR25MW902B		
					WELL IR28MW136A		
					WELL IR28MW151A		
					WELL IR28MW169A		
					WELL IR28MW188F		
					WELL IR28MW211F		
					WELL IR28MW300F		
					WELL IR28MW406A		
					WELL IR28MW407		
					WELL IR28MW407A		
					WELL IR33MW61A		
					WELL IR36MW08A		
					WELL IR39MW21A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR50MW07A WELL IR58MW31A WELL IR58MW33B WELL IR71MW03A		
N00217 / 001142 BRAC SER BPMOW.REP/0777 CORRESPONDENC NONE 2	09-13-2007 **08-21-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING THE FINAL PROJECT WORK PLAN BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL, DATED 21 APRIL 2006, TO REVISION 1 (PORTION OF THE MAILING LIST IS SENSITIVE) [W/OUT ENCLOSURE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-4/7	
N00217 / 001199 BRAC SER BPMOW.REP/0841 CORRESPONDENC NONE 3	11-13-2007 **09-13-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE DRAFT REVISED FEASIBILITY STUDY REPORT (W/OUT ENCLOSURE) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090413-2/5	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001200 SULT-5104-0018-0002 REPORT N68711-03-D-5104 19064	11-13-2007 **09-17-2007** CTO 0018	SULTECH DELHOMME, S. BRAC PMO WEST	DRAFT REVISED FEASIBILITY STUDY (FS) REPORT [CD COPY ENCLOSED]	ADMIN RECORD INFO REPOSITORY	BLDG 00123 BLDG 00134 BLDG 00203 BLDG 00205 BLDG 00211 BLDG 00214 BLDG 00224 BLDG 00231 BLDG 00241 BLDG 00251 BLDG 00252 BLDG 00253 BLDG 00258 BLDG 00270 BLDG 00271 BLDG 00272 BLDG 00281 PARCEL C SITE 00006 SITE 00025 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00045 SITE 00049 SITE 00050 SITE 00051 SITE 00057 SITE 00058 SITE 00063 SITE 00064 WELL IR06MW59A1 WELL IR06MW59A2	CHOICE IMAGING SOLUTIONS SW-20090413-2/5 AND SW-20090413-3/5	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR25MW15A1		
					WELL IR25MW15A2		
					WELL IR25MW18A		
					WELL IR25MW19A		
					WELL IR25MW54A		
					WELL IR25MW902B		
					WELL IR28MW127A		
					WELL IR28MW129A		
					WELL IR28MW151A		
					WELL IR28MW155		
					WELL IR28MW211F		
					WELL IR28MW272A		
					WELL IR28MW300F		
					WELL IR28MW338A		
					WELL IR28MW407		
					WELL IR28MW911A		
					WELL IR58MW31A		
					WELL IR58MW33B		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001160 ECSD-2201-0003-0003 REPORT N62473-06-D-2201 100	10-02-2007 **09-28-2007** CTO 0003	TETRA TECH EC, INC. STEPHAN, C. BRAC PMO WEST	DRAFT RADIOLOGICAL ADDENDUM TO THE REVISED FEASIBILITY STUDY (FS) [CD COPY ENCLOSED]	ADMIN RECORD INFO REPOSITORY	BLDG 00114 BLDG 00274 BLDG 00351 BLDG 00351A BLDG 00351B BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00401 BLDG 00408 BLDG 00411 BLDG 00813 BLDG 00815 BLDG 00819 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00313 SITE 00313A SITE 00317 SITE 00317A SITE 00322 SITE 00364 SITE 00365 SITE 00383 SITE 00408	CHOICE IMAGING SOLUTIONS SW-20090413-2/5	
N00217 / 004235 FWSD-RAC-05-0165.R1 REPORT N62473-06-D-2201 75	10-17-2007 **10-05-2007** CTO 0006	TETRA TECH EM INC. HENDERSON, B. BRAC PMO WEST	BASE-WIDE RADIOLOGICAL WORK PLAN, REVISION 1 (CD COPY IS ENCLOSED)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090702-6/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001191 BRAC SER BPMOW.MLW/0038 CORRESPONDENC NONE 2	11-01-2007 **10-18-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING THE QUARTERLY GROUNDWATER MONITORING REPORT (OCTOBER - DECEMBER 2006) TO REVISION 1 (PORTION OF MAILING LIST IS SENSITIVE) [W/OUT ENCLOSURE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E	CHOICE IMAGING SOLUTIONS SW-20090508-3/7	
N00217 / 001100 CEKA-3001-0000-0002.R1 REPORT N62473-07-C-3001 5238	07-12-2007 **11-01-2007** NONE	CE2 - KLEINFELDER RUCKER, B. BRAC PMO WEST	QUARTERLY GROUNDWATER MONITORING REPORT (JANUARY - MARCH 2007) AND ANNUAL REPORT, REVISION 1 (INCLUDES REPLACEMENT PAGES CONVERTING DOCUMENT, DATED 01 JUNE 2007, TO REVISION 1, AND CD COPY)	ADMIN RECORD INFO REPOSITORY	PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090522-3/7	
N00217 / 001267 CEKA-3001-0000-0004 REPORT N62473-07-C-3001 10000	02-11-2008 **11-01-2007** NONE	CE2-KLEINFELDER JOINT VENTURE RUCKNER, B. BRAC PMO WEST	SEMI-ANNUAL GROUNDWATER MONITORING REPORT, APRIL - SEPTEMBER 2007, VOLUMES 1, 2, AND 3 OF 3 {INCLUDES ANALYTICAL DATA} {CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-6/7	
N00217 / 001231 BRAC SER BPMOW.MLW/0096 CORRESPONDENC NONE 2	11-29-2007 **11-15-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING QUARTERLY GROUNDWATER MONITORING REPORT (JANUARY - MARCH 2007) AND ANNUAL REPORT, DATED 1 JUNE 2007, TO REVISION 1 (PORTION OF THE MAILING LIST IS SENSITIVE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090522-6/7	

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N00217 / 001251 CHAD-3213-0019-0002 REPORT N62473-07-D-3213 21000	01-07-2008 **12-12-2007** CTO 0019	CHADUXTT JV MOWER, T. BRAC PMO WEST	FINAL TECHNICAL MEMORANDUM IN SUPPORT OF A RECORD OF DECISION AMENDMENT (TMSRA) (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00103 BLDG 00104 BLDG 00109 BLDG 00113 BLDG 00114 BLDG 00115 BLDG 00116 BLDG 00117 BLDG 00120 BLDG 00123 BLDG 00125 BLDG 00128 BLDG 00130 BLDG 00134 BLDG 00140 BLDG 00141 BLDG 00146 BLDG 00157 PARCEL A PARCEL B PARCEL C SITE 00007 SITE 00018 SITE 00020 SITE 00023 SITE 00024 SITE 00026 SITE 00042 SITE 00061 SITE 00062 WELL IR07MW20A WELL IR07MW21A-1 WELL IR07MW24A	CHOICE IMAGING SOLUTIONS SW-20090508-3/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR07MW25A		
					WELL IR07MW26A		
					WELL IR07MWS-1		
					WELL IR07MWS-2		
					WELL IR07MWS-4		
					WELL IR10MW12A		
					WELL IR10MW14A		
					WELL IR10MW59A		
					WELL IR18MW09A		
					WELL IR18MW21A		
					WELL IR24MW04A		
					WELL IR25MW61A1		
					WELL IR25MW61A2		
					WELL IR26MW41A		
					WELL IR26MW45A		
					WELL IR26MW46A		
					WELL IR26MW47A		
					WELL IR26MW48A		
					WELL IR26MW49A		
					WELL PA50MW02A		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001243 BRAC SER BPMOW.SAK/0161 CORRESPONDENC NONE 2	12-27-2007 **12-17-2007** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE DRAFT RADIOLOGICAL ADDENDUM TO THE REVISED FEASIBILITY STUDY (FS) REPORT [W/OUT ENCLOSURE] {PORTION OF MAILING LIST IS SENSITIVE}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090413-3/5	
N00217 / 001245 ECSD-2201-0006-0035 REPORT N62473-06-D-2201 904	12-27-2007 **12-17-2007** CTO 0006	TETRA TECH EC, INC. DOUGHERTY, B. BRAC PMO WEST	DRAFT RADIOLOGICAL ADDENDUM TO THE REVISED FEASIBILITY STUDY (FS) REPORT (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00203 BLDG 00205 BLDG 00211 BLDG 00213 BLDG 00224 BLDG 00241 BLDG 00253 BLDG 00271 BLDG 00272 PARCEL C SITE 00006 SITE 00025	CHOICE IMAGING SOLUTIONS SW-20090413-3/5	
N00217 / 001264 BAI.5106.0005.0006 REPORT N68711-03-D-5106 100	02-07-2008 **01-18-2008** CTO 0005	BARAJAS & ASSOCIATES, INC. ONO, Y. BRAC PMO WEST	FINAL TECHNICAL MEMORANDUM: NONREPRESENTATIVE GROUNDWATER SAMPLES AND INFLUENCES ON RESULTS OF HUMAN HEALTH, RISK ASSESSMENTS (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090522-6/7	

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N00217 / 001487 BAI.5106.0016.0015 MINUTES N68711-03-D-5106 45	12-24-2008 **01-24-2008** CTO 0016	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	24 JANUARY 2008 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES AND TRANSCRIPT (INCLUDES LIST OF ATTENDEES, ACTION ITEMS, AND CD COPY)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00117 BLDG 00140 BLDG 00813 BLDG 00819 PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00007 SITE 00009 SITE 00018 SITE 00026 SITE 00033 SITE 00071 WELL 00046A WELL 00047A WELL 00048A WELL 00049A	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001276 BRAC SER BPMOW.SAK/0227 CORRESPONDENC NONE 2	03-17-2008 **02-04-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE DRAFT FINAL REVISED FEASIBILITY STUDY REPORT {PORTION OF MAILING LIST IS SENSITIVE} (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090508-4/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
N00217 / 001277 SULT.5104.0018.000 3 REPORT N68711-03-D-5104 19300	03-17-2008 **02-04-2008** CTO 0018	SULTECH DELHOMME, S. BRAC PMO WEST	DRAFT FINAL REVISED FEASIBILITY STUDY (FS) REPORT {INCLUDES ANALYTICAL DATA} (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00144 BLDG 00203 BLDG 00205 BLDG 00211 BLDG 00218 BLDG 00219 BLDG 00224 BLDG 00231 BLDG 00241 BLDG 00251 BLDG 00253 BLDG 00271 BLDG 00272 BLDG 00281 PARCEL C SITE 00006 SITE 00025 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00045 SITE 00049 SITE 00050 SITE 00051 SITE 00057 SITE 00058 SITE 00063 SITE 00064 UST S-209 WELL IR28MW124A WELL IR28MW126A	CHOICE IMAGING SOLUTIONS SW-20090508-4/7 AND SW-20090508-5/7	

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR28MW127A		
					WELL IR28MW128A		
					WELL IR28MW129A		
					WELL IR28MW155		
					WELL IR28MW188F		
					WELL IR28MW189F		
					WELL IR28MW190F		
					WELL IR28MW216F		
					WELL IR28MW299B		
					WELL IR28MW300F		
					WELL IR28MW314B		
					WELL IR28MW31A		
					WELL IR28MW32B		
					WELL IR28MW338A		
					WELL IR28MW33B		
					WELL IR28MW354A		
					WELL IR28MW35A		
					WELL IR28MW360F		
					WELL IR28MW36A		
					WELL IR28MW397B		

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject	Classification	Sites	Location SWDIV Box No(s) CD No.	FRC Accession No. FRC Warehouse FRC Box No(s)
					WELL IR28MW407 WELL IR28MW909A WELL IR28MW911A WELL IR28MW914A WELL IR28MW919A WELL IR58MW32B		
N00217 / 001488 BAI.5106.0016.0017 MINUTES N68711-03-D-5106 39	12-24-2008 **02-28-2008** CTO 0016	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	28 FEBRUARY 2008 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES AND TRANSCRIPT (INCLUDES LIST OF ATTENDEES, ACTION ITEMS, AND CD COPY)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001295 BRAC SER BPMOW.SAK/0316 CORRESPONDENC NONE 2	04-08-2008 **03-11-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE DRAFT FINAL RADIOLOGICAL ADDENDUM, TO THE REVISED FEASIBILITY STUDY (FS) REPORT (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090508-5/7	
N00217 / 001297 ECSD-2201-0006-0075 REPORT N62473-06-D-2201 900	04-08-2008 **03-11-2008** CTO 0006	TETRA TECH EC, INC. DOUGHERTY, B. BRAC PMO WEST	DRAFT FINAL RADIOLOGICAL ADDENDUM, TO THE REVISED FEASIBILITY STUDY (FS) REPORT (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00203 BLDG 00205 BLDG 00211 BLDG 00214 BLDG 00224 BLDG 00241 BLDG 00253 BLDG 00271 BLDG 00272 PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090508-5/7	

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N00217 / 001490 BAI.5106.0016.0020 MINUTES N68711-03-D-5106 73	12-24-2008 **04-24-2008** CTO 0016	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	24 APRIL 2008 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES AND TRANSCRIPT (INCLUDES LIST OF ATTENDEES, ACTION ITEMS, AND CD COPY)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00819 PARCEL 049 PARCEL B PARCEL C PARCEL D PARCEL E-2 SITE 00009 SITE 00033 SITE 00071	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001491 BAI.5106.0016.0022 MINUTES N68711-03-D-5106 20	12-24-2008 **05-22-2008** CTO 0016	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	22 MAY 2008 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES AND TRANSCRIPT (INCLUDES LIST OF ATTENDEES, ACTION ITEMS, AND CD COPY)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00813 BLDG 00815 BLDG 00819 PARCEL 00049 PARCEL B PARCEL C PARCEL D PARCEL E-2 SITE 00001 SITE 00002 SITE 00007 SITE 00009 SITE 00010 SITE 00018	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001347 BRAC SER BPMOW.DJ/0522 CORRESPONDENC NONE 2	07-02-2008 **06-17-2008** NONE	BRAC PMO WEST FORMAN, K. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA KOHLI, V.	TRANSMITTAL OF THE FINAL RESPONSE TO COMMENTS ON THE FINAL BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL PROJECT WORK PLAN, REVISION 1 (W/ OUT ENCLOSURE) [PORTION OF MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	

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N00217 / 001348 ECSD-2201-0006-0079 CORRESPONDENC N62473-06-D-2201 13	07-02-2008 **06-17-2008** CTO 0006	TETRA TECH EC, INC. NAVFAC - SOUTHWEST	FINAL RESPONSE TO COMMENTS ON THE FINAL BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL PROJECT WORK PLAN, REVISION 1 (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	

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N00217 / 001333 JNS-7417-0004-0172 REPORT N68711-05-G-7417 250	06-23-2008 **06-18-2008** CTO 0004	JONAS AND ASSOCIATES INC. MALAEB, S. BRAC PMO WEST URIZAR, L.	DRAFT SECOND FIVE-YEAR REVIEW OF REMEDIAL ACTIONS (CD COPY ENCLOSED) [PORTION OF MAILING LIST IS SENSITIVE]	POST DECISION FILE SENSITIVE	BLDG 00123 BLDG 00134 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00007 SITE 00018 SITE 00026 WELL IR07MW12A WELL IR07MW21 WELL IR07MW24A WELL IR07MWS-4 WELL IR10MW13A1 WELL IR10MW23A WELL IR10MW33A WELL IR10MW59A WELL IR10MW61A WELL IR10MW71A WELL IR26MW47A WELL IR26MW49A	CHOICE IMAGING SOLUTIONS SW-20090605-2/9	

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N00217 / 001451 BRAC SER BPMOW.SAK/0479 CORRESPONDENC NONE 2	11-04-2008 **06-20-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE RADIOLOGICAL ADDENDUM, FINAL REVISED FEASIBILITY STUDY (W/OUT ENCLOSURE) [PORTION OF THE MAILING LIST IS SENSITIVE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001452 ECSD-2201-0006-0077 REPORT N62473-06-D-2201 915	11-04-2008 **06-20-2008** CTO 0006	TETRA TECH EC, INC. DOUGHERTY, B. BRAC PMO WEST	RADIOLOGICAL ADDENDUM, FINAL REVISED FEASIBILITY STUDY (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY	BLDG 00203 BLDG 00205 BLDG 00211 BLDG 00214 BLDG 00224 BLDG 00241 BLDG 00253 BLDG 00271 BLDG 00272 PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	

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N00217 / 001492 BAI.5106.0016.0025 MINUTES N68711-03-D-5106 43	12-24-2008 **06-26-2008** CTO 0016	BARAJAS & ASSOCIATES, INC. RAB MEMBERS	26 JUNE 2008 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES AND TRANSCRIPT (INCLUDES LIST OF ATTENDEES, ACTION ITEMS, AND CD COPY)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BLDG 00140 BLDG 00144 BLDG 00317 BLDG 00351 BLDG 00351A BLDG 00364 BLDG 00365 BLDG 00366 BLDG 00401 BLDG 00408 PARCEL B PARCEL C PARCEL D PARCEL D-2 PARCEL E PARCEL E-2 PARCEL G SITE 00007 SITE 00317	CHOICE IMAGING SOLUTIONS SW-20090619-4/9	
N00217 / 001412 CEKA-3001-0000-0008 REPORT N62473-07-C-3001 8000	09-10-2008 **07-01-2008** NONE	CE2-KLEINFELDER JOINT VENTURE RUCKER, B. BRAC PMO WEST	SEMI-ANNUAL GROUNDWATER MONITORING REPORT (OCTOBER 2007 - MARCH 2008) [INCLUDES ANALYTICAL DATA AND CD COPY] {SEE RECORD # 1408 - BRAC PMO WEST TRANSMITTAL LETTER}	ADMIN RECORD INFO REPOSITORY	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090605-6/9	
N00217 / 001397 BRAC SER BPMOW.SAK/0613 CORRESPONDENC NONE 3	08-13-2008 **07-31-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE FINAL FEASIBILITY STUDY REPORT (PORTION OF THE MAILING LIST IS SENSITIVE) [W/ OUT ENCLOSURE] {SEE RECORD # 1398 - FINAL FEASIBILITY STUDY REPORT}	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090619-2/9	

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N00217 / 001398 SULT.5104.0018.000 4 REPORT N68711-03-D-5104 40000	08-13-2008 **07-31-2008** CTO 0018	SULTECH HALL, S. BRAC PMO WEST	FINAL FEASIBILITY STUDY REPORT (INCLUDES ANALYTICAL DATA) [CD COPY ENCLOSED]	ADMIN RECORD INFO REPOSITORY	BLDG 00134 BLDG 00204 BLDG 00205 BLDG 00207 BLDG 00231 BLDG 00241 BLDG 00253 BLDG 00258 BLDG 00272 BLDG 00273 BLDG 00281 PARCEL C SITE 00006 SITE 00025 SITE 00045 SITE 00049 SITE 00050 SITE 00051 WELL IR28MW124A WELL IR28MW125A WELL IR28MW126A WELL IR28MW129A WELL IR28MW131A WELL IR28MW155 WELL IR28MW171 WELL IR28MW188F WELL IR28MW300F WELL IR28MW35A	CHOICE IMAGING SOLUTIONS SW-20090619-3/9 AND SW-20090619-4/9	

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					WELL IR28MW397B WELL IR28MW401B WELL IR28MW909A WELL IR28MW911A WELL IR28MW914A		
N00217 / 001408 BRAC SER BPMOW.HGK/0784 CORRESPONDENC NONE 2	09-10-2008 **08-28-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE SEMI-ANNUAL GROUNDWATER MONITORING REPORT (OCTOBER 2007- MARCH 2008) [PORTION OF THE MAILING LIST IS SENSITIVE] {W/OUT ENCLOSURE} (SEE RECORD # 1412 - SEMI-ANNUAL GROUNDWATER MONITORING REPORT)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090605-5/9	
N00217 / 001428 CHAD-3213-0029-0002 REPORT N62473-07-D-3213 50	10-07-2008 **09-01-2008** CTO 0029	CHADUXTT JV NAVFAC - SOUTHWEST	DRAFT PROPOSED PLAN (UNFORMATTED VERSION) [CD COPY ENCLOSED]	ADMIN RECORD	PARCEL C PARCEL UC-2	CHOICE IMAGING SOLUTIONS SW-20090702-1/7	
N00217 / 001427 BRAC SER BPMOW.SAK/0851 CORRESPONDENC NONE 3	10-07-2008 **09-22-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF DRAFT PROPOSED PLAN (UNFORMATTED VERSION) [W/ OUT ENCLOSURE]	ADMIN RECORD	PARCEL C	CHOICE IMAGING SOLUTIONS SW-20090702-1/7	

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N00217 / 001467 JNS-7417-0004-0324 REPORT N68711-05-G-7417 325	11-14-2008 **11-11-2008** CTO 0004	JONAS AND ASSOCIATES INC. MALAEB, S. BRAC PMO WEST	FINAL SECOND FIVE-YEAR REVIEW OF REMEDIAL ACTIONS (CD COPY ENCLOSED)	POST DECISION FILE	BLDG 00134 BLDG 00140 PARCEL A PARCEL B PARCEL C PARCEL D PARCEL E PARCEL E-2 PARCEL F SITE 00007 SITE 00010 SITE 00018 SITE 00026	CHOICE IMAGING SOLUTIONS SW-20090605-6/9	
N00217 / 001462 EMAC-8823-0002-0002 REPORT N62473-08-D-8823 18	12-03-2008 **11-21-2008** CTO 0002	TETRA TECH EC, INC. WEINGARZ, R. BRAC PMO WEST	FINAL EXECUTION PLAN, FISHER AND SPEAR AVENUES SANITARY SEWER AND STORM DRAIN REMOVAL (CD COPY ENCLOSED)	SITE FILE (SF)	PARCEL C PARCEL G PARCEL UC1 PARCEL UC2	CHOICE IMAGING SOLUTIONS SW-20090702-7/7	
N00217 / 000955 FWSD-RAC-06-0675.R3 REPORT N62473-06-D-2201 400	07-13-2006 **11-30-2008** CTO 0006	TETRA TECH EC, INC. DOUGHERTY, B. BRAC PMO WEST	FINAL PROJECT WORK PLAN, REVISION 3, BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL (***SEE COMMENTS)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-1/7	
N00217 / 001476 BRAC SER BPMOW.DCJ/1117 CORRESPONDENC NONE 2	12-08-2008 **12-05-2008** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF REPLACEMENT PAGES CONVERTING THE FINAL PROJECT WORK PLAN, REVISION 2, BASE-WIDE STORM DRAIN AND SANITARY SEWER REMOVAL, TO REVISION 3 (PORTION OF THE MAILING LIST IS SENSITIVE) [W/OUT ENCLOSURE]	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090522-7/7	

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N00217 / 001519 CEKA-3001-0000-0012 REPORT N62473-07-C-3001 8612	03-02-2009 **02-01-2009** NONE	CE2-KLEINFELDER JOINT VENTURE RUCKER, B. BRAC PMO WEST	SEMI-ANNUAL GROUNDWATER MONITORING REPORT (APRIL - SEPTEMBER 2008) [INCLUDES ANALYTICAL DATA AND CD COPY]	POST DECISION FILE	BASEWIDE	CHOICE IMAGING SOLUTIONS SW-20090619-7/9	
N00217 / 001548 TN&A-3217-0004-0008.A1/D & .A1/F REPORT N62473-07-D-3217 27	04-01-2009 **04-10-2009** CTO 0004	TN & ASSOCIATES, INC. SHARMA, S. BRAC PMO WEST	FINAL ADDENDUM 01 TO THE FINAL SAMPLING AND ANALYSIS PLAN (SAP) (FIELD SAMPLING PLAN (FSP) AND QUALITY ASSURANCE PROJECT PLAN (QAPP)) TREATABILITY STUDY FOR VARIOUS ORGANIC COMPOUNDS (***SEE COMMENTS)	ADMIN RECORD INFO REPOSITORY	BLDG 00253 PARCEL C RU C1	CHOICE IMAGING SOLUTIONS SW-20090619-8/9	
N00217 / 001549 TN&A-3217-0004-0009 & TN&A-3217-0004-0009.R1 REPORT N62473-07-D-3217 17	04-01-2009 **04-10-2009** CTO 0004	TN & ASSOCIATES, INC. SHARMA, S. BRAC PMO WEST	FINAL TRANSPORTATION AND DISPOSAL PLAN TREATABILITY STUDY FOR VARIOUS ORGANIC COMPOUNDS (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT, DATED 12 FEBRUARY 2009, TO FINAL, AND CD COPY) [REPLACEMENT PAGES ISSUED ON 20 APRIL 2009]	ADMIN RECORD INFO REPOSITORY	BLDG 00253 PARCEL C RU C1	CHOICE IMAGING SOLUTIONS SW-20090619-8/9	
N00217 / 001546 TN&A-3217-0004-0006 & TN&A-3217-0004-0006.R1 REPORT N62473-07-D-3217 201	04-01-2009 **04-15-2009** CTO 0004	TN & ASSOCIATES, INC. WOLFGANG, C. NAVFAC - SOUTHWEST	FINAL ACCIDENT PREVENTION PLAN (APP)/SITE SAFETY AND HEALTH PLAN (SSHP) TREATABILITY STUDY FOR VARIOUS ORGANIC COMPOUNDS (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT, DATED 12 FEBRUARY 2009, TO FINAL, AND CD COPY) [***SEE COMMENTS]	ADMIN RECORD INFO REPOSITORY	BLDG 00253 PARCEL C RU C1	CHOICE IMAGING SOLUTIONS SW-20090619-8/9	
N00217 / 001547 TN&A-3217-0004-0007 & TN&A-3217-0004-0007.R1 REPORT N62473-07-D-3217 40	04-01-2009 **04-17-2009** CTO 0004	TN & ASSOCIATES, INC. SHARMA, S. BRAC PMO WEST	FINAL DATA MANAGEMENT PLAN TREATABILITY STUDY FOR VARIOUS ORGANIC COMPOUNDS (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT, DATED 12 FEBRUARY 2009, TO FINAL AND CD COPY) [REPLACEMENT PAGES ISSUED ON 20 APRIL 2009]	ADMIN RECORD INFO REPOSITORY	BLDG 00253 PARCEL C RU C1	CHOICE IMAGING SOLUTIONS SW-20090619-8/9	

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N00217 / 001586 BRAC SER BPMOW.SAK/0292 CORRESPONDENC NONE 4	06-17-2009 **05-13-2009** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE DRAFT RECORD OF DECISION (ROD) [W/OUT ENCLOSURE]	ADMIN RECORD INFO REPOSITORY	PARCEL UC-2	NAVFAC SOUTHWEST - BLDG. 1	
N00217 / 001587 CHAD-3213-0039-0003 REPORT N62473-07-D-3213 642	06-17-2009 **05-13-2009** CTO 0039	CHADUXTT JV BRAC PMO WEST	DRAFT RECORD OF DECISION (ROD) [CD COPY ENCLOSED]	ADMIN RECORD INFO REPOSITORY SENSITIVE	PARCEL B PARCEL C PARCEL UC-2 SITE 00006 SITE 00025	NAVFAC SOUTHWEST - BLDG. 1	
N00217 / 001599 ECSD-3211-0018-0002 REPORT N62473-07-D-3211 40	07-27-2009 **06-12-2009** CTO 0018	TETRA TECH EC, INC. DOUGHERTY, B. BRAC PMO WEST	FINAL BASEWIDE DUST CONTROL PLAN (CD COPY ENCLOSED)	ADMIN RECORD INFO REPOSITORY SENSITIVE	BASEWIDE	NAVFAC SOUTHWEST - BLDG. 1	
N00217 / 001598 BRAC SER BPMOW.DCJ/0387 CORRESPONDENC NONE 2	07-27-2009 **06-18-2009** NONE	BRAC PMO WEST FORMAN, K. VARIOUS AGENCIES	TRANSMITTAL OF THE FINAL BASEWIDE DUST CONTROL PLAN (W/OUT ENCLOSURE)	ADMIN RECORD INFO REPOSITORY	BASEWIDE	NAVFAC SOUTHWEST - BLDG. 1	

Total Estimated Record Page Count: 288,716

Total - Administrative Records: 430

[UIC NUMBER]='N00217'

No Keywords

Sites=006;BASEWIDE;PARCEL C;PARCEL UC2;PARCEL UC-2;SITE 00006

No Classification