



**NAVY RESPONSES TO AGENCY COMMENTS
AND AN ADDENDUM TO THE
DRAFT FINAL INTERIM-ACTION OPERABLE UNIT II
SUMMARY ALTERNATIVE SELECTION REPORT
NAVAL STATION TREASURE ISLAND
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA**

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DRAFT FINAL – INTERIM ACTION OPERABLE
UNIT II SUMMARY ALTERNATIVE SELECTION
REPORT

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The following are the Navy's responses to comments by the United States Environmental Protection Agency (EPA), Region IX, Bechtel Environmental, Inc. (Bechtel; reviewer for the United States EPA, Region IX), and the California EPA Department of Toxic Substances Control (DTSC), on the Draft Final Interim-Action Operable Unit II Summary Alternative Selection Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California, dated May 14, 1993. Verbal comments from the Regional Water Quality Control Board (RWQCB) were of the same general nature as DTSC comments; written comments were not submitted to the Navy by the RWQCB. The comments are reproduced here exactly as in the original documents. All written agency comments received are addressed below.

I. EPA OFFICE OF REGIONAL COUNSEL'S COMMENTS AND NAVY RESPONSES

Section 4.0 claims to present the various potential ARARs for the three interim action alternatives considered for Site IR-6. We have the following comments regarding the analysis of these ARARs:

Comment 1: **Primary MCLs:** It appears that MCLs are a potential ARAR for this OU.

Response: The comment is acknowledged.

Comment 2: **Secondary MCLs:** Secondary MCLs (SMCLs) (40 CFR Part 143) are non-enforceable limits designed to establish minimum aesthetic qualities in drinking water. SMCLs and proposed SMCLs may be TBCs for the OU if the selected remedy includes supplying water to a public water supply system.

Response: The comment is acknowledged. SMCLs will be tracked as TBCs if the selected remedy includes supplying water to a public water supply.

Comment 3: **MCLGs:** Use of MCLGs as ARARs is usually reserved to instances where application of MCLs will not provide sufficient protection.

Response: The comment is acknowledged. MCLGs will not be used as ARARs unless application of MCLs will not provide sufficient protection.

Comment 4: **Proposition 65:** To be an ARAR, the requirements of the state law must be more stringent than federal requirements. However, the regulations implementing Proposition 65 state that "[n]othing in this article shall preclude a person from using evidence, standards, risk assessment methodologies, principles, assumptions or levels not described in this article to establish that level of exposure to a listed chemical poses no significant risk." CCR Title 22, Section 12701(a). If the Navy has performed, or will perform, a risk assessment meeting the requirements of CCR Title 22, Section 12721, and has determined that the standards that will be met in the cleanup pose "no significant

risk," as intended by this regulation. The Proposition 65 Title 22 regulations, at Section 12703(b) state:

For chemicals assessed in accordance with this section, the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000 assuming lifetime exposure at the level in question, except where sound consideration of public health support an alternative level, as for example, where a clean-up and resulting discharge is ordered and supervised by an appropriate governmental agency or court of competent jurisdiction. (emphasis added).

Thus, the statute and implementing regulations recognize that the alternative cleanup levels set by U.S. EPA for a Superfund cleanup are adequate to satisfy the requirements of the Act. Therefore, this law does not impose any more stringent requirement for the remedial action at the OU and is not an ARAR.

Response: The comment is acknowledged; Proposition 65 will be deleted as an ARAR.

Comment 5: Antidegradation policy (Resolution No. 68-16): This is a potential ARAR.

Response: The comment is acknowledged.

Comment 6: Sources of Drinking Water Policy (Resolution No. 88-63): This law is not enforceable and is thus not an ARAR.

Response: The comment is acknowledged; the sources of drinking water policy will be deleted as an ARAR.

In addition to the above ARARS cited for all three alternatives, the following are provided as ARARS for at least one of the alternatives:

Comment 1: 40 CFR Section 264.14 (Security at a TSD): In discussion of this ARAR as well as all additional potential RCRA requirements, the Navy states "[b]ecause chemicals at concentrations considered hazardous have been identified at Site IR-6 ... [the following RCRA requirement is an ARAR]." The Navy appears to be assuming that all chemicals at concentrations considered hazardous are RCRA hazardous waste. This assumption, while perhaps correct, does not appear to be substantiated within the documents provided. However, for this review, I will assume that the substances in question are RCRA hazardous wastes.

This is a potential ARAR.

Response: The comment is acknowledged.

Comment 2: 40 CFR Part 264 Subpart F (release from a SWMU): It is unclear what substantive portions of Subpart F will be more stringent than the groundwater monitoring requirements necessary under CERCLA. To the extent such portions of Subpart F are determined, these specific provisions may be an ARAR.

Response: The comment is acknowledged; only portions of 40 CFR 264 Subpart F that are more stringent than the CERCLA groundwater monitoring requirements at the facility will be considered as ARARs.

Comment 3: 40 CFR 264.119 (Post-Closure Notices): While there is a substantial portion of the RCRA closure requirements which are potential ARARs for this OU, 40 CFR 264.119 does not appear to be included within this category. Specifically, the Navy sites the requirement to place a deed restriction as relevant and appropriate; this statement neglects the fact that there is no deed for the property at Hunters Point.

Response: 40 CFR 264.119 requires that the notation be recorded on the deed "or on some other instrument which is normally examined during title search." The Navy anticipates the preparation of a deed in conjunction with any property transfer; the deed could serve as a vehicle for restrictions, covenants or other similar mechanisms for post-closure controls.

Comment 4: EPA Guidelines for Groundwater Classification: This is a potential TBC.

Response: The comment is acknowledged.

Comment 5: 40 CFR 264.601 (Env. Perf. Stds.): This is a potential ARAR.

Response: The comment is acknowledged.

Comment 6: 40 CFR 268 (LDR): This is a potential ARAR.

Response: The comment is acknowledged.

Comment 7: Section 402(p) Clean Water Act: This is a potential ARAR.

Response: The comment is acknowledged.

Comment 8: 23 CCR, Division 3, Chapter 15: A copy of this state requirement was not provided by the Navy. Review of its potential as an ARAR was not undertaken.

Response: The comment is noted.

Comment 9: BAAQMD Rules & Regulations: A copy of the BAAQMD Rules and Regulations was not provided by the Navy for review as potential ARARs.

Response: The comment is noted.

Comment 10: Finally, the ASR apparently fails to discuss to what extent any of the alternatives will comply with the Navy's list of ARARs.

Response: Potential ARARs were presented as they pertain to each of the three alternatives considered. It is the intent of the Navy that the chosen alternative will comply with the substantive requirements of all pertinent ARARs.

II. EPA REGIONAL TOXICOLOGIST'S COMMENTS AND NAVY RESPONSES

Comment 1: As stated in previous comments by EPA on the ASR's, EPA does not support the use of 10^{-4} excess lifetime cancer risk as a cut-off; rather we use 10^{-6} as a point of departure and look at risks within a range of 10^{-6} to 10^{-4} based on site specific factors.

Response: The comment is acknowledged. A thorough analysis of the risk characterization results was provided in the OU II PHEE report dated August 12, 1992, supplemented with two sets of responses to agency comments. The point of departure issue will be further addressed in the parcel-specific studies.

Comment 2: As stated previously, EPA does not support the use of PRGs to screen out class A carcinogens. Class A carcinogens should be carried through the risk assessment.

Response: The comment is acknowledged. A thorough analysis of the risk characterization results was provided in the OU II PHEE report dated August 12, 1992, supplemented with two sets of responses to agency comments. This issue will be further addressed in the parcel-specific studies.

Comment 3: EPA has requested that risk levels be calculated for interim ambient levels. This was done for the Draft Final OU III and IV ASRs but not for the OU II ASR.

Response: The OU II ASR summarizes the RI, PHEE and FS reports prepared for OU II sites; the OU II PHEE report dated August 12, 1992 presents the calculations performed on interim ambient levels. Because the OU III and OU IV ASRs were not summary documents, calculations of interim ambient levels were presented in these documents.

Comment 4: Also as commented upon previously, EPA does not support the determination of health based clean up levels for TPH.

Response: The comment is not applicable to the OU II ASR since the TPH cleanup level is not based on risk assessment calculations. The TPH cleanup level for OU II is based on evaluation of TPH cleanup levels approved at other sites, as documented in the responses to comments on the Draft OU II ASR.

III. EPA RPM COMMENTS AND NAVY RESPONSES

Comment 1: On page 19, the ASR states that "observations made during the removal action and conditions at the site at completion of the removal will be addressed in an addendum to this ASR." When will such an addendum be prepared and what ramifications are there for the action proposed in the ASR? This addendum should precede or be included in the decision document for this ASR.

Response: This information is provided with these responses to comments as an addendum, dated August 13, 1993. In general, a portion of the soil previously targeted for onsite treatment was found to contain free phase hydrocarbons (free product) during the removal action; this soil would now be targeted for Class I disposal. Soil collected during demolition and removal of the tanks and associated piping that was disposed offsite would also be deducted from the total amount originally targeted for Class I disposal. In addition, dewatering activities during excavation would include passage of groundwater through an oil/water separator to remove any free product present.

Comment 2: On page 21, the ASR states "...the final determination of ARARs will be made by EPA as part of the selection of the remedy, and will take into account public comment." The final determination of ARARS and selection of the remedy is the responsibility of the Navy as lead agency, not EPA. EPA would either concur with or dispute the Navy's final determination.

Response: The comment is noted. EPA will either concur with or dispute ARARs proposed by the Navy.

Comment 3: The following comments pertain to the rationale used to consider interim-action on pages 41-43:

Comment 3a: For Site IR-8, the ASR states that "Potential exposures to future users of the site, assuming continued commercial uses...could be mitigated; therefore direct contact exposures to soil through the exposure pathways described in the OU II PHEE Report are not expected."

First, a decision regarding future uses of the site has not been made; second mitigation implies some form of remediation; third, cleanup decisions should be based on the results of the quantitative risk assessment, not some other set of assumptions which discount the risk assessment.

A more appropriate rationale for not taking interim action would be criteria such as that there are no current exposures, or access to the site is restricted to prevent exposure, and that cleanup to protect future uses will be assessed in the Parcel RI/FS when additional data are available.

Response: The comment is noted. The rationale for not evaluating current exposures is similar to that suggested in the third paragraph of the comment, as noted in Section 5.2 of the ASR. Also, the data collected at Site IR-8 will be reassessed as part of parcel RI/FS studies.

Comment 3b: The rationale used to weed out interim-action at other IR sites was not applied to IR-6. Diesel fuel appears to drive the IR-6 cleanup. The rationale for this is not stated, nor is the extent of floating product described.

Response: Please refer to Section 5.4.7. Although there are no promulgated standards for cleanup of diesel fuel from sources such as the aboveground tanks at Site IR-6, TRGs were proposed based on knowledge of RWQCB's common enforcement of such cleanups from a perspective of water quality protection. Please refer to responses to the following agency comments in Appendix E of the Draft Final Summary OU II ASR:

- DTSC General Comment 6
- DTSC General Comment 7
- DTSC Specific Comment 11
- RWQCB General Comment 4
- RWQCB Specific Comment 5

Data collected during the remedial investigation did not indicate that floating product was present. Floating product was not observed in monitoring wells sampled, and maximum concentrations of diesel and oil and grease in groundwater were 4.9 and 6.8 mg/l, respectively. The removal action performed at the Tank Farm (Site IR-6) subsequently discovered free phase petroleum hydrocarbons beneath the tanks within bermed areas that were inaccessible during the period of RI activities. Field observations and initial results of data collection performed during the removal action were used to revise the assumptions made during development of interim action remedial units and alternatives for the OU II ASR. These revisions are provided in the attached addendum. A construction report for the removal action is in preparation and will be submitted for agency review upon completion.

Comment 4: On page 43, commercial use TRGs are the basis for determining the size of the interim action soil remedial unit. This could result in additional action needed if residential use TRGs are selected for parcel cleanup.

Response: The comment is noted; the size of the interim action soil remedial unit would be somewhat larger if based on residential TRGs. The OU II FS defined remedial units based on residential TRGs; this

information could be applied to interim action if land use scenarios were decided upon prior to the design and implementation stage. Otherwise, the information on the residential use scenario could be applied to parcel cleanup.

Comment 5: In Section 6.2, the ASR states that Remedial Action Objectives (RAOs) are to reduce risk within a range of 10^{-4} to 10^{-6} , yet Appendix A states that "setting the target risk equal to 1×10^{-4} yields the initial estimates of TRG." These statements are not consistent.

Response: Setting a TRG based on a target risk of 1×10^{-4} is expected to yield levels in soil that would result in residual risks within a target risk range of 1×10^{-4} to 1×10^{-6} .

Comment 6: On page 48, treatment of ground water is discounted due to TDS levels. For the Parcel RI/FS's and site wide cleanup, the Navy should still retain treatment as an option for the groundwater.

Response: The comment is acknowledged. Groundwater treatment technologies will be evaluated as appropriate in Parcel FS studies.

Comment 7: The detailed analysis of alternatives is written as if the Navy were looking at final as opposed to interim actions. For example: For Alternative 1 - No Action/Institutional Action, the ASR states on page 53, Section 6.5.1, that "The implementation of this alternative would presumably discontinue any further remedial measures at the site after implementation of the Tank Farm Removal Action." This alternative only applies to the need for interim action; if it were selected now, future action would still be considered as part of the Parcel RI/FS.

Response: The comment is acknowledged. For the purposes of interim action for this alternative, the 5-year period recommended by the EPA's Superfund Accelerated Cleanup Model (SACM) guidance was applied. No further remedial measures were evaluated within the scope of the interim action document; final action will still be considered as part of the Parcel RI/FS.

Comment 8: On page 53, Section 6.5.1.1, the ASR states "It is expected that continued monitoring of the groundwater would be necessary, and deed restrictions would need to be imposed if this land is transferred before completion of the final ROD." First, the Parcel RI/FS/ROD will precede the final site-wide ROD. Second, transfer of this parcel would be unlikely without a Parcel ROD in place, since it is not a clean site. Under CERCLA, it must be demonstrated that all remedial action has been taken prior to a transfer (except in the case of a lease).

Response: The Navy agrees that transfer of this land before completion of the final ROD is unlikely; however, in the case of a lease, a restriction may need to be imposed. Therefore this possibility was included in the analysis. The Navy acknowledges that, under CERCLA, it must be demonstrated that all remedial actions have been taken prior to a transfer, except in the case of a lease.

Comment 9: Again, in Section 6.5.1.2, Cost, the No Action Alternative is analyzed as if being proposed as a final action versus an interim action.

Response: If no action is the preferred alternative, the sites will be eliminated from the Interim Action ASR process and will then be addressed in the parcel-based RI/FS. The costs associated with institutional controls during the 5-year period recommended by SACM guidance for cost estimating purposes are not presented or intended as final remedy costs.

Comment 10: On page 56, the ASR describes treatment and placement of contaminated soil within an excavated area. If the waste being excavated and treated is a RCRA hazardous waste, this activity could trigger Land Disposal Restrictions (LDR) ARARs.

Response: The comment is acknowledged; however, hazardous waste would be disposed offsite, and treatment would only be applied to nonhazardous wastes at the site.

Comment 11: On page 57, LDR for offsite disposal of hot spots is discussed. Has possible cost of stabilization been included in the cost analysis for this action?

Response: Stabilization costs are included for disposal of hazardous waste at a Class I landfill.

Comment 12: On page 58, the ASR states that long-term effectiveness for Alternative 2 would result in an immediate reduction of long-term risks to current and future users of HPA. This statement only applies to the commercial use scenario. The statement cannot be made at this time that this alternative is expected to meet the final action objectives at the site since those have not yet been agreed upon.

Response: The Navy agrees that reduction of long-term risks only applies to the commercial use scenario presented in the ASR; a residential land use assessment was presented in the OU II FS. Based on the assumption that final action objectives will be consistent with current commercial scenario remedial goals and objectives, it is expected that final action objectives for a future commercial use would be met.

Comment 13: Page 62 of the ASR states that implementing Alternative 3 would "eliminate the potential for human exposure and...is expected to meet

final action objectives..." This alternative would reduce the exposure to a certain risk level for a certain use, not eliminate exposure, and again, the final action objectives are not currently known.

Response: The comment is acknowledged; please refer also to Response to Comment 12, above.

Also, how could residual risks be within or below the target risk range of 10^{-4} to 10^{-6} if TRGs are based on 10^{-4} , as is stated on page A-1?

Response: Please refer to the Response to Comment 5, above.

Comment 14: Page 63 of the ASR states that "State, federal and community acceptance of the Interim Action remedial alternatives cannot be determined at this time and will be addressed in the ROD." It is EPA's position that there should not be a ROD for this interim action, but that a removal action should be done, supported by an Action Memorandum.

Response: The comment is acknowledged; state, federal, and community acceptance will be addressed during the public comment period prior to the removal action.

IV. BECHTEL'S COMMENTS AND NAVY RESPONSES

Comment 1: Response to General Comment 1:

The discussion in Sections 2.0 of conditions that must be met before an interim action is recommended should be further clarified. Quantitative (or semi-quantitative) criteria should be provided for the following:

- assessment of chemicals most frequently detected in soil samples, e.g., 10% of surface (0- to 2-foot depth) samples;
- assessment of chemical most consistently detected in groundwater samples from the same wells in different sampling rounds, e.g., 2 samples with detectable concentrations above background out of 3 samples;
- comparison of soil and groundwater metal concentrations to disputed background levels and health based levels, e.g., if the 95% upper confidence limit Cd concentration in a quaternary bay mud sample was less than or equal to the site wide bay mud background concentration, then the bay mud was not considered contaminated;
- assessment of spatial trends in the chemical concentrations in soil and groundwater, e.g., decreasing concentration with increasing distance from a location where a spill may have occurred;
- comparison of soil and groundwater chemical distributions, e.g., areas of high soil concentration are associated with areas of high groundwater concentrations and the relationship between the distributions is consistent with probable soil to groundwater transport mechanisms;
- comparison of groundwater concentrations to MCLs, e.g., concentrations determined in three sampling rounds were averaged and the upper 95% confidence limit concentration was compared to the corresponding MCL;
- identification of remedial units using risk assessment results, e.g., if surface (0 to 2-foot depth) soil concentrations were less than or equal to health based levels, then the soil represented by that sample was excluded from the remedial unit.

A flow chart should be developed that includes the decision criteria requested above and incorporated into Section 2.0 of the report.

Response: The evaluation process for assessing whether or not an interim action is necessary is presented in Section 2.3 of the ASR. Discussion of the chemical data collected as part of the RI and evaluation of areas indicative of point-source releases was presented in the OU II RI; the

ASR summarized those results. The use of risk assessment results to define remedial units is described in Section 2.3.

Comment 2: Response to General Comment 2:

Sufficient data from the OU II remedial investigation report, public health and environmental evaluation report, and feasibility study report have not been presented to support the selection of the interim remedial action alternative proposed in this ASR. For example, plates illustrating soil and groundwater contaminant distributions and remedial units would be more illustrative of the horizontal extent of contamination if they were annotated to include the results of sampling and analysis. The rationale for the vertical extent of a remedial unit should be illustrated with a cross section.

The conceptual model presented as Plate J1 of Appendix J of the OU II RI Report is not acceptable. The model should be specific to OU-II (or specific to IR-6, IR-8, IR-9, and IR-10) and include a three dimensional pictorial representation of all potentially complete exposure pathways, OU II contaminant sources, potential contaminant sources under investigation in adjacent areas (e.g., PA-24, PA-25, PA-33, and PA-37), OU-II exposure points, release mechanisms, transport media, and receptors. The limited nature of the proposed interim remedial action should be contrasted with the conceptual model.

Response: The OU II ASR is a summary document of the RI, PHEE and FS documents prepared for OU II sites; the information was presented in the RI and FS reports dated June 12, 1992 and October 12, 1992, respectively.

The conceptual model presented on Plate J1 was a general overview of possible migration pathways at OU II sites and was not meant to be specific to each site, given that they are not in geographic proximity to each other. Results of a comprehensive exposure assessment were presented in the OU II PHEE dated August 12, 1992 where possible exposure points, release mechanisms, transport media and receptors were addressed. Possible chemical releases from other OUs or PAs to OU II sites will be addressed further in the parcel-specific studies; the possibility of these sources affecting OU II sites was addressed in the OU II reports to the extent possible given available chemical data. Limitations on quantitative consideration of inter-site interactions were called out in the OU II reports; it is expected that they will not affect analyses conducted as part of parcel RI/FS studies. Those limitations were called out as part of the rationale for reporting ASRs instead of RI/FS reports for these operable units.

V. BECHTEL'S EVALUATION OF NAVY'S RESPONSE TO EPA COMMENTS ON THE SUPPLEMENTAL REGULATORY AGENCY COMMENTS ON THE DRAFT OU II PHEE REPORT, AND NAVY RESPONSES

This document contains EPA's evaluation of the Navy's 23 April 1993 response to comments made by the EPA on the Public Health and Environmental Evaluation Report. The Navy's response address two unresolved issues: 1. use of total health-based levels (tHBL) in the selection of chemicals of potential concern (COPC) and 2. exclusion of hexavalent chromium as a soil contaminant.

EPA Region IX does not approve of the use of risk-based concentrations to select COPCs and requires Group A carcinogens to be carried through the risk assessment even though initial screening indicates that the concentrations of those carcinogens are too low to present a significant risk.

Comment: Use of Risk-Based Concentrations to Screen COPCs

Region IX requires risk assessments to be performed in accordance with guidelines developed by EPA for Superfund sites. Current guidelines specify conducting risk assessments on all chemical analytes found in concentrations significantly above background and known or suspected of having been released at the site under investigation. If the number of COPCs is very large, the guidelines allow the list of COPCs to be reduced to a reasonable number. Chemicals may be culled from the initial list on the basis of a toxicity-concentration screen, frequency of detection, and other factors. The guidelines clearly state that the number of COPCs should not be reduced without approval from the EPA remedial program manager (RPM).

With the development of computerized spreadsheets for computations, EPA has found that the cost of eliminating chemicals from the COPC list using risk-based concentrations and other means is approximately the same as the cost of conducting the risk assessment on all of the chemicals. The list of chemicals of concern and additional chemicals (revised Table 7-18) contains 66 chemical substances, including those that were initially eliminated from further consideration because their concentrations were below their respective tHBLs. EPA does not consider 66 to be an unreasonable number of chemicals to include in a risk assessment.

Inclusion in a risk assessment of all known and potential site related chemicals detected at levels significantly above background increases the credibility of any risk assessment. Those that do not contribute significantly to overall risk would be identified in the process. Eliminating such chemicals before the risk assessment is performed does not foster as much confidence in the outcome of the assessment as leaving them in would.

Although the Navy's procedure for reducing the COPC list may be scientifically sound, the act of excluding chemicals, no matter how sound the basis for exclusion is, will most likely reduce significantly the public's confidence in the outcome and the decisions based on the outcome. Therefore, the Navy's response is unacceptable. The risk

assessment should be performed on all of the chemicals on the original list of COPCs.

Response: The COPC selection process will be reviewed with the agencies prior to performing the risk assessments for the parcel-specific studies. Even with the advancements of computer spreadsheets, the Navy does not expect to perform risk characterization on all chemicals detected at a site as long as there are scientific bases for demonstrating that the health risks from some of these chemicals are insignificant, if not negligible. Because the risk assessment process involves more than just spread sheet calculations, carrying all chemicals identified at a site through a risk assessment, as suggested in the comment, could require analysis of their fate and transport properties, preparation of toxicological profiles, exposure modeling, and risk characterization, and would result in a very costly and voluminous document that would not be as focused as those generated to date for HPA.

Comment: **Elimination of Hexavalent Chromium as A COPC in Soil**

According to the Navy, hexavalent chromium was eliminated as a soil COPC because its measured concentration in soil was less than its tHBL; hence, the evaluation presented above applies.

Response: A thorough analysis of hexavalent chromium was provided in the supplemental response to agency comments on the OU II PHEE. This comment will be further addressed in the parcel-specific studies.

VI. DEPARTMENT OF TOXIC SUBSTANCES CONTROL COMMENTS AND NAVY RESPONSES

GENERAL COMMENTS:

Comment 1: This report lacks some important components which could affect the outcome. The Ecological investigation, uninvestigated areas, the selection of the lower bound of 10^{-4} risk as a point of departure and the establishment of background levels are the missing driving factors. It is thus premature to accept the report as an encompassing and conclusive document. However, this report can be used for the purpose of a removal action.

Response: Important aspects of the RI/FS process at HPA which are not included in this ASR, such as results of ecological investigations, results of investigation in adjacent sites, agreement on risk levels and background levels, and areas where the vertical extent of contamination have not fully been investigated, are either currently under investigation or under discussion. Many of these issues have been identified previously by the Navy and, in fact, provided the motivation for the ASR approach. The Navy acknowledges that this ASR is not an encompassing and/or conclusive document and that more information is necessary prior to final evaluation of the fate of OU II sites. As requested, response to the stated DTSC concerns will be incorporated into the parcel RI report.

Comment 2: The recommended treatment alternative for IR-6 seems to be exclusively based on the cost. Although cost is an important factor, but the effectiveness of the treatment must be the focus of the evaluation. Thus, the report must describe the effectiveness of such alternative.

Response: A thorough evaluation of the effectiveness and implementability of each alternative was undertaken in the report and is reflected in the Detailed Analysis, Comparison of Alternatives, and Selection of a Preferred Alternative sections. As discussed in these sections, both alternatives would be equally effective in destroying the contamination, although bioremediation appears to have a slight cost advantage over thermal desorption.

Comment 3: The Department considers that point of departure is 1-in-1,000,000 for the purpose of risk assessment.

Response: The comment is acknowledged and will be considered in the parcel-based RI/FS.

SPECIFIC COMMENTS:

Comment 1: Page 11, paragraph 1, when discussing the point-source, an explanation should accompany the text.

- Response: A brief definition of point sources is provided on page 9, Section 2.2 in the first bullet. Further explanation of point sources will be provided in future reports, as necessary.
- Comment 2:** Page 13, paragraph 3, the lower aquifer investigation is missing from the report. And if the lower aquifer is in communication with the upper, please explain if any vertical extent of the contamination has been investigated.
- Response: The vertical extent of contamination in the lower aquifer has not been fully defined. Continued investigation will be recommended as part of the Parcel B RI Work Plan for Sites IR-6 and IR-10.
- Comment 3:** Page 35, paragraph 2, the Navy is not certain if "the adverse health effects of arsenic, antimony, manganese, lead and other metals are associated with the ambient conditions at the site." Nonetheless, the Navy has concentrated on only three chemicals or concern. Please explain the inconsistency.
- Response: The three chemicals of concern addressed in the ASR are considered site-related chemicals; the other metals were considered to be associated with natural occurrences or non-point source releases.
- Comment 4:** Page 40, paragraph 3, please explain what the "inherent limitations in the RI/FS process" are that lead you to consider an interim action.
- Response: Please refer to p. 1 and 2 of Section 1.0 of the ASR for a discussion of these limitations.
- Comment 5:** Page 42,
- a. Paragraph 3, available information indicate TCE and VC contaminated site. However, the IR-6 interim removal action is focused on the oil, grease and diesel fuel. Please explain why TCE and VC are not considered chemicals of concern.
- Response: The interim removal action for soil focused on diesel fuel, but also addresses areas of elevated lead and PCB concentrations. TCE and VC were identified as chemicals of concern in groundwater: concentrations of both chemicals exceed Federal MCLs at IR-6/10. Occurrences of TCE and VC above MCLs were used in defining the groundwater remedial unit, as described in Section 6.1.2.
- b. Paragraph 4, although chromium VI has been detected above the MCL, no mitigation measures have been recommended. The report must explain why the Navy believes high levels of chromium VI are related to the naturally occurring

background. This issue must be initially established prior to remediation.

Response:

Due to recent storm drain and sewer investigations, it is now suspected that the contents of these lines could have impacted the groundwater in areas at Site IR-6 where chromium VI was detected. The occurrence of chromium VI in these areas will be further evaluated in the facility storm drain and sewer line investigations.

August 13, 1993

**ADDENDUM TO DRAFT FINAL INTERIM-ACTION OPERABLE UNIT II
SUMMARY ALTERNATIVE SELECTION REPORT
NAVAL STATION TREASURE ISLAND
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA**

**Table 1. Summary of Interim Action Alternatives 2 and 3
Addendum to OU II Summary ASR
Hunters Point Annex**

Draft Final Summary OU II ASR			Addendum to Summary OU II ASR	
Planned Activity	Volume	Comments	Volume	Comments
Excavation of Soil	7,000 cy	Estimate of volume of soil based on OU II RI data	6,850 cy	The 150 cy of soil disposed during removal action is subtracted from the estimate of volume of soil based on OU II RI data.
Treatment of Soil by Interim Action Alternative 2 or 3	6,100 cy	Estimate of volume of soil that is nonhazardous and could be treated based on OU II RI data	4,100 cy	The 2,000 cy of soil assumed to contain levels of free product requiring Class I disposal is subtracted from the estimate of volume of soil that is nonhazardous and could be treated.
Disposal of Soil at a Class I landfill	900 cy	Estimate of volume of soil that is hazardous and would require disposal at a Class I landfill (for example, soil containing lead, PCBs, and cPAHS)	2,750 cy	The 2,000 cy of soil assumed to contain levels of free product requiring Class I disposal is added to the estimate of volume of soil that is hazardous based on RI data. The 150 cy disposed during removal action is subtracted.
Dewatering with oil/water separation prior to discharge to POTW	--	RI data indicated floating product was not present; therefore, oil/water separation was not included	--	Based on field observations during removal action, free product was present within bermed areas; an oil/water separator will be installed during dewatering activities.
Discharge from groundwater remedial unit to POTW	--	The impacted groundwater considered for interim action occurred in a separate portion of the site that was not impacted by the removal action	--	The groundwater remedial unit considered was outside the area affected by the removal action.

-- A volume estimate for this media is not available, pending further collection of data or field observations during implementation.

This addendum was prepared as part of the *Draft Final Interim-Action Operable Unit II Summary Alternative Selection Report (OU II ASR)*, submitted to the agencies on May 14, 1993. The OU II ASR developed interim action remedial units and alternatives for Site IR-6 based on information collected during the remedial investigation (RI) of the OU II sites. As the OU II ASR was being prepared, a removal action was being performed at the Tank Farm (Site IR-6) to remove the tanks, associated piping within bermed areas, and pump houses. During the removal action, free phase petroleum hydrocarbon product (free product) was observed within the bermed area surrounding Tanks 1 through 8 (see Plate 4, OU II ASR). This area was not accessible for drilling and sampling during the RI. These observations and the removal of soil associated with underground piping performed as planned during the removal action have been used to modify both the definition of the remedial units and the removal action alternatives to reflect current knowledge and conditions at the site, as discussed in the following paragraphs.

It is assumed that the affected soil (approximately 2,000 cubic yards) would require disposal at a Class I landfill and could not be treated by ex situ biodegradation or thermal desorption (Interim Action Alternatives 2 and 3) because: 1) the soil throughout the bermed area is saturated with free product and could demonstrate hazardous waste characteristics and onsite treatment of hazardous waste is not planned as part of the interim action, and 2) these treatment methods may not be able to effectively treat saturated soil in a timely or cost-effective manner consistent with interim action. In addition, approximately 150 cubic yards of surface soil within the bermed areas were disposed at a Class I landfill as part of the removal action due to elevated concentrations of lead in composite samples. This corresponds with RI data indicating high concentrations of lead in surface soil; much of the surface soil has now been removed. These changes to soil volumes requiring treatment are summarized in Table 1.

Because of the presence of free product, an oil/water separator would need to be installed during dewatering of the excavated area to separate any floating product from the groundwater prior to discharge to the POTW. Free product collected would be stored temporarily in a tank and disposed offsite. It is assumed the groundwater effluent from the oil/water separator would contain less than 100 mg/l of total petroleum hydrocarbons and could be discharged to the POTW in a permitted batch discharge mode after sampling. The cost estimates presented in the Draft Final OU II ASR for Interim Action Alternatives 2 and 3 have been revised to reflect current conditions. Revised cost estimates are presented as Tables 2 and 3. Detailed information regarding analytical data and field observations, as well as a summary of the removal activities, will be presented in the *Tank Farm Removal Action Construction Report*, currently in preparation.

Harding Lawson Associates

Table 2. Site IR-6 — Revised Cost of Interim Action Alternative 2
Excavation and Biotreatment with Groundwater Extraction and Discharge
Addendum to OU II Summary Alternative Selection Report
Hunters Point Annex

Item	Total Cost
<u>Capital Costs</u>	
Mobilization and site preparation	
- Site preparation, biotreatment pad, piping, and mobilization	\$ 30,000
- Monitoring well destruction, installation, and groundwater collection trench	\$61,000
Excavation and sampling	\$159,000
Transportation and Disposal of Soil at a Class I landfill	\$399,000
Treatment and backfill of soil	
- Biotreatment, verification sampling	\$396,000
- Backfill with treated and borrowed fill	\$114,000
Groundwater extraction and POTW discharge systems	\$40,000
Oil/water separation during dewatering, transportation and recycling of free product	\$63,000
Surface water control	\$100,000
Engineering and regulatory costs	<u>\$ 204,000</u>
Subtotal Capital Costs	\$1,566,000
Capital contingency (20%)	<u>\$ 313,000</u>
TOTAL CAPITAL COST	\$1,879,000
<u>Annual O&M</u>	
Groundwater monitoring and POTW discharge	\$108,000
O&M PV for 5 years at 5% ROR	\$467,000
PV O&M cost contingency (20%)	<u>\$ 93,000</u>
TOTAL NPV O&M	\$560,000
TOTAL COST	\$2,439,000

**Table 3. Site IR-6 — Revised Cost of Interim Action Alternative 3
Excavation and Thermal Desorption with Groundwater Extraction and Discharge
Addendum to OU II Summary Alternative Selection Report
Hunters Point Annex**

Item	Total Cost
<u>Capital Costs</u>	
Mobilization and site preparation	
- Site preparation, treatment pad, piping, and mobilization	\$ 15,000
- Monitoring well destruction, installation, and groundwater collection trench	61,000
Excavation and sampling	\$159,000
Transportation and Disposal at a Class I landfill	\$399,000
Treatment and backfill of soil	
- Thermal desorption, verification sampling	\$453,000
- Backfill with treated and borrowed fill	\$114,000
Groundwater extraction and POTW discharge systems	\$ 40,000
Oil/water separation during dewatering, transportation and recycling of free product	\$ 63,000
Surface water control	\$100,000
Engineering and regulatory costs	<u>\$ 211,000</u>
Subtotal Capital Costs	\$1,615,000
Capital Contingency (20%)	<u>\$ 323,000</u>
TOTAL CAPITAL COST	\$1,938,000
<u>Annual O&M</u>	
Groundwater monitoring and POTW discharge	\$108,000
O&M PV for 5 years at 5% ROR	\$467,000
PV O&M cost contingency (20%)	<u>\$ 93,000</u>
TOTAL NPV O&M	\$560,000
TOTAL COST	\$2,498,000