RESPONSES TO REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION AND CITY OF RICHMOND COMMENTS ON THE DRAFT SITE 3 EE/CA NAVAL FUEL DEPOT POINT MOLATE

This document presents Navy responses to comments on the draft Site 3 Engineering Evaluation/Cost Analysis (EE/CA) for Naval Fuel Depot (NFD) Point Molate, dated February 20, 2002. Comments were received from Ms. Adriana Constantinescu of the Regional Water Quality Control Board (RWQCB), San Francisco Bay Region in a letter dated April 24, 2002, and an electronic mail dated May 22, 2002. Comments were also received from Mr. Thomas Mitchell of the City of Richmond in a letter dated May 2, 2002.

RESPONSES TO RWQCB COMMENTS

Comment 1:

Draft General Comment - Regional Board main concern about the proposed clean-up alternatives is to take into consideration the non-time critical removal action of sources in the area left out of this document (fuel saturated soil areas, treatment ponds area and up-gradient contaminated groundwater). This EE/CA has also to present a clear schedule of the treatment ponds removal and groundwater treatment underneath those ponds because they are hydraulically interconnected with the proposed area for the cleanup.

Response:

This general comment identifies two significant concerns that the RWQCB has with the draft EE/CA. First, is that the schedule and plans for the treatment ponds closure must be more fully developed. Second, is that residual hydrocarbons in soil located hydrologically upgradient of the proposed cleanup area are not addressed in the draft EE/CA and could migrate to clean areas.

The Navy is budgeting for and planning closure of the treatment ponds in fiscal year 2003. A schedule of closure activities was presented in a letter from the Navy dated June 18, 2002. This schedule of closure activities also will be summarized in the final EE/CA.

Because residual hydrocarbons located hydrologically upgradient could migrate toward the shoreline, the final EE/CA will expand the treatment area to include all areas where residual fuel was observed, although action levels for groundwater were not exceeded in these additional areas. Since the RWQCB and Navy previously agreed that

the technologies evaluated in the draft EE/CA can be used to address these areas, the final EE/CA will evaluate the alternatives in the draft over these additional areas. A complete analysis that includes these areas will be presented in the final EE/CA. Implementation initially may be conducted on a pilot scale to further refine operational parameters and evaluate practicability of addressing additional areas of residual hydrocarbons.

Comment 2:

Section 1.0: Introduction - The second Paragraph on the page 2 states: "This action is intended as a final action for Site 3." This statement has to be revised because the alternatives proposed in this Draft EE/CA do not include the removal of the extraction trench when it will be appropriate and the removal of the treatment ponds and the remediation of the contaminated groundwater underneath those ponds.

Response:

The referenced statement will be modified as follows:

"This action, along with removal of the extraction trench after the action is deemed sufficiently effective, is intended as a final action for Site 3 under CERCLA. In addition to those actions being taken consistent with CERCLA, other compliance actions within the Site 3 footprint also may be necessary. In particular, the treatment ponds will be closed as a compliance action."

Contamination beneath the treatment ponds is being addressed as part of the CERCLA action (that is, the removal action).

Comment 3:

Section 2.2.1: Geology of Site 3 - The description of the unconsolidated deposits has to contain a presentation of the "Reworked intertidal sediments" which are presented in Figure 3 despite the fact that they are not presented in the text.

Response:

A description of reworked intertidal sediments will be added to Section 2.2.1, as follows:

"The reworked intertidal deposits consist mainly of greenish-gray (glauconitic) silty sand and sandy silt with numerous small shell fragments. Also common are pebbles or rock fragments consisting of subrounded quartzite and angular to subrounded siltstone and sandstone. Glauconitic sandstone pebbles are common. The

sediments contained in the intertidal deposit generally are well sorted for each size range encountered. The rounding of the sediments is, in general, indicative of reworked beach or near-shore deposits. Bedrock rubble and rock fragments within a wet clayey matrix also make up a portion of the reworked intertidal deposits."

Comment 4:

Section 2.2.2: Hydrogeology - Please present in this section the different depths to groundwater in the area of Site 3 and their influence in selecting the remedial alternatives.

Response:

Figure 8 will be modified to show depths to water. The following paragraphs will be added to Section 2.2.2:

"According to measurements taken June, 2001, the groundwater depth is lower near the bay and rises toward the treatment ponds. There is also evidence of groundwater mounding behind the former sump pond containment wall and the extraction trench/containment wall near the bay. Groundwater elevations between the extraction trench and the former sump pond containment wall are from about 2 to 6 feet above mean sea level (msl). Groundwater upgradient of the sump pond containment wall are from 11 to 14 feet above msl.

The depths of excavations were based on the range of contaminated soil in the soil borings and extend below the water table in many areas. Excavation of the industrial waste, FRF area, and Tank G are based on potential risks associated with soils; therefore, they are excavated to 4 or 10 feet bgs. All other depths of excavation and treatment were chosen based on visible soil contamination information, which is generally from about 10 to 18 feet bgs. For example, the groundwater depth around well SB11-33 is about 6 feet, but there is evidence of contamination in the soil borings from 14 to 20 feet bgs. Therefore, excavation or treatment of this area will have to extend below the water table. Excavation below the water table is a major consideration in the implementability of Alternative 4, as described in Section 4.4.3. The treatment wells also will have to be adjusted for the water level; for example, the biosparge wells must be below the water table and the biovent wells must be above the water table. Significant consideration to the changes in depth to water after the ponds are closed (primarily from the sump pond containment wall) will be necessary during the removal action design."

Comment 5:

Section 2.4.1: Soil - This section presents the statement: "This section uses data primarily from samples collected in June 2001. Data from this sampling event are used because they reflect the most recent site conditions and are the only data set that includes from across the site at depths that are related to potential exposure pathway". Regional Board staff does not agree with this statement because there are previous sampling results collected during the pipes removal and during the Final Phase II Remedial Investigation data which could draw a better distribution of COC in the soils and groundwater. Actually, the goal of the Work Plan for the June 2001 investigation was to bring "additional soil sampling results" (TtEMI, 2001). Those previous sampling results should be considered in the evaluation of the proposed alternatives in the areas with data gaps.

Response:

Data collected before June 2001 were used to evaluate analytical soil and groundwater sampling needs for the EE/CA; in particular, the Phase II Remedial Investigation (RI) was reviewed to develop the work plan. This evaluation resulted in development of the RWQCB-approved work plan for collection of samples in June 2001. Data collected before June 2001 was limited in that soil samples were collected almost exclusively at depths greater than 10 feet bgs (and therefore was not applicable to potential soil exposure pathways). Before 2001, groundwater sampling events were limited to only a few wells within Site 3.

The June 2001 soil data provide a data set collected with a consistent methodology applicable to risk characterization for soils. Data were collected from 27 soil borings. Collection of soil samples was from across the site (with the exception of inaccessible areas around the treatment ponds). The June 2001 groundwater sampling event was the first comprehensive event across all of Site 3; 14 new and 21 existing wells were sampled at Site 3 during this event.

Phase II RI data, and data from previous investigations, are evaluated in the EE/CA. In particular, these data were used to develop Figure 6, which identifies areas of residual hydrocarbons in soil.

In addition, data from the pipeline removal are included in Section 2.4.1.2 of the EE/CA.

Section 2.4.1 will be modified to clarify the use of data in the EE/CA.

Comment 6:

Section 2.4.1.1: FRF and Waste Disposal Area - 0 to 3 feet bgs - The last paragraph on page 10 mentioned that "the value of 300 micrograms per kilograms (µg/kg) for benzo(a)pyrene was applied for all other PAHs." Instead of this value for all other PAHs, Regional Board recommends the values presented in the Table A of Volume 1 of "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" prepared by California Regional Water Quality Control Board San Francisco Bay Region, Interim Final, December 2001.

Response:

The application of the 300 micrograms per kilogram (µg/kg) action level for benzo(a)pyrene referenced in this comment is for potential ecological receptors. The referenced RWQCB screening levels are not specific to ecological receptors and may not apply to the particular use in the EE/CA. Human health exposure is addressed in the EE/CA in a more detailed risk assessment and will be used to evaluate areas for the removal action. Nonetheless, the RWQCB reference is useful and will be considered for use in evaluating Site 3 and other sites in the future.

Comment 7:

Section 4.0: Identification and Analysis of Removal Action Alternatives - The proposed alternatives should be modified to address the clean-up of contaminated groundwater underneath the treatment ponds and the contaminated soil around soil borings SB11-108 through SB11-111 and the other areas with soils residually saturated with hydrocarbons. Also the potential changes to the on-site groundwater treatment system should be presented.

Response:

Please also see response to RWQCB General Comment 1. The final EE/CA will include a description of and schedule for the ponds closure. The final EE/CA will address residual hydrocarbons in the vicinity of soil boring SB11-108. The data from soil boring SB11-111 do not clearly demonstrate an unacceptable risk, although Figures 4 and 5 identified contaminant concentrations that exceeded action levels. The exceedance shown on Figure 4 is for a detection of benzo(a)anthracene (914 µg/kg), which exceeds terrestrial ecological action levels. However, since no terrestrial ecological action level exists for benzo(a)anthracene, the action level for benzo(a)pyrene was applied. Benzo(a)pyrene has a significantly greater toxicity, so this comparison was extremely conservative. The detection of benzo(a)anthracene (914 µg/kg) does not exceed the soil screening level for industrial and commercial use (1,800 µg/kg) in Table A of

Volume 1 of "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" prepared by California Regional Water Quality Control Board San Francisco Bay Region, Interim Final, December 2001. The exceedance shown on Figure 5 is based on residential criteria; however, no residential use is planned for the site. Data from soil boring SB11-111 does not report residual hydrocarbons in soil. For these reasons, SB11-111 will not be included in the area for the removal action.

In regards to the on-site groundwater treatment system, the following sentences will be added to the text:

Section 4.1.1, "This EE/CA assumes that the extraction trench/containment wall and associated groundwater treatment plant would operate for 30 years under Alternative 1, after which it will be removed. Costs for removal of these systems are not included in this cost analysis."

Section 4.2.1, "This EE/CA assumes that the extraction trench/containment wall and associated groundwater treatment plant would operate for 4 years under Alternative 2, after which it will be removed. Costs for removal of these systems are not included in this cost analysis."

Section 4.3.1, "This EE/CA assumes that the extraction trench/containment wall and associated groundwater treatment plant would operate for 5 years under Alternative 3, after which it will be removed. Costs for removal of these systems are not included in this cost analysis."

Section 4.4.1, "This EE/CA assumes that the extraction trench/containment wall and associated groundwater treatment plant would operate for 1 year after the excavation has been backfilled to confirm that remediation criteria have been met, after which it will be removed. Costs for removal of these systems are not included in this cost analysis."

The costs for removal of the extraction trench/containment wall and groundwater treatment plant are the same, regardless of the alternative, and would not affect the comparison of alternatives. Groundwater monitoring is not specifically addressed in this EE/CA because all actions are assumed complete.

Comment 8:

Section 4.0: Identification and Analysis of Removal Action Alternatives - Please present the reference source of the inflation rate and the annual discount used in this section.

Response:

According to Blue Chip Financial Forecasts (November 1, 2001) the discount rate for 2002 is 2.4 percent. The rate for 2007 is 3.8 percent. These values are, of course, only projections; predictions for Alternative 1, with a duration of 30 years, are uncertain. For this EE/CA, a discount rate of 3 percent will be assumed. The inflation rate was estimated from data from Financial Trend Forecaster (2002). The references for this information will be added to Section 4.0.

Comment 9:

Section 4.2.1: Description - On page 43, it is mentioned that "the measured vacuum radius of influence (ROI) was 24 feet or more during field pilot testing" without to specify the ROI in the two different media (soil and groundwater saturated soil). The assumption that the actual ROI will be 30 feet was not explained. Also, this section lacks a presentation of the ROI for the bioslurping method. The assumption presented on page 45 that the effective ROI of 30 feet must be revisited for the proposed Alternatives 2 and 3.

Response:

During field pilot testing of the SVE system, a detectable vacuum was found in all monitoring wells that were included in the test. The monitoring wells were placed at various distances from the SVE wells; the largest distance was 24.2 feet. The pilot test data show that the pressure effects of the SVE wells extended at least 24 feet from the well, but could not be measured past this radius (since no wells were monitored beyond this point). Although the pressure effects from the SVE system are a good initial indicator of the ROI of the system, the real objective of the bioventing system is the distribution of oxygen in the subsurface. This oxygen initiates the biodegradation of the contaminants. The pilot test did not measure the distribution of the oxygen in the subsurface because it was only operated for a limited time (about 2 hours). Over a period of a few weeks, the SVE system will have extracted enough air in the surrounding areas to create an effect on the area outside of the detectable vacuum range. Oxygen from the surrounding soil and from the surface will move into the area to replace the air that is removed. A bioventing radius of influence of 30 feet also satisfies the criterion presented in USACE "Soil Vapor Extraction and Bioventing" (Engineer Manual EM 1110-1-4001, p. 4-29). According to the manual, the ROI can be determined

by plotting the pressure vs distance from the well and extrapolating to a pressure of 0.1 in. H2O. A graph of the pressure vs distance for pilot test SVE-3 from the Site 3 Fieldwork Summary Letter Report (Oct. 2001) was prepared. The slope of the pressure is fairly flat, indicating that there would still be a pressure of greater than 0.1 in. H2O at 30 feet; therefore, it is reasonable to assume an ROI of 30 feet.

The ROI of the biosparging system will be changed from 30 feet to 25 feet. Appendix E of NAVFAC Technical Report (TR-2193-ENV) "Air Sparging Guidance Document," estimates that the ROI of a system is 30 feet in gravel/coarse sand and 25 feet in sand. The EE/CA describes the fill as "heterogeneous materials that generally consist of poorly sorted gravel, silt, sandy silt and sandy clay, and angular bedrock fragments." An ROI of 25 feet is also supported by the pilot test data in the Field Summary Report. The farthest monitoring well from the air sparge well was 15.6 feet away. Results from the depth to water data suggest some sparging influence at a distance of at least 15.6 feet away. For tests AS-1, T-1, AS-2 and T-2, the concentration of dissolved oxygen almost doubled in wells MP-03C and MP-03D, which are located 15.6 feet away from the test wells. This sharp rise in DO in less than 12 hours suggests that the ROI of the well is much larger than 15 feet. Results of the analysis of soil gas and the helium tracer tests also suggest that the effective radius of influence extended beyond the farthest monitoring point (beyond a 15.6 foot radius). The final EE/CA will estimate that the biosparge system will have an actual ROI of 25 feet.

A more detailed description of these ROI estimates will be included in Sections 4.2.1 and 4.3.1 of the final EE/CA. The design of the bioventing/biosparging system is consistent with information presented in the EPA guidance document "An Overview of Underground Storage Tank Remediation Options" (EPA 510-F-93-017 through EPA 510-F-93-030).

Section 4.2.1, primary assumption 10, states, "The effective zone of influence (ZOI) of the bioslurping trench is 15 feet (minimum)."

Comment 10:

Section 5.0: Comparative Analysis of Removal Action Alternatives - This section should be modified to reflect the changes to the proposed alternatives.

Response:

The comparative analysis of the alternatives will be changed to reflect additional areas to be included in the removal action.

Comment 11:

Figure 3 - Please provide the range of depths of each depositional sequence of the encountered soils.

Response:

Because this is a generalized depositional sequence (that is, not specific to Site 3), and that most intervals are either not present at Site 3 or drilling through entire thickness has not been conducted, this information will not be added to Figure 3.

The following information will be added where appropriate in Section 2.2.1 to describe the depth ranges of unconsolidated sediments that may be encountered at Site 3:

"Fill material is present across the entire site. The range of depths of the fill material was from approximately 0 to 2 feet bgs at inland areas to 0 to 23 feet bgs near the center of the site and near the bay."

"The range of depths of alluvium was from approximately 8 to 9 feet bgs to 15 to 24 feet bgs. Alluvium is found in limited areas within Site 3; typically, these areas are limited to the vicinity of Diesel road and the shoreline. Reworked intertidal sediments have similar characteristics to the alluvium and they may be identified as alluvium."

"Colluvium at Site 3 was identified from as shallow as approximately 2 feet bgs to as deep as approximately 18 feet bgs. Colluvium typically is present at the more inland areas of Site 3."

"Bay mud was identified as shallow as approximately 9 feet bgs and may be found to extend to the top of bedrock."

"Bedrock outcrops at the base of a bluff to the south of Site 3. During drilling activities at Site 3, bedrock was encountered as shallow as 18 feet bgs and as deep as 64 feet bgs."

Comment 12:

Figure 4 - Please represent on the map the location of the extraction wells EW-C and EW-D presented in the text on page 5, Section 2.1.2.

Response:

The location of extraction wells EW-C and EW-D will be presented on Figure 4.

Comment 13:

Figures 13, 14, 15, and 16 - Please show on these figures the location of the soil borings advanced during June, 2001 showing the screening levels.

Response:

The locations of the soil borings presented on Figures 4, 5, and 6 also will be shown on Figures 13 through 16.

Comment 14:

Figure 15 - Please show the location of the proposed trenches that will be used for the bioslurping at plume F.

Response:

The location of the bioslurping trenches will be added to Figures 14 and 15.

Comment 15:

Figure 16 - Please present on Figure 16 the areas of proposed deep excavations as presented on page 53.

Response:

Because of the expansion of the treatment area to include the soil beneath the treatment ponds, Figure 16 will show one continuous excavated area with an average depth of 18 feet bgs. The text will be changed accordingly.

Comment 16:

Table 3 - Please present the criteria for costs rating of the four proposed alternatives.

Response:

The costs were rated by comparing the values of each alternative with the others. Alternatives 1A, 1B, and 2B, all had similar costs of about $8.5 million. They received a ranking of "Good." Alternatives 2A, 3A, 3B, and 4B had costs of about $10 million. They received a ranking of "Fair." Alternative 4A was the most expensive at about $13 million so it was rated "very poor." Available cost information from EPA guidance documents "An Overview of Underground Storage Tank Remediation Options" (EPA 510-F-93-021 through EPA 510-F-93-028) shows that the cost estimate for Alternative 4A is average, and the cost for biopiling is slightly lower than average. The ranking will be reviewed and modified to include the new costs of the expanded treatment area before submittal of the final EE/CA.

Comment 17:

Appendix C RWQCB recommends the additional ARARs - 1. The RWQCB's (1995) San Francisco Bay Basin Water Quality Control Plan sets forth narrative standards and permissible concentrations of organic and inorganic chemical constituents for various types and beneficial uses of surface waters and groundwater. 2. SWRCB, 11 April 1991, California Enclosed Bays and Estuaries Plan, Water Quality Control Plan for Enclosed Bays and Estuaries of California. These new water quality criteria became effective on May 18, 2000 and are promulgated under 40 CFR 131.38, Establishment of Numerical Criteria for Priority Toxic Pollutants for the State of California, also known as the California Toxic Rules (CTR). 3. RWQCB (2001) Risk-based Screening Levels (RBSL) are not clean-up levels. RBSL can be used, if appropriate, as site specific clean-up levels are not available for a specific chemical. 4. SWRCB Resolution No. 88-63 - Adoption of Policy Entitled "Sources of Drinking Water" states that all surface water and groundwater in CA should be designated suitable, or potentially suitable, sources of drinking water. As we know, at Point Molate, the groundwater designation was not established yet. 5. SWRCB Resolution No. 92-49 - policies and procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304.

Response:

Following are responses to each of the five applicable or relevant and appropriate requirements (ARAR) the RWQCB has requested be evaluated; each ARAR found applicable or relevant and appropriate will be included in the ARARs analysis in the final EE/CA:

1. **The RWQCB's (1995) San Francisco Bay Basin Water Quality Control Plan (Basin Plan) sets forth narrative standards and permissible concentrations of organic and inorganic chemical constituents for various types and beneficial uses of surface waters and groundwater. The final EE/CA will make a preliminary ARAR determination that the Basin Plan is applicable. The final EE/CA also will discuss how the Basin Plan and other RWQCB-approved objectives relate to the planned removal action as described in the following paragraph.**

   The Basin Plan identifies that municipal or domestic beneficial uses (in particular, a drinking water source) may apply to all groundwater in the region. This beneficial use has not been evaluated at Point Molate (within the guidelines of RWQCB Resolution [Res.] No. 88-63) and there is sufficient likelihood that the groundwater within Site 3 is not a potential drinking water source (see discussion of RWQCB Res. No. 88-63 below; additional

documentation of these conditions may be conducted after this removal action). Therefore, the removal action planned in this EE/CA will address known pathways and uses of the Site 3 groundwater consistent with the action levels Navy and RWQCB have agreed upon in the fuel product action level development report (FPALDR). The action levels in the FPALDR are protective of surface water replenishment (that is, groundwater migration to the bay) and potential exposure under a construction worker scenario.

2. **Although the California Toxics Rule is a potential ARAR, the Navy and RWQCB previously agreed to the levels specified in the FPALDR. The levels in the FPALDR address appropriate, site-specific exposure pathways. Therefore, the California Toxics Rule is not an ARAR for this removal action.**

3. **The reference to "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" (RWQCB 2001) is not an ARAR because it is guidance. However, it will be identified in the ARARs analysis as a TBC (to be considered).**

4. **According to Res. No. 88-63, all groundwater in California is considered suitable or potentially suitable for domestic or municipal freshwater supply except in cases where any one of the following water quality and production criteria exclusions is met:**

    - **TDS exceed 3,000 mg/L (or electrical conductivity is greater than 5,000 micromhos per centimeter) and the RWQCB does not reasonable expect the groundwater to supply a public system.**
    - **Groundwater is contaminated, either by natural processes or by human activity unrelated to a specific pollution incident, and cannot reasonably be treated for domestic use either by best management practices or best economically available treatment practices.**
    - **The groundwater does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day.**

    In the draft EE/CA, it is stated that Site 3 groundwater will not be used as a water source because (1) the site is adjacent to the bay where pumping will result in saltwater intrusion, (2) there are other available water supply sources, (3) the site groundwater has never been used for supply, and (4) Contra Costa County well

construction requirements for a 50-foot surface seal prohibit domestic use of shallow groundwater. Therefore, the groundwater at Site 3 is likely to satisfy the second criteria in that the water is contaminated by natural processes and cannot be reasonably treated, so Res. No. 88-63 is not an ARAR. However, the Navy is planning additional evaluation of potential drinking water sources at Point Molate and recognizes that additional documentation of Site 3 groundwater not being a likely potential drinking water source may be necessary.

5. **The Navy does not agree that Res. No. 92-49 is an ARAR. The Navy and the State have expressed their respective positions and have developed language to "agree-to-disagree," which has been integrated in various documents. The following language will be included in the final EE/CA ARARs evaluation.**

   State Water Resources Control Board Res. No. 92-49 (as Amended on 21 April 1994 and 02 October 1996) is titled Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under California (Cal.) Water Code § 13304. This resolution contains policies and procedures for the regional boards that apply to all investigations and cleanup and abatement activities for all types of discharges subject to Cal. Water Code § 13304.

   SWRCB Res. No. 68-16 Statement of Policy With Respect to Maintaining High Quality of Waters in California, 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 the required 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 such water, and will not result in water quality less than that 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 necessary to assure that (a) pollution or a nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained (SWRCB 1968).

Cleanup to below background water quality conditions is not required by the SWRCB under the Porter-Cologne Act. SWRCB Res. 92-49 II.F.1 provides that regional boards may require cleanup and abatement to conform to the provisions of the Resolution No 68-16 of the State Water Board, and the Water Quality Control Plans of the State and Regional Water Quality Control Boards, provided that under no circumstances shall these provisions be interpreted to require cleanup and abatement which achieves water quality conditions that are better than background conditions.

The Navy's Position Regarding SWRCB Res. 92-49 and 68-16.

The Navy recognizes that the key substantive requirements of Cal. Code Regs. tit. 22, § 66264.94 (and the identical requirements of Cal. Code Regs tit. 23, § 2550.4 and Section III.G of SWRCB Res. 92-49) require cleanup to background levels of constituents unless such restoration proves to be technologically or economically infeasible and an alternative cleanup level of constituents will not pose a substantial present or potential hazard to human health or the environment. In addition, the Navy recognizes that these provisions are more stringent than corresponding provisions of 40 C.F.R. § 264.94 and, although they are federally enforceable via the RCRA program authorization, they are also independently based on state law to the extent that they are more stringent than the federal regulations.

The Navy has also determined that SWRCB Res. 68-16 is not a chemical-specific ARAR for determining response action goals. However, SWRCB Res. 68-16 is an action-specific ARAR for regulating discharged treated groundwater back into the aquifer. The Navy has determined that further migration of already-contaminated groundwater is not a discharge governed by the language in Res. 68-16. More specifically, the language of SWRCB Res. 68-16 indicates that it is prospective in intent, applying to new discharges in order to maintain existing high-quality waters. It is not intended to apply to restoration of waters that are already degraded.

The Navy's position is that SWRCB Res. 68-16 and 92-49 and Cal. Code Regs. tit. 23, § 2550.4 do not constitute chemical-specific ARARs for this response action because they are state requirements and are not more stringent than federal ARAR provisions of Cal. Code Regs. tit. 22, § 66264.94. The NCP set forth in 40 C.F.R. § 300.400(g)(4) provides that only state standards more stringent than federal standards may be ARARs

(see also CERCLA § 121(d)(2)(A)(ii) [42 U.S.C. § 9621(d)(2)(A)(ii)]).

The substantive technical standard in the equivalent state requirements (i.e., Cal. Code Regs. tit. 23, div. 3, ch. 15 and SWRCB Res. 92-49 and 68-16) is identical to the substantive technical standard in Cal. Code Regs. tit. 22, § 66264.94. This section of Cal. Code Regs. tit. 22 will likely be applied in a manner consistent with equivalent provisions of other regulations, including SWRCB Res. 92-49 and 68-16.

State of California's Position Regarding SWRCB Res. 92-49 and 68-16.

The state does not agree with the Navy determination that SWRCB Res. 92-49 and 68-16 and certain provisions Cal. Code Regs. tit. 23, div. 3, ch. 15 are not ARARs for this response action. However, the state agrees that the proposed action would comply with SWRCB Res. 92-49 and 68-16, and compliance with the Cal. Code Regs. tit. 22 provisions should result in compliance with the Cal. Code Regs. tit. 23 provisions. The state does not intend to dispute the EE/CA, but reserves its rights if implementation of the Cal. Code Regs. tit. 22 provisions is not as stringent as state implementation of Cal. Code Regs. tit. 23 provisions. Because Cal. Code Regs. tit. 22 regulation is part of the state's authorized hazardous waste 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]).

Whereas the Navy and the state of California have not agreed on whether SWRCB Res. 92-49 and 68-16 and Cal. Code Regs. tit. 23, § 2550.4 are ARARs for this response action, this EE/CA documents each of the parties' positions on the resolutions but does not attempt to resolve the issue.

RESPONSES TO COMMENTS FROM CITY OF RICHMOND

Comment 1:

In regards to master scheduling, the City of Richmond encourages the Navy's clean up and removal of Tanks 1, 2, and 3 at the earliest opportunity.

Response:

Currently, there are no plans for removal of Tanks 1, 2, and 3 consistent with the Final Closure Plans for Underground Storage Tanks and Pipelines. The Navy recognizes this comment. Because this comment is not specific to the Site 3 EE/CA, it will not result in changes to the final document.

Comment 2:

In regards to base maintenance, the City of Richmond encourages the Navy to provide periodic preventative maintenance to the large Eucalyptus tree grove.

Response:

The Navy recognizes this comment. Because this comment is not specific to the Site 3 EE/CA, it will not result in changes to the final document.

Comment 3:

In regards to Site 3 specifically, the City of Richmond prefers a work plan that cleans upgradient contamination as a priority.

Response:

The final Site 3 EE/CA will include an expanded area under the removal action. However, because of potential risks posed by site contamination to ecological receptors in the bay, the EE/CA focuses on an aggressive strategy near the bay.

Comment 4:

The City of Richmond agrees with Regional Water Quality Control Board (RWQCB) staff comments during the April 23, 2002 Site 3 EE/CA conference call that both environment and human protection should be a priority in designing this EE/CA.

Response:

Responses to RWQCB comments are included above in this response to comment document.

TETRA TECH EM INC.

TRANSMITTAL/DELIVERABLE RECEIPT

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