



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

August 19, 2004

Mr. Jerry Dunaway  
Southwest Division,  
Naval Facilities Engineering Command  
1220 Pacific Highway  
San Diego, CA 92101-8517

RE: Response to Comments on the Draft Remedial Investigation for Investigation Area F2  
(IR04) Mare Island Naval Shipyard, Vallejo, CA, May 11, 2004

Dear Mr. Dunaway:

EPA has reviewed your response to our comments on the Draft Remedial Investigation for Investigation Area F2. The following comments remain:

General Comments on the Remedial Investigation Report:

G1. EPA requested that the Navy provide a descriptive summary in the text of the sampling that was conducted, and significant findings in each area. The Navy's response is that this information is included in appendix D and the complete analytical data is in Appendix G. **This response does not address the comment. Appendix D gives only a general summary of field procedures that were followed, but does not describe what samples were collected in which areas and what was found. Appendix G provides the data tables and statistical summary sheets, but nowhere is there a narrative description of the work that was done, what was found to support the Navy's conclusions.**

G2. EPA requested that the Navy investigate the storm drains in area F2. The Navy responded that the storm drains and outfalls were investigated in 1997. **Please summarize in the text the activities that were conducted and the results of those activities in the next version of this report.**

G3. EPA requested that the Navy include a description and status of all of the PCB sites in the RI report. The Navy responded that PCBs are being addressed under the basewide PCB program. **The comment is not addressed. Please include a summary of PCB sites, concentrations found and status of cleanup under the PCB program in the RI report.**

G4. EPA requested analyses for hexavalent chromium; Navy responded that 33 soil samples were analyzed for hexavalent chromium and all non-detected; therefore groundwater samples were not analyzed for hexavalent chromium. **The comment appears to be addressed.**

G5. EPA requested that a discussion of any radiological investigations or considerations pertaining to this area be discussed in the RI report. Navy responded that a basewide radiological survey was conducted in 1996 and EPA and DTSC agreed that no further action was required. **Comment noted. Please summarize the radiological data, information and conclusions pertinent to area F2 from the 1996 report in the next version of the RI report so that it provides a complete summary of environmental information for this area.**

#### General Comments on the Human Health Risk Assessment

G1. EPA recommended that the dual tracking risk assessment approach be eliminated by using the more protective of either the EPA or DTSC toxicity criteria. Navy responded that their guidance called for dual tracking. **This comment appears to be addressed.**

G2. EPA commented that discussions of acceptable risks be reserved for the conclusions section and deleted from the risk assessment report. Navy agreed to revise the risk assessment to address the comment. **This comment appears to be addressed.**

G3. EPA noted that the expression of exposure point concentrations (EPCs) did not directly correspond between soil/groundwater concentrations and indoor air concentrations and requested the indoor air EPCs table be revised to represent actual calculated indoor air concentrations. Navy agreed to revise the text to explain the difference in the units. **This comment appears to be addressed.**

G4. EPA commented that the use of the Johnson and Ettinger model may not be appropriate for estimating indoor air concentrations under site conditions with shallow groundwater and requested that soil gas data be collected. EPA also requested that the model limitations under these conditions be discussed. Navy has agreed to collect soil gas data at this site and revise the appendix. **This comment appears to be addressed.**

#### Specific Comments on the Human Health Risk Assessment.

S1. EPA noted a discrepancy between the method for evaluating censored non-detect data in statistical calculations. **It is not clear from the Navy's response whether a value of one-half the method detection limit (MDL) or if statistically estimated proxy values were used for non-detects. Either method is acceptable, the original comments simply asked that the report clearly indicate which was used. The response still states that "either estimated values or one-half the maximum detection limit was used. For clarity, please indicate which method was used.**

S2. EPA requested the text be clarified to provide justification for defining surface soils to be from 1 to 2.25 feet. **This comment appears to be addressed.**

S3. EPA requested that the selection of Chemicals of Potential Concern (COPCs) be revised to include those metals that are currently excluded on the basis of ambient levels. Navy responded that Navy policy to excluded inorganic constituents found at levels consistent with ambient concentrations. **The response is inadequate. In order to provide a full and complete**

**characterization of site risks, metals present at ambient levels should be quantitatively evaluated in the risk assessment, to be consistent with EPA guidance. If metals present at ambient levels are significant contributors to the estimated risks and hazards then this should be discussed in the risk characterization section.**

S4. EPA commented that the statement on page I-8 implying that residential preliminary remedial goals were more conservative than the industrial PRG because it accounts for childhood exposure is incorrect; the residential PRG is more conservative because on-site residents are presumed to have greater potential for prolonged exposure than occupational receptors who would only be exposed for some portion of the day or week. Navy agreed to revise the text accordingly. **This comment appears to be addressed.**

S5. EPA commented that the exposure point concentrations were calculated using outdated 1992 EPA guidance, and requested that the risk assessment be revised to use the 95 percent upper confidence limit (UCL) as the concentration for the central tendency exposures (CTE) as well as the reasonable maximum exposures (RME). Navy replied that the risk assessment was prepared using the guidance that was available at the time it was written and would not be revising it to reflect the revised (2002) guidance for this risk assessment. **The response does not appear to be adequate as the 2002 guidance was available in 2004 when this report was released. It is not possible to ascertain the effect of utilizing the revised EPA guidance for calculating exposure point concentrations without actually utilizing the new guidance and comparing the results.**

S6. EPA requested that the risk assessment be revised to include a presentation of the derivation of particulate emission factors (PEFs) and chemical specific volatilization factors (VFs). EPA noted that the PEFs used only addressed wind driven dust particles and did not account for dust generated from intrusive operations and vehicular traffic which is necessary to evaluate exposures to construction workers. Navy agreed to revise the text to identify the process for calculating PEFs, but did not agree that revising the derivation of the PEF would effect the findings of the risk assessment. **The response appears to be inadequate. To assume that the effect would not be significant even if the exposure via this pathway were doubled is not supported by any specific data. In some instances a PEF that accounts for dust generated due to vehicular traffic and other activities at construction sites may differ by several orders of magnitude. Exposure to airborne particulates may be a pathway of concern. The risk assessment should be revised to reflect the comment.**

S7. EPA commented that the reference doses (RfDs) and cancer slope factors (SFs) for evaluating dermal exposure presented in the tables had been adjusted for gastrointestinal absorption, and the text stated that the oral RfDs and SFs were used to quantify dermal exposures and no information provided to explain the extrapolation. EPA comment that the dermal RfDs and SF should be revised to correspond with the recommendations in the 2001 guidance. Navy responded that the adjustments for gastrointestinal absorption were in accordance with the 1998 Navy guidance, which resulted in a more conservative analysis. **The comment appears to be addressed.**

General Comments on the Ecological Risk Assessment

G1. EPA recommended that the Navy provide the results of the Screening Level Ecological Risk Assessment (SLERA) before proceeding to the Baseline Ecological Risk Assessment (BERA). Navy responded that the SLERA is presented in Appendix J, and the BERA is not complete. **This comment appears to be addressed, however EPA does not agree with Navy's further comment regarding their policy to eliminate chemicals shown to be statistically similar to background concentrations, as stated in response to comment S3 above.**

G2. EPA recommended that BAFs calculated from non site-specific data are not acceptable in an SLERA. The Navy responded that Mare Island data was used for the SLERA but this data did not specifically come from area F2. **This comment partially addresses the comment.**

G3. EPA noted that the risk assessment omitted consideration of receptors in the upland area and thus does not provide a food chain model assessment for upper trophic level receptors. Navy responded that the ERA considered the salt marsh harvest mouse as an endangered species to address wetland habitat, and upland habitats did consider food chain modeling for the gray fox by estimating tissue body burdens in prey items using bioaccumulation factors. **This comment appears to be addressed.**

G4. EPA requested a map be included which presents the areas to be remediated as discussed in the conclusions section. The Navy responded affirmatively. **This comment appears to be addressed.**

G5. EPA asked why the Navy has not presented the results of the bioassay data. Navy replied that Appendix J did discuss the bioassay data and provided a table presenting the bioassay results that they will include in the next version of the report. **This comment appears to be addressed.**

#### Specific Comments on the Ecological Risk Assessment

S1. EPA strongly recommended against eliminating chemicals of potential ecological concern (COPECS) on the basis of ambient concentrations during the screening process and recommended that any contaminant exceeding screening levels be addressed in the BERA. Navy responded that COPECS that were similar to ambient concentrations were excluded consistent with Navy policy. **The response is inadequate, and this comment remains unaddressed.**

S2. EPA commented that Hazard Quotients (HQ) for aquatic invertebrates should have been calculated using the effects range-low (ER-L) values rather than the effects range- medium (ER-M). Navy responded that the initial screening of COPECS were identified based upon ER-L values, while the ER-M values were used to calculate HQ for invertebrates. **EPA does not consider the use of ER-Ms to be conservative for a screening level risk assessment and finds this unacceptable.**

S3 and S4. Regarding risk characterization for plants and invertebrates EPA reiterated the comment that all COPECS need to be screened against benchmarks, not only the ones above ambient levels; Navy reiterated their policy. **The response is inadequate, and the comment**

remains unaddressed.

S5. EPA recommends against the use of allometric scaling in ecological risk assessment due to the high uncertainty associated with the proposed values. Navy identified the guidance they used in deriving toxicity reference values (TRVs) through allometric conversion and agreed to include a discussion of the uncertainties this introduces to the risk assessment in the next version of the RI. **This comment appears to be addressed.**

S6. EPA commented that the BTAG lead TRV had changed. Navy agreed to update the RI report to reflect this. **This comment appears to be addressed.**

S6 EPA commented on the risk refinement for plants that a number of COPECS had been eliminated that were found at high percentages and well above benchmarks. These COPECS should be carried into the BERA, and contaminants such as antimony should not be deleted from the risk assessment due to lack of information, rather, uncertainties should be identified and discussed. Navy responded that their process is consistent with the 2001 EPA guidance and agreed to revise the risk assessment to discuss COPECS that were eliminated due to lack of information. **This comment only partially addresses the comment. EPA requests that the eliminated COPECS be put back into the risk assessment and that the uncertainties be discussed.**

S7. Regarding risk refinement for invertebrates, EPA commented that it was not acceptable to screen toxicity against the ER-M only, but rather a range of values from the ER-L to the ER-M should be developed and discussed to represent the grey area where the potential for adverse effects remain uncertain. Navy replied that the ER-Ls were used in screening to identify the COPECS as explained in the response to comment S2. **The response is inadequate and does not address the comment.**

S8. EPA commented that COPECS exceeding the Oak Ridge National Laboratory benchmark must be carried through to the BERA, at which time background or ambient concentrations can be considered. Navy responded that their guidance allows for the exclusion of COPECS at ambient concentrations. **EPA disagrees. The response is inadequate.**

S9. Regarding risk refinement of vertebrates EPA commented that the bioavailability factors developed for other parts of Mare Island do not necessarily translate to this area given the wide range of soil types and metals content, and requested site specific information in the BERA. Navy is pushing for accelerated transfer and cleanup of the area and suggested that the SLERA could be re-run and the need for a new BERA could be evaluated after that has been completed. **The response only partially addresses the comment.**

S10: EPA commented that the use of average doses is not acceptable; the risk assessment should consider the range of variability across a site, as "average" concentrations cannot be remediated. Navy responded that average dose was used only in the refinement of COPECS to be evaluated in the BERA; and that maximum concentration used for dose would conservatively bias the risk assessment high as it would assume the receptor would feed 100 percent of the time at that level. **The comment appears to be addressed.**

S11. EPA commented that no adjustment for bioavailability could be made without site-specific information (section 8.3.2) The Navy proposes accelerated transfer and cleanup of the area and suggests the need for site specific bioavailability data could be evaluated after that work is done. **This response only partially addresses the comment .**

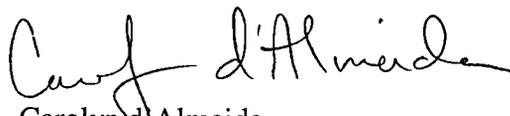
S12. Regarding the refinement of Avian and mammalian COPECS, EPA commented that deletion of COPECS must be revisited when site-specific bioavailability information is available, especially when endangered species are present. Navy reiterated their response to comment S11. **This only partially addresses the comment.**

#### Summary

EPA remains concerned that the past discharges of sandblast material to the wetlands and off shore area remains inadequately characterized and the potential ecological risks are not adequately evaluated.

If you have any questions, I can be reached at (415) 972-3150.

Sincerely,



Carolyn d'Almeida  
Remedial Project Manager

cc: Gary Riley, RWQCB  
Chip Gribble, DTSC  
Henry Chui, DTSC