



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

April 3, 2001

Mr. Richard Mach
Department of the Navy
Naval Facilities Engineering Command
Southwest Division
BRAC Office
1220 Pacific Highway
San Diego, CA 92132-5190

Re: EPA review and comment on the Calculation and Implementation of Supplemental Manganese Ambient Levels, Hunters Point Shipyard, dated February 28, 2001

Dear Mr. Mach:

EPA has completed its review of the above-referenced document. Comments are provided in an attachment to this letter.

If you have any questions, please contact me at 415-744-2409.

Sincerely,

A handwritten signature in cursive script, appearing to read "Claire Trombadore".

Claire Trombadore
Remedial Project Manager

cc: Dave Demars, Navy
Rich Pribyl, Navy
Mike Wanta, TtEMI
Chein Kao, DTSC
Brad Job, RWQCB
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Michael Work, EPA
Indira Balkisoon, TechLaw

**EPA REVIEW AND COMMENT
CALCULATION AND IMPLEMENTATION OF SUPPLEMENTAL
MANGANESE AMBIENT LEVELS
HUNTERS POINT SHIPYARD**

General Comments

1. The Navy's use of a 95% Upper Confidence Limit on the 95th percentile to calculate the ambient levels of manganese in bedrock and fill containing basalt and chert represents a value that is on the upper end of the distribution curve but is not health protective. Since the area of concern contains areas designated for residential use, it is appropriate to use a health protective screening value. It would be more appropriate to use strictly the 95th percentile. EPA made a preliminary calculation and determined a supplemental ambient level of about 7,500. Please revise the calculation of the supplemental ambient level for Mn to be the 95th percentile of the soil samples containing visible basalt or chert fragments. The navy should also perform this same recalculation for the bedrock supplemental ambient level.
2. Figure 12, Decision Flow Chart. This figure is a very important part of the SMAL but it needs revision. The Flow Chart should include all steps leading to application of a supplemental ambient level for Mn including the evaluation potential industrial sources of Mn. This screening should occur before the first decision diamond in the diagram. During this evaluation, the presence of low levels of VOCs, SVOCs, PCBs or petroleum (below cleanup levels) in a sample containing manganese should be considered a possible indicator of industrial activities. As mentioned at a recent meeting, the Navy will also include a step of screening against the PRG - 1,800 for residential reuse areas and 32,000 for industrial reuse areas. Any other metals that could be associated with sandblast grit should be included in the collocated metals portion of the flow chart. If chert rock fragments are not noted upon visual inspection, the Navy should excavate the site and not continue on with taking a collocated sample. The "Delineate and Evaluate" end point on the Decision Flowchart does not include excavation. Should manganese concentrations be present at an excavation site, in excess of the screening criteria, then excavation of the material should take place.
3. Appendix B of the hard copy of the report does not include the set of boring logs. Please include the set of boring logs in the hard copy of the final deliverable.

Specific Comments

1. **Section 2.0, page 3.** The statement that manganese concentrations in fill and bedrock at Hunters Point Shipyard (HPS) show considerable spatial variability because manganese concentrations in chert and basalt range from 200 mg/kg to 100,000 mg/kg is misleading. Concentrations of manganese in bedrock at HPS chert and basalt have not been detected as high as 100,000 mg/kg. According to Table 2, the highest concentration of manganese detected in bedrock at HPS is 30,200 mg/kg. It is understood that concentrations of manganese exceeding 100,000 mg/kg do occur in nature, however, concentrations of this

magnitude have not been observed at HPS. Please revise this section to refer to data that reflect site-specific conditions.

2. **Section 2.0, page 3, first paragraph and Table 1.** Based on the information in Table 2, Hunters Point samples do not have detected concentrations of manganese greater than 30,200 mg/kg, and this detection may be an outlier. In Table 1, the detections above 100,000 are from samples collected from massive ore bodies and manganese lenses. Huebner and Flohr (1990) describe the Buckeye deposit as a mine with massive and layered ores. They further describe the rocks as a striking “compositional contract...with Franciscan cherts and shales deposited above metabasalt.” This deposit is unlike the metabasalts and cherts that are present at Hunters Point. Chyi et al (1984) similarly caution readers against comparing cherts with manganese lens data. Trask (1943) did not identify any manganese deposits or manganese production in the County of San Francisco or in nearby San Mateo County. This suggests that it is inappropriate to compare data from manganese lenses and ore bodies with samples from Hunters Point fill or bedrock. All of the data from manganese lenses should either be removed completely from Table 1 or placed in a separate table that is clearly labeled “manganese ores and lenses.”
3. **Section 2.0, page 3.** The last paragraph of this section speculates that other parts of the San Francisco peninsula have a greater abundance of chert and basalt than HPS, and that manganese concentration associated with the former areas are expected to be higher than those at HPS. It is inappropriate to speculate that soil conditions at the other locations contain higher levels of manganese than HPS without providing data that confirms this assertion. In addition, HPS differs from the other areas because HPS has had a long history of industrial use. Please revise this section.
4. **Section 4.3.** Calculation of an ambient level using regional analytical results in published literature must be based on samples collected from areas that are generally similar to Hunters Point. As discussed in Comment 2, above, it is not appropriate to include results from samples of ore bodies and manganese lenses. It is also inappropriate to include samples from current or former mines. There is no evidence to suggest that these ore bodies or economically viable manganese lenses are present at Hunters Point Shipyard and there are no bedrock sample concentrations to suggest that concentrated manganese deposits are present at Hunters Point Shipyard. The ambient concentration should be recalculated without the concentrations from manganese lenses and ore bodies.
5. **Section 4.4, page 9.** It is unclear how many geologic logs were reinterpreted in order to provide additional chert and basalt bedrock sample analyses. Please provide the geologic logs that were reinterpreted and provide a summary of the rationale for why each log was reinterpreted.
6. **Section 6.0, page 12.** Part of the proposed decision flowchart for manganese screening is to physically examine collocated soil samples that contain manganese concentrations of 1,400 mg/kg or higher to determine whether the samples contain chert or basalt. However, the SMAL Report does not state how the soil samples will be inspected to determine whether the sample contains chert or basalt. At the March 22 meeting, the

Navy's consultants stated it would be visual inspection only. Please clarify this in the SMAL. Further, please describe how this visual inspection will be performed, by who and with what quality control measures in place to ensure the determinations are both accurate and consistent.

7. **Figure 12.** Two of the decision boxes on the Decision Flowchart hinge upon whether the soil sample has "low As, Cd, Pb, or Zn concentrations". It is unclear what is meant by "low". Does this refer to the Hunters Point Ambient Level (HPAL), or does it refer to another value. Please revise Figure 12 (and Section 6.0) to specifically state what "low" concentrations of As, Cd, Pb, and Zn are. In addition, it is not clear why only concentrations of As, Cd, Pb, and Zn are evaluated in the Screening Process and why other contaminants are not being evaluated. Please revise the SMAL Report to include all contaminants of concern.
8. **Responses to EPA Comments. EPA General Comment 1 of January 31, 2001.** This comment has not been adequately addressed. EPA understands that the SMAL uses a basewide approach but EPA still wants to know this information. Please revise the RTC to include this information or provide it separately, perhaps by email.