

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

400 P STREET, 4<sup>TH</sup> FLOOR  
SACRAMENTO, CA 95814

July 25, 1995

N00217.003113  
HUNTERS POINT  
SSIC NO. 5090.3



Engineering Facilities Activity, West  
Attn: Mr. David Song [1832.3]  
900 Commodore Way, Building 101  
San Bruno, California 94066-0720

Dear Mr. Song:

**PHASE 1B ECOLOGICAL INVESTIGATION WORKPLAN, HUNTERS POINT ANNEX**

Upon further evaluation of the above report, the Department of Toxic Substances Control (Department) is forwarding enclosed comments for your consideration.

Should you have any questions regarding this letter and would like to seek clarification, please call me at (510) 540-3821.

Sincerely,

A handwritten signature in cursive script that reads "Cyrus Shabahari".

Cyrus Shabahari  
Project Manager  
Office of Military Facilities

Enclosure

cc: US EPA, Region IX  
Attn: Sheryl Lauth  
Mail Code H-9-2  
75 Hawthorne Street  
San Francisco, California 94105

Regional Water Quality Control Board  
Attn: Richard Hiett  
2101 Webster Street, Suite 500  
Oakland, California 94612

California Department of Fish and Game  
Mr. Attn: Mr. Michael Martin  
20 Lower Ragsdale, Suite 100  
Monterey California, 93940

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

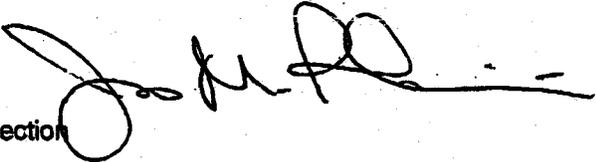
400 P STREET, 4TH FLOOR  
P.O. BOX 806  
SACRAMENTO, CA 95812-0806



(916) 323-3734 Voice  
(916) 327-2509 Facsimile

**MEMORANDUM**

**TO:** Cyrus Shabahari, Project Manager  
Site Mitigation Branch, Region 2  
700 Heinz, Building F, Second Floor  
Berkeley, CA 94710

**FROM:** James M. Polisini, Ph.D.  
Staff Toxicologist  
Office of Scientific Affairs  
Human and Ecological Risk Section 

**DATE:** July 25, 1995

**SUBJECT:** HUNTERS POINT ANNEX PHASE 1B ECOLOGICAL RISK ASSESSMENT  
DRAFT FINAL WORK PLAN  
[PCA 14740 SITE 200050-45 OC 2:16]

**Background**

We have reviewed the document titled *Hunters Point Annex San Francisco, California Phase 1B Ecological Risk Assessment Draft Final Work Plan*, dated June 7, 1995 and prepared by PRC Environmental Management, Inc. This document was received in our offices on June 12, 1995 and the review was made in response to your written work request.

The Department of Toxic Substances, the San Francisco Regional Water Quality Control Board, the Department of Fish and Game, the U.S. Environmental Protection Agency Region IX and the National Oceanic and Atmospheric Administration have reviewed the preliminary draft of this work plan. The coordinated agency response to the proposals for the aquatic receptors was furnished in a memorandum to Cyrus Shabahari, dated November 10, 1994. A separate review by the Office of Scientific Affairs review was furnished in a memorandum to Cyrus Shabahari, dated November 14, 1995.

**General Comments**

This version of the work plan reflects the response to agency comments and reflects additional discussions among the parties. There are several points which should be clarified, but response to the comments listed below can take the form of a separate memorandum, which can be attached to the work plan as an addendum, so that the entire work plan need not be revised. The most critical technical issue is the level of correlation which shall be considered 'acceptable' to be predictive of toxicological response.



### Specific Comments

How will assessment of the grain size and pH data allow evaluation of the 'accuracy of the resultant bioavailable fractions' (Section 6.4.3, page 31).

As stated in previous memoranda we doubt it will be possible to predict the results of aquatic toxicity tests based on physical or chemical sediment measurements or Microtox® results with sufficient accuracy. Microtox® results are presented as 'within one order of magnitude of the EC<sub>50</sub> values from other bioassays' (Section 7.1.3, page 35) for 86 percent of the data evaluated. If the correlation coefficient is greater than 0.5 the Microtox® results will be used to predict the aquatic toxicity result for stations where aquatic bioassays are not performed (Section 8.1, Step 4, page 39). A correlation coefficient [r] of 0.5 indicates that the coefficient of determination [r<sup>2</sup>] is 0.25 and that only 25 percent of the variation in the aquatic toxicity test results would be accounted for in the variability of the Microtox® results. A correlation coefficient of 0.5 is not an indicator of a sufficiently accurate correlation. Additional discussions should be scheduled to determine what level of correlation is sufficient for participating regulatory agencies.

How will dermal contact be evaluated 'qualitatively' (Section 8.2.1, page 40) for avian aquatic receptors? Dermal exposure should be factored into the estimation of dose for those receptors being evaluated using the dose methodology. Dermal contact can be a significant route of exposure and might be expected to be significant in a wading shorebird. A similar comment was made on the preliminary draft work plan.

We agree that development of 'high' dose and 'low' dose estimates (Section 8.2.1.4, page 45) coupled with 'high' and 'low' toxicity reference values (TRVs) (Section 8.2.2.2, page 48) will enhance communication of the range of probable ecological risk.

We agree that discussion of the exact uncertainty factors to be applied in developing the TRVs can await development of the core toxicological data set (Section 8.2.2.2, page 48).

The uncertainty factor column of the TRV data table (Section 8.2.2.2, page 49) should be expanded to allow separate indication of each uncertainty factor applied in development of the TRVs. For example, the uncertainty factor for LOAEL-to-NOAEL, acute-to-chronic, cross-species extrapolation and all other uncertainty factors should be indicated separately.

Please indicate the 'groups' proposed for summing hazard quotients (HQs) by similar chemistry and toxicological modes of action (Section 8.2.3, page 51).

The conclusions regarding the ecological risk to terrestrial receptors posed by contaminants in Parcels B, C, D (Section 9.0, page 51) should be formalized in a scoping level assessment of these parcels to complete the administrative record.

The assessment of non-bioaccumulative compounds on small mammals should include both the 'high' and 'low' dose estimates. The work plan currently states the it 'may' involve both estimates (Section 9.1, page 53). Dermal exposure should be factored into the estimation of dose for those receptors being evaluated using the dose methodology. Dermal contact can be a significant route of exposure and might be expected to be significant in a burrowing rodent.

Will contaminants which are known to bioconcentrate from soil to plant tissues be evaluated in the 'non-bioaccumulative' methodology (Section 9.1, page 52) or the 'bioaccumulative' methodology (Section 9.2, page 53)? The dose equation for the 'non-bioaccumulative' methodology should be modified to separate the soil intake from food intake with

a bioconcentration factor included for food intake, This would allow evaluation of dose using contaminant-specific bioconcentration factors for primary consumption.

The assessment of bioaccumulative organic and inorganic compounds on the kestrel should include both the 'high' and 'low' dose estimates. The work plan currently states the it 'may' involve both estimates (Section 9.2, page 55). Dermal exposure should be factored into the estimation of dose for those receptors being evaluated using the dose methodology.

### Conclusions

As stated in previous memoranda we doubt it will be possible to predict the results of aquatic toxicity tests based on physical or chemical sediment measurements or Microtox ® tests with sufficient accuracy or precision for regulatory acceptance. However, if this methodology is successful it will prove a benefit to many other ecological risk assessments in the San Francisco Bay area. Agreement on a correlation coefficient which is indicative of an 'acceptable' correlation is central to this methodology and should be the subject of further discussion among all parties.

Reviewed by: Laura M. Valoppi, M.S. *LM Valoppi*  
Associate Toxicologist  
Human and Ecological Risk Section

cc: Michael J. Wade, Ph.D., DABT, Senior Toxicologist, OMF Liaison, HERS  
Deborah J. Oudiz, Ph.D., Senior Toxicologist, Northern California Liaison, HERS

Sheryl Lauth  
U.S. EPA Region IX  
Superfund Technical Assistance  
75 Hawthorne (H-8-4)  
San Francisco, CA 94105

Denise Klimas  
NOAA Coastal Resources Coordinator  
U.S. EPA Region IX  
75 Hawthorne (H-9-5)  
San Francisco, CA 94105

Michael Martin  
California Department of Fish and Game  
20 Lower Ragsdale, Suite 100  
Monterey, CA 93940

James Haas  
U.S. Fish and Wildlife  
Environmental Contaminants Section  
2800 Cottage Way  
Sacramento, CA 95825

Richard Hiatt  
San Francisco Regional Water Quality Control Board  
2101 Webster Street, Suite 500  
Oakland, CA 94612