

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2  
 700 HEINZ AVE., SUITE 200  
 OAKLAND, CA 94710-2737  
 (510) 540-2122

N60028\_000437  
 TREASURE ISLAND  
 SSIC NO. 5090.3.A



September 21, 1995

Commanding Officer  
 Engineering Field Activity West  
 Attn: Code 18, Mr. Ernesto Galang  
 Naval Facilities Engineering Command  
 900 Commodore Drive  
 San Bruno, California 94066-5006

Dear Mr. Galang:

**COMMENTS TO INTERIM DRAFT FINAL WORK PLAN, PHASE II ECOLOGICAL  
 RISK ASSESSMENT, NAVAL STATION TREASURE ISLAND, SAN FRANCISCO  
 (JULY 18, 1995)**

The Department of Toxic Substances Control and San Francisco Bay Regional Water Quality Control Board have reviewed the subject document. In addition to review of this draft document, comments were provided at a meeting on August 15, 1995. Agreements reached at the August 15 meeting will require substantial revision of several sections of this work plan. Comments from the August 15 meeting are summarized in the enclosed memorandum from Dr. James Polisini. Specific comments are also enclosed. The polychaete aquatic toxicity test using both survival and growth as endpoints should be performed on a subset of the samples for Naval Station Treasure Island to verify the proposal that this bioassay is relatively insensitive.

If you have any questions regarding this letter, please contact me at (510) 540-3818.

Sincerely,

*Mary Rose Cassa*  
 Mary Rose Cassa, R.G.  
 Engineering Geologist  
 Office of Military Facilities

Enclosure

cc: Mr. Michael Bessette  
 California Regional Water Quality Control Board  
 San Francisco Bay Region  
 2101 Webster Street, Suite 500  
 Oakland, California 94612

Ms. Rachel Simons [H-9-2]  
 U. S. EPA, Region 9  
 75 Hawthorne Street  
 San Francisco, California 94105-3901

*Admin Record (3 copies)*

437



**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 Fax

**MEMORANDUM**

**TO:** Mary Rose Cassa, Project Manager  
Office of Military Facilities, Region 2  
700 Heinz, Building F, Second Floor  
Berkeley, CA 94704

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

**DATE:** September 1, 1995

**SUBJECT:** TREASURE ISLAND PHASE II ECOLOGICAL ASSESSMENT WORK PLAN  
[PCA 14740 SITE 200231-45 OC 2:40]

**Background**

We have reviewed the document titled *Naval Station Treasure Island San Francisco, California Phase II Ecological Risk Assessment Interim Draft Final Work Plan*, dated July 18, 1995 and prepared by PRC Environmental Management, Inc. of San Francisco, California. In addition to review of this draft document, comments were furnished to PRC at an August 15, 1995 meeting in San Francisco.

We have reviewed a previous draft of the Phase II Ecological Risk Assessment Work Plan in an OSA memorandum dated February 8, 1995.

Naval Station Treasure Island occupies both Treasure Island and Yerba Buena Island in San Francisco Bay midway between San Francisco and Oakland. Treasure Island (TI) is manmade and approximately 450 acres in size. Yerba Buena Island (YBI) is a natural island in San Francisco Bay approximately 130 acres in size. The U.S. Army first occupied YBI in 1866. The Navy began operations on YBI in 1896. TI was constructed in 1936 and 1937 as a site for the Golden Gate International Exposition in 1939. TI was leased to the Navy in 1941 for use as a training and personnel processing facility. Naval Station Treasure Island (NAVSTA TI) is used today for processing personnel, and training such as fire fighting. YBI is mainly a residential facility.

**Comments from August 15, 1995 Meeting**

The following points were agreed to at the August 15, 1995 NAVSTA TI meeting at PRC offices in San Francisco:

1. The San Francisco Bay-only Effects Range-Low (ER-Ls) and Effects Range-Median (ER-Ms) extracted from the National Oceanic and Atmospheric Administration (NOAA) sediment data base will be evaluated as the primary sediment bulk chemistry concentration criteria to delineate three groups of sediment sites: 1) those proposed



- for no further action; 2) those which require additional investigation; and, 3) those which appear to require immediate remediation. PRC will apply these criteria to the data available from the NAS Alameda Phase I investigation as part of this evaluation and furnish the results of the NAS Alameda classification to regulatory agencies for evaluation.
2. The assessment of interstitial water will focus on pore water centrifuged from NAVSTA TI sediments. A small number (between 15 and 20) of leachate extractions may be performed in addition to the pore water evaluation to assess the capacity for leachate concentrations to serve as predictors of pore water concentrations or biological response in aquatic toxicity tests.
  3. Regulatory agencies agreed to allow sediment samples to be held for up to 8 weeks in the dark at 4°C prior to initiation of the whole sediment bioassay with amphipods.
  4. Sediment will be centrifuged to extract pore water within 24 hours of collection. Pore water may then be frozen until required for the pore water bioassay.
  5. Analysis of sediment samples for volatile organic compounds (VOCs) may not be performed at all stations, but will be performed at stations where VOCs may appear based on site history. Justification will be provided for those stations where VOC-analysis will not be performed.
  6. The San Francisco Bay-only ER-Ls and ER-Ms will be evaluated, and possibly 'adjusted', based on the results of the NAVSTA TI investigations to further refine the usefulness as sediment screening criteria.
  7. Regulatory agencies will provide the Navy and PRC with a short list of contaminants which, in the judgment of regulatory agencies, are sufficient to cause a site to be classified for immediate remediation should the contaminant exceed the San Francisco Bay-only ER-Ls

### General Comments

Agreements reached at the August 15, 1995 meeting at PRC in San Francisco will require substantial revision of several sections of this work plan. Changes to this work plan should be identified using some method such as ~~strikeout mode~~ for those portions being removed and underlining added text.

### Specific Comments

No bats are listed with the terrestrial mammals occupying NAVSTA TI (Section 2.8.1, page 9). Many, if not all, bat species in California are rare, threatened or endangered (RTE). Part of the receptor survey for RTE species (Section 4.0, page 17) in the Phase II ecological risk assessment (ERA) should include confirmation that bats do not occupy NAVSTA TI.

We understand from discussions at the August 15, 1995 meeting that the work plan will be amended so that leachates (Section 5.1.1, page 20) will not be used to screen sediment sites, but will be performed at a small number of sites to assess the predictive capability of sediment leachates (see number 2 above).

The final sentence of the description of Clipper Cove Skeet Range sampling (Section 5.1.2, page 21) should be amended to indicate that further sampling will be performed if shot is present in sediment samples at the 900 foot distance. The draft work plan currently indicates that additional sampling may be performed.

The sampling depth for cores should indicate depths below the water-sediment interface. The draft work plan currently states depths 'below ground surface' (Section 5.1.2, page 21).

The agreement of the regulatory agencies, at the June 3, 1994 meeting, was that a qualitative ecological assessment of the terrestrial ecosystem of Treasure Island was appropriate because of the lack of terrestrial habitat, but that the terrestrial ecological assessment of Yerba Buena Island would require much more detail. Please amend the statement regarding this agreement (Section 6.0, page 22) so that it does not refer to all of NAVSTA TI.

The total chemistry section (Section 6.2.1.1, page 25) proposes 'standard EPA methods' for all analytical procedures. We understand from separate discussions that polycyclic aromatic hydrocarbons (PAHs) will be analyzed by a modified Contract Laboratory Program (CLP) Semi-volatile organic analysis (SVOA) which is capable of reaching the NOAA ER-Ls for most PAHs. This deviation from 'standard EPA' methods for PAHs in sediment should be noted in the text.

The section on bioavailability (Section 6.2.1.2, page 26) will need to be greatly modified to cover the agreements reached regarding pore water and leachates in the August 15, 1995 meeting.

We are still reviewing the comparative response data for amphipods and polychaetes furnished as facsimile copy by PRC after the August 15, 1995 to determine whether polychaete worm bioassays should be added to the suite of bioassays (Section 6.2.2, page 28).

Two 'second step' sentences occur in the second paragraph discussing ecological risk (Section 7.1, page 31).

The sediment screening discussion (Section 7.1.1.1, page 32) requires modification to reflect the agreements reached on the San Francisco Bay-only ER-Ls and ER-Ms as discussed in the August 15, 1995 meeting.

Chronic effect concentrations should be used as opposed to acute effect concentrations to evaluate pore water potential threat (Section 7.1.1.2, page 33).

We propose that sediment toxicity tests be performed on a small number, perhaps five, of the sediment samples immediately upon collection. The results of these sediment toxicity tests can then be compared with similar test performed at the end of the holding period to verify that holding the sediment samples eight weeks (Section 7.1.2.3, page 34) does not appreciably alter the toxicity.

Additional material was forwarded from the Houston, Texas office of PRC in support of the PRC position that the polychaete worm aquatic toxicity test is relatively insensitive and not necessary for the NAVSTA TI Phase II investigations. The polychaete worm results from the Naval Air Weapons Station (NAWS) Point Mugu investigation indicate that while polychaete worm survival may be insensitive, the growth endpoint was statistically different from the controls for one station. It appears that statistical testing of the growth endpoint data was confounded by the low but uniform growth rates in some controls (Table 8 and Table 9) and the variable growth rates between commercial sand and natural sand in other controls (Table 6 and Table 7):

Controls	Growth (Table 6)	Growth (Table 7)	Growth (Table 8)	Growth (Table 9)
Commercial Sand	0.84	0.56	0.42	0.49
Natural Sand	0.54	0.90	0.46	0.41

It seems likely that combining the control growth data for the statistical tests may have increased the control variation making a finding of statistical difference impossible. Polychaete worm

bioassays should be performed on a small number of NAVSTA TI samples to verify the contention that polychaete worm bioassays are insensitive.

The work cited as Johnston and others (1994) regarding the biological impact of 20 percent amphipod mortality (Section 7.1.2.3, page 35) does not appear in the reference section.

The appropriate site use factor (SUF) (Section 7.2.1, page 38) for each representative species should be developed in coordination with regulatory agencies. Site specific characteristics, such as water supply, roosting areas or prey availability may cause YBI use to exceed a strict ratio of the size of YBI to the size of a representative species home range.

Further discussion is needed prior to acceptance of the formula for calculating dose for avian receptors (Section 7.2.1, page 38). Ingestion of contaminated water, dermal exposure and inhalation are not presently included in the calculation. We would favor retaining these routes of exposure in the initial stages of investigation and only eliminating them if exposure parameters are too uncertain or toxicological reference values are not available or cannot be extrapolated. In addition, the Exposure Duration (ED) factor may be unnecessary if the exposure period of the toxicological experiment approximates the critical exposure period of the receptor at NAVSTA TI.

The work cited as Arthur and Gates, 1988 regarding ingestion of soil (Section 7.2.1.2, page 40) does not appear in the reference section.

A 'Litigation Area' which is not part of NAVSTA TI is referenced in the text 7.2.1.4, page 42 and Section 7.2.2.2, page 44). Please remove this reference.

We agree that the manner in which uncertainty factors (UFs) and allometric conversions will be employed is best left until after selection of the representative species and review of the toxicological data for the contaminants of concern (COCs) (Section 7.2.2.2, page 45).

We propose that both the small mammal and american kestrel be assessed for impacts from all contaminants regardless of the biomagnification factor (Section 8.1, page 49). A single dose equation which incorporates the biomagnification factor (BMF) can be used for both with a BMF of 1.0 for substances which do not bioaccumulate.

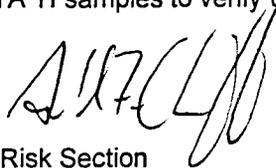
Additivity must be addressed when evaluating the estimated dose against the toxicity reference value. We do not agree that COPCs may be eliminated from further consideration if the estimated dose does not exceed the toxicity reference value (Section 8.1.1, page 51).

## Conclusions

The revised draft work plan should address the comments above and the agreements reached at the August 15, 1995 meeting at PRC in San Francisco. We appreciate the opportunity to review this early draft of the Treasure Island Phase II ecological risk assessment work plan.

The polychaete aquatic toxicity test using both survival and growth as endpoints should be performed on a subset of the NAVSTA TI samples to verify the proposal that this bioassay is relatively insensitive.

Reviewed by: Gerald Chernoff, Ph.D.  
Staff Toxicologist  
Human and Ecological Risk Section



Mary Rose Cassa  
September 1, 1995  
Page 5

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

Clarence Callahan, Ph.D.  
U.S. EPA Region IX  
Superfund Technical Support (H-8-4)  
75 Hawthorne Street  
San Francisco, CA 94105

c:\jimpl\ecol\tieco5.doc\h40