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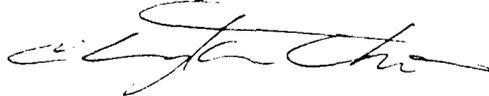
Commander  
Department of the Navy  
Engineering Field Activity, West  
Naval Facilities Engineering Command  
Attn: Mr. Stephen Chao, Project Manager  
900 Commodore Drive, Bldg. 101  
San Bruno, California 94066-2402

Dear Mr. Chao:

**DRAFT PHASE II SITE-WIDE ECOLOGICAL ASSESSMENT(SWEA) WORK PLAN,  
MOFFETT FEDERAL AIRFIELD**

The California Environmental Protection Agency (Cal/EPA) has reviewed the subject document. Comments regarding the document have been prepared by the Department of Toxic Substances Control (DTSC) and San Francisco Regional Water Quality Control Board (RWQCB). Please respond to all comments prior to the submission of the draft final Phase II SWEA work Plan. If you have questions, please contact me at (510) 540-3830.

Sincerely,



C. Joseph Chou  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facility

Enclosures

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**M E M O R A N D U M**

**TO:** C. Joseph Chou  
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**FROM:** Laura M. Valoppi, M.S. *L M Valoppi*  
Associate Toxicologist  
Office of Scientific Affairs

**DATE:** March 28, 1995

**SUBJECT:** NAS Moffett Field, Draft Phase II SWEA Work Plan  
OC = 02, PCA = 14740, Site = 200068/45, HZ60

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The Human and Ecological Risk Section (HERS) in the Office of Scientific Affairs (OSA) was requested by Region 2, Office of Military Facilities, to review the Draft Phase II Site-Wide Ecological Assessment (SWEA) Work Plan, dated February 17, 1995, and prepared by PRC Environmental Management, Inc., and Montgomery Watson, for Naval Air Station Moffett Field (Moffett Field).

**GENERAL COMMENTS**

These comments are in addition to those provided by Clarence Callahan, Jim Haas, and Susan Gladstone, who have reviewed these comments. We also presented certain portions of the proposed plan to the U.S. EPA Region IX Biological Technical Advisory Group, comprised of state and federal regulatory agencies and Natural Resource Trustees, to receive their input.

This work plan contains the results of meetings between the Navy and their contractors, along with the regulatory agencies and natural resource trustees, to develop an approach for Phase II. Conference calls took place on March 22, and



again on 27 where revised drafts of Tables 3-11, 3-12, and 3-14 were presented. These comments reflect the changes discussed in the March 27 conference call.

We understand this project is on a very tight timeframe, so we have provided comments only on those aspects of the draft work plan which are related to the sampling effort scheduled to start in the beginning of April. We are available to meet or conference call with the Navy contractors to finalize these time-critical aspects for the field work. Additionally, as noted in Comment 14 below, we would like to have some technical meetings to clarify some of the non-time-critical elements of Phase II.

#### **SPECIFIC COMMENTS**

1. Storm Water Retention Ponds, (SWRP) and Eastern Diked Marsh (3 reference locations and 5 site locations): We agree to eliminate acute tests for mysid and silverside in water, as is reflected in the revised Table 3-14. We agree with the revised Tables 3-11 and 3-14 which indicates all three locations will have bioassays for algae, mysid and silverside, with all locations having a dilution series. We agreed at the March 27 conference call that only one reference location is needed for water, but a dilution series will be conducted for each of the three test species.

For sediment, we agree with the revised Table 3-14. In addition, during the March 27 conference call it was agreed that the amphipod and polychaete test will be conducted at each of the three reference locations; however only one location will have the polychaete bioaccumulation bioassay.

2. Northern Channel (1 locations for water with a dilution series; three locations for sediment, with 1 location a dilution series; 2 locations for porewater, one with a dilution series): We agree to the revised Table 3-11 and 3-14. The revised proposal is a appropriate mix of additional locations and dilution series for sediment, while emphasizing dilution series for water

3. Nereis bioassay: The revised Table 3-14 includes a growth endpoint for this bioassay for the subchronic test; we agree. The laboratory that is conducting the bioassays should be aware of studies on the relationship between food ration and toxicity

(Moore, et al., 1993a), and the interpretations of the growth endpoint in *Nereis* (Moore, et al., 1993b).

4. FETAX: The Frog Embryo Teratogenesis Assay using *Xenopus* (FETAX) will be conducted at only one location in the Eastern Diked Marsh, and per the facsimile of March 27, the reagent water will be used in place of FETAX solution and the necessary preliminary tests prior to using reagent water will be conducted (e.g., range finding and replicate definitive tests). The revised Table 3-14 indicates this is a sediment pore-water test, with a dilution series. We also require that a reference toxicant be conducted as part of this test. Lacking a reference area for this test, we assume the laboratory control will be used as the reference. During the conference calls, we suggested that another location, possibly in the western portion of the diked marsh, be added for the FETAX so that more information is available to establish a no-effect level. It is our understanding the Navy has decided against this option for the Phase II sampling, but realizes further bioassays may be required depending on the test results.

5. During the conference calls we expressed concern that the number of replicates to be done for each test is not specifically stated in the workplan, and we requested clarification on the number and type of replicates, reference toxicants, etc. The revised Table 3-14 contains more information on number of replicates for each test; the Navy indicated the lab protocols will be provided to us. We request that all QA/QC information from the bioassay test, including the results of reference toxicants, be reported in the Phase II SWEA report.

6. Analysis on Pore-Water: It is our understanding from the conference calls that Table 3-3 in the workplan will be revised to indicate pore-water contaminant analysis will be conducted at SSWL-22, where the FETAX bioassay will be done.

The work plan does not specify the extraction technique which will be used. For the sea urchin test, We recommend the centrifuge technique used by the RWQCB Bay Protection Program.

7. Methods: Simultaneously Extracted Metals (SEM) and Acid Volatile Sulfides (AVS) should be included chemical analysis on sediments so that information on bioavailability of metals in sediments can be obtained, and this information correlated to the bioassay results. Table 3-10 indicates a method for AVS,

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but Table 3-13 lists a different method (Total Sulfides). It is important that the AVS method be used. Also, total metal methods are specified (EPA 6010/7000 series), but the SEM method is needed for sediments (Ankley, et al., 1994; Allen et al., 1993). It is our understanding from the March 27 conference call that SEM will be conducted along with AVS.

8. It is unclear from the work plan the location where sweep net samples for insects will be collected. It was clarified in the March 27 conference call that the location will be near the Eastern Diked Marsh, and that only 1 sample will be collected rather than the 6 replicates indicated in the workplan; we agree.

9. Pickleweed collection: The above-ground, fleshy part of the pickleweed should be sampled, since this is the part the Salt-Marsh Harvest Mouse is expected to eat. Why is TPH analysis being done on pickleweed tissue? The ratios of PAHs compared to that in sediment or product may be, will likely be, very different in plant tissue. We suggest deleting the TPH analysis, and just conducting PAH analysis.

10. Foodweb/Representative Receptors: It is unclear to us the reason for differences between the representative receptors listed on page 2-9 versus those listed on page 3-2. How will terrestrial vascular plants be assessed for bioaccumulation or toxicity since none of the tests proposed are plant tests?

In general, we are confused about whether current exposure to terrestrial receptors at the landfills (Site 1, Site 2, and the Golf Course Landfills) are to be evaluated as part of this assessment, or if they are eliminated based on decisions made by the Remedial Project Managers. As noted below, various chlorinated pesticides are found in the Golf Course Landfill and Non-landfill Upland areas in soil at greater than 5% frequency. Therefore, the terrestrial receptors indicated on page 2-9, need to be reconsidered.

For the aquatic receptors, we agree that the black-necked stilt should replace the clapper rail, since Jim Haas (U.S. FWS) indicated the rail is unlikely to feed in the SWRP since it is non-tidal; therefore it was recommended to use the stilt to represent a resident shorebird which would feed in the SWRP and diked marsh. However, we question the elimination of the invertebrate- fish/amphibian - great blue heron pathway since

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this bird feeds on a different trophic level, and since fish and amphibians will be evaluated in the toxicity tests.

11. Interpretation of Sediment Bioassay Results: While we have reservations about use of the proposed RTR approach, the discussions concerning alternatives can be postponed until the bioassay results are available.

12. In addition to requesting resolution on the above time-critical items, we also have other topics we would like clarification on by having a few meetings of the technical staff. These topics include: sampling for VOCs in owl burrows, clarification on the "indicator PAH" approach, refinement of Assessment and Measurement Endpoints, clarification on which exposure pathways and exposure routes will be evaluated for vertebrate species, toxicity profiles and determination of ecological reference doses (extrapolation and uncertainty factors), and modeling bioaccumulation to higher trophic levels, and consideration of multiple contaminants and exposure pathways.

13. We have the following comments on Table 2-1 concerning COCs. This list includes risk management decisions which have been made separate from the risk assessment comments. Refer to my previous memorandum, dated January 11, 1995.

**Wetland Sediments** - Table 2-4 indicates chlordane should be added based on our criteria.

**Wetland surface water** - Table 2-5 indicates chlordane should be added.

**Golfcourse Landfill soil** - Table 2-6 indicates chlordane, endrin ketone, endosulfan sulfate, heptachlor, endrin aldehyde, gamma BHC should be added based on the criteria.

**Golfcourse Landfill groundwater** - Table 2-7 indicates mercury exceeds the AWQC.

**Nonlandfill Upland Soil** - Table 2-9 indicates gamma and alpha chlordane, endrin ketone, endrin aldehyde, and endosulfan II were detected at a frequency of greater than 5%. As I indicated in previous memos, these are highly toxic, bioaccumulative compounds that meet the criteria and should be retained. During the last meeting on this work plan, the Navy

assured us that these chlorinated pesticides were not found in upland soils, and therefore we agreed that earthworm tissue residue analysis were not warranted, and that the inhalation pathway was the only complete pathway for the burrowing owl. Based on the presentation of the data in this table, this conclusion must be reassessed.

**Groundwater in NBA Wells** - Table 2-10 indicates several chlorinated compounds (DDT/DD/DDE, gamma and alpha chlordane, dieldrin, endrin, endrin ketone, dieldrin, and Aroclor 1254) were detected in groundwater at a frequency greater than 5%, at levels which exceed the chronic AWQC. What is the source of these compounds in groundwater if not the landfills? Our concern is that we have made an *a priori* assumption that surface runoff discharges are responsible for the chlorinated compounds found in the sediments of the SWRP. However, given the frequency with which these compounds are detected in groundwater in the NBA, can we conclude that groundwater is not an additional source of these contaminants to the SWRP?

Also, it is the Navy's contention that pumping of shallow groundwater at Building 191 to the Northern Channel results in a localized shallow groundwater gradient which pulls the groundwater south to Building 191, and therefore contaminants in groundwater do not flow north to be released to the SWRP. Are we certain that shallow groundwater is not released to the Northern Channel via Building 191? What happens if the sediment in the Northern Channel is cleaned up, but the leaching of these compounds into groundwater at the source (landfills) is not remediated, and thus continues to be released to the Northern Channel via Building 191 pump station?

#### **SUMMARY**

The saltmarsh and wetland habitat at Moffett Airfield is important because of the general decrease in such habitat in the San Francisco Bay region, and because this habitat supports the endangered Salt Marsh Harvest Mouse. Upland portions Moffett Airfield support the burrowing owl, a state species of special concern. The regulatory agencies are committed to continued cooperation with the Navy and their contractors to ensure Phase II results are useful for evaluating the contaminant impacts to wildlife, and to provide the RPMs with information for evaluating remedial actions. We have found technical meetings with the contractors to be productive, and

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believe continued meetings will be fruitful to resolve the remaining issues.

If you have any questions on these comments, please contact me at CALNET 8-467-2513.

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cc: Michael J. Wade, Ph.D.,  
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#### REFERENCES

- Allen, H.E., G.Fu, B. Deng. 1993. Analysis of Acid-Volatile Sulfide (AVS) and Simultaneously Extracted Metals (SEM) for the estimation of potential toxicity in aquatic sediments. Environmental Tox. and Chemistry, Vol. 12, pp. 1441-1453.
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- Moore, D.W., T.M. Dillon. September 1993a. Chronic Sublethal Effects of San Francisco Bay Sediments on *Nereis (Neanthes) arenaceodentata*; Effect of food Ration on Sediment Toxicity. U.S. Army Corps of Engineers Waterways Experiment Station, Miscellaneous Paper D-93-4.
- Moore, D.W., T.M. Dillon. September 1993b. Chronic Sublethal Effects of San Francisco Bay Sediments on *Nereis (Neanthes) arenaceodentata*; Interpretative Guidance for a Growth End Point. U.S. Army Corps of Engineers Waterways Experiment Station, Miscellaneous Paper D-93-5.

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