

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2
700 HEINZ AVE., SUITE 200
BERKELEY, CA 94710-2737

March 25, 1996

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 RESPONSES (DATED FEBRUARY 7, 1996) TO STATE'S COMMENT NUMBER 15 AND DRAFT RESPONSE (DATED FEBRUARY 26, 1996) TO STATE'S COMMENT NUMBER 26 ON THE DRAFT PHASE II SITE-WIDE ECOLOGICAL ASSESSMENT (SWEA) REPORT, MOFFETT FEDERAL AIRFIELD (MFA)

Enclosed please find comments prepared by the Department of Toxic Substances Control (DTSC) and the San Francisco Regional Water Quality Control Board (RWQCB) on the subject documents. Other comments will be provided when the entire Response to Comments Package and the Draft Final Phase II SWEA are completed.

The State recognizes Navy's efforts in preparing the Response to Comments Packages No. 1, 2, and 3, Revised Report Outline and Draft Trophic Transfer Coefficients (TTC) for regulatory agencies' review prior to the release of the Draft Final Phase II SWEA report. In order to respond to the Navy's request for an immediate answer from regulatory agencies, DTSC and RWQCB have spent significant resources and provided a series of verbal or written responses for the above mentioned packages. However, we still believe that the most expedient way to produce an acceptable SWEA report and meet the Federal Facility Agreement schedule simultaneously is to submit a preliminary draft final document to the State as soon as possible. If you have any questions, please contact me at (510) 540-3830.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Joseph Chou".

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

Mr. Stephen Chao
March 25, 1996
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Enclosures

cc:

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**MEMORANDUM**

TO: C. Joseph Chou
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Region 2
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FROM: Laura M. Valoppi, M.S.
Associate Toxicologist
Office of Scientific Affairs

LM Valoppi

DATE: March 18, 1996

SUBJECT: NAS Moffett Field, Draft Final Phase II SWEA
Response to Comments, Set Nos. 2 and 3.
PCA = 14740, Site = 200068/45

The Human and Ecological Risk Section (HERS) in the Office of Scientific Affairs (OSA) has been asked to review these response to comments (RTC) from the Navy on the HERS memorandum of December 8, 1995 concerning the Draft Phase II Site Wide Ecological Assessment (SWEA). HERS has received two facsimile transmissions:

1. Facsimile transmittal from Chris Petersen and Kim Walsh of Montgomery Watson, dated February 7, 1996. Subject, Phase II SWEA Draft RTC, second set. Only comment numbers 15, 17, 19, and 20 are from HERS.
2. Facsimile transmittal from Chris Petersen and Kim Walsh of Montgomery Watson, dated February 26, 1996. Subject, Phase II SWEA Draft RTC, third set. Only comment number 18 is from HERS.

RESPONSE TO COMMENTS

Comment number 15 of the second set of RTC was unclear as to why the Navy was modifying food ingestion rates to account for the proportion of the diet assumed to be contaminated, since most of the site use factors are assumed to be one. To expedite resolving this issue, Kim Walsh of Montgomery Watson and I conversed on March 15, 1996. We agreed that the food ingestion rates (mass of food ingested per body weight of the animal) differs from the contaminant dose via the food ingestion pathway (mass of contaminant ingested per body weight of the animal). The contaminant dose via the food ingestion pathway is a function of the food ingestion rate (g of food/g BW-day) and the concentration of the contaminant in the food per mass of food (g of contaminant / g of food). The product of these two parameters is the contaminant dose via food ingestion (g of contaminant / g BW -day). The original workplan specified that the low dose calculations assume that 50% of the food items in the diet are contaminated. Thus, the Navy contractor was assuming only half of the prey in the diet were contaminated. I was concerned that this is not consistent with the forage area being less than the contaminated area. In other words an animal could receive all it's food from the contaminated area, but the contaminant concentration would vary. The assumption that 50% of the food is from the contaminated area originated in a PRC proposal to the Biological Technical Advisory Group, which was not site-specific and is still under review by the regulatory agencies.

Ms. Walsh agreed to assume that the proportion of the animals diet obtained from the contaminated area be consistent with the site use factor. Ms. Walsh was concerned that this may overestimate the hazard because the sample data were biased toward the more contaminated areas. We agreed this aspect could be discussed in the uncertainty section, but that the food ingestion rates should not be modified or adjusted in an attempt to compensate for the biased sampling. To evaluate the magnitude of uncertainty in this approach to food ingestion, a range of food ingestion rates could be determined using the equations in U.S. EPA (1993) and the range of body weights for the receptors as Moffett Field. Thus the low dose and high dose estimates of contaminant ingestion via the food pathway will be evaluated by considering the differences in food intake (based upon body weight), and soil concentration (95th UCL on the mean and maximum, which when multiplied by the biotransfer factors result in low and high estimates of contaminant concentrations in the food, respectively).

All other responses to HERS comments state that the information will be contained in the Draft Final SWEA.

Peer Review: James Polisini, Ph.D. *JM* *J.P. Polisini*
Staff Toxicologist, HERS

C. Joseph Chou
March 18, 1996
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References

U.S. Environmental Protection Agency. December 1993. *Wildlife Exposure Factors Handbook. Volume I of II.* Office of Research and Development, Washington, D.C. EPA/600/R-93/187a.

cc: Michael J. Wade, Ph.D.,
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Prepared by: Susan Gladstone

Phone No. 510-286-0840

Date: March 13, 1996

File No. 2189.8009

Subject: 1) Draft Responses to Selected Regulatory Agency Comments on the DRAFT Phase II Sitewide Ecological Assessment, dated February 26, 1996, for Moffett Federal Airfield - Navy request for preliminary impressions

Response to DTSC Comment #26 (provided to DTSC by RWQCB):

The response to comment #26 is incomplete with respect to providing the rationale for and the limitations of comparing porewater chemistry and polychaete tissue COPEC concentrations to amphipod survival. The response is incomplete because there is no discussion of the limitations of the data used for both the porewater chemistry and polychaete tissue data comparisons. Because there is limited porewater data, both in number of samples and in chemical analyses, we will have low confidence in any correlation made between amphipod mortality and porewater chemistry. And because the polychaete tissues were measured for chemicals that bioaccumulate, those chemicals which cause toxicity in amphipods will not necessarily be detected in the tissue residues. Lastly, the response lacks rationale because the Navy has not described (with references) the scientific basis for performing the porewater chemistry comparison to amphipod survival. The response to this comment should be revised, based on the following discussion.

As was stated in the original RWQCB comment, there may be merit to comparing porewater chemistry to amphipod survival. However, the limitations for performing this type of evaluation with the Moffett sediment data must be discussed in the report. For example, porewater chemistry was analyzed only on four samples from stations SSNC-18, SSWL-22, SSRP-29, and SSRP-32 (out of eleven stations sampled for the amphipod bioassay), and only for metals. Organic chemical analysis was performed on only station SSNC-18, and physicochemical parameters in porewater (e.g., ammonia, pH) were measured at all stations.

The following are some considerations which should be included in the discussion regarding the comparison of amphipod survival and porewater chemistry:

- 1) The Navy has metals chemistry for the four porewater samples mentioned above. No analytical data is available for organics in porewater samples PWWL-22, PWRP-29, and PWRP-32, therefore presenting an incomplete picture of what may be causing toxicity.
- 2) The physicochemical parameters in porewater were measured for all corresponding amphipod sample stations and may provide useful information with regard to evaluating the amphipod mortality.

3) Comparing porewater metals chemistry from a limited number of samples (four of eleven stations) to amphipod survival will not be conclusive evidence, but present a possible explanation for amphipod mortality.

4) The data's usefulness is further limited because those four porewater samples do not represent one aquatic habitat type, but represent three different regimes (Northern Channel, Eastern Diked Marsh, and Stormwater Retention Ponds), to which sediments are exposed. The samples from different locations should not be compared because at each of those habitats, the physical and chemical properties of the porewater, sediments, and overlying water are likely to be different.

5) While the amphipods are exposed to porewater, they are also exposed to the solid phase sediment fraction by dermal contact and ingestion which cannot be accounted for directly by porewater exposure alone.

6) While porewater chemistry may be in equilibrium with the solid phase in undisturbed sediments, once the sediment has been manipulated (homogenization followed by porewater extraction by centrifugation) the equilibrium is in question.

With regard to the last paragraph in this response, we do not agree that the polychaete tissue data will provide enough information to evaluate the potential for bioavailability of COPECs to amphipods because the tissue residue study was designed to detect bioaccumulative chemicals, not those that necessarily cause toxicity to amphipods. All chemicals that are bioavailable are not necessarily bioaccumulative, therefore comparing the polychaete tissue data to amphipod bioassays is not a sound method for evaluating the toxic response observed in the amphipods. There are a number of scenarios in which a chemical, or chemical mixtures, might provide a toxic response in the amphipods that would not be explained by presence or absence of a compound in the polychaete tissue.

Concur:



Ron Gervason
Ron Gervason, Section Leader