

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
700 HEINZ AVENUE, SUITE 200
BERKELEY, CALIFORNIA 94710
(510) 540-3724



October 31, 1991

Commanding Officer
Attn: Mr. Eddie Sarmiento
Naval Station Treasure Island
Building 1 (Code 84)
San Francisco, California 94130-5000

Dear Mr. Sarmiento:

**DTSC COMMENTS ON THE EXPOSURE PATHWAYS AND INTAKE ASSUMPTIONS FOR
OU-II AT HUNTERS POINT ANNEX**

On September 16, 1991, the Department of Toxic Substances Control (DTSC) received a copy of the Exposure Pathways and Intake Assumptions for Operable Unit (OU) II, for Naval Station, Treasure Island, Hunters Point Annex, for review and comment.

The DTSC has reviewed the report and our comments are enclosed.

If you have any questions regarding this letter, please contact me at (510) 540-3816.

Sincerely,

A handwritten signature in cursive script, appearing to read "William L. Brown".

William L. Brown
Hazardous Materials Specialist
Site Mitigation Branch
Region 2

Enclosure

cc: See next page

Mr. Eddie Sarmiento
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cc: Ms. Louise T. Lew (Code 1811)
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-0720

Ms. Roberta Blank (H-7-5)
Remediation Project Manager
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, California 94105

Ms. Barbara Smith
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Memorandum

To : William Brown
Site Mitigation Branch
Region 2
700 Heinz Street, Building F,
Second Floor
Berkeley, CA 94710

Date: October 18, 1991

From : Technical Services Branch
400 P Street, Fourth Floor
P.O. Box 806
Sacramento, CA 95812-0806

Subject: Review of Exposure Pathways and Intake Assumptions for Operable Unit II at Hunters Point Annex

Background

We have reviewed the document titled Exposure Pathways and Intake Assumptions for Operable Unit II, Baseline Public Health and Environmental Evaluation, Hunters Point Annex, Treasure Island, San Francisco, California, dated September 5, 1991, in response to your written request, received at Technical Services on September 17, 1991.

Hunters Point Annex (HPA) covers 965 acres and is located in southeastern San Francisco on a peninsula extending into San Francisco Bay. Ship repair and berthing facilities are located on the northern and eastern boundary of HPA. Approximately 70 to 80 percent of HPA is comprised of level lowland areas created by placing fill along the bay margin.

Analysis

General Comments

Exclusion of apparently complete exposure pathways, prior to quantifying the incremental risk associated with each, is inappropriate in a preliminary risk assessment such as this Baseline Public Health and Environmental Evaluation (BPHEE). Quantitative risk estimates for each complete exposure pathway must be made available to the risk manager.

Each successive version of the BPHEE dealing with exposure pathways and intake assumptions should be an independent, self-contained document. Statements such as "This document is to be used in conjunction with the attached Worksheets 1 through 9 and other working materials previously submitted to the agencies for OU-II (HLA, 1991b,c,d).", which refer to



previous attempts (HLA, 1991b and 1991c) to delineate the exposure pathways and intake assumptions and which have already been commented on by regulatory agencies, are confusing at best.

Specific Comments

It is inappropriate to exclude potentially complete exposure pathways based on a subjective determination that other exposure pathways are more important (Section 1.0, page 1). Incremental risk associated with all complete exposure pathways must be determined in a preliminary risk assessment document such as this Baseline Public Health and Environmental Evaluation (BPHEE). Clearly, the completeness and magnitude of some pathways is unknown at this time. It would be better to include all pathways and scenarios as the risk assessment progresses, excluding them from the completed risk assessment only if the data show they are incomplete. The risk manager may determine, after review of the risk associated with the complete set of exposure pathways, that some exposure pathways present minimal risk and allow the use of a subset of exposure pathways in risk assessments for HPA subsequent to the BPHEE.

Department of Toxic Substances Control (DTSC) allows exclusion of pathways based on two criteria:

1. The chemicals of concern do not and will not contaminate the medium involved in the pathway; or,
2. People do not and will not come into contact with the medium involved in the pathway.

Pathways such as dermal, ingestion and inhalation during recreational activities in San Francisco Bay are proposed for exclusion prior to development of evidence in the ESAP regarding transportation of OU-II contaminants to San Francisco Bay which would allow these two criteria to be evaluated.

Comment "a" under each pathway except the last pathway (Table 1) is not valid. Since pathways are additive, exclusion of one or more because another pathway is greater is inappropriate. Discussion of some pathways does not include the scenarios to which they apply.

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What results from the Environmental Sampling and Analysis Plan (ESAP) will cause exposure pathways for transport from OU II sites to San Francisco Bay to be restored (Section 1.0, page 1) as part of this BPHEE? Will the detection of chemicals associated with OU-II sites in San Francisco Bay sediments be sufficient to cause these exposure pathways to be restored? The use of the Tidal Influence Modeling Plan (TIMP) in this determination is unclear as the sentence appears to lack a verb (Section 1.0, page 1).

Exclusion of exposure via homegrown fruits and vegetables (Section 1.0, page 2), based on the "robust", health-conservative nature of the soil ingestion evaluation, is inappropriate as exposures via these two routes are additive. Future residential housing at OU-II sites could reasonably be expected to be similar to current housing in the area surrounding HPA.

It is impossible to judge the appropriateness of several of the exposure calculations because "Values for exposure point concentrations, absorption factors, and skin permeability constants are not discussed in this submittal." (Section 1.0, page 4).

A default assumption of 1.0 should be used for the pulmonary absorption factor (PAF) unless studies supporting a different PAF are presented (Worksheets 2 and 5).

The inhalation rate (IR) of on-site workers would, most probably, be greater than 15 m^3 per day (0.63 m^3 per hour in Section 2.2 page 10).

DTSC guidance currently directs that indoor concentrations of dust contaminants (Section 2.4, page 13) be treated as equal to outdoor soil concentrations unless documentation is provided justifying other assumptions.

Why are future on-site workers not considered separately in inhalation of outdoor dust emissions (Section 2.5, page 14)? Construction at HPA could be expected to increase once the facility is transferred to public or private ownership. Any construction workers in such a future use scenario would, probably, be exposed to a higher concentration of dust, and associated chemicals, than current on-site workers.

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For average case soil ingestion (Section 3.2, page 17), 55 and 25 mg/day may be used for children and adults, respectively.

What calculations were done which allowed "showering" to be selected as the primary exposure pathway for dermal contact (Section 4.1, page 18). Determination of incremental risk must be made for all complete exposure pathways.

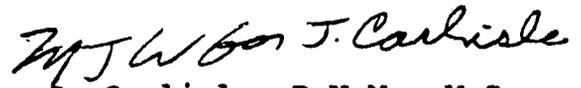
Conclusions

Using only the most conservative exposure scenario is not advised. While it is clear that a remediation driven by the most conservative exposure scenario will be the most extensive, a baseline PHEE will be of the most value in terms of options and strategies if it lays out all reasonable exposure scenarios.

Exclusion of apparently complete exposure pathways, prior to quantifying the incremental risk associated with each, is inappropriate in a preliminary risk assessment such as this Baseline Public Health and Environmental Evaluation (BPHEE). Quantitative risk estimates for each complete exposure pathway must be made available to the risk manager.



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