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From: Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command
To: Distribution

Subj: RESPONSES TO CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL/EPA)
DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) COMMENTS ON THE
PARCEL B HUMAN HEALTH RISK ASSESSMENT (HHRA) APPROACH

Encl: (1) Responses to California Environmental Protection Agency (CAL/EPA) Department of Toxic
Substances Control (DTSC) Comments on the Parcel B Human Health Risk Assessment
(HHRA) Approach

1. As discussed at the BCT/RPM meeting on 5 December 1995, Navy responses to general and specific DTSC comments on "Human Health Risk Assessment Approach, Parcel B, Hunters Point Annex" faxed to CAL/EPA DTSC on 8 November 1995 are presented in enclosure (1). The comments were presented in a memorandum attached to a letter from Mr. Cyrus Shabahari of DTSC to Mr. McAvoy of Engineering Field Activity, West (EFA WEST), dated 15 November 1995. Unedited comments from CAL/EPA are presented in bold text followed by the Navy's response.
2. It is the Navy's intent to continue discussions with our BCT partners to resolve any remaining differences on the subject HHRA approach.
3. Questions may be directed to the undersigned at (415) 244-2655.

~~Original signed by~~ WJM

for RICHARD POWELL
By direction of
the Commanding Officer

Distribution:

U.S. Environmental Protection Agency (Attn: Sheryl Lauth)
California Department of Toxic Substances Control (Attn: Cyrus Shabahari)
California Regional Water Quality Control Board (Attn: Richard Hiett)

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ENCLOSURE (1)

RESPONSE TO CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL/EPA) DEPARTMENT OF TOXIC SUBSTANCE CONTROL (DTSC) COMMENTS ON THE PARCEL B HUMAN HEALTH RISK ASSESSMENT (HHRA) APPROACH

General Comments

Comment 1: We appreciate the opportunity to review the proposed approach for the Parcel B human health risk assessment prior to submittal of the full document.

Response: The Navy welcomes any input from the regulatory agencies that will help expedite the transfer process and help reduce future conflicts.

Comment 2: The heading of the section relating to each specific comment is indicated as there are no section numbers or page numbers on the submitted material.

Response: Comment acknowledged.

Specific Comments

Paragraph 1: We support the decision to evaluate future use both as light industrial and residential (unrestricted) use (Land Use Conditions).

Response: Comment acknowledged.

Paragraph 2: We support the use of 0.5 acre parcel size for the industrial use scenario. However, 0.5 acre parcel size is inappropriate for the future residential use scenario (Surface and Subsurface Soil Exposure Areas). OSA recommends a parcel size of 1000 ft² as the default for residential exposure areas in Supplemental Guidance for Human Health Multimedia Risk Assessment of Hazardous Waste Sites (Section 3.2.3, OSA, July 1992). The parcel size survey conducted for Parcel A should be used to set a Hunters Point-specific parcel size for the Parcel B human health risk assessment.

Response: The City's proposed reuse plan does not designate any portion of Parcel B for residential housing, which would be typically assessed as a residential scenario for HHRA. The intended uses are mixed use (area similar to the Embarcadero area with shops, condos, etc.) open space and educational. The use of a .5 acre grid size, similar to that used for industrial use HHRA, will provide a realistic HHRA for the planned use. A 0.5-acre parcel size is selected as the grid size for both the residential and industrial scenarios to enable risk managers to compare risks and hazards under both scenarios. Risk estimates conducted for these two scenarios will bracket risk ranges for the other probable scenarios.

Using the 0.5-acre grid size, two-thirds of the grid cells do not include any soil sampling points from 0 to 10 feet below ground surface or groundwater sampling points. However, U.S. Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRG) guidance suggests that 0.5-acre is an acceptable grid size because the particulate emission factors (PEF) were developed based on a 0.5-acre grid. Risks and hazards cannot be estimated for grids that do not contain sampling points. If the grid is to cover 2,500 square feet (ft²), approximately 90 percent of the grid cells will not contain sampling points. Reducing the size of the grid increases uncertainties associated with the HHRA because more grid cells would not contain sampling points. Grids that measure only 1,000 ft² will further increase HHRA uncertainties because risks in a majority of the grid cells will be unknown.

Development currently underway in the Embarcadero area of San Francisco suggests that future residential developments at Hunters Point Annex (HPA) are likely to consist of large housing complexes or condominiums. These types of residential developments would occupy more than 1,000 ft². Additionally, the San Francisco Planning Department suggests an average residential lot size for a single family home in San Francisco of 2,500 ft². A residential lot size of 1,000 ft² is not expected to be large enough to contain a backyard. Therefore, soil exposure would not be expected. A 1,000 ft² lot size scenario is therefore not very conservative.

Paragraph 3: Point estimates of risk and hazard are not mentioned in this proposal. We understood from previous discussions that point estimates of risk and hazard would be employed in each parcel risk assessment to develop the point estimates necessary for the base-wide human health risk assessment.

Response: Point estimates of risks and hazards are not appropriate because a receptor is not expected to be exposed at a specified point. Exposure is expected to occur within an exposure area or within a 0.5-acre grid. The point estimate approach to HHRA presented during the Parcel C and D workshops was part of a preliminary effort because information about probable exposure area boundaries and background levels were not available at that time. To respond to DTSC's request for risk and hazard point estimates, the Parcel B HHRA risk characterization section will discuss soil and groundwater associated with sampling locations that contribute significantly to the risk and hazards.

Paragraph 4: Comparison of the upper 95 percent confidence limit on the mean groundwater total dissolved solids (TDS) with the water board TDS criterion of 3000 mg/l is inappropriate (Groundwater Exposure Areas). Evaluate the ground water samples on an individual basis to determine what portion of the wells may serve as sources of drinking water.

Response: Groundwater wells installed at any location are expected to draw water not only from the area of the one well but also from adjoining areas. Therefore, evaluation of groundwater samples on an individual basis is not a appropriate approach.

Paragraph 5: The groundwater concentration term for bedrock aquifers should be set up using the future residential use parcel size developed from the Parcel A survey (Groundwater Exposure Area).

Response: Further clarification is needed to respond to this comment. Please define "future residential use parcel size developed from the Parcel A survey." Groundwater in Parcel A is considered one unit in both the Parcel A remedial investigation (RI) and HHRA. Future residential use parcel sizes are not established in the Parcel A RI report.

Paragraph 6: Have methods been jointly developed by the Navy and the regulatory agencies for comparing site-related concentrations to background levels? The deadline for the development noted in the memorandum is November 1, 1995.

Response: The Navy and regulators have not finalized the conceptual approach for comparing site-related contamination to background concentrations at all Navy sites.

Paragraph 7: Please describe more completely the "...remedial investigation (RI) approach for assessment of inorganic contamination..." (Selection of Chemicals of Potential Concern). Is this approach, which is number 3, proposed only for those contaminants which cannot be treated using the first two approaches?

Response: The following procedure will be used to select inorganic Chemicals of Potential Concern (COPC) at Parcel B.

1. For exposure areas with sufficient data, site data will be compared against background data using box plots and the Wilcoxon rank sum test, a nonparametric comparison test.
2. For exposure areas with limited data, the maximum concentration of inorganics will be compared to Hunters Point Ambient Levels (HPAL). If the maximum detected concentration detected is greater than an inorganic chemical HPAL, that chemical will be evaluated as a COPC.

The RI approach for assessing inorganic contaminants will also be conducted for all chemicals irrespective of evaluation by other approaches.

Paragraph 8: Selection of contaminants of potential concern (COPCs) for the Parcel B human health risk assessment should be distributed and agreed upon prior to beginning the exposure calculations (Selection of Chemicals of Potential Concern).

Response: The COPCs for the Parcel B HHRA were selected in accordance with EPA's "Risk Assessment Guidance for Superfund." The calculation of exposure doses, carcinogenic risks, and hazards for COPCs are nearly complete. If discussion and agreement on the list of COPCs is necessary prior to preparation of the Parcel B HHRA, the current

schedule for Parcel B RI submittal will be impacted. It is suggested that DTSC can submit comments on the selection of COPC for the preparation of the draft final Parcel B HHRA report.

Paragraph 9: Indoor air exposure should be considered together with other applicable routes of exposure (Groundwater Exposure Areas) so that incremental cancer risk or hazard is based on total exposure. Do not screen chemicals in indoor air against Region IX PRGs.

Response: The models that attempt to estimate indoor volatile organic compound (VOC) concentration from groundwater are based on numerous assumptions. Such models are only as good as the site-specific data incorporated, which are not always available. Dr. Daniel Stralka, the EPA Region IX toxicologist, noted that the estimated indoor air VOC concentrations significantly differ from concentrations at sites for which monitoring data are available. The current screening is considered appropriate for the data available.

Because of the poor estimating capabilities of indoor air models, Dr. Stralka suggested comparing indoor air VOC concentration to EPA Region IX PRGs for ambient air. Therefore, if potential exists for organic vapor transport, concentrations of vapors inside the building will be estimated using mathematical models and compared to EPA Region IX PRGs for ambient air.

Paragraph 10: Consumption of fish or shellfish should be included as a potentially complete exposure pathway (Exposure Pathways) for future use scenarios.

Response: Exposure pathways from the ingestion of fish and shellfish will be evaluated as part of the Parcel F RI. The Parcel B HHRA approach will not include the consumption of fish or shellfish.

Paragraph 11: We do not agree with the statement that cross-route extrapolation should not be conducted. Cross-route extrapolation should be used for those chemicals which lack cancer slope factors or reference doses for exposure pathways evaluated in the human health risk assessment (Risk Factors). Cross-route extrapolation is routinely applied in calculation of the EPA Region IX PRGs referenced as the basis for exposure factors to be used in the risk assessment.

Response: Route-to-route (cross-route) extrapolation will be conducted as suggested for COPCs which route-to-route extrapolation is conducted in the EPA Region IX PRG document.

Conclusions

The most serious divergence from OSA guidance in this proposal is the 0.5 acre parcel size rather than the 1000 ft² default of a parcel size based on the lot size survey performed for Parcel A. The impact this will have on the human health risk assessment is dependent on the nature of any contamination. If contamination is uniformly distributed it will have little effect. The presence of

isolated locations with high concentration ("hot spots") could markedly impact the concentration term and therefore the conclusions of the human health risk assessment. Future use residential scenario must either 1) use the default or site-specific parcel size based on the Parcel A survey or 2) calculation point estimates of risk or hazard and associated isopleths of equal risk or hazard to resolve this issue.

The Navy believes that continuing the preparation of the Parcel B HHRA using the 0.5-acre grid cells and focusing on soil and groundwater associated with sampling locations that contribute significantly to the risk and hazards will enable the risk managers to make decisions without impacting the Parcel B RI schedule.

Realizing that this approach represents a divergence from the regulatory agencies' proposal, the Navy will continue discussions with the agencies and will incorporate any decisions regarding deviation from the 1/2 acre parcel size in the draft final RI Report.

A 0.5-acre grid cell size is selected for both the residential and industrial scenarios to enable risk managers to compare risks and hazards under both scenarios. Risk estimates conducted for these two scenarios will bracket risks for the other probable scenarios. The Parcel B HHRA risk characterization section will discuss soil and groundwater associated with sampling locations that contribute significantly to the risk and hazards and should therefore be able to identify isolated locations with high concentrations of COPCs.