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Governor

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SSIC NO. 5090.3.A

U.S. Department of the Navy  
Attn: Mr. Keith Forman  
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Subject: Comments on the *Draft Technical Memorandum, Soil Vapor Investigation in Support of Vapor Intrusion Assessment, Parcels B, D-1, G, and UC-2*, Hunters Point Naval Shipyard, San Francisco, dated July 1, 2011

Dear Mr. Forman:

I reviewed the *Draft Technical Memorandum, Soil Vapor Investigation in Support of Vapor Intrusion Assessment, Parcels B, D-1, G, and UC-2 (Draft Tech Memo)*. The document presents the results of the basewide soil gas sampling for the subject parcels and evaluation of the data including a human health risk assessment to estimate the potential indoor air health risks from VOCs detected in individual soil gas samples. My comments on the document are as follows:

## COMMENTS

**1. Marginal Risk Concept and Protocol for De-designating a Vapor Intrusion ARIC<sup>1</sup>** – Section 7.5 of the document introduces the concept of “marginal” risk<sup>2</sup> for those parcel grid blocks (blocks) where the Tier 2 cancer risk results are above  $1 \times 10^{-6}$  and below  $5 \times 10^{-6}$  (essentially at the lower end of the risk management range). The document then goes on to suggest that blocks with such marginal risk do not need to be designated as vapor intrusion ARICs and there is a recommendation for how to go about supporting de-designation. The following is a summary of my understanding of the presentation and my concerns.

**1a.** Section 7.5 (HHRA Summary and Conclusion) suggests that the nine marginal-risk blocks do not require designation as vapor intrusion ARICs because the vapor intrusion risk likely is to be controlled or mitigated by risk management, engineering controls, or planning without further remedial action. Based on my review of Section 12.2.1.5 of the January 14, 2009 *Final Amended Parcel B Record of Decision (Amended Parcel B ROD)*, the reduction in potential risk that can be achieved

<sup>1</sup> ARIC = area requiring institutional control.

<sup>2</sup> In Section 7.5 the phrase used is “minimal” risk but “marginal” risk is used in Section 8.0 and Section 9.0.

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through engineering controls or other design alternatives is not justification for eliminating the ARIC.

- 1b.** In Section 9.0 (Recommendations), there is mention of the many conservative assumptions employed in estimating the risks and a recommendation that the marginal risk blocks could be eliminated by better definition of modeling parameters or planned (required?) minor engineering design changes. For the latter, consistent with Comment #1a, my understanding is that an engineering design change would not justify elimination of a vapor intrusion ARIC. While refinement of the modeling parameters remains a possibility, the *Amended Parcel B ROD* also cites further sampling and analysis to support de-designation of an ARIC. Given the coarse sampling grid (one sample per acre, or about one sample every 200 feet) for the basewide survey and commensurate uncertainty, further characterization of the soil gas impact for a particular sampling location (e.g., Parcel B grid block D6) on a tighter spacing (e.g., 30 feet) should be considered as the first step in the process/protocol of de-designating the ARIC. With a refined understanding of distribution and potentially enough data to calculate a representative average concentration (e.g., 95% UCL of the mean), the need for an ARIC in the grid block/area could be resolved with greater certainty. Should the Navy choose to defer the de-designation process, then this protocol could be employed by the Transferee.
- 2. Section 6.1 (Deviations from the SAP), p. 6-1** – Present the rationale for deviations for the SAP, not just a summary of the deviation. For instance, in the third bullet, sampling of IR10SG74-6 and IR10SG47-10 was substituted for sampling IR10SG74-4; the reason for doing so is not described.
  - 3. In-Text Tables 6-5 and 6-6, p. 6-5 through 6-6** - The Table 6-6 (Parcel D-1) contents are identical to the Table 6-5 (Parcel B) contents. Please insert the correct data.
  - 4. Section 6.3 (Onsite Analytical Results), p. 6-3** – There was a high incidence of acetone and cyclohexane detections in the soil gas samples. Does the Navy or the laboratory have an explanation for the likely source of these chemicals (e.g., solvent in both the mobile and fixed laboratories, other sources)?
  - 5. Section 7.2.1 (Source VOC Concentrations), p. 7-2, first paragraph** – In the third sentence, there is mention of the range of depths of soil gas samples (0.5 feet bgs to 8 feet bgs). Are the 0.5-foot samples sub-slab samples?
  - 6. Section 7.3.3.2.1 (Residential Scenario) and Table 7-5** – In the text, the discussion intersperses number of samples with the number of blocks, which renders the paragraph difficult to follow. Please consider a summary table (number of samples and number of blocks as columns, with rows for below  $1 \times 10^{-6}$  risk, above  $1 \times 10^{-6}$  risk and above  $1 \times 10^{-5}$  risk) or another way of concisely conveying this information. Table 7-5 presents the Tier 2

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risk results by sample, but reorganizing by parcel and then parcel grid block could be more helpful to the reader.

7. **Figure 7-1 (Conceptual Site Model for Human Exposure)** – There are two secondary sources on the figure. Please review to see if the second secondary source (soil gas beneath buildings) should be a tertiary source.

8. **Section 9.0 (Recommendations)** – Please address the following:

**8a. Second Bullet on p. 9-2** – Specify the appropriate entity that should conduct such a re-evaluation triggered by excavation (owner or entity conducting the subsurface work?).

**8b. Fourth Bullet on p. 9-2** – The text indicates that as a result of benzene detected in soil gas at the southern portion of Parcel UC-2, Parcel UC-1 appears likely to be impacted by subsurface soil gas and should be assessed for potential vapor intrusion. In the City of San Francisco's (Amy Brownell) email dated August 2, 2011 regarding the *Draft Final FOST for Parcel D-2*, the City raised the question of whether subsurface soil gas on Parcel D-2 might also be impacted and therefore need an assessment for potential vapor intrusion. Please consider addressing this topic in this document.

9. **Minor Comments** – Please address the following:

**9a. Section 4.1 (Soil Gas Sampling Locations, p. 4-3, third paragraph)** – Please review the third sentence to see if the text “collect better determine” should be replaced with “collected to better determine.”

**9b. Section 6.1 (Deviations from the SAP), p. 6-2, third bullet** – Check the spelling of trans-1,2-dichloroethene.

**9c. Section 6.3 (Onsite Analytical Results, p. 6-3, first paragraph)** – Review the second sentence to see if the word “experienced” should be replaced with “experience.”

**9d. Section 8.0 (Conclusions, p. 8-1)** – In the first sentence, replace “discreet” with “discrete.” Extend this comment throughout the document.

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Please contact me at (510) 622-2445 or [rsteenson@waterboards.ca.gov](mailto:rsteenson@waterboards.ca.gov) if you have any questions.

Sincerely,



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Ross Steenson  
Date: 2011.08.11  
09:07:40 -07'00'

Ross Steenson, PG, CHG  
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Cc (via email only):

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