



Department of Toxic Substances Control



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NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA – DRAFT WORK PLAN FOR DATA GAP INVESTIGATION AT SITE 6

Dear Mr. Sullivan:

The Department of Toxic Substances Control (DTSC) has reviewed the "*Draft Work Plan for Data Gaps Investigation at Installation Restoration Site 6, Former Fire Training School*" (Work Plan) dated August 2009 for Naval Station Treasure Island, San Francisco, California. DTSC provides the following comments on the Work Plan.

General Comments

1. Historical Site Use and Photographs. Test pits were proposed at the northwest corner of the site based on review of historical aerial photographs. These photographs should be included in the Work Plan or historical reports where they can be viewed should be referenced. The investigation focused on the northern, southern and eastern portions of the Site. The southwestern portion includes former buildings 236 and 238. Building 238 was used as boiler house and repair shop. The rationale for not sampling in this area should be provided. Based on the use of Building 238, soil and soil gas samples should be taken in this area for TPH and VOC analyses.
2. Previous Investigations. The Work Plan provides a brief summary of previous investigations that makes it difficult to evaluate the data for delineation of lateral and vertical extent of contamination. Detected concentrations were discussed but the sampling depths were generally not provided. A summary table of the concentrations left-in-place after the removal actions at the Site should be included

in the Work Plan. Concentration contours and cross-sections may also be helpful in understanding the extent of contamination at the Site and evaluating the potential data gaps that remain.

3. Revised Site Boundary. The Site 6 boundary was changed to include an area towards the Bay due to detections of dioxins. Please discuss any previous investigations and land uses of this area to support limiting the sampling to dioxin in soil and TPH in groundwater. If no additional data exists, additional sampling in this area may be warranted.
4. Screening Criteria. Applicable screening criteria for TPH were discussed and the levels were provided in Figures 5, 6 and 7 that include TPH screening criteria in soil for unrestricted land use and protection of groundwater. A separate table of the applicable screening criteria for all COCs should also be included in the Work Plan.
5. Metals. Metal investigations were conducted in the early 1995 and 1997 prior to the completion of the ambient metal level study for Treasure Island in 2005. The metal results and the screening criteria used at that time as well as the rationale for eliminating metals as COCs at the Site should be discussed in the Work Plan. Some of the proposed samples should be analyzed for metals since Site remediation is planned for unrestricted use and screening levels have changed for some metals since the 1990s.
6. Naphthalene. The left-in-place concentrations of naphthalene in soil at three locations were above the PRG of 3.9 mg/kg and/or the screening criterion of 0.46 mg/kg in Figure 11 of the December 16, 2005 Final Closure Report. Please provide the rationale for not proposing soil samples near these locations for PAH analysis.
7. Radionuclides. Radionuclide contamination is also possible at Site 6 due to its proximity to the Site 12 solid waste disposal areas (SWDAs), the anomaly detected in the ground at Site 12 outside of the SWDAs, and the historic use of Site 6 as temporary storage of radiologically impacted materials excavated from Site 12. Therefore, a radionuclide survey should be conducted at Site 6 along with the ongoing Site 12 survey.

Specific Comments

8. Data Gap 1 – Delineate Dioxins and Furans in Soil, Pages 4-2 to 4-4.
 - 8.1 First Paragraph, Page 4-2. The last sentence states that burn material was less evident on the ground surface north, south, and east of the former Building 464. East should be changed to west.

- 8.2 First Complete Paragraph, Page 4-3. Please clarify whether the maximum dioxin TEQ concentrations of 1250 and 1013 ng/kg were composite or discrete samples.
- 8.3 Third Paragraph, Page 4-3. The 1250 ng/kg at sample location 06-177 was detected during the excavation confirmation in 2002 and not during the Environmental Baseline Survey sampling in 2003. This sample ID is missing an "S", i.e, the ID should be 06-S-177. It should be specified that sample location 06-S-177 is shown as a 4-point composite sample in the Site 06 Fire Training School Remedial Excavation report dated June 24, 2003.
- 8.4 Dioxins and Furans Sampling Strategy, Page 4-4. Please clarify if all dioxin and furan contamination is thought to be associated with burn residue and if samples will not be collected at trenches with no visible burn residue.
9. Data Gap 2 – Delineate Total Petroleum Hydrocarbons and Petroleum-Related Compounds in Soil, Page 4-5. Based on the use of Building 238 as boiler house and repair shop, soil borings should be installed in this area for soil sampling and analyzed for TPH and VOCs.
10. Data Gap 3 – Collect Soil Gas Samples to Evaluate Vapor Intrusion Pathway, Pages 4-8 to 4-8.
 - 10.1 Based on the use of Building 238 as boiler house and repair shop, soil borings should be installed in this area for soil gas sampling and analyzed for TPH and VOCs.
 - 10.2 Soil gas samples must also be collected in areas with left-in-place naphthalene concentrations in soil above the screening criterion in order to verify if potential vapor intrusion issues need to be evaluated and addressed moving forward.
11. Figure 4 and SAP Worksheet 18.1.
 - 11.1 Please specify which results are from discrete and composite samples. The excavation confirmation samples in 2002 were composited for dioxin analysis and the 2003 EBS investigation were discrete samples from test pits.
 - 11.2 Please explain why all test pit (TP) sample results are inconsistent with the results shown in Figure 25 of the EBS report, e.g., Figure 4 shows a concentration of 1013 ng/kg at TP022 while Figure 25 of the EBS report presents 949 and 950 ng/kg.

- 11.3 The confirmation sample IDs that start with 06 are missing an S, i.e., sample 06-098 should be 06-S-098.
 - 11.4 Additional test pits should be dug at locations near the site boundary where dioxin TEQ exceeds the screening concentration, i.e., near sample locations TP-004 and in the area of TP-002, TP-016 and TP031.
 - 11.5 Sample location DX06 or a new boring should be placed closer to the northern property boundary towards the Bay to determine the contamination extent from TPO13 with 114 ng/kg dioxins TEQ.
 - 11.6 The rationale for sample location DX09 in the Worksheet is "Primary shallow sample in central portion of IR Site 6 for horizontal delineation near site boundary." This location is not at the center of the Site and at about 30 feet from the site boundary. The highest detections nearest to the site boundary were at TP004 and 06-098. Another boring should be installed near these borings at the site boundary or DX09 can be moved at this location.
12. Figure 7 – Proposed Soil Gas Sampling Locations.
 - 12.1 Sample locations should be placed in the area of Buildings 238 for soil and soil gas samples. See General Comments.
 - 12.2 A soil gas sample should be collected further downgradient of the UST 248 plume at the site boundary near former monitoring well 06-MW18. Total TPH was detected at this well 920 µg/L in 2004.
 - 12.3 Please discuss the analytical method for the soil gas samples and specify that naphthalene will be included in the analytical suite for VOCs.
 13. Tables. The tables (Tables 1, 2 and 3) are missing from the paper copy of the Report.
 14. Appendix A – Sampling and Analysis Plan.
 - 14.1 Please review the Worksheets and Attachments to verify their applicability for the proposed work at the Site, e.g. Attachment 24-1 (Key Ions and Abundance Criteria).
 - 14.2 SAP Worksheet #10 – Problem Definition, Page 37 of 147. The third paragraph states that the ambient concentration will be used as the project action limit (PAL) to guide further RI actions. If the PALs are the same as the

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screening criteria, then this term should be replaced throughout the document with screening criteria.

- 14.3 SAP Worksheet #11.1 to #11.4 – Data Quality Objectives (DQOs). Additional DQOs for metals and radionuclides should be included in this worksheet. See General Comments #5 and #7.
- 14.4 SAP Worksheet #11.1 – Dioxin DQOs. Worksheet 15.1 was referenced for the TI ambient dioxin soil screening criterion in Step 3 and the calculated TEQ is compared to PAL in Step 5 of this worksheet. Worksheet 15.1 does not include the PAL or screening criterion for dioxin.
- 14.5 SAP Worksheet #18-2. Please include in the rationale that naphthalene was detected in soil above screening criterion at borings near the proposed soil gas sample locations SG-01, SG-11 and SG-14.

If you have any questions or comments, please contact me at 510-540-3840 or by e-mail at rsunga@dtsc.ca.gov.

Sincerely,



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