



California Department of Public Health
MEMORANDUM

DATE: February 14, 2014

TO: Remedios Sunga
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SUBJECT: Review comments for *Draft Work Plan Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12, Former Naval Station Treasure Island San Francisco, CA. Issued January 16, 2014.*

Upon the request of the Department of Toxic Substance Control (DTSC), the Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) reviewed *Draft Work Plan Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, CA.* This review was performed in support of the Interagency Agreement between DTSC and CDPH.

If you need further assistance about this response please contact Matt Wright of my staff at (916) 449-5687.

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The Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) appreciates the opportunity to review the submitted, *Draft Work Plan Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12*, Former Naval Station Treasure Island, San Francisco, CA

General Comments:

1. The *Draft Work Plan Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12*, was submitted without Appendix E, "Sampling and Analysis Plan" (SAP). The SAP is crucial to this document as it contains the technical description of methodologies employed for radiological surveys and characterization analysis. EMB cannot concur on this document until the SAP is submitted and fully reviewed.
2. EMB's conceptual site model for Treasure Island maintains that Radioactive Contaminants of Concern (RCOCs) are co-located with chemical contaminants of concern or debris in soil. It appears the Solid Waste Disposal Areas (SWDAs) at Bigelow Court represent the boundaries of chemical contaminations and not the physical boundaries of the SWDAs. Please explain how, and to what degree of confidence, the SWDAs at Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12, have been identified and their limits established. Please explain how, and to what degree of confidence, Navy has determined that the SWDA does not extend beneath Buildings 1105 and 1107.
3. EMB appreciates that the project release criterion for radiological contamination has been identified as the demonstration of residual ^{226}Ra soil concentrations to be indistinguishable from background.
4. If new information is developed in the course of implementing the *Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12*, which contradicts assertions or representations in this document; EMB reserves the right to rescind concurrence with this document and re-address its comments.
5. The primary Radioactive Contaminant of Concern (RCOC) is Ra^{226} contained in foils, or fragments of foils: commonly termed as

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“commodities”. These commodities are randomly distributed and not responsive to survey techniques which rely on the assumption commodity populations are approximately normally distributed and the Central Limit Theorem of Statistics applies. The investigative/survey process in this document does not address EMB's concern how all radioactive commodities will be located and removed. Please add this information in the next version of the document.

Specific Comments:

6. Section 1.4 Remedial Action Objectives, page 1-5, paragraph one, sentence two, “Although radiological contamination has not been detected at Bigelow Court, radiological screening of Buildings 1101 and 1103 prior to demolition and the excavated soil and other materials (including asphalt, concrete and construction debris) will be performed due to the presence of radiological contamination at other Site 12 solid waste debris areas.”

According to the Historical Radiological Assessment Supplemental Technical Memorandum (HRASTM) February 2013, section 5.2.1.1, page 50, Suspected Sources and Types of Contaminants, “Because of grading and site preparation for construction of the housing units, including mixture and spreading of the solid waste material with fill and surface soil in and outside of known SWDAs, radioactive commodities have been found in areas adjacent to these SWDAs.”,

Please explain why buildings 1105 and 1107 should not be included in this screening process; as they are both immediately adjacent to excavation areas, as indicated in figure 5, “Laydown Pads and Soil Stockpile Areas Bigelow Court Solid Waste Disposal Area.” As noted in General Comment number two; EMB does not retain the confidence that the SWDAs at Bigelow Court have been sufficiently investigated and properly bounded.

7. Section 1.4 Remedial Action Objectives, page 1-5, paragraph one, sentence three, “The radionuclide of concern at Site 12 is ²²⁶Ra.” Other radionuclides have been identified in historical documents as being present or used at Treasure Island (TI). One example is ¹³⁷Cs. Please explain why ²²⁶Ra is the only identified RCOC at Bigelow Court.

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8. Section 1.4 Remedial Action Objectives, page 1-6, paragraph two, sentence one, "In addition, solid waste-contaminated soil will be removed within the project site-visual observations will be used to verify that solid waste is removed laterally."

The nature and extent of the SWDAs, including their physical boundaries and adjacent areas, are crucial to any EMB decision regarding concurrence on a Recommendation for Un-Restricted Release (RURR). Will the judgment that the solid waste has been removed laterally be made by a registered, professional geologist or civil engineer; using all investigative and analytical resources which represent the standard and accepted best practices within their field of practice? EMB concurrence will in large part be dependent upon the signed, approved and verified statement of a registered, professional geologist or civil engineer.

9. Section 4.2.6.2, Investigation Levels and Background Reference Area Survey, page 4-6, paragraph two, bullet number one, "Minimum count rate should be four to five standard deviations less than the mean count rate for the gamma scan and two to three standard deviations less than the mean count rate for the gamma static count survey." However, the April 2, 2012, Memo from Steve Adams, Certified Health Physicist, to Christine Donahue, Project Radiation Safety Office, subject, "Analysis of Gamma Survey and Radium-226 Soil Concentration Data at the Treasure Island Site-wide Background Areas and the Area 7 Background Reference Area, Attachment 1, Data Analysis, section 2.1 Analysis of Area 7 Gamma Walkover Survey (GWS) Data, bullet one, says, " Minimum count rate should be three to four standard deviations less than the mean count rate." Please explain why there is difference between the two documents regarding accepted minimum count rate values.
10. Section 4.3 Excavation Procedure, page 4-8, paragraph one, bullet number four, sentence three, "A gamma count rate survey of the soil surface directly below the removed concrete will be performed. Biased soil sampling below each section of concrete will be performed." Will the gamma count rate survey include 100% of the newly exposed surface? Will there be a minimum number of soil samples collected from the newly exposed area? Please explain.

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11. Section 4.3 Excavation Procedure, page 4-9, paragraph three, sentence one, "The Bigelow Court SWDA will be excavated to the predetermined depth shown on Figure 2." EMB strongly disputes this methodology. Unless the Navy can demonstrate that it has prior knowledge of the depth of the Bigelow Court SWDA, the investigation and exploration of the depth, width, length, nature and extent of the SWDAs must be vigorously and exhaustively pursued to establish their boundaries and those boundaries certified by registered professionals employing the best, accepted practices of their field. Figure 3-5, "Treasure Island Ground Water Elevation Contour Map, October 2002, contained in "Remedial Investigation/Feasibility Study Report for Installation Restoration Site 6 Former Fire Training School, Naval Station Treasure Island San Francisco, California, December 2011: indicates elevations of 4.5 to 5.5 feet above mean lower low water level in the Bigelow Court area. Figure 2, "Excavation Areas Bigelow Court Solid Waste Disposal Area", contained in this *Draft Non-time Critical Removal Action for Bigelow Court Solid Waste Disposal Area*, shows excavation depths of 2 feet to 4 feet below ground surface.

Notwithstanding the disclaimer contained in Section 4.3, Excavation Procedure, page 4-9 paragraph three, sentence two, "If debris or contamination above the screening criterion is identified at the extent of the excavation, the depth of the excavation may exceed contractually predetermined depth following consultation with the Navy and RASO": it is EMB's position the depth of the excavation *must* exceed the contractually predetermined depth until the SWDA boundary is determined.

12. Section 4.3, Excavation Procedure, page 4-10, paragraph two, sentence one, "At the completion of each excavation, the bottom and sidewall will be visually inspected for evidence of solid waste or other signs of contamination." EMB believes this inspection must be carried out by a registered professional as noted in Specific Comment number six.
13. Section 4.6.1 Bottom Sampling, page 4-14, paragraph one, "Radiological samples will be collected using a random-start triangular systematic grid at a rate of 20 samples per 1,000 square meters." Please include an explanation of how the value of 20 samples per unit was derived; demonstrating that it meets the intent of Multi-Agency Radiation Survey

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and Site Investigation Manual, (MARSSIM) and supply a retrospective power curve which shows the number of data points was sufficient.

14. Section 4.6.2, Sidewall Sampling, page 4-14, paragraph one, sentence one, "One discrete sidewall confirmation sample will be collected approximately every 40 linear feet of the excavation perimeter sidewalls." This approach does not meet the criteria of MARSSIM. Please integrate the area of the sidewalls into a single survey unit with the excavation floor; being mindful not to exceed the 1,000 square meters per survey unit limitation; and employing the standard triangular grid used to collect Final Status Survey samples.
15. Since the survey units identified in Bigelow Court are Class 1 as defined in the MARSSIM Section 5.5.3.2, Land Area Surveys, it is required that a 100% gamma scan is performed of all excavations including sidewalls and floor for all survey units.
16. Section 5.1, Waste Characterization and Disposal, paragraph one, sentence four, "The Analytical Method for Waste Characterization will be performed as presented in the Waste Management Plan (Appendix F) and SAP (Appendix E), specifically Worksheet 17 (section 17.3)" As noted previously in General Comment number one, the SAP was not included in this document.
17. Figure 9, Radiological Sampling Locations Bigelow Court Solid Waste Disposal Area, please note the 2 foot below ground surface excavation in the near center of Bigelow Court; and the 4 foot below ground surface excavation to the immediate west of building 1105. Why were these excavation locations chosen? Please explain.