



Department of  
Toxic Substances  
Control

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94710-2737

N00217.003530  
HUNTERS POINT  
SSIC NO. 5090.3



September 2, 1997

Commanding Officer  
Engineering Field Activity, West  
Attention: Code 18, Mr. Richard Powell (1832)  
Naval Facilities Engineering Command  
900 Commodore Drive  
San Bruno, California 94066-5006

Pete Wilson  
Governor

James M. Strock  
Secretary for  
Environmental  
Protection

**RE: California Department of Health Services' comments for Parcel E  
Draft Remedial Investigation Report, Hunters Point Shipyard, San  
Francisco, California**

Dear Mr. Powell:

Attached please find comments from Department of Health Services for Parcel E  
draft Remedial Investigation Report.

If you have any questions, Please contact me at (510) 540-3822.

Sincerely,

Chein Ping Kao, P.E.  
Senior Hazardous Substance Engineer  
Office of Military Facilities

Enclosure

CC: Ms. Sheryl Lauth  
US EPA Region IX  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Richard Hiett  
California Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, California 94612

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# Memorandum

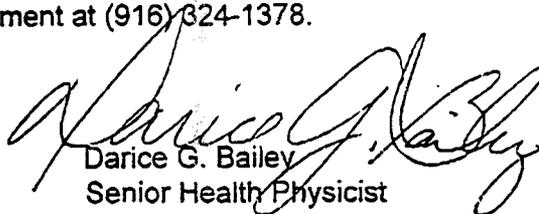
Date : September 2, 1997

To : Chein Kao  
Department of Toxic Substances Control (DTSC), Region 2  
Office of Military Facilities  
700 Heinz Avenue, Suite 200  
Berkeley, California 94710

From : Environmental Management Branch, MS 396  
P.O. Box 942732  
Sacramento, California 94234-7320  
(916) 445-0498

Subject : Department of Health Services' (DHS) review of "Appendix E with Attachments E1 and E1-1, and Appendix P with Attachments P1 through P5" of *Parcel E Remedial Investigation Draft Report*, Hunters Point Shipyard, San Francisco, California, May 29, 1997

Attached are DHS' comments on the subject report. This review was performed by Ms. Deirdre Dement in support of the Interagency Agreement between DHS and DTSC. If you need additional information, please contact Ms. Dement at (916) 324-1378.

  
Darice G. Bailey  
Senior Health Physicist

cc: Ms. Deirdre Dement  
Department of Health Services  
Environmental Management Branch  
601 N. 7th Street, MS 396  
Sacramento, CA 95814

## Department of Health Services

### Review of "Appendix E with Attachments E1 and E1-1, and Appendix P with Attachments P1 through P5" of *Parcel E Remedial Investigation Draft Report*, Hunters Point Shipyard, San Francisco, California, May 29, 1997

August 29, 1997

DTSC Resource Planning Form # TBD

The following comments are in response to the request from Mr. Chein Kao of Department of Toxic Substances Control to review Appendix E with Attachments E1 and E1-1, and Appendix P with Attachments P1 through P5 of the *Parcel E Remedial Investigation Draft Report*, for Hunters Point Annex, located in San Francisco, CA.

#### General Comments:

1. DHS did not have access to all the documents referenced for justification of why additional surveys were not required or necessary. DHS only questioned the validity of the documentation when discrepancies occurred; additional clarification was needed; or the justification appeared questionable. Therefore, DHS' review scope was limited by the documentation available.
2. The risk assessment presented in Appendix P was based on leaving the contamination in place. The State of California's policy, as stated previously, is that all discrete items that are radioactive should be removed, and if radioactive items cannot be removed, unrestricted public use would not be an option for the property in question.
3. DHS does not agree with the use of "Acceptable Surface Activities" from NRC Regulatory Guide 1.86 for release of areas which are no longer buildings or structures and are open to the external environment. (NUREG/CR-5849 refers to these areas as "Open Land Areas.") Instead, a statistically based sampling plan should be used to demonstrate that an appropriate number of environmental samples were collected for a 95% assurance that the volume activity data show these areas surveyed meet acceptable release criteria. This will affect the release of demolished buildings 506, 507, 508, 509, 517, 510, 510A, 517, 529 and areas outside existing buildings 707 (including the concrete pad) and 364 (including the sump and trench areas).
4. It is not clear why background samples were not collected for this investigation. The EPA document referenced, in lieu of presenting background sample data, stresses the need to have background samples from the specific sites and from the media to be evaluated (e.g., concrete, soils, asphalt, etc.), because cleanup criteria is based on levels above background. It also was not shown how the background counts per minute (cpm) readings related to background sample results.

**Page 2. Review of "Appendix E and P" of *Parcel E Remedial Investigation Draft Report*, Hunters Point Shipyard, San Francisco, California, May 29, 1997.**

**General Comments: (Continued)**

5. DHS concurs that Buildings 708, 815, 820, 830 and 831 require no further surveys or documentation based on the information provided and agrees that these buildings may be released for unrestricted use.
6. It does not appear from comparing the figures showing the locations and number of soil or asphalt samples collected and the gamma count surveys that all areas have been adequately characterized, that samples were collected from all locations having elevated count rates or that the areas surveyed were extended far enough to determine that the elevated count rates ( $> 6500\text{cpm}$ ) were not indicating further contamination. On Page E1-19, Section 2.5.3.3 it is stated that all activity above 6,500 cpm was considered residual contamination, although in the next paragraph the equivalent background for asphalt was 7,600 cpm. Additional information should be provided to distinguish readings taken on asphalt from other readings that would be considered residual contamination. (See Specific Comments, numbers 15 through 19.)

**Specific Comments:**

1. Appendix E, Page E-12, Section 2.2.2. What is the estimated number of years that "any radium-containing device" would have been in the soil where Ra-226 contamination was found 18 inches away from a device?
2. Appendix E, Page E-13, Section 2.4.4. Explain the purpose of discussing the use of a Geiger-Mueller counter for detection of alpha particles. What is meant by the comments regarding "a 10 to 20 percent detection efficiency for alpha" and "areas of activity more than 10 times the alpha release criteria may be detected using the pancake detector." It appears that this method to screen for alpha emitters would be ineffective and would only detect areas greatly exceeding the release criteria. Was this use of a pancake detector successful in locating elevated alpha contamination?
3. Appendix E, Page E-14, Section 2.2.2. Eighteen inches of Ra-226 migration over this limited time span ( $< 50$  years) appears significant. Information on the chemical and physical causes of this migration and the direction(s) of this migration should be provided.
4. Appendix E, Page E-26, Section 2.4.1. Please provide the following document for review, "Results of EPA NAREL Analysis of Groundwater Collected from the IR-02 Landfill at Hunters Point Annex," (PRC, 1995).

**Page 3. Review of "Appendix E and P" of Parcel E Remedial Investigation Draft Report, Hunters Point Shipyard, San Francisco, California, May 29, 1997.**  
**Specific Comments: (Continued)**

5. Appendix E1, Page E1-v. Need to change either the abbreviation to reflect microCuries per milliliter or the definition to reflect milliCuries per milliliter.
6. Appendix E1, Page E1-v. Verify that the acronym "NRC" refers to the "Naval Radiological Commission."
7. Appendix E1, Page E1-11. Explain the purpose of the intensities of the energies listed in this table and how they were used in this report. When compared to other references (e.g., *Radioactive Decay Data Tables*, D. C. Kocher, 1981) there appear to be several errors in the percent intensities listed in this table. Notably, Ra-226 is most often reported as having a gamma intensity of 3% associated with the 0.186 MeV gamma, but in this table the gamma intensity is shown as 100%.
8. Appendix E1, Page E1-15. Reviewer was unable to locate Table E1-3-1 in Attachment E1-3. There was a Table E1-3.
9. Appendix E1, Page E1-18, Section 2.5.3.1. It is unclear what is meant by, "All background activities were measured as zero activity, therefore, all measurable activity above background is attributed to residual surface contamination." Please verify that the cpm values shown on Figures E1-4, E1-6, E1-8, E1-10 and E1-12 show readings taken without subtraction of background.
10. Appendix E1, Page E1-21, Section 2.5.7. Environmental samples should have included concrete cores from surveyed areas especially from Building 707's concrete pad and Building 364's sump and trenches. Soil samples should also be collected below these areas showing contamination (i.e., concrete pad, sump and trenches.)
11. Appendix E1, Pages E1-23 through E1-25, Section 3.1.1. This section discusses carbon-14 and tritium analyses of swipe samples taken from water drain pipes. The reviewer was unable to find analytical results for carbon-14 or tritium in Table E1-3 and the only swipe sample analytical results for Building 351A appeared to be the first three sets of results on Page 1 of Table E1-3 and are designated with a "Not Analyzed" notation for carbon-14 and tritium analysis results. The tables on Page E1-24 do show Building 351A Swipe Results for maximum and average activities. Verify that swipe samples were collected and analyzed and the results are as shown on Page E1-24.
12. Appendix E1, Page E1-34, Section 3.1.2.7. As mentioned in General Comment 3, it may not be appropriate to base the cleanup criteria on NRC Regulatory Guide 1.86, and contamination should be determined using volume activities.

**Page 4. Review of "Appendix E and P" of Parcel E Remedial Investigation Draft Report, Hunters Point Shipyard, San Francisco, California, May 29, 1997.**

**Specific Comments: (Continued)**

13. Appendix E1, Figure E1-4. It is unclear why the area associated with the elevated gamma count behind Building 529 is not also designated as being associated with Building 520. The highest counts appear to be located on or closest to Building 520. Information regarding Building 520 should be provided.
14. Appendix E1, Figure E1-5. One of the surface soil sampling locations, at the northeast corner of Building 507 is not labeled. Please verify that this was the location of sample B507SS04.
15. Appendix E1, Figure E1-4. Describe the surface covering(s) (e.g., concrete, soil, asphalt, etc.) where any gross gamma count readings >6500 cpm were taken.
16. Appendix E1, Figure E1-6. Describe the surface covering(s) where any gross gamma count readings >6500 cpm were taken.
17. Appendix E1, Figure E1-8. Describe the surface covering(s) where any gross gamma count readings >6500 cpm were taken.
18. Appendix E1, Figure E1-10. Describe the surface covering(s) where any gross gamma count readings >6500 cpm were taken.
19. Appendix E1, Figure E1-12. Describe the surface covering(s) where any gross gamma count readings >6500 cpm were taken.
20. Appendix E1, Figure E1-11. There appear to be two sample locations at opposite ends of the concrete pad labeled with the same sample location designation of "B707SS01." Please verify if the sample location located between "B707SS17" and "B707SS15" was intended to be designated as "B707SS16."
21. Appendix E1, Attachment E1-2, Page E1-2-1, Number 3. Explain how varying the work plan by performing a "Serpentine scan of all horizontal surfaces and random fixed count measurements with a NaI detector" would accomplish the reason given for the variation, to allow for survey of the vertical surfaces.
22. Appendix E1, Attachment E1-4, Page 4, Section 3.1.1. Allied Technology Group, Inc. should have applied for reciprocity with the State of California's Radiologic Health Branch to perform work for this project. It does not appear appropriate that the State of Washington would have reviewed and approved any Work Plan, Quality Assurance Project Plan or Health and Safety Plan for work to be performed in another State. Please verify and explain this section.

**Page 5. Review of "Appendix E and P" of *Parcel E Remedial Investigation Draft Report*, Hunters Point Shipyard, San Francisco, California, May 29, 1997.**

**Specific Comments: (Continued)**

23. Appendix E1, Table E1-1, Page 1. The asphalt sample collected at Station Number 2857070B1 is shown on Figure E1-11 to be located outside of the areas scanned. The results of this sample show elevated concentrations of cesium-137 with  $6.3 \pm 4.7$  pCi/g, radium-226 with  $70.0 \pm 13.0$  pCi/g and thorium- 228 with  $79.0 \pm 7.0$  pCi/g. Headings to explain the numerical values in the column next to the analytical results should be provided. Further investigation of areas adjoining Building 707 concrete drum storage pad appears necessary.
24. Appendix E1, Table E1-1, Page 1. The concrete sample collected at Station Number 2857070B2 appears to be the only concrete sample collected and analyzed to characterize this "concrete pad." The results of this sample show an elevated radium-226 concentration of  $55.0 \pm 13.0$  pCi/g. Further sampling and analysis of concrete should be included in the remediation of this concrete pad.
25. Appendix E1, Table E1-3. Explain why all swipe samples were not analyzed or provide results of analyses. (See Specific Comment, number 11.)
26. Appendix E1, Table E1-1, Pages 1-15; Table E1-2, Pages 1-3; Table E1-3, Pages 1-29; Table E1-4, Page 1; and Table E1-5, Pages 1 and 2. Explain the column of numbers located right of analytical results, and also, identify and label the  $\pm$  uncertainty values as 95% confidence level, 1 or 2 sigma, etc. (See specific Comments, numbers 25 and 27.)
27. Appendix E1, Table E1-5, Pages 1 and 2. The pCi/cm<sup>2</sup> results of asphalt samples collected from Station Number 2857070A3 on page 2 appear to have been inadvertently inserted into the pCi/g results from the same station number on page 1. Please verify that the results shown on Page E1-59, with an activity concentration of 7000 pCi/g for Cs-137 at Anomaly 3 - 285707A3 are correct and revise Table E1-5 as needed. Also explain the meaning of the column to the right of the results and label heading.
28. Appendix P. This risk assessment addresses only radium-226 and its daughters from the disposal of radium-containing devices (See General Comment 2, regarding discrete radioactive items.) as the radionuclides of potential concern.