

State of California

Department of Health Services

## Memorandum

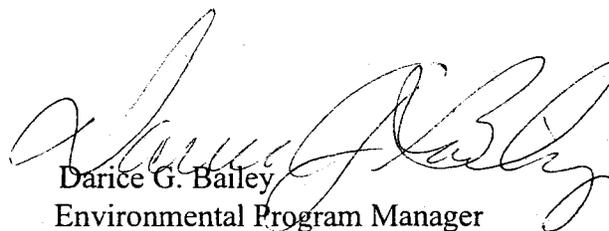
Date: April 1, 1999

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

From: Environmental Management Branch  
P.O. Box 942732  
601 North 7th Street, MS 396  
Sacramento, California 94234-7320  
(916) 445-0498

Subject: Department of Health Services (DHS) Review of the Draft Phase IV Radiation Investigation Field Sampling Work Plan, Hunters Point Shipyard, San Francisco, California, dated February 24, 1999

Attached are DHS' comments on the subject document. This review was performed by Ms. Deirdre Dement, Associate Health Physicist, in support of the Interagency Agreement between DTSC and DHS. If you have any questions concerning this report, or if you need additional information, please contact Ms. Dement (916) 324-1378.

  
Darice G. Bailey  
Environmental Program Manager

### Attachment

cc: Mr. Richard Powell, Code 6221  
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Ms. Luann Tetirick, Code 62210 ✓  
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cc: Ms. Deirdre Dement  
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Department of Health Services

Review of the Draft Phase IV Radiation Investigation Field Sampling Work Plan,  
Hunters Point Shipyard, San Francisco, California, dated February 24, 1999.

March 31, 1999

DTSC Resource Planning Form # 423

The following comments are in response to the request from Mr. Chein Kao of  
Department of Toxic Substances Control to review the draft document listed above.

General Comments:

1. It is not clear if U. S. EPA will be performing comparative analysis of samples collected during the Phase IV radiation investigation or if confirmation samples will be collected by RASO for verification that the areas are ready for unrestricted release. DHS may want to collect and analyze confirmation samples following or in conjunction with the final status survey for verification that the areas meet unrestricted release criteria. Please notify DHS prior to scheduling the final status survey.

Specific Comments:

1. Page 7, Section 5.3. DHS may not agree with methods which pool all the various sampling media data together to determine background and a standard deviation. Distribution analysis is a good method to correlate the data and determine if all the data points, including the  $3\sigma$  value, fall within the background distribution. (The following documents, "Interpretation of Environmental Radioactivity Measurements" (by D.A. Waite, CRC Handbook of Environmental Radiation, Boca Raton: CRC Press, 1991, pp.173-182) and Livermore Big Trees Park January 1995 Soil Survey Results (by Don MacQueen, Lawrence Livermore National Laboratory, July 1995), which describe and use distribution analysis, are good reference sources for using this method.)
2. Page 8, Section 5.4. In addition to meeting a dose limit of 25 mrem per year for residual radioactivity, for unrestricted release of these areas, DHS uses the 5 pCi per gram concentration limit from 40 CFR 192 for homogeneously distributed Ra-226 in soil.