State of California—Health and Human Services Agency
California Department of Public Health

SANDRA SHEWRY, MPH, MSW
Acting Director

GAVIN NEWSOM
Governor

DATE: November 18, 2020

TO: Juanita Bacey
Project Manager
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710-2721

FROM: Sheetal Singh
Environmental Program Manager
Emergency, Restoration & Waste Management Section
Environmental Management Branch (EMB)
California Department of Public Health (CDPH)
1725 23rd Street, Suite 110
Sacramento, California 95816

Sheetal Singh
Digitally signed by Sheetal Singh
Date: 2020.11.18 12:56:50 -08'00'

SUB: CDPH-EMB review of *Draft Radiological Scoping Survey Report Parcel F Structures—Finger Piers,* Hunters Point Naval Shipyard, San Francisco, CA. Received August 25, 2020.

As submitted by the California Department of Toxic Substances Control (DTSC), Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) reviewed the *Draft Radiological Scoping Survey Report Parcel F Structures—Finger Piers* Hunters Point Naval Shipyard, San Francisco for radiological issues. This review was performed in support of the Interagency Agreement between DTSC and CDPH.

If you need further assistance, please contact Terry Han of my staff at (916) 210-8531 or via email at Terry.Han@cdph.ca.gov.

Activity: Review *Draft Radiological Scoping Survey Report Parcel F Structures—Finger Piers,* Hunters Point Naval Shipyard, San Francisco, CA. Received August 25, 2020.

November 18, 2020

The Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) appreciates the opportunity to review the submitted document, *Draft Radiological Scoping Survey Report Parcel F Structures—Finger Piers,* Hunters Point Naval Shipyard, San Francisco, CA. Received August 25, 2020.

General Comments:

1. Please note that CDPH-EMB uses the following criteria in Title 17 of the California Code of Regulations, Section 30256(k) [17 CCR § 20256(k)] to base its evaluation for determining if a site is suitable of radiological unrestricted release:

   (1) Radioactive material has been properly disposed;

   (2) Reasonable effort has been made to eliminate residual radioactive contamination, if present, and;

   (3) A radiation survey has been performed which demonstrates that the premises are suitable to release for unrestricted use; or other information submitted by the licensee is sufficient that the premises are suitable for release for unrestricted use.

   In practice this means employing the decision making process outlined in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM, NRC et al, 1997), which includes establishing a reference background area for each of the materials to remain in situ. These reference background measurements are then compared to survey units (SUs) to determine suitability for radiological unrestricted release.

2. CDPH-EMB will not consider the alpha scan survey data presented in this scoping report for evaluating any unrestricted release request from Navy due to the following reasons:

   a. The minimum detection concentration (MDC) of alpha scan survey instruments exceeds the release criteria (Table 4).

   b. The alpha scan was limited (25% of the accessible surface in survey units); hence the additional alpha/beta statics measurements did not provide sufficient statistical support to supplement the alpha scan surveys. Please refer to Specific Comment #9 for more detailed discussion.

Specific Comments:

3. **Section 3.4.4 "Alpha/Beta Scan Surveys", Page 3-6, Paragraph 1, Sentence 5:**

   "This measurement achieved the same level of detection as slow scanning". Please provide explanation or calculation on why the six-second static counts can achieve the same level of detection as the design survey scan speed of 0.25 centimeters per second.

4. **Section 3.4.4 "Alpha/Beta Scan Surveys", Page 3-6, Paragraph 3, Sentence 3:**

   "The following equation is used to calculate instrument MDC in units of dpm/100 cm^2 when the background and sample were counted using the different time intervals:" Please provide the source of the equation.

5. **Section 3.4.4 "Alpha/Beta Scan Surveys", Page 3-7, Paragraph 2, Sentence 2:**

   "The scan MDC for alpha activity measured in the field exceeded the planned scan DC for alpha by more than a factor of two and exceeded the release criterion of 100 dpm/100 cm^2 for alpha activity by a factor of two." Please see general comment #2. For any future scan or static measurement, CDPH strongly recommends adjusting parameters so the MDC value of the field instruments does not exceed the release criteria.

6. **Section 3.4.4 "Alpha/Beta Scan Surveys", Page 3-7, Paragraph 5, Sentence 3:**

   "Table 4 provides calculated MDCs for each detector used for alpha and beta scan surveys." Please provide detailed steps of calculation for the MDCs in Table 4, including the values for every input parameters of the MDC equation at the bottom of page 3-6. CDPH is unable to replicate the MDC results in Table 4 using the parameters in Table 4, input values listed on page 3-6, and the equation on page 3-6. To assist in our review process, please provide one example of MDC calculation for alpha surface scan (sequential six-second static counts) on concrete, one example of MDC calculation for beta surface scan on concrete, and one example of MDC calculation for alpha static measurements on concrete.

---

7. **Section 5.3.1 "Reference Background Areas", Page 5-3, Paragraph 1, Sentences 1:**

"A concrete pad in Parcel C was used as the RBA for alpha/beta measurements." Please provide the reference data for alpha/beta scan measurement (i.e. 6-second static counts). CDPH strongly recommends Navy to obtain reference background data with the same input parameters (for example, but not limited to, the count time of measurement) as the measurements planned in a survey unit. This practice would ensure that a relevant comparison can be made between the survey and reference area data.

8. **Section 5.3.1 "Reference Background Areas", Page 5-3, Paragraph 1, Sentences 1:**

"This small pad was non-impacted because it was separate from the submarine pens and could not have been used for ship repair or other radiological operations due to its small size." Please explain why the small pad being separated from the "submarine pens", but not finger piers, provides reasoning of this small pad being non-impacted.

9. **Section 6.4 "Alpha/Beta Scan Measurement Results Data Quality Review ", Page 6-4, Paragraph 2:**

"The alpha scan MDC calculations and upper simultaneous limit calculations identified upper bounds on the alpha scan data in the 200 to 300 dpm/100 cm2 range. MARSSIM (EPA et al., 2000) Section 5.5.2.4 provides for increasing the number of measurements performed in a survey unit to account for MDC values that do not achieve the survey objectives. The number of measurements in each survey unit was increased by a factor of 3 during development of the work plan to allow for an alpha scan MDC as high as 300 dpm/100 cm2. A minimum of 54 alpha and beta static measurements were performed in each SU to account for the scan MDC not achieving the survey objective of measuring concentration below the specified release criteria and ILs. While the scan MDC for alpha scan surveys does not meet the project objectives, it still provides a technically defensible approach to surveys based on MARSSIM guidance." The special case mentioned in MARSSIM Section 5.5.2.4 (EPA et al., 2000) does not apply to the survey results reported in this document because the scanning survey covered only ~25% of the accessible area. The area factor and additional statics measurement discussed in MARSSIM Section 5.5.2.4 can only be applied to a Class 1 area that is fully scanned (100%). This Class 1 requirement is mentioned in MARSSIM multiple times. Only in the case of the scan survey covering the

entire available surface, like in a Class 1 site, the additional static data points may supplement necessary statistics for the scan MDC not achieving the survey objective.

As mentioned in General Comment #2, CDPH-EMB will not consider the alpha scan survey data presented in this scoping report for evaluating any unrestricted release request from Navy.

10. **Section 6.5 "Alpha/Beta Static Measurement Results Data Quality Review ", Page 6-4, Paragraph 2:**

"Appendix G provides analysis of the alpha and beta static measurement data, including graphical representations of the data and identification of data distributions." Please explain why the reference values of alpha and beta static measurements for manhole/grates in SU4, SU5, and SU6 are consistently higher than every survey alpha and beta static measurements for manhole/grates in the same SU. Judging from the consistently elevated reference value of alpha and beta static measurements for manholes/grates listed on page G-1359. G-1365, and G-1365, it appears the surface material of reference area and survey area for manholes/grates are not the same. Hence the reference area and survey unit data cannot be compared. CDPH believes this mismatch in surface material at reference area and survey area for manholes/grates distorted the net dpm/100cm^2 values at manhole/grates locations, including but not limited to, GR-14, GR-15, GR-16, GR-17, GR-18, GR-6, GR-3, GR-15 in SU6.

11. **Appendix D "Reference Background Area Data":**

To provide proper documentation and accountability, please include the name and signature of the technician and person conducting validation for instrument quality control documents on pages, not limited to, D-3 to D-10 in Appendix D.

12. **Appendix E "Radiological Instrument Quality Control Documents":**

To provide proper documentation and accountability, please include the name and signature of the technician and person conducting validation for instrument quality control documents on pages, not limited to, E-3 to E-40 in Appendix E.

13. **Appendix E "Radiological Instrument Quality Control Documents":**

Please provide the model number and serial number of the instruments on Page E-23 to E-24 in Appendix E.