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**CERCLA Cleanup 2020.04.09 Response from EPA to ELJC Letter  
Dated Dec. 2019**

United States Environmental Protection Agency

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

**SENT VIA EMAIL AS PDF**

April 9, 2020

Robert D. Mullaney  
Golden Gate University School of Law, Environmental Law and Justice Clinic  
536 Mission Street  
San Francisco, CA 94105-2968

Subject: Environmental Law and Justice Clinic Letter Regarding Radiological Soil Remediation Goals, Hunters Point Naval Shipyard Superfund Site

Dear Mr. Mullaney:

Thank you for your letter dated December 13, 2019, submitted on behalf of Greenaction for Health and Environmental Justice. Your letter responds to the U.S. Environmental Protection Agency's (EPA's) November 15, 2019, letter to the Navy regarding the Navy's draft evaluation of radiological soil remediation goals at the Hunters Point Naval Shipyard Superfund site (HPNS). HPNS is being managed by the Navy as a federal facility under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA plays an oversight role.

Your letter states that you agree with EPA's position on the long-term protectiveness of the Navy's soil radiological remediation goals and support EPA's recommendation that the Navy clarify how any health risks exceeding  $1 \times 10^{-4}$  and the radionuclide contribution from background sources will be addressed.

Your letter also describes four concerns with the approach outlined in EPA's letter. We summarize and respond to each of those concerns below.

**Golden Gate Law Clinic Concern A. "The Navy Should Have Considered the Risk Posed by Consumption of Homegrown Produce"**

The risk evaluation completed by the Navy to evaluate the radiological soil remediation goals (RGs) assumes that homegrown produce consumed by future residents at HPNS would not take up site contaminants. Your letter states this assumption is unsupported and inappropriate, resulting in an underestimation of risks. Your letter notes that Institutional Controls (ICs) are planned for HPNS but finds the controls inadequate.

ICs at HPNS are or will be described in a series of interrelated documents, including Records of Decision, Land Use Control Remedial Design Documents (LUC RDs), Operation and Maintenance Plans (O&M Plans), Covenants to Restrict Use of Property (CRUP), and a Risk Management Plan (RMP). RODs, LUC RDs, and O&M Plans have been finalized or drafted for most HPNS parcels, but to date a CRUP has only been executed for Parcels UC-1 and UC-2. EPA submitted comments on the latest version of the RMP in September of 2019.

The Records of Decision (RODs) provide a general description of the ICs. The wording varies somewhat between RODs. In the ROD for Parcel UC-1, the remedy includes a prohibition on “Growing vegetables or fruits in native soil for human consumption.” The CRUP describes the IC in more detail, providing a prohibition similar to the ROD (prohibiting the growing of vegetables, fruits, or any edible items in native soil for human consumption) and adding a prohibition against planting trees producing edible fruit unless “...they are grown in containers with a bottom that prevents the roots from penetrating the native soil.” The CRUP also states that “Plants for human consumption may be grown if they are planted in raised beds (above the CERCLA-approved cover) containing non-native soil.”

Your letter asks that EPA respond to three specific questions:

1. “The California Department of Toxic Substances Control (“DTSC”) would be responsible for filing and enforcing the CRUP. Has DTSC expressed its support in writing for this type of CRUP (i.e., raised beds with impermeable bottoms and sides) at HPNS?”
2. “Has a similar CRUP been used at any Superfund Site that contains a radionuclide of concern such as Radium-226 that has a half-life of 1,600 years?”
3. “As a practical matter, how does DTSC intend to enforce this CRUP against future HPNS residents?”

We have discussed your questions with DTSC representatives. Based on our discussions, and a public presentation made by DTSC to the “Bayview Hunters Point Environmental Justice Response Task Force” on January 22, 2020, we understand that:

- DTSC intends to require that produce be grown in raised beds with impermeable bottoms to prevent roots from penetrating the durable cover;
- DTSC plans to amend the CRUP for Parcels UC-1 and UC-2 to ensure consistency with planned CRUPs;
- Similar restrictions have been executed at the former El Toro Marine Corps Air Station Site, where Ra-226 is also a site contaminant; and
- Each owner is responsible for the inspection, maintenance, and repair (if needed) of the durable cover. Failing to comply with the obligations and restrictions established by the CRUP may result in DTSC taking administrative or civil action or referring the matter for criminal prosecution.

We understand you have reached out to DTSC to answer questions about the development, adoption, or enforcement of the CRUPs.

**Golden Gate Law Clinic Concern B. “The Current Remediation Goal for Radium-226 Has No Basis and Must Re Revised”**

Your letter expresses several concerns related to the remediation goal (RG) for Radium-226 (Ra-226) and concludes that the RG must be revised. The RG, 1 picoCurie per gram (pCi/g) above the Ra-226 background concentration, was adopted in the 2006 Action Memorandum and multiple RODs at HPNS.

First, your letter concludes that the Ra-226 RG is not protective of public health. EPA’s June 2001 Comprehensive Five-Year Review Guidance, which you reference in your letter, calls for revising a RG if it is determined that risks associated with the goal exceed EPA’s risk range (see Exhibit G-1 in the Guidance). It is not yet known if that is the case with the Ra-226 RG at HPNS.

The purpose of the Navy’s long-term protectiveness evaluation of soil RGs is to determine if the HPNS remedies are or will be, when complete, protective of human health. The Navy’s evaluation is not yet complete. As described in EPA’s November 15, 2019, letter, we believe that it is appropriate to defer making a decision about the long-term protectiveness of the remedies until after retesting is complete and health risks can be assessed using site data. In the case of Ra-226, where the RG is defined as an increment above background, the background concentration of Ra-226 will also need to be considered. This approach is consistent with EPA guidance.

Second, your letter expresses dissatisfaction with the historical record documenting the basis for the Ra-226 RG. Your letter refers to the RG’s “dubious origin” and comments on a footnote associated with the RG that states that the RG is “per agreement with EPA.”

We have searched our records for additional information on the origin of the Ra-226 RG and found four documents relating to discussions between EPA and the Navy from the early 2000s. These documents shed additional light on the origin of the Ra-226 RG, and we have provided those to you in an email on March 9, 2020.

We do not see any evidence that the RG was adopted improperly or inconsistent with CERCLA requirements, in its formulation (as an increment above background) or its value (1 pCi/g above background). The approach (as an increment above background) has been used at many other radium-contaminated CERCLA sites nationally and the value is similar or lower to other CERCLA sites. The HPNS Ra-226 RG is similar to other CERCLA sites in EPA Region 9, such as the McClellan Air Force Base site with a Ra-226 RG of 2 pCi/g.

Third, your letter refers to “EPA's current residential preliminary remediation goal of 0.0018 pCi/g for Radium-226 in soil” as approximately 897 times more protective than the Navy's current Ra-226 RG of 1.633 pCi/g.

The preliminary remediation goal (PRG) is 0.0018 pCi/g when EPA’s Preliminary Remedial Goal Calculator (PRG Calculator) is used with “default” exposure parameters. EPA may use

PRGs calculated with default exposure parameters to determine whether further investigation at a site is warranted, or as a final cleanup goal if site-specific data are unnecessary or unavailable. (See the EPA User's Guide that accompanies the PRG calculator: "The site manager should weigh the cost of collecting the data necessary to develop site-specific PRGs with the potential for deriving a higher PRG that provides an appropriate level of protection.")

PRGs calculated with default exposure parameters are usually lower than PRGs calculated with site-specific exposure values. At some sites default exposure parameters are used because the PRGs are being applied in an initial screening step and will be modified later. At other sites it may not be worth the time or expense to develop site-specific exposure values because PRGs are not expected to change significantly if default exposure parameters are replaced with site-specific parameters. Neither of these situations is the case at HPNS.

We are not aware of any CERCLA sites that have adopted the 0.0018 pCi/g value as a Ra-226 RG. As noted above, the Ra-226 RG at the McClellan Air Force Base is much higher than the default 0.0018 pCi/g value and slightly higher than the current 1.633 pCi/g RG at HPNS.

The current 1.633 pCi/g Ra-226 RG at HPNS is based on a background concentration of 0.633 pCi/g. The background concentrations of Ra-226 (and other radionuclides at the HPNS) are undergoing reevaluation and may be revised.

Ultimately, the most important consideration is whether the soil RGs for Ra-226 and the other radionuclides at HPNS remain protective of human health given improvements in our understanding of health risks from radiation since the RGs were first adopted 14 years ago. We will continue to work with the Navy to complete the long-term protectiveness evaluation and ensure that the site remedies are protective of human health.

**Golden Gate Law Clinic Concern C. "EPA Must Require the Navy to Use Detection Methods for Retesting that Can Achieve Appropriate Detection Limits and Data Quality Objectives"**

We agree. The detection limits used to analyze soil samples during retesting should be and are expected to be below remediation goals (RGs). The planned detection limits are listed below, and they are well below the RGs. The detection limits are taken from the Final Parcel G Removal Site Evaluation Work Plan, June 2019 (Appendix B, Worksheets #15a-d, available on EPA's HPNS webpage). The values are referred to in the Work Plan as "Minimum Detectable Concentrations" [MDCs].

	<b>Remediation Goal (pCi/g)</b>	<b>Detection Limit (pCi/g)</b>
Radium-226	1 + background	0.05
Thorium-232	1.69	0.3
Cesium-137	0.113	0.05
Strontium-90	0.331	0.15
Uranium-235/236	0.195	0.1
Plutonium-239/240	2.59	0.5

**Golden Gate Law Clinic Concern D. “The Navy's Public Response to EPA's Review Letter Repeats an Unfounded Assertion”**

Your letter reports that the Navy, in the "Timely Topics" section of its HPNS webpage, continued to report that the RGs for soil are "...protective and consistent with federal law (CERCLA)" after EPA's November 2019 letter. We agree that the statement does not address EPA's and the public's concerns with the HPNS RGs. We raised a similar concern with the Navy after the Timely Topic first appeared on the Navy's webpage.

If you have any questions, please contact Brianna Fairbanks at 415-972-3907.

Sincerely,

John Chesnutt  
 Manager, Pacific Islands and Federal Facilities Section  
 Superfund and Emergency Management Division