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MEMORANDUM TO FILE

Date: March 8, 2021

To: Navy Administrative Record

From: Derek Robinson ,NAVFACHQ BRAC Environmental Coordinator, Hunters Point

Subject: Memorandum to File Regarding Radiological Remediation Goals for the Removal Site Evaluation Workplan for Parcels B, C, D-1, D-2, E, G, UC-1, UC-3, Former Hunters Point Naval Shipyard, San Francisco, California

The purpose of this Memorandum is to document the determination that cesium-137 may be present due to background in some soils at Hunters Point Naval Shipyard (“HPNS” or “Site”) at concentrations above the remediation goal (RG) established in the Basewide Radiological Removal Action Memorandum and Records of Decision (RODs) for Parcels B, C, D-1, D-2, E, G, UC-1, UC-2, and UC-3. Allowing material to remain on-site that is attributable to background is consistent with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and applicable guidance. United States Environmental Protection Agency (EPA) and Department of Defense (DOD) guidance is clear that responsible parties are not generally required to remediate contaminants that are background. (DoDM 4715.20, March 9, 2012/OSWER 9285.6-07P, April 26, 2002). Therefore, the decision criteria for determining if additional cleanup action is necessary will require consideration of the background threshold value (BTV) of cesium-137.

As is common in the environment, radionuclides of concern (ROCs) may be present at the Site due to naturally occurring radioactive materials (NORM) or as a result of human activities not related to the Department of the Navy (Navy) activities at the Site (anthropogenic), both referred to as “background.” The Navy completed a background study in June 2020 (Final Background Soil Study Report). This report, further explained below, determined that the appropriate cesium-137 background value for HPNS is 0.141 picocurie per gram (pCi/g), a value higher than the remedial goal of 0.113 pCi/g found in multiple Site RODs.

Another purpose of this Memorandum is to outline a secondary analysis that may be performed on any samples that exceed the ROC RGs or the cesium BTV. This secondary analysis will be used to determine whether the detected concentrations of ROCs in a sample can be attributed to Site contamination or to background. Conducting a secondary analysis is consistent with past cleanup activity at HPNS. Where the regulatory agencies agree that the secondary analysis demonstrates that the detected ROC concentrations are attributable to background, the sample results will not trigger the need for additional cleanup and the material represented by that sample may be left in place.

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The determination documented in this Memorandum immediately affects Parcels G and E, the parcels where the Navy is currently conducting fieldwork for potential radiological contamination. This Memorandum also applies to future site work at HPNS and planned radiological retesting to be conducted under forthcoming parcel-specific site evaluation workplans on Parcels B, C, D-1, D-2, UC-1, UC-2, and UC-3.

## BACKGROUND STUDY

During the background study, the following soil ROCs were sampled: cesium-137, plutonium-239, radium-226, strontium-90, thorium-232, and uranium-235. Samples were collected for radiological characterization from five different reference background areas (RBA). Four RBAs were on-site and one was offsite, located at San Bruno Mountain State and County Park. The RBA characterization consisted of surface and subsurface soil sampling at various depths from 0 to 10 feet below ground surface for radiological analysis. After reviewing the dataset from these locations, the Navy agreed with the regulatory agencies' proposal to set the BTVs of cesium-137, radium-226, thorium-232, and uranium-235 by only using the offsite San Bruno Mountain dataset as further explained in the Final Background Soil Study Report.

Background concentrations vary across the Site and the BTVs may not be representative of the full range of background concentrations at the Site.

## SUMMARY OF THE REMEDIAL ACTION OBJECTIVES FOR RADIOLOGICAL IMPACTS

The RODs for the affected parcels have similar remedial action objectives for radiologically impacted soil that prevent exposure to ROC in concentrations that exceed RGs for all potentially complete exposure pathways.

Soil RGs for ROCs at HPNS

<i>Radionuclide</i>	<i>Residential Soil RG (pCi/g)</i>
<i>137Cs</i>	0.113
<i>239Pu</i>	2.59
<i>226Ra</i>	1.0 <sup>a</sup>
<i>90Sr</i>	0.331
<i>232Th</i>	1.69
<i>235U</i>	0.195

<sup>a</sup> Goal is 1 pCi/g above background.

## SUMMARY OF NON-SIGNIFICANT CHANGE TO THE REMEDY

Incorporating consideration of the BTV for cesium-137 and a secondary analysis of all ROCs into the decision criteria for remediation is a non-significant change to the remedy. The proposed soil background levels from the 2020 Final Background Soil Study Report include six ROCs. These ROCs may be present due to background and may not be a release at the Site.

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In most instances, these ROC BTVs using the offsite San Bruno Mountain dataset are less than the RGs. However, for cesium-137, the BTV is 0.028 pCi/g greater than the ROD RG. The BTV for cesium-137 of 0.141 pCi/g is well within the acceptable cancer risk range for a CERCLA RG. Allowing ROC material to remain in place that is attributable to background is consistent with CERCLA and applicable guidance and does not represent a significant change to the scope, performance, or cost of the remedy. RGs and Background Values from Background Evaluation (June 2020):

<b>Radionuclide</b>	<b>HPNS Remediation Goals<sup>a</sup> (pCi/g)</b>	<b>Offsite Background Threshold Values (BTVs) (pCi/g)</b>	<b>Range of Onsite Background levels (pCi/g) <sup>c</sup></b>
137Cs	0.113	0.141	0.0523 - 0.477
239Pu/240Pu	2.59	0.515 <sup>d</sup>	0.378 – 0.494
226Ra	1.0 <sup>b</sup>	0.861	1.13 - 1.35
90Sr	0.331	0.150 <sup>d</sup>	0.149 - 0.150
232Th	1.69	1.63	1.42 - 2.21
235U/236U	0.195	0.145	0.129 - 0.245

a Remediation goals are consistent with those issued in the Radiological TCRA Action Memo (Navy, 2006. Basewide Radiological Removal Action, Action Memorandum – Revision 2006.

b. Goal is 1 pCi/g above background.

c. Based on comments received from the regulatory agencies on the Draft Background Soil Study Report, data collected from RBA-3 will not be used for site data comparisons and were excluded from the range of background levels presented. EPA noted objections with some of the onsite background level ranges.

d. EPA noted objections with the BTV for Pu-239 and Sr-90.

For any future radiological soil sampling, the Navy will first compare soil sample results to the ROC RGs. For cesium-137, if a sample result is above the RG, then data will be compared to the BTV. For any sample exceeding either the RG or the BTV for cesium-137, a secondary analysis may be conducted to determine whether the detected concentration is Site-related contamination or background. For all other ROCs, the sample will first be compared to the RG, and a secondary analysis may be performed if the sample exceeds the RG. The Removal Site Evaluation Workplan for Parcel G describes some of the information that the Navy may evaluate in support of a claim that the sample represents background rather than Site-related contamination. Relevant information may include: 1) whether the sample was collected in an area with a known or suspected release of the radionuclide; 2) whether the sample is comparable to background soils with a similar soil type, color, and/or local environment; 3) whether the sample is nearby other elevated sample results; and 4) whether the sample is in secular equilibrium with its parent radionuclides (this is relevant for radium-226 only).

If the Navy determines that a sample result exceeding an RG or the cesium-137 BTV represents background conditions, the Navy will submit its supporting information to EPA and State regulatory agencies (Department of Toxic Substances Control (DTSC) and the California Department of Public Health (CDPH)). The regulatory agencies will evaluate the Navy’s finding

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that a sample result is attributable to background. If any of the regulatory agencies do not agree with the Navy's finding, the sample result will trigger the need for additional investigation and cleanup to remove all soils and/or materials containing Site-related contamination in excess of the RGs or cesium-137 BTV.

Changing the remedy by including the BTV for cesium-137 established by the Final Background Soil Study Report as a decision criteria for determining the need for clean-up is consistent with both DOD and EPA policy. As the BTV for cesium-137 is close to the RG and is still within the acceptable cancer risk range under CERCLA, it is a non-significant change to the remedies documented in the RODs for HPNS. In addition, performing additional analysis to determine whether a sample that exceeds the applicable RG or BTV represents background rather than Site-related contamination is also consistent with both EPA and DOD policy.

REF:

1997 Navy. Parcel B Final Record of Decision, Hunters Point Shipyard, San Francisco, California. Oct 7

2006 Navy. Basewide Radiological Removal Action, Action Memorandum – Revision 2006, Hunters Point Shipyard, San Francisco, California. April 21

2009 Navy. Record of Decision for Parcel G, Hunters Point Shipyard, San Francisco, California, Feb 18

2009 Navy. Final Amended Parcel B Record of Decision for Hunters Point Shipyard, San Francisco, California. Jan 14

2009 Navy. Record of Decision for Parcels D-1 and UC-1, Hunters Point Shipyard, San Francisco, California. July 24

2009 Navy. Record of Decision for Parcels UC-2, Hunters Point Shipyard, San Francisco, California. Dec 17

2010 Navy. Record of Decision for No Further Action at Parcel D-2, Hunters Point Shipyard, San Francisco, California. Aug 9

2010 Navy. Record of Decision for Parcel C, Hunters Point Shipyard, San Francisco, California. Sept 30

2013 Navy. Record of Decision for Parcel E, Hunters Point Shipyard, San Francisco, California. Dec 23

2014 Navy. Record of Decision for Parcels UC-3, Hunters Point Shipyard, San Francisco, California. Jan 21

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2014 Navy. Explanation of Significant Differences to the Final Record of Decision for Parcel C.  
Oct 28

2019 Jacobs. Removal Site Evaluation Workplan for Parcel G. June 6

2020 Aptim. Removal Site Evaluation Workplan Addendum for Parcel G. July 24

2020 CH2M. Final Background Soil Study Report. June 11

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By direction of the Director