

RESPONSES TO COMMENTS ON USACE Comments to February 11, 2016 - De Minimis Determination for Incidental Trace Amounts of Radiological Material found in Pier 12 Dredged Sediments.: FEBRUARY 24, 2016

The following are responses to comments provided by Mr. Hans Honerlah, Army Corp of Engineers			
Comment Number	Reference	Comment	Response
General Comments			
1.	10 CFR	<p>General Comment – The Atomic Energy Act (AEA) defines by-product materials - (3)(A) any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or (B) any material that–(i) has been made radioactive by use of a particle accelerator; and (ii) is produced, extracted, or converted after extraction, before, on, or after the date of enactment of this paragraph for use for a commercial, medical, or research activity.</p> <p>Under the AEA, except as provided in § 91.b (42 USC 2121(b)), the Nuclear Regulatory Commission (NRC) has the authority to regulate the use, possession, ownership, transfer, receipt, acquisition, distribution, production, or manufacture of byproduct material, source material, and special nuclear material. The AEA prohibits any person, including Government agencies, from receiving, transferring, owning, possessing, or</p>	<p>An MOU, dated April 17, 2015, was entered into by the Naval Facilities Engineering Command Southwest (NAVFAC SW), Naval Sea Systems Command Detachment Radiological Affairs Support Office (RASO), Manson Construction and the Gilbane Company. The Navy has contracted with Manson Construction who, in turn, has contracted with Gilbane to provide radiological services under its State of California Radioactive Materials License No. 7948-07.</p> <p>While the Navy is recognized as owner of the radioactive materials at NBSD, the materials are not currently permitted under the Master Materials License, as the materials are considered residual contamination from previous operations.</p> <p>Under the terms of the MOU, Gilbane is</p>

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		<p>using byproduct material, source material, or special nuclear material unless authorized by a general or specific license from the NRC, or otherwise exempt from the licensing requirements by statute or 10 CFR, Chapter 1. It is understood that the NRC and the DOD are currently in final stages of approving a Memorandum of Understanding (MOU) associated with the regulatory responsibilities associated with these radioactive materials at DOD sites that are undergoing Comprehensive Environmental Response, Compensation and Liability Act, (42 U.S.C. 9601 et seq., as amended) (CERCLA) Response actions.</p> <p>While there may be a Draft MOU between the NRC and DOD that is attempting to minimize duplicative regulations between the NRC and DOD, it is applicable to sites undergoing CERCLA response actions.</p> <p>Under what regulatory authority is the Navy possessing and transferring the current radium devices recovered from the dredging project?</p> <p>Additionally, 10 CFR §20.2008 - Disposal of certain byproduct material (b) A licensee may dispose of byproduct material, as defined in paragraphs (3) and (4) of the definition of <i>Byproduct material</i> set forth in §20.1003, at a</p>	<p>responsible to characterize and inventory radioactive waste discovered during the performance of field work and maintain custody until transferred to the LLRW contractor or to the Navy. The Navy is responsible to coordinate with its low-level radioactive waste contractor to provide containers for and disposal of radioactive contaminated materials found as a result of the conduct of site work.</p> <p>The objects in question may not be by-product material because they are not and were not used for “commercial, medical, or research activity”. Even if they are by-product materials, ones still in the sediment are not under any control for use, possession, etc. They are at large in vast amounts of sediment. Therefore they are regulated under the MPRSA as trace constituents of dredged material.</p>

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		disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005. Please confirm that the LA-5 ocean disposal location is authorized under Energy Policy Act of 2005.	
2	NEPA	General Comment – Is the proposed ocean disposal of radioactive objects identified within the dredge materials addressed in any NEPA documentation for the ocean or upland disposal cell, dredging operations, or Pier 12 replacement project? Specifically, the July 2011 Navy Environmental Assessment for P-327 Pier 12 Replacement and Dredging Naval Base San Diego states – “The proposed action would demolish Pier 12 and construct a single-deck replacement pier and associated facilities. All debris except for concrete planned for creation of fish enhancement structures would be recycled or disposed of at a landfill, consistent with Navy policies and procedures for solid waste diversion.”	The NEPA process for this project consisted of an EA. A FONSI was signed in 2011. A Supplemental Impact Report (SIR) to the Navy’s 2011 EA was completed in August 2015 (provided) which analyzed the unanticipated finds of RAD and MEC and the transportation of upland disposal material to Azusa Landfill. The 2011 SIR analyzed screening all material above the previous design depth, -30 ft MLLW, for MEC and RAD prior to discharge at the previously-approved disposal locations. Since a decision has not been made regarding screening of the material located above -30 ft MLLW which was previously approved for ocean disposal, a NEPA document has not been completed at this time. The Navy’s white paper would support any future Navy NEPA document regarding this decision.

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3	40 CFR 227	<p>General Comment – 40 CFR §227.7 - Limits established for specific wastes or waste constituents. Materials containing the following constituents must meet the additional limitations specified in this section to be deemed acceptable for ocean dumping: (b) Radioactive materials, other than those prohibited by §227.5, must be contained in accordance with the provisions of §227.11 to prevent their direct dispersion or dilution in ocean waters. How will the radioactive objects/materials be contained? From the De Minimis Determination for Incidental Trace Amounts of Radiological Material found in Pier 12 Dredged Sediments - Table 3. Radioactive Object Collection Log – about half of the items are identified as radium rope and several of the deck markers are identified as damaged/broken. How will these types of materials meet the requirements of §227.7?</p>	<p>40 CFR 227.7 is not applicable since it is “for specific wastes or waste constituents”. 227.13 is applicable because it applies to Dredged Materials. That is material that is “substantially the same as the substrate at the proposed disposal site” 227.13 (b)(3)(i) and is in compliance with 227.6. 227.13(c)(1).</p> <p>Note that 227.13(c) refers back to 227.6, constituents prohibited as other than trace. Therefore, the question becomes whether the requirements of 227.6 are met, rather than the requirements of 227.7, which implicitly applies to material other than dredged material.</p> <p>While an argument could be made that 227.7 does apply, it is not a practical or beneficial result from the standpoint of financial resources and human and environmental health. And it is not necessary to reduce any risk.</p>
4	Page 2	<p>From the evaluation (page 2) – States “The radiological and munitions screening program calls for very slow methodical process that includes...” Did the sifting of materials</p>	<p>Out of 51 items, 23 were detected before or during the ¾” screening process. The rest of the 28 items were small enough to fall through the screen and were found by</p>

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		through the ¾” identify any of the radioactive objects or were they all identified by the radiological scanning?	manual screening on the radiological screening pads.
5	Page 2	From the evaluation (page 2) – As stated, it appears that the dredge materials slated for upland disposal will require the current screening techniques prior to placement in the engineered disposal cell. Yet the proposed ocean disposal will receive no additional screening prior to placement. This may become a public relations issue for all stakeholders.	<p>The State of California is mandated to have a criteria that is protective of human health and the environment for radioactive materials for landfill disposal, however, the State of California has not established any such criteria and instead relies on ALARA or As Low As Reasonably Achievable. Because no criteria exists, the State has determined that discrete objects contain high enough specific activity of radium that they are not acceptable for receipt at landfills intermixed with lower specific activity soils. For ocean disposal, the Department of Energy (DOE) and IAEA has established a screening criteria that is protective of human health and marine ecology. The sediment at Pier 12 does not pose a risk to the marine ecology using the established screening criteria.</p> <p>The Navy will have a plan to have a community meeting with all of the information available in this white paper if the more public relations is needed.</p>

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6		<p>From the evaluation (page 2) – States “Evaluating both the cores and dredged-screened sediments, these materials are at trace levels and de minimis in terms of radioactivity.” This statement really confirms the fact the radioactive items within the dredge materials are discrete items. Please provide the guidance/reference that supports completing the assessment without consideration of the discrete items/objects of radioactive materials that meet the definition of by product materials as defined in the AEA. Additionally, the Navy should consider obtaining concurrence from the NRC on this evaluation and proposed path forward.</p>	<p>The paper has provided three different lines of evidence that the sediment at Pier 12 does not pose a risk that would create an adverse affect to the marine ecology.</p> <ol style="list-style-type: none"> 1. First line of evidence: 48 four inch sediment cores were taken in-situ in the footprint of the Pier 12 site. None of cores were above the background for radiological isotopes that include Ra-226 in the San Diego Bay. 2. The highest dose emitted from any single source found at Pier 12 is a Deck Marker with 0.24 rad/Day. The DOE screening criteria for a chronic risk assessment on any aquatic animal is 1 rad/day as specified in DOE Order 5400.5. 3. The AEA London Convention guidance for ocean disposal of low level radiological waste provides equations and guidance for sites with volumetrically contaminated sediment. However, the sediment at Pier 12 is clean sediment but with possible trace amounts of Ra-226 above background. To

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			<p>compare the activity from the 8,400 cy of sediment that was dredged and screened, the total activity from the 51 items were summed to and correlated to the 8,400 cy of sediment. This calculation was conducted to use the equations given in the AEA London Convention guidance to attempt to compare the activity found in the volume of sediment at Pier 12, to clean San Diego Bay sediment with naturally occurring Ra-226.</p> <p>NRC has been informed of the Pier 12 project and the possibility of trace amounts of radium 226 items being disposed into the ocean. NRC requested to be informed of the progress but does not require a MOU or a license since Pier 12 is a MILCON site and not a CERCLA site.</p>
7	Page 2	From the evaluation (page 2) – Please provide additional information that identifies the applicability of the <i>Guidelines for the Application of the De Minimis Concept under Annex 9 of the London Convention and Protocol</i> and IAEA documents	40 CFR 220.1(b) says that the regulations and criteria set out in the chapter implement standards and criteria in the London Convention and Protocol. . The Annex 9 protocol' gives methodology and

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			standards for sediment that may have radiological contamination from items such as existing fallout remaining from nuclear tests and any other type of radioactivity such as discrete objects that will not cause adverse harm to the marine environment. It defines the concept of “de minimis” which fits in very well with the 227.6 idea of “trace”. The contamination can’t be trace unless it is de minimis and the reverse is also true.
8		From the evaluation (page 5) – Regulatory Evaluation Precedents from previous dredging operations. Specifically, Brewer Glen Cove Marina. It is not clear to the reviewer, the location of the referenced dredge site. Additional information for the team to consider - The New York District terminated the dredging contract for Glen Cove Creek on 22 February 2002. The radiological contaminated material in the dewatering site was segregated by USEPA (as part of a CERCLA Remedial Action) in the summer of 2002 and stored for eventual disposal. The City of Glen Cove disposed of the remaining nonradioactive dredged material from the dewatering site in November/ December 2002. The USACE was not able to complete the dredging of the creek, which was contaminated with radiation, at that time due to the fact it was incorporated into the ongoing EPA Superfund cleanup project in the adjacent upland areas. Dredging of the	Thank you for the additional information. A memorandum dated August 21, 2003, titled: Suitability Determination for Brewer Glen Cove Marina, Glen Cove Creek, Glen Cove, NY. Application Number 2001-01029 from Joanne M. Barry, Chief, Policy Analysis and Technical Support Branch to Mark Roth, Project Manager. The project is similar to Pier 12 since the source of radiological contamination (slag from Li Tungsten) is unevenly distributed and may be deposited in small clumps. Sediment cores were taken and scanned for radioactivity, but found to similar to background. The memo states, “The physical effects of

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		remaining portions of the creek was performed for EPA under the Superfund program following the CERCLA Process.	the disposal of the dredged material at the disposal site should be minimal. Although some benthic marine organisms will be buried by the disposal, the disposal site should be rapidly re-colonized.”
9	Page 8	From the evaluation (page 8) – “The Navy elected to evaluate the dredged material where known radioactive objects were identified in material slated for upland disposal and extrapolate the activity per cubic yard of dredged sediment to dose rates to workers on the disposal barges, the public, and to ecological receptors at the LA-5 disposal site following the IAEA guidance for trace or de minimis material and are below the criteria to protect the marine environment.” Please provide the guidance/reference that supports the decision to average the activity of the discrete objects with the entire volume of dredge materials.	The Navy is following the regs from 40 CFR 227 – Criteria for Evaluation of Permit Applications for Ocean Dumping of Materials. The paper is written with three different lines of evidence to satisfy the 40 CFR 227.4 – Criteria for Evaluating Environmental Impact, which is to allow EPA to determine that “the proposed disposal will not unduly degrade or endanger the marine environment.....” The evaluation that mentioned in this comment where the total activity from 51 items with radium is extrapolated per cubic yard of dredged sediment was calculated to use the IAEA guidance (Application of Radiological Exclusion and Exemption Principles to Sea Disposal) for the evaluation of trace or de minimis material which assumes the screening coefficients are derived from uniformly contaminated sediment.

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			<p>The main assumption from this guidance is that the entire 65,000cy of sediment is uniformly rad contaminated. At Pier 12, the sediment is clean, with exception of 51 discrete items with an extremely low radioactivity. To use this evaluation, the averaging calculation was performed.</p> <p>This is only one line of evidence and should not be the only factor looked when determining if the 40 CFR 227 criteria has been met.</p>
10		From the evaluation (page 8) – States “Screening coefficients for dose per unit activity concentration for Ra-226 in uniformly contaminated sediment...” Please provide rational for the assumption that the activity concentration is uniformly contaminated.	Please see response for comment #9
11		From the evaluation (page 8) – Assumed density of 2.6 grams per cubic centimeter (g/cm ³) seems high. Please check the assumption or provide a reference supporting the assumption.	The source of the assumed density is from a Navy document entitled, <i>User’s Guide for Assessing Sediment Transport at Navy Facilities</i> , Technical Report 1960 (Sep 2007). Section 2.1.1 describes physical properties of sediment. In the first paragraph, 3rd sentence on page 6, the document states, “The approximate density of the quartz and clay minerals that make up the majority of sediment particles in the natural world is about 2.65 g/cm ³ .”