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LETTER REGARDING RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COMMENTS ON U S NAVY RESPONSES TO COMMENTS ON PROPOSED PLAN FOR SITE 16 ON NCBC DAVISVILLE RI
7/10/2013
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

10 July 2013

Mr. Jeffrey Dale, RPM
U.S. Department of the Navy
BRAC PMO, Northeast
4911 South Broad Street
Building 679, PNBC
Philadelphia, PA 19112

RE: NCBC Site 16 Proposed Plan
Navy Responses to RIDEM 26 March 2013 Comments
Davisville, Rhode Island
Submitted 26 June 2013, Dated June 2013

Dear Mr. Dale:

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the above referenced document and comments are provided below.

1. Page 4, Column 1, Bottom Paragraph – The Quonset Davisville Navy Yacht Club is now known as the Allen Harbor Boating Association[1], please revise. In addition, please remove the phrase "restricted recreational" and simply refer to the marina portion of this site as "recreational". Though not all inclusive, the site is not "restricted recreational" for the following reasons – 1) There are no barriers, physical or otherwise, to prevent public access to the site, 2) The site is owned by a governmental agency (Navy), will be transferred to a quasi-governmental agency (QDC) who will lease it to a non-profit entity (Allen Harbor Boating Association)[1,2] and 3) especially during the boating season (primarily the summer months), if space is available the public can dock their boats at the Association without having to be a member[1].

   Navy Response to RIDEM Comment No. 1: *The narrative will be modified to reference the Allen Harbor Boating Association. The phrase "restricted recreational" is used in order to convey clarity and transparency to the community. The Navy does not disagree with the points the RIDEM has provided; however, to suggest that this area is "recreational" would give a false pretense since the inference in the RIDEM Remediation Regulations definition of "recreational" use assumes remediation to "residential" criteria whereas the proposed remediation utilizes necessary land use restrictions. Please note that the*

30% post-consumer fiber

preferred remedial alternative for the Site 16 soils in the immediate vicinity of Bldg E-107 specifies the remediation of the 0-2 foot soils only to the RIDEM residential DECs. Receptor exposure to the subsurface soils would be controlled by land use controls (LUCs)/soil management plans (SMPs). So, in effect, "unrestricted" development/use of the area is prohibited. (Please see BCT meeting notes of March 28th, 2013. RIDEM has agreed to the use of the phrase "restricted recreational" in the proposed plan.)

RIDEM Comment – RIDEM disagrees with the Navy response. For clarity, while the clean up standards are the same for residential use and recreational use the land uses and activities that will take place on the land are completely different. RIDEM concurs that residential use should not be allowed at the marina. It is anticipated that the Navy will place an ELUR on the marina property that allows for recreational use, but will prohibit residential use. With respect to "restricted recreational use" it does not meet the definition for this use as noted in Section 3.39 of the RIDEM Remediation Regulations, Amended 2011 and as outlined in the original comment.

While RIDEM at an earlier meeting agreed to the term "restricted recreational use" it was for the purpose of noting that we would restrict the marina to recreational uses. The intent was that residential use would not take place. Upon reflection, the term "restricted recreational use" would be confusing to the public as it implies something that is not the case. As originally requested, please remove the phrase 'restricted recreational use". The Navy can note, however, that the marina will be "restricted to recreational use".

2. Page 4, Column 2, Bottom paragraph – This paragraph references a NCBC Davisville base-wide background study. Please note that this study is no longer considered valid.

Navy Response to RIDEM Comment No. 2: *The narrative is not citing the referenced background soil dataset as the rationale for deleting chemicals of concern. The dataset does exist and the referenced statement is simply advising the reader that site concentrations exceed the NCBC Davisville background soil dataset concentrations. Importantly, the 95% UCL (on the arithmetic mean) arsenic level based on the NCBC Davisville background soil dataset is equal to the RIDEM residential/industrial DEC for arsenic (7 mg/kg) which is also a background-based number. The NCBC Davisville background soil dataset appears to support the background level derived by the state and vice versa.*

RIDEM Comment – RIDEM is not saying that the study cannot be referenced, it is only saying that it is no longer considered valid as we now have updated procedures for determining background values (Section 8.06 of the RIDEM <u>Remediation Regulations</u>, Amended 2011). It is similar to when USEPA changes procedures and standards based on updated technology and

information. The public should be aware that the cited study is dated and may not reflect current background values. Please revise as requested.

3. Page 6, Column 1, Paragraph 2 – "To meet the requirements of the RODs for Sites 07 and 09, periodic **monitoring** is being conducted in accordance with the Long-Term **Monitoring** Program for each site." The Navy might want to mention the $9 million cap that was constructed at Site 09.

   Navy Response to RIDEM Comment No. 3: *Agree.*

   RIDEM Comment – Navy response is acceptable.

4. Page 6, Column 2, Step 4 – Characterize the Risk, Bullet 1, Last Sentence – This bullet notes that there are no unacceptable risks to recreational users for surface soil. RIDEM disagrees with this portion of the statement as soil sample SB16-095 (next to building E-107) at the 0 to 2' depth for example has exceedances for benzo(a)pyrene (730 ug/kg) and chrysene (1100 ug/kg) which exceed RIDEM acceptable levels of 400 ug/kg for each constituent. Please remove the recreational user from this statement and include in the former statement which notes exceedances of acceptable levels for future residents.

   Navy Response to RIDEM Comment No. 4: *The referenced text is stating the outcome of the baseline risk assessment, a component of the Remedial Investigation (RI) prepared for Site 16. Risk estimates presented in the RI are based on exposure point concentrations (EPCs) (that typically represent the 95 % upper confidence limit [UCL] on the arithmetic mean of concentrations detected within an exposure unit) and a set of exposure factors that represent "how" the recreational receptor is likely exposed. The risk estimates and conclusions are not based on concentrations detected at a single location or on comparisons to the RIDEM criteria. The following clarifying sentence will be added to the Proposed Plan (PP) section titled, "Summary of Results for Site 16 Human Health and Ecological Risk Assessments": "The results of the risk assessments, prepared per standard EPA risk assessment protocol, are described below."*

   RIDEM Comment – While RIDEM does not concur with the methodology, the response is acceptable.

5. Page 7, Exhibit 2, Carcinogens – Please change "For example, exposure to a particular carcinogenic chemical may present a 1-in-10,000 additional chance of causing cancer over an estimated lifetime of 70 years. This can also be expressed as 1×10^{-4}." To "For example, exposure to a particular carcinogenic chemical may present a 1 additional case of cancer above normal background rates in 10,000 which would be expressed as 1×10^{-4}." Similarly please revise the 1×10^{-6} and RIDEM 1×10^{-5} example.

Navy Response to RIDEM Comment No. 5: *Agree.*

RIDEM Comment – Navy response is acceptable.

6. Page 9, Table 1. Soil Cleanup Levels, Column 3, Row 1 – Please change "Residential/Restricted Residential User" to Residential/Recreational User".

   Navy Response to RIDEM Comment No. 6: *Per BCT discussions of March 28, 2013, the referenced column heading will read, "Residential/Restricted Recreational".*

   RIDEM Comment – Please change to Residential/Recreational User as originally requested. See RIDEM Comment to Navy Response for RIDEM Comment 1.

7. Page 9, Table 1. Soil Cleanup Levels, Footnote 1 - If we use benzo(a)pyrene (BaP) equivalents as a cleanup goal, please explain how we know if we exceed anyone of the seven constituents that comprise the BaP individually. For example, Indeno(1,2,3-cd)pyrene has a Residential/Recreation Direct Exposure Criteria of 0.9 mg/kg. If the concentration of this chemical were found to be 1.8 mg/kg (twice the allowable limit) it would only register as 0.18 mg/kg (1.8mg/kg x 0.1BaP equiv.), much less than the 0.4 mg/kg allowed, but would still exceed the RIDEM Residential/Recreational Direct Exposure Criteria.

   Navy Response to RIDEM Comment No. 7: *First, please note footnote No. 4 to Table 1 regarding the soil clean-up levels to be applied to the 0-2 bgs soils in the immediate vicinity of Bldg. E-107:*

   .... "The goals established for the "restricted recreational user" are ***the RIDEM residential land use criteria*** *and apply to the soils in the immediate vicinity of the Marina Building only."* ***For clarity, the residential DECs for each of the carcinogenic PAHs that make up the calculated benzo(a)pyrene equivalent (BaPeq) concentration will be specified in this footnote.*** *This is in agreement with the numerous teleconferences/meetings held over the last several months to resolve the remedial approach for surface soils in the immediate vicinity of Bldg. E-107.*

   Second, the remedial level presented in the Feasibility Study (FS) for the BaPeqs in soil for the hypothetical future resident is 0.15 mg/kg. This is a risk-based goal derived based on the methodology presented in the Phase III remedial investigation report. This remedial level represents the 1E-05 cancer risk level, the State of Rhode Island cumulative cancer risk benchmark. Per our E-mail correspondence exchange of March 25, 2012 (see Attachment A, from Ms. Lee Ann Sinagoga to Mr. Richard Gottlieb), ***from a risk perspective****, setting the remedial level for the BaPeq's (representing the carcinogenic PAHs as a group) at 1E-05 is more conservative than specifying the RIDEM residential DECs for*

each of the individual carcinogenic PAHs. In fact, the cancer risk estimate associated with the RIDEM residential DEC for benzo(a)pyrene alone (0.4 mg/kg) is 3E-05 (for the hypothetical future resident). However, since the RIDEM residential DECs are not strictly risk-based numbers (please see the footnotes applied to Table 1 of the RIDEM regulations), it is possible that a location might have a chrysene concentration (for example, a concentration of 0.5 mg/kg) greater than it's associated RIDEM residential DEC (0.4 mg/kg) but, if chrysene was the only PAH detected (an unlikely scenario), the calculated BaPeq concentration would be less than the 0.15 mg/kg. Per previous BCT discussions, the Navy has evaluated that cPAH data set for the Site 16 NCA area to assure that all locations with exceedances of the residential DECs were identified and evaluated in the FS for Site 16 (when the hypothetical future residential land use was evaluated). Conservatively, footnote 4 of Table 1 will be amended to state that the remedial levels for the cPAHs in soil for the hypothetical future land use will be 0.15 mg/kg for the cPAHs (as a group) calculated in terms of the BaPeq's and the RIDEM residential DECs for each individual cPAH.

Third, the remedial level presented in the FS for the BaPeqs in soil for the industrial land use scenario is 0.8 mg/kg (which is the risk-based goal derived for the recreational user as defined in the Phase III RI report). The RIDEM industrial DEC for benzo(a)pyrene is also 0.8 mg/kg. In contrast to the RIDEM residential DECs, the RIDEM industrial DECs do appear to be risk-based numbers. Although they are calculated using methodology different from the standard EPA methodology used in the Phase III RI, the RIDEM industrial DECs do appear to be calculated using the same relative potency factors used by the EPA for the cPAHs. Therefore, the issue raised in the reviewer's comment does not occur. For example, whereas the RIDEM residential DECs for benzo(a)pyrene and chrysene are the same (0.4 mg/kg), the RIDEM industrial DEC for chrysene (780 mg/kg) is 3 orders of magnitude greater than the RIDEM industrial DEC for benzo(a)pyrene (0.8 mg/kg). Whereas the RIDEM residential DEC for indeno(1,2,3-cd)pyrene (0.9 mg/kg) is approximately twice the RIDEM residential DEC for benzo(a)pyrene (0.4 mg/kg), the RIDEM industrial DEC for indeno(1,2,3-cd) (7.8 mg/kg) is one order of magnitude greater than the RIDEM industrial DEC for benzo(a)pyrene (0.8 mg/kg). These order-of-magnitude differences in the RIDEM industrial DECs reflect the EPA's current relative potency factors (i.e., benzo(a)pyrene is considered 1000 times more potent than chrysene, as a carcinogen).

RIDEM Comment – Navy response is acceptable.

8. Page 9, Table 1. Soil Cleanup Levels, Footnote 4 - Please change" restricted recreational user" to recreational user". See comment 1.

Navy Response to RIDEM Comment No. 8: *Per BCT discussions of March 28, 2013, the referenced text will not be changed.*

RIDEM Comment – Please change "restricted recreational user" to "recreational user". See RIDEM Comment to Navy Response for RIDEM Comment 1.

9. Page 10, Table 2, Groundwater Cleanup Levels – The Navy is proposing a cleanup level for chromium in groundwater of 214 ug/l which is based on the Facility-Wide Background Study that was done in 1996. At least 14 wells were evaluated for this study in the main center of NCBC. Of those wells tested the highest value was 214 ug/l at well MW-Z1-4. This well is about 400' east of Post Road (Route 1). This well discharges to Mill Creek which eventually discharges to Wickford Harbor. Therefore, groundwater from this well never reaches NCBC Site 16.

   Well MW-Z4-1, located about 800' west of the former Building 41 at the intersection of Davisville Road and Thompson Road, had a concentration of 78.2 ug/l. Well MW-Z4-2, which is about 600' south of well MW-Z4-1 along Thompson Road was undetected for chromium. Well MW-Z3-3 located southwest of NCBC Site 02 had a chromium concentration of 16.7 ug/l It is not clear what the background value for chromium should be as it is possible that wells MW-Z3-3 and MW-Z4-1 have been influenced by activities at the former Building 224. In either case a cleanup level for chromium of 214 ug/l seems very high since most of the chromium samples in the wells were less than 10 ug/l. A more appropriate cleanup level for chromium would be the MCLs.

   Similarly, for nickel the highest value detected was at well MW-Z1-4 at 154 ug/l. same well as above, this water never reaches NCBC Site 16. The next highest value detected was at well MW-Z4-1 at 53.3 ug/l. This is lower than the MCL of 100 ug/l. The groundwater cleanup level should be the MCL.

   For thallium the highest concentration detected was 4.1 ug/l at well MW-Z2-4. This well discharges to Davol Pond and Hall Creek and would therefore not reach NCBC Site 16. The next highest value is 2.2 ug/l which is very close to the MCL of 2.0 ug/l. The groundwater cleanup level should be the MCL.

   Navy Response to RIDEM Comment No. 9: *The Basewide Ground Water Inorganics Study was conducted, in part, to determine background values that may be used when "performing feasibility studies and for evaluating remedial alternatives at the Main Center and West Davisville areas of NCBC". (See page 43 of the subject background report.) Site 16 is within the "Main Center" of the former NCBC Davisville facility. The inorganic background values recommended in the study are not (and were never intended to be) "specific" to any one particular site at the former NCBC Davisville; rather, they represent inorganic groundwater chemistry not affected by historic Naval operations in these general areas. As indicated in the report, the values represent both naturally occurring inorganic concentrations as well as typical non-Navy-related anthropogenic*

influences on the inorganic chemistry of the groundwater (see page 37 of the report).

RIDEM Comment No. 9 appears to suggest that the basewide background study was not finalized or accepted by EPA/RIDEM. Unfortunately, the Navy was not aware that the Final Base Wide Inorganics Study prepared by Stone and Webster in 1996 was no longer considered valid by RIDEM or EPA. The Navy requests additional technical information as to why and when this determination was made. We also request clarification via what mechanism of the Federal Facilities Agreement the Navy was notified that a final document was no longer considered valid. While this determination may be appropriate under Section 7.9, proper notification was never made to the Navy by either regulatory party. This notification should identify the nature of the modification to a final document; and what "significant new information" is available to support the proposed changes to the final document.

The Navy is at the PP stage of the environmental work at Site 16. Given the potential importance of background values, the notification referenced above should have been made in a timely manner so that the issue could be resolved and would not impact progress for Site 16. If metals were significant groundwater contaminants at Site 16, the lack of approved background values may have had a more significant impact on remedial decision making for the site. However, since metals are not significant groundwater contaminants at Site 16 and for purposes of finalizing the PP for Site 16, the Navy agrees that the groundwater clean-up levels for the referenced metals in Table 10 of the PP simply read "Facility-Wide Background or MCL whichever is higher" (as recommended in EPA Comment No. 45) with the understanding that the Navy, EPA, and RIDEM will resolve this issue during the preparation of the long-term monitoring plan for Site 16.

RIDEM Comment - RIDEM concurs with the Navy response to the extent that we will resolve the groundwater clean-up levels during the preparation of the long-term monitoring plan for NCBC IR Site 16.

10. Page 11, Column 2, Alternative S-2, Paragraph 1 - This paragraph states that soils in the marina area would be cleaned up to residential standards, but LUCs would be implemented to maintain industrial uses and prevent residential uses. While this is fine, somewhere in this paragraph it should be explained that the cleanup to residential standards is to allow the continued recreational use of the area.

Navy Response to RIDEM Comment No. 10: *Agree. The referenced sentence will be changed to read, "....backfilled with clean soil to the existing grade to allow for continued marina use at the ground surface."*

RIDEM Comment – Navy Response is acceptable.

11. Page 11, Column 2, Alternative S-3, Last Sentence – This sentence seems to state that LUCs would restrict recreational use which in turn will somehow maintain a 2-foot soil cover. Perhaps this could be re-written to state that an LUC will prevent residential use of the marina area, but will allow for recreational use and another LUC will be implemented for the maintenance of a two foot soil cover and soil management plan. This comment also applies to the restriction of recreational use for Alternatives S-3A, S-4 and S-6.

    Navy Response to RIDEM Comment No. 11: *Generally agree. The referenced text will be changed to state that, "LUCs would be implemented that would prevent residential use of the marina area, allow for recreational use associated with the marina, maintain the 2-foot cover, and implement a soil management plan."*

    RIDEM Comment – Navy response is acceptable.

12. Page 14, Alternative S-5: Excavation and Off-Site Disposal – Unrestricted Use – Please remove the reference to the marina as it is not necessary since there would be unrestricted use of the entire site, including the marina.

    Navy Response to RIDEM Comment No. 12: *Agree.*

    RIDEM Comment – Navy response is acceptable.

13. Page 14, Alternative G-3A – As part of this alternative groundwater adjacent to Allen Harbor should be monitored similar to what is proposed for Alternative G-3B since alternative G-3A also has a waste management area. This comment also applies to Alternatives G-4, G-5 and G-6.

    Navy Response to RIDEM Comment No. 13: *Agree. The additional monitoring will be noted along with the description of the MNA monitoring.*

    RIDEM Comment – Navy response is acceptable.

14. Page 15, Preferred Alternative, Soil Alternative S-3A – Please remove the reference to restricted recreational land use especially since it is relating it to excavation of soils and rewrite to state that the surface soils in the vicinity of Building E-107 will be cleaned up to allow for recreational land use coupled with LUCs to prevent contact with underlying contaminated soils that will remain on site.

    Navy Response to RIDEM Comment No. 14: *The phrase "restricted recreational land use" is specifically used because the preferred alternative specifies the remediation of surface soils* ***only*** *to RIDEM residential DECs. As explained in the text at the top of page 16, "Restricted recreational land use is specified because unauthorized excavation and/or disposal of soils greater than 2 feet bgs would be*

prohibited under soil alternative S-3A." (Please see BCT meeting notes of March 28th, 2013. RIDEM has agreed to the use of the phrase restricted recreational in the proposed plan.)

RIDEM Comment – The term "restricted recreational land use" implies that recreational use is restricted. What is restricted is the digging into the soil, not the recreational activity that is taking place at the surface. This is why the two foot soil cover will be coupled with LUCs and a soil management plan. The term "restricted recreational land use" is confusing to the public. See Comment 1.

15. Table 3, Evaluation of Soil Alternatives, Item 4 (Reduces Mobility, Toxicity and Volume) - Alternative 2 which is just a cover and LUCs partially or potentially meets criteria, but Alternative S-3A which includes excavation does not meet the criteria. Alternative S-3A should be a full circle, not a circle with a line through it. Similarly, Alternative S-5 which is excavation for unrestricted use would entail removing all the toxicity, mobility and volume should be a filled in circle since it would exceed criteria as opposed to the full circle that is there now. Please change.

    Navy Response to RIDEM Comment No. 15: *Agree.*

    RIDEM Comment – Navy response is acceptable.

1 - Telephone conversation on 20 March 2013 between Richard Gottlieb of RIDEM and Commodore Chris Courtney of the Allen Harbor Boating Association.
2 - RIDEM RemediationRegulations, November 2011, Section 3.62

RIDEM would like to thank you for the opportunity to comment on this document and looks forward to working with the Navy and USEPA. If you have any questions or require additional information please call me at (401) 222-2797 ext. 7138 or email me at richard.gottlieb@dem.ri.gov.

Sincerely,

Richard Gottlieb, P.E.

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