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LETTER AND COMMENTS FROM RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT REGARDING FEASIBILITY STUDY FOR SITE 16 NCBC DAVISVILLE RI  
06/14/2011  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

14 June 2011

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 Feasibility Study, Revised Comments  
Davisville, Rhode Island  
Submitted 1 March 2011, Dated 23 February 2011

Dear Mr. Dale:

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the above referenced document and has the following comments to offer:

- General Comment – The soil alternatives address residential and commercial/industrial use, but note that residential use is not permitted on the MARAD property. This is true. What the soil alternatives do not address is the existing and anticipated future recreational use of the MARAD property. There is a small portion of the marina and also contained within the Site 16 boundaries that is currently recreational in land use and will remain so well into the future. The feasibility study must address this land use and be accounted for in the soil alternatives.
  - General Comment - To save the Navy resources for the soil alternatives, where direct contact only is an issue, RIDEM could accept 6" of clean soil with a minimum of 4" of asphalt or concrete or 1' of clean soil underlain with a geo-fabric material and an appropriate ELUR to maintain said covers.
1. Page 1-12, Section 1.2.3.2, Site 16 Geology, Paragraph 2, Sentence 3: *"Also in the North Central Area of the site and toward Allen Harbor, relatively recent material was deposited on top of the undisturbed deposits but below the reworked soil and fill material (including the observed waste materials)."* Please clarify this sentence

as it is not clear how recently deposited materials are below reworked soil and fill materials.

2. Page 1-20, Section 1.2.4, Nature and Extent of Contamination, Metals: This section notes the EPA Industrial/Commercial screening criteria for lead as 800 mg/kg. Please be advised that the RIDEM Industrial/Commercial direct exposure criteria for lead is 500 mg/kg. Please revise this section accordingly.
3. Page 1-23, Section 1.2.6.1.1, Soil Exposure Units, Bullet 3: This bullet states that a forensics analysis indicates that PAHs found in this area (south of Building 41) are from coal tar pitch and building materials rather than from fuel, therefore no remedial action is proposed. Since this is a public document, please explain the circumstances under which the decision was made not to remediate this contamination (additional sampling) since clean-up standards are based on level of contamination, irrespective of source.
4. Page 1-25, Section 1.2.6.1.2, Risk Summary, Paragraph 1: This paragraph notes that Site 16 is not currently used for residential purposes and the anticipated future use of the land is commercial/industrial. A portion of the site is currently a marina and is expected to remain so well into the future. Section 3.58 of the RIDEM Remediation Regulations notes that recreational areas are subject to residential direct exposure criteria. Please revise this paragraph to note that recreational criteria (residential direct exposure criteria) apply to the portion of the site that is leased by the Yacht Club that lies within the boundaries of IR Site 16.
5. Page 2-1, Section 2.1, Media of Concern, Paragraph 2: It is stated in this paragraph that Rhode Island does not have an EPA-endorsed Comprehensive State Groundwater Protection Program so Rhode Island's GB groundwater classification was not used in the development of PRGs and remedial alternatives. Please be advised that standards for groundwater classified as GB are based on promulgated regulations and are therefore valid standards whether EPA endorses them or not. Please revise this paragraph in addition to revising the PRGs to include the RIDEM GB groundwater classification.
6. Page 2-5, Section 2.2.2, Chemicals of Concern in Groundwater, Bullet 2, Last Sentence: Based on this sentence it appears that only dissolved COCs that exceed either MCLs or RSLs are included for further consideration in the FS. Please be advised that Table 1, associated with Rule 11.3 of the RIDEM Groundwater Quality Regulations require that analysis be based on *unfiltered samples*. Please include aluminum, lead, silver and thallium in the analysis.
7. Page 2-6, Section 2.3, Remedial Action Objectives, Paragraph 3: This paragraph states that the site will be used for commercial and industrial purposes only. Please revise this paragraph to note that a portion of the site is occupied by the Yacht Club, which under the RIDEM Remediation Regulations is defined as recreational use.

Please note this will also affect the soil remedial action objectives in Section 2.3.1.1.

8. Action Specific ARARs: A Table needs to be included for action specific ARARs. The following items need to be placed in this table:

Process	Requirement	Status	Synopsis	Action to be Taken to Meet ARAR
Groundwater Monitoring	Rules and regulations for Groundwater Quality (12-100-006)	Applicable	Rules and regulations intended to protect and restore the quality of the State's groundwater. Includes groundwater monitoring requirements and monitoring well construction abandonment. Also establishes groundwater quality standards and/or requirements	Groundwater monitoring program will comply with these regulations
	Rhode Island Hazardous Waste Management Act of 1978 (RIGL 23-19.1 et seq.	Relevant and Appropriate	Rules and regulations for hazardous waste generation, transportation, treatment, storage, and disposal. They incorporate, by reference, the Federal RCRA requirements.	Wastes generated during monitoring and excavation activities will be managed in accordance with these regulations.
	Water Pollution Control (RIGL 46-12 et seq) and Water Quality standards and Ambient Water Quality Guidelines	Relevant and Appropriate	Establishes water use classifications and water quality criteria for all waters of the State. Establishes acute and chronic ambient water quality criteria for the protection of aquatic life.	Discharges of groundwater from the site to surface water will comply with the substantive portions of these regulations to the extent they are more stringent than federal standards
	State of Rhode Island Rules and Regulations for the Investigation and Remediation of hazardous material Releases; DEM-DSR-01-93 – Sections 9, 10, 11 and 12	Relevant and Appropriate	Establishes minimum requirements for a remedial action work plan, approvals, the remedial action and requirements for managing arsenic in soil	These sections are required in order to insure proper steps are accomplished to successfully implement the ultimate remedial response and arsenic is a COC.

9. Table 2-2, Location Specific ARARs : The following need to be added to this table:

Process	Requirement	Status	Synopsis	Action to be Taken to Meet ARAR
	Rhode Island Historic Preservation Act (RIGL 42-45 et. Seq.)	Applicable	This act requires the recovering and preservation of archeological and historic data and artifacts when threatened by a publicly funded action.	Compliance with this requirement in the event historical or archeological artifacts are discovered during remedial activities.

10. Table 2-3; Preliminary Remediation Goals – Soil – Under the column for RIDEM Direct Contact Risk – Under this column PRGs are provided for Residential, Commercial and Recreational scenarios. For the recreational scenario it is consistently labeled as NA (Not Applicable). Please revise this to be the same value as the residential PRG since Section 3.58 of the RIDEM Remediation Regulations defines recreational use as having the same maximum exposure criteria as residential use.

11. Page 2-14, Section 2.5.2, Action Specific ARARs, Paragraph 1, Sentence 1: “Action-specific ARARs and TBCs are technology or activity based regulatory requirements or guidance that would control or restrict remedial action.” Please change this to: “Action-specific ARARs and TBCs are technology or activity based regulatory requirements or guidance that would provide upper or lower boundaries on the implementation of remedial actions.” The ARARs and TBCs do not restrict one’s choice of a reasonable remedial action, they just place boundaries on what is acceptable.

12. Page 3-5, Section 3.2.2.1, LUCs, Effectiveness – Arsenic, lead, benzene, TPH, PAHs and other organics remain at the site. It is pointed out that prohibiting residential use would prevent the occurrence of unacceptable risk to human receptors from direct exposure to contaminated soil. Please revise this paragraph to state that at various locations all the above mentioned COCs also exceed commercial/industrial direct exposure criteria. It would follow then that commercial/industrial use would also need to be prohibited. Clearly this is not reasonable. Perhaps the entire paragraph should be revised to state that LUCs, by themselves are not effective in protecting human health and the environment, but instead could be used to supplement a more aggressive remedial action.

13. Page 3-6, Section 3.2.3, Containment, Effectiveness, Last Sentence: This sentence points out that capping and covering is typically incompatible with residential development that would make maintenance very difficult. Please revise the

sentence to point out that under the industrial/commercial scenario the same could also be said where development of the land is likely. There is no guarantee on how long NORAD will remain at the site and many portions of Parcels 7 and 8 have yet to be developed.

14. Page 3-7, Section 3.2.4, Removal, Paragraph 1: Please explain and provide a reference as to why the load bearing capacity of the soil must be greater than 1,500 lb/ft<sup>2</sup> in order to consider a removal action. In addition, please provide the test results that Navy has taken of the load bearing capacity of the soil at Site 16 along with a map delineating areas of less than 1,500 lbs/ft<sup>2</sup> since apparently this will have an impact on where removal actions can be implemented. As a reminder to the Navy, at Tank Farm 4 at Naval Education and Training Center in Newport an oil/water separator and oil contaminated soil was removed from wetlands. In addition, as part of an NRDA claim from the US Fish and Wildlife Service muck was dug out of the wetlands that lie between Calf Pasture Point and Allen Harbor Landfill to improve flora quality. It is highly unlikely that the load bearing capacity of these soils was in excess of 1500 lbs/ft<sup>2</sup>. Perhaps the Navy should consider the use of a lighter piece of equipment for soil removal.
15. Table 3-2; Preliminary Screening of Remedial Technologies and Process Options For Groundwater, LUCs, Passive Controls, Screening Comment: This section notes that groundwater use is restricted through the MARAD and LIFO. The LIFO ends once the land is transferred and MARAD use is not guaranteed (QDC could decide to just purchase the land). Please revise to state that depending on alternative selected an **environmental** groundwater restriction would need to be placed on the land in accordance with RIDEM Remediation Regulations.
16. Page 3-14, Section 3.5.2.1, LUCs, Bullet 1, Parcel 7 - This paragraph states that MARAD has determined that residential use of the property would likely not qualify as an acceptable use of the property. While this is true, MARAD does approve of the use of the property for marinas (information obtained from RIDE). As the Navy is well aware, under the RIDEM Remediation Regulations, a marina is considered recreational use. The clean-up standards for recreational use are the same as the residential clean-up standards. Please note this in this paragraph.
17. Page 3-18, Section 3.5.3.1, Extraction Wells, Implementability, Paragraph 2 – The last sentence states that BRAC PMO approval is required prior to the implementation of this alternative. This statement should be removed as it makes it sound as though the Navy is proposing an alternative they cannot implement.
18. Page 3-23, Section 3.5.5.1, Filtration, Implementability, Paragraph 2 – See comment 17. In addition, given the nature of groundwater contamination, it would seem that filtration would not be a stand alone alternative, but rather would be used in conjunction with another alternative. Please explain why the Navy feels this technology would require special approval from the BRAC PMO.

19. Page 3-25, Section 3.5.5.2, Air Stripping, Implementability, Paragraph 1 – See comment 17.
20. Page 3-25, Section 3.5.5.3, Liquid-Phase GAC Adsorption, Paragraph 3 - Please change NPDES to RIPDES as Rhode Island has an EPA approved program.
21. Page 3-26, Section 3.5.5.3, Liquid-Phase GAC Adsorption, Implementability, Paragraph 2 – See comment 17.
22. Page 3-28, Section 3.5.5.5, Neutralization/pH Adjustment, Implementability, Paragraph 2 – See comment 17.
23. Page 3-30, Section 3.5.6.1, Direct Surface Discharge, Effectiveness & Implementability - Please change NPDES to RIPDES as Rhode Island has an EPA approved program.
24. Page 4-3, Section 4.1.1.7, Cost – This section notes a planning horizon of 30 years, but does not include an interest rate. Please provide the interest rate used to generate present value costs for the alternatives. The interest rate used can have an impact on alternative selection.
25. Page 4-6, Section 4.2.1.1, Alternative S-1: No Action, Description – This section notes that residential use, groundwater extraction and uses limited to port activities are included as restrictions on property use, though they are not environmental in nature. Please note that recreational use of the property exists and is permitted as noted in comment 16.
26. Page 4-8, Section 4.2.2.1, Alternative S-2, Description – Six major components are stated, but only five are presented. Please correct.
27. Page 4-10, Section 4.2.2.1, Alternative S-2, Component 3: Excavation near Marina – The Marina, under RIDEM Remediation Regulations, is considered recreational use and therefore Residential Direct Exposure (RDEC) criteria apply. The depth of excavation would be until the RDEC are met or groundwater is encountered. Whichever is first. The depth of groundwater in this area is not deep and allowances for the structural integrity of Building E-107 can be made. Please revise this section accordingly.
28. Page 4-10, Section 4.2.2.1, Alternative S-2, Component 4: Monitoring – The last paragraph, of this section, states that monitoring would be quarterly for the first year, semi-annual for the next 2 years and annual thereafter. RIDEM typically monitors on a quarterly basis for two years (to get seasonal variations among other things) and evaluates the data to determine subsequent monitoring frequency. Please revise accordingly.

29. Page 4-11, Section 4.2.2.1, Alternative S-2, Component 5: LUCs, Bullet 1 – This bullet states that the purpose of the conveyance of the property is for development and operation of a port facility in perpetuity and that residential use of the property would not likely be an accepted use of the property. This is true. The paragraph should also note that recreational use of the property can be an accepted use. As noted in comment 16 a marina is a permitted use. In addition a bicycle path traverses the northern border of the MARAD property. Please revise this paragraph to reflect the recreational use of the property.
30. Page 4-11, Section 4.2.2.1, Alternative S-2, Component 5: LUCs, Last Paragraph, Second Sentence - This sentence states that an LUC would be added to protect the caps and covers. Since the purpose of this land is for development please state if the LUC would preclude development of construction over the caps and covers.
31. Page 4-12, Section 4.2.2.2, Alternative S-2, Detailed Analysis, Overall Protection of Human Health and Environment – This paragraph describes protection for residential and industrial use, but does not address the existing and anticipated future recreational use. Please address the recreational use of Site 16 (marina).
32. Page 4-14, Section 4.2.3.1, Alternative S-3, Description, Component 1: Excavation - The first sentence states that COC concentrations greater than industrial PRGs would be excavated to a depth of 2 feet bgs. Please revise this to account for the recreational use associated with the marina. In the marina area the soil would need to be excavated to a depth sufficient to meet RDEC or to the water table, whichever occurs first.
33. Page 4-16, Section 4.2.3.2, Alternative S-3, Detailed Analysis, Overall Protection of Human Health and the Environment, Paragraph 1, Sentence 1 – This sentence states that Alternative S-3 would be protective of human health and the environment. At this time RIDEM does not agree with this statement as Alternative S-3 does not address the recreational land use of the marine within the boundaries of Site 16.
34. Page 4-17, Section 4.2.3.2, Alternative S-3, Detailed Analysis, Implementability, Last Sentence – This sentence notes that there are few structures near the excavation areas, therefore the need for shoring is limited. For consistency, the concerns associated with the marina should be mentioned in this section.
35. Page 4-19, Section 4.2.4.1, Alternative S-4, Description, Component 1: Excavation – Based on Figure 4-4 there will be a 10’ excavation adjacent to the marina building. For consistency the concerns of excavating by this building should be mentioned.
36. Page 4-19, Section 4.2.4.1, Alternative S-4, Description, Component 2: Excavation near Marina – “This component would be similar to Component 3 of Alternative S-3.” It is assumed Component 2 is in reference to the remedy. Component 3 of

Alternative S-3 which in turn references Component 5 of Alternative S-2 relate to LUCs which would cover excavations resulting from development of this land. It is not clear how LUCs are a factor in the excavation associated with the remedy for this site. Please explain.

37. Page 4-20, Section 4.2.4.2, Alternative S-4, Detailed Analysis, Overall Protection of Human Health and Environment – This section states that an LUC would be placed on the site limiting its use to industrial scenarios. A portion of the site is currently and in the foreseeable future going to be used for recreational purposes. This paragraph must recognize this. Please revise accordingly.
38. Page 4-27, Section 4.3.1.1, Alternative G-1, No Action, Description, Paragraph 1, Sentence 2 – This sentence notes that LUCs are in place to prevent residential uses of the property and to prevent groundwater use for the portion of the site north of Davisville Road. Please note that RIEDC also has restrictions on groundwater use for the property south of Davisville Road. In addition, for this groundwater alternative, as well as the others, please remove references to land use (residential, commercial, industrial or otherwise) as they have no bearing on RIDEM Remediation Regulations Groundwater Objectives or EPA MCLs.
39. Page 4-30, Section 4.3.2.1, Alternative G-2, MNA & LUCs, Component 1 MNA, Paragraph 4 – This paragraph states that monitoring would be conducted annually. Typically, RIDEM requires quarterly sampling for the first two years at which time the data is reviewed to determine subsequent monitoring frequency. Please revise accordingly.
40. Page 4-31, Section 4.3.2.1, Alternative G-2, MNA & LUCs, Component 2: LUCs, Bullet 1 – Please remove the reference to land use as this has no basis with regard to groundwater issues.
41. Page 4-31, Section 4.3.2.1, Alternative G-2, MNA & LUCs, Component 2: LUCs, Bullet 2 – Please note, in this bullet, that once a Record of Decision has been completed the Navy, within 18 months, is responsible for insuring that an Environmental Land Use Restriction (ELUR) has been placed on the property, north of Davisville Road, delineating the appropriate restrictions.
42. Page 4-34, Section 4.3.2.2, Alternative G-2, MNA & LUCs, Implementability, Paragraph 2 – This paragraph states that LUCs would be incorporated into the LUCIP for the property under Navy control, however, the administrative aspects for property not under Navy control will require coordination with the current property owner and/or local or state officials. Please remove the and/or local or state officials. With respect to local officials the only coordination would be the recording of an ELUR at the town hall. With respect to state officials the only coordination would be to insure the ELUR addresses what it needs to. Neither the Town nor the State can place an ELUR on the property in question without the consent of the property owner.

43. Page 4-34, Section 4.3.3.1, Alternative G-3, In-Situ Chemical Oxidation, MNA and LUCs, Paragraph 1 – Please change “four major components” to “three major components”.
44. Page 4-35, Section 4.3.3.1, Alternative G-3, In-Situ Chemical Oxidation, MNA and LUCs, Component 2: MNA – It is proposed for Alternative G-2 that 36 wells would be needed for monitoring purposes. It is stated in this paragraph that it is assumed that only 28 wells would need to be monitored, presumably because of the treatment. Until one knows how well the sodium permanganate is being distributed within the plume 36 wells should be monitored. After a certain period of time the data can be evaluated, and if appropriate, the number of monitoring wells could be reduced (or increased) for both Alternatives G-2 and G-3. This should be incorporated into the description of the respective components of the alternatives.
45. Page 4-35, Section 4.3.3.1, Alternative G-3, In-Situ Chemical Oxidation, MNA and LUCs,, Component 3: LUCs, - See Comment 41 regarding ELURs.
46. Page 4-36, Section 4.3.3.2, Alternative G-3, Overall protection of Human health and the Environment, Paragraph 2, Last Sentence – This sentence states that vapor intrusion would be controlled by building construction methods. Since the plume is moving please state if contingencies have been made for addressing existing buildings.
47. Page 4-36, Section 4.3.3.2, Alternative G-3, Long-Term Effectiveness and Permanence, Paragraph 4, Last Sentence – See comment 46 regarding existing buildings and vapor intrusion.
48. Page 4-36 & 37, Section 4.3.3.2, Alternative G-3, Reduction of Toxicity, Mobility, or Volume Through Treatment, Paragraph 1 – This paragraph states that arsenic would be addressed through biological and abiotic processes. Please explain how this would occur since it is not clear that either process addresses metals. This comment also applies to Alternative G-2.
49. Page 4-38, Section 4.3.3.2, Alternative G-3, Implementability, Paragraph 1 – See Comment 42 regarding ELURs.
50. Page 4-40, Section 4.3.4.2, Alternative G-4, Overall Protection of Human health and the Environment, Paragraph 4, Last Sentence – See Comment 46 regarding vapor intrusion and existing buildings.
51. Page 4-40 & 41, Section 4.3.4.2, Alternative G-4, Long-Term Effectiveness and Permanence – See comment 46 regarding vapor intrusion of existing buildings.

52. Page 4-42, Section 4.3.5.1, Alternative G-5, Groundwater Extraction and Treatment, MNA, and LUCs, Description – Please add a sixth component – Discharge of VOCs to Atmosphere.
53. Page 4-46, Section 4.3.5.2, Alternative G-5, Long-Term Effectiveness and Permanence, Paragraph 4, Last Sentence – See comment 46 regarding existing buildings and vapor intrusion.
54. Page 4-48, Section 4.3.5.2, Alternative G-5, Implementability, Paragraph 3, Last Sentence – Please see comment 17 regarding BRAC PMO level approval.
55. Page 4-50, Section 4.3.6.1, Alternative G-6, Components 1 and 2: Both of these Components state that sampling would be quarterly for the first year and annually thereafter. Please revise to state that sampling would be quarterly for the first year at which time sampling results will be reviewed to determine subsequent sampling frequency.
56. Page 4-50, Section 4.3.6.1, Alternative G-6, Component 3 MNA – For alternatives G-3, G-4 and G-5 which have some form of treatment as a component, 28 monitoring wells are proposed for the MNA component. Please explain why only 15 wells are proposed for Alternative G-6 MNA component.
57. RIDEM reserves the right to re-review ARARs at the time of the proposed plan and ROD phases.

RIDEM would like to thank you for the opportunity to comment on this request 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](mailto:richard.gottlieb@dem.ri.gov).

Sincerely,



Richard Gottlieb

Cc: M. Destefano, DEM OWM  
C. Williams, EPA Region 1  
D. Barney, BRAC Environmental Coordinator  
S. King, RIEDC

S. Licardi, ToNK  
S. Vetere, TTNUS