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NSY PORTSMOUTH  
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LETTER AND U S NAVY RESPONSE TO SEACOAST ANTI POLLUTION LEAGUE  
COMMENTS REGARDING DRAFT GROUNDWATER SAMPLING FOR RADIONUCLIDES  
NSY PORTSMOUTH ME  
11/13/1998  
PORTSMOUTH NAVAL SHIPYARD



PTSMH-5216/9 (REV 8) DEPARTMENT OF THE NAVY  
 PORTSMOUTH NAVAL SHIPYARD  
 PORTSMOUTH, N. H. 03804-5000

**FILE**

IN REPLY REFER TO

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 Ser 105.5/688

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Peter Vandermark  
 Seacoast Anti-Pollution League  
 P.O. Box 1136  
 Portsmouth, New Hampshire 03802

Dear Mr. Vandermark,

Carolyn A. Lepage's letter of July 21, 1998 forwarded comments from Lepage Environmental Services, Incorporated on the June 1998 Draft Groundwater Sampling for Radionuclides plan for Portsmouth Naval Shipyard.

Enclosure (1) contains the specific responses to your comments. Please let us know within 30 days if you have additional questions.

Should you have any questions regarding this response, please feel free to contact me at (207) 438-1283.

D. A. SCHAUER  
 By direction

Enclosure: 1. Navy Responses to Seacoast Anti-Pollution League (SAPL) Comments/Questions on the June 1998 Draft Groundwater Sampling for Radionuclides Plan for Portsmouth Naval Shipyard

Copy to:  
 NAVFACENGCOM (Code 1823/FE)  
 Environmental Protection Agency, Region I  
 Maine Department of Environmental Protection  
 TAG Advisor (Carolyn Lepage)  
 RAB Members

Blind Copy to:  
 COMNAVSEASYSKOM (SEA 04N, 08R)  
 NRRO PTSMH (Mr. Solich)  
 105  
 105.5  
 105.6  
 106.3 (Ms. Raymond)

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Navy Responses to Seacoast Anti-Pollution League  
(SAPL) Comments/Questions on the June 1998  
Draft Groundwater Sampling for Radionuclides Plan for  
Portsmouth Naval Shipyard

Reference: (a) Historical Radiological Assessment,  
Portsmouth Naval Shipyard, July 1998

Comment 1: Page 1, Section 1: Although the title of the document (Groundwater Sampling for Radionuclides) and the purpose stated in Section 1 indicate that the plan is specific to the collection of groundwater samples, the Navy is also proposing to collect surface water, sediment, and biota samples. The title and the purpose should reflect that a variety of environmental samples, not just groundwater samples, will be collected.

Response: The title will be changed to "Radiological Sampling of Water, Sediment, and Biota - Portsmouth Naval Shipyard."

Paragraph 1 will be revised to clarify the scope of the plan as follows:

"1. Purpose: Although there are no indications of residual radioactivity in the soils at Portsmouth Naval Shipyard (PNS) that would affect groundwater, one round of sampling will be conducted for informational purposes. Limited surface water, pond sediment, and biota sampling in Upper and Lower Meade Ponds will also be conducted. This protocol defines the methods:"

Comment 2: Pages 1 & 2, Section 2: What is the Navy's experience with analyzing environmental samples with the equipment and methods described in Section 2? Why are cobalt-60 and radium-226 selected for analysis? Are there other radioactive isotopes or materials used or in use at the shipyard? Are daughter products a concern?

Response: PNS has extensive experience in analyzing environmental samples and has been performing environmental monitoring for radionuclides for forty years. Reference (a) provides a detailed discussion of the radioisotopes of concern and of historical environmental monitoring.

For clarity, new paragraph 2.c(5) will be added as follows to summarize the rationale for selecting cobalt-60 and radium-226 for analysis, and to refer to the HRA for a discussion of the Navy's experience with analyzing environmental samples:

"2.c(5) Cobalt-60 was selected for analysis because it is the predominant isotope associated with Naval Nuclear Propulsion Program (NNPP) work and has the most restrictive concentration limits of any NNPP radionuclide. Radium-226 was selected for analysis because it is a naturally-occurring isotope which was used previously at the Shipyard. Reference (a) provides a detailed discussion of the Navy's experience with analyzing environmental samples."

Note: The HRA will be listed as reference (a).

Comment 3: Page 2, Section 2: How is the minimum detectable concentration (MDC) determined? How does the Navy's proposed MDC compare with regulatory action levels?

Response: Paragraph 2.c(2) will be revised as follows to discuss the determination of minimum detectable concentrations and to provide comparison to regulatory limits:

"2.c(2) The MDC of <10 pCi/l for cobalt-60 is well below the effluent unrestricted release level of 3000 pCi/l listed in the Code of Federal Regulations, Title 10, Part 20 for sites regulated by the Nuclear Regulatory Commission. The MDC of <10 pCi/l is also more than 10 times below the drinking water standard listed in Code of Federal Regulations, Title 40, Part 141.16. The MDC of <10 pCi/l for cobalt-60 was chosen because it reflects the practical capabilities of the analysis equipment and procedures at PNS."

Comment 4: Page 3, Section 3: Who certifies a contractor for low-flow sampling? It appears that the contractor would collect groundwater samples using low-flow techniques. What sampling protocol or plan will be followed? Will both EPA and the DEP be collecting split samples?

Response: Contractors are not certified. Reference to certification will be deleted from paragraph 3.a. The contractor will be following the protocol of the EPA/State approved Brown and Root Environmental Groundwater Investigation and Monitoring Plan of November 1996, which has been used for chemical well monitoring at PNS.

The subject sampling plan allows for both EPA and the State to receive split samples if they choose. The plan has been clarified throughout on this point. The Maine Department of Environmental Protection (MEDEP) has expressed an interest in obtaining split samples.

Paragraph 3.a will be revised as follows:

"3.a. A contractor trained in low flow sampling will draw the groundwater samples, decontaminate sampling equipment, and measure the water level of the monitoring wells in accordance with the procedures in reference (c)."

Note: The Brown and Root Environmental Groundwater Investigation and Monitoring Plan for PNS will be listed as reference (c).

Comment 5: Page 3, Section 3: How will the surface water samples be collected? Is turbidity a potential problem? Why were the extreme east and west ends of the two ponds selected for sampling locations?

Response: Paragraphs 3.d and 3.e will be revised as follows to provide more detail on the surface water collection technique, to require the collection of additional samples as requested by the EPA, and to describe the actions taken if water clarity is a concern:

"3.d. PNS will obtain surface water samples of the same sizes from the two on-site ponds, splitting samples as requested by the State and EPA. The ponds will be divided into quadrants (i.e., northeast, southeast, southwest, northwest). A set of water samples will be taken in each quadrant and at the center of each pond. The northeast and southwest samples will be taken from the edge of the ponds, the southeast and northwest samples will be taken approximately half way between the center of the pond and the edge. The samples will be collected directly into the appropriate sample containers. The same protocol as for well samples will be used for the water samples after collection. The pond water samples will be checked for visual clarity and filtered if necessary prior to acidification. The filter and filtrate will be analyzed separately, and the results summed during data analysis.

"3.e. In addition to water samples, PNS will collect biota (plant) and sediment samples at the edge of the ponds in each of the quadrants described above (eight locations total). Any available biota common to the four quadrants of each pond may be collected (no specific species will be targeted). PNS will collect three 500 ml samples in Marinelli beakers for each biota and sediment sampling point identified for

independent analyses by the EPA and State, (one 500 ml biota sample and one 500 ml sediment sample each for EPA/State, the remainder for PNS), and one 500 ml biota sample and one 500 ml sediment sample for each remaining pond site. The biota and sediment samples will be collected directly into the sample containers and drained. The samples will be analyzed using the procedure referenced in Section 6 of reference (a). The EPA/State 500 ml Marinelli beaker sample size may be changed at their request."

Comment 6: Page 3, Section 3: How will the biota samples be collected? What biota will be sampled? What are the criteria for selecting which biota to sample?

Response: Paragraph 3.e will be revised to include a description of the sampling procedure and a description of the biota to be sampled, as shown in comment 5 above.

Comment 7: Page 4, Section 5: Why is tidally-influenced water level a criteria for selecting a background well location?

Response: There is the potential that a tidally influenced well may contain seawater, not the desired fresh groundwater. This will be noted in the revised sampling plan.

Comment 8: Page 5, Section 5: While cobalt-60 does not exist in nature, it is appropriate to analyze samples collected from background wells for it to determine if the background location has been affected by industrial activity.

Response: Gamma spectrometry is being performed on all samples. This will identify any detectable levels of cobalt-60 regardless of the sample source.

Comment 9: Page 6, Section 6: Because the sample collection methods have not been described in sufficient detail, it is not clear if the appropriate quality control samples will be collected. For example, if sampling equipment will be decontaminated between use, quality control samples to check for cross-contamination should be collected.

Response: Paragraph 3.a will be revised (as shown in response to comment 4 above) to clarify the protocol the contractor will be using to draw the samples.

Paragraph 6.a will be revised as follows to ensure that the sampling equipment is properly cleaned between sampling points (i.e., monitoring wells):

"6.a. To prevent cross-contamination, the contractor will decontaminate groundwater sampling equipment in accordance with the procedures in reference (c). PNS will follow similar protocol for pond samples."

The Navy feels that since there are no indications of residual radioactivity in the soils at PNS that would affect groundwater, radiological analyses of rinsate are not necessary.

Paragraph 6.b describes quality control field duplicates.

Comment 10: Page 7, Section 8: It is not clear how the results of the sampling will be communicated to the Restoration Advisory Board. Please clarify.

Response: A copy of the draft and final report will be made available to the Restoration Advisory Board. The final report will also be placed in local libraries (Rice Public Library, Kittery, Maine and the Portsmouth Public Library, Portsmouth, New Hampshire) along with the HRA.