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LETTER AND COMMENTS ON BEHALF OF SEACOAST ANTI POLLUTION LEAGUE  
REGARDING FEASIBILITY STUDY REPORT FOR OPERABLE UNIT 3 (OU 3) NSY  
PORTSMOUTH ME  
9/8/2000  
LEPAGE ENVIRONMENTAL SERVICES

# Lepage Environmental Services, Inc.

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September 8, 2000

Marty Raymond  
Seacoast Anti-Pollution League  
P. O. Box 1136  
Portsmouth, New Hampshire 03802

Subject: July 2000 *Feasibility Study Report for Operable Unit 3*

Dear Ms. Raymond:

We are transmitting the following comments on behalf of the Seacoast Anti-Pollution League (SAPL) on the July 2000 *Feasibility Study Report for Operable Unit 3* (OU3 FS).

**1. Page ES-2, Media of Concern.** The information in this and subsequent sections (Chapter 1 and Section 3.1.2, for example) concerning Mercury Burial Site II (MBII) should be updated to state that the vaults have been located and removed, that soil in the excavation was tested, and that site has been backfilled. Figures (Figure 1-3, for example) must also be revised appropriately.

**2. Pages ES-3 & 6-19, RAOs.** The fourth Remedial Action Alternative (RAO) states that migration of groundwater contaminants will not adversely impact the offshore environment and that Ambient Water Quality Criteria (AWQCs) and Statewide Water Quality Criteria (SWQC) will be met at all compliance points based on full mixing. As the Maine Department of Environmental Protection (MEDEP) states in comment 5 for Section 6 in their letter dated June 6, 2000, the MEDEP may consider a remedial decision for groundwater discharge to surface water that includes a mixing zone if the release to surface water has been fully characterized as the point of exposure and that potential risks are acceptable. The MEDEP requested the Navy conduct WET tests on seep water to assess the combined impact of a number of contaminants and potential harm to the marine environment at low tide. The Navy has not yet performed WET tests or other means of assessing impacts of seeps on the intertidal biota. Therefore, the issue of mixing zones and impacts on intertidal receptors has yet to be resolved.

**3. Page ES-3, DEVELOPMENT AND SCREENING OF ALTERNATIVES.** The text states that Alternative 2, which consists of Institutional Controls, Erosion Controls, and Monitoring, will meet all Remedial Action Objectives. As we had commented on the earlier draft of the OU3 FS, we do not believe that monitoring and erosion controls described later in the OU3 FS will "... ensure that the migration of groundwater contaminants does not adversely impact the offshore environment..."(RAO 4 on page ES-3). We also believe that Alternative 2 is more extensive than

presented on page ES-3. What the Navy describes in Sections 7 and 8 is that Alternative 2 consists of institutional controls, erosion controls, and monitoring, with a contingency of remedial action should monitoring indicate a potential impact to the offshore environment. This differs significantly from Alternative 2 as listed on page ES-3 which does not include the possibility of active groundwater remediation. Alternative 2 should be revised to include the contingency of groundwater remediation.

**4. Table ES-1.** Alternative 2 is listed in the table as complying with ARARs. Since there are already exceedances of AWQCs at seep locations along the OU3 shoreline, it is not clear how Alternative 2, which does not include active seep management, meets ARARs, including Maine's Hazardous Waste Management Rules. These rules specify that no hazardous waste, constituent, or derivative shall appear in ground or surface water at a concentration above background, current public water standards, or standards for aquatic toxicity, whichever is greater.

**5. Page 1-24, Section 1.4.3.25 Facility Background Report.** As we have noted in comment letters concerning the Facility Background Report, the Navy has not demonstrated that site-related contaminants can be differentiated from non site-related chemicals. This increases the uncertainties associated with the interpretation and application of background data. Therefore, it is possible that site-related risks have been underestimated.

**6. Figure 1-3.** What are MTP-01 and -02, and JTP-01, -02 and -03 shown of the figure? If they are important features, additional information is needed in the legend or notes.

**7. Page 2-2, Section 2.2 DEMOGRAPHY AND LAND USE.** The paragraph at the bottom of the page states that recreational visitors are unlikely to access the shoreline from the Jamaica Island Landfill (JILF). However, during the August 29, 2000, site visit to observe the OU3 seeps, a couple of children were observed along the shore in the vicinity of seep 1011 (I. McLeod and L. Dearborn, MEDEP, personal communication). Because the site visit attendees were able to walk along the shore from seep 1004.5 to seep 1011, it is reasonable to assume that others, including children, could easily access the shore in the vicinity of seep 1004.5, the seep with the highest pesticide concentrations. Other seeps could also be accessed. Therefore, seep management is critical to protecting human health. In addition, institutional controls implemented at OU3 must take access to the shore into consideration to prevent potential human exposure to seeps.

**8. Page 2-7, Section 2.5 HYDROGEOLOGY.** We note that the analysis in Appendix A.1 uses a tidal range for the Back Channel that is less than half that for Clark Cove. It is not clear why such disparate values were used as there is no indication of significantly difference in tide levels between the two locations. The analysis should be redone. Furthermore, recalculation yields a hinge line location that is on the order of 100 feet from the shore, rather than the 150 to 200 feet stated in the text. The presentation of tidal intrusion in the text, as well as the hinge line depiction on Figure 2-7, requires revision. The calculation of saturated fill (see Section 6.2) is also affected.

**9. Page 2-9, Section 2.6 SURFACE WATER USE AND HYDROLOGY.** The last paragraph in the section refers to Badgers Island in two places. However, we did not find the island on the location maps included in the figures. Badgers Island should be added to an appropriate figure (with reference to the figure added to the text), or the text should include information regarding the distance from Badgers Island to Seavey Island. In addition, the text should state if the tidal current speeds reported include Back Channel. If not, information regarding currents in Back Channel should be added.

**10. Page 3-1, Section 3.0 NATURE AND EXTENT OF CONTAMINATION.** The definition of seeps as locations where water drains from Seavey Island is incorrect and should be revised wherever used in the OU3 FS (Section 5.1.1.3, for example), replacing "water" with "groundwater".

**11. Page 3-1, Section 3.0 NATURE AND EXTENT OF CONTAMINATION.** The second paragraph is confusing as presently written. It is not clear how evaluation of samples collected in 1996 and 1997 will demonstrate a current (emphasis added) migration pathway of onshore contaminants to the offshore. The 1996 and 1997 data represents conditions three to four years ago. Nor is it clear how offshore monitoring results will indicate if the onshore is a potential (emphasis added) continuing source of contamination to the offshore. The offshore data would indicate actual effects, not the potential for future impacts. Additional explanation is needed in this paragraph to clarify these points.

**12. Page 3-1, Section 3.1 OU3 SOILS.** Because of OU3's proximity to Site 29 and because ash from the Site 29 incinerator was disposed in the JILF, we are concerned with the lack of dioxin testing results for OU3. Dioxin testing should be included in future monitoring at OU3. As we noted in comment number 29 on the draft OU3 FS, the potential impact from airborne/windblown deposition of contaminants (particularly dioxin) from Site 29 on OU3 soils should be evaluated. We are confused by the Navy's response that states "... No information is available to assess whether the operations at Site 29 impacted OU3. However, a Proposed Remedial Action Plan will be prepared based on the information available which the Navy believes will be protective of human health and the environment." If the Navy is basing action on available information, but there is no information available, how will this issue be resolved?

**13. Pages 3-5 & 3-6, Section 3.1.3 Site 11 (Former Waste Oil Tanks).** The text on page 3-5 states that Freon 113 was detected in soil at Site 11, and the second paragraph on page 3-6 states it was not detected. The text should be corrected appropriately.

**14. Page 3-9, Section 3.3.1 Jamaica Cove Seeps.** The sentence comparing concentrations of copper, lead and nickel is missing the location being compared with BC-1005.

**15. Pages 3-10 & 3-11, Section 3.4 SUMMARY OF NATURE AND EXTENT OF CONTAMINATION.** In our comments on the draft OU3 FS, we had raised the issue of elevated detection limits affecting the understanding of contamination at OU3, particularly regarding interpretations of frequency of detection and exceedances of regulatory thresholds for contaminants. Therefore, we appreciate the discussion added in this section the current OU3 FS. However, we disagree with the statement "Because the extent of contaminated soil and groundwater at OU3 was not based on the soil samples, but rather on the extent of landfill operations, the detection limits do not impact the understanding of the nature and extent of contamination." While the outer boundaries (extent) of landfilling operations may help define the area (extent) requiring remedial action, the identification (nature) of contaminants and magnitude of contamination must be determined by investigation that includes sampling. Without information regarding the type and concentration of contaminants, risks associated with OU3 cannot be adequately evaluated and addressed. It is important to differentiate here and elsewhere in the text when the "nature and extent of contamination" means the limits of landfill operations, and when it is based on actual sampling results.

**16. Page 4-1, Section 4.1.1 Potential Contaminant Migration Pathways.** The term "saturated groundwater" is confusing and should be replaced with "saturated soil" or "groundwater" as appropriate. The use of "groundwater" with regard to contaminant migration in the unsaturated zone is also confusing. The term "aquifer media" should also be changed. The "direct contact" pathway requires additional qualification. Is it direct contact with waste materials or with contamination migrating from waste materials? If the latter, direct contact with contaminated seep water is a real possibility (see comment 7, above), even though wastes are buried and most of OU3 is covered. The term "underground storage" in the last line on the page is confusing. Is it supposed to be "underground storage tank"? Finally, it should be noted that the statement regarding wastes being buried and most of OU3 being covered represent current conditions. During landfilling operations at the JILF and waste disposal (with associated contamination from filling/spilling) at Site 11, contaminants have been exposed at the ground surface and would be available for migration to air.

**17. Page 4-2, Section 4.1.1 Potential Contaminant Migration Pathways.** The statement at the top of the page that current information does not indicate a large quantity of drums having been buried at JILF requires qualification. The basis for the statement should be provided in the form of reference citations. What does "large quantity" mean in this instance? It should also be noted that record-keeping is insufficient to identify drum disposal locations, and that recent investigations revealed potential and actual drum disposal areas, but these investigations covered only part of the landfill. The potential for as-yet undiscovered drums and for those drums to leak at some time in the future remains.

**18. Page 4-6, Section 4.3 CONTAMINANT FATE AND TRANSPORT.** It should be noted that diesel- and gasoline-range organics (DRO and GRO) are not evaluated in this section (as well

as the rest of the FS), even though numerous concentrations exceeding regulatory criteria have been detected. These contaminants should be considered and addressed by remedial actions at OU3.

**19. Page 4-18, Section 4.4.3 Onshore/Offshore Contaminant Fate and Transport Model Conclusions.** The paragraph ends with the statement that understanding groundwater concentrations trends over time is necessary to confirm the assumption of steady-state conditions. This is an important assumption to test, particularly given concerns for impacts to offshore receptors. The design and implementation of an adequate groundwater (including seeps) monitoring and data analysis program will be a critical component of the selected remedy. Monitoring of contaminant concentrations in offshore sediments alone is not sufficient to test the steady-state assumption.

**20. Figure 4-2.** The figure should also depict waste (the contaminant source) located below the water table, as described in Section 4.1.1.

**21. Page 5-5 & 5-6, Section 5.1.1.3 Seep/Sediment.** As noted in comment 7, above, children were observed along the shore in the vicinity of seep 1011 during the August 29<sup>th</sup> seep observation site visit. These children could very easily have accessed seep 1004.5, where pesticide concentrations are highest. While exposure to only feet by simply walking through a seep area may be likely for adults, children could also be expected to play in seep areas, leading to exposure involving lower legs, hands and lower arms in addition to feet. It was also noted that the area around the seeps in Jamaica Cove was muddy, so that a person walking (or playing) in the area might track mud offsite for a continuing exposure (I. McLeod, MEDEP, personal communication). As long as access to the shore area is not strictly controlled, consideration of risks associated with seeps should include these additional exposures. In addition, risks for children should be recalculated to account for frequent, not limited, exposure to seeps.

**22. Page 5-8, Section 5.3.1 Soils.** The fifth sentence in the paragraph does not make sense and should be revised.

**23. Pages 5-10 & 5-11, Section 5.3.2 Groundwater.** The note at the top of page 5-11 mentions PAHs, but there are no PAHs listed in the table at the bottom of page 5-10. This should be corrected.

**24. Pages 5-11 & 5-12, Section 5.3.2 Groundwater.** The list of potential ecological COCs should include DDT and its congeners. Although Table 8-1 in the *Estuarine Ecological Risk Assessment* (EERA) does not list them, Table 4-8 in the EERA does. In addition, the EERA states in Section 4.2.4 on page 4-23 that "Because of elevated concentrations in estuarine media (sediment and some biota), the pesticide DDT and its metabolites (DDD and DDE, tDDx) were also included as COCs in the risk assessment." Groundwater (including seep) concentrations of

DDT and its congeners, as well as associated risks, must be addressed by remedial measures at OU3.

**25. Page 6-1, Section 6.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS.** As stated on page 8-1, overall protectiveness of human health and the environment and compliance with ARARs are "threshold criteria that must be satisfied for an alternative to be eligible for selection. But the text in Section 6.1 currently states that actions that attain or exceed ARARs will be given primary consideration. Section 6.1 should clearly state that only those actions that attain or exceed ARARs will be considered. If the Navy intends to seek an ARARs waiver, that information must be presented in the FS as well.

**26. Page 6-3, Section 6.1.1 Chemical-Specific ARARs and TBCs.** This section should include the State of Maine's Statewide Water Quality Criteria (SWQC).

**27. Page 6-9, Section 6.1.3 Action Specific ARARs and TBCs.** The last two paragraphs on the page present what appears to be conflicting information. The first states that Federal MCLs and non-zero MCLGs are relevant and appropriate for groundwater at OU3 as they provide the basis for institutional controls to prevent human exposure to groundwater. Yet the following paragraph argues that the Federal MCLs and non-zero MCLGs are not relevant and appropriate chemical-specific requirements that require remediation of the groundwater at OU3 for a variety of reasons. The second of the two paragraphs should be deleted.

**28. Page 6-14, Section 6.1.3 Action Specific ARARs and TBCs.** The paragraph regarding Maine SWQC states that SWQC must be met at a compliance point based on full mixing. As noted in comment 2, above, the issue of mixing zones has not been resolved. At low tide, there is no mixing zone for seep discharges as far as the intertidal biota are concerned.

**29. Page 6-17, Section 6.2 MEDIA OF CONCERN.** The first paragraph contains the statement that with regard to source areas at Sites 9 and 11, the tanks at Site 11 have been excavated and disposed. The text should be amended to state that some contaminated soil was not removed and remains at Site 11. This section should also contain accurate information regarding MBII. In addition, the figures in the table at the bottom of the page do not agree with those in Appendix A. The figures should also be recalculated based on comment 8, above.

**30. Page 6-18, Section 6.2 MEDIA OF CONCERN.** The second paragraph states that it is unknown if the elevated pesticide concentrations at seep 1004.5 are associated with sediment particulates as filtered organic analysis was not conducted for the seeps. It is important to know if the pesticides are dissolved in groundwater or bound to the sediment particles in order to effectively manage contaminant migration at seeps. Additional investigation will be required.

**31. Page 6-21, Section 6.3 REMEDIAL ACTION OBJECTIVES.** RAO 5 provides for JILF's current and future land uses while providing sufficient protection for human health and the environment. However, the performance of the remedial measures (capping, etc.) must not be jeopardized by future land uses. The priority is remediation, not future use as a parking lot.

**32. Page 7-4, Section 7.2.1.3. Capping.** The text states that reducing infiltration of precipitation with a cap would be of secondary importance at the JILF. We concur with MEDEP's previous comments that reducing precipitation infiltration should be a primary objective of the cap.

**33. Page 7-6, Section 7.2.1.3. Capping.** The first paragraph under the Maine Hazardous Waste [Management] Rules heading lists the adverse impacts to be prevented by capping. In addition to preventing adverse impacts, the rules also specify that no hazardous waste, constituent, or derivative shall appear in ground or surface water at a concentration above background, current public water standards, or standards for aquatic toxicity, whichever is greater. This requirement should be added to the paragraph.

**34. Page 7-9, Section 7.2.1.4.1 Surface Erosion Control.** The text states correctly that surface erosion controls address erosion from rainfall runoff. Runoff from snowmelt will also be a concern. Given that the Navy's projected future land use in OU3 includes parking areas and roadways, melting of snow piles and banks resulting from plowing must also be addressed by drainage and erosion control measures.

**35. Page 7-11, Section 7.2.1.4.2.2 Wetland Development.** The wetland development as described here and in other places in the OU3 FS is not allowed under State of Maine regulations. It is not permissible to dump sand on a tidal flat and construct a wetland outward from the current shore. Construction of wetlands in the area currently occupied by landfilled material (this would involve digging back into the landfill so that the wetland would be constructed inland of the current shore) might be allowed.

**36. Page 7-21, Section 7.2.2.2 Institutional Controls.** The institutional controls should also address prevention of human exposure to seeps (see comments 7 and 21, above).

**37. Page 7-42, Section 7.3 DEVELOPMENT OF ALTERNATIVES.** As we have pointed out in comments above, institutional controls, erosion controls, and monitoring are not sufficient to meet RAO 4. Alternative B should be rewritten to include the contingency of groundwater remedial action if it is to meet all RAOs.

**38. Page 7-44, Section 7.4 SCREENING OF ALTERNATIVES.** The description of Alternative B does not spell out how contaminant migration from seeps and associated risks will be eliminated. This information should be clearly presented.

**39. Page 7-49, Section 7.4 SCREENING OF ALTERNATIVES.** As Restoration Advisory Board member Jeff Clifford states in comment 4 of his September 7, 2000 letter, Alternative 5 [Alternative E] is the only alternative that provides source control. As currently written, it requires a barrier around the entire landfill. The Navy should develop and evaluate options, such as partial barriers, that could be more cost effective.

**40. Page 8-6, Section 8.2.2 Alternative 2: Institutional Controls, Erosion Controls, and Monitoring.** We have already commented on Alternative 2, institutional controls, and seep management in several comments above (see comments 3, 4, 7, 21, and 38, above), as well as on meeting ARARs. These comments also apply to this section. We assume that the monitoring described in this section was developed for costing purposes. If that is the case, the text should state as much. However, we do not believe that monitoring on an annual basis provides sufficient warning of the need for groundwater remediation. Monitoring on a more frequent basis will be needed, particularly in the early years of monitoring in order to establish trends. Furthermore, we do not believe the number of monitoring points specified provide adequate coverage. Therefore, the cost estimate for monitoring may be on the low side. The specifics of a monitoring program will be developed after a remedial alternative is selected. This comment also applies to subsequent sections describing Alternatives 3, 4, and 5.

**41. Page 8-8, Section 8.2.2 Alternative 2: Institutional Controls, Erosion Controls, and Monitoring.** We do not agree with the statement at the beginning of the third paragraph that this alternative would be protective of the environment. As we pointed out in the previous comment, the monitoring presented on page 8-6 would not provide sufficient warning to prevent an adverse impact. Also, without adequate seep characterization and management, there is no reason to believe that adverse impacts to offshore environments will not continue.

**42. Page 8-10, Section 8.2.2 Alternative 2: Institutional Controls, Erosion Controls, and Monitoring.** The Long-term Effectiveness section provides additional detail regarding institutional controls. The discussion should also cover restrictions that would apply should property at OU3 be leased by the Navy to another party.

**43. Page 8-12, Section 8.2.3 Alternative 3: Cover with Composite Liner and Enhanced Drainage Layer, Institutional Controls, Erosion Controls, and Monitoring.** According to the MEDEP's June 6<sup>th</sup> comment letter, the Maine Solid Waste Management Regulation requirements are relevant and applicable, not TBC, with regard to cover details. Barrier soil layers must be 24, not 12, inches thick, and a 5% slope is the minimum that will be acceptable. These requirements must be addressed in the FS. This comment applies to subsequent sections on Alternatives 3, 4, and 5 as well.

**44. Page 8-31, Section 8.2.5 Alternative 5: Cover with Composite Liner and Enhanced Barrier Layer, Cut-Off Barriers, Institutional Controls, Erosion Controls, and Monitoring.**  
Comment 39, above, also applies to this section.

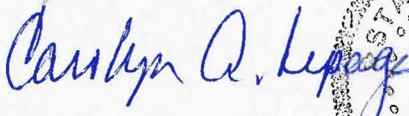
**45. Page 9-2, Section 9.1 OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT.** We disagree with the statement that Alternatives 2, 3, 4, and 5 are expected to be similar in protectiveness of the environment. Alternative 2, in particular, would not be expected to be as protective as the other alternatives, as it includes not active remediation. Alternative 5 is the only alternative with source control. The statement must be revised.

**46. Page 9-2, Section 9.2 COMPLIANCE WITH ARARS.** For reasons covered in comments above, Alternatives 2, 3, 4, and 5, as currently described in the FS, do not or will not meet ARARs.

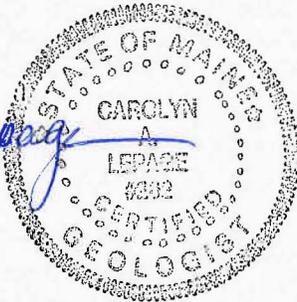
**47. Page 9-2, Section 9-3 LONG-TERM EFFECTIVENESS AND PERMANENCE.** Alternative 2 should not be ranked first in long-term effectiveness as it does not include active remedial measures to limit contaminant migration.

If you have any questions regarding the comments above, please give me a call at 207-777-1049.

Sincerely,



Carolyn A. Lepage, C.G.  
President



Enc.

cc: Johanna Lyons, SAPL  
Iver McLeod, Department of Environmental Protection  
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