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LETTER REGARDING SEACOAST ANTI-POLLUTION LEAGUE COMMENTS ON THE SITE 10 ADDITIONAL EXTENT INVESTIGATION QUALITY ASSURANCE PROJECT PLAN NSY PORTSMOUTH ME
6/19/2004
LEPAGE ENVIRONMENTAL SERVICES

Lepage Environmental Services, Inc.

P. O. Box 1195 • Auburn, Maine 04211-1195 • 207-777-1049 • Fax: 207-777-1370

June 19, 2004

Ms. Marty Raymond
Portsmouth Naval Shipyard
Code 106.3 R, Building 44
Portsmouth, New Hampshire 03804-5000

Subject: Review of the April 2004 *Site 10 Additional Extent Investigation Quality Assurance Project Plan*

Dear Ms. Raymond:

We are transmitting the following comments on behalf of the Seacoast Anti-Pollution League (SAPL) on the April 2004 *Site 10 Additional Extent Investigation Quality Assurance Project Plan* (QAPP):

1. General Comment. SAPL concurs with the comments in the Maine Department of Environmental Protection's letter dated June 16, 2004, and will not duplicate those comments below except where particular emphasis is desired.

2. Page ES-2, EXECUTIVE SUMMARY, Second Bullet. Please clarify why auger refusal is expected to be less than 3 feet below ground surface (bgs). While SAPL agrees that the two surface soil sample interval depths should provide better delineation of potentially high lead concentrations in the surface soil, the text should also note that the highest concentration under the building was detected in a sub-surface interval.

3. Page ES-2, EXECUTIVE SUMMARY, Third Bullet. Please clarify in the text why sampling will focus on the area east of BA-3C.

4. Page 1-6, Section 1.4.2 November 2001 Site 10 Additional Investigation. *"The evaluation showed that concentrations of lead and other metals were relatively higher in soils in the crawl space beneath the floor of Building 238 compared with concentration in the soils outside the crawl space. Concentrations of metals were generally similar throughout the area outside the crawl space."*

The last sentence should be deleted or revised. Concentrations of lead detected outside the crawl space varied by three orders of magnitude, as did the concentrations within the crawl space.

5. Page 1-7, Section 1.4.2 November 2001 Site 10 Additional Investigation. *"The area outside the building crawl space has a relatively uniform distribution of lead concentration, with no apparent vertical gradient. This suggests that the fill material at the site is the likely source of the lead. The only exception to this lack of a vertical gradient is lead concentrations was a detection of lead in the soil sample collected at 6 to 10 feet bgs at BA-3C, located near the former acid tank excavation area."*

SAPL has three issues with the passage quoted above. As noted in Comment Number 4, above, the first sentence should be revised or deleted, as concentrations of lead detected outside the crawl space vary by three orders of magnitude (as do concentrations within the crawl space). Secondly, with regard to vertical variation, both BA-2F and BA-1C, the only other sampling locations with five or more vertical intervals sampled, have the highest concentration detected in the 6-10 foot bgs interval. Of the remaining nine boring locations with only two intervals sampled, all but two locations have a higher concentration at the greater depth, so the lack of vertical gradient is not readily apparent. Thirdly, there is insufficient information presented to support the conclusion that the fill at the site is the source of the lead. Please clarify and revise as necessary.

6. Page 1-7, Section 1.4.2 November 2001 Site 10 Additional Investigation. SAPL believes that the impact of groundwater, including transport of particulate and colloidal material, on the offshore should be evaluated further. See the next comment.

7. Page 1-11, CONCEPTUAL MODEL. *"Currently, migration of contaminants via groundwater in the fill may be the only potential migration pathway at the site... It is known that groundwater in the intertidal zone is introduced by the River and it is ultimately returned to the river fairly rapidly... Based on the results from the investigations, lead contamination is not migrating effectively, if at all, in the groundwater."*

The conclusion regarding contaminant migration via the groundwater pathway should be revisited. Given the extremely high hydraulic conductivity estimated for the fill and the great volume of water migrating through the site with the daily tidal cycles, it is significant that any lead was detected in the limited number of groundwater samples collected. And the higher concentration detected in the unfiltered (vs. filtered) sample collected at well BA-MW05 indicates that sediment or colloidal transport of contaminants by groundwater is also a possibility. This would mean that the site-related contaminants are migrating to the offshore in both dissolved and solid form. SAPL believes that additional data and evaluation are needed to support any conclusion regarding the effect of the groundwater migration pathway on the offshore.

8. Page 1-11, CONCEPTUAL MODEL. The detection of lead at BA-MW05 indicates that lead is mobile in both the dissolved and particulate/colloidal forms; this should be addressed in the Conceptual Model. The Conceptual Model should also discuss how the acidic material disposed into, and then leaked out of, the underground tank would have affected the mobility and migration of metal contamination in the past and how it could affect the vertical and horizontal distribution of metal contamination (especially lead) currently seen at the site. This aspect of the Conceptual Model is necessary in order to appropriately locate "representative fill" that is not affected by site activities.

9. Page 1-12, Section 1.6, PROBLEM STATEMENT. "*The comprehensive data collected from the previous investigations at Site 10 show ... that groundwater migration to the offshore is not of potential concern.*"

As stated in the comments above, SAPL believes that additional data and evaluation are required to support any conclusion regarding the groundwater migration pathway.

10. Page 1-12, Section 1.6, PROBLEM STATEMENT. "*The confined space also limits the use of powered tools for exposing subsurface soils under the building.*"

The Navy is proposing that samples in the crawl space be collected using hand tools. What are the limitations imposed by confined space on the use of hand tools? The headroom in the crawl space ranges from three to eight feet. What is the minimum headroom necessary to use the hand tools?

11. Page 1-13, Section 1.6, PROBLEM STATEMENT. "*Some of the lead concentrations outside the building, presumably in locations that were not directly impacted by releases from the acid drainage area of the former tank, were also relatively high compared to facility background. The causes of these relatively elevated concentrations are unknown; presumably these are a reflection of the higher levels of fill material deposited in the 1900s prior to the construction of Building 238.*"

Please identify the locations covered by the first sentence. As noted in comments above, regarding the Conceptual Model, additional data and evaluation for past and current contaminant migration and mobility are needed. In the second sentence quoted above, please replace "presumably these are" with "these may be" as insufficient information has yet been presented.

12. Page 2-1, Section 2.2 PROBLEM DEFINITION. "*The extent of surface soil lead contamination under the building needs to be determined. (The limitation to the access to subsurface soil will be acknowledged and appropriately addressed in the RI).*"

The first sentence should be revised to indicate that subsurface soil will also be sampled. As currently written, it appears that the Navy isn't even going to try to collect samples deeper than 2 feet bgs. As noted in comments above, additional information is needed regarding the limitations on hand methods for sample collection in the confined space conditions in the building crawl space.

13. Page 2-1, Section 2.2 PROBLEM DEFINITION. *"The extent of subsurface soil contamination at and around BA-3C below the depth of the former acid tank is needed."*

Why just below the tank when the groundwater flow is predominantly horizontal? Where was the hole in the tank? Presumably the tank fittings and associated piping may also have developed leaks. How will contamination from those areas be evaluated?

14. Page 2-2, Section 2.3 DECISION STATEMENTS, Principal Study Questions. As noted in Comment Number 12 above, the statement in the first bullet should be revised to state that subsurface soil under Building 238 will also be addressed.

15. Page 2-2, Section 2.3 DECISION STATEMENTS, Decision Statements. As noted in comments above, subsurface soil under the building must also be sampled. The highest concentration detected in the crawl space soil was in a subsurface, not surface soil, interval.

16. Page 2-2, Section 2.3 DECISION STATEMENTS, Decision Statements. *"Determine whether the extent of lead contamination has been adequately delineated in the subsurface soil in the vicinity of the former acid tank (14 feet bgs) around BA-3C using the spatial distribution of lead concentrations. ...(Note the current maximum extent in the northern and western directions is defined by available data...)."*

As noted in comments above, investigation should not be limited to contamination below the level of the tank. There were only two other borings, BA-2F and BA-1C, to the north and northwest of the tank, with more than two subsurface intervals sampled. They are also the only two locations with the 6-10 foot interval sampled, which is consistently the "hottest" zone sampled. So only the area north and northwest of the former tank have been characterized. Borings west of BA- MW05 should be added to the investigation.

17. Page 2-3, Section 2.4 INTENDED DATA USES AND STUDY BOUNDARIES. As noted in comments above, the soil sampling depths beneath the building should not be limited to surface soils; the highest concentration detected in the building crawl space was in a subsurface soil interval. Please revise the second bullet.

18. Page 2-4, Section 2.5 DECISION RULES. Please provide examples of the "other data visualization techniques" mentioned in the second paragraph.

19. Page 2-4, Section 2.5 DECISION RULES. The second bullet describes how the area of "representative fill" will be delineated. Without more information on how representative fill is defined, plus answers to the contaminant mobility and migration comments above, SAPL cannot say if the Navy's proposal is acceptable. In addition, the Navy has suggested (see page 1-7 of the QAPP, for example), that the fill material at the site is the likely source of the lead in the area outside the building. So what is considered "representative"? SAPL is very concerned with dealing with this "lead mine" at Site 10, and believes that the lead concentrations should be considered site-related until proven otherwise.

20. Page 2-5, Section 2.5 DECISION RULES. *"If the lead concentrations are more elevated compared to those of surrounding locations, then mark the location as a potential CERCLA release point..."*

What does "surrounding locations"mean? What if all concentrations are elevated? What's the minimum threshold? By this decision, all concentrations could be on the order of 100,000 mg/kg, for example, and there would be no CERCLA release. Please revise to clarify the decision.

21. Page 2-5, Section 2.5 DECISION RULES. What is considered to be a "lower" concentration in the second bullet? Is it an order of magnitude difference? If the concentration is "lower", is the material considered "representative fill"? What are metals concentrations in fill of the same age elsewhere on the Shipyard? As noted in Comment Number 19 above, more information on "representative fill" is needed. How will "general site conditions" (in the fourth bullet) fit with the "representative fill" concept? What will be considered "relatively high" concentrations?

22. Page 2-6, Section 2.6 SAMPLING DESIGN AND RATIONALE. How will the two fill strata (pre- and post-1880s) be differentiated?

23. Page 2-7, Table 2-1. Why is only 4,250 square feet under the building to be sampled? As noted in Comment Number 16 above, additional boring information to the west of BA-MW05 is needed. Information on the impact of leaking piping and fittings associated with the tank is also needed.

24. Page 3-2, Section 3.2.1 Modifications to the Approved QAPP. Any modifications to the final approved QAPP must be documented in the Investigation Report.

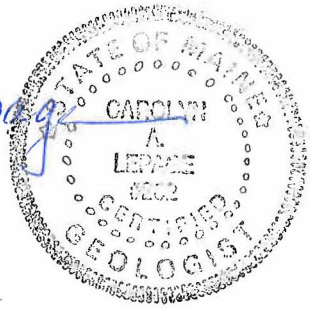
25. Page 6-1, Section 6.0 DATA MANAGEMENT AND QUALITY ASSESSMENT PLAN. Where is the Investigation Report described?

26. Offshore Monitoring. SAPL has commented previously on the need for offshore monitoring locations to be re-evaluated in light of the very high levels of metals contamination in shallow soils, the high hydraulic conductivity of Site 10 materials, and the dominance of horizontal groundwater flow. Also, as stated in previous comments, SAPL agrees that monitoring offshore sediments is appropriate for evaluating adverse impacts of Site 10 contamination; however, SAPL can not accept that the offshore monitoring, as currently designed and conducted, is adequate for future monitoring.

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

Sincerely,

Carolyn A. Lepage



Carolyn A. Lepage, C.G.
President

cc: James Horrigan, SAPL
Iver McLeod, MEDEP
Matt Audet, USEPA

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