

N00102.AR.002438  
NSY PORTSMOUTH  
5090.3a

LETTER REGARDING SEACOAST ANTI-POLLUTION LEAGUE REVIEW COMMENTS ON  
APRIL 2004 SITE 10 ADDITIONAL EXTENT INVESTIGATION QUALITY ASSURANCE  
PROJECT PLAN NSY PORTSMOUTH ME  
9/14/2004  
LEPAGE ENVIRONMENTAL SERVICES

# Lepage Environmental Services, Inc.

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

September 14, 2004

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

Subject: Review of Responses to Comments on 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 Navy's responses to June 2004 comments on the April 2004 *Site 10 Additional Extent Investigation Quality Assurance Project Plan (QAPP)*:

## **General Issue Responses (with specific comments referenced in parentheses)**

**1. Inclusion of Antimony Analysis (MEDEP 3).** The Navy's response states that lead analysis is the only one necessary to determine the extent of contamination at the site. SAPL concurs with the MEDEP (Comment Number 1, dated September 10, 2004) that the results for all metals analyzed by Method 6010, not just lead, should be reported, and that such reporting is a basic requirement for any site investigation. The Navy has also suggested that there are other possible sources of lead contamination at the site, not just the former underground storage tank and piping. Therefore, SAPL believes it will be important to have the data on all the Method 6010 analytes to evaluate the likelihood of other sources of metal contamination at Site 10 and to understand the extent of metal contamination that must be addressed in the feasibility study.

**2. Determination of Extent of Contamination in the Vicinity of BA-3C (MEDEP 11 and 13, SAPL 13 and 16).** The Navy response states that the proposed boring locations and sampling depths are adequate because that there is a lack of elevated lead concentrations below 14 feet, and that the vertical extent of contamination is known. SAPL disagrees with the Navy's proposal and supporting statements. The limited site data for depths greater than 14 feet show that concentrations range from 736 ppm to 1750 ppm. As the MEDEP points out (Comment Number 2, dated September 10, 2004), these concentrations exceed the State's adult worker Remedial Action guideline of 700 ppm for soil. Contrary to the Navy's statement, the concentrations are indicative of significant lead contamination at depth. And with only three samples at collected at depths greater than 18 feet bgs, SAPL does not agree that vertical extent of contamination has been adequately defined.

**3. Decision Rules Regarding “determination of representative fill concentrations” and “determination of areas of elevated concentrations showing CERCLA releases” (MEDEP 2 and 14, SAPL 18, 19, 20, and 21).** SAPL had several questions regarding the magnitude of concentrations and differences in concentrations that would be used to differentiate “representative” fill. The Navy had suggested that the fill material at the site is the likely source of the lead in the area outside the building. The Navy’s responses state that the magnitude of differences between filled areas (that may contain low levels of contamination), areas that indicate impacts from CERCLA releases, and other areas of the site or facility background will depend on the statistical evaluation of the data distribution. SAPL shares MEDEP’s concern (Comment Number 3, dated September 10, 2004) that differentiating between fill areas containing low levels of contamination and the contamination “halo” surrounding known, and possibly unknown, CERCLA releases should be approached cautiously given the years of tidally-influenced groundwater “flushing” and the site’s hydrogeologic complexities.

**4. Groundwater Flow (SAPL 7, 8, and 9).** The Navy’s responses, in summary, state that groundwater movement is predominantly horizontal, with the net movement of groundwater being from the interior of the Shipyard island toward the river. However, the exact movement of groundwater is longer and more complicated with groundwater moving both horizontally and vertically as large volumes of river water enter and exit the site with the tidal cycles. According to the Navy’s response, water in contact with soil during the upper half of the tidal cycle has only a limited amount of time for dissolution of contaminants. Therefore, sampling at low tide should represent groundwater that has been in contact with soil the longest, with maximum time for dissolution of contaminants. The Navy cites the detection of lead in only one well as support for this model and for the conclusion that lead is not very soluble and is not migrating.

SAPL appreciates the Navy’s revision of the Conceptual Model section, but still has some questions and comments. The Navy concludes that lead is not very soluble and is not migrating. Given the detections at BA-MW05, SAPL would say that lead is migrating. What are literature values for the solubility of lead in settings similar to Site 10? How much time must groundwater be in contact with the soil to dissolve the concentrations detected at well BA-MW05? What is the groundwater velocity in the vicinity of BA-MW05 during various stages of the tidal cycle? Given the large volumes of water “flushing” the site during the tidal cycles and the generally low solubility of lead, SAPL has considered it significant that any lead has been detected in the limited number of groundwater samples at the site.

The following relate to the Navy's specific response to SAPL Comment Number 7.

*There is no apparent "smearing" of lead because there is no clear gradation of lead levels in either the vertical or horizontal directions with respect to areas of clearly impacted soils."*

As SAPL has stated above, the vertical extent of contamination has not been adequately defined. However, SAPL also agrees with the MEDEP (Comment Number 4, dated September 10, 2004), that the available data does suggest some vertical smearing, but is less clear regarding the horizontal aspects. More data is needed to address the vertical and horizontal extent of contamination.

*"Based on the results from the investigations, lead contamination is not migrating effectively, if at all, in the groundwater."*

Because lead was detected in groundwater, the phrase "if at all" must be removed from the passage quoted above. With regard to the effectiveness of lead contamination migration, SAPL still believes that sediment and colloidal transport is a real possibility, based on the data (see comment below). Furthermore, the Navy cites the large volume of water exiting the site with the tidal cycles. What is the cumulative impact of the concentration of lead detected at BA-MW05 being transported to the offshore?

*"The observation of higher lead levels in the unfiltered versus filtered samples is not necessarily evidence that sediment and colloidal transport are viable pathways."*

SAPL didn't interpret the difference in unfiltered versus filtered sample results as absolute evidence of sediment and/or colloid transport. However, a logical conclusion is that it is a likely possibility and therefore, should be considered a part of the conceptual model.

**5. Appropriate Offshore Monitoring Location (SAPL 26).** The Navy's responses ask SAPL for the technical basis for why the current monitoring program is not adequate and to suggest a more suitable location for offshore monitoring. One of the responses also states that the Navy proposes to revisit this issue during the additional scrutiny of MS-12 data. SAPL would like to clarify its original comment as it appears that the Navy may have misunderstood SAPL's intent.

The OU4 offshore monitoring program was designed in the late 1990s and implemented in September 1999. The Site 10 Additional Investigation was conducted in November 2001. This is when the magnitude and extent of lead contamination became better defined, and unexpectedly high concentrations of lead were detected at the site. In Comment Number 26, SAPL meant that it would be a good idea to check the current offshore monitoring locations because of the new site-specific information that had become available. SAPL agrees with the Navy that monitoring offshore sediments is appropriate for evaluating adverse impacts from Site

10. But without reevaluating the offshore monitoring program with the new Site10 data, SAPL could not say if the current monitoring locations were still appropriate.

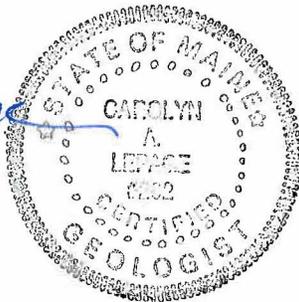
SAPL does not have a specific offshore monitoring area in mind to suggest. However, SAPL is concerned with areas where dissolved and/or sediment/colloidal material from Site 10 would accumulate in the offshore. Once the Additional Extent Investigation data becomes available, SAPL suggests looking at current and deposition patterns to ensure that the offshore monitoring locations to be used in the future are appropriate and optimally located.

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