N00129.AR.000425
NSB NEW LONDON
5090.3a

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

July 1, 1996

Mark Evans, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Responses to EPA comments on the Area A Landfill Groundwater/Leachate Modeling Study Report

Dear Mr. Evans:

Thank you for the opportunity to review your responses to EPA's letter dated April 24, 1996 regarding the *Area A Landfill Groundwater/Leachate Modeling Study Report*. I have explained a few of the outstanding issues below.

Comment No. 5: The steeper portions of the landfill and water table are dismissed as "difficult to simulate," yet these areas include some of the more critical portions of the landfill where EPA has repeatedly expressed concern about the geotechnical stability. Moreover, EPA was not involved in the Navy's selection of a calibration target despite numerous requests for such information. Additional efforts should be directed at improving the model calibration.

Comment No. 6: Although the response to Comment No. 1 indicates that a 3-D model was used, it is apparent that the additional layers were not used meaningfully since no attempt was made to calibrate the piezometric elevations. Since there has not been any significant analysis of the model at depth, it is not clear whether the model is simulating current conditions reasonably, or whether the model allows reasonable predictive simulations. A series of calibration points must be identified to quantify the model calibration at depth.

Comment No. 7: Please demonstrate with vertical flow diagrams.

Comment Nos. 8 & 13: It appears that the area (A - calculated by using the *total* landfill area) was erroneously used instead of "L x H." The area that was used in the report appears to have been calculated using the upgradient distance feet used to estimate the hydraulic gradient or about 100 feet (which was estimated from the distance between the center and the edge of the capped area - covering a half of the capped area). Please explain why the total capped area (*see* equation 4.3 on page 4-15) was used instead of using a half of the total area to calculate a rate of water table rise.

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 75% recycled fiber

The data indicates that the elevation for a 100 year flood event is 73.91 feet - not the 72 feet used in the calculations. Please recalculate the groundwater model and slope stability analyses as appropriate.

Comment No. 10: Comparison of soil and groundwater contaminants is not an appropriate method to establish partition coefficients for the Area A Landfill. Based on the limited soil sampling data, it is apparent that the soil contaminants are extremely heterogeneous. While groundwater quality date are generally considered to be representative of groundwater conditions, it is not possible to make the same conclusion for soils data. This is the predominant reason why EPA generally does not recommend extensive characterization programs for the internal contents of a landfill. Contaminant levels may vary over orders of magnitude for two soil samples that were collected near each other. Therefore, it is not reasonable to estimate soil partitioning coefficients by comparing groundwater concentrations (which are assumed to be representative of groundwater conditions) to soil concentrations (which are definitely not representative of soil chemical conditions).

I am certain that we can resolve these issues in time to plan construction at the Area A Landfill this fiscal year. Please do not hesitate to contact me at (617) 573-5777 should you have any questions or wish to arrange a meeting.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

cc: Mark Lewis, CTDEP, Hartford, CT
Andy Stackpole, NSBNL, Groton, CT
Joan Miles, USEPA, Boston, MA
Yoon-Jean Choi, USEPA, Boston, MA
Patti Lynne Tyler, USEPA, Boston, MA
Dale Weiss, TRC, Lowell, MA
Matthew Cochran, Brown & Root, Pittsburgh, PA