



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

January 22, 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's October 16, 1995 Letter of Comments on Letter Work Plan and Letter Work Plan Addendum for Groundwater/Leachate Modeling Study for the Area A Landfill

Dear Mr. Evans:

I am writing in response to your request for EPA to review the *Responses to EPA's October 16, 1995 Letter of Comments on Letter Work Plan and Letter Work Plan Addendum for Groundwater/Leachate Modeling Study for the Area A Landfill*. Overall, EPA is concerned that most of the issues raised previously remain unresolved. Moreover, some responses to comments on the field component of the Work Plan are not adequately addressed, yet the work has already been completed. Many of EPA's comments are deferred until the new data have been collected and the modeling approach will be detailed in a "supplemental document." To date, EPA has not been given sufficient information concerning the intended strategy. Based on the level of detail provided thus far, modeling efforts should not proceed until a complete modeling plan is developed and approved by EPA and the Connecticut Department of Environmental Protection. Detailed comments are provided in Attachment A.

I look forward to resolving these issues soon. Please do not hesitate to contact me at (617) 573-5777 should you have any questions or wish to arrange a meeting.

Sincerely,


Kimberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT



Andy Stackpole, NSBNL, Groton, CT
Joan Miles, USEPA, Boston, MA
Patti Lynne Tyler, USEPA, Boston, MA
Dale Weiss, TRC, Lowell, MA
Ken Finkelstein, NOAA, Boston, MA

ATTACHMENT A

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| p. 1, ¶3 | The document indicates that a modeling approach will be formulated “once the newly collected data is interpreted.” To date, no such document has been submitted, nor has a comprehensive data report been submitted. Complete details about the modeling approach must be discussed soon. |
| p. 2, ¶1 | EPA plans to review the determination of whether there are sufficient potentiometric data for the fill, dredged material, bedrock, and other layers once a comprehensive data package is prepared. |
| p. 2, ¶4 | EPA is still awaiting copies of the Geoprobe logs. |
| p. 3, ¶2 | Without regard to the “general practice of the Navy's contractor,” it is not possible for EPA to determine whether the work will be performed in accordance with EPA guidance unless complete SOPs are provided. Complete SOPs will ensure that the field sampling plan is sufficiently complete to direct the field work. EPA remains waiting for “other SOPs applicable to modeling activities” and the “supplemental document which will outline the details of the modeling effort.” |
| p. 3, ¶5 | The document indicates that other methods for dewatering beyond a toe drain will not be evaluated. One of the objectives of the modeling effort was to determine how to eliminate the saturated waste in the landfill and control leachate from the landfill. If models of the toe drain are not effective, other methods including wells must be evaluated. |
| p. 4, ¶1 | The modeling plan needs to include a sensitivity analysis after the model calibration and prior to the simulations. This sensitivity analysis would include testing the sensitivity of the model to variations in key model parameters such as infiltration, hydraulic conductivity, leakage, <i>etc.</i> A sensitivity analysis needs to be performed at this stage in order to determine a baseline understanding of the degree of confidence in the model. A sensitivity analysis for key parameters of the simulations (<i>e.g.</i> , cap infiltration rate, pumping rate, <i>etc.</i>) specific to the remedial measure being simulated should also be conducted in order to determine a level of confidence in the predicted outcome. Please refer to the ASTM Standard Guide for Conducting a Sensitivity Analysis for a Ground-Water Flow Model Application (D 5611-94). |

- p. 7, ¶2 Please provide the referenced “supplemental document.”
- p. 9, ¶3 Develop a calibration plan including scattergrams, residual statistics, and plots of residuals in order to evaluate the adequacy of the model. The ASTM Standard Guide for Comparing Ground Water Flow Model Simulations to Site-Specific Information (D 5490-93) may be helpful.
- p. 11, ¶1 Since bedrock cores were not obtained, there is no information regarding the subsurface flow network. Given the extent of fractures in the area outcrops, it is likely that there is a significant anisotropy of hydraulic conductivity in the bedrock aquifer. Please present how such information will be obtained (*e.g.*, a bedrock pumping test).
- p. 12, ¶4 Provide copies of the two dimensional flow diagrams that will be constructed.
- p. 13, ¶5 The response to EPA's comment is unclear. The response of the hydraulic head in the wetlands will be estimated using the groundwater model.
- p. 17, ¶4 The clarification requested by EPA was not provided. Please indicate the specific intended use for the data derived from the Shelby tube testing.