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LETTER AND COMMENTS FROM U S EPA REGION I REGARDING DRAFT FINAL PRE  
DESIGN INVESTIGATION REPORT FOR SITE 1 WEST GATE LANDFILL NAS SOUTH  
WEYMOUTH MA  
12/29/2009  
U S EPA REGION I



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

December 29, 2009

Brian J. Helland, P.E.  
BRAC Program Management Office NE  
4911 South Broad Street  
Philadelphia, PA 19112-1303

Re: Draft Final Pre-Design Investigation Report for the West Gate Landfill

Dear Mr. Helland:

Thank you for the opportunity to review the *Draft Final Pre-Design Investigation Report for the West Gate Landfill*, Naval Air Station South Weymouth, dated November 2009 (PDI). This PDI reports the results of the data collected to support the Remedial Design for the West Gate Landfill. EPA reviewed the document for technical accuracy and for compliance with the requirements of the PDI-QAPP. Detailed comments are provided in Attachment A.

The calculations in Appendix E to evaluate the 100-year flood are based on user provided precipitation data that significantly underestimates the precipitation associated with a 100-year storm at the site (as well as underestimating precipitation for all return periods). Please note that according to TR-40, the total precipitation associated with a 100-year 24-hour storm at the site is approximately 6.8 inches, not 4.65 inches. The 30% Design document used the TR-40 data. 310 CMR 57 (2)(a)(3a) dictates that calculations be based on seven inches total precipitation for a 100-year 24-hour storm event. Moreover, Cornell University has updated the TR-40 data for total precipitation associated with the various return periods based on data collected from significantly more reporting stations using significantly greater monitoring periods than were used for TR-40 (*see* Cornell University, Northeast Regional Climate Center, September 1993, Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada). A 100-year 24-hour storm event at the site based on this larger database will generate 8.7 total inches of precipitation. Although the Cornell University data would best represent site conditions based on its larger database, at a minimum the 100-year flood calculations should be based on seven inches total precipitation. Please edit Appendix E accordingly and in consideration of the 30% landfill cap design.

Appendix E suggests that the flow rate information from the Rockland flood insurance study (FIS) may have been incorrectly applied in calculating the limits of the 100-year flood. The 220 cfs flow rate reported in the Rockland FIS is the flow at the confluence of the east and west branches of French Stream. The east branch is the stream discussed in the Rockland FIS that originates approximately 3,500 feet north of its Spruce Street crossing. The west branch of French Stream is adjacent to the West Gate Landfill. Therefore, using the 220 cfs flow rate for

the west branch of French Stream upstream of STA 2+00 is not correct. Hence the previous comment that the stream configuration used in the calculations is not accurate. Please provide more detail on the development of the stream configuration and the use of existing flood data. Using the 220 cfs flow rate to match the 100-year flood elevation misrepresents the stream configuration and therefore also misrepresents the flooding potential. EPA recommends that we plan a conference call to further discuss this issue.

Please present better documentation of the work in Appendix E. EPA previously requested documentation of all assumptions and presentation of the supporting data used to develop the flood impact presentation. Simply providing the printouts is not sufficient to allow EPA to assess the validity of the inputs or to concur with the conclusions.

I look forward working with you and the Massachusetts Department of Environmental Protection to complete the West Gate Landfill cap. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to be 'K. Keckler', written over the word 'Sincerely,'.

Kymerlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachment

cc: Dave Barney, USN, South Weymouth, MA  
Dave Chaffin, MADEP, Boston, MA  
Kevin Donovan, SSTTDC, South Weymouth, MA  
Phoebe Call, TTNUS, Wilmington, MA

## ATTACHMENT A

### Page

### Comment

Appendix E

- a) The new table on the third page lists the NGVD 29 water surface elevation (WSE) at STA 2+00 as 125.00 and the equivalent NAVD 88 WSE of 126.614. The NAVD 88 elevation is not correct. At this location the NAVD 88 elevation should be less than the NGVD 29 elevation. Please correct all NAVD 88 elevations as appropriate.
- b) The table included in the Conclusions and Results section only has STA 100+00 through STA 84+00. Please provide the complete STA elevation table.
- c) The previous version of the table in the Conclusions and Results section identified the elevation at STA 100+00 as 151.27, which was apparently a NGVD 29 elevation. The revised table lists the STA 100+00 NAVD 88 elevation as 148.13. If this is intended to be a conversion of the 151.27 NGVD 29 elevation to NAVD 88, then the conversion was not done correctly. The elevation difference should not exceed approximately one foot at this site. Please correct all elevations in this Flood Plain Report.