UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF: SRF-5J

August 20, 2002

Mr. Jeff Meyers, PE, CHMM
Code ES32
Southern Division, Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, SC 29419-9010

Subject: ***Review of March 2002 Revisions to the Groundwater Flow Modeling Report and in consideration of the response to comments letter on 2001 Annual Monitoring Report, dated August, 2002 for Naval Industrial Reserve Ordnance Plant Fridley, Fridley, Minnesota.***

Dear Mr. Meyers:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the revised Groundwater Flow Modeling Report dated March 2002, and response to comments on the 2001 Annual Monitoring Report which we received August 9th, 2002. After reviewing these, U.S. EPA has the following comments:

1. Review of the March 2002 Revisions to the Groundwater Flow Modeling Report indicates that, with the exception of providing the input files for the model, the Revised Report provides the additional documentation of the modeling effort requested in previous technical review comments on the May 2000 Revision of the Groundwater Flow Modeling Report and subsequently agreed to by the Technical Committee during its September, 2001 conference call. Review of the Revised Report continues to indicate that the reliability of the model for purposes of evaluating the efficacy of the extraction system remains uncertain. However, as agreed to during the September, 2001 Technical Team conference call, any effort to further analyze or calibrate the model should be reserved for the updated model that incorporates the recent changes in the NIROP extraction system. Consequently, EPA approves the March 2002 Revised Groundwater Flow Modeling Report with the reservations that the input files to the newly upgraded model be provided to the EPA and Minnesota Pollution Control Agency (MPCA) and that the reliability of the old model for purposes of evaluating the efficacy of the extraction system remains uncertain.

2. The Navy's consultants, Tetra Tech NUS, have recently submitted (on August 8, 2002) responses to the EPA's technical review comments on the 2001 Annual Monitoring Report (AMR). The original technical review comments identified some issues or concerns regarding the results of the groundwater model upgraded to reflect recent changes in the NIROP extraction system. In the response to these comments, the Navy has acknowledged that because of the complexity of the site, "the model does not completely simulate some of the complex and irregular hydrogeologic features at the site." The Navy further indicates that "considering the 'weighting' given to the model in the DQO process, the Navy has refined the present model with the appropriate amount of resources and does not anticipate significant additional model updates given the low level of return on this effort." Careful review of the errors and uncertainties inherent in the predictions of the current, upgraded model indicates that it may be possible to improve the performance of the model by better defining and reducing the size of the hydraulic conductivity zones established in the model, further manipulating the vertical hydraulic conductivities used in the model, and better defining the clay zones that appear to control groundwater flow in and around the extraction system. However, this additional effort is likely to be difficult and time consuming. Moreover, because of the complexity of the site, such efforts to further revise the upgraded model in hopes of better reproducing the hydraulic behavior of the NIROP groundwater system are not guaranteed to lead to significant improvements in model performance. Consequently, the Navy's apparent decision not to invest significant additional resources in revising the model appears justifiable, and no additional comments requesting further sensitivity analyses and calibration of the model have been provided. However, the Navy must realize that, based on the errors and uncertainties inherent in the predictions of the recently upgraded model as indicated in the 2001 AMR technical review comments, it will not be possible to rely heavily on the predictions of the groundwater flow model and associated particle tracking results when evaluating the performance of the upgraded extraction system.

If you have any questions regarding this letter, please feel free to contact me at (312) 886-5907.

Sincerely,

Craig Thomas, P.G.
Remedial Project Manager
Federal Facilities Response Section

cc: David Douglas, MPCA
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Mark Sladic, TtNUS
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