UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

FEB 29 2000

Mr. James Colter
Remedial Project Manager
Department of the Navy
10 Industrial Highway, Mailstop #82
Lester, PA 19113-2090

Dear Mr. Colter:

The U.S. Environmental Protection Agency, Region 2 Office has reviewed the Navy's January 31, 2000 Draft Letter Workplan to conduct additional testing at IR Site 7 - Fuel Depot to determine if conditions are present to allow for the natural biodegradation of site contaminants through Monitored Natural Attenuation (MNA). The letter report was reviewed by an EPA Region 2 hydrogeologist who had participated in the workgroup that prepared the *EPA Directive on the Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (Directive 9200.4-17P; April 21, 1999).

The enclosed comments focus on MNA, as it is presented in your January 31, 2000 Draft Letter Workplan. We recognize that some of the information inquired about in these comments may be available in other reports prepared by the Navy. The comments are meant to guide you regarding proper techniques and additional information that would be needed in order to evaluate whether MNA would be viable at IR Site 7. The comments are not meant to approve or disapprove your proposal to include MNA as a potential alternative.

If you should have any questions regarding these comments, please feel free to contact Ms. Carol Stein, of my staff, at (212) 637-4181.

Sincerely yours,

James Reidy, P.E.
Chief, New York Section
RCRA Programs Branch

Enclosure

cc: Marsden Chen, NYSDEC w/enclosure
Steven Kaminski, NYSDEC w/enclosure
Stanley Farkas, NYSDEC w/enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

Hydrogeological Review of the NWIRP Calverton Facility Monitored Natural Attenuation (MNA) letter Report dated Jan 31, 2000

General Comments

The document reviewed is a MNA evaluation for the Site 7-Fuel Depot. The report does not include any background information on site hydrogeology or past sampling data. Therefore, these comments do not address the adequacy of the site characterization, which is critical to any MNA evaluation. If groundwater flow paths from the source are not well-defined, contaminant concentration over distance data cannot be used to develop site-specific degradation rates.

If heavy metals have not been analyzed in the past, they should be analyzed now since they can inhibit microbial activity.

Specific Comments

Page 1, Objective and Scope

The goal of this investigation should be to determine if, and the extent to which, natural attenuation processes are contributing to attenuation at the site and if these processes can be used as part of remedial efforts at the site. While the alternative of MNA without source treatment may be considered, it is highly unlikely to be an effective remedy unless there is statistically significant data documenting attenuation of the source.

The report should provide a summary of existing hydrogeologic and water quality data that documents the 3-dimensional site characterization and identifies any data gaps.

Page 3, existing well purging and sampling - During purging, water levels should also never be allowed to fall to the level of the screen. Also, the EPA Region II SOP calls for low-flow purging and sampling, is there a rationale for why this method is not being used at this site? Dissolved oxygen values should also stabilize to within +/- 10% before sampling is initiated.

The "soda straw" method of crimping and uncrimping the tubing is non-standard and has the potential to result in volatile losses. A submersible positive pressure, or variable rate centrifugal (e.g. Grundfos) pump should be used to collect samples at 300- 500 ml/min to minimize volatilization.

Page 4, monitoring well installation and development - The boreholes should be continuously sampled from the water table to the bottom of the deepest well.

Page 6, well purging and sampling - This states that carbon dioxide will be analyzed both in the

field and in the lab. Please clarify.

Page 9, Data evaluation

It is not clear if fraction organic carbon has been measured on-site. This parameter cannot be estimated based on literature values. The bases for all parameters used in the modeling should be provided. Ranges of values for key parameters such as hydraulic conductivity should be used as model inputs to evaluate the sensitivity and uncertainty of the modeling. The report should discuss the limitations of the model. The degradation rates should be determined using the most rigorous available method or methods. Conservative tracers should be used if available.

MNA should not be the only alternative evaluated. Pump and treat, enhanced in-situ bioremediation and air sparging should also be considered potential remedial methods.

Page 10, report format - The report should include plots of concentrations of key or total volatile organic compounds (VOCs) over time as well as plan maps depicting key geochemical parameters such as dissolved oxygen along with total or selected VOCs.

Table 2-1, sampling rationale- What is the basis for locating wells in clusters about 25 feet apart in depth. Are there any other significant water bearing zones between the shallow and intermediate screen depths? Has hydropunch or cone penetrometer sampling been conducted to assess the heterogeneity of contaminant distribution with depth?