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LETTER AND COMMENTS FROM MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REGARDING WORK PLAN FOR DELINEATION OF DISSOLVED PHASE PLUME SITE 6 NCBC GULFPORT MS
2/23/2004
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

23 February 2004

Art Conrad
Naval Facilities Engineering Command
Southern Division
2155 Eagle Drive
P.O. Box 190010
North Charleston, South Carolina 29419-9010

Re: Work Plan for Delineation of the Dissolved Phase Plume at Site 6, Naval Construction Battalion Center, Gulfport, Mississippi, Draft, July 2003.

The Mississippi Office of Pollution Control has reviewed the above referenced document and offers the following comments.

1. The cover title should include the site designation (Site 6).

2. Borings completed at the site have not encountered the interval comprising "light brown silty clay" shown on figures 2-2a and 2-2b (referred to as the "clay layer"and "clay unit" on page 11, paragraph 4), so the presence nor the extent of the unit has not been confirmed.

   As stated in the text (page 11, paragraph 4) the extent of the "clay unit" has not been confirmed by drilling or geophysical methods. The occurrence, composition, vertical and lateral extent of lithologies utilized in conceptual models should be demonstrated by boring (preferably core) sample descriptions and geophysical (electrical, etc.) logs when possible.

   The fine grained unit most likely contains variable amounts of sand and silt, as clays in this region are depositional and are seldom pure in composition (such as in situ weathering products). The description "clay" (as given on page 11) without qualifiers identifies a pure clay lithology that is isotropic and homogeneous throughout its vertical and lateral extent. These less permeable units are frequently utilized in conceptual models that may not accurately describe the hydrostrtigraphic setting if improper lithologic descriptions and inaccurate vertical and lateral extent are assumed.

These variations in lithology that control horizontal vertical movement of contaminants become especially important when tracing plumes containing various types of contaminants from the various compounds encountered at military fire training areas. Some of these may be dense liquids (DNAPLs or "sinkers") that could migrate undetected below screened intervals of monitoring wells and into underlying aquifers.

Please feel free to contact me if I can be of further assistance.

Sincerely,

Bob Merrill

cc. Michelle Thornton, USEPA