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State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
 William W. Cobey, Jr., Secretary

William L. Meyer
 Director

January 13, 1992

Mr. John Barnard
 Hazen & Sawyer, P. C.
 4011 Westchase Boulevard
 Raleigh, North Carolina 27607

RE: Completeness Review - Austin Quarter Site, Site
 Suitability Application *Alamance County*

Dear Mr. Barnard:

The Solid Waste Section has completed its preliminary review of the above referenced application. The initial review letter for Volume I of the site suitability application was issued on October 31, 1991. This correspondence, in conjunction with the referenced correspondence, addresses the necessary revisions/additional information required for the Section to commence its technical review process.

Enclosed please find Bobby Lutfy's, Section Hydrogeologist, review of the "Geologic and Hydrogeologic Study for the Proposed Alamance County Landfill" prepared by Westinghouse Environmental. Based upon his findings, the Section shall require additional hydrogeological investigation, monitoring, testing, and corrections to augment the report and further characterize the site for suitability of landfilling activities.

These comments are intended to expedite the review of the application and in no way restrict the Section's right to request additional information following the technical review process.

A meeting should be set-up with the Section to further discuss the hydrogeologic review. Please contact our office at

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(919)733-0692 to set-up a meeting.

Sincerely,

Suzanne Molloy

Suzanne Molloy
Environmental Engineer
Solid Waste Section

ENCLOSURES

cc: Robert Smith
Bobby Lutfy ✓
Jeff Rodgers
Julian Foscue
Bob Difiori



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MEMORANDUM

TO: Jim Coffey and Suzanne Molloy

FROM: Bobby Lutfy, Hydrogeologist *BL*

RE: Review Of The "Geologic And Hydrogeologic Study" For The
Proposed Alamance County Site Plan Application

Upon completion of a review of the above referenced Site Plan Application, it appears that the site may be reasonably well suited for landfill development, however some additional hydrogeological investigation is necessary in order to further characterize the site. Only 27 borings were installed to characterize the 404 acre site. Additional information is needed for some parts of the site. It appears that all three of the rock core borings were installed in the same type of environment, on lower slopes near minor drainage features. Additional rock core borings are needed in other types of environments, such as ridges and immediately adjacent to larger drainage features.

Although the February water table readings for borings one through seven are said to be representative of seasonal high water table readings, there is no estimation of seasonal high water table readings for the site as a whole. Since there is an average fluctuation of 3.2 feet between the February and September water table readings for borings one through seven, similar fluctuations would be likely at the other borings at the site. Some additional investigation may be needed to explain why the water table fluctuations for borings one, twelve, and seventeen are significantly greater than water table fluctuations at other boring locations. As suggested in the report "additional water monitoring should be completed in order to better define the seasonal high water table at the site".

There appear to be some errors in the potentiometric surface as pictured on the cross sections and soil profiles. Also there are some discrepancies in the ground surface elevations as reported on the boring logs as compared to the elevations illustrated on the plan sheets.

There was little hydraulic conductivity information for the soil units. I assume this is because the water table was only slightly above partially weather rock or rock and it would be difficult to isolate the soil units with a well screen. However in the more critical locations some undisturbed Shelby tube samples may be needed to determine hydraulic conductivity values for these soil units.

There was no ground and surface water monitoring plan submitted as part of the report. While it is apparent that exact locations and depths of proposed monitoring wells can not be proposed until a more detailed construction plan is formulated, there should be some preliminary discussion of a proposed monitoring plan.

The final submittal of the Hydrogeologic Study must bear the seal of a Professional Geologist. It is my understanding that Hazen and Sawyer is making some revisions to the Site Plan Application. Therefore they or their geotechnical consultant should contact our office to discuss what additional work may be necessary for the final Hydrogeologic Report in the Site Plan Application.