

**Municipal  
Services**



**Engineering  
Company, P.A.**

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April 29, 1999

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Mr. Mark Poindexter  
Solid Waste Section  
Division of Waste Management  
North Carolina Department of  
Environment and Natural Resources  
401 Oberlin Road  
Raleigh, NC 27605



Re: Alexander County Landfill (02-01) Assessment  
Municipal Engineering Project No. G99006.0

Dear Mr. Poindexter:

In response to your letter to Alexander County dated February 2, 1999 Municipal Engineering Services Company, P.A. (MESCO) has enclosed the information requested for your review of the Water Quality Assessment Plan at the Alexander County Landfill.

A revised site map with potentiometric contours and proposed monitoring locations is enclosed. Alexander County currently owns all property shown on the map. However, the landfill property boundary does not extend to the major discharge feature (the Catawba River south of the property).

Based on boring logs and construction records for the existing monitoring plan, the aquifer exists in the transition zone and fractured crystalline rock. The transition zone generally has the highest hydraulic conductivity in the Piedmont/Blue Ridge hydrologic provinces. The landfill is located in an area that likely recharges the aquifer suggesting a downward component to groundwater flow. Monitoring wells will be screened just below the water table across fractures found to be the most productive during installation of the wells.

Proposed monitoring well locations were developed based on existing groundwater sampling and potentiometric data. The monitoring wells were moved 150 feet from the waste boundary in the direction of groundwater flow from each existing monitoring location because organic constituents have been detected at each monitoring well.

Monitoring well MW-9 is proposed in the axis of a drainage feature downgradient of existing well MW-4R. Because the groundwater system is generally controlled by dominant fractures, it is most likely that groundwater flow from the area around MW-4R is concentrated in this draw.

Monitoring well MW-10 is proposed downgradient from existing well MW-5. Groundwater and contaminants most likely migrate down the slope south-southeast of MW-5.

Monitoring wells MW-11, MW-12, and MW-13 are proposed downgradient from MW-3, MW-7, and MW-6 respectively. These wells are designed to intercept contaminants that may migrate downgradient from the existing monitoring wells.

Monitoring well MW-14 is proposed downgradient from the damaged MW-2. Sampling of MW-2 ceased over two years ago, although contaminants were consistently being detected at that time. MW -14 will be placed downgradient of MW-2 to detect constituents that may still be migrating downgradient.

Monitoring well MW-15 is proposed in the draw downgradient from MW-8. Groundwater and contaminants most likely migrate down this draw from the area around MW-8.

Actual placement of the monitoring wells, as well as screen intervals and completion depths will be determined with regard to field conditions during the installation of the monitoring wells.

If you have any questions regarding this proposal please contact either Jim Skinner or me at 919-772-5393.

Sincerely,



Richard R Allison  
Geologist

Enclosure

cc: Sylvia L. Turnmire  
Interim Management Team, Alexander County