

**North Carolina**  
**Department of Health and Human Services, Division of Public Health**  
**2001 Mail Service Center**  
**Raleigh, NC 27699-2001**

November 29, 2005

Kim H. Colson, P.E., Supervisor  
Land Application Unit  
Aquifer Protection Unit  
Division of Water Quality  
1636 Mail Service Center  
Raleigh, North Carolina 27699-1636

Dear Mr. Colson:

The attached document is a report by the Occupational and Environmental Epidemiology Branch (OEEB) titled "Human Health Risk Evaluation of the Land Application of Sewage Sludge/Biosolids." As you know, the OEEB has received a number of health and odor complaints from residents living adjacent to sites where treated sewage sludge (biosolids) has been applied to land. In addition, the OEEB is aware of nitrate contaminated groundwater at sites where there has been land application of biosolids. OEEB has reviewed the scientific literature on land application of biosolids, contacted experts involved in studying the potential health effects of land applied biosolids, and has met with staff in the Division of Water Quality, in the North Carolina Department of Environment and Natural Resources (DENR), about permit requirements for biosolids land application.

The attached report makes some recommendations about land application of biosolids including:

- The land application rules should include a requirement for monitoring wells around the perimeter of dedicated and selected non-dedicated land application sites.
- Until more data is available to scientifically determine appropriate setback distances, the currently proposed allowable setback distances should be doubled.
- A surveillance program of humans living near application sites should be developed to determine if there are adverse health effects in humans and animals as a result of land application of biosolids.
- There should be adoption of "best practices" for control of odors
- Recommend adoption of specific, objective siting evaluation criteria that should be established based on best current scientific information

Please call me at 919-707-5901 if you would like to discuss the report and these recommendations.

Sincerely,

Douglas S. Campbell, MD. MPH, Head  
Occupational & Environmental Epidemiology Branch