

<b>D</b>	<b>LAND APPLICATION OF BIOSOLIDS</b>
<p>This section provides information for property owners and applicators proposing to apply biosolids in agricultural areas of Clarke County.</p>	
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### **Background Information**

In July 1997, the Clarke County Board of Supervisors approved the adoption of a text amendment establishing standards for the application of biosolids. Beginning in 1998, two companies (Bio-Gro and Recyc Systems) applied biosolids in the county. Currently Synagro (formally Bio-Gro) and Wright Trucking spread biosolids on local farms.

In 2004, Virginia law repealed the ability of counties to regulate biosolid application beyond testing and monitoring. The change permits counties to request reimbursement for expenses relating to monitoring and testing, but it eliminated increased setback standards that Clarke County had adopted to protect ground and surface water resources in sensitive karst areas. Clarke County maintains the standards and requests applicators to comply voluntarily (see below).

All applications have been closely monitored by county and state representatives and have been in compliance with all requirements. In accordance with state regulations, counties may be reimbursed for the testing and monitoring expenses.

As of Jan. 1, 2008, the Virginia Department of Environmental Quality (DEQ) assumed regulatory oversight of all land application of treated sewage sludge, commonly referred to as biosolids. Current state regulations require:

- Nutrient Management Plan to be submitted with application
- Posting of property 48 hours prior to application
- No spreading on snow

### **Clarke County Regulations and Inspections Process**

At least 48 hours prior to biosolids land application on a site approved by DEQ, the applicator shall notify the County's Biosolids Monitor in writing of the application. The written notice shall include the following information:

- A field map of the lands to which the biosolids will be applied.
- How long the process is estimated to continue.
- When the application will terminate.

The applicator shall notify the Biosolids Monitor in writing if circumstances cause the start of the land application process more than five days after the date indicated.

The County reserves the right to conduct random sampling of biosolids material, which is collected by the County Biosolids Monitor and analyzed by a State Certified Testing Laboratory at the applicator's expense. Biosolid sample analysis shall include as a minimum:

- Percent solids
- pH
- Dry weight concentration of total Kjeldahl nitrogen
- Ammonium nitrogen
- Nitrate nitrogen
- Total phosphorous
- Total potassium
- Cadmium
- Copper
- Mercury
- Nickel
- Lead
- Zinc.

The Biosolids Monitor may require analysis of other biosolids constituents if necessary to adequately assess the potential public health and environmental impacts of the application.

While State law limits County authority to impose regulations on biosolids application activities, the County does have recommended standards for applicators to follow:

1. Biosolids shall not be applied in areas with a slope exceeding 15% or where bedrock is shallow or the water table is high.

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- Depth to Bedrock:  
Biosolids may not be applied to soil types with a depth to bedrock of less than 30 inches as identified in Table 16 of the [Soil Survey of Clarke County, Virginia \(USDA, 1982\)](#). These include the following soil types: 1B, 1C, 5B, 5C, 7D, 8D, 9D, 12D, 12E, 13D, 13E, 14C, 15B, 15C, 17B, 28B, 28C, 29C, 32B, 41C, 42C, 43C, 58D.
  - Depth to High Water Table:  
Biosolids may not be applied to soil types with a depth to high water table of less than 30 inches as identified in Table 16 of the [Soil Survey of Clarke County, Virginia \(USDA, 1982\)](#). These include the following soil types: 1B, 1C, 24, 25B, 26B, 26C, 27B, 30B, 56.
2. If an applicator believes the Soil Survey is inaccurate, the applicator shall demonstrate to the Biosolids Monitor that a minimum depth of 30 inches to bedrock or ground water exists. Demonstrating adequate depth shall be determined by auger borings. Auger borings shall be collected in the following manner:
    - To determine depth of bedrock, there shall be at least one boring for each soil type in question with a minimum of one boring per 10,000 square feet.
    - To determine depth to high water table there shall be at least one boring for each soil type in question with a minimum of one boring per 10,000 square feet. Borings shall be placed in the lowest areas of the soil type. Borings shall be exactly 30 inches deep. Groundwater may be assumed to be within two feet of the soil surface if any water appears in the bottom of the hole after 30 minutes (one hour if the soil is “heavy textured”, i.e., high in clay content).
  3. Biosolids shall not be applied within the EPA designated Sole Source Aquifer of Prospect Hill Spring. This encompasses the surface water drainage area of Page Brook, and the Spring Protection Overlay District.
  4. In addition to the setback requirements established by the Virginia Department of Health, as listed in items one through six below, the additional setbacks, listed in items seven through seventeen below, shall be complied with:
    - Occupied dwellings: 200 feet (unless waived in writing by the owner and occupant of the dwelling)
    - Property lines: 100 feet (unless waived in writing by the owner of the adjacent property)
    - Public rights of way: 10 feet
    - Rock outcrop: 25 feet
    - Agricultural drainage ditches with slopes < 2%: 10 feet

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- Private wells: 100 feet
- Intermittent streams or drainage swales: 50 feet
- Perennial streams: 100 feet
- Parcels containing public water sources (including wells, springs, or surface water intakes): 1000 feet
- Shenandoah River: 100 year flood plain
- Sinkholes (sinkholes as depicted in the Clarke County GIS): 100 feet
- Springs-perennial:
  - above spring: 500 feet
  - below spring: 200 feet
- Incorporated town limits: 1000 feet
- Berryville Annexation Area: 1000 feet
- Residential zoning districts: 1000 feet
- Parcels containing public or private schools, authorized by the Commonwealth of Virginia, providing instruction at any grade(s) from K through 12, with at least 50 students: 1000 feet
- Other human created, animal created, or natural features that could allow bio-solids to migrate to surface water or ground water to be identified by the applicator and the Zoning Administrator (including but not limited to perc. holes, old foundations, pulled up trees, animal holes on slopes, etc.): 100 feet