

**REPORT OF THE
JOINT LEGISLATIVE AUDIT
AND REVIEW COMMISSION**

Review of Land Application of Biosolids in Virginia

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



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In Brief...

Review of Land Application of Biosolids in Virginia

The 2005 General Assembly directed JLARC staff to review the land application of biosolids in Virginia. Biosolids are residues generated when sewage sludge is treated to reduce the concentrations of nine regulated chemicals and pathogens, and to reduce vector attraction. More than 232,000 dry tons of biosolids were spread on roughly 50,000 of Virginia's agricultural acreage in 2004.

Biosolids have been a source of controversy both nationally, and in Virginia, making some people wary of their use. Federal and State regulatory bodies share the perspective that when biosolids are generated and disposed of in compliance with the established standards, they are safe for human health and the environment. During this review, however, JLARC staff found that biosolids applications occur with little oversight, making it difficult to ensure compliance. For example, in 2004, more than 1,100 separate biosolids applications took place, but VDH inspected only 19. EPA regional staff are performing even fewer on-site inspections. Despite efforts to increase oversight at the local level, few counties have an effective testing and monitoring program.

Opportunities exist for improving the State's biosolids use program. These measures include using the proceeds from the underutilized biosolids fee fund to increase the State's oversight capacity. VDH could also provide greater support to the counties wishing to perform their own oversight.

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Preface

Biosolids are residues generated after sewage sludge has passed through a wastewater treatment facility. The treatment reduces concentrations of nine chemical pollutants, disease-causing organisms, and the material's attractiveness to animals and insects. Biosolids are considered a good source of crop nutrients that are essential for plant growth, and the use of biosolids as a fertilizer has been viewed as beneficial recycling of a material that would otherwise be landfilled or incinerated. However, biosolids have been a source of controversy, both nationally and in Virginia, due to potential health and environmental risks.

Federal and State regulatory bodies hold that when biosolids are generated and applied in compliance with established standards and regulations, the material is safe for human health and the environment. The federal Environmental Protection Agency (EPA) sets minimum standards for the production and disposal of biosolids. In Virginia, the Department of Health (VDH) is primarily responsible for permitting and overseeing biosolids activity through biosolids use regulations, which are more strict than the federal regulations. The General Assembly also has authorized localities in which biosolids use is permitted to monitor applications and test the material.

House Joint Resolution 643 of the 2005 General Assembly called for the Joint Legislative Audit and Review Commission (JLARC) to evaluate the oversight and enforcement of biosolids activity in Virginia. The mandate directed JLARC staff to study VDH's capacity to oversee and enforce the biosolids use regulations, the capacity of local governments to carry out biosolids monitoring and testing as authorized by the General Assembly, and ways to make State and local complaint response and enforcement more consistent and efficient.

During 2004, more than 232,000 dry tons of biosolids were applied to approximately 50,000 agricultural acres in the State. However, this review showed that little on-site oversight is being conducted. For example, VDH performed only 19 routine inspections during 2004, while more than 1,100 land applications were made. EPA has conducted one on-site inspection since 2002 in the region that includes Virginia. And despite efforts to increase oversight at the local level, few counties have an effective testing and monitoring program. A principal finding of the study is that VDH should increase the frequency of the routine inspections it conducts. State law could be amended to authorize the use of the currently underutilized biosolids fee fund to pay for costs associated with increased VDH oversight.

On behalf of the Commission staff, I would like to express our appreciation to the Virginia Department of Health staff and local government staff for their assistance during this study.



Philip A. Leone
Director

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There are numerous checks and balances within the [biosolids] regulatory system that ensure that the producers of the biosolids and the applicers of the biosolids comply with requirements designed to protect human health.

In its reference to “numerous checks and balances,” this communication repeated a theme that was previously stated by VDH biosolids staff in communications with citizens in December 2001 and September 2002.

The production of biosolids material as well as the application of material is regulated under the current system. With regard to biosolids producers, the VDH office director’s correspondence indicated that biosolids that are to be applied “must be tested routinely for trace metals and a number of other parameters.” In addition, “the wastewater treatment facility producing the biosolids must utilize approved processes to reduce pathogens and organically stabilize the material prior to land application.”

With regard to applicers, the correspondence noted that the regulatory system sets standards such that applications do not exceed nutrient requirements, provides set-back distances based on various features of the site and adjacent properties, and provides “site specific operational restrictions” that “can be implemented to prevent permit violations or nuisance conditions from developing or re-occurring.” Finally, the correspondence noted, “inspections by local monitors and our staff can detect irregularities either in the application process or in the farm sites land applied with biosolids.”

The points noted by VDH staff seem to be encouraging as to the public health protection that is provided by the regulatory framework. However, VDH staff comments indicate that site specific operational restrictions “can” be implemented, and inspections by local monitors and VDH staff “can” detect irregularities. Chapters 2, 3, and 4 of this report will examine the extent of oversight that is actually in place to ensure that biosolids are applied under the terms of regulations. The chapters examine the capacity for oversight that exists at the federal level, and at the State and local levels in Virginia, to provide the types of checks and balances noted by VDH.

BIOSOLIDS APPLICATIONS IN VIRGINIA

In Virginia, there has been growth in the amount of agricultural acreage to which biosolids have been applied and in the tonnage of biosolids that has been applied. The spreading of biosolids in Virginia has led to contentious debate between those who support the permitted application of biosolids, on the one

Table 9
County Opinions on Future Local Monitor Training

Source: JLARC staff survey, Summer 2005.

<i>What additional training, or greater focus on certain components of the VDH training, would be beneficial to the monitors in performing their functions?</i>	Number of Respondents
Operational concerns (such as biosolids site access, odor control, road tracking and cleanup)	15
General training on State regulations	13
Complaint investigation and resolution	12
Sampling techniques	12
Nutrient management planning	10
Reimbursement process for the biosolids fee fund	10
VDH has provided enough training	1
Other	4

Note: Respondents could choose more than one response. There were 35 responses to this question.

Recommendation (6). The Virginia Department of Health should offer additional training opportunities that address, in an in-depth manner, matters such as: the content of the biosolids regulations, departmental expectations of applicators based on the regulations, effective on-site techniques for monitoring biosolids applications, and department expectations as well as effective techniques for responding to complaint situations. While the training should be offered under the auspices of the department, the department should utilize outside expertise to conduct some of the training as seems appropriate.

Recommendation (7). Materials from training sessions should be used in conjunction with other information to develop a user-friendly guidance manual for local monitors. The manual should address, in lay terms, the questions that local monitors may frequently have in fulfilling a monitoring and testing role. The manual should indicate VDH expectations and best practice ideas for handling different types of challenging situations that have been experienced previously or can reasonably be anticipated.

Improvements in VDH’s Sharing of Information With Localities

It appears that some improvements need to be made in the area of information sharing between VDH and local monitors, and across localities. JLARC staff found during this review that many local governments believe that VDH does not share

