

Biosolids Program Frequently Asked Questions



1) What are Biosolids?

They are nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. When treated and processed, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth.

2) What is the difference between biosolids and sludge?

Biosolids are treated sewage sludge. Biosolids are carefully treated and monitored and must be used in accordance with regulatory requirements.

3) Why do we have biosolids?

We have biosolids as a result of the wastewater treatment process.

4) How are biosolids generated and processed?

Biosolids are created through the treatment of domestic wastewater generated from the Water Reclamation Plant. Once the wastewater reaches the plant, the sewage goes through physical, chemical and biological processes which clean the wastewater and remove the solids. The solids are then sent through a separate treatment process that sanitizes wastewater solids to control pathogens (disease-causing organisms, such as certain bacteria, viruses and parasites) and other organisms capable of transporting disease.

5) How are biosolids used?

After treatment and processing, biosolids can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth. The controlled land application of biosolids completes a natural cycle in the environment. By treating sewage sludge, it becomes biosolids which can be used as valuable fertilizer, instead of taking up space in a landfill or other disposal facility.

6) Where are biosolids used?

Farmers and gardeners have been recycling biosolids for ages. Biosolids recycling is the process of beneficially using the treated residuals from wastewater treatment to promote the growth of agricultural crops and fertilize gardens and parks. Land application of biosolids takes place in all 50 states.

7) Why are biosolids used on farms?

The application of biosolids reduces the need for chemical fertilizers. As more wastewater plants become capable of producing high quality biosolids, there is an even greater opportunity to make use of this valuable resource.

8) What percentage of biosolids are recycled and how many farms use biosolids?

About 50% of all biosolids in the United States are being recycled to land. These biosolids are used on less than one percent of the nation's agricultural land.

9) Are biosolids safe?

The National Academy of Sciences has reviewed current practices, public health concerns and regulator standards, and has concluded that "the use of these materials in the production of crops for human consumption when practiced in accordance with existing federal guidelines and regulations, presents negligible risk to the consumer, to crop production and to the environment." As a standard practice, the City of Rochester does not apply biosolids on cropland where crops are used for human consumption.

10) Do biosolids smell?

Biosolids have the potential to smell. However, odors from manure spreading operations are much stronger. Odors that become present around the biosolids application sites are typically from applications of other sources upwind of the site. Odors from biosolids produced at the Water Reclamation Plant are minimal but may smell earthy if anything.

11) Are there regulations for the land application of biosolids?

The federal biosolids rule is contained in 40 CFR Part 503. Biosolids that are to be land applied must meet these strict regulations and quality standards. The Part 503 rule governing the use and disposal of biosolids contain numerical limits, for metals in biosolids, pathogen reduction standards, site restriction, crop harvesting restrictions and monitoring, record keeping and reporting requirements for land applied biosolids as well as similar requirements for biosolids that are surface disposed or incinerated.

12) Where can I find out more about the regulations?

The biosolids rule is described in the EPA publication, [A Plain English Guide to the EPA Part 503 Biosolids Rule](#) . This guide states and interprets the Part 503 rule for the general reader. This guide is also available in hard copy. In addition to the Plain English Guide, EPA has prepared [A Guide to the Biosolids Risk Assessments for the EPA Part 503 Rule](#) which shows the many steps followed to develop the scientifically defensible, safe set of rules.

13) How are biosolids used for agriculture?

Biosolids are used to fertilize fields for raising crops. Agricultural use of biosolids, that meet strict quality criteria and application rates, have been shown to produce significant improvements in crop growth and yield. Nutrients found in biosolids, such as nitrogen, phosphorus, potassium, and trace elements such as calcium, copper, iron, magnesium, manganese, sulfur and zinc, are necessary for crop production and growth. The use of biosolids reduces the farmer's production costs and replenishes the organic matter that has been depleted over time. The organic matter improves soil structure by increasing the soil's ability to absorb and store moisture. The organic nitrogen and phosphorous found in biosolids are used very efficiently by crops because these plant nutrients are released slowly throughout the growing season. This enables the crop to absorb these nutrients as the crop grows. This efficiency lessens the likelihood of groundwater pollution of nitrogen and phosphorous.

14) Are there rules about where biosolids can be applied?

To determine whether biosolids can be applied to a particular farm site, an evaluation of the site's suitability is performed by the Water Reclamation Plant and approved by the Minnesota Pollution Control Agency. The evaluation examines water supplies, soil characteristics, slopes, vegetation, crop needs and the distances to surface and groundwater. There are different rules for different classes of biosolids. Class B biosolids, as produced at the Water Reclamation Plant, have buffer requirements, public access, and crop harvesting restrictions. Nutrient management planning ensures that the appropriate quantity and quality of biosolids are land applied to the farmland. The biosolids application is specifically calculated to match the nutrient uptake requirements of the particular crop. Nutrient management technicians work with the farm community to assure proper land application and nutrient control.

These FAQ's source was provided by the EPA and modified to reflect biosolids application at the Water Reclamation Plant in Rochester, MN. Source for most of this information was provided by the EPA and can be found on their website at:

<http://water.epa.gov/polwaste/wastewater/treatment/biosolids/index.cfm>.