Biosolids 101

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Biosolids: the nutrient-rich organic materials resulting from the treatment of domestic **sewage** at a wastewater treatment facility. Through biosolids management, solid residue from wastewater treatment is processed to reduce or eliminate pathogens and minimize odors, forming a safe, beneficial agricultural product. Farmers and gardeners have been recycling biosolids for ages. Biosolids can be applied as fertilizer to improve and maintain productive soils and stimulate plant growth. They also are used to fertilize gardens and parks and reclaim mining sites. Biosolids are carefully monitored and must be used in accordance with regulatory requirements.

Why do we need a sewer system?

Each time you flush the toilet or you wash something down the sink's drain, you create **sewage** (also known in polite society as **wastewater**). One question that many people might ask is, "Why not simply dump this wastewater onto the ground outside the house, or into a nearby stream?" There are three main things about wastewater that make it something you don't want to release into the environment:

1. **It stinks.** If you release wastewater directly into the environment, things get very smelly very fast.
2. **It contains harmful bacteria.** Human waste naturally contains **coliform bacteria** (for example, E. coli) and other bacteria that can cause disease. Once water becomes infected with these bacteria, it becomes a health hazard.
3. **It contains suspended solids and chemicals that affect the environment.** For example:
   - Wastewater contains nitrogen and phosphates that, being fertilizers, encourage the growth of algae. Excessive algae growth can block sunlight and foul the water.
   - Wastewater contains organic material that bacteria in the environment will start decomposing. When they do, these bacteria consume oxygen in the water. The resulting lack of oxygen kills fish.
   - The suspended solids in wastewater make the water look murky and can affect the ability of many fish to breathe and see.

   The increased algae, reduced oxygen and murkiness destroy the ability of a stream or lake to support wildlife, and all of the fish, frogs and other life forms quickly die.

No one wants to live in a place that stinks, is full of deadly bacteria and cannot support aquatic life. That's why communities build wastewater treatment plants and enforce laws against the release of raw sewage into the environment.

To be continued next week

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