

Biosolids, Sludge and Reuse Permits

Tressa Nicholas, MSCE

IDEQ Biosolids Coordinator

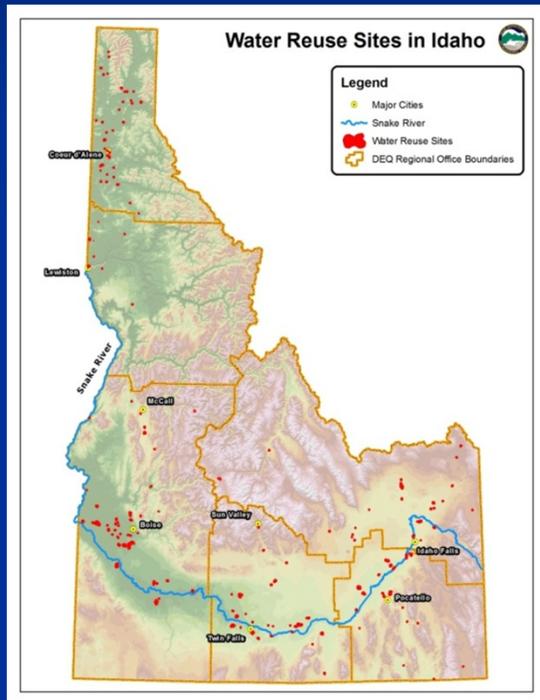
2013 Water Reuse Conference

May 16

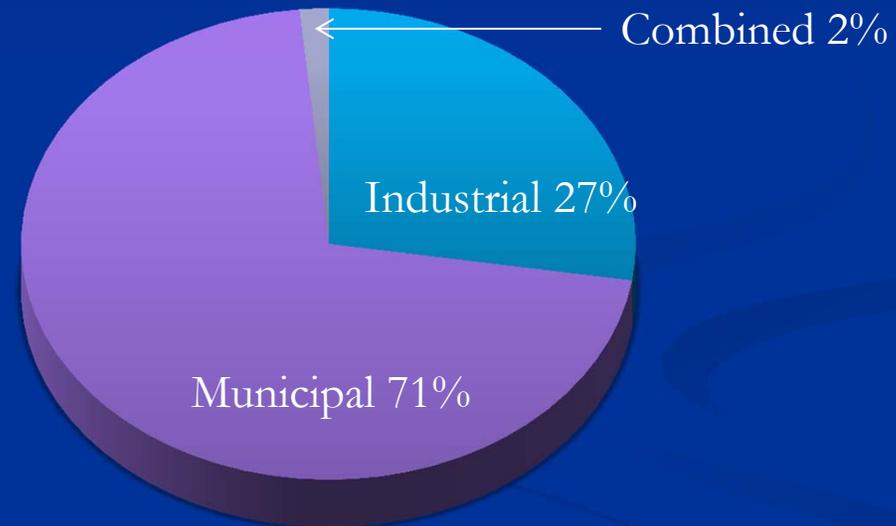


Idaho Reuse Permits

■ Water Reuse Sites



Wastewater Reuse Permits Statewide



■ Wastewater treatment generates

- Recycled water
- Sludge

Overview

- **Reuse Permits**
 - **Wastewater treatment**
 - **Municipal Sludge**
 - **Biosolids**
 - **Rules that govern sludge**
 - **Biosolids Management Plans**
 - **Industrial Sludge**
 - **Sludge Management Plans**
 - **Other wastes**



Reuse Sites

Municipal Wastewater

- Sludge Management and/or
- Biosolids Management Plan

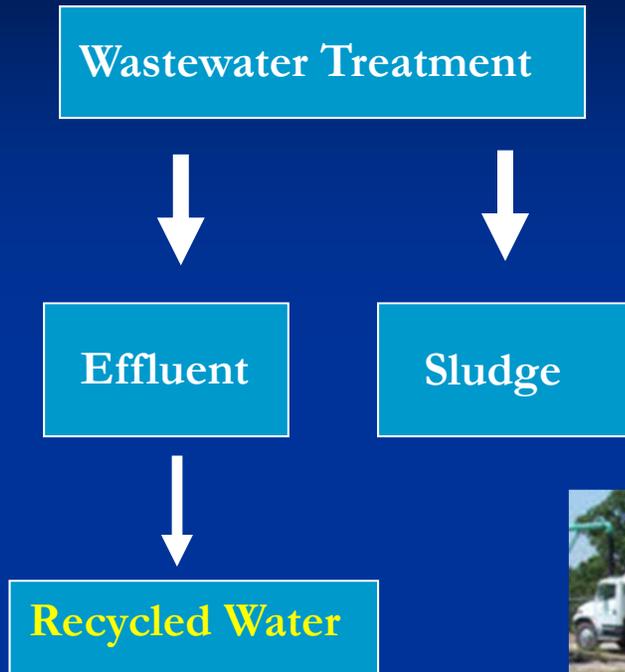


Dive in a wastewater treatment plant

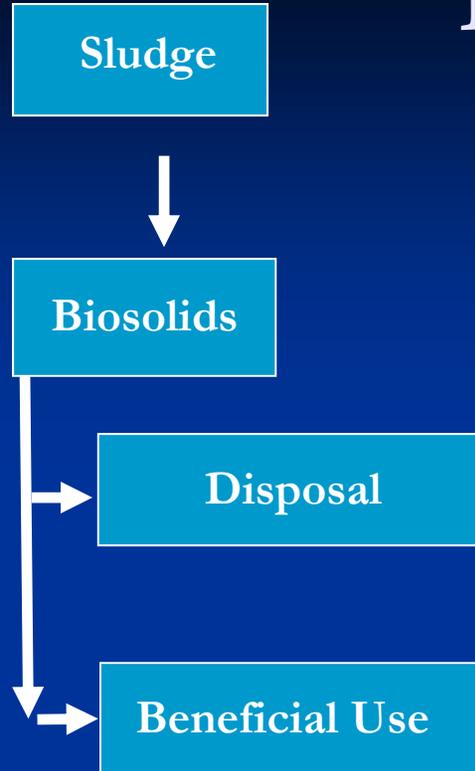
Sludge Flowchart

Wastewater treatment creates:
a liquid stream (effluent) and sludge

Sludge is the solid, semisolid or liquid untreated residue generated during wastewater treatment



Biosolids Flowchart



When treated and processed, sewage sludge becomes biosolids

Landfilling

Biosolids can be safely used to sustainably improve and maintain productive soils and provide nutrients for plants



Composition of Biosolids

- Water
- Nitrogen
- Phosphorus
- Other nutrients and organic matter
- Trace amounts of metals and organic compounds

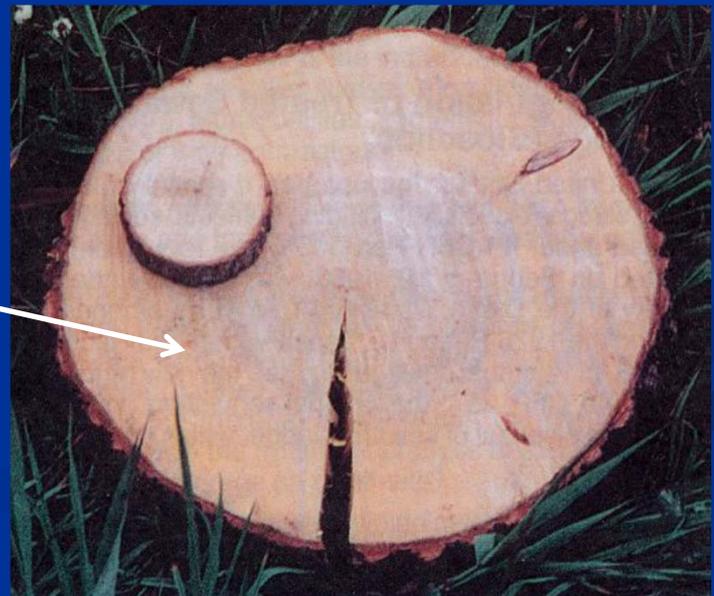


Biosolids Benefits

- EPA and state of Idaho considers biosolids a beneficial resource.
- Nutrients and organic matter in biosolids can be recycled as a fertilizer and used for soil augmentation.

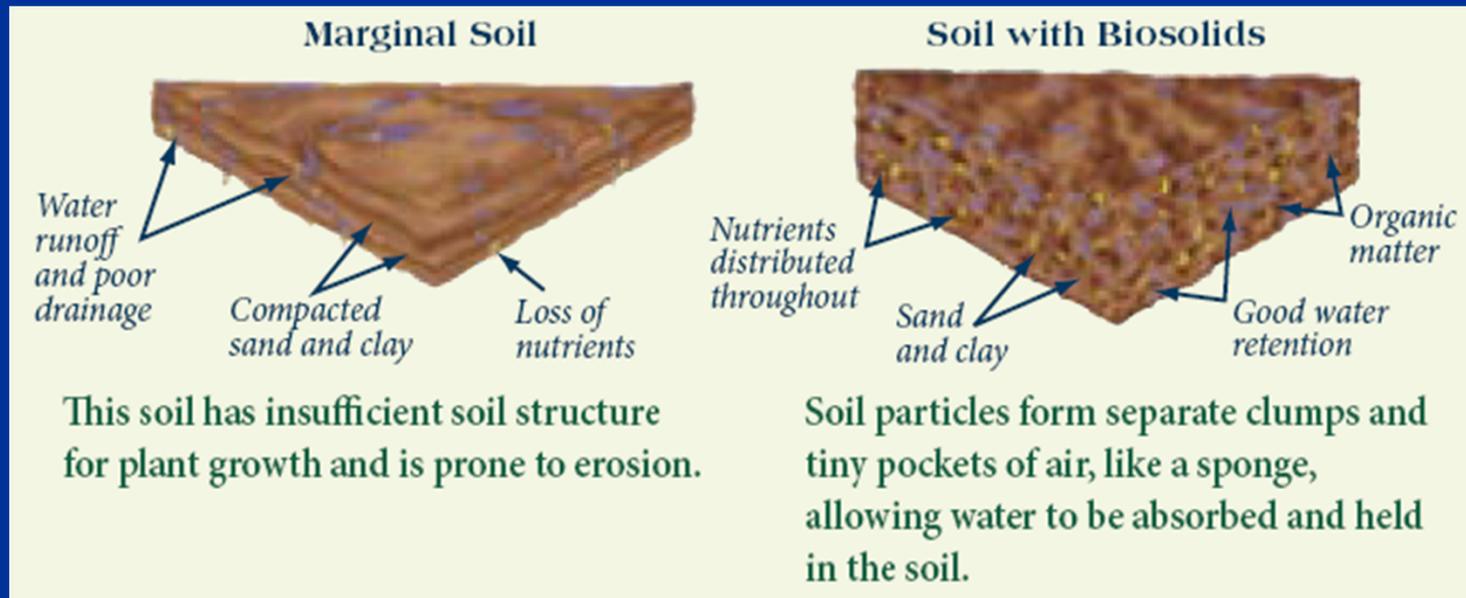
Cross-section of popular trees showing how sludge application increases tree growth.

Both cross sections are 8 years old.



(Photo courtesy of Mike VanHam, British Columbia, Canada)

Biosolids Benefits



<http://www.kingcounty.gov/environment/wastewater/Biosolids/DocumentsLinks.aspx>

Constituents of Concern

- Nutrients
- Pathogens
- Odors and bio-aerosols
- Pollutants
 - Trace elements
 - Organic Toxins



Biosolids are Regulated

- Biosolids are subject to federal, state, and local regulations
- Biosolids must be treated to meet standards for:
 - Pathogens
 - Vectors
 - Pollutants



Land application at the Whitehouse

Biosolids Regulations

- Federal Regulations (40 CFR Part 503)
 - Anyone who the law applies to, has to follow it whether or not they have a permit



<http://lancaster.unl.edu/enviro/biosolids/overview.shtml>



Biosolids Regulations

- State (IDAPA 58.01.16 “Wastewater Rules”)
 - Require DEQ approval of a biosolids/sludge management plan

- Separate enforcement authority in Idaho
 - EPA is the permitting and enforcement authority for 40 CFR Part 503
 - Approval of the biosolids management plan by DEQ only relates to compliance with state law and Wastewater Rules
 - IDAPA 58.01.17, “Recycled Water Rules” per the Reuse Permit and permit compliance activities
 - IDAPA 58.01.06, “Solid Waste Management Rules”

Biosolids and Responsible Party

- *This applies to anyone who:*
 - **Generates** treated sewage sludge (biosolids)
 - **Derives** a material from treated sewage sludge (biosolids)
 - **Applies** biosolids to the land
 - **Owns** or operates a surface disposal site

Beneficial Use: Biosolids Management Plan

- **IDAPA 58.01.16 “Wastewater Rules”**
require approved Plans for sludge (biosolids)
used for soil augmentation
- Plans should accurately reflect activities
- Requires DEQ approval and includes:
 - Biosolids characterization and stabilization
 - Site selection criteria, including soil types, geology, ground water characteristics, land use, topography, and climate
 - Management for application process, nutrient loading and public and environmental safety (buffer zones)



Search the site



Find it Fast

Pick a Topic

About DEQ

Regional Offices & Issues

News & Public Comments & Events

Air Quality

Water Quality

Drinking Water »

Ground Water »

Source Water »

Surface Water »

Wastewater »

Grants & Loans »

Waste Mgmt & Remediation

INL Oversight

Permitting

Home » Water Quality » Wastewater » Sludge & Biosolids

Sludge & Biosolids

Sludge is the solid, semisolid or liquid untreated residue created during the wastewater treatment process. When treated and processed, sludge becomes biosolids, which are the stabilized residuals that settle from the water during the treatment process. Biosolids may be disposed of or beneficially used.

Biosolids Beneficial Reuse/Disposal Options

Beneficial Reuse

Because biosolids contain nutrients and organic matter, they are considered a beneficial resource by EPA and DEQ; therefore, the reuse of biosolids through land application is encouraged. When land-applied, biosolids can be used as fertilizer to help improve and maintain productive soils and stimulate plant growth.

Before biosolids may be land applied, they must be treated to meet standards for pathogens, vectors, and metals. Biosolids treatment is designed to kill pathogens, stabilize organic matter, reduce odors, and minimize vector attraction.

Disposal

Biosolids may be disposed of by various means such as landfilling, incineration, or surface disposal.

» Biosolids Beneficial Use and Disposal Flowchart

Staff Contact

Wastewater Analyst

Tressa Nicholas
DEQ State Office
Water Quality Division
1410 N. Hilton
Boise, ID 83706
(208) 373-0116
tressa.nicholas@deq.idaho.gov

DEQ Resource

Guidance for Land Application of Municipal Biosolids (December 2011)

More Information on EPA's Website

Use and Disposal of Biosolids (Sewage Sludge)

A Plain English Guide to the EPA Part 503 Biosolids Rule

Technology Fact Sheet: Land Application of Biosolids

Technology Fact Sheet: Alkaline Stabilization of Biosolids

Reuse Permit

Compliance
Activity →

Plan of Operation →

Waste Solids
Management Plan →

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-0XY-XY Date	<p>Plan of Operation (PO): The permittee shall submit for review and approval a Plan of Operation (PO) that reflects current operations and incorporates the requirements of this permit. The PO shall comply with the applicable requirements stated in IDAPA 58.01.17.300.05 and shall address applicable items in the Plan of Operation Checklist in the DEQ Guidance.</p> <p>The PO shall include the following site management plans or the permittee may submit the site management plans individually:</p> <ol style="list-style-type: none"> 1. Buffer zone plan; 2. Cropping plan; 3. Emergency operating plan; 4. Grazing management plan; 5. Irrigation management and scheduling plan; 6. Nuisance and Odor management plan; 7. Runoff management plan; 8. Well location acceptability analysis; 9. Waste solids management plan; 10. Site or permit specific plan <p>The PO shall be updated as needed to reflect current operations. The permittee shall notify DEQ of material changes to the PO and copies must be kept on site and made available to DEQ upon request.</p>

Biosolids generated from sewage sludge are regulated by EPA under 40 CFR Part 503 and require a DEQ approved sludge disposal plan as outlined in IDAPA 58.01.16.650. Contact DEQ prior to biosolids application at any permitted reuse facility.

Biosolids Beneficial Use



- EPA, WERF, NACWA have demonstrated that the beneficial land application of biosolids poses a negligible risk to human health (National Academy of Sciences, 2002 Study)

Rules Related to Biosolids Use

■ Biosolids Uses



■ Beneficial

- Land Application

■ Ocean Disposal

- Banned in 1988

■ Disposal

- Land Fill
- Incineration



water.epa.gov



Biosolids or Sludge Use



- As a generator you have to know what is in your waste.
- It is the generators responsibility to manage their waste appropriately

<http://www.owasa.org/whatwedo/BiosolidsQandA.aspx>

Sludge Disposal - Landfilling

- Regulated by Part 258 of Land fill Rule
- Operators generally should be asking for documentation
 - No Hazardous Waste
 - Pass the paint-filter liquids test



Reuse Site

Industrial Wastewater

- Reuse Permit
- Waste Solids include sludge
 - Plans for sludge: Disposal or Beneficial Use
 - Beneficial Use: Sludge Management Plan
 - Not regulated by 40 CFR 503
 - Regulated by IDAPA 58.01.16 “Wastewater Rules”



<http://www.caes.uga.edu>

Additional Resources

- Visit Sludge Biosolids Webpage
 - <http://www.deq.idaho.gov/water-quality/wastewater/sludge-biosolids.aspx>
- Questions?

Tressa Nicholas

Idaho Department of Environmental Quality

Wastewater Program

State Biosolids Coordinator

Email: Tressa.Nicholas@deq.idaho.gov

208-373-0116

