



Sludge Recycling Facility North Shore Sanitary District Zion, Ill., U.S.A.

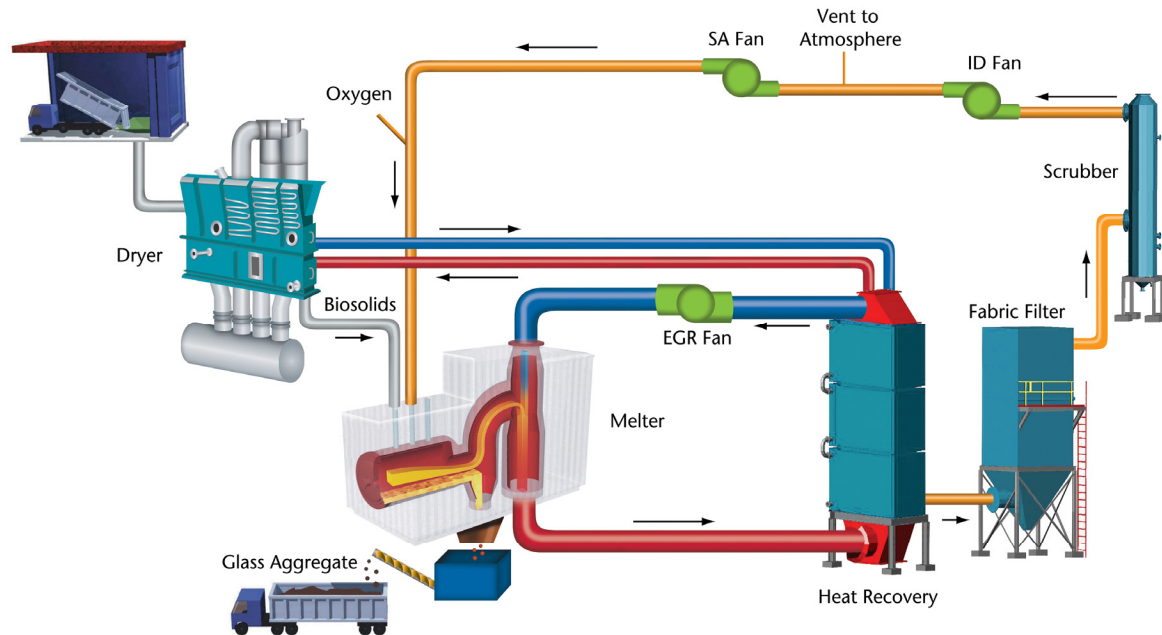
North Shore Sanitary District (NSSD) selected Minergy's GLASSPACK® system as the technology of choice for sustainable biosolids management at its new Sludge Recycling Facility located in Zion, Ill., U.S.A. NSSD's Sludge Recycling Facility incorporates Minergy's GLASSPACK® vitrification technology to harness and use the energy contained in biosolids to create an inert, beneficially reusable glass aggregate product.



The Sludge Recycling Facility integrates both the GLASSPACK® closed-loop oxygen enhanced combustion process and thermal energy recovery into processing biosolids from the district's three wastewater treatment plants. Heat energy, required by a fluidized bed dryer to produce dry granulate, is recovered from the GLASSPACK® flue gas using a thermal oil heat transfer system.

From "Water Matters," the Newsletter of the North Shore Sanitary District (Summer 2005)

"...The many economic advantages are bolstered by the environmental benefits of the facility. The cutting-edge biosolids technology will take the 52,600 tons of solids the District disposes of each year and, through a drying and melting process, turns it into a marketable product. The new facility removes the need to landfill solids produced through the wastewater treatment process, thereby removing the risk of leaking landfill polluting our soil and water supply. There will also be no new landfills to occupy precious open land. Preserving open land has been at the forefront of North Shore community issues and the District shares the community's desire to maintain and protect this valuable resource."



NSSD GLASSPACK® Closed-Loop System Configuration

PLANT SPECIFICATIONS
Commercial Operation: 2006

Feed

Material: Municipal biosolids from the district's three plants
Capacity: 200 wet tons/day (as received)
Biosolids feed: 17 to 20% solids
Storage: 800 wet tons and 150 dry tons

Drying Process

Technology: Fluid bed
Evaporative capacity: 6.4 tons water/hour
Granulate production: 35 dry tons/day
Granulate solids content: >90%

Vitrification Technology

GLASSPACK® GP-35
Configuration: Closed-loop oxygen enhanced system
Operating temperature: 2200–2600° F
Heat input: 26 mm Btu/hr

Oxygen Supply

On-site vacuum pressure swing absorption (VPSA) production
Purity: >90%
Capacity: 66.6 tons/day

Thermal Energy Recovery

Thermal oil heat transfer
Output: 16.5 mm Btu/hr
Temperature: 482° F

GLASSPACK® Emission Control

Bag filter
Wet scrubber/condenser
Granular activated carbon (GAC)

Output

7.5 tons/day glass aggregate