CASE STUDY:

Mount Pleasant, South Carolina Center Street WWTP

Application:	Flow Equalization and Anoxic Mixing
Design Flow (ADF):	3.7 MGD
Mixing Efficiency:	≈ 0.13 HP/1000 FT^3
Compressor:	One (1) 15 HP Rotary Screw
Mixing Nozzles:	140
Design Engineer:	Black & Veatch

Nozzle headers are custom designed to avoid tank obstructions.

Mount Pleasant WWTP Gains Enhanced Treatment Capacity and Green Project Reserve (GPR) funding with BioMix™ system

The Center Street WWTP in Mount Pleasant, SC, was comprehensively upgraded to provide improved treatment and increased capacity in 2014. BioMix Compressed Gas Mixing technology was an integral part of the plant upgrade, and it replaced inefficient positive displacement blowers and coarse bubble aerated mixing in the flow equalization basin. BioMix was also installed to provide anoxic mixing in two biological nutrient removal selector basins which were converted from primary clarifiers.

The project was funded through South Carolina's State Revolving Fund (SRF) program, and the work related to the design and installation of BioMix in the flow equalization and anoxic selector basins qualified for GPR funding.

Black & Veatch, the engineering firm on the project, submitted a GPR Business Case to South Carolina's Department of Health and Environmental Control that provided a cost/benefit analysis indicating the expected "green" benefits associated with the upgrade including BioMix. The case indicated a **70% decrease in the power demand versus alternative mixing technology** and highlighted the operational benefits of a mixing technology that requires no in-tank maintenance.

ENERGY EFFICIENCY

70% decrease in power demand versus traditional mixing technology

STRAIGHTFORWARD OPERATION

No in-tank moving or wearing parts

Non-clog, maintenance free performance

PROCESS OPTIMIZATION

Operator-adjustable firing parameters

Promotion of optimal conditions for BNR processes

UNPARALLELED FLEXIBILITY

No low water level limitations – able to mix at any depth

Compatible with any tank geometry or configuration

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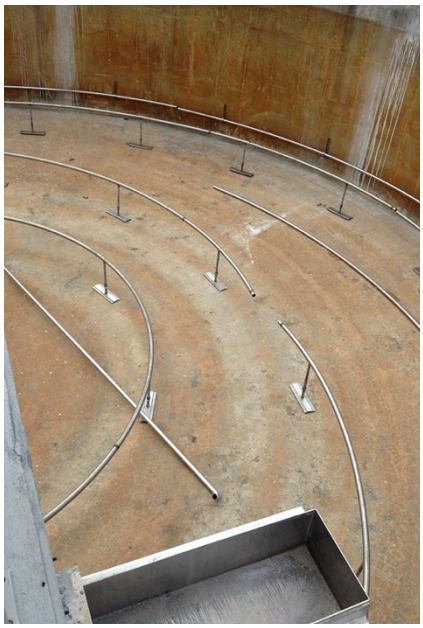

Concentric rings of nozzle headers: Nozzles follow the slope of the tank floor.

Short duration, sequential bursts of compressed air uniformly mix the tank contents.

The GPR Business Case indicated a **70% decrease in the power demand** versus alternative mixing technology.

Efficiency means little if the system fails to perform its intended function. The projected energy efficiency was proven during field performance testing, and BioMix demonstrated a competitive advantage over conventional diffused air or mechanical mixers by providing uniform mixing throughout the basin. The BioMix system provided less than 1% coefficient of variation of solids concentration throughout the tanks.

Mount Pleasant is just one example. **Nearly all wastewater treatment facilities can benefit from lower cost of operation and maintenance through the use of a BioMix Compressed Gas Mixing System.** Energy savings across the board are significant.

In summary, BioMix Compressed Gas Mixing technology offers the following advantages:

- Bottom-up mixing in any tank size or geometry
- Uniformly distributed mixing energy
- Improved mixing versus alternatives
- Lowest energy consumption mixing technology
- Minimized and localized maintenance requirements

Contact sales@enviro-mix.com today to discuss the ways EnviroMix can optimize your mixing solutions.

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