



Town of Enfield
Department of Public Works
Water Pollution Control

To Whom It May Concern:

February 6, 2007

The Town of Enfield, Wastewater Treatment Facility provides sewage treatment for residents and businesses in Enfield, CT. Wastewater Treatment facilities in the State of Connecticut several years ago were impacted by poor water quality in Long Island Sound where the discharge for the majority of facilities ends up. While the facilities were meeting the 85% standards for BOD and Suspended Solids removal, the remaining solids leaving the facilities coupled with the nitrogen caused algae blooms and when the DO was used up large areas of the sound ended up with a low DO. Obviously this was considered a major issue for the health of the Sound. The Department of Environmental Protection responded by requiring all facilities to upgrade by installing nitrification denitrification systems. While the upgrade was mandatory, a nitrogen trading program was created which allowed the Town upgrading to sell credits.

The Town responded by conducting a study to determine the best process to install. While the study recommended the Modified Ludzack Ettinger Process, that the Town would be able to sell credits for a period, it would not be able to meet the 2014 limits for Total Nitrogen Discharge unless it could fine tune the system being recommended. Realizing the best they could do was to adjust the system once per day, they decided to see if an automated system existed which could adjust the process several times per day. What they found was the BioChem BIOS System. This system promised a reduction in energy consumption and increased removal of nitrogen. After a heads up competition, the BioChem BIOS managing one treatment train and the operation staff managing the remaining units, the BioChem BIOS bettered the operations staff by succeeding in removing 2.7 mg/L more TIN with a reduction in energy consumption of 16%, or an estimated 246,000 kWh per year.

Today, after several modifications to the system, a post anoxic and post aerobic zone and a control system to manage the MLSS, the plant's biological system has been completely automated. The system has met the initial promise and more. Over the last two months, November and December, winter months, the system has reduced the Total Nitrogen to 245 and 278 lbs respectively. The TN limit (lb/day) set by the DEP for 2014 for the corresponding flow of 7 mgd is 278 lbs. It has completed this without any intervention by the operations staff and with relatively little maintenance.

If any facility needs an automated system to maximize the biological process, a system that is reliable, that provides energy savings and improved nitrogen removal, I would recommend that they consider the BioChem BIOS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Marvin Serra'.

Marvin Serra
Superintendent