

Tighe & Bond Phosphorus Removal Experience

We have already assisted clients in Massachusetts and Connecticut and can capitalize on this experience to tailor a phosphorus removal solution to fit your needs. We can provide technical assistance for biological and chemical removal of phosphorus. Our services include NPDES permit renewal technical support, preliminary evaluations and pilot tests, detailed design and permitting, and support of the construction, start-up and operational phases. For more information contact **Fred Mueller** at (860) 704-4768 or FAMueller@tighebond.com.

Sturbridge, MA

We evaluated a number of technologies for this 0.75-mgd plant upgrade and capacity expansion and recommended implementation of the innovative BioMag treatment process. Pilot testing indicated that BioMag will meet the 0.2 mg/L limit and result in 20-30% savings over comparable treatment technologies. The future 0.12 mg/L phosphorus permit limit will be met with CoMag. The project is currently under construction.



Charlton, MA

Tighe & Bond completed an upgrade that allows the 0.45-mgd facility to comply with its NPDES permit for phosphorus, which was reduced to 0.11 mg/L. Construction of the \$3.52 million improvement project has recently been completed and includes a retrofit of the existing process building to replace the existing cloth media filters with the CoMag low level phosphorus system.



North Attleborough, MA

We are designing upgrades to the 4.61-mgd facility to meet new NPDES permit requirements for nitrogen (8 mg/L) and phosphorus (0.1 mg/L). Upgrades will include biological phosphorus removal combined with multi-point chemical addition and tertiary cloth filters for phosphorus removal. We completed pilot testing of three 2-stage technologies including: 1) cloth filters/tertiary membranes, 2) 2-stage deep bed sand filters, 3) ballasted flocculation/dual media filters. We performed supplemental testing of cloth filters and ballasted flocculation with multiple coagulants to confirm cloth filters could meet the required limits.



Redding, CT

Tighe & Bond completed planning, design, construction support, and funding support for the expansion of the facility, replacing existing sequencing batch reactors with membrane bioreactors (MBR), and tripling capacity to 245,000 gpd while minimizing the footprint of the expansion. Phosphorus concentrations of <1 mg/L are achieved via single-point chemical addition with membrane filtration.



Belchertown, MA

Tighe & Bond designed a cost effective upgrade involving a combination of innovative processes to achieve compliance with one of the first NPDES permits with stringent phosphorus limits in New England. Single-point chemical addition, tertiary up flow buoyant clarifiers and filtration allow the 1.0-mgd facility to achieve 0.25 mg/L total phosphorus. The upgraded facility has been operating for over 10 years.

