The patented *Phos*FLOW phosphorus recovery process obtains high rates of phosphorus recovery from digestor effluent streams, by utilizing existing tankage and piping systems to precipitate soluble phosphorus as micron-sized struvite crystals that can be captured by existing dewatering systems.

Relying on proven *Hydro*FLOW technology for struvite scale control, the process is easily integrated into existing WWTP operations, without the need for extensive capital equipment, financial resources, or installation time.

Benefits

- High capture rates of phosphorus, typically exceeding 80%.
- Prevention of struvite or other scale formation on internal piping and equipment surfaces
- Polymer reduction in sludge dewatering operations of 20%-25%.
- Elimination of iron or aluminum-based coagulants to precipitate phosphate in the primary clarifier or digestor effluent, reducing sludge volume and disposal costs.
- Increased cake dryness of 1%-3%, resulting in reduced sludge disposal costs.
- High ROI.

Process Description

Digestor effluent is dosed with a magnesium salt and pH adjusted to obtain the optimum conditions for struvite formation. Dosing is typically performed in sludge retention and/or piping systems, with sufficient hydraulic retention time (HRT) to precipitate the struvite as micron-sized crystals. Crystal growth is encouraged with seed crystals from the process. To prevent scale formation, the effluent is treated with the HydroFLOW electronic water conditioner, which induces the struvite to precipitate in suspension as opposed to as hard scale on piping and equipment surfaces. Acting as a filter aid, the sludge biosolids and struvite crystals are captured with existing dewatering equipment, increasing the value of the dewatered biosolids.