

MagPrex™

Sludge Optimization and
P-Recovery



THE PROBLEM

Struvite Mineral Buildup Leads to **Reduced** Plant Capacity

In wastewater reclamation plants with biological phosphorus removal (BPR), phosphorus accumulates in sludge and releases in a dissolved reactive form (orthophosphate) in an anaerobic condition.

Elevated orthophosphate levels in sludge causes operational challenges, including:

- Deterioration of sludge dewaterability
- Elevated phosphorus load to the wastewater treatment plant due to phosphorus recirculation
- Uncontrolled formation of struvite (or MAP: magnesium ammonium phosphate) inside pipes and other equipment
- Reduced digester capacity by struvite build-up inside the anaerobic digester

THE SOLUTION

MagPrex **Optimizes** the Sludge Treatment Process Like No Other System

MagPrex turns struvite into an opportunity for resource recovery. Struvite, when formed under a controlled environment, can be harvested and utilized as a beneficial fertilizer. MagPrex forms struvite by stripping out CO₂, elevates the pH and adds MgCl₂ to augment Mg₂⁺. MagPrex installs between the anaerobic digester and the dewatering equipment. The process converts the orthophosphate into struvite crystals, which is harvested from the bottom of the reactor. MagPrex mitigates the unexpected consequence of dewatering Bio-P sludge.

THE BENEFITS

MagPrex Removes Struvite while Significantly **Improving Treatment Efficiency**



Reduce Polymer Consumption up to **30%**



Reduce Disposal Costs up to **20%**



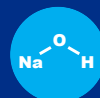
Reduce Phosphate Recycle Load up to **90%**



Reduce Maintenance Costs up to **50%**



Increase Revenue from Fertilizer up to **20%**

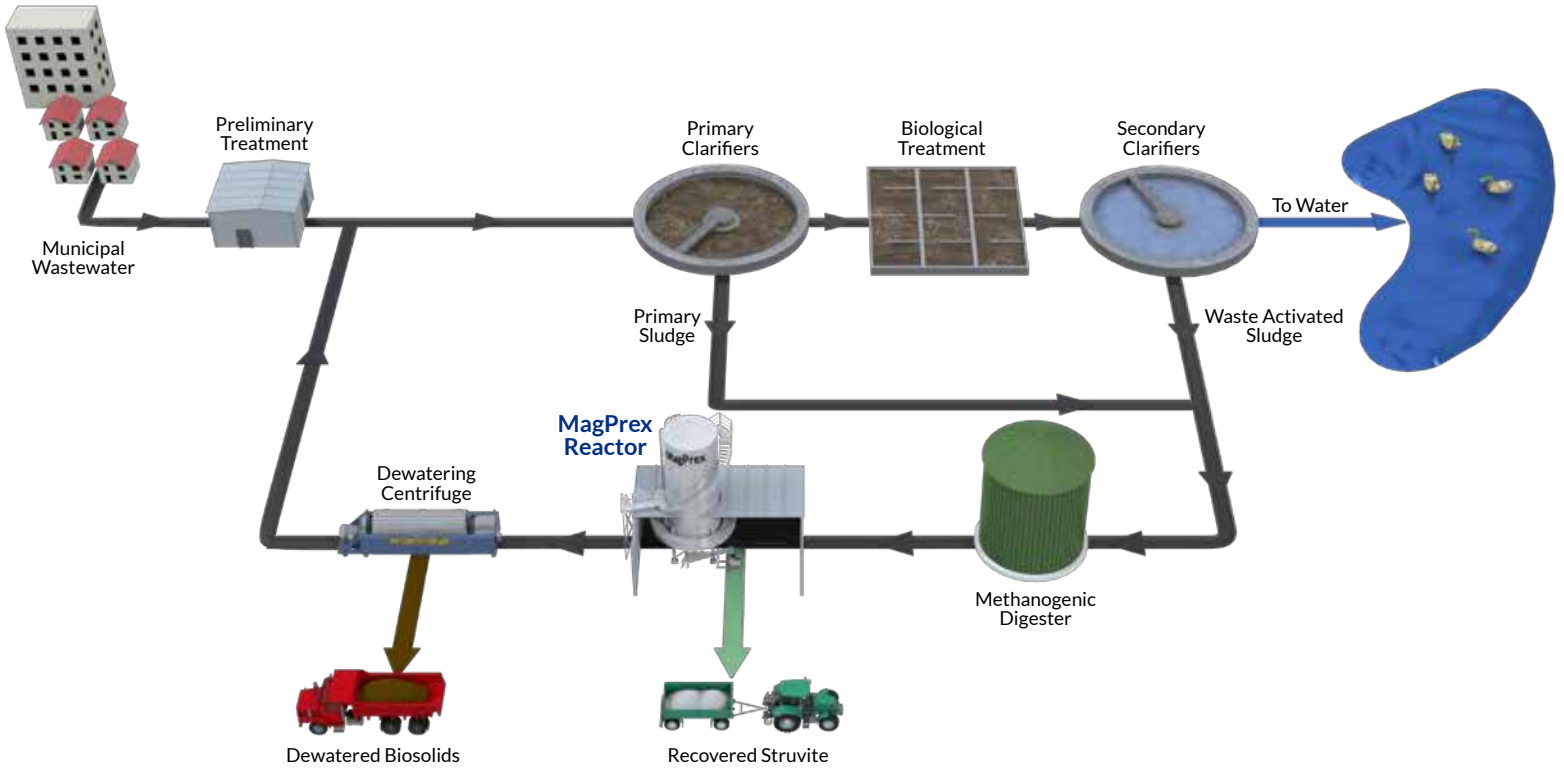


No Sodium Hydroxide Required



PROCESS: MagPrex™

Changing our nutrient recovery technology's name to MagPrex (formerly AirPrex) signifies our commitment to continued innovation for all our North American customers.



	Centrate Recovery	WAS Fermentation + Centrate Recovery	MagPrex™
Reduce Phosphorus Recycle	✓	✓	✓
Recovery of Marketable Fertilizer	✓	✓	✓
Reduce Struvite Maintenance	✓	✓	✓
Improve Sludge Cake Dryness	✗	?	✓
Reduce Polymer Demand	✗	?	✓
No Recovery Option (Sequestration)	✗	✗	✓
Cost Competitive for Small Utilities	✗	✗	✓