

# Reduce Sludge Volume

Keep the hydrolysis process  
**simple | affordable | safe**  
for all sized plants

Qualifies for the  
**Biogas  
Investment  
Tax Credit**



## As a **Cost-Effective** Choice, PONDUS™ Requires Little Day-To-Day Plant Supervision

PONDUS, a thermal/alkaline hydrolysis process, is designed for solids from 4% to 12% and uses a combination of caustic soda (NaOH) and low grade heated water (140 °F to 160 °F) to break down the cell walls.

**No heat exchangers** needed to cool sludge after hydrolysis to maintain an optimum digester temperature

### No pressure vessel required

- Safer operation
- Certified steam operators or boiler makers for maintenance are not necessary
- Reduces operating and energy costs

**Saturated steam option** for sludge above 7% total solids (TS) or with high viscosity

### Compact, small footprint solution for all sized plants

- Hydrolysis reactor operating under atmospheric pressure
- High-efficiency hot water heat exchanger
- Chemical dosing station
- Progressive cavity pumps
- Instrumentation and controls

### Typical maintenance includes

- Pump maintenance
- Heat exchanger cleaning

## PONDUS **Simple** and **Effective** without a Pressure Vessel



Reduce Viscosity of Thickened WAS up to **80%**



Reduce Anaerobic Digestion Volume up to **50%**



Reduce Biosolids Disposal Costs up to **30%**



Increase Biogas Production up to **35%**



Reduce Polymer Consumption at Dewatering up to **20%**



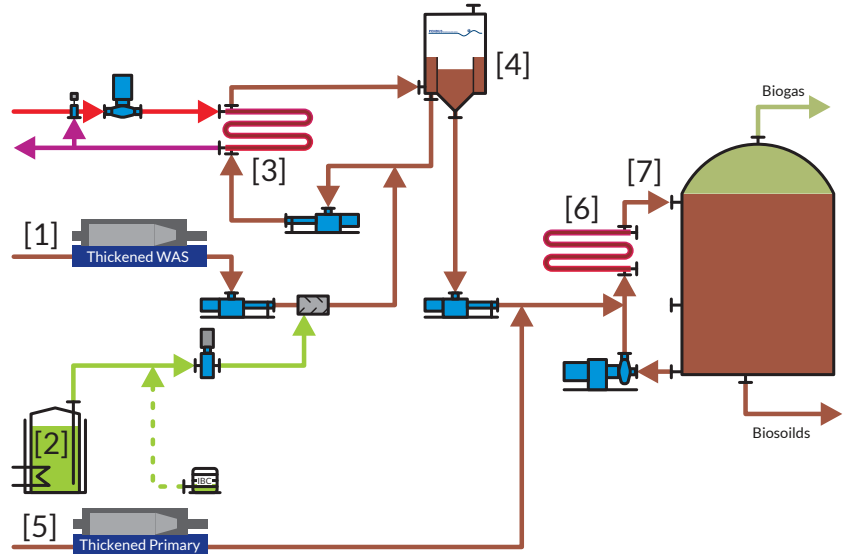
Reduce Digester Foaming



PONDUS is a **Cost-Effective** Choice

- Simple operation requires little day-to-day plant supervision
- Fully automatic process runs 24/7 year-round
- 99% uptime; minimal estimated downtime for maintenance and repairs
- Designed using standard industrial control system equipment
- Compact; small footprint solution for all sized plants

PONDUS Step-By-Step



[1] Thickened WAS is mixed with a small dose of [2] caustic soda (1.75 l/m<sup>3</sup>).

[3] Sludge, up to 7% total solids (TS), is heated in a loop through a high-efficiency heat exchanger. Sludge above 7% TS or high viscosity sludge can use saturated steam as a heat source.

[4] Sludge is fed into PONDUS and goes through hydrolysis. The sludge is heated with 140 °F to 160 °F water from a combined heat and power (CHP) unit or boiler. Retention time differs due to varying sludge properties. The reactor operates under atmospheric pressure and connects to the atmosphere or bio filter. After hydrolysis, sludge leaves the reactor close to a neutral pH level and the remaining thermal energy can be used in the anaerobic digester [7].

[5] Thickened primary sludge and hydrolyzed sludge is mixed to achieve an ideal mesophilic temperature of the combined sludge and then pumped into the digester [7]. If needed, additional heat can be brought into the digester through a [6] heat exchanger.

PONDUS Full Scale Installations

Wastewater Treatment Plant	Location	Year Built	Plant Size (MGD)	Note
Kläranlage Gifhorn	Gifhorn, Germany	2005	14	
Kläranlage Ratekau	Ratekau, Germany	2007	13	
Nordhorn Kommunale Betriebe AöB	Nordhorn, Germany	2013	16	24-hr operation, Class A possible
Kläranlage Uelzen	Uelzen, Germany	2013	13	
Kenosha Wastewater Treatment Plant	Kenosha, Wisconsin	2014	28	
Kläranlage Wolfsburg	Wolfsburg, Germany	2014/17	34	
Löhne-Riebel Wastewater Treatment Plant	Löhne, Germany	2019	14	
Stadtentwaesserung Göppingen	Göppingen, Germany	2019	33	
Klärwerk Mettingen	Mettingen, Germany	2021	15	
Klärwerk Erlangen	Erlangen, Germany	2023	50	
Wasserzweckverband Saale-Fuhne-Ziethe	Bernburg, Germany	2023	10	
Foce Regi Lagni	Naples, Italy	2024 Start-Up	15	
Columbiana County Wastewater Treatment Plant	Salem, Ohio	2024 Start-Up	4	
Capitol Region Water Advanced Wastewater Treatment Facility	Harrisburg, Pennsylvania	2024 Start-Up	37.7	
Kläranlage Bayreuth	Bayreuth, Germany	2024 Start-Up	30	

