

Evaluating Sludge Stabilization Alternatives

Author: BioTerraVa | Published: 2026-09-01

Audience: Municipal officials, wastewater facility managers, regulators, engineering stakeholders

Primary Use: Decision-support content for biosolids and stabilization strategy

Topics: sludge stabilization, biosolids, CAPEX/OPEX, process comparison

Executive Summary

A comparison of four sludge-stabilization options using footprint, CAPEX, OPEX, simplicity, and compliance. Strong methodology-focused asset for biosolids, sludge handling, and municipal wastewater strategy.

Key Points

- Compares four stabilization technologies: CKD/PAM static mixing, Lystek THP, Walker Services hauling, and RDT/Aerobic Digesters
- CKD/PAM with static mixers: lowest CAPEX (\$220,000) and OPEX (\$227,200/year), compact footprint, simple operation, produces Class A NPK fertilizer
- Lystek THP: thermal hydrolysis at high temperature/pressure followed by alkaline stabilization, CAPEX \$6.24M, OPEX \$279,416/year, moderate footprint and energy use
- Walker Services: hauls stabilized sludge to Niagara facility for Class A fertilizer production, CAPEX \$220,000, OPEX \$513,200/year
- RDT + Aerobic Digesters + New Holding Tank: highest CAPEX (\$7.37M) and OPEX (\$891,624/year), largest footprint, highest energy consumption
- Recommended alternative: CKD/PAM with static mixers as the most cost-effective, practical, and environmentally beneficial solution

Citation

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BioTerraVa Technologies Inc.

399 Warmstone Drive, Stittsville, Ontario K2S 0W2, Canada

Phone: +1 (613) 883-5905 | Email: info@bioterrava.com