



Sustainable Solutions for Unsustainable Storage Challenges

ABOUT

The South Huron Valley Utility Authority (SHVUA) services over 90,000 people across seven communities. www.shvua.org

CHALLENGES

- Insufficient storage capacity for lime-stabilized, liquid Class B biosolids program
- Land application constraints due to weather and time in field
- Unsustainable and cost prohibitive reliance on contingency landfill disposal

PROJECT DRIVERS

SHVUA selected Lystek THP as an advanced treatment technology providing these benefits:

- Substantially reduce biosolids volumes, alleviate operational stressors and enhance efficiencies and cost savings overall
- Production of Class A biosolids

RESULT

- More than 2x biosolids volume reduction and extension of onsite storage capacity
- Elimination of alkali stabilization, expensive storage clean out, and contingency dewatering activities
- Optimized use of existing site infrastructure with equipment installation in existing building and continued use of the 4 MG biosolids storage tanks

"It has been a pleasure to work with Lystek staff to complete this project. Not only did we find a more reliable and sustainable method of beneficially reusing our biosolids, but we also now have twice the storage volume since the stored biosolids are twice as thick, more homogeneous, and easier to handle. Another added benefit to the Authority is transferring the responsibility of transporting and marketing the biosolids to Lystek."

Firooz Fath-Azam, System Manager

South Huron Valley Treatment Plant
South Huron Valley, Michigan US

The South Huron Valley Utility Authority has implemented Lystek THP, to enhance their biosolids management program at their WWTP located in Brownstown Township, Michigan.



KEY METRICS

Population Served: 90,000

WWTP Rating: 24 MGD design, ADF of 10 MGD
(9,800 m³ / day)

Lystek THP Processing Footprint: 1,850 ft² (172 m²)

Lystek THP Module Size: 1 x LY10 (1.0 dry tons / hr)

Feedstock: Municipal biosolids (undigested)

Project Delivery Model: Integrated Design-Build-Transfer

Lystek THP substantially reduced the facility's residual biosolids volumes with the production of Class A LysteGro, presenting cost-savings, operational relief, and a secure and sustainable biosolids management solution.

The Authority services over 90,000 people across seven communities. Historically, the South Huron Valley wastewater treatment plant (WWTP) produced a Class-B quality low solids liquid lime stabilized biosolids for land application. The facility was experiencing challenges related to solids accumulation and insufficient liquid biosolids storage capacity on site. When combined with seasonal weather variations further stressing land application, excess biosolids were being dewatered using temporary equipment and disposed of in landfill. These operational challenges and contingency disposal outlet resulted in substantially increasing program costs.

Analysis of the Net Present Value of alternatives, including continuing to rely on temporary dewatering and installing permanent dewatering, conducted by Jacobs Engineering Group (plant and collection system operator) and the Authority's engineering firm, Hubbell Roth & Clark (HRC), found that the Authority's long-term costs for residual management would be lower with the operation of Lystek THP and a LysteGro Class A biosolids management program than with dewatering alone.

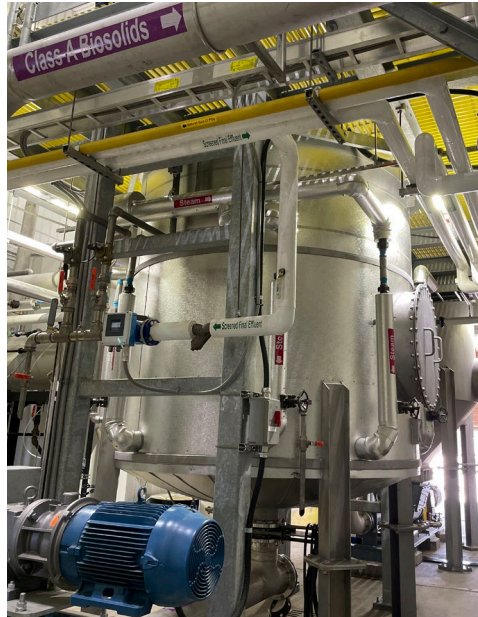
Based on these factors, the Authority decided to engage Lystek in 2020 to design and build this new system into existing

building space on site. This advanced biosolids management project includes the implementation of one Lystek THP LY10 Module alongside a dewatering centrifuge and permanent biosolids truck loading infrastructure. The project took advantage of existing liquid storage tanks and building infrastructure to optimize the use of existing infrastructure and minimize capital costs. The facility was commissioned and operations handed over to Jacobs in April 2022.

This technology presents an affordable solution that is energy efficient, requires no additional operators beyond their existing staff complement, and significantly reduced the Authority's biosolids volumes, substantially extending the capacity of the WWTP's existing liquid storage infrastructure.

With the production of a Class A quality biosolids fertilizer and the operational security achieved, this solution removed the need for contingency disposal of biosolids in landfills and advances the Authority's resource recovery program.

The Authority has also entered into a multi-year Agreement with Lystek for comprehensive LysteGro Management Services, and we completed the first application in the Fall of 2022. The enhanced biosolids quality and concentrated nature of the high-solids liquid Class A biosolids, exceeds regulatory requirements and drives the demand for LysteGro amendments from local farmers, providing further price security to the Authority.



About Lystek

Lystek International is the leading provider of advanced, thermal hydrolysis solutions in North America, servicing over 60 utilities globally. Lystek offers turnkey solutions including technology supply, design-build and installation services, regional processing solutions, and comprehensive LysteGro sales and management. **Lystek THP®** is proven across a range of small, medium, and large communities. We work with public and private sector clients to enhance operations, reduce GHG emissions, and recover valuable nutrients and carbon from biosolids and organic feedstocks through the production of increased renewable biogas with **LysteMize®** and **LysteGro®** Class A quality biosolids fertilizers.