

Case Study

# BREAKING GROUNDS IN SUSTAINABLE WATER REUSE FOR xAI

What fuels the world's most advanced artificial intelligence isn't just data - it's clean, reliable water.



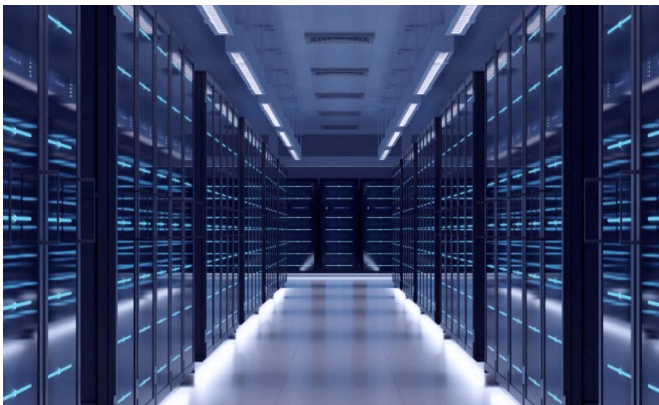
# CUTTING-EDGE ENGINEERING THAT ENABLES SUSTAINABILITY AT SCALE

**xAI, founded by Elon Musk, is building the world's largest AI super-computer training cluster in Memphis, Tennessee. Once complete, this record-breaking installation will reuse 49.2 million liters (13.0 million gallons) of municipal wastewater everyday thanks to Cerafiltec, transforming it into high-quality water for cooling xAI's next-generation supercomputing data center - one of the most powerful AI infrastructures ever built.**

High-performance computing demands vast cooling capacity. Traditionally, this has come at a cost: consuming millions of liters of fresh water. But xAI envisioned something different – an AI data center that could operate at peak efficiency while minimizing environmental impact.

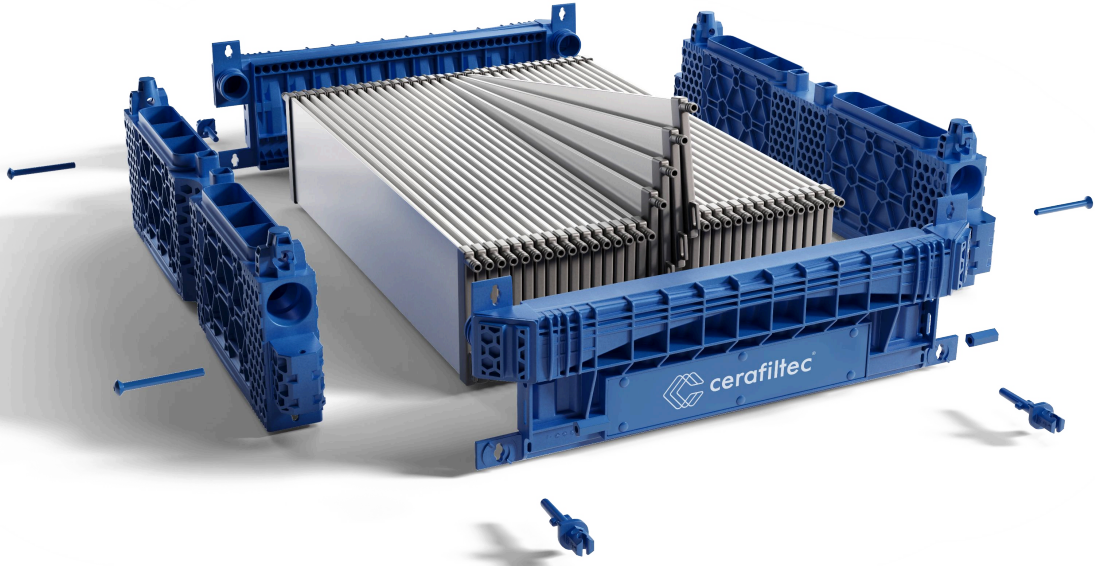
Cerafiltec answered that challenge with its advanced ceramic ultrafiltration membranes – a solution built to last. Unlike polymer-based systems that degrade over time, ceramic membranes are robust, chemically resistant, and fully reusable. They handle the immense volumes and pressures of industrial-scale wastewater reuse with ease, delivering crystal-clear,

high-quality water to keep xAI's supercomputers running cool and clean. The Memphis installation not only supports xAI's cooling needs – it supplies surplus treated water to local industries, drastically reducing the city's dependence on its natural aquifer. This circular model of reuse proves that innovation and sustainability can advance together. For Cerafiltec, this partnership is a statement of capability and purpose – demonstrating that clean water technologies can scale to meet the world's most complex engineering demands. It's not just about filtering water – it's about reshaping how we power progress.



# Key Facts

## KPIs



Fact	Solution	
Reclaimed Water Capacity	<b>49.2</b>	million litres/day (13.0 million gallons)
System Type	<b>MBR</b>	World's largest municipal Ceramic Membrane Bioreactor
Primary Use	<b>xAI</b>	AI Data Center Cooling
Recovery Rate	<b>&gt;99%</b>	Reuse Efficiency
Environmental Benefit	<b>0</b>	Impact on Memphis Sands Aquifer
Material Advantage	<b>0</b>	Plastic waste