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Contact:
Stephanie Kraynick
952.832.2618
skraynick@barr.com

Cutting-edge PFAS destruction technology reaches pilot stage in public-private partnership

MINNEAPOLIS, MN, April 15, 2026—An innovative method to manage and destroy per- and polyfluoroalkyl substances (PFAS) in biosolids and water treatment residuals will be pilot tested this summer in St. Cloud, Minnesota.

The pilot will test the effectiveness of supercritical water oxidation (SCWO), a technology that applies intense heat and pressure to destroy PFAS and convert organic residuals into stable end products, leaving inert mineral residues. The effort is led by Barr Engineering Co. with partners and collaborators 374Water, the City of St. Cloud, the Minnesota Technical Assistance Program (MnTAP) at the University of Minnesota, and the University of St. Thomas.

“This project is a pilot-scale demonstration of SCWO to destroy PFAS as an initial step in evaluating this promising PFAS destruction option for future implementation in Minnesota,” said Andy McCabe, PhD, an environmental engineer at Barr. “SCWO has the potential to serve as a viable technology to mineralize PFAS, produce clean water for beneficial reuse, and recover valuable nutrients and energy from waste.”

Made possible through a grant from the Legislative-Citizen Commission on Minnesota Resources (LCCMR), the evaluation will be conducted onsite at the St. Cloud Nutrient, Energy and Water Recovery Facility ([NEW RF](#)). The [work plan](#) for the project can be found on the LCCMR website.

As PFAS regulations evolve, Minnesota’s water and wastewater treatment facilities need sustainable ways to manage and destroy PFAS. However, currently available

technologies for the destruction of PFAS associated with biosolids and water treatment residuals are energy-intensive and can be cost-prohibitive, as noted in a recent [Barr study](#) for the Minnesota Pollution Control Agency.

Through focused efforts at research institutions and technology companies such as 374Water, the slate of available PFAS destruction technologies continues to expand and improve.

“For this pilot, the team’s goal is to evaluate SCWO’s ability to destroy PFAS in a range of wastes within the project scope while assessing pathways toward energy-neutral operation,” said McCabe. “A long-term outcome could be PFAS destruction facilities using SCWO and accepting PFAS-containing residuals and liquid wastes from a variety of sources, including water resource recovery facilities, drinking water treatment utilities, and even landfills.”

The pilot project is scheduled for completion in June 2027. The effort will include detailed data collection on the fate of PFAS in the SCWO reactor and on the composition and value of the residual solids remaining after SCWO treatment. Input from Minnesota operators and utilities will inform the project’s operational and monitoring plan, and data collected from this study will be publicly available.

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About Barr: Barr Engineering Co. is an employee-owned engineering and environmental consulting firm incorporated in 1966. Barr has been working on [PFAS-related issues](#) at a national level since the early 2000s, when the company helped the PFAS-manufacturing industry develop an understanding of the extent of their perfluorooctanoic acid (PFOA) use and its fate in multiple manufacturing processes. Since that initial project, Barr has helped numerous clients across the country and around the world manage the complexity of PFAS. The company’s work includes treating drinking water and wastewater, remediating soil, managing landfill leachate, and addressing stormwater and groundwater contamination for PFAS. To learn more about Barr, visit [barr.com](#).