

WATER RECLAMATION SERVICES-PROFILE

A K R O N W A T E R

A hub of collaboration and innovation



TECHNOLOGY COLLABORATION INNOVATION

Akron Water Reclamation Services began in 1916, when the original treatment plant was first put into operation with a working capacity of 8 million gallons per day (MGD) (30,300 m³/d). Since then, Akron Water Reclamation Services has expanded both its capacity and service area, collecting, conveying and treating wastewater

through its three divisions: the Sewer Maintenance Division, the Water Reclamation Facility and the Renewable Energy Facility.

Together, the combined divisions can serve its current customer base of 350,000, with the capacity to accommodate future residential and commercial users.

Service Area

The total area served by Akron Water Reclamation Services is about 110 square miles (285 sq. km.) and includes the City of Akron and many neighboring communities.

Water Reclamation Services Network

The three divisions that constitute the Akron Water Reclamation Services work together to satisfy the needs of its customer base while instituting improvements and innovations to prepare for future requirements.

Sewer Maintenance Division

The Sewer Maintenance Division operates and maintains the wastewater collection and conveyance systems (including main sewer lines, combined sewer overflow [CSO] racks and overflows, pump stations, force mains, and retention tanks) as well as stormwater ditches and sanitary sewers and pump stations in several Joint Economic Development Districts.

Water Reclamation Facility

Utilizing the latest treatment processes and technology, the Water Reclamation Facility treats approximately 75 MGD (284,000 m³/d) of wastewater, with peak flows to the facility approaching 280 MGD (1,060,000 m³/d) due to rain or snow melt.

Renewable Energy Facility

The Renewable Energy Facility receives approximately 175,000 gallons per day (662 m³/d) of biosolids from the Water Reclamation Facility for processing. The biosolids are anaerobically digested and dried, and the biogas generated during the process is captured and conditioned, and used to fuel a combined heat and power system capable of generating up to 1.2 megawatts of electricity.



WATER RECLAMATION SERVICES



Technology Highlights

Akron Water Reclamation Services uses the latest technology to achieve effective and efficient wastewater treatment. One recent initiative was the Akron Landfill Gas to Energy Project, a collaboration between the City of Akron and Hull & Associates, Inc., to develop and install an 1,100-kilowatt electrical generation and distribution system designed to convert methane gas collected from a nearby landfill to electricity.

The engine-generator skid produces approximately 8,600 megawatt hours (MWh) of electricity annually, satisfying about 40 percent of the Water Reclamation Facility's requirements.

Another example is the liquid oxygen storage, vaporization, transmission and delivery system installed at Akron Water Reclamation to maintain the dissolved oxygen (DO) in its effluent above the permitted minimum level.

The Akron Water Reclamation Facility also has a computerized control and data collection network communicating over a redundant fiber optic network with distributed function and location providing for high system integrity.

Collaboration Highlights

Akron Water Reclamation Services has a reputation for engaging in collaborative efforts with both domestic and international entities and companies to explore and develop new methods of water treatment as well as provide a location for pilot-testing new technologies.

Recent partnerships include the Anaerobic Digestion System (ADS)/Biogas Project, a pilot project undertaken by the City and its partner KB BioEnergy, Inc. using high-solids ADS technology supplied by Schmack Biogas GmbH of Germany. Another successful collaboration was with Japan-based EBARA, the only company that currently produces

bromochlorodimethylhydantoin (BCDMH) for the wastewater industry, to test the chemical as an alternative disinfection technology for wet-weather applications.

Akron Water Reclamation Services also participated in pilot-scale comparisons with three high-rate treatment system manufacturers, enabling them to use the system to field-test performance of their technologies. Akron Water Reclamation Services is available for future partnering opportunities. Its full-service wastewater quality laboratory and team of chemists and technicians can provide sampling and analysis.

Innovation Highlights

The Anaerobic Digestion System (ADS)/Biogas Project is just one example of Akron Water Reclamation Services' commitment to innovation and energy efficiency. The ADS system has the potential to generate 10,000 MWh of electricity annually. This system will also reduce greenhouse gas emissions by more than 20 times, promote resource recovery that reduces solids volume, and reduce water and air pollution.

The Water Reclamation Facility has instituted many power-saving initiatives. Nearly all power requirements are met through on-site generation from renewable energy sources. Future innovations include ADS3 – modifying ADS1 as a merchant facility to accept fats, oil and grease, organics, biosolids and exporting power.

Akron Water Reclamation Services' commitment to system improvements and innovations has earned it many awards.

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