In primary treatment, there are three primary clarifiers, each with 714,000 gallons capacity.

High Flow Events

Extra flow into our wastewater stream from a large storm, rainwater inflow, and groundwater infiltration is sent to three high flow equalization tanks with a total capacity of 2.3 million gallons. Wastewater is then screened by four rotary drum screens and then disinfected prior to discharge.

Tank Equalization

Solids Handling

Solids from primary and secondary treatment are combined and allowed to settle and thicken in a thickener tank. The solids are then pumped to the belt filter press where a polymer conditioner is added and water is squeezed out.

Biosolids are used at local farms

Lime is added to the dewatered solids to reduce pathogens. The biosolids are then applied to local farm fields as a natural fertilizer.

Who We Are

The Eastern Regional Water Reclamation Facility is owned by Montgomery County. Each day, the facility safetly treats and discharges approximately 8 million gallons of wastewater into the Little Miami River watershed.

The facility is operated and maintained 24 hours a day, seven days a week by a dedicated staff of operators, electromechanical maintenance technicians, technical and administrative support staff.

MONTGOMERY COUNTY
ENVIRONMENTAL SERVICES

Eastern Regional Water Reclamation Faciility
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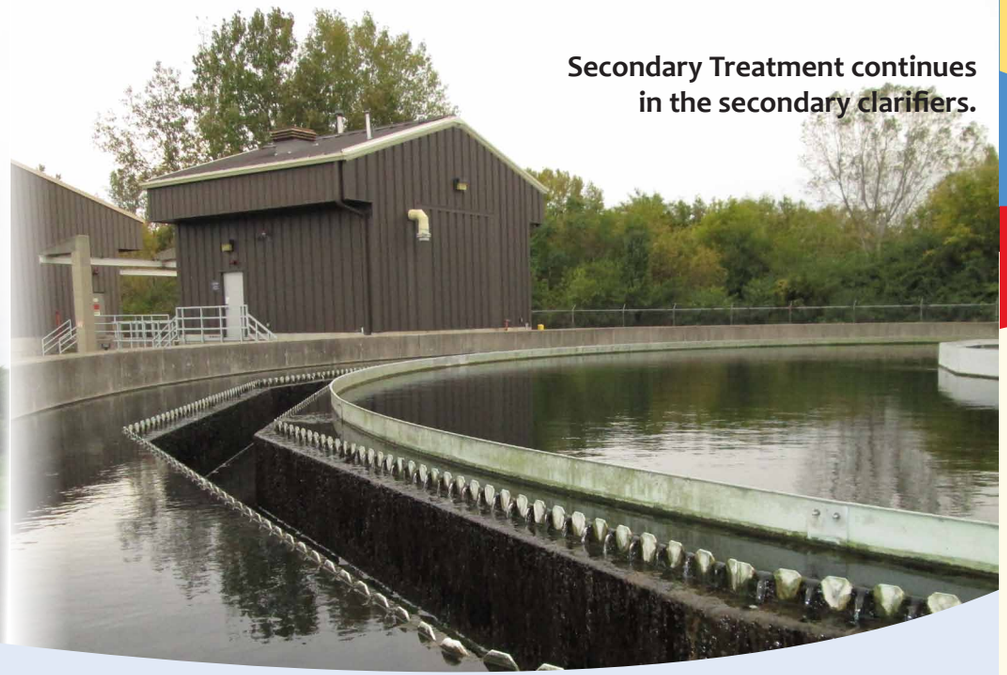
MONTGOMERY COUNTY
ENVIRONMENTAL SERVICES

Water Reclamation

Montgomery County Eastern Regional Water Reclamation Facility

Secondary Treatment begins in the trickling filter towers.



Secondary Treatment continues in the secondary clarifiers.

Preliminary Treatment

Bar screens remove large debris like rags, sticks, and paper from the wastewater (influent) as it enters Eastern Regional. There are five bar screens: two coarse, two fine and one manual fine screen. After screening, wastewater is pumped into two aerated grit channels that remove inorganic solids such as sand and gravel.

Primary Treatment

In this physical treatment process, the wastewater flow slows down, allowing scum to float and solids to settle. There are three primary clarifiers, each with a capacity of 714,000 gallons.

Aerated grit channel

Secondary Treatment

Secondary treatment starts with a biological treatment process. Inside the trickling filters, naturally occuring microorganisms grow on the plastic media, reducing organic matter present in the wastewater. Inside the aeration basins, these bacteria reproduce and consume solids. Eastern Regional has three trickling filter towers with a diameter of 108 feet and 28 feet media depth, and two aeration basins with 210,600 gallon capacity each.

In 2007, we began nutrient removal for phosphorus using ferric chloride. We have been in 100% compliance with the Ohio EPA TMDL phosphorus loading goal for the Little Miami River watershed.

Nutrient Removal

The next step in physical treatment is the secondary clarifiers. Very similar to primary clarification, solids from biological treatment are settled. There are three secondary clarifiers, each holding 1.68 million gallons. A portion of solids from the secondary clarifiers are returned to the aeration basins for additional treatment, and the remaining solids are removed for final disposal.

Disinfection

The final step in water reclamation is the removal of pathogens, which is achieved by introducing sodium hypochlorite (chlorine) into the tank.

Although chlorine effectively destroys pathogens, it can be harmful to fish and wildlife. Sodium bisulfite is added to neutralize the treated wastewater, which is now called effluent. The effluent is then discharged to the Little Beaver Creek.

Eastern Regional

Water Reclamation Facility Overview

Who We Are

The Eastern Regional Water Reclamation Facility is owned by Montgomery County. Each day, the facility safetly treats and discharges approximately 8 million gallons of wastewater into the Little Miami River watershed.

The facility is operated and maintained 24 hours a day, seven days a week by a dedicated staff.

Service Area

- Kettering, portions of Beavercreek, Dayton and Oakwood
- Approximately 45,000 citizens, light industry and commercial businesses
- 8,700 acres in Facility Planning Area

Plant Design

- Design flow – 13 MGD (million gallons/day)
- Peak plant flow – 26 MGD
- Peak high flow – 34 MGD
- Peak hourly design flow – 60 MGD
- Current average flow – 8.4 MGD