TREATMENT PROCESS

OUR TREATMENT PROCESS

The City of Dayton, Division of Water Reclamation (previously Waste Water Treatment) prevents and controls sanitary water pollution to the Great Miami River, working around the clock, 24 hours a day, 365 days a year, year after year since 1929. The Division of Water Reclamation serves the City of Dayton and the region, including a large part of Montgomery County which includes Trotwood, Northridge, Riverside, Harrison Township, parts of Randolph Township, Oakwood, Kettering, Greene County, Moraine, and Wright Patterson Air Force Base. The staff of 71 full time employees serves 340,000 people, businesses, and industries by providing for disposal and treatment of all their collective wastewater discharges. The wastewater is treated to remove pollutants to a high degree of purity that meets or exceeds Ohio EPA issued permit requirements before it is discharged to the Great Miami River.

WATER DISCHARGE

The WRF is located at its original 1929 site in the southwest corner of the City of Dayton at river mile 76.1 on the 170.3 miles long Great Miami River. The average daily discharge ranges between 48 to 55 million gallons per day (MGD). At this point on the river, the wastewater discharged from the WRF can contribute up to 40 to 50% of the total river flow during low flow (drought) conditions. This large contribution to river flow requires the wastewater discharged to meet the cleanest water quality standards to protect warm water aquatic animals and plants, as well as, to allow for other designated uses like fishing, boating and skiing.

This need for very clean discharges required the City of Dayton to build major upgrades to its secondary

treatment facilities. From 1983 to 1991 near continuous construction upgraded the treatment capacity and capabilities of the treatment plant to a 72 MGD Advanced Water Reclamation Facility. The treatment processes now provide preliminary, primary, secondary, tertiary (nitrification), filtration, chlorination/dechlorination and post-aeration to all wastewater.

ANAEROBIC DIGESTION

Sludge collected and removed throughout the system is stabilized by anaerobic digestion. This sludge, now biosolids, is dewatered for use as fertilizer for land application on approved farms. The average biosolids production is 40 to 45 dry tons per day

Methane gas, produced as a by-product of anaerobic digestion, is used as a fuel for cogeneration engines and digester gas fired boilers. 100% of the plant heating requirements are supplied by the combination of digester gas fired boilers. Cogeneration engines are used as a back up for power outages.

ODORS

Odors are a common but unwelcome side effect of wastewater treatment. A new odor control facility consisting of a packed tower scrubber was installed in 1993 to address odor complaints from neighbors of the WRF. This new facility replaced a smaller mist scrubber facility and increased air handling capacity 10 times. Odors are controlled through the containment of odors at the weir overflow areas of primary settling basins and subsequent evacuation and treatment with bleach and caustic in the packed tower scrubber. Collection system odors are also controlled by the addition of hydrogen peroxide at the Longworth and Westwood Pump Stations.

WATER RECLAMATION PLANT

The Water Reclamation plant receives a significant portion of its wastewater flow and pollutants from industry. Control of the industrial pollutants and recovery of costs associated with their treatment is critical to the operation of the treatment plant. The Division of Water Reclamation administers an Industrial Pretreatment Program to protect the plant from industrial wastewater discharges which contain pollutants that may upset treatment, pass-through the plant and contaminate the Great Miami River, or accumulate in the biosolids and limit its use as farm fertilizer. Industries discharging metals and/or toxic organic pollutants are required to pretreat their wastewater to remove excessive amounts of these pollutants to assure no adverse impact on the City of Dayton Water Reclamation Plant. Control of the pollutants requires extensive monitoring of individual industries through sampling and chemical analyses. Discharges from industries exceeding predetermined standards are controlled through enforcement actions which includes fees and surcharges for extra-strength wastewater.

101 W 3rd Street
Dayton, Ohio
45402

Phone: 937-333-3333

Public Works: 937-333-4800

Waste Collection: 937-333-4800

Email Us