

**Activated Sludge Process:** a biological process used in secondary treatment in which a mixture of wastewater and microorganisms is agitated and aerated to allow the microorganisms to break down organic material

**Advanced Treatment (Tertiary):** a wastewater treatment process that goes beyond secondary treatment. This can consist of oxidation of ammonia, de-nitrification, filtration, and activated carbon adsorption and absorption

**Aeration:** mixing oxygen into the wastewater to help microorganisms grow; this process increases the speed at which the microorganisms break down the organic material.

**Aeration Clarifiers:** basins through which wastewater passes slowly so particles can sink to the bottom or float to the top for removal.

**Ammonia:** an element that is toxic to aquatic life. It is a user of oxygen in the receiving waters.

**Ammonia Nitrogen Removal:** a wastewater treatment process in which ammonia compounds are oxidized to nitrogen and water by means of a specialized bacteria in an aeration process.

**Bar Screens:** series of vertical parallel bars that catch large debris (such as sticks or rags) found in raw wastewater to prevent them from entering the plant treatment process and damaging equipment.

**Biosolids:** a primarily organic solid product produced by wastewater treatment processes that can be beneficially recycled

**Carbonaceous Oxygen Demand (CBOD<sub>5</sub>):** the measure of oxygen usage potential that wastewater can cause to receiving waters.

**Chlorination:** the addition of chlorine to wastewater to kill harmful bacteria and other microorganisms.

**Combined Sewers:** pipelines that carry both wastewater from homes and businesses and storm water runoff.

**Comminution:** use of mechanical shredders to grind debris into smaller pieces for passage through the plant equipment without damage.

**Dechlorination:** removal of excess chlorine from wastewater effluent before the effluent is discharged into the environment.

**Dewatering (Centrifugation):** the process of separating solids from a liquid by the use of centrifugal force in fast, rotating, mechanical equipment in order to reduce volume, and therefore, costs.

**Disinfection:** elimination of harmful bacteria and other microorganisms from wastewater.

**Effluent:** the cleaned liquid wastewater exiting the treatment plant into area waterways.

**First Stage (Aeration):** a biological process to reduce Carbonaceous Oxygen Demand

**Gravity Thickening:** the natural separation of liquid and solids in a basin where the wastewater and solids mixture (sludge) move through, slowly.

**Gravity Belt Thickening:** removal of excess water from solids in a mechanical device. This process employs a coagulant chemical (polymer) to facilitate the separation.

**Grit:** abrasive material, such as sand and gravel, that is suspended in untreated water.

**Grit Removal:** removal of the abrasive particles that settle quickly to prevent premature equipment wear.

**Incineration:** the burning of wastewater residuals by the application of high heat. This process produces a harmless ash.

**NPDES (National Pollutant Discharge Elimination System) permit:** a permit issued to a wastewater plant by the Ohio Environmental Protection Agency, which establishes limits on the amount of pollutants that can be discharged from wastewater treatment plants to receiving waters (such as Lake Erie). This permit also requires the monitoring of the plant effluent to determine compliance with effluent pollutant regulations.

**Phosphorous:** an element that acts as a fertilizer for algae growth when released into waterways. Algae blooms can be detrimental to receiving waters because they consume the dissolved oxygen that fish need to live.

**Phosphorous Removal:** removal of phosphorous from wastewater by either chemically or biologically tying it up in solid matter that can be removed by settling.

**Preliminary Treatment:** the process that removes grit, debris, and other large particles from the wastewater to prevent damage to plant equipment.

**Primary treatment:** a wastewater treatment process that removes most solid particles from wastewater through settling and skimming

**Residuals:** (also referred to as sludge) organic and inorganic solid materials in wastewater that are removed in primary or secondary treatment and disposed of.

**Second Stage (Aeration):** a biological process used to oxidize ammonia compounds to nitrogen and water by means of air and specialized bacteria.

## GLOSSARY

**Secondary Treatment:** a wastewater treatment process where active microorganisms break down organic material and other pollutants into simpler chemical compounds.

**Settling Tanks:** basins through which wastewater passes slowly so particles can sink to the bottom or float to the top for removal.

**Skimmers:** mechanical scrapers that remove floating materials, including grease, from the wastewater.

**Sludge:** the thick mixture of liquid and solids removed from the wastewater in the various sedimentation and separation processes.

**Storm water:** precipitation, such as rainwater or melted snow, that drains from roofs, streets, and parking lots into sewers, creeks, and streams.

**Wastewater:** a combination of liquid and solid wastes from homes, businesses and industrial processes.

**Wet Air Oxidation:** a process in which sludge is subjected to high heat and pressure inside a vessel (reactor) to break down the organic molecules, producing a smaller volume of solids that is less costly to dewater.