TREATMENT PROCESS

TERTIARY TREATMENT

SANITAIRE DRUM FILTERS

The Drum Filter Building with ITT Sanitaire Drum Filters was constructed in 2007. The drum filters became operational in September 2007. The drum filters remove total suspended solids (TSS) that are not removed in the primary and secondary treatment processes. This is strictly a physical process.

Each drum is five (5) feet in diameter and ten (10) feet long, containing fifty (50) polypropylene grids, with injection-molded and embedded polyester fabric, approximately two (2) feet by one and a half (1 1/2) feet. The screen size openings are 17 microns. Each of the eight (8) drum filters has about 126 square feet of surface area with 13% open area. Capacity of the eight (8) drum filters is 18 MGD.

A lift station with three (3) 6 MGD submersible Flygt pumps transfers water from the final clarifiers to the tertiary drum filters. The water enters the inside of each of the drum filters, where the water is filtered through the screens to remove solids. When the differential level inside and outside the filter is reached (about 10 inches), or a high level in the influent level is reached, or a manual high level float is activated, then the backwash cycle begins. The drum turns. Thirty (30) nozzles (@ 0.8 gpm at 100 psi) on the outside of each drum wash the solids from the outside of the drum to the inside, onto a trough which carries the backwash and solids back to the headworks of the wastewater treatment plant. The effluent water of the filters is used as backwash water, pressure is provided by two (2) of three (3) 15 hp booster pumps. The filtered effluent is discharged to the contact tank before exiting through the Parshall flume (and flow meter) to Cedar Creek.