

CITY OF CASTLEGAR SOUTH WASTEWATER TREATMENT PLANT

- Class II plant, Certificate # 68
- Activated sludge plant, being run as extended aeration
- Pretreatment: grit chamber, comminutor
- Ultrasonic flow recorder
- Equalization basin: 600 m³, 1 - 60 hp 300-500 scfm blower; 2 - 7 hp Flygt pumps
- Aeration tank: 1040 m³, 1 - 1000 scfm blower, 27 - coarse bubble diffusers
- Clarifier: 150 m³
- Digester: 250 m³, 5 course bubble diffusers
- Sludge holding ponds: 100 m³
- Chlorine contact chamber: 100 m³

The original plant was built in 1974 and is currently serving a population of between 3000 - 3500 people. The plant is situated on 5 acres of land about 200 feet above a fast flowing stretch of the Columbia River which is the outfall for the plant.

In 1974 when the plant was first commissioned the daily flows ranged between 150,000 - 200,000 US gallons per day. In April 1995 an equalization basin was added to the plant to help offset our diurnal peak flows which were hydraulically overloading the plant. The original plant was designed to handle 600,000 US gallons per day which would be 416 USg/min, but for a 5 - 6 hour period every day we were getting flows up to 700 USg/min.

There is more work scheduled this year for the plant. Prior to the equalization basin being built we had two Hoffman blowers driven by 60 hp motors to supply air to the plant. One of the blowers was diverted for use in the equalization basin, so in order to compensate for the loss of air supply we are installing fine bubble diffusers in the aeration tank and digester to increase our oxygen transfer capability.

The influent to the plant is domestic sewage only with no industrial wastes and the influent BOD is usually in the range of 140 - 200 mg/l. The effluent BOD is normally between 5 - 15 mg/l and the suspended solids range from 7 - 35 mg/l depending mostly on weather conditions. The plant does not like cold winters.

The biggest problem we have is one which is shared by many municipalities, and that is sludge removal. The two holding ponds we have give us a storage capacity of roughly 5 years. We fill one pond which takes approximately 2 1/2 years and then let it sit while we are filling the second pond. After this period of time the sludge is very stable and has the look of rich composted soil. We then dewater the sludge by opening drains in the bottom of the holding pond and actually get the sludge dry enough to haul with trucks to the landfill site. The Regional District which runs the landfill is anxious to have us find another method of disposal so we are presently studying several alternative options.

The City of Castlegar wastewater treatment crew consists of Joe Popoff, WWT II; Kelly Tamelin, WWT I; and Chief Operator Michael Harrison, WWT II, WD II, WWC II. In addition to the south plant we have an

aerated lagoon for north Castlegar, 11 wastewater pumping stations and the city water supply system which we maintain.

- Mike Harrison; Chief Operator, City of Castlegar

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