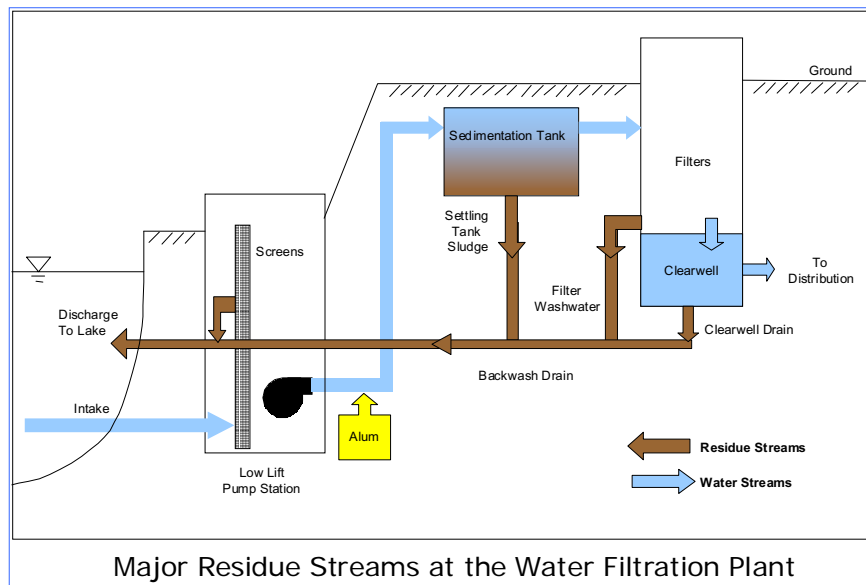


## BACKGROUND: King Street Water Filtration Plant Waste Residues

Waste residues from the water plant are from various processes, as shown in the diagram below.

- ◆ Screenings
- ◆ Settling tank sediments
  - sediments accumulate in settling tank, and are manually flushed out twice a year
  - short duration, high volume discharge
  - residues have a very high solids concentration
- ◆ Filter backwash water. Each of 6 filters is typically backwashed to clean filter media once per day at a high flow



## PROBLEM STATEMENT: WATER PLANT PROCESS WASTES

Process residues produced at the Kingston Water Treatment Plant are discharged back to Lake Ontario. These wastes contain concentrations of suspended solids, aluminum and chlorine in excess of the Ministry of Environment's Provincial Water Quality Objectives (PWQO). These residues may have the following effects

- ◆ Degraded water aesthetics from any visible discharge plume or increase in water turbidity
- ◆ Aluminum, chlorine and heavy metals can be toxic to fish and other aquatic organisms
- ◆ Aquatic habitat and organisms can be adversely affected by sediment deposition on the lake bed

## OBJECTIVES

- ◆ Minimize pollution of the environment from the discharge of these process residues
- ◆ Conform with the Ontario Water Resources Act and the Environmental Protection Act