6.3.2 Fine Screening Process Control

The intermediate pumps take flow from the primary effluent channel and pumps it to the channel in front of the fine screens. The pumping rate of the intermediate pump station determines the rate of flow to the MBR treatment system and to the fine screens. The headloss across the fine screens increases with the flow through the screens. Therefore, the headloss through the screens is much higher when higher flows are treated by the MBR treatment system.

Differential Level Setpoints

The treatment plant has an average dry weather capacity of 4.0-mgd and a peak flow of 10.0-mgd. The headloss across the screens will be much higher at the higher flows. Therefore, the differential level setpoints need to be adjusted at higher flows to keep the screens from running continuously. The specific setpoints will need to be determined by operations experience.

System Flushing

Operating experience has shown that following a lengthy period of low flow operations debris settles out in the intermediate pump feed lines. When the flows are increased, these lines scour and the high load can blind the screens. Periodic flushing of the system should be done to minimize the amount of settled debris in the pipelines feeding the MBR system.

Screen Channel Flushing

There is a drain line for the influent and effluent channel on each screen to drain the channels when the screens are removed from service. The valve for these drain lines are located in the lower level of the fine screen building in the intermediate pump room above Intermediate Pump No. 3. When these valves are opened, they will drain the contents of the channels to the sump pump station located in the intermediate pump station. These channels should be flushed periodically to remove any debris that may have settled out in the channels.