

6.3.3 Fine Screening – Automatic Operation

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 the fine screens.

Fine Screening Control Screens

The fine screens are controlled through SCADA from fine screening screens. The access to these screens is discussed in the following sections.

Fine Screens Main Screen

The automatic operation of the fine screens is controlled through the SCADA system on the Fine Screens Main Screen (**Figure 6.3.3-1**). The screen is accessed by clicking on the **Screens** button <1> on the top of the screen. The individual screen setpoints are accessed by selecting the **screen icon** <2>. The gate operators can be operated by selecting the **gate icon** <3> and the drum screens can be accessed by selecting the **gate icon** <4>.

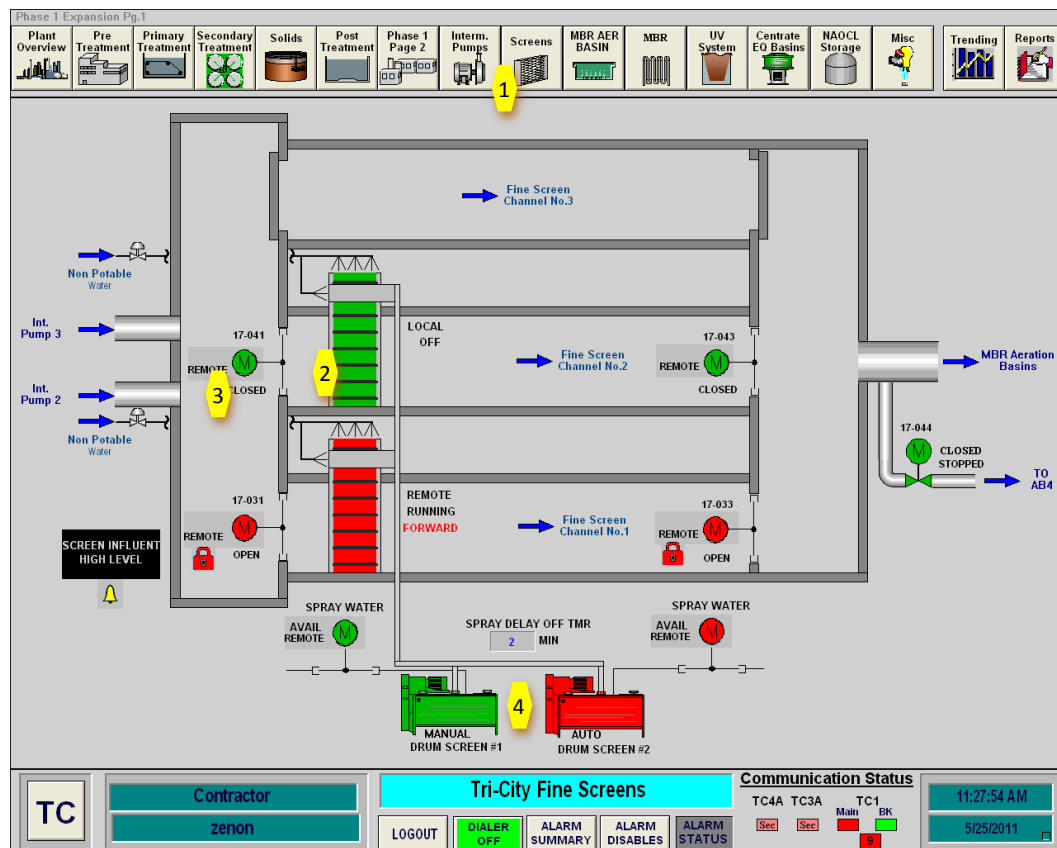


Figure 6.3.3-1 – Fine Screen Control Panel

Fine Screen Gate Controls

The gate popup box (**Figure 6.3.3-2**) is the same for each of the gates in the treatment plant. To operate the gates from SCADA, the gate must be placed in REMOTE at the gate operator. Once, the gate is in remote, the gate can be operated from the SCADA popup box <5>.

The gate can be placed in AUTO or MANUAL. In AUTO mode, the gate is controlled automatically from the PLC. Normal operating mode is to have the gate in AUTO. To open or close the gate manually, place the gate in MAN and operate the gate with the OPEN and CLOSE button. The gate will be RED when fully open and GREEN when fully closed. When the gate is partially open, the gate icon will be GRAY.

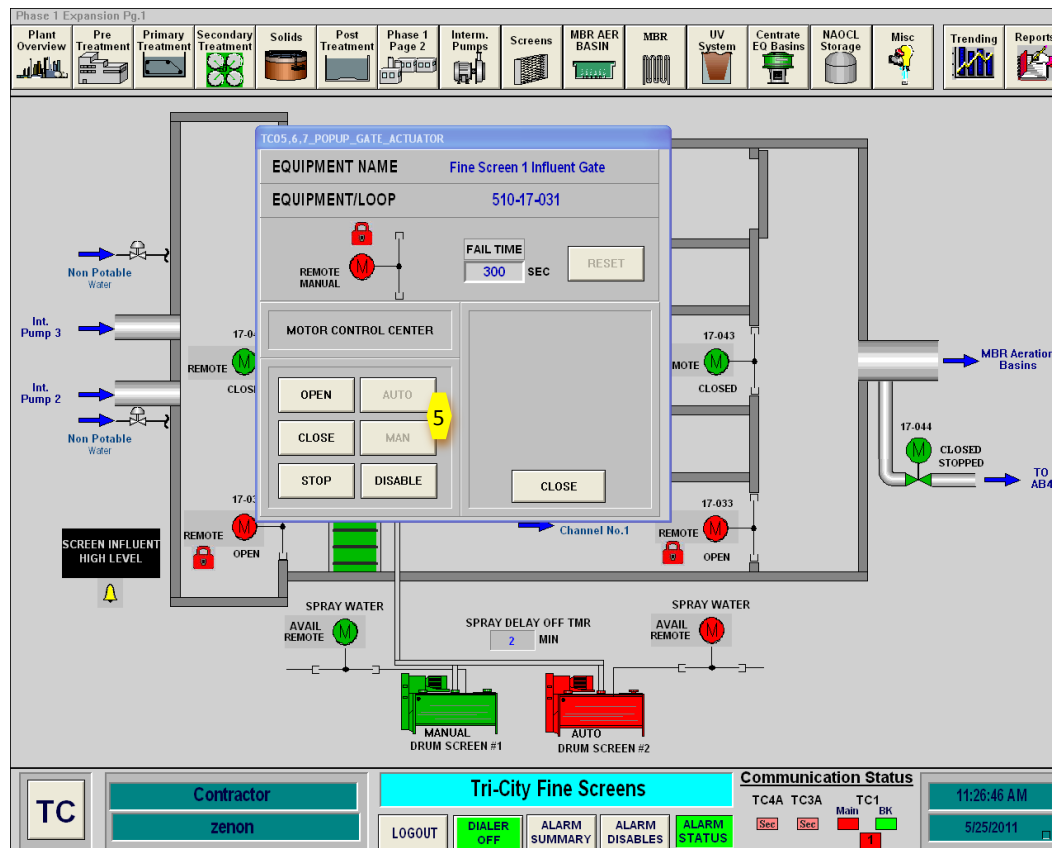


Figure 6.3.3-2 – Gate Popup Box

The gate fail time is a timer on the alarm that can be set for each gate. This timer must be set for a time longer than it takes for the gate to open. If the gate does not open within the time that this timer is set, there will be a gate failure alarm.

Fine Screen Control Screen

The automatic operation of the fine screens station is actually done on the local fine screen control panel. The Fine Screen popup **box (Figure 6.3.3-3)** on SCADA only allows for changing level setpoints for the screen cleaning cycles <1>. The control panel screen **(Figure 6.3.3-4)** provides a direct interface to the fine screen controls and alarms.

Drum Screen Control Screen

The drum screen popup box **(Figure 6.3.3-5)** provides the capability to start and stop the drum screens. To operate the drum screens from SCADA, the drum screen must be placed in REMOTE at the drum screen control panel located at the MCC in the Screenings Building Electrical Room. Once, the drum screen is in remote, the drum screen can be operated from the SCADA popup box <1>.

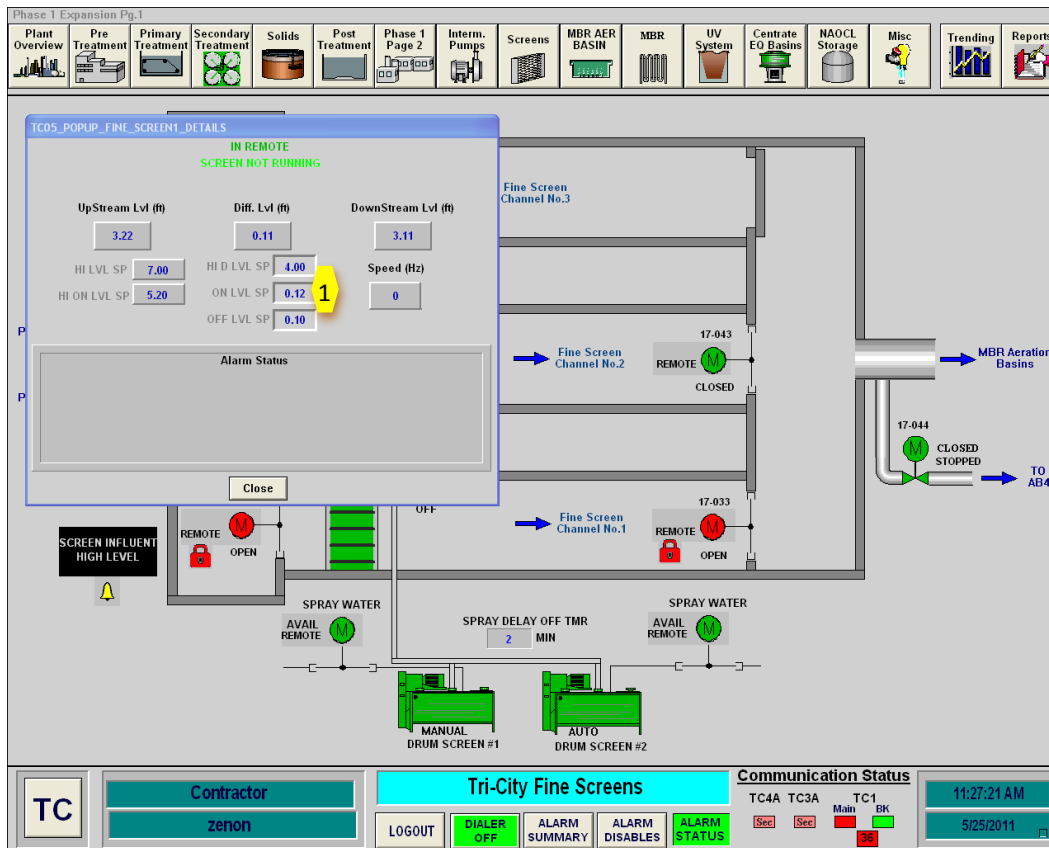


Figure 6.3.3-3 – Fine Screen Pop-up Box

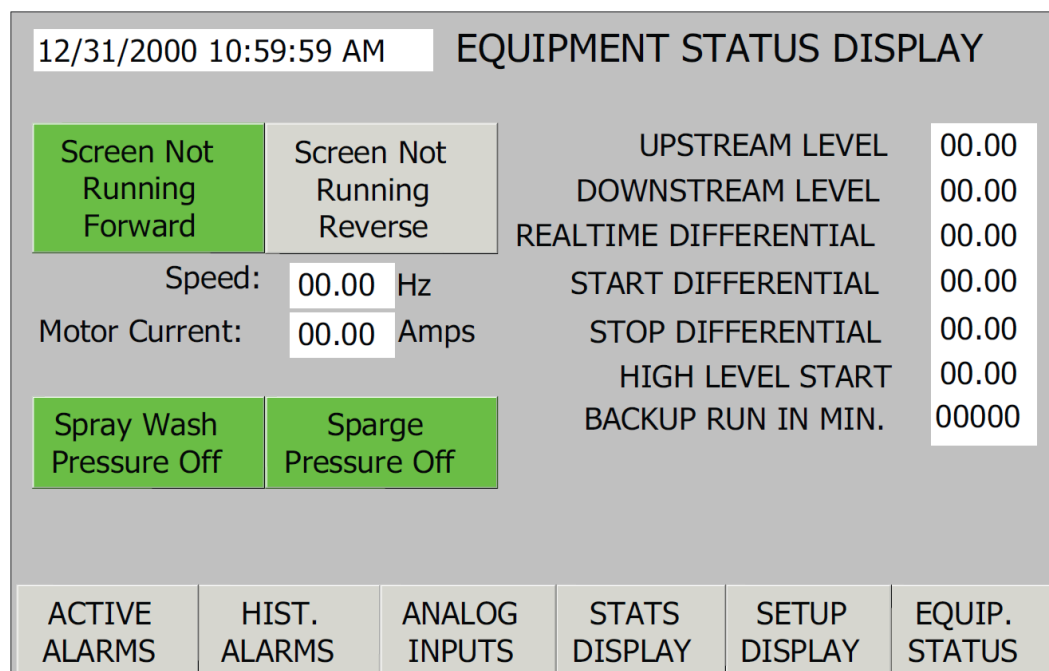


Figure 6.3.3-4 – Fine Screen Control Screen

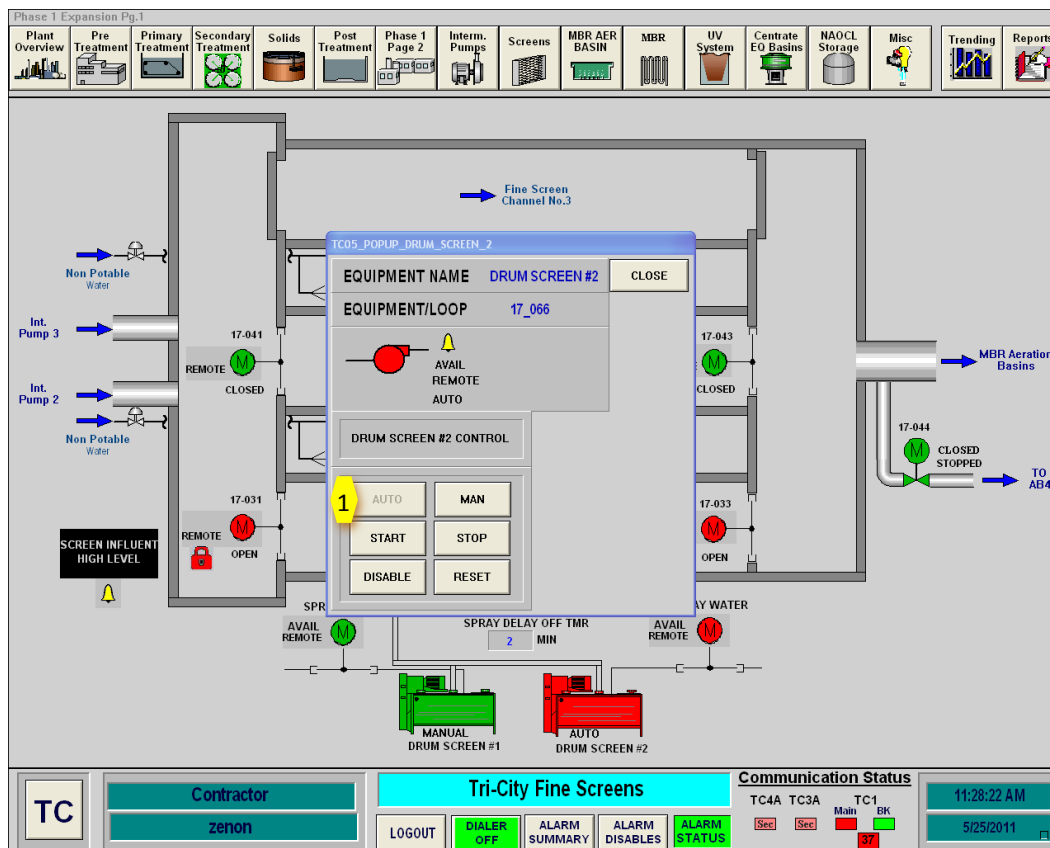


Figure 6.3.3-5 – Drum Screen Popup Control Box

The drum screen can be placed in AUTO or MANUAL in the popup control box. In AUTO mode, the drum screen is controlled automatically from the PLC. Normal operating mode is to have the drum screen in AUTO. To operate the drum screen manually, place the drum screen in MAN and operate the drum screen with the START and STOP button. The drum screen will be RED when on and GREEN when off.

The Spray Delay Off TMR will determine the length of time that the sprays are on on the drum screen. This timer can be set on the Fine Screen main screen. The sprayers are controlled in the Drum Screen Spray Valve control Screen (**Figure 6.3.3-6**). The screen provides the capability to operate the screens manually. Normal operating mode will be to have the sprayer in AUTO.

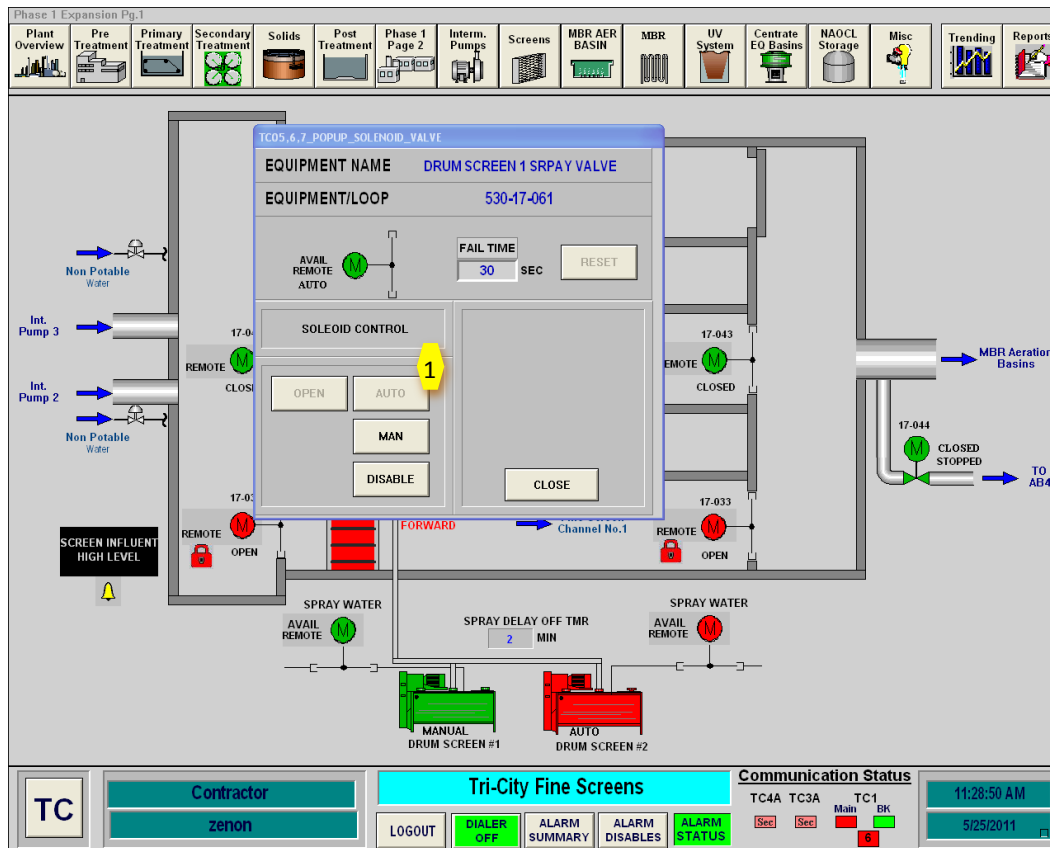


Figure 6.3.3-6 – Drum Screen Spray Valve Popup Control Box

Automatic Fine Screen Process Startup Sequence

To start up the Fine Screen Process in Automatic Mode, follow the following sequence. This sequence is for a cold startup of the system. If the system is operating, confirmation that the equipment is off may not be necessary.

Step	Action	Location
	Confirm Equipment is in Off	
1	Confirm Intermediate Pumps are OFF	SCADA Main Screen
2	Confirm Fine Screen Influent and Effluent Gates are Closed	SCADA Main Screen
3	Confirm Fine Screens are in Off Position in SCADA	SCADA Main Screen
4	Confirm Fine Screens are in OFF Position at Local Control Panel	Next to Fine Screens
5	Confirm Drum Screens are in Off Position in SCADA	SCADA Main Screen
6	Confirm Drum Screens are in Off Position at Local Control Panel	Fine Screen Electrical Room
	Ready Equipment	
NOTE	Confirm Aeration Basin influent gate is open	AB#5 or AB#4
1	Close Breaker on MCC for Gates	Fine Screen MCC
2	Close Breaker in MCC for Fine Screens	Fine Screen MCC
3	Close Breaker in MCC for Drum Screens	Fine Screen MCC
4	Select Fine Screen Channel to be placed into operation	
5	Place Fine Screen Channel Influent Gate into	Fine Screen Influent

	Remote	Channel
6	Place Fine Screen Channel Effluent Gate into Remote	Fine Screen Effluent Channel
NOTE	Confirm that a LOCK appears at above each gate on SCADA. This confirms both gates are open and will allow Intermediate Pumps to operate	
7	Place Fine Screen in Remote at Local Control Panel	Next to Fine Screen
8	Confirm the sluice is directed to the desired Drum Screen by confirming the manual gate isolates the Drum Screen not to be used	Fine Screen Sluice Channel
9	Place Drum Screen in Remote at Local Control Panel	Fine Screen Building Electrical Room MCC
10	Place Fine Screen Channel Influent Gate Into AUTO	SCADA Fine Screen Control Screen
11	Place Fine Screen Channel Effluent Gate into AUTO	SCADA Fine Screen Control Screen
12	Place Drum Screen in AUTO	SCADA Fine Screen Control Screen
13	Place Drum Screen Spray Valve in AUTO	SCADA Fine Screen Control Screen