

COW Reuse Pump Station

1.0 CONTROLS NARRATIVE

1.1 Pumps (SPR-P001, SPR-P002, SPR-P003)

Pumps shall be configured in a Lead/Lag/Spare configuration that shall rotate which available pump is in what role to equalize run hours.

Run Permissives: Level above LOW and LOW-LOW level (LS-103 & LI-101)

Pump speed shall be controlled by discharge pressure (PT-102). Pressure falling below set-point shall increase pump speed, and pressure increasing above set-point shall reduce pump speed. If level in the basin (LI-101) falls below LOW set-point, then control of pump speed shall switch to attempt to maintain the LOW set-point until basin levels are restored to normal and control shall return to pressure control mode. If Basin falls below LOW-LOW Level the Drives will Stop and a SCADA Alarm will be initiated. A High Level in the Basin will initiate an SCADA Alarm.

1.2 Bleach Feed Pumps (Provided in OSG Package)

The SCADA shall send to the Bleach Feed Pumps (SPR-P010, SPR-P011) an analog signal that shall control the pump speed based on the following formula:

$$\% \text{ Output} = \frac{Q_W * C_D * 1,000,000}{C_B * R_{MAX}}$$

Where:

Q_W = Reuse Water Flow, MGD (FI-100)

C_D = Desired Feed Concentration, ppm (manual operator input)

C_B = Bleach Concentration, ppm (manual operator input)

R_{MAX} = Maximum Pump Rate, GPD (manual operator input)

1.3 Bleach On-Site Generation System (Provided in OSG Package)

The OSG system will operate per manufacturer's requirements with system starting and stopping based on level in the Bleach Tanks (SPR-T002, SPR-T003). This control and the level instrumentation is provided subsidiary to OSG Package.

1.4 Other

All other alarms and indications shall be per the P&ID (plan sheet G2.0).