

## **Balancing System Water Flow**

### **Balancing Return Water and its Importance:**

- Return water is balanced by adjustment of the gate valves.
- There are three main considerations when balancing:
  - 1 - pump motor amperage
  - 2 - overflow at the extractor
  - 3 - return flow into the pulper
- As the pulper grinds up the waste, it pumps the slurry (mixture of solids and liquids) to the extractor, which in turn separates the solids out and pumps (via 'Return Pump') the return water back to the pulper to be used again. In order to keep the return water from becoming too thick from constant reuse and a buildup of 'fines', a small amount of extracted water (usually 1-3 gpm) is adjusted to overflow from the extractor. This water is made up automatically as needed through the water level control system at the pulper.

### **Follow the Procedure Below:**

- When balancing, an amp meter is placed on the leads to the return pump to avoid over-amping the motor.
- First set the pre-fill static level in the pulper.
- Start the pulper, then throttle (adjust) the gate valves in order to give the appropriate overflow (at Extractor) and return flow (at Pulper) staying within operating amps of the return pump motor. Decreasing the flow down the trough will increase overflow at the extractor. This may take a few adjustments and readjustments to get correct flow, depending on the size and complexity of the system. After each adjustment, a few minutes must be given to let the system settle to see where it balances out. It is wise not to make large or numerous changes at one time to avoid bouncing back and forth (a 1/4 turn on a throttling valve may have significant effects). Start at the end of the trough (spreader plate) and work towards the pulper. Remember, velocity is more important than volume. Keep the trough inlets at the end of the trough at a higher velocity than the side nozzles to keep the waste moving quickly.