

## Silt Density Index Procedure

- 1) Before beginning the test, open valves to allow flow through the SDI device to set the pressure regulator for 30 psi.
- 2) Use tweezers to place a 0.45 micron filter in the holder, top side toward the incoming water, and wet it completely by slightly opening the vent valve on top as the filter holder vent valve is opened. Close the vent valve.
- 3) Completely open the inlet valve and immediately re-adjust the pressure regulator for 30 psi. Measure the time in seconds required to fill the 500 mL graduated cylinder ( $t_0$ ). [Empty the cylinder.]
- 4) Allow water to continue flowing for a combined time of 5 minutes while maintaining the pressure at 30 psi. Again the measure the time required to fill the 500 mL cylinder.
- 5) If possible, allow the water to flow for a total time of 10 minutes and repeat the cylinder measurement.
- 6) If possible, allow the water to flow for another 5 minutes and repeat the measurement. If any measurement (in steps #5 or #6) is more than twice the initial measurement, then it is invalid and the prior flow measurement (step #4 or #5) should be used in the Silt Density Index calculation that follows:

$$SDI = 100 \times \frac{1 - \frac{t}{t_0}}{T}$$

where:  $t_0$  is the initial time required for 500 mL of water to permeate the filter

$t_F$  is the time for the 500 mL of water to permeate after T minutes

T is the time in minutes between the  $t_0$  and  $t_F$  measurements, usually 5, 10, or 15 minutes