



# EPA Region 8 Drinking Water Unit Tech Tips

## Sanitary Protection of Drinking Water Storage Tanks: Overflows

**Finished Water Storage Sanitary Protection:** An overflow releases water when controls fail to shut off the incoming water at the high water mark; it is an integral component that protects the tank from damage from overflowing. The overflow allows an emergency release of water when telemetry fails, which should be a rare occurrence. Because water would only be flowing out of an overflow when another system has failed, it is important that the discharge is visible, so that the flow of water can be observed and reported. All key components of storage tanks must be protected to maintain sanitary conditions inside the tank. Also, storage tank overflows cannot serve as the only vent, and tanks must have an air vent separate from the overflow.

### Overflow screen requirements

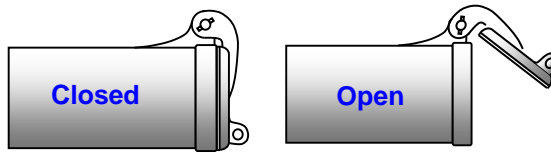
**Not implementing one of these options will trigger a significant deficiency.**

#### Option 1 No. 24 Mesh



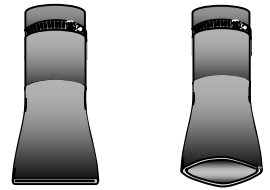
The #24 mesh screen can be used to keep contamination out. The screen should be inspected after overflow events and replaced, if necessary.

#### Option 2 Flapper Valves



Flapper valves with a screen meeting local minimum size requirements can also be used to keep contamination out. Each valve design can get stuck open and therefore should be fitted with a screen inside. EPA recommends a #24 mesh screen. **A flapper valve with no screen inside will trigger a significant deficiency.**

#### Option 3 Duckbill Valves



Duckbill Valves which seal under normal dry conditions can be used to keep contamination out. EPA recommends having a screen fitted inside.

### Overflow height requirements

#### Protection of tank structure and water quality



An overflow inhales just like a vent but through a pipe that extends to the ground. Having the overflow opening at least 12 to 24 inches above an inlet structure, splash plate or engineered rip-rap protects against the inhalation of contamination (dried feces, leaves, dried plants, dust, etc.).

The other reasons to bring the overflow within 12 to 24 inches above a inlet structure, splash plate, or engineered rip-rap are for safety reasons and to prevent erosion that can washout the tank supports or foundation.

**Not having the overflow piped to 12 to 24 inches above an inlet structure, splash plate, or engineered rip-rap will trigger a significant deficiency.**

**Not having access to inspect the overflow will trigger a significant deficiency.**

EPA also recommends that overflows be visible so that any discharge can be observed and reported to identify possible problems.

### Overflows cannot be directly connected to a sanitary sewer or storm drain



**Overflows directly connected to a sanitary sewer or storm drain will trigger a significant deficiency; there must be an air gap of at least 3 pipe diameters above the sanitary sewer or storm drain.**

An air gap is needed to prevent a cross connection between the sewer or storm drain and the overflow pipe. This air gap also prevents the tank from inhaling air from a sewer or storm drain when the overflow is not spilling water, which should be most of the time.