Testing the quality of the water within water storage reservoirs is increasingly becoming more important. The use of chloramines as a method of disinfection requires that the chlorine residuals in the water reservoir be checked on a far more frequent basis. Placing water-sampling points at variable locations and levels within the reservoir enables the sampling technician to also check the water for possible problems resulting from stagnation and/or thermal stratification. These problems usually result during periods of low water usage, i.e. off-peak season or when there are rapid changes in the weather. They can also result from incomplete mixing of the reservoir contents when fresh water is introduced to water that has been in the tank for extended periods of time.

It is also important for the system operator to regulate the fill-draw cycle to match periods of high and low consumption. There are numerous variables that enter into the formulation of keeping these ratios at optimum conditions, and by sampling the water for PH, chlorine residual, as well as for bacteriological levels, the operator gains valuable information to help monitor and control proper conditions.

The size of the reservoir will determine the quantity, size and location of the sampling points. Small reservoirs with high turnover rates may only require one sampling port while in most reservoirs with single center column roof support it is suggested that at least three collection points be located in a fixed vertical position near the shell. This will normally provide sufficient sampling data. They should be set at elevations within the lower, middle and upper third of the content levels. Direct sunshine on the tank shell, especially during summer months can raise the temperature of the water near the shell thus giving misleading information of sampled water. Therefore it is suggested that the sampling points be placed at least three-feet away from the shell, and that they preferably be located on the north side of the reservoir. Water samples taken at these points will yield consistent levels and give a more representative sample. For larger reservoirs additional sampling points from the middle and intermediate points should be considered. It is possible to locate the sampling points at variable levels through lines that are attached to brackets connected to the intermediate roof support columns.

The final number, size and location of sampling points needs to be carefully planned so as to allow sampling from all points within the reservoir. Lastly, in some cases it might also be beneficial to locate a sampling point directly in front of the inlet water nozzle so as to collect data from the incoming water. This allows the operator to compare the data from the fresh water to the stored water.

Generally lines sized ¼” Ø permit sufficient sampling from all points within the reservoir. It is imperative that the lines be constructed of non-corrosive materials such as PVC or 316-grade stainless steel. For the convenience of the system operator, it is best to have the entire sampling lines pass through the shell and into one secured enclosure that is mounted to the shell at chest height. Samples can be taken by opening control valves also made of 316 stainless steel should be conveniently located within the enclosure, and positioned to leave ample room for the collection bottles below the valves. For security purposes the enclosure should be locked when not in use.

–Barry Matchett

Key Benefits
- Mounts to exterior walls of both concrete and steel water reservoirs.
- Take water samples at multiple tank levels inside.
- Check vales available to prevent injection of foreign materials.
- Locking enclosure and locking valves provide extra security.

Customization Options
- Size
- Arrangement
- Installations

Contact us today to learn more
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