

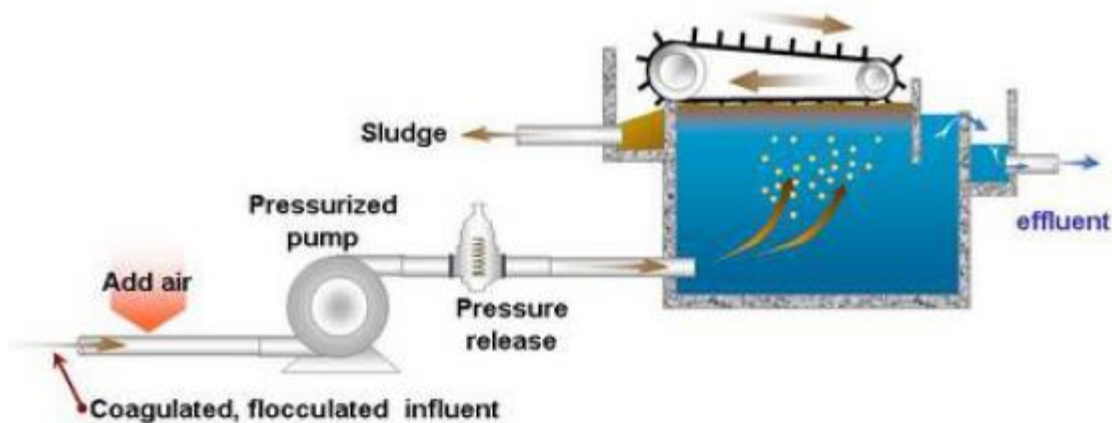


Why is flotation used for water treatment?

- Flotation is an effective process for the removal of relatively light types of flocs.

What does the flotation process involve?

- Flotation involves the formation of small bubbles in water that has to be flocculated. The bubbles attach to the floc causing them to rise to the surface where they are collected as a froth that is removed from the top of the flotation unit. A typical flotation unit is illustrated below.



How is the fine bubbles formed?

- Air is dissolved under pressure in a small amount of water in a device called a saturator. This water that is saturated with dissolved air is added to the main stream of water that is to be treated. When the pressure is released after the saturated water is mixed with the water to be treated, the dissolved air comes out of solution in the form of fine bubbles.

How does flotation differ from sedimentation?

- Both sedimentation and flotation remove the bulk of the flocs from the water. However, most of the time a small amount of (broken) flocs or non-flocculated colloidal material remains in the water. This material has to be removed to ensure a low enough turbidity in the water. A sufficiently low turbidity level is required for the effective disinfection of the water and to remove all traces of murkiness from the water. Removal of turbidity to low levels is achieved by means of sand filtration.

Sedimentation and flotation are two processes that perform the same function. Sedimentation is normally used when raw water contains mainly silt or clay particles, while flotation is normally used when the raw water contains algae or other types of organic material.