

Water Purification Plant

Where do we get our water from?

The supplier of the raw water, South East Queensland (SEQ) Water is responsible for building and maintaining the Wivenhoe and Somerset dams, and then storing the raw or untreated water. The water is then delivered to Brisbane Water at Mt Crosby who as bulk treatment supplier, purifies and treats the raw water. It is then distributed to Ipswich Water as drinking water, stored in reservoirs, and sold to residents, commercial and industrial customers.

Ipswich Water is responsible for the provision, operation and maintenance of water reservoirs and extensive pipe networks winding through the City.



Water Purification Plant

How is the raw water purified after it is taken out of Wivenhoe Dam?

1. Screening

At the purification plant water passes through metal screens to trap large living organisms, sticks, leaves and litter, but allows the water to pass through.

2. Coagulation and flocculation

All raw water contains suspended particles, which need to be removed.

Coagulation is the first process and involves adding alum to the water. Flash mixers mix the alum into the water for about 20 to 30 seconds, this destabilises the particles.

Flocculation is the clumping together of the suspended particles that have been destabilised, to form heavier visible particles called "floc". The "floc" remains in suspension as the water is flowing at high velocity through the flocculators.

Slaked lime and small quantities of sodium may also be added to promote coagulation and flocculation.

3. Sedimentation

Sedimentation is the oldest known method of water purification and has been used over thousands of years. The water flows slowly into large sedimentation tanks. The "floc" then settles to the bottom of the tank to form sludge. The sludge is then removed from the process.

4. Recarbonation

The use of lime as a coagulant raises the pH of the water to about 10.5 which is very unstable and can form scale in the water pipes. After sedimentation, the water flows into carbonation bays where it is stabilised by introducing pure carbon dioxide gas into the water.

5. Filtration

Following carbonation, the water passes into the filter houses where it flows through rapid gravity sand filter beds of finely graded silica sand and pebbles. The remaining suspended particles are removed at this stage.

6. Primary Disinfection

The water leaving the purification works is disinfected with chlorine to kill micro-organisms, bacteria and any viruses that may be present in the water.

7. Secondary Disinfection by Chlorination

Although chlorine is an excellent disinfectant it does not remain active for much longer than 6 to 8 hours. At the booster pumping stations in the Ipswich supply area chloramine (chlorine and ammonia) is added to the water. This is a less powerful disinfectant but has the capacity to prevent microbial growth in the water for up to 8 to 12 days.

