

Wurdee Boluc Water Treatment Plant

How does water get to the Wurdee Boluc Treatment Plant?

Surface runoff is water that moves across the land surface.

West Barwon Reservoir captures surface runoff water from the Otway catchment.

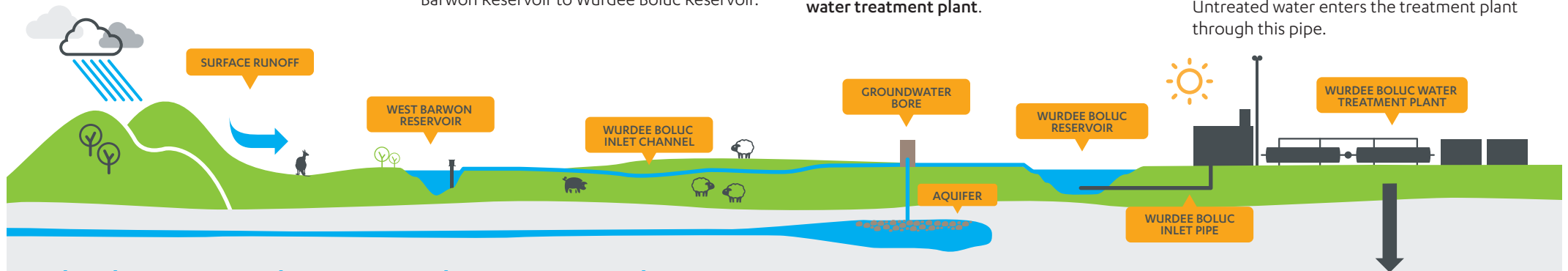
Wurdee Boluc Inlet Channel is 57 kilometres long and transfers untreated water from West Barwon Reservoir to Wurdee Boluc Reservoir.

Groundwater is found in underground water bodies called **aquifers**. Water can be extracted from an aquifer using a **bore** and pump. Groundwater is used to supplement surface water during times of reduced rainfall.

Untreated water sits in the **Wurdee Boluc Reservoir** before being transferred to the **water treatment plant**.

Wurdee Boluc Reservoir helps improve water quality by allowing time for the sun to neutralise micro-organisms (germs), and for fine clay, sand and silt to sink to the bottom of the reservoir.

The **inlet pipe** extends to the deepest part of the reservoir, sitting just above the bottom. Untreated water enters the treatment plant through this pipe.



What happens to the water at the treatment plant?

Coagulation and mixing

Specialised chemicals are added to the untreated water as it flows into the treatment plant. The chemicals (coagulant) act like a magnet, sticking to any tiny dirt particles in the water and forming 'floc' particles.

The water is mixed to allow the floc particles to join together, forming larger flocs that are easier to remove.

Filtration and filter media

The coagulated water, with suspended floc particles, passes through one of the 20 large filtration tanks. Inside, compact layers of gravel, sand and anthracite (a special type of coal) are used to trap the flocs as the clear water easily passes through.

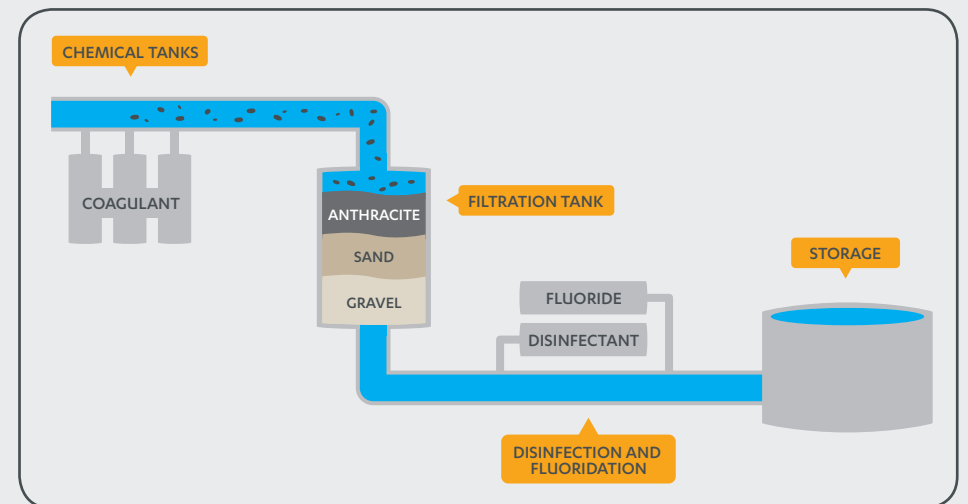
Filters work on a basic principle that large objects cannot pass through a small hole. Water can change its shape and squeeze through tiny gaps, but the flocs are too large to pass through the spaces between the gravel, sand and anthracite.

Disinfection and fluoridation

The final step is the addition of a small amount of disinfectant (liquid chlorine) to inactivate any micro-organisms that may be present. Fluoride is also added to the clean water at this point, to help reduce tooth decay.

Storage

The water is now clean and safe to drink. It moves into a large storage tank before being sent to Geelong.

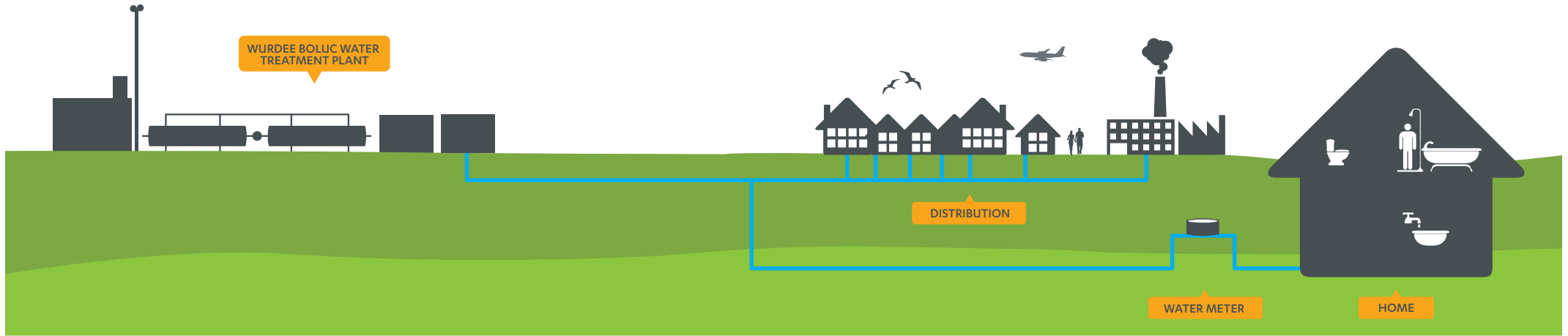


How does the water get to Geelong?

The clean water travels through pipes on its way to homes, schools and factories.

Water meters measure how much water passes through them, and can be used to determine how much water you use at home.

By the time a glass of clean water arrives at your kitchen tap, it has been on an incredible journey. It is important we remember the time and effort that goes into making water clean and safe to drink and ensure we use each and every drop carefully.



What happens to the waste water from filtration?

Backwashing

The filters work hard trapping the floc particles and, over time, they too become blocked. When this happens, air and water is forced backwards through the filter in a process called 'backwashing'. The trapped floc is dislodged and floated away as waste water.

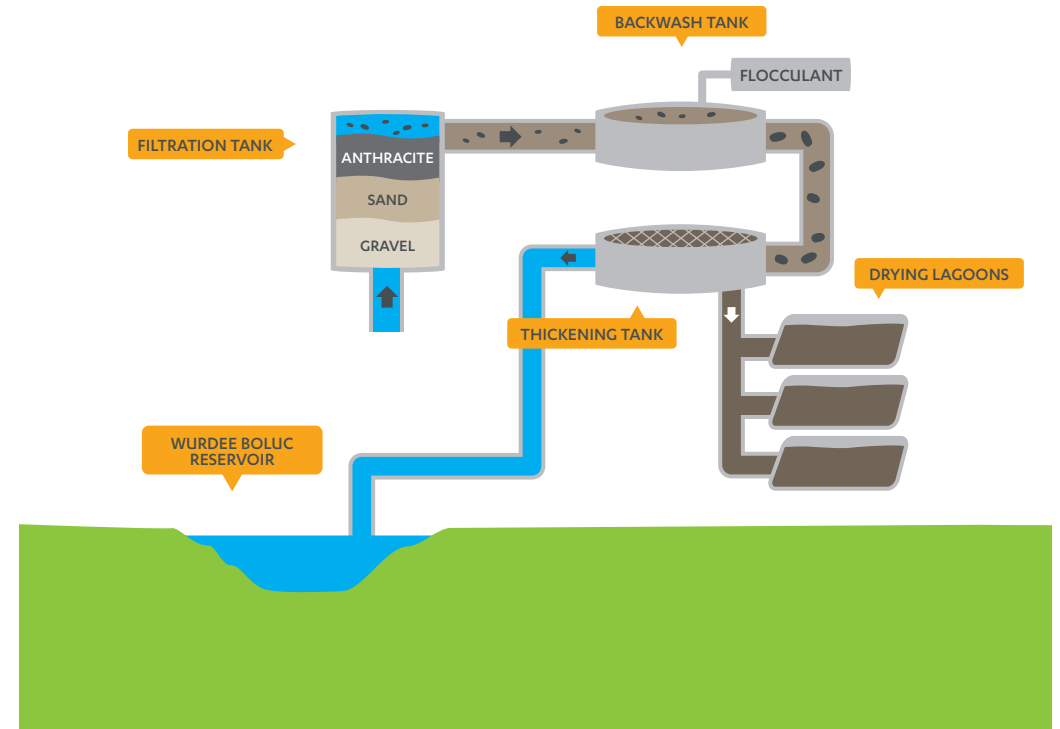
Backwash tank and flocculation

The backwash water collects in the backwash tank. Here another chemical, flocculant, is added to help the small flocs combine into even larger sized flocs.

Thickening tank, drying lagoons and reservoir return

The larger flocs settle to the bottom of the tank as sludge where they are pumped out and sent to one of the large drying lagoons. Eventually they are returned to the ground as clay and silt.

The clear water retrieved from the thickening tank is recycled to the Wurdee Boluc Reservoir where it is mixed with the untreated water to be turned into drinking water.



For further information

☎ 1300 656 007 | ✉ info@barwonwater.vic.gov.au

www.barwonwater.vic.gov.au