

Groundwater Treatment Process



1 Aquifer

Groundwater is obtained from a deep sand and gravel layer in the ground at depths ranging from 50 to 100 meters below the surface.

2 Groundwater Well

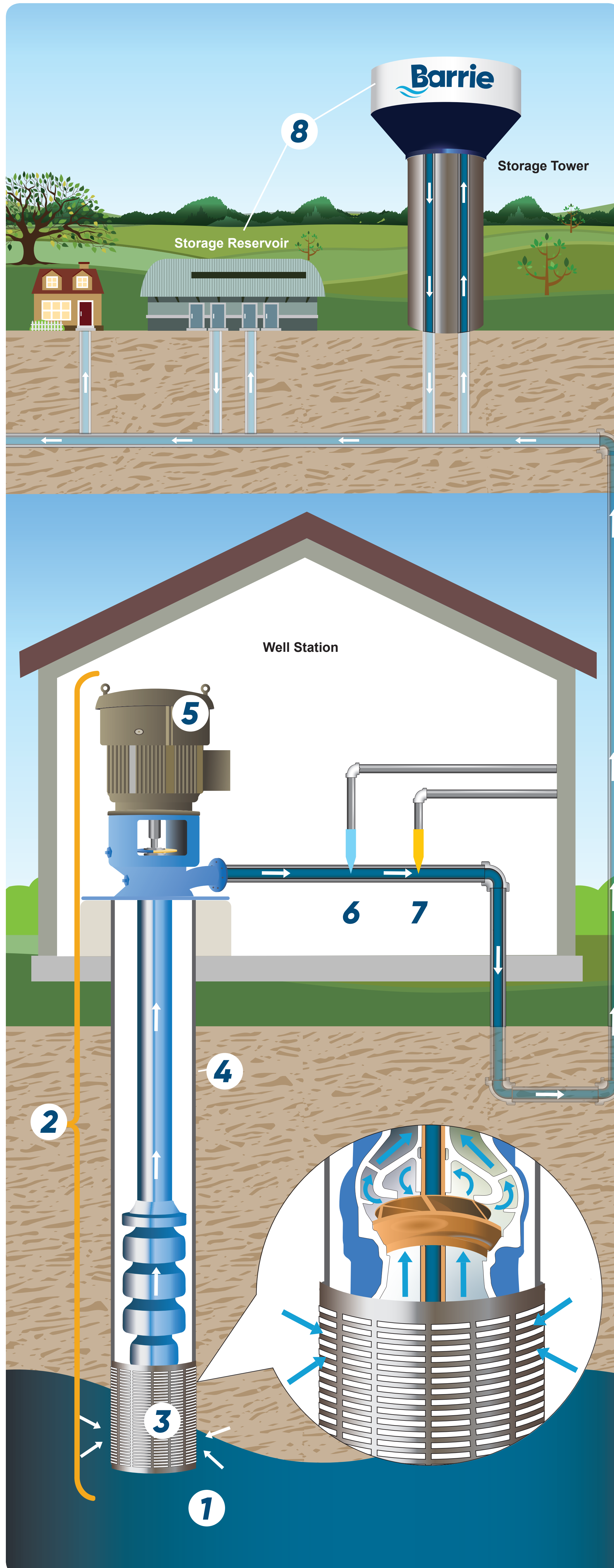
Wells are structures that bring groundwater from deep underground to the surface and are comprised of a screen, pump, motor and casing.

3 Screen

Water is first drawn through a screen which acts as a barrier, stopping particles from entering the well and causing damage to the equipment.

4 Casing

The water travels to the surface through an unperforated pipe called a casing. The casing provides structural stability to the well and is surrounded by grout to help protect against contamination.



5 Pump & Motor

Vertical turbine pumps are used to move water to the surface in all municipal wells. These pumps consist of an electric motor at the surface connected by a shaft to impellers at the bottom of the well. When the motor is activated it causes a rotation of the shaft and impellers, which pushes the water up to get treated.

6 Disinfection

Before being released to the distribution system the water must be disinfected to inactivate any potential harmful pathogens. Most wells within the City use chlorine and are provided with sufficient contact time for disinfection. One well uses ultraviolet light which provides immediate disinfection.

7 Iron Sequestering

Groundwater in Barrie contains naturally occurring iron and manganese. Sodium silicate is added to the water to keep these particles in suspension. This helps prevent rusty looking water at the tap.

8 After disinfection, the water is pumped to a water storage reservoir and/or tower for use by the community.