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Recycled water for industry

BlueScope Steel, Port Kembla

More than seven billion litres of recycled water a year is used for industrial processes in Sydney and the Illawarra. BlueScope Steel is one of a growing number of industrial customers using recycled water to save drinking water.

BlueScope Steel, in the Illawarra, has been using recycled water for iron and steel making processes since 2006 and is one of the world’s most water efficient steel producers.

About recycled water

BlueScope Steel’s recycled water comes from the Wollongong Sewage Treatment Plant. Recycled water is highly treated wastewater. It’s a valuable resource that can be used in many ways. Sydney Water treats recycled water so it’s safe to use. There are many steps involved in treating recycled water for use in industrial processes. This may include physical and biological treatment, sand filtration, micro-filtration, reverse osmosis filtration, chlorination and ultraviolet disinfection.

The recycled water for BlueScope Steel from the Wollongong plant is suitable for industrial processes and fire fighting, but not for drinking or bathing. For more information, please see the National Water Quality Management Strategy (NWQMS) 2006, Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1), NWQMS.

Benefits of recycled water

- saves drinking water
- reduces the amount of treated wastewater entering oceans, creeks and rivers
- is a reliable alternative water supply for industrial processes
- reduces long term costs.
How recycled water is produced
Wastewater going to sewage treatment plants is more than 99% water.

At the Wollongong Sewage Treatment Plant, a series of processes is used to clean the wastewater before it can be used for industrial processes at BlueScope Steel:

1. The wastewater is screened and settled to remove large solids and grit.
2. Biological treatment uses micro-organisms to reduce nutrients such as nitrogen and phosphorous.
3. The treated wastewater is clarified to further improve quality.
4. Microfiltration uses hollow fibres to remove some fine particles, bacteria and viruses.
5. Reverse osmosis improves the quality of the water by removing viruses, nutrients and dissolved salts at high pressure, using fine barrier membranes.
6. The recycled water is then disinfected before it is pumped to BlueScope Steel's Port Kembla Steelworks.

How recycled water is used at BlueScope Steel
BlueScope Steel's Port Kembla Steelworks is within two kilometres of the Wollongong Sewage Treatment Plant.

Sydney Water pumps recycled water to its industrial water storage tank, where it mixes with unfiltered dam water before being supplied to the steelworks. The recycled water is then transported in pipes throughout the site where it is used in iron and steel making processes. It is also used to cool the plant and equipment, and for environmental purposes such as reducing dust from roads, trucks and stockpiles.

BlueScope Steel uses up to 7,300 million litres of recycled water each year, equivalent to about 20 million litres each day.

Safe recycled water
Recycled water is safe to use when relevant health and technical guidelines have been followed. It is treated to a high standard, but is not for drinking.

Sydney Water and BlueScope Steel have signed an agreement that sets out how to use recycled water safely and achieve the best results for the community, staff and the environment.

Signs around the steelworks advise where recycled water is being used on the site.

Further information
To know more about recycled water and its availability, phone Sydney Water’s Recycled Water Market Development team on 8762 5477 or email recycledwater@sydneywater.com.au

Information is also available on our website www.sydneywater.com.au under ‘Saving water / Recycling’