

Western Trade Coast Managed Aquifer Recharge Study

A study is underway to examine the cost effectiveness of a Managed Aquifer Recharge (MAR) Scheme to secure long term process water supplies for heavy industries in the Western Trade Coast (WTC).

Overseen by the Western Trade Coast Industries Committee, the \$1M study is being led by CSIRO and includes the Kwinana Industries Council (KIC), Departments of Water and Health, the Water Corporation and the Western Trade Coast Office. The study has been made possible through the financial support of the Australian Water Recycling Centre of Excellence, CSIRO and KIC.

Securing a long term water source for major industries within the Kwinana Industrial Area is a priority of the Western Trade Coast Industries Committee. Waste water reuse, whether it be via a MAR Scheme, or another method, has the potential to be a climate independent solution that will benefit the whole community.

Conceptually, such a MAR scheme would see the significant volumes of treated waste water, already available in the WTC, further purified and added to the superficial aquifer. The water is stored within the aquifer and undergoes natural filtration before being drawn out by individual industries. An indicative diagram is overleaf.

A key difference in this MAR concept is that the water will only be for industrial use rather than drinking water. This means that waste water may not need to be treated to such a high quality reducing the cost of supply.

Many industries are large users of groundwater. Reusing wastewater is a much preferred option from an environmental and sustainability viewpoint. Industry already uses treated wastewater from the Kwinana Water Reclamation Plant but there is potential to significantly increase the use of wastewater. More than 30 gigalitres of wastewater per year, or enough to fill 15,000 Olympic swimming pools, is potentially available for recharge from existing wastewater treatment facilities in the Western Trade Coast.

There are other potential benefits from a MAR in Kwinana. By recharging underground aquifers a MAR scheme could, in turn, push back the seawater intrusion and provide a greater pressure head to improve the health of upstream wetlands.

The study will evaluate the potential for a recharge scheme from hydrological, engineering, environmental, health, commercial and socio-economic perspectives.

The study is an important first step that will map the potential for and pathway to developing and operating a recharge scheme for the Western Trade Coast. The study will run until March 2015.

Managed Aquifer Recharge Concept

