

FAQ 6 - What is the difference between a public and private groundwater pump?

Groundwater pumping is desirable to control watertables and salinity. Pumping groundwater ultimately requires its disposal. This can be done by reusing on-farm and/or disposing to drains and channels. This is dependent upon the groundwater salinity and purpose of the pump.

Private groundwater pumps – at groundwater salinities less than 3,500 EC, groundwater reuse on-farm can provide extra irrigation water for crops with the additional benefits of salinity control. How much groundwater can be reused depends on the groundwater quality, area available and the type of crops to be irrigated. Reuse of saline groundwater will very likely require mixing with channel water to ensure the applied water salinity (800 EC) will not cause productivity losses.

Private pumps are installed, owned and operated by individual landowners. Grants are available to assist landowners search for groundwater on their farm, and to install a groundwater pump.

Public pumps - if groundwater salinity is greater than 3,500 EC but less than 10,000 EC, a Public Salinity Control Pump is the recommended method of achieving salinity and watertable control. A Public Pump allows disposal under strict guidelines to G-MW drains (in winter) and channels (in summer).

Public pumps are installed, owned and operated by Goulburn—Murray Water for salinity control. Beneficiaries are rated for its ongoing operation and maintenance. For more information please refer to "Public Pump Operating Criteria" in the Groundwater Brochure series.

For further information contact:

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Ed works as a Grant Officer assisting with capital grants and upgrades of shallow spear-point systems in the Shepparton Irrigation Region. He also provides advice on the Farm Exploratory Drilling Scheme (FEDS) and the level of financial support available to assist in pump and system upgrades.

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Groundwater Extension Officers can provide advice on locating groundwater through the Farm Exploratory Drilling Scheme (FEDS), the management of groundwater and its use for irrigated agriculture, domestic and stock drinking water (eg. Groundwater quality impacts on productivity and stock health).

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ISBN 1 74146 601 6

This project is delivered as part of the Goulburn Broken Catchment Management Authority activities in the Shepparton Irrigation Region and is supported and funded by the Australian and Victorian Governments.

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Authorised by the Victorian Government, Department of Primary Industries, Ferguson Road, Tatura.
Printed by Department of Primary Industries, Ferguson Road, Tatura, September 2005.

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Sub-surface Drainage Program

Frequently asked questions (FAQ)



Department of Sustainability and Environment

Department of Primary Industries

FAQ 1 - What is groundwater?

Groundwater is part of the natural water cycle. When it rains, some water is evaporated, some forms runoff into drains, rivers and streams and some seeps into the ground. Water in the soil that is not used by plant roots travels deeper until it reaches a level known as the watertable. This is a saturated zone where all the spaces between the soil or bedrock are filled with water. Water in this saturated zone beneath the watertable is called groundwater.

FAQ 2 - What are aquifers?

Aquifers are layers of porous material such as sand, gravel or fractured rock in which the spaces or fractures are filled with water. In the SIR they are commonly sand and gravel layers left by old rivers and streams that have been buried over time by sediments.

In the Shepparton Irrigation Region, shallow aquifers (within 25 m of the surface) are available in most areas. The salinity of these aquifers varies quite significantly.

Some parts of the SIR, such as the Katunga area, also have deeper groundwater aquifers (greater than 25 metres below surface level). These aquifers are more extensive than the shallow system and yields can be greater.

FAQ 3 - How do I determine the right mix of groundwater and surface water?

To work out the right mix of any surface water (whether from the channel, reuse system or drainage diversion) to groundwater, use the simple formula below:

$$\text{Ratio} = \frac{\text{Groundwater Salinity (EC)} - 800}{800 - \text{Surface water Salinity (EC)}}$$

Where:

800 = recommended 'safe' reuse salinity limit (EC)

Example

$$\frac{(2000 - 800)}{(800 - 100)} = \frac{1200}{700} = 1.7$$

If your groundwater salinity is 2,000 EC and the channel water salinity is 100 EC, you need 1.7 ML of surface water at 100 EC to every 1 ML of groundwater used at 2,000 EC to achieve a salinity of 800 EC in the irrigation blend.

FAQ 4 - How far apart do groundwater pumps used for irrigation have to be?

With the introduction of the Shepparton Irrigation Region Groundwater Management Plan (GMP), there are a number of criteria that govern the installation, maintenance and operation of a groundwater pump, and in particular management of the groundwater.

The minimum distance from an existing bore stipulated on a Bore Construction License is 300 metres. This also applies to domestic and stock bores.

FAQ 5 - Why do I need a Whole Farm Plan to be eligible for receiving an incentive for a groundwater pump?

A Whole Farm Plan provides you with a blue print for the future development of your farm. It enables you to plan investment in works in a systematic way. You can use your own ideas to make the most out of natural drainage, soil types, formed drains and channels.

The extra water made available by groundwater pumping should not overload the existing farm services. A farmer with a Whole Farm Plan is better placed to demonstrate sustainable land use practices than someone without a Whole Farm Plan. It also shows a commitment to the development of the works and is one way of ensuring that public funds for salinity management are well spent.

For further information on Whole Farm Plans contact: Chris Nicholson, Department of Primary Industries, Tatura. Phone: (03)5833 5932.