Coal Seam Gas Water Management

Santos is one of Australia's leading gas producers, supplying Australian and Asian customers. The growth of the coal seam gas (CSG) sector represents a major opportunity to help Australia and the region move to a cleaner, less carbon-intensive future.

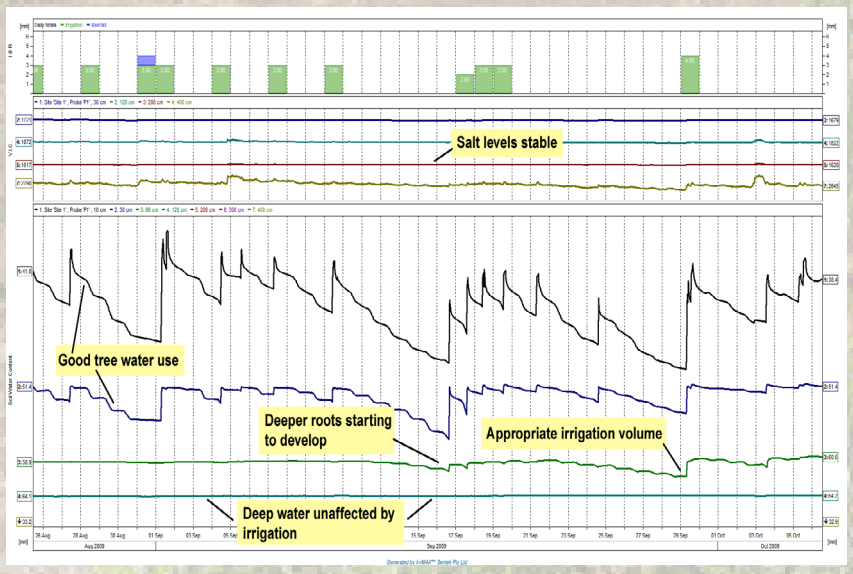
As a CSG industry leader Santos is at the forefront of this growth, and is working closely with Government environmental protection specialists in the implementation of strict new guidelines in CSG (coal seam gas) water treatment and subsequent beneficial use. Santos' Queensland CSG fields are in the Fairview, Roma and Arcadia Valley areas. Irrigation will beneficially utilise between 45% and 80% of treated CSG water.

Sentek is supporting Santos with Coal Seam Gas water management, which supports clean energy.

Santos seeks to maximise the environmental, community and business benefits from the irrigation of forage-based grazing systems, forest plantations and native forest regeneration on suitable land and soil systems and is utilising Sentek Technologies precision greening systems to manage the sustainable use of treated CSG water on specific crops on specific soils in a range of catchments.

To maintain the fine balance between maximising irrigation volumes, promoting tree plantation and forage crop health and minimising environmental impacts, Sentek soil moisture and salinity sensors, along with a range of other precision environmental monitoring devices, have been deployed across the tree plantation and forage crop areas. The data from the sensors is continually used to refine and adapt irrigation management to maintain environmental conditions, compliance and maximise water use efficiency, achieve target leaching fractions. Sentek Technologies including appropriate decision-support IrriMAX software provides continuous data which shows:

IrriMAX graph showing water management of young trees



- how much water the trees and crops are using each day
- optimal times for further irrigations
- any changes in salt levels and vertical and lateral distribution within the soil profile
- how irrigation amount and frequency is managed to ensure below root zone drainage is within the guidelines set in the irrigation management plan
- that vertical or horizontal movement of below root zone drainage does not impact upon ephemeral streams or shallow or deep groundwater aquifers
- appropriate times for further monitoring

With the CSG industry expanding rapidly, these innovative precision management decision making approaches to managing wastewater will support the CSG industry in its competitiveness and in achieving sustainable environmental outcomes.