GEOSCIENCE, WATER AND SALINITY IN RURAL TOWNS OF WESTERN AUSTRALIA

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Abtract

Western Australia has serious salinity problems both in the agricultural lands of the WA Wheatbelt and also in the Rural Towns which serve the Wheatbelt. A major multi-disciplinary, multi-agency project : Rural Towns – Liquid Assets began in mid 2005 to address salinity and water issues in sixteen of the most salt affected towns. Salinity affects the infrastructure (roads, railways, buildings) and also affects the water supply. The project is designed to mitigate the effects of salinity, find more water for these towns and more uses for the water to encourage new industries. The project includes social surveys, economics, geoscience, hydrogeology, and engineering design work and implementation. Geophysics is being used to provide information on the geology of regolith and bedrock. Gravity has been widely used in this project and has proved to be very useful. This is supplemented by other geophysical methods such as time domain electromagnetics, seismic and borehole geophysics. In each town the scientific questions to be answered are defined and appropriate geophysical programs are designed to answer these questions. This paper includes examples of work done to provide understanding of the geology and hydrogeology in project towns and how this fits in with the total project.