ABSTRACT:

The Aboriginal outstations or 'homelands' movement of the last decade has witnessed a migration of small groups of Aboriginal people back to their traditional lands, a movement now involving over two thousand Aboriginals in Western Australia. Statistics indicate an acceleration of this movement in the last few years, particularly in the Kimberley and East Pilbara areas of W.A.

The provision of water and related services such as reticulation and ablutions for the small, remote, often seasonally occupied settlements, or "outstations", which are being established is a difficult and expensive task. Often the site chosen for the outstation is not within proximity to good water, since available water resources are scarce and often utilised by pastoral stations for stock watering. Where water is accessed by bore drilling, over half the water quality limits exceed acceptable levels as determined by Australian standards for drinking water quality. Field workers and engineers have questioned the stringency of such criteria in the context of the Aboriginals' particular circumstances. Likewise, quantities of water regarded as minimal by servicing authorities are considered far in excess of actual usage figures, causing over-capitalisation in the provision of services to a few outstations at the expense of others. In general, it appears that the perceived need for remote Aboriginal outstations as envisaged by servicing agencies is much greater than the expressed needs of the people themselves. This anomaly raises the need to define an approach to the servicing needs of the outstations, which may be termed an 'appropriate technology' approach.

The appropriate technology approach focuses upon both the technology and its impact on a particular group or society. It is the
adaptation of technology to the physical, cultural and societal context that makes that technology appropriate. Of greatest importance to Aboriginal needs is the use of technology which is robust, easily maintained, reliable and safe. In the political framework of the outstation movement, it is apparent that the technology should involve minimal outside servicing requirements, and maximum input by the users themselves.

This thesis seeks to address some of the issues outlined above for the provision of water supply and the technology of treatment and disposal, and of the revision of supply standards to achieve this. Particular attention is given to:

- quantity and quality needs assessment for outstations, referring to work done by Aboriginal field workers and overseas studies in this area.

- the appropriate technology approach to the development of technology for outstation communities

- assessment of a number of technologies for water supply, distribution and disposal using appropriate technology criteria for their use in outstations

- the development of a particular technology, reverse osmosis desalination, for potential use in the purification of outstation water supplies. This unit would conceivably operate using a renewable energy source such as windpumping, and fulfill the criteria of appropriateness outlined in this thesis.