

Executive Summary

The waste water treatment technologies proposed for the development have been utilised widely both in Western Australia, nationally and internationally. The adoption of a particular technology is largely dictated by the quantity of inflow and the desired quality of treatment by-products.

Issues associated with waste water treatment are mainly odour and the attraction of certain disease carrying vermin. Both can be managed, however, the most important consideration in the management of these issues is the maintenance of a buffer zone and attention to maintenance of significant equipment such as aerators, mixers and chemical dosing systems.

The by-products of waste water treatment technology, biosolids and treated effluent, can and have been re-used for many years in Western Australia and beyond. Currently, approximately 98% of biosolids are re-used while only 4% of treated effluent is re-used. The latter figure largely reflects upon the profligacy to which water has been subjected both historically and currently.

Issues associated with the production of both by-products are odour and vermin. Odour issues are mainly due to extended on-site storage, inappropriate chemical dosing and seasonal impacts of temperature and wind velocity. Vermin relates to flies and scavenging birds able to spread disease outside the WWTP facility. On-site composting of biosolids is a potential value-add opportunity providing an important nutrient source for composting of green waste and other carbon rich waste sources, while reducing on-site storage time.

Irrigation of commercial horticulture and parks and gardens with treated effluent may require acceptance by neighbouring property owners, however, the quality of the treated effluent should, in most circumstances, be suitable for sub-surface irrigation (Class C) and may, dependent upon the technology employed, be suitable for above surface drip irrigation and/or spray irrigation (Class A). Retention periods for crops produced using treated effluent are determined by the Department of Health and should be strictly abided.

Development of strategies for siting of the proposed WWTP will be significantly influenced by the ownership/lease arrangement between EMRC and Water Corporation. Of the two options, sale of a discreet parcel of land (option 2 - Section 10) is regarded as providing the most sustainable outcome for the EMRC, however, it must be also be stated that the implications for potentially negative attention for the Red Hill site will occur irrespective of which of these options is applied given that such close proximity will draw criticism by those opposed to such developments.

Siting for the proposed facility, irrespective of the site being leased or sold, is largely determined by the requirement for adequate buffer distances (see Section 9) to sensitive land uses and the attraction of vermin or the potential for surface water contamination.

No examples were found of landfill sites hosting the siting of waste water treatment plants for treatment of sewage. Although WWTP for treatment of on-site generated leachate at landfills is a reasonably common experience (Cleanaway's Tullamarine facility, Melbourne; Waste Services, Sydney) and off-site treatment of leachate at designated WWTPs (Maroochy Shire, Queensland) occurs where required, the actual siting of a WWTP on a current landfill is an unknown circumstance.

Overall, the risks associated with the EMRC leasing land to Water corporation for development of an on-site WWTP outweigh known on-site requirements for reuse water supplies or the estimated revenue resulting from such an arrangement.

The opportunity to sell to Water Corporation a site which has previously been developed or which may become isolated from current on-site activities by the Perth-Adelaide Highway is a potentially attractive proposition, particularly if on-site development will require significant additional water consumption and the cost of reticulating from a distant WWTP is prohibitive.