

13. Land and Groundwater

The Project area contains rocky red soils derived from basalt in a much altered landscape with a high degree of soil disturbance and numerous stockpiles of soil and rock (Plate 13-1). Vegetation consists of high-threat weeds typical of disturbed sites in the west of Melbourne, including Serrated Tussock *Nassella trichotoma*, Chilean Needle-grass *Nassella neesiana*, Artichoke Thistle *Cynara cardunculus subsp. flavescens*, Sticky Ground-cherry *Physalis hederifolia*, Bristly Ox-tongue *Helminthotheca echioides*, Noogoora Burr *Xanthium occidentale*, Fennel *Foeniculum vulgare* and African Box-thorn *Lycium ferocissimum* (Plate 13-2). Scattered native plants of Windmill Grass *Chloris truncata* and Kidney-weed *Dichondra repens*, persisted at very low densities amongst the high-threat weeds. The site is viewed by the City of Wyndham as being subject to significant disturbance. The risks to land from the Project have been assessed as very low.



Plate 13-1: Aerial View of Project Site



Plate 13-2: View across Site – High Threat Weed Species Dominant

Groundwater in the area of the Project is contained within fractured basalt, is relatively shallow (<5m) and contains medium salinity (1000mg/L – 3000mg/L). Six bores are located within 500m of the proposed REA Site⁹⁰ (Figure 13-1). The available details on these bore holes is shown in Table 13-1. Bore hole WRK043282 was drilled to 33m and is the only hole registered for commercial use. Bore hole WRK085517 is in close proximity and does not have a designated use but it was drilled to 60m suggesting it may have been used commercially in the past. All the other holes are shallow and none have a designated use suggesting they are likely to be observation bores.

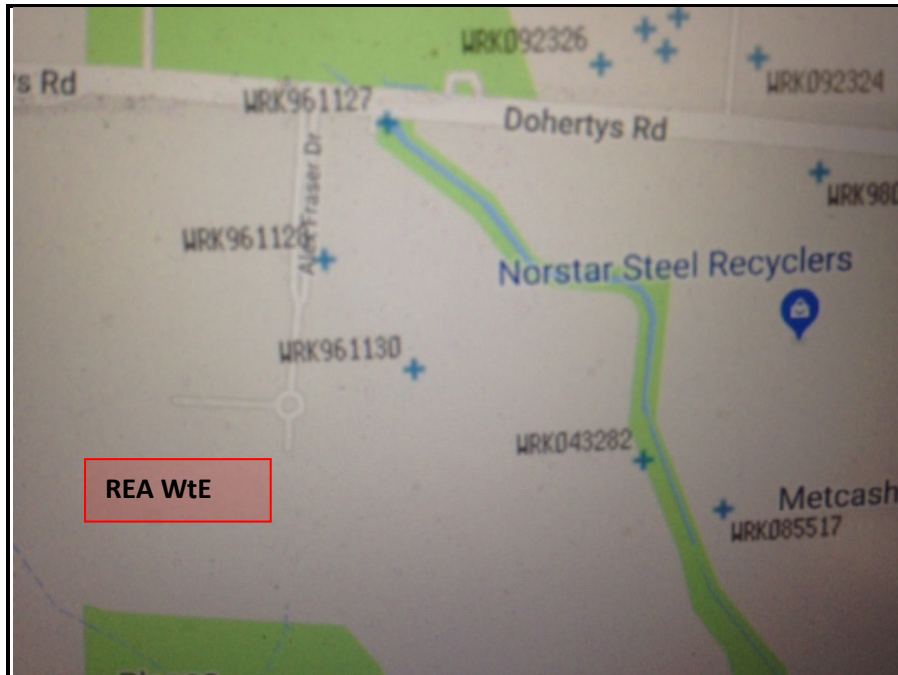


Figure 13-1: Location of Groundwater Bores (+) near REA Site

Bore Hole Number	Depth of Bore Hole	Designated Use
WRK961128	5m	Not Recorded
WRK961130	5m	Not Recorded
WRK961127	5m	Not Recorded
WRK04382	33m	Commercial
WRK085517	60m	Not Recorded
WRK092326	12.5m	Not Recorded

Table 13-1: Details of Bore Holes

The risk assessment (Appendix 4) evaluated the likelihood and consequence of leakage of wastewater from the site into groundwater and found only a low risk to groundwater from the Project. All by-product water generated in the process is reused and reagents are mixed in only small quantities at any one time. The processing area is contained within bunds and additional bunding is incorporated around chemical and fuel storages. The only containment that retains liquids for any length of time is the

⁹⁰ Visualising Victorian Groundwater. <http://maps.ubspatial.com.au>

leachate tank and the MSW waste bunker. Only limited quantities of leachate are retained in each of the areas as the leachate in the bunker is regularly pumped to the leachate tank and the leachate tank is continuously pumped in small volumes into the gasifier feed. The bunker and the leachate pool are concrete and epoxy lined and are designed to be impermeable minimising the potential for leakage to groundwater.