



1.1.1 Nanofiltration Membrane Water Purification Treatment Plant

1.1.1.1 Introduction and Background

The project entails treating borehole water (from two boreholes located within close proximity of the plant) to a potable standard (SANS 241). The reason for the plant is due to the high fluoride, iron and manganese that have been encountered in the borehole water. The Nanofiltration water purification plant will treat approximately 80 kl/day of water over a 10-hour period which will then be sent to the existing reservoir onsite (Reservoir E5 in the Ekukhanyeni area) which will then be distributed via the existing reticulation system in the area. The project beneficiary will be the people within the area and is expected to directly benefit approximately 106 households or around 450 people.

1.1.1.2 Project Area

Both boreholes are located in Ward 3. The water from the boreholes will be treated then sent to the E5 Reservoir (supplemented by Durban Heights Water). Reservoir E5 currently supplies rural areas around the reservoir (Ekukhanyeni) and has provision of supplying the Ilembe DM with water. This however, is not done due to the lack of water at the site.

1.1.1.3 Risks/Challenges

- Constant power supply to package plant is crucial as failures will affect production and quality of water.
- The risks associated with the project will be the insufficient yield of water in the boreholes to feed the entire rural supply area.
- Environmental risks could be encountered in the discharge of the brine to the environment (EWS to appoint a geohydrologist to undertake a study on the impacts of the discharge).
- Security provision on site should be regarded as crucial, as the risk of theft, vandalism and destruction of equipment would be highly likely and therefore the performance of the plant cannot be guaranteed to operate at an acceptable standard.
- Community unrest to be taken into account and Councillors/CLO to be included in planning of community involvement.

1.1.1.4 Benefits

The benefits of the project will be the provision of potable water to the rural area where currently there is no water. This project will not address the entire supply area but will add much needed water into the area (100 kl/day). There are major cost saving to be made as compared to the high costs of water tankers servicing the area.

1.1.1.5 Implementation Plan

The project has Design, Build, Operation and Maintenance components with training and troubleshooting workshops for all internal parties with a vested interest in the Plant.

1.1.1.6 Budget

The budget for this project is provided in Table 6.13.

Table 1: Budget for the Nanofiltration of borehole water

FINANCIAL YEAR	15/16	16/17
BUDGET (excl VAT)	R 2,403,354.00	R 540,000.00



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1.1.1.7 Site Layout

The sites of the boreholes are shown in Figure 6.15.

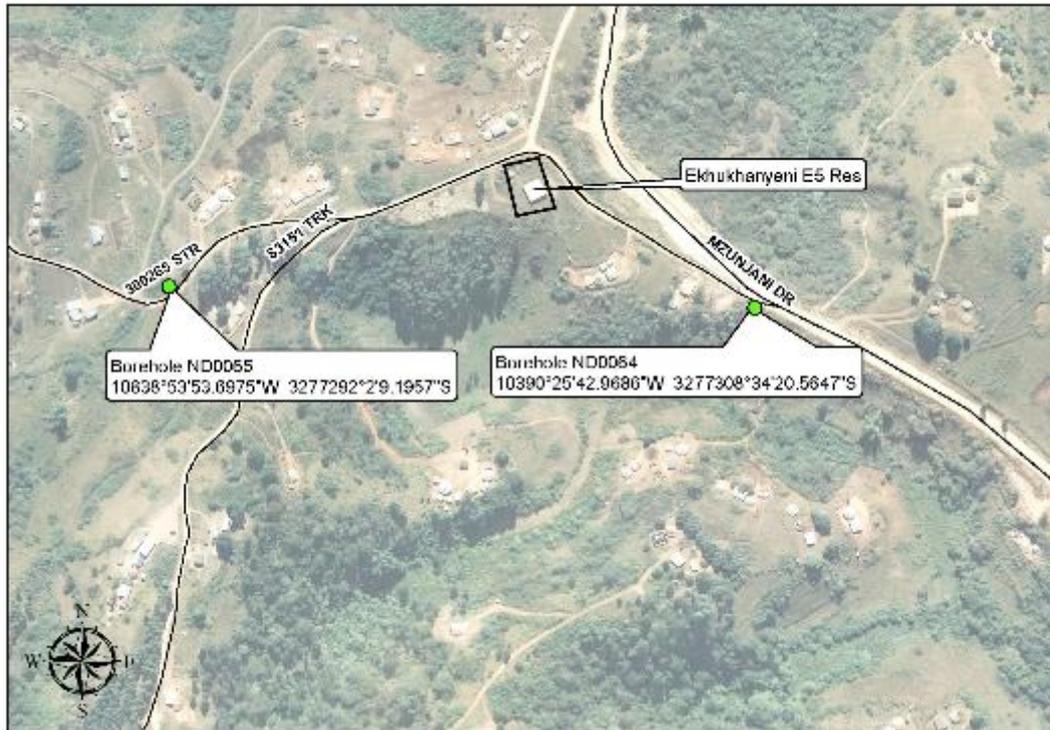


Figure 1: Site for the proposed Nanofiltration Membrane Water Purification Treatment Plant