POWER AND WATER AUTHORITY
WATER DIRECTORATE

Report No. 52/88 D

Groundwater Investigation

YARRINGUR OUTSTATION

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Darwin
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1. GROUNDWATER QUALITY
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<tr>
<td>AMG</td>
<td>Australian Map Grid</td>
</tr>
<tr>
<td>°C</td>
<td>degree Celsius</td>
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<tr>
<td>km</td>
<td>kilometre</td>
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<tr>
<td>L/s</td>
<td>litre per second</td>
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<td>m</td>
<td>metre</td>
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<tr>
<td>mm</td>
<td>millimetre</td>
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<tr>
<td>m³</td>
<td>cubic metre</td>
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<td>m³/d</td>
<td>cubic metres per day</td>
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1. INTRODUCTION

The objective of this work was to investigate the groundwater potential and subsequently construct a production bore providing a water supply for the Yarringur Outstation. The work was carried out in September 1987 by the Water Resources Group (Water Directorate) on behalf of the Office of Local Government.

Preliminary hydrogeological study, interpretation of aerial photographs, hydrochemical study and other relevant studies of the area were carried out in the office and resulted in selection of six sites.

Yarringur is an outstation of Gapuiwiyak. It is located 40 km north of Gapuiwiyak at the AMG co-ordinates 612900 - 8646900 (Arnhem 1:100 000 sheet 6173). The outstation is accessible only during the dry season by four-wheel drive track to the north from Gapuiwiyak.

According to the information supplied by the Office of Local Government, the present population of the outstation is estimated to be twenty-five.

Climate in the area is monsoonal with the wet season lasting from December to April. The mean annual rainfall ranges between 1400 mm and 1600 mm. The mean annual evaporation ranges between 2400 mm and 2600 mm.

The Arnhem Land is divided into three major physiographic units: the Coastal Plain, the Gulf Fall and the Arafura Fall.

The Coastal Plain extends along the coast of the Arafura Sea and is developed on flat lying Proterozoic and Mesozoic rocks. The plains are covered mainly by salt-rich soils, laterite, ferricrete and sand. The Outstation is situated on the northern part of the Everett Island which lies within Coastal Plain physiographic unit.
2. HYDROGEOLOGY

The Everett Island lies on the northern part of the Middle Proterozoic McArthur Basin. It is covered by a geological map Arnhem Bay - Gove, NT 1:250 000 sheet SD/53-3/4.

The area is underlain by sedimentary rocks of the Middle Proterozoic Habgood Group and are covered by the Cainozoic sediments. Investigation drilling for groundwater supply was restricted to the Cainozoic sediments because of the possibility of salt water intrusion into deeper aquifers. The Cainozoic sediments consist mainly of sand, residual soil, coastal silt, laterite, lateritic soil and ferricrete.

Five holes intersected Cainozoic sediments to the maximum depth of 8.8m and each of them struck brackish water between 5.2 m and 8.8 m.

3. RESULTS

Five bores (25324, 25325, 25326, 25327 and 25328) were drilled and encountered shallow aquifers with brackish water. Therefore, all the bores were backfilled.

4. RECOMMENDATION

Further investigation drilling is recommended to the west of the Everett Island on the mainland because of the better hydrogeological conditions to look for fresh water.
REFERENCE

