WATER RESOURCES DIVISION
Assessment Branch
Groundwater Section

BORE COMPLETION REPORT
BORE 14669
PINGALA OUTSTATION

AUGUST 1986
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2. HYDROGEOLOGY
3. RESULTS
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TEST REPORT - BORE 14669
WATER SAMPLE ANALYSIS BORE 14669

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55:KARP
INTRODUCTION

This report provides details of construction and pumping recommendations for bores drilled on Pingala Outstation.

The Outstation is situated approximately 35 km west of Tennant Creek at the co-ordinates 392 200 - 7875 000 (Tennant Creek 1:250 000 sheet SE 53-14).

Investigation bores 14669 and 14670 were drilled and bore 14669 was successful.

The work was carried out in May 1986 on behalf of the Department of Community Development and involved preliminary investigation, construction and testing of the production bore.

HYDROGEOLOGY

The area is located on the Tennant Creek Block. It is covered by the Tomkinson Creek Beds of the Early Proterozoic Age consisting of siltstone, sandstone, shale limestone and conglomerate. The aquifer with good supply was struck in the sandstone.

RESULTS

Bores 14669 and 14670 were drilled and bore 14669 was constructed with a steel casing and perforations.

An eight hour constant discharge test and a recovery test was conducted and water samples were taken.

The water quality is considered suitable for human consumption.
WATER RESOURCES DIVISION

TEST REPORT — BORE RN. 14669

Bore location: PINGALA OUTSTATION  
Client/owner: COMMUNITY DEVELOPMENT
Client's reference:  
Purpose of supply:  

Map: TENNANT CREEK 1:250 000 SHEET SE 53-14  
Grid reference: 392 200 - 7875000

RECOMMENDATIONS  
Pumping rate: 4.0 L/s. Pump setting: 27.0 m below ground level  
General recommendations are given on the reverse side.  
The aquifer and bore cannot sustain higher pumping rates with deeper pump settings or for short periods in favourable seasons. Further advice can be obtained from: Water Resources Division Sasco House

BORE DATA  
Finished depth: 40 m Completion date: 16/5/86 Test date: 23/6/86  
Standing water level: 4.66 m on 20/6/86 Test rates: 4.5 L/s  
Construction details:  
Test duration: 8 hrs

<table>
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<th>Interval (m)</th>
<th>Description</th>
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<tr>
<td>0 to 5.5m</td>
<td>203mm I.D. Steel surface casing</td>
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<tr>
<td>0 to 27.6m</td>
<td>152mm I.D. Steel casing</td>
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<tr>
<td>27.6 to 33.8m</td>
<td>152mm I.D. Steel casing with 9mm perforations</td>
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<tr>
<td>33.8 to 40.0m</td>
<td>152mm I.D. Steel casing</td>
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Notes:  
1. Top of casing as constructed was 0.55 m above ground  
2. All depths are measured from natural ground level  
3. Test rates are not indicative of safe long term pumping rates.

WARNING: MINIMUM INTERNAL BORE DIAMETER IS 152 mm

COMMENTS

0 - 1  
RED SOIL

1 - 6  
LIMESTONE

6 - 40  
SANDSTONE

WATER QUALITY

See water laboratory report (Analysis No. 86/87/0069; AC58 30/86)

WRD4020
RECOMMENDATIONS FOR FINISHING, OPERATING AND PROTECTING GROUNDWATER BORES

Attention to the following points will ensure a long and safe life for the bore supply and help prevent pollution of the groundwater resource.

1. Construct a concrete apron around the bore head to prevent surface flow, seepage and waste from entering the bore.

2. Seal the space between the casing and pump equipment to prevent entry of vermin, dirt and pollutants.

3. Maintain pumping equipment in good order to prevent pollution. Prevent spillage of fuel and oil on the ground around the bore. Store fertilizer and other chemicals at least 50 m away.

4. Keep stock away from the bore head. Discourage domestic activity at the bore. The first tap on the pipeline should not be less than 5 m from the bore head.

5. Pumping the bore at higher than recommended rates may fork the bore leading to instability or pump maintenance problems. Seek the professional advice of an hydrogeologist or groundwater engineer.

6. If the bore is no longer required, the casing is to be removed or securely capped and the bore backfilled with clayey material. A cement plug may be required in some instances.

In addition, please ensure that the BORE IDENTIFICATION TAG is retained securely at all times. The registered bore number is Water Resources Division’s only reference to the scientific and engineering data on this bore, and hence important to WRD’s further advice to bore owners.

1. Recommended pumping rate is based on a constant discharge test at 4.5 L/s for 8 hours and assume that hydrological conditions remain constant.

2. Provisions to obtain water samples at the bore head should be incorporated in any reticulation.
**WATER ANALYSIS**
Department of Transport & Works
Water Division, Darwin N.T.

**LABORATORY Registers **
Laboratory Register No. 96/87/0069
Date received in Laboratory 1.7.86

**LOCATION AND DETAILS**
Pingala RN 14669 Depth 38.40m
Bisch H/S Pig Temp 31°C Cond 760 WRD 405 RSP 1919

Proposed water use:- Domestic, Stock, Irrigation, other (specify)

### ANALYSIS — PHYSICAL

- pH 8.2
- Specific conductance (microsiemens/cm at 25°C) 705
- Total dissolved solids (mg/L - by evaporation at 180°C) 440

### ANALYSIS — CHEMICAL (mg/L)

- Sodium, Na 44
- Potassium, K 17
- Calcium, Ca 27
- Magnesium, Mg 39
- Total Hardness (as CaCO₃) 253
- Total Alkalinity (as CaCO₃) 243
- Iron, (total) Fe 0.1
- Silica, SiO₂ 68

### ANALYSIS — ADDITIONAL (mg/L)

- Chloride, Cl 68
- Sulphate, SO₄ 22
- Nitrate, NO₃ 17
- Bicarbonate, HCO₃ 296
- Carbonate, CO₃ 243
- Fluoride, F 18
- Orthophosphate, PO₄ 110
- NaCl (calc. from chloride) 110

- Copper, Cu
- Lead, Pb
- Arsenic, As
- Manganese, Mn
- Zinc, Zn
- Cadmium, Cd
- Nickel, N
- Cobalt, Co

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**THE SAMPLE AS ANALYSED **
**DOES NOT COMPLY WITH NORTHERN TERRITORY DRINKING WATER STANDARDS AS RECOMMENDED BY THE NORTHERN TERRITORY DEPARTMENT OF HEALTH.**

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Analysed By: [Signature]
9/7/86

Boxes marked thus ☑ indicate levels considered undesirable for drinking water by the Northern Territory Department of Health.
NATA CERTIFICATE

N.T. Department of Mines & Energy
Water Resources Division
PO Box 2655
ALICE SPRINGS NT 5750

Attention: Mr R. Freyling

REPORT AC 5830/86

YOUR REFERENCE: Letter dated 25 June 1986, 36.1
REPORT COMPRISING: Cover Sheet
DATE RECEIVED: 30 June 1986

ANALYSIS OF WATER

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Method: U3/7

Approved Signatory: Martin R. Hanckel

Manager, Chemistry Services
for Dr William G. Spencer
General Manager
Applied Sciences Group

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