70/115.

SECTION 5234 5235

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

GROUNDWATER SURVEY

Yalata Lutheran Mission

HD Co HOPE TOWN

by

J.A.C. PAINTER
GEOLOGIST
HYDROGEOLOGY SECTION

6th August, 1970

Rept.Bk.No.70/115

70/115

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No.70/115
G.S.No.4504
Hyd.No.2265
D.M.No.656/70

GROUNDWATER SURVEY

Location

General: Area of Mission Station

Hundred: Co. Hopetown

Section: -

Name of Property: Yalata Lutheran Mission

Owner: B. Lindon (superintendent)

Postal Address: via Ceduna

Telephone No:

Requirements

Water required for: Domestic

HYDROGEOLOGICAL REPORT

Physiography and Land Use

Ground surface is gently undulating, and formed by dense natural sands covered by timber vegetation.

Climate

Nearest rainfall station: Yalata Mission Station

Mean annual rainfall: 8 inches

Surface Hydrology

Streams: None observed

Geology

Soil Cover: Calcareous sands loam, extensive throughout the entire area.

Rock Units:
1. Siliceous sand dunes, fixed by vegetation
2. Aeolianite, calcareous sand
3. Nullabor Limestone
4. Sedimentary sands and gravel
5. Archaean gneiss and schist

Lithology:

1. and 2. occur in very restricted areas and are not important.

3. Nullabor Limestone is a dense limestone outcrops of which first occur east of the Mission, and thicken westward to more than 350ft. near the head of the bight. It is commonly cavernous and has a re-cemented crust at the surface.

4. The sedimentary sequence is thought to occur throughout the area, but details of the sequence are not known. Elsewhere thin sand and gravel beds occur separated from the Nullabor Limestone by thick clay and shale.

5. Gneiss and schist of Archaean age occur at variable depth, generally increasing westward. They do not outcrop.

Aquifer Assessment

Type:

1. Nullabor Limestone contains groundwater at a depth of approximately 200ft. However this water is generally saline, and in many places the dissolved salt content exceeds 14,000 parts per million. Supplies of the order of 500 to 1,000 gallons per hour are probably available.
2. The sedimentary sequence of sands underlying the Nullabor Limestone is known elsewhere to contain water under artesian pressure. In areas west of the mission this water commonly contains less than 10,000 parts per million of total dissolved salts.

Extent:

Both aquifers are thought to underlie the entire area.

Potential Recharge:

1. Nullabor Limestone: Recharge is by direct downward percolation of rainfall. However because the annual fall is low, and the considerable depth to the water table, salinities are high. Better quality water might be obtained where surface run-off is concentrated into broad topographic depressions
2. Recharge to the sands and gravels is thought to occur at considerable distances to the east and north, where these sediments outcrop.

Borehole Site Location:

General: In view of the fact that water of suitable quality is not available, bore sites were not recommended.

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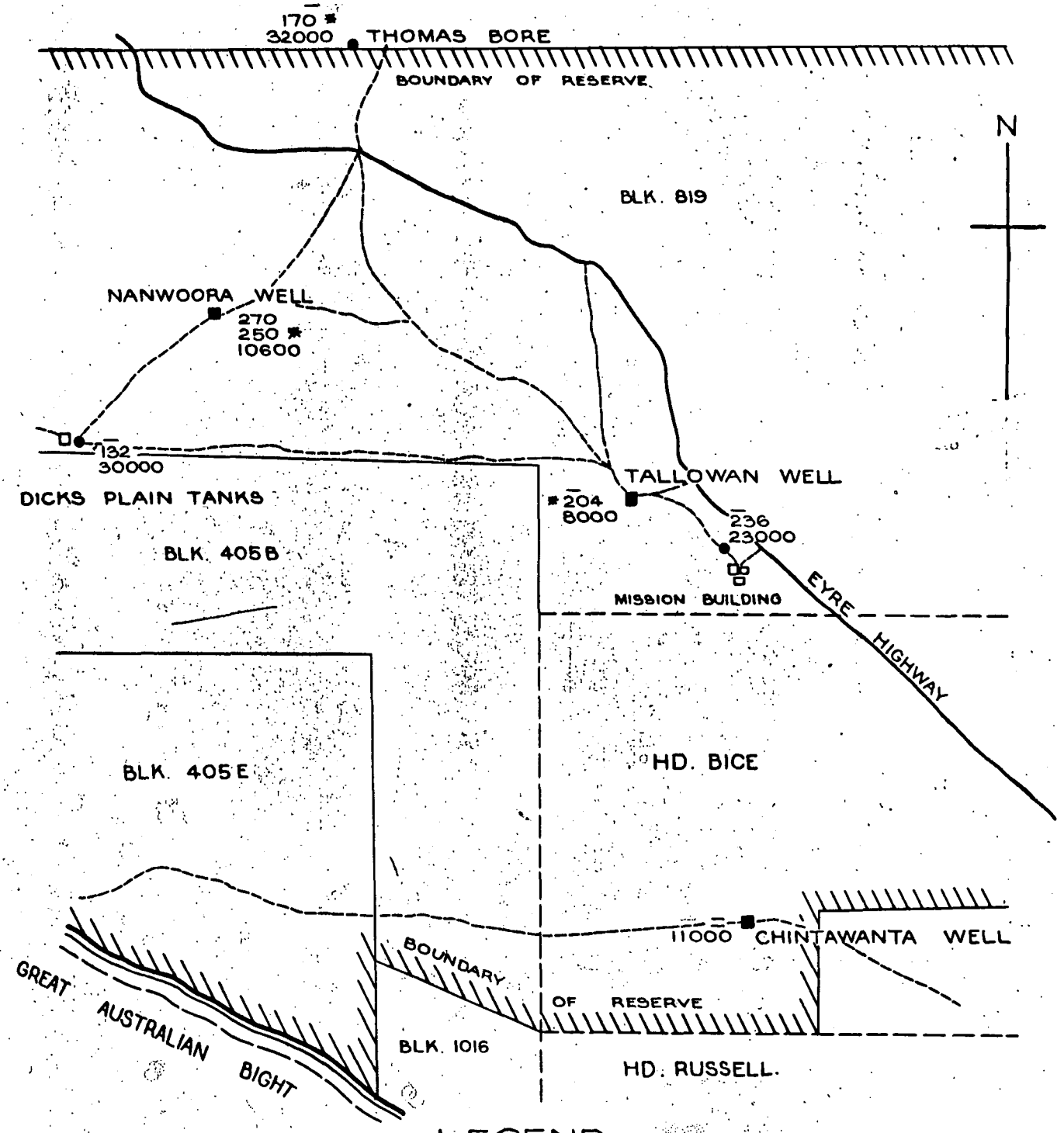
JACP:PMM
6th August, 1970

Survey Date: 6.7.70



LEGEND

NULLARBOR LIMESTONE, overlain by thin soils and siliceous dunes in places.

● 204/7000 BORE, showing approximate depth to water / static water level / salinity, parts per million.

■ WELL " " " "

* Figures obtained by measurement during survey, other details from bore records

	DEPARTMENT OF MINES — SOUTH AUSTRALIA	Scale: 4 miles to 1 inch.
Compiled: J.A.C.P.	GROUNDWATER SURVEY	Date: 5 Aug. '70
Drn. S.L.T. | Ckd. L.V.W.	YALATA MISSION	Drg. No. S7897
S.S.4	Co. HOPETOUN (B.LINDEN)	Da

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