REPT.BK.NO. 74/67



GROUNDWATER SURVEY

Hundred Noarlunga, Part Sections: 930, 939

S.R. BARNETT

Department of Mines
South Australia —

DEPARTMENT OF MINES
SOUTH AUSTRALIA

# GROUNDWATER SURVEY

## Hundred Noarlunga, Part Sections: 930, 939

- K. Furler -

by

S.R. BARNETT B.Sc.

GEOLOGIST

Rept.Bk.No. 74/67
G.S. No. 5386
Hyd. No. 2636
D.M. No. 225/74

4th March, 1974

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No. 74/67
G.S. No. 5386
Hyd. No. 2636
D.M. No. 225/74

GROUNDWATER SURVEY

Location

General: 3 km southeast of Aldgate

Region: 4

County: Adelaide

Hundred: Noarlunga

Part Sections: 930, 939

Owner: K. Furler

Postal Address: 22 George Street,
TORRENS PARK. S.A. 5062

Telephone: 513681 (work)

Requirements

Water required for: Drinking, domestic use, watering of vegetables & garden.

Quantity: About 0.65 litres/sec. (500 gals/hr)

Quality: As good as possible

Other factors: Owner would prefer bore halfway up the hill on southern portion of the property.

HYDROGEOLOGICAL REPORT

Physiography and Land Use:

The property inspected is situated in an east-west trending partially cleared gully and extends up onto a hillside to the south which is covered with natural vegetation. It lies between 310 and 366 metres above sea level.

Climate:

Nearest rainfall station: Bridgewater

Mean annual rainfall: 1050 mm (41.33 ins)

Remarks on rainfall pattern: Most of the annual rainfall (80%) falls between April and October with each of the winter months receiving over 125 mm (5 ins).

Surface Hydrology:

Creek name: Unnamed tributary of Aldgate Creek

Characteristics: The creek contains water all year round and forms a series of soaks along the gully.

Geology:

Soil Cover: The soil cover varies from a light grey silty soil about 1 metre thick with cobbles of bedrock on the hillslope to a considerably deeper very dark grey silty soil in the gully.

Rock Units: Proterozoic - Torrensian Aldgate Sandstone.

Lithology: A fine to medium grained slightly ferruginous sandstone with minor interbeds of micaceous shale.

Direction and Amount of dip: The sandstone was observed to be dipping steeply ($50^0$) to the southeast.

Aquifer Assessment:

Type: Free water table. Groundwater is stored in joints and fractures in the underlying bedrock. The storage capacity is therefore dependent on the degree of fracturing. The water table in the vicinity can be quite high and precautions must be taken when foundations are constructed.

Potential Recharge: Recharge results from infiltration of rainfall and downward percolation of runoff in drainage lines. Because of the high rainfall and low salinities

recorded in the area, recharge is expected to be good.

Borehole Site Location:

General: A borehole site is recommended halfway up the hill to the south of the property (see accompanying plan

Reason for location: This position satisfied the owner's preference of lacation whilst at the same time ensuring a supply which will meet the owner's requirements.

Proposed Depth: 45-60 m.

Expected Yield: 0.65-1.3 litres/sec. (500-1000 gals/hr).

Expected Quality: Less than 1000 mg/l.

Probable Log: 0.- 2 m Topsoil and weathered sandstone

2m + Fresh sandstone

Drilling and Testing Recommendations:

Drilling Hazards: The bore should be cased to the top of unweathered rock to prevent collapse of the bore, with 0.5 metres of casing above ground level to prevent influx of sediment into the bore.

Sampling: All waters cut and at intervals in the aquifer to detect any salinity increase with depth. Samples (26 fl.oz) should be brought into the Department of Mines for testing free of charge. A geological log would be appreciated.

Pump Test: This service can be provided by the driller or the pump distributor.

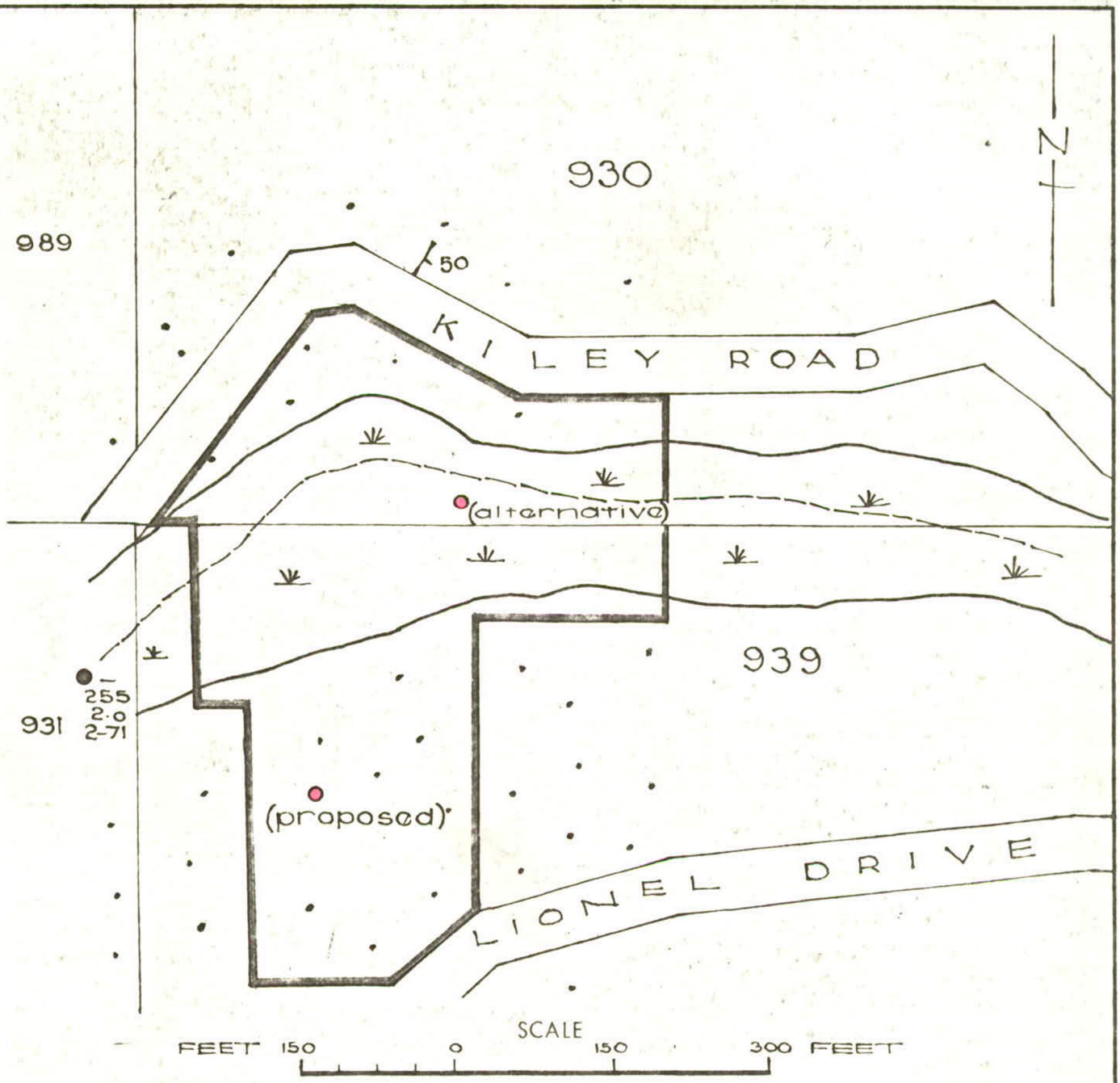
Summary:

The property was inspected geologically and a borehole site is recommended as shown on the accompanying plan. This site should meet the owner's requirements in terms of both supply and location. Drilling to a depth of 45-60 m is suggested and a supply of 0.65 - 1.3 litres/sec (500-1000 gals/hr) is expected. The probable salinity is less than 1000 mg/l which is suitable for all general purposes. If the preferred site proves inacessible, an alternative site in the gully, 50 m from the western boundary of the property is recommended.

S.R. BARNETT. B.Sc.
GEOLOGIST

Survey Date: 27.2.74

4th March, 1974




## LEGEND

Quaternary- creek alluvium

Torrensian Aldgate Sandstone- medium grained

Strike and dip of bedding ..... 60

Strike and dip of jointing ..... 50

Strike and dip of foliation ..... 35

Strike and dip of cleavage ..... 45

Geological boundary .....

Fault line .....

Drainage lines .....

Surface storage .....

Existing borehole ● 160 —Depth in metres
2015 —Salinity in milligrams per litre
5·0 —Supply in litres per sec
2-72 —Month , year

Well .....

Spring .....

Abandoned borehole .....

Proposed boresite .....

Scale 1" = 150 Feet (APPX.)

**DEPARTMENT OF MINES - SOUTH AUSTRALIA**

| | | |
|---|---|---|
| HYDROGEOLOGY SECTION | GROUNDWATER SURVEY<br>PT. SECS 930,939. HD. NOARLUNGA<br>K. FURLER. | Date 4 MAR 1974 |
| Compiled. S. R. B. | | Drg. No. S10739 Ha 9 |
| Drn. R. B. Ckd. A.F. | | |

P.F. No. S7359A MH
A4