Rept Bk No. 35-70

D.M. 377/47

DEPARTMENT OF MINES SOUTH AUSTRALIA

Mt. Burr Settlement - Water Supply

This settlement was visited on 24th April 1953 and the Acting Superintendent, Mr. H.O. Pettman was interviewed.

REQUIREMENTS ETC.

There is one existing bore at the Settlement, depth 425', supply approx. 10,000 galls. per hour. It is equipped with a Pomona deepwell turbine pump which is understood to deliver about 8,500 gallons per hour under the existing pressure conditions.

The settlement has grown fairly rapidly and water is now available to the inhabitants for a period of only 4 hours per day, as a reserve has to be kept for fire fighting purposes. For the remainder of the 24 hours, the twon mains are empty. At least a further 10,000 g.p. hour is understood to be needed, for all requirements.

GEOLOGY AND HYDROLOGY

The Gambier limestone below has been intruded by volcanic rocks which have reached the surface to form both composite and volcanic ash cones.

Ash and lava underlie the surface beneath the whole of the township area to varying depths, dependent on topography, their depth being 101 feet at the existing bore site. These igneous rocks do not yield any significant quantity of groundwater, and any boring for domestic supplies will have to be taken down through them to the underlying permeable Gambier limestone.

The present bore is towards the western end of the main settlement, and because of the small mains, it is desired if possible to obtain another supply near the eastern town boundary.

At the site tentatively selected by the A. in C, it is estimated that a thickness of probably 60 feet of volcanic material will overlie the limestone. This is probably a mixture of inter-calculated lavas and ash beds, and drilling may be rather hard until the limestone is reached.

Large supplies of groundwater are usually obtainable in the limestone, and drilling should be continued in that series until sufficient is available. It is suggested that the hole be collared with a short length of 10" casing and drilling then be continued through the volcanics with a 9" straight drill.

The possibility of pollution from domestic effluent is considered to be negligible. The bore site is at the end of the present settled area, and water level is probably some 75' down. No septic tanks are in use, nightsoil being disposed of by a pan system, and domestic sullage disposed of in shallow soakage pits.

It would be possible to move $\frac{1}{2}$ to $\frac{3}{4}$ miles further east and avoid the basalt, but the extra length of main involved renders this undesirable. Furthermore, a bore so located would be rather too near to the sewage disposal area. Drilling near the storage tank could be expected to yield a satisfactory supply, but the thickness of volcanic rock penetrated would be corespondingly greater than in the existing bore because higher ground, and there would be a danger of mutual interference if both were pumped together.

CONCLUSIONS AND RECOMMENDATIONS

The bore site indicated by the A. in C is satisfactory.

Probably 60' of volcanic rock will be penetrated and water should be obtainable in large supply and excellent quality in the underlying limestone.

The possibility of pollution is negligible.

Apart from possibly hard drilling in the igneous rock, no constructional difficulties are expected. The 8" bore should be collared with 10" casing.

28-4-1953

SENIOR GEOLOGIST
HYDROLOGY