Director
RB 36/74 1.3
2208/53

DEPARTMENT OF MINES

SOUTH AUSTRALIA

REPORT ON GROUNDWATER PROSPECTS - HDS SECS 354, 355 & 356

HD SEYMOUR - TAILEM BEND - RACING CLUB

This area was visited on 21/10/53 in company with Mr. D. Fitzpatrick.

REQUIREMENTS

The Secretary of the Tailem Bend Racing Club, Mr. H.C. Bolton, states that the Club requires a quantity of water estimated at 50,000 gallons over a two-day period once a month, for the watering of turf on the racecourse, located on Sec 356, Hd. of Seymour. Water delivered at a lesser rate than this could be utilised if of suitable quality, but would seem that its application to the turf would involve more labour. Since grasses are fairly hardy, water of a salinity not exceeding 100 grains per gallon or thereabouts would probably not cause damage, though better quality is desirable.

LOCATION, TOPOGRAPHY ETC

The racecourse on Sec 356 is about 1 mile east of the town of Tailem Bend, and is on a slight rise. The soil is light and sandy, and would probably not react unfavourably to a salinity such as above mentioned.

The town itself has a reticulation system deriving from the river, and the logical thing would appear to be for the Racing Club to obtain its water from such a source. The Secretary states, however, that the Club's needs are regarded as a low priority, and water cannot be made available from the town supply. A 3 inch main extends to within some threequarters of a mile of the course, but enquiries from the E. & W.S. Dept., indicate that this is already quite heavily drawn upon, and to have it enlarged and extended would involve heavy expenditure.

It seems unlikely therefore that the Club can obtain its requirements from the town mains, and must look elsewhere.

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The next most obvious source of supply is the river, situated about ½ mile away. However, any project to develop such a source of supply would involve crossing three sets of Railway lines and two roads, as well as installing pumping equipment on the river bank in a position above flood level. Cost of construction of all the works, together with the mains, may be outside the Club's finances, although this method of obtaining water seems the most reasonable one. The third possibility is groundwater.

GEOLOGY, HYDROLOGY

In this area the Miocene limestone occurs at or very near natural surface and extends downward to below river level. It is waterbearing at a depth roughly corresponding to river flow level, and because of its high permeability should be capable of yielding enough water for requirements.

In the area east of the river and within a radius of several miles of Fallon Bend, groundwater is usually of stock quality only, dissolved salts sometimes exceeding 2 oz. per gallon. Unless very localised conditions obtain which would cause an improvement in quality, such water would be unsuitable for the required purpose.

No such local conditions appear to exist on the Club's property. A bore (formerly a well, now collapsed) on Sec. 35E does yield fairly good water.

It is located in a local depression in which a considerable amount of surface runoff collects after rain, and quickly soaks downward into the underlying rocks to join the main body of groundwater. This causes a localised sweetening, and the surface feed water is probably sufficient to maintain a fairly high quality even if pumped at the rate needed for the Racing Club's purposes. Two analyses at different times show 36 grains and 73 grains, the variation being caused apparently by rainfall conditions.

It might be possible to develop this bore as a source of supply, but if the area is utilized it is suggested that a new bore be constructed nearby, as the collapse of the old well in which the present bore casing stands may cause subsequent mechanical difficulties if the pumping rate is increased. That the site is privately owned might perhaps be regarded as another disadvantage.

There is another bore distant locality, on the western border of Sec. 35? (town commonage) where a quite considerable drainage depression also exists, so much so that flooding of nearby houses was serious until the construction of a drainage bore.

This area is understood to have at times flooded about a foot in depth over some 20 acres, a considerable part of the water being lost by downward seepage. Such a quantity of fresh runoff water could reasonably be expected to sweeten the groundwater very considerably, perhaps enough for use on the racecourse. Since the section is only about ½ mile from the river, the freshening effect of the river water itself might also be of some account.

Sampling of the water in the drainage bore at the time of inspection would have served no purpose because of heavy rain and surface runoff the day before, but there are two other known drainage bores, one beside the new railway cottages on the east side of Sec. 370, and the other at the Hospital ½ mile north of the centre of the town, the water from which was analysed at the time of construction. The first showed 82.8 grains and the second 105.3 grains per gallon.

It seems reasonable to conclude that a bore on the common adjacent to the existing drainage bore would have a good chance of success. If its method of construction were found to be satisfactory as regards depth and casing,

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the existing drainage bore could probably be utilised as a temporary measure.

Development of a site so far removed from the course means a main nearly as long as would be needed from the river, and furthermore both the quality and quantity of the water would compare unfavourably with a river supply. The one apparent advantage is that the main would not have to cross railways and roads.

CONCLUSIONS & RECOMMENDATIONS

(I) The most readily apparent and most satisfactory source of water is the river; but the expense of laying a main across rails and roads may be beyond the Club's means.

(II) Groundwater of suitable quality is not available except possibly in limited local areas.

(III) On such area, privately owned, is on Sec. 358, where development of an existing bore, or the construction of another one nearby, should be possible.

(IV) Possibly a more satisfactory location is on the western side of the commonage on Sec. 355, beside an existing drainage bore, and it is recommended that if the river is not utilised, a bore be constructed at this site. Depth to water should be about 70 feet, and drilling should be continued in the water-bearing limestone to at least 100 feet to ensure a good supply.

Drilling conditions are very good, and the construction and testing of such a bore should take not more than one week.

As a temporary measure, water could probably be pumped from the existing drainage bore, which it is not expected would suffer any damage thereby.

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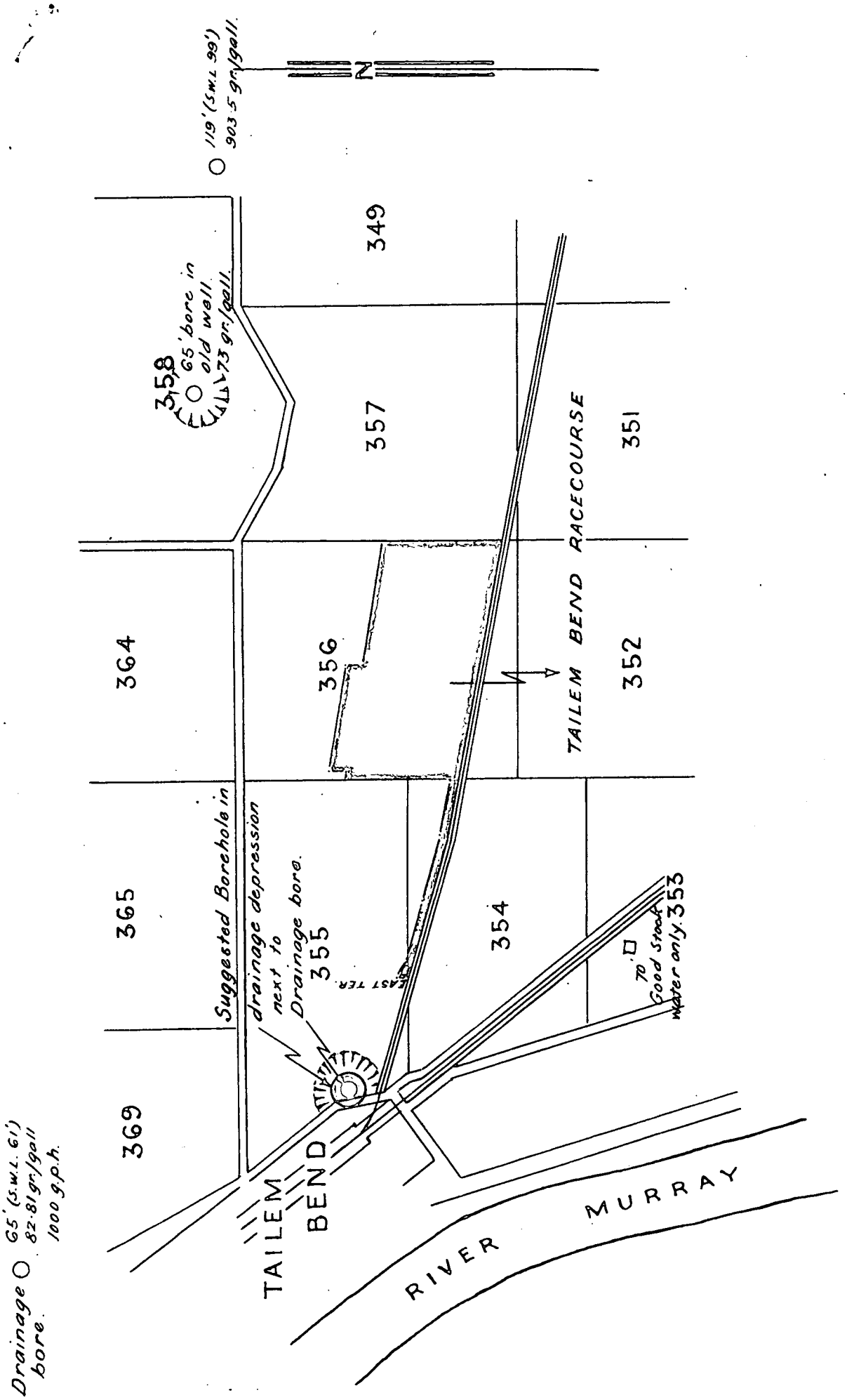

To accompany report by E. O'Driscoll.

S. A. DEPT. OF MINES

Traced	Passed	Drn. R.R.	UNDERGROUND WATER SURVEY	2208/53	20 CHNS. TO 1 INCH
		T.	HD SEYMOUR PT SEC. 356		S 841
		C.	TAILEM BEND RACING CLUB		Je 4
Director	C.D.	Exm.			Date 26.10.'53