Section 4—Underground Water

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UNDERGROUND WATER ON LAND SETTLEMENT DIVISION PROPERTY BETWEEN TOMAHAWK AND BOOBYALLA RIVERS

by W. L. Matthews.

GENERAL

The Land Settlement Division of the Agricultural Bank is developing about 3,000 acres of land between the Tomahawk and Boobyalla Rivers. During dry periods the only water available is from the above rivers and an examination to determine the possibilities of finding underground water was made on March 14th and 15th, 1961.

The area being developed can be reached by a newly made gravel road from Bridport. The Tomahawk River is approximately 20 miles, by road, east of Bridport.

TOPOGRAPHY

The area is part of the coastal plain. Stabilized sand dunes, which rise to a maximum of about 25 feet above plain level, occur over most of the development. The dunes are parallel and have an approximate east-west direction. Between the dunes, swamps develop in winter time, and extensive drainage systems have been made to combat this.

Granite hills mark the southern boundary and the northern part of the eastern boundary.

GEOLOGY

Granite is the dominant rock in this locality but only a few outcrops occur in the area being developed. Around the margins, outcrops are common except for the western side which is bounded by the Tomahawk River. To the north-east of the area, along the coastline, the granite intrudes Silurian quartzite. In general the granite is porphyritic and feldspar laths of two inches in length are common.

Although recent sand covers most of the area, it can be assumed that granite and perhaps some quartzite underlie the coastal sand dunes. The thickness of the overlying sand is not known but is probably variable and could reach considerable thicknesses. The grain size of the sand is variable. In some cases it is almost grit and in most cases the grains are rounded. They have therefore been transported and are not residual weathering products of the granite. Limonite has cemented the sand in some localities giving rise to a hard compact rock.

UNDERGROUND WATER

The occurrence of underground water in the area depends to a large extent on the thickness of sand overlying the base rock (granite or perhaps some quartzite). The granite and quartzite are not considered as aquifers unless they have been brecciated or deeply weathered around fault zones. It is not possible to find such faults when most of the area is covered with sand.

Indications of water in the sand are not common although several places were found in the bottom of some of the drains where the sand is continually moist. One bulldozed water hole has been made in the north-eastern part of the area. The water level at the time of this investigation was no more than five feet below the ground surface. The quality of the water seems to be good and the quantity sufficient.

A comparison with the area to the west of the Tomahawk River shows the two areas to be very similar in nature as recent sand overlies granite in this area also. The depth of the sand overlying the granite was found in the several bores attempted to be too shallow for an adequate supply of water to be obtained and the only hole which gave a reasonable supply delivered saline water. In general the average depth of the sand was reported to be about 15 feet.

RECOMMENDATIONS

It is suggested that the area under development at present be drilled in a number of places to test the depth of sand overlying the granite. Depths of sand of 30 to 40 feet should be sufficient to give adequate supplies of water. A hand boring plant is suitable for boring in this type of country and requires two men to operate. Such plants are available for hire from the Department of Mines. Any water obtained from such holes should be analysed for dissolved solid matter. Difficulties may be encountered on areas where limonite cemented sand occurs although these areas do not appear to be very extensive.