

THE WITWATERSRAND—THE CITY DEEP

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Transvaal.

The City Deep mine is regarded as one of the coming mines on the Rand. Formerly this deep level area was not regarded with much favour, as several of the outcrop mines, notably the Spes Bona and New Goch have not been conspicuously successful, owing to the low grade of the ore, others like the Wolhuter, Meyer and Charlton and City and Suburban have excellent records. The work done by the City Deep has, however, disclosed a more than usually rich main reef leader, and the recovery values rank amongst the half dozen highest on the Rand.

Milling operations commenced just over two years ago, but during the short time that has elapsed since the stamps were first dropped, operations have not proceeded as smoothly as could be wished, either above or below ground. Many of the difficulties were trifling, but those underground were the most serious. The layout of the mine did not conduce to economical working, ventilation troubles arose, and, last, but not least, there

From east to west the property of the City Deep extends about two miles. Two vertical rectangular seven-compartment shafts have been sunk to the reef, each shaft measuring 44 feet by 8 feet in the clear. The No. 1, or eastern shaft, is 3,100 feet from the eastern boundary and 3,261 feet deep. Cross-cuts have been driven north from this shaft to strike the reef on the 8th and 9th levels, and sinking has been resumed with the object of striking the reef at a vertical depth of a little over 4,000 feet. 4,400 feet further west is the No. 2 or western shaft, where the reef was struck at a depth of 2,876 feet. This shaft is situated about 3,500 feet from the eastern boundary. It is the rule on the Rand to place the shafts considerable distances apart, a practice which has many disadvantages as regards ventilation, particularly before the shafts are connected, the value of which has only been recently recognized.

What is known as the main reef leader is the principal reef, little work having so far been done on the main reef or south reef, although it is possible that as



No. 2 Shaft, Sorting and Crushing Station.

was a chronic scarcity of native labour. These difficulties are being gradually overcome one by one, and at the time of writing 150 stamps out of 200 stamps originally erected have been got to work and last month the City Deep figured, by reason of its gold output, amongst the twelve leading gold producers in the Transvaal.

It was not until 1908 that by amalgamation with neighbouring mines that the City Deep assumed its present shape and importance, and to-day its total area is only one claim short of a round two thousand, a gold mining claim in the Transvaal measuring 154.95 English feet on the strike, 413.2 feet on the dip, being in area approximately $1\frac{1}{2}$ English acres. The capital of the company is £1,250,000 in £1 shares. The company also possess an estate of over 3,500 acres upon which the workmen are offered building sites for the erection of their own dwellings on highly advantageous terms, with the object of inducing the white employees to settle, and not move from mine to mine as is usual on the Rand.

in some of the neighbouring mines both these reefs may be drawn upon in the future. Several miles of driving on the main reef leader show that it is wonderfully consistent, both in width and values, the average width running twenty inches and the assay value twenty-two dwts. of gold to the ton. The reefs dip south at an angle of 38 degrees, the distance between the south reef and main reef leader varying from 60 feet to 80 feet, the main reef leader being apparently thicker in the eastern than in the western section of the property.

The two shafts are situated about 2,000 feet south of the northern boundary of the property, thus leaving a larger area than usual to the rise which is worked through cross-cuts from the shaft. The proposed method of working is to drive main collecting levels 1,000 feet apart, designed to be fed by inclines from the dip by chutes from the rise. These main levels are at present worked by mule traction, but petrol locomotives are being fitted together on the property, with the object of displacing mule transport. They are of single cylin-