

No. 3 level (636 ft.): The drive on the Martha lode has been extended to the boundary, and stoping operations continued. No development-work was done on the No. 2 lode. Stopping operations have been continued, with satisfactory results.

No. 4 level (794 ft.): The drive west on the Martha has been extended to the boundary. Several crosscuts were put out to the hanging-wall, and these showed the reef to be about 45 ft. wide, but with the exception of about 6 ft. on the foot-wall the ore is low grade. Stopping operations have been commenced here. The drive east on the Martha has been extended, and is now about 520 ft. east of the crosscut. For the whole distance there is ore along the foot-wall, but it is very irregular both in width and value. Four crosscuts were put out to the hanging-wall, and these show the reef to be about 30 ft. wide, but the hanging-wall portion is low-grade ore. The drive east on No. 2 lode was extended, and is now about 620 ft. east on the crosscut. Some very good ore was encountered in the drive, and stoping was commenced. A crosscut is being put out towards the Martha lode, and it is expected that it will require about 200 ft. to connect the two drives. A crosscut was commenced to the south of the shaft, and a reef was intersected at about 20 ft. from the shaft. This proved to be a wide reef, but of low values. This crosscut will be extended during the coming year. A start was made to sink the shaft to No. 5 level, but at 20 ft. below the level a reef was cut which brought in a quantity of water, and after sinking to 30 ft. it was decided to suspend operations until a large electrically driven pump had been installed.

Mining machinery: The electric hoist has been working for about nine months, and proves to be a very satisfactory machine for the work. In order to facilitate hoisting operations, a hopper was constructed at No. 4 level, and the ore from the upper levels is sent by gravity to the hopper. By this arrangement all the hoisting of ore is done from the one level. A complete set of new guides has been put in the shaft, as the old ones were badly worn.

Battery: This has been kept steadily running during the year. It was proved early in the year that concentration was necessary in connection with the present process, so eight tables were installed, and this number has since been increased to twelve. The concentrates were at first shipped to Australia for treatment, but the company is now treating them at the mill very satisfactorily. The present process consists of crushing in the battery through ten-mesh screens, the duty per stamp being from 6 to 7 tons per diem. From the stamps the ore goes direct to the tube mills, by means of which it is ground to an exceedingly fine state. The next operation is concentration (amalgamation has been discarded, as it is unnecessary with this ore), after which the pulp is separated into two products—sands and slimes. The sands are treated by percolation, and the slimes by agitation and vacuum filtering. The concentrates are treated by being ground to slimes in a tube mill, and they are then agitated in cyanide solution. Two classes of agitation are used, the A. Z. machine and the B. and M. tanks. The latter require far less power and attention than the former, and are far cheaper to install. After the agitation, the concentrates are filtered by the vacuum process. The future programme of the company is to go in for finer grinding, and to gradually eliminate the sand treatment and treat everything as slimes, and with this object in view extra mills are being installed, and eight B. and M. tanks, each 13 ft. by 55 ft., are being erected. Tests show that the operation of concentrating can be dispensed with provided the ore is all ground exceedingly fine, so ultimately the whole of the ore will be treated by one process, which will mean cheaper handling, both as regards labour and the mechanical cost.

Power-station: Everything in connection with this has been running most satisfactorily, and it has been demonstrated that an up-to-date central station is both economical and convenient.

Waihi West section: Very little work has been done here for the year, but it is the intention of the company to do some stoping on a run of ore that has been opened up, and if the results are satisfactory, extensive work will probably be undertaken.

The mine was inspected several times during the year, and found to be in good order; the ventilation was good, and every precaution was taken for the safety of the men. The return for the year is 40,875 tons treated, for a yield of 78,854·13 oz. (mostly silver), for a value of £71,741 14s. 11d. 293 men were employed.

*Waihi Extended.*—During the year the shaft was sunk from the No. 3 level (630 ft.) to No. 4 level (786 ft.), and continued to a depth of 806 ft. from the surface, after which a crosscut was commenced to intersect the No. 2 lode. At 100 ft. what was thought to be No. 2 lode was cut and driven on for a distance of 400 ft., and a connection made with a winze from No. 3 level. This greatly improved the ventilation. At 500 ft. from the shaft a crosscut was driven, and after passing through 7 ft. of country a strong body of ore was cut, which proved to be about 20 ft. in width, and carried payable values in parts. As the vertical depth between Nos. 3 and 4 levels is 170 ft., there is consequently a considerable quantity of ore in sight. This mine is now emerging from what may be termed the "prospecting stage," and it is hoped that the company will soon meet with success. As shown by the following figures, a considerable amount of prospecting has been carried out for the year: Sinking the shaft, 163 ft.; driving and crosscutting, 670 ft.; rising and sinking on reef, 220 ft. An average of seventeen men were employed.

*Waihi Syndicate (Limited).*—Operations have been confined to sinking the shaft, which has now attained a depth of 539 ft., 144 ft. having been sunk for the year. I understand that an English company hold an option over the property, and that their capital has become exhausted. In June last, work was suspended until further capital could be raised, but the mine is still lying idle. Up to time of closing down £8,000 had been expended on the property, including machinery and shaft-sinking, equivalent to £15 per foot, which may be considered very satisfactory. The country for the last 120 ft. was andesite, and from the collar of the shaft down to a depth of 419 ft. the ground was of a pumice character with coarse gravel. Here a quantity of water was met with, and offered much