

six shafts at the close of the year and the depths sunk during the year are as follows: No. 1 shaft, 708½ ft., 55 ft. sunk during year; No. 2 shaft, 732 ft.; No. 3 shaft, 348 ft.; No. 4 shaft, 703½ ft., 72 ft. sunk during year; No. 5 shaft, 863 ft., 128 ft. sunk during year; No. 6 shaft, 553½ ft. Total number of feet driven, sunk, and risen, 18,678 ft., or 3·537 miles.

Product.—The total tonnage crushed amounted to 298,531 tons (dry weight) of 2,000 lb. per ton. An increased tonnage has been drawn from the Martha, Regina, Royal, Albert, and Reef I, whereas a smaller tonnage has been taken from the remainder of the reefs.

Reduction-works.—The tonnages crushed at the three mills were respectively as follows: Waihi Mill (90 stamps, and 3 tube mills since end of May 1905), 89,216 tons; Victoria Mill (200 stamps), 181,187 tons; Union Mill (40 stamps), 28,128 tons: total, 330 stamps, 298,531 tons.

Waihi Mill (90 stamps).—The increase in the quartz crushed amounted to 9,914 tons. This increase was due to the use of three tube mills during the latter part of the year. The erection of these tube mills, and the necessary enlargement and alteration of the engine-room and treatment plant for dealing with the increased output, was sufficiently advanced to allow of their being started at the end of May, since when (except for sundry small stoppages) they have been kept continuously at work. As the increased tonnage crushed overtaxed the existing stone-breaker department (which consisted of a No. 5 and a No. 3 Gates crusher) a large-sized "Hadfield" Hecklon stone-breaker was ordered, and came to hand at the end of the year and was erected in place of the No. 5 Gates, the latter being used as a finishing crusher instead of the No. 3 Gates, which was taken down. A Babcock and Wilcox boiler was obtained, and is being erected. The adoption of tube mills has necessitated a considerable amount of alteration of and addition to the existing plant. The preliminary filter-pressing of the slimes is performed by means of a vacuum slimes plant.

Victoria Mill (200 stamps).—The third No. 5 Gates crusher was erected and brought into use. It was decided to add two tube mills; the necessary building has been erected. The two elevator-wheels required in connection with this plant have been constructed and partly erected in position. The tube mills themselves are now coming to hand. The large vanner plant is nearing completion. Concentrates Treatment Plant, Victoria Mill: Early in the year two more agitating-vats, 15 ft. in height by 6 ft. diameter, were added, and later on in the year seven more vats of the same size were erected.

Union Mill (40 stamps).—The Leffel wheel obtained during the previous year was erected and dam and penstock completed. It has been in use during the latter part of the year. During the year four out of the eight mortar-blocks were provided with heavy cast-iron anvils, and during the overhaul at Christmas a fifth anvil was put in.

General.—The construction of the Government railway from Paeroa as far as the Victoria Mill, Waikino, was completed by the end of March, the first train of coal-trucks reaching there on the 2nd April. The opening of the line to this point has lessened the difficulties attending the transport of the large quantity of coal and other goods required by the company. A new air-compressor (made by the firm of Messrs. Yates and Thom, of Blackburn, England) for supplying air for the rock-drills was started at the No. 5 shaft in the beginning of November last. It is of the horizontal cross-compound jet condensing type, indicating 260-horse power when running at a speed of seventy revolutions per minute. The air is compressed in two stages, the high-pressure air-cylinder being arranged tandem with the high-pressure steam-cylinder and the low-pressure air-cylinder with the low-pressure steam-cylinder. Steam is supplied at a pressure of 150 lb. per square inch, the air being compressed to 100 lb. per square inch. The high-pressure steam-cylinder has a diameter of 14 in., the low-pressure 30 in., with a common stroke of 3 ft. Both cylinders are fitted with "Corliss" valves, the steam-valves being actuated by the "Dobson" valve-gear admitting of a cut-off of from 0 to 75. The cut-off on the high-pressure cylinder is under the control of the governor, whilst that on the low-pressure cylinder can be altered by hand whilst the engine is in motion. A reheater, supplied with steam at boiler-pressure, is placed between the two cylinders, thus slightly superheating the steam on its way to the low-pressure cylinder and reducing initial condensation. A jet condenser is fitted, an Edwards air-pump being connected to it and driven off the low-pressure-engine crosshead; piston-rods and valve-spindles are fitted with metallic packing; the lubricating arrangements are very complete, both cylinders being fitted with sight-feed adjustable force-pumps; the crank-shaft bearings, eccentrics, &c., are also fed by two rotary pumps driven from the engine, the oil dripping from the bearings being returned to a tank where it is filtered and used over again. The high-pressure air-cylinder has a diameter of 16 in. and the low-pressure cylinder 28 in., with a common stroke of 3 ft. Both cylinders are fitted with "Corliss" valves mechanically operated by eccentrics on the crank-shaft, the inlet-valves having plain eccentric motion, whilst the outlet-valves receive their motion from a wrist-plate. Air is drawn in at the top of the low-pressure cylinder and compressed to a pressure of about 33 lb. per square inch, passing on its way to the high-pressure air-cylinder through a water cooler where the temperature is very considerably reduced. In the high-pressure cylinder it is further compressed to a pressure of 100 lb. per square inch. Both high- and low-pressure air-cylinder bodies and covers are thoroughly water-jacketed; an air governor is also fitted to the engine. This consists of a cylinder fitted with a piston upon which the air-pressure acts, the rod of this piston being connected through a series of levers to the high-pressure-steam cut-off gear. The whole of the valve-gear—both for the steam and air cylinders—is arranged so that it can be easily adjusted to suit the working-conditions. The compressor is capable of supplying 1,780 cubic feet of free air per minute. The company's licensed holdings comprise an area of 874 acres; the average number of men employed during the year was 1,396; the quantity of material operated on during the year, 298,531 tons of 2,000 lb.; the yield of bullion 1,192,046 oz.: total value of bullion, £693,671 14s. The mode of treatment is by wet crushing and cyanide, partly also with amalgamated