

The operations of the year have been marred by only one unfortunate feature, the scarcity of labour which was experienced after the dislocation of the labour situation by the precipitate enactment of the eight-hour law for underground workers in metalliferous mines. The introduction of this measure is a matter of history and does not come within the scope of this report; but the situation created was one which caused grave anxiety to all who were responsible for the proper conduct of the company's affairs, and called for patience and forbearance in carrying out the measures which were deemed advisable for the protection of its interests, and for the maintenance of harmonious relations with the men. As is usual under such circumstances, a compromise was arrived at; reasonable concessions were offered by the company, and equally reasonable concessions were required of the men; and the result was, that after a few weeks' hesitation, the men cheerfully recognized the justice of the company's position and work has been carried on without any further delay. The months of June and July (as will be seen in the various tables submitted herewith) reflect the situation with clearness: but the success of the policy adopted is evidenced by Table 11., which shows that the number of men employed underground never fell in any one month below an average of thirty-five per diem, and also that the month of August found matters practically re-established along normal lines.

With these facts in mind, the operations of the year may be reviewed with satisfaction: for a profit of \$31,504.55 has been realized on working expenses under conditions which may be described as unfavourable. Not only has this profit been realized on the books, but the property has experienced an improvement (not so easily shown but equally important) by the superior efficiency in which all the departments are now found. Development can be made more effective, and the production and reduction of the ore can be more effectively carried on, with the result that a better produce will follow.

MINE.

During the year 1,275 feet of development work has been done, as follows: 720 feet of drifts, 360 feet of crosscuts, 165 feet of raises, and 30 feet of winzes. 5,150 tons of ore have been mined and sent to the mill, 200,000 tons of waste have been mined and thrown over the dumps, and a further large quantity of waste has been holed in the stopes from which the ore has been removed. This work has been carried on entirely by hand labour in hard ground. Altogether about 40,000 tons of ore and waste have been handled at a total cost of \$74,824.35, including all cost of labour, material, supervision, and sundries; or at a cost of \$1.87 per ton.

The character of the vein is unusual. The strike of the vein on the surface is approximately at right angles to the strike of the vein in the main tunnel, and the explanation of this unusual feature seems to be connected in some manner not yet fully understood with the numerous faults which cause frequent displacements of the vein. If it is possible to conceive of these faults having a greater and greater throw as they proceed farther from some central point, an explanation would be obtained of the situation which seems to prevail.

The vein dips at a very shallow angle from the horizontal. The angle of dip varies from "horizontal" to 30 degrees from the horizontal. The definition of the

limits of the ore chute proper has been confused by the peculiar system of faulting, and this problem has not yet been completely solved. Having regard only to certain points of information, it appears to be dipping along the line of strike at an angle of about 10 degrees from the horizontal; but it is quite possible that this theory will require to be reconsidered when a fuller knowledge of the faulting system is attained.

It is likely that as depth is gained the character of the ground will be less broken, and indications are not wanting that below the present main tunnel this will be the case, and also that the pitch of the vein will be greater than hitherto. Improvements in these two respects will be of the greatest importance, as the cost of mining the ore and of handling the ore after mining will be materially decreased. A further decrease in mining cost can be looked for from the installation of the compressor plant, whereby the development and exploratory work can be kept well in advance.

The high values obtained from the preliminary shipments to the smelter, of sorted ore, and from the assays made during development, raised hopes of high figures being obtained in the mine, and in this respect our hopes had not been disappointed. Owing to the proper development of the mine at the commencement of the year, and the interruptions caused by the scarcity of miners during the summer, we have been able to only partially demonstrate the values of the ore in practice; but the months of November and December are indications of what can be done under more favourable conditions; during these months values of \$29.86 and \$30.25 (respectively) were recovered in the mill.

It is of the utmost importance that development work should be pushed beyond the confines of the present ore zone; indications of a special and of a general character are sufficiently encouraging to warrant extensive work of an exploratory character, both in drifting and in cross-cutting, and I urge that these should be carried out independently of the development of the ore body as already known.

It has been found necessary to use greater caution in timbering than heretofore. The formation lies in parallel bands of ground which is dry and tight and easy to hold up, and of ground which is exactly the reverse. Nothing but stulls is used, and the waste is kept filled in the stopes as close as possible to the working faces.

It is satisfactory to record the fact that the year has passed without an accident of any kind, either in or outside the mine.

GRAVITY TRAMMING.

This important factor in handling the ore has proved entirely satisfactory. Great care has been exercised in watching the details and keeping the track in proper condition, with the result that no accidents have occurred and no repairs except to running gear have been necessary.

5,350 tons have been handled on this tramway at a cost of \$1,090.40, or at the rate of 20½ cents per ton, which figures include all cost of supervision. Besides handling the ore this tramway also transports all the supplies, provisions and lumber required at the mine, the cost of which is included in the above figures.

REDUCTION.

The 10-stamp mill has worked during the year 353 days and 6 hours and has been idle during the year 11