

which yielded \$9,774, or \$33.19 per ton and of this the company received 40 per cent. and \$3 per ton for milling. The total tonnage produced by the Athabasca including tributes was 935, producing \$18,500.

The aerial tram, connecting the Venus with the mill, has worked satisfactorily during the year, and with the exception of one accident in June it has run continuously. Seven thousand five hundred tons were shipped over the tramway at a cost of 19 cents per ton. The three rail gravity tram from the Athabasca has given satisfaction, but it was found necessary to repair it considerably during the summer.

The mill has run since it was started in November, 1902, a total of 375½ days, and crushed 8,260 tons of ore. Of Venus ore alone, the mill could crush 30 tons a day. During the first four or five months in the year experiments were made in treatment both in the mill and cyanide plant in an endeavour to increase the extraction. Up to March 1st the average extraction from Venus ore was less than 80 per cent. In May it reached 88 per cent., while for the last seven months of 1903 it averaged from both mines 93.3 per cent.

In the cyanide plant there were treated 4,486 tons of sand, from which was recovered \$15,863.60, or \$3.50 per ton. From an average extraction of 62.5 per cent. it has been increased to an average of 92.8 per cent.

Milling for the first few months cost \$1.32 per ton while for the last half of the year it averaged 81 cents. Cyaniding costs were reduced in the same period from 85 cents per ton to 80 per ton of ore milled.

The manager estimates that costs at the Venus, were the ing, \$3.85 per ton; tramming, 17 cents; milling and cyaniding, \$1.32; management and general expenses, 46 cents; total, \$5.80; leaving a profit, as shown by the last six months' average recovery, of \$3.75 per ton.

From the Athabasca with the \$20 grade of ore there could be made a profit of from \$8 to \$10 per ton, and by milling 600 tons from the Venus and 300 tons from the Athabasca per month, the property could make an approximate profit of \$5,000 per month. These estimates are based on actual results obtained during a certain period last year, when favourable conditions obtained. Both properties look better than at any period since work was started and development at present is proceeding with such satisfactory results that the company can look forward to a prosperous future.

CANADIAN ORE CONCENTRATION.

At the second ordinary general meeting of this company, Mr. Stanley Elmore stated that with the permission of Lord Ernest Hamilton, chairman of the Le Roi No. 2, he was able to give the result of the working of the oil concentration plant at that point. The oil loss was 1.03 gallons per ton of ore treated; there was a concentration of sixteen tons into one; the final tailings assay was three-fourths of a dwt. of gold, and less than one quarter of an ounce of silver per ton, and one-tenth of one per cent. of copper, which must be regarded as being extremely satisfactory.

Referring to this experimental mill the chairman said that \$2 per ton should be the very outside cost of working, even at such an expensive place as Rossland, and with the present small plant. With regard to the oil consumption, although it was originally estimated at one and a half gallons per ton, since the works have started it has been reduced to very slightly over one gallon.

To show the advantages which are gained by increasing the plant the inventor stated that with a 6 or 8 unit plant oil, royalty, all charges should not greatly exceed 3s. per ton. The adoption on a large scale of an economical concentrator process such as this in the Rossland mines will so greatly benefit the mining industry generally in that province that the satisfactory statements made at this meeting will be read with great interest in Canada.

MACHINERY NOTES.

Dr. W. A. HENDRYX in a recent interview stated that in treating the ore of the Mountain Lion by his new process he used only .094 of a pound of cyanide of potassium to the ton of ore. The average duration of the

treatment was only eight hours. It is claimed with the expense of mining and treatment not exceeding \$4 to \$6 per ton that Republic and vicinity can produce about 1,000 tons of ore per day.

Dr. Hendryx, the inventor of the new electro-cyanide process, is reported to have stated that he has succeeded in treating the ores of the Mountain Lion mine at Republic at a cost of \$1.50 per ton. The general values of the ores of the Republic camp are \$10, out of which the process saves \$8.33. The cost of milling, \$1.50, leaves the mine owner with \$6.83 to pay his extraction. The Republic mill and that of the Mountain Lion, erected at a large expense, both failed to settle the problem satisfactorily, and the mines could not smelt their ore profitably as smelting and transportation took up \$6.50, leaving the mine owner with \$3.50 to stope and develop his ore bodies. Out of this no profit was possible. Under the new conditions the mines are \$3.33 better off and this difference will pay handsomely. Within a year, it is declared, Republic will be altogether a different camp, and the new process will certainly be in use elsewhere.

Mr. S. S. Fowler, M.E., has finished the plans for the concentrator for the Alice mine at Creston. It will have a capacity of 100 tons in 24 hours. The work of constructing the concentrator will be commenced as soon as the snow is off the ground. Work on the tramway has already been commenced; that is, the iron is being made up for the various parts of the plant.

The Le Roi company, it is stated, is contemplating adding a converter plant to the Northport works, and thereby effect a considerable economy in freight rates on matte shipments.

It is reported that Mr. Hobson, manager of the Consolidated Cariboo Hydraulic, proposes installing an hydraulic elevator at the mine to avoid tunnelling the rim to make grade.

The lead refinery at Trail is now in regular operation, and shipments of pig-lead and refined silver therefrom to Eastern Canada have already commenced.

Messrs. Fernan & Lefevre, lead and zinc specialists representing European capital, have, it is announced, determined to establish a zinc smelter at either Fernie or Frank at either of which points an abundance of cheap fuel would of course be available. A zinc enriching works are also to be erected immediately at Roseberry on Slokan Lake, the plans and specifications for the plant having been already prepared.

It is reported that the Great Northern Mines, Ltd., propose erecting a forty-stamp mill on the Lucky Jack claim at Poplar Creek, and also doubling the capacity of the Oyster-Criterion mill.

The new machinery for the St. Eugene mine, at Moyie, East Kootenay, is being installed, and it is thought mining operations will shortly resume at this property.

The British American Mining Company, operating in Atlin, has ordered from a San Francisco firm a second dredge of 5,000 yards daily capacity to be operated by electricity.

A large hydraulic plant is to be installed at Bull River this spring.

COAL MINING NOTES.

THE output of the Nanaimo coal mines is steadily increasing, the monthly tonnage produced now being well over 30,000 tons. Machinery for the new pit-head at Departure Bay has been ordered and is now en route. The machinery is designed to enable coal to be taken direct from the mine and loaded in the holds of ships by a system of elevators, and thus provides for handling the mine product most economically. At the new mine Burleigh drills are now in use and rapid progress is being made, water no longer causing trouble.

It is reported that an important conditional sale has been made of coal areas in the Nicola, the purchasers being Tacoma people, who propose organizing a company to develop the field. It is possible that a railway connecting with the Canadian Pacific system will be built into this promising new section of country in the not distant future.

In the month of January 76,000 tons of coal were mined