

PRINCETON MINE.

In the early months of 1917 there were three men employed underground at the Princeton Mine doing repair work on the 5th and 6th levels. In April, when the Austin Mine started up again, this crew was reduced to two men, who continued to work here for the balance of the year. There was a daily inspection made of the important drifts, props being put in wherever necessary. The water has been kept out of the mine - one pumpman being employed for this work. Some ore was obtained from repair work - the total for the year being 443 tons.

The work of preparing for re-opening the mine was started early in December, after the Stephenson Mine was flooded. Up to December 15th there were regular charges for "Idle Expense" but after December 15th this account was dropped and all charges were made against "Re-opening".

The work of repairing the surface equipment was started about the middle of December with a large crew of men from the Stephenson Mine. The first important work consisted of installing a motor for the hoist, so that material could be taken into the mine. Temporary repairs were made to the 150 H.P. motor which had burned out on the Austin hoist last spring, this motor being temporarily installed at the Princeton. This motor was used until the last of the month, by which time the Austin Mine had been drowned out, after which the 200 H.P. motor which belonged to the Princeton hoist was moved from the Austin and installed at the Princeton in place of the 150 H.P. motor. While this work was being done the pulley stands were repaired and the sheaves at the top of the shaft house raised 18 inches.

The work of repairing the shaft between the 4th and 5th level, where several of the steel sets had buckled, was completed before the end of the month. The greater part of these sets were removed and replaced by timber sets spaced one foot apart. This increased the strength very materially, so that no further

trouble at this point is anticipated. Eleven stocking bents were erected on the Cambridge stockpile ground, which will be sufficient for a short time. Timber is now being framed for the stocking trestle North of the shaft for the Princeport grade. The top tram equipment was not yet in operation at the end of the year, and the rock and ore coming from the mine was handled by hand tramping.

As soon as the shaft had been repaired so that the cage could be operated, a crew of men started to work installing motor haulage tracks on 6th level. There was a section of the 5th level drift, about 400 feet in length, which had not been equipped for motor haulage at the time the mine closed down in 1913.

A crew of men was started on the 5th level where it was decided to drive a new drift in the ore near the foot-wall, instead of repairing one of the old drifts, which had caved. It would be possible to make faster head-way by driving a new drift than by re-timbering the old drift. At this is the point from which the first product would be obtained, this work is being done on three 8-hour shifts in order to speed it up.

No attempt will be made in this report to outline the work which will have to be done before the Princeton Mine is in condition for producing a good product. The work thus far is only the preparatory work, however, and it will require nearly all of 1918 to complete it. The programme of new work when completed will make it possible to mine the ore left in No. 1 shaft pillar, also to open the ore body on C. & N. W. Lease, Section 19, as well as to open the main Princeton ore body on 6th and 7th levels. This will result in the development of a large territory, and it is hoped, will permit of the production of an ore of better physical character than has been possible in the past.

The re-opening work in December was handicapped by the fact that more men were employed than could be worked to the best advantage, but it was very important to keep all the men from the Stephenson and Austin Mines employed so that they would not leave the district. Some ore was obtained from the re-

opening work on the last day of the year, the product amounting to forty-nine tons.

During the year, 150,375 tons of Cambridge ore was shipped from the old pile at the Princeton Mine. A careful estimate was made of the ore remaining in stock from which it developed that there was a shortage of 1,598 tons. This old Cambridge pile was made prior to 1913, so that it had been standing at least five years. The shortage was undoubtedly due to the ore carried away from the pile by melting snow and heavy rains. There is over a 1/2 inch of ore over a considerable area in a field two hundred or more feet from the pile.

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AVERAGE MINE ANALYSIS OF OUTPUT FOR YEAR-1917.

| GRADE         | IRON  | PHOS. | SILICA | MANG. |
|---------------|-------|-------|--------|-------|
| Cambridge #2, | 57.47 | .397  | 10.33  | .895  |

Above grade went into mixed cargoes.

ORE STATEMENT - DECEMBER 31ST, 1917.

|                            | CAMBRIDGE | TOTAL   | TOTAL<br>LAST YEAR |
|----------------------------|-----------|---------|--------------------|
| On Hand January 1st, 1917, | 154,938   | 154,938 | 154,793            |
| Output for Year,           | 492       | 492     | 145                |
| Stockpile Shortage,        | 1,598     | 1,598   |                    |
| Total,                     | 155,832   | 155,832 | 154,938            |
| Shipments,                 | 150,375   | 150,375 | 0                  |
| Balance on Hand,           | 3,457     | 3,457   | 154,938            |
| Decrease in Ore on Hand,   |           | 151,481 |                    |

Mine idle during 1916 ' 1917.

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COMPARATIVE WAGES AND PRODUCT.

|                                   | 1917.    | 1916.    | INCREASE.  | DECREASE. |
|-----------------------------------|----------|----------|------------|-----------|
| PRODUCT                           | -        | 145      |            |           |
| No. Shifts and Hours              | 1-8hr    | 1-8hr    |            |           |
| <u>AVERAGE NUMBER MEN WORKING</u> |          |          |            |           |
| Surface                           | 4        | 3½       | ½          |           |
| Underground                       | 4        | 4½       |            | ½         |
| Total                             | 8        | 8        |            |           |
| <u>AVERAGE WAGES PER DAY</u>      |          |          |            |           |
| Surface                           | 3.31     | 2.83     | .48-16.96% |           |
| Underground                       | 4.04     | 3.49     | .55-15.76% |           |
| Total                             | 3.70     | 3.20     | .50-15.63% |           |
| <u>WAGES PER MONTH OF 25 DAYS</u> |          |          |            |           |
| Surface                           | 82.75    | 70.75    | 12.00      |           |
| Underground                       | 101.00   | 87.25    | 13.75      |           |
| Total                             | 92.50    | 80.00    | 12.50      |           |
| <u>TOTAL NUMBER OF DAYS</u>       |          |          |            |           |
| Surface                           | 1,146½   | 1,158    |            | 11½       |
| Underground                       | 1,302½   | 1,455½   |            | 152½      |
| Total                             | 2,449    | 2,613½   |            | 163½      |
| <u>AMOUNT FOR LABOR</u>           |          |          |            |           |
| Surface                           | 3,799.99 | 3,277.12 | 522.87     |           |
| Underground                       | 5,261.13 | 5,078.18 | 182.95     |           |
| Total                             | 9,061.12 | 8,355.30 | 705.82     |           |

Proportion Surface to Underground Men:

1917 - 1 to 1  
 1916 - 1 to 1.29  
 1915 - 1 to 1.25  
 1914 - 1 to 1.31  
 1913 - 1 to 3.13  
 1912 - 1 to 4.69  
 1911 - 1 to 4.18

Mine not producing since 1913.