

MORRIS LLOYD MINES

LABOR
(CONTINUED)

The following statement shows the number of men of the different nationalities at work in these mines as of December 1924, and for the same month during previous years, viz:

| | | TONS PER MAN PER DAY | | | | | | | | | | | |
|------|------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 1924 | 1923 | 1922 | 1921 | 1920 | 1919 | 1918 | 1917 | | | | |
| | Americans, | 0 | 0 | 0 | * 0 | 80 | 69 | 60 | 57 | | | | |
| | English, | 16 | 15 | 16 | 35 | 14 | 14 | 10 | 13 | | | | |
| JAN. | Swedish, | 20 | 16 | 17 | 22 | 9 | 9 | 9 | 10 | | | | |
| FEB. | French, | 44 | 44 | 60 | 53 | 20 | 23 | 10 | 11 | | | | |
| MAR. | Finnish, | 76 | 82 | 89 | 96 | 114 | 96 | 87 | 83 | | | | |
| APR. | Italian, | 29 | 32 | 32 | 22 | 60 | 53 | 45 | 51 | | | | |
| MAY. | Greeks, | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | | | | |
| JUN. | Slavish, | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | | | | |
| JUL. | Norwegian, | 1 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | | | | |
| AUG. | Irish, | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | | | | |
| SEP. | Scotch, | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | | | | |
| OCT. | Austrian, | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| NOV. | TOTAL, | 191 | 196 | 217 | 237 | 299 | 267 | 224 | 226 | | | | |
| DEC. | | | | | | | | | | | | | |
| AVG. | | 14.10 | 13.86 | 13.59 | 16.97 | 18.29 | 20.45 | 18.55 | 17.67 | 15.78 | 17.43 | 18.47 | 19.03 |

*Basis of Classification changed year 1921.

PRODUCTION

During the year we produced 246,356 tons as compared with 260,335 tons in 1923.

These mines are developed and equipped to produce a much greater tonnage. We have the ore "in sight" and we certainly hope we will be called upon for more tonnage in the future than in the past.

The production for the year was made up of the following grades, viz:

| MINE | BESSEMER | MORRIS | SILICA | LLOYD | LLOYDDALE | TOTAL | | | | | | |
|-------------|----------|---------|--------|---------|-----------|---------|------|------|------|------|------|------|
| Morris | | 76,038 | 68,040 | | | 144,078 | | | | | | |
| Lloyd | | | 1,213 | 88,672 | 12,393 | 102,278 | | | | | | |
| TOTAL, 1924 | | 76,038 | 69,253 | 88,672 | 12,393 | 246,356 | | | | | | |
| " 1923 | | 132,413 | 25,147 | 101,145 | 1,630 | 260,335 | | | | | | |
| " 1922 | | 109,227 | 22,850 | 89,902 | | 221,979 | | | | | | |
| " 1921 | | 68,593 | 45,529 | 84,741 | 171 | 209,034 | | | | | | |
| " 1920 | 929 | 46,643 | 63,873 | 105,327 | 45,000 | 261,772 | | | | | | |
| " 1919 | 14,674 | 23,142 | 78,755 | 121,623 | 44,289 | 282,483 | | | | | | |
| " 1918 | 30,709 | 16,320 | 41,922 | 141,144 | 59,405 | 289,500 | | | | | | |
| " 1917 | 55,772 | 9,530 | 52,848 | 138,235 | 27,615 | 284,000 | | | | | | |
| " 1916 | 75,024 | 2,630 | 76,350 | 112,119 | 41,562 | 307,685 | | | | | | |
| NOV. | | | | | | | | | | | | |
| DEC. | | | | | | | | | | | | |
| AVG. | 2.50 | 2.55 | 2.75 | 3.15 | 3.45 | 4.04 | 3.57 | 3.48 | 3.44 | 4.08 | 4.28 | 4.80 |

MORRIS LLOYD MINES.

MORRIS LLOYD MINES

PRODUCTION
(CONTINUED)

The following statement shows the tons per man per day for each month and the average for the year with previous years for comparison, viz:

TONS PER MAN PER DAY

| | | SURFACE | | | | | | | | | | | |
|------|----------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| JAN. | | 14.87 | 10.98 | 10.86 | 17.75 | 17.09 | 17.66 | 18.53 | 22.64 | 14.37 | 18.97 | 18.03 | |
| FEB. | 592 tons | 15.31 | 10.54 | 12.29 | 18.04 | 16.36 | 18.65 | 17.54 | 22.07 | 15.65 | 18.42 | 17.17 | |
| MAR. | | 15.49 | 12.74 | 15.38 | 18.37 | 19.80 | 19.61 | 19.58 | 23.72 | 16.52 | 19.38 | 15.66 | |
| APR. | | 13.97 | 12.26 | 14.50 | 17.88 | 19.60 | 16.65 | 15.85 | 22.12 | 14.04 | 18.68 | 16.87 | |
| MAY. | 11.94 | 14.47 | 13.91 | 16.50 | 21.43 | 20.84 | 17.68 | 13.98 | 23.48 | 16.15 | 16.64 | 20.30 | |
| JUN. | 13.55 | 15.68 | 13.54 | 17.86 | 19.28 | 25.18 | 20.40 | 16.71 | 13.02 | 19.13 | 22.33 | 20.70 | |
| JUL. | 15.97 | 10.58 | 14.51 | 15.64 | 20.25 | 24.80 | 17.69 | 15.98 | 15.21 | 18.63 | 19.01 | 19.43 | |
| AUG. | 14.70 | 13.21 | 12.49 | 17.64 | 20.09 | 22.37 | 18.63 | 18.54 | 13.73 | 18.78 | 19.96 | 14.35 | |
| SEP. | 16.18 | 12.25 | 15.15 | 16.04 | 17.36 | 22.96 | 18.70 | 19.09 | 12.41 | 17.77 | 17.62 | 16.77 | |
| OCT. | 13.67 | 13.16 | 14.48 | 17.00 | 16.76 | 25.35 | 20.31 | 19.45 | 15.07 | 18.13 | 18.89 | 18.64 | |
| NOV. | 12.86 | 13.82 | 15.12 | 15.56 | 16.92 | 15.31 | 16.68 | 16.51 | 18.32 | 18.70 | 18.01 | 17.72 | |
| DEC. | 15.07 | 13.30 | 14.13 | 17.57 | 15.28 | 15.81 | 17.29 | 20.27 | 15.60 | 18.17 | 14.66 | 15.68 | |
| AVG. | | 14.10 | 13.86 | 13.38 | 15.57 | 18.29 | 20.45 | 18.33 | 17.67 | 18.78 | 17.40 | 18.47 | 19.08 |

| | | UNDERGROUND | | | | | | | | | | | |
|------|------|-------------|------|------|------|------|------|------|------|------|------|------|------|
| | | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| JAN. | | 3.43 | 2.58 | 2.87 | 3.71 | 4.20 | 4.28 | 4.19 | 4.04 | 4.71 | 5.39 | 5.53 | |
| FEB. | | 3.41 | 2.60 | 2.94 | 3.96 | 4.29 | 4.42 | 4.22 | 4.16 | 4.76 | 5.00 | 5.59 | |
| MAR. | | 3.08 | 3.15 | 3.75 | 4.14 | 4.63 | 4.31 | 4.43 | 4.10 | 5.11 | 5.37 | 5.23 | |
| APR. | | 3.00 | 3.08 | 3.64 | 4.02 | 4.71 | 3.89 | 4.03 | 4.08 | 4.35 | 4.94 | 5.55 | |
| MAY. | 3.18 | 3.35 | 3.20 | 4.17 | 4.33 | 5.25 | 4.57 | 4.39 | 4.69 | 4.97 | 5.37 | 6.12 | |
| JUN. | 3.58 | 3.42 | 3.63 | 4.56 | 4.06 | 5.42 | 4.64 | 4.40 | 3.57 | 5.40 | 6.52 | 6.09 | |
| JUL. | 3.85 | 2.44 | 4.00 | 4.39 | 4.39 | 5.50 | 4.49 | 4.16 | 4.16 | 5.88 | 6.21 | 6.74 | |
| AUG. | 3.56 | 3.00 | 3.97 | 4.74 | 4.75 | 5.56 | 4.39 | 4.77 | 3.93 | 5.90 | 5.98 | 6.02 | |
| SEP. | 3.52 | 2.84 | 4.06 | 4.53 | 4.79 | 5.61 | 4.81 | 4.61 | 4.26 | 5.78 | 5.51 | 5.87 | |
| OCT. | 3.45 | 2.95 | 4.10 | 4.33 | 4.63 | 6.23 | 4.93 | 4.88 | 4.70 | 5.52 | 5.91 | 6.14 | |
| NOV. | 3.48 | 3.06 | 3.97 | 4.04 | 4.47 | 4.52 | 4.22 | 4.13 | 4.50 | 5.56 | 5.63 | 6.52 | |
| DEC. | 3.60 | 3.09 | 3.48 | 4.01 | 4.04 | 4.53 | 4.38 | 3.90 | 4.51 | 5.08 | 5.31 | 5.83 | |
| AVG. | | 3.52 | 3.09 | 3.48 | 4.00 | 4.27 | 5.04 | 4.44 | 4.33 | 4.22 | 5.33 | 5.58 | 6.42 |

GRAND TOTAL, 315,540 190,557 200,388 85,850 233,915 210,592 269,228

| | | TOTAL | | | | | | | | | | | |
|------|----------|-------|------|------|------|------|------|------|------|------|------|------|------|
| | | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| JAN. | | 2.78 | 2.09 | 2.27 | 3.07 | 3.37 | 3.44 | 3.42 | 3.43 | 3.55 | 4.20 | 4.23 | |
| FEB. | | 2.79 | 2.09 | 2.37 | 3.25 | 3.40 | 3.57 | 3.40 | 3.50 | 3.65 | 3.93 | 4.22 | |
| MAR. | 160 tons | 2.57 | 2.53 | 3.02 | 3.38 | 3.75 | 3.54 | 3.61 | 3.49 | 3.90 | 4.20 | 3.92 | |
| APR. | | 2.47 | 2.46 | 2.91 | 3.28 | 3.80 | 3.16 | 3.22 | 3.45 | 3.32 | 3.91 | 4.18 | |
| MAY. | 2.51 | 2.72 | 2.60 | 3.33 | 3.60 | 4.20 | 3.63 | 3.34 | 3.91 | 3.80 | 4.06 | 4.70 | |
| JUN. | 2.83 | 2.81 | 2.86 | 3.63 | 3.36 | 4.46 | 3.78 | 3.48 | 2.80 | 4.21 | 5.05 | 4.71 | |
| JUL. | 3.10 | 1.98 | 3.13 | 3.43 | 3.61 | 4.50 | 3.58 | 3.30 | 3.27 | 4.47 | 4.68 | 5.01 | |
| AUG. | 2.86 | 2.44 | 3.01 | 3.73 | 3.84 | 4.45 | 3.55 | 3.73 | 3.05 | 4.49 | 4.60 | 4.24 | |
| SEP. | 2.89 | 2.30 | 3.20 | 3.53 | 3.75 | 4.51 | 3.83 | 3.71 | 3.17 | 4.36 | 4.20 | 4.35 | |
| OCT. | 2.75 | 2.41 | 3.20 | 3.45 | 3.63 | 5.00 | 3.97 | 3.90 | 3.58 | 4.23 | 4.50 | 4.62 | |
| NOV. | 2.74 | 2.50 | 3.15 | 3.21 | 3.54 | 3.49 | 3.36 | 3.31 | 3.55 | 4.29 | 4.29 | 4.77 | |
| DEC. | 2.91 | 2.51 | 2.79 | 3.26 | 3.20 | 3.52 | 3.49 | 3.30 | 3.50 | 3.97 | 3.90 | 4.25 | |
| AVG. | | 2.80 | 2.53 | 2.76 | 3.18 | 3.46 | 4.04 | 3.57 | 3.48 | 3.44 | 4.08 | 4.28 | 4.80 |

MORRIS LLOYD MINES

PRODUCTION
(CONTINUED)

It will be noted that the tons per man per day for the current year 1924 are the greatest for any year in the history of the properties and we would like to ship them out.

SHIPMENTS

The balance of Silica carried has been materially reduced during the past year and we have on hand the balance of all our piles 269,228 tons as compared with 210,692 tons last year.

We are prepared to ship a much larger tonnage and we certainly hope next year will be better.

We continue shipping small tonnages to Charcoal Furnaces and trust we will increase these and continue all through the present winter.

The following statement shows the shipments by grades for the past year and previous years for comparison, viz:

| YEAR | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|---------------------|---------|---------|---------|--------|---------|---------|---------|
| GRADES | TONS | TONS | TONS | TONS | TONS | TONS | TONS |
| Morris Bessemer, | 23,785 | 5,000 | 7,789 | | | | |
| Lloyd Bessemer, | 2,679 | | | | | | |
| TOTAL BESSEMER, | 26,464 | 5,000 | 7,789 | | | | |
| Morris Ore, | 13,576 | 3,613 | 37,402 | 7,868 | 118,858 | 45,394 | 27,084 |
| Lloyd Ore, | 155,166 | 121,198 | 111,922 | 38,582 | 96,571 | 80,267 | 104,115 |
| Lloyddale Ore, | 60,087 | 27,699 | 11,438 | | 42,742 | 20,390 | 25,171 |
| TOTAL NON BESSEMER, | 228,829 | 152,510 | 160,762 | 46,450 | 258,171 | 146,051 | 156,370 |
| Morrisville, | 11,878 | 8,506 | 256 | 4,620 | 8,117 | 39,773 | 80,975 |
| North Lake Silica, | 48,369 | 24,541 | 31,581 | 14,780 | 27,627 | 24,868 | 31,883 |
| TOTAL SILICA, | 60,247 | 33,047 | 31,837 | 19,400 | 35,744 | 64,641 | 112,858 |
| GRAND TOTAL, | 315,540 | 190,557 | 200,388 | 65,850 | 293,915 | 210,692 | 269,228 |

Of the total shipments for 1924, 89,068 tons were from pockets and 180,160 tons from stockpiles.

MORRIS LLOYD MINES

ORE IN STOCK

The balances in stock at the end of the year are a trifle smaller than for the same date last year. They are entirely too large for comfort and we would like to ship them out.

The balance of Silica ore being carried has been materially reduced during the past year and we hope we can clean up the balance of all our piles are excellent and an ultimate tonnage greatly in excess of the total shown as "in sight" can reasonably be expected.

The balances in stockpile at the end of 1924 with comparison for

previous years are as follows, viz:

| | 1914 | 1915 | 1916 | 1917 |
|------------------------|-----------|-----------|-----------|-----------|
| In mine Jan. 1st, Tons | 3,216,750 | 3,089,300 | 2,681,800 | 2,575,577 |
| Product, " | 176,080 | 192,145 | 207,685 | 264,000 |
| Balance, " | 3,040,670 | 2,897,155 | 2,474,115 | 2,311,577 |

BALANCES IN STOCKPILES DECEMBER 31ST, 1924.

| Developed Fiscal Year | BESSEMER | MORRIS | SILICA | LLOYD | LLOYDDALE | TOTAL |
|---------------------------------------|----------|---------|---------|---------|-----------|---------|
| Morris, Lloyd, in mine Jan. 1st, Tons | | 186,709 | 5,568 | 117,373 | | 192,277 |
| Product, " | | 186,709 | 20,106 | 117,373 | | 131,911 |
| Balance, " | | 137,758 | 63,908 | 132,977 | 12,417 | 347,060 |
| In mine Dec. 31st, Tons | | 65,658 | 103,835 | 96,674 | 31,250 | 297,417 |
| Developed Fiscal Year | | 87,371 | 117,720 | 90,270 | 73,992 | 369,353 |
| " 1920 | | 26,917 | 91,591 | 33,840 | 73,821 | 226,169 |
| " 1919 | 10,414 | 31,975 | 60,052 | 22,085 | 40,259 | 164,785 |
| " 1918 | 2,669 | 10,571 | 14,203 | 21,992 | 23,424 | 72,859 |
| Product, " | | 3,769 | 32,903 | 31,006 | 23,960 | 98,899 |
| Balance, " | | 61,251 | 333 | 37,077 | 3,866 | 118,152 |

| Developed Fiscal Year | 1914 | 1915 | 1916 | 1917 |
|-----------------------|---------|---------|---------|---------|
| Product, Tons | 176,080 | 192,145 | 207,685 | 264,000 |

- ** Shows a loss.
- * 700,750 tons estimated for Morris Mine.
- ** Section 6 ore body reduced 603,200 tons.

MORRIS LLOYD MINES
MORRIS LLOYD MINES
ESTIMATE OF PRODUCTION

ORE RESERVES

Our Estimate of Production for the coming year, based on our present The following statement shows the results, in tons, of our development work during the past and previous years. 242,250 tons.

We continue to develop more ore each year than we mine.

The prospects for additional ore below our present bottom levels are excellent and an ultimate tonnage greatly in excess of the total shown as "in sight" can reasonably be expected. spite of curtailed operations. This

| Estimated Ore | | 1913 | 1914 | 1915 | 1916 | 1917 |
|-------------------------|------|-------------|-----------|------------|-----------|-----------|
| In mine Jan. 1st, | Tons | 2,861,000 | 3,218,750 | 3,089,200 | 2,081,600 | 2,575,577 |
| Product, | " | 176,080 | 192,145 | 221,585 | 307,685 | 284,000 |
| Balance, | " | 2,684,920 | 3,026,605 | 2,867,615 | 1,773,915 | 2,291,577 |
| In mine Dec. 31st, | " | **3,218,750 | 3,089,200 | 2,081,600 | 2,575,577 | 2,267,116 |
| Developed Fiscal Year " | " | 533,830 | 62,595 | ** 786,015 | 801,662 | ** 24,461 |

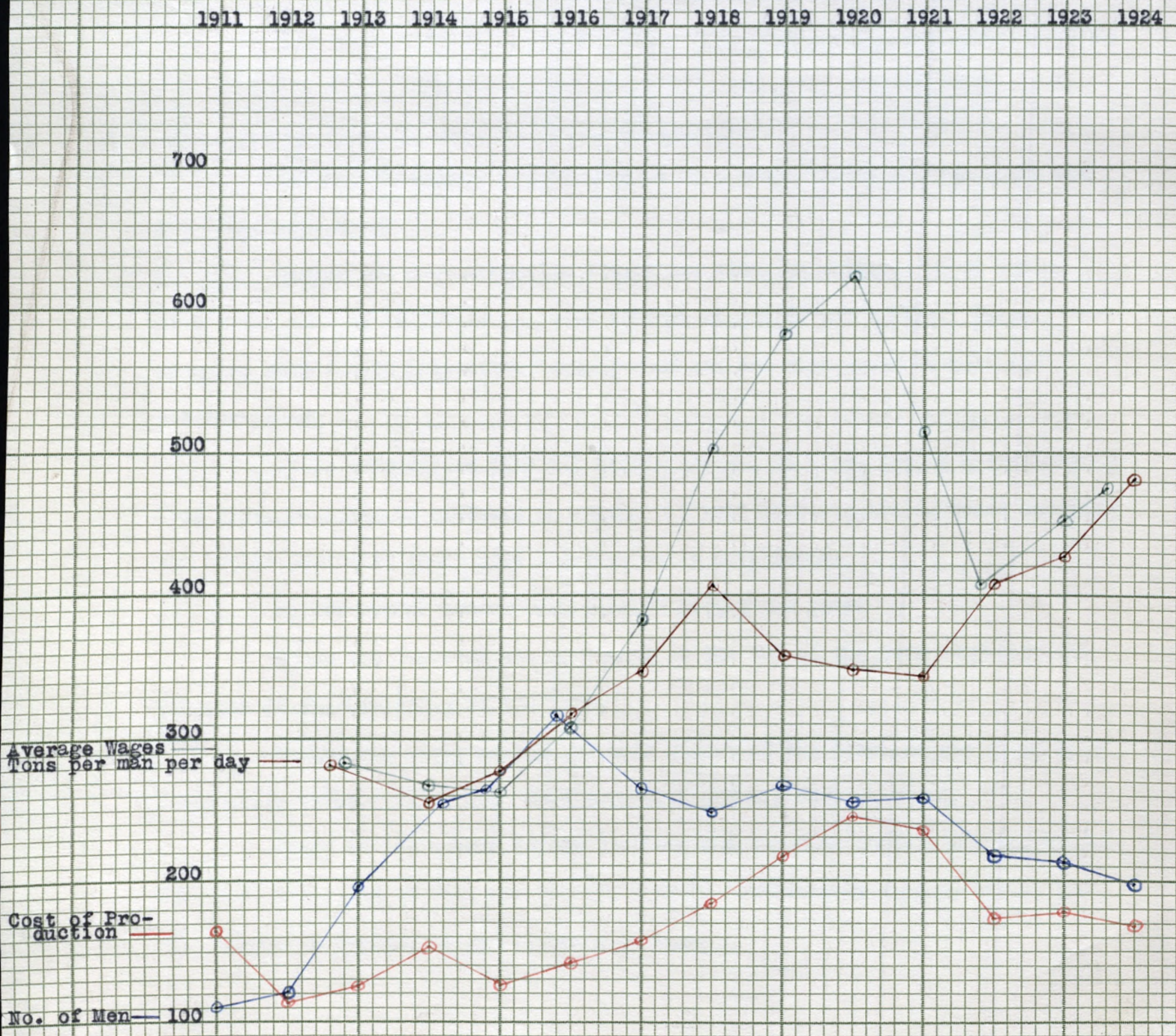
| Estimated Ore | | 1918 | 1919 | 1920 | 1921 | 1922 |
|-------------------------|------|-----------|-----------|-----------|-----------|-----------|
| In mine Jan. 1st, | Tons | 2,267,116 | 2,185,771 | 2,189,763 | 2,260,449 | 3,038,514 |
| Product, | " | 289,500 | 282,483 | 261,772 | 209,034 | 221,979 |
| Balance, | " | 1,977,616 | 1,903,288 | 1,927,991 | 2,051,415 | 2,816,535 |
| In mine Dec. 31st, | " | 2,185,771 | 2,189,763 | 2,260,449 | 3,038,514 | 3,309,174 |
| Developed Fiscal Year " | " | 208,155 | 286,475 | 332,458 | 987,099 | 492,639 |

| Estimated Ore | | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 |
|-------------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|
| In mine Jan. 1st, | Tons | 3,309,174 | 3,306,270 | 3,309,174 | 3,306,270 | 3,309,174 | 3,306,270 |
| Product, | " | 260,335 | 246,356 | 260,335 | 246,356 | 260,335 | 246,356 |
| Balance, | " | 3,048,839 | 3,059,914 | 3,048,839 | 3,059,914 | 3,048,839 | 3,059,914 |
| In mine Dec. 31st, | " | 3,306,270 | 3,309,075 | 3,306,270 | 3,309,075 | 3,306,270 | 3,309,075 |
| Developed Fiscal Year " | " | 257,431 | 249,181 | 257,431 | 249,181 | 257,431 | 249,181 |

| | | | | | | | | | |
|------------|---|---------|-----------|------------|------------|------------|-------|-------|-------|
| JAN. | 21,551 | 4.23 | 24,870.91 | 18,212.48 | 37,063.89 | 1.155 | .657 | 1.722 | |
| FEB. | 19,317 | 4.22 | 22,415.23 | 16,599.53 | 33,674.84 | 1.170 | .668 | 1.838 | |
| MAR. | 18,071 | 4.19 | 20,878.53 | 15,178.53 | 31,734.76 | 1.261 | .724 | 1.985 | |
| APR. | 17,071 | 4.14 | 19,071.00 | 13,878.53 | 29,606.62 | 1.171 | .707 | 1.878 | |
| MAY. | 16,071 | 4.08 | 17,071.00 | 12,578.53 | 27,478.53 | 1.086 | .626 | 1.662 | |
| JUN. | 15,071 | 4.02 | 15,071.00 | 11,278.53 | 25,350.44 | 1.042 | .656 | 1.678 | |
| JUL. | 14,071 | 3.96 | 13,071.00 | 10,078.53 | 23,222.35 | .970 | .624 | 1.594 | |
| AUG. | 13,071 | 3.90 | 11,071.00 | 8,878.53 | 21,094.26 | .900 | .592 | 1.510 | |
| SEP. | 12,071 | 3.84 | 9,071.00 | 7,678.53 | 18,966.17 | .830 | .560 | 1.426 | |
| OCT. | ** Shows a loss. | 3.78 | 7,071.00 | 6,478.53 | 16,838.08 | 1.099 | .744 | 1.843 | |
| NOV. | ** 700,750 tons estimated for Morris Mine. | 3.72 | 5,071.00 | 5,278.53 | 14,710.00 | 1.068 | .845 | 1.913 | |
| DEC. | ** Section 6 ore body reduced 603,200 tons. | 3.66 | 3,071.00 | 4,078.53 | 12,582.00 | 1.187 | .680 | 2.047 | |
| OVER-RUNS | 19,186 | | | | | | | | |
| ADJUSTMENT | | | | | | | | | |
| TOTAL-1924 | 262 | 246,356 | 4.80 | 262,000.04 | 162,055.50 | 414,853.54 | 1.028 | .658 | 1.684 |
| TOTAL-1923 | 295 | 260,335 | 4.29 | 281,956.94 | 177,498.75 | 459,455.69 | 1.083 | .688 | 1.765 |
| TOTAL-1922 | 301 | 221,979 | 4.08 | 226,217.25 | 155,123.03 | 381,340.26 | 1.019 | .699 | 1.718 |
| TOTAL-1921 | 289 | 209,034 | 3.44 | 309,782.95 | 181,681.56 | 491,664.51 | 1.482 | .870 | 2.352 |
| TOTAL-1920 | 300 | 261,772 | 3.48 | 458,245.96 | 192,164.29 | 650,410.25 | 1.751 | .734 | 2.485 |
| TOTAL-1919 | 299 | 282,483 | 3.57 | 458,614.70 | 173,261.44 | 611,876.14 | 1.583 | .613 | 2.166 |
| TOTAL-1918 | 297 | 289,500 | 4.04 | 358,003.72 | 174,376.53 | 532,382.05 | 1.237 | .602 | 1.839 |
| TOTAL-1917 | 302 | 284,000 | *1-3.48 | 297,870.77 | 125,041.62 | 422,912.39 | 1.113 | .467 | 1.580 |
| TOTAL-1916 | 299 | 307,685 | *2-3.18 | 257,025.03 | 159,995.37 | 397,029.40 | .911 | .501 | 1.412 |
| TOTAL-1915 | 304 | 221,585 | 2.75 | 178,145.41 | 97,564.12 | 275,609.53 | .804 | .440 | 1.244 |
| TOTAL-1914 | 299 | 192,145 | 2.53 | 193,882.96 | 103,064.08 | 296,887.06 | 1.010 | .535 | 1.545 |

*1 - 1917 Cost of Production and tons per man per day does not include 16,213 tons mined from open pit by Steam Shovel method.

*2 - 1916 Cost of Production and tons per man per day does not include 30,333 tons taken from open pit by Steam Shovel method.



MORRIS LLOYD MINES

MINE BUILDINGS

During the year an addition was built on the East end of our engine house to enclose the new compressor installed. This was the only new construction during the year.

The wood work on the office, laboratory and shops was repainted during the summer months.

All mine buildings are in good condition at the end of the year.

DWELLINGS

Heavy repair charges against our tenant houses continue. The buildings are all of wood construction and most of them having been erected in 1909 and 1910, are beginning to call for extensive repairs.

The underpinning is badly decayed in a large number and the roofs are also beginning to go.

During the past summer we placed new asbestos shingles on 34 houses at a total cost of \$5,955.11 - 481½ squares at \$12.57 per square. These shingles make a very attractive looking roof and are fire-proof as well as weather-proof.

It is recommended that all tenant houses, at mines having a sufficiently long life, be built of concrete or brick. If wood construction is found necessary the houses should at least have concrete walls underneath.

No new tenant houses were erected during the year.

There are fourteen houses vacant at the end of the year compared with fourteen at the beginning of the year.

During the early spring the main street of our location was lined with young maple trees. These have done very well and all have survived.

There are no sewers in our location and out-door toilets are maintained. These are beginning to fill and we have been to considerable expense during the past summer on account of the cleaning of these.

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DOCKS STORE BUILDING

Our store building in the location has been occupied all the year by Mr. J. B. Casper who has been the tenant from the time the building was erected. He moved in January 1st, 1918. His business seems prosperous, but no large profits are being made. The business is in keen competition with the stores in Ishpeming who send delivery teams out here every day.

WELFARE WORK

This equipment was repaired during the year and one new saddle back stocking car built. We continue work along the same general lines as in years past. Prizes are given for the best kept premises, etc. and visiting nurse service is maintained.

HOISTING MACHINERY

Our club house has been open all the year and has proven a valuable adjunct to our operations. There have been some heavy expenses to our hoisting equipment in the Morris mine engine house, due to a fire which occurred in November 1923. The new equipment to replace that destroyed was installed in 1924. This amounted to \$5,071.12. Moving pictures are shown on Wednesday and Saturdays, but the attendance is small. A large portion of our population are Finnish and do not, as a rule, attend shows. Four hoisting cables costing \$2,024.65 were also charged to this account during the past years attendance as these picture shows has been as follows, Viz:

| | | | |
|------|------|---|--------|
| Year | 1924 | - | 11,953 |
| " | 1923 | - | 10,076 |
| " | 1922 | - | 6,946 |
| " | 1921 | - | 10,703 |
| " | 1920 | - | 21,768 |
| " | 1919 | - | 23,822 |

We installed a new 25 hp. Ross-Rand Air Compressor during the past summer and this was placed in operation in August month.

We now have a sufficient air supply and at proper pressure.

MORRIS LLOYD MINES
MORRIS LLOYD MINES.

MINE VENTILATION
DOCKS, TRESTLES AND POCKETS

No artificial ventilation is necessary in any of the mines in this district. We have not been to so great an expense this year account of our trestles as that of 1923. During February month our rock trestle at the Morris last year between the Morris and Barnes-Becker mines gives us complete and mine was extended and a short ore trestle was erected on the South Morris stock-very satisfactory natural ventilation in all of our underground workings, ing ground. This being necessary due to the small shipments of Morris ore made this last season.

ELECTRIC TRAM EQUIPMENT

TOP TRAM ENGINE AND CARS

Due to our extraordinary long and numerous trams, we have heavy wear to this equipment. This equipment was overhauled and repaired during the year and one new saddle back stocking car built. Saddle back tram cars were rebuilt in our shops.

TRACKS AND YARDS

We also purchased eighteen new two-ton rocker dump tram cars, costing \$6,640.55. The railway company maintain the tracks and we have been to only the regular expense of cleaning etc., in the yards during the year.

MINES

HOISTING MACHINERY

One new gear and pinion costing \$2,380.00 was placed on our No. 1 Prescott. There have been some heavy expenses to our hoisting equipment in the Morris mine engine house, due to a fire which occurred in November 1923. The new equipment to replace that destroyed was installed in 1924. This amounted to \$3,071.12.

Four hoisting cables costing \$2,024.65 were also charged to this account during the year.

COMPRESSORS

We installed a new 2500 cubic foot Ingersoll-Rand Air Compressor during the past summer and this was placed in operation in August month.

We now have a sufficient air supply and at proper pressure. Air is obtained from the Lloyd mine, but is not available for stockpile ore.

During the year we have transferred, underground, some ore from the Morris mine, bringing it to the Lloyd mine on the fourth level, in order to pass same through this crusher for Charcoal Furnace sales.

MORRIS LLOYD MINES.

MORRIS LLOYD MINES

MINE VENTILATION

(CONTINUED)

No artificial ventilation is necessary in any of the mines in this district. The upcast and downcast shafts, together with the connection made last year between the Morris and Barnes-Hecker mines gives us complete and very satisfactory natural ventilation in all of our underground workings.

ELECTRIC TRAM EQUIPMENT

Due to our extraordinary long and numerous trams, we have heavy wear to this equipment. During the year two of the electric locomotives were overhauled and fifteen of our four ton saddle back tram cars were rebuilt in our shops.

We also purchased eighteen new two ton rocker dump tram cars, costing \$6,640.55, which were charged directly to this maintenance account.

We have had adequate supplies of this material during the year and no delays or inconveniences were experienced in deliveries.

PUMPS

One new gear and pinion costing \$2,380.00 was placed on our No. 1 Prescott Pump in the main pumping plant on the fourth level of the Morris mine. This puts the equipment in first class condition.

The average gallons pumped during 1924 was 466 G.P.M. compared with 489 G.P.M. last year.

In addition to this, we pump about 50 G.P.M. for domestic water supply from the second level of the Lloyd mine.

CRUSHING PLANT

No additions have been made to this plant during the year and only regular repairs and renewals have been necessary.

This plant is ample to serve the product being shipped as hoisted from the Lloyd mine, but is not available for stockpile ore.

During the year we have transferred, underground, some ore from the Morris mine, bringing it to the Lloyd mine on the fourth level, in order to pass same through this crusher for Charcoal Furnace sales.

MORRIS LLOYD MINES.

MORRIS LLOYD MINES.

CRUSHING PLANT

(CONTINUED)

We should have a crusher at the Morris mine in order to crush the product as it comes directly from the mine.

A total of 41,779 tons were crushed during the past season at a cost of .034 cents per ton.

WATER SUPPLY

We continue pumping from the second level of the Lloyd mine for the supply of water for our location. In addition to this, we are compelled, at times, to augment this by taking some water from the small creek that flows West of the Morris mine.

MINE TIMBER AND LAGGING

We have had adequate supplies of this material during the year and no delays or inconveniences were experienced in deliveries.

PERSONAL INJURIES

We regret to have to report a fatal accident for this year. The first since 1916. George Salmi was killed in #73 Stope on September 20th, 1924. There were no witnesses and it was quite impossible to determine just how this man met his death. He entered the stope about a half hour ahead of his partner, and when his partner came in later, he found him lying on the broken ore and moaning. He died while being removed from the stope. It is assumed that a fall of ground from the back struck him a glancing blow on the head, although no marks were visible.

We have had no very serious accidents and only the usual number of minor accidents during the year.

MORRIS LLOYD MINES.

ACCIDENTS TO EQUIPMENT

(CONTINUED)

We have had no serious accidents to equipment during the year and the following statement shows the valuation, taxes, etc. for the have experienced no delays due to failure of any part of our machinery or current year and for the past three years for comparison, viz: other items.

| | 1921 | 1922 | 1923 | 1924 |
|--|------------|----------|------------|----------|
| | VALUATION | AMOUNT | VALUATION | AMOUNT |
| <u>STEAM SHOVEL LOADING</u> | | | | |
| LLOYD MINE. | | | | |
| Realty | 812850.00 | 26722.27 | 887662.00 | 27741.22 |
| Personal | 543500.00 | 17450.00 | 569950.00 | 17150.53 |
| Coll. Fees | | | | |
| TOTAL LLOYD | 1356350.00 | 44172.27 | 1457612.00 | 44891.75 |
| Our shipments from stockpile were very much greater than last year being 180,160 tons compared with 85,856 tons in 1923. | | | | |
| MORRIS MINE. | | | | |
| Realty | 341500.00 | 11055.10 | 355500.00 | 10910.00 |
| Personal | 244900.00 | 7789.10 | 296550.00 | 7325.00 |
| Coll. Fees | | | | |
| TOTAL MORRIS | 586400.00 | 18844.20 | 652050.00 | 18235.00 |
| The cost for loading this year was .049 cents per ton compared with .0461 cents per ton in 1923. | | | | |
| GRAND TOTAL | 1942750.00 | 63016.47 | 2109662.00 | 63126.75 |
| PRODUCE TONS | 209,084 | | 260,335 | |
| <u>ROCK DRIFTING</u> | | | | |
| TAXES PER TON PRODUCED | | .2794 | | .2145 |
| TONS PRODUCED | | 1173 | | 1173 |
| We drifted a total of 1173 feet in rock during the year at a cost of \$8.15 per foot. | | | | |
| TAXES PER TON SHIPPED | | .8870 | | .2014 |
| TONS SHIPPED | | 1323 | | 1323 |

TAXES - TOTAL RAISED TAXES ISHUEMING TOWNSHIP & MARQUETTE COUNTY

| TAX | 1920 | 1921 | 1922 | 1923 | 1924 |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|
| State | | | | | |
| County | 5,877.91 | 6,355.93 | 6,326.16 | 7,000.32 | 5,975.52 |
| County Road | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| Township Cont. | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| Highway | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| Road Repair | 3,000.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 |
| School | | 68.43 | 26,325.68 | 19,362.71 | 17,500.00 |
| Bridge | 300.00 | | | | |
| One Mill | | | | | |
| Rejected Tax | 1.00 | 3.22 | 16.70 | 21.97 | 1.96 |
| School | | | | | |
| TOTAL | 50.25 | 57,189.13 | 52,314.37 | 51,113.57 | 38,594.12 |
| Assessed Valuation | 1,705,323 | 1,761,569 | 1,674,116 | 1,637,000 | 1,518,000 |
| Tax Rate | 3.369 | 3.244 | 3.126 | 3.12 | 2.525 |
| Assessed Val. County | 64,099,012 | 65,177,455 | 67,081,717 | 67,395,000 | 67,478,000 |
| State Tax | 222,641.97 | 229,854.23 | 231,053.11 | 164,220.16 | 182,814.60 |
| County Tax | 336,160.00 | 418,997.00 | 442,054.00 | 513,245.15 | 467,187.55 |
| TOTAL | 569,801.97 | 647,851.23 | 649,087.11 | 697,465.31 | 620,002.15 |
| State & Co. Rate | .388 | .375 | .388 | 1.038 | .919 |
| Total All Taxes | | | | | |
| Raised in Marq. Co. | | | | | |
| State, Co., Cities and all Townships | 1,960,037.11 | 2,035,265.95 | 2,042,264.82 | 2,115,743.74 | 2,124,810.28 |
| Tax Rate | 3.05 | 3.07 | 3.04 | 3.145 | 3.149 |

MORRIS LLOYD MINES.

1915 1916 1917 1918 1919 1920 1921 1922 1923 1924
 TAXES
 (CONTINUED)

The following statement shows the valuation, taxes, etc., for the current year and for the past three years for comparison, viz:

| | 1921 | | 1922 | | 1923 | | 1924 | |
|------------------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| | VALUATION | AMOUNT | VALUATION | AMOUNT | VALUATION | AMOUNT | VALUATION | AMOUNT |
| LLOYD MINE. | | | | | | | | |
| Realty | 812850.00 | 26722.27 | 887662.00 | 27741.22 | 869950.00 | 27168.53 | 701450.00 | 17709.51 |
| Personal | 543544.00 | 17758.08 | 380274.00 | 11883.65 | 360500.00 | 11257.86 | 408000.00 | 10301.03 |
| Coll. Fees | | | | 396.25 | | 384.26 | | 280.11 |
| TOTAL LLOYD | 1356394.00 | 44480.35 | 1267936.00 | 40021.12 | 1230450.00 | 38810.65 | 1109450.00 | 28290.65 |
| MORRIS MINE. | | | | | | | | |
| Realty | 341940.00 | 8139.45 | 471884.00 | 11655.49 | 525540.00 | 13696.59 | 479540.00 | 12417.82 |
| Personal | 244000.00 | 5789.10 | 296560.00 | 7325.00 | 280000.00 | 7308.00 | 461000.00 | 11962.95 |
| Coll. Fees | | | | 189.80 | | 210.07 | | 243.81 |
| TOTAL MORRIS | 585940.00 | 13928.55 | 768444.00 | 19170.29 | 805540.00 | 21214.66 | 940540.00 | 24624.58 |
| GRAND TOTAL, | 1942334.00 | 58408.90 | 2036380.00 | 59191.41 | 2035990.00 | 60025.31 | 2049990.00 | 52915.23 |
| PRODUCT TONS | | 209,034 | | 221,979 | | 260,335 | | 246,356 |
| TAXES PER TON PRODUCED | | .2794 | | .2667 | | .2305 | | .2148 |
| SHIPMENTS TONS | | 65,850 | | 293,915 | | 210,692 | | 269,228 |
| TAXES PER TON SHIPPED | | .8870 | | .2014 | | .2848 | | .1965 |

TAXES - TOTAL RAISED YEARLY - ISHPEMING TOWNSHIP & MARQUETTE COUNTY

| TAX | 1920 | 1921 | 1922 | 1923 | 1924 |
|---------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| State, | 6,214.75 | 6,079.97 | 5,017.19 | 4,487.96 | 3,438.00 |
| County, | 5,577.91 | 6,035.93 | 6,226.16 | 7,600.92 | 5,975.52 |
| County Road, | 3,363.77 | 5,119.94 | 4,954.32 | 4,902.72 | 4,535.22 |
| Township Cont. | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 | 2,000.00 |
| Highway Imp., | 4,500.00 | 3,500.00 | 3,600.00 | 8,600.00 | 1,125.00 |
| Road Repair, | 3,000.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 |
| School, | 22,294.68 | 21,388.43 | 26,325.88 | 19,362.71 | 17,500.00 |
| Bridge, | 300.00 | | | | |
| One Mill | 1,705.32 | 1,761.57 | 1,674.12 | 1,637.29 | 1,518.42 |
| Rejected Tax | 1.80 | 3.29 | 16.70 | 21.97 | 1.96 |
| School Bldg. Tax, | 8,500.00 | 8,800.00 | | | |
| TOTAL TAX, | 54,458.23 | 57,189.13 | 52,314.37 | 51,113.57 | 38,594.12 |
| Assessed Valuation, | 1,705,323 | 1,761,569 | 1,674,116 | 1,637,000 | 1,518,000 |
| Tax Rate, | 3.369 | 3.246 | 3.126 | 3.12 | 2.525 |
| Assessed Val. County, | 64,099,012 | 66,177,466 | 67,081,717 | 67,195,000 | 67,473,000 |
| State Tax, | 233,641.97 | 228,354.23 | 201,053.11 | 184,220.16 | 152,814.60 |
| County Tax, | 336,160.00 | 418,997.00 | 448,034.00 | 513,245.15 | 467,187.55 |
| TOTAL, | 569,801.97 | 647,351.23 | 649,087.11 | 697,465.31 | 620,002.15 |
| State & Co. Rate, | .888 | .978 | .968 | 1.038 | .919 |
| Total All Taxes, Raised in Marq. Co. | | | | | |
| State, Co., Cities and all Townships, | 1,960,037.11 | 2,033,985.95 | 2,042,284.82 | 2,113,743.74 | 2,124,810.28 |
| Tax Rate, | 3.06 | 3.07 | 3.04 | 3.145 | 3.149 |

MORRIS LLOYD MINES.

1915 1916 1917 1918 1919 1920 1921 1922 1923 1924

90¢

80¢

70¢

60¢

50¢

40¢

30¢

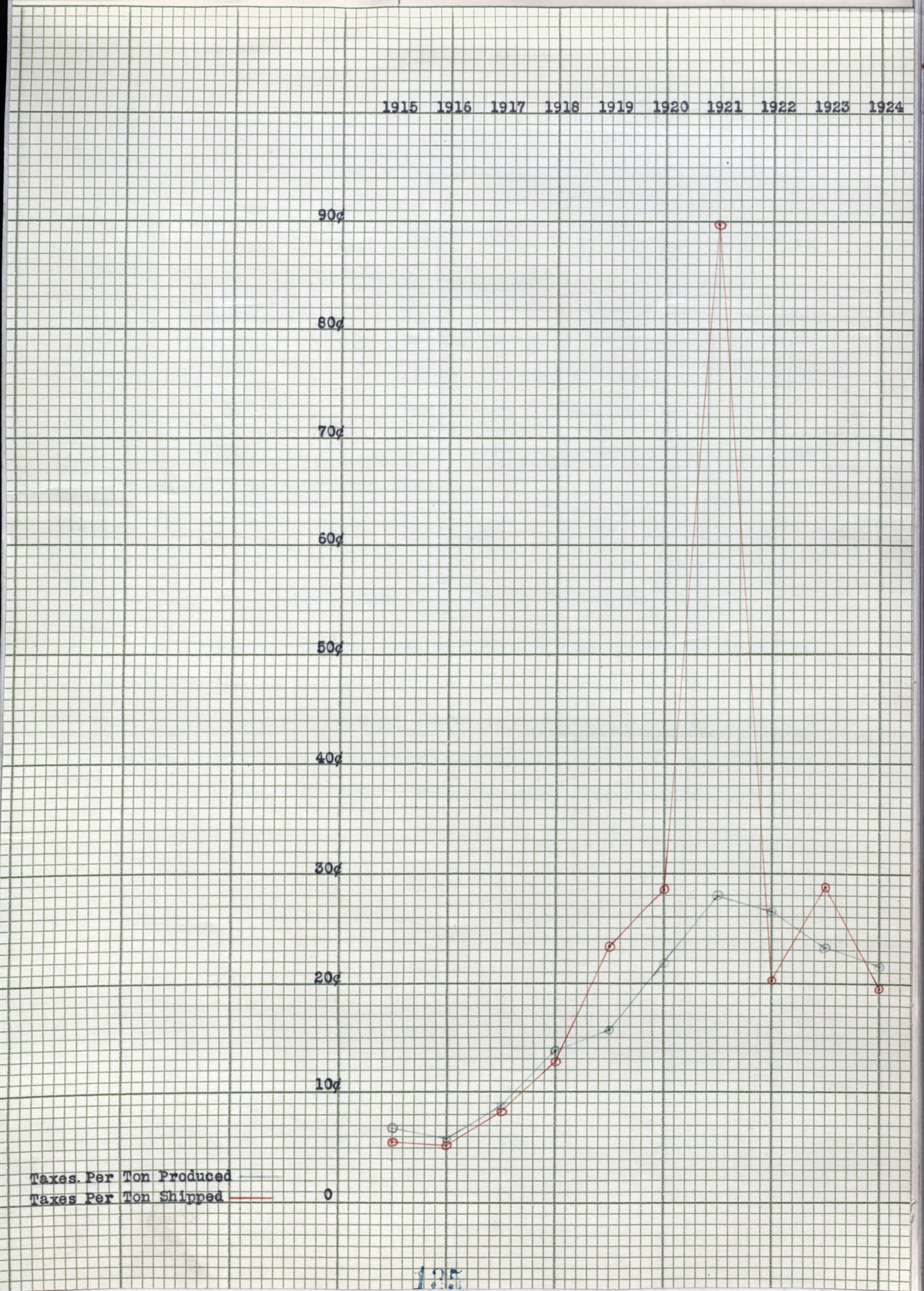
20¢

10¢

0

Taxes Per Ton Produced
Taxes Per Ton Shipped

1925



NORTH LAKE DISTRICT.

MORRIS LLOYD MINES.

TONNAGES MINED AND TONNAGES ACCRUED ON LEASES.

BOILERS

| YEAR | LEASE NO. 9 | | | LEASE NO. 24 | | | LEASE NO. 25 | | |
|------|-------------|---------|---------|--------------|-------|---------|--------------|-------|---------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1909 | 2,285 | | | | | | | | |
| 1910 | 10,000 | | | | | | 1,068 | | |
| 1911 | 10,000 | | | | | | 15,000 | | |
| 1912 | 10,000 | | | | | | 15,000 | | |
| 1913 | 10,000 | 15,245 | | | | | 15,000 | | |
| 1914 | 10,000 | 36,267 | | | | | 15,000 | | |
| 1915 | 10,000 | 67,740 | | | | | 15,000 | | |
| 1916 | 10,000 | 68,524 | | | | | 15,000 | | |
| 1917 | 10,000 | | | | | | 15,000 | | |
| 1918 | 10,000 | 24,002 | 145,077 | | | 288 | 133,251 | | 134,066 |
| 1919 | 10,000 | 52,175 | 147,255 | | | 455 | 143,764 | | 151,068 |
| 1920 | 10,000 | 32,907 | 150,155 | | | 143,855 | 1,311 | | 164,607 |
| 1921 | 10,000 | 56,724 | 156,874 | | | 12,072 | 142,804 | | 174,764 |
| 1922 | 10,000 | 93,170 | 120,124 | | | 6,752 | 151,232 | 4,843 | 187,712 |
| 1923 | 10,000 | 100,277 | 410,907 | | | 6,719 | 145,513 | 2,052 | 196,094 |
| 1924 | 10,000 | 52,362 | 147,155 | | | 11,132 | 151,321 | | 210,795 |

The new heating boiler installed last year in our main heating plant in the Morris change house has given good satisfaction.

All heating plants are in good condition at the end of the year.

MECHANICAL LOADERS

We have three Mayne mechanical loaders at work and during the year we purchased and installed nine scraper hoists and the results of the work performed by these machines are reflected in our tons per man.

The cost of the nine scraper hoists was \$5,756.94 and they have been charged direct to breaking ore costs.

LEASES

| YEAR | LEASE NO. 26 | | | LEASE NO. 27 | | | LEASE NO. 28 | | |
|------|--------------|-------|---------|--------------|-------|---------|--------------|-------|---------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1909 | 1,068 | | | | | | | | |
| 1910 | 15,000 | | | | | | 545 | | |
| 1911 | 15,000 | | | | | | 7,500 | | |
| 1912 | 15,000 | | | | | | 7,500 | | |
| 1913 | 15,000 | | | | | | 7,500 | | |
| 1914 | 15,000 | | | | | | 7,500 | | |
| 1915 | 15,000 | | | | | | 7,500 | | |
| 1916 | 15,000 | | | | | | 7,500 | | |
| 1917 | 15,000 | | | | | | 7,500 | | |
| 1918 | 7,500 | | 128,586 | | | 190,366 | 3,733 | | 53,045 |
| 1919 | 15,000 | | 143,586 | | | 112,313 | 4,505 | | 59,608 |
| 1920 | 15,000 | 1,292 | 155,211 | | | 144,215 | 7,500 | | 67,106 |
| 1921 | 15,000 | 2,075 | 157,286 | | | 149,037 | 7,500 | | 74,608 |
| 1922 | 15,000 | 0 | 157,286 | | | 144,037 | 7,500 | | 82,109 |
| 1923 | 15,000 | 0 | 157,286 | | | 144,037 | 7,500 | | 89,608 |
| 1924 | 15,000 | 0 | 157,286 | | | 144,037 | 7,500 | | 97,108 |

Under our curtailed operations, we have made every effort to mine as much ore as possible from the different leases and have mined a sufficient tonnage to care for all of the Chase Leases and in addition the Barnes-Hecker mine produced in excess of its minimum requirements.

The following statement shows the condition of our Royalty account on the different leases, as regards production, in the North Lake District. Viz:

| YEAR | LEASE NO. 31 | | | GRAND TOTAL | | |
|------|--------------|--------|---------|-------------|---------|-----------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1909 | | | | | | |
| 1910 | | | | | | |
| 1911 | 70,000 | | | | | |
| 1912 | 70,000 | | | | | |
| 1913 | 70,000 | | | | | |
| 1914 | 70,000 | | | | | |
| 1915 | 17,500 | | | | | |
| 1916 | 17,500 | | | | | |
| 1917 | 70,000 | | | | | |
| 1918 | 35,000 | | 420,000 | 1,082,160 | 250,217 | 851,963 |
| 1919 | 70,000 | | 490,000 | 1,224,933 | 285,855 | 936,155 |
| 1920 | 70,000 | | 560,000 | 1,372,493 | 341,245 | 1,051,249 |
| 1921 | 70,000 | 215 | 629,787 | 1,519,933 | 417,421 | 1,102,572 |
| 1922 | 70,000 | 20,313 | 679,474 | 1,667,493 | 539,705 | 1,127,785 |
| 1923 | 70,000 | 36,228 | 715,245 | 1,814,933 | 635,659 | 1,121,134 |
| 1924 | 70,000 | 75,257 | 790,502 | 1,962,493 | 865,530 | 1,098,963 |

NORTH LAKE DISTRICT.

TONNAGES MINED AND TONNAGES ACCRUED ON LEASES.

| YEAR | LEASE NO. 9 | | | LEASE NO. 24 | | | LEASE NO. 25 | | |
|------|-------------|---------|----------|--------------|--------|---------|--------------|-------|---------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1908 | 2,283 | | | | | | | | |
| 1909 | 10,000 | | | 1,088 | | | 1,088 | | |
| 1910 | 10,000 | | | 15,000 | | | 15,000 | | |
| 1911 | 10,000 | | | 15,000 | | | 15,000 | | |
| 1912 | 10,000 | 968 | | 15,000 | | | 15,000 | | |
| 1913 | 10,000 | 15,345 | | 15,000 | | | 15,000 | | |
| 1914 | 10,000 | 36,267 | | 15,000 | | | 15,000 | | |
| 1915 | 10,000 | 67,740 | | 15,000 | | | 15,000 | | |
| 1916 | 10,000 | 68,524 | | 15,000 | | | 15,000 | | |
| 1917 | 10,000 | 34,514 | | 15,000 | 2,569 | | 15,000 | | |
| 1918 | 10,000 | 24,002 | 145,077 | 15,000 | 288 | 133,231 | 15,000 | | 136,088 |
| 1919 | 10,000 | 32,176 | 167,253 | 15,000 | 4,465 | 143,766 | 15,000 | | 151,088 |
| 1920 | 10,000 | 32,907 | 190,160 | 15,000 | 18,707 | 140,059 | 15,000 | 1,481 | 164,607 |
| 1921 | 10,000 | 56,794 | 236,954 | 15,000 | 12,075 | 142,984 | 15,000 | 4,843 | 174,764 |
| 1922 | 10,000 | 93,170 | 320,124 | 15,000 | 6,752 | 151,232 | 15,000 | 2,052 | 187,712 |
| 1923 | 10,000 | 100,777 | 410,901 | 15,000 | 8,719 | 157,513 | 15,000 | 6,618 | 196,094 |
| 1924 | 10,000 | 82,282 | *488,183 | 15,000 | 11,192 | 161,321 | 15,000 | 299 | 210,795 |

| YEAR | LEASE NO. 26 | | | LEASE NO. 27 | | | LEASE NO. 28 | | |
|------|--------------|-------|---------|--------------|-------|---------|--------------|-------|---------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1909 | 1,088 | | | 1,088 | | | 545 | | |
| 1910 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1911 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1912 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1913 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1914 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1915 | 15,000 | | | 3,750 | | | 1,875 | | |
| 1916 | 15,000 | | | 3,750 | | | 1,875 | | |
| 1917 | 15,000 | | | 15,000 | | | 7,500 | | |
| 1918 | 7,500 | | 128,588 | 7,500 | | 106,088 | 3,750 | | 53,045 |
| 1919 | 13,125 | | 141,713 | 13,125 | | 119,213 | 6,563 | | 59,608 |
| 1920 | 15,000 | 1,292 | 155,421 | 15,000 | | 134,213 | 7,500 | | 67,108 |
| 1921 | 15,000 | 2,075 | 168,346 | 15,000 | 176 | 149,037 | 7,500 | | 74,608 |
| 1922 | 15,000 | 0 | 183,346 | 15,000 | 0 | 164,037 | 7,500 | | 82,108 |
| 1923 | 15,000 | 1,809 | 196,537 | 15,000 | 0 | 179,037 | 7,500 | 0 | 89,608 |
| 1924 | 15,000 | 41 | 211,496 | 15,000 | 0 | 194,037 | 7,500 | 0 | 97,108 |

| YEAR | LEASE NO. 31 | | | GRAND TOTAL | | |
|------|--------------|--------|---------|-------------|---------|-----------|
| | ACCRUED | MINED | BALANCE | ACCRUED | MINED | BALANCE |
| 1909 | | | | | | |
| 1910 | | | | | | |
| 1911 | 70,000 | | | | | |
| 1912 | 70,000 | | | | | |
| 1913 | 70,000 | | | | | |
| 1914 | 70,000 | | | | | |
| 1915 | 17,500 | | | | | |
| 1916 | 17,500 | | | | | |
| 1917 | 70,000 | | | | | |
| 1918 | 35,000 | | 420,000 | 1,082,180 | 250,217 | 831,963 |
| 1919 | 70,000 | | 490,000 | 1,224,993 | 286,858 | 938,135 |
| 1920 | 70,000 | | 560,000 | 1,372,493 | 341,245 | 1,031,248 |
| 1921 | 70,000 | 213 | 629,787 | 1,519,993 | 417,421 | 1,102,572 |
| 1922 | 70,000 | 20,313 | 679,474 | 1,667,493 | 539,708 | 1,127,785 |
| 1923 | 70,000 | 36,228 | 713,246 | 1,814,993 | 693,859 | 1,121,134 |
| 1924 | 70,000 | 75,857 | 707,389 | 1,962,493 | 863,530 | 1,098,963 |

Tonnages Accrued

| | | |
|---------------------|-----------|------|
| Chase Leases | 391,574 | Tons |
| Barnes-Hecker Lease | 707,389 | " |
| Total, | 1,098,963 | Tons |

UNDERGROUND
MORRIS MINE

FOURTH LEVEL:

The work of slicing and caving in the ore body above this level was continued all the year. Two slices, the 800' and 785' have been worked out and the 775' is now being taken.

A horse of jasper cuts through the ore body and greatly reduces the ore area on the sub now being worked.

The line of Chase Lease No. 9 cuts through this ore body and we, therefore, mine ore from both Fee and Lease grounds.

A raise has just been started from the main fourth level near the 700' line. It is hoped the leader of ore, in which this raise has been started, will follow up to where ore shows in the bottom of the main third level.

Some Silica ore was taken from the West end of this level to fill special orders for shipment.

A total of 38,607 tons were taken from here during the year. A limit of mining has been fixed and slicing will soon be commenced in this ore.

SIXTH LEVEL:

No exploratory work has been done on this elevation during the year and the work has been confined to the mining of ore on leased grounds.

The large sub level stope on Lease No. 9 has been worked all the year and a total of 66,019 tons were taken from here. Most of this has been of Silica grade.

At the end of the year this low grade material was being replaced with regular Morris grade to some extent. During the year we had a number of falls of lean material from the hanging of this stope.

We continue to work three gangs in ore to the West of the large stope. At the beginning of the year the contracts were on the 530' elevation. The ore body has now been worked down to the 480' sub. Some of this ore was blasted directly into the large stope to the East (No. 24).

A total of 89,672 tons ore were taken from this level during the year.

MORRIS LLOYD MINES.

UNDERGROUND
MORRIS MINE

SEVENTH LEVEL:

Continued-

We have accomplished considerable development work on this level during the year and are continuing the work. This has consisted principally of out-lining the different ore bodies discovered on and above this elevation which extended through to the sixth level. A shrinkage stope was then started and preparing same for mining.

Contract No. 61 on Lease No. 9 completed the outline of the ore body was completed up a distance of 110 feet above the main level. This is a small on the 250' sub level. We have a nice ore body here 600 feet long by about 40 feet in width, through which a horse of jasper projects. This ore lies under-neighborhood of 20,000 tons.

No. 74 contract followed the ore, near the West line of Lease No. 25, be placed underway in it until the work on the 6th level has been completed. This ore body extends through from the 7th to the 6th level.

Contracts Nos. 71 and 75 have developed the ore body on Lease No. 9 and are now at work on the 254' sub level. This ore body undoubtedly extends through to the ore now being worked above the 6th level West of the large stope. A limit of mining has been fixed and slicing will soon be commenced in this ore.

A "Trench Stope" has been started in order to try out this system of mining. An ore body on the 3400' meridian seems ideal for this method and is being developed. The stope is now up 130 feet above the main seventh level and we expect it to go considerably higher. This trench is 96 feet long and chutes

are placed to carry the ore from stope to tram cars. The product is of excellent quality and as soon as the top of the ore is reached it is planned to use scrapers to pull the ore from the limits into the stope.

No. 76 contract is putting up a raise South of the trench stope in order to mine the ore which cannot be taken through the trench. This raise is up a distance of 128 feet at the end of the year.

No. 62 Contract is raising and developing the ore body to the North-east of the trench stope.

| HOLE | LOCATION | DATE | DATE | TOTAL | | | |
|------|-----------|-------------|-------------|-------|--------------|------|---------------------|
| 77 | 6th Level | Dec. 31 '23 | Jan. 9 '24 | 215' | 125' to 195' | -70' | -40°30' |
| 78 | 7th | Jan. 19 '24 | Jan. 26 '24 | 70' | 5' to 10' | 5' | " North |
| 80 | 7th | Jan. 26 '24 | Jan. 26 '24 | 75' | | | + 1°30' " South |
| 81 | 7th | Mar. 6 '24 | Mar. 16 '24 | 100' | 60' to 89' | | |
| 82 | 7th | Mar. 19 '24 | Apr. 15 '24 | 220' | | | 845°00'E " South |
| 84 | 7th | May 21 '24 | Jun. 18 '24 | 315' | | | " " " South |
| 85 | 7th | Jul. 15 '24 | Jul. 22 '24 | 60' | 0' to 5' | 5' | " North |
| 87 | 7th | Jul. 22 '24 | Jul. 22 '24 | 55' | | | " " " " |
| 88 | 7th | Jul. 29 '24 | Aug. 19 '24 | 150' | | | 550°00'W " " |
| 89 | 7th | Sep. 11 '24 | Sep. 11 '24 | 167' | | | 545°00'E " " |
| 90 | 7th | Sep. 11 '24 | Oct. 15 '24 | 283' | 25' to 75' | -50' | " Due South |
| 91 | 4th | Oct. 17 '24 | Nov. 13 '24 | 219' | | | -51°30' N15°00'E |
| 92 | 7th | Nov. 14 '24 | Nov. 21 '24 | 102' | | | Horizontal N12°46'E |
| 93 | 7th | Nov. 25 '24 | Nov. 25 '24 | 46' | 5' to 20' | -15' | " Due South |
| 94 | 4th | Dec. 1 '24 | Dec. 31 '24 | 276' | | | " " " |

MORRIS LLOYD MINES.

UNDERGROUND
MORRIS MINE

SEVENTH LEVEL: Continued-

The ore body on the 3500' line was developed by contract No. 73. A drift was driven North from the main 7th level and a raise put up from same which extended through to the sixth level. A shrinkage stope was then started in this ore body and is being carried up. At the end of the year the stope was completed up a distance of 110 feet above the main level. This is a small finger of ore extending between the 6th and 7th levels and contains in the neighborhood of 20,000 tons.

No. 74 contract followed the ore, near the West line of Lease No. 25, South-west a distance of 100 feet. This is a small ore body and no work is being done in it at the close of the year.

A total of 15,799 tons were mined from this level during the year.

DIAMOND DRILLING:

Diamond drilling has been underway all of the year with one machine and crew on day shift and on days only on which the mines of the district have been operated.

The following table shows the holes drilled, locations etc., viz:

| HOLE NO | LOCATION | DATE STARTED | DATE COMPLETED | TOTAL DEPTH | ORE FOOTAGE | DIP | COURSE |
|---------|-----------|--------------|----------------|-------------|-----------------------------------|------------|-----------|
| 77 | 6th Level | Dec. 21 '23 | Jan. 9 '24 | 215' | 125' to 195'-70' | -40°00' | N25°00'W |
| 78 | 7th " | Jan. 10 '24 | Jan. 18 '24 | 98' | - - | Horizontal | Due South |
| 79 | 7th " | Jan. 19 '24 | Jan. 26 '24 | 70' | 5' to 10'- 5' | " | " North |
| 80 | 7th " | Jan. 28 '24 | Mar. 5 '24 | 335' | - - | + 1°30' | " South |
| 81 | 7th " | Mar. 6 '24 | Mar. 18 '24 | 160' | 60' to 89') 97' to 130' 62' | Horizontal | S45°00'E |
| 82 | 7th " | Mar. 19 '24 | Apr. 15 '24 | 220' | - - | " | S35°00'E |
| 83 | 7th " | Apr. 15 '24 | May. 20 '24 | 310' | - - | " | Due South |
| 84 | 7th " | May. 21 '24 | Jun. 18 '24 | 315' | - - | " | " " |
| 85 | 7th " | Jun. 18 '24 | Jul. 17 '24 | 295' | - - | " | " " |
| 86 | 7th " | Jul. 18 '24 | Jul. 22 '24 | 60' | 0' to 5'- 5' | " | " North |
| 87 | 7th " | Jul. 23 '24 | Jul. 28 '24 | 53' | - - | " | " " |
| 88 | 7th " | Jul. 29 '24 | Aug. 19 '24 | 150' | - - | " | S50°00'W |
| 89 | 7th " | Aug. 21 '24 | Sep. 11 '24 | 167' | - - | " | S45°00'E |
| 90 | 7th " | Sep. 11 '24 | Oct. 16 '24 | 283' | 25' to 75'-50' | " | Due South |
| 91 | 4th " | Oct. 17 '24 | Nov. 13 '24 | 219' | - - | -51°30' | N15°00'E |
| 92 | 7th " | Nov. 14 '24 | Nov. 21 '24 | 102' | - - | Horizontal | N12°46'E |
| 93 | 7th " | Nov. 25 '24 | Nov. 28 '24 | 46' | 5' to 20'-15' | " | Due South |
| 94 | 4th " | Dec. 1 '24 | Dec. 31 '24 | 276' | - - | " | " " |

MORRIS LLOYD MINES.

UNDERGROUND
MORRIS MINE

DIAMOND DRILLING: Continued-

It will be noted most of this drilling has been done on the seventh level. In only two holes, #81 and #90, ore of any importance was cut. however,

Hole No. 77 was drilled downward from the 6th level to prove the extension of the ore body on which we are now working above that level. when when

At the end of the year the drill is at work on hole No. 95 on the 4th level of the Morris mine. the year averaged 16.26 tons per miner per day.

No. 17 has cut a new sub just below the first main sub and are slicing the small body of ore which has extended below their workings above.

THIRD LEVEL: 8 and 46 are slicing and caving the ore to the West of the block

being all. Five gangs continued at work in this central ore body above the main third level and we have no new developments to report. The ore body is fully determined and straight slicing and caving is underway. The ore is somewhat tougher than in other parts of the mine and our powder cost for breaking is high.

During the year 30,916 tons were mined from this area. of main raises.

FOURTH LEVEL: the crotch of the dike and foot-wall is narrowing back towards the West quite rapidly.

No work was done upon this level during the year with the exception of using the pocket at the shaft to hoist a tonnage of Morris ore brought over to the Lloyd in order to pass same through the crusher at this shaft.

During the year the balance of the ore remaining in the pillars of old No. 10 steps was removed. LLOYD EAST

FIRST SUB (1455')

All of the ore remaining on and above this elevation was mined out during the year and no work is now being done here. Lloyd East territory

The level is being used to pass men and material to the subs below.

MORRIS LLOYD MINES.

ORE IN SIGHT UNDERGROUND 31ST, 1924.
LLOYD EAST

Following is a conservative estimate of ore in sight as of December 31st, 1924, calculating a deduction of 10% for rock and 10% for loss in mining.

SECOND SUB (1305')

The block of ore between the first and second subs which had been prepared for encline slicing was worked all during the year. We have, however, discontinued the encline slice method and are taking the slices horizontally.

We find we can get the same results per man with less labor than when we had to timber on an encline. Two contracts are at work in this small area using scrapers and during the year averaged 16.26 tons per miner per day.

No. 17 has cut a new sub just below the first main sub and are slicing the small body of ore which has extended below their workings above.

Nos. 8 and 46 are slicing and caving the ore to the West of the block being sliced with scrapers.

Nos. 9, 10 and 19 are slicing and caving on the 1410' sub around the line of main raises. No. 19 has a Mayne loader which is being used as conditions permit.

Nos. 1 and 20 are slicing and caving East of the line of main raises.

The ore in the crotch of the dike and foot-wall is narrowing back towards the West quite rapidly.

No. 40 raised up to the 1280' elevation and are now engaged in mining the ore in this territory.

During the year the balance of the ore remaining in the pillars of old No. 10 stope was removed.

THIRD SUB:
 No work was done on this elevation during the year.

A total of 70,357 tons were mined from this Lloyd East territory

during the past twelve months.

MORRIS LLOYD MINES.

ORE IN SIGHT DECEMBER 31ST, 1924.

(CONTINUED)

Following is a conservative estimate of ore in sight as of December 31st, 1924, calculating a deduction of 10% for rock and 10% for loss in mining,

| LOCATION OF ORE | LLOYD ORE | LLOYDDALE | TOTAL TONS |
|---------------------------------|--------------------|--------------|---------------|
| Above 2nd Main Sub | 98,073 | 30,669 | 128,742 |
| " 3rd " " | MORRIS MINE | | 257,298 |
| " 4th " " | 10,866 | 26,350 | 108,934 |
| LOCATION OF ORE | BESSEMER ORE | MORRIS ORE | TOTAL TONS |
| DEVELOPED ORE | | | |
| Above 4th Lev. (Chase Lease #9) | 28,020 | 120,781 | 148,801 |
| " " " (C.C.I.Co. Land) | 212,268 | 636,899 | 849,167 |
| " 6th " (Chase Lease #9) | 388,623 | 1,102,420 | 1,491,043 |
| " " " (Chase Lease #26) | 2,293 | 2,339 | 4,632 |
| " " " (C.C.I.Co. Land) | 9,113 | 21,111 | 30,224 |
| " 7th " (Chase Lease #9) | 11,49,837 | 23,613,365 | 35,113,202 |
| " " " (Chase Lease #24) | | 132,406 | 132,406 |
| " " " (Chase Lease #25) | 400,029 | 1,125,31,370 | 1,525,342,749 |
| " " " (Chase Lease #26) | | 25,100 | 25,100 |
| " " " (C.C.I.Co. Land) | 24,283 | 72,847 | 97,130 |
| Below " " (Chase Lease #9) | 22,609 | 94,701 | 117,310 |
| " " " (Chase Lease #25) | | 10,635 | 10,635 |
| " " " (C.C.I.Co. Land) | 15,284 | 45,852 | 61,136 |
| Total Developed Ore | 112,013 | 1,379,921 | 1,491,934 |
| PROSPECTIVE ORE | | | |
| Above 4th Lev. (C.C.I.Co. Land) | 131,471 | 3,164 | 134,635 |
| " 7th " (Chase Lease #9) | 400,029 | 1,125,25,608 | 1,525,281,237 |
| " " " (Chase Lease #24) | | 3,586 | 3,586 |
| " " " (Chase Lease #25) | 2,071,281 | 1,125,1,328 | 3,196,609 |
| " " " (Chase Lease #26) | | 3,206 | 3,206 |
| " " " (C.C.I.Co. Land) | | 73,440 | 73,440 |
| Below " " (Chase Lease #24) | TOTAL | LLOYD ORE | 18,394 |
| " " " (Chase Lease #25) | MORRIS MINE | LLOYD ORE | 11,981 |
| " " " (Chase Lease #26) | | LLOYD ORE | 19,153 |
| Total Prospective Ore | 1,491,934 | 513,900 | 1,595,834 |
| TOTAL ORE, MORRIS MINE, | 159,860 | 1,539,781 | 1,699,641 |
| TOTAL, | 112,013 | 1,539,781 | 1,651,794 |

| LOCATION OF ORE | LLOYD ORE | LLOYDDALE | TOTAL TONS |
|-------------------------------|-----------|-----------|-----------------|
| Above 3rd Level | 125,286 | | 125,286 |
| PROSPECTIVE ORE | | | |
| Below 3rd Level | 6,185 | | 6,185 |
| TOTAL ORE, LLOYD MINE, | 131,471 | | 131,471 |
| GRAND TOTAL, | | | |
| | | | 3,309,075 Tons. |

MORRIS LLOYD MINES.

ORE IN SIGHT DECEMBER 31ST, 1924
(CONTINUED)

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1924.

LLOYD EAST

| LOCATION OF ORE | LLOYD ORE | LLOYDDALE | TOTAL TONS |
|---|----------------|------------------|------------------|
| Above 2nd Main Sub | 98,073 | 30,669 | 128,742 |
| " 3rd " " | 39,376 | 217,922 | 257,298 |
| " 4th " " | 10,886 | 96,050 | 106,936 |
| Between 3rd Level and 4th Main Sub | 28,020 | 120,781 | 148,801 |
| Above and Below 4th Level, Total Developed Ore | 212,268 | 636,804 | 849,072 |
| PROSPECTIVE ORE | 388,623 | 1,102,226 | 1,490,849 |
| Above 3rd Main Sub | 2,293 | 2,293 | 4,586 |
| " 4th " " | 9,113 | 21,262 | 30,375 |
| Total Prospective Ore | 11,406 | 23,555 | 34,961 |
| TOTAL ORE, LLOYD EAST, | 400,029 | 1,125,781 | 1,525,810 |

Lloyd Silica, SUMMARY OF TOTAL ORE 19.65 52.35 9.64 (**)

| MINE | BESSEMER | LLOYD & MORRIS | LLOYDDALE | TOTAL TONS |
|----------------------------------|----------------|------------------|------------------|------------------|
| Morris, Lloyd, Lloyd East, | 112,013 | 1,539,781 | 131,471 | 1,651,794 |
| | | 400,029 | 1,125,781 | 1,525,810 |
| GRAND TOTAL, | 112,013 | 2,071,281 | 1,125,781 | 3,309,075 |

| | MORRIS MINE | | TOTAL | LLOYD MINE | | TOTAL | GRAND TOTAL TONS |
|-----------------------|----------------|------------------|------------------|----------------|------------------|------------------|------------------|
| | BESSEMER | MORRIS ORE | MORRIS MINE | LLOYD ORE | LLOYDDALE | LLOYD MINE | |
| Total ore Developed, | 112,013 | 1,379,921 | 1,491,934 | 513,909 | 1,102,226 | 1,616,135 | 3,108,069 |
| Total Prospective Ore | | 159,860 | 159,860 | 17,591 | 23,555 | 41,146 | 201,006 |
| TOTAL, | 112,013 | 1,539,781 | 1,651,794 | 531,500 | 1,125,781 | 1,657,281 | 3,309,075 |

Total, 221,488 25,171 46,481 293,060 302,842
Shipments, 104,115 25,171 31,683 161,169 123,525

Balance on Hand, Total ore on Chase Lease No. 9 1,004,364 Tons
" " " " " No. 24 154,386 "
Decrease in Output, " " " " " No. 25 55,314 "
" " " " " No. 26 49,798 "
Decrease in Ore on Hand, Total ore on all Chase Leases 1,263,862 Tons
Total ore on Company Lands 2,045,213 "
GRAND TOTAL, 3,309,075 Tons.

1924 -- 1-8 Hour Shift, 5 days per week, Jan. 1st to July 31st, 1924.
1-8 Hour Shift, 4 days per week, July 26th to Nov. 30th, 1924.
1-8 Hour Shift, 5 days per week, Dec. 1st to Dec. 31st, 1924.
1923 -- 1-8 Hour Shift, 5 days per week, Jan. 1st to Dec. 31st, 1923.

LLOYD MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1924.

| | GRADE | IRON | PHOS. | SILICA | TOTAL | TOTAL LAST YEAR |
|---|---------------|--------------|---------|----------|-------------------|-----------------------|
| Lloyd, | | 59.19 | .127 | 5.92 | | |
| Lloyd, | Lloyddale, | 59.59 | .174 | 70.531 | 104,115 | 60,267 |
| Lloyddale, | Lloyd Silica, | 52.59 | .072 | 14.15.50 | 25,171 | 20,390 |
| Lloyd Silica, | | 12,364 | 19,519 | 31,883 | | 24,868 |
| AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1924. | | | | | | |
| Total, | | 56,351 | 104,818 | 161,169 | 125,525 | |
| Total Last Year, | GRADE | Mine IRON | PHOS. | SILICA | Lake Erie IRON | MOIST. |
| Increase, | Lloyd, | 58.87 | .120 | - | 58.92 | 11.29 (**) |
| | Lloyddale, | (All Mixed) | | | | |
| | Lloyd Silica, | 49.98 | .074 | 19.85 | 52.33 | 9.64 (**) |

NOTE: (**) Mine Analysis includes four cargoes to East Jordan Furnace, but excluded from Lake Erie Analysis.

ORE STATEMENT - DECEMBER 31ST, 1924.

| | LLOYD | LLOYDDALE | LLOYD SILICA | TOTAL | TOTAL LAST YEAR |
|--------------------------|---------|-----------|-----------------|---------|-----------------------|
| On hand January 1, 1924, | 132,977 | 12,417 | 31,923 | 177,317 | 172,108 |
| Output for Year, | 88,672 | 9,975 | 1,213 | 99,860 | 108,632 |
| Transferred, | 161 | 361 | 13,285 | 13,485 | 22,102 |
| Stockpile Overruns, | - | 2,418 | - | 2,418 | - |
| Total, | 221,488 | 25,171 | 46,421 | 293,080 | 302,842 |
| Shipments, | 104,115 | 25,171 | 31,883 | 161,169 | 125,525 |
| Balance on Hand, | 117,373 | - | 14,538 | 131,911 | 177,317 |
| Decrease in Output, | | | | 6,354 | |
| Decrease in Ore on Hand, | | | | 45,406 | |

1924 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to July 26th, 1924.
 1-8 Hour Shift, 4 days per week, July 26th to Nov. 30th, 1924.
 1-8 Hour Shift, 5 days per week, Dec. 1st to Dec. 31st, 1924.

1923 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to Dec. 31st, 1923.

LLOYD MINE

AVERAGE MINE SHIPMENTS FOR YEAR-1924. YEAR 1924.

| | GRADE | IRON | PHOS. | SILICA | TOTAL | |
|---|------------------|---------|----------------|-----------|---------------|---------|
| | GRADE | POCKET | STOCKPILE | TOTAL | LAST YEAR | |
| Lloyd, Morris Morris, | | 533,637 | .068 | 70,448.47 | 104,115 | 80,267 |
| Lloyddale, Morrisville, | | 510,320 | .058 | 14,851.16 | 25,171 | 20,390 |
| Lloyd Silica, | | 12,364 | | 19,519 | 31,883 | 24,868 |
| AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1924. | | | | | | |
| Total, | | 56,351 | | 104,818 | 161,169 | 125,525 |
| Total Last Year, | GRADE | 80,997 | Mine PHOS | 44,528 | Lake Erie LIC | 125,525 |
| Increase, | Morris Bessemer, | | (No Shipments) | | | 35,644 |
| | Morris, | 58.20 | .061 | - | - | -(**) |
| | Morrisville, | | (All Mixed) | | | |

NOTE: (**) This represents three cargoes going to East Jordan Furnace. One cargo shipment, this grade, went mixed.

ORE STATEMENT - DECEMBER 31ST, 1924.

| | MORRIS BESSEMER | MORRIS | MORRISVILLE | TOTAL | TOTAL LAST YEAR |
|--------------------------|-----------------|---------|-------------|---------|-----------------|
| On hand January 1, 1924, | - | 137,758 | 31,985 | 169,743 | 125,309 |
| Output for Year, | - | 76,038 | 51,272 | 127,310 | 151,708 |
| Transferred, | - | 3 | 13,482 | 13,485 | 22,102 |
| Stockpile Overrun, | - | - | 16,768 | 16,768 | - |
| Total, | - | 213,793 | 86,543 | 300,336 | 254,910 |
| Shipments, | - | 27,084 | 80,975 | 108,059 | 85,167 |
| Balance on Hand, | - | 186,709 | 5,568 | 192,277 | 169,743 |
| Decrease in Output, | | | | 7,625 | |
| Increase in Ore on Hand, | | | | 22,534 | |

1924 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to July 26th, 1924.
 1-8 Hour Shift, 4 days per week, July 26th to Nov. 30th, 1924.
 1-8 Hour Shift, 5 days per week, Dec. 1st to Dec. 31st, 1924.

1923 -- 1-8 Hour Shift, Jan. 1st, 1923 to Dec. 31st, 1923.

MORRIS MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1924.

| GRADE | IRON | PHOS. | SILICA | TOTAL | TOTAL LAST YEAR |
|-------------------------|---------------------|-------|--------|-------|-----------------|
| Morris Bessemer, | PCC (No Production) | | | | |
| Morris Bessemer/Morris, | 58.09 | .068 | 7.47 | - | - |
| Morris, Morrisville, | 51.22 | .058 | 13.31 | 84.18 | 45,394 |
| Morrisville, | 19.01 | | 61.95 | 80.97 | 39,773 |

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1924.

| GRADE | Mine IRON | PHOS. | SILICA | Lake Erie IRON | MOIST. |
|------------------|------------------|----------------|--------|----------------|--------|
| Total, | 32.71 | | 75.34 | 108.05 | 85.16 |
| Total Last Year, | | | | | |
| Increase, | Morris Bessemer, | (No Shipments) | | 22,892 | |
| | Morris, | 58.20 | .061 | - | - (**) |
| | Morrisville, | (All Mixed) | | | |

NOTE: (**) This represents three cargoes going to East Jordan Furnace. One cargo shipment, this grade, went mixed.

ORE STATEMENT - DECEMBER 31ST, 1924.

| | MORRIS BESSEMER | MORRIS | MORRISVILLE | TOTAL | TOTAL LAST YEAR |
|--------------------------|-----------------|---------|-------------|---------|-----------------|
| On hand January 1, 1924, | - | 137,758 | 31,985 | 169,743 | 125,309 |
| Output for Year, | - | 76,038 | 51,272 | 127,310 | 151,703 |
| Transferred, | - | 3 | 13,482 | 13,485 | 22,102 |
| Stockpile Overrun, | - | - | 16,768 | 16,768 | - |
| Total, | - | 213,793 | 86,543 | 300,336 | 254,910 |
| Shipments, | - | 27,084 | 80,975 | 108,059 | 85,167 |
| Balance on Hand, | - | 186,709 | 5,568 | 192,277 | 169,743 |
| Decrease in Output, | | | | 7,625 | |
| Increase in Ore on Hand, | | | | 22,534 | |

1924 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to July 26th, 1924.
 1-8 Hour Shift, 4 days per week, July 26th to Nov. 30th, 1924.
 1-8 Hour Shift, 5 days per week, Dec. 1st to Dec. 31st, 1924.

1923 -- 1-8 Hour Shift, Jan. 1st, 1923 to Dec. 31st, 1923.

MORRIS MINE

SHIPMENTS FOR YEAR-1924

COMPARATIVE MINING COST FOR YEAR

| GRADE | POCKET | | STOCKPILE | | TOTAL | | TOTAL |
|-------------------------------|---------|---------|-----------|----------|----------|----------|-----------|
| | 1924 | 1923 | INCREASE | DECREASE | INCREASE | DECREASE | LAST YEAR |
| Morris Bessemer, PRODUCT | 246,356 | 260,335 | - | - | - | - | 13,979 |
| Morris, Underground Costs | 13,699 | 13,385 | 27,084 | | | | 45,394 |
| Morrisville, Surface Costs | 1,297 | 1,400 | | | | | .103 |
| Total, | 19,018 | 61,957 | 80,975 | | | | 39,773 |
| General Mine Accounts | .225 | .236 | | | | | .011 |
| Total Last Year, | 32,717 | 75,342 | 108,059 | | | | 85,167 |
| Cost of Production | .162 | .129 | .033 | | | | |
| Increase, | 43,890 | 41,277 | 85,167 | | | | |
| Original Cost | 1.684 | 1.765 | | | | | .081 |
| Plant Account | .034 | .032 | .002 | | | | |
| Extraordinary Drifting | .263 | .263 | | | | | |
| Taxes | | .009 | | | | | .009 |
| Central Office | .215 | .231 | | | | | .016 |
| Contingent Expense | .088 | .076 | .012 | | | | |
| Cost Adjustment | .038 | .030 | .008 | | | | |
| Cost on Stockpile | .018 | .026 | | | | | .008 |
| Loading & Shipping | 2.340 | 2.432 | | | | | .092 |
| Total Cost on Cars | .116 | .060 | .056 | | | | |
| No. Days Operating | 2,456 | 2,492 | | | | | .036 |
| No. Shifts & Hours | 262 | 295 | | | | | 33 |
| Avg. Daily Product | 1-8 | 1-8 | | | | | |
| | 940 | 382 | 558 | | | | |
| <u>COST OF PRODUCTION</u> | | | | | | | |
| Labor | 1.026 | 1.083 | | | | | .057 |
| Supplies | .658 | .682 | | | | | .024 |
| Total | 1.684 | 1.765 | | | | | .081 |

MORRIS-LLOYD MINE
 MORRIS-LLOYD MINE
 COMPARATIVE MINING COST FOR YEAR

| | 1924 | 1923 | INCREASE | DECREASE |
|-----------------------------------|-----------|-----------|----------|------------|
| PRODUCT | 246,356 | 260,335 | | 13,979 |
| No. Shifts | 3 | 3 | | |
| Underground Costs | 1.297 | 1.400 | .103 | |
| Surface Costs | .225 | .236 | .011 | |
| General Mine Accounts | .162 | .129 | .033 | |
| AVG. WAGES PER DAY | | | | |
| Surface Cost of Production | 1.684 | 1.765 | 4.12 | .17-4.1081 |
| Underground | 4.94 | 4.65 | 29-6.23% | |
| Original Cost | .034 | .032 | 4.5 | .002 |
| Plant Account | .263 | .263 | | |
| Extraordinary Drifting | 123.50 | .009 | 113.25 | 6.25 |
| Taxes | .215 | .231 | | .016 |
| Central Office | .088 | .076 | 18.4 | .012 |
| Contingent Expense | .038 | .030 | 4.2 | .008 |
| Cost Adjustment | .018 | .026 | | .008 |
| Under Cost on Stockpile | 2.340 | 2.432 | .834 | .092 |
| Loading & Shipping | .116 | .060 | .056 | |
| Total Cost on Cars | 2.456 | 2.492 | 4.83 | .036 |
| No. Days Operating | 262 | 295 | | 33 |
| No. Shifts & Hours | 1-8 | 1-8 | | |
| Avg. Daily Product | 51,940 | 882,749 | | 58 |
| <u>COST OF PRODUCTION</u> | | | | |
| Surface | 55422.25 | 58007.55 | | 2585.29 |
| Underground | 1.026 | 1.083 | 7099.94 | .057 |
| Total | 245111.47 | 275107.49 | | 29996.02 |
| Supplies | .658 | .682 | | .024 |
| Proportion Surface to Underground | | | | |
| 1924 - 1 to 3.27 | 1.684 | 1.765 | | .081 |
| 1923 - 1 to 3.4 | | | | |
| 1922 - 1 to 3.7 | | | | |
| 1921 - 1 to 4.0 | | | | |
| 1920 - 1 to 4.4 | | | | |
| 1919 - 1 to 4.4 | | | | |

1924 - 1-8hr shift 4 days per week-July 30th to Dec.1st;
 1-8hr " 5 " " " Dec.1st.

MORRIS-LLOYD MINE

MORRIS-LLOYD MINE
TIMBER STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1924.

COMPARATIVE WAGES AND PRODUCT

| KIND | LINEAL FEET | AVG. PRICE PER FOOT | | AMOUNT | |
|----------------------------|-------------|---------------------|------------|-----------|-----------|
| | | 1924 | 1923 | 1924 | 1923 |
| | | | | INCREASE | DECREASE |
| 6" to 8" Timber | 31,709 | 246,356 | 260,335 | 1,559.97 | 4,160.41 |
| No. Shifts & Hours | 37,177 | 1-8hr | 1-8hr | 2,575.47 | 3,155.63 |
| AVG. NO. MEN WORKING | 29,907 | 44 | 46 | 700.16 | 2,239.73 |
| Surface | | 44 | 46 | | 2 |
| Underground | 9,541 | 144 | 156 | 448.77 | 560.85 |
| Total | | 188 | 202 | | 14 |
| Total Timber - 1924 | 108,437 | | | 8,294.37 | |
| AVG. WAGES PER DAY | | | | | |
| Surface | 188,945 | 4.29 | 4.12 | .17-4.12% | |
| Underground | | 4.94 | 4.65 | .29-6.23% | 132.62 |
| Total | | 4.78 | 4.53 | .25-5.51% | |
| WAGES PER MO. OF 25 DAYS | | | | | |
| Surface | 105,400 | 107.25 | 103.00 | 4.25 | 152.46 |
| Underground | 375,805 | 123.50 | 116.25 | 7.25 | 746.46 |
| Total | | 119.50 | 113.25 | 6.25 | |
| PRODUCT PER MAN PER DAY | 481,205 | | | 3,557.06 | 2,888.94 |
| Surface | 231,922 | 19.08 | 18.48 | .60 | |
| Underground | | 6.42 | 5.58 | .84 | 042.52 |
| Total | 713,127 | 4.80 | 4.29 | .51 | |
| LABOR COST PER TON | 526,360 | .225 | .223 | .002 | 931.46 |
| Surface | | .225 | .223 | | |
| Underground | 99,061 | .770 | .834 | | .064 |
| Total | | .995 | 1.057 | | .062 |
| AVG. PRODUCT BRK'G & TRM'G | | 10.70 | 10.05 | .65 | |
| " WAGES CONTRACT MINERS | | 5.32 | 4.83 | .49 | |
| " " " LABOR | | 5.32 | 4.83 | .49 | |
| TOTAL NO. OF DAYS | | | | | |
| Surface | 12911-1/2 | | 14014,083 | | 1,172 1/2 |
| Underground | 38384-3/4 | | 46,666 1/4 | | 8,281 1/2 |
| Total | 51296-1/4 | | 60,749 1/4 | | 9,453 |
| AMOUNT FOR LABOR | | | | | |
| Surface | | 55422.26 | 58007.55 | | 2585.29 |
| Underground | | 189689.21 | 217099.94 | | 27410.73 |
| Total | | 245111.47 | 275107.49 | | 29996.02 |

Proportion Surface to Underground Men:

- 1924 - 1 to 3.27
- 1923 - 1 to 3.4
- 1921 - 1 to 4.9
- 1920 - 1 to 4.4
- 1919 - 1 to 4.4

1924 - 1-8hr shift 4 days per week-July 30th to Dec.1st;
1-8hr " 5 " " Dec.1st.

MORRIS-LLOYD MINE.

MORRIS-LLOYD MINE.

MORRIS-LLOYD MINE

TIMBER STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1924.

| STATEMENT OF EXPLOSIVES USED FOR BREAKING ORE | | | | |
|---|-------------|---------------------|-------------|-------------|
| KIND | LINEAL FEET | AVG. PRICE PER FOOT | AMOUNT 1924 | AMOUNT 1923 |
| 6" to 8" Timber | 31,709 | .042 | 1,559.97 | 4,160.41 |
| 8" to 10" " | 37,177 | .0693 | 2,575.47 | 3,155.63 |
| 10" to 12" " | 29,967 | .09 | 2,700.16 | 2,239.73 |
| 12 to 14" " | 9,584 | .152 | 1,458.77 | 626.85 |
| Total Timber - 1924 | 108,437 | .0764 | 8,294.37 | |
| Total Timber - 1923 | 188,925 | .0539 | | 10,182.62 |
| | LINEAL FEET | PER 100' | | |
| 5' Lagging | 105,400 | .812 | 855.83 | 1,162.46 |
| 8' " | 375,805 | .719 | 2,701.25 | 1,726.48 |
| Total Lagging | 481,205 | .739 | 3,557.08 | 2,888.94 |
| 3" Poles | 231,922 | 1.338 | 3,102.79 | 1,042.52 |
| Total Lagging & Poles | 713,127 | .934 | 6,659.87 | |
| " " " " 1923 | 526,360 | .746 | | 3,931.46 |
| 5/8" Covering Bds. | 99,061 | 1.725 | 1,710.45 | 1,093.08 |
| Product | | | 246,356 | 260,335 |
| Ft. of timber per ton of ore | | | .439 | .726 |
| " lagging " " | | | 1.95 | 1.58 |
| " " " per ft. of timber | | | 4.44 | 2.18 |
| Cost per ton for timber | | | .0337 | .0391 |
| " " covering bds. | | | .0069 | .0042 |
| " " lagging | | | .0144 | .0111 |
| " " poles | | | .0126 | .0041 |
| " " timber, bds., lagging & poles | | | .0676 | .0585 |
| Equivalent of stull timber to bd. measure | | | 200,222 | 291,973 |
| Feet bd. measure per ton of ore | | | .813 | 1.122 |
| Cost of timber, lagging & poles, etc., 1924 | | | | 16,664.69 |
| 1923 | | | | 15,207.16 |
| 1922 | | | | 11,735.86 |
| 1921 | | | | 19,348.78 |
| 1920 | | | | 17,277.93 |
| 1919 | | | | 17,277.93 |
| 1918 | | | | 15,676.42 |
| 1917 | | | | 19,623.30 |

MORRIS-LLOYD MINE.

MORRIS-LLOYD MINE.

NORTH LAKE DISTRICT.

BARNES HECKER MINE.

GENERAL

This mine, due to shortage of men, was operated on day shift only until July month. Beginning then and continuing the balance of the year operations were conducted on two shifts full time excepting the short Saturday night shift. This was made possible due to the closing of the Salisbury mine which permitted us to secure some additional men.

We have produced our minimum tonnage during the year. This is the first year we have been able to do this. The minimum requirements are 70,000 tons and we mined 75,857 tons.

ORE IN SIGHT

The available tonnage in sight in this property has been increased by further development during the past twelve months and additional ore is expected to be shown in later work. The estimate of ore in this property as of December 31st, 1924 is 823,562 tons as compared with 462,963 tons as of same date last year.

PUMPING

A pumping plant is still maintained to keep North Lake water pumped.

It was decided to permit the water in the East basin to raise to the 1502' elevation and then ascertain if the water would get back into the mine from that point. No increase in mine water was noticed until November month. During November and December we had a small increase in flow in the area being worked by contracts Nos. 4, 13, 6 and 7 which are in the central ore body. No additional water was encountered on the East end of the mine nearest the lake. We are of the opinion that this water is coming down through drill holes and will eventually drain off.

NORTH LAKE DISTRICT.

BARNES HECKER MINE.

GENERAL
(CONTINUED)

A ditch to drain North Lake to the 1502' elevation and thereby permit us to do away with the cost of a pumping plant was authorized and work of excavation was commenced in October month. This was continued until extreme cold weather was encountered when work was stopped until spring.

A total of 13,400 cubic yards were moved over length of 1600 feet of ditch line. The total length of the ditch will be 4300 feet.

The following statement shows the gallons per minute pumped at this property during the past five years, viz:

| YEAR | G.P.M. |
|------|--------|
| 1920 | 261 |
| 1921 | 1113 |
| 1922 | 1044 |
| 1923 | 743 |
| 1924 | 615 |

As stated above the water has increased slightly during the last two months of the year 1924.

During 1924 we pumped an average of 1111 G.P.M. from the North Lake basin as compared with 1580 G.P.M. during 1923.

ACCIDENTS

We have had no fatal or serious accidents at this property during the year.

ACCIDENTS TO EQUIPMENT

We have had no serious accidents to equipment during the past twelve months.

NORTH LAKE DISTRICT.

BARNES HECKER MINE.

TRANSPORTATION OF MEN

There are only housing facilities for (21) twenty-one families at this mine, therefore, when men were available, due to the closing of the Salisbury mine, it seemed advisable to transport them from Ishpeming - a distance of about eight miles - rather than provide additional houses at this time. Some of these men own their own homes. We equipped our "White" Motor Truck with a closed top and are handling the men with this equipment. This has worked out very nicely.

We are transporting about (75) seventy-five men in this way.

During the summer the truck was in use during the working hours at the Morris-Lloyd Mines and the men handled between shifts. Since the heavy snow and cold weather has set in, the truck is kept at the Barnes-Hecker Mine and used practically only for caring for the men.

We have erected a small building to house this equipment when not in use.

PRODUCTION

During the year we produced a total of 75,857 tons compared with 36,226 tons in 1923.

UNDERGROUND

FIRST LEVEL:

The main level was extended East and an additional raise was put up to the 1115' elevation to permit the more rapid mining of the ore in this territory.

This sub is 150' above the main level, at which point it has been determined to commence mining operations, and we have an ore area 300 feet long and 70 feet wide. The ore is somewhat mixed with silicious seams, but is soft. Three gangs are at work on this sub and we are filling the space, as worked out, with old timber and lagging to start a gob. The ground is very heavy and great care has had to be exercised in taking this first slice.

BARNES HECKER MINE.

NORTH LAKE DISTRICT.

BARNES HECKER MINE.

UNDERGROUND

FIRST LEVEL: Continued-

In the West ore body four gangs have been slicing and caving. During the year, three slices have been completed and the 1050' slice is now being taken. This ore is of good quality and fairly clean.

Nos. 4, 6, 7, 9, 10 and 13 are at work slicing and caving in the central ore body which is being rapidly worked down. The ground in this territory is badly mixed and some ore of Silica grade must be made.

SECOND LEVEL:

During the year a raise was brought up from the third level to the elevation of the second level in ore and a cross-cut driven North and South on the elevation of the second level. This cross-cut shows the ore to have a width of about 70 feet.

The main second level was driven East to hole to this cross-cut and was continued on to the end of the ore and gives us 166 feet additional ore on this level. This looks very promising.

A raise is now going up in this ore near the 7800' line and we expect the ore to continue through to the first level.

One contract is slicing and caving in No. 35 raise above this level. One sub has been worked out and slicing is now going forward on the 875' sub level.

THIRD LEVEL:

No work has been done on this level during the year. The opening by raise to the 6th level of the Morris mine is being maintained.

FOURTH LEVEL:

There is an excellent showing of ore on the third level and it was decided to push the main 6th level of the Morris mine, which is 194' below the Barnes Hecker third level, underneath this area. The drift was started in January month and was stopped in April after going a distance of 600 feet without cutting any ore. It was decided to defer work in this territory until the ore had been worked down farther from above.

NORTH LAKE DISTRICT.

BARNES HECKER MINE.

UNDERGROUND

FOURTH LEVEL: Continued-

Conditions are most favorable for ore in this area and we expect to add to the tonnage in this property by further development.

BARNES-HECKER MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1924.

| GRADE | IRON | PHOS. | SILICA |
|----------------|-------|-------|--------|
| Barnes, | 57.82 | .086 | 8.13 |
| Barnes Silica, | 51.82 | .075 | 17.02 |

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1924.

| GRADE | Mine | | Lake Erie | |
|----------------|----------------|-------|-----------|-------------|
| | IRON | PHOS. | SILICA | IRON MOIST. |
| Barnes, | (No Shipments) | | | |
| Barnes Silica, | (All Mixed) | | | |

ORE STATEMENT - DECEMBER 31ST, 1924.

| | BARNES | BARNES SILICA | TOTAL | TOTAL LAST YEAR |
|--------------------------|--------|------------------|---------|-----------------------|
| On hand January 1, 1924, | 37,576 | 2,159 | 39,735 | 20,526 |
| Output for Year, | 58,123 | 15,476 | 73,599 | 36,228 |
| Transferred, | 99 | 99 | - | - |
| Stockpile Overrun, | - | 2,258 | 2,258 | - |
| Total, | 95,798 | 19,794 | 115,592 | 56,754 |
| Shipments, | 99 | 17,001 | 17,100 | 17,019 |
| Balance on Hand, | 95,699 | 2,793 | 98,492 | 39,735 |
| Increase in Output, | | | 39,629 | |
| Increase in Ore on Hand, | | | 58,757 | |

1924 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to May 5th, 1924.
 2-8 Hour Shifts, 6 days per week, May 5th to Dec. 31st, 1924.

1923 -- 2-8 Hour Shifts, Jan. 1st to Feb. 18th, 1923.
 1-8 Hour Shift, Feb. 19th to Dec. 31st, 1923.

BARNES-HECKER MINE

SHIPMENTS FOR YEAR-1924.

| GRADE | POCKET | STOCKPILE | TOTAL | TOTAL LAST YEAR |
|------------------|--------|-----------|--------|-----------------------|
| Barnes, | 99 | - | 99 | - |
| Barnes Silica, | 8,329 | 8,672 | 17,001 | 17,019 |
| Total, | 8,428 | 8,672 | 17,100 | 17,019 |
| Total Last Year, | 2,834 | 14,185 | 17,019 | |
| Increase, | | | 81 | |

BARNES-HECKER MINE

COMPARATIVE MINING COST FOR YEAR

| | 1924 | 1923 | INCREASE | DECREASE |
|---------------------------|-------------------|-------------------|----------|----------|
| PRODUCT | 75,875 | 36,228 | 39,647 | |
| Underground Costs | 2.347 | 3.805 | | 1.458 |
| Surface Costs | .238 | .496 | | .258 |
| General Mine Accounts | .165 | .288 | | .123 |
| Cost of Production | 2.750 | 4.589 | | 1.839 |
| Construction Cost | 1.000 | 1.194 | | .194 |
| Equipment | .001 | | .001 | |
| Taxes | .064 | .103 | | .039 |
| Central Office | .136 | .160 | | .024 |
| Contingent Expense | .059 | .060 | | .001 |
| Cost Adjustment | .026 | .016 | .010 | |
| Cost on Stockpile | 4.036 | 6.122 | | 2.086 |
| Loading & Shipping | .012 | .025 | | .013 |
| Total Cost on Cars | 4.048 | 6.147 | | 2.099 |
| No. Days Operating | 294 | 296 | | 2 |
| No. Shifts & Hours | 1-8-99 2-8-195 | 2-8-41 1-8-255 | | |
| Avg. Daily Product | 258 | 122 | 136 | |
| <u>COST OF PRODUCTION</u> | | | | |
| Labor | 1.640 | 2.260 | | .620 |
| Supplies | 1.110 | 2.329 | | 1.219 |
| Total | 2.750 | 4.589 | | 1.839 |

BARNES-HECKER MINE.

BARNES-HECKER MINE

COMPARATIVE WAGES AND PRODUCT

| | 1 9 2 4 | 1 9 2 3 | INCREASE | DECREASE |
|-----------------------------|-----------|-----------|-----------|----------|
| PRODUCT | 75,857 | 36,228 | 39,629 | |
| No.Shifts & Hours | 1-8;2-8 | 2-8;1-8 | | |
| AVG.NO.MEN WORKING | | | | |
| Surface | 21 | 19 | 2 | |
| Underground | 64 | 37 | 27 | |
| Total | 85 | 56 | 29 | |
| AVG.WAGES PER DAY | | | | |
| Surface | 4.38 | 4.20 | .18-4.28% | |
| Underground | 4.82 | 4.68 | .14-2.99% | |
| Total | 4.71 | 4.52 | .19-4.20% | |
| AVG.WAGES PER MO.OF 25 DAYS | | | | |
| Surface | 109.50 | 105.00 | 4.50 | |
| Underground | 120.50 | 117.00 | 3.50 | |
| Total | 117.75 | 113.00 | 4.75 | |
| PRODUCT PER MAN PER DAY | | | | |
| Surface | 11.76 | 6.10 | 5.66 | |
| Underground | 3.98 | 3.17 | .81 | |
| Total | 2.98 | 2.09 | .89 | |
| LABOR COST PER TON | | | | |
| Surface | .372 | .688 | | .316 |
| Underground | 1.211 | 1.478 | | .267 |
| Total | 1.583 | 2.166 | | .583 |
| AVG.PRODUCT BRK'G & TRM'G | 7.77 | 10.72 | | 2.95 |
| " WAGES MINERS | 5.57 | 4.95 | .62 | |
| " " TRAMMERS | | 4.25 | | |
| " " BRK'G & TRM'G | 5.57 | 4.50 | 1.07 | |
| TOTAL NO.OF DAYS | | | | |
| Surface | 6448-3/4 | 5936 | 512-3/4 | |
| Underground | 19047-3/4 | 11427-3/4 | 7620 | |
| Total | 25496-1/2 | 17363-3/4 | 8132-3/4 | |
| AMOUNT FOR LABOR | | | | |
| Surface | 28226.16 | 24929.49 | 3296.67 | |
| Underground | 91882.66 | 53534.38 | 38348.28 | |
| Total | 120108.82 | 78463.87 | 41644.95 | |

Proportion Surface to Underground Men:

1924 - 1 to 3.04

1923 - 1 to 2

1922 - 1 to 2.7

1924 - changed from 1-8hr to 2-8hr shifts May 6th.

BARNES-HECKER MINE

TIMBER STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1924.

| KIND | LINEAL FEET | AVG. PRICE PER FOOT | AMOUNT | |
|--|--------------------|------------------------|----------|-----------|
| | | | 1 9 2 4 | 1 9 2 3 |
| 6" to 8" Timber | 33,414 | .041 | 1,377.52 | 2,666.61 |
| 8" to 10" " | 59,870 | .069 | 4,179.00 | 1,927.21 |
| 10" to 12" " | 12,012 | .074 | 885.32 | 291.99 |
| 12" to 14" " | 4,696 | .112 | 527.01 | 292.02 |
| 14" to 16" " | 1,572 | .126 | 198.06 | 162.70 |
| 16" to 18" " | | | | 21.65 |
| Total Timber | 111,564 | .064 | 7,166.91 | 5,362.18 |
| | LINEAL FEET | PER 100' | | |
| 5' Lagging | 440,937 | .828 | 3,651.57 | 2,043.36 |
| 8' " | 87,916 | .695 | 611.11 | 466.76 |
| Total Lagging | 528,853 | .806 | 4,262.68 | 2,510.12 |
| Poles | 194,820 | 1.158 | 2,257.50 | 632.55 |
| Total Lagging & Poles | 723,673 | .901 | 6,520.18 | 3,142.67 |
| 5/8" Covering Boards | 5,417 | 1,869 | 101.24 | 330.73 |
| Product | | | 75,857 | 36,228 |
| Feet of timber per ton of ore | | | 1.471 | 3.067 |
| " " lagging " | | | 6.971 | 9.323 |
| " " " per foot of timber | | | 4.74 | 3.03 |
| Cost per ton for timber | | | .094 | .148 |
| " " lagging | | | .056 | .069 |
| " " poles | | | .029 | .018 |
| " " covering boards | | | .001 | .009 |
| " " timber, lagging, poles & Bds. | | | .181 | .244 |
| Equivalent of stull timber to bd. measure | | | 182,020 | 164,685 |
| Feet bd. measure per ton of ore | | | 2.399 | 4.545 |
| Cost for timber, lagging & poles -1922 | | | | 2,080.15 |
| 1923 | | | | 8,835.58 |
| 1924 | | | | 13,788.33 |
| Jan. 1st to May 6th, 1924, - 1-8hr. shift. | | | | |
| May 6th to Dec. 31, " 2-8hr " | | | | |

BARNES-HECKER MINE

STATEMENT OF EXPLOSIVES USED FOR BREAKING ORE

| <u>KIND</u> | <u>QUANTITY</u> | <u>AVERAGE PRICE</u> | <u>AMOUNT 1924</u> | <u>AMOUNT 1923</u> |
|----------------------------------|-----------------|----------------------|--------------------|--------------------|
| 40% 1 $\frac{1}{4}$ " L.F.Powder | 36,375 | .135 | 4,910.62 | 3,034.08 |
| 60% 1 $\frac{1}{4}$ " Gelatin | | | | 86.25 |
| Total Powder | 36,375 | .135 | 4,910.62 | 3,120.33 |
| Fuse | 148,700' | 6.375 | 947.88 | 720.47 |
| Caps | 29,800 | 10.97 | 327.07 | 202.72 |
| Cap Crimpers | 23 | .484 | 11.13 | 5.03 |
| Tamping Bags | | | | .97 |
| Total Fuse, Etc. | | | 1,286.08 | 929.19 |
| Total Explosives | | | 6,196.70 | 4,049.52 |
| Product | | | 75,857 | 36,228 |
| Pounds powder per ton of ore | | | .479 | .639 |
| Cost per ton for powder | | | .065 | .086 |
| " " fuse, caps, etc. | | | .017 | .025 |
| " " all explosives | | | .082 | .111 |
| Avg. price per lb. for powder | | | .135 | .134 |

BARNES-HECKER MINE.

Mr. M. M. Duncan, Vice-Pres. & Gen. Mgr.,
Ishpeming, Michigan.

Dear Sir:

I beg to submit the following report of the work done in the Gwinn District for the year ending December 31st, 1924.

The various subjects have been taken up under the following heads:-

GENERAL REMARKS

STEPHENSON MINE

FRANCIS MINE

GWINN MINE

PRINCETON MINE

AUSTIN MINE

GARDNER-MACKINAW MINE

GENERAL SURFACE

ANALYSIS OF COST SHEETS

GENERAL REMARKS.

The product of the Gwinn District Mines for the years 1924 and 1923, was as follows:-

| | <u>1924</u> | <u>1923</u> | <u>INCREASE</u> | <u>DECREASE</u> |
|----------------------|---------------|----------------|-----------------|-----------------|
| Stephenson Mine, (1) | 249,428 | 247,212 | 2,216 | |
| Austin " | 0 | 82,976 | | 82,976 |
| Francis " (2) | <u>39,031</u> | <u>110,550</u> | | <u>71,519</u> |
| TOTAL, | 288,459 | 440,738 | | |
| DECREASE - 1924, | | | | 152,279 |

(1) Includes overruns from stockpile shipments.

(2) Francis Mine abandoned April 30th, 1924.

The following table gives shipments for 1924, and ore in stock on December 31st, 1924:

| | <u>SHIPMENTS</u> | <u>IN STOCK DEC. 31-1924</u> |
|-------------------------------|------------------|----------------------------------|
| Stephenson Mine, | 186,899 | 475,736 |
| Princeton " | 7,452 | 184,295 |
| Gwinn " | 4,935 | 2,519 |
| Austin " | 0 | 43,233 |
| Francis " | 0 | 403,035 |
| Gardner-Mackinaw Mine, | <u>9</u> | <u>50,562</u> |
| TOTAL SHIPMENTS, | 199,286 | |
| Ore in stock Dec. 31st, 1924, | | 1,159,382 |
| Ore in stock Dec. 31st, 1923, | | <u>1,070,209</u> |
| INCREASE - 1924, | | 89,173 |

Shipments were relatively small in 1924, and at the end of the year there was more ore in stock.

GENERAL REMARKS:

The district is now 22 years old and probably has a life of from ten to twenty years, depending on the rate of production.

With the closing of the Francis there are now five mines in the district. Of these, the Austin has a comparative short life as the remaining ore in the shaft pillar can be removed in twelve months. The bottom of the Gwinn Mine deposit has been reached and developed for mining, so that this mine has a relatively short life. There is considerable ore in the Gardner-Mackinaw property, but in order to mine it the Mackinaw shaft must be sunk and new levels opened. The Gardner ore body is developed and can be mined out in a relatively short time, as there is only a limited tonnage on this property. The main reserve is in the Princeton Mine. The Stephenson Mine has a probable life of from four to five years at its present rate of operation.

The following statements are included in the report as they give the history of the district in a concise form:

STATEMENT SHOWING TOTAL ORE PRODUCED BY YEARS FROM 1903 TO 1924 - INCLUSIVE.

| YEAR | AUSTIN | PRINCETON | STEPHENSON | GWINN | FRANCIS | GARDNER- MACKINAW | TOTAL |
|-------|------------|-----------|------------|---------|---------|----------------------|-----------|
| 1903 | 1,086 | | | | | | 1,086 |
| 1904 | 30,118 | | | | | | 30,118 |
| 1905 | 57,210 (a) | 8,224 | | | | | |
| | | 48,889 | | | | | 114,323 |
| 1906 | 160,049 | 175,752 | | | | | 335,801 |
| 1907 | 192,424 | 174,457 | 8,333 | | | | 375,214 |
| 1908 | 197,525 | 124,346 | 78,419 | | | | 400,290 |
| 1909 | 203,129 | 144,882 | 142,816 | | | | 490,827 |
| 1910 | 64,705 | 115,782 | 214,500 | | | | 394,987 |
| 1911 | 145,221 | 96,670 | 226,022 | 537 | | | 468,450 |
| 1912 | 115,934 | 22,567 | 209,282 | | | | 347,783 |
| 1913 | 68,259 | 74,884 | 255,979 | | | | 399,122 |
| 1914 | | 3,256 | 214,608 | 48,389 | | | 266,253 |
| 1915 | | 122 | 207,724 | 127,300 | | | 335,146 |
| 1916 | 16,193 | 145 | 303,562 | 144,066 | | | 463,966 |
| 1917 | 51,659 (b) | 1,106 | 253,266 | 161,963 | 1,778 | | 467,560 |
| 1918 | 1,069 | 148,265 | 4,245 | 155,534 | 41,535 | 2,405 | 353,053 |
| 1919 | 14,896 | 193,228 | 2,402 | 137,847 | 80,528 | 69,326 | 498,227 |
| 1920 | 73 | 156,746 | 174,782 | 96,595 | 80,056 | 130,388 | 638,640 |
| 1921 | | 97,150 | 196,539 | 63,501 | 71,075 | 159 | 428,424 |
| 1922 | 50,905 | 74 | 213,223(c) | 20,085 | 98,049 | 0 | 382,336 |
| 1923 | 82,976 | 0 | 247,212 | 27,334 | 110,550 | 0 | 468,072 |
| 1924 | 0 | 0 | 249,428 | 0 | 39,031 | 0 | 288,459 |
| Total | 1,453,431 | 1,584,333 | 3,202,342 | 983,151 | 522,602 | 202,278 | 7,948,137 |

(a) On hand when mine was taken over August 1st, 1905.

(b) Stockpile shortage.

(c) Stockpile overrun.

STATEMENT SHOWING SHIPMENTS FOR EACH YEAR FROM 1905 TO 1924, INCLUSIVE.

| YEAR | AUSTIN | PRINCETON | STEPHENSON | GWINN | FRANCIS | GARDNER-MACKINAW | TOTAL |
|--------|-----------|-----------|------------|---------|---------|------------------|-----------|
| 1905 | 44,653 | 47,290 | | | | | 91,943 |
| 1906 | 173,182 | 166,894 | | | | | 340,076 |
| 1907 | 195,950 | 177,863 | 6,305 | | | | 380,118 |
| 1908 | 111,229 | 36,033 | 52,588 | | | | 199,850 |
| 1909 | 125,727 | 42,935 | 64,206 | | | | 232,868 |
| 1910 | 188,587 | 89,442 | 225,726 | | | | 503,755 |
| 1911 | 107,394 | 28,189 | 128,839 | 230 | | | 264,652 |
| 1912 | 102,529 | 162,137 | 214,386 | | | | 479,052 |
| 1913 | 107,365 | 53,477 | 96,298 | | | | 257,140 |
| 1914 | 30,491 | 13,607 | 93,796 | 20,159 | | | 158,053 |
| 1915 | | 17,171 | 243,458 | 57,910 | | | 318,539 |
| 1916 | 64,521 | | 368,739 | 143,708 | | | 576,968 |
| 1917 | 44,420 | 150,375 | 496,712 | 188,070 | | | 879,577 |
| 1918 | 8,533 | 66,244 | 75,162 | 182,541 | 30,775 | | 363,255 |
| 1919 | 2,334 | 111,617 | 1,965 | 66,666 | 26,936 | 32,332 | 241,850 |
| 1920 | 3,665 | 153,609 | 110,924 | 196,593 | 34,199 | 49,051 | 548,041 |
| 1921 | | 23,916 | 77,077 | 64,515 | 16,220 | 19,889 | 201,617 |
| 1922 | 5,065 | 26,145 | 202,522 | 26,436 | 11,437 | 40,180 | 311,785 |
| 1923 | 94,553 | 25,642 | 74,368 | 28,529 | 0 | 10,264 | 233,356 |
| 1924 | 0 | 7,453 | 186,899 | 4,935 | 0 | 0 | 199,287 |
| TOTAL, | 1,410,198 | 1,400,039 | 2,719,970 | 980,292 | 119,567 | 151,716 | 6,781,782 |

STATEMENT SHOWING ORE IN STOCK AT THE CLOSE OF EACH YEAR, FROM 1903 TO 1924 INCLUSIVE.

| | | | | | | | |
|------|---------|---------|---------|---------|---------|---------|-----------|
| 1903 | 1,086 | | | | | | 1,086 |
| 1904 | 31,204 | | | | | | 31,204 |
| 1905 | 43,761 | 8,923 | | | | | 52,684 |
| 1906 | 30,628 | 18,681 | | | | | 49,309 |
| 1907 | 27,102 | 15,275 | 2,028 | | | | 44,405 |
| 1908 | 113,398 | 103,588 | 27,859 | | | | 244,845 |
| 1909 | 190,800 | 205,535 | 106,469 | | | | 502,804 |
| 1910 | 66,918 | 231,875 | 95,243 | | | | 394,036 |
| 1911 | 104,745 | 300,356 | 185,792 | 307 | | | 591,200 |
| 1912 | 118,150 | 160,786 | 180,688 | 307 | | | 459,931 |
| 1913 | 79,044 | 182,193 | 340,369 | 307 | | | 601,913 |
| 1914 | 48,553 | 171,842 | 461,181 | 28,537 | | | 710,113 |
| 1915 | 48,553 | 154,793 | 425,447 | 97,927 | | | 726,720 |
| 1916 | 225 | 154,793 | 360,270 | 98,285 | | | 613,573 |
| 1917 | 7,464 | 3,457 | 116,824 | 72,178 | 1,778 | | 201,701 |
| 1918 | -- | 85,478 | 45,907 | 45,171 | 12,538 | 2,405 | 191,499 |
| 1919 | 12,562 | 167,089 | 46,344 | 116,352 | 66,130 | 39,399 | 447,876 |
| 1920 | 8,970 | 170,226 | 110,202 | 16,014 | 111,987 | 120,736 | 538,135 |
| 1921 | 8,970 | 243,460 | 229,664 | 15,000 | 166,842 | 101,006 | 764,942 |
| 1922 | 54,810 | 217,389 | 240,365 | 8,649 | 253,454 | 60,826 | 835,493 |
| 1923 | 43,233 | 191,747 | 413,209 | 7,454 | 364,004 | 50,562 | 1,070,209 |
| 1924 | 43,233 | 184,294 | 475,738 | 2,519 | 403,035 | 50,562 | 1,159,381 |

GENERAL REMARKS:

The Stephenson Mine operated throughout the year, but on a reduced scale, starting July 28th. The Francis operated only 4 months, closing permanently on April 30th. The Gwinn, Princeton and Austin Mines have been kept in repair and ready for re-opening on short notice. The Gardner-Mackinaw Mine pumps were pulled in November, 1923, the mine flooded, but it can be pumped out and operations resumed on several months notice.

There has been a surplus of surface labor available throughout the year. The closing of the Francis Mine made it necessary to lay off a number of underground employes, but work was available at other company mines in Marquette County. Quite a number of the young first-class miners left the district in October and November on account of the four-day-a-week schedule. The shortage of miners has been made up, a number of surface men going underground for the winter, but the efficiency of the miners, as a whole, has been lowered.

On January 1st, 1924, there were 400 men employed in the district; on December 31st, 1924, there were 269, the decrease for the year being 131. This compares with a decrease of 52 between the same dates in the previous year. The number now employed in the district is the lowest since 1904.

All the 50 houses at the Gardner-Mackinaw location are vacant and have been boarded up. There are 23 vacant houses at Gwinn; 13 at the Austin Location and 5 at the Princeton Location. During the fall months there was a feeling of depression prevailing in the district due to operating only 4 days per week. This feeling is much better since the mines started working 5 days per week. There are a number of employees in the district who have large families, ranging from five to ten children, and when working only 4 days per week they were not able to make a living and in several cases the merchants had refused to extend them further credit. The extra day each week, starting in December, means better living conditions for their families.

The Austin 4-room school building which burned on December 13, 1923, was rebuilt with local labor in 70 days, being opened on February 28th, 1924. The cost was about \$17,000.00, while the estimate on contract was \$30,000.00.

Work on the new County Park near Gwinn was continued during the summer months. Nearly all of the park grounds have been cleaned of brush and dead timber, tables and seats have been provided, also camp stoves, etc. Considerable use was made of the park by the local residents, and also by other Marquette County people and tourists. The park would have been used more if the weather had not been so cool during the summer months. Improvements have not been completed and it is planned to continue the work during 1924. Over \$2,200.00 was expended on the park, the funds for this purpose being raised by a general County tax. The Marquette County parks are under the supervision of the Marquette County Road Commission.

STEPHENSON MINE

The mine operated on single shift in 1924, ore, however, was hoisted on both day and night shifts. Only a few men work at night handling the ore underground and on surface.

The product by months for the years 1924 and 1923, was as follows:

(Includes ore hoisted from C. & N. W. Ry. Co. Lease):-

| | <u>TONS</u> <u>1924</u> | <u>TONS</u> <u>1923</u> | <u>DECREASE</u> <u>1924</u> |
|-----------------------------|----------------------------|----------------------------|--------------------------------|
| January, | 25,299 | 22,154 | |
| February, | 23,383 | 18,052 | |
| March, | 21,088 | 20,722 | |
| April, | 22,524 | 20,408 | |
| May, | 25,322 | 19,386 | |
| June, | 23,449 | 18,541 | |
| July, | 22,447 | 20,687 | |
| August, | 17,380 | 21,238 | |
| September (a) | 14,611 | 20,045 | |
| October, | 15,948 | 21,669 | |
| November (b) | 13,035 | 22,155 | |
| December, | <u>19,940</u> | <u>21,174</u> | |
| Total Ore, | 244,426 | 246,231 | 1,805 tons. |
| Rock, | <u>15,580</u> | <u>19,980</u> | 4,400 " |
| Total Hoist, Ore and Rock, | 260,006 | 266,211 | 6,205 " |
| Avg. Total Monthly Product, | 21,667 | 22,184 | 517 " |

(a) Product low on account of cave on Southwest side of mine.

(b) Product low on account of shortage of miners.

Stockpile overruns not included in the above table.

In 1924, the mine operated four days per week from the last week of July to the end of November; 5 days per week in December; 6 days per week in 1923.

The ore statement, showing the amount on hand January 1st, 1924, the output for the year, shipments for the year and the amount on hand January 1st, 1925, is as follows:

| | <u>STEPH. BESS.</u> | <u>STEPHEN- SON</u> | <u>STEPHEN- WOOD</u> | <u>NORTH- DALE</u> | <u>NORTH- WOOD</u> | <u>TOTAL</u> |
|-------------------------|-------------------------|-------------------------|--------------------------|------------------------|------------------------|----------------|
| On Hand Jan. 1st, 1924, | 1,629 | 390,073 | 14,095 | 7,412 | 0 | 413,209 |
| Output for Year, | <u>270</u> | <u>181,221</u> (b) | <u>60,393</u> | <u>4,569</u> | <u>2,833</u> | <u>249,428</u> |
| Total, | (a) 1,889 | 573,335 | 74,488 | 11,981 | 2,833 | 662,637 |
| Shipments, 1924, | <u>0</u> | <u>116,633</u> | <u>64,992</u> | <u>2,909</u> | <u>2,365</u> | <u>186,899</u> |
| In Stock Jan. 1, 1925, | 0 | 456,702 | 9,496 | 9,072 | 468 | 475,738 |

(a) Transferred to "Stephenson" grade.

(b) Includes 5,002 tons stockpile overrun.

Shipments from the Stephenson Mine in 1924 were 186,899 tons as compared with 74,368 tons in 1923, an increase of 112,531 tons. The ore in stock increased 62,529 tons in 1924.

An attempt was made to make a product of Bessemer grade, but the ore ran so high in Phosphorus that it was transferred to "Stephenson" grade. As a result of the years work it does not seem likely that any Bessemer ore will be produced until mining starts again in the North-east ore body. The main change in output by grades, as compared with 1923, was the output of "Stephenwood" ore in 1924. Mining on the sub-levels below the 5th disclosed considerable high-phosphorus ore, so that for the first time in several years, ore of "Stephenwood" grade was produced. The old diamond drill holes from surface indicated that the ore below the 5th would run Bessemer and Stephenson grades, but it has been very variable in Phosphorus, running up to .800 in some areas. The footwall flattens below the 5th Level, which accounts for the increase.

The ore in sight on December 31st, 1924, was as follows:

| | <u>STEPH. BESS.</u> | <u>STEPH. NO.1</u> | <u>STEPHEN- SON</u> | <u>STEPHEN- WOOD</u> | <u>TOTAL</u> |
|--------------------------------|-------------------------|------------------------|-------------------------|--------------------------|----------------|
| Ore above 1st Level, | | | 4,858 | | 4,858 |
| " " 4th " | | | 47,830 | | 47,830 |
| " " 5th " | | | 110,328 | 10,000 | 120,328 |
| " " 6th " | <u>30,000</u> | <u>20,000</u> | <u>183,464</u> | <u>104,195</u> | <u>337,659</u> |
| TOTAL DEVELOPED ORE, | 30,000 | 20,000 | 346,480 | 114,195 | 510,675 |
| Prospective Ore, | | | <u>60,114</u> | <u>30,000</u> | <u>90,114</u> |
| GRAND TOTAL ORE, STEPH. LEASE, | 30,000 | 20,000 | 406,594 | 144,195 | 600,789 |
| DECREASE - 1924, | | | | | 151,666 |

STEPHENSON MINE:

The product from the Stephenson Lease in 1924 was 242,126 tons. The decrease in ore in sight was 151,666 tons, therefore, 90,460 tons of ore was developed during 1924.

The following table shows division of estimated ore into available and unavailable for the years 1924 and 1923, also the decrease by levels:-

| Developed Ore | 1924 | | 1923 | | 1923 | | DECREASE PER LEVEL |
|------------------------------|----------------|------------------|----------------|----------------|------------------|----------------|--------------------------|
| | TONS AVAIL. | TONS NON-AVL. | TOTAL TONS | TONS AVAIL. | TONS NON-AVL. | TOTAL TONS | |
| Ore above 1st Level | | 4,858 | 4,858 | | 4,858 | 4,858 | 00 |
| Ore above 4th Level | 34,569 | 13,261 | 47,830 | 59,552 | 13,261 | 72,813 | 24,983 |
| " " 5th " | 114,553 | 5,779 | 120,328 | 57,923 | 74,647 | 132,570 | 12,242 |
| " " 6th " | <u>258,444</u> | <u>79,215</u> | <u>337,659</u> | <u>256,729</u> | <u>195,371</u> | <u>452,100</u> | <u>114,441</u> |
| Total Developed Ore | 407,566 | 103,109 | 510,675 | 374,204 | 288,137 | 662,341 | 151,666 |
| Prospective Ore. | | | | | | | |
| Ore above 6th Level | <u>45,057</u> | <u>45,057</u> | <u>90,114</u> | | <u>90,114</u> | <u>90,114</u> | |
| GRAND TOTALS, | 452,623 | 148,166 | 600,789 | 374,204 | 378,251 | 752,455 | |
| DECREASE 1924 TOTAL ORE, | | | | | | | 151,666 |
| INCREASE 1924 AVAILABLE ORE, | | | | | | | 78,419 |

If to the increase in available ore is added the product from the Stephenson Lease in 1924, the actual increase in available ore, as compared with 1923, is 320,545 tons. This increase is due directly to the cave on the Southwest side of the mine in September. It seems probable that no future serious danger is to be expected from floods as the hanging has now broken at a point that will permit all of the main Stephenson ore body to be mined. Additional tonnage is included this year as available below the 6th Level, where it is now assumed 50% of the prospective ore can be safely mined. The unavailable ore this year above the 6th is 50% of the tonnage in the North-east ore body. It is possible that all of this ore may eventually be mined, but it is not considered advisable to include it at this time as available ore. The ledge is much deeper here and it is possible that caving of the hanging, that will occur probably in 1927 or 1928, may increase the mine water beyond the capacity of the pumps. Expressed

another way, it is probable that 50% of this ore body can be mined before there is any danger of a flood due to the hanging breaking through to surface.

The total available, 452,623 tons, represents a life for the mine of only two years at the present rate of production from this lease. However, it will be extended by reason of a larger production from the C. & N. W. Ry. Co. Lease, Section 29, following the opening of the 7th and 8th Levels, "Auxiliary Shaft", and also through the development of additional ore. According to present estimates of available tonnage on both the leases, there is an indicated life of three years, but, barring the possible flooding of the mine, it seems reasonable to assume a probable life of four to five years.

The estimated tonnage in the mine, sub-divided as required by the Tax Commission, is as follows:

Bessemer Ore:

| | | | |
|------------|-------------------------|-------------|-------------|
| Developed: | 1. Stephenson Bessemer, | 15,000 tons | |
| | Total Bessemer Ore, | | 15,000 tons |

Non-Bessemer Ore:

| | | | |
|--------------|-------------------------|---------------|------------------|
| Developed: | 1. Stephenson No. 1, | 10,000 | " |
| | 2. Stephenson, | 268,381 | " |
| | 3. Stephenwood, | 114,185 | " |
| Prospective: | 1. Stephenson, | 30,057 | " |
| | 2. Stephenwood, | <u>15,000</u> | " |
| | Total Non-Bessemer Ore, | | <u>437,623</u> " |
| | Grand Total, | | 452,623 " |

The ore now reported as unavailable represents ore in the shaft pillar, ore under the stocking ground and launder carrying mine water to the Escanaba River, and 50% of the ore in the North-east ore body, a total of 148,166 tons.

In August, the concrete dams, one on the Southwest side of the mine and one on the Northeast side, were removed from the drifts and repair work started behind the dams. It was decided that mining could again be started in these two territories, and it was hoped that it would increase the amount of water coming into the mine. The opening of these two areas would also provide additional working places in ore. The work of repairing the timber in the

drifts, haulage tracks, trolley lines, etc., was continued during August in both of these areas. The incoming water at each of these places had not changed during the past two years.

The last of August, just after mining had been started in the Southwest area, the ground further to the West above the sub-levels under the 5th, started to take weight and early in September a large area crushed. The working places of seventeen contracts had to be hastily abandoned, and the product was decreased while new places were being prepared for these gangs. The course of the incoming mine water in this territory, amounting to approximately 1500 gallons per minute, shifted further to the West and came in on the subs below the 5th Level. The total incoming mine water increased from 2150 gallons per minute to 2550, and within 30 days, 1650 gallons came in on the 6th, as compared with less than 300 prior to the cave. The water coming in on the South-west side of the mine on the 5th Level decreased from 1500 gallons per minute to less than 200.

The above cave was the outstanding event of the year. It opened for mining, under favorable working conditions, approximately 54,000 tons of ore above the 5th Level. This increase in available ore is temporarily off-set to the extent of 50% by the areas below the 5th that are now too wet for the men to work. The main benefit of the cave has been to remove further apprehension of danger from water in the mining of the main Stephenson ore body, together with the Southwest ore body. It has not, however, entirely removed all the danger from water in the North-east ore body. This is due to the sand and water overlying the ledge above this ore body being considerably deeper, and there is a chance that after the hanging breaks at a lower elevation, there may be a sudden increase in the incoming water beyond the capacity of the pumping plants. This is not likely, however, to occur for several years, and by this time most of the ore in the mine will have been removed.

The drop in production in September, continuing through October and November, together with the increased cost for retimbering and for launders, etc., is the main cause of the small increase in cost of production in 1924.

The expense for powder increased due to more mining under the hanging below the 5th Level, in new ground where the ore was harder, and from the use of an increased amount of powder due to hard ground in the area where mining has been resumed in the South-west ore body. The ore in this territory is much harder than in any other part of the mine. The cost in connection with the effort to gain control of the water was somewhat lower than in 1923. It is to be regretted that this problem has not yet been solved. The pumping costs increased, starting in September, on account of two additional pumpmen employed on the 6th Level, expense of installing 2000-gal. centrifugal pump, new discharge line to 5th, and more current used due to pumping more water from the 6th Level.

The work in connection with the effort to gain control of the water overlying the ore body was continued until in September, when it had to be temporarily abandoned on account of other necessary work, following the cave on the South-west side of the mine. It is planned to do a little more work early in the coming year, but without much hopes of success. It now seems that the pressure on the sand at the point where the sub-level is broken through to ledge, is so great that no water can penetrate it. It may be illustrated by comparing it to a sponge from which practically all the water has been squeezed by pressure. There is a chance that the breaking of the hanging at lower elevations, due to mining operations, will increase the mine water so as to lower the general water level and make it safe to mine the greater part of the ore remaining on the property.

Measurements of the water level in several standpipe holes on the Stephenson Lease, Section and the Chicago & North-Western Railway Company Lease, Section 29, have been made during the year. The following table gives a record of these measurements:-

| | <u>NO. C</u> | <u>NO. W</u> | <u>NO. 54</u> | <u>NO. 59</u> | <u>NO. 61</u> | <u>NO. 48</u> |
|------------------|--------------|--------------|---------------|---------------|---------------|---------------|
| Elevation Ledge, | 1030.00 | 999.00 | 1066.00 | 959.00 | 949.00 | 1109.00 |
| Nov. 7, 1923, | 1033.30 | 1066.20 | 1069.70 | 1064.70 | 1059.40 | 1115.80 |
| Feb. 1, 1924, | 1033.20 | 1065.50 | 1067.30 | 1063.80 | 1058.10 | |
| Mar. 19, " | Dry | 1065.10 | 1067.40 | 1063.40 | 1057.60 | |
| Jun 10, " | " | 1066.10 | 1069.10 | 1064.40 | 1058.20 | |
| July 3, " | " | 1065.80 | 1069.60 | 1064.10 | 1058.00 | 1115.70 |
| Sept. 10, " | " | 1065.10 | 1067.70 | 1063.40 | 1057.60 | 1115.00 |
| Oct. 8, " | " | 1065.10 | 1067.40 | 1063.30 | 1057.40 | 1114.50 |
| Dec. 5, " | " | 1064.90 | 1070.20 | 1062.90 | 1056.90 | 1114.40 |

| | <u>NO. C</u> | <u>NO. W</u> | <u>NO. 54</u> | <u>NO. 59</u> | <u>NO. 61</u> | <u>NO. 48</u> | |
|-------------------|----------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------|
| Net change, 1924: | Lowered Dry | Lowered 1.30 ft. | Raised 0.50 ft. | Lowered 1.80 ft. | Lowered 2.50 ft. | Lowered 1.40 ft. | |
| " " | 1923: | 0.90 ft. | 0.30 ft. | 2.50 ft. | 0.50 ft. | 0.40 ft. | 0.80 ft. |
| " " | 1922: | 3.60 ft. | 1.40 ft. | 0.20 ft. | 1.70 ft. | 2.50 ft. | No reading |

The above table shows that the general water level in all but one hole has lowered appreciably since July. The water in Hole No. 54 for some unknown reason has raised in both 1923 and 1924. It is probable that the lowering of the water-level in 1924, starting in September, was due directly to the increase in the mine water following the cave on the South-west side of the mine. Some of the lowering is undoubtedly due to the seasonal variation in rain-fall, as 1924 was an unusually dry year. In order to lower the mine water further it will be necessary to increase the amount of water coming into the mine.

STEPHENSON LEASE, SECTION 20.

Work has been done during 1924 on the following sub-levels and main levels:-

2ND, 3RD AND 4TH SUBS BELOW 3RD LEVEL
FOURTH LEVEL
2ND, 3RD AND 4TH SUBS BELOW 4TH LEVEL
FIFTH LEVEL
1ST, 2ND, 3RD, 4TH AND 5TH SUBS BELOW 5TH LEVEL
SIXTH LEVEL.

2ND SUB BELOW 3RD LEVEL:

Approximately one-half of the pillar of ore left on this sub-level many years ago to support the haulage drift from the shaft on the 4th Level, was mined in 1923. Mining was continued here in 1924, and all of the ore removed in April.

3RD SUB BELOW 3RD LEVEL:

This sub-level was opened in January, 1924, and mining continued until the pillar was removed in December. This pillar had been left to support the haulage drift from the shaft on the 4th Level and was approximately 200' long by 130' wide.

4TH SUB BELOW 3RD LEVEL:

This sub-level was opened in June, in the pillar which had been left to support the haulage drift on the 4th Level, and approximately 37% of the ore had been mined at the end of the year. It was estimated that there are approximately 15,000 tons of ore remaining to be mined here. When mining on this sub-level is finished, this pillar will have been mined down to the back of the 4th Level.

FOURTH LEVEL

The hanging of the ore body left as a pillar to support the 4th Level haulage drift, flattens out at the elevation of the 4th, which made it possible to start mining here without interfering with the work on the sub-level above. Approximately 15% of the ore in this pillar was mined during 1924. In addition to this work, a drift was driven in the pillar in order that a raise might be put up for mining the ore on the subs above the 4th. It is estimated that there are approximately 19,000 tons of ore in this pillar to be mined on the 4th Level.

At the South-west side of the 4th Level there are 13,000 tons of ore left in pillars which are unavailable, as mining them might cause a cave which would wreck the launder taking the mine water to the Escanaba River, and also cave part of the stockpile ground. Including the above 13,000 tons, there is a total of 47,000 tons of ore left in the mine above the 4th Level, of which approximately 32,000 tons is available for mining.

2ND SUB BELOW 4TH LEVEL:

In September, mining was resumed in the South-west ore body, following the cave in this territory, which diverted the water from the 5th Level to the subs below the 5th. This made it possible to start mining in the pillars on this sub-level where no work has been done since the mine was flooded in 1917. There were 17 small pillars left on this sub-level, and during the last three months of the year four gangs worked here. The back over the old sub-level has not caved at the East end near some of these pillars, and care has to be taken to safeguard the men in case this ground caves.

3RD SUB BELOW 4TH LEVEL:

In September, after the cave on the South-west side of the mine, work was started at the North end of the pillar that had been left on this sub-level near the point where the water came in, in 1917. A number of gangs were transferred to this sub-level from the crushed area below the 5th Level, and during the last two months of the year there were five gangs working here. The last of December the North end of the pillar had been mined and work was being started in the main part of the pillar further to the South, where it is estimated, there are 13,500 tons of ore to be mined.

4TH SUB BELOW 4TH LEVEL:

In the early part of the year it was decided to open this sub-level at the North-east side of the mine, and to drive a drift along the hanging of the ore body back of the dam which had been put in the North-east haulage drift in 1921. This dam was installed following a sudden increase in the mine water in this territory to 750 gallons per minute. It was hoped that the water coming in on the 2nd sub below the 4th could be diverted to this lower sub-level, which would make it possible to start mining again on the 2nd sub. A raise was put up just outside the concrete dam in the haulage drift, and drifting started to the South on this sub-level. After drifting through the foot, a seam of ore was encountered about 10 feet wide near the hanging. This ore was followed by a drift to the West for a distance of 160 feet, where loose ore was encountered and drifting had to be abandoned. In order to handle any water which might be encountered as the drift advanced, a crosscut was driven 100 feet East of the first crosscut to an old raise inside of the concrete dam. A ditch was dug in this drift, which would carry water to this old raise in case any were encountered in the drift. Two heavy doors were constructed outside of this crosscut which could be closed and would hold back any water that might be encountered, so that it would go to the 5th Level at a point behind the concrete dam. Work was continued here from February to June, but owing to the caving in the breast of the drift, which rendered it impossible to continue further to the East, even with spiling, it was decided to temporarily abandon

work at this point.

FIFTH LEVEL

In January, the rock haulage drift on the North-east side of the mine, which had been driven in 1923, to replace a section of the old haulage drift that had caved, was completed after advancing about 20 feet. This provided a permanent haulage drift for handling the ore which will come from the mining of the North-east ore body above the 5th Level.

In the early part of the year two raises were put up from the foot-wall haulage drift to the elevation of the 4th sub below 3rd level; also two raises to the 4th Level. These raises are being used for the mining of the pillar left above the 4th Level to support the 4th Level haulage drift.

On the South-west side of the mine three small pillars were mined in January near the limit of mining, which completed the mining of the main 5th Level ore body except those areas that had been set aside as unsafe for mining.

In July, some repair work was done on the South-west haulage drift, as it had been decided to sub-divide some of the pillars left on this side of the mine on C. & N. W. Ry. Co., Lease, Section 29.

Early in August, it was decided to remove the concrete dams that had been installed on the 5th Level, one in 1917 on the South-west side and one in 1921 on the North-east side. These two dams were blasted out and material cleaned up. Repair work was started inside the dams, the drifts being cleaned, tracks repaired and trolley wire installed for electric haulage.

On the South-west side of the mine, the territory above the subs, where considerable ore had been mined under the hanging below the 5th, started to take weight the latter part of August and early in September there was an extensive cave here. It involved an area approximately 200 feet in width by 600 feet in length, and although the surface did not cave, there is a crack which indicates a settlement over an extensive area. The affects of this cave showed on the 5th Level at the South-west side of the mine, in the hanging-wall drift which crushed for a distance of approximately 200 feet. Repair work was started immediately after the cave and continued for nearly two months; the ground, however, continued to settle, and work finally had to be abandoned,

as sets broke nearly as fast as they were replaced. It was then decided to extend a crosscut in the footwall over to the hanging-wall drift, a distance of approximately 100 feet, which would again open the territory near the hanging and permit mining to be resumed in the pillars on the C. & N. W. Ry. Co., Lease, Section 29, just South of the boundary line. This crosscut had been extended 25 feet in rock and 50 feet in ore at the end of the year; it lacks 25 feet of holing to the hanging-wall drift. In addition to the above work, two raises have been put up on the South-west side of the mine since the cave.

On the South-west side of the mine, above the 5th, it is estimated that there are 54,000 tons of ore available for mining since the cave which occurred here in September, of which 6,000 tons are in pillars on the 2nd sub level, 13,000 tons on the 3rd sub and 34,000 tons between the 3rd sub and the 5th Level.

1ST SUB BELOW 5TH LEVEL:

Mining was started on this sub-level in 1923, and the greater part of the ore on the North-east side mined. Work was continued here in 1924, mining of the main ore body being completed in May except for a pillar at the South-east end where one gang continued working for the balance of the year. A pillar approximately 90 feet by 120 feet had been left here as the ledge was deeper at this point and it was not considered advisable to mine it as it might cause a cave which would increase the mine water. The results obtained near No. 66 diamond drill hole, where work has been underway for the past three years in an effort to get the water to come into the mine under control, indicated that there was practically no danger from extending the cave to lower elevations, as it did not seem likely that there would be any dangerous increase in the mine water.

It is estimated that there are 14,000 tons of ore on the South-west side of this sub-level, and 1,600 tons on the South-east side, remaining to be mined. Expressed in percentages, 83% of the ore on this sub-level has been mined.

2ND SUB BELOW 5TH LEVEL:

This sub-level was opened in 1923 and at the end of 1924, 82% of the

ore had been mined. The remaining 18%, amounting to 20,000 tons, consists of a pillar at the South-east end of the ore body, containing 7,000 tons and a pillar at the South-west end, containing 13,000 tons. Both of these areas will be mined when mining has been completed on the subs above.

3RD SUB BELOW 5TH LEVEL:

This sub-level was opened under the hanging in 1923. Mining was continued here in 1924 and at the end of the year it was estimated that 45% of the ore had been mined. The North-east side of the ore body has been mined, and some development work done on the South-west side. It is estimated that there are 29,500 tons remaining to be mined on this sub-level. Some of this ore, however, is in territory which, at the present time, is very wet and it is possible that some ore will have to be left on this sub-level.

4TH SUB BELOW 5TH LEVEL:

This sub-level was opened in 1923 under the hanging and work continued in 1924. It is estimated that 50% of the ore has been mined and that there are 34,000 tons of ore left here. Work was abandoned on the South-west side of this sub-level in September, following the cave, as this area was so wet it was impossible to work here. It is hoped to divert the water to a lower sub-level by mining on the 5th sub-level. If this does not succeed, there will be some ore that will have to be left on this sub-level on account of the water.

5TH SUB BELOW 5TH LEVEL:

This sub-level was opened in 1924, and some mining done under the hanging. Part of this sub-level is now very wet, and at the present time it is impossible to do further work in this territory. Only a comparatively small amount of mining can be done here until the sub-levels above have been mined. At the end of the year it was estimated that 25% of the ore had been mined, leaving 56,000 tons on the sub-level. This does not include the ore in the North-east ore body which, due to the fact that it is separated by a horse of rock from the main ore body, is considered throughout this report as a separate

ore body. It is estimated that there are 127,700 tons of ore in the North-east ore body from this sub-level up to the 2nd sub below the 4th, a distance of approximately 100 feet.

SIXTH LEVEL

During the past year six raises have been put up from the 6th Level to various elevations; two of these were put up in No. 2 crosscut; one in No. 3; one in No. 4 and two in the footwall haulage drift on the North-east side of the mine.

GENERAL REMARKS

During 1924 ore has been mined on eleven sub-levels and two main levels. A study of the maps accompanying the annual report show the relatively small tonnage of ore remaining on this lease, outside of the North-East ore body. It has become imperative to open the North-east ore body for mining, otherwise all other ore on the Stephenson Lease would be removed within two years. The opening of the North-east ore body for mining, together with the opening of the 7th and 8th Levels, Auxiliary Shaft, which will develop the ore at the bottom of the North-east deposit on the Stephenson Lease and on the C. & N. W. Ry. Co., Lease, Section 29, will add from one to three years to the life of the mine.

WATER RAISE

It will be recalled that the work of trying to get the water to enter the mine under control was started late in 1921, and continued through 1922 and 1923.

In order that the work of 1924 might be made more clear, a brief review is given of the work which was done in prior years. The South-west haulage drift on the 6th Level was extended several hundred feet in 1920, to reach a point beneath the deep basin which had been found by surface stand-piping on Section 29 property. A drill hole, (No. 66) was put down at a point directly above this drift, this hole having an 8" standpipe to ledge and a 6" hole being drilled in the ledge until it reached the elevation of the drift. This drill hole deviated some 30 feet and an extension of the 6th Level drift was necessary to reach the bottom of the hole. A blast was fired in the drill hole just below ledge to shake the ground so that the water in the deep basin could reach the drill hole. This plan to get the water to enter the mine was not successful as it was impossible to prevent the drill hole from blocking with boulders. A raise was then put up near No. 66 drill hole and a sub-level opened 50 feet below ledge. Efforts were made to open No. 66 drill hole and also additional diamond drill holes were put up from the back of the sub-level to the sand. This work did not succeed in increasing the amount of water, and the sub-level was extended beyond No. 66 drill hole and five raises put up to within 10 feet of the ledge. This part of the sub-level was sealed off with a concrete dam, through which there was an 18" square opening with a suitable stopper to permit re-entry behind the dam. These five raises were blasted through to the sand on November 28, 1922. The first blast was not successful, and they were again blasted, making holes at the top of each raise at least 5 feet in diameter through to the sand. Following this, the water increased to 125 gallons, and for a short time reached 250 gallons per minute. Considerable material was removed from

these raises, as bars had been placed across them to prevent a sudden run of material. After several months work washing sand out of the raises and removing material by barring, it was decided to blast out the rails and let the material run from the raises into the sub-level drift. After this was done an examination behind the dam showed that the drift was filled with boulders and sand, but there was still no increase in the water.

It was then decided to open another sub-level 80 feet below the top sub, and above this sub-level to make a large stope which would be blasted through to the floor of the top sub-level, and permit material from above the ledge to run in and fill the stope. This work was finished in December, 1923, but the material did not come through the raises, as they blocked with boulders.

It was decided to drive a drift along the side of the opening to the stope on the top sub-level and to put up another raise in the rock pillar which had been left between two of the raises to ledge. This new raise was started in December, 1923, and finished the last of January, 1924. There was a rock pillar, 7 feet in thickness, left on each side of the raise, and the top of the raise was 7 feet from the sand. A total of 125 holes were drilled in all directions so as to insure a break through to the two other raises and through to the sand, which would make a hole approximately 18 feet wide by 25 feet in length. Twenty-five boxes of 60% nitro-glycerin powder was used in charging these holes, which were blasted with electric fuses. Owing to a fault in the wiring only the holes at the bottom of the raises exploded. An examination was made the following day, and new wires carried to the top of the raise and all exploders carefully connected. This blast was successful and the big stope immediately filled with material from above the ledge. The water increased following the blast, which increase continued during the month of February. Prior to the blast there had been about 80 gallons per minute coming in; after the blast it increased to nearly 200 gallons for thirty days.

Efforts were made to increase the flow by washing out sand. Water was taken from the pump column, which gave a pressure of 150 pounds at the dam

on the top sub-level. After a months work, water would pass freely through the material in the stope, but no progress was made in washing out material above the top sub-level. There was no increase in the amount of water entering at ledge.

It was decided, early in March, to try another plan, that provided a way for drawing more material from above the ledge. A new sub-level was opened 50 feet below the 2nd sub, and a raise put up which holed directly under one of the raises in the bottom of the big stope above the 2nd sub-level. After installing suitable doors on the 3rd sub to hold back any sudden rush of sand, the work of drawing material from the stope was started. The raise from 3rd Level was first filled, then the stoppers installed in the chute of the raise at the bottom of the stope, after which the men would go down and empty the raise from the 3rd sub. In this way any sudden rush of sand was avoided while they were tramming and the doors were open on the 3rd sub. The work of drawing material from the raise started May 29th and was continued until June 25th, when a sudden heavy rush of sand and water occurred. It had been thought that the material drawn from the stope was being constantly replaced with material from above ledge, but this evidently was not the case, as there must have been a large opening at some point below the ledge, probably near the elevation of the top sub-level. The rush that occurred on June 25th, made a cave which extended through to surface; the ground settled to a depth of 5 or 6 feet over a considerable area at a point about 40 feet East of No. 66 drill hole. The water increased for a few minutes to a considerable volume, but was again blocked and soon resumed its normal flow of about 100 gallons per minute. It was decided that it was not safe to continue the work of drawing material out of the stope, as there was considerable danger to the men doing the work.

Before finally abandoning the work it was decided to make a last effort to wash out sand, and for this purpose a 100-gal. 1000-ft. head pump was brought to the mine and set up on the 6th Level in August. The pump had just been installed when the cave occurred on the South-west side of the mine, and for the balance of the year no further work was done at this point, as there

was a great deal of work necessary in connection with the pumping plants. An attempt will be made early in 1925 to build up a heavy pressure back of the dam on the top sub-level in the hopes that it may open up the material above the sub-level so that water will come into the mine. There will be very little expense connected with this work, and probably only a very slight chance of success, but it was decided to try it as a last resort.

The last work done here prior to the installation of the high pressure pump, showed that water under pressure would circulate freely from the 2nd sub-level up to the 1st, but that very little water under pressure on the top sub, would come out on the 2nd. This showed conclusively why the water does not enter the mine as the pressure from above is so heavy that it closes the voids in the sand and gravel above the top sub-level. It is thought that perhaps with high pressure on the top sub, some of this material will be washed away and more water may enter the mine.

In conclusion, it may be stated that it does not now seem so imperative to make a success of this plan, for the cave on the South-west side of the mine in September indicates that there is no longer any great danger from floods, due to the breaking of the hanging at lower elevations.

C. & N. W. RY. CO. LEASE, SECTION 29.

The product from this lease for the years 1924 and 1923, was as follows:-

| | <u>1924</u> | <u>1923</u> | <u>INCREASE</u> |
|------------|----------------|-------------|-----------------|
| Northdale, | 4,569 tons | 308 tons | 4,261 tons |
| Northwood, | <u>2,833 "</u> | <u>0 "</u> | <u>2,833 "</u> |
| Total, | 7,402 " | 308 " | 7,094 " |

The product increased in the latter part of the year, after the cave in September occurred on the South-west side of the mine.

The product from this lease, however, was only 3% of the total product from the Stephenson Mine.

Shipments and balance on hand at the end of year were as follows:-

| | <u>SHIPMENTS</u> | <u>BALANCE ON HAND DEC. 31ST, 1924.</u> |
|------------|------------------|---|
| Northdale, | 2,909 tons | 9,072 tons. |
| Northwood, | <u>2,365 "</u> | <u>468 "</u> |
| Total, | 5,274 " | 9,540 " |

The balance on hand at the end of 1923 was 7,412 tons, the increase in 1924 was 2,128 tons.

The estimate of ore in sight on December 31st, 1924, was as follows:-

| | <u>NORTHDALE</u> | <u>NORTHWOOD</u> | <u>TOTAL</u> |
|----------------------------------|------------------|------------------|----------------|
| Developed ore above 5th Level, | 13,608 | 0 | 13,608 |
| " " " 6th " | <u>30,282</u> | <u>9,892</u> | <u>40,174</u> |
| Total Developed Ore, | 43,890 | 9,892 | 53,782 |
| Prospective Ore below 6th Level, | <u>88,644</u> | <u>59,096</u> | <u>147,740</u> |
| Grand Total, | 132,534 | 68,988 | 201,522 |

A year ago, the estimate of ore in sight was 215,708 tons, the decrease in 1924 was, therefore, 14,186 tons. The product in 1924 was 7,402 tons; the

estimate shows a decrease of 6,782 tons as compared with 1923.

The estimated tonnage, divided into available and unavailable ore, is as follows:-

| | AVAILABLE DEC.31,1924 | UNAVAILABLE DEC.31,1924 | INCREASE 1 9 2 4. |
|--------------------------|--------------------------|---------------------------------------|----------------------|
| Developed ore above 5th, | 13,608 tons | 0 | 13,608 tons |
| " " " 6th, | <u>13,829</u> " | <u>26,345</u> tons | <u>13,829</u> " |
| Total Developed, | 27,437 " | 26,345 " | 27,437 " |
| Prospective Ore, | <u>88,644</u> " | <u>58,096</u> 127,064 " | <u>0</u> " |
| Grand Total, | 116,081 | <u>85,441</u> 153,469 " | 27,437 " |

See S.A.B. letter of 2/20/25

The increase in available ore in 1924 is due to the cave in September on the South-west side of the mine that released for mining the ore above the 5th and also part of the ore above the 6th Level. It is impossible to correctly estimate the percentage of available prospective ore below the 6th Level. Very little information concerning the size and grade of this ore is available, so that the tonnage in this territory is not accurately known. The opening of the 7th and 8th Levels, Auxiliary Shaft, will give the needed information to permit of an accurate estimate of tonnage by grades.

The estimated tonnage in the mine sub-divided as required by the Tax Commission, is as follows:-

Non-Bessemer Ore:

| | | |
|--------------------|---------------|-----------------|
| Developed: | 1. Northdale, | 20,901 tons |
| | 2. Northwood, | <u>6,536</u> " |
| Total Developed, | | 27,437 tons. |
| Prospective: | 1. Northdale, | 44,322 " |
| | 2. Northwood, | <u>44,322</u> " |
| Total Prospective, | | <u>88,644</u> " |
| Grand Total, | | 116,081 " |

The estimate differs from the previous year in that the total ore is increased from 88,644 tons in 1923 to 116,081 tons in 1924. The increase is due entirely to the cave on the South-west side of the mine, which released for

mining part of the developed ore above the 6th Level and all of the ore on this lease above the 5th Level.

The work of 1924 on this lease indicates that no more Bessemer ore will be produced. The phosphorus in the ore increases with depth and for the first time it has been necessary to make a new grade "Northwood", a high-phosphorus ore. Developments later on may reduce the estimated tonnage of this grade, but the tonnages as given are fairly accurate, based on present information.

In order to mine the available ore on this lease it will be necessary to largely increase production during the next three years, which represent the probable life of the property.

During the past year, work has been done at the following places on this lease:-

2ND SUB BELOW 4TH LEVEL
5TH LEVEL
3RD, 5TH AND 6TH SUB-LEVELS BELOW 5TH LEVEL
6TH LEVEL.
AUXILIARY SHAFT ON 6TH LEVEL
7TH LEVEL
8TH LEVEL.

2ND SUB BELOW 4TH LEVEL:

Mining was started on this sub-level in September, after the cave on the South-west side of the mine. At the time the mine was flooded in 1917, mining was nearly completed on this sub-level. After repairing the drift from the raise, several small pillars were mined. Mining of the remaining ore on the sub-level was not quite completed at the end of the year.

FIFTH LEVEL.

In June, owing to the shortage of working places in ore, it was decided to sub-divide several large pillars on this lease. The ore body on 5th Level, just South of the Stephenson Lease, had been developed in 1916 and 1917, and a few small pillars mined in 1920 after the mine was unwatered. No further work had since been done here until in June, 1924, when the drifts were cleaned and several drifts driven through the largest pillars. This territory was in-

volved in the area that caved early in September, since which time the hanging wall haulage drift near the boundary line has been caved. A new tram road will soon be available after which work will be resumed here, if water conditions permit, for there is a possibility that this area may be quite wet since the cave in September.

3RD SUB BELOW 5TH LEVEL:

Some work was done on this sub-level in August and September. Mining of a small pillar near the hanging was underway when the cave came in September. This sub-level was in the area where the pressure was the greatest. The ore body had been developed in 1922, and divided into pillars. These pillars broke on the edges, and the drifts all crushed. Fully 80% of the water now comes in on this sub-level and goes to the 6th Level through two raises. Launderers were installed in these raises and the timber repaired over the tops of the raises. Ditches were made to carry the water to the launderers. No further work can be done on this sub-level until the water has been diverted to a lower elevation.

5TH SUB BELOW 5TH LEVEL:

Ore was encountered in an Eastward extension of No. 5 crosscut on the 6th Level in January, 1923. In June, 1924, it was decided to develop this ore and start mining at the top. This sub-level was opened but only a narrow seam of 57.00% ore was found at this elevation. It was followed to the North over on the Stephenson lease, where it connected with a sub-level opened in 1921 from the North-east haulage drift. All the ore, extending above this sub-level on the foot, was then mined, work being finished here the last of July. This is the top of the ore body on Section 29, that extends down to the 8th Level, "Auxiliary Shaft".

6TH SUB BELOW 5TH LEVEL:

This sub-level was opened in June from a raise in No. 5 crosscut. The two sub-levels immediately above this area had been mined here in 1921 and 1922. It was decided that another sub-level could be mined, without danger from water.

On the two sub-levels previously mined the ore was rather low-grade due to narrow seams of rock. This sub-level, for the first few months, showed no improvement in the grade of the ore, but starting in December, the grade improved from 56.50% Iron, .800 Phos., to 60.00% Iron, .120 Phos. The ore body was opened from three raises in No. 5 crosscut, and at the end of the year it was estimated that there was only 1,300 tons of ore remaining on the sub-level.

AUXILIARY ENGINE HOUSE
6TH LEVEL.

The drift connecting the auxiliary shaft and engine house has been lined on the sides with boards and metal lath installed, preparatory to gunning to make it fire-proof.

AUXILIARY SHAFT

On December 31st, 1923, the shaft had been sunk 92 feet below the 6th Level. Sinking was completed in May at a depth of 171 feet below the 6th Level; it was sunk 79 feet in 1924. Ground for the plat and loading pocket on the 7th and 8th Levels were excavated, a drift driven 37 feet to the North of the shaft at the bottom for handling skip-pit dirt and a raise put up to the elevation of the 8th Level from the end of this drift. The loading pockets were installed on the 7th and 8th Levels, and the skip-pit pocket at the bottom of the shaft, after which skip guides were installed, skip roads cased and permanent ladder road built. The skip-dump plates were installed 50 feet above the 6th Level and the head sheaves, after which the two skips went into commission.

In September a 6" discharge line was installed in the ladder compartment, also electric signal system and electric lights on the 7th and 8th Level plats.

7TH LEVEL - AUXILIARY SHAFT

Drifting was started on this level in July. The motor haulage tail drift was driven 70 feet North-west of the shaft. Near the end of this drift,

a stub drift was driven 30 feet to the North and a raise started that will hole to No. 5 crosscut on the 6th. This raise will be used for handling timber and other supplies; at the end of the year it was nearly completed. The haulage drift to the South-east of the shaft was driven 50 feet, when ground water was encountered and it was decided to stop work here until the permanent pumping plant on the 8th Level was in commission. A small dam was installed near the shaft to hold water over holidays, otherwise, the shaft pump would have been under water within twenty-four hours. Work will be resumed on the haulage drift to the ore within four months.

During 1924, there was a total of 150 feet of drifting on the 7th Level, exclusive of the plat. Thus far the drifts have been in hard granite.

8TH LEVEL - AUXILIARY SHAFT.

Drifting was started on this level in July and continued for the balance of the year. The motor haulage tail drift was driven 45 feet Northwest of the shaft. The raise from the skip-pit level holed to the side of this drift. It was extended 10 feet above the back of the 8th Level drift, a head sheave installed and chute built for handling skip-pit dirt which it is planned to hoist in a bucket from the bottom of the shaft, and dump in tram cars on the 8th Level. On completing this work, the haulage drift to the ore body was started to the South-east of the shaft and at the end of the year it had advanced 150 feet. A stub drift was driven to the North from this drift at a point 30 feet from the shaft, from which a raise will be put up to the 7th Level. This raise will hole near the bottom of the 7th Level raise which is now being put up to hole to No. 5 crosscut on the 6th Level. Timber and other supplies will be handled through these raises. They also provide a permanent second outlet from these two levels.

The last of December a drift was started from the haulage drift to the site of the permanent pump-houses. It is planned to push the work on pump-house and sump, as the drifts to the ore body are held up until the permanent pumping plant is in commission.

Twelve rocker-dump 2-ton motor cars were purchased in the summer, six for each of the new levels. Two electric motors have been taken underground ready for use on the two levels as soon as the drifts have advanced a little farther from the shaft.

STEPHENSON SURFACE.

During January and February it was necessary to increase the surface force in order to unload mine timber, and lagging which came in very rapidly.

During the year, 65 bents were erected on the stocking trestles. Part of these replaced bents torn down account of loading from stockpile. Fifteen bents were erected in the summer for stocking Stephenwood ore in the pit North of the rock pile. No ore of this grade had been produced since operations were resumed at the mine in 1920, after it was unwatered. Sales of this grade later in the year made it necessary to dismantle part of this trestle, which was re-erected in November after shipping was finished.

On account of the large amount of ore in stock it was necessary to extend the stocking grounds on Section 29, to provide for additional stocking capacity. The ground was graded and sollar plank laid. Several carloads of old plank from the Francis Mine trestles and coal dock were used for this purpose.

The permanent trestle East of the shaft was torn down and a new trestle erected. The old trestle had stood for nearly 16 years and was no longer safe, due to rotting.

The greater part of the Stephenwood ore in the pit North of the rock pile was shipped during the past year. The cost of loading this ore was high due to the stocking grounds being 15 feet below the level of the railroad track at the mine. Stephenwood ore is again being stocked here so that it became advisable to plan for permanent railroad track that would permit this ore to be loaded from the level of the sollar. Tracks have been laid on top of the ore, heretofore, so that the last cut only ran from 3' to 12' in thickness. Grading for a permanent track was started late in the fall, a scraper and hoist being used to make the cuts and fills. About 30% of the work has been finished; the balance will be done in the spring of 1925, as soon as the frost is out of the ground. It is expected that, as a result of this work, the loading cost

will be reduced 66-2/3%.

For some time there had been delays due to broken guides near the skip-dump in the shaft house. The steel head-frame at this shaft was the first one purchased by the company and the arrangements at the skip-dump did not provide steel channels to hold the guides in place. The channels in the Francis head frame were removed in August and installed in the Stephenson head-frame. No further trouble has been experienced, the expense of this change has been saved already, due to elimination of delays.

The steel stairway in the shaft house had rusted away so as to become dangerous, and a new stairway was built and installed. The excessive rusting of the steel in the stairway was due to action of salt carried on the shoes of the men working on the top tram. Hot water and salt is used for thawing frozen ore in the top tram cars. Since the head frame has been enclosed, it has been necessary to use very little salt; in previous years a large amount was used every winter.

Metal lath for making top tram engine house and enclosed head frame fire-proof, has been purchased and will be installed next spring.

STEPHENSON MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1924.

| GRADE | IRON | PHOS. | SILICA | MANG. |
|----------------------|-------|-------|--------|-------|
| Stephenson Bessemer, | 62.15 | .059 | 4.69 | - |
| Stephenson, | 60.92 | .296 | 4.42 | .858 |
| Stephenwood, | 59.60 | .721 | 3.87 | .812 |
| Northdale, | 59.14 | .427 | 7.46 | .818 |
| Northwood, | 57.92 | .539 | 7.97 | .979 |

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1924.

| GRADE | Mine | | | Lake Erie | |
|----------------------|-------------|-------|--------|-----------|-------------|
| | IRON | PHOS. | SILICA | MANG. | IRON MOIST. |
| Stephenson Bessemer, | (All Mixed) | | | | |
| Stephenson, | (All Mixed) | | | | |
| Stephenwood, | (All Mixed) | | | | |
| Northdale, | (All Mixed) | | | | |
| Northwood, | (All Mixed) | | | | |

ORE STATEMENT - DECEMBER 31ST, 1924.

| | STEPHEN- SON BESSEMER | STEPHEN- SON ORE | STEPHEN- WOOD ORE | NORTH- DALE | NORTH- WOOD | TOTAL | TOTAL LAST YEAR |
|--------------------------|-----------------------------|------------------------|-------------------------|----------------|----------------|---------|-----------------------|
| On hand Jan. 1, 1924, | 1,629 | 390,073 | 14,095 | 7,412 | - | 413,209 | 240,365 |
| Output for Year, | 270 | 181,221 | 55,533 | 4,569 | 2,833 | 244,426 | 246,231 |
| Transferred, | 1,899 | 2,041 | 142 | - | - | - | - |
| Stockpile Overrun, | - | - | 5,002 | - | - | 5,002 | 981 |
| Total, | - | 573,335 | 74,468 | 11,981 | 2,833 | 662,637 | 487,577 |
| Shipments, | - | 116,633 | 64,992 | 2,909 | 2,365 | 186,899 | 74,368 |
| Balance on Hand, | - | 456,702 | 9,496 | 9,072 | 468 | 475,738 | 413,209 |
| Increase in Output, | | | | | | 2,216 | |
| Increase in Ore on Hand, | | | | | | 62,529 | |

1924 -- 1-8 Hour Shift, 6 days per week, Jan. 1st to July 26th, 1924.
 1-8 Hour Shift, 4 days per week, July 26th to Nov. 30th, 1924.
 1-8 Hour Shift, 5 days per week, Dec. 1st to Dec. 31st, 1924.

1923 -- 1-8 Hour Shift, Jan. 1st to Dec. 31st, 1923.

STEPHENSON MINE
SHIPMENTS FOR YEAR-1924.

| GRADE | POCKET | STOCKPILE | TOTAL | TOTAL LAST YEAR |
|----------------------|--------|-----------|---------|-----------------------|
| Stephenson Bessemer, | - | - | - | 31,178 |
| Stephenson No. 1, | - | - | - | 5,770 |
| Stephenson, | 62,641 | 53,992 | 116,633 | 37,420 |
| Stephenwood, | 19,005 | 45,987 | 64,992 | - |
| Northdale, | 2,909 | - | 2,909 | - |
| Northwood, | 2,365 | - | 2,365 | - |
| Total, | 86,920 | 99,979 | 186,899 | 74,368 |
| Total Last Year, | 50,796 | 23,572 | 74,368 | |
| Increase, | | | 112,531 | |

STEPHENSON MINE

COMPARATIVE MINING COST FOR YEAR

| | 1924 | 1923 | INCREASE | DECREASE |
|---------------------------|---------|---------|----------|----------|
| PRODUCT | 249,428 | 247,212 | 2,216 | |
| Underground Costs | 1.412 | 1.358 | .054 | |
| Surface Costs | .224 | .225 | | .001 |
| General Mine Accounts | .177 | .165 | .012 | |
| Cost of Production | 1.813 | 1.748 | .065 | |
| Plant Account | .017 | .032 | | .015 |
| Uncompleted Construction | .002 | .0 | .002 | |
| Taxes | .077 | .104 | | .027 |
| Central Office | .095 | .073 | .022 | |
| Contingent Expense | .012 | .008 | .004 | |
| Cost Adjustment | .036 | .027 | .009 | |
| Cost on Stockpile | 2.052 | 1.992 | .060 | |
| Loading & Shipping | .098 | .022 | .076 | |
| Total Cost on Cars | 2.150 | 2.014 | .136 | |
| No. Days Operating | 261 | 298 | | 37 |
| No. Shifts & Hours | 1-8 | 1-8 | | |
| <u>COST OF PRODUCTION</u> | | | | |
| Labor | 1.126 | 1.076 | .050 | |
| Supplies | .687 | .672 | .015 | |
| Total | 1.813 | 1.748 | .065 | |

STEPHENSON MINE

COMPARATIVE WAGES AND PRODUCT

| | 1 9 2 4 | 1 9 2 3 | INCREASE | DECREASE |
|---------------------------|------------|------------------------------------|-----------|----------|
| PRODUCT | 249,428 | 247,212 | 2,216 | |
| No.Shifts & Hours | 1-8 | 1-8 | | |
| AVG.NO,MEN WORKING | | | | |
| Surface | 41 | 38 | 3 | |
| Underground | 162 | 139 | 23 | |
| Total | 203 | 177 | 26 | |
| AVG.WAGES PER DAY | | | | |
| Surface | 4.43 | 4.29 | .14-3.26% | |
| Underground | 5.02 | 4.91 | .11-2.24% | |
| Total | 4.89 | 4.78 | .11-2.30% | |
| WAGES PER MO. OF 25 DAYS | | | | |
| Surface | 110.75 | 107.25 | 3.50 | |
| Underground | 125.50 | 122.75 | 2.75 | |
| Total | 122.25 | 119.50 | 2.75 | |
| PRODUCT PER MAN PER DAY | | | | |
| Surface | 20.05 | 20.73 | | .68 |
| Underground | 5.83 | 5.90 | | .07 |
| Total | 4.52 | 4.59 | | .07 |
| AVG.PRODUCT BRK'G & TRM'G | 9.27 | 9.25 | .02 | |
| " WAGES CONTRACT MINERS | 5.23 | 5.17 | .06 | |
| " " " LABOR | 5.23 | 5.17 | .06 | |
| TOTAL NO.OF DAYS | | | | |
| Surface | 12444-3/4 | 11,923 ³ / ₄ | 521-1/4 | |
| Underground | 42770-1/4 | 41,913 ³ / ₄ | 856-3/4 | |
| Total | 55215 | 53,837 | 1378 | |
| AMOUNT FOR LABOR | | | | |
| Surface | 55,097.13 | 51164.44 | 3932.69 | |
| Underground | 214,718.67 | 206019.95 | 8698.72 | |
| Total | 269,815.80 | 257184.39 | 12631.41 | |

Proportion Surface to Underground Men:

1924 - 1 to 3.95
 1923 - 1 to 3.67
 1922 - 1 to 3.62
 1921 - 1 to 4.14
 1920 - 1 to 3
 1919 - 1 to 1

1924 - 1 -8hr 4 days per wk from July 30th to Dec.1st;
 1 -8hr 5 " " Dec.1st.

STEPHENSON MINE

TIMBER STATEMENT FOR YEAR ENDING DECEMBER 31, 1924.

| KIND | LINEAL FEET | AVG. PRICE PER FOOT | AMOUNT 1924 | AMOUNT 1923 |
|---|-------------|---------------------|-------------|-------------|
| 4" to 6" Timber | 8,690 | .0167 | 145.34 | 14.02 |
| 6" to 8" " | 54,610 | .0421 | 2,298.30 | 2,760.90 |
| 8" to 10" " | 105,622 | .0668 | 7,053.01 | 7,120.30 |
| 10" to 12" " | 34,579 | .0840 | 2,905.74 | 2,609.46 |
| 12" to 14" " | 12,620 | .1081 | 1,364.46 | 736.85 |
| Total 1924 | 216,121 | .0637 | 13,766.85 | 13,241.53 |
| Total 1923 | 229,646 | .05766 | 13,241.53 | 13,214.53 |
| | LINEAL FEET | PER 100' | | |
| 5' Lagging | 454,750 | .773 | 3,518.04 | 3,809.93 |
| 7' " | 552,776 | .6752 | 3,732.32 | 1,783.48 |
| 8' " | 28,896 | .5998 | 173.28 | 2,079.96 |
| Total Lagging | 1,036,422 | .7162 | 7,423.64 | 7,673.37 |
| Poles | 101,355 | 1.029 | 1,043.26 | 491.02 |
| Total Lagging, Poles - 1924 | 1,137,777 | .7442 | 8,466.90 | 8,164.39 |
| Total " " 1923 | 1,125,324 | .7255 | 8,164.39 | |
| 5/8" Covering boards | 30,896 | 2.132 | 655.63 | 492.31 |
| Product | | | 249,428 | 247,212 |
| Feet of timber per ton of ore | | | .866 | .929 |
| " lagging " " | | | 4.155 | 4.358 |
| " " per foot of timber | | | 4.796 | 4.692 |
| Cost per ton for timber | | | .05519 | .05356 |
| " " lagging | | | .02976 | .03104 |
| " poles | | | .00418 | .00198 |
| " covering boards | | | .00263 | .00199 |
| " stull timber, lagging, poles & Bds. | | | .09177 | .08857 |
| Equivalent of stull timber to bd. measure | | | 355,417 | 343,399 |
| Feet of bd. measure per ton of ore | | | 1.425 | 1.389 |

| | | |
|----------------------------------|------|-----------|
| Cost of timber, lagging & poles | 1924 | 22,233.75 |
| | 1923 | 21,898.23 |
| 5/8" covering bds. used in place | 1922 | 17,626.10 |
| of lagging - | 1921 | 28,815.06 |
| | 1922 | 488.39 |
| | 1923 | 492.31 |
| | 1924 | 655.63 |

Mine worked 6 days per wk. Jan. 1 to July 28th - 1 shift;
 4 " " Jul. 28 to Dec. 1st - 1 "
 5 " " Dec. 1st to Dec. 31 - 1 "

STEPHENSON MINE

STATEMENT OF EXPLOSIVES USED FOR BREAKING ORE

| <u>KIND</u> | <u>QUANTITY</u> | <u>AVERAGE PRICE</u> | <u>AMOUNT 1924</u> | <u>AMOUNT 1923</u> |
|---------------------------------|-----------------|----------------------|--------------------|--------------------|
| 40% Powder | 300 | .1350 | 40.50 | 1,495.46 |
| 50% " | 46,300 | .1450 | 6,713.50 | 6,812.88 |
| 60% " | 25,600 | .1675 | 4,288.00 | 1,260.54 |
| Total Powder | 72,200 | .1529 | 11,042.00 | 9,568.88 |
| Fuse | 261,300 | .692 | 1,808.88 | 1,592.01 |
| Caps | 54,150 | 1.079 | 584.78 | 539.42 |
| Cap Crimpers | 50 | .50 | 25.00 | 17.00 |
| Tamping Bags | 13,500 | 2.15 | 29.02 | 23.38 |
| Total Fuse, Etc. | | | 2,447.68 | 2,171.81 |
| Total Explosives | | | 13,489.68 | 11,740.69 |
| Product | | | 249,428 | 247,212 |
| Pounds Powder per ton of ore | | | .289 | .266 |
| Cost per ton for powder | | | .0443 | .0387 |
| " fuse | | | .0098 | .0088 |
| " all explosives | | | .0541 | .0475 |
| Avg. Price per pound for powder | | | .1529 | .1455 |

Mine operated 6 days per wk. Jan. 1st to July 28, 1924;
 4 " " Jul. 28th to Dec. 1, 1924;
 5 " " Dec. 1st to Dec. 31, 1924.

STEPHENSON MINE
ANALYSIS OF COST SHEETS EXPLAINING INCREASE OR DECREASE
IN VARIOUS ACCOUNTS BETWEEN YEARS 1924 AND 1923.

| UNDERGROUND COSTS: | | | |
|--------------------|-----------|---------------|--------------|
| Exploring in Mine, | Year 1924 | 0.00 | Cost per ton |
| | Year 1923 | <u>644.74</u> | " " " |
| | DECREASE | 644.74 | DECREASE |
| | | | <u>.003</u> |
| | | | .003 |

In 1923 there were two holes drilled (188 feet) in No. 5 crosscut on the 6th Level, C. & N. W. Lease, Section 29. There was no drilling in 1924.

| | | | | |
|-------------------|-----------|-----------------|--------------|-------------|
| Sinking in Shaft, | Year 1924 | 11,131.47 | Cost per ton | .045 |
| | Year 1923 | <u>5,819.86</u> | " " " | <u>.023</u> |
| | INCREASE | 5,311.61 | INCREASE | .022 |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> |
|----------------|-------------|-------------|-----------------|
| Number feet, | 107 | 86 | 21 |
| Cost per foot, | 104.03 | 67.67 | 36.36 |

The cost per foot in 1924 was higher account of harder ground, greater depth of shaft, and cutting plats and loading pockets on 7th and 8th Levels, skip-pit pocket at bottom of shaft, and for installing skip guides and casing plank.

| | | | | |
|----------------------|-----------|------------------|--------------|-------------|
| Development in Rock, | Year 1924 | 12,525.62 | Cost per ton | .050 |
| | Year 1923 | <u>13,395.92</u> | " " " | <u>.054</u> |
| | DECREASE | 870.30 | DECREASE | ..004 |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|----------------------|-------------|-------------|-----------------|-----------------|
| Number feet drifted, | 1584 | 1577 | 7 | |
| Cost per foot, | 7.91 | 8.49 | | .58 |

The number of feet of rock drifting and raising increased slightly in 1924, but the cost per foot shows a decrease. There was less feet of motor haulage drifting in 1924 and more small drifts driven for timber roads and for development purposes.

| | | | | |
|---------------------|-----------|-----------------|--------------|-------------|
| Development in Ore, | Year 1924 | 2,253.44 | Cost per ton | .009 |
| | Year 1923 | <u>1,777.23</u> | " " " | <u>.007</u> |
| | INCREASE | 476.21 | INCREASE | .002 |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> |
|----------------|-------------|-------------|-----------------|
| Number feet, | 446 | 375 | 71 |
| Cost per foot, | 5.05 | 4.74 | .31 |

Development in Ore, (continued)

There was more raising in ore in 1924 and a slight increase in the cost per foot due to slower progress account of difficulty in raising through soft, loose ground. A higher wage scale was effective twelve months in 1924 as compared with eight months in 1923.

| | | | | |
|----------|-----------|-------------------|--------------|-------------|
| Stoping, | Year 1924 | 113,416.37 | Cost per ton | .455 |
| | Year 1923 | <u>112,339.87</u> | " " " | <u>.454</u> |
| | INCREASE | 1,076.50 | INCREASE | .001 |

The product was slightly larger in 1924; the cost per ton increased 4.8% in the last four months of the year, due to mining on the South-west side of the mine where the ore is harder. There was also more ore mined under the hanging on subs below the 5th Level, where ground was hard. More powder was used per ton of ore mined and the cost per pound for powder increased 5%, due to use of a higher strength powder. Expenditures for 1924 also increased due to higher wage scale effective twelve months in 1924 as compared with eight months in 1923. There were more contracts working on ore during 1924, as the mine operated thirty-seven less days, but days stoping only decreased eight.

| | | | | |
|------------|-----------|------------------|--------------|-------------|
| Timbering, | Year 1924 | 73,620.16 | Cost per ton | .295 |
| | Year 1923 | <u>66,954.40</u> | " " " | <u>.271</u> |
| | INCREASE | 6,665.76 | INCREASE | .024 |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> |
|-----------------------------|------------------|------------------|-----------------|
| Mine timber, lagging, etc., | 22,889.28 | 21,898.23 | 991.05 |
| Other supplies, | 4,973.51 | 4,354.86 | 618.65 |
| Labor, | <u>45,757.37</u> | <u>40,701.31</u> | <u>5,056.06</u> |
| | 73,620.16 | 66,954.40 | 6,665.76 |

Mine timber prices increased 10% and lagging and poles 2% in 1924; lumber prices were also higher. Labor cost increased mainly on account of retimbering necessary after the cave on the South-west side of the mine in September. Higher wage scale effective twelve months in 1924 as compared with eight months in 1923 accounts for part of the increase.

| | | | | |
|-----------|-----------|------------------|--------------|-------------|
| Tramming, | Year 1924 | 32,331.99 | Cost per ton | .130 |
| | Year 1923 | <u>33,608.95</u> | " " " | <u>.136</u> |
| | DECREASE | 1,276.96 | DECREASE | .006 |

The detail of charges for 1924 and 1923 is as follows:-

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-------------------|------------------|------------------|-----------------|-----------------|
| Electric Haulage, | 21,888.15 | 23,484.33 | | 1,596.18 |
| Other Charges, | <u>10,443.84</u> | <u>10,124.62</u> | 319.22 | |
| | 32,331.99 | 33,608.95 | | |

The decrease in expenditures is due to the mine operating less days in 1924, the cost per ton decreased on account of larger product. There was more expense in 1924 for cleaning tracks following the change in location of incoming mine water from 5th to 6th Levels, in September.

| | | | | |
|----------|-----------|------------------|--------------|-------------|
| Pumping, | Year 1924 | 44,879.11 | Cost per ton | .180 |
| | Year 1923 | <u>43,729.64</u> | " " " | <u>.177</u> |
| | INCREASE | 1,149.47 | INCREASE | .003 |

The detail of charges for 1924 and 1923 is as follows:-

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-----------------|---------------|-----------------|-----------------|-----------------|
| Labor, | 9,199.76 | 7,193.88 | | |
| Electric Power, | 34,918.50 | 35,497.50 | | |
| Other Supplies, | <u>760.85</u> | <u>1,038.26</u> | | |
| | 44,879.11 | 43,729.64 | | |

Gallons Water Pumped, 1,131,055,767 1,258,504,848

The increase in labor cost is due to two extra pumpmen employed for the last four months of the year on the 6th Level, on account of 1600 gallons water per minute coming in on the 6th Level, as compared with 300 gallons in the first eight months of the year. The number of gallons of water pumped in the first eight months of the year was considerably less than in the previous year, while more water was pumped during the last four months. Approximately 66-2/3% of the water pumped from the 6th to the 5th and then to surface during the last four months of the year as compared with 14% for the first eight months of 1924. The average cost per ton during the last four months of the year was \$0.290 as compared with a cost of .154 for the first eight months of the year.

| | | | | |
|-------------------------------|-----------|------------------|--------------|-------------|
| Compressors and Air Pipes, | Year 1924 | 22,611.82 | Cost per ton | .091 |
| | Year 1923 | <u>22,988.70</u> | " " " | <u>.093</u> |
| | DECREASE | 376.88 | DECREASE | .002 |

The detail of charges for 1924 and 1923 is as follows:-

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|--------------|-----------------|-----------------|-----------------|-----------------|
| Compressors, | 18,594.42 | 19,610.02 | | 1,015.60 |
| Air Pipes, | <u>4,017.40</u> | <u>3,378.68</u> | 638.72 | |
| | 22,611.82 | 22,988.70 | | |

Total Cu. Ft. Air, 479,936,700 482,823,405 2,886,705

The cost for air was lower in 1924, due to compressor operating less hours in 1924; mine worked thirty-seven less days. The cost for air piping increased on account of expense for air lines that had to be replaced after the cave on the South-west side of the mine in September; also for air lines on new 7th and 8th Levels, Auxiliary Shaft. The decrease in the cost per ton is due to decreased expenditures and larger product.

| | | | | |
|---------------------------------|-----------|------------------|--------------|-------------|
| Underground Superintendence, | Year 1924 | 13,322.08 | Cost per ton | .053 |
| | Year 1923 | <u>13,262.68</u> | " " " | <u>.054</u> |
| | INCREASE | 59.40 | DECREASE | .001 |

The small increase is due to employment of underground foreman for twelve months in 1924, as compared with eight months in 1923, and higher wage scale effective twelve months in 1924 as compared with eight months in 1923. The decrease in the cost per ton is due to larger product.

Maintenance Accounts

| | | | | |
|-----------------------|-----------|-----------------|--------------|-------------|
| Compr. & Pwr. Drills, | Year 1924 | .00 | Cost per ton | . |
| | Year 1923 | <u>1,113.49</u> | " " " | <u>.005</u> |
| | DECREASE | 1,113.49 | DECREASE | .005 |

There was no expense in this account in 1924, while in 1923, three Cleveland auger drills and three Ingersoll-Rand sinking drills were purchased.

| | | | | |
|-----------------------|-----------|-----------------|--------------|-------------|
| Hand-Tramming Equipt. | Year 1924 | 1,353.20 | Cost per ton | .005 |
| | Year 1923 | <u>1,494.34</u> | " " " | <u>.006</u> |
| | DECREASE | 141.14 | DECREASE | .001 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|---------|---------------|---------------|-----------------|-----------------|
| Cars, | 405.84 | 842.05 | | 436.21 |
| Tracks, | <u>947.36</u> | <u>652.29</u> | 295.07 | |
| | 1,353.20 | 1,494.34 | | |

The expense for sub-level tracks increased due to opening more new territory and more contracts working.

| | | | | |
|---------------------|-----------|-----------------|--------------|-------------|
| Elec. Tram. Equipt. | Year 1924 | 14,574.29 | Cost per ton | .058 |
| | Year 1923 | <u>9,746.22</u> | " " " | <u>.039</u> |
| | INCREASE | 4,828.07 | INCREASE | .019 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|----------------------|--------------|--------------|-----------------|-----------------|
| Generator and Motor, | 570.59 | 267.33 | 303.26 | |
| Locomotives, | 1,945.97 | 1,478.00 | 467.97 | |
| Wiring, | 1,432.57 | 1,279.56 | 153.01 | |
| Main Line Tracks, | 1,284.28 | 2,662.39 | | 1,378.11 |
| " " Cars, | 9,249.21 | 4,047.89 | 5,201.32 | |
| Spotting Engines, | <u>91.67</u> | <u>11.05</u> | 80.62 | |
| | 14,574.29 | 9,746.22 | | |

The principal increase is in account "Main line cars" and is due to purchase of 12-rocker-dump, two-ton cars, E. & A. #454, costing \$4,127.73, for use on the 7th and 8th Levels, Auxiliary Shaft. There was an increase in repair expense in all accounts except "main line tracks", which decreased due to less extensions of main level drifts.

| | | | | |
|--------------------|-----------|-----------------|--------------|-------------|
| Pumping Machinery, | Year 1924 | 10,099.82 | Cost per ton | .041 |
| | Year 1923 | <u>8,774.36</u> | " " " | <u>.036</u> |
| | INCREASE | 1,325.46 | INCREASE | .005 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-----------------------|-----------------|---------------|-----------------|-----------------|
| Steam Pumps, | 397.85 | 207.97 | 189.88 | |
| Electric Pumps, | 3,926.36 | 854.90 | 3,071.46 | |
| Dams, | 831.95 | 430.73 | 401.22 | |
| Keystone Drill, | 3,511.00 | 6,591.85 | | 3,080.85 |
| Pump House and Sump, | 189.00 | | 189.00 | |
| Launders and Ditches, | <u>1,243.66</u> | <u>688.91</u> | 554.75 | |
| | 10,099.82 | 8,774.36 | | |

Pumping Machinery, There was more expense for steam (air) pumps due to installing temporary pumps to handle water in Auxiliary Shaft. The main increase, in account "electric pumps", was due to repairs to Aldrich plunger pump in April, to installation of 1000-gal. 1000-ft. head centrifugal pump (from Francis Mine) in main pumping plant on 5th Level, in December; to installation of 2000-gal. 100-ft. head centrifugal pump and 10" discharge line in 6th Level pumping plant in September, and to expense of dismantling 1200-gal. centrifugal pump in 5th Level plant for extensive overhauling and replacement of worn parts. The expense in connection with the effort to get water to enter the mine under control near #66 diamond drill hole was lower in 1924, due to temporarily stopping this work in July. The expense for launders increased due to installation of launders in 6th Level raises, in September and October, to handle incoming mine water following the cave on the South-west side of the mine.

| TOTAL UNDERGROUND COSTS: | | | |
|--------------------------|-------------------|--------------|--------------|
| Year 1924 | 352,134.73 | Cost per ton | 1.412 |
| Year 1923 | <u>335,672.75</u> | " " " | <u>1.358</u> |
| INCREASE | 16,461.98 | INCREASE | .054 |

The three accounts responsible for the greater portion of the increase are, shaft sinking, timbering and electric tram equipment; the balance, accounting for about 10% of the total, are Pumping, Pumping Machinery, Stopping and Development in Ore.

The main reasons for increase were, sinking and equipping Auxiliary Shaft, cutting plats and pockets 7th and 8th Levels, purchase of electric tram equipment for 7th and 8th Levels and extraordinary expense for timbering, following the cave on the South-west side of the mine in September.

| SURFACE COSTS: | | | |
|----------------|-----------|------------------|-------------------|
| Hoisting, | Year 1924 | 13,602.15 | Cost per ton .055 |
| | Year 1923 | <u>13,122.64</u> | " " " <u>.053</u> |
| | INCREASE | 479.51 | INCREASE .002 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Labor, | 7,436.24 | 6,396.42 | 1,039.82 | |
| Electric Power, | 4,926.13 | 5,002.65 | | 76.52 |
| Other Costs, | <u>1,239.78</u> | <u>1,723.57</u> | | 483.79 |
| | 13,602.15 | 13,122.64 | | |

The increase in labor cost is due to operating auxiliary hoist during twelve months of 1924, as compared with less than six months in 1923. The electric power cost decreased due to the total ore and rock hoisted in 1924, being 6,205 tons less than in 1923. Other costs shows a decrease due to the charge for heating shaft being less in 1924.

| | | | | |
|---------------|-----------|------------------|--------------|-------------|
| Stocking Ore, | Year 1924 | 9,549.56 | Cost per ton | .038 |
| | Year 1923 | <u>12,458.14</u> | " " " | <u>.050</u> |
| | DECREASE | 2,908.58 | DECREASE | .012 |

Stocking Ore
(continued)

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-----------------------------|---------------|---------------|-----------------|-----------------|
| Erecting Portable Trestles, | 1,095.35 | 2,012.82 | | 917.47 |
| Operating Tram System, | 7,924.06 | 9,564.01 | | 1,639.95 |
| Picking and Trammig Rock, | <u>530.15</u> | <u>881.31</u> | | <u>351.16</u> |
| | 9,549.56 | 12,458.14 | | 2,908.58 |

The decrease is due to less portable trestle erected in 1924 and to less expense for operating tram system, due to the mine operating thirty-seven days less in 1924 and larger amount of this expense charged to loading at pocket, as shipments from pockets were 86,920 tons in 1924 as compared with 50,796 tons in 1923. There was also less expense for picking rock in 1924 due to ore being cleaner.

| | | | | |
|------------|-----------|-----------------|--------------|-------------|
| Dry House, | Year 1924 | 14,200.70 | Cost per ton | .057 |
| | Year 1923 | <u>7,531.71</u> | " " " | <u>.031</u> |
| | INCREASE | 6,668.99 | INCREASE | .026 |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> |
|----------|-----------------|-----------------|-----------------|
| Heating, | 8,944.00 | 4,169.52 | 4,774.48 |
| Water, | <u>3,933.33</u> | <u>2,329.83</u> | <u>1,603.50</u> |
| | 12,877.33 | 6,499.35 | 6,377.98 |

The large increase is due to more expense for operating heating plant, to higher charge for water and to Austin Mine being idle in 1924, while in 1923 it operated for eleven months and absorbed a proportion of the expense of operating the dry house. Heating plant expense increased \$1,837.00 in 1924, as 495 tons more coal, costing \$1,434.62 was burned and charge for water was \$402.38 higher. The Central Power Plant and Austin Mine operated in 1923 and absorbed part of the expense of operating Central Pumping Plant. More coal was burned in 1924.

| | | | | |
|-------------------------|-----------|-----------------|--------------|-------------|
| Gen'l. Surface Expense, | Year 1924 | 3,259.21 | Cost per ton | .013 |
| | Year 1923 | <u>2,680.91</u> | " " " | <u>.011</u> |
| | INCREASE | 578.30 | INCREASE | .002 |

The increase was due to all surface foreman's time charged to Stephenson Mine in 1924, while in 1923 a proportion was charged to the Austin Mine, which operated for eleven months. Raise of wages, of May 1st, 1923, was effective twelve months in 1924 as compared with eight months in 1923.

Maintenance Accounts:

| | | | | |
|---------------------|-----------|-----------------|--------------|-------------|
| Hoisting Equipment, | Year 1924 | 3,813.60 | Cost per ton | .015 |
| | Year 1923 | <u>9,646.44</u> | " " " | <u>.039</u> |
| | DECREASE | 5,832.84 | DECREASE | .024 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|------------------------------|-----------------|-----------------|-----------------|-----------------|
| Auxiliary Hoist, | | 5,716.71 | | 5,716.71 |
| Steam " | 2.52 | | 2.52 | |
| Electric " | 915.13 | 579.99 | 335.14 | |
| Wire Rope, | 124.59 | 499.66 | | 375.07 |
| Skips, Cages and Skip Roads, | <u>2,771.36</u> | <u>2,850.08</u> | | <u>78.72</u> |
| | 3,813.60 | 9,646.44 | | |

Hoisting Equipment,
(continued)

The large decrease is due to no expense in 1924 for auxiliary hoist on 6th Level. There was more expense for repairs to electric hoists, the largest item being new lining for brake band on cage hoist; other accounts show decreases due to less new hoisting ropes in 1924, and less repairs to skips, cages and skip roads.

| | | | | |
|--------|------------|---------------|--------------|-------------|
| Shaft, | Year 1924 | 400.00 | Cost per ton | .002 |
| | Year, 1923 | <u>401.58</u> | " " " | <u>.002</u> |
| | DECREASE | 1.58 | --- | |

The expense for 1924 and 1923 was practically equal. This expense covers necessary repairs in shaft, the main item of which is replacement of worn and broken runners.

| | | | | |
|---------------------|-----------|-----------------|--------------|-------------|
| Top Tram Equipment, | Year 1924 | 2,382.51 | Cost per ton | .009 |
| | Year 1923 | <u>3,309.10</u> | " " " | <u>.013</u> |
| | DECREASE | 926.59 | DECREASE | .004 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|------------------------|---------------|---------------|-----------------|-----------------|
| Engines and Motors, | 124.29 | 170.88 | | 46.59 |
| Tracks and Cars, | 1,120.01 | 1,793.64 | | 673.63 |
| Wire Rope, | 757.34 | 662.21 | 95.13 | |
| Sheaves, Rollers, etc. | <u>380.87</u> | <u>682.37</u> | | 301.50 |
| | 2,382.51 | 3,309.10 | | |

The principal decrease is in accounts "Tracks and Cars" and "Sheaves, Rollers, etc.", and is due to less trestle erected in 1924. There was also less expense for repairs to top tram cars. Expense for wire rope increased due to longer tram on account of extension of stocking grounds on Section 29.

| | | | | |
|----------------------|-----------|-----------------|--------------|-------------|
| Docks, Tres. & Pkts. | Year 1924 | 7,498.11 | Cost per ton | .030 |
| | Year 1923 | <u>3,566.94</u> | " " " | <u>.015</u> |
| | INCREASE | 3,931.17 | INCREASE | .015 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|------------------------|--------------|--------------|-----------------|-----------------|
| Grading and Planking, | 2,214.55 | 53.52 | 2,161.03 | |
| Permanent Trestles, | 1,529.43 | 451.29 | 1,078.14 | |
| Portable Trestles, * | 3,704.16 | 3,025.05 | 679.11 | |
| Pockets, Chutes, etc., | <u>49.97</u> | <u>37.08</u> | <u>12.89</u> | |
| | 7,498.11 | 3,566.94 | 3,931.17 | |

(* Original cost)

The large increase is due to extension of stocking grounds on Section 29 to make room for stocking ore, to grading work in the pit North of the rock pile, to rebuilding of East permanent trestle and to erection of trestle in pit North of the rock pile for stocking Stephenwood ore.

| | | | | |
|-----------------|-----------|-----------------|--------------|-------------|
| Mine Buildings, | Year 1924 | 1,174.52 | Cost per ton | .005 |
| | Year 1923 | <u>2,776.24</u> | " " " | <u>.011</u> |
| | DECREASE | 1,601.72 | DECREASE | .006 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|------------------------|-----------------|-----------------|-----------------|-----------------|
| Office, | 136.81 | 330.65 | | 193.84 |
| Warehouse, | 8.36 | 13.73 | | 5.37 |
| Stables, | 77.30 | 167.56 | | 90.26 |
| Shaft House, | 414.38 | 100.79 | 313.59 | |
| Engine House, | 160.62 | 602.22 | | 441.60 |
| Boiler House, | 17.07 | 54.07 | | 37.00 |
| Dry House, | 231.42 | 675.96 | | 444.54 |
| Coal Dock and Trestle, | | 59.61 | | 59.61 |
| Fire Protection, | 107.06 | 615.69 | | 508.63 |
| Water Tank, | 21.50 | 149.71 | | 128.21 |
| Oil House, | | 6.25 | | 6.25 |
| | <u>1,174.52</u> | <u>2,776.24</u> | | |

All accounts show decreases, except "shaft House", where a new stairway was installed replacing the original that had rusted away.

TOTAL SURFACE COSTS:

| | | | |
|-----------|------------------|--------------|-------------|
| Year 1924 | 55,880.36 | Cost per ton | .224 |
| Year 1923 | <u>55,493.70</u> | " " " | <u>.225</u> |
| INCREASE | 386.66 | DECREASE | .001 |

There was a small increase in 1924 due to more expense for operating dry house, on account of part of this expense charged to Austin Mine in 1923. The cost per ton decreased account of larger product.

Gen'l. Mine Accts.

| | | | | |
|------------|-----------|---------------|--------------|-------------|
| Insurance, | Year 1924 | 204.98 | Cost per ton | .001 |
| | Year 1923 | <u>206.58</u> | " " " | <u>.001</u> |
| | DECREASE | 1.60 | -- | |

This decrease is due to less insurance premiums accrued for 1924.

| | | | | |
|--------------|-----------|-----------------|--------------|-------------|
| Engineering, | Year 1924 | 4,392.46 | Cost per ton | .018 |
| | Year 1923 | <u>3,591.17</u> | " " " | <u>.014</u> |
| | INCREASE | 801.29 | INCREASE | .004 |

The increase is due to the Stephenson being the only mine operating in the district during the last eight months of the year, consequently, it had to absorb a greater proportion of the cost of operating the engineering department.

| | | | | |
|-----------|-----------|-----------------|--------------|-------------|
| Analysis, | Year 1924 | 10,290.49 | Cost per ton | .041 |
| | Year 1923 | <u>8,013.32</u> | " " " | <u>.032</u> |
| | INCREASE | 2,277.17 | INCREASE | .009 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-------------------|------------------|-----------------|-----------------|-----------------|
| Laboratory Costs, | 7,807.50 | 5,864.22 | 1,943.28 | |
| Sampling " | <u>2,482.99</u> | <u>2,149.10</u> | 333.89 | |
| | <u>10,290.49</u> | <u>8,013.32</u> | | |

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|------------------------------|-------------|-------------|-----------------|-----------------|
| Number Determinations, | 27,310 | 20,405 | 6,905 | |
| Lab. Cost per Determination, | .2859 | .2874 | | .0015 |

The increase is due to more determinations account of more contracts working underground, and to more ore shipped from pocket and stockpile.

| | | | | |
|---------------------|-----------|------------------|--------------|-------------|
| Pers. Inj. Expense, | Year 1924 | 10,246.20 | Cost per ton | .041 |
| | Year 1923 | <u>13,699.62</u> | " " " | <u>.055</u> |
| | DECREASE | 3,453.42 | DECREASE | .014 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|--|-----------------|-----------------|-----------------|-----------------|
| Gratuities, | 77.50 | 100.00 | | 22.50 |
| Legal and Other Expense, | 44.18 | 41.71 | 2.47 | |
| Wages paid by Company acct. men working day of funeral, | | 293.43 | | 293.43 |
| Medical and Hospital Attendance, | 562.17 | 722.21 | | 160.04 |
| Compensation payments, | 8,214.15 | 11,398.27 | | 3,184.12 |
| Payments to Doctors, 40¢ per man, | <u>1,348.20</u> | <u>1,144.00</u> | 204.20 | |
| | 10,246.20 | 13,699.62 | | |

Practically all accounts show decreases in 1924, the main decrease occurs in account "Compensation Payments" and is due to there having been no fatal accidents in 1924. The payments to doctors increased account of more men employed.

| | | | | |
|-------------------|-----------|---------------|--------------|-------------|
| Safety Dept. Exp. | Year 1924 | 270.54 | Cost per ton | .001 |
| | Year 1923 | <u>231.31</u> | " " " | <u>.001</u> |
| | INCREASE | 39.23 | | |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|-------------------------|---------------|--------------|-----------------|-----------------|
| Salaries of Committees, | 162.79 | 159.62 | 3.17 | |
| Traveling Expenses, | 3.70 | 9.90 | | 6.20 |
| First-Aid Supplies, | <u>104.05</u> | <u>61.79</u> | 42.26 | |
| | 270.54 | 231.31 | | |

The increase is due to more first-aid supplies being used account of more men employed.

| | | | | |
|----------------------|-----------|-----------------|--------------|-------------|
| Tel. & Saf. Devices, | Year 1924 | 1,031.73 | Cost per ton | .004 |
| | Year 1923 | <u>1,113.88</u> | " " " | <u>.005</u> |
| | DECREASE | 82.15 | DECREASE | .001 |

The detail of charges for 1924 and 1923 is as follows:

| | <u>1924</u> | <u>1923</u> | <u>Increase</u> | <u>Decrease</u> |
|--|-----------------|-----------------|-----------------|-----------------|
| a. Lighting for Shafts & Levels, | 482.78 | 432.02 | 50.76 | |
| b. Mine Telephones, | 52.72 | 61.02 | | 8.30 |
| c. Safety Gates & Undgr. Imp. | 43.77 | 14.04 | 29.73 | |
| d. Sign Boards, Signals, etc. | 157.57 | 40.73 | 116.84 | |
| e. Appliances for care of inj. persons | 9.24 | | 9.24 | |
| f. Miscellaneous, | 34.46 | | 34.46 | |
| Fire Protection, Underground | 251.19 | 232.57 | 18.62 | |
| Central Office Charges, | | <u>333.50</u> | | 333.50 |
| | <u>1,031.73</u> | <u>1,113.88</u> | | |