

SOUTH JACKSON AND CRUSHER.

On May 6th word was received to commence work in the pit. A few men were hired on that day and on the 7th we commenced to load ore. The force was rapidly increased until on the end of the month we were mining about twelve cars. This product was maintained during the month of June. In July we put on a few additional men as we had cleaned up the track to the south and were able to spot more cars. During that month we shipped about fourteen cars per day, or 575 tons. In August at times we mined fifteen cars, or approximately 600 tons. On Sept. 25th our requirement had been filled and work in the pit was stopped. During the entire season, with the exception of a very short period, the ore held up well to grade. In August, on the west face we exposed a bunch of ore, special samples from which ran as high as 58 per cent. At our present elevation the amount of this ore is limited. It, however, may increase in size below the floor of the pit. The larger part of the ore has come from the east face. In this direction it has been necessary to strip for most of the season. The distance to tram is getting greater each year and in addition we are now up against an old rock dump on the north side. The face of ore directly below is decreasing in height. It will not pay to continue to strip on the North side. Towards the south end of the pit the face is increasing gradually. It is only possible to spot a certain number of railroad cars on the present track. During the following year, on account of the reduction in the length of the face on the east side, it will be necessary to reduce the number of cars which can be loaded daily. Little ore can be obtained from the west face as for practically its entire length we are up against very low grade material. This face is extremely high, being 80 or 90 feet. On account of the loss in working space it has been necessary to reduce the estimated tonnage for the following year.

No trouble was experienced in hiring sufficient men for work in the pit. For a few days in August we were short of men who were looking for work

in other mines which were starting up. Their places were easily filled by others.

During the month of May it was necessary to have two miners retimbering the part of the tunnel which runs below the county road. This timber was found to be in bad condition and lining sets had to be put in.

The following statement shows the production from the pit by months:

May,	7,917
June,	10,544
July,	12,732
August,	13,989
September,	<u>10,844</u>
Total,	56,026

CRUSHER.

On May 12th work was started at the crusher on a single shift.

On July 20th, on account of handling ore from other mines and also because of the large accumulation of cars in the yard due to a breakdown, the second shift was added. We continued to work on two shifts until Nov. 1st when the crew was reduced to a single shift. The crusher was shut down on Nov. 27th.

On July 15th some of the teeth in the main gear on the hoist broke. The crusher was idle for a day while temporary repairs were being made. The hoisting engine is operated by electricity, the controller being on the crusher landing. The brake is also operated from this point; the engine, however, being in a building about 50 ft. to the north. If for any reason the current is suddenly shut off, the operator is not able to control the loaded skip quick enough with his brake. The loaded skip rushes down the shaft and usually snaps the rope. On July 20th the gears which had been temporarily repaired broke out, and in addition others were destroyed. Upon an examination it was found that the main shaft was bent. The crusher was idle until the night shift of Aug. 2d. During this time a very large number of cars accumulated in the yard. On Oct. 30th the current was suddenly shut

off and the skip again ran away and snapped the rope. It, however, did not damage the hoisting engine. During August a new gear was received to replace the damaged one. In October there was much delay at the crusher due to the great shortage of cars. For the last week of the month the night shift did not work a single day. This naturally caused great dissatisfaction and it was finally decided to work the crusher on a single shift.

Much trouble was experienced in the latter part of November due to the freezing of the ore. Since the plant has been electrified it has been assumed that the crusher would not have to operate after extremely cold weather set in. It is strictly a summer proposition. No provision has ever been made to heat the plant. No coal has been stored there. The plant was not designed to handle soft ore as the angle of all of the pockets and chutes is entirely too flat. The results on Maas, Lake, and North Lake ores is very poor. Even in mild weather a large amount of extra labor is necessary as this ore will not run through the pockets or chutes. In freezing weather it is hopeless to attempt to handle this moist material. A large number of cars accumulated in November due to the small amount of soft ore which it was possible to send through the crusher. Cold weather set in and the ore froze solid. It was necessary to hire an engine to steam the cars. The ore froze to the dumps below the crusher. There were no steam coils around the crusher and the oil froze, making it impossible to start the machine. In the latter part of the month three cars of coal were switched to the plant and one of the boilers was started. This, however, did little good as the necessary piping to heat the plant had not been put in. Radical changes must be made if we are going to be required to crush ore during winter weather.

During the year the amount of ore which has been sent through the crusher was as follows:

South Jackson,	56,026
Chase,	39,059
North Lake Silica,	36,151
North Lake,	11,218
Maas,	9,616
Lake,	3,645
Scotch,	3,479
Morris,	1,118
Republic,	1,070
Negaunee,	<u>53</u>

Total, 161,435



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SOUTH JACKSON MINE

AVERAGE MINE ANALYSIS OF OUTPUT FOR YEAR-1915

GRADE	IRON	PHOS.	SILICA	MANG.
South Jackson,	40.29	.078	33.51	2.07

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR-1915

GRADE	Mine				Lake Erie		
	IRON	PHOS.	SILICA	MANG.	IRON	MOIST	MANG.
South Jackson,	40.27	.074	33.31	2.01	39.46	7.99	2.48

ORE STATEMENT AND SHIPMENTS FOR YEAR-1915

	SOUTH JACKSON	LAST YEAR
Output for Year,	56,026	20,241
Shipments,	56,026	20,241

Mine operated from May 8th to September 26th, 1915.

SOUTH JACKSON MINE.

COMPARATIVE MINING COST PER YEAR.

	1 9 1 5 .	1 9 1 4 .	INCREASE.	DECREASE.
<u>PRODUCT</u>	56,026	20,241	25,785	
General Expense	.020	.018	.002	
Maintenance	.010	.005	.005	
Mining Expense	.363	.400		.037
<u>Cost of Production</u>	.393	.423		.030
<u>DEPRECIATIONS.</u>				
Original Purchase	.200	.200		
Equipment	.006		.006	
<u>Total Depreciation</u>	.206	.200	.006	
Taxes	.029	.058		.029
Central Office	.018	.018		
Sundry Expense	.065	.030	.035	
Fire Loss		.007		.007
<u>COST ON STOCKPILE</u>	.711	.736		.025
Loading & Shipping		.001		.001
<u>Total cost on Cars</u>	.711	.737		.026
Number Days Operating	112	42	70	
Number Shifts and Hours	1-10hr	1-10hr		
Avg. Daily Product	500	482	18	
<u>COST OF PRODUCTION.</u>				
Labor	.270	.252	.018	
Supplies	.123	.171		.048
<u>Total</u>	.393	.423		.030

SOUTH JACKSON MINE.

SOUTH JACKSON MINE.

COMPARATIVE WAGES AND PRODUCT.

	1 9 1 5.	1 9 1 4.	INCREASE.	DECREASE.
<u>PRODUCT</u>	56,026	20,241	25,785	
No.Shifts and Hours	1-10hr	1-10hr		
<u>AVERAGE NUMBER MEN WORKING</u>				
Surface	7	2	5	
Underground	35	26	9	
Total	42	28	14	
<u>AVERAGE WAGES PER DAY</u>				
Surface	2.08	2.32		.24(103%)
Underground	2.14	2.26		.12(5.3%)
Total	2.14	2.27		.13(5.7%)
<u>WAGES PER MONTH OF 25 DAYS</u>				
Surface	52.00	58.00		6.00
Underground	53.50	56.50		3.00
Total	53.50	56.75		3.25
<u>PRODUCT PER MAN PER DAY</u>				
Surface	75.84	121.6		45.76
Underground	9.12	9.85		.73
Total	8.14	9.11		.97
<u>LABOR COST PER TON</u>				
Surface	.027	.019	.008	
Underground	.235	.230	.005	
Total	.262	.249	.013	
<u>TOTAL NUMBER OF DAYS</u>				
Surface	738 $\frac{3}{4}$	166 $\frac{1}{2}$	572 $\frac{1}{4}$	
Underground	6,145 $\frac{1}{2}$	2,056 $\frac{3}{4}$	4,088 $\frac{3}{4}$	
Total	6,884 $\frac{1}{4}$	2,223 $\frac{1}{4}$	4,661	
<u>AMOUNT FOR LABOR</u>				
Surface	1,534.44	386.90	1,147.54	
Underground	13,164.65	4,654.17	8,510.48	
Total	14,699.09	5,041.07	9,658.02	
<p>Prop. Surface to Underground Men - Oct.1,1914, Wage rates reduced 10% from 1915 - 1 to 5 schedule adopted Feb. 1, 1913. 1914 - 1 to 13 Aug. 1, 1915, Wages restored to scale in effect prior to Oct.1,1914.</p> <p style="text-align: right;">Avg.wages 9 Mths. Jan.1 to Sept.30,1914 2.34 " " 10 ")ct.1,1914, to Aug.1,1915, 2.04 Decrease during 10 Mo.period .30 Percent " " " 12.82%</p>				