



REPORT OF SUPERINTENDENT FOR YEAR ENDING DECEMBER 1st, 1895.

ISHPEMING, MICHIGAN.

DEPARTMENT OF MINES AND MINERALS.

IRON CLIFFS COMPANY.

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DEPARTMENT OF MINES AND MINERALS  
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Report of Superintendent for year ending December 1st, 1895.

W. G. Mather Esq.,  
President, Iron Cliffs Co.,  
Cleveland, Ohio.

Dear Sir:-

The closing statements have been sent you also the book of maps, which by comparison with last years book, will show the changes on each level during the year.

Following is report on the present condition of the property.

OLD BARNUM MINE.

*Lease to L. S. I. Co. ?*

This mine was shut down on March 1st 1891, and amount of ore remaining is estimated at 30,000 tons. There is no ore on hand in stock pile. The mine is 362 feet deep and is dry, as the Lake Superior Hard Ore Mine is below it and keeps it drained. There is some ore in the bottom of this mine still going down, but to get it an auxiliary shaft would have to be sunk at some distance west of present bottom of the Shaft which is now up to the Lake Superior Line. The Lake Superior Iron Company, have mined up to the line in a few places and there is some ore showing at the line, and ore goes across the line at greater depth to the West. If some fair basis of royalty

could be agreed upon and they would mine the ore it would be a good thing for the Iron Cliffs Company, as it would not pay them to sink a shaft for it.

#### CLIFFS SHAFT MINE .

This mine stopped work July 1st, 1893.

Shipped during present year	-	-	4,973 tons	Cliffs Shaft Ore.
" " " "	-	-	<u>16,062</u>	" Barnum "
" " " "			<u>21,035</u>	" "
Ore in stock November 30th, 1895,			151,144	" Cliffs Shaft Ore.
" " " "			4,693	" Barnum "
" " " "			<u>155,837</u>	" "
Amount of ore in sight,	-	-	- 500,000	"

The water has raised to within 40 feet of the top of "A Shaft". The mine is 511 feet deep and was producing 190,000 tons a year when shut down.

#### ORE CRUSHING PLANT.

On account of limited sales the amount of ore crushed this year has been small and is as follows:-

Month.	Cliffs				Total.		
	Fitch Barnum Shaft.	No.1.Ore.	Scotch Bessemer	Sheffield			
Dec'94.		875			875		
Jan'95.		513			513		
May, "		277	778	4,971	348	6,374	
June, " .	1,204		2,921	4,236		8,361	
July, " .	198		1,473	4,149		5,820	
Sept, " .				887		887	
Oct, " .	55	951	461	3,555		5,022	
Nov. " .	220	292	820			1,332	
Totals, 1,677		1,243	1,665	6,453	17,798	348	29,184

On account of small amount crushed the cost has been much higher than if crusher had been kept busy, and cost is high too on account of additional water that comes into crusher pit because of water having raised up in the mine.

Have had no breakage during the year and it is due to the fact that the new crusher made by the Lake Shore Iron Works and purchased late last season is much stronger than the former crusher and especially to the fact that the ore this year was not crushed as fine as previous season. The bulk of the ore has been crushed down to 1,1-2 inches. A small amount for the Gladston Furnace was crushed down to 3-4 inches, and once while doing this the belts were thrown off of the pulleys without doing any damage. Two crushers could be run almost as cheaply as one and if kept at work would greatly reduce the cost.

SALISBURY MINE.

Following is a statement of the amount of each grade of ore hoisted from each level of this mine the past year.

Level.	Bessemer.	Salisbury.	Litchfield.	Silica.	Total.
8.		13,991.			13,991.
9.	2,183.	24,031.	5,455.	269.	31,938.
10.		3,877.	17.		3,894.
11.		13,346.	345.	955.	14,646.
12.	4,673.	5,497.	1,969.	4,372.	16,511.
13.	3,206.	2,692.	609.	2,499.	9,006.
14.	12,913.	3,011.	4,578.	6,656.	27,158.
15.	14,194.	11,750.	3,833.	3,799.	33,576.
16.	4,155.	3,872.	458.	1,116.	9,601.
Totals,	41,324.	82,067.	17,264.	19,666.	160,321.
Shipped during year	37,617.	96,229.	17,264.	17,702.	168,812.
On hand Nov.30'95.	8,580.	676.	0.	6,165.	15,421.

Average men employed 175.

Following is an estimate of ore now showing in the mine.

Level.	Bessemer.	Salisbury.	Letchfield.	Silica.	Total.
9.	600.	15,500.	500.		16,600.
10.		42,768.			42,768.
11.	4,000.	27,117.			31,117.
12.	3,000.	15,450.			18,450.
13.	6,000.	13,000.			19,000.
14.				3,000.	3,000.
15.	45,333.	14,750.	6,000.	27,775.	93,858.
16.	110,000.	84,000.		9,000.	203,000.
Totals,	168,933.	212,585.	6,500.	39,775.	427,793.

The Salisbury mine has never before shown up the amount of ore now to be found in it and it is getting to be of a better quality. The ore on the bottom or 16th level is showing fine, and limits of ore body are not yet reached. The bunches of paint rock and jasper in ore body on levels above this seem to have disappeared at this depth. Following are extreme sizes in feet of ore measures in which the new ore deposits of the mine occur:

Level.	Length.	Width.
11.	0.	0.
12.	50.	25.
13.	300.	280.
14.	495.	255.
15.	475.	255.
16.	280.	180.

On 8th level all ore has been mined out.

On 9th level are working five scrams and milling the ore down to the 10th level from where it is trammed to the shaft.

On 10th level no mining is being done.

On 11th level one scram is working towards the East.

On 12th level two gangs are working.

On 13th level no work is being done at present.

On 14th level three gangs are working on the South Ore.

On 15th level five gangs of men are at work.

On 16th level four gangs are working.

On these lower levels more men will be put at work when there places above are worked out.

The limits of ore bodies known about are reached on all the levels except the 16th and this extends further to the West than yet driven on.

Have done some diamond drilling looking to location for a new shaft for this mine but had not finished it when some settlement above the present shaft occurred and have been busy since December 13th., hope to have shaft fully repaired early in January, and will then not only resume hoisting but will complete the holes to be bored to determine best location for another shaft, and during the coming year will be necessary to put one down as ground south of present shaft is moving slightly and in time will make it expensive to keep shaft in condition to work through. While nothing has moved to



hurt the machinery, yet there are some small cracks showing and in time it might make it difficult to keep the machinery in proper alignment.

#### FOSTER MINE.

This mine is 365 feet deep, and showing 50,000 tons of ore in sight, was closed down July 1st 1893, and is now full of water. During the past year 10,986 tons of Foster Silica Ore was shipped from an old rock pile and about 100,000 tons more of this stuff remains to be shipped if there is a demand for it.

#### FITCH MINE.

During the year the stock pile of 4,537 tons was shipped from this mine. It over ran 87 tons. Mine is now full of water and abandoned.

#### EXPLORATIONS.

On Section 21, East of the Winthrop have been doing considerable drilling the past year and find lots of lean ore and jasper, but so far no ore of merchantable grade that amounts to anything.

#### PIONEER ARCTIC LANDS.

Nothing has been done during the year.

### OPTIONS.

Four options were granted during the year. One South East of Salisbury Mine shows a little fair ore but enough work has not been done on it to tell what it will amount to.

One on Cascade Range they hope to find a Silica Mine.

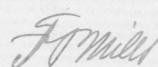
One at old Ogden Mine the parties hope to mine a Silica Ore from, this is north of old Cliffs Furnace.

One East of the Powder works Lake is not developed sufficiently to tell much about yet, but would look more favorably at it than any of the others and it is possible that a mine might be found in this vicinity.

### Summary of all the mines of the Iron Cliffs Company.

Produced during the year,	. . . .	171,394 tons.
Shipped " " "	. . . .	205,370 "
In stock December 1st 1895,	. . . .	171,258 "
In sight underground,	. . . .	927-793 "
Men now employed,	180.	

Respectfully submitted,



Superintendent.