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IRON CLIFFS CO.

DEPARTMENT OF MINES AND MINERALS.

ISHPEMING, MICH.

ANNUAL REPORT FOR THE YEAR ENDING NOVEMBER 30th, 1899.

W. G. Mather, Esq., President,

Iron Cliffs Co.,

Cleveland, Ohio.

Dear sir,-

The closing statements, copy of inventory and book of maps have been sent you. Following is the report of the work done during the year, and the present condition of the property.

OLD BARNUM MINE.

This mine was closed down March 1st, 1891, and has since remained idle. On Jan. 18th, 1896, a contract was made with the Lake Superior Iron Co. to take out the ore adjacent to their old Hard Ore mine on a royalty of 15 cts. a ton. Under this contract, they have mined during the year as follows:

1898	Dec.	1036 tons.
1899	Jan.	1964 "
	Feb.	1524 "
	March	1378 "
	April	492 "
	May	611 "
	June	266 "
	July	372 "
	August	388 "
	Sept.	612 "
	Oct.	468 "
	Nov.	<u>517 "</u>
	Total	9628 "

All the ore mined during the year has come from the 640 ft. level. Mr. Johnston, Agent of the Lake Superior Iron Co., reports that the ore has now entirely pinched out on this level, and the only work being done is raising to the 600 ft. level to test the ore above the present stopes. This deposit has never been tested on this level, as it would have required a long drift, and it was thought cheaper to attack it from below.

-----o-----
CLIFFS SHAFT MINE.

The following amount has been mined from the different levels during the year:

<u>Level</u>	<u>A Shaft.</u>	<u>B Shaft.</u>	<u>Total</u>
1st	37140	44870	82010
2d	33720	9990	43710
3d	23220	53140	76360
4th	12370	9240	21610
5th	8991		8991
6th	19480		19480
	<u>134921</u>	<u>117240</u>	<u>252161</u>

AVERAGE ANALYSIS OF STOPE SAMPLES FOR 1899.

Stope No.	Shaft	Iron,	Phos.
1	A Shaft	60.01	.124
2	"	59.86	.143
3	"	61.32	.143
4	"	62.42	.171
5	"	63.03	.093
6	"	63.20	.094
7	"	64.58	.087
8	"	62.52	.153
9	"	63.56	.099
10	"	63.73	.127
11	"	63.23	.109
12	"	62.94	.128
13	B Shaft	65.10	.104
14	"	63.91	.140
15	"	63.89	.075
16	"	62.55	.096
17	"	62.20	.104
18	A Shaft	62.14	.103
19	B "	63.84	.109
20	"	61.84	.143
21	"	61.18	.126
22	A "	60.71	.085

(over)

(Stope Analysis, continued)

Stope No.	Shaft	Iron	Phos.
23	B	63.23	.080
24	A	64.83	.090
25	B	61.11	.130
26	"	62.22	.034
27	A	62.46	.086
28	B	58.53	.153
29	"	63.12	.090
30	"	61.51	.114
31	A	<u>63.81</u>	<u>.103</u>
Total average		62.54	.110

The stopes have not been worked for phosphorus since July, 1899. Average is from December, 1898 to July, 1899, inclusive.

It will be noted that the general average of all the stopes is slightly lower than last year. This is due to the fact that with depth the ore grows leaner, and that a larger percentage of the ore mined this year came from lower levels than last.

AVERAGE ANALYSIS OF MINE SAMPLES FOR 1899.

	Iron	Phos.
Cliffs Shaft ore, crushed,	62.25	.103
" " " coarse	62.54	.106

ORE SHIPMENTS FOR 1899.

	Pocket	Stock Pile	Total
Coarse Ore	15988	3760	19748
Crushed Ore	142542	97645	240187
Total	158530	101405	259935

70
7.6
92.4

AVERAGE ANALYSIS OF SHIPMENTS FOR 1899.

Cliffs Shaft ore, crushed	Iron, 62.25	Phos., .103
" " " coarse	" 64.27	" .106

ORE STATEMENT, NOVEMBER 30th, 1899.

On hand Dec. 1st, 1898	7743 tons
Output for year	252161 "
Overrun on old excess ore	231 "
Total	<u>260135</u> "
Shipments	<u>259935</u> "
Balance in stock Nov. 30th, 1899	200 "

The cost of mining 252161 tons of ore this year, is as follows:-

	1899.	1898.	Increase.	Decrease.
Product	12 mos. 252,161	7-1/2 mo. 181,844		
General expense	.087	.110		.023
Maintenance	.035	.024	.011	
Mining Expense, including crushing cost	.790	.696	.094	
Cost of Production	.912	.830	.082	X
Increase, 1899	.082			
Exploratory	.030	.034		.004
<u>DEPRECIATION.</u>				
Inventory, less credits	.007	.017		.010
Improvement	.004	.005		.001
New Construction	.042	.028	.014	
Steam Shovel No. 2	.003	.004		.001
Reopening Mine	.057	.044	.013	
Total Depreciation	.113	.098	.015	
Cost on Stock Pile	1.055	.962	.093	
Cost per ton, loading and shipping	.021	.010	.011	
<u>Total Cost</u>	1.076	.972	.104	
Increased wages over 1898 per ton	.054			X
Comparative Total	1.022	.972	.050	

This shows an increase in the cost of production of 8-310 cents per ton over 1898.

The increase due to advance in wages was	.054 per ton.
" " " " drifting	.047 " "
" " " " sinking	.01 " "
Total	.111 " "

Taking these items into consideration, the ore would have been mined slightly cheaper than last year, under the same conditions.

The increased cost of .011 cents per ton for loading is explained by the fact that in 1898 the entire product for the 7½ months the mine was operated, was loaded through the pockets, while this year the winter's stocking was loaded with the steam shovel.

AVERAGE WAGES AND PRODUCT.

	Surface.		Underground.		Total.	
	1899.	1898.	1899.	1898.	1899.	1898.
Average number of men working	87.	79.	225.	241.	312.	320.
Average wages per day	1.70	1.60	1.99	1.83	1.91	1.76
" " " M8., 25 days,	42.50	40.00	49.75	45.75	47.75	44.00
" product per man per day	9.49	8.85	3.85	3.89	2.74	2.70
Labor cost per ton	.178	.180	.519	.471	.698	.651
Difference in labor per ton ^{cost}		.002	.048		.047	
Average product breaking & tramping			5.15	5.04		
Average wages for contractors			2.00	2.02		
" " " miners			2.10	2.09		
" " " trammers			1.75	1.66		
Amount paid in increased wages	2650.40		10469.36		13790.63	
Cost per ton on increased wages	.01		.042		.054	

STATEMENT OF EXPLOSIVES USED FOR BREAKING ORE.

Kind	Quantity	Avg. Price	Amount	Amount, 1898.
50% Powder	103350#	.1194	12402.25	7611.07
D. T. Fuse	85350'	4.27 pr.M	364.62	208.71
Caps	30600	4.87 "	149.20	103.40
Elec. Fuses	13600'	28.40 "	386.11	394.70
Battery wire	698#	.24 pr.#	167.52	166.20
<u>Total</u>			13469.70	8484.08
			<u>1899.</u>	<u>1898.</u>
Pounds powder per ton of ore			.41	.39
Cost per ton for explosives			.053	.047
Increased cost per ton			.006	

The slight increase in the pounds of powder per ton of ore is due to the larger amount of drifting. In January, 1899, the price of powder advanced $1\frac{1}{8}$ ¢ per #. 15%.

CLIFFS SHAFT MINE.

Statement of Comparative Wages.

	<u>1899</u>	<u>1898</u>	<u>Increase, 1899.</u>
<u>Surface.</u>			
Total number of days	26504	20539	
Average rate	1.70	1.60	.100 (5.9%)
Amount	44937.51	32846.48	2650.40
<u>Underground</u>			
Total number of days	65433 $\frac{1}{2}$	46754 $\frac{1}{2}$	
Average rate	1.994	1.83	.164 (8.2%)
Amount	130500.68	85611.67	10731.08
Total days	91937 $\frac{1}{2}$	67293 $\frac{1}{2}$	
Average rate	1.908	1.76	.148 (9.2%)
Total amount	175438.19	118458.15	13606.75
Increase in 1898 over 1897			

The work in different parts of the mine has been as follows: (For convenience of description, the number of each stope has been marked on the maps, and reference will be made to them by number, rather than by location).

1st LEVEL.

"A" SHAFT:

The south drift going northwest has been extended 150 ft. during the year, and is still in ore.

At No. 5, a drift stope 20 X 20 is being carried west along the footwall. In the last 75 feet, jasper occurs on the north as well as on the south side, but the back is in ore. The first 75 ft. of this stope had ore on both the north and south sides. The width was not determined. A drift has been put north 75 feet to the soaprock foot, all in ore. This was extended 75 feet west along the foot. The ore was only 18 ft. wide where the drift was turned off, and narrowed to four feet in the breast. At No. 9 a raise is being put up, and is now 40 ft. high, all in ore. The deposit seems to be increasing in size with height. This will be used for a chute from the sub-level above the 1st level.

At No. 4, a sub-level has been opened 50 ft. above the 1st level. It is 75 ft. long and 20 ft. wide along the foot and has ore on the south and in the back. The developments already made indicate that there will be a body of considerable size at this place.

The raise at No. 9 referred to in last year's report, struck jasper at 22 ft. and was discontinued.

At 27 the drift passed 100 ft. through soaprock and 65 ft. through ore and was stopped in ore, as it had reached the Lake Superior Iron Co's line. This deposit has been opened 75 ft. to the east. The soaprock hanging is pitching to the east, and the stope is now about ten feet high, but there is still ore to the north and in the breast. On the west side a stope has just been started. It is 18 ft. high, and still in ore. This deposit is likely to increase in size going west. No work has been done on the two raises in the east end, for the reason referred to in the last Annual Report. As soon as the drift at 27 is far enough east, raises will be put up as originally intended, and the ore taken out through this drift.

1st LEVEL.

B Shaft.

The ore referred to in the last Annual Report at No. 3, pinched out and work was discontinued. On the west end of this level a drift has been extended 150 ft. west along the hanging, and is still in ore. For the first 125 ft., it was against jasper on the south side, but the last 25 ft. has ore on this side, which would indicate that the jasper first encountered was narrow, and that the ore will continue back to No. 20 stope.

150 feet east of No. 15, a drift has been driven 50 ft. south and 100 ft. west. Jasper was struck in the face and a stope started on the angle of the rock. It is now up 40 ft. The north side and back are in ore. It is proposed to drift from ^{No. 15} under this stope, in the belief that the jasper showing in the drift is only a small run and will cut out. East of No. 15 a small cross-cut was driven 50 ft. north; 25 ft. through ore. The ore narrowed to six feet and work was discontinued. The ore formation at this point is very flat, being only about 12 ft. high. This ore undoubtedly joins No. 15 on the west. This will be proved during the coming year.

Directly east of this cross-cut, a drift stope has been carried 100 ft. along the hanging to the east in order to shorten the tram.

The sub-level referred to in the last Annual Report has been opened 150 ft. to the west, and 100 ft. to the east. At the east end the ore narrowed to four feet, and work was discontinued.

At No. 25 west, the stope is being driven along the hanging. The south side and back are in ore. It is proposed to put up a raise 50 ft. east of No. 25, and open up a second sub-level. The ore is widening as it goes to the west, No. 25 stope being 20 ft. wide, with an unknown width of ore to the south. This sub-level is very promising, and it is expected that the work of the coming year will show up a good-sized deposit. On the east side of this sub-level, 50 ft. back from the breast, the ore is 20 ft. wide, and it is proposed to put up a raise at this point to hasten the development of the second sub-level.

The raise at No. 14, referred to in last year's report, from which so much was expected, went up only 40 ft., when the foot and hanging came together. All the ore has been mined from this height to the 1st level.

2d LEVEL.

"A" SHAFT.

No drifting has been done on this level during the year, both the east and west ends being in jasper. At 29 a raise has been put up 45 ft. on the angle of the foot. Both sides and back are in ore.

At No. 10 a raise has been holed to the 1st level and the ore is now being stoped west on this level, the intention being to turn south when opposite No. 29 raise. It is hoped that this ore will make over the soaprock which shows on the 2d level.

At No. 1 a breast stope is going south, all in ore. This will be continued about 100 ft. to the hanging.

At No. 22 a pillar is being cut.

up

At No. 21 a raise has been put ^{up} 30 ft. to take the ore from the back, which is about 40 ft. above the 2d level. In the west end of this level, a drift has been started west in jasper to see if ore cannot be found behind it.

"B" SHAFT.

At the west end a drift has been extended 50 ft. to the west. In the face the ore is only three feet wide. This drift will be extended to reach the 24 ft. of ore shown up by the diamond drill.

At No. 23, a raise is being put up on the foot to the 1st level, all in ore. This is being done for ventilation. Two pillars on the west end have been cut. On the north side, a drift has been driven 50 ft. in mixed ore and jasper. 12 ft. farther it is expected to reach the 65 ft. of ore shown up by the diamond drill. West of this a raise was put up 50 ft., expecting to open up a body of ore on a sub-level, but at this height the foot and hanging came together.

South of "B" Shaft at 14, a raise has been put up to the 1st level, and

east of it a second raise, both being in ore. Both will be used for taking the ore from the foot, and afterwards for the waste rock from the 1st level. The vein at this point is 25 ft. wide.

3d LEVEL.

"A" SHAFT.

Everything east of the shaft has been worked out, only the pillars remaining. At the extreme east, there is a possibility of finding a small body of ore, which will be tested during the coming year by a raise from the 4th level.

At No. 6 an underhand stope is taking the ore on the foot from the 2d to the 3d level. The ore, going west, seems to be coming in on the south side below the jasper. There is still 250 ft. of bottom to be removed, with the prospect of its widening to the west. It is now 25 ft. in width.

At No. 22 a drift was driven 175 ft. northwest, when the ore pinched out. It was never over 14 ft wide. On the east side there is mixed ore and jasper. It is intended to start a new drift north, farther east on this level in hopes of finding ore developed on the 1st level.

At No. 7 a raise has been put up to take the ore from the bottom of the 2d level. The foot at this point is very flat, the ore being only about 20 ft. thick. It is expected that this will extend over the entire bottom of the 2d level west of the shaft.

At No. 31 a raise has been put up to take the ore from the bottom of the 2d level, as at 7.

"B" SHAFT.

At No. 30, east of the shaft, a raise had been put up by the former management as high as the 2d level, but not connected with it. During the year a drift has been put north 64 ft. from the top of this raise; 1st, 22 ft. of ore, then 24 ft. of soaprock and 18 ft. of ore, the breast still being in ore. There is ore on both sides and in the back of the drift, and it may develop into a small deposit.

At No. 13 a drift stope was carried 175 ft. east in ore. On the south it is

following the jasper, but has ore on the north and in the back. In the face the jasper has cut out the ore. This will be used to take out the 2d level bottom.

At No. 17 a raise has been put up on the foot, which will also be used to take out the 2d level bottom. The angle of the foot at this point is 45 deg., and the jasper hanging cuts out the ore at the 2d level.

At No. 23 a raise is being put up to take out the 2d level bottom. Southwest of the shaft a drift was driven 75 feet, expecting to strike the ore shown on the level above, but nothing was found. This would indicate that the foot is extremely flat.

At No. 19 a drift was driven 12 ft., 10 ft. of which was in ore. The ore, going west, is only three ft. wide, while east, where the drift started, it is 10 ft. Work is now being done north of this drift and has opened out well, being 12 ft. wide and increasing as the drift goes northwest.

4th LEVEL.

"A" SHAFT.

The stope referred to in the last Annual Report at No. 4, was carried 100 ft. west, but it got so lean, running only 54% to 56% in iron, that it was abandoned.

At No. 18 east of the shaft, a raise is being put up to the 3d level to take out the bottom. When this is finished a raise will be put up farther east to take the ore from the extreme east of the 3d level and prove up this part of the mine. As shown by the maps, three other raises have been put up west of No. 18 for the same purpose. The breast drift east shows 3 ft. of ore. This will be followed during the year.

"B" SHAFT.

At No. 26 a drift has been driven 300 ft. to reach the ore shown on the 3d level. The drift stopped in jasper, and a new drift has been started 50 ft. from the breast and is being driven southwest. The ore is now 8 ft. wide, and it is hoped it will open out and show as large a body as on the level above. North of the shaft a raise has been put up to the 3d level, which later will be utilized to take out the 3d level bottom. At present this is prevented by work above.

The vertical diamond drill hole shown on the map west of the shaft, passed through 53 ft. of ore, while the hole north showed 33 ft. This would indicate a roll or trough at that point, as the bottom of the shaft is in siderite.

It is intended to sink "B" Shaft and not drift from "A" as originally intended. From all the information now at hand, there is no ore west of the present west end of the 5th level, unless it is to the south of the present workings.

5th LEVEL.

"A" SHAFT.

At No. 12 a drift has been driven 350 ft. north, the first 325 ft. in siderite, the balance in mixed ore and soaprock. At the face, and laying on the soaprock, there is 3 ft. of ore which is now being followed to the west. As soon as this drift will permit, work will be pushed north to strike the ore shown up by the diamond drill hole from the 4th level. This should be reached within 75 or 100 ft.

At No. 8, east of the shaft, a drift stope has been carried a distance of 425 ft. first, 50 ft. of ore, then 20 ft. of rock and the balance ore. The ore seems to be increasing in width towards the east. The drift is now following the hanging, and has ore on the foot side. No work has been done on the west, the drift being 50 ft. in siderite. It may be that the ore swings to the south and was missed by the diamond drill holes from the breast. To prove this, a drift stope will be started in this direction, 100 ft east of the breast where there is a face of ore 5 ft. thick. 300 ft. east of the shaft a raise has been put up to the 4th level for ventilation. This is all in ore.

6th LEVEL.

East of the shaft the main drift has been extended 325 ft., the first 150 ft. being in ore, the balance rock. The face now shows about four feet of ore. This level has been very disappointing, but as the 5th level showed a run of rock of less magnitude with the ore pinched where it first left it, it is expected the same conditions will follow on this level. As shown on the map, a raise has been put up to the 5th level for air. A drift has been driven 100 ft. to the west. The first 8 ft. in ore, the balance siderite. The ore cut out on this level the same distance west as on the 5th.

125 ft. east of the face of this drift, a raise has been put up 45 ft. in ore. The back of the raise is in jasper, and the work was stopped on this account. 40 ft. east of this, a drift stope has been started south in mixed ore and jasper. It is now in 25 ft. and has clean ore on both sides and back. This will go under the raise referred to above, and will be continued south. It is hoped that this will show a deposit of some size which will eventually swing to the west and develop some ore south of "B" shaft. South of the shaft a drift stope has been driven 100 ft. in ore to permit the sinking of a winze to raise for the 7th level.

At No. 24 a winze has been sunk 65 ft. in ore. From this a drift has been started towards the shaft, and is now in about 15 ft. The ore has been shown up about 18 ft. wide to the hanging, but the distance to the foot is not known.

The sump on the 6th level is in the bottom of the shaft, which makes it very inconvenient and expensive to sink. It is proposed before raising from the 7th level to cut a large sump in the plat which will permit sinking future levels with less trouble and cost. As soon as the 7th level plat is finished, sinking will be continued for the 8th level. It is intended to continue sinking as fast as possible so that new levels can be opened up to take the place of those exhausted.

It is to be regretted that the diamond drill has shown up no new lenses of any extent this year. In "B" Shaft, the only new developments have been on the sub-level above the 1st and at Nos. 15 and 20 on the west end of the 1st level, and No. 28 on the west end of the 3d level. In "A" Shaft, The new developments have been at 27 on the 1st level, and at 24 on the sub-level above. At 29 and 10 on the second level. On the 3d level north the ore body shown at 27 on the 1st level has been opened up. At 22 and 12 on the 5th level. On the 6th level No. 11 east, and No. 2 west, and the winze sunk for the 7th level.

It is recommended that arrangements be made with the Lake Superior Iron Co. to mine the ore on their side of the line on the same royalty that they are paying for the Barnum. It is not likely there is any large quantity, as the foot can be but a short distance north of the line at 27. It may be, however, that on the sub-level above the 1st level, "A" Shaft, the ore will also cross their line.

The following estimate of ore in sight was made by Mr. Jopling from the maps:

	<u>A. Shaft.</u>	<u>B Shaft.</u>	<u>Total.</u>	<u>Less 10% for rock & loss in mining.</u>
Floor	640000	463000	1103000	992000
Pillars	211000	201000	412000	371000
Back of 1st level	83000	40000	123000	110000
Partly developed walls, breasts, etc.	168000	66000	234000	211000
Total	1102000 110200	770000 77	1872000	1684000
From the above, there should be deducted-				
Ore left to support Lake Bancroft			195000	
" " " machinery & shafts			380000	
" " " Excelsior Addition			50000	
			<u>625000</u>	<u>562000</u>
Total available for mining				1122000

About 313000 tons of ore have been developed this year as against the output of 252000 tons. About 100000 tons of this output was taken from the ground thus developed

CRUSHER PLANT.

The following statement shows the cost of operating the crushers for the past year:-

	<u>Operating Cost.</u>		<u>Repair Cost.</u>		<u>Total Cost.</u>		
	<u>Amount.</u>	<u>per.T.</u>	<u>Amount</u>	<u>Per.T.</u>	<u>Amount</u>	<u>Per.T.</u>	<u>1898</u>
Product crushed, 236173 Tons.							
Operating Engine	1116.73	.005	46.95	.000	1163.68	.005	.003
" Crushers	5563.93	.023	1807.24	.007	7371.17	.030	.026
Total Crushing Cost	6680.66	.028	1854.19	.007	8534.85	.035	.029
Tramming to R. R. Pocket	3278.62	.014	328.51	.001	3607.13	.015	.013
Total Cost	9959.28	.042	2182.70	.008	12141.98	.050	.042
" " 1898	5613.67	.036	1003.64	.006	6617.31	.042	
Labor Cost						.035	.029
Supply Cost						.015	.013
Total						.050	.042
Per cent.	85		15		100		
Number of men employed on plant	15.						
Product per man per day						50.	56.

The increase in cost is due to the advance in wages, and to the fact that about 16000 tons of the product for the year was shipped without crushing. This additional tonnage would have reduced the cost .003 per ton. It will be noted that two less men were employed this year than last.

FATAL ACCIDENTS.

There have been three fatal accidents during the year:

James King, Jan. 10th;

Abraham Aho, July 21st; and,

W. J. Williams, Nov. 27th. All of them were purely accidental, as the accident reports will show, and could not have been foreseen and prevented by any amount of care. The time lost to hoisting was 158 hours. The custom of closing

the mine when a fatal accident occurs is a hardship on the men, which they fully appreciate, but are not willing to change. Two propositions were made them during the year to break up this practice: 1st, that they continue at work and contribute part of their earnings, say, 50 cents each, to the family of the deceased, the Company to give an equal amount. On the day of the funeral, the mine to be closed during the time of the services;

2d, the mine to be shut down only on the afternoon or morning of the funeral, and the Company account men to receive pay for the time lost.

The latter proposition is more favorable to the company in point of expense, and has the advantage that the men contribute nothing and it would be an object to Company account men, who would exert their influence to have it adopted. While admitting that both propositions were fair, they declined to accept either for fear of criticism. Under the present labor conditions, it is useless to attempt to force the question.

SALISBURY MINE.

The following grades of ore have been mined from the different levels during the year:

<u>Level.</u>	<u>Bessemer.</u>	<u>Salisbury.</u>	<u>Sals.#3.</u>	<u>Total tons.</u>
5th		1086		1086
8th	354	3120	290	3764
11th	705	10916	926	12547
12th	6337	18032	15380	39749
13th	1837	3402	504	5743
14th		578		578
16th	<u>12921</u>	<u>47438</u>	<u>12693</u>	<u>73052</u>
Total	22154	84572	29793	136519

AVERAGE ANALYSIS OF MINE SAMPLES FOR 1899.

	<u>Iron.</u>	<u>Phos.</u>
Bessemer	63.11	.051
Salisbury	61.76	.093
Salisbury No. 3	53.43	.053

SHIPMENTS.

	<u>Pocket.</u>	<u>Stock Pile.</u>	<u>Total.</u>
Bessemer	12864	5612	18476
Salisbury	61355	29257	90612
Salisbury No. 3	<u>20966</u>	<u>3289</u>	<u>24255</u>
Total	95185	38158	133343

AVERAGE ANALYSIS OF SHIPMENTS.

	<u>Iron.</u>	<u>Phos.</u>
Bessemer	63.47	.048
Salisbury	61.55	
Salisbury No. 3	53.29	.055

ORE STATEMENT, NOVEMBER 30th, 1899.

	<u>Bessemer.</u>	<u>Salisbury.</u>	<u>Sals.#3</u>	<u>Total.</u>
On hand Dec. 1st, 1898		8590		8590
Output for year	<u>22154</u>	<u>84572</u>	<u>29793</u>	<u>136519</u>
Total	22154	93162	29793	145109
Shipments	<u>18476</u>	<u>90612</u>	<u>24255</u>	<u>133343</u>
On stock pile Nov. 30, '99	3678	2550	5538	11766

AVERAGE WAGES AND PRODUCT.

	<u>Surface.</u>		<u>Underground.</u>		<u>Total.</u>	
	<u>1899</u>	<u>1898</u>	<u>1899</u>	<u>1898</u>	<u>1899</u>	<u>1898.</u>
Product, 136519. tons.						
Average number of men working	50.	62.	128	123	178	185
Average wages perday	1.68	1.64	2.24	2.06	2.07	1.92
" " pr. mo. of 25 days	42.00	41.00	56.00	51.50	51.75	48.00
Avg. product per man per day	8.84	5.91	3.57	3.02	2.54	2.00
Labor cost per ton	.19	.277	.627	.683	.816	.962
Difference in labor cost per ton		.087	.	.056		.146
Average product, breaking and trammig				5.85		
Average wages for contractors			2.32	2.20		
Amount paid in increased wages	617.94		6889.59			8058.60
Cost per ton on increased wages.	.004		.051			.059

The cost of Mining 136519 tons of ore this year, is as follows:

	1899. 12 months 136519	1898 12 months 111481	Increase.	Decrease.
General expense	.088	.112		.024
Maintenance	.042	.033	.009	
Mining expense	<u>.849</u>	<u>.841</u>	.008	
Cost of production	.979	.986		.007
<u>DEPRECIATION.</u>				
Inventory	.004	.013		.009
New Construction-New Shaft	.097	.405		.308
Steam Shovel	<u>.006</u>	<u>.007</u>		<u>.001</u>
Total	.107	.425		.318
Less Credits	<u>.010</u>			
Net Depreciation	.097	.425		.328
Cost on Stock Pile	1.076	1.411		
Loading and Shipping	<u>.020</u>	<u>.031</u>		.011
Total Cost	1.096	1.442		.346
Increased Wages over 1898 per ton	.059			
Comparative on equal wages basis	1.037	1.442		.405

COMPARATIVE WAGES.

	<u>1899.</u>	<u>1898.</u>	<u>Increase for 1899.</u>
Surface:			
Total number of days	15448.5	18876	
Average rate	1.68	1.64	.04 (2.4%)
Amount	25888.53	30956.63	617.94
Underground:			
Total number of days	38275.5	36859	
Average rate	2.24	2.06	.18 (8.7%)
Total amount	85570.22	76193.53	6889.59
Total days	53724	55735	
Average rate	2.07	1.92	.15 (7.8%)
Grand total amount	111458.75	107150.16	8058.60
Increase in 1898 over 1897			4458.80

STATEMENT OF EXPLOSIVES USED FOR BREAKING ORE.

<u>Kind.</u>	<u>Quantity.</u>	<u>Average Price.</u>	<u>Amount.</u>	<u>Amount, 1898.</u>
40% Powder	350#	.10	35.00	962.96
50% "	12210#	.1192	1457.55	150.77
Fuse	40650'	4.24 pr. 1000'	172.35	154.86
Caps	15452	4.73 pr m	73.08	72.71
			<u>1737.98</u>	<u>1341.30</u>
		<u>1899.</u>	<u>1898.</u>	
Pounds of powder per ton of ore		.092	.095	
Cost per ton for explosives		.013	.012	
Increased cost per ton		.001		

The small increased cost per ton for explosives is due to the advance in price.

STATEMENT OF TIMBER USED FOR MINING ORE.

<u>STULL TIMBER.</u>				
<u>Size.</u>	<u>Lineal Feet.</u>	<u>Average per ft.</u>	<u>Amount.</u>	<u>Amount last year.</u>
6 to 10"	37665	.02	752.46	981.71
10 to 12"	31880	.0325	1046.74	521.83
12 to 14"	18198	.045	826.24	1333.26
14 to 16"	28415	.065	1846.96	251.29
16 to 18"	1984	.08	158.72	20.32
Total	118142	.039	4631.12	3108.41
Total, 1898	99073	.031		

<u>LAGGING.</u>			
5 ft.	204800	.40 per 100 ft.	819.11
7 ft.	8202	.50 " "	41.01
Poles	66007	.64 " "	424.20
Total	279009		1284.32
" 1898	208522		933.83
Cost for timber and lagging, 1899			5915.44

	<u>1899.</u>	<u>1898.</u>
Feet of timber per ton of ore	.86	.89
" " lagging " " "	2.04	1.87
" " " " foot of stulls	2.36	2.10
Cost per ton for timber and lagging	.043	.036
Equivalent of still timber to Board Measure	460006.	292333.
feet bd. measure per ton of ore	3.37	2.62

The increase in the cost of timber and lagging per ton of ore over 1898, is due, first: to the change in the system of mining from stoping to caving; and, second, to the larger sizes of timber required to maintain the main drifts on the 16th level.

Following is an estimate of the ore in sight on the different levels, of Salisbury and Bessemer grades:

<u>LEVEL.</u>	<u>TONS.</u>
5th	2000
8th	7000
12th	3000
13th	31000
14th	15000
16th	<u>75000</u>
Total	133000

By comparing the ore hoisted and the estimate above with with the estimate of ore in sight last year, it will be seen that the estimates have been exceeded in every case. This was due entirely to ore which was "run" from old workings, and above the 12th level northwest. The ore estimated on the 5th and 8th levels was not in sight last year. The estimate of the 13th level has been increased by adding the supposed amount of ore in the old stope on the 12th level southeast of No. 4 shaft. The estimate for the 14th level has been increased 10000 tons on account of ore shown up between this and the 13th level southeast. On the 16th level the estimate has been reduced 22,000 tons on account of the large amount of rock shown by this year's mining.

Following is the location of the ore estimated:

5th level.	Small shaft pillar at No. 1 shaft.
8th "	No. 1 shaft pillar, and small pillar east of air shaft.
12th "	Small pillar at No. 4 shaft.
13th "	Pillar at No. 4 shaft, and two pillars east of shaft and ore in 12th level stope.
14th "	Shaft pillar and two pillars east.
16th "	Entire ore body above level. Some of this ore will be taken

through the 17th level, owing to the large expense of maintaining crushing drifts.

Work on the different levels during the year has been as follows:

5th LEVEL:

A drift has been driven through the old workings 75 ft. east from the air shaft to No. 1 shaft in order to reach the shaft pillar. There has been mined during the year 1086 tons, and it is estimated 2000 tons still remain in the pillar. One gang of six men is working here.

8th LEVEL:

On this level a drift has been put east 115 ft. from the air shaft. This was done to take out the pillar at No. 1 shaft. 3764 tons have already been mined, and it is estimated that there are 7000 tons still in sight. One gang of four men is working here. The amount of ore found on the 5th and 8th levels will well repay the cost of reopening the drifts.

The 9th, 10th and 11th levels are exhausted.

12th LEVEL:

From this level, 39749 tons were mined this year. There is left only a small shaft pillar, which is estimated to contain 3000 tons. Two gangs of six men each are taking this out.

13th LEVEL:

175 ft of old drifts have been reopened to reach a point under the 12th level stope southeast of No. 4 shaft, which was referred to in last year's report as being partially filled with ore. Two raises, 38 ft. and 52 ft. high, respectively, have been put up to this stope and the ore is now being run. It is of Bessemer grade, running about 60% in iron. Four gangs of six men each are working at this point. Two gangs running from the 12th level stope, one gang taking out a small pillar, east of the shaft, and one working on the shaft pillar.

14th LEVEL:

There has been 75 ft. of rock drifting, and 110 ft. of reopening old drifts to reach a point under the 12th room/stope so the ore could be run to the 14th level and trammed to the new shaft. Two raises, 60 ft and 78 ft. high, respectively, have been put up for this purpose, which will also be used later for winning the ore on the 13th level.

The cross-cut to the new shaft has been graded and tracked. It was on this level that mules were to be used for tramping, but up to this time, the product has been so small that it did not warrant their use.

The old shaft has been repaired, and chutes put in for ore and timber from the 13th to the 14th level. No mining is being done on this level at present. The remaining pillars will be taken out when the 13th level is exhausted. The product of 578 tons from this level came from reopening the old drift and two raises.

15th LEVEL. is exhausted.

16th LEVEL:

There has been no new drifting on this level, but owing to crusing ground, constant work has been required to maintain the drifts. Two slices of 17 ft. each have been mined during the year. The ore body has been very badly mixed with paintrock and jasper, which has made the mining expensive. There only remains one more slice 16 ft, high to take before this level is exhausted. This slice is much harder and the ore of better quality than the ore on the first two sub-levels. Nine gangs of six men each are working on this level. Six gangs are on the 3d slice and three gangs on the sill floor, west end.

17th LEVEL:

The plat has been cut out and the cross-cut is being driven to the ore body. It is now in 75 ft., leaving, it is estimated, 155 ft. yet to drift to reach the ore. This level will be open in time to take the place of the 16th. As soon as mining is begun on the 17th level, the shaft will be sunk for the 18th, it being the intention to always keep one level ahead of the mining. It is proposed this year to drift west on the 8th level to prove up the ground west of the diorite bluff. At the east end of the Salisbury basin, there is every indication of a deposit of ore which was not reached by the workings from the old mine. It is strongly recommended that a small shaft be sunk during the coming year to determine whether it will pay to sink a new shaft, or be more economical to reopen the drifts through the old workings. The latter method of reaching the ore is not desirable on account of the constant expense of re-timbering the drifts, due to crushing ground.

CRUSHING GROUND.

Crushing has continued during the year, and has been most noticeable on the 16th level. It has required constant work to maintain the drifts, and has prevented getting a maximum tonnage from this part of the mine. The cost due to crushing ground is as follows:

	<u>Regular Time.</u>		<u>Extra Sunday Time.</u>		<u>Total.</u>	
	<u>Days.</u>	<u>Amount.</u>	<u>Days.</u>	<u>Amount.</u>	<u>Days.</u>	<u>Amount.</u>
Dec.	136½	292.39	79	154.24	215½	446.63
Jan.	124½	260.21	86	167.19	210½	427.40
Feb.	300½	623.61	58	115.02	358½	738.63
March	76	195.58	31	157.11	157	352.69
April	214½	506.19	32	62.86	246½	569.05
May	212¾	465.21	52	101.67	264¾	566.88
June	161	361.17	71	136.29	232	497.46
July	90½	242.59	136	284.16	226½	526.75
August	211½	472.64	69	142.08	280½	614.72
Sept.	210½	523.59	108	220.12	318½	743.71
Oct.	144	350.25	177	360.60	321	710.85
Nov.	77	185.51	192	394.28	269	579.79
	<u>1958½</u>	<u>4478.94</u>	<u>1141</u>	<u>2295.62</u>	<u>3099½</u>	<u>6774.56</u>

IMPROVEMENT AND NEW CONSTRUCTION.

COST OF NEW SHAFT.

Temporary Engine House	710.99		
Pulley Stands & Shaft House	625.58		
Erecting Mach'y in Temp. Eng. Ho.	1369.22		
Rental Fitch Mach'y	144.00		
Skip Road in Air Shaft	909.29		
Engineering	1256.13		
General Expense	24.55		
Diamond Drilling	3251.60		
Cross-Cuts	9993.14		
Timber for Cross-cuts	168.04		
Shaft Raising & Sinking	25644.81		
Timber for Shaft	3759.91		
Cutting and Trimming Timber	809.09		
Teaming Shaft Material	120.70		
Compressors	1298.47		
Hoisting	3054.91		
Top Trimming	1736.74		
Extending Air Pipes and Tracks	2034.76		
Moving Lake Angeline Houses	724.64		
Moving Church & Y.M.C.A. Bldg.	1107.42		
Shaft House & Pocket	4252.34		
Trestles	1015.74		
Pulley & Pump Rod Stands	1139.36		
Skip Road, New Shaft	2911.13		
Ladder Road, New Shaft	91.90		
Test Pitting	97.82		
Wagon Road	20.31		
Handling Material	1088.30		
Excavat'g, New Engine House	1747.89		
New Eng. & Boiler House Fdns.	554.10		
" " " " " Building	3375.33		
Foundation for Machinery	4639.47		
Moving & Erecting Machinery	4249.53		
Removal of Cornish Pumps	6617.54		
Removal of Office & Dry	640.24		
Coal Trestle & Approaches	2810.53		
Temporary Pumps	2180.32		
Surface & Stock Pile Improvement	4038.35		
New Office Building	743.93		
Repairs & Renewals of Mach'y	4654.88		
Cage & Skips	464.80		
	<hr/>		
Total	106578.30		
		EXPENDITURES NOT INCLUDED IN ESTIMATE.	
		Engineering	1256.13
		General Expense	24.55
		Compressors	1298.47
		Hoisting	3054.91
		Top Trimming	1736.74
		Extending Air Pipes & Tracks	2034.76
		Moving Lake Ange. Houses	724.64
		Test Pitting	97.82
		Wagon Road	20.31
		Handling Material	1088.30
		New Eng. & B. House Fdns.	554.10
		Surface & Stock Pile Imps.	4038.35
		New Office Building	743.93
		Repairs & Renewals of Mach'y	4654.88
			<hr/>
			21327.89
		Adding estimated cost as per original statement	67206.00
			<hr/>
			88533.89
		Increase	18044.41

By comparing the estimate with the total cost of the shaft, it will be found that it is largely exceeded. At the time the estimate was made it was intended to put the engine house and coal dock at the foot of the hill. It was found, however, on test pitting, that it would be over ore bearing material, and it was not deemed safe to do so. For this reason the engine house was placed on top of the hill, which required re-handling all the material for the foundation, coal dock, and engine house. This will account for the increase in the cost of the coal dock, foundation, excavating for new engine house and handling material. The increase in the shaft house was due to an entire change of location and design. It was originally intended to hoist the ore to the shaft house and tram to the pockets, but later it was decided that it would be more economical to combine the two, even at a slightly greater cost, and save the constant expense of tramping during the shipping season. The cost of both the cross-cuts and shaft exceeded the estimate. This was due to the fact that it was supposed that the same ground would continue as had been shown up by the drifts in the different levels. All the cross-cuts were started at \$3.75 per ft. but before they reached the shaft, as high as \$10.00 per foot had been paid. The same cause increased the cost of the shaft. It is extremely difficult, if not impossible, to exactly figure the cost of such work, as the ground varies so in hardness. There were also a number of items which were not included in the estimate, and which are shown in detail on the statement. The surface and stockpile improvement is really no part of the cost of the new shaft, but is due to crushing ground. The new office building took the place of the old one, which was moved and converted into a dwelling house. No estimate was made of the repairs and renewals to machinery. The greater part of this cost came from the breaking of the fly wheel of the Cornish pumping engine.

The increase in the cost of the skip road in the air shaft over the estimated cost, was due to the large amount of labor required to keep it free from ice during the winters of 1897-98. The skip road in the new shaft overran the estimate on account of the cost of the knuckle, and the track to the shaft house.

It will therefore be seen that most of the increase in the cost of the shaft was due to the change in the location of the surface improvements.

LOCATION.

During the year, all of the houses in this location have been thoroughly overhauled and painted at a cost of \$1809.47. For details of the cost, reference is made to the statement of repairs to rented houses. No work had been done on these houses since the Iron Cliffs Co. was acquired by the Cleveland-Cliffs Iron Co., which accounts for the large expenditure necessary to put them in repair.



FOSTER MINE.

This mine was closed down October 15th, 1898.

Ore STATEMENT NOV. 30th, 1899.

On hand Nov. 30th, 1898	59179
Shipped during year	<u>55707</u>
Bal. in stock Nov. 30th, 1899	3472

SHIPMENTS.

Foster Ore	55707
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AVERAGE ANALYSIS OF SHIPMENTS.

Foster Ore	Iron, 51.60
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TILDEN MINE.

AVERAGE ANALYSIS OF ORE MINED IN 1899.

	Iron	Phos.
Tilden Silica	42.72	.028

SHIPMENTS.

	Pocket.
Tilden Silica	27345

AVERAGE ANALYSIS OF SHIPMENTS.

	Iron.	Phos.
Tilden Silica	42.65	.031

ORE STATEMENT NOV. 30th, 1899.

Output	27345
Shipments	27345.
Bal. in stock Nov. 30th, 1899	000

EXPLOSIVES USED FOR BREAKING ORE.

Kind.	Quantity	Avg. rate	Amount	Amt., 1898.
40% Powder	7150#	.105	750.75	922.25
Black Powder	2275#	.057	129.69	420.38
Battery Wire	60#	.242	14.52	35.50
Fuse	1350'	4.23 per M ft	5.71	1.71
Exploders	500	28.32 " M	14.16	64.17
Caps	400	4.875	1.95	1.23
			916.78	1445.24
		1899	1898	
Pounds of powder per ton of ore		.3443	.364	
Cost per ton for explosives		.0331	.028	
Increased cost per ton		.0051		

TILDEN MINE

AVERAGE WAGES AND PRODUCT.

	Surface	Underground.	Total.	
			1899	1898.
Average number of men working			22.	33.
Average wages per day			1.78	1.67
Avg. wages per month 25 days			44.50	41.75
Avg. product per man per day			6.27	7.71
Labor cost per ton			.284	.22
Difference in labor cost per ton			.064	
Average product, breaking and tramming			11.41	11.29
Average wages for contractors			1.78	1.74
Amount paid in increased wages			479.54	
Cost per ton on increased wages			.017	

COMPARATIVE WAGES.

	1899	1898	Inc., 1899.
Total number of days	4359 $\frac{1}{2}$	6592 $\frac{3}{4}$	
Average rate per day	1.78	1.67	.11
Total amount paid	7775.40	10939.74	479.54
Increase in 1898 over 1897	20 ¢ per day, or		\$1318.50

STATEMENT OF MINING COST.

	1899	1898.
Product	27345 tons	50833
General Expense	.013	.008
Maintenance	.043	.029
Mining Expense	.331	.267
Cost of production	.387	.304
Increased wages over 1898	.017	
Comparative on equal wage basis	.370	.304
Increase	.066	

TILDEN MINE.

The railroad cut was extended 30 ft., giving room for an additional car. It was found that it would be very expensive to put the cut to the face of the ore, owing to the large amount of rock to be removed, and this plan was abandoned. The ore body extends west under the blacksmith shop, and when this ore is taken out, the expense of changing the tracks farther north can be accomplished at much less cost than at present.

When the diamond drill can be spared, it is recommended that the ground west of the open pit be thoroughly tested. Should it prove that this deposit has depth, it would be cheaper to sink and open up a large face of ore. The saving in the cost of tramming would more than offset the expense of hoisting, and it would permit of a much larger product with the same number of men. The open pit has been extended 80 ft. northwest, 60 ft. Northeast and 30 ft. north. The north and northeast faces have soaprock in the bottom, while to the west it is clean. The soaprock intrusions run almost due east and west, and two have already been cut through, and the ore taken out from behind them as far back as the foot on the east. As long as the cut is worked north, these runs of rock will have to be removed. If, however, the pit was sunk as suggested, the ore could be taken from between them and the cost of this avoided.

On the completion of shipments this season, the men were put to work stripping and cutting through the rock on the north and northeast. This was continued until cold weather and snow put a stop to it. While this has added some to this year's product, it will expedite shipments in the spring. It has been very difficult to keep men at this location, owing to the great demand at the Ishpeming and Negaunee mines the men preferring to live in the towns. The laborers were of the worst class, and it was impossible to get a satisfactory amount of work out of them.

FITCH MINE.

This mine was abandoned in September, 1893.

OPTIONS.

Following is a record of the options issued during the year:

E. W. Adams, Negaunee, N $\frac{1}{2}$ of the NW $\frac{1}{4}$ of Sec. 12-47-27	Iron Ore.
John Nevala, et al, SW $\frac{1}{4}$ of SE $\frac{1}{4}$ & SE $\frac{1}{4}$ of SW $\frac{1}{4}$ Sec.24-47-27	" "
Chas. Johnson & H. Peter Johnson E $\frac{1}{2}$ of SW $\frac{1}{4}$ Sec.19-47-26	" "

The option issued to E. W. Adams in 1898, on the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Sec. 12, was transferred to the Jackson Iron Co. and has been renewed from time to time, and expires Dec. 31st. During the year Mr. Adams explored his option with a churn drill, but did not find any merchantable ore, the deepest hole, 116 ft., stopping in mixed ore and jasper. In September, he sold out to the American Mining Co., who at once put a diamond drill to work. The first hole on the east side of the land was 180 ft. deep. It was practically in mixed ore and jasper for the entire distance and stopped in diorite. They are still drilling, but nothing has been found to date.

John Nevala, et al, have sunk a shaft 90 ft. deep, all in lean ore similar to the Tilden. They propose to continue this, expecting to strike richer ore at greater depth. They have erected a fairly good two-drum hoist and engine, and have built a boarding house 20 X 75 ft. capable of accommodating 40 men. It is reported that this option has been assigned to Corrigan, McKinney & Co.

Chas. Johnson & H. Peter Johnson have transferred their option to Jones, O'Brien and Foley, and Foley in turn has sold his interest to his partners. Numerous test pits have been sunk, all showing lean ore running 42% to 45% in iron. A tunnel has been started on the side of the hill, 250 ft. from the old shaft. When this reaches the ore, it will give a face about 75 ft. high. It is intended to strip the surface and mill the ore to this drift.

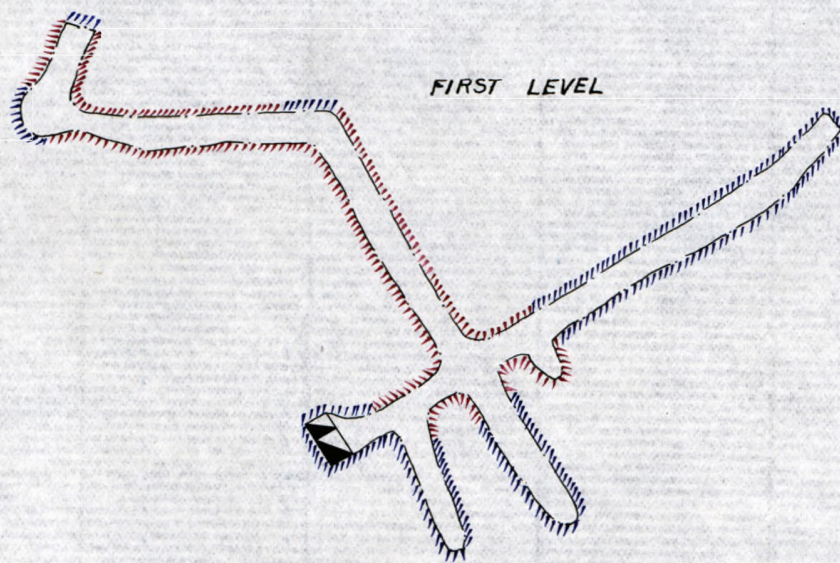
OPTIONS, Continued.

The Jackson Iron Co. have done more thorough and systematic exploring than any of the other holders of options. A shaft 7' X 10' has been sunk 163 ft. and two levels opened up as shown by the accompanying map. The ore body is small and of inferior quality. Analyses of all samples taken are as follows:

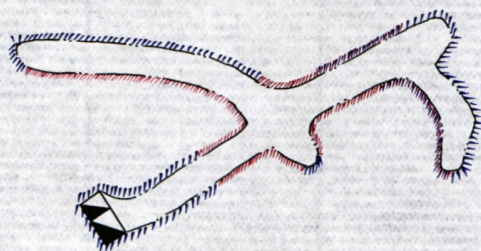
<u>No. 2 LEVEL.</u>			<u>NORTH DRIFT.</u>		
No. of feet east from shaft.	Iron	Phos.	Ft. from East Drift.	Iron	Phos.
21	57.00	.030	6	54.10	.181
27	49.20	.027	8	58.40	.178
27	53.80	.049	12	56.90	.181
34	54.00	.041	16	52.60	.245
38	53.90	.051	18	56.50	.174
40	58.50	.033	23	56.30	.170
45	59.00	.040	27	53.30	.190
50	53.00	.283	31	55.10	.184
54	57.80	.343	36	54.60	.045
58	54.00	.280	40	52.50	.056
62	57.00	.200	45	53.60	.072
70	54.00	.173	49	54.80	.063
70	58.00	.180	56	55.80	.086
79	55.00	.196	62	54.10	.096
85	54.90	.184			
90	58.10	.117			
92	53.30	.102			
93	57.60	.136			
94	54.00	.143			
107	52.80	.128			
110	55.00	.168			
111	54.90	.175			
			<u>STOCK PILE SAMPLES.</u>		
				53.10	.136
				54.30	.162
				52.90	.132
<u>SOUTH DRIFT.</u>					
Ft. from east drift.	Iron	Phos.			
3	53.50	.177			
6	58.20	.189			
46	52.00				
50	43.80				
55	44.60				

The work so far, has been very discouraging, and at present there is no prospect of a deposit of any extent. In addition to the shaft, numerous test pits have been sunk, none of which showed anything better than lean ore, running 42% Iron. They have drilled three holes, two of them bottomed in diorite, without striking ore. The third was in jasper. but the bit was lost at 170 ft, and work suspended.

Captain Mitchell claims to have spent \$20,000.00 on this option.



SECOND LEVEL.



JACKSON IRON Co's EXPLORATION.
ON

N $\frac{1}{2}$ of the *S.W* $\frac{1}{4}$ of Section 12 T47N R27W.

Shaft is 610' South and 900' West of center of Section.

The Levels are 103' and 163' respectively below Surface.

Red represents Ore, and Blue rock.

SCALE 1" = 50'

Dec. — 1899

EXPLORATIONS.

At the Ogden Mine, the exploration referred to in the last Annual Report, was completed February 25th. The west drift was extended 54 ft. and stopped in diorite. The total length of the drift was 201 ft. The west drift was driven 31 ft. and stopped in lean ore. The ore was no richer on the foot than on the face of the bluff. It will run about 42% in iron. There is an old grade to this mine from the Foster Branch of the C. & N. W., and a track could be built at small expense. If there was a demand for this grade of ore, a large tonnage could be secured at this point at a low cost.

No other exploring has been done on the lands of the Iron Cliffs Co.

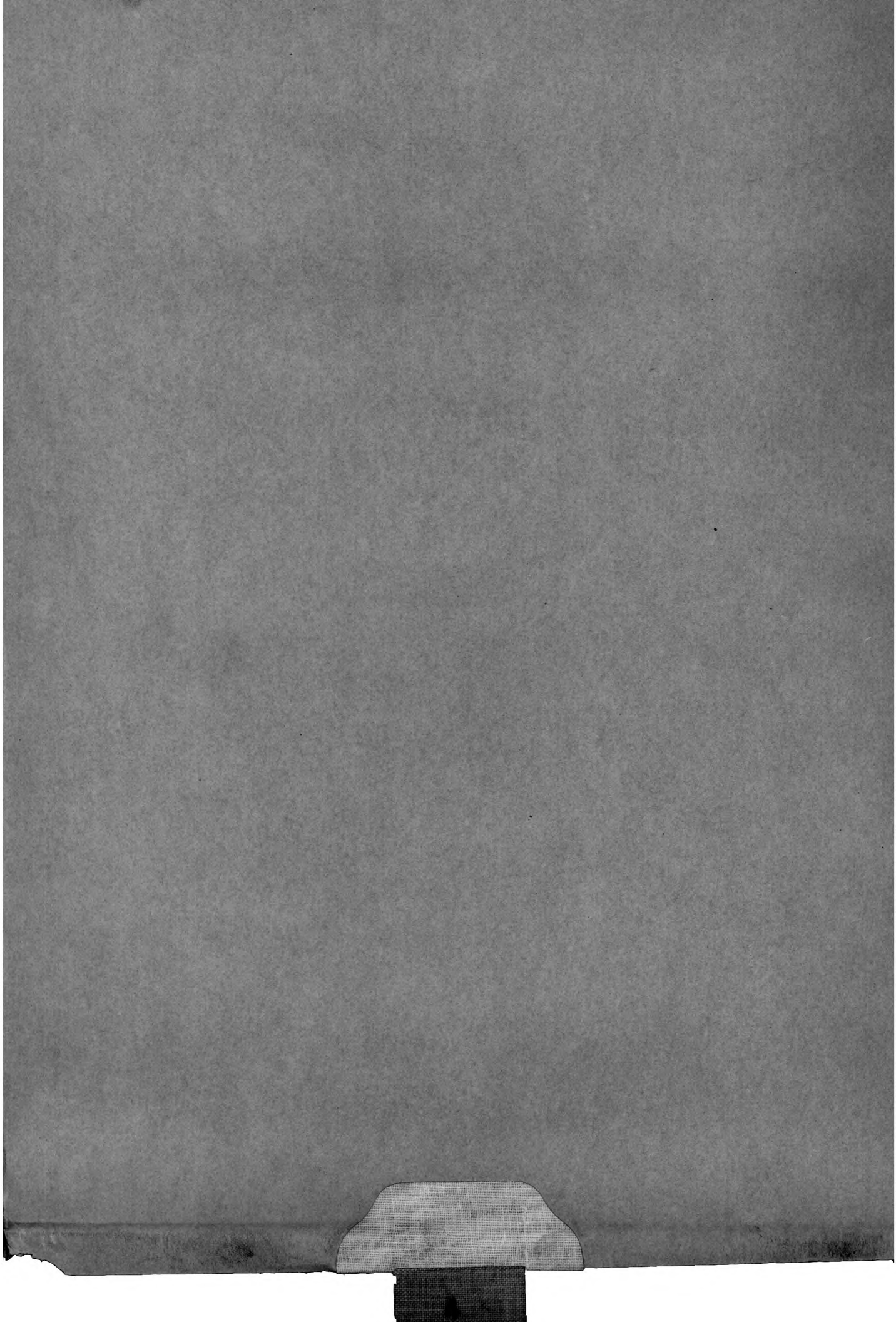
CLEVELAND CLIFFS CLUB.

It may not be out of place to mention the organization of the Cleveland Cliffs Club. The office men, heads of departments and their assistants are eligible to membership. The idea in organizing the Club was to increase the esprit de corps of the employes, and to afford an opportunity for free exchange of opinions. The Club now has on its roll forty-five active and four honorary members. A reading room and kitchen have been fitted up in the new office building. A Bowling alley and billiard table furnish amusement. The members are very enthusiastic, and there is no further question ^{but} that the organization is going to be successful in every particular.

Respectfully submitted,



Agent.



Iron Cliffs Company

Index, Miscellaneous Data, 1899.

- 1 Cliffs Shaft Mine Cost Sheet
- 2 Salisbury Mine " "
- 3 Foster " " "
- 4 Weekly Mine Report, Ore Mined & Shipped.
- 5 Comparative Statement of General Expense, 5 Years
- 6 Repairs of Rented Houses, Cliffs Shaft Mine
- 7 " " " " Salisbury "
- 8 " " " " Foster "
- 9 Analysis of Mineral Lands & Explorations
- 10 " " Improvement & New Construction
- 11 Record of Fire Insurance
- 12 Detail of Accounts Receivable
- 13 " " " Payable
- 14 " " Unpaid Vouchers
- 15 Deliveries of Ore, All Ores.
- 16 Record of Delays, Cliffs Shaft Mine
- 17 " " " Salisbury "
- 18 " " " Tilden "
- 19 Operating Steam Shovel No. 2
- 20 Amt. Paid from Benefit & Suspense Fund, Time Lost, etc
- 21 Recapitulation from Accident Reports
- 22 Analysis of Mineral Lands & Exploration
- 23 Comparative Statement of Taxes
- 24 Ore Statements, -
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IRON CLIFFS COMPANY.

Cliff. Shaft. Mine.

COST SHEET FOR MONTH OF

1899 ^{4th} 1898.

IRON CLIFFS COMPANY.

Salisbury Mine.

COST SHEET FOR MONTH OF

1899 and 1898.

IRON CLIFFS COMPANY.

Cost of Production for the Years of 1899 and 1898.

	<u>12 Months</u> 1899		<u>70</u> Months 1898		TONS.		36,391 Tons.	
	LABOR.		SUPPLIES.		TOTAL.		TOTAL.	
	Amount.	Cost Per Ton.	Amount.	Cost Per Ton.	Amount.	Cost Per Ton.	Amount.	Cost Per Ton.
GENERAL EXPENSE.								
Insurance,			6780		6780		7754	002
Taxes,			52028		52028		27667	008
Engineering,							2773	001
Analysis,			1519		1519		23865	007
Relief Fund,			660		660		30180	008
Mine Office,	3075		3008		6083		30280	008
General Office,		%					116039	032
Total,	3075		63995		67070		238562	066
MAINTENANCE—Repairs of								
Tracks and Yards,							2789	001
Docks, Trestles and Pockets,							6377	002
Buildings,							522	000
Shop Machinery,							6320	002
Boilers,							25	000
Hoisting Machinery,							1496	000
Compressors and Air Pipes,							7779	002
Pumps,							8966	002
Top Tram Engines and Cars,								
Portable Machinery,							10406	003
Skips and Skip Roads,							5758	002
Underground Tracks and Cars,								
Total,							50268	014
MINING EXPENSE.								
Air Pipes,							245	000
Compressors,							184131	051
Hoisting,							204441	056
Wire Rope, Skips and Pulley Stands,								
Pumps,							281265	077
Sinking,								
Drifting,							226925	068
Breaking Ore,							942761	289
Tramming,							580796	151
Filling,								
Timbering,							4177	001
Mining Captain and Bosses,							201917	056
Dry House,								
Top Landing and Tramming,							103222	028
Stocking and Sorting,							90197	025
Cost to Crush,							14000	004
Total,							2822307	776
Cost of Production,					67070		3113337	846
Per cent.,								
EXPLORATORY.								
Exploring in Mines,							1750	000
Exploring Outside,								
Total,							1750	000
DEPRECIATION.								
Inventory,					31342		30594	008
Improvement,								
New Construction,							376515	104
Date of Equipmen ^t Ca					820		275	
Charging up Sinking ^t Min ^{ing} Ca					9950			
Total,					70572		406832	112
Total Cost on Stock Pile,					87642		3521921	968
LOADING AND SHIPPING.								
Load'g by Steam Shovel 55605 Tons	2075		252782		256857	046		
Loading by Hand, "	1120				1120		26292	080
Bosses and Sorters, "								
Total Loading Stock Pile, "							14081	023
Loading at Pocket, "							285	---
Total,	3195		254782		257977		40861	012
Cost,					246619		3562779	980
Comm'n and Expense, Cleveland Office,								
Total Cost,								

ACCOUNTS	<u>12</u> Mos 1899		<u>12</u> Mos 1898		SINKING.			DRIFTING.			COMPARATIVE COST.		
	Amount.	Per ton	Amount.	Per ton	Feet.	Cost.	Per ft.	Feet.	Cost.	Per ft.	1895	1896	1897
New Construction,											12 Mos.	10 Tons.	
Improvement,											12 Mos.	15818 Tons.	1166
Machinery Plant	102509	---	117331	032				388	226955	636	12 Mos.	39575 Tons.	1050
Total,													

REMARKS.

Mine closed down 11.00 pm Oct 15th 1898.

IRON CLIFFS COMPANY.

Factor Mine.

COST SHEET FOR MONTH OF

12 Months 1899

IRON CLIFFS COMPANY.

Weekly Mine Report, for the Week Ending Nov 30th 1899

	FOR WEEK		PREVIOUS FOR MONTH	TOTAL FOR MONTH	OVERRUNS AND SHORTAGES	TOTAL FROM DEC. 1, 189 <u>8</u>	Transferred To and Transferred From	IN STOCK DEC. 1, 189 <u>8</u>	TOTAL	SHIPMENTS TO DATE	BALANCE ON HAND	AVERAGE DAILY ORE HOIST			Product Year ending Nov 30 th 189 <u>8</u>
	ROCK	ORE										WEEK	MONTH	YEAR	
Barnum, <i>Overrun</i> Cliffs Shaft, <i>No Excav Dr 1893</i>	186	¹¹⁴ 4952	16761	¹¹⁴ 21713	1012 231	252161 231	569	7401 342	1260131 573	259931 573	200	830	909	846181844	
Total from Hard Ore Mines, <i>Overrun</i>	186	5066 ⁴¹⁶	16761	21827 ⁴¹⁶	781	252392	569	7743	260704	260504	200	830	909	846181844	
Salisbury, <i>Overrun</i>	230	3218 ⁷⁸	7214	10432 ⁷⁸	209	84572	414	8590	93576	91026	2550	415	402	288 68626	
" Bessemer,		490	853	1343		22154	8641		13513	9835	3678	72	71	130 17980	
" Litchfield,						29793			29757	24219	5538			181 16272	
" No 3							36 5763			175080				8923	
" Silica,															
Foster,								59179	59179	55707	3472			36397	
" Silica, <i>Overrun</i>															
Tilden,	761	⁶⁴ 0	1521	⁶⁴ 1521		27345			27345	27345		132	168	50833	
Total from Hematite Mines,	991	4266	9588	13854	209	163864	8263	67769	223370	208132	15238487	605	767	198825	
Grand Total,	1174	9332	26349	35681	572	416256	7694	75512	484074	468636	154381317	1514	1613	380669	
Rock, previous for Month, ..	1927														
" total " "	3104														
" from Dec. 1, 189 <u>8</u>	24377														

OVERRUNS shown in Black; SHORTAGES in Red; Transfers To in Black; Transfers From in Red.

Transfers
 Bailis. No. 3 to Salisbury 36
 Bailis. Bes. " Salisbury 378
 Bailis. Bes. " East End Bes. 8263
 Saw Mill " Cliffs Shaft 569

IRON CLIFFS COMPANY.

ORE MINED AND SHIPPED

For Week ending *Nov 30th* 189*9*

758393
26770
231623

I R O N C L I F F S C O .

Comparative Statement of General Expense Accounts

for Five Years Ending November 30th, 1899.

General and Mine Office	1899	1898	1897	1896	1895
Superintendent	4609.53	3926.03	3339.71	1206.16	3037.57
Master Mechanic	1293.74	654.75	645.41	645.79	645.66
Clerks	5419.56	5027.67	3821.99	3844.46	2866.39
Watchman	472.15	154.41		8.75	
Stationery & Printing	325.20	350.40	242.07	219.72	247.57
Choreman	157.92	117.79	109.31	81.25	59.13
Telephones & Telegraphing	364.40	307.60	255.67	267.42	236.67
Traveling	243.86	166.29	19.25		
Water & Ice	46.25	49.72	29.80	69.06	19.63
Fuel & Light	254.32	197.58	242.93	188.39	180.98
Livery & Stable Expense	503.21	494.96	32.50	41.00	36.75
Postage & Box Rent	81.80	84.57	62.80	73.25	67.78
Papers & Periodicals	14.00	12.25	14.75	12.00	15.57
Freight & Express	20.71	15.67	10.08	12.75	15.55
Donations	97.03	576.67	149.66	141.55	92.09
Petty Office Expense	87.45	48.19	29.29	14.87	12.63
Exchange	261.00	222.00	128.00	108.00	74.00
Revenue Tax	152.99	141.52			
Office Furniture & Fix.	141.59	118.90	5.12	12.50	19.01
Rent	185.00	330.00	330.00	330.00	330.00
Legal	437.97	300.00	277.43	594.95	262.50
Advertising	15.00	27.50	26.25	39.00	15.00
Miscellaneous	23.80				
Uncollectable Debts			5.00		
Total,	15208.48	13324.47	9777.02	7910.87	8234.48
<u>General Expense Accounts</u>					
Fire Insurance	587.11	550.89	672.51	538.58	727.50
Boiler Insurance	68.42	64.52	64.52	64.52	141.80
Taxes	13298.90	13485.78	14835.52	16867.72	16005.13
Engineering	1387.04	2104.60	1081.70	1317.20	353.37
Analysis	2004.72	3557.90	2164.38	2303.07	1910.35
Relief Fund	2102.10	2022.60	1241.10	874.80	1240.54
Total,	19448.29	21786.29	20059.73	21965.89	20378.69
GRAND TOTAL,	34656.77	35110.76	29836.75	29876.76	28613.17

GRAND TOTAL

24922.14 22110.12 32922.12 32812.12 32912.14

Total

12442.32 51122.32 30022.12 21222.32 50212.32

Relief Fund	\$102.10	\$022.30	\$247.10	\$144.80	\$240.24
Amalgams	\$004.12	\$221.20	\$124.22	\$202.04	\$210.22
Engineering	\$321.04	\$104.20	\$102.10	\$211.20	\$22.21
Taxes	\$322.30	\$422.12	\$222.22	\$222.12	\$22.22
Boiler Insurance	\$2.42	\$4.22	\$4.22	\$4.22	\$41.20
Fire Insurance	\$21.11	\$20.22	\$22.21	\$22.22	\$21.20

General Expense Accounts

Total	12202.12	12224.11	2111.02	1210.21	2224.12
Uncollected Debits	\$2.20	\$1.20	\$2.22	\$2.00	\$2.00
Miscellaneous	12.00	\$2.20	\$2.12	\$2.22	\$2.20
Advertising	421.21	\$20.00	\$11.12	\$20.00	\$20.00
Rent	122.00	112.20	2.12	12.20	12.01
Office Furniture & Fix.	122.22	141.22			
Revenue Tax	221.00	\$22.00	122.00	102.00	\$4.00
Exchange	\$1.12	42.12	\$2.22	14.22	12.22
Left Office Expense	\$1.02	\$12.21	142.22	141.22	\$2.02
Donations	\$0.11	12.21	10.02	12.22	12.22
Freight & Express	14.00	12.22	14.12	12.00	12.21
Orders & Periodicals	\$1.20	\$4.21	\$2.20	\$2.22	\$1.12
Postage & Box Rent	\$22.21	121.22	\$2.20	41.00	\$2.12
Livery & Stable Expense	42.22	42.12	\$2.20	122.22	120.22
Fuel & Light	\$2.22	42.12	\$2.20	\$2.02	12.02
Water & Ice	\$42.22	122.22	12.22	\$21.22	\$22.21
Traveling	\$24.20	\$21.20	\$22.21	\$21.22	\$22.21
Telephones & Telegraphing	121.22	111.12	102.21	\$1.22	\$22.21
Operators	\$22.20	\$20.20	\$42.01	\$1.22	\$21.22
Stationery & Printing	412.12	121.21	\$22.22	8.12	\$22.22
Clerks	\$412.22	\$221.21	\$22.22	\$24.22	\$22.22
Master Mechanic	1222.11	\$22.22	\$22.21	\$22.22	\$22.22
Underintendent	\$222.22	\$22.22	\$22.21	\$22.22	\$22.22

General and Mine Office

1232 1232 1231 1232 1232

For Five Years Ending November 30th, 1923.

Comparative Statement of General Expense Accounts

L. K. O. N. C. I. E. F. S. C. O.

Dept. M & W

Comparative Statement of Gen'l Expenses

J. O. Co.

Year ending Nov. 30, 1924

IRON CLIFFS COMPANY.

CLIFFS SHAFT MINE

Statement of Rented Houses, Showing Rent Received, Cost of Repairs, etc.

For the year ending November 30th, 1899.

House No.	Present Occupant	Rent Received	Repairs	Insurance	Taxes	Total Expense
A	J. H. Rough,	144.00	142.78	10.00	50.62	203.40
B	Campbell & Whittington	133.60	94.77	6.00	29.98	130.75
C	A. J. Youngbluth,	106.00	484.19	5.00	26.96	516.15
1	T. Dougherty,	54.00	63.13	2.00		65.13
2	Luke & Oatman,	150.00	79.20	3.00		82.20
3	Dan Campbell,	60.00	14.24	1.00		15.24
4	Beal & Sehadt,	152.25	8.06	4.00		12.06
5	Kennedy & Treloar,	65.00	30.07	3.00		33.07
75	Victor Pearson,	60.00	36.97	2.50		39.47
76	Napn. Billy,	60.00	24.79	2.50		29.29
	Total,	984.85	978.20	39.00	107.56	1124.76
	Total 1898,	907.00	878.19	37.50	108.38	1024.08
			<u>1899</u>			<u>1898</u>
	Net Loss for Year,		139.41			117.08
	Per cent Loss on Insurance Valuation		1.8%			1.6%
	Insurance valuation,		7800.00			7500.00

I R O N C L I F F S C O .

SALISBURY MINE

Statement of Rented Houses, Showing Rent Received, Cost of Repairs etc.,
For the year Ending November 30th, 1899.

House No.	Present Occupant	Rent Rec'd	Repairs	Insurance	Total Expense
1	Thos. Buzzo,	144.00		10.25	10.25
2	W. M. Sterling,	96.00	68.70	5.00	73.70
3	A. E. Buzzo,	45.00	103.35	4.00	107.35
4	W. C. Quayle,	24.00	49.33	.25	49.58
5	John Crellen,	42.00	47.37	5.00	52.37
6	W. H. Quayle,	48.00	125.84		125.84
6	Phil. Christian,	48.00	164.51	3.00	167.51
7	Francis Corbett,	36.00	49.99	.75	50.74
9	Arnt Olson,	30.00	27.08	.50	27.58
10	John Dawson,	31.50		.75	.75
14	Amb. Tear,	39.00	46.14	.38	46.52
15	John Christian,	30.00	.73	.38	1.11
16	Mrs. Williams,	42.00	49.49	2.00	51.49
17	John Looney,	69.88	80.60	1.50	82.10
18	Ros. Anderson,	30.00	17.53	1.00	17.53
18	Mrs. Conibear,	10.00	.19		1.19
19	Christ Hanson,	42.00	23.88	1.00	24.88
20	John Larson,	36.00	51.50	1.00	52.50
22	Walter vicary,	96.00	46.80	5.00	51.80
23	william Reed,	54.00	55.65	5.00	60.65
23	Ben. Leece,	37.00	1.99		1.99
24	John Quick,	64.00	49.20	5.00	54.20
25	Thos. Greer,	54.00	49.65	5.00	54.65
25	Wilfred Buzzo,	35.00	3.64		3.64
26	J. L. Hew,	44.25	55.25	5.00	60.25
26	And. Everson,	36.75	1.86		1.86
27	C. Wills,	96.00	48.10	5.00	53.10
28	Geo. Vicary,	55.00	33.05	2.50	35.55
29	Art. Fargher,	60.00	30.65	2.50	33.15
30	John Cain,	60.00	33.92	2.50	36.42
31	Robt. Carkin,	60.00	32.65	2.50	35.15
32	C. Gilling,	55.50	34.15	2.50	36.65
33	Archie Shimmin,	60.00	31.37	2.50	33.87
	Old Office Bldg. (dbl. House)		382.34	2.50	384.84
	Jno. S. Minnie Est'g. Etc.		12.97		12.97
	Total 1899	1710.88	1809.47	84.26	1893.73
	" 1898	1733.50	260.32	82.00	342.32
	Insurance value 1899			16850.00	
	" " 1898			16400.00	
	Net Loss for 1899 1.1%			182.85	
	" Earnings - 1898 8.5%			1391.18	

IRON CLIFFS COMPANY.

F O S T E R - M I N E

Statement of Rented Houses, Showing Rent Received, Cost of Repairs, etc.

For the year ending November 30th, 1899.

House No.	Present Occupant	Rent Received	Repairs	Insurance	Taxes	Total Expense
1	John Skewes,	60.00				
2	John Bloomquist,	16.50				
3	Zept Pepin,	3.00				
4	Adol. Busta,	6.00				
5	Matt Elliason,	10.50				
6	Phil Geauma	19.50				
7	Fred Delore,	15.40				
8	Jacob Ahola,	22.50				
9	Chas. Cox,	6.60				
10	Jos. wearium,	18.50				
11	Jas. Gouge,	13.60				
12	B. Farnary,	9.00				
13	B. Farnary,	10.50				
14	John Okerson,	15.00				
15	Louis Ericson,	4.50		No		
16	Frank Demarse,	4.50		No		
	Total,	\$235.60	----	18.50		18.50
	" 1898,	525.10	135.22	18.50		153.72

Net earnings,	<u>1899</u> 217.10	<u>1898</u> 371.38
Per cent,	85	14.6
Insurance Valuation,	2550.00	2550.00

Iron Cliffs Co.

Repairs Rental Houses 1889

Rept Mr & W

Statement of Rental Houses, Showing Rent Received, Cost of Repairs, etc.

FOR THE YEAR ENDING NOVEMBER 30th, 1889.

IRON CLIFFS COMPANY.

No.	Present Occupant	Rent	Repairs since Inaug-	Taxes	Expense Total
10	John Demaree	4.30			
11	John Emison	13.00			
12	John Okeason	10.20			
13	J. S. Samsell	3.00			
14	Geo. G. G. G.	13.00			
15	Geo. G. G. G.	13.20			
16	Geo. G. G. G.	8.00			
17	Geo. G. G. G.	88.20			
18	Geo. G. G. G.	12.40			
19	Geo. G. G. G.	13.20			
20	Geo. G. G. G.	10.20			
21	Geo. G. G. G.	6.00			
22	Geo. G. G. G.	3.00			
23	Geo. G. G. G.	10.20			
24	Geo. G. G. G.	80.00			
Total		232.10	132.33	18.20	132.13

Increase Rent 1889
 232.10
 132.33
 18.20

 132.13

Net Savings

232.10
 132.33
 18.20

 132.13

IRON CLIFFS CO.

Analysis of "Mineral Lands" and "Explorations" for Year Ending Nov. 30th, 1899.

<u>Mineral Lands.</u>			
Cost of Geological Survey by Smyth and Finlay:			
H. L. Smyth, traveling expense	144.52		
Freight & express on samples	<u>10.46</u>	154.98	
J. R. Finlay	732.30		
Other labor with Finlay	410.50		
Camp Supplies	209.78		
Livery and Teaming	68.04		
Photographs	3.60		
J. E. Jopling	<u>170.66</u>	<u>1594.88</u>	
Total			1749.86
<u>Explorations on our own Lands.</u>			
General.			
Thos. Buzzo	714.21		
J. E. Jopling	256.61		
Analysis	16.00		
Abstract	<u>1.00</u>	987.72	
<u>Explorations, 47-27</u>			
Superintendence	715.56		
Laborers	704.40		
Engineering	6.11		
Supplies and Tools	64.71		
Analysis	<u>8.96</u>	<u>1499.74</u>	
Total			2487.46
<u>Explorations on Outside Lands.</u>			
Menominee Range	48.00		
Republic	24.00		
Mather Lands, Sec. 27	12.00		
Barassa	12.00		
Dexter	12.00		
Little Lake	12.00		
Hartford	<u>18.00</u>		<u>138.00</u>
Grand Total			4375.32
Charged as follows:			
Mineral Lands	2875.58		
Explorations	<u>1499.74</u>		
Total	<u>4375.32</u>		

Iron Cliffs Co.

Explorations 1899
 Dept M + M

Cost of Geological Survey by Dept and Division:

Mineral Leases.

H. L. Smith, traveling expenses	144.88	194.88
Photography	10.46	
Livery and teaming	14.88	
Gas and supplies	309.38	
Other labor with Division	410.80	
H. L. Smith	138.80	
Total	1,008.00	194.88

Explosives on our own lands.

Wattson	1.00	281.18
Analysis	16.00	
H. L. Smith	800.81	
Exp. mine	14.31	
Total		281.18

General.

1,489.88

Explosives, 47-51

Explosives	8.00	1,000.18
Shells and tools	04.11	
Explosives	8.11	
Laborers	106.40	
Expenses	118.80	
Total		2,137.49

2,627.48

Explosives on other lands.

Hartford	18.00
Little Lake	18.00
Dept	18.00
Bellevue	18.00
Maths Range, Geo. St	18.00
Hampton	28.00
Memphis Range	40.00
Total	138.00

138.00

2,765.48

Expenses as follows:

Explosives	4,418.38
Mineral Leases	1,408.18
Total	5,826.56

IRON CLIFFS CO.

Analysis of Improvement and New Construction,
November 30th, 1899.

<u>CLIFFS SHAFT MINE.</u> <u>IMPROVEMENT</u>	Inventory Nov.30,'98	Expndtrs for year	Total	Deprec'n for year	Inventory Nov.30,'99
Stock Pile Trestle & Ground		626.60	626.60	626.60	
Laboratory & Captain's Office		335.56	335.56	335.56	
<u>NEW CONSTRUCTION</u>					
Crusher Plant (old)	11157.76		11157.76	5580.00	5577.76
New General Office	2347.87	7496.24	9844.11	5000.00	4844.11
Re-Opening Cliffs Shaft Mine	28698.69		28698.69	14349.36	14349.33
14 Boarding House		2920.13	2920.13		2920.13
Total Cliffs Shaft Mine	42204.32	11378.53	53582.85	25891.52	27691.33
<u>SALISBURY MINE.</u>					
Salisbury New Shaft		13245.04	13245.04	13245.04	
<u>FOSTER.</u>					
Machinery Plant	1173.31		1173.31	128.22	1045.09
Dec'd for Rent \$128.22					
Steam Shovel No. 2	6070.69	60.25	6130.94	184.00 1517.68	4429.26
Cl.S. Dep. 10% 758.84					
Salis. Dep.10% 758.84					
Rent from LS&I 184.00					
Total I. C. Co.	49448.32	24683.82	74132.14	40966.46	33165.68

*✓ CAP 6000
1/19/1900*

Iron Cliffs Co.

Construction Acct, 1899.

Total I. C. Co.	46448.33	34883.98	41133.14	40889.46	32152.99
Rent from L&SI 194.00					
Office. Dep. 100 459.34					
Off. S. Dep. 100 459.34					
Steam Shovel No. 3	6040.63	60.33	6130.34	1814.98	4433.32
Dec'd for Rent \$189.33				194.00	
Machinery Plant	1112.31		1113.31	138.33	1042.09
<u>HOUSES.</u>					
Salisbury New Shaft		13349.04	12349.04	13349.04	
<u>SALISBURY MINE.</u>					
Iron Cliffs Shaft Mine	43304.33	11248.33	22283.32	3981.33	31221.32
Boarding House		3830.12	3830.12		3830.12
Re-opening Cliffs Shaft Mine	80036.63		80036.63	14342.32	14342.32
New General Office	3247.94	4436.34	3844.11	2000.00	4844.11
Crusher. Plant (old)	11132.18		11132.18	2280.00	2280.18
<u>NEW CONSTRUCTION</u>					
Laboratory & Captain's Office		333.26	333.26	333.26	
Stock Pile Transfer & Ground		839.60	839.60	839.60	
<u>IMPROVEMENT</u>					
CLIFFS SHAFT MINE.					
Nov. 30, 98 Inventory	104.30	For Year Expenditure			
November 30th, 1899.					
Total					For Year Nov. 30, 99 Deprec'n Inventory

Analysis of Improvement and New Construction.

IRON CLIFFS CO.

I R O N C L I F F S C O .

Record of Insurance on Dwellings and Mine Buildings for the
Year ending November 30th, 1899.

	<u>Amount Insurance Carried.</u>	<u>Premiums Accruing For 1899</u>	<u>Fire Losses For 1898</u>
<u>CLIFFS SHAFT MINE</u>			
Dwellings,	7800.00	39.00	
Boarding House,	2500.00	5.22	
Mine Buildings,	7300.00	138.72	
Crusher, Building & Contents,	5000.00	72.96	
New general Office & Contents,	<u>4500.00</u>	<u>27.00</u>	-----
<u>Total,</u>	27100.00	282.90	
<u>Salisbury Mine</u>			
Dwellings,	17350.00	86.75	
Mining Buildings,	<u>8050.00</u>	<u>156.48</u>	-----
<u>Total,</u>	25400.00	243.23	
<u>Foster Mine</u>			
Dwellings,	2550.00	18.48	
Mine Buildings,	<u>2950.00</u>	<u>49.32</u>	-----
<u>Total,</u>	5500.00	67.80	
Total I. C. Co.,	58000.00	593.93	

Remarks:-

No Fire losses during year.

Iron Cliffs Co.

*Insurance 1899
Sept 31 - 1899*

No Fire losses during year.

Remarks:-

Total I. C. Co.,	28000.00	203.93	
Total,	2200.00	62.80	
Mine Buildings,	2050.00	48.33	
Dwellings,	150.00	14.47	
Hooper Mine			

Total,	32400.00	266.73	
Mining Buildings,	8050.00	136.48	
Dwellings,	14250.00	98.25	
<u>Self-owned Mine</u>			

Total,	24100.00	238.48	
New General Office & Contents,	4500.00	31.00	
General Building & Contents,	2000.00	45.93	
Mine Buildings,	1300.00	138.28	
Boarding House,	2200.00	2.83	
Dwellings,	1800.00	36.00	

CLIFFS BUILT UP

Carried over from 1898	For 1898	For 1899
Insurance Amount	Accruing Premiums	Losses Paid

-----000-----

Year ending November 30th, 1899.

Board of Insurance on Dwellings and Mine Buildings for fire

IRON CLIFFS CO.

IRON CLIFFS CO.

Detail of Accounts Receivable.

Cleveland Iron Mining Co.	6400.39
W. M. Sterling	16.65
R. W. Clayson	31.78
Thos. Buzzo	18.01
J. H. Rough	38.31
Superior Posten	100.00
Ishpeming Floral Co.	60.00
Standard Oil Co.	13.41
J. F. VanBroeklin	25.05
D. J. Ryan	12.03
John T. Burke	12.69
The D. C. Prescott Co.	836.55
R. L. Ginsberg & Sons	<u>237.18</u>

Total

7852.65

Iron Cliffs Co.

Auto Receivable + Payable 1899.

Sept 26 - 26

1899.00

Total

K. G. General & Sons	881.18
The D. C. Bassett Co.	839.89
John F. White	18.69
D. J. Ryan	18.03
J. E. Amelocklin	82.09
Standard Oil Co.	13.41
Terbening & Jones Co.	60.00
Subsidiary Boston	100.00
J. H. Korte	38.31
Proc. Brzo	18.01
B. A. Cleason	31.38
A. W. Sterling	16.69
Cleveland Iron Mining Co.	8400.39

Detail of Accounts Receivable

IRON CLIFFS CO.

IRON CLIFFS CO.

Detail of Accounts Payable.

Pay Rolls 25094.11

Bills Audited:- of Bills Audited (Accounts Payable) November 30th, 1899.

J. A. Hodgkins	14.00	
Wm. T. Cole	2.50	
J. J. Leffler	1.25	14.00
J. W. Jochim Hdw. Co.	2.10	2.50
Fred P. Tillson	.90	1.25
Ole Olson	4.16	2.10
A.W. Myers & Co.	2.45	.90
Losselyong Bros.	.33	4.16
C. Olson	.30	2.45
Mrs. A. Williams	1.00	.33
R. A. Burke	27.00	.30
Columbian Furniture Co.	21.00	1.00
T. H. Dawson	1.05	27.00
And. Hanson	14.88	21.00
F. Braastad & Co.	.40	1.05
The D. C. Prescott Co.	48.90	14.88
The Gutta Percha Rubber Mfg. Co.	14.00	.40
Rand Drill Co.	39.40	48.90
Women's Auxiliary	1.25	14.00
B. J. Goodman	20.49	39.40
Cleveland Iron Mining Co.	519.95	1.25
E. Skoglund	7.00	20.49
Negaunee Land Dept.	36.00	519.95
Felch & Vandeventer	547.00	7.00
Ishpeming City Water Works	74.00	36.00
Cleveland Iron Mining Co.	25.50	547.00
Chas Gound	36.00	74.00
Cleveland Iron Mining Co.	662.80	25.50
F. J. McLoughlin	18.75	36.00
Central Elec. Co.	6.20	662.80
D.S.S. & A. Ry. Co.	14.11	18.75
B. T. Fund	91.99	6.20
L. S. & I. Ry. Co.	10.71	14.11
H. Hemming	15.00	91.99
Christ Peterson	10.00	10.71
		2292.37
Taxes Unpaid		13468.26
Estate of Thos. Casey		500.00
" " Wm. J. Williams		385.00
Youghiogheny River Coal Co.		1321.73
Poll Tax		2.00
J. C. Hodge		20.40
Total		43083.87

IRON CLIFFS CO.

Record of Bills Audited (Accounts Payable) (November 30th, 1899.)

J. A. Hodgkins	14.00
Wm. T. Cole	2.50
J. J. Leffler	1.25
J.W.Jochim Hdwe.Co., Ltd.	2.10
Fred P. Tillson	.90
Ole Olson	4.16
A. W. Myers & Co.	2.45
Losselyong Bros.	.33
C. Olson	.30
Mrs. A. Williams	1.00
R. A. Burke	27.00
Columbian Furniture Co.	21.00
T. H. Dawson	1.05
And. Hanson	14.88
F. Braastad & Co.	.40
The D. C. Prescott Co.	48.90
The Gutta Percha Rub.Mfg.Co.	14.00
Rand Drill Co.	39.40
Women's Auxiliary	1.25
B. J. Goodman	20.49
Cleveland Iron Mining Co.	519.95
E. Skoglund	7.00
Negaunee Land Department	36.00
Felch & Vandeventer	547.00
Ishpeming City Water Works	74.00
Cleveland Iron Mining Co.	25.50
Chas. Gound	36.00
Cleveland Iron Mining Co.	662.80
F. J. McLoughlin	18.75
Central Electric Co.	6.20
D.S.S.& A.Ry.Co.	14.11
B. T. Fund	91.99
L.S.& I.Ry.Co.	10.71
H. Hemming	15.00
Christ Peterson	10.00
Total	<u>2292.37</u>

Iron Cliffs Co.

Details of unpaid Vouchers

Record of Bills Analyzed (Accounts Payable) November 30th, 1903.

IRON CLIFFS CO.

	Total	<u>\$283.37</u>
Christ Peterson		10.00
H. Hemming		12.00
L.S. & I. S. Co.		10.71
B. T. King		21.22
D. S. & A. S. Co.		14.11
Central Electric Co.		8.20
E. J. McLoughlin		13.72
Cleveland Iron Mining Co.		63.30
Cass. Gould		36.00
Cleveland Iron Mining Co.		32.20
Lehman City Water Works		24.00
Reid & Vandeventer		27.00
Keystone Land Department		26.00
E. Skoelund		17.00
Cleveland Iron Mining Co.		22.32
B. I. Goodman		20.42
Women's Auxiliary		1.32
Rand Drill Co.		22.70
The Gulf Paving Sub. M. Co.		17.00
The D. C. Prescott Co.		42.20
H. Brunsford & Co.		1.40
And. Hanson		14.82
L. H. Dawson		1.02
Columbian Furniture Co.		21.00
J. A. Burke		27.00
Mrs. A. Williams		1.00
C. Olson		.20
Joergsberg Bros.		.32
V. W. Myers & Co.		2.42
Ole Olson		4.12
Fred E. Linton		.30
L. W. Kochin Howe Co., Ltd.		8.10
L. J. Pelifier		1.22
Am. T. Cole		2.20
L. A. Hofberg		14.00

IRON CLIFFS CO.

Detail of Accounts Payable.

Pay Rolls		25094.11	
Bills Audited:-			
J. A. Hodgkins	14.00		
Wm. T. Cole	2.50		
J. J. Leffler	1.25		
J. W. Jochim Hdw. Co.	2.10		
Fred P. Tillson	.90		
Ole Olson	4.16		
A.W. Myers & Co.	2.45		
Losselyong Bros.	.33		
C. Olson	.30		
Mrs. A. Williams	1.00		
R. A. Burke	27.00		
Columbian Furniture Co.	21.00		
T. H. Dawson	1.05		
And. Hanson	14.88		
F. Braastad & Co.	.40		
The D. C. Prescott Co.	48.90		
The Gutta Percha Rubber Mfg. Co.	14.00		
Rand Drill Co.	39.40		
Women's Auxiliary	1.25		
B. J. Goodman	20.49		
Cleveland Iron Mining Co.	519.95		
E. Skoglund	7.00		
Negaunee Land Dept.	36.00		
Felch & Vandeventer	547.00		
Ishpeming City Water Works	74.00		
Cleveland Iron Mining Co.	25.50		
Chas Gound	36.00		
Cleveland Iron Mining Co.	662.80		
F. J. McLoughlin	18.75		
Central Elec. Co.	6.20		
D.S.S. & A. Ry. Co.	14.11		
B. T. Fund	91.99		
L. S. & I. Ry. Co.	10.71		
H. Hemming	15.00		
Christ Peterson	10.00	2292.37	
Taxes Unpaid		13468.26	
Estate of Thos. Casey		500.00	
" " Wm. J. Williams		385.00	
Youghioghney River Coal Co.		1321.73	
Poll Tax		2.00	
J. C. Hodge		20.40	
Total		43083.87	

Records of Cliffs Shaft Continued

	At mine			At Precast Sale			At L. E. Parts					
	Tons	Price	amount	Tons	Price	amount	Tons	Price	amount			
July	10572	1610	1560316	11383	1900	1984648	99206	1960	24123275			
	x 4874	1020	150	731167	2315	--	181	419015	173	680	240	41593
									x 16586	360	241	3997263
August								o 11210	1050	2475	2774590	
								o 1706	1060	250	426618	
	x 4464	1860	150	669724	x 4537	--	181	821197	20908	1280	241	5038964
September	19917	10	2961727	18735	1900	3724860			57	1420	240	13835
	3784	760	150	567649	7310	--	181	1323110	149826	1090	241	36416133
									12159	540	241	2930374
October								o 3070	700	2475	759903	
	x 4736	670	150	710443	7044	--	181	1274964	16501	60	241	3976747
									739	2040	250	184978
November								o 4500	400	2475	1113794	
	x 5789	560	150	868387	11272	--	181	2040232	4071	260	241	981136
	37471	2000	5707686	117	170	185	21659	656	560	250	164062	
Previous years				80	600	1875	15050	402	720	2475	99575	
				44059	430	7849275	11949	1820	2475	466226107		
											2951	
1899	31662	2210	150	4749439	40448	770	1812	7322140	107713	1180	2413	25989919
Previous years sales				90406	160	2386	21575721					
1899 sales				179824	1920	2116	38061498					
				770230	2080	2206	59637219					

360,000
2240
13600
13440
1600

151,160
7558
226.74

290,000
2240
6600
4480
21200
20160
1040
693200

803,129
80,3129
883,4419

1323450
11200
20345
20160
1850
1120000
201600
1850
1323450

414300
2240
19030
17920
11100
8960
2140
184
179200
8960
2140
14300

Deliveries of Cliffs Shaft Ore - Year ending Nov. 30, 1899

	at mine			at Presque Isle			At Lake Erie piers								
	Tons	Price	amount	Tons	Price	amount	Tons	Price	Amount						
December	2558	2030	140	3582	47	3610	1900	160	5777	35	3186	1460	208	6628	23
											979	2140	220	2155	90
											174	140	240	417	75
											13666	1710	2475	33825	22
January											200		240	480	00
											128	1480	220	283	05
											1510	1400	2475	3738	79
											1093	580	250	2733	14
February											1353	2180	220	2978	74
											101	1760	240	244	28
											5111	1410	2475	12651	28
											748	1880	250	1872	10
											43	1630	208	90	95
March											70	600	208	146	15
											722	620	220	1589	01
											422	420	240	1013	24
											6822	1820	2475	16886	46
April											332	1920	240	798	86
											159	340	241	383	56
											2480	1700	250	6201	90
											8528	680	2475	21107	54
May	2302	1780	150	3454	19	3063		181	5544	03	217	420	240	521	24
											14336	1060	241	3455	152
											8336	710	2475	20632	38
											433	1080	250	1083	70
June	5711	40	150	8566	50	4710	-	181	8525	10	200	500	240	480	53
											18883	580	241	45508	63
											8436	610	2475	20879	76
											612	670	250	1530	74
Forward	10572	1610		15603	16	11383	1900		19846	48	99206	1960		24123	75

2501.50
2451.35

4952.85

5140

4480

1634.54
500.3

6636

11708
22760

11052

Deliveries of Barium Ore Year ending Nov. 30, 1919

	At Mine						At L. E. parts			
	Tons	Price	Amount	Tons	Price	Amount	Tons	Price	Amount	
December							23	1580	350	8343
January							785	1550	325	255349
February							267	1670	325	87017
March							86	2160	225	19567
April							31	2210	350	11196
May							21	910	260	5565
June							101	1690	260	24315
July							1439	240	325	467709
August							1451	1310	325	471764
September							1055	1950	325	343161
October							345	1500	250	86417
							5611	1390	3172	1780403
							<u>Previous year's sales</u>			

Deliveries of Old Mine Barium

June	30	300	260	7835
July	43	180	260	11201
Aug	80	500	260	20858
September	153	980		39894
October	84	1740	260	22042
				1111460
				260
				29029
				3491940
				260
				90965
				<u>Previous year's sales</u>

Deliveries of Salisbury Business Year ending Nov. 30, 1899.

	At Midd						At L. E. ports		
	Tons	Price	Amount	Tons	Price	Amount	Tons	Price	Amount
December 1789		161	278369				3973 980	250	993359
January							1554 1240	256	397965
February							4760 1100	250	1190123
Mar							1307 1970	256	334817
Apr.							1789 40	250	447254
May							13365 45		336354
June							8788 780	250	2197087
July							3856 1860	250	964207
Aug.	2101 1740	185	388829				76030 1250		6524812
Sept.	4844 1970	185	896303				5016 410	280	1404531
Oct.	702 1620	185	130004				31046 1660		7929343
Nov.	613 2130	185	113581				461 1060	280	129212
	999 740		1807036				2575 150		9247673
Previous year 1789	-	161	278369				26030 1250	2506	65264812
1899	8263 740	185	1528717				9724 1140	280	2722861
Previous year sales			277591250	2450	6803181				
1899 sales			179871880	2363	4251578				
			45747890	2416	11054759				

Livings of Salisbury Year ending Nov. 30, 1899.

	At Mine				At L. E. pits							
	Tons	Price	amount	Tons	Price	amount	Tons	Price	amount			
December							1521	1760	175	266312		
							2099	920	185	388391		
							288	1080	190	53861		
							2174	440	200	434839		
January	1189	1640	120	142768			1631	760	175	285484		
							2262	1520	200	452535		
February	3185	690	120	382237			1724	1940	175	301851		
	<small>4373</small>	<small>40</small>		<small>573005</small>			<small>11697</small>	<small>1700</small>		<small>2183773</small>		
										10		
Mar.	5050	2080	120	606111			2503	2080	175	438187		
							1036	1810	200	207361		
April	354	470	105	37192			2565	800	175	448937		
	1777	1120	120	213300			354	390	195	69064		
							810	150	200	162013		
May	1221	1160	105	128259			490	800	175	85812		
	1034	800	120	124123			1092	670	185	202075		
	<small>13613</small>	<small>1240</small>		<small>1633790</small>			1242	670	195	242248		
							<small>11993</small>	<small>110</small>		<small>4038930</small>		
June	2047	2130	105	215034			4180	300	180	752423		
	917	600	120	110072			1660	1070	185	307188		
							4660	650	195	908756		
July	1891	910	105	198597			17278	460	195	3369248		
	2747	1980	120	329746			2129	-	195	410001		
Aug.	3197	360	105	335705			9652	810	195	1882210		
	745	480	120	89425			<small>61353</small>	<small>1160</small>		<small>11668806</small>		
	<small>2360</small>	<small>920</small>		<small>1918569</small>			8823	1930	195	1720653		
Sept.	5973	1970	120	716865			6764	440	195	1319017		
Oct.	7341	600	120	880952			5023	870	195	949560		
Nov.	6232	480	120	747882	307	860	127	39038	1190	1360	185	220250
	<small>44907</small>	<small>1090</small>		<small>51256268</small>					5023	870	195	949560
Previous years	8712	550	105	914787			27227	1780	1839	5007529		
1899 sales	36195	1540	120	4343481	307	860	127	39038	55927	1740	195	10900757
Previous years sales				35940	40	1648		59223	16			651551200
1899 sales				92430	1928	1653		152832	76			
				128370	1990	1651		212055	92			

3.54.2

1.20

70800

3542

1200

Deliveries of Salesbury #2 Year ending Nov. 30, 1899

	at mine			At L. E. pits		
	Tons	Price	amount	Tons	Price	amount
December	718	2030	75	539	18	
May						
June						
July						
Previous years sales	718	2030	75	539	18	
1899 sales	-	-	-	-	-	-
Previous years sales	910	1540	960	874	80	
1899 sales	3158	1280	200	6317	14	
	4069	580	1767	719	194	

Deliveries of Fitch #2 Ore Year ending Nov. 30, 1899

1899 sale 580 1650 355 2061 61

Serris Salis Silica Year ending Nov. 30, 1899.

	<i>At Mine</i>			<i>At Lake Erie pts.</i>			
	<i>Tons</i>	<i>Price</i>	<i>Amount</i>	<i>Tons</i>	<i>Price</i>	<i>Amount</i>	
<i>Mar</i>				231	2160	150	34795
<i>Apr</i>				1076	2210	150	161548
				1308	2130	150	196343
				<u>1308</u>	<u>2130</u>	<u>150</u>	<u>196343</u>

Previous years sales

Deliveries Hitchfield Year ending Nov. 30, 1899

	at Minn			at Marquette			at Lake Erie ports							
	Tons	Price	Amount	Tons	Price	Amount	Tons	Price	Amount					
Mar.							1299	1040	2200	285882				
April							2261	720	2200	497490				
May							1498	2040	2200	329760				
June							5059	1560		1113132				
							648	1690	2200	1427207				
							5708	1010		1255859				
							Previous year sales			5708	1010	2200	1255859	
	Deliveries of Foster													
June	3072	2050	100	3072	91	1438	-	132	1898	16	4118	980	195	803095
						1306	-	165	2154	90	3522	570	206	716779
July	314	960	100	314	43	1479	-	132	1952	28				
Aug.						756	-	132	997	92	3957	1620	195	771756
											1692	2220	2035	344522
Sept.	435	1740	100	435	77						942	20	195	183692
Oct.	1351	670	100	1351	29	1187	-	132	1566	84	3455	200	195	673742
											3490	600	2035	710270
November	4755	960	100	4755	43	6166	-				513	1030	195	100125
1899 sales	9929	1900	100	9929	83	6166	-	1389	8570	10	21692	520	1984	4303981

1899 sales 37788 180 1628 6153964

Deliveries of Tilden Soda Year ending Nov. 30 1898.

	At Mine			At L. E. ports		
	Tons	Price	Amount	Tons	Price	Amount
December				0	2332 790	140 326529
January				0	1618 1770	140 286629
February				0	2120 1190	140 296873
March				+	130 650	160 20846
April				0	2140 2150	140 299733
May				0	1799 50	140 251864
June				0	1891 1030	140 264804
July				x	1672 620	160 267564
Aug.				+	2512 120	160 401926
September				0	2808 1010	140 393182
October				0	731 60	140 102344
November				+	747 920	160 116919
				0	1445 400	140 202324
				+	1375 1500	160 220106
				0	487 820	140 68231
				+	814 1640	160 130356
				+	1757 1220	180 316358
				0	1294 940	140 181218
				+	956 660	160 153006
				0	5339 2050	140 747589
				+	1436 1460	160 229864
				+	382 2170	180 68934
					35795 820	7659
Previous years sales					24009 1060	140 33613201
1899 sales					11785 2000	1628 1918220

Totals

35795 820 1475 5279541

Iron Cliffs Co.

On Illinois - 1899

IRON CLIFFS CO.

RECORD OF DELAYS FROM VARIOUS CAUSES, YEAR ENDING NOVEMBER 30th, 1899.

CLIFFS SHAFT MINE.

	Hours delay	Tons lost	Per cent. of time lost.	
			1899	1898
Fatal accidents	148 ✓	6492	.308	.087
Strike	26 ✓	2691	.054	
Skips, and skip road repairs & Bell line	7 ✓	300	.014	.111
Hoisting Machinery	16 ✓	688	.033	.100
Motors and cars, Underground tracks and cars				.002
High water in Lake bottom				
Shaft and shaft house repairs				
No R. R. cars				
Barring ground				
Top tram engine and cars	3 ✓	123	.006	.040
Cave in and mud				
Crusher Repairs	61 ✓	1364	.127	.188
Rain and snow				.034
Miscellaneous				.014
Total	261	11663	.542	.576
Holidays	220	9520	.458	.424
Grand total	481	21183	1.000	1.000
No. of days 20 hrs. per dya	24			
	tons	Cost	Amount	
Actual product for year	252161			
Average product per day for year	846			
No. of full days mine worked for year	288			
No. of days idle	24			
Lost product (excluding holidays)	11663			
FIXED CHARGES				
Accounts that would not be affected when mines are idle.				
General expense (Except Analysis & Relief Fund)		.079	19862.09	
Maintenance		.035	8639.65	
Air pipes		.003	731.53	
Pumping		.033	8345.51	
Mining Captains		.009	2500.00	
Cave in				
Stripping				
Exploring		.030	7463.34	
Depreciation		.113	28200.08	
Total		.302	75792.20	
Total cost on stock pile for year (actual)	252161	1.055	265545.35	
Less fixed charge - Cost per ton		.302		
Cost of lost product	11663	.753	8782.24	
Possible product and cost	263824	1.040	274327.59	
Loss, or the difference between actual and Possible cost, and the amount	263824	.015	3957.36 ✓	
Do. 1898	190136	.013	2471.77 ✓	

IRON CLIFFS CO.

RECORD OF DELAYS FROM VARIOUS CAUSES, YEAR ENDING NOVEMBER 30th, 1899.

<u>SALISBURY MINE.</u>		Hours delay	Tons lost	Per cent. of time lost	
				1899	1898
Fatal accidents	100				.025
Strike	0	104	3320	.147	
Skips and skip road repairs & Bell line	546	74	1406	.104	.107
Hoisting machinery	60	248	4305	.351	.030
Motors & cars, underground tracks & cars					
High water in Lake bottom					
Shaft, and shaft house repairs	47				.549
No R. R. cars					.006
Barring ground					
Top tram engine and cars	6 1/2	9	171	.013	
Cave in and mud					
Crusher repairs					
Rain and snow					
miscellaneous	20 1/2				
Total	7 81	435	9702	.615	.717
Holidays	26 1/2	272	5463	.385	.233
Total	104 1/2	707	15165	1.000	1.000
No. of days 24 hrs per day	43 1/2	29 1/2			
		Tons	Cost	Amount	
Actual product for year		136519			
Average product per day for year		470			
No. of full days mine worked for year		282 1/2			
No. of days idle		29 1/2			
Lost product (excluding holidays)	1 day	9702			
FIXED CHARGES.					
Accounts that would not be affected when mines are idle:-					
General Expense (Except analysis & relief fund)			.074	10033.95	
Maintenance			.042	5709.00	
Air Pipes			.001	106.64	
Pumping			.057	7810.12	
Mining Captains			.014	1992.00	
Cave In					
Stripping					
Exploring					
Depreciation			.097	13220.12	
Total			.285	38822.83	
Total cost on stock pile for year (actual)		136519	1.076	146395.26	
Less fixed charges - Cost per ton			.285		
Cost of lost product		9702	.791	7674.28	
Possible product and cost		146221	1.057	154569.54	
Loss, or the difference between actual and possible cost, and the amount		146221	.019	2773.20	
Do. 1898		125793	.071	3931.66	

IRON CLIFFS CO.

RECORD OF DELAYS FROM VARIOUS CAUSES YEAR ENDING NOVEMBER 30th, 1899.

Tilden Mine.

	Hours delay	Tons lost	Per cent of time lost	
			1899	1898
Fatal accidents				.124
Strike				
Skips & Skip road repairs & bell line				
Hoisting machinery	17	120	.077	
Motors & cars Undg. tracks & cars				
High water in Lake bottom				
Shaft, and shaft house repairs				
No R. R. cars	17	167	.077	.130
Barring ground				
Top tram engine and cars	2	40	.009	
Cave-in and mud				
Crusher repairs				
Rain and snow	115	1700	.520	.443
Miscellaneous				.003
Total	151	2027	.683	.700
Holidays	70	1150	.317	.300
Total inc. holidays	221	3177	1.000	1.000
No. days 10 hrs. per day	22			
	Tons	Cost	Amount	
Actual product for year	27345			
Average product per day for year	168			
No. full days mine worked for year	155			
No. of days idle	22			
Lost product, (excluding holidays)	2027			
<u>Fixed Charges</u>				
Accts. that would not be affected with mines idle				
General expense (except analysis & relief fund)		.008		251.91
Maintenance		.043		1164.53
Air Pipes				
Pumping				
Cave in				
Mining Captains		.021		570.00
Stripping		.024		675.91
Exploring				
Depreciation				
Total		.096		2662.00
Total cost on stock pile for year (actual)	27345	.387		10585.54
Less fixed charges, cost per ton		.096		
Cost of lost product	2027	.291		589.86
Possible product and cost	29372	.380		11175.40
Loss, or the difference between actual and possible cost, and the amount	29372	.007		205.60
Do. 1898	54214	.004		216.86

The Cleveland-Cliffs Iron Co.

Report of Delays 1899

Sept M + M

RECORD OF DELAYS FROM VARIOUS CAUSES YEAR ENDING NOVEMBER 30th, 1899.

IRON CLIFFS CO.

Ligon Mine.

Hours	Lost	1899 1898
days	Tons	time lost
		Per cent of

Loss of work due to	1899	1898	Per cent of
Loss of work due to	380	7172.40	
Loss of work due to	307	639.98	
Loss of work due to	386		
Total cost on stock pile for year (actual)	\$2342	10282.84	
<hr/>			
Deduction	1092	\$668.00	
Explosive			
Stripping			
Mining Machine			
Cave in			
Framing			
Air Pipes			
Maintenance			
General expense (except machinery & relief fund)			
Accnts. that would not be affected with mine idle			
Fixed Charges			
Loss product, (excluding holidays)	2082 1/2		
No. of days idle	38		
No. full days mine worked for year	168		
Average product per day for year	24342		
Actual product for year	Tons	Cost	Amount
No. days to hrs. per day	SS		
	SS1	3152	1.000 1.000
Holidays	50	1190	.317 .300
	191	\$287	.683 .700
Miscellaneous	112	1500	.680 .443
Rain and snow			
Campfire repairs			
Cave-in and wire	\$	40	.003
Top from surface and wire			
Barring Ground	15	167	.057 .130
No. H. R. cars			
Sharf, and shaft horse repairs			
High water in Lake bottom			
Hoists & cars (incl. tracks & cars)	15	180	.057
Hoisting machinery			
Skids & skip road repairs & pull line			
Strike			
Lost accidents			.134

Dec. 1898

possible cost, and the amount
lost, or the difference between actual and

possible product and cost
Cost of lost product
Less fixed charges, cost per ton
Total cost on stock pile for year (actual)

Dec. 1898	\$4214	.004	\$16.38
Dec. 1898	\$3338	.001	\$39.60
Dec. 1898	\$3338	.004	\$112.32
Dec. 1898	\$3338	.001	\$112.32
Dec. 1898	\$3338	.001	\$112.32
Dec. 1898	\$3338	.001	\$112.32
Dec. 1898	\$3338	.001	\$112.32
Dec. 1898	\$3338	.001	\$112.32

Dec. 1898

\$4214

.004

\$16.38

\$3338

.001

\$39.60

\$3338

.004

\$112.32

\$3338

.001

\$112.32

\$3338

.001

\$112.32

Explosive
Stripping
Mining Machine
Cave in
Framing
Air Pipes
Maintenance

.084
.081

\$42.31
\$70.00

General expense (except machinery & relief fund)
Accnts. that would not be affected with mine idle

.043
.002

\$164.32
\$21.31

Fixed Charges

Loss product, (excluding holidays)

2082 1/2

No. of days idle

No. full days mine worked for year

Average product per day for year

Actual product for year

Tons
24342

Cost

Amount

No. days to hrs. per day

Total no. holidays

Holidays

Total

Miscellaneous

Rain and snow

Campfire repairs

Cave-in and wire

Top from surface and wire

Barring Ground

No. H. R. cars

Sharf, and shaft horse repairs

High water in Lake bottom

Hoists & cars (incl. tracks & cars)

Hoisting machinery

Skids & skip road repairs & pull line

Strike

Lost accidents

.134

1899 1898

time lost

Per cent of

I R O N C L I F F S C O .

3

Report of Operating Steam Shovel No. 2 for Season of 1899.

<u>Product, Etc.</u>	<u>1899</u>	<u>1898</u>
No. Days-Shovel Worked,	176	114
Average No. Hours worked per Day,	5.88	4.8
Total No. Tons Loaded,	253489	142815
Average Tons per Day Loading,	1440	1253
No. of Men working with Shovel,	11	9.3
Average Tons per man per Day,	131	134.7
Average Wages per Day for Runners,	2.35	2.16
" " " " " Laborers,	2.65	1.40
<hr/>		
Labor Cost per Ton Operating	.016	.016
Supply " " " "	<u>.003</u>	<u>.003</u>
Total,	.019	.019

EARNINGS	<u>1899</u>		<u>1898</u>	
	Amt.	Cost	Amt.	Cost
Lake Mine 159378 Tons	3055.13	.019		.019
Cliffs Shaft 73270 "	1456.14	.020		
Salisbury 20841 "	<u>424.93</u>	<u>.020</u>		<u>.018</u>
Total 253489 "	4936.20	.020	2737.78	.019
<u>Operating Shovel</u>				
Labor,	3988.58	.016	2325.52	.016
Supplies,	<u>823.46</u>	<u>.003</u>	<u>412.26</u>	<u>.003</u>
Total,	4812.04	.019	2737.78	.019
Repairs to Shovel:-				
Labor & Supplies,	124.16	.001		
<hr/>				
Total Operating & Repairs,	4936.20	.020	2737.78	.019

Loading cost during year was charged to mines on basis of actual cost each month.

The Cleveland-Cliffs Iron Co.

Steam Shovel Report 1899
 Mpt M-M

Report of Operating Steam Shovel No. 3 for Season of 1898.

I R O N C L I F F S C O.

each month.

Working cost during year was charged to mines on patents of working cost

Total Operating & Repairs,	4339.80	.080	3233.18	.019
Taper & Supplies,	134.79	.001		
Repairs to Shovel:-				
Total,	4818.04	.019	3233.18	.019
Supplies,	833.72	.002	418.89	.002
Taper,	2388.28	.016	3182.28	.018
<u>Operating Shovel</u>				
Total	5224.80	.080	3233.18	.019
Ballast	30841	"	434.32	.080
Cliffs Shovel	128310	"	1428.14	.080
Lake Mine	128218	Tons	3022.13	.019
<u>FAVORING</u>			<u>Amt. Cost</u>	<u>Amt. Cost</u>
			1899	1898

Total,	.019	.019
Subbt,	"	.002
Taper Cost per Ton Operating	.016	.019
"	"	1.40
"	"	1.40
Average Wages per Day for Runners,	3.32	3.16
Average Tons per man per Day,	121	124.7
No. of men working with Shovel,	11	123.3
Average Tons per Day Loading,	1440	1322
Total No. Tons Loaded,	323483	148319
Average No. Hours worked per Day,	3.38	4.3

No. Days-Shovel Worked,	119	118
Product, Etc.	1898	1898