Bozeman, Mont.
July 9, 1902

C.E. Hendricks Report

Mr. Nelson P. Hulst, Vice President
Duluth, Minnesota

I herewith submit a report of my examination of the properties offered by Mr. Sidney C. Eastman of Chicago, Illinois.

LOCATION:

The property is located in the State of Wyoming, in Carbon County, and is a part of the Seminole Mountains. It is described as being in Sections 12 and 13, Town 25 N., Range 86 West, and 7 and 18, Town 25 N., Range 85 West.

ACREAGE:

There are seven load claims of 20 acres each, covering 140 acres, viz: St. Louis, Calcator, Rex Oxide, Domingo, New Year, Boston and Frozen Finger.

Also four placers, as follows:

The Midnight Iron Placer	154.70	acres,
" Grant " "	103.99	" ,
" Greely " "	94.45	" ,
" Hayes " "	111.74	" ,
Total acreage, all patented, ...	604.88	(Total should be 464.88 acres.)

With 140 acres before referred to the total is 604.88 acres.

Character of Ore:

The ore is a soft hematite of variable quality ranging from a pure blue ore down. There are only three places, however, where the good ore outcrops but the majority is more or less mixed with jasper, iron schists and chloritic and dioritic schists. The formation is very much broken and distorted by eruptions of diorite. In fact it is one knoll after another gradually rising to Bradley's Peak, the highest of the Seminole Mountains and reported to be 9500 feet above sea level. It is not only broken by upheavels of diorite but it is also cut by dikes in different directions. The ground rises knoll after knoll from # 2 (see print attached) and culminates in a high peak 541 feet above in the NW¼ of the SW¼ Section 7. It then drops 219 feet and again gradually rises as before to the top of Bradley's Peak, 1216 feet, about a mile, to the North. The West half rises from # 2 one knoll after another and culminates in a peak in the NW¼ of NW¼ Section 12 or 656 feet above # 2. It drops slightly again and then rises about 500 feet in the next half mile North.

I would note here that # 2 is from 250 to 300 feet above the valley about two miles South of here, where I understand the Burlington Railway ran a survey for a track through their coal lands, (of which reports say they have taken up 25,000 to 30,000 acres.)

By referring to the map you will note from a point near #2, which is near the South line of the NW¼ of the NW¼ of Section 18, thence Northerly and cutting off the East row of forties, that this is practically all diorite, with a couple of outcrops of iron schists. Also from # 2 drawing a line Northwesterly to the center of Section 12.

West of this is practically all diorite or its equivalent, green schists, etc.

I took a sample, # 1, from a little isolated pocket into which a cut had been made in the side of a hill in the NE¼ of NW¼ of Section 18 and which had caved in so I could not get a satisfactory sample.

The Southern forty of the second row from the East is the lowest and lies next to if it does not embrace, some of the coal deposit lying South of here.

On the forty North of this or the NW¼ of the NW¼ Section 18, there must have been a number of pits sunk and cuts made in the sides of the hills but they have either caved in or are of no value. The formation here is dipping in all directions, having been thrown out of position by the upheavals. In fact this is the case throughout the whole property.

On the top of nearly all the knolls can be seen the composition of the knolls and some of them are half iron formation and half dioritic schists and I have approximately located a number of the upheavels though by no means all.

The development is so meagre that it is impossible to make an estimate of the ore in sight, as the cuts, tunnels and pits that have been made are caved in so badly that one cannot tell what there is in the bottom, whether there is an improvement with depth or not. As there are but one or two shafts on the whole property that are 35 feet deep and where even there is a pit or shaft there is a good deal of poor materal thrown out, it seems reasonable

to think and in fact quite likely that had the quality improved with depth, (or even continued where the ore was good to start with that they would not have continued the good ones instead of scratching around in so many places and in such a superficial way. As I stated before, it is impossible to make an estimate of the ore with the present state of development yet if I was to make a guess I would say there is not 1,000,000 tons of 60% ore on the property. There are, however, three places where good blue ore outcrops, viz. Bos. 11, 13 and 18, though the samples may not indicate it and I do think the indications are worthy of $10,000. to $15,000. to clean up some of the pits and sink some and also put down a few diamond drill holes to see if the iron schists do not improve with depth and also test the depth of other places. I think for the most part that we would drill very rapidly and that the formation would be very easy on diamonds.

MINING.

As to mining, would say that unless the ore would be found from exploration to follow up from # 2 Northerly so it would be practicable to work into it from that point, it might be advisable to install an overhead wire tram. I cannot give a possible mining cost, as we know so little of the extent of the deposit. The physical character of the ore however is such that it could be easily broken down and be loaded with a steam shovel. The stripping would not average more than four or five feet.

Timber:

There is no timber on the property. Nothing but sage-bush and cacti excepting around the springs there are a few bushes. I understand, however, that there is timber about fifteen miles to the Northeast on the other side of the mountains.

Water:

I think there would be no water to bother. There are a few springs however of very fine water. There is a gulch running lengthwise about through the center North and South which I think would afford ample drainage.

Fuel:

There is an unlimited amount of good steam coal within four miles. Thousands of acres I understand have not been taken up.

Following are some analyses given by Prof. Knight of the University of Wyoming of the coal in the vicinity:

Name of Coal Vein.	Water%	Vol. Matter %	Fixed Carbon%	Ash%	Fuel%
Fieldhouse	12.24	34.31	46.87	6.58	81.21
Penn M. Co.	11.01	33.27	48.48	6.24	81.75
Miller	12.02	37.53	49.90	5.20	82.78

Railroad Facilities:

The property could not be opened under the present railroad facilities. The main line of the Union Pacific lies about thirty miles South in a direct line. The Northwestern is extended as far as Casper, about sixty miles Northeast. The Burlington completed a line as far as Gumsey about a year ago, which is about 125 miles East and had a line surveyed within four or five miles of this property to the South, passing on to the West.

Following you will find analyses of samples taken and corresponding numbers on the map showing the location.

Respectfully submitted

(Signed) C. E. Hendrick, E. M.

LAKE SUPERIOR IRON COMPANY'S LABORATORY.

REPORT OF ANALYSIS

Ishpeming, Mich.,
Aug. 6, 1902.

date taken	Description of sample Dried at 212°	Claim	Iron	Phos.	Silica
7/2	Wyoming No. 1	Hayes Placer	53.45	.107	49.86
	" No. 2	Frozen Finger	51.40	.085	43.77
	" No. 4	" "	33.70	.107	65.95
	" No. 5	Domingo	28.70	.087	67.91
	" No. 6	Hayes Placer	51.40	.057	53.26
	" No. 7	New Year	44.10	.188	13.51
	" No. 8	N. End Creely Placer	66.30	.223	1.37
	" No. 9	Barton	40.35	.055	40.46
	" No. 10	Midnight Plac	53.75	.067	42.09
7/3	" No. 11		56.05	.049	16.50
	" No. 12	Midnight Plac	53.90	.094	49.75
	" No. 13	" "	63.30	.129	3.81
	" No. 14	Calcator	61.30	.168	6.38
	" No. 15	"	68.55	.074	.91
	" No. 16	St. Louis	56.45	.144	15.98
	" No. 17	Calcator	57.85	.154	37.18
	" No. 18	"	58.65	.190	17.71
	" No. 19		45.00	.143	33.41
	" No. 20		60.05	.149	8.25
	" No. 21		56.30	.038	15.25