

AN INDEPENDENT ENGINEER'S

REPORT ON THE PROPERTIES

of the

PENN-WYOMING COPPER COMPANY

and the

GRAND ENCAMPMENT

COPPER MINING DISTRICT

Located in the County of Carbon

STATE *of* WYOMING

Made for and at the expense of a party of Dubuque, Iowa, Investors and Stockholders.
Given to the Penn - Wyoming Copper Company
with their compliments

PUBLISHED BY CONSENT

J. H. VANDENBERGE, *Mining Engineer*
DUBUQUE, IOWA

Encampment, Wyo., Oct. 15, 1906.

GEOGRAPHICAL SITUATION.

The properties of the Penn-Wyoming Copper Company, consisting of the Ferris-Haggarty Group of Mines, the Doane-Rambler Group of Mines, the Carbondale Coal Mines, The Smelting and Reduction Works, The 16 1-2 Mile Aerial Tramway, The Electric Lighting Plant and Franchise, The Water Works System and Franchise, the properties of the Town Site Companies, both at Encampment and Rambler, the Pipe Line Ditch Company, the Saratoga and Encampment Railway Company, now under course of construction, and a Large Timber Grant from the United States Government, are all situated in Carbon County, Wyoming.

Commencing at the town of Walcott, Wyoming, on the Union Pacific Railway, which is the Northern terminal of the Saratoga & Encampment Railway, the line runs in a Southerly direction from Walcott through the Platte and Encampment Valleys to the town of Encampment via the towns of Saratoga and Riverside. The properties then extend across the Continental Divide, passing the Battle Basin in which lie the Doane-Rambler Group of Mines, Town of Rambler and other valuable properties, and end at the Carbondale Coal Mine and the Ferris-Haggarty Mine on the extreme southwest, a distance of 65 miles from Walcott.

A variety of geographical conditions exist within the boundaries of these various properties. The Railway courses through two extensive and well watered, fertile valleys, one through which the Platte River flows and one having the Encampment River and numerous creeks for its water supply.

TOWN OF ENCAMPMENT.

Encampment consists of a town of about 1,500 people, very modern, having many up-to-date improvements and conditions, good water and electric lighting system. It is well situated with regard to wood, water and coal; is well built, containing numerous large and well equipped stores, office buildings, bank, hospital, saw mill, ice houses, laundry, several good hotels, churches and school houses, lying immediately at the edge of the foot hills of the Continental Divide at an elevation of 7,200 feet.

This town will be the Southern terminal of the Saratoga & Encampment Railway and is naturally the distributing point for the entire mining and agricultural section covering a vast area between the Union Pacific main line 45 miles to the North and the Moffat Road 130 miles to the South.

DOANE-RAMBLER MINE.

The Doane-Rambler Mine is situated in a basin at an elevation of 9,300 ft. on the Pacific Slope of the Continental Divide at the Town of Rambler about 13 miles southwest from Encampment at the upper part of the valley of Battle Creek and forms about the hub of what is known as Battle Lake Mining District. This property together with over 600 acres of mineral land all patented, upon which is also the town site of Rambler, represents the holdings of the Battle Lake Tunnel Site Mining Company, all of which has been recently purchased by the Penn-Wyoming Copper Company.

There are two lakes lying in this basin, together with several creeks feeding to and flowing from each, the water from one lake being capable of producing electric energy enough to run a plant of considerable size. The hills rising from and adjacent to this basin are covered with a good growth of both mining and sawing timbers and timbers for fuel purposes.

THE FERRIS-HAGGARTY MINE.

The Haggarty Copper Mining Company whose holdings consist of the following: The Ferris-Haggarty Mine situated on the Rudefeha claim, the Rudefeha East Extension, the Rudefeha West Extension, the Doyle, and the Jordan, all patented full claims, one fraction known as the West End Fraction patented, and three claims unpatented, giving over one mile continuously on the strike of the vein and two claims protecting the side lines, together with water rights, timber claims and mill sites, all of which were purchased at a cost of One Million Dollars, (\$1,000,000.00), by the Penn-Wyoming Copper Company, are situated on and above Haggarty Gulch at a distance of about two miles from and upon the Western Slope of Bridger Mountain at an elevation of 10,300 feet, sixteen and one-half miles in a direct line from the Town of Encampment, and is in the heart of a highly mineralized zone upon which much prospecting has been done and many mines discovered. The district in which these properties lie is very precipitous, very well watered, with an abundance of timber for mining, building and fuel purposes.

THE CARBONDALE COAL MINE.

The Carbondale Coal Mine lies seven miles southwest of the Ferris-Haggarty Mine and practically in the same range of mountains. Very similar conditions with regard to wood and water existing as is the case in the entire district.

THE TRAMWAY.

The geographical conditions over which the tramway courses are exceedingly varied. Its eastern terminal is the Reduction Works of the Penn-Wyoming Company at Encampment, Wyoming. From thence it travels for about four miles with a very slight inclination, to the first station which is called No. 2. It passes over a series of hills and gulches with a maximum elevation of about 8,500 feet, crossing gulches a distance as much as 2,300 feet between retaining towers and in some places being more than 400 feet from the bottom of the gulches. From the Smelting Works to No. 2 station represents the first section, from thence it travels over practically the same country only reaching a maximum elevation of about 9,500 feet, a distance between stations of four miles passing over a rather more rugged section than the first one. From No. 3 station, which is situated immediately on Cow Creek, it rises very rapidly over cliffs and mountains until it reaches its maximum elevation for the entire route, while crossing the Continental Divide, at Bridger Peak, of over 11,000 feet. At this point is established a service station, and it proceeds on its way dropping down to the Ferris-Haggarty Mine a distance of nearly 1,000 ft. where is established its present Southern terminal.

THE WATER PIPE LINE.

Encampment River, rising in what is known as the Hog Park Country, is fed from numerous creeks and streams and from the waters of the perennial snows, which in some parts of its source, last practically the entire season, flows in a northerly direction through the Encampment Valley and emptying into the Platte River at a point some eight miles below the Reduction Works of the Penn-Wyoming Copper Company. A Pipe Line was constructed along the line of this river by the Encampment Pipe Line Ditch Company at a cost of \$117,000.00, which was later acquired by the Penn-Wyoming Copper Company. It has its head at a dam constructed at a point four miles from the Reduction Works having a fall of 149 feet.

TITLES OF PROPERTIES.

The titles to all properties owned by the subsidiary Companies of the Penn-Wyoming Copper Company, namely, The Encampment Smelting Company, The Encampment Tramway Company, The Encampment Pipe Line Ditch Company, The Encampment Water Works Company, The Encampment Land and Town Lot Company, The Haggarty Copper Mining Company, The Battle Lake Tunnel Site Mining Company, The Carbondale Coal Company,

The Emerson Electric Light Company, The North American Mercantile Company, and The Saratoga & Encampment Railway Company, are all vested in The Penn-Wyoming Copper Company, which Company controls the entire operations. The Companies are duly organized and incorporated under the Laws of the State of Wyoming, the deeds and conveyances being duly recorded and passed upon by counsel, and the properties are free from all incumbrances.

INSURANCE.

All the properties of the Companies are fully covered for protection against fire. The Companies also insure themselves against liability for accident for all their employes. It is well to state here that the Company has a Hospital both at Encampment and at the Mine, in charge of two very competent physicians who take care of all the sickness, illnesses and all accidents of its employes.

SUPPLY OF LABOR.

The labor condition is very good, all of the Camps being entirely free from Labor Organizations, consequently there are no strikes, shut downs, or anything happening which affects the operation of the properties. The supply of labor is good, both skilled and unskilled, paying from \$3.00 to \$5.00 per day.

MINING TIMBERS AND FUEL.

The entire District is well supplied with mining and sawing timbers for fuel, the hill sides being covered with a fine growth of pine, spruce and fir. No difficulty is encountered in procuring square timbers up to 18" and 24". In addition to the large wood fuel supply there are numbers of coal deposits already discovered and developed, varying in thickness from a few feet to 65 ft., as is the condition on the Elk Mountain property where a seam of good bituminous coal has been developed. It is well to state here that upon the best authorities in coal, it is a well known fact that more coal exists in the State of Wyoming untouched than in any other State in the Union, Pennsylvania not excepted.

MINING STORES, SUPPLIES, ETC.

The Penn-Wyoming Copper Company carry in stock in their Warehouses a full supply of mining and other supplies amounting to about \$35,000.00. Owing to the fact that the Company has its own well equipped machine shops, blacksmith shops, carpenter, wood

working and pattern making shops, and its own Foundry, it is relieved of the necessity of having to waste time by sending to Denver or Salt Lake City for material, which is constantly being required.

GEOGRAPHICAL CONDITIONS.

The Encampment Copper Mining District which lies exclusively in the Sierra Madre Range of Mountains consists of granitic rocks, quartzites, shists, lime stones, diorites and slates, all irregularly banded together, the principal contacts, however, in which the ore occurs are quartzites and the rocks of the Gabbro family, known locally as diorites. The Medicine Bow Range in which the Medicine Bow Mining District lies and which lies in an easterly direction from the town of Encampment, is somewhat more regularly formed having in addition to the structure of the Encampment District occasional dykes of porphyritic rocks which, however, do not seem to have influenced the mineral deposits in any manner, the ore bodies lying conformably with the quartzites and in the shistose rocks.

CHARACTER OF ORE DEPOSITS.

The Districts contain many interesting variations in ore depositions.

The conditions of the ore deposits in the Ferris-Haggarty Mine and the Doane-Rambler Mine are entirely different and represent, possibly, the two most important occurrences existing in the whole district. In the case of the Ferris-Haggarty Mine the ore occurs as a replacement of the shists, the shists lying between widely divided walls of quartzite on the foot wall, and diorites on the hanging wall. In this property, the ore is capped with a leached out iron oxide which carries itself to a depth of about 60 feet from the surface. The extent of this mass of iron, which originally contained copper values, has not yet been found either in width or length. This same zone of oxidation extends to a depth which varies, but averages about 25 ft., carrying with it carbonates and oxides of copper and some very rare mineral forms such as covellite, bornite, chalcocite and crystals of both azurites and malachites.

This oxidized condition is a most natural one and a very regular one in the case of all large deposits of copper, extending in some instances to depths of several hundred feet.

Immediately below this line of oxidation, and continuing on to the lowest depths of the property, is carried the enriched sulphides and bornites which have received their enrichment from the copper leached from the oxidized zone. This enrichment is an

exceedingly noticeable one and a close examination of the deposit reveals a condition which is not only rare but which places this property upon a basis which makes its copper sulphides unexcelled by any other deposit known to the writer.

The character of the ore through the Mine is a very highly enriched chalcopyrite, the enrichment commencing immediately on the line of demarcation between the oxidized and unaltered zones. The vein filling ore matter is a shistose slate more or less silicified and carrying with it some lime in places. The ore exists through this entire mass, which has been opened up, and a thickness of 65 ft. has been encountered.

In the case of the Doane-Rambler Mine, the conditions as stated before are very dissimilar to those found in the Ferris-Haggarty Mine, the ore as so far shown occurs with the diorites in fractures and fissures in the quartzites. There are showing, with the present state of development, above the main tunnel level four distinct and separate ore occurrences, three of the four showing at the surface capped with the same character of iron oxide as is in evidence at the Ferris-Haggarty and other properties in the neighborhood, with a similar zone of oxidation carrying carbonates and oxides of copper, also carrying some rare forms of copper. These veins vary in thickness as is usually the condition in this character of deposit.

From the tunnel level a shaft has been sunk to a depth of 365 ft., which makes the total depth of development from the surface nearly 600 feet. At the 400 ft. level a body of ore was cross-cut 14 ft. in width, carrying high grade copper and further cross-cutting at this point showed the existence of still another vein upon which, however, very little work was done. At the 500 ft. level, what is supposed to be the main ore body of the property was encountered, showing a width of 65 ft., the majority of which is smelting ore.

DESCRIPTION OF THE FERRIS-HAGGARTY MINE.

This Mine, together with the claims contiguous to it, were located in the year 1898 by two Sheep men named Ferris and Haggarty. In the month of September of the same year after having sunk a shaft through the wash, covering the vein the ore was encountered at a depth of about 40 ft. from the shaft head. The ore consisted of a leached out spongy limonite, or iron oxide, from which all the copper had been leached and re-deposited, enriching the lower ore bodies.

A distance of about 45 feet more was sunk through this same iron capping to that portion lying directly upon the unaltered ores

and for a depth averaging about 25 ft. had retained some of its copper values in the form of carbonates, oxides, covellite, and partly decomposed sulphides to such an extent that the lowest assay of this particular zone made to date is better than 8 per cent. copper, all of which stand in the Mine intact. It was at this point, on the dividing line of oxidation and unaltered condition, that the phenomenally rich ore was encountered.

The small prospecting and discovery shaft was then abandoned and a vertical main working shaft was sunk to allow the extraction of the rich ores for shipping. It was sunk to a depth of 360 ft. and drifts, levels and cross-cuts run from it opening up and disclosing the existence of large bodies of high grade ore, averaging for the milling ore, better than 7 per cent., and the high grade ore or smelting ore better than 35 per cent.

About this time the transfer of the property was made, with the introduction of more capital and miner like operations were conducted.

A long working tunnel was driven commencing on Haggarty Gulch and running in for a distance of about 1,400 ft. At this point the ore bodies were encountered and the tunnel extended for a distance of about 500 ft. all in ore. From this level a winze was sunk 185 ft., 100 ft. being vertical, 85 ft. being at an angle of about 45 degrees dipping towards the ore body which was cut by a cross-cut at the bottom of winze showing continuity of ore. From this main drive raises were made and chutes established directly in the ore and a level run 165 ft. above, which is known as No. 3 level. No. 2 level was also run at a distance of 85 ft. above No. 3 connecting with the shaft and with the level below by raises all in ore. From No. 2 level to No. 1 above is a distance of 120 ft., and is connected by two man ways and raises, all in ore. From No. 1 level to surface, a distance of 165 ft., is the part of the Workings known as the Old Workings.

It was from this block of ground that \$700,000.00 worth of high grade ore averaging about 40 per cent. was extracted and shipped by wagon to Walcott, a distance of nearly seventy miles. This block of ground still contains large bodies of good grade milling ore besides some blocks of high grade ore, which will all average in value about 25 per cent. copper. The width of the ore bodies in portions of these upper workings has not yet been determined, but has been opened as wide as 55 ft. This block of ground was mined by inexperienced men, no regular system of work having been established, consequently it has been necessary for the present management to establish a system of timbering to first, take care of the roof of the Mine, and second, to place this ground in condition for future operation.

On each level and wherever openings are established in the ore from the surface to the bottom, the same large ore bodies are to be seen carrying with them the same tremendous enrichment, it is only natural to assume that with additional depth, large workings, and as the present system of development is continued, the same condition of ore deposition will continue.

It is a strongly established fact and a matter which is the general experience in all copper districts that where an immense LODE of copper bearing ore of this extent is found that as depth is gained the ore bodies increase in size and are more likely to be more compact and better established than in the ground immediately below the surface, because of the fact that the deeper the workings the less likelihood of any effect from local disturbances, and more especially in this case should the fact be appreciated.

Possibly the strongest geological feature obtained in this particular deposit is the fact that the ore lies immediately in the shists, which are not only extensive but to some extent altered by the action of the intrusion of copper and by this alteration they have been placed in a condition of receptiveness which could not be better in any established rock formations. Besides this, the filling of this enormous contact is well and firmly established with no horses or dykes, so far encountered, which could affect in the slightest degree the existence of further and continuous ore bodies along the whole line of this "lode."

The conditions for the economical operation of this property are exceedingly good. The permanent water level of the country should be several hundred feet below the present workings and the only water that can be encountered will be the natural seepage of surface waters. All of these naturally drip to the main tunnel which has been driven with a grade sufficient to allow of the passage of these waters along its entire length, consequently to the present depth no pumping is necessary, in fact, the Mine does not contain a pump of any description.

All the ore taken from the mine is dropped to the tunnel level through a series of ore chutes which extend from the surface down and from these loaded into cars and drawn from the mine with a Porter Air Locomotive, which is capable of making a trip in and out every 30 minutes with five cars, each carrying five tons of ore. The ore is dumped directly from these cars into bins over which the locomotive passes and from there taken out below into the tramway buckets and sent on its way to the Smelting Works at a very slight cost.

The equipment of the mine is very efficient and in splendid shape.

The power plant consists of a 26 Drill Air Compressor, a Norwalk High Speed Compressor for loading the Air Locomotive, an Electric Generating Plant for lighting the mine and surface plant by electricity, a Battery of three Boilers, a well stocked Store Room, well equipped Blacksmith Shops, Machine Shops, Timber Framing Shops and Yard, Powder Magazine, Good Office Building, Bunk Houses, Boarding House, Hospital, Cottages for the employes, and Stables. A full complement of Air Drills and all machinery and other things necessary and proper for the economical operation of a large property.

The water system is good with a plentiful supply of hydrants and hose placed throughout all the buildings and around the Works, in fact it can be stated that it is a strictly up to date equipped property, its entire operations being conducted with a view to proper economy. Machinery and tools are all in first class condition, as are the underground workings in the mine. The buildings have been kept in good repair and there is every evidence of a prosperous, well managed property.

DESCRIPTION OF THE DOANE-RAMBLER MINE, THE PROPERTIES OF THE BATTLE LAKE TUNNEL SITE MINING CO.

The Doane-Rambler Mine was located in the year 1881 by George F. Doane, but very little more than the annual assessment (\$100.00 worth of work) was done until about the year 1895, at which time the district was showing some activity by reason of the rich gold ores that were being discovered in Purgatory Gulch, situated about six miles from Encampment.

These discoveries naturally brought large numbers of Prospectors and Mine Investors into the Camp, which was the real beginning of mining activities of this District. Prospecting was pushed, bodies of copper ore, some of them carrying high values in gold and silver, as well as copper, as is the case in the Doane Mine, were found, during which time some shipments of ore were made particularly from the Doane Mine, which property shipped sixteen carloads of ore, which, according to Smelter receipts, averaged better than 40 per cent copper and about \$7.00 in gold and silver to the ton.

This condition existed until the Ferris-Haggarty Mine was discovered in September, 1898, which finally established the district as unquestionably "A Great Copper District." Other large discoveries were being made proving that the Ferris-Haggarty Mine and the Doane-Rambler Mine were not the only two large producers in the Camp.

Among the more noticeable properties discovered have been the New Rambler with its large bodies of high grade copper ore containing high values in gold and silver and averaging one ounce of platinum to the ton. The Kurtz-Chatterton Mine with its five extensive and distinct veins ranging in width from 18 to 44 ft. wide. The Portland Mine, which has since developed an ore body 45 ft. wide; The Charter Oak Mine, which has an unbroken lead of about two miles in extent; The Shawnee Mine with its neighboring property the Ak-Sar-Ben with an oxidized iron capping varying from 70 to several hundred feet in width; The Copper Age Mine, The Batchelor, The Congo, The Anchoria, The Aetna, The Itmay, The Dill, The Standard and numerous others, more or less developed, and capable of making daily shipments of ore to the Smelting Works of several hundred tons, all assisted in establishing the fact that one of the most extensive and richest copper districts in the United States had been discovered.

It is also a fact that there are more copper deposits opened up that contain high grade ore in this district than in any district known to the writer. It is a remarkable fact that in my investigations and inquiries made in this district that a copper ore containing 10 per cent. of copper is not considered high grade by any means, in fact when high grade ore was mentioned 30 per cent copper seemed to be the minimum amount carried, to be in this class.

The Doane Mine during this period of activity was being systematically prospected and developed; several good sized veins were discovered and an amount of ore extracted and shipped until it had reached a stage of development which made it possible to command a high price. The property together with other claims, which had been located, was sold to a company formed and called The Battle Lake Tunnel Site Mining Company. A plant was established and the real work of systematic development was commenced.

At this time of writing the mine contains five distinct and separate leads or veins of copper ore, four of these showing above the main tunnel level and from which a large amount of high grade ore has been extracted and shipped. One other vein was found to exist at the 400 ft. level, and it is assumed although development has not been extended that far, that these five veins are feeders to the large ore bodies discovered at the lower depths.

In sinking the shaft from the tunnel level, which is down to a depth of 360 ft. and when the 400 ft. level was reached a body of high grade smelting ore was cut together with a vein of lesser importance, that was found to be 14 ft. wide. Instead of opening up this vein the shaft was continued down for another 100 ft., a cross-cut was run and the real ore body encountered having a width of 65 ft.

The character of the formation in which these ore bodies lie makes it a certain fact that this ore body of 65 ft. in width should be extensive both in depth and along the strike. This 65 ft. vein consists of both high grade smelting ore and milling ore lying in streaks and seams through the entire exposure.

The fact that it contains also considerable of the oxides of copper mechanically combined with the sulphides at such a depth would prove it to be an exceedingly rich deposit as depth was gained, and when the development shall have reached a depth of 1,000 ft. it should disclose a deposit of copper that may not be equaled in this country.

The Mine is in good condition; the work has been done in a proper manner, and should be considered one of the most valuable properties owned by The Penn-Wyoming Company. The Plant is very efficient, consisting of a hoist located in the tunnel level with 1,000 ft. capacity, a battery of three boilers, a 10 drill air compressor with air drills, tools, blacksmith shop, machine shop, timber framing shop, full equipped saw mill, powder magazine, houses for the employes, office building and stables.

The Mine has large dumps of ore containing very high values in copper, in fact the time when shipments were being made all the ore that did not carry to exceed 35 per cent. copper was discarded, it being necessary, owing to the long and hard haul to the railroad, to have at least 40 per cent ore to pay expenses and show a profit.

Although the writer did not compute the weight and values contained in these dumps, it would be safe to assume that the value of the ore that can be shipped from them would exceed \$150,000.00.

The other properties of this Company consist of over 600 acres of mineral land situated in this basin upon which the town site of Rambler exists. There is possibly no land in this entire district that has the promise and future that this has.

In this basin are situated a number of large properties being systematically and properly developed, among the most noticeable being the Portland Mine situated upon this same mineralized showing, a distance of about one mile from the workings of the Doane Mine and immediately adjoining the land owned by this Company.

The Portland Mine contains one vein 44 ft. wide and a number of smaller veins varying in width from a few feet to 10 and 12 feet wide, carrying a good grade of milling and smelting ore. At the present time the Portland Company is installing a second plant to sink a second shaft which is proposed to reach a depth of 700 ft. There are also the Dill properties, the Fravert, Ohio,

Doane Verde and numerous others now in course of development, all of which have remarkable showings for the depth attained.

DESCRIPTION OF TRAMWAY.

Possibly the most interesting feature of the Penn-Wyoming equipment is its Tramway. It is not only the longest in the country but it is very successfully operated. Its present total length is 16-1/2 miles, carrying ore from the Ferris-Haggarty Mine to the Reduction Works. It is built in three sections, one of eight miles and two of four miles each.

It is purely a gravity system so much so that because of the difference in elevation between its starting and discharging point it was necessary to build it in three sections and establish at each station a small engine which acts as a brake for its particular section, otherwise it could not possibly be controlled. It was constructed by the A. Leschen & Sons Rope Co., of St. Louis, Mo., at a cost of \$405,000.00.

The whole system from beginning to end is automatic with tripping and self dumping devices having no complicated arrangements to get out of order or to be subjected to the inexperience of the ordinary workman. Very little skilled labor is required in the working of it and in fact the records of the Company show that very little repairs are necessary and accidents are few.

The cables from which are suspended the buckets consist of 33 miles of 1-1/4" crucible steel wire cable upon which the buckets are suspended and 33 miles of 7/8" cable to which are attached the buckets and which is called the traveling cable. The towers by which these cables are held are constructed of good pine timber, well built, and should last with very little repair for many years. The buckets number 985, in service, are built of sheet steel and carry from 750 to 1,000 lbs. of ore, according to the percentage of copper contained.

No. 2 station has a set of bins of a carrying capacity of about 750 tons so that if the lower section is shut down for repairs the upper section can still be running. Each station is well built, fully protected against fire and in such a position that any condition of weather will not affect them.

The total capacity of this tramway under present conditions is 1,000 tons each twenty four hours, which, by the addition of more buckets can be increased to any capacity to the safety points of 2,000 tons per 24 hours. Its estimated speed is about 6 miles an hour, which under favorable conditions can be increased. When not in regular operative service its usual speed is about four miles.

Every mile of the line is patrolled daily winter and summer by line men who carry a small kit of tools and keep everything in repair besides oiling the sheaves on each tower.

It is the present intention of the Company to install several spurs from this main line to tap the several mining camps now ready to become shippers. The first one to be built will be from No. 3 station to the Battle Basin, a distance of 2-1/4 miles, the purpose being first to take the ores from the Doane-Rambler Mine and second, to take the ores from the various properties operating in and adjacent thereto. A charge will be made for transporting these ores, which, in itself, should be an exceedingly profitable business. The prices charged for this transportation will vary according to conditions, but not less than \$4.00 and as high as \$5.00 and \$6.00 per ton will be charged, and even at that price a tremendous saving will be made to the shippers over transportation by wagon. The charge would be according to conditions of the country leading from the many Camps to the Reduction Works, with the exception of the Charter Oak, the Kurtz-Chatterton, The Manhattan, the Aetna, and a few others situated within a few miles of Encampment where wagon haul could be had. With the properties mentioned all being situated very handily to the Reduction Works a wagon hauling charge would be from \$2.00 to \$4.00 per ton, but in the case of the camps upon and on the Western slope of the Continental Divide it would cost at least from \$10.00 to \$20.00 per ton to haul by wagon, so that a charge of \$5.00 or \$6.00 a ton by tramway would be beneficial to the shippers.

It does not seem, however, the intention of the Company to do anything but treat the shippers and probable shippers fairly. The best of feeling seems to exist between all parties and all mine operators and prospectors seem to appreciate the fact that much merit is due the Penn-Wyoming Copper Company for their effort towards the building up of the Camp and providing the means for the disposition of all ores. The cost of tramway operation according to the Company's books for 1905 was 72 cts. per ton of ore transported, but it might be well to state that the cost of this will be considerably reduced when the tram is worked to its full capacity.

The tramway also does a general freighting business carrying mining and other supplies to the various Camps situated upon and adjacent to its route, which is quite a source of income to the Company, and, as the Camp progresses, will be considerably increased.

THE WATER POWER LINE.

The saving in cost of power by the installation of this power line is obvious. According to my calculations the theoretical horse power of this line is 1,060. What the frictional loss would be the writer is not able to state owing to the fact that but little water is being used, only sufficient to run one generator, which supplies power for the machine shops, etc., at the Reduction Works during the day time and lights for the town at night. The pipe is well constructed being built out of 2"x6" clear lumber, dressed, tongued and grooved, bound and clamped together with 5/8" iron rods placed every 2-1/2" apart over the entire line. The dam at its head is well constructed, 25 ft. deep, and affords a good reservoir. The pipe line heads in a pen-stock well and strongly built and from thence is carried to the Reduction Works over and under the ground and on trestle bridges in crossing the river.

The life of this line is according to the condition in which it is kept. If it continues to receive the careful attention it is receiving now there is no reason why it should not last a lifetime. This pipe line not only runs, up to the present time, all the power for the entire plant but it also supplies the mains and feeders which constitute the fire Department at the Reduction Works. The Company owns the absolute water rights of this river to a point below the Reduction Works, from whence the water is taken through ditches for the irrigation of the farm lands in the vicinity so that it might be stated, they are masters of the situation, as far as water is concerned in the entire district, the only other water in the district being that which flows down what is known as the North Fork of this River, which is also owned, controlled and used by this Company in its City Water System.

This covers all the waters in and around this district upon the eastern slope of the Continental Divide and as far as the writer can find is in itself a sufficient guarantee that no competition may be feared by the Penn-Wyoming Company with reference to its milling and smelting operations.

THE ENCAMPMENT WATER WORKS COMPANY.

One of the many things that should impress one with regard to Encampment is the perfect water system, owned, and for which the Penn-Wyoming Company have a perpetual franchise. This is one of the most important conditions which make the town of Encampment more progressive than the average mining and smelting town.

The waters of the North Fork of the Encampment River are owned and controlled by the Penn-Wyoming Company. They are taken

from the river by an open ditch leading to two large reservoirs in their turn being connected by open ditch. From the reservoir leads a main line pipe through all of the main streets and alleyways of Encampment supplying water to all the houses, stores, buildings, etc., supplying the city with water for its Fire Department, all of which represents for the investment, and outside of the mining and smelting interests of the Company, one of the best paying ones.

THE ENCAMPMENT LAND AND TOWN LOT COMPANY.

The holdings of this branch of the Penn-Wyoming business consist of more than 1,600 lots situated in and about the town especially that portion of Encampment which will be the terminal of the railroad, and considering that lots today are selling at from \$50.00 to \$500.00 per lot and considering that with the advent of the Railroad these values will be trebled, this represents an exceedingly valuable asset.

THE ELECTRIC LIGHTING PLANT.

As with the Water Works of the city the Penn-Wyoming Company hold a perpetual franchise with the City of Encampment for lighting its streets and alleyways and also supplying it with power. Previous to the fire the Company owned, so the writer is informed, a well equipped and efficient Electric Lighting Plant built and maintained solely for this purpose. The Franchise is being maintained by furnishing light from a generator now being operated at the smelter, which is being replaced by an electric lighting plant of greater proportions than the one destroyed and which the writer is informed will be in full operation at not later than the beginning of the year 1907. The town is equipped with poles, wires, arc lights, transformers and in many cases meters. Most of the houses and all the stores, office buildings, hotels and other places of business are wired and have been and will be supplied with electric lights. Owing to the fact that this is run entirely by water power the cost of maintenance is very slight and the profits proportionally large.

THE ENCAMPMENT SMELTING COMPANY.

This department of the Penn-Wyoming Company's business is not only the most important one but represents the base from which the bulk of the revenues are derived. These Works with the Tramway are the bone and sinew of this immense Mining District.

The money earning capacity of the Smelting Works and Tramway is limited only to their own limitations. No more important business than the smelting of custom ores exists among the many industries upon which the vast fortunes of men of wealth of this Continent are based. The particular reason for this is that a Smelting Company smelting other than their own ores has no investment, it does not have to pay for ore, hold it in stock a year or two and then be in doubt as to its disposal. The ore is delivered at the Smelting Works, weighed, sampled, and before payment is made upon it, it has been treated and represents that much cash in copper, gold, or silver bars, each of which metals have a standard cash value the moment they leave the furnaces and the profit for Smelting ore is very large.

In this particular district containing as it does large numbers of copper prospects, partly and fully developed Mines, many of which have reached the state of production the owners of all these depending entirely upon these Reduction Works to handle their product, proves in itself the importance of this industry.

The Smelting and Reduction Works consist of a Sampling Department, Smelting Department, Converting Department, Concentrating Department, Machine and Boiler Department, Power Plant, Work Shops, Laboratory, full complement of bins for the reception and delivery of all classes of smelting material, and, in fact, everything that a modern, up to date and well equipped Plant should possess.

The Sampling Works which are separate and apart, are used for the sampling of custom ores and for the determination of their values. The ore is delivered direct from the sampling bins to the feed floor of the furnaces, and are capable of handling a daily tonnage proportionate to the demands of the furnaces.

The Smelting Department with which should be included the Smelter Bins, having a capacity of about 1,500 tons, besides Coke Storage Bins of 1,000 tons, consists of two steel water jacketed rectangular blast furnaces 40x120x84 deep and 40x96x84 deep, each furnace being equipped with settlers or fore-hearths into which the molten metal flows in a continuous stream, an electric traveling crane of 25 tons capacity which handles pots of matte from the blast furnaces to the converters, a full equipment of pots and other apparatus and tools, an all steel feed floors, weighing scales, a well built flue dust chamber leading to a 100 ft. steel stack, a No. 6 Connersville Blower and No. 7 Green Blower, all the power necessary being electrical.

The Converter Department consists of three stands of converters of the Copper Queen type with six shells, a converter lining

department with crushers and Chilli mills for the mud making and pneumatic tools for the tamping, chipping and weighing floor and the necessary tools and equipment to this department. The arrangement of the Smelting Works is very complete, everything is in splendid condition, both furnaces having recently been taken to pieces, fully repaired, and as far as the writer could determine, are equally as good as new.

According to the records of the Company the blister copper produced in the year 1905 averaged 99.27 per cent copper. This is remarkable and cannot be done only with ores absolutely free from zinc, arsenic, antimony, lead and other contaminating elements. Their records show that copper has been produced 99.7 per cent. pure.

Their records show that the cost of production at these works in which is included costs of mining, transportation by tramway and delivery of the copper by animal traction to Walcott 45 miles distant, has varied from 6.37 cts. to 8.9 cts. per pound of copper. From a careful perusal of the records in the office of the Penn-Wyoming Copper Company by the writer he feels perfectly safe in stating that with the Railroad facilities and the more economical conditions which the railroad will bring about, that copper can be produced at this Plant for not to exceed, under any conditions, on an average over 7 cts. per lb. The equipment of this plant and many economical features as well as its very efficient management, the high grade ore which will be treated from its own mines and from the properties in the neighborhood all tend to show why the cost of production is so very small.

The capacity of the Smelting Works on the character of ore treated together with the concentrates produced in the Mill is about 600 tons per 24 hours or 1,000 tons daily including the ore handled by the Mill.

The New Concentrating Mill now under course of construction and replacing the one recently destroyed by fire should also prove as efficient and as economical to operate as the Smelting Department. The writer has gone carefully over the blue prints and specifications and over the portion now constructed, and can state with fairness that the arrangement reflects credit upon the management.

Comparing the mill destroyed by fire to the present one a great difference in its position, construction, equipment and efficiency is noted. The old mill stood practically under one roof allowing the vibration resulting from the pounding of crushers and rolls to be felt through the entire building, which is a feature always subjected to criticism. Under the present conditions the

crushing and rolling department will be situated directly at the tramway terminal bins and at a sufficient distance from the main mill building to not affect any portion of it in the slightest degree.

Further than this by placing the Mill and power plant in its new position a greater security against loss by fire is obtained, a distance from any other building of not less than 80 ft. being maintained. Also there is ample ground space with good foundations to be had on either side of the present mill so that when its capacity is increased it can be done at a very small additional cost.

It must not be construed by this that the Mill has not a large capacity. Its capacity is greater than the old Mill and ample for the demands made upon it by the smelter. The crushed ore taken from the Crushing and Rolling Department will be conveyed by an open top carrier to a set of storage bins of a capacity of 800 tons, placed upon good solid masonry foundations at the head of the mill. These bins are well constructed, nothing but first class lumber being put into their construction, are well built and shows an efficiency of workmanship not usually encountered in the western states.

From thence the ore is conveyed by belt and bucket conveyers, passed through an automatic sampler, then through an automatic weighing-machine giving the mill men an absolute check on the amount of material the mill is handling and the value of the ore, then through Trommel screens into jig concentrators known as the Hancock Jig, each having a capacity of up to 700 tons per 24 hours, the coarse material passing to one jig and the fine material to the other. The tailings and middlings will pass into two sets of fine grinding rolls, the material from these again being screened and classified and passed over No. 3, Wilfley Concentrating Tables.

A further saving will be made and the tailings and middlings from these passed through two sets of grinding mills of the Calumet pattern, which material will be ground to pass through 30 mesh screens, thence into a partial dewatering settling and sliming tank and apparatus which will again discharge over Frue Vanner Tables for a final separation of the remaining values and the gangue of the ore.

The concentrates produced from all these operations will each be run into settling tanks, dewatered and sent direct to the Smelter bins. The cost of milling under these conditions should not exceed the maximum 75 cts. per ton of material treated and an extraction of between 90 and 95 per cent of the values contained in the ore should be made.

THE POWER PLANT.

The Water Power Plant was also destroyed at the time of the burning of the Mill. It consisted of seven water wheels belted to a drive in the Mill, blowing engine, two blowers and electric generators for both power and light in the Power House. Out of this burned plant the Company has saved, which again reflects great credit upon its management, a blowing engine, (costing \$15,000.00.) two blowers, and all of the seven water wheels some of which have yet to be repaired. The pipe line which happened to be buried at this point did not suffer any injury.

The Penn-Wyoming Company has now purchased a steam power plant which will be auxiliary to the water power plant. It consists of a 500 K. W. Westinghouse-Parsons Steam Turbine Unit having a rated capacity of 666 H. P. with a guaranteed over load of 25 per cent., and a safe over load of 50 per cent which will receive its steam from three 200 horse power Babcock and Wilcox Boilers, the electricity generated being fed on to a common system. The water wheels will be divided into two units of three wheels each with one auxiliary wheel, each water wheel of a unit will be belted on to a common line shaft on which will be built a 200 K. W. electric generator of the engine type.

The electricity derived from these two 200 K. W. generators will also be fed on to the common system, giving the works a total rated horse power in water and steam of more than 1,200 H. P. at its minimum, sufficient to supply the plant with power for all purposes and to supply the town with electric lights. The blowers and blowing-engine will be driven each by a motor which in turn will be driven by the power generator and fed upon the common system.

The plans for the power plant and boiler house, all of the machinery for which is purchased, have been examined by the writer and show a perfect arrangement and economical distribution of the power and the most efficient and well thought out plan of operations.

The Westinghouse-Parsons Turbine although somewhat new in the Western States is by no means an experiment. The Manufacturers of this, The Westinghouse Machine Company, have already installed in the United States over 500,000 horse power of these turbines. They excell the reciprocating or piston type of engine in many ways. The cost of installation is less, heavy foundations are unnecessary; they take up about a third the space on a floor. They have a wider range of efficiency and a less consumption of steam than any other style of engine. They have stood an over load test of

112 per cent. The turbine is incased, making it absolutely fool proof and the installation of this is one other instance of the progressive ideas of the management.

THE WORK SHOPS.

A very important adjunct to the Reduction Works are the well equipped work-shops and foundry. The foundry was installed in the year 1905, and, according to items gathered by the writer it has already paid for itself. The Company is able to cast most of the castings excepting the very large parts, used around a Reduction Works of this size. There is always an accumulation of scrap iron which usually goes to waste but in this instance is utilized making the cost of castings and new parts very slight. In addition to the foundry there is a machine shop with engine and table lathes, punches, planer, grind stones and all the necessary tools and small equipment to the operations of a plant of this size.

Another shop in which all the boiler and sheet iron work is done is also superior to the usual conditions.

The carpenter, wood-working and pattern-making shops are very well equipped with saws and planers, etc., of every description, everything being installed with a view to the saving of labor.

The Blacksmith shop consisting of two forges, blowers being driven by electricity, is a building of ample means and size to handle any work around a plant of this description. It is 18' wide by 38' long with coal bunkers and iron and steel racks, making a very complete equipment.

There is also a nicely arranged and well equipped laboratory and office building, the electrolytic system of determination being used on all copper ores, mattes and blister copper.

SMELTING AND MILLING MATERIAL ON HAND AT SMELTER.

7,000 tons of Ore in bins and on dump estimated

7% copper.....	490	tons copper.
50 tons concentrates.....20% copper,.....	10	" "
200 " Flue Dust,.....18% "	36	" "
12 " Furnace Bottoms,.90% "	10.8	" "
15 " High Grade Matte.60% copper.....	9	" "
45 " Slag and Furnace Cleanings 5% copper	2.25	" "
50 " Mixed Concentrates, Flue Dust and high Grade Ore...15% copper.....	7.5	" "
40 " Copper Clippings, Converter cleanings and Converter flue dust, 50% copper..	20	" "
Total	585.55	" "

This tonnage equals 1,171,100 lbs. of copper which at the present price of copper, 21 cts. per lb., represents a total value of \$245,931.00.

The writer has gone over these items carefully and considers it a safe and conservative estimate as to their values.

TIMBER GRANT.

As evidence of the importance of the holdings of this Company and their relationship to the success of the mining industry in Wyoming, the United States Government, through the Secretary of the Interior, has recently granted the Penn-Wyoming Company permission to cut 3,000,000 feet of lumber upon land within the Forest Reserves at absolutely no cost to the Penn-Wyoming Company as between it and the United States Government.

This is a most valuable concession and one which insures this Company lumber for a long time to come. The lumber cut under this concession is solely for the purpose of re-constructing the mill, power plant and making any additions or improvements upon any of the properties of the Company, but will not be used for mining timbers or fuel, an ample quantity of this class being situated upon the Company's own property, about its mines.

SARATOGA AND ENCAMPMENT RAILWAY COMPANY.

After this Company had passed through a series of unfortunate conditions and misfortunes and after a great deal of time had been wasted by its officers in its construction, it came into the possession of the Penn-Wyoming Company in a condition, although absolutely free from any legal entanglements, that has taken only the most careful policy and very hard work to place in the position it holds today.

From all the information the writer can secure it stands today absolutely free from debt or any other incumbrances other than the present operating bills, and has made more progress within the past few weeks than it did during all the time under the regime of the original promoters.

At the present time Camps are established between Walcott and Saratoga numbering seven all told, besides two more grading outfits which are now preparing to establish themselves, and according to the best information and also from the observation of the writer at least 25 miles of the grading should be entirely finished within 30 days from date. The bridge timbers are cut and on

the ground and nearly 75 per cent. of the ties are distributed along the right of way.

The writer understands that there was some difficulty with the Union Pacific Railroad under the original owners which has been entirely overcome. It also seems to be a fact that owing to the Union Pacific double tracking their entire system, grading outfits have been exceedingly scarce, besides which, owing to the tremendous demand for labor in the surrounding agricultural districts, men could not be secured to do this work, but all these conditions have changed.

There does not seem to be much difficulty in getting outfits and men and according to the contracts which are now made and which are all made under penalty, the Railroad should reach the town of Encampment not later than the end of the present year.

The manifold advantages to be derived by the construction of this Railroad make it a wonder why it has not been built any time during the past two or three years. Apart from the present business and the present condition of the country, and not taking into consideration the increased tonnage of material both in and out, which is bound to happen with the railroad into the country, it is stated and can be proved that a sufficient profit on the present tonnage can be made to more than double pay the interest on the bonds to build the entire road.

In the year 1904 when the operations of this Company were not as extensive as they are at the present time, neither was the country as well developed both as to its mining and agricultural conditions, over 11,000,000 lbs. of freight was unloaded at the station of Walcott for this district and it is safe to assume that the records for 1905 and 1906 will show an increase over that tonnage.

The Railroad passes directly through an exceedingly rich and fertile country, coursing through both the Platte and Encampment Valleys, which have hundreds of thousands of acres of rich fertile land waiting for the farmer and ranchman. No better land can be found in any State than can be found here. It has been used as grazing land since the first settler came into the District and has provided feed for some of the largest droves of cattle that existed when the Western States were looked upon as a cattle country.

At the present time there are numbers of well improved ranches and farms all ready to take advantage of the Railroad immediately.

The principal feature, however, is the building of irrigating systems of which there are many, some under course of construction and some projected ones. There is a vast quantity of

water running to waste yearly down the Platte and Encampment Rivers, French Creek, Brush Creek, Spring Creek, and many other water ways, which, in districts not so well blest with water, would be looked upon as rivers.

All this improvement means a large tonnage of produce for a railroad to handle and a correspondingly large tonnage of supplies and material to be brought into the country. The importance of the agricultural advantages this district presents for a railroad cannot be over estimated, and should be considered, in the opinion of the writer, one of the most important sources of revenue for the Saratoga & Encampment Railway.

The Mining District and The Reduction Works do, however, constitute a sufficient guarantee for the success of this Railroad in themselves. It can readily be estimated that the operations of the Penn-Wyoming Copper Co. alone when operating to their full capacity, would more than warrant a railroad into this territory, but in addition to this when it is taken into consideration that there are sixty-five mining properties in the district equipped with power plants and numbers of properties yet in a partly developed and prospective stage, it is conclusive evidence that either the Mining and Smelting interests or the agricultural interests are more than sufficient to warrant the building of a railroad through and into this District.

The writer finds numbers of people who complain of the lack of freighting outfits in the country to handle the material now being used, and when it is considered in this connection, that the Penn-Wyoming Copper Company are not producing copper, consequently there is not more than 25 per cent of the usual material to be hauled, it may readily be seen what condition would exist if the Company were in operation.

As a matter of fact it took 260 head of animals besides having to occasionally hire teams to do the hauling of the Penn-Wyoming Company alone in the year 1905, and with their increased capacity and with the introduction of a steam power plant, which will enable them to operate every day in the year, it will be seen that the tonnage of freight, both incoming and outgoing, will be constant and by its constancy dozens of properties now being developed in the half hearted way will be in full operation, and as "Success means Success," there will be an ever increasing freight tonnage up to a point which cannot be realized now.

GENERAL CONDITIONS.

Possibly the most surprising condition which is noted is the prosperity, growth and development of Encampment and this Copper District. When it is considered that only a few years ago there was scarcely a prospector in the district and now find a well built town such as Encampment and an area of country as large as the area of the Encampment District in which mineral is found, and realize that it is all at least 45 miles from a railroad, with a large Smelting and Reduction Works, tramway, well equipped mines, 65 of them being equipped with power plants every pound of which has been hauled at least 45 miles, and some 90 miles it denotes in itself as well as being the opinion of the writer, that the future of this district cannot be told.

That it will be great and WITHOUT QUESTION ONE OF THE LARGEST AND RICHEST COPPER FIELDS IN THE UNITED STATES. The writer has never in his long and varied experience in Mining seen so much high grade copper ores in any mine or district as are found in the Ferris-Haggarty, Doane, and other well known mines and prospects in this district.

The proportion of high grade to milling ore is very large even at depth where is usually encountered the unaltered conditions. In this district equally as rich ore is found at a depth of 500 feet as is found immediately below the line of enrichment, and such conditions do not exist in any other copper mining district known.

Not only is this enriched condition noticeable but the size of the ore bodies is also unusual. In this Camp a body of ore that is not 15 or 20 ft. wide does not seem to be considered of any size and ore that does not carry to exceed 20 per cent in copper is not considered high grade.

The writer has himself visited properties in the district in addition to the holdings of the Penn-Wyoming Copper Company where the croppings consist of the oxides of iron which represent the usual condition of the croppings throughout the district, are in some cases as wide as 200 ft. with underground cross-cuts driven for 70 ft. in the vein without any sign of a wall. In view of the condition usually existing in most Copper Camps these statements may appear exaggerated, but such is not the case.

With such showings as these on the surface and the showings made underground wherever development has reached that point, it is hard to predict how great may be the future of this District, but it is safe to assume that the next five years will prove it to be one of the most remarkable Copper Districts ever discovered particularly when it is considered that the available territory

tributary to the Reduction Works of the Penn-Wyoming Copper Company covers an area of from 15 to 20 miles wide with one section about fifty miles long and the Medicine Bow section of a length that cannot be well determined.

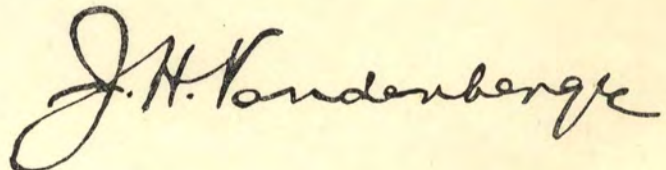
CONCLUDING REMARKS.

In the assembling of the material and data embodied in this report the writer has made the greatest effort to be conservative, every figure and statement made throughout are matters of fact and record. A thorough investigation of the entire properties, holdings and operations of the Penn-Wyoming Company has been carefully made.

The writer desires in this to very sincerely thank the management for the courtesy shown him during his period of inspection. The willingness displayed in submitting for his inspection reports and data, reflects credit upon the good policy and the integrity of the officers of the company. The writer also desires to say and to embody in this that he considers the entire properties each in their turn and collectively, in the hands of a corps of most able and efficient men.

The system of operations, of developments, conditions of the plants and properties throughout, the designing of the New Mill and Power Plant, the intelligence of the employes, are all facts which tend to show that at the head of this enterprise and consequently from the head down is ability, efficiency and common sense, besides good, sound scientific reasoning, all of which must have its place in the success of this enterprise.

All of which is respectfully submitted,



M. E.

ORIGINAL

NUMBER

44

STATEMENT

OF

The Perm. Wyo. C. Mine,
Carbon County,

WYOMING.

Filed in the office of State Geologist,

this 20th day of January

Henry A. Beeler, 1907
State Geologist.

ORIGINAL

RECORD COPY

NOT TO BE REMOVED
FROM OFFICE.



The filing of this statement, or any part thereof, shall be purely optional.

Section 3, Chapter 92, Session Laws of 1905.

ORIGINAL

THE STATE OF WYOMING.

BUREAU OF MINING STATISTICS.

Dec 10th, 1906

HENRY C. BEELER, State Geologist of Wyoming, Cheyenne, Wyo.

Sir:—The following statement is submitted for filing in your office under the provisions of Chapter 92, Session Laws of Wyoming, 1905, and fee of \$1.00 enclosed:

Name of Company, owner or operator Penn-Wyoming Copper Company
Object (kind of mineral sought or mined) Copper, Gold, Silver & Lead
Office address Encampment, Wyo., Chicago, Ill., 732 Monardnock
Mines addresses Rumber, Wyo., and Redefeha, Wyo.

Officers of Company (if incorporated), owner or operator:
President E. M. Cobb, Address Encampment & Chicago
Vice President H. B. Draper & J. F. Malloy, Address "
Secretary E. M. Norton, Address "
Treasurer L. M. Fishback, Address "
Managers Cobb, Draper & Norton, Address "
General Superintendent J. H. Hand & 10 other supts., Address "

Location of property Encampment Copper District County, Wyoming.

Title (whether by location or patent) Patent

Description—Property is known as the Harris-Higgerty & Doane Rumber Group, consisting of 36 claims, comprising 753 acres.

Number of Shares of Stock (if incorporated) 10,000,000 Par value \$1.00

Number of Shares of Treasury Stock 10,000,000

Number of Shares of Stock sold to date 7,300,000

Amount received from sale of above Stock \$ From 50 to 85¢ per share

Amount expended for development work \$ For mines, trackway, smelter, etc.

Amount expended for office work \$ Reduction Works, Math, Systems, etc.

Amount expended for supplies and machinery \$ Power Plants, Development Work, etc.

Total amount of work done on property \$ 4,600,000.00 lineal feet.

Extent of workings, date, 1906

Shaft, feet. Average size of vein or ore in this working
Drift, feet. Average size of vein or ore in this working
Cross-cut, feet. Average size of vein or ore in this working
Tunnel, feet. Average size of vein or ore in this working
Raise, feet. Average size of vein or ore in this working
Winze, feet. Average size of vein or ore in this working
See reports of Mining Engineers J. H. Vandenberg

Stope, _____ feet. Average size of vein or ore in this working ✓ attached.
Estimate of ore in sight, date See Engineers reports 19____ : _____

Estimate of work proposed for coming year (1907) Will expend about
One Million Dollars for improvements
on entire properties.

Shipments made to date and value of same _____

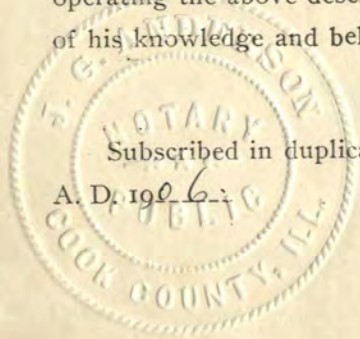
Number of men employed About four hundred men
Length of time work was carried on _____

General statement regarding property, giving amount, kind and condition of machinery, surface improvements, etc.
See complete set of literature
mailed with this Engineer's
report attached

Other resources of Company, owner or operator See ~~Literature~~ Engineer's
report attached

STATE OF Illinois
County of Cook } ss.

L. M. Fishback, being duly sworn, deposes and says
that he is Treasurer of the Peavey-McGowan Copper Co.
operating the above described property, and that the statements herein made are true and correct, to the best
of his knowledge and belief.



Subscribed in duplicate and sworn to before me this 15th day of December,
A. D. 1906
J. G. Anderson
Notary Public