

BRIEF HISTORY and GEOLOGY

of

CENTRAL CITY DISTRICT, COLORADO

as related to the

GREGORY-BATES MINING COMPANY

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General Haupper
for the Gregory-Bates Mining
Co. for which this report written.

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Obviously the purpose of a report on any mining property is to picture as accurately as possible the physical and economic conditions surrounding and effecting the property in question. This is sometimes comparatively easy where simple facts are easily gathered and set down on plan maps and sections showing positions of samples, their widths and values, together with photographs and accompanying written matter, describing such points of interest as cannot be shown otherwise, including geology, calculations of position, probable and possible tonnage, metallurgy, history, economic conditions, etc.

The problem of conveying a correct picture of the Gregory-Bates Mining Company's operation is unusually difficult in the brief space possible here. History plays an important part. Months of time, in fact years, have been spent in gathering this history and volumes could be written about it. While it would all be interesting reading the writer hesitates to go too extensively into this, on account of the time required to read it.

Briefly, the Gregory-Bates Mining Company has acquired, under lease and purchase agreement, over two thousand lineal feet along the Bates gold vein. It has also an option to purchase the controlling interest in the so-called "Fifty Gold Mines" together with one hundred per cent of the improvements thereon, including an eighty stamp mill, in good condition, water right, office building, etc. all situated in Central City and Black Hawk, Gilpin County, Colorado. These properties have been big producers of

gold and it is believed they will produce millions of dollars more. The gold occurs in true fissure veins of great length, depth and width. The veins produce high grade smelting ore and large tonnages of lower grade mill ore. Economic conditions are ideal, there being good transportation by railroad and auto highways; camp already constructed, timber, water and skilled labor at hand. Working agreement and terms of purchase are liberal. The amount of capital required to put this project on paying basis is insignificant compared with possible and probable profits.

The Gregory-Bates properties are located right in the towns of Central City and Black Hawk. Central City is the county seat of Gilpin County and only forty miles westerly from Denver, over the Colorado and Southern Railroad to Black Hawk or over good auto highways via Idaho Springs or Golden. The roads are kept in good condition the year round. All modern conveniences such as Public Service electric power, telephone, telegraph, city water, assay office, daily stages and mails, police protection, mercantile establishments, hotels, schools, churches, dwellings, etc. etc. are already provided.

The elevation at Central City is about 8,300 feet above sea level. The country immediately surrounding is hilly and quite bare of vegetation, but the outlying country is beautiful, having the typical beauty of the Colorado Rockies. Year round working conditions are pleasant.

The first vein gold discovery in the Rocky Mountains was at a point almost midway between Central City and Black Hawk. Gold

was discovered there by John H. Gregory, May 6, 1859, and a monument now marks the spot where this discovery was made. The gold area in this district is limited to a few square miles where the veins are numerous and prominent. Like most vein discoveries, this was found by following up the streams and gulches in search for placer deposits. Once the source of the gold had been located, the prominent veins were easily found and lode claims were located in rapid succession by the few prospectors first on the ground. The veins were rich. Lode claims were laid out only fifty feet wide and from fifty feet to three hundred feet long. The news of this gold strike spread and hordes of men rushed into the new field, locating, relocating and overlapping one another's claims. The opening of this district has been full of romance. By the end of December 1859 it is reported that nine hundred men were in the district making a weekly production of \$50,000. In the eight months preceding about \$1,000,000.00 had been produced and the gold taken back to the States. In addition to hundreds of sluice boxes, it is reported that by July 1, 1860, sixty mills and thirty Arastras were in operation and the district had a population of over 10,000. It will be understood, of course, that the mills were small and crude; small homemade stamp mills with wooden stems in some cases shod with ox shoes or any kind of scrap iron procurable.

Among the hordes that rushed into this new field were many fine people of education and culture and the fine and better things of life were encouraged and developed. The camp, in this

respect, was quite different from most other gold boom camps.

I do not suppose there is another spot on earth where surface and underground workings are more crowded together. Some of the richest veins sold by the linear foot in length along the vein. A man with a fifty foot long claim was considered wealthy. In some instances these claims sold for as much as \$1,000.00 per linear foot.

The Bates vein was the second discovery in the district and was located May 19th, 1859 by the same John Gregory and Captain Wm. C. Bates of the United States Army. The Bates vein was and is considered by many as good if not better than any other in the district. This Bates vein was covered by short claims fifty feet wide. Old maps show these claims fifty feet and one hundred feet long. Old Photographs show each with its separate operation and ownership. The hillsides must have looked like gigantic anthills with men digging wherever there was room to dig and the greater number having successful operations. Many old photographs clearly picture the surrounding hillsides in the height of the activity. It is claimed that on one vein there were thirty working shafts in a distance of 2300 feet along that vein. Fawcett's "History of Colorado" states: "There are more valuable lodes in the immediate vicinity of Central City, Black Hawk and Nevadaville, Gilpin County, Colorado, than in any other section of equal size in the known world." Records credit this county with a production of more than \$200,000,000.00. (3,000,000,000)

Many comfortable fortunes were made in those early days in spite of small holdings, the numerous independent small oper-

ations, "bad men", "wild cat promoters", and salesmen for every newfangled and experimental device for mining and metallurgy. This camp underwent and survived all the vicious evolution that must have accompanied its development.

Among the more cultured people who were attracted to and came to this country in the early days was a Mr. Theodore Becker, a man of means with high standards of living but no experience in mining. Mr. Becker was a business man and invested in mining claims but never worked them himself. After listening to the stories he selected what he thought the best ground in the district -- claims along the Bates vein. He purchased claims that were known as the Becker-Bates, Cowenhoeven-Bates, Rocky Mountain-Bates and others. He divided these holdings up in short blocks and let leases to local miners. I am told he never gave written leases and reserved the right to cancel the said leases on ten days notice. This was to prevent the miners from gouging and spoiling the property. He had an expression that "a horse, no matter how good was worthless with his eyes gouged out." However, this system actually compelled the miners to gouge, the very thing he attempted to prevent, for men could not afford to properly equip and develop for systematic and economical mining without the protection of written leases. Group after group were attracted by the strong vein, long ore shoots, and high values, but never were able to continue for any considerable length of time. Much litigation resulted that retarded the work and left this vein practically unworked and unexplored while other claims of the dis-

district worked on profitably to much greater depths -- in one case to 2400 feet below the surface. Henry Becker, son of Theodore Becker, fell heir to this property and held and managed it along similar lines. He told his children never to sell this ground under any consideration. Repeated attempts have been made unsuccessfully by mining men to acquire this property. Only recently Henry Becker's heirs, driven by emergency, consented to give a lease and purchase agreement. The Gregory-Bates Mining Company now has this ground and is unwatering and repairing the Becker-Bates and Hunter-Bates Shafts.

Much strife centered around the early operations on the Bates vein. Armed guards were stationed at different workings to prevent theft of high grade ores from surface and underground. Litigation from various causes resulted but the work went on. The Hunter-Bates put down a shaft 745 feet deep; the Rocky Mountain-Bates, 250 feet deep; the Becker-Bates, 415 feet deep; Cowen-hoeven, 300 feet; the Baxter-Bates, 350 feet; etc. etc., along the strike of the Bates vein. Regardless of their troubles all these properties on the Bates vein worked along, shipping smelting ore and milling the second grade ore. Work was also progressing on the neighboring veins and the camp boomed. The Becker-Bates and Hunter-Bates were at the peak of their productive period when they were abruptly shut down by litigation in the late eighties or early nineties. Shafts caved, stopes fell in and for one reason or another work was never resumed except in a small way on these valuable mines, the cream of the district, so history

states.

No mine in this district was free from such troubles but the personnel of other ownerships was such that many kept working and mined on down to depths of 1,000 feet, 1200 feet, 1700 feet, and even to 2300 feet with profitable operations to these respective depths. The mines aside from those on the Bates vein worked right on for years after the Bates mines shut down through litigation at the peak of their productive period. The geology of this district is simple. The veins are replacement fault fissures in old pre-Cambrian schists and gneisses. These fissures cut across the cleavage of the old formation. The fissuring was caused by intrusive igneous masses and dikes of monzonite and other porphyry. The mineralization was no doubt derived from the same igneous masses and traveled freely along the ground openings in aqueous solution, altering and replacing the crushed material in the shear planes. All through this district the walls are well marked and defined except at vein junctions and splits. Post mineral faulting, of consequence, has never been observed in this area. Replacement on one wall is usually quite complete, forming a streak of high grade smelting ore from one inch to five feet wide in places, the balance of the vein filling being an alteration product, usually sufficiently mineralized to make varying grades of milling ore. The minerals present are sulphides of copper and iron carrying gold and very little silver. Now and then some lead and zinc may appear but in no great quantity. Secondary sulphides of copper are seen in upper levels and at times

oxides?

quite deep near so-called water courses or openings where oxidization has extended to depths deeper than normal surface oxidization. Specimens examined from the 900 level, Gregory Lode showed coarse free gold from the size of grains of corn on down, embedded in massive sulphides. In milling the sulphide ores from this district, an amalgamating unit was always included by which from twenty to thirty per cent of the gold values were extracted.

Geologists estimate that the old pre-Cambrian structure will extend to many thousands of feet in depth. The area lying between Central City and Black Hawk appears to be the focal point of the shearing stresses and mineralization. The ground was opened in major planes running northeasterly and southwesterly. A study of the map showing claim locations reveals the location of these major fractures, or veins, covered by the old fifty foot wide claims. Going from the northwest to the southeast on the map we find these veins as follows: First we have the ^(VASA LEVITT OR GETTYSBURG?) Gregory Second vein; then lying parallel thereto and about 250 feet distant is the Bates vein; 600 feet southeasterly from the Bates is the Gregory vein; and 700 feet southeasterly from the Gregory are the Fisk and Cook. These veins stand nearly vertical and lie approximately parallel. These major fractures are cut by cross fractures, or veins, almost equally as important as the so-called major fractures and striking easterly and westerly. One of these cross-fractures, known as the ^(Where?) Gregory Gulch fracture, forms vein junctions with the Bates, Gregory and Gregory Second. Another cross-fracture of great importance is the Mammoth vein, cutting across the Gregory and Cook

veins and extending into Bobtail Hill. The Mammoth Vein lies parallel to and about 1200 feet southerly from Gregory Gulch. About midway between the Mammoth Vein and Gregory Gulch is the Hartford Vein, referred to by "old timers" as the "Hartford Crossing".

These principal vein crossings or junctions formed large ground openings, easily penetrated by mineralizing solutions, that resulted in great widths of shipping and milling ore. Simultaneously with the ground opening along these major shear planes were numerous secondary shear planes or openings that bear a definite relation to the vein system and were formed by a resultant of the shearing forces that formed the major veins of the district. These secondary veins form junctions, splits and crossings, forming secondary channels of flow for the mineralizing solutions. Vein widths swelled at these junctions and at these junctions wider and richer ore was found.

Bobtail Hill appears to have born the brunt of the combined shearing forces and is literally a network of veins. Bobtail Hill is one of the four famous hills of Colorado from the standpoint of mineralization and gold production. The small area about 3,000 feet square comprising Bobtail Hill, Fisk, Cook, Gregory, Gregory Second and Bates veins has the reputation of being the richest area of its size in the world. In this area is the Buell Mine, that has been a big producer, covering the junction of the Gregory Second and Gregory Gulch. The Buell is still considered a valuable property from ore possibilities and

according to USGS (FIII-9)
is E. of Gregory @ S. end of
Black Hawk.

should be owned and worked by the Gregory-Bates Mining Company in conjunction with their Bates, Gregory, Cook, Fisk and Bobtail properties.

Outlying properties appear to have smaller veins, less mineralized, shallower valuable mineral deposits and different character of mineralization. The small area described above carries gold with sulphides of iron and copper but very little silver, lead and zinc. Further from this area more lead and silver appear with less gold values. In this small area the ore shoots are long and apparently go to great depths. Down a winze, 180 feet below the 1400 foot level, Cook workings, near the Mammoth junction, the best and richest ore of the mine is reported. Geologists and practical miners most familiar with the deepest workings of this small area believe that these veins will prove profitable as deep as man can devise means to work them. All agree as to the depth of the pre-Cambrian schists and they also agree as to its favorable properties for precipitating the gold values. One concludes that we have here a favorable host-rock that will extend to great depth. If this is the focal point of the shearing stresses and a fountain head of mineralizing solutions, the fissures and mineralization may extend to the depth of the pre-Cambrian structure.

The geology of the district has been surveyed and described in Professional Paper number 94 of the U. S. Geological Survey, by Mr. Edson S. Bastin and Mr. James M. Hill.

The organizers of the Gregory-Bates Mining Company, realizing the growing importance of gold mining as an industry

and desirous of securing a mining property where a mining operation might be profitably carried on, searched many states in the United States, in Canada and Mexico and were finally attracted by this Central City Camp that has produced so many millions and might still produce more.

On account of the long idle period since these mines were worked, the death of many of the "old timers", destruction of buildings by junk men, vandals, fire and the elements generally; on account of the general lack of interest in gold mining during these idle years, maps, reports and records concerning these properties have been hard to secure. Even banks that bought bullion have gone out of business making bullion purchase records impossible to find. The older workings paid little attention to surveys, working maps and underground records. They followed the well defined veins and mined the ore, they prospered and cared but little about how and from where. Records were carried in the minds of those in charge and sufficed for the time at least. There were wonderful maps of the "Fifty Gold Mines", comprising the Bobtail, Cook, Fisk, and Gregory workings. These maps have been loaned, lost and scattered. None of these maps have been located to date.

In Central City, however, still live many of the "old timers" who worked in these mines up to the time they were closed down. Such men as Robert Johnson, Neil McKay, William Mills, H. C. Eastman, Bill Cline and many others, including the late Robert Wilkinson, who was mayor of Central City for five terms. Mr. Wilkinson, a Michigan miner, came to Central City in the early

days and was actively engaged in mining in this district for years. Mr. Wilkinson retained a keen mind and vividly recalled many details of the early day operations. Banks, business men and men in all walks of life who knew Mr. Wilkinson are enthusiastic in their praise of him, of his truthfulness and dependability. Mr. Wilkinson was employed at the Hunter-Bates during the last seven years of that operation and vividly recalled all essential details. He talked at length about the district and particularly the ore occurrence and future possibilities of the Bates vein. Others have given information regarding Becker-Bates, Rocky-Mountain, Gregory, Cook, Fisk, etc. The stories all agree in essential details and are possibly too optimistic but convincing nevertheless. Months of contact with the district, hearing over again and again from various and disinterested parties, statements of simple facts regarding these old mines, their ore occurrence and future possibilities finally leads one, no matter how skeptical, to favorable conclusions regarding this district and especially those mines located in the favorable area, between Central City and Black Hawk.

Mr. Wilkinson was the last superintendent of the Hunter-Bates Mine and firmly asserted that at the time of the shut down he was hauling ore from this property with fourteen teams making seven round trips per day or over 200 tons per day. He further positively stated that the lower levels were all in ore "wider than he could reach with outstretched arms"; that the vein carried from one and one-half to two feet wide of high grade shipping ore better than five ounces of gold per ton and that the balance of the vein

was mill ore that yielded \$12.00 to \$16.00 per ton with a 60% to 70% recovery. He stated that the best mineralization was in an ore shoot pitching about fifty degrees from horizontal towards the northeast along the strike of the vein; that on the first level down from surface, this shoot was 400 feet southwesterly from the shaft but that the lowest level drifted only seventy feet southwesterly to this ore shoot and that the bottom of the 745 foot shaft had reached the ore shoot and had penetrated it to a depth of fifteen feet, when the mine abruptly shut down. He stated that this ore shoot was and is five hundred feet long, measured along the drift. He further stated that the ore in the bottom of the shaft is better grade than any yet discovered in the mine. Mr. Wilkinson believed that the Hunter-Bates and Becker-Bates combined constitute the most valuable ground in the entire area. He stated that the Hunter-Bates high grade shoot, pitching northeasterly towards the Gregory Gulch junction, will join the Becker-Bates shoot at a point not far from the bottom of the 745 foot shaft and at the junction of the two shoots a much longer, wider and richer shoot will be found. This was the opinion and belief of this last superintendent of the Hunter-Bates Mine and a man who bears an enviable reputation for ability and veracity.

At the Hunter-Bates shaft, the workings had caved in. There was practically no dump. Mr. Wilkinson said that the material mined had been either shipped to the smelter or hauled to the mill. The fact remained that at these quite extensive workings, there was and is no surface dump -- none sufficient to ac-

curately locate the old 745 foot shaft and workings. It was decided to go down in this shaft and Mr. Wilkinson walked over the ground and spotted the place where he believed the old shaft was located, although there was but little except old caved workings and a few landmarks such as roads and buildings to guide him. A new cribbed shaft was started down through the cave and at 116 feet in depth landed on top of the old shaft timbers in nearly perfect alignment. Quite remarkable and true. Mr. Wilkinson stated that there was but little bothersome water when the mine was working, but when the water was reached it stood at the 120 foot level.

The Becker-Bates shaft is 415 feet deep and is located on the Bates vein about 500 feet northeasterly from the Hunter. Gregory Gulch crosses about midway between the two shafts. The Becker was never worked systematically due to the character of its ownership. Theodore Becker, the owner, had plenty of money, was no miner himself, but had definite ideas of his own about how his mine must be worked. His son, Henry Becker, who afterwards fell heir to the property, never worked the mine and advised his children never to sell, but, like his father, occasionally gave a verbal lease, reserving the right to cancel on ten days notice. Large bodies of rich ore were found and extracted. Many comfortable small fortunes were taken from the limited workings of the Becker -- just from the high grade shipping ore extracted by small leasers from time to time. This developed and left the major portion of the vein filling on the lower levels of the mine, in some cases as broken ore and rejects from sorting the shipping ore.

One man told the writer about his father having a lease on the Becker and paying 50% royalty for all ore shipped. He sunk the shaft from the "300" level to the "400" level, developed a block of ground and did some stoping. He made a small fortune for himself, even paying the 50% royalty, before his lease was cancelled. This man says there is plenty of \$100.00 ore still left on the "400" level. Another man told of some miners who had planned to sink a 400 foot shaft off the Becker ground and crosscut under the Becker and steal the ore; said there was millions to be made from the bottom of the Becker workings. One could go on and on with such stories about the Bates vein and the others mentioned above.

These stories have all been discounted but after studying the geology of the district; after observing the physical evidence that is available; the extensive workings and old metallurgical plants; after delving into the history of these early locations and their ownerships, one comes to but one conclusion and that is, that this district has produced many millions in gold and will produce many millions more. Our information regarding future ore possibilities comes from workmen who worked these mines and vividly recall conditions at the time they last operated. We have had information in great detail. The Bates vein was the second discovered in the Central City district. It has, no doubt, been a big producer. The Hunter is reported to have produced over \$7,000,000., about \$1,000,000 per level. The Becker is reported to have produced more than \$3,000,000.00 from its limited workings. This vein has always been considered one of the strongest and best

veins of the camp and those most familiar with the camp consider this the best place in the state to quickly and surely make a big mining success.

We were told many small details about the size, shape and nature of the workings, position of pump stations, underground tanks, pipes, shaft rollers, loading pockets, etc. We were warned about trouble we might have with timber at the "300" level of the Hunter shaft. We were told that there would be but little trouble after that until the "500" level was reached, where some trouble might be expected but not as serious as at the "300" level. We were told that from the "500" down we will have "clear sailing" and much less volume of water for each foot in depth. Our informants worked in these mines and spoke with positive assurance. They claimed to know. We have been told of the ore occurrence in the Becker workings, size of stopes and position of levels. We were told that on account of the Hunter shaft being located near the northeast endline of that property, practically no work of any kind was done in the direction of Gregory Gulch and the Becker shaft. We were told there is no underground workings connecting the Hunter and Becker shaft and that that most desirable block is practically undeveloped and unexplored. We are told that the Hunter shipped more than 200 tons per day for years and that for every five tons of ore, one ton went directly to the smelter and the other four to the mill.

Theodore Becker, son of Henry Becker and grandson of the original Theodore Becker, told of taking a lease from his

See USGS
P. 167

1t @ 5m
4t @ 3 1/2 = 3
= 8
= 1.6
02/2

father, on a block of ground northeast from the Becker shaft. This he said was in 1913 and the last work done in that property. He had two other partners in his lease. Water was low, they never attempted to handle any water, just worked above the water. They were poorly equipped. Worked with hand steel only -- just the three men. They shipped the high grade streak, wasting the mill ore where they could most easily and cheaply. In five months they made over \$30,000.00^{\$450,000 @ \$300}. The lease was cancelled by the father when he learned that one of the partners had stolen over \$15,000.00 in high grade ore from his son and the other partner. These three men worked below the "200" level about 70 feet northeasterly from the Becker shaft. Young Theodore Becker told the writer that the high grade streak was only four inches wide when they started but had widened to fourteen inches in the bottom, when his dad called them off. He says that, aside from the high grade streak, there is fully four feet of rich mill ore. None of the stories we have heard have been conflicting in essential details. Regardless of the source, one story verifies the other and all express confidence that success will be certain.

Gold mining carries a certain element of gamble, more in an unexplored field than in a proven field, however. Some districts normally have more hazards than others, due to spotted values, short ore shoots, post-mineral faulting, uncertain water conditions, complex metallurgical problems, possible legal entanglements resulting in litigation regarding titles, apex, water rights, etc., etc. No adverse conditions such as these exist at

Central City. There is no question about the favorable location. Much of Mr. Wilkinson's story and the stories of others sound reasonable and after all, these memories of this responsible man may guide one as accurately as profound geological theories. These positive statements that there is ore should justify work as reasonably as a geologist's statement that there should be ore.

At Central City the Gregory-Bates Mining Company has, as we believe, a mining project as free from chance of failure as it is possible for any mining project to be. And the chance for profit is great in proportion to capital required to reach the objective. In this district, with its long continuous true fissure veins and long ore shoots mineralized with high grade smelting gold ore and high grade milling ore, has been consolidated a group of the best properties in the most favorable area. The evidence is convincing that these mines have not been worked out but are capable of producing as many tons of ore in the future as they have produced in the past. Modern metallurgy, improved equipment, more favorable economic conditions and the greater value of gold should enable this company to produce twice the profit that has been produced in the past. The amount of money required for this project is small by comparison with the magnitude of the enterprise and probable large profits.

The Gregory-Bates Mining Company is incorporated under the laws of the State of Colorado. Douglas M. Todd, Jr. is president, German E. Ellsworth, vice-president, and Herbert C. Shotwell, general manager.

It was decided to carry on the first mining operation on the Bates vein and open up the Hunter and Becker shafts. It was impossible to accurately estimate the cost of opening up these old workings due to conditions that could not be predetermined. The volume of water could not be accurately estimated nor could the amount of timbering. There would be jams in the shaft and every possible bothersome obstacle to overcome. The task was not to be an easy one but it was decided to go to the bottom and meet and overcome the obstacles as they were encountered.

A gasoline hoist was purchased and installed for temporary and emergency service, buildings were remodeled and repaired. A new steel head-frame was constructed at the Hunter shaft, connections were made with the Public Service Company's power line and electric transformers installed at both the Becker and Hunter shafts. The Becker steam hoist was electrified with a 40 H.P. General Electric slip ring motor, and equipped with a new 1000 foot 3/4 inch steel cable. A 50 H.P. electric sinking pump was put into operation in the Hunter shaft, pumping through a 4 inch water column. The pump is the centrifugal type with eight stages and guaranteed to pump against a head of 800 feet. Impellar bowls and runners are of bronze to resist the corrosive action of acid water. A 150 H.P. electric hoist was purchased for the Hunter shaft capable of going to a depth of 2000 feet. The grade for this hoist is complete, the new hoist building completed and the templet set ready for the foundation.

We pumped the Hunter down to the "350" level and re-

timbered the shaft all the way. At a few places but little new timber was required, at other places we found it difficult and expensive. We had our troubles at the "300" as we were told we would have. We found ore pockets, shaft rollers, old pump station and conditions of shaft and timbers almost exactly as previously described to us. We are gradually verifying the stories we have heard regarding both the Hunter and Becker, and the accuracy of our information is being found remarkably correct. We are gaining more and more confidence in the accuracy and truthfulness of the stories regarding the ore conditions and values we may find below.

We are working diligently at the Becker shaft. We timbered a good shaft down to water and started bailing with a 200 gallon bailing bucket. Water stood at the 115 foot level when bailing was started at the Becker, January 26, 1934. By February 27, 1934, the water in the Becker had been bailed down to the 239 foot level. The shaft had been retimbered with stules, posts, spreaders, lacing, liners, skids, manway and ladders down to the 225 foot level. This was a difficult and expensive task because the vein was wide and stoped right up to the shaft. The old shaft was crooked and an attempt was made to put it in better alignment, thus increasing its capacity. There were jams that caused bothersome delays. There was a large area of open stopes and the volume of water per foot in depth is believed to be the greatest in this part of the workings. Up to date conditions have been found as expected -- a mined out, wide and strong vein with good walls;

some small pillars but no tonnage of ore left. At the "100" level we sampled a streak of sulphide ore left in a small pillar near the shaft that gave a return of 4.04 ounces gold per ton. An inspection of the "200" level showed the Theodore Becker winze, he told us about, 70 feet northeasterly from the shaft. Samples of muck piles on this "200" level gave the following results.

	<u>Gold</u>	<u>Trace</u>	<u>Aw@ #35</u>
N.E. face caved down from surface, wall rock and waste			
Grab from coarse and fine pile N.E. drift between winze and shaft	\$ 7.35		
4" <u>black sulphide</u> streak, small pillar 10 feet above floor of "200" level near shaft	43.40		= 1.2402 = $\frac{.14}{31}$
Pile of fines "200" level near shaft, apparently rejects or second grade smelting ore	73.15		2.08
Grab from pile "200" level 10 feet southwest from shaft	8.40		.24
Specimen from muck pile "200" level, 10 feet southwest from shaft showing <u>black sulphides</u> , iron pyrite and some quartz	72.80		+2.0
Picked sample, vein filling, coming from shaft at "200" level, only slightly altered and mineralized		trace	
Picked sample vein filling coming from shaft at "200" level, quite well altered and mineralized, looks like mill ore	10.15		.28

Continuing our investigation we sampled a pillar at the "220" level near shaft with the following results:

	<u>Gold</u>	<u>Silver</u>
4" streak, hanging wall side of vein northeast from shaft, shows copper and iron	28.9702 \$1014.30	\$27.10
12" streak next to above sample showing quite massive iron sulphides	4.8802 170.80	4.48

The above samples show good values and are of great importance in that way are positive verification of the stories we have heard that encouraged and induced us to do this work. Now we proceed with even more confidence believing we will find big bodies of this rich ore on and below the four hundred level. It will not be much longer now before this objective is reached. This verification also strengthens our belief in the stories regarding the ore in the lower workings of the Hunter.

The definite plan of operation is:

1. Unwater the Becker and timber the shaft on down into the ore as rapidly as possible. Estimated cost not to exceed \$3,500.00 to the "400" level. Development work to be outlined after detailed examination to that point.

2. Continue pumping and timbering at the Hunter shaft. Good time should be made from the "300" to the "500" as the bad mess at the "300" is now in good shape. When the "600" level is reached a drift on the vein should be started northeasterly into the Becker ore body. Further development to be outlined as the work progresses.

3. Modernize a 125 ton unit of the Fifty Gold Mines Mill as rapidly as our finances will permit. This may cost \$20,000. Custom ore could be treated at a profit along with Becker ore until company ore takes the capacity of the plant. Enlarging the milling plant to be a matter of logical progression as requirements demand.

Our hope is that after reasonable development the Hunter may produce two hundred tons per day, 20% going directly to the smelter at a total cost of say \$10.00 per ton and a net profit of say \$140.00 per ton. The balance of 160 tons would

go to the mill and may show a net profit of \$10.00 per ton. This would make a net daily profit of say \$7,000.00. We are told that this same Hunter shaft has produced over \$100,000.00 per month for years even with low recovery, high cost and gold at \$20.67 per ounce.

In the same manner we may reasonably assume that the Becker will produce say 100 tons per day after being properly developed, or at net of \$1,000.00 per day from the Becker.

The 48% of the Fifty Gold Mines, the Buell and O'Neill or any other properties we wish to acquire -- and the unwatering of the Fifty Gold Mines will be accomplished out of earnings.

To accomplish the above requires time, money and effort. The physical possibilities exist. The amount of money required is small compared with the large possible profits. We will need \$60,000.00 for preliminary work and development to put this property on a production basis of 300 tons daily. It would require a less amount to develop the mine up to a 100 ton daily basis -- say \$35,000.00 -- 50 tons from the Becker and 50 tons from the Hunter. Our entire expenditures for preliminary work, equipment and development will be more than repaid from each month's earnings. This vein has done it in the past and will, no doubt, do it again, more easily than ever with improved methods, better transportation and increased value of gold.

The odds are all in our favor. All the "old timers" tell us we cannot fail. We have not reached our objective but are getting there. There have been no discouraging findings to date.

Time after time we verify the detailed information we have gathered. We have the best mining property in one of the best mining districts in the best mining state in the United States. Our economic conditions are ideal. We will progress logically, step by step. Eventually we may get to the bottom of the Gregory, Cook, Fisk and Buell. Each additional development will add to our daily tonnage and profits.

We believe that here in this camp, that was once so inaccessible, lying only partially worked, is the best mine ever discovered in the district. Now we come with finance and determination to see the bottom with modern machinery and metallurgical practice, only forty miles from Denver over good auto highways and a railroad to the camp, and gold increasing in value from \$20.67 to \$35.00 per ounce.

The accompanying map, sketch and photographs will assist the reader, in some measure, to understand this project better and to share with us some of our enthusiasm resulting from our months of contact with and study of the project.

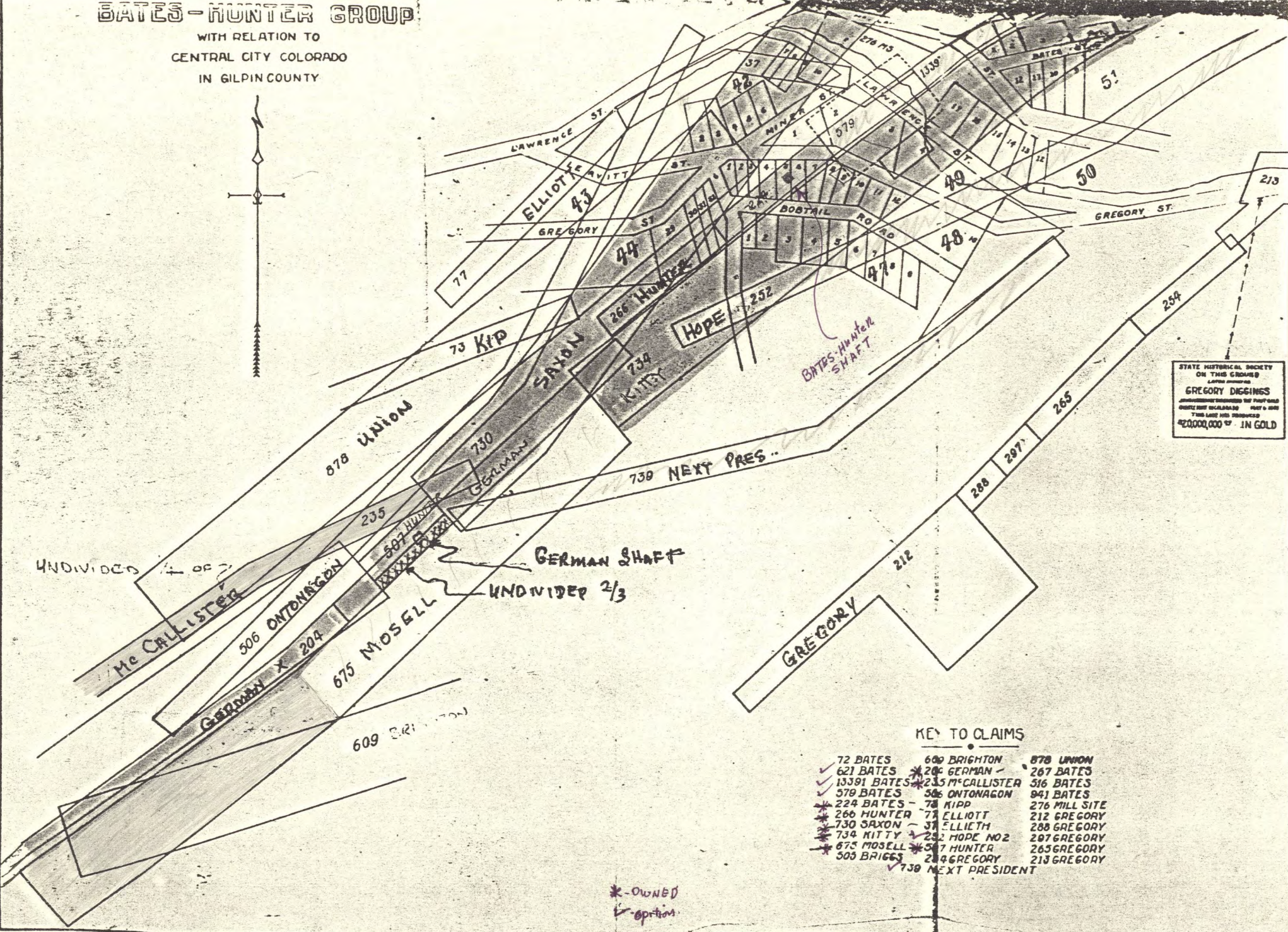
S/Herbert C. Shotwell
Mining Engineer.

March 7,
1934.

WM. C. RUSSELL JR.
POST OFFICE BOX #161
CENTRAL CITY, COLORADO 80427

BATES-HUNTER GROUP

WITH RELATION TO
CENTRAL CITY COLORADO
IN GILPIN COUNTY



STATE HISTORICAL SOCIETY
ON THIS GROUP
LATER DISCOVERED
GREGORY DIGGINGS
ADJACENT TO BATES-HUNTER
DUG IN 1880
THEY WERE PRODUCED
420,000,000 IN GOLD

KEY TO CLAIMS

- | | | |
|---------------|----------------------|---------------|
| ✓ 72 BATES | 600 BRIGHTON | 878 UNION |
| ✓ 621 BATES | 20 GERMAN | 267 BATES |
| ✓ 13391 BATES | 235 McCALLISTER | 516 BATES |
| ✓ 579 BATES | 506 ONTONAGON | 941 BATES |
| * 224 BATES | 78 KIPP | 276 MILL SITE |
| * 266 HUNTER | 71 ELLIOTT | 212 GREGORY |
| * 730 SAXON | 37 ELLIOTT | 288 GREGORY |
| * 734 KITTY | 232 HOPE NO 2 | 207 GREGORY |
| * 675 MOSELL | 507 HUNTER | 265 GREGORY |
| * 509 BRIGGS | 219 GREGORY | 213 GREGORY |
| | ✓ 739 NEXT PRESIDENT | |

*-OWNED
-option

1 centimeter = 20 feet