

REPORT

TO

THE

GLADIATOR GOLD AND SILVER
MINING COMPANY CONCERNING THE AD-
JOINING GENERAL SHERMAN MINE.

LAKE MINING DISTRICT
Hinsdale County

By

Thomas A. Dall,

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GOLDEN, COLORADO

September, 1901.

THE SHERMAN MINING AND MILLING COMPANY

This company is organized under the laws of the State of Wyoming, with a capitalization of \$500,000.00

Its property consists of the Grace and the Vivette Lode claims, 20 acres, held by location, and the Champion group of claims, part patented, part in process, consisting of Champions Nos. 1 and 2, Alaska, Caribou and O.K. tunnel site, 35 acres, which is held under bond and lease, and the General Sherman claim, 7 acres, patented, also held under bond and lease.

Both the Gen. Sherman and the Champion group are being actively worked, large bodies of low grade ore being uncovered in each.

The General Sherman is developed by a tunnel about 1,000 feet long, 700 feet of its length following the vein and then cross-cutting to intercept the vein which shows strong croppings on the surface.

In the first 700 feet, where the tunnel follows the vein, two chutes of low grade ore have been opened up, aggregating nearly 250 feet in length. In these chutes the pay streak varies in width from one foot to ten feet, the average being close to 4 $\frac{1}{2}$ feet.

The ore in these chutes by rough sorting will average from \$12.00 to \$15.00 per ton as determined in the tunnel by a large number of assays and several mill runs.

The vein is developed at a height of 120 feet above the main tunnel by a secondary tunnel, which carries much the same character of ore as to value and extent.

It is estimated that there exists between these two tunnel levels, without counting ground below the lower tunnel or above the upper tunnel, close to 12,000 tons of milling ore, which will readily yield at least \$8.00 per ton, figuring on about 65% saving, which is conservative, judging from mill practice on property adjoining, the Golden Fleece. There are several hundred tons on the dump.

Figuring on a saving of only \$8.00 per ton, which is \$2.00 less than that determined by Henry W. Wood of Denver, the most careful ore tester of Colorado, fifty tons a day would net \$400.00. Against this is the expense account of \$225. dividend as follows:

Mining 50 tons at	\$1.00	\$50.00
Milling " "	1.10	55.00
Hauling 14 tons concentrates at	.75	10.50
Freight " " "	4.00	56.00
Treatment " "	6.00	84.00
		<hr/>
		\$225.50

leaving a daily profit of \$145.00.

The saving will undoubtedly amount to much more than this as the expenses have been figured upon the most liberal scale, sources of income being figured correspondingly low.

In addition to the ore body mentioned above there has been encountered quite recently, near the breast, 1,000 feet from the portal, an entirely new vein, carrying considerably better values than those in the outer tunnel. This body was only slightly more than one foot wide when it was cut by the tunnel, but drifting on it has disclosed a constantly widening vein measuring six feet across a distance of forty feet from where it was first struck. As the vein increased in size it also increased in value. It assayed \$16.00 when first struck, and at the forty foot point it assayed clear across better than \$20.00. Sixteen inches of it assayed \$37.00. Work is being pushed on this vein and as the drift is more than 500 feet from the surface the possibilities of its tonnage are immense. Upraising on the body of ore will be commenced in a short time. Should the values continue to the surface, as is probable, there would be in sight over 10,000 tons of ore, measuring only forty feet on the vein.

A C Gorham,
Buxton, Maine.

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Record of sampling of General Sherman lower tunnel, beginning at a point 150 feet west of timbers in outer tunnel. Sampling was effected by taking the whole of the mineral streak every three feet and measuring the width of streak at point sampled. Samples were assayed in lots of ten, and widths for same average, making each set of figures the average of 30 feet on the vein.

<u>Location</u>	<u>Width</u>	<u>Vein Filling</u>	<u>Gold</u>	<u>Silver</u>	<u>Copper</u>	<u>Value</u>	<u>Remarks:</u>
First 30 ft.	3'7"	Quartz	.44	54.4	2.1	\$43.97	An average width of about 3' and an average value of about \$19.35
Second 30 ft	3'2"	"	.10	27.4	.5	18.15	
Third 30 ft	3'6"	"	.24	15.0	1.4	16.55	
Fourth 30 ft	3'0"	"	.14	6.1	.15	6.50	
Fifth 30 ft	2'0"	"	.18	13.3	.15	11.25	
Sixth 30 ft	1'6"	"	.36	22.2	.15	19.75	
Upper Tunnel	2'9"	"	.12	14.0	3.4	18.60	
Surface Cropping	2'3"	"	1.10	21.2	1.8	38.16	

Denver, Colo., March 20th, 1901.

Dear Sir:

By request I have made an examination of the Sherman Mining & Milling Company's properties, in Hinsdale County, Colorado.

The General Sherman mine is located three miles south of Lake City and is reached by good wagon-road from Lake City, the nearest railroad point.

The mine is developed by one main, or lower, tunnel, running on the vein through the property; is now in a distance of about 700 feet. For about 250 feet the vein, or lode, will average about four and half feet in width, and the general average values, from assays taken, for this distance is about \$12.50 per ton. I took eight assays, showing the following results:

No.	Gold oz.	Silver oz.	Copper %	Value
1.	.2	11.5	.55	\$10.67
2.	.08	4.2	.3	4.03
3.	.1	5.8	.25	5.36
4.	.22	19.5	3.66	19.03
5.	.1	3.7	.15	4.14
6.	.18	16.	1.1	12.88
7.	.15	17.2	.3	12.97
8.	.24	36.	3.41	29.50

These samples were taken across the entire vein and would be about an average of the ore as broken down for milling purposes without sorting; by sorting this ore could be made to run 50 per cent higher. Judging from the appearance of the ore, it is well adapted to concentration. The vein is very well defined and a strong fissure, and no doubt the ore will increase in value as depth is gained. There are other workings on the property which disclose the vein. An upper tunnel on the vein is run in about 142 feet, which also discloses the vein and ore.

The General Sherman is equipped with a 30 H.P. boiler, a 2-drill Ryan Compressor, cars, tools, etc., necessary for economical working of the mine. A concentrating mill has been secured for the reduction of the Sherman ores. There are large amounts of ore reserves for milling, and perhaps some smelting ore now blocked out, and the estimates embodied in the prospectus are very conservative. In my opinion this property is a very valuable one and the making of a good mine.

Very truly yours,

(signed) R.M.RAY,

Denver, Colorado, January 19, 1900.

Dear Sir:

I herewith send you last report on the Sherman Mine with four drawings showing the work done and contemplated. Since this report and these drawings were made we have driven the lower tunnel some fifty feet ahead, and a cross-cut therefrom about fifty feet, (on a cross-cut vein of about an average showing of the property) have sunk a shaft some 35 feet and a cross-cut therefrom, which more fully develops the property, and have improved it in other directions.

You will note assays on the third page from the last of the report, and you will notice the group of mines directly ahead of the Sherman property and higher up the mountain, as shown on drawing No. 1.

The Sherman property, as you will note from the drawings, runs directly up the mountain, and our tunnels make depth as we go in; the lower tunnel now having something over 220 feet of depth at its breast, and as we should drive it on would make, as you note, greater depth.

The Contention property, which you will note crosses the corner of the Sherman on the upper end of our property, has recently struck gold ore worth over \$100 a ton; the Black Crook and the Hiwassee have had ore running as high as \$900 a ton; the Golden Fleece has had a marvelous record, and has paid over \$800,000.00 with small expenditure. Their vein matter runs \$8.00 to \$10.00 a ton while ours runs \$15.00 to \$20.00 to the ton; the vein in our upper tunnel being $2\frac{1}{2}$ feet wide, and in the lower tunnel being $4\frac{1}{2}$ feet wide, showing that it widens with depth; we have the largest and most thoroughly defined vein in that whole district. The "Fleece" and other mines there have from time to time, in driving their levels, struck rich "chutes" or ore; and the "Fleece", after spending \$5,000., struck a chute from which the first carload netted them over \$19,000.00, and a little later on they got smelter returns of between \$44,000 and \$45,000 for five carloads. In doing this they accumulated quite a large amount of lean ore, and have built a concentrating mill, as located on drawing No. 1. They have a years stock of ore on their dump to concentrate, and another year's stock in sight in the mine, but still in the frequent interviews I have had with them they are inclined to make some business arrangement with me, where, if we stop out our ore (which runs for about 400 feet in length in the tunnels we have -- upper and lower -- which are 120 feet apart, showing as our Engineer tells me blocked out between 12,000 and 15,000 tons) they could handle some for us perhaps not to stop and actually treat our ore for us, but to purchase our ore from us and mix it with theirs, and my foreman tells me that our ore will run much higher average than the "Fleece", and will concentrate more tons into one. The "Fleece" mill has been running some six weeks now and they are very much pleased with their returns. They concentrate 8 or 9 tons into one, and this one ton of concentrates they claim shows them smelter returns of \$60.00 a ton net profit, and that they will make about \$6,000 a month net as they are now doing with their own concentrates. My idea is, that if I cannot make any better trade, to have them purchase our ore (we have 500 tons on the dump besides what is above referred to ready to stop) and mix it with theirs, giving them a higher return in concentrates.

Again, we have had to do all our work up to date by hand, and as the rock is very hard it has been very slow and very expensive as by hand we have been able to go only six inches a day, or a foot when we have been working both day and night.

The "Fleece" people have to team their ore about $\frac{5}{8}$ of a mile to their mill, while with us their mill is less than 1,000 feet to the mouth of our tunnel, and they also have a large compressed air plant to run their drills which gives them sufficient power to work six drills, and they are now using only power enough for two drills. They will rent us power so that we can run two drills in the Sherman by compressed air, thus giving us air at the breast of the tunnel (we had to cease working owing to no air) and I am told with this air drill we can make four feet by day and four feet by night, or 8 feet in 24 hours if we choose to run a double shift.

Directly ahead of the breast of the tunnel, on drawing No. 1, you will note marked "Dis. Shaft"; this is what we call "Discovery shaft", and at that point my foreman claims that there is the biggest body of ore on the Sherman property, and that there we would strike it at over 300 feet in depth, and strike a large "chute", rich in gold, and all indications point to this, and we are very likely to cross a "chute" where the cross-vein comes in before reaching the "Discovery Shaft".

The air pipe of the "Fleece", which gives them their power for drills, passes within about 200 feet, I am told, from the mouth of our tunnel, and that it would cost us only about \$500 to put in an air receiver, get a drill and pipe, and perhaps two drills, to equip our mine.

I have been delaying so as to get the whole of the Sherman property under my control, and it looks now as if I would have under my personal control $\frac{1}{2}$ of it -- perhaps $\frac{7}{8}$, and possibly the whole.

Please consider this letter and enclosures at once, and reply to me as early as you possibly can.

I believe we have a very great property, and there are reasons to think that it is the most valuable mine in that whole district.

Kindly take every care of the drawings and report I send you, because they are the only ones I have.

With best regards and kind wishes, I remain.

Sincerely yours,

(Signed) AUSTIN G. GORHAM,

Denver, Colorado, January 23, 1900.

Dear Sir:

Referring to my letter of the 19th, would say; Since then I have had a talk with Reppy, who was my foreman at the Sherman for three years, and has been there and looked after the work for many years before; in fact, he is a practical miner and has been since he was a boy, and had an interest with me in the mine. I enclose copy of letter he wrote me from Lake City a year ago last June, showing his views and estimate of value in the property, and what should be done to get the value out. He is said to be one of the best and most expert judges, practically, of a mining property in the State of Colorado, and has been called to Cripple Creek and Boulder County many times to look at properties for owners of those interested, giving them his views. He is the one who located two of the most valuable properties at Cripple, and he is at the present time making quite a prolonged stay at Cripple Creek where he has been called as a witness in one of the largest mining law suits that has yet come up there, so that a practical opinion from Reppy as to the value of a property is considered a very valuable one. You know something of my own education for this business, and that I have been mining coal, iron and metals for 30 years, have belonged to the American Institute of Mining Engineers for the past 20 years, and have been paid \$100 a day and my expenses when I have examined properties for other people, and can assure you that, with money sufficient to properly develop the "Sherman", I have every reason to believe we have the most valuable property in that district, and among those of large value in the State; as we are to-day, had we a concentrating plant of our own, and an air compressor plant, such as the "Fleece" has (which cost them \$35,000) we would be able to run our mine at a profit from this on as we have already blocked out, according to our engineer, from 12,000 to 15,000 tons of ore, which should show a net value in concentrating of \$5.00 a ton, which would equal from \$60,000 to \$75,000 net profit on what is in sight in the mine.

Again, take drawing No. 1, and see the location of the "Contention", "Hiawasseo", "Ilma", "Governor Pitkin", "Black Crook" and "Golden Fleece". They have all shipped to smelters large quantities of high-grade ore, and my engineer, Dall, tells me they have shipped ores running over \$1,000 to the ton, and I know that the "Fleece" has shipped large quantities of ore that have run over \$2,000 to the ton, and ore running over \$20,000 to the car load, and large quantities of ore running \$5,000 to \$10,000 to the car load.

I yesterday had a talk with another of the "Golden Fleece" owners and he showed me many of their assays which ran very similar to ours, from 25 to 200 ounces of silver and from $\frac{1}{2}$ of an ounce to $\frac{3}{4}$ of an ounce gold, and yet, when they strike these chutes of ore, the chutes contain enormous gold values.

As you will note from Reppy's letter, he is very positive that up the mountain 335 feet from the side lines of the "Gladiator" or now about 280 feet ahead of the breast of the tunnel, there are four cross veins coming, which he has every reason to believe form a big chute or body of ore which would prove of great value: that point being marked on little map No. 1 as "Discovery Shaft",

I have previously written you how slow our work has been by hand, and how rapidly we can work by compressed air, so that with air drills we could reach the chute up the mountain in about three months' time when we start upon it.

There has been spent \$20,000 in money on the Sherman to date, to say nothing of work done before I took it by miners who leased the property, and did all of the upper tunnel work. I, myself, have paid \$10,000 out in something less than three years.

You will note the value in the lower tunnel for about 100 feet before reaching the side lines of the "Gladiator", and that Reppy refers to it, as I have also, to stop this ore to the upper level. This vein is the same for about 400 feet, running perhaps an average of \$15.00 to \$18.00 to the ton, yet at the point 420 feet in the tunnel, and from that point running on 100 feet, there comes a streak in the center of this vein which runs that length, and is from six inches to 2½ feet wide, and it is from this streak that values have been taken out and assayed running as high as \$81.00 to the ton, and all through this whole streak runs from forty odd dollars to \$80.00. The cause of my not stopping this ore before has been that I wanted to get beyond the side lines of the "Gladiator", which as you note is the only property which crosses the "Sherman". By starting on our own property as we have on our lower tunnel and driving as we have to more than 50 feet beyond the side lines of the "Gladiator", we have established the fact that this vein belongs absolutely to us, and thereby could have no possible interference from the "Gladiator" over any legal point, and we would now be at liberty to go back having established the above fact, and stop as we have suggested.

Until I received your letter I have, as I stated, been getting $\frac{3}{4}$, and I expect the whole property into my own individual possession, and with what I have written you of my negotiations with the "Fleece" people, who are very intimate personal friends, I have been contemplating a deal whereby I could get them to take a portion of my interest, and for that get air power, and, if possible, have them purchase from me ore, which I would stop as herein outlined, with the feeling that I would get profit enough from the stoped ore to more than pay my driving by compressed air to the rich chute up the mountain; and then sink, as outlined by Dall, two shafts, say 200 feet each, in the main tunnel, connect same at a depth of 150 or 200 feet (See drawing No. 4), where both he and Reppy are very positive the two veins come together, forming one rich vein. (Do not think I am writing a prospectus -- I am not -- I am giving you business facts and business probabilities). I will add that with all my experience in examining mines, that what I know now of the Sherman property, indicates to me very great value, and perhaps enormous value and without an outlay of much money.

A mining property in the position and condition of the Sherman to-day is the best kind of a property for a capitalist to take hold of, for he runs very little or no risk, with every probability of enormous returns. You take the Cripple Creek mines and other mines that are fully developed and value established, and the prices run up into the hundreds of thousands of dollars and into the millions. The way to make money in mines is to get a good property before said property has reached anything like such point, and make that value for yourself and your friends.

You will note one property crossing the Sherman, which is called the "Missouri". I have a lease on this for dumping purposes; it is owned by the same people as the "Sherman", and is controlled by us. I think you understand that I do not own the "Sherman" outright, but have a lease which has been extended. Briefly the terms of which are, that I am to ultimately pay \$30,000 for the property, \$15,000 at the end of two years and \$15,000 at the end of three years, and if it is necessary I can undoubtedly extend this; in the meantime we pay 12% royalty on the ore we take out and ship to market from the returns of same, and this royalty applies upon the purchase price.

You will notice in the upper tunnel, drawing No. 3, just before reaching the breast or end of the tunnel, that there is a little depression in the straight line of the drawing, which is to indicate a point where "bismuth" ore has been found. This is rarely found in this country, but is of very great value. At this point in the upper tunnel and for 25 feet in length this streak, which comes right in the vein, running length-wise with it (as I have stated 25 feet) runs from one inch to 18 inches in width of an average of about nine inches. It shows in the roof and shows in the floor, and we have taken samples and had them assayed, showing over 1200 ounces of silver from several, and from one we got 2,771 ounces of silver to the ton.

In the lower tunnel we struck a point just about under this bismuth, at 420 to 450 feet in the lower tunnel, there, as you note, we got richer ore owing to another vein coming in, not quite parallel, but running slantingly across the main vein, and it is at this point that I have proposed to do the stoping, and in stoping into the upper tunnel we must somewhere strike into bismuth. We could run one air drill in the breast of the tunnel, driving that on to the chute of the mountain, and we could, if we wished, at the same time use another air drill in stoping from the lower to the upper level at the point above indicated.

You will note that the "Sherman" vein runs North-east and South-west, and I will here say, that on this mountain any vein having a trend North-east and South-west, or anywhere near a northerly and southerly direction, is almost sure of good paying mineral, as it is a note-worthy fact that any vein on this mountain which has such a trend has been found to have good ore, and this has been proved by the experience of all the mines referred to in this letter, and above us up the mountain. It is a well-known geological fact that from Alaska to the southern end of South America, taking the Rocky Mountains and the Andes, and all the way through, the biggest and richest paying mines have been on veins running North-east and South-west, which is the exact trend of the vein in the "Sherman". Others tell me that the "Sherman" vein is the most clearly defined and most regular vein on that mountain.

I am at a loss just what kind of a proposition to make your friend, or the gentlemen you referred to as a friend of Mr.-----, but I am ready to make some agreement which would be advantageous to all. I want particularly to get back the \$10,000 I have put in, in money for an interest with me in the property, or I would be willing to give 51% of the stock for \$20,000 in money, of which \$20,000 I would agree to spend \$10,000 in the future development, and the other \$10,000 to go to me personally for what I have paid at present. If I can consummate what I believe I can with the "Fleece" people, I can with the \$10,000 or less spent on the property get to such values that we need raise no more money, and would have sufficient profit to build a mill and sink shafts upon the property as we would desire; otherwise I am inclined to borrow the money and go at it myself, keeping the property for myself.

Please read these letters and reports fully and carefully, and do so at once and let me know immediately what your people think.

I am, with kind regards.

Sincerely yours,

(Signed) AUSTIN G. GORHAM

Denver, Colorado, January 25th, 1900.

Dear Sir:

Referring to my letter of the 19th and 23rd, would say; Yesterday afternoon my foreman of the "Sherman" returned from Cripple Creek and I had a long talk with him. He told me that when he started, at a point 300 feet in from the mouth of the lower tunnel, to sink a winze, he sunk ten feet; and in that ten feet the vein widened from $4\frac{1}{2}$ to 7 feet, and that it undoubtedly widens rapidly as it goes down. He said the whole 7 feet was mineralized and ran, like the general vein matter, about \$15 to \$18 in value to the ton, and was full of bunches, running \$450 to 500 ounces silver. This work was done a year ago last summer while I was East, and at that time we had an assay made of some of the rich bunches, and you have with the papers sent you, the copy of the letter from Mr. Knight, assayer of the Boston & Colorado Smelter, dated a year ago, July, where he reported (I think sample No. 3 from winze) as containing I believe 487 ounces silver. You can refer to copy of this letter and see for yourself. When I asked my foreman why he did not continue sinking that winze, he said he encountered so much water that he couldn't keep it out by hand and so quit; but with a little power pump (which we didn't have) he could sink as deep as we wanted him to. He told me also, which I never knew before, that between walls at this point it is 20 feet, and at depth, he expected the whole distance between walls -- 20 feet -- would be mineralized and, he thought, much higher in value. This man has been in Denver more in the last three months than in the past ten years, and as he is not much of a letter-writer, I gleaned more from him regarding the "Sherman", work done and probabilities of the future, than I'd ever known before. The more I learn the more I am impressed with the value of the property.

Sincerely yours,

(Signed) AUSTIN G. GORHAM,

Denver, Colorado, February 7th, 1900.

Dear Sir:

Referring to my three previous letters would add; We have quite a bunch of bismuth ore (as papers sent you show) in our upper tunnel. How large that body may be is yet to be determined, but, under any conditions, it must be a good many tons. We have considered our bismuth only as valuable for the silver it contains, but I learned last evening, from a man who has handled a small amount of bismuth found in Wyoming, that the bismuth proper is, by far, the most valuable, Bismuth being now worth a dollar per pound or Two Thousand Dollars to the ton.

Very sincerely yours,

(Signed) AUSTIN G. GORHAM,

EXTRACTS FROM LETTER FROM MR. W.E. REPPY,
FOR YEARS FOREMAN OF THE "SHERMAN" MINE.

Lake City, Colo., Sunday (June 4) 1898.

Dear Mr. Gorham:

Your telegram duly received Friday evening; your letter came to hand Saturday, June 3rd. I have read them through a couple of times and think I fully understand their meaning, and I will try my best by letter to give my opinion of the Sherman in detail.

I will try to give you my opinion of the Sherman vein so far as developments show, also my idea for future work for the best results. First you will note by your plat the cross-cut I and my brother ran to the south; we cut a nice looking vein in there with some rich ore scattered through the quartz, but not in sufficient quantity to pay; this vein dips heavy to the north while the Sherman dips slightly to the south. At this point the two veins, the Sherman and the cross-cut vein is 49 feet apart, and at depth, of course, are bound to come together and I claim will make a body of rich ore; those veins are not exactly parallel, the cross-cut vein comes into the Sherman vein at a point on your blue print where the second cross-cut was run by you, when you first taken hold of the Sherman; if you will notice this point is exactly under the upper workings, also where the Bismuth was found in the upper workings; here the two veins are together in the upper workings, also in our lower tunnel. And from all appearances by looks and surveys, and other examinations I have made, proves to me beyond a doubt to be the top of an ore chute, and at depth will make a long junction of the two veins and will make a large body of good ore for no doubt 300 feet long, for the cross-cut veins does not seem to be so strong as the Sherman vein, and therefore will run with it instead of crossing it, and my theory is that nothing is a better indication of an ore body than the intersections of veins, and it is my firm belief that at the intersection of those two veins is the apex of the best ore chute in the Sherman and the very place that will by the means of leading us on to something good and a permanent steady ore chute.

I will not hesitate in saying I am certain at depth we will have all the ore we want, though, as I have said in previous letters, the ground is hard and expensive to work; the whole proposition means machinery, and as I have said, aside from any rich ore we may get, we have a tonnage proposition already in sight.

At a point opposite the Discovery Shaft, 335 feet beyond the end of our tunnel I consider one of the best ore bodies we have on the Sherman vein the entire length of the claim; this chute I consider will be principally gold, and will be at least 75 feet long in the vein where our tunnel would tap it. Our tunnel will tap this chute at about 500 feet deep; the vein that carries the chute will have a heavy dip to the south. At this point there are at least 4 different parallel veins on the surface, and there is two of them dip towards each other. On the surface their apex does not seem to be more than 60 feet apart; this point is opposite the Discovery Shaft and 600 feet from the west end line of the Sherman claim. Now Mr. Gorham, do not think I have any object in view in giving you a description of this ore chute for I have not more than to tell you the truth and give you my opinion, for I have been trying very hard to get something in our reach that would pay and then push the tunnel for something ahead. In my opinion this ore chute is as certain to exist at this point as there is a Sherman vein.

Mr. Gorham I have told you, I believe, all I know about the Sherman and I am very certain there is no other man that can understand this property as I do, and I am sure it will bear me out in all I have said about it, in short, all it needs is money and machinery to make a big producer.

I am very truly,

(Signed) W.E. Reppy.

COPY, CERTIFICATES OF ASSAY OF GENERAL SHERMAN ORE
BY R. L. RAY, LAKE CITY, COLORADO

1900	No	Silver oz.	Gold oz.	Lead %	Copper %	Value on 3/20/25	REMARKS	
A.A.M.	6	6.6	.26	3.3	2.46	\$22.82	Breast 2 ft average	
let 21/11	7	10.8	.32	6.4	3.20	34.86	4 ft. vein 3 ft wide	
	8	14.3	.34		2.64	24.32	Vein 9 ft from crosscut width sample 2½ feet	
Letter								
Nov. 22	9	.4	.18		Trace	3.87	R. side Br. of drift S.W.	
	10	4.4	.22		.88	9.94	Middle " (12 ft from	
	11	2.6	.21		.72	8.06	Left " (turn	
	12	12.9	.30	6.2	2.18	32.23	Middle br. 15½ ft S.W. (from turn	
Letter	13	.5	.24		Trace	5.14	Tale seam 15½ ft drift	
Nov. 23	14	24.3	.32		2.92	31.42	20" ore in br. 1½ ft	
"	24	10.88	.42	.3	3.27	25.93	26" in br't 18½ ft on Ore	
"	26	16.6	.44	5.9	3.12	40.02	L. side Br. 20" 23 ft drift	
	37	5.3	.26		Trace	9.80	Middle " " " "	
Letter	18	8.1	.30		1.46	15.70	25 ft from plug narrow seam on left	
Dec 4	19	1.2	.06		Trace	1.99	25 ft from plug, filling between seam and vein	
"	5	21	1.3		Trace	1.88	R. side br. 12" 30 Ft plug	
"	5	22	4.7		1.34	9.89	Middle " 16" " "	
"	10	23	20.0	.32	4.2	41.36	Roof of tunnel 20 ft. be- yond winze	
"	12	24	6.8	.04	0.8	.8	8.26	Chunk from wall 30" feet back of sets where por- phyry faults vein
"	18	27	5.6	.30		2.76	18.05	Grab of fine from plat E. of winze, ore from
"	22	28	11.9	.40			16.09	R. side of tunnel
"	24	29	31.2	.18	Trace	5.82	42.21	From upper shaft East edge of underhand stope where drift turns to right.

Lake City, Colorado 22nd July, 1901

The Gladiator Gold and Silver Mining Co,
Dr. M. T. Case

Gentlemen:

In accordance with the request of your Dr. M.T. Case and Mr. W.B. Reed, I have pleasure in submitting to you my report upon the Gladiator mine, near Lake City, Colorado.

I may mention at the outset that I had charge of the General Sherman mine from March 1897 until February 1901, hence I am thoroughly conversant with the property, and as the ore in the General Sherman workings is that upon which I shall have cause to dwell in this report, you will readily see that there is no question of surmise in my statements, but they are based upon long knowledge of the ore and several hundred tests both in the nature of assays and mill tests, etc, and I can fully vouch for all figures given herein.

Of the history of your property, its conflict with the General Sherman, and your work up to date you are of course fully aware, the history of the General Sherman, being, in a nutshell, that the owners had simply extended the workings commenced by your company in the second level-- and have continued such workings -- beyond the south side line of the Gladiator claim and are still pushing ahead such workings by virtue of a tunnel site located to cover the General Sherman claim, which tunnel site was located on the 29th day of August 1900. Your law officers will be able to explain what rights and equities the Sherman people have under such tunnel location, but it may be well to remark here that all the veins shown on the drawings I submit were discovered prior to such tunnel location being made, --

The old Gladiator tunnel on Second level was started and driven in the form of a crosscut, (marked crosscut No. 1) and cut the vein at the point where No. 2 crosscut was started.-- thence it was run upon the vein, south, for a distance of about 130 feet, and for some cause your company then stopped. The General Sherman owners, as stated, have carried this second level forward through the property on the vein, and outside the south side line.

This tunnel is run upon a vein 4 feet 5 inches wide (average measurement) and discloses ore for a distance of 300 feet (between points A and B on drawing No. 1.) The vein is thoroughly mineralized for its full width, and lies between well defined walls and has a tale streak on each side, enabling very cheap mining. (Appendix "A" gives some of the many assays made by me upon this ore.)

The vein commences to have a commercial value at point "A" and is practically continuous for its full distance to point "B", where it splits and does not reappear within the lines of the Gladiator claim. The average distance under the surface and above this level is 150 feet. This ore has a density of 10 cubic feet to the ton, hence $300 \text{ ft.} \times 150 \text{ ft.} \times 4'6'' = 202,500$ cubic feet of ore, divided by 10 cubic feet to the ton = 20,250 tons of ore opened up by this second level. This ore will average \$18.00 per ton hence the gross value exposed is \$364,500 above the second level.

A very marked improvement in the values took place as the tunnel advanced toward point "B" and in my opinion, this was caused by the intersection of vein marked "X X" with this main vein, and I am of opinion also that under the point of the intersection of these veins (see drawings No. 2) there will be found much better ore than has yet been encountered in the mine.-- The projected shaft and third level will carry the workings below such line of intersection, as far as can be judged from the dip of the two veins -- see drawings No. 2.

Level No. 1 is caved for a distance of about 45 feet, but a short shaft has been sunk connecting with this level beyond the caved portion. I have frequently been in this level and the vein here shows good and strong in the vein here exposed and had returns of \$54.68 from same, the average over the whole vein being \$24.00. In this level occurs the small chute of Bismuth ore. It lies on the East or hanging wall at the point marked "understope" and is about 3 inches thick, and 24 feet long. This Bismuth does not appear in the second level, but the best ore in this level is found immediately under the "understope" at the point marked "upraise" on drawing No. 2, and may contain some Bismuth, but I have never tested for this mineral at this or any point in second level.

The ore thus exposed forms a very good concentrating ore and I have made several tests upon same, although never in a mill rigged for this class of ore, hence the tests are not so good as they ought to show and only effected a saving of about 50% of the values. The concentrates had a value of about \$35.00 per ton, and the bulk was reduced 4 tons of ore into 1 ton of concentrates, hence a mill treating 50 tons of crude ore per day would yield 12 tons of concentrates, or \$420.00 gross, even at the low value of these inefficient tests I have been able to make. To take out this 50 tons, mill same and ship concentrates to smelter would cost about \$6.00 per ton of crude ore, or \$300.00 per day, which leaves a profit of \$120.00 per day on each 50 tons of ore milled and of course better with more efficient milling, --

The ore taken out in driving this second level was put over the dump and I recently had some sorted (the last work I did for the Sherman Company) Appendix "B" gives the result of my sorting. This ore (about 25 tons) now lies on a platform at the Sherman mine. I submit to you also two samples of the ore, the values being \$38.31 and \$16.32 respectively.

Appendix "D" is a statement of one of the mill tests made and referred to above, showing the amount of crude ore treated, mill loss, amount of concentrates and moisture in same, also value of crude ore (\$11.97) and value of concentrates (\$34.59).

Appendix "F" is an estimate of the probable cost of compressor, boiler etc., ore car, blacksmith's outfit and fittings. The cost per month in erecting buildings and preparing for regular steady work and taking out ore will be about \$500, chiefly in wages, and the property can be ready for extracting ore in from 4 to 6 weeks, after this time the cost per month in labor and supplies, will be in the neighborhood of \$1500, but this should be well met from ore returns. Thus you will see that about \$4000 will be required before any returns come in from ore, and upon the subject of raising ready money for a treasury fund, I would again advise you to raise not less than \$7500, not that the whole of this sum used be expended, but as I explained to you, if it should be needed, it will be sure to be at a time when any delay might be very costly, and it is always well to be over prepared than to be lacking in capital in any mining enterprise.

I have not entered into the question of a mill here, but my mention that there are two water power mills which can be rented and remodeled for a very reasonable figure.

I submit you herewith appendixes A., B., and drawings 1, 2. No. 1, being a surface plan on second level, No. 2 being section along second level, also two samples of Gladiator Ore.

I remain, Gentlemen,
Yours obediently,

THOMAS A. DALL, F.G.S.
Civil and Mining Engineer,

GLADIATOR ORES.

APPENDIX "A"

Gold oz.	Silver oz.	Copper %	Lead %	Value \$	Remarks
0.20	61.00	2.		43.60	Mill run 2980 lbs.
	1201.00			720.60	Bismuth-silver only
0.21	13.11			12.06	Average over vein No. 1
0.36	16.00			16.80	level
0.16	16.10			12.86	do
0.23	13.80			12.88	Lower No, 2 level
0.13	11.50			9.50	do
0.18	16.80			13.68	do
0.30	32.00			25.20	do
0.06	18.00			12.00	do
0.20	322.00			197.20	Bismuth No. 1 level
0.10	38.00			24.80	Average over vein No, 1 level
0.30	72.00	3.60	0.80	54.68	12" paystreak No. 1 level
0.20	16.00	2.30		17.05	Lower level
0.36	19.40	1.30		20.79	do
0.40	10.30	1.50		16.43	do
0.46	16.00	1.40		20.90	do
0.64	46.80		13.50	46.49	do
0.50	24.60	5/10		32.41	Fine ore do
0.40	24.00	6.30	5.20	33.67	do
0.60	17.60	1.10	6.70	26.55	do
0.36	13.11	2.10	4.30	19.71	do
0.48	16.80	3.50	8.60	27.44	do
0.50	60.20	7.10	13.90	61.63	do
0.20	94.40	4.91	4.00	69.67	do
0.23	61.80	3.93	4.50	48.73	do
0.25	287.00		10.00	180.70	Sack Bismuth No. 1 level
0.48	76.20	6/40	12.80	67.40	No. 2 level
0.49	108.40	9.30	6.20	90.76	do
0.16	14.40	2.80	9.20	19.26	do
0.20	18.60	3.06	7.70	22.44	do
0.20	25.06	1.70	0.50	23.75	do
0.20	487.50	5.11	6.70	306.00	do, Winze
0.30	69.70	3.70	10.30	56.97	do. Upraise
0.26	39.87	9.00	10.90	45.43	do.

Gold \$20 per ounce, Silver 60¢ oz. Copper \$1.50 % Lead 35¢ %

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Appendix "B"

0.08	70.80			44.08	Sorted ore from dump.
0.32	22.40			23.55	do
0.12	21.00			18.71	do
0.16	14.40			15.55	do
0.20	19.80	1.54	4.00	19.59	do
0.08	14.60			12.87	do
0.32	75.70			57.53	do
0.20	14.40			16.35	do
0.18	28.50			24.41	

Gladiator

Appendix "C"

0.40	40.60	2.69	5.50	38.31	Samples submitted
0.12	20.00	Trace	5.50	16.32	do

GLADIATOR ORES

Appendix "D"

Result of milling test made upon 10 tons of Gladiator ores at the Ocean Wave Mill.

Crude Ore treated 21,860 lbs.
 Milling loss 2 1/2% 546 "
 Net crude 21,314 "

Weight of concentrates 5,390 Lbs
 Moisture 10% 539 "
 Net concentrates 4,851 "

Ratio of concentration about 4-1-3- to 1

Value of crude ore \$11.97
 Value of concentrates 34.59

NOTE. This test was very inefficient as the mill was not arranged for this class of ore and the saving was only a little over 50% of the values. With a properly equipped mill a saving of at least 75% should be effected.

GLADIATOR ORES

Appendix "E"

Milling and Mining Estimates.

Extract 50 tons of ore per day, haul to mill, treat, and haul product to R.R., freight and treat at Smelters, the cost per ton of crude ore would be about as follows viz.,--

Stoping per ton crude	\$1.00
Teaming to mill do.	.50
Milling do.	.50
Team Conc. to R. R.	.10
Freight on do.	1.45
Smelter charges do.	1.70
Contingencies	.75
	<hr/> 6.00

50 tons of crude ore reduced (4 to 1) to 12 tons of concentrates	
at \$35.00 per ton --	\$420.00
50 tons of crude ore mined and milled at \$6.00 per ton	300.00
Net per day	<hr/> 120.00

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