

**MINERAL REPORT
ON THE
KAHILTNA RIVER PLACER
PROPERTY**

Prepared by

**Licensed Alaska Professional Geologist
Certified AIPG Professional Geologist**

December 1992

Introduction

Gold Gulch Mining Company has a block of roughly 4,000 (subject to change) acres of placer claims on the Kahiltna River (figure 1) in the Yentna Mining District of southcentral Alaska available for mining. Gold Gulch holds 100 state mining claims (figure 2) which have yielded gold, platinum, monazite, zircon and rare earth minerals in southcentral Alaska. An estimated 67 million cubic yards of gold bearing placer ground are waiting to be mined in this block. The sampling and limited mining indicate that there is plenty of good paying ground to be mined. The owner of the mineral rights, Gold Gulch Gold Mining Co. of Anchorage, is looking for high volume operators to lease or buy some of their extensive placer property.

History of Exploration and Development

The earliest placer mining in Kahiltna Valley began in 1905 at Cache Creek about 25 miles upstream from this property. The first recorded mining on the lower Kahiltna occurred the following year when about 20 ounces was taken from Leslie's Bar (in this property) by hand methods. In 1907 four men were working on a nearby bar and each earning \$13 per day. J.B. Mertie, an early Alaskan geologist, stated in a 1917 government publication that four small hand mining operations were scattered up and down the river. He mentioned a 600 square foot cut into a low terrace at Boulder Bench (in the upper end of this property), according to Mertie "a commercial gold placer" existed. Mertie also noted placer production from several other sites upstream such as at Round Bend Bar (just upstream of this property) where "about \$1,500 in gold was rocked out by two men from about 100 cubic yards" in 1908. With gold at \$20.67 per Troy ounce, it took 72.5 ounces to be worth \$1500. Therefore the gravel had a grade of 0.725 ounces per cubic yard. This seems a bit optimistic, but encouraging. This could even represent a small sample of the high grade bedrock concentration.

Sholan Bar, near Shulin Lake (figure 1), was reported by Mertie to have a hand mining that had been carried on intermittently for a number of years with "some fairly rich spots"... "particularly on the bars projecting into the river at the sharp turns". Sholan Bar is three miles below the mouth of Peters Creek. Mertie noted that there was garnet, magnetite, ilmenite, zircon, and platinum in his pan concentrates.

In those days in Alaska"... placer ground was not considered sufficiently rich to justify mining unless it could be made to yield at least \$10 a day for each man." according to S.R. Capps (1915). So at least a half an ounce per day was required to cover the mining costs and make the hardships worthwhile. C.C. Longridge (1910) stated that four men digging, lifting and dropping gravel into a sluice could average six cubic yards per man per day under Alaskan conditions. The large boulders required the miners to stop shoveling and wrestle with the boulders, so the daily average would be lower, let's say four yards. If the \$13 per day gold rush miners at Leslie's Bar, where there are boulders (photo #4), averaged four yards per day and had a profitable mine, then they would have had to have been mining ground that grades as 0.157 Toz/BCY, or at today's gold price of \$350 (1992) a **\$55 per cubic yard**.

Another important reason to discuss Mertie's data is to show that he reported that gold is distributed from the mouth of Peters Creek downstream to almost the mouth of the Kahiltna River. The old timers were either making a living mining by hand or they were getting enough gold to at least think they were making a living. Capps (1913) estimated that 3000 ounces were mined on the lower Kahiltna River and Lake Creek from 1905 to 1911.

The obvious question is, "Why didn't some one come in with heavy equipment and mine the valley from top to bottom before now?" I don't know what the answer is, but here are some possibilities. In the old days they were having gold rushes to other parts of Alaska and the Klondike. Many of these areas had easier access. This area had some of the most difficult access in the state. Even the remote mining districts like Iditarod had river access. The Kahiltna is too swift for barge traffic. Overland transportation was arduous at best. This property lends itself to large volume mining equipment, which was very expensive to transport without barge access. Access has improved dramatically in the last 25 years.

Large scale placer mining in those days was done with bucketline dredges. But this ground was not favorable for a bucketline due to the large boulders in the paystreak and the segmented benches. One dredge

would not have access to the whole property. Other factors would be that much of the bench ground was too dry for floating a dredge, but not enough water head for hydraulicking.

Perhaps the best reason for not having been previously mined is due to difficult sluicing. The combination of an abundance of heavy black sands and fine gold reduce sluice efficiency. The gold size generally is smaller than 10 mesh, but one-ounce nuggets have been recovered. The black sand, fine gold, and boulders made a very difficult combination for early mining operations. Some of these heavy minerals such as platinum and monazite are valuable though.

This ground was left abandoned for decades while the price of gold was low and the access remained poor. Both access and gold prices eventually got better. Neither are great now, but much better than during the first half of the century. The primitive trail from the Susitna River to the Peters Hills was dozed in during the late 1930's. The Parks Highway was not built until the late 1960's. The price of gold finally broke \$200 in 1978. This group of claims was staked in the late 1970's and early 1980's.

Mining equipment and methods have also improved. With new mining techniques, the mining cost per yard is dramatically lower, far lower than the average grade of this placer ground. Now it appears that mining this ground is easily feasible, especially with an adequate exploration program to direct the mining.

The current owners diligently developed the property by staking additional claims, testing the tenor of the bench, and small scale mining. The claims were leased to St. Joe Minerals who tested the airstrip area and the adjacent area near Black Creek. St. Joe felt like the property was "very valuable", but they had a big shake up and decided to back away from expensive exploration programs in Alaska. Their data is summarized here in this report. In brief it proved that the grade of the ground is indeed feasible to mine and quite rewarding too.

St. Joe had a mining engineer from British Columbia, J. E. Lusney, take seven samples with volumes of 3/8ths of a cubic yard in the camp bench. The gold that they got was amalgamated and weighed in milligrams. The samples averaged \$8.30 per cubic yard, but it ranged from \$.75 to \$21.60. The fineness is 871. The average depth was nine feet to bedrock, but it varied from 3 to 12 feet. The pit tested ground blocked out a minimum of 100,000 cubic yards. However, Mr. Lusney believed the block tested could represent as much as 1,000,000 cubic yards that would include the entire bench in this immediate area. One thing is sure though is that the area tested represents only a very small portion of the bench (figure 4). This sample data suggests that the gravel in the adjacent benches (figure 3) of equal height would be a similar grade to this. Figure 4 shows that there are at least 250,000 cubic yards of possible placer reserves in this bench too.

Alvon had Union Carbide test the area near the airstrip and near Black Creek. The confluence with Black Creek is a mile downstream from the camp. Union Carbide got mixed, but encouraging results. In spite of their unprofessional handling of the samples, they proved that rich samples could possibly be taken. Their data does show that good values can be found near the mouth of Black Creek, which would suggest that this creek is very likely to be contributing gold to the Kahiltna valley.

Alvon has mined the property on a very small, or test mine scale (photos 5 & 6). One test mining operation that they did was 2500 (loose) cubic yards that yielded at least 45 ounces of gold, \$7.90 per bank cubic yard. I say "at least" because they apparently lost lots of fine gold in the tailings.

Frankly one of the problems that this property has had is the shortage of careful sampling by competent placer mining professionals. There appears to have been several sampling programs since the late 1970's, but only the tests by St. Joe was done by knowledgeable placer people. The rest of the testing showed that there was gold present, but it was not accurate enough for quantitative results. Some samples showed what was probably anomalously high assays of gold. These samples were not included in this report. The problem with their sampling was that they did not quantify the original volumes of the samples. There are

many samples showing rich results in ounces per ton or parts per million; but no data on how large the sample was to begin with. So these samples are only good for indicating the presence or absence of gold at various locations. Fortunately there is enough gold in the samples to be encouraged to do more exploration.

During the summer of 1992, Gold Gulch Gold Mining Co. had a small fully permitted placer mine operation that mined 3,000 cubic yards and got at least 62 ounces of gold. This calculated to an average grade of \$6.30 per bank cubic yard. The cons were tumbled and then run through a pop tube, but there was still gold left in the black sands, so the 62 ounces is less than what was actually mined. They felt that they were not mining in the best area before they started. They began in this location so this could be the beginning of one end of the proposed new airstrip. (photo 6)

Assuming conservatively that the ground here would have an average grade of \$6 per yard, and there are 100,000 cubic yards identified; then 1714 troy ounces of gold and some unknown amount of platinum can be expected in this block of auriferous gravel.

The attached photographs show the landscape, bench channels proposed for mining, the present riverbed, the existing workings, and the wash plant being used (photos #1 -6 respectively).

GEOLOGY and MINERAL RESOURCES

Understanding the geology of a mining property is necessary for the proper evaluation and to give direction to the further exploration. If you know why the gold is where it is, then it is possible to predict where else it may be. We know the gold was transported from its bedrock sources in the Peters Hills, Collinsville area. and various other unidentified spots in the Alaska Range. Glaciers and streams have moved the gravel and gold from the lode sources during the past few million years. Since there was a huge slug of auriferous rock debris left in the way of the Kahiltna River, the river had erode it and sluice it. The river has been concentrating the gold out of the glacial deposits and into the present and former channels.

The Kahiltna Glacier is large even by Alaskan standards, but it is only a shadow of its ice age self when it extended past Anchorage. This glacier has advanced and retreated many times in the past million or so years. The advances and retreats are important to the transportation of the placer minerals because glaciers act like enormous bulldozers that push rocks as they advance and then leave them strewn downvalley in many large heaps. Since the rocks that the glacial dozer were gold bearing (Capps, 1913. p.50), the gold was carried farther down the valley than the river normally would have washed it. The most recent ice age glacier had alot to do with the placers in this area because it dumped its load in this area and then sluiced it with its meltwaters. As the glacier was melting the floor of the Kahiltna¹ valley was filled with many braided channels like you see today farther upstream just below the Kahiltna glacier.

In the 10,000 years since the glacier was in this area, the river has eroded down through the weakly auriferous glacial deposits and even into the underlying bedrock. As it cut down through these sediments, it re-sluiced them to concentrate the heavy minerals into the riverbed. The river eroded deeper and deeper, so that now it is several hundred feet below it's ice age height. As it cut down it changed channel often. Some of these abandoned channels are left as benches on both sides of the river (photos 2&3). Bedrock under the river bed acted like the floor of this 400 foot wide sluice box where the heavy minerals and boulders (photo 4) were concentrated for thousands of years. What was formerly placer bearing river bed alluvium is now part of the extensive network of placer bearing benches.

Bedrock under the river is a Tertiary formation composed of stream gravels, lignite coal, and lake sediments. Bedrock in the mine area is a dense, smooth clay. It is possible that some of the gold and platinum in the valley came from the Tertiary stream channels. Where ever the gold came from, it seems to be present in adequate quantities to develop a lucrative large volume placer mine.

Subeconomic amounts of gold are found in the glacial till, glacial outwash, and the Tertiary stream channels of the bedrock. It is unlikely that these landforms would be future undiscovered resources. The present stream alluvium and the former stream alluvium of the benches provide ample resources and reserves to

mine for at least a quarter of a century at a rate of 100 yards per hour. These landforms should have the richest concentrations and are almost totally unmined. Figure 2 is an aerial photo that shows about 22 river miles in the vicinity of the camp and airstrip. (The airstrip does not show because the photo was made in 1952.) The extensive network of benches has been highlighted with a yellow felt tip pen. Use the drawn in airstrip as a scale, it is 1240 feet long.

The property is essentially unmined even though mining has occurred off and on for almost 90 years. The previous mining has only scratched the surface. Gold Gulch Gold Mining Company has been prospecting and mining (photos 5 & 6) for two summers (1991 & 1992). Gold Gulch has shown that it is lucrative to mine this ground even at small rate of 25 yards per hour. At the most this operation may have mined 20,000 cubic yards.

The valuable minerals that are found in these placer deposits are gold, platinum, monazite, and thorianite (Robinson et al, 1955. p.21). These last two are both radioactive thorium minerals. It is not known if these other minerals would be profitable to sell as a byproduct.

The placer minerals are in the riverbed and in the former riverbeds. The present river is 300 to 400 feet wide and maybe even wider during the recent geologic past. So the paystreaks are likely to be very wide too and as long as the length of the present channel and the benches. The bench channels are long, at least nine miles long. Assuming the pay is only three feet thick by 400 feet wide by 47,520 feet long, then there are (very conservatively) 2.1 million bank cubic yards in this block of claims. This is very conservative because in most places the floor of the valley is three times as wide as 400 feet and that does not include the width of the river. As discussed previously the overburden is very thin to non-existent.

The real attractiveness of this property is its geologic simplicity and enormous size. Glaciers have randomly distributed gold throughout the valley. Then the river sluiced the heavy minerals into extensive glacier deposits. Since the placers were formed from the re-working of glacial deposits there is no reason to say that the closer to the lode, the richer and coarser the gold is. It should be about as rich at the upper end of the property as is the lower end. The placers ought to be about as continuous as placers can get throughout the length of the property.

LAND STATUS (SUBJECT TO CHANGE)

The claim block consists of 100 forty-acre state claims on both sides of the Kahiltna River (figure 2). The land (surface estate) on both sides of the Kahiltna River is owned by the State of Alaska. The land on the east side of the river is still open for mineral entry, while most of the land on the west side is now closed.

EXISTING FACILITIES

The existing facilities include heavy equipment and a camp. Itemizing the on site facilities includes (subject to change) (*may be in need of repair):

MF 450S backhoe	MF 400S dozer (blown engine)*
JD 644 loader (rubber-tired)	Shaker washplant, TROMMEL & SLUICES
100 kw Cummings 225 Hp generator*	water pumps
2-500 gal fuel tank	Miscellaneous tools
1240 foot natural airstrip	All-weather cabins

The access to the property during the winter is via seismograph trails from the Oilwell Road, or from the Petersville Road, or by aircraft on skis. The distances are 20 to 30 miles from these roads respectively. Summer access is by airplane, boat or all terrain vehicles. The airstrip is 65 air miles northwest of the Anchorage International Airport. It is also possible to get there by jet boat from Willow, Alaska. All Items are subject to change with out notice.

CONCLUSION

The owner, Gold Gulch Gold Mining Co., would like to sell the property all or in part. They will also consider experienced, high volume placer mining operators to mine and explore this Kahiltna River property under a lease arrangement, or some other negotiated agreement. And to pay a royalty to Gold Gulch Gold Mining Company. All terms are negotiable and reasonable.

PARTIES INVOLVED

Additional information and verification of the above information can be gotten from:

Dan Freitas
Gold Gulch Gold Mining Co.
PO BOX 91087 Anchorage, Alaska
99509-1087
907-229-2834 Cell
(907) 349-5972

Consulting Geologist Anchorage,
Alaska 99502

This mineral report was prepared by _____ November 1992. The information presented here is true, correct and the best available as of this point in time.

REFERENCES

Capps, S.R., 1913, "The Yenta District, Alaska", US Geological Survey Bulletin 534

Capps, S.R., 1915, "The Willow Creek District, Alaska", US Geological Survey Bulletin 607

Longridge. C.C., 1910, "Hydraulic Mining", Mining Magazine. London

Mertie. J. B., 1917, "Platinum-Bearing Gold Placers of the Kahiltna Valley", US Geological Survey Bulletin 692

Robinson, G.D., Helmuth, W., Lyons, J.B., 1955, "Radioactivity Investigations in the Cache Creek Area Yentna District Alaska, 1945", US Geological Survey Bulletin 10.24-A

FIGURES

Figure 1. General location map showing the whole Kahiltna River from the Kahiltna Glacier down to the confluence with the Yentna River. This property is highlighted. The Petersville Road and the Parks Highway are in the upper right side area. Note the Cache Creek and Collinsville mining districts in the headwaters area. The squares are townships **six** miles by six miles.

Figure 2. Gold Gulch claim block map. The camp and airstrip are near the center of the claim block. A close examination will reveal the abandoned river channels -see figure 3 too- and the alluvium lying near the rivers elevation.

Figure 3. Aerial photo taken in 1952 which shows the present river and its former channels very clearly.

Figure 4. Hand drawn map of the pit test sites done by J.E. Lusney. Based on this map there appears to be at least 100,000 bank cubic yards of probable to proven reserves.