

Barrington River Placer Gold Prospect

Ore Reserve Prognosis

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GEOLOGICAL REPORT

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## INTRODUCTION

The Barrington River placer gold prospect has attracted prospectors and miners over many years. Past activities have included panning, rocking, sluicing, trenching, pitting, shaft sinking, Keystone drilling, dredging, and various kinds of sampling. Unfortunately, none of the extensive records which must have been generated are now available, and the writer is aware of only a few brief relevant reports within the Annual Reports Of The Minister Of Mines for British Columbia, and some Memoirs of the Geological Survey of Canada, both circa 1930.

Further to a geological report dated 30 October, 1986 by the writer, on a shallow sampling program over a selected part of the Barrington River prospect, this report attempts an economic prognosis by integrating results of that program with information on drilling and sampling contained in government reports of the 1930s. This report does not comply with specifications by Canadian Stock Exchanges for qualifying reports.

## ORE RESERVES

Placer ore reserves, like hardrock ore reserves, can be divided into proven, probable and possible reserves. Proven reserves are those which have been sampled adequately to provide a high level of confidence in the conclusions reached; probable reserves are those whose existence is reasonably assured but less than certain; possible reserves are those which have been inferred from reasonable geological conclusions or other sources of information.

No Barrington River reserves can be placed in the "proven" category today even though some of the work done in the past might have been adequate, by today's standards, to justify this classification if the appropriate records were available. However, some of the shallow sampling carried out in 1986 tended to confirm the range of values reported from the early '30s for two adjacent blocks. It is proposed that reserves calculated from this area be regarded as "probable". Untested adjoining ground, which displays no apparent geological reason for containing lesser gold values, is regarded as containing "possible" reserves.

## MEASUREMENT OF RESERVES

Inquiries made of the B.C. Ministry of Energy, Mines and Petroleum Resources elicited the advice that the cubic yards referred to in the old reports "are almost certainly loose cubic yards", which means cubic yards after mining rather than before. The average increase of volume of dense gravel and clay, as from river beds, is taken as 50%. The increase for bench material could be somewhat less.

## PROBABLE RESERVES

### Stripped Area

According to old reports, a Keystone drilling program indicated 700,000 yd<sup>3</sup> of reserves prior to the commencement of dredging. A total contained value of "about \$500,000" was reported on the basis of gold 820 fine and \$20.67 per fine ounce. An equivalent value today at \$C550.00 per fine ounce would be  $\frac{550.00}{20.67} \times \$500,000 = \$13,300,000$ .

Factors used in the October, 1986 sampling program were 800 fine and \$C550.00 per fine ounce. Excerpts from several old reports are included in Appendix "A".

The area stripped in 1931 is situated between samples 26 and 28 on the sample map and extends north-south for the length of the island, with an area of approximately 24,000 yd<sup>2</sup>. A depth of 20 yd would yield 480,000 yd<sup>3</sup> before mining, or a little over 700,000 yd<sup>3</sup> after mining. Photographs owned by the leaseholder, Mr. Wayne Eberg, depict the stripped area as well as several recognizable topographic features. While the exact limits of the drilled area cannot be identified, it is known that they lie within the stripped area and that their boundaries are roughly equivalent. Erosion since the 1930s could have enlarged the size of the stripped area somewhat.

Based upon information contained within the 1931 Report To The Minister Of Mines, and on mapping conducted in 1986 by the writer, some 70,000 yd<sup>3</sup> of probable reserves having a fine gold value of \$19.00 per yd<sup>3</sup> should be recoverable by open pit mining. Mining costs are estimated not to exceed \$7.00 per yd<sup>3</sup> as there is no overburden to be

removed. (The cost suggested is an operating cost and assumes that plant and equipment is available.) Therefore, a profit of  $70,000 \times \$12 = \$840,000$  is indicated. Modern machinery such as jigs and centrifugal separators should increase the recovery significantly over older methods although it is not known how the original samples were treated. Possibly, a hand rocker and gold pan were used.

#### Pit Drainage

Based upon an approximate measurement of the fall of the river from the upper end to the lower end of the island as 16 feet (use 15 feet), a maximum of 12.9% (use 10%) of the total could be mined above the water table using drainage to the river at the south end of the island. The actual figure would vary throughout the season depending on the state of the river.

When the river has been diverted into its old channel it is likely that the increased flow there will cut down the river bed at the south end of the island somewhat, improving pit drainage and making some additional reserves available. Many property reports refer to a "bedrock drain". In this case the alluvium is very thick (such as 200 feet) but the principle is the same.

It might be practicable to increase the reserves available to open pit mining by pumping in order to maintain a dry face. A dragline could mine below water but gold losses would be high. Dredging would be much more efficient.

#### Previous Dredging

Gold removal by the dredge is not a consideration according to the Report Of The Minister Of Mines for 1932 which states "... operations ceased after about thirty days' digging with no recovery." The dredge was of an obsolete design and apparently could not handle the boulders.

## POTENTIAL PROBABLE RESERVES

### First Bench

Adjoining the stripped area to the east, the first bench has been mined extensively with a dragline. The area has not been surveyed but the writer has mapped the pits, and wastepiles which are covering unmined ground. Deepening the pits and removing the waste could provide, at a rough estimate, 60,000 yd<sup>3</sup> of mineable material above the river level. Subject to surveying, this material might be included with the probable reserves since a reasonable amount of information on grades is available.

The Report Of The Minister Of Mines for 1933 reports several approximate rocker tests by the Resident Engineer from one pit averaged 60.2¢ (\$16.01) per yd<sup>3</sup>. At another pit, panning results varied from 22¢ (\$5.85) to \$2.12 (\$56.39) per yd<sup>3</sup>. A day's run of 180 yd<sup>3</sup> yielded 11 ounces of fine gold (\$27.56 per yd<sup>3</sup>). Our 1986 results tended to be lower but this might reflect smaller sample size. Values determined in 1986 tended to increase with depth.

All numbers in brackets above, are the equivalent values in fine gold at \$550.00 per ounce :  $\frac{550.00}{20.67} \times .602 = \$16.01$  Thus, 60.2¢ (1933) is equivalent to \$16.01 (1986) at \$550.00 per Troy ounce.

Supposing that the estimated volume of 60,000 yd<sup>3</sup> is confirmed, a similar rate of profit to that calculated for the adjoining area would result in a profit of 60,000 x \$12 = \$720,000. Overburden costs would be minimal and within the limits of precision of the calculation.

## POSSIBLE RESERVES

### First Bench

Below the surface material described above is a wedge of approximately 50,000 yd<sup>3</sup> that could be mined using a drain. It has apparently been tested with a single drill hole because Memoir 246 of the Geological Survey of Canada states: "A hole drilled to a depth of 100 feet in the

bottom of this pit is said to have cut 94 feet of good pay." The pit referred to is "the main production pit (ibid) and the drill hole location is probably about 100 feet east of sample 1986#7 which yielded \$21.43 from -5" material. Other nearby samples, which yielded lower grades, were taken from higher elevations, especially those along the base of the second bench.

#### The Island

Ground adjoining the stripped area to the west (the island) is covered by 5 to 8 feet of overburden and moderate bush. An estimated 50,000 yd<sup>3</sup> wedge should be available after stripping. There is no geological reason apparent to the writer that this ground should not contain grades equivalent to those of the areas adjoining to the east which have been described above.

#### Other Potential Targets

Four small samples collected in 1986 from the point just south of the island indicated values in the \$5 to \$10 range before allowing for oversize. The area contains numerous old pits and an old timbered shaft. These samples were all taken from bench material well above the water table. From this point the benches continue, like a giant staircase, until they reach the wall of the valley a thousand feet to the west, where the ground is more than a hundred feet above the level of the river. The benches continue to the south for at least a mile. Clearly, more sampling should be done.

Across the river near some beaver dams are other old workings, but this area has not received any recent attention because of a short break in the access road. The present leaseholder has been told by a previous owner that good values were obtained from this area.

#### BOULDERS

Memoir 246 of the Geological Survey of Canada states "No boulders, it is reported, were encountered in the drilling operations." Establishing whether or not boulders occur at depth is an important objective of future drilling programs. If no boulders are present below a certain

depth then mining to that depth with a dragline, and dredging with a cutter-suction dredge, is suggested. If the boulders have a glacial origin, as is probable, they could be restricted to the upper part of the alluvial section.

#### CONCLUSIONS

An inferred quantity of 230,000 yd<sup>3</sup> having a contained fine gold value of about \$19.00 per yd<sup>3</sup> with a suggested processing cost of \$7.00 per yd<sup>3</sup> yields a calculated profit of \$2.76 million. Of this total, 70,000 yd<sup>3</sup> (\$840,000 calculated profit) might be regarded as probable reserves if the available information from old reports is considered adequate, and some 60,000 yd<sup>3</sup> (\$720,000 calculated profit) might be regarded as probable reserves on the same basis, subject to a surveying determination of its exact volume. The remaining 100,000 yd<sup>3</sup> is geologically inferred, although it is noted that one successful drill hole is reported.

The point south of the island may contain mineable material in benches well above the river. The benches are extensive and should be investigated further.

Another area of old workings on the east side of the river should be investigated.

Widespread gold distribution, some positive test results, encouraging reports from the past, and a favourable geological environment (which includes tens of millions of cubic yards of alluvium) suggest to the writer that this property deserves evaluation and has a better than average chance of supporting production of placer gold in the future. Its remote location seems to be the major reason it has not received more attention in the past.



## APPENDIX "A"

## Report Of The Minister Of Mines, 1931:

"It is estimated that approximately 700,000 cubic yards of ground containing from 35 cents to \$1.65 in gold per yard (about \$500,000) is indicated ...."

## Report Of The Minister Of Mines, 1932:

"It was soon discovered that boulder conditions were more acute than had been expected and operations ceased after about thirty days' digging with no recovery. In all, an area about 200 feet long and 80 feet wide, with the end about 13 feet down, was dug."

## Report Of The Minister Of Mines, 1933:

"Several approximate rocker tests on material from this pit were made by the Resident Engineer and they showed a gold content from 21.2 cents to \$2.76 per cubic yard, with an average of 60.2 cents per cubic yard for the pit (gold 820 fine and \$20.67 per fine ounce)."

At another pit: ".... panning .... showed a gold content of from 22 cents to \$2.12 per cubic yard of gravel (gold 820 fine and \$20.67 per fine ounce)."

".... from the last day's run of ninety-nine cars (about 180 yards) 11 oz. of gold was recovered."

## Geological Survey of Canada Memoir 246:

"A hole drilled to a depth of 100 feet in the bottom of this pit is said to have cut 94 feet of good pay."

"The present appearance of the river bed is .... in no way representative of what lies beneath. No boulders, it is reported, were encountered in the drilling operations."

The above short excerpts were quoted or otherwise utilized in the writing of this report.

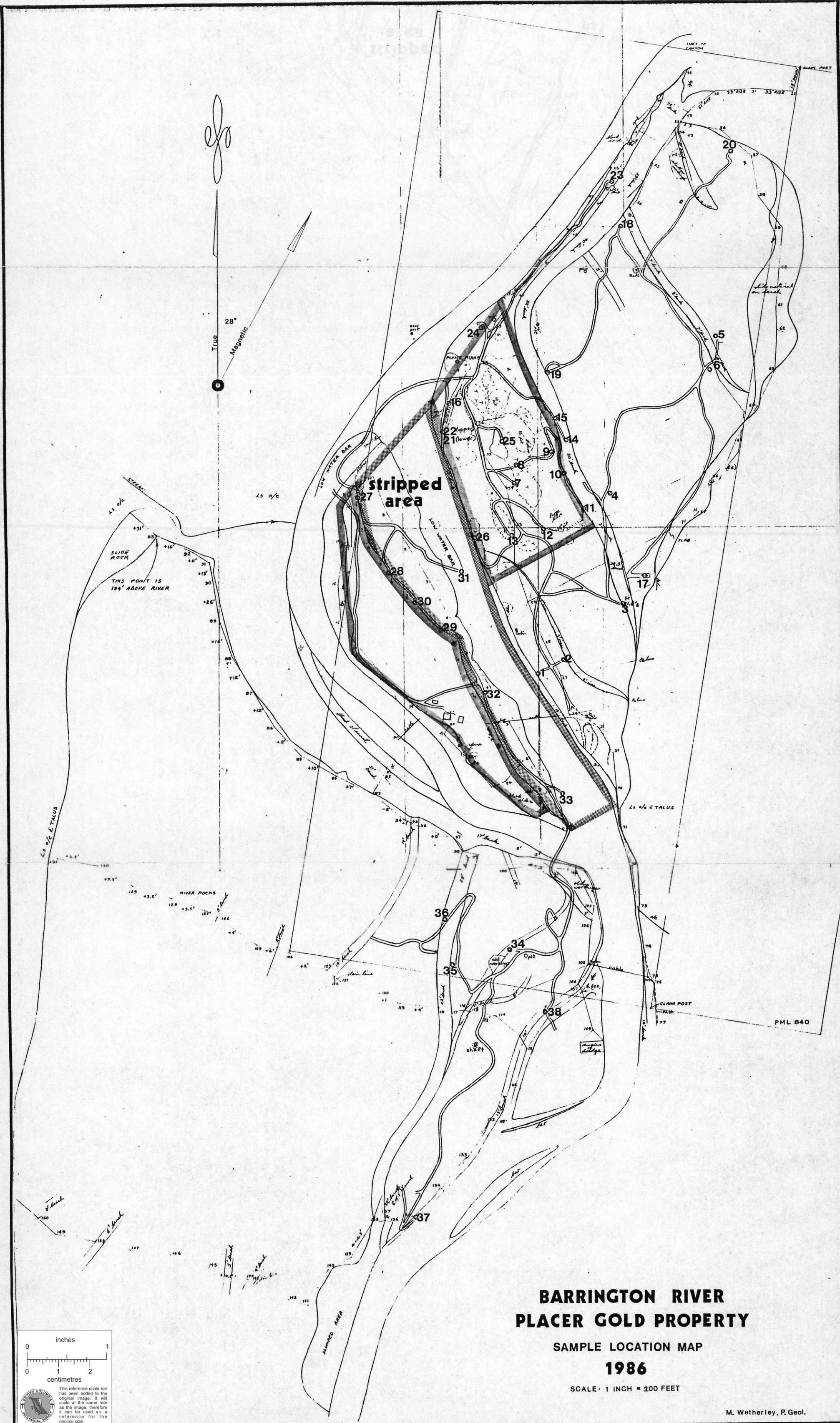
M.W.

CERTIFICATE

1. I am a professional geologist and a member of the Association of Professional Engineers, Geologists & Geophysicists of Alberta (APEGGA).
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario (Diploma in Mining Technology granted 1962) and Michigan Technological University, Houghton, Michigan (B.Sc. Geology, honours, granted 1966; completed M.Sc. Geology course 1967).
3. I have served as an executive director of a placer mining company listed on a public stock exchange, and I am familiar with the evaluation of placer prospects and placer mining activities.
4. I have worked on and am familiar with the Barrington River Placer Claims which are the subject of this report.
5. I have no beneficial interest in this claim group and do not expect to receive any return, direct or indirect, from any mining activity that might take place there.

*M. P. Wetherley.....*

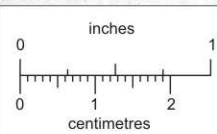
Michael P. Wetherley, P.Geol.



**BARRINGTON RIVER  
PLACER GOLD PROPERTY**  
SAMPLE LOCATION MAP  
**1986**

SCALE: 1 INCH = 100 FEET

M. Wetherley, P. Geol.



This reference scale bar has been added to the original image. It will scale at the same ratio as the image, therefore it can be used as a reference for the original size.