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LOWER ANTLER CREEK GOLD PLACERS

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Map #1 - Lower Antler Creek
Geography traced from
aerial photos
1" = ½ mile

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CARIBOO DISTRICT, BRITISH COLUMBIA

INTRODUCTION

This report deals with nine placer leases, each approximately half a mile in length, extending along the lower reaches of Antler Creek for more than 8 miles and reaching from above Russian Creek down stream to within a mile of Summit Creek. Antler Creek rises in the Cariboo Mountains south of Barkerville and follows a northerly course to Bowron Lake. Barkerville and Bowron Lake are reached by good motor roads from Quesnel on the Pacific Great Eastern Railway about 55 miles to the east. A branch road from the Barkerville-Bowron Lake road reaches Antler Creek at the fifth lease from the north, and at the mouth of Bob Creek.

HISTORY

These placer deposits have been known since 1860 when the first gold discovered in the Barkerville District was found in the headwaters of Antler Creek. In the years following, hand placer miners gradually extended their work down Antler Creek through the sections now under investigation. They mined gold from the main

stream and from some of the numerous terraces which occur at intervals throughout the Antler Creek valley. There were neither sufficient water under head nor steep enough gradients to permit hydraulic mining on a large scale, and the gold was all recovered by laborous hand methods. After the richest spots were skimmed off, the remaining deposits were too low grade to yield an attractive profit by these primitive methods. When the price of gold was raised in 1934, these deposits again attracted a number of hand miners, some of who made good profits on some of the richest terraces and on the river bars which had been enriched a second time during the period of inactivity.

In recent years, however, new methods of placer mining have come into vogue, based on the use of modern dirt-moving equipment, and a number of successful operations of this kind are now being carried on in this and other districts. The deposits now being successfully worked are those which are too low grade for hand methods, too small and shallow for the conventional large and very expensive bucket dredges and which have not the necessary attributes, such as water under pressure and steep gradients, to permit hydraulic mining. Such deposits which are not amenable to the old, but are to the new methods, are all situated further

down the streams than the rich deposits which were worked by hand. The gold is consequently much finer and the deposits not so rich. Lower Antler deposits fall within this category, and consequently have in recent years attracted the attention of the modern placer miner.

Several years ago these deposits were investigated and an attempt made to mine on one of the lower leases using a drag line shovel and washing plant. For various reasons this attempt failed, but it did not disprove the adaptability of these methods to these placer deposits, nor the fitness of the deposits to these methods.

PREVIOUS REPORTS

The deposits have been mentioned in some of the older Government reports but apparently have never been fully described. Some of the testing preliminary to the above mentioned operation was done by one of the present owners, Mr. Horace McN. Fraser, who at that time wrote a full report on the deposits. This report contains most of, if not the only existing information, regarding the amount and distribution of gold in these deposits.

PURPOSE OF PRESENT INVESTIGATION

The present investigation was made by the writer from Aug.25th to September 3rd, 1949. The purpose of the investigation was to assist in the appraisal of the property

mainly from geological evidence rather than from conventional sampling, and to supply other geological information which would be of assistance in planning and carrying out the exploitation of the property.

METHODS OF INVESTIGATION

In the course of the investigation the property was traversed twice from one end to the other. Over 100 samples were panned and the recoveries from some of the samples accurately weighed. The character and origin of the various types of deposits found on the property were studied. Also, the bedrocks into which the Antler Creek valley has been incised were examined and noted.

SUMMARY OF FINDINGS

From these studies it became evident that the gold did not originate locally but was transported hither by rivers and glaciers from the numerous gold bearing veins of the Barkerville gold belt situated 10 to 15 miles to the south. It also became evident that, though the continental ice sheet of the Pleistorene period covered this whole area it did not strongly scour lower Antler Creek valley and, therefore, did not remove or disperse the pre-glacial placers. This is partly because the movement of the ice in this direction was sluggish and partly because the valley was too narrow, deep, and crooked. It appears also that during the

ablation and retreat of the ice sheet, deposits of outwash gravels more than 100 feet thick in places were deposited in Antler Creek valley and spread up the mouths of its tributary valleys, then at a later period, after the retreat of the ice up to the alpine glaciers, these gravels were largely removed by the excessive volumes of water flowing from the rapidly melting alpine glaciers. In the removal of these gravels, their gold content was concentrated in the present stream channels, in other channels since abandoned, and on many of the terraces, thus enriching the pre-glacial placers. Therefore, the gold carried down from the Barkerville gold belt by the pre-glacial river is still in the valley, and to this has been added the gold content of the glacial outwash gravels. Excepting the gold recovered by the earlier miners, the placers in Antler Creek are largely intact.

Neither the present nor the abandoned old channels contain deep gravel deposits, and no deposits are known which are mineable by tunneling methods. The present stream is so swift and large that it is very doubtful if the deeper gravels and the bedrock deposits have ever been mined from this part of Antler Creek, excepting perhaps from the few spots where they are unusually shallow. No records of such mining are known, and no evidence of such workings can now be found in the

area. The stream is large enough and swift enough throughout its length to transport a very large amount of material, including fine gold, but not too swift to prevent the concentration of this gold in the deeper gravels and on the rough bedrock surface. It is concluded therefore that the present geological conditions, and the sequence of past geological events which produced these conditions, are favorable to the formation and preservation of deposits of fine placer gold.

The large extent of the old workings, the testing done by Mr. Fraser and others, and the panning done by the writer, all prove the auriferous character of the gravels. But all the testing so far done has been of a random rather than a systematic nature, and while it proves the presence of gold in all of the gravels, and indicates some to be richer than others still, accurate estimates of quantities and values cannot be made at this time.

ANTLER CREEK VALLEY

Antler Creek Valley, below Russian Creek, is deep, steep walled, and has a pronounced V shape in cross section. In long straight sections the creek runs between steep walls which slope down to the water's edge. In other

places there is room for the creek to swing from one side to the other. Where it strikes the valley wall there is invariably a steep rock cliff, and on the opposite side of the creek, a small low terrace. Throughout the lower part of the property these swings from side to side are fairly regular, and from 600 to 1000 feet in length. The stream gradient is uniform and steep so that the current is swift throughout. No evidence of glacial scouring could be found. Besides the low terraces only a few feet above the river level, other terraces at higher levels are common. These are rock terraces from 50 to 200 feet wide, and from 10 to 100 feet above the present river level. They are covered with coarse gold bearing gravels, and many of them were mined by hand methods many years ago, as is clearly evidenced by the almost continuous parallel rows of hand piled boulders. Most of the terraces lower than these were not worked by the early miners. As previously noted, there is no evidence of the present creek gravels having been mined, but there is no doubt that edge gravels and the top gravels of the bars were mined perhaps more than once.

BEDROCK CONDITIONS

The bedrock formations into which this part of Antler Creek has been incised consist of volcanic and sedimentary rocks. For 2½ miles below Russian Creek the

bedrock formations were mapped by W. L. Uglow prior to 1925. He shows on his map two formations, one consisting of sediments, mainly cherts and well hardened argillites, and the other consisting of basic igneous rock which he called the Mount Murray sills, believing them to be intrusive into the sediments. He was a little doubtful whether they were intrusive sills or volcanic flows interbedded with the sediments. The latter view is favored by the present writer. As far down as Murray Creek similar formations are found. Below Murray Creek there are wide bands of igneous rock with narrower bands of cherty and argillaceous rock, with some thick beds of sandstone or arkose. The igneous rock in this section have many of the characteristics of volcanic flows and are so classified by the writer. Below a point about ½ a mile above Bob Creek the rocks consist of black argillites and gray quartzites highly schistose, closely resembling the various members of the Richfield formations of the Barkerville gold belt. In many places these sediments have exceedingly flat dips. A few quartz veins and one carrying barite were noted in these sediments. The presence of these is an additional mark of similarity to the Richfield formation. These veins are reported to carry small amounts of gold but are far too small and too

few to have been the source of any appreciable part of the placer gold of Antler Creek. They are in fact the only quartz veins seen between a point one mile above Russian Creek and the lower limit of the property.

Some of the argillaceous rocks above Russian Creek have exceptionally bright colors, red, brown, and blue. An excellent exposure of these was seen in an hydraulic pit recently opened up on a claim just above the southern boundary of the property. These beds are 2 to 3 inches thick and are steeply and intricately folded.

Of the bedrock formations seen the volcanic rocks, the cherts and quartzites, and some of the argillites are quite hard and fresh. Most of the argillaceous rocks, however, and particularly those seen in the lower leases and which resemble the Richfield formation, are soft and could probably be dug by a dragline or other type of power shovel.

GRAVELS OF LOWER ANTLER CREEK

Two types of gravel can be distinguished in the reaches of lower Antler Creek, the poorly washed and crudely stratified outwash gravels and the well washed and stratified river gravels. The outwash gravels vary from fine to course and contain many angular as well as rounded

pebbles and boulders. They contain also a large amount of clay so that they stand up well in high steep banks. They are usually dark in color. They have been largely removed from the main valley or have been greatly reworked by post-galcial streams, but in the mouths of some of the tributary valleys they are seventy feet or more in thickness and still in their original state.

The most common type of gravel is exceedingly well washed and composed of well rounded pebbles and boulders with much coarse sand. This type is found on most of the terraces and in the river bed. In the river, however, notwithstanding its strong swift current, a large amount of very fine silty material has been deposited in recent times. This comes from hydraulic operations which have been for many years and still are carried on in the upper reaches of the creek. This fine material renders the river gravels much less permiable than they originally were, and may be of considerable assistance to those future mining operations which may require that the stream be diverted from its present channel.

The gravels of Antler Creek in most places are free from boulders large enough to cause serious difficulties in mining by modern methods. In some places, however, where the valley is more than ordinarilly steep and narrow

large blocks of rock which have rolled down from the valley walls are fairly numerous and might be troublesome. Where previous mining operations have been carried on, the character and size of the boulders are very clearly shown and in these places none were seen which would be unduly troublesome.

GOLD CONTENT OF GRAVEL

The presence of gold in all the gravels of Antler Creek is proven by the extent of the old workings, by a few small recent workings, by a considerable amount of testing done by Mr. Fraser and others, and by the large amount of panning done during the present investigation. Some of the tests made by Mr. Fraser were on a fairly large scale, involving the washing of several of cubic yards of gravel.

All of the testing so far done has been of a random rather than a systematic nature. While random testing intelligently done can furnish a large amount of useful information, it can sometimes be very misleading and can not be safely used in making quantitative estimates.

The glacial outwash gravels contain small amounts of gold widely dispersed. These gravels were too

rapidly accumulated by waters too heavily overloaded to permit good classification and gold concentration. These gravels can only be worked profitably when they can be moved in large quantities by very cheap methods such as hydraulic methods. They constitute only a very small proportion of the total volume of gravels on this property.

The well washed river gravels contain larger amounts of gold on the average than the outwash gravels, but their gold content also varies greatly from place to place. Of 123 pan samples taken during this investigation, 29 were blank, the others varied in value from a small fraction of a cent to 7¢. Most of these samples were taken from near the bank of the creek, but some were from low terraces and others from the creek gravels, 10 or more feet from the shore. Some were taken from near/or at the bedrock surface but the great majority were taken above bedrock. Most of those from at or near bedrock were fair to good but some of those taken from above bedrock also were good.

Most of the bulk samples taken by Mr. Fraser were from low terraces and represented deposits 5 to 15 feet deep. These pits showed alternating layers of coarse gravel and sand with the bulk of the gold in coarse gravel

layers or on bedrock. No tests are known to have been taken from the deeper gravels or from the bedrock under the creek bed. Theoretically, the best values should be found in these places but they will not be uniformly distributed up and down stream. Richer and poorer sections are certain to occur depending on the depth to bedrock, the nature of the bedrock surface and the varying speeds of the current.

Another factor affecting values per yard of gravel is the position of the stream channel with respect to the many rock talus slopes which extend down to the water's edge. In these places the gold carrying gravels are diluted by quantities of barren talus rock.

CONCLUSIONS

Judging from all the evidence, both theoretical and observable, which is now available, it would appear highly probable that the amount of gold in the present stream and some of its adjacent unworked low terraces is ample to make a profitable operation, if the deposits can be economically worked by modern methods and equipment. But it would seem to be a wise precaution before risking large expenditures on equipment, roads, etc., to supplement the present random testing with some systematic testing which will determine positively the depth and

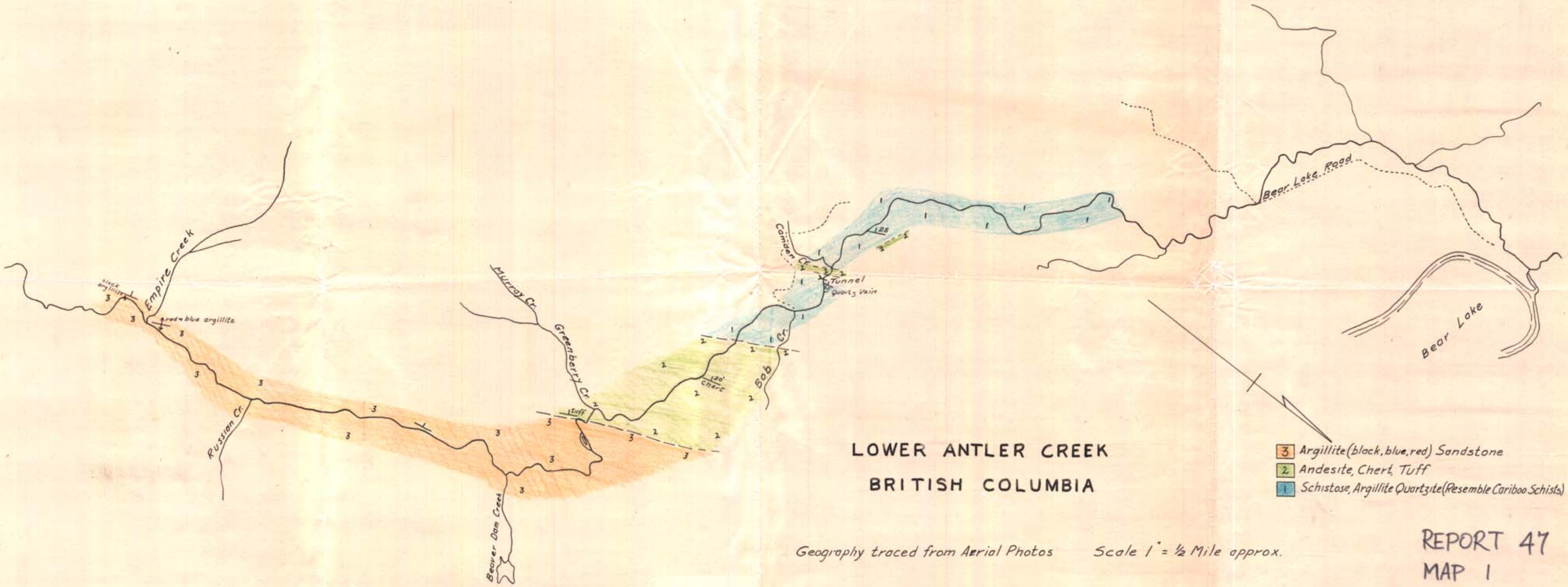
configuration and degree of hardness of the bedrock surface and provide data regarding gold content on which accurate estimates of quantities and values can be based.

It is recommended that one or two areas be selected which are the most favorable from the operational viewpoint and systematically tested across their widths by lines of equally spaced drill holes or, if more convenient, equally spaced drill holes and test pits. If one or two of such localities proves on testing to be capable of returning the capital necessary to mine it or them, the iniation of an operation would be warrented and any further testing which might be desirable could be performed contemporaneously with the mining operation. As the knowledge gained from the actual mining operations accumulates, less and less testing will be necessary.

Respectfully submitted,

V. Dolmage

VD/fm



LOWER ANTLER CREEK
BRITISH COLUMBIA

3 Argillite (black, blue, red) Sandstone
2 Andesite, Chert, Tuff
1 Schistose, Argillite Quartzite (Resemble Cariboo Schists)

Geography traced from Aerial Photos Scale 1" = ½ Mile approx.

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MAP 1

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