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REPORT

ON THE PROPERTY OF

GEORGIA RIVER GOLD MINES LTD. (N.P.L)

PORTLAND CANAL MINING DISTRICT

BRITISH COLUMBIA

F O R E W O R D

The original discoveries, which led to the location of the Georgia River Mineral Claims, were made by Hume and Jervis, two prospectors, in the year 1910. During that year the area was staked that is now covered by the following claims; GEORGIA, GEORGIA NO. 1 and GEORGIA NO. 2, comprising the GEORGIA GROUP, AND A HALF INTEREST WAS ACQUIRED by the firm of Beaton and Hemsworth, who subsequently did much toward financing and developing the property.

In 1914 the Georgia River Mining Company, Ltd., was organized by C.H. Dickie, M.P., of Duncans, B.C., and this Company took an option on the property, subsequently acquiring a 7/16 interest. Some development work was done during 1915-16, with encouraging results, but at this time the World War was in progress and gold-mining properties were not in demand, for which reason financial support could not be secured, and work was indefinitely suspended.

In 1922 control of the property was secured by Beaton and Hemsworth, who in turn bonded the entire holdings to The American Mining and Milling Company. Development work was continued by this company during this and the succeeding year, but as it was unable to fulfill the conditions of its agreement, control of the property again reverted back to Beaton and Hemsworth in 1924. In that year the Georgia River Gold Mines, Ltd., was incorporated, and full ownership was vested in that organization, and besides, a large number of adjoining claims were also acquired making a large group completely covering, in strike and dip, all of the known veins within the boundaries.

In 1928 a considerable sum of money was raised, a pack trail was made to the property, a camp was built, machinery and ~~XXXX~~ equipment installed, and development work started and continued until November, 1930. The property was then idle until September 1931, when work was again resumed for about two months, since the termination of which period no work has been done.

ORGANIZATION:

The Georgia River Gold Mines, Ltd., (Non-Personal Liability) is a corporation organized under the laws of British Columbia, Canada, with a capitalization of 3,000,000 shares, each having a par value of one dollar.

PROPERTY:

This Company also holds absolute title, free from all encumbrance, of 34 crown-granted mineral claims situated in the Portland Canal Mining District, British Columbia, Canada.

LOCATION:

The property is situated on the east side of Portland Canal about eight miles nearly due south of the town of Stewart and about 600 miles north of Vancouver, B.C. Boats of the Canadian National and the Union Steamship Companies sail regularly between Vancouver and Stewart. From Stewart the property can be reached by motor-boat to the mouth of Georgia river, a distance of about 16 miles southerly, thence by pack trail northerly along Georgia river, a distance of about 8 miles to the mine camp and mine workings.

AREA:

There are 34 crown-granted mineral claims named as follows:

Danny Fraction	Lot 5163	Goldfields	Lot 5152
Georgia	4437	" #1	5153
Georgia #1	4438	" #2	5154
Georgia #2	4439	" #3	5155
Gem	5150	" #4	5156
Gem #1	5151	June	5167
Gem Fraction	5165	" #1	5168
Gold Fraction	5166	" #2	5169
June #7	5174	" #3	5170
" #8	5175	" #4	5171
" #9	5176	" #5	5172
" ~~Fraction~~ #10	5177	" #6	5173
" Fraction	5178	Sovereign	5160
Jitney	5159	" #1	5161
September Fraction	5184	" #2	5162
Top Fraction	5164	" Fraction	5173

The aggregate acreage is 1235.81

CLIMATE:

The climate of this district is characterized by long winters with heavy snowfall, and short moderately warm summers, usually with an abundance of rain. Zero temperatures are generally of short duration.

Mining operations are conducted throughout the year in this locality but preparations for such work in advance are manifestly necessary.

TOPOGRAPHY:

The following description of the topography was given by B. W.W. MacDougall, Mining Engineer of Vancouver, B.C.

"The Georgia river has its source in those mountains which flank the southern side of the headwaters of Bulldog creek. It flows in a general south, south-westerly direction and empties into the Portland Canal at a point about eighteen miles southerly from the town of Stewart. The course of the river is very nearly parallel to that of the Canal and it is distant from the Canal from two to a little more than three miles throughout most of its course."

"Between the Portland Canal and the Georgia river is a precipitous ridge known as the Colling Range. The summit of the range, in the vicinity of the Georgia river property is at an elevation of about 4,400 feet above sea-level. The north-west end-line of the Georgia M.C. is at the summit of the range and the property is entirely situated on the south easterly-facing slopes on the west side of the Georgixa river and at a distance of about seven miles northerly from the mouth of this river."

"Elevations vary from about 4,400 feet at the summit of the Colling Range to about 1,500 feet at the Georgia River which flanks the eastern boundary of the property. The area is deeply cut by creek courses. Timberline is at an elevation of about 3,200 feet. Steep slopes, cliffs and bluffs, separated by narrow benches characterize much of the area. It is a typical mountainside location and the topography is decidedly rugged through the area is readily accessible."

GEOLOGY:

The general geology is concerned very largely with the Coast Range batholith, a prominent geologic feature consisting of a great mass of intrusive rock, nearly 100 miles in width in places, varying in composition, but commonly classified as granite. It is quite certain that many of the ore deposits have originated from this source.

The older formations which were intruded by this batholithic structure, are found on both its eastern and western flanks, as well as upon its surface in massive fragments known as roof pendants. These formations often show excessive alteration and contain ore deposits.

It is very interesting to note that the west contact of the batholith is very irregular, the rocks consisting of highly altered

schists which contain copper minerals largely, while the east contact is much more regular, the surrounding rocks are less altered, and contain gold, silver, lead and zinc minerals principally.

The Georgia River property is on the east flank of the batholith. The local geology has not been mapped in detail, but it is described by B.W.W. MacDougall as follows:-

"The normal cycle of igneous intrusion includes three phases - volcanic, plutonic and the phase of minor intrusions. On and in the vicinity of the Georgia River property, all three phases may be observed. Greenstone of volcanic origin and related in age to the Bear River Series underlays a large portion of the property. On the Western Slopes of the Colling Range there is an extensive area of grano-diorite which is believed to be a part of the main mass of the Coast Range batholith. Extending south-easterly from the margin of this mass of intrusive rocks is a series of granitic dykes some of which extend across the full width of the Georgia River property and into the Mountains east of the Georgia valley. These dykes apparently represent the phase of minor intrusions which completed the cycle of vulcanism."

"There is some reason for believing that a part of the area was intruded by a system of dykes prior to the intrusion of the main mass of the batholith. It is also believed that the end-phase dykes were brought into existence at varying time intervals. The ore deposition appears to have been associated with the latest phase of igneous activity."

"The greenstone which underlays most of the Georgia River property is frequently found in varying stages of alteration. In many places it has been rendered schistose. Well-defined shear zones in a NW SE direction have been developed and there has been abundant silification in some of these."

"The general direction of the dykes is NW-SE and the predominant shearing is in the same direction though there has been some cross-fracturing. There has been faulting but while there is doubtless some post-mineral fault movements it is likely that the most extensive rock movements antedate the period of ore deposition."

MINERAL ZONES:

The ore-bodies of this property are found in two distinct systems of veins; the Main vein which strikes approximately north 40° West and dips 55° south-west, the Summit, South-west, Bullion and Camp veins which strike nearly due north. The main vein can be traced for a linear distance of 2,000 feet, across a portion of the

Georgia #1 and Georgia #2 claims and through a vertical range of approximately 800 feet. This vein varies in width from ~~x~~ 10 feet to 40 feet and appears to be made up of layers of varying thicknesses up to 10 feet and separated by country rock. Near the central part it has been broken and faulted downward for a distance of about 500 feet. The faulted zone is 200 feet in width or more in which considerable shearing has taken place.

The Summit vein is visible for only a short distance on the south side of the Georgia claim at which place it should intersect the Main vein, but the actual point of intersection is not exposed

The south-west vein is traceable for about 3,000 feet across the Georgia #2 and Georgia #1 claims, and through a vertical range of about 1,500 feet.

The Bullion vein follows the course of Bullion creek and is visible for a distance of about 1,000 feet through the north-east part of the Georgia #2 claim intersecting the strike of the Main vein, but lying entirely within the sheared zone, so far as known.

The Camp vein is exposed in a few places only and intersects the Main vein on the east side of the Georgia #2 claim.

All of the veins are quartz filled.

ORE DEPOSITS:

The metallic mineral of commercial value is gold principally with a small amount of silver. The ore-bodies, so far as known, are in close proximity to the intersections of the veins. Near the surface, the Summit, Southwest and Camp veins have been found to contain free gold. Samples taken have given assay returns of several hundred dollars per ton. At the intersection of the Main and Southwest veins on the No1 tunnel level, there is a narrow shoot of sulphide ore, varying in width from a few inches to 2½ feet, that averages about $38.00 per ton in gold over a length of 100 feet.

In the Bullion tunnel, three shoots of ore were encountered; the first one is about 60 feet from the portal and continues for about 100 feet in length. It has been proven in depth to the No. 3 tunnel level where it has a length of 160 feet. The second shoot was encountered 90 feet beyond the first and continues in length for 75 feet; the third is 80 feet from the second and continues in length for 130 feet. These ore-bodies vary in width, to a maximum of about six feet. The values in this ore are rather erratic, ranging from a few dollars to several hundred dollars per ton. From various average assays taken, it is conservatively estimated that mill ore can be mined from this vein, having a value of from $12.00 to $15.00 per ton.

Before cutting the Bullion vein, occurrences of ore were found in several places in No. 3 tunnel; but not in quantities sufficient to be classified as a shoot; however, no crosscutting or

other work was doen to determine their extent.

CHARACTER OF ORE:

The ore is apparently primary in character, requiring concentration. The metallic minerals are pyrrhotite, chalcopyrite, a small amount of galena, and sphalerite, with which gold and silver arex associated. The non-metallic mineral is principally quartz.

SAMPLING:

A large amount of sampling has been done on this property by a number of engineers and operators, proving without doubt the commercial value of various bodies of ore.

The following channel samples were taken from the southwest vein on the No. 1 tunnel level, during the progress of the work in 1929, and were assayed by J.R. Williams of Vancouver, B.C. Their locations are shown on a sketch which follows:

Sample	Width	Ton Gold oz. per	Ton Gold Value per	Ton Silver oz. per	Where taken
1	5"	0.10	$2.00		#1 tunnel S.W. vein
2	5"	0.10	2.00		"
3	5"	0.10	2.00		"
4	5"	0.13	2.60		"
5	4"	0.25	5.00	0.10	"
6	7"	0.20	4.00		"
7	8"	0.41	8.20		"
8	17"	0.50	10.00	0.50	"
9	12"	0.80	16.00	1.00	"
10	10"	1.56	31.20	1.50	"
11	12"	8.40	16.80	4.00	"
12	12"	3.40	68.00	3.40	"
13	20"	3.60	72.00	3.50	"
14	26"	0.18	3.60		"
15	30"	0.16	3.20		"
16	30"	0.19	3.80		"
17	16"	1.96	39.20	1.20	"
18	10"	2.80	56.00	2.10	"
19	19"	3.28	65.60	3.60	"
20	7"	3.44	68.80	3.60	"
	Piece	20.56	411.20	8.20	Summit vein

The following samples were taken by B.W.W. MacDougall in 1923.

Sample	Width	Ton Gold oz. per	Ton Gold Value per	Ton Silver oz. per	Where Taken
2M	30"	5.40	$ 108.00	4.12	Bottom Bullion creek
5M	60"	2.16	43.20	1.24	Bullion tunnel over Winze
13M	30"	0.04	.80	nil	Upper t. left side
16M	132"	0.70	14.00	nil	Main vein E of Bullion
17M	60"	0.09	1.80	Tr.	" creek
19M	60"	0.72	14.40	0.19	"
26M	12"	0.02	.40	Tr.	S.W. Vein cut No. 1
27M	8"	0.05	1.00	nil	" " " 2
28M	14"	0.20	4.00	Tr.	" " " 3
29M	7"	5.40	108.00	4.02	" " " 4
30M	6"	5.00	100.00	5.70	" " " 5
31M	14"	2.40	48.00	1.52	" " " 6
32M	8"	0.20	4.00	7.00	Camp vein lower cut
34M	6"	0.22	4.40	Tr.	Bullion T. at contact

The following samples were taken in 1915 by W.J. Elmendorf, Mining Engineer, Seattle, Washington.

2E	12'	1.08	21.60	1.40	Opencut near Intersec. man and S.W. Veins.
3E	Grab	0.30	6.00	0.90	20 tons from above cut
7E	15"	1.46	29.60	4.30	Bullion vein
11E	24"	1.78	35.60	3.60	Xcut W side Winze B. T.
14E	Grab	2.21	44.20	8.00	12 tons Bullion tunnel
16E	18"	2.36	47.20	7.00	Ft. of Raise Bul. tun.
17E	12"	0.81	16.20	1.20	Bullion tunnel.
22E	Grab	10.10	202.00	14.30	Selected ore Bull. tun.

It should be noted that any assay returns of high-grade ore, running in many instances several thousand dollars per ton, have been excluded in the foregoing lists.

DEVELOPMENT:

The development work done on this property, shown on the accompanying map, in plan and vertical projection, consists of tunnels, drifts, crosscuts, raises and open-cuts. There are five tunnels, a short upper tunnel; tunnel No. 1 about 225 feet long with a drift north 80 feet and a drift south 70 feet long; Tunnel No. 2 about 100 feet long; Bullion tunnel about 810 feet long, with a raise 36 feet to the surface; and Tunnel No. 3, about 1,180 feet long with 330 feet of crosscuts and drifts, and a raise 150 feet to the Bullion tunnel level.

TIMBER:

There is no timber other than few scattered trees near the mine camp and workings. In the valley of Georgia river, there is an ample supply of timber for all mining purposes, that can be transported to the mine at reasonable expense.

WATER:

Bullion Creek supplies all of the water required for Camp use for cooling machinery and is a potential source for a small amount of waterpower during five or six months of the year. Water powers of magnitude can be developed along the north fork and the east fork of Georgia river.

POWER:

For preliminary development operations, diesel engines are employed, and outside of a rather high charge for transporting fuel-oil from the Beach to the mine, the present cost of power development is not excessive.

EQUIPMENT:

The mine has been equipped with the following new machinery, all of which is in perfect working condition, having had but little use.

2 - 36/42BHP Petter Oil Engines complete.
2 - 8 x 6" Gardner-Denber compressors, 220 cu. ft. capacity.
2 - No. 7 Waugh Rock-Drills complete with several sets of steel.
1 - D.S. 3-A Drill Sharpener complete with tools.
4 - Mine cars.
Assay Equipment - Blacksmith Shop Equipment - Good supply of picks, shovels, and all hand-mining tools. The floating equipment consists of a 36-foot motor launch and a 30-ton scow.

BUILDINGS:

At the Beach Camp, situated near the mouth of Georgia river, there is a boarding and bunk house combined, an office and dwelling, a storehouse and a stable for the accommodation of about 14 horses. At the Mine Camp there is a large bunk and boarding-house combined for the accommodation of 25 men, and an engine and compressor building, assay laboratory, an office and a stable. About six miles from the beach, situated on the trail, there is a storehouse with temporary quarters for men, where supplies are relayed to the mine.

TRANSPORTATION:

There is no wharf, except a small float for motor-boat use, but ocean-going ships stop in the channel opposite the Camp and

discharge supplies which are loaded on the Company's scow then towed to shore and transferred to the store-house from where they are distributed as needed. Mine supplies are transported by pack-horses and go-devils at a contract cost of 2½ cents per pound. Some difficulty is experienced in keeping the trail open during the winter, due largely to lack of traffic, and for this reason, it has been found necessary to transport all of the essentials during the early fall season, in order to insure continuous work throughout the year.

FUTURE DEVELOPMENT:

The possibilities of this property can now be tested with greatest celerity and least expense through the operation of diamond-drills. Owing to the specialized nature of this work, it should be done under contract by some responsible company which employs only highly skilled men, thoroughly experienced in the exploration of ore-bodies. At least two units should be put in service at the start; a small machine for underground work, operated by air; and a large machine, operated by gasoline motor, for surface work. The small machine is very serviceable for cross-cuts of 200 feet or less, and the total cost per lineal foot of hole should not exceed $2.00 and may be much less. The larger machine should be adapted to drilling holes of 1,000 feet or more in length or depth, and can be used to explore the Main vein, the shear-zones and the vein intersections. As a tentative outline the following work is suggested:

1000 feet of underground drilling @ $2.00 per ft.		$2,000
6000 " " surface " @ $4.00 " "		24,000
		$26,000.
Incidental expense		4,000
Total:		$30,000

At the completion of this work, if satisfactory results are attained, further work may be planned based on these results, and continued to the full extent of justifiable exploration operation.

GENERAL REMARKS:

Considering the numerous widely separated high-grade ore-bodies, associated with a system of veins of great strength and continuity, together with the existence of fairly substantial ore-bodies, exposed in the underground workings, and recognizing the fact that large proven mines have been opened in the district, the Georgia River property offers unusual attractions for the possible development of a highly profitable mine.

CONCLUSION:

A large amount of creditable exploration has already been done on this property, but it has not been carried far enough to

prove the existence of large bodies of commercial ore; it has, however, exposed small bodies of relatively high-grade ore, and the possibilities of the extension and expansion of these ore-bodies to greater depth and beyond the known lateral limits, are sufficiently encouraging to warrant the expenditure of capital for further development, in proof of such possibilities; and, with this in view, the foregoing outlined work is recommended.

It is most important to note that all of the preliminary work attendant upon the exploration and development of this property has been completed; the claims have been Crown-granted; trails have been made, affording access to the mine workings, and good camps have been built. The natural advantages such as timber, water and power are present, and the property is free from all encumbrance. Under these conditions, it may be readily seen that future expenditures can be limited to actual exploration, development and mining operations, and it is reasonable to expect that such work will result in the development of commercial ore-bodies of magnitude.

Respectfully submitted,

"John F. Coats"

Mining Engineer.

Vancouver, B.C.
February, 1932.

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