

# PROPERTY FILE

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## REPORT ON EDYE PASS GOLD DEPOSIT, BY

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### EDYE PASS GOLD DEPOSIT

The following report on the Ede Pass gold deposit is based on an examination of this deposit as well as the adjoining Surf Point deposit made on December 5th to 7th inclusive.

Both deposits consist of quartz-purite veins which occur in the quartz diorite of the Coast Range batholith. Several other deposits of the same type have been found on the coast of British Columbia, the most promising of which is the Surf Inlet mine which for some time maintained an annual production of over one million dollars. The Surf Point mine operated a mill of twenty tons daily capacity.

The Ede Pass and Surf Point deposits are situated on the northwest corner of Porcher Island and about twenty miles southwest of Prince Rupert. The Surf Point deposits are within one mile of the shore and the Ede Pass deposits are from a few hundred feet to 2,000 feet from the shore. Prince Rupert is the western terminal of the northern branch of the Canadian National Railway, it has a population of 6,000 and is an important distributing centre. The deposits in question, therefore, are conveniently situated both for the purpose of obtaining supplies and of shipping concentrates.

The climate on Porcher Island is mild but wet. Snow seldom remains for more than a few days and temperatures below freezing are confined to only a few weeks each year. Timber for mining and construction is scarce in the near vicinity of the mines but is abundant on other parts of Porcher Island and on neighboring islands. Water for milling and domestic purposes is abundant.

### HISTORY OF DEVELOPMENT

The gold veins of these two properties were found by a prospector named Patterson who held them for many years and from time to time made shipments of high grade ore. Both groups were bonded by the N.A. Timmins Corporation of Montreal who spent a considerable amount of money in building a railway to the beach, construction camps and exploring the veins underground. The Ede Pass claims were not retained by this company but were bonded early in 1936 by the Reward Mining Company. This company is now engaged in developing these claims. A long low level tunnel was started from a point 400 feet distant from and 40 feet above the sea shore. This tunnel was driven in a southerly direction for

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870 feet in the course of which it intersected numbers 2 and 5 veins as well as three smaller unnamed veins. A drift has been driven on number 5 veins for 115 feet to the west and on number 2 vein for 116 feet west and 66 feet east of the main tunnel. A branch of the tunnel was driven 140 feet southwest from a point 265 feet from the portal. The object of this was to explore number 3 vein but this drift was stopped before reaching the objective.

Figure I shows the position of the tunnels with respect to the several veins, the surrounding topography and the most important claims of the group. The Reward Company holds options on other adjoining claims but these were not examined.

### GEOLOGY

Porcher Island lies within the region of the Coast Range batholith which occupies almost the entire coastal region of British Columbia from Vancouver to Alaska. This great batholith consists mainly of granodiorite and quartz diorite but contains many inclusions large and small of the older rocks into which the batholith was injected and which formed its roof. One of the largest of these inclusions occupies an extensive area in the vicinity of Prince Rupert of which Porcher Island is a part. Much the greater part of this Island is occupied by the older intruded rocks but there are many small and a few large bodies of quartz diorite and in one of these the veins of the Surf Point and Edye Pass deposits are situated.

The older rocks have been named the Prince Rupert schists and are fully described in reports of the Canadian Geological Survey. They are made up of schists containing various amounts of amphibole chlorite, pyroxene, mica and garnet, all of which indicates intense metamorphism. A few layers of limestone are also included. In the vicinity of the gold deposits in question the older rocks consist mainly of amphibolite schists.

The batholithic rocks in which the gold veins occur consist of typical quartz diorite also fully described in the above mentioned reports. The veins of the Edye Pass Mine are situated near the western margin of the quartz diorite and one of the veins, number 4, lies outside the quartz diorite in the amphibolite schists. The Surf Point veins are more centrally located in the quartz diorite.

The veins though small are decidedly numerous. On the Surf Point property between fifteen and twenty veins have been found and opened up and some of these veins have several radiating branches. On the Edye Pass claims five distinct veins and several narrow shears, which might open up into workable widths, have been discovered. The larger veins are numbered from 1 to 5 in the order in which they were found. Branch veins radiating from number 1 and number 5 have been observed but not explored.

The greatest length of any vein yet found is about 400 feet. The widest individual vein so far observed is about three feet but the average is less than one foot. However, the veins are so rich and closely spaced that several may be mined from one stope. Stopes up to 18 feet in width have been worked profitably at the Surf Point mine. In these stopes the total width of vein material might not exceed two feet. The mining of such large widths is made possible partly by the richness of the veins and partly by a system of hand sorting in which large amounts of waste diorite are eliminated from the ore before it reaches the mill. The vertical extent of the individual veins is greater than the length but seems to be not greater than a few hundred feet. The various veins, however, are not all in the same horizontal zone but are distributed over a vertical range of many hundreds and probably several thousands of feet. Several of the veins in the Surf Point mine appear from diamond drill records to have been bottomed at shallow depth and because of this it was thought by the operators that all the veins would be found to bottom at approximately the same elevation. This conclusion led to their abandoning the Edge Pass claims since these lie at elevations 100 to 500 feet lower than the Surf Point veins. However, subsequent work done by the Reward Mining Company has shown that two at least of the five veins so far discovered extend below the level of their tunnel which is about 400 feet lower than the main working level of the Surf Point Mine. It seems probable from the nature of their occurrence that veins will be found hundreds and probably thousands of feet below sea level.

Almost all of the quartz veins are rich. The record of ore shipments, the mill records at Surf Point as well as extensive sampling show that the veins range in value from half an ounce up to three or four ounces per ton and the average close to one ounce. The sulphide concentrates so far shipped have averaged eight ounces of gold per ton.

The composition of the veins is simple. Quartz and pyrite constitute 95% of the total volume and usually are the only minerals which can be recognized in the field. Small amounts of sericite, ankerite, calcite and chlorite can be seen in nearly all the veins and chalcopyrite in most of them. Under the microscope however, the bismuth telluride, tetradyrite, is frequently seen accompanied by free gold.

The gold values are easily recovered in a flotation concentrate and fine grinding is unnecessary.

Number 1 vein is situated about 100 feet from the south boundary of the property and 280 feet above sea level. It has been traced for about 100 feet and has been mined over a length of 50 feet and a depth of 20 or 30 feet. Some of the high grade ore from the vein was shipped and some was milled in the Surf Point Mill. The ore mined was of excellent grade and the vein still

appears to hold important amounts of good ore. No work has been done on this vein by the Reward company and their main adit which was stopped at number 2 vein would have to be extended a further 550 feet to intersect number 1 vein.

Number 2 vein is situated about 1,000 feet from the shore at elevation 200 and in the centre of the Jeanie mineral claim. It strikes nearly east and west and is somewhat parallel to veins in 1 and 5 as well as most of those in the Surf Point mine. All the veins dip nearly perpendicularly generally to the north. Number 2 vein is exposed on the surface for a distance of 240 feet and has an average width of 18 inches. Near the east end it is crossed by a basalt dyke three feet in width. A sample taken by the writer from the east end of the vein near the dyke intersection ran .58 ounces per ton across a width of 12 inches. Nine tons of ore shipped from this section of the vein gave a return of 2.92 ounces per ton. Another shipment of 20 tons returned 1.64 ounces per ton. A third shipment of 30 tons returned 0.96 ounces per ton.

This vein has been cut in the main adit at an elevation of 60 feet and drifts have been driven on it 66 feet to the east and 116 feet to the west. West of the adit the vein has been largely replaced by the same or a similar basalt dyke as crosses it on the surface. East of the adit the vein varies from 4 to 16 inches wide but the average value is much lower than on the surface. The average of nine samples which have been taken to date is .47 ounces across 10 inches which is below mineable grade. The eastern section of the vein has been rendered worthless by the injection of a basalt dyke as shown on plan 2. The last sample taken by the writer from the east face at 66 feet from the main adit assayed .77 ounces per ton across twelve inches and the vein appeared to be coming in much stronger so that later results may improve the present outlook. The ore shipped from the surface of this vein indicates an average value of 1.4 ounces per ton.

Number 3 vein is situated from 200 to 700 feet west of the adit and strikes about southeast following a depression which is occupied by a small creek. This depression is pronounced and straight. It extends across the full width of the property and several thousand feet to the southwest of the boundary. The rocks in this depression are strongly sheared up to widths of five feet or more. At two places in it a vein is exposed for lengths of 200 feet and 50 feet respectively. From the longer exposure about 180 tons of ore was mined from a trench 140 feet in length. From this ore 30 tons of picked ore was shipped to the smelter and gave a return of 0.8 ounces per ton.

This vein appears to have possibilities of being somewhat larger than any veins yet discovered and its exploration is recommended.

Number 5 vein was discovered in the main adit about 465 feet from the portal and has been drifted on towards the east for 115 feet. As shown on plan 2 the first 20 feet is quite rich and wide. The next 30 feet has been displaced by a basalt dyke and the remaining 64 feet of vein is somewhat narrower and slightly poorer. Omitting the section displaced by the dyke the samples indicate a width of 17 inches averaging .73 ounces per ton. This vein has important possibilities and warrants further work.

Number 4 vein is situated 500 feet west of number 3 and strikes in a similar direction. It is opened up by a cut for about 50 feet and shows an average width of 2 feet. A systematic sample taken from the dump by the writer ran 1.44 ounces per ton. This vein also is worthy of further development.

Several narrow veins were encountered in the main adit which carry good values and which might be found to open up to mining widths if they were explored. At a distance of 130 feet from the portal a stringer 5 inches wide assayed 0.96 ounces per ton. At 194 feet from the portal a two inch vein assayed 4.92 ounces per ton. A sample across 2 feet at this point assayed only .05 ounces per ton. At 644 feet from the portal a fairly strong vein with two branches was encountered and named number 6 vein. A picked sample of quartz and pyrite from this vein assayed 0.86 ounces per ton.

On the surface between veins 2 and 3 a small vein has been uncovered for a length of 25 feet and a sample taken from the dump is reported to have assayed over one ounce of gold per ton.

All of the above veins warrant further exploration.

This property has a large number of attractive possibilities. The veins are small and therefore development costs will always be high. They are, however, high grade and fairly numerous. The values are confined entirely to the quartz pyrite veins, in mining the veins break down in small pieces while the barren diorite walls break down in large blocks. These conditions make hand sorting a cheap and effective method of handling these small veins. The values, being confined almost entirely to the sulphides, enables the ore to be cheaply concentrated to a very high grade product. All the concentrates shipped from Surf Point have averaged eight ounces of gold per ton.

The situation of the deposits on tidewater is also a great advantage. The freight rate on concentrates from the mine to Tacoma is \$3.75 per ton. The climate also is favorable to low cost operation.

The strongest recommendation which the property has is in the fact that the neighboring property is making a profit by mining similar veins. It is seldom that a combination of conditions is found so favorable that ore carrying only .22 ounces of gold per ton can be profitably mined and treated in a mill of twenty tons daily capacity.

The present plan of development is well designed to test the various possibilities and should be continued. At present drifts are being carried on veins 2 and 5. These should be continued a further distance which will depend on the results obtained. Some crosscutting should be done on number 5 vein to try and develop a zone of branching veins similar to some which are being mined at Surf Point. The branch tunnel to number 3 vein should be extended to the intersection and a large amount of drifting done on this shear. This appears to be one of the major possibilities on the property and might develop sufficient ore to warrant the installation of a small mill.

The main adit should at some time be extended to the intersection of number 1 vein. This is a rather extensive piece of work but this vein where it branches at its eastern end might be able to be stoped to the surface over large widths, thus yielding a fair tonnage of mill feed. The adit intersection on this vein will be 215 feet below the outcrop. There is also a possibility of finding other veins in the adit between veins 1 and 2. The work outlined would cost in the neighborhood of \$20,000.00 but it might succeed in opening up sufficient ore to warrant a small concentrator.

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