

KERR ADDISON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

820070

FEB 25 1974

To G. M. Hogg From W. M. Sirola 103 A
Subject TSAWWASSEN ENTERPRISES LTD.
SURF POINT MINE AND EDYE PASS MINE Date February 21, 1974

W.J. ✓
D.M.H. ✓
G.M.H. ✓
M.D.R.
I.D.B.
R.D.S.
G.R.
T.W.B.
E.C.J.

This situation was presented to us some time ago by Mr. Tim Waterland of Delta, B. C.

Tim Waterland managed this operation in 1939 and he now feels that by advancing the lower level another 500 feet that the numerous gold bearing veins of the Surf Point Mine will be exposed and he has estimated that there is a reserve of gold ore worth approximately four million dollars at today's gold prices.

Our feeling on this situation is that the Surf Point veins had a habit of being both narrow and low grade and we are not at all optimistic about the tonnage possibilities. The situation is now further complicated by legislation from Victoria which completely inhibits the reopening of a small gold property.

Tim Waterland is aware of our views but we will write him a covering letter regardless.

Bill

W. M. Sirola

WMS/rb

Enclosure

*Agreed
lms. Feb 25/74*

103 A 103J/2
Tsawwassen Enterprises Ltd
Surf Point a Ede Pass mines
Prince Rupert area BC
Feb 21 1974

COPY

W. M. Sirola

F. Chow

TSAWWASSEN ENTERPRISES LTD.
SURF POINT MINE AND EDYE PASS MINE

February 20, 1974

This is a report on the Surf Point and Ede Pass properties submitted by Mr. T. M. Waterland of Tsawwassen Enterprises Ltd.

LOCATION AND ACCESS

The properties are located just east of Edwin Point within Ede Pass, on the northwestern coast of Porcher Island. It can be reached by boat from Prince Rupert, B. C., about 21 miles to the northeast.

HISTORY

The occurrence of gold was discovered about 1920. Main production from the Surf Point Mine was during 1933-1937 when the ore was concentrated on a 25-30 ton per day mill. Development work on the Ede Pass Mine was conducted during 1934-1937. In 1937, both properties were amalgamated by purchase and exploration and development work were expanded from the lower Ede Pass Mine. By 1939 the lower level adit was advanced 2250 feet, just to the downward projection of the Surf Point ore zone. Immediately after, operations ceased due to financial difficulties in the company.

PRODUCTION

Total production from both properties was: 67,720 tons milled; 20,330 oz. Au (0.3 oz/ton), 7,188 oz. Ag (0.16 oz/ton) and 9,174 lbs. Cu (0.006%) were recovered. Most of the production was from the Surf Point Mine prior to the amalgamation of the two properties.

GEOLOGY

The gold occurrences are found in quartz veins within quartz diorite of the Coast Range Batholith with roof-rocks of altered sediments and volcanics of the Prince Rupert series lying nearby.

The mineralization occurs within an erratic quartz-vein system, distributed along a northeasterly trend. The veins, which strike generally easterly to northeasterly, appear to occupy tension fractures or joint planes in the diorite, and are short and irregularly

COPY

W. M. Sirola

F. Chow

TSAWWASSEN ENTERPRISES LTD.
SURF POINT MINE AND EDYE PASS MINE

February 20, 1974

-2-

distributed lenses. Vein widths vary from a few inches to several feet, and locally up to 10 feet or more where shearing and intense fracturing occurred. When shearing and fracturing are not evident the veins die out rapidly at both extremities.

No information regarding the length of the veins have been found in the old reports. They likely vary sharply from a few tens of feet to a probable 150-200 feet in length. The latter probably pinches and swells along its length. It has been reported that the vertical extent of the individual veins is greater than the length.

MINERALIZATION

The gold is strictly associated with pyrite and where the quartz is barren there is no gold. Pyrite mineralization is erratic within individual veins and is known to be barren in others. Gold content in the mineralized sections of the veins is highly variable, ranges from about 0.1 oz/ton to about 4 oz/ton and averages about 1 oz/ton. Stoped ore has averaged 0.3 oz/ton. Silver and copper are both minor metals in past production. Mr. Waterland gives a ballpark figure of 1 oz/ton across 2 feet for a total of 120,000 tons of probable and possible ore reserves above the lowest mine level (near sea level).

The veins are narrow, range from a few inches to about 4-6 feet in width and average about 2 feet in width. The veins have been mined to a depth of about 100 feet and have been estimated to continue for another 300 feet or so downdip. Individual ore shoots are irregularly distributed within the veins and the latter are not closely spaced.

CONCLUSIONS

From the study of the data submitted by Mr. Waterland, plus information from B. C. Minister of Mines Reports, the following facts are presented:

1. Gold occurs in short and irregularly distributed lenses of auriferous pyrite-quartz veins.
2. The quartz-vein system is controlled by tension fractures or joint planes within a quartz diorite mass.

COPY

W. M. Sirola

F. Chow

TSAWWASSEN ENTERPRISES LTD.
SURF POINT MINE AND EDYE PASS MINE

February 20, 1974

-3-

3. The vein or vein system could extend to depth but the size of the ore shoots would probably remain small. (Mr. Waterland reports that the Edye Pass adit had intersected the Surf Point vein(s) 300 feet below the latter's lowest level.)
4. The veins are not closely spaced in barren diorite for bulkmining.
5. The deposit(s) may be suitable for a small tonnage (25 ton/day) highgrading operation.

RECOMMENDATIONS

Marginal grade ore in small narrow shoots and irregularly distributed will not make a profitable operation. Therefore, I do not recommend that Kerr Addison Mines participate in any work at this time.

FC/rb



F. Chow

TSAWWASSEN ENTERPRISES LTD. (N.P.L.)

1131 JACKSON WAY
DELTA, B.C. V4L 1W5
December 14, 1973

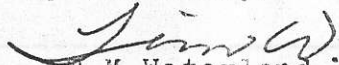
Mr Wm. Sirola
Kerr Addison Mines
405 -1112 West Pender
Vancouver 1 B.C.

Dear Bill :

I am enclosing some data on that Porcher Island Gold property that we chatted about on Wednesday. Also, ^{included} is my version of the probable reserve in the 300' block that lies just ahead. If it proves to be of interest then I would have you take a quick run out to 1131 Jackson Way. I have a large scale and a small scale mine model designed to show the relationship between the two mines and aid in designing the development program for the first stage of work. I also have maps and engineers reports that were made during the 30's

If you decide to run out here give me a ring beforehand so that I am sure to be on hand. Jackson Way is the second street to the right off 12th Ave. going East of the Tsawwassen shopping centre.

Very Sincerely,

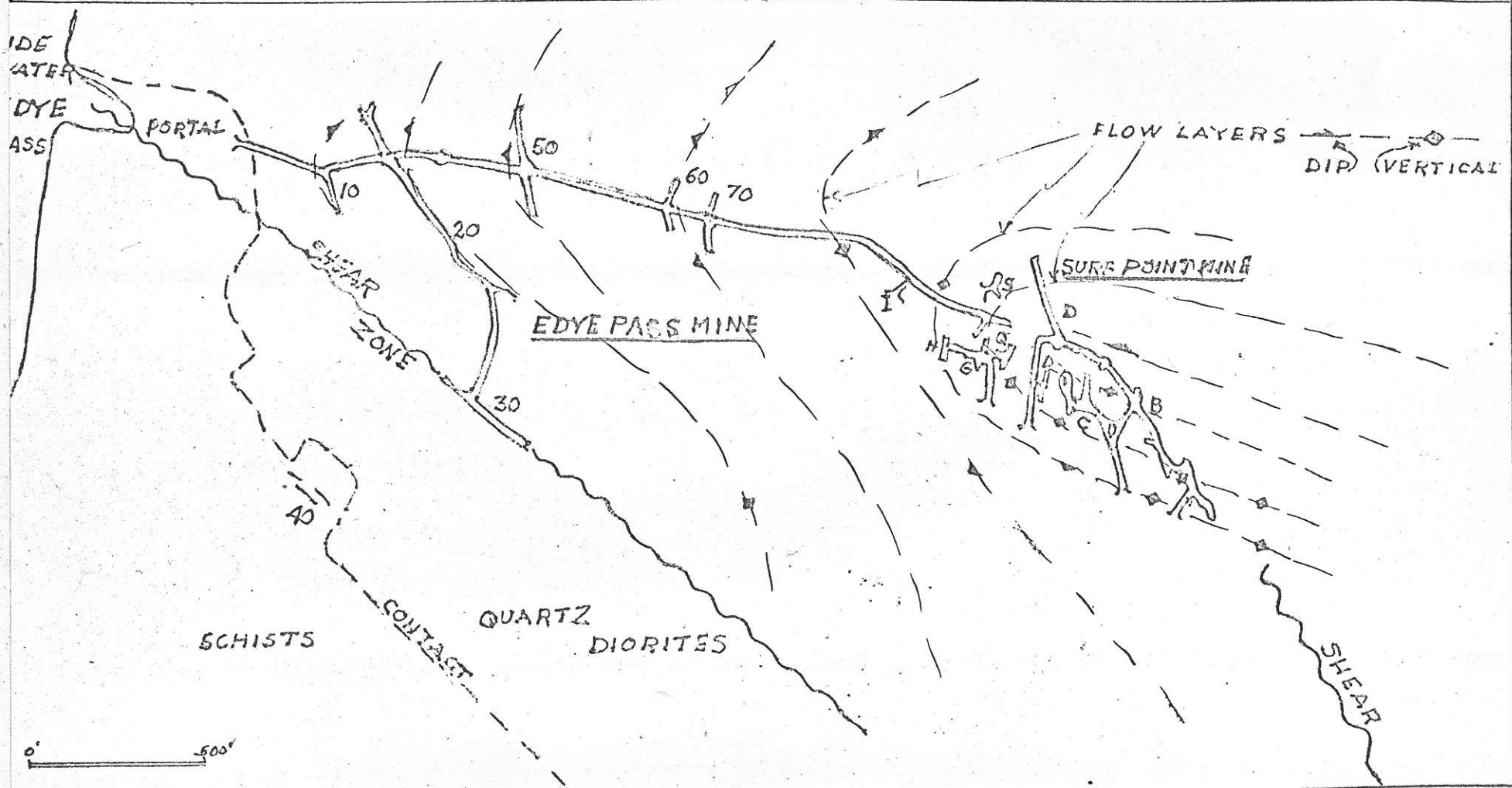
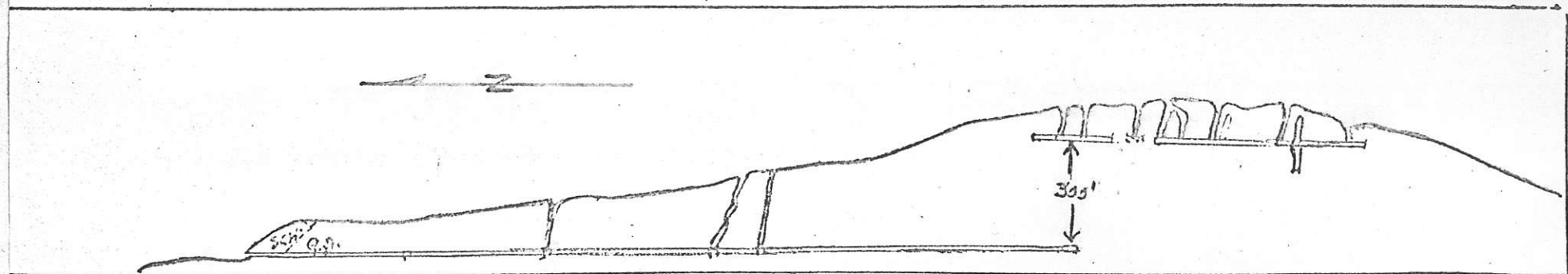

T.M. Waterland

RECEIVED
DEC 18 1973

KERR ADDISON

MINES LTD.

Per. _____



COMPOSITE MAP-EDYE PASS AND SURF POINT MINES
WITH N-S SECTION & PERTINENT GEOLOGY

PORCHER ISLAND GOLD MINES

A Resume

Prepared by Tilmer M. Waterland, P.Eng. (Mining)
October 19, 1973

Quartz-pyrite veins containing excellent gold values were discovered on the northern tip of Porcher Island in the early 1920's by a prospector named Patterson. They occurred in a quartz diorite outcrop on a ridge some 4,000 feet inshore and at about 350 feet above sea level.

A favourable report by their exploration staff prompted the Noah A. Timmins Mining Corporation of Montreal to option the 6 claims and carry out further exploratory work. This was followed by a decision to put the property into limited production.

A dock was built in a sheltered cove on the west side of the island. This was connected to the mill site by a railroad. A 30-ton per day concentrator, a diesel power plant and other facilities were installed. Milling operations commenced in June 1933.

The Timmins Corporation operated the mine for over four years. They recovered over \$800,000 in gold and silver. This would be in excess of \$2 million at today's gold and silver prices. With their ore reserves approaching exhaustion, because of the low backs, a limited diamond drilling program was undertaken to check for the downward extension of their several ore shoots. This showed erratic values and led them to conclude that the veins were shallow and limited to surface tension cracks.

The Reward Mining Company of Vancouver purchased the Timmins' interest in 1937. This included the surface plant and a 3/4 interest in the two mining claims - the Trixie and the Western Hope. The mill and power plant was destroyed by fire only a few months after the new company took over.

The Reward company had entered the Porcher Island picture the preceding year by purchasing the Patterson claims that lay up against the Timmins group to the north. They initiated an underground exploration program at once.

The writer was appointed manager of operations in mid 1938. He replaced Alexander Smith, a competent geologist who had completed a thorough geological study of the area both underground and surface. During the preceding two years he had directed the underground exploration work on the Edye Pass group. A low level tunnel had been collared just above sea level on the north or Edye Pass side of the island. This was designed to explore and develop the several favourable surface showings on Patterson group and, eventually, the downward extension of the Surf Point veins.

$8 \times \frac{220}{25} = 3.24$
 $8 \times \frac{130}{25} = 2.72$

22850 oz @ 35

1919-1939 production
67,720 tons { 20,330 oz Au
7,188 oz Ag
9,174 lbs Cu

596
~~22850~~ 22,850 oz
19,150
3700
3441
2530

Avg. Grade
Au. = 0.3 3/4
Ag. = 0.16 5/8
Cu. = 0.135 16/7 (0.00625% Cu)

Now - the debatable question -- Was the Timmins Corporation correct in assuming that their veins had only a limited downward extension or did the Reward Company hold the key to a large tonnage of good grade gold ore?

The following notes and quotes from inspection reports of four outstanding mining and geological engineers help to clear up this enigma.

No. 1 N. E. Nelson, Chief Engineer - Granby Consolidated Mining & Smelting Company - made inspections of the Patterson property in 1932 and 1935. No underground work had been done here at that time. In his 1935 report he stated that the showings on the Patterson group were better than the surface showings at the Surf Point mine, from which 10,000 tons of 0.7 oz. gold ore had been milled during the preceding two years. He was quite optimistic in this report. He felt certain that the several veins would extend downward for several hundred feet. He cut 9 samples from Patterson's surface trenches. These averaged 1.8 oz. of gold per ton over an average width of 9 inches.

$$1.8 \times \frac{9}{30} = 0.54 \text{ } \frac{\text{oz}}{\text{ft}^2} \text{ across } 30' \text{ width}$$

No. 2 Dr. Victor Dolmage - Prominent Consulting Geologist - Vancouver, B.C., inspected the property in December, 1936. The following is a quote from his report on this visit. "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 in the same horizontal zone but are distributed over a vertical range of many hundred and probably thousands of feet. Several of the veins in the Surf Point mine appear, from diamond drilling, to have been bottomed at shallow depth and because of this it was thought by the operators (Timmins) that all veins would be found to bottom at approximately the same elevation ----- thus they abandoned the Edye Pass claims since these lie at elevations lower than the Surf Point veins. However, subsequent work done by the Reward Mining Company has shown that at least 2 of the 5 veins discovered extend below the level of their tunnel which is 400 feet lower than the main working level of the Surf Point mine. It seems probable, from the nature of their occurrences, that veins will be found hundreds and probably thousands of feet below sea level." Unquote.

No. 3 Quote - from Dr. Alexander Smith's paper "Control of ore by primary Igneous Structures - Porcher Island - British Columbia". A bulletin of the Geological Society of America - 1947.

"The veins (Surf Point Mine) were formerly considered to occupy tension cracks of limited vertical range (200 to 300 feet) formed by cooling near the roof of the intrusive. Reconstruction of the form of the intrusive, using the flow structures, platy and linear, and the trend of the schists, indicates that the veins of the Surf Point mine lie about 1,000 feet below the roof of the stock. Hence, a much

greater vertical range for ore zones is suggested ----- At depth the deposits should continue to occur along the axis of the arch - i.e. in a zone striking N-20° E. and dipping 80° S.E." Unquote.

No. 4 A. M. Richmond, Mining Engineer - Vancouver, B.C.

Quoting from his report of January 1939 -

"The inference to be drawn from the geological studies which have been made and from a study of both the Surf Point and Edye Pass underground workings, is that there is every reasonable possibility that the vein fracturing may extend to at least 1,000 feet below the present surface. The vein fractures are well defined both underground and on the surface at the Edye Pass Property."

The following are assays on ore intersections from a series of diamond drill holes put in by the Timmins Corp. Most of these are approximately 50' below their main level. The figures show the width in feet and ounces of gold per ton: 23.7' - 0.21 oz., 21.0' - 0.04 oz., 2.0' - 3.10 oz., 5.2' - 0.20 oz., 5.0' - 0.16 oz., 0.7' - 1.04 oz., 6.0' - 0.63 oz., 6.0' - 0.10 oz., 2.0' - 0.66 oz." The significant thing about these D. Drill results, when studied in conjunction with results underground at the Edye Pass mine, is that it would appear almost certain that the ore fractures at the Surf Point mine should continue to at least the Edye Pass low tunnel and considerably below ----- the individual ore shoots within any one fracture may be erratic and probably frequent in occurrence." Unquote.

A Timmins' diamond drill hole through the Edye Pass 60 zone gave a perfect corroboration of Richmond's last statement. It had drilled through from the hanging wall side, at about 60 feet below the surfact. When this zone was mined up in 1939, the hole was noted. It had intersected the fracture zone at a point where the quartz pyrite vein was only a few inches wide. The assay return on this D.D. hole was negative. The stope was mined at +1 oz. of gold per ton and at an average width of 3 feet.

R. E. Legg, M.E. - Manager of Operations for the Timmins Corporation, stated that one diamond drill hole made an ore intersection at 65 feet below the Surf Point level that assayed 11 oz. gold per ton over 5 inches.

The writer took charge in August of 1938. He had been instructed to get the Edye Pass Mine into production at the earliest possible date. His program: (1) Design and construct a 25-ton per day concentrator-rehabilitating as much of the equipment from the burned out mill as possible. (2) Enlarge the power plant

23.7' x 0.21 ³	=	4.977	
21.0 x .04	=	.84	
2 x 3.1	=	6.20	
5.2 x 0.2	=	1.04	
5 x .16	=	.80	
0.7 x 1.04	=	.728	
6 x .63	=	3.78	
6 x .10	=	.60	
2 x .66	=	1.32	20-285

			.283 3/4 AV.W.
716	202.850		
	1432 x 4		
	5965		
	5728		
	2370		

and install sufficient generating capacity to handle the mill (3) Install a water system by building a flume (1 Mile) to Useless creek and a tank, (4) Construct additional camp facilities (5) prepare the Ede Pass veins for stoping and (6) rush the main cross cut towards Surf Point.

The cost of this program was very heavy. The company was very hard pressed to come up with the necessary funds. Equity financing, loans and bond sales were used. It became so serious that pay rolls were even delayed. However, by mid December, the mill went into operation.

Due to low backs in most of the Ede Pass veins, the available ore for mining was limited. Some stopes had less than 50'. The urgency of extending the cross cut to the Surf Point area was very apparent. When the minority owners of the two Surf Point claims obtained a court injunction that stopped all work in the Surf Point area - until a dispute had been settled - the picture looked hopeless. The real irony of the situation was this -- the cross cut had advanced to within a relatively short distance of the expected downward extension of a strong Surf Point Vein.

The writer recognized the obvious - the company faced bankruptcy. He offered his resignation in April but carried on until a replacement was obtained in June.

The operation carried on for several months after this. The gold commissioner placed a lien on the concentrated being produced in order to pay current and back wages and current operating costs. During this period of turmoil, the cross cut was advanced to intersect a strong vein - most certainly the Surf Point ('G') vein. Back-slashing on this helped to produce sufficient values to square the wage and current supply bill.

The real significance of the last phase of the operations on Porcher Island was this -- The enigma had been solved -- The downward extension of the Surf Point vein structures had been definitely proven to be a fact - not just a conjecture.

On July 13, 1973 the writer made an inspection of the property. He was accompanied by another professional mining engineer. After 34 years in the wet north coast climate - all the buildings had collapsed and the camp area completely overgrown with timber and underbrush. The portal of the crosscut, however, was clear and open. They entered without difficulty and encountered no obstructions or rock falls between the portal and the face or end of the cross cut - a distance of 2,250 feet.

Two special samples were cut from the back of the drift on the downward extension of the Surf Point vein. The assay results:
No. 1 - 1.45 oz. of gold and 1.57 oz. of silver per ton
No. 2 - 1.97 oz. of gold and 0.45 oz. of silver per ton.) *width?*

THE ORE RESERVE ESTIMATE

Production from the Surf Point Mine according to data from B.C. Dept. of Mines and Engineer's reports:

Noah A. Timmins Corp. 1933 to 1937-----	\$700,000
Reward Mining Co. 1937 & 1938-----	125,000
Total production from Surf Point Mine-----	<u>\$825,000</u>

This monetary figure is for both the gold and silver production. The ratio of the two metals in Surf Point ore is in the neighborhood of three ounces of gold to one ounce of silver. The gold equivalent for this production is approximately 24,500 ounces. (Gold was \$33.75 per ounce).

24,500 oz. gold at \$100 per oz.-----\$2,450,000

The average back in Surf Point stopping operations was 110 feet according to the longitudinal section. This gives a production figure of \$22,200 per vertical foot. If the Surf Point veins extend downwards at full strength, the 300 foot block above the Edye Pass cross-cut will contain gold and silver values of -----

\$6,660,000

Three strong parallel zones to the North of the mining area, the I, J & S zones, were not mined by the former operators. The I & J outcropped at a lower elevation and the S was not developed for mining when the Surf Point ceased operations. The vertical distance here would be greater. The estimate for these is -----

\$1,500,000

Gross value on this basis-----\$8,160,000

All work done in the low level Edye Pass cross-cut indicates that the vein structures are continuous. The Surf Point vein that was intersected during the final stage of operations in 1939 gave very good assays.

A 50% downward extension of the Surf Point ore can be safely assumed. On the basis of foregoing figures, this gives a value of-----

\$4,080,000

T.M. Waterland - B.Sc., B.M., P.Eng., (Mining)

A Resume!

- 1928-1929--Anaconda Copper Co. Butte, Montana.
Mine Sampling -- Geology
- 1929-1935--Granby Consol. M.S. & P. Co. British Columbia.
Mine Surveyor, Safety Engineer, Efficiency
Engineer, Explosives Engineer & Supervision.
- 1935-1937--Premier Gold Mines, Stewart, B.C.
Pillar Recovery, Explosives & Supervision.
- 1937-1938--Granby Cons. M.S. & P. Copper Mountain, B.C.
Engineering & Supervision.
- 1938-1939--Porcher Island Gold Mines - Prince Rupert, B.C.
Resident Manager - Development, Construction,
Production.
- 1939-1957--Britannia Mining & Smelting Co. B.C.
Engineering Research, Production Efficiency,
Sup't of Mines, Assistant Manager.
- 1957-1966 Upper Canada Mines, Kirkland Lake, Ontario
Assistant Manager (In charge of Production.)
- 1966----- Mining Consultant.

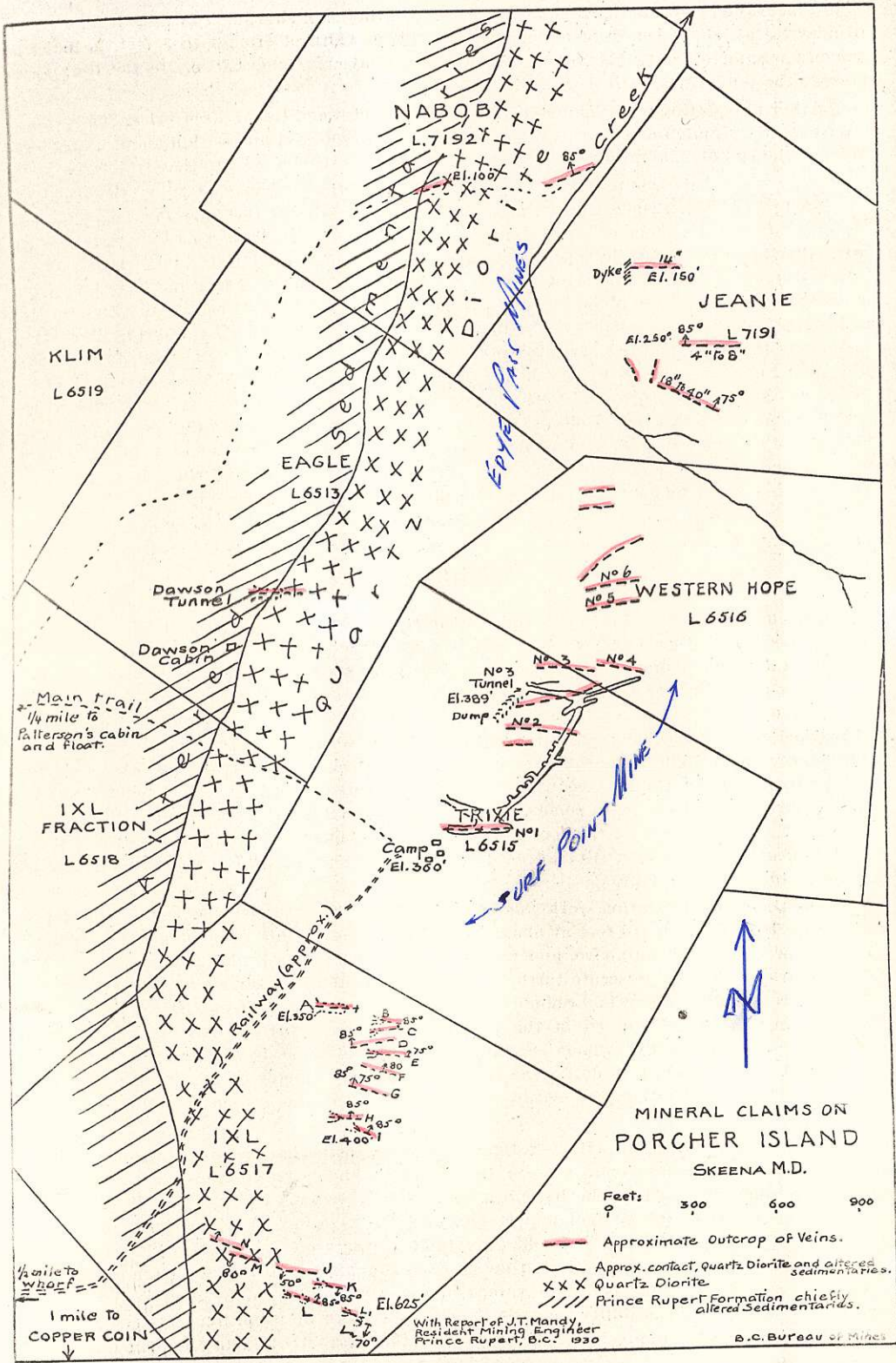


GEOLOGY - PRINCE RUPERT (103J-2)
 1 in. = 4 mi.

also LOCATION PLAN

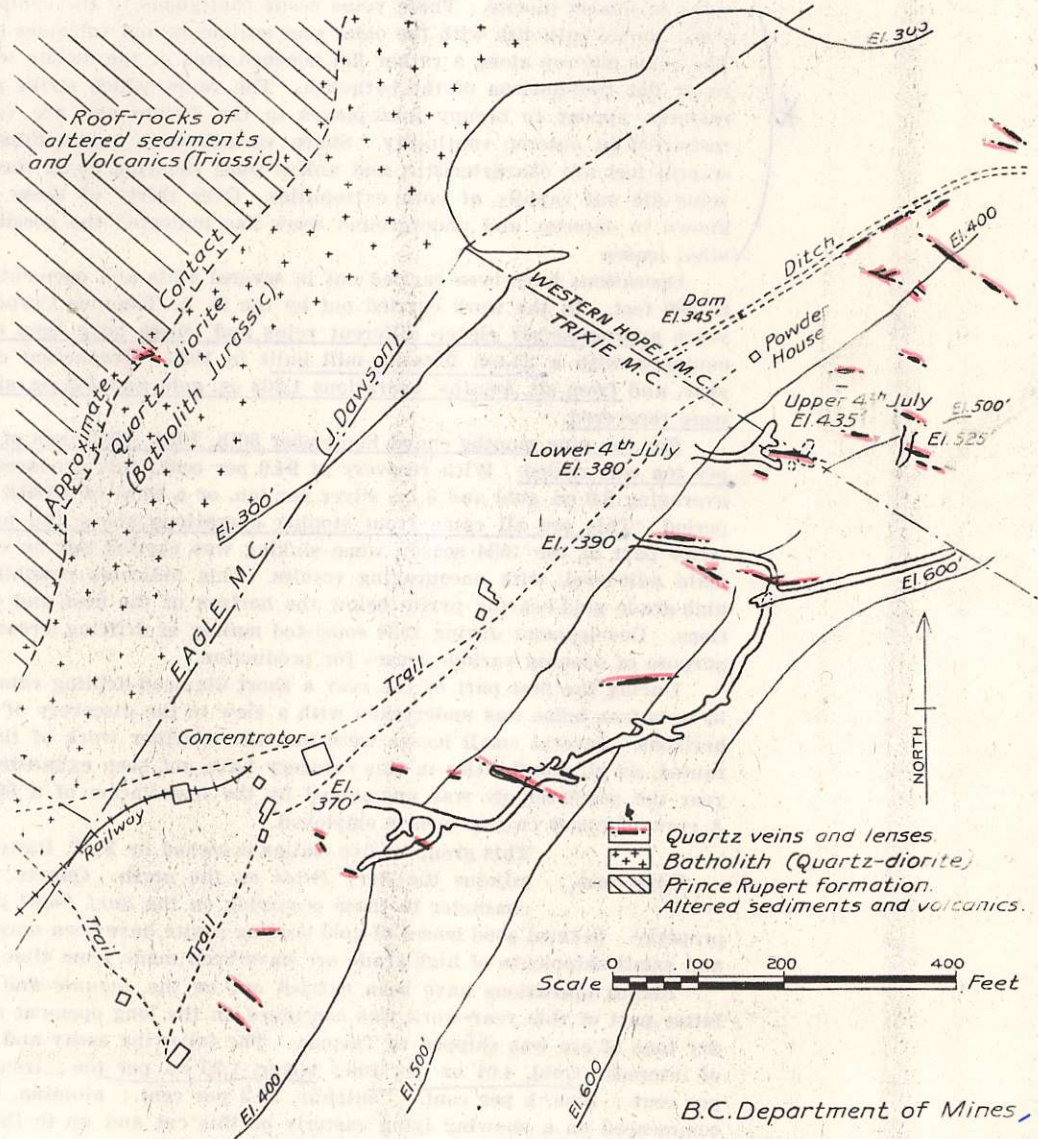
- ⊗ 1 Surf Point Mine
- ⊗ 2 Edge Pass Mine

54°00' 131°00' 45' 30' 15' 130°00'



Surf Point Mine

The topography of the area is featured by a comparatively flat or hillocked foreshore deeply covered with muskeg and of about 300 feet general elevation, bordering the steep slopes to mountain domes or ridges of from 4,000 to 5,000 feet elevation that form the central portion of the island. This characteristic topography is conformable to the flat and doming structure of the intrusive batholithic rocks, the low hillocked areas generally marking flat roof-horizons of the batholith with remnants of preserved roof-rocks. It is in this flat roof-horizon that



B.C. Department of Mines, 1934

Surf Point Mine.

the mineral deposits occur. In former years small shipments of sorted ore were made to the smelter, either by the owner or by some operator working under lease and bond. In 1917 the property was bonded to the Belmont-Surf Inlet Mines, Limited, which company after doing considerable exploratory work relinquished the bond. About 1928 the property was bonded by J. B. Woodworth, of Vancouver, and later, in association with N. A. Timmins, of Montreal, was purchased. In the operation preceding the present active direction of the work by the

N. A. Timmins Corporation inaugurated in 1933, extensive underground work and open-cutting were carried out and an incline railway constructed. The older operations are described in former Annual Reports. The more recent operations are described in the Annual Reports from 1927 to date. The property is also referred to in Bulletin No. 1, 1932, issued by the B.C. Department of Mines, and in the Geological Survey of Canada Summary Report for 1922.

* The mineral occurrence consists of gold-bearing pyrite in erratic and lenticular quartz veins in quartz diorite. These veins occur contiguous to the contact of quartz diorite of the Coast Range batholith with the older roof sediments and volcanics of the Prince Rupert series. The veins outcrop along a rather flat benched area of the diorite which represents a comparatively flat roof-horizon of the batholith. The veins, which strike generally easterly to north-easterly, appear to occupy joint-planes in the diorite and are very lenticular, erratic, and restricted in outcrop continuity. Sharp variations in vein-widths of from a few inches to several feet are characteristic, and unless some shearing along the joint-planes is evident the veins die out rapidly at both extremities. Over thirty of these quartz veins or lenses are known to outcrop, and underground work has indicated the possibility for the occurrence of blind lenses.

Operations have been carried out in several adits and open-cuts between elevations of 370 to 500 feet. In the work carried out by the N. A. Timmins Corporation during the last two years approximately eleven different veins and lenses have been developed. The property is equipped with a 25-ton flotation-mill built in 1933. Production commenced in July of that year, and from six months' operations 1,268 oz. gold and 345 oz. silver from 1,620 tons of ore were recovered.

For the nine months ended September 30th, 1934, 4,049 tons of ore averaging 0.81 oz. gold per ton was milled. With recovery at 94.6 per cent., this produced 364.5 tons of concentrates averaging 8.6 oz. gold and 3 oz. silver per ton, or a total of 3,136.6 oz. gold for the nine-month period. This ore all came from stoping operations above the main adit-level. During the latter part of the 1934 season some sinking was carried out on one of the lenses below the main adit-level, with encouraging results. This indicates possibilities for the occurrence of high-grade gold-bearing pyrite below the horizon of the first and present main mining operations. Development during 1934 consisted mainly of drifting, crosscutting, and raising for the purpose of opening various lenses for production.

During the first part of the year a short diamond-drilling campaign consisting of 985 feet in seventeen holes was undertaken with a view to the discovery of further lenses below known horizons. Several small lenses were located. Further work of this nature, however, is warranted, as all possibilities in this category have not been exhausted. At the beginning of the year the power-supply was augmented by the installation of a 60-horse-power Diesel engine. A crew of about twenty men is employed.

This group of five claims is owned by F. T. Patterson, of Porcher Island, and adjoins the *Surf Point* on the north. Quartz veins and lenses similar in character to those occurring on the *Surf Point* have been discovered on this property. Several good lenses of gold-bearing pyrite have been uncovered by extensive stripping and small shipments of high-grade ore have been made from time to time.

Recent operations have been carried out on the *Jeannie* and *Nabob* claims. During the latter part of this year work was continued on the long open-cut on the *Jeannie* claim and 13 dry tons of ore was shipped to Tacoma. The following assay and analysis of this ore may be of interest: Gold, 4.01 oz. per ton; silver, 1.25 oz. per ton; iron, 17.8 per cent.; silica, 56.7 per cent.; lime, 1 per cent.; sulphur, 19.2 per cent.; alumina, 3 per cent. Work was also commenced on a showing lying easterly of this cut and up to the end of December approximately 15 tons of high-grade ore is reported to have been extracted from lenses about 2 feet in width. On the *Nabob* claim a trench 170 feet long, continuing in an open-cut about 120 feet long, has exposed a well sheared and defined vein-structure varying from 6 to 41 inches in width. From the open-cut approximately 35 tons of ore, estimated to assay about 1 oz. gold per ton, was extracted and piled on a dump. A sample of the face of this cut across 41 inches assayed: Gold, 0.6 oz. per ton; silver, 0.5 oz. per ton. About 30 feet south of the face of this cut the vein is exposed again and shows a width of 30 inches of well-pyritized quartz. Southerly the vein is covered with muskeg, but its possible continuity is marked by a trough-depression which can be observed extending into the adjoining *Eagle* claim and aligning