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Property File  
92 JNE 008

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720 Pacific Building.

June 1, 1946.

Mr. R. Crowe-Swords, President,  
Santiago Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Re: HOLLAND MINE

Dear Sir:-

I have just returned from the Holland Mine at Pioneer, B. C., where I found progress quite different from what I was lead to expect before leaving Vancouver.

Instead of casing being set at 903 feet in the No. 1 drill hole, and drilling going on below that point, I found that a crook in the hole, too sharp for the casing to follow had been encountered at 280 feet and that the casing-bit had started a new branch hole. Therefore the casing was set at 284 feet and drilling was continued from that point. This hole is called No. 1-A and at 2 PM on May 30th it had advanced 359.5 feet, or to a depth of 642.5 feet from the collar of the original hole.

Since my previous visit on March 9th, when the original hole was 831.4 feet deep, it was extended a further 52.6 feet through broken ground of which the first 28.3 feet was greenstone and the next 24.3 feet argillite partially altered to talcose material and serpentine. Beyond this point the drillers report that seven feet of core was recovered some of which contained small fragments of quartz and pyrite, but none of this core can now be found. A small fragment of the quartz and pyrite which was sent in to Vancouver at the time it was cut assayed only 0.01 Oz. gold.

The remaining twelve feet of the hole (to 903 feet) is reported to have been through mud-gouge which stuck the bit so tightly that while trying to pull it the drill rods broke about 40 feet from the bottom. After spending considerable time "fishing" unsuccessfully for the rods and bit the drillers decided to case the hole. As mentioned above they were unable to complete this, so the tools were abandoned and drilling of the straighter hole started .

No tests to show the divergence of the original hole from the vertical have ever been made on account of the lack of the proper equipment and although the Contractor has several times advised your office, and the drillers on the job, that the necessary equipment had been shipped, none has been received to date.

During my recent visit we made a test with

makeshift apparatus in the No. 1-A hole at 500 feet depth and found a divergence there of approximately three degrees from the vertical, which is not a serious variation.

The No. 1-A hole, from its start at 283 feet to its present bottom at 642.5 feet, has passed through quartzite, argillite, and greenstone of the Fergusson Series entirely similar to that in the original hole and the various rocks check closely in their positions.

The Canada Geological Survey show on their maps a fault masked by overburden supposed to come to the surface at about 800 feet south of our drill-hole, and it is very probable that the mud we encountered from 890 to 903 feet represents this fault. There is geological reason to hope, if not to expect, that the formation on the other side of the fault will be different and may very possibly be the Bralorne Diorite which is the host rock of most of the ore of the Bralorne Mine.

Due to a large turnover of men and the scarcity of good drillers work has been alternately on a one and two shift basis; I have no fault to find with their work. However the contractor's Vancouver office has been extremely lax in failing to supply testing equipment which, on your insistence, they have several times agreed to do at once. The drill foreman states that he has just been notified again that such equipment is now being shipped, - this should be checked at the head office.

I consider it imperative that a test of the divergence of the No. 1-A hole immediately after the mud gouge is cut (around 900 feet depth), and advisable to make a test before that at about 750 feet depth.

Logs of the drilling from March 9th to May 30th are enclosed herewith.

Yours very truly,

CCS

Property File  
92 JNE 008

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720 Pacific Building

March 13, 1946.

Mr. R. Crowe-Swords, President,  
Santiago Mines Ltd.,  
423 Hamilton St.,  
Vancouver, B. C.

Dear Sir:-

As instructed, I have again visited the Holland Mine at Pioneer, B. C. and examined the drill-core recovered from No. 1 Hole since my last visit on January 13th.

The log of the core from 185 feet, the depth on January 13th, to 831.4 feet, the depth on March 9th, is enclosed herewith.

The rocks penetrated consist of thin bedded quartzites and argillites, as in the first 185 feet of the hole, together with several beds of altered volcanic rocks which were probably erupted over the sediments at intervals during their deposition. These volcanics appear to be of a generally andesitic composition, show flow-lines near their contacts, and grade from fine grained near their boundaries to moderately coarse near their centers. They are included as a part of the Fergusson Series by the Geological Survey and called "Greenstones", which name I have also used in the log of the drill-hole.

From 333 to 333.8 feet several small seams of fine pyrite were cut, occurring in thin argillite bands in quartzite; no quartz was noted. A specimen of this assayed Gold 0.005 Oz. per ton.

At 560 feet a specimen showing amygdules of quartz, calcite, and a trace of pyrite assayed Gold "Trace".

From 566.5 to 569.8 feet a mixture of quartz and quartzite containing bare traces of pyrite was cut which may be a vein, but it is equally likely that it may be only a local development of quartz. A sample of the best mineralized piece assayed Gold "Trace".

At 702 feet a one inch stringer of quartz and calcite also assayed Gold "Trace".

The dips of the strata are erratic, varying from flat to vertical, but apparently averaging about 45 degrees.

The hole required cementing several times between 185 and 418 feet, but below that point the drilling was good, and the hole stands well. No water is emerging from



the collar of the hole and is said to escape at the 350 foot point. Attempts have been made to plug the leak with sawdust and cement, but were unsuccessful. Another attempt ~~to close the leak~~ <sup>samples may be taken</sup> will be made with Bentonite so that sludge <sup>age</sup> can be taken. Two shifts are now working on the drill, and the work is going ahead satisfactorily.

Yours very truly,

C. C. S.



Property File  
92JNE008

*Revised copy*

XXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXX  
720 Pacific Building

January 18, 1946.

Mr. R. Crowe-Swords, Managing Director,  
Santiago Mines Ltd.,  
423 Hamilton St.  
Vancouver, B. C.

Dear Sir:-

According to your instructions I have revisited the HOLLAND MINE at Pioneer, B. C., and report as follows:-

Diamond Drill Hole No. 1. This is a vertical hole planned to go to a depth of 2000 feet to explore for the extensions of both the Pioneer "27" vein and the Bralorne Empire vein. It is situated on the Langdon Claim 300 feet, north 85 degrees east from the southwest corner of the claim. At present one shift, only, is worked and progress has been slow on account of hard, caving ground which has necessitated frequent cementing of the hole. On January 13th the depth was 185 feet. At the present time no water is returning from the hole, but it is hoped that sand from the drilling will eventually plug the leak. The last 25 feet of drilling has been through more solid rock than before and progress has been better. Core recovery for the first 100 feet of hole was very poor, 34%, but considerably better in the last 85 feet where 65% was recovered.

To date the hole is entirely in the Fergusson formation, of Palaeozoic age and the oldest formation exposed in the district. It consists of thin-bedded quartzites with much thinner beds and seams of argillite and chert which are more or less broken and distorted. The strike of the formation is variable, but averages between N 60° and 70° W, and the dip from 45° to 60° northerly. The thickness of the formation at the drill hole is not known but is probably considerable.

The drill-runner, Ed Nelson, appears to be an experienced and conscientious man.

Holland Tunnel:- The ventilation in the tunnel is now good and I examined and sampled the vein near the face, which I was unable to do last summer on account of bad air.

At 1247 feet from the tunnel portal there is a contact, striking S 70° E and dipping 72° north, between

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andesitic lava on the southwest and thin bedded quartzites on the northeast, both belonging to the Fergusson series. From here to the 1259 foot point, which is at the hangingwall of the vein zone, the quartzites contain small stringers of quartz which predominantly strike and dip at a small angle across the formation, but in part are irregular. They are strongest in the four feet adjoining the hanging wall.

It is often difficult to distinguish between the quartzite rock and the quartz stringers, but it would appear that the quartz forms only a small percentage of the whole. The hanging wall strikes S 35° E, dips 72° north, and consists of darker more argillaceous quartzite with several irregular quartz stringers about an inch in width.

At four feet back from the hanging wall, and at the limit of the strongest development of stringers, a fracture strikes S 30° E and dips 80° south. Possibly the quartzites between this slip and the volcanics-quartzite contact should not be included as "vein", although they contain some quartz stringers.

Three samples were taken, as follows:-

- No. 1 From 1254.5 feet to 1259 feet from the portal, across the strongest quartz showing rare specks of pyrite. Gold 0.01 Oz.
- No. 2 Picked specimens at the above footage showing scattered pyrite grains mostly in the seams. Gold 0.02 Oz.
- No. 3 From 1247 to 1256 feet on opposite side of X-cut & from contact to No. 1 sample. Gold 0.31 Oz.

The vein, or stringer-zone, is not particularly strong or attractive in appearance, and the low assays do not give any encouragement to the idea of drifting on it.

It is noteworthy that several other stringer-veins and gouges in the tunnel have approximately the same dips and strikes as the one above, and that all of them closely parallel the major fault postulated by Cairnes (C. G. S. Memoir 213) several hundred feet southwest of the tunnel portal.

Yours very truly,

*CCS.*

Property File  
092 JNE 008

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720 Pacific Building.

Vancouver, B. C

August 21, 1945.

Mr. R. Crowe-Swords, Managing Director,  
Santiago Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Dear Sir:-

Pursuant to your instructions I have re-visited the claims of the New Holland Gold Mines Ltd., near Pioneer, B. C. and report as follows, having given special attention, by your request to (1) the vein at the face of the Holland tunnel, (2) a vein outcrop reported to be exposed near the west side line of the "A Fr." claim of the Pioneer, (3) a site, or sites, for diamond drilling, and (4) a water supply for drilling.

(1) In my report of June 20, 1945, I described the vein at the face of the Holland tunnel (1270 feet from the portal) thus: "At 735 feet there is a vein several feet wide lying in quartzite walls, with a filling of quartzite alternating with bands of vein-quartz containing a few grains of pyrite. . . . . A similar quartz-quartzite vein shows at the face of the tunnel." The strike is about N 60° W and the dip steeply northeast. At that time I was unable to make a careful examination of the vein on account of bad air. On the present trip the air was even worse than before and I did not get to the face at all. Material from the end of the dump, which is presumably from this vein, shows chert, quartzite, and a little vein-type quartz containing a few tiny specks of pyrite, as per the sample given you, which also included several pieces of drill-core from the vein (Tilley) taken before the tunnel was advanced to that point.

In my opinion the "vein" is fractured beds of the cherts and quartzites of the Fergusson formation in which a little quartz has been deposited, and is of doubtful importance; however it deserves a more careful examination if and when the air improves.

(2) A careful search was made along, and adjacent to, the west side of the "A Fr." claim for a reported vein outcrop which was said to exist close to the side-line and to strike toward the Holland ground. Nothing of the sort was found, nor were there any rock outcrops except for an area roughly 200 by 50 feet lying some 300 feet



west of the northwest corner of the claim where thin bedded quartzites, cherts, and argillites of the Fergusson formation outcrop, striking about N 70° W and dipping 50° north. At one point in this outcrop there is an irregular stringer of quartz showing a maximum width of ten inches. To the west it fingers out and disappears within three or four feet, to the east it disappears under the soil. Quartz stringers are a fairly common occurrence in the Fergusson formation and I consider them of no importance.

(3) The western half of the Whistler claim, and the triangular part of the Langdon claim southeast of the brushy draw, are on a moderately steep slope and the overburden may be expected to be from three to ten feet in thickness. Through the draw, for a width of several hundred feet, overburden is probably quite deep and presumably full of boulders, and would be difficult to drill through. On the western third of the Langdon claim and on the McCallum Fr. slopes are generally fairly steep; on the upper half of the area there are numerous rock outcrops, but on the lower half there is only one, some 300 by 75 feet, lying 200 feet east of the southwest corner of the Langdon claim; the overburden in the vicinity might be fairly deep.

(4) There is a spring on the Langdon claim approximately 700 feet from the southwest corner and about 20 feet north of the south side-line. I would estimate the present flow to be between five and ten gallons per minute. Above the spring the draw appears to be entirely dry, although the brush is of a type requiring a fair amount of water. Several holes, dug from two to six feet deep in the draw above the spring, show no signs of water or unusual dampness. There is a ditch extending from the spring to immediately above the Holland camp and it is evident that they formerly used it for domestic water. The water has now been diverted to its original channel from which it is now picked up near the south side of the Monica Marjorie claim and piped to houses for the Pioneer employees. At the time I saw it there was a considerable overflow, presumably going to waste. The spring, where it emerges appears to come upward, is very cold, and shows no evidence of greatly fluctuating amounts, suggesting that it may come from a considerable depth rather than as seepage down the draw.

At 100 feet south of the southwest corner of the Langdon there is a small pool of water from which a rivulet runs S 15° W, partly under moss and partly on the surface through a swamp of three or four acres extent; lower down it joins the flow from the first mentioned spring. A little digging should open this up sufficiently to furnish enough water for a diamond drill.

Immediately above the swamp the hill slopes upward steeply to the northeast.

About 450 feet northwest of the southwest corner of the McCallum Fr. and just west of the wood-road on the Sunshine claim there is a small rivulet which only shows on the surface for a few feet. It might furnish one or two gallons of water per minute; it does not flow into the swamp mentioned above. There is evidence of a considerable flow at times.

The above three water sources lie in a nearly straight line at the foot of the steep mountain slope approximately on the strike of the formation, and suggest that they might lie along a fault or a pervious formation.

It should be noted that previous to this visit there has been a long dry spell and the water flow observed should be the minimum. During a rainy season or when snow is melting there should be a considerable increase in flow from seepage and run-off.

The use of the water for drilling from the two first mentioned sources might affect the supply of domestic water for Pioneer houses and bring your Company into conflict with the Pioneer Mines Company. There is no other nearby source of water for drilling, except an insufficient flow at the Holland tunnel.

Elevations as determined by aneroid barometer are given below, but should not be considered as more than approximately correct: -

Holland tunnel	4460	Elevation
Langdon spring	4535	"
Pool near S-W Cor. Langdon	4430	"
Water on Sunshine claim	4550	"
Lowest outcrop on Langdon	4530 to 4580	"

No new information was gained from personal observation as to the continuation of any of the Bralorne or Pioneer veins into the Holland property, or where they might be expected if they extend that far. On the map herewith Bralorne's Empire vein has been platted on the 600 foot level from Cairnes map (Memoir 213, Fig. 2) and, allowing for the dip of the vein (assumed at  $60^{\circ}$  - Cairnes shows  $55^{\circ}$  on the 600 level, but notes that it steepens above), its projection should intersect the surface at the north west end of the Winifred Fr. claim. That is, it should if there is no great throw to the fault, probably dipping northeast, which is believed by Cairnes to lie about 500 feet southwest of and parallel to the southwest boundary of the Holland property. However the presence of this fault and its possible throw is too vague to be taken into calculations at the present time. The presence of the springs and the topography

suggest the possibility that the fault might lie some 500 feet northeasterly from the position that Cairnes map shows and approximately along the southwest edges of the Sunset and Langdon claims.

If the above assumptions are true, the extension of the Empire vein should be expected at approximately 1500 feet vertically below the southwest corner of the Langdon claim. This point might very possibly be below the fault.

The man who drove the Eagle tunnel states that the Pioneer "27" vein was cut by that tunnel some 150 feet from the portal, and showed some gold. His description indicates that its surface projection should be 100 feet south of the northeast corner of the Monica Marjorie claim, again provided that the assumed fault does not throw it far. It, also, would then be expected to lie at a depth of 1500 feet vertically below the southwest corner of the Langdon claim.

From the above discussion, plus conveniently located water, plus ease of access for drill and supplies, it appears that the best place to sink a vertical exploratory drill hole is at the lower edge of the rock outcrop near the southwest corner of the Langdon claim, the hole to be planned to go to 2000 feet depth if necessary. This is, of course, a long hole for semi-blind prospecting, but the history of both the Bralorne and Pioneer mines indicates that the average values increase with depth as far as the present workings extend.

An alternative location for a drill hole would be just north of the Langdon south sideline at 400 feet westerly from the southeast corner of the claim. This would halve the possible distance to the "27" vein, and would perhaps shorten the distance to the Empire vein to 1200 feet. It would not be as convenient a location for the delivery of water and machine, and might have considerable overburden to contend with.

Yours very truly,

*Chas. C. Starr*





Property File

09254008

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720 Pacific Building.

*Santiago Mines Ltd.*

June 29, 1946.

Mr. H. Crowe-Swords, President,  
423 Hamilton St.,  
Vancouver, B. C.

RE: HOLLAND MINE

Dear Sir:-

When I visited the Holland Mine on the 26th of the month the No. 1 (A) diamond drill hole had gone down to 933 feet, and drilling was stopped pending further arrangements.

The reason for the stoppage is that, after passing through some forty feet of fissured rock, a mud-gouge containing fragments of quartzite was encountered from 896 to 905 feet, which is squeezed back into the hole by the ground pressure as soon as the drilling tools are withdrawn.

This necessitates the re-drilling of the mud for every drilling-run and results in prohibitively slow advance at the bottom of the hole, as well as considerable danger that the tools will be pinched and lost.

The quartzite, argillite, and greenstone passed through in the No. 1 (A) branch of the hole, above the mud, is the same as that cut in the original branch. Below the mud (fault), at 905 to 933 feet, the hole continued through thin bedded quartzite and argillite of the Fergusson formation.

It is manifestly impossible to continue this hole without casing off the mud-gouge, and it is very improbable that a single string of casing of uniform diameter could be set to the necessary depth, therefore to continue the hole it will have to be reamed to a larger diameter and several strings of casing of decreasing diameters must be used.

It is my considered opinion that our chance of striking a vein is sufficiently promising to justify the extra expense of continuing the hole, approximately \$20,000 as given by the Contractor, and I recommend that it be undertaken.

My reasons for this recommendation, based on geology, and an outline of the method to be used to continue the hole to 2,000 feet are outlined below.

The following outline of the geology at the Holland and the adjoining Pioneer and Bralorne mines is based largely on the work of Dr. C. E. Cairnes and published in Memoir 213 of the Canada Geological Survey, in part on personal observations.

*C.B.*

and in part on the sketchy information it has been possible to obtain from the adjoining mines.

The surface of the Holland property is entirely underlain by sediments and intercalated greenstones of the Fergusson formation, which strike northwest, a little more westerly than the Holland Pioneer boundary, and dip 40 to 60 degrees northeast. Southwest of the boundary, for a thousand feet, the surface is covered with heavy overburden through which no outcrops show, followed by outcrops of Pioneer greenstone and Bralorne diorite which are the host rocks of the Pioneer and Bralorne veins.

A thrust fault also striking northwest and dipping at a steep to moderate angle to the northeast passes under this overburden and is represented by the mud-gouge in our drill hole.

The Bralorne diorite and Pioneer greenstone are, in greater part at least, intrusive into the Fergusson formation, dip northeasterly toward the Holland ground and should be encountered in our drill hole according to the position and attitude of the contact in the Bralorne Mine.

The cross-section diagram, herewith, illustrates the above description.

It is well known that at least two Bralorne veins strike toward the Holland in the vicinity of our drill hole, one of them developed to within 1500 feet with the face still in ore in Pioneer greenstone. It is also understood that one of the Pioneer veins strikes toward the Holland in the vicinity of the drill hole, and several of their veins dip toward the Holland and would enter it at depth. Our information on these veins is not sufficiently detailed, on account of the suppression of information by the Companies concerned, to allow us to set definite points where we may expect to cut them, but I believe the chance that we may cut one or another of them is good.

The procedure to enable the drill hole to be extended to a depth of 2,000 feet is approximately as follows:-

1. Ream out the hole to  $3\frac{1}{2}$  inch diameter to 500 feet depth and set  $3\frac{1}{2}$  inch casing to that point.
2. Ream to  $2\text{-}7/8$  inch diameter from 500 to 1000 feet and set corresponding sized casing to that point.
3. Drill a  $2\frac{1}{2}$  inch hole from 1000 to 1500 feet and set corresponding casing to that point, if necessary.
4. Drill a  $1\text{-}3/16$  inch hole 1500 to 2000 feet. This may or may not require casing.

This procedure is now being followed successfully through broken ground in a hole designed to go to 2000 feet on a nearby property, and can confidently be expected to be successful on the Holland.

The Bridge River district is notorious for broken, fissured rock which is often extremely difficult to drill,

CS.

and our hole is proving no worse than many others. To complete it will be cheaper than to drill a new one for about the same procedure would have to be followed.

The drilling contractor estimates that he can complete the hole to 2,000 feet by the end of September, next.

Yours very truly,

CCS



CHARLES C. STARR  
720 PACIFIC BUILDING  
VANCOUVER, B. C.

Property File  
092JNE008

March 18, 1947.

Mr. R. Crowe-Swords, President,  
Santiago Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Re: HOLLAND MINE

Dear Sir:-

The vertical diamond drill hole, No. 1-A, on the Holland property, near Pioneer, B. C., was completed to 2000 feet depth on March 14th.

Since my last visit on February 22nd the advance was 239 feet, from 1761 to 2000 feet, through quartzites, argillites, and a thin bed of greenstone, all belonging to the Fergusson Series. No vein and only traces of mineralization were found, these latter consisting of occasional seams and small irregular spots of white quartz, and very small amounts of fine pyrite occurring in the argillite bands rather than the quartz.

The average core recovered was 37%, but, since over some sections almost none was saved, a number of sludge samples covering those sections were assayed with practically negative results.

Taken as a whole there has been no radical change in the rocks from the collar of the hole to the bottom, but there is a slight increase at depth in the ratio of argillite to quartzite, the argillite occurs in thicker bands, and shows somewhat less graphite along slip faces. There is no evidence of definitely increasing mineralization in depth. The strongest mineralization found was in the sediments adjacent to the several greenstone beds. Between 1696 and 1702 feet, just below a thin bed of greenstone, there were some small fragments of quartz and pyrite from sections from which little core was recovered which looked more promising than usual, but only assayed 8.02 Oz. gold.

In detail the bedding of the sediments is highly distorted, but from the surface downward it steepens from about 45 degrees to 80 degrees at a thousand feet, and flattens again to about 70 degrees at the bottom.

Based on the geology, I had hoped, and rather expected, that a more favorable formation would be entered on or soon after crossing the faults at 905 feet and at 1230 feet, but this failed to materialize.

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It is scarcely feasible to continue the hole to greater depth. It is cased to 1252 feet, starting at the surface with 3½ inch (N) casing and ending with 1-3/16 inch (E) and there is little possibility that E casing can be put down any further. The hole is sloughing around 1760 feet and would have to be cemented and drilled out before it could be continued below 2000 feet. Also the Drilling machine and the water circulating pump are now working at considerably above their rated capacity and serious breakdowns are to be expected if the hole is continued. The E rods are also too small to go deeper without serious danger of serious breaks.

The difficulty throughout has been the starting of the hole at too small a diameter and using too light equipment, plus hard and very broken rock with occasional mud seams. As you remember, we both urged the Contractor to start the hole on a larger bore, but allowed ourselves to be over-ruled, believing the Contractor knew his business better than we did. However the hole is now the longest attained in the district by some 200 feet.

The officials of the Bralorne Mines have been very helpful in giving me information on the geology and location of their veins and workings, but we have been able to get very little information as to the locations and attitudes of the various veins of the more immediately adjoining Pioneer Mine. This, taken in conjunction with what we have learned from the present drill hole, and the high cost of drilling a deep hole, makes it seem very inadvisable to consider the drilling of another hole on the Holland property unless further favorable information can be obtained from an intensive study of the Holland and adjacent surface after the snow melts, or from data from the Pioneer company.

Copies of the Log of the hole from 1761 to 2000 feet are enclosed. These, together with the previous Log sheets sent you form a complete Log of the hole. Prints of the Graphic Log are also enclosed.

Yours very truly,

*Chas. C. Starr*

Property File

092 JNE008

July 2, 1947.

Mr. R. Crowe-Swords, President,  
Santiago Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Re: HOLLAND MINE

Dear Sir:-

Pursuant to your instructions I have spent three days on, and near, the Holland property at Pioneer, B. C., mostly on the Holland, Ruby Fr., and Emerald Fr. claims, and on the adjoining Great Fox, Titanic, and Clifton claims of the Pioneer Gold Mines Ltd., and the Pioneer Extension No. 1 of the Pacific (Eastern) Gold Mines Ltd.

The particular object of the work was to determine the advisability of doing work to explore for the continuation into the Holland property of veins known on adjoining claims, and the probable presence or absence of the Pioneer greenstone, the host rock of the Pioneer mine, at a reasonable depth.

In connection with the following notes refer to the map "Southeastern Portion of Holland Claims and Adjoining Property", herewith. map.

There is nothing to add to my description of the vein in the east tunnel on the Holland claim, given in my June 1945 report, as follows:- "The vein is quartz from a few inches to over two feet in width. It strikes N 65° to 75° W, and dips 60° to 70° northeast. Occasionally the quartz contains grains of pyrite and in places is said to give low assays in gold. In the west face the vein has pinched to a stringer; to the east it is cut off by a fault and has not been picked up beyond".

The vein reported on the Great Fox claim (Pioneer) is situated on the northwestern third of the claim, where there are twelve open cuts and a short tunnel. All the cuts start in overburden which has sloughed badly.

Cuts Nos. 1 and 2 (numbered from east to west) are filled with surface material and no evidence of vein can be seen, nor is there any quartz on the dumps; it is probable that they did not reach the vein.

In No. 3 cut the vein shows on both sides for about a foot in height above the sloughed in soil. It consists of quartz, in part weakly iron stained, strikes S 65° E, and dips 65° northeast. The wall rocks are highly sheared



and altered, so much so that their classification is uncertain, except that they undoubtedly belong to the Fergusson formation.

Sample #1 was taken from the vein on both sides of the cut over the full width of 7 inches, and assays 0.29 Oz. gold, Trace silver.

Cut #4 is "L" shaped and apparently followed the vein for about twelve feet. Any quartz in place has been covered, but a strongly sheared footwall is in evidence. There is some quartz on the dump.

Cut #5 shows the footwall shearing, and there are a few small pieces of quartz on the dump. #6 shows the shear and there is a trace of quartz on the dump.

Cut #7 shows the top of a 3 inch width of quartz projecting above the sloughed-in surface soil.

Cut #8 has completely closed in, but there is a little quartz on the dump.

Cut #9 does not show any quartz, and the footwall shear appears weak; there is a suggestion of a cross-fault here.

Cuts Nos. 10, 11, and 13 show no vein or footwall shear. Cut #12, and tunnel, 20 and 60 feet long respectively, do not show any trace of the vein, nor any shearing that can be correlated with the footwall shear.

Sample No. 2 is a composite of pieces of quartz from the dumps of the various cuts and assays 0.01 Oz. gold, 0.64 Oz. silver. The altitude of the vein in the cuts is 4325 feet, by aneroid.

The dip of the vein may be somewhat steeper than the observed 65°, since it is entirely possible that the soft, altered rock in which it occurs at the surface, has crept down the hill somewhat.

The observed dip and strike of this vein, projected 1000 feet southeast, would pass about 150 feet south of the southwest corner post of the Ruby Fr. and theoretically the vein would be at about 400 feet vertically below the corner. However, from what I have seen of the veins in the Fergusson formation, I doubt if the vein will extend more than a fraction of the distance necessary to reach the Ruby claim before pinching out, or faulting, or both.

Information obtained from the Pacific (Eastern) Gold Mines Ltd. indicates that the thrust fault indicated on Dr. Cairnes geological map, and cut by the Holland #1 diamond drill hole at 900 feet, is quite accurately located on the Pacific Eastern's Pioneer Extension No. 1 claim, and that there is a considerable width of Fergusson formation in the footwall (southwest) of the fault, beyond which further to the southwest there is a belt of Pioneer greenstone extending to the Cadwallader fault, which closely follows Cadwallader Creek. The dips on both sides of the Pioneer greenstone are diverging rather steeply, so that

it is widening in depth, but probably not rapidly enough to be cut by any drill hole in the southeastern end of the Holland property at less than 3000 feet vertical depth.

The Pacific Eastern company have done several thousand feet of work in the Pioneer greenstone at elevation 3550 (more or less) and have found a number of small veins which were generally nearly barren. Quite recently they have found a fair sized vein showing free gold (assay not known to me) lying along the Pioneer greenstone-Fergusson contact. The strike is northwesterly and the dip steeply to the northeast.

The best location for a second vertical diamond drill hole on the Holland property appears to be close to the southwest corner of the Ruby Fr., where it would explore for the Great Fox vein and would also have as good a chance as any other location of cutting the Pioneer formation at depth. However neither of these chances seem to be very favorable. At this location, and most others also, it would be necessary to start in boulder-filled soil of unknown, but probably not great, depth. It would be fairly though not entirely safe from rolling rocks and snowslides, and would require a quarter of a mile of new road.

Drilling water would have to be obtained either from Nomad Creek a few feet above the south line of the Ruby Fr. and piped across rough country and slide-rock for upwards of 1600 feet to obtain a gravity flow. Or, alternatively, by pumping from Cadwallader Creek a distance of about 1800 feet, and a lift of about 550 feet, but over comparatively smooth, though steep, ground.

To conclude - I believe there is only a slim possibility of finding any ore deposit of commercial value in the Fergusson formation, and there is no reason to believe that the underlying ore-bearing formations can be cut at less than 3000 feet vertically below any part of the Holland ground except possibly in the vicinity of No. 1 hole. Therefore, also taking into consideration the expensive drilling encountered in the No. 1 hole, and in the Pacific Eastern's drilling, I see no sufficient justification for any further drilling on the Holland property, nor do I know of any other work which is to be recommended.

The foregoing does not imply that I think the Holland valueless, for I believe there is a very good chance that the Bralorne, or Pioneer, or both, may eventually follow their productive veins to the Holland boundary at some further depth.

Yours very truly,

C.C.S.

Property File

092JNE008

July 21, 1947.

Golden Slipper Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Re: HOLLAND MINE

Dear Sirs:-

According to your instructions, I have been to the Holland property at Pioneer, B. C. and have spotted the No. 2 diamond drill hole on the Ruby claim at 70 feet east of the southwest corner of the Ruby Fr. claim at about 4375 feet elevation. There are no rock outcrops in the vicinity, but it seems probable that the overburden is shallow.

Mr. Mike Roache of the Keyes Construction Co. and I agreed that the best way to get the drill up was straight up the hill from the Pacific Eastern road. Also, that the Holland cabin had better be used for the camp, and a trail brushed out to the drill hole. This trail would be about a half mile long and nearly level. Water will be taken from the spring which was used for the No. 1 hole. On account of the low head Roache thinks they will have to use a pump as a booster to get a sufficient flow.

Mr. Wallace informed me this morning that they have a wire from you not to start drilling until your return; they are, however, going ahead with the preliminary work.

Yours truly,



NOTE - to R. C\*S.

Between 815 and 997 feet there is an error in the driller's log and markings in the core boxes of (1009.5 by log as against 997 feet true)  $12\frac{1}{2}$  feet. In my Log of the core I have altered the measurements proportionately to check with the true depth, but the core boxes still have the driller's markings.

Core boxes are piled in a rough frame under a big tree and will be covered.

*C.C.S.*

December 9, 1947.

Mr. R. Crowe-Swords,  
Golden Slipper Mines Ltd.  
423 Hamilton St.  
Vancouver, B. C.

Re: HOLLAND MINE

Dear Sir:-

Diamond Drill Hole #2 was finished on the 5th of the month at a depth of 997 feet; the Log of the core is enclosed herewith.

Except for 75 feet of overburden the hole is in Fergusson formation throughout, consisting of altered greenstone lavas, argillites and quartzites the same as encountered in #1 hole. At 126 feet it cut 0.4 feet of white quartz

which may be the extension of the Great Fox vein; it assayed only a trace of gold. Around 710 feet soft altered argillite shows a faint copper stain. From 978 feet to the bottom of the hole there are a few fine seams of quartz which contain a little pyrite; assays show a maximum of 0.005 Oz. gold per ton.

Drilling was difficult throughout, except in the greenstone, and the hole required cementing a number of times. Except immediately after cementing, there was no return of water and sludge.

From 75 to 173 feet drilling was with a "B" bit and core recovery was 95.2%; from 173 to 587 feet an "A" bit was used with a recovery of 65.7%; from 587 to 997 feet an "E" bit was used with a recovery of 50.1% of the core. The variation in core recovery with the different bits is believed to be in part due to the size of the bit but mostly to the condition of the rock passed through.

The hole was stopped at 997 feet, rather than 1,000 feet, on account of the poor core recovery (20% in the last 8 feet) and the difficult drilling when only three feet advance was made in the last shift.

Yours truly,

C.C.S.

Stain Copy

DIAMOND DRILL LOG

HOLLAND MINE, PIONEER, B. C.

HOLE No. 2. - Vertical.

LOCATION: 70 feet East of the southwest corner of the Ruby Fr. Claim. Elevation 4375 (approx.)

Formation: Fergusson Series of Palaeozoic sediments, chiefly thin bedded quartzites and argillites, with some inter-bedded altered greenstone.

Ft. Depth	Ft.	Remarks
From to	Core	
0 75	0	Overburden
75 126	49.0	Greenstone, somewhat decomposed.
126 126.4	.4	Quartz, white with vugs & trace pyrite. At 60° with core.
126.4 137	8.8	Greenstone
137 163	25.1	Greenstone & trace argillite inclusions.
163 179	15.6	Argillite & spots of quartzite. Bedding 45 to 60 degrees.
179 230	49.0	Argillite & thin bands of quartzite.
230 267	23.3	Argil. & several thin beds greenstone.
267 309	36.5	Greenstone & inclusion (?) Argil. at 294 to 296 ft.
309 330	11.1	Greenstone & weak Argil. inclusions. 2" Q-Calc. stringer @ 310'. 7 ft. core lost 321-330 ft.
330 352	13.1	Argillaceous quartzite mostly. Core broken.
352 397	34.6	Quartzite & argillaceous quartzite & chert. Q-Calc. strg. at 358 ft at 60° to core.
397 416	15.5	Argillac.-Qtzt. and quartzite. 1/2" Calcite at 400 & 401 ft. at 70° & 45° to core.
416 420	0	
420 446	9.5	Quartzite & trace of chert & argillite. Bedding 10° to 70°
446 494	25.5	Quartzite, broken & distorted. Trace of breccia.
494 538	26.8	Quartzite & argil. partings. Irreg. spots quartz. Broken.
538 587	21.5	Quartzite & seams & bands of Argil. & weak chert.
587 639	28.8	Quartzite with Argil. seams at 40° to 70°
639 704	44.5	Quartzite grading to Argil. at end.
704 720	7.9	Argillite, in part decomposed. Copper stains in bedding at 709 to 711 ft. Core broken 709 to 714 ft.
720 730	7.7	Argillite & quartzite in thin bands.
730 739	5.2	Argillaceous quartzite.
739 761	12.1	Argillite, fairly massive. Lost core 775 to 778 & 780' to 788'
761 799	22.3	Argillite, " " " " 812 to 815 feet.
799 815	10.2	Argillite with bands of quartzite & chert.
815 825	8.7	Argillite & thin bands of quartzite. Bedding 45 to 70 degree.
825 835	2.2	Argillite, badly broken.
835 851	4.5	Argillite & quartzite in bands. Broken.
851 854	1.2	Argillite and graphitic slips.
854 882	3.8	Quartzite with bands & seams of argill. with graphitic slips. Core short pieces & fragments.
882 891	3.5	Argillite (?) Core sand & fine gravel only.
891 911	8.7	Quartzite & argil. seams grading to argillite at end. Core broken.

C.S.



HOLLAND, D. D. HOLE No. 2, Continued.

Ft. Depth		Ft.	Remarks
From	To	Core	
911	936	14.8	Argillaceous-quartzite. Graphitic slips @ 928 to 932 ft.
936	948	3.7	" " & weak Qtzt. Graphitic slips @ 936-939 ft. Core badly broken.
948	958	0.4	Argillaceous-quartzite. Fragments of core only.
958	960	1.7	Argillite, uniform.
960	964	1.0	Quartzite, dark & trace of graphite.
964	978	5.9	Argillite with bands & spots of quartzite. Weak graphitic slips near end about parallel to core. Trace of irreg. quartz seams @ 978' with small grains pyrite.
978	980	1.4	Quartzite. A few 1/8" quartz seams & Tr. pyrite.
980	989	4.1	Argillite & weak Qtzt. A few 1/16" Quartz seams & Tr. pyrite
989	992	0.8	Argillite " " " Fewer quartz seams. 1/2" mud @ top.
992	994 1/2	0.05	Fragments of quartzite, quartz seams & bare trace pyrite. 1/2" mud @ 992 ft.
994 1/2	997	0.7	Quartzite. Irregular thin seams of quartz & weak tr. pyrite

END OF HOLE 997. feet.

Core Recovery (75 to 997 ft.) 61.9%.

Core Samples:

Sample Range	Description	Gr. Gold
126 to 126.4	Quartz & Tr. pyrite	Trace
992 to 994.5	Quartzite, quartz seams, Tr. pyrite	0.005
994.5 to 996.8	Ditto	Trace

Sludge Samples

Sample Range	Description	Sample Range	Description
895 to 900	Trace Gold	940 to 945	Trace Gold
900	" "	945	950
905	" "	950	955
			0.005 oz. gold.

*Chas. C. Starr*  
Dec. 5, 1947

Property File  
092JNE008

TELEPHONES: MARINE 4621  
PACIFIC 8049

ROCK EXCAVATING  
DIAMOND DRILLING  
CLAY DRILLING  
CEMENT GUN WORK

# KEYES CONSTRUCTION

General Contractors and Engineers

C. C. KEYES, MANAGER

TUNNEL DRIVING  
SHAFT SINKING  
DYNAMITING  
CEMENT BREAKING

WAREHOUSE AND OFFICE:  
250-260 INDUSTRIAL AVENUE  
VANCOUVER, B.C.

July 5th, 1946.

Golden Slipper Mines Ltd.,  
423 Hamilton Street,  
Vancouver, B. C.

Gentlemen: Re: Diamond Drilling on Holland Group  
Mineral Claims, Bridge River, B.C.

This will confirm our quotation to you whereby we agree to do the following Diamond Drilling on the above property at the undermentioned prices:

500 feet N Casing	@ \$3.00 per ft.	\$1,500.00
1000 feet B Casing	@ 2.00 per ft.	2,000.00
1500 feet A Casing	@ 1.50 per ft.	2,250.00
2000 feet E Casing	@ 1.00 per ft.	<u>2,000.00</u>
		7,750.00
500 feet NX Reaming	@ 4.00 per ft.	2,000.00
0 - 1000 feet BX Reaming	@ 3.00 per ft.	3,000.00
1000 - 2000 feet AX Reaming	@ 5.75 - 8.00 ft	<u>6,725.00</u>
		\$11,725.00

*1000 ft paid for previously?*

*drilling??*

It is agreed that your Company will advance \$5,000.00 at once and \$2,750.00 before the 5th of August, 1946 to cover our out of pocket expenses.

Payments under this agreement are to be made on a footage basis. The payments to be received by us on or before the fifth day of each month when all drilling done in the previous month shall be paid for in full.

Core boxes will be supplied at cost by Keyes Construction to your Company.

TELEPHONES: MARINE 4621  
PACIFIC 8049

ROCK EXCAVATING  
DIAMOND DRILLING  
CLAY DRILLING  
CEMENT GUN WORK

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VANCOUVER, B.C.

July 5th, 1946.

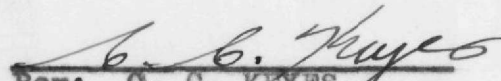
Page 2

On Completion of the job all salvage casing and equipment will become the property of Keyes Construction.

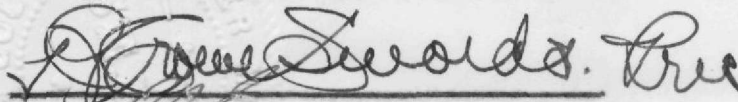
Men and equipment are ready to start on the work at your property at once.

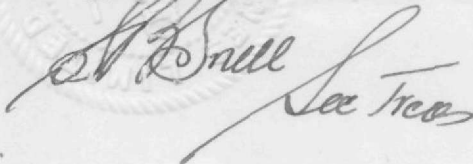
We guarantee to do all work in a workmanship manner and will endeavour at all times to comply with all your requests regarding the above Diamond Drilling.

Yours very truly,  
KEYES CONSTRUCTION.

  
Per: C. C. KEYES.

Accepted and approved on behalf  
of the Golden Slipper Mines Ltd.

  
James Shields, Treas.

  
J. H. Snell  
Secy Treas



HOLLAND

PIONEER

D.D. HOLE N° 1

BOUNDARY

Depth 933 ft. June 26, 1946

Thrust Fault

Proposed extension to 2000 ft. depth.

Projected Position of Bralorne Vein  
Projected Position of a Pioneer Vein

PIONEER SHAFT

Pioneer Main Vein

SW

NE

DIAGRAMMATIC CROSS SECTION  
THROUGH  
HOLLAND N° 1 DRILL HOLE

Bralorne Diorite and Pioneer Greenstone

Fergusson Sediments and Loras

Colored green on other prints

