

INTERIM REPORT ON THE

BAYONNE MINE

W.G..Hainsworth, Cons. Geologist.

June 20th. 1964

800547

Bayonne
Hainsworth

June 20/64

INTERIM REPORT ON
BAYONNE MINES LTD.,
NELSON MINING DIVISION,
BRITISH COLUMBIA

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In Pocket:

Location Map of Property
Longitudinal Section through Vein Systems
Vertical Projections of Ore Reserve Blocks
Surface Contour Map Re: 9th & 10th Levels

June 20, 1964
Rossland, B.C.

W.G. Hainsworth, B.Sc.
Consulting Geologist

June 26, 1964

President & Directors,
Bayonne Mines Ltd.,
404-409 Granville Street,
Vancouver 2, British Columbia

Gentlemen:

It is the intent of this report to summarize in detail the work that has proceeded to date at Bayonne Mine. In addition future intentions and economic considerations of the operation are outlined as per present schedule.

The writer has been in daily contact with operations at the property which has been proceeding in accordance with a previously-agreed schedule.

LOCATION

The Bayonne Mine is within the Nelson Mining Division, some 15 miles west of Creston.

The property consists of seventeen Crown granted mineral claims and twenty-four located claims all situated on the south-westerly slope of John Bull Mountain. Bayonne Creek, a tributary of the West Fork of Summit Creek, flows through the claims along the base of the mountain.

The Crown granted claims are identified as follows:

Bayonne	Lot #5083	Illinois	Lot #6888
Oxford	5084	Skookum	9360
Maryland	5085	Echo	13014
Delaware	5960	Echo Fraction	13015
Columbus	5961	Ontario	13016
Ohio	5962	Portland	13017
Kentucky	5966	St. Elco Fraction	13018
New Jersey	5967	Idaho	13019
Virginia	6887		

The twenty-four located claims which encompass the Crown grants are known as Bayonne #1-12 inclusive and #14-26 inclusive (#7334-7545 & 7368-7380 respectively). These claims are held in trust for the company by the writer. They are also held in good stead through sufficient assessment work to June 1966.

ACCESS

Previous operators had built a road extending from Tye Siding on the west side of Kootenay Lake up Cultus and Canyon Creeks to the mine site. This 27 mile route served the mine through trucks in summer and caterpillar tractors in winter. Tye Siding is a flag stop on the Kettle Valley Branch of the

Canadian Pacific Railway.

With the 1963 completion of the Salmo-Creston Highway, present operators constructed an access road from the mine along Bayonne Creek to connect with this Provincial highway. This route brings the smelter at Trail within a 65 mile trucking distance.

TOPOGRAPHY

The area forms part of the Selkirk Mountain range with the claim being located on John Bull Mountain. Elevations vary from 5200 feet at Bayonne Creek to 7800 feet at the #1 portal. The depth of oxidation prevalent in the mine workings leads to the assumption that the thickness of the ice field covering the area could not have been too great.

RESOURCES

Water: Bayonne Creek flows through the claim carrying a quantity of water greater than 40 gallons per minute at its lowest period. This is sufficient water to carry a 50 ton flotation mill.

Sufficient water can be trapped in catch basins from nearby small mountain stream to supply camp needs.

Timber: The lower claims are well covered with spruce and cedar. The timber becomes stunted and sparse and disappears almost entirely around the 5800' elevation.

There is sufficient timber of all sizes to sustain a mining operation.

HISTORY OF THE PROPERTY

The Bayonne Area came into prominence in 1901 with initial interest being centered around two claim blocks--the Bayonne and Echo groups. Active development work on the Bayonne group resulted in their being brought to Crown-grant in 1904, while the Echo group lagged behind only acquiring their patents in 1935.

Early development work on the Bayonne consisted of numerous surface trenches and the driving of 3 short adits on what is now known as the 1st, 6th and 8th levels.

During 1915 to 1929 the area saw very little activity. From 1929 until 1935 at which date the Bayonne and Echo groups were consolidated, minor prospecting was carried on. However during this period the original trail was extended through to the Bayonne and enlarged to wagon road size.

When the 17 Crown-grants were acquired by Bayonne Consolidated Mines Limited in 1935 an immediate mining and milling

program was set in motion. A 60 ton cyanide mill was constructed and an ambitious underground development program was instituted. Until 1939 production was steady but was halted at this date in favour of an extensive exploration and development program. Production resumed following the disclosure of sufficient ore reserves until August 1942. The shortage of man power and materials due to the war forced a closing down of the operation. In August 1945 the company attempted to put the mine back into operation. The high cost of maintaining labour combined with the post-war material shortage forced a closure in July of 1946. Lessers operated the property sporadically between 1947 and 1951 until the present organization took control.

In 1942 a dividend of \$25,000 was paid by the company.

Production figures taken from the B.C. Department of Mines Annual Reports show:

<u>Period</u>	<u>Operators</u>	<u>Tonnage</u>	<u>Au (oz)</u>	<u>Ag (oz)</u>	<u>Pb (lb)</u>	<u>Zn (lb)</u>
1938-42	Bayonne Consolidated	64,695	30,398	79,715	-----	-----
1945-46	" "	2,196	263	707	-----	-----
1947-51	Lessers	673	454	3,198	59,334	31,627
	Production=	67,564	31,115	83,620	59,334	31,627
	Grade=		0.46oz/t	1.24oz/t	4.4%	2.3%

ECONOMICAL FACTORS

To the early operators it was a recognizable fact that the geographical location of Bayonne Mine would create high costs, and to offset this, a high-grade product must be produced. Despite the high transportation costs and moderate-grade ore production the operation thrived for some six years. Working to their advantage were the low wage rates and cheap material costs (as apposed to today). Sufficient returns were obtained to pay a total dividend of \$25,000.

The present operators have several important factors in their favour. The costly, time-consuming 27 mile haul from Bayonne to Tye has been eliminated. The construction of a 6 mile access road puts the mine within 65 miles of Trail via the new Salmo-Creston highway.

The old operators produced as a final product, bullion, which form ignores the lead-zinc minerals. The present management intends to float a concentrate carrying the precious metals plus the lead content. Additional dollar values should be derived from this lead concentrate. It is expected a higher extraction will result from this float process as apposed to the cyanide procedure. Initial installation costs will not be much in excess of the cyanide costs.

An examination of many of the old stopes shows mining widths to be well beyond the limits of the veins. This dilution

of grade reduces the income of any mine. Present intentions are to mine to a maximum width of 24 inches other than where the vein exceeds this width. This close stops control will ensure a good grade mill feed. Stope dilution was likely one of the major contributing factors to the 0.47 gold grade of the previous operators.

Early operators handled the oxidized and sulphide ore as one operation. It is a hard fact that each type calls for a different metallurgical approach. Present plans call for the storage and milling of the differing ores as an individual process. Here again a better mill recovery is anticipated.

ORDER OF WORK PROCEDURE

The restoration of the dormant property back to a producer is following a definite laid-out pattern. Four phases have been involved to date.

Phase I - Transportation

Previous operation had required that the shipping of material from any point to Bayonne involved rail haulage by C.P.R. to Tye at which point it was unloaded and trucked 27 miles to the mine site. To offset this economic disadvantage a road was laid out from the mine down Bayonne valley to the Salmo-Creston highway, a distance of 6 miles.

As this road made use of a logging road of the Wynn-del-Box Lumber Company, this company's permission was obtained to incorporate their road with ours. In return Bayonne was obliged to observe certain standard provisions.

The building of this road was a long and costly procedure due to the nature of the ground.

Bayonne Mine is at an elevation of 6200 feet and the access point to the highway has an elevation of 4300 feet. Average grade is 8% but isolated sections carry steeper grades over short distances.

To accommodate a year-round operation the road was carried on a 20 foot width. This allows sideroom for snow drifts and ensures safe passage for large-size vehicles.

Phase II - Housing

Of the original mine buildings, only one was in any shape for human habitation. The old two-storey office building, although slightly mutilated internally by visiting hunters, fishermen and sight-seers still presented a serviceable roof and strong walls. The upper storey had been rodent infested. This building served as a temporary early sleeping quarters.

The old bunk house which contained 12 rooms of 10' x 8' demensions on two levels was in a poor state of repair. Wind effects had removed almost $\frac{1}{2}$ of the roof; vandalism

and thieving had despoiled the interior; snow and rain had rotted and broken many beams.

This building has been completely renovated. The roof has been replaced; each room has been remodelled; heating and electricity have been installed and quite recently the building has been completely painted inside and out. The bunkhouse will accommodate 24 men with all facilities available.

To alleviate the accommodation situation in the early stages, management brought in a 6 man sleeping trailer and a cook-house trailer. These are temporary units which will be returned when a staff-house and cook-house are built.

Eventual plans call for the erection of a small dry, garage, staff-house, cook-house, first-aid room, office and a power house.

Phase III - Mill Site

Damage to the old mill and crusher house was so severe that no consideration was given to renovation. Instead plans were drawn up for a new structure with the result that the old buildings were removed.

The old ore bins were in good repair but company policy had decided on two ore flotation recoveries so the differing ores had to be segregated. To this end additional ore bins had to be built. A second coarse ore bin was built adjoining the present one at the crusher house. Completed also is the additional fine ore bin in the mill. Each of these bins has a capacity of 300 tons.

From an economical standpoint and as a snow-safety factor it was decided to purchase a prefabricated type of building for the mill. A Butler-type structure measuring 120' x 40' x 22' is presently in Vancouver awaiting shipment to the property.

Milling equipment of the flotation type is being investigated with an eventual eye to purchase.

Phase IV - Underground

The location of the mill at the 6200' elevation meant the 8th level, also at this elevation, would require special attention.

All the adit portals had slumped and filled in due to their timber failing. Both #8 portals--the main and the "A" vein--have been retimbered.

To carry the heavy loads with a minimum of hazards, the track gauge on this level is being changed from 18" to 24". In many places the width of the adit requires slashing to take the wider track.

The #8A adit has a blockage some 700' from the portal. To reach this point track must be laid and ditching done. Some 300' of this work has been done to date.

Another important phase of the underground program has been the drift and stope sampling undertaken by the writer. Although more of a check variety than a full scale sampling program the results of the sampling have materially added to the ore reserves of the mine. Several stopes previously thought of non-economic grade have been shown to be of either mine grade or well above. Other stopes have been definitely ruled out as of low grade. Further sampling is contemplated.

The last phase prior to production and not reached at the time of writing is stope preparation. It will consist of retrimbering of all old stopes intended for production and the preparation of chutes or draw point in new stopes. This is an extensive procedure.

WATER SUPPLY

Camp - Several streams run year-round down the hillside close to the camp area. Past operators built a small catch basin of 600 gallons capacity on one of these streams. This is fed through a 4" stave pipe by gravity feed to the camp. With an elevation difference of 300 feet, sufficient head is generated to supply good camp pressure.

As this system fulfilled all camp requirements in the past it is not proposed to alter this system in any major way. Scheduled is an addition to the dam to increase its capacity and a tank reservoir to be placed within the line.

A fire hydrant system was previously locked into this line. It has been temporarily disconnected due to line damage.

Mill - The flotation process is estimated to require three tons of water for every ton of rock processed. With a 50 ton daily production this means some 36,000 gallons of water will be required. Bayonne Creek, measured at a low peak in September 1963 following an unusually dry season, ran 35 gallons per minute or better than 50,000 gallons daily. This flow allows expansion of the mill to 70 tons whenever required. It is the company's intention to put a control outlet dam on the small lake supplying Bayonne Creek.

MILLING OPERATIONS

The previous milling procedure was a cyanide recovery process installed primarily because of the transportation problem. The recovered precious metals were smelted and poured as a bullion. This set-up ignored lead and zinc recovery.

With the opening of the Salmo-Creston highway and the connecting of the Mine to this road, the situation, mill-wise, has changed. A bulk concentrate containing the gold-silver-lead value can be shipped to the Trail smelter most readily. The initial costs of installing a flotation concentrator as against a cyanide plant is slightly higher but the benefits derived from the additional lead values and gold recovery will greatly offset the difference over the life of the mine.

It is expected that when operating at full capacity a concentrate of 700 to 1000 lbs. will be produced daily. Bulk of the concentrate will be from the lead ores. It is not intended to recover the zinc minerals due to their low grade.

Layout of the milling plant is planned so that an increase in tonnage can be easily brought about.

One of Bayonne's milling problems has been the two types of ore mined each having their associated metallurgical problem. The present operators intend to mill each ore as a separate process. Individual ore bins to contain the oxidized and sulphide ores have been built. Drawing from one or the other bin is a simple mechanical operation.

Two separate bulk samples are to be taken from an oxidized and sulphide section of the mine for shipment to a metallurgical laboratory.

It is recognized that in the oxidized ore the gold is more coarse and relatively unassociated. To recover this coarse material early in the process a jig will be installed in the grinding circuit. In the primary, or sulphide zone, the values are closely associated with pyrite in the form of native gold and minor tellurides. These tellurides have been identified by Dr. H. V. Warren of U. S. C. as hessite and petzite.

The association of the auriferous values with pyrite emphasizes the importance of the crushing and grinding circuit. A cone crusher is to be installed following the jaw crusher with the grinding geared to yield a product \pm 70% 200 mesh. It is expected these measures will free the greater bulk of the gold content for flotation recovery. The elimination of the pyrite poses a metallurgical problem of minor consequences.

With the metallurgical tests not run off at the time of this report it would be hazardous to predict any figures pertaining to the milling end of the operation. The pyrite content of the concentrate is unknown at this stage as will be the grade of the lead contained.

GEOLOGY

The property covers ground near the southwestern corner of a large granodiorite intrusive known as the Bayonne Batholith. Of generally a medium to moderately fine grained appearance, the composition tends to vary locally.

The Bayonne vein system is a zone of fracturing trending from north 60° east to north 80° east and generally dipping steeply to the south. On the 8th level the Main Vein has shown steep north dips locally. Alterations in the form of tale-carbonates are normally present in close association with the fracturing, but it does not appear to be confined to any particular wall of the zone. The normal width of the altered section is from 3-4 feet. The fracture zone produces a series of splits which may rejoin the original vein or strike off into the wall. The intensity of the structure is quite variable as is its quartz and mineral content. Horseshoes of granodiorite, sometimes well mineralized, may impart widths of up to 10 feet to the zone.

The gold values have two significant locations. The oxidized zone which extends to a depth of 400-500 feet presents a limonitic, vuggy quartz ore. Values in this zone average, according to reports, in the 1 to 2 ounce classification. The writer picked up a sample from #3 ore dump of this type of ore which assayed 62 ounces of gold to the ton. Rice in Memoir 228, Geological Survey of Canada, refers to a 50' transitional zone lying between this oxidized zone and the lower primary zone. The grade reputedly drops off to 0.5 to 1.0 ounce in this sector. Entering the sulphide zone he states that the values again drop to 0.4 ounces. This statement is debatable due to results of fair grade ore occurring in the "A" vein on the lower levels. The association of the gold values with pyrite takes on a more significant aspect in the sulphide zone. The disposition of the base metal contents is quite variable, and of greater importance in this lower zone. Dr. H. V. Warren of the University of British Columbia has identified the auriferous values as being obtained from native gold and minor tellurides. The tellurides are present in the forms of hessite and petzite which forms suggest they are primary in character and not the results of a breakdown of the telluride, calaverite. Dr. Warren's observation of the gold values being of a primary nature offsets Rice's thinking that the gold is an enrichment from the oxidized zone. Rice's reference to the possibility of zoning in the primary ore must go unchallenged due to insufficient evidence at this time.

The sulphide minerals, pyrite, galens and sphalerite, appear to have been introduced into fractures in the vein-filling. These fractures lying generally with the vein walls give the ore a pronounced banded appearance.

ECONOMICS OF PRESENT ORE RESERVES

Previous operators prior to closing their operation had compiled ore reserve sections for a later use. Eighteen

ore blocks totalling 11,000 tons with a grade of 0.78 ounces gold per ton across an average width of 20 inches were assembled. The writer through systematic sampling had added a further four ore blocks(#19-22), increasing the reserve tonnage to 12,450 for an average grade of 0.79 ounces gold per ton over a 17½ inch width.

Assuming a practical mining width of 24 inches these figures as per schedule "A" break down to a tonnage figure of 17,200 grading 0.58 ounces gold per ton. This is a 38% increase in tonnage while lowering the grade by 27%.

Calculating on the accepted formula of a stope recovery of 80%, a grade dilution of 10% and a mill recovery of 35%, this assumes a gross return of roughly \$215,000. To this figure can be added \$20,000 for the silver values and \$15,000 for the lead content, giving an overall revenue of \$250,000. Balanced against this are the following estimated production figures:

Mining Costs	=	\$7.50	per ton
Milling Costs	=	<u>\$1.50</u>	per ton
Total	=	\$9.00	per ton

On this basis expenditures approximate \$150,000 leaving a gross profit of \$100,000 on the known ore reserves.

The base metal content is based solely on the writers check sampling. It is the average of roughly some 200 samples. The average lead content is 0.95% or 19 lbs. to the ton. The zinc content is extremely low averaging about 0.10% or 2 lbs. to the ton. The lead average includes sampling from areas of weak gold values which will not be mined. It is likely the mill feed will average better than 1.0% lead.

The check sampling shows a silver to gold ratio that is roughly 2½ silver to one part gold. This is also borne out by early production figures of the bullion produced where the ratio is very similar.

Assuming the same production figures as used earlier for stope and mill recovery and calculating silver at \$1.30 an ounce and lead at 5¢ a pound, the respective dollar values are roughly \$20,000 and \$15,000. These figures have been added to the total revenue.

It is realized that the base metal grades are in conflict with the lesser's recovery. The writer can only assume at this point that his check sampling confined as it was to special areas was (1) in areas of localized low-grade content and for (2) well below the average mine grade. As mentioned previously some of the sampling grades as incorporated into the overall average were from areas that will bear no relation to final production figures.

The presently outlined ore reserves as drawn up by the Bayonne Consolidated Staff in 1946 and including the additions to the reserves as derived by the writer is included with this report.

POSSIBILITIES OF FURTHER ORE SECTIONS

The prospect of adding to the present ore tonnage picture by bringing in new stopes is considered promising.

The ready accessibility of ore sections close to portals likely influenced the mining procedure of past operators. As a consequence the more interior sections of the mine present a worthy exploration target.

The strong persistence of the #2 ore body through the first, second and third levels indicates possibilities for the down dip continuation of the structure. This area requires early exploration. Past operators had put 3 holes under this section but the results are unfortunately unknown. The writer suggests sinking on the vein in 3 or 4 locations for a short depth. Should results be encouraging the 4 East drift can be pushed ahead. Although an apparent 550' of dead drifting is outlined, some 3 samples cut across the face of the 4 East drift ran an encouraging 0.40 oz/t gold, 1.58 oz/t silver and 0.76% lead across a 16" width.

The south vein from which this 4 East drift would advance has received little attention. A present ore block (#15) is outlined for a depth of 25 feet below this level. The chances are good that the ore will extend to twice this depth possible to the next level. Here again sinking on the structure is recommended.

On the third level the 3S-#2 stope justifies further examination. Expansion up the vein is quite likely. This level has not been examined by the writer due to portal caving.

Below the 4th level no attempts have been made to follow this South Vein to depth other than for two short drill holes on the 6th level. These could possibly have stopped short of their target.

Further exploration prospects on the Main Vein include the area contained between 6-H-248 and 6-I-256 raises. Previous drilling explored the ground below this section with apparently disappointing results. The 6K stope must also be reappraised.

The "A" Vein has seen the more intensive stoping operations in the past. Of exploratory interest is the area immediately west of the 7A1 stope. As the stopes on this section in the upper levels had broken through to surface, the writer sees no reason why this stope should not carry values also out to surface.

Sampling in the sut stope(6A.J) adjacent to 6A2 stope carry values that might well indicate this stope could be carried further to the west.

The high grade blocks 3, 4 and 5 on the eighth level cover a strike distance of 260'. These blocks could well extend below their indicated 25' depth. A similar result is indicated for blocks 6 and 7.

In addition to the above prospective ore areas there are two known drill hole intersections that make immediate drifting feasible. On the 3rd level, hole 3-10, 26' in advance of 33#2 drift out 4" of 4.0 oz/t gold. There is no record of assays in hold 3-9, 40' further advanced from 3-10.

On the 9th level, hole 8-4 intersected 19" of 1.24 oz/t gold. Hole 8-6, 25' beyond, cut the vein at a lower horizon for a 10" return of 0.48 oz/t gold. These two holes strongly suggest the downward extension to this level of ore block #9.

Two parallel vein structures on the 4th level just east of the vein crosscut returned assays of 6.63 oz/t gold across 12" on one and 2.30 oz/t gold across 24" on the other. These values warrant immediate drifting on the veins.

It would appear that when production gets underway, sufficient additional ore will be encountered to raise the present tonnage to near the 25,000 ton mark.

ADDITIONAL LEVELS

Eight levels at Bayonne Mine are driven by adit methods, the ninth by an internal shaft operation. It is an understood fact that shaft operations are much more costly than adit operations and to this end a surface contour survey was undertaken to see if the 9th level could be adit-driven.

Results of the survey have shown that the 9th level can be driven from surface as can a 10th level. These levels will approach from the "A" vein side. To intersect the vein on the 9th level will require 350 feet of crosscutting. 600 feet will be necessary on the 10th level before encountering the vein structure.

Subsequent deeper levels will provide a problem only in that their portals will be located on a steep sidehill.

FIELD EXPLORATION

The Bayonne group of claims offers excellent opportunities for further surface work. There are indications of additional vein structures either related or independant of the developed system.

A related structure is the North Vein on which very little work has been done. A shallow shaft, presently caved in, some 200 feet north of #3 level portal yielded 1.02 ounces gold

per ton and 6.55 ounces silver per ton from a grab sample taken from the ore dump. The only attempt to locate this vein in the underground workings was a single short hole put out to the north from the 5th level. It is recommended that further underground holes be put out from the 4th level. In addition bulldozer outs should be made across the strike of the vein followed by shallow trenching directed toward the westward continuation down the hillside.

To the south of the "A" vein parallel structures were located by prospectors in the early history of the area. Two short tunnels were driven on separate veins on the Echo claims. One of these tunnels has been located. An assay from a grab sample taken from the dump ran 0.08 ounces gold per ton, 1.35 ounces silver per ton and 1.17% lead. Further sampling of this tunnel is warranted.

SUMMARY AND RECOMMENDATIONS

The presently indicated ore reserves are sufficient to run a 50 ton mill for a year. It is expected however that mining operations also will extend this period from 3-6 months. If a vigorous exploration program employing a diamond drill is instituted the writer feels confident that the reserves can be more than doubled. The addition of new lower levels in ore grade material will also extend the life of the mine.

Mill tonnage can eventually be upped from an initial 50 tons to 70 tons with the present water supply. Beyond this tonnage adjustments must be made in the water supply.

A close stope control is necessary. The average vein width is 17½ inches. A practical mining width is 24 inches. Serious dilution can occur beyond this point thus lowering the mine income.

When operations begin again at the mine the writer offers the following recommendations. To survive as an active producer, Bayonne Mines must carry a strong exploration program. It is recommended that the areas outlined in the "Possibilities of Further Ore Sections" be thoroughly tested by drifting, sinking or diamond drilling. In addition work be commenced immediately on driving the 9th level from surface. This will eventually link up with the drift on the 9th level driven from the shaft. This adit will (1) eliminate expensive shaft haulage and (2) be into good ore in a shorter time period.

In addition emphasis should be placed on following up the vein structure exposed by the small shaft in the vicinity of #3 adit portal. If the shaft reveals good values to its lower limits than diamond drilling and crosscutting from the third and fourth levels should be undertaken.

The Echo vein structures could possibly provide the mill with additional feed and should be investigated by surface

drilling and underground exploration. The possibility of subsidiary structure in this area is not remote.

Respectfully submitted,

June 20, 1964
Rossland, B.C.

J.G. Hainsworth, B.Sc.,
Consulting Geologist

SCHEDULE 'A'

<u>Block #</u>	<u>Tonnage</u>	<u>Width</u>	<u>Grade</u>	<u>24" Mining Width Tonnage</u>	<u>Width Grade</u>
(Over 24")					
1	600	28"	0.42	600	0.42
7	400	38"	1.10	400	1.10
9	900	24"	1.13	900	1.13
(From 18"-22")					
2	700	21"	0.52	800	0.46
6	1000	22"	0.54	1100	0.49
10	900	21"	0.47	1000	0.41
11	500	18"	0.59	700	0.44
13	1300	22"	0.93	1400	0.85
14	900	18"	0.52	1200	0.39
16	700	18"	0.75	900	0.56
17	400	18"	1.11	500	0.83
(Under 18")					
3	600	12"	0.75	1200	0.37
4	100	10"	1.35	300	0.56
5	300	9"	1.13	800	0.42
8	300	12"	1.04	600	0.52
12	500	14"	1.56	800	0.91
15	600	16"	0.48	900	0.32
18	300	14"	0.80	500	0.47
19	450	12"	0.67	900	0.34
20	300	15"	0.72	500	0.45
21	250	11"	0.45	500	0.21
22	450	12"	1.71 (cut)	900	0.86

12,450 @ 0.79oz/t gold

17,200 @ 0.58 oz/t gold

SCHEDULE 'B'

EQUIPMENT REQUIREMENTS

<u>MILL</u>	<u>Price</u>	<u>Used</u>
	<u>New</u>	
1 - set 4-cell Denver #8, size 16" x 16", sub A Type		
1 - set 10-cell Denver #12, size 22" x 22", sub A Type		
1 - Filter, 2 disc 4' diameter type		
1 - Filter, filtrate pump		
1 - Filter, vacuum pump		
1 - Jig, selective, size 16" x 24"		
1 - Cone crusher, 20"		
1 - Thickner, 12' x 5'		
1 - Conditioner, 8' x 5'		
5 - 2" pumps		
1 - Sump Pump		
1 set - Reagent Feeder; Dry		
1 set - Reagent Feeder; Wet		
300 feet - Conveyor Belting		
Rollers, idlers etc for conveyors		
20 to 25 - Motors, from 1 to 15 HP		
Building Material for offices		
Miscellaneous Equipment		

POWER HOUSE

- 1 - Generator Unit - 250 KVA
- 1 - Standby Generator - 15 KVA

GARAGE & SHOP

Mechanics Tools
Miscellaneous

ASSAY LAB

Equipment

UNDERGROUND

- 1 - Battery Locomotive - 24" gauge
- 1 - Extra Battery
- 1 - Battery Charger
- 10 - Ore cars, 24" gauge, 1½ ton capacity
- 10 Miners Lamps
- 5 - Holman Drill Machines
- Drill steel and bits
- 2 - Tugger Hoists
- Water and Air piping
- 800 feet - Track - 30# steel
- Miscellaneous

DRY

- 3 - Showers
- 2 - Toilets
- 3 - Wash basins

Schedule 'B' continued

New

Used

15 - Clothes hangers and baskets
2 - Oil Stoves
1 - Hot Water Tank
Miscellaneous

FIRST AID ROOM

1 - Bed
Complete First Aid Equipment
Miscellaneous

COOK HOUSE

1 - Large size electric stove
Dishes, cutlery for 35 men
Cooking Utensils
1 - Toilet
1 - Wash Basin
2 - Beds
2 - Oil Stoves
1 - Hot water tank
Miscellaneous

STAFF HOUSE

6 - Beds
1 - Shower
2 - Wash Basins
1 - Toilet
3 - Oil stoves
1 - Hot water tank
Miscellaneous

BUNK HOUSE

2 - Showers
2 - Toilets
4 - Wash Basins
1 - TV
Miscellaneous

GENERAL CAMP EQUIPMENT

300 - sheets
90 - Blankets
45 - Pillows

NOTE : The following buildings to be erected on contract:

Garage & Shop - 60' x 35' x 15'
Power House - 55' x 35' x 15'
Dry and First Aid Room - 35' x 25' x 15'
Staff House - 40' x 25' x 15'

CERTIFICATE

I, J.G. Hainsworth, of West Vancouver, B.C. do hereby certify:

- (1) That I am a Consulting Geologist residing at 4664 Clovelly Walk, West Vancouver, B.C.
- (2) That I am a graduate of the University of Western Ontario, London, Ontario, Bachelor of Science Degree.
- (3) That I have practiced my profession for 14 years.
- (4) That the information contained in this report is based on personal knowledge of the property obtained through constant contact with all phases of the operation and examination of maps and data pertaining to the area in general.

J.G. Hainsworth, B.Sc.