

Property Files

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Corban

REPORT ON THE  
CARIBBO YANKEE BELLE MINE  
KEITHLEY CREEK, B. C.

By  
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Yorkshire Building  
Vancouver, B. C.  
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## THE CARIBOO YANKEE BELLE MINE.

**INTRODUCTION:** Six and a half days were spent on the property during this examination. Work was in progress driving the main crosscut ahead at the beginning of the examination, but was changed to drifting on the so-called "galena vein" later.

**LOCATION & ACCESSIBILITY:** The property is situated on the southwest slope of Yanks Peak six miles, airline, or about ten miles by trail north of Keithley Creek post-office, in the southern part of the Cariboo district, proper.

Keithley Creek is reached by a good road connecting with the Cariboo highway, and with the Pacific Great Eastern Railway at Williams Lake. The trail to the mine is good and could be made into a wagon road at comparatively small expense.

**PROPERTY:** There are five claims and several fractions in the group, consisting of the Yanks Peak Nos 1, 2, and 3 and East Yanks Peak Nos. 1 and 2, and intervening fractions.

The titles are presumed to be in good order but were not checked for this examination.

**GENERAL CONDITIONS:** The climate offers no serious obstacle to year around work. While winters are long and cold the snow-fall is reported to be not excessive and the trail to the mine can be kept open without much difficulty if it is in frequent use.

Timber, mostly balsam and jackpine, suitable for mine use is plentiful.

There is a fair amount of water for domestic use above the elevation of the camp, but a sufficient supply for milling purposes would have to be obtained from some distance below the present workings.

The elevation at the mine varies between 5350 and 5800 feet (aneroid). The topography shows considerable relief but in general the slopes are of moderate pitch and comparatively smooth. Most of the surface is covered with a varying amount of overburden and rock or vein outcrops are rather rare.

**EQUIPMENT:** There is a Sullivan 110 foot portable gasoline driven compressor, installed at the portal of the main crosscut tunnel; an Ingersoll-Rand jackhammer and the usual accessories, cars, tools, etc. The camp is sufficient for a crew of eight or ten men.

**DEVELOPMENT:** The maps herewith indicate the location and extent of the principal development work. These maps are compiled from maps by Hawkins & Horie and by W. R. C. Beadon, except that the northern half of the main crosscut tunnel was surveyed with a compass by the writer. There is some discrepancy between the two surveys, and possibly some error in the compass work, but the maps are believed to be amply accurate for present purposes.

Four tunnels have been driven for the development of the Corban ore-zone, as follows:-

<u>Tunnel</u>		<u>Elevation</u>	<u>Length</u>
Top	Drift	5760	90 feet
Middle	"	5660	180 "
Lower	"	5610	150 "
Main	Crosscut	5360	1635 "
"	" branches		100 "
	Total		2155 feet.

There are in addition about a dozen open-cuts and a twelve foot shaft.

On the Talbot ore-zone, some 1500 feet to the northwest, there are numerous open cuts but no deep work.

**GEOLOGY:** See Canada Geological Survey publication "Keithley Creek Map Area, Cariboo District, B. C.", by A. H. Lang, from which part of the following data has been obtained. Also refer to maps herewith.

The claims are underlain by the Richfield formation of the Cariboo Series, of pre-Cambrian age, which consist of strongly sheared and altered impure quartzites and argillites with sericitic and graphitic schists, often containing scattered cubes of pyrite. The strike of the formation is generally from N 20° to 40° W and the dip 65° to 70° westward, there are however many local variations from this due to crumpling and faulting. The property is situated on the west limb of a regional anticline, not far from its axis.

There are a great many small faults on the claims, none of which appear to have caused any great displacement, although definite evidence on this point is lacking; these faults are both pre-mineral and post-mineral. There are three series of faults and fractures, (1) along the bedding planes of the formation, (2) in a nearly north and south direction with a southeasterly dip, and (3) in a northeasterly direction with a southeasterly dip. Many of these fractures are occupied by quartz veins.

The quartz is generally coarse grained and vitreous and there are many large crystals and vugs. With the quartz there are extremely few other minerals; in some of the veins there is a small amount of ankerite (iron-lime-magnesium carbonate), and rarely there are traces of pyrite. Oxidation has penetrated to a depth of a hundred feet or more from the surface.

**DESCRIPTION OF WORKINGS:** Corban Zone - Upper Tunnels

Open-cuts and three shallow tunnels expose four or five veins for short distances; on account of faulting it is impossible to tell just how many veins there are exposed.

These veins have a fairly uniform strike of N 60° to 70° E and dip 35° to 80° southeast. They consist of coarse grained vitreous quartz and there is considerable limonite and ironstain in the vugs and cracks; they are all of similar character, though varying in value, and vary from a few inches to four feet in width.

The Lower tunnel exposes a two and a half to three foot vein for a length of fifty feet, but it is seemingly a different vein from that exposed in the open-cuts nearby.

The Middle tunnel is mostly in country rock but exposes segments of three parallel veins from one to two feet in width between two faults about twenty feet apart. One of these veins, probably the middle one, is exposed in the bottom of the twelve foot shaft. The first of the faults follows the strike of the formation, but dips about vertical; the second fault strikes north and south and dips 70° eastward. The amount and direction of movement is not evident on either, but is believed to be small.

The Top tunnel follows a two to four foot vein, dipping 80° southeast for about fifty feet; it is twice offset for a foot or two by northerly striking faults. Near the face of the tunnel it is cut off by a third north-south fault of much flatter dip and an unknown amount of throw, the east side being probably moved farther north. This vein in places contains high grade ore, but it is not noticeably different in character from others of low grade except that it contains a little more iron.

The rocks in these tunnels consist of argillite and sericite schists, often much contorted, but having in general a normal strike but a somewhat flatter dip than the schists in the main crosscut tunnel.

#### Main Crosscut Tunnel

The average strike of this tunnel is N 10° W and it crosscuts the Corban Zone under about the center of the surface exposures, as well as other zones which are not exposed on the surface. It cuts a total of more than sixty veins of different widths and strikes, but all very similar in character.

There are slight variations in the coarseness of the quartz crystals, the amount of ankerite, the number of vugs, and the amount of gouge, or lack of it, along the walls. The description of one vein will fit all of them with the exception of the so-called "galena vein" at 15 feet north of Sta. I. The quartz in this vein, which is four or five inches wide, is somewhat finer grained than most and contains some pyrite, and rarely galena, occurring in seams both parallel to and at right angles to the walls. It also carries more gold than most of the other veins in the main crosscut. It has been followed for about eight feet to the westward, where it is twice faulted a foot or two to the right along bedding planes; at the face it pinches to a width of about two inches. It is now being followed to the eastward.

Nothing exceptional was noted about any other veins in the crosscut except that the small vein at 55 feet north of Sta. Q shows an unusual amount of ankerite and a trace of pyrite, as well as shearing along its walls; it also assays slightly more than most.

There are no very definite zones as exposed by the tunnel, but the veins are most frequent and largest between 550 and 1000 feet from the portal. These veins are not found on the surface and must apex under thick overburden.

From the 1000 foot point to the face of the tunnel veins are small and much more scattered.

The veins of the Corban zone, as known on the surface and in the shallow tunnels over a width of more than two hundred feet, project to the tunnel level at 1320 to 1580 feet from the portal (roughly from Sta. I to within fifty feet of the face).

The dips of the veins out in this length of tunnel, all of them less than six inches in width, would in turn connect with the Corban zone on the surface if projected upward on their observed dip.

The great majority of the veins in the crosscut tunnel strike between N 45° E and east; a few, not over a half dozen, strike from N 45° E to nearly north; in only one or two instances are there veins with other strikes.

At about 700 feet from the portal the tunnel encountered a body of crushed quartz and heavy ground which was difficult to hold up and the heading was abandoned. An attempt was made to go around it to the westward, but was unsuccessful; this work exposed fifteen or twenty feet of white crushed quartz which is now inaccessible. A crosscut was then started to the eastward which succeeded in crossing the bad ground. At the present time close timbering in the abandoned part of the crosscut and in about half of the length between Stas. B and D so obscures the geology that it cannot be interpreted with certainty. However, it seems probable that there is a large vein of crushed white quartz striking a little east of north and dipping east which passes through the abandoned part of the crosscut and a little north of Sta. B, where it is narrower than farther south.

There also appears to be a north-south fault of steep easterly dip which about coincides with the large quartz vein in the abandoned part of the crosscut, but diverges from it to the northward and passes through the main tunnel just north of Sta. C. There are no means of telling whether this fault has a large displacement, or its direction of throw. Several other parallel slips occur passing through the crosscut to the northward, and lend credence to this interpretation of the fault. This fault, if continued on its supposed strike, would reach the surface just east of the Top tunnel, where several small parallel faults with a small throw to the left occur.

It is probable that there is some small faulting

along some of the northeast striking veins, and it is known that there is also some faulting throwing to the right along some of the bedding planes of the schist.

#### Talbot Zone

The Talbot zone lies some 1500 feet north-northwest of the Corban zone and at about the same elevation. There are many veins scattered through a width of three hundred feet, some few of which have been opened by small open-cuts; no work except a very limited amount of open-cutting and stripping has been done on the zone.

Practically all the veins strike in the northeast quadrant, and the majority of them strike about N 65° E and dip medium steeply to the southeast. In width they vary from stringers up to about four feet; in character they are entirely similar to the veins outcropping on the Corban zone.

Little is known in regard to their gold content, further prospecting and sampling should be done on the zone.

**SAMPLES:** A few samples have been taken previously from various veins in the Corban zone and in the main crosscut, and their assays recorded. But apparently no thorough sampling has been made of either of the zones or of the main crosscut, and it would be rather an expensive matter on account of the great number of veins. It would be well to pan samples from these veins, and to have any that showed "colors" assayed.

During the present examination sixteen samples were taken and assayed, as follows:-

No.	Location	Ft. Width	Oz. Gold	Remarks
<u>Top Tunnel</u>				
373	18 ft. from face	1.5	3.33	quartz & iron stain
<u>Shaft</u>				
374	12 ft. from surface	1.3	0.24	" ankerite, tr. pyrite
<u>Main crosscut</u>				
375	671 feet from portal	1.1	0.01	" " , oxidation
376	665½ ft. " "	1.6	0.005	" " "
377	55 ft. N. of Sta. G.	0.9	0.06	Qtz., ankerite, tr. pyrite
378	34-50 ft. N of Sta. G	1.0	Trace	" "
379	80-86 ft. N of Sta. D	7.2	0.005	" with iron stains
380	53-58 ft. N of Sta. D	6.0	Trace	"
381	12 ft. N of Sta. D	4.0	0.015	" and iron stains
382	58 ft. N of Sta. A	3.1	Trace	" ankerite, tr. pyrite
383	57 ft. N of Sta. A	Specimen	Trace	" vug, pyrite on Qtz. crystals
384	47 ft. N of Sta. A	3.6	Trace	" " schist with tr. pyrite

No.	Location	Ft. Width	Oz. Gold	Remarks
<u>Main Crosscut</u>				
385	45-65 ft. N of Sta. H	20.0	0.005	Decomp. schist & Qtz. seams & coarse pyrite.
386	59 ft. N of Sta. H	4.8	0.01	ditte
387	15 ft. N of Sta. I	Specimens	0.40	Qtz. with pyrite. Galena vein
388	18 ft. N of Sta. I & 5 ft. in E. drift	0.35	0.10	Qtz., pyrite, tr. galena

These samples tend to confirm reports of spotty high grade ore near the surface of the Corban zone, but entirely fail to confirm reports of fair values in some of the veins in the main crosscut.

**REVIEW OF DATA:** As the mine stands today the objective of the crosscut tunnel has been passed without finding any commercial ore, and the important question now is what should be done to further explore the property which, as explained later, warrants further development.

The face of the crosscut tunnel is now about vertically under the most northerly known vein of the Corban zone, while the dips of the veins indicate they should have been cut from fifty to seventy five feet southerly of their surface position. The last five hundred feet of the tunnel, in part of which section the veins of the Corban zone should have been cut, show only a few small stringers, - much fewer and smaller veins than in the preceding five hundred feet, - and so far as known none of them contain any appreciable values, except the "Galena vein" on which work is now being done. The reason for this failure to cut the expected veins is not certain, but it may very probably be on account of the change in the formation, since veins in the Cariboo show a strong tendency to end when passing from one rock type to another.

The three upper tunnels are mostly in a highly sheared sericitic schist and similar strata appear in the crosscut tunnel roughly between Stas. B and H, and contain numerous fair sized veins.

From Sta. H nearly to Sta. I there is a more massive schist containing quartz seams in the bedding planes, followed beyond Sta. I by a few feet of graphitic schist grading into argillaceous-quartzite schist which extends to the face.

The strata in which the upper tunnels are situated should begin on the tunnel level at upwards of one hundred feet to the west of Sta. I and continue for some hundreds of feet. The area determined by the downward projection of the Corban vein-zone and the downward projection of the strata in which the Corban veins occur at the surface appears to be more likely to contain ore than any other, and its exploration is recommended.

The dips of the strata are westerly and considerably steeper at the crosscut level than at the surface

and besides the schist is sometimes much contorted, so that the calculated position of any given surface strata on the crosscut level may be subject to considerable error.

**RECOMMENDATIONS:** There seems no good reason to continue the main crosscut farther to the north, since there are no more veins known in that direction until the Talbot zone is reached; however, some farther exploration of the Corban zone, and other veins on the tunnel level, seems justified. I therefore recommend:-

- (1) Continue the drift east on the "Galena Vein" (15 ft. north of Sta. I) until it pinches or becomes barren.
- (2) Drift on the vein which is 55 feet north of Sta. G (sample #277) far enough to test it out for any improvement in value. Probably it would be better to drift west first.
- (3) Drift westward on the "Galena Vein" if it can be followed, if not then along the same course, until well into the sericite schist, - possibly 200 feet total - and then crosscut northward along the planes of the schisting for (say) 200 feet.
- (4) Sample and pan carefully all veins in the main crosscut. Then sample carefully for assay all veins from which any gold or any appreciable amount of concentrate was panned. Then drift on any vein found to contain reasonable values.

**CONCLUSION:** The Corban zone has been proven to contain erratic high grade ore and while individual veins can hardly be expected to extend to the crosscut level, the zone as a whole should be expected there according to the experience of other mines in the district, at least in the same kind of rock.

The results obtained by the main crosscut are thus far discouraging since no veins have been found known to contain values comparable to those found on the surface, and the Corban zone has not been found, - at least not in a recognizable form. The crosscut passes through the strike of the zone in a different type of rock from that which contains the known veins above, and I believe that it is advisable to explore the zone in the same rock which, on the crosscut level, will lie to the westward. The presence of numerous veins where the same rock beds as occur in the upper tunnels pass through the crosscut gives an additional incentive to further exploration of the zone.

It is my opinion that in spite of the unfavorable results of exploration to date, further exploration should be undertaken along the lines recommended, and that it is justified by observed conditions, and by the experience of other mines in the northern part of the district.

Respectfully submitted,

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