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PRELIMINARY

REPORT

ON

WILBY CREEK PROPERTY

MINING DIVISION

Alex'r.Smith

MINING ENGINEER

1945

OFFICE OF

Ridgeway R. Wilson

and Associates

MINING ENGINEERS

215 - 602 WEST HASTINGS ST.

VANCOUVER, B.C.

RIDGEWAY R. WILSON & ASSOCIATES
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SUMMARY:

The showings on Wilby Creek consist of eight or more lenses of alteration in the tuffs forming a bluff between two ice falls. Those lenses which could be examined are the common carbonization with a little pyrite, and are too low grade to be of economic interest. Within one of the altered areas a small lense (3' x 10') of heavy pyrrhotite mineralization carries values up to 0.80 oz in Gold and probably averages 0.30 ounces. The talus slopes and medial moraines show no indication of any large bodies of ore in the inaccessible portions of the bluffs.

Because the company has already built a trail nearly into the property it is recommended that the trail be completed in 1946 and that a prospecting party be sent into the Wilby Creek, Porter Creek and adjacent areas. If nothing of interest is discovered in 1946 the property should be dropped.

INTRODUCTION:

The writer spent three weeks with James A. Robertson in September in the area between Meziadin Lake and Wilby Creek. Of this period only two days were spent in an examination of the Wilby Creek showings, the balance of the time being taken in cruising a route for the trail now being built into the prospect and in back packing into and out from the property.

Two Premier engineers, Hugh Langille, geologist, and Malcolm Hunt, assistant, were on the property with us. Langille had made a hasty examination of the showings in the fall of 1941. Their New York office had asked for further information, hence their interest at this time. To save duplication of samples it was agreed that the

results of the sampling be available to both companies. The Premier report should be to hand within a week or two.

C.E.Gordon Brown examined the property during the 1944 season for the St. Eugene Mining Corporation. His report, photographs and maps were available. As Mr. Brown has described the country in considerable detail only a brief summary will be given herein. A Pioneer company engineer made an examination of the Wilby Creek property just previous to Brown's examination. The writer has been shown in confidence the results of his sampling and his conclusions.

LOCATION:

The property lies on the east slope of the Cambria Range about fourteen miles south of the west end of Meziadin Lake and 25 airmiles east of the town of Stewart, B.C. Wilby Creek heads in a valley glacier about 5 miles long and is an eastward projection of the great Cambria icefield down Wilby Creek Valley. This icefield is at an elevation of 6000 - 6500 feet. Three icefalls descend 2000 ft. into Wilby Creek valley and coalesce to form the Wilby Creek glacier. Projecting up between these icefalls are bluffs of rock. The Wilby Creek showings and property cover the north bluff between the north and central icefalls. The topography in the vicinity of the showings is rugged but relief decreases rapidly eastward to the broad valley of the Nass River wherein are rolling hills similar in appearance to the Interior Plateau country of B.C.

Good balsam and hemlock timber covers the rolling country east of the mountains and extends westward to within a couple of miles of the Wilby Creek glacier.

The climate is drier and more extreme in temperature than at Stewart. Summers are sunnier and warmer. Apparently snowfall is heavy and snowslides numerous in the mountains. Climate and timber both are closer to the coastal than to Interior types. Underbrush of berries and devils club is thick.

GEOLOGY:

The bedrock formations characteristic of the Portland Canal and Alice Arm districts extend east and north to the Wilby Creek - Meziadin Lake area. The bulk of the rocks in the latter area belong to the "Hazelton series" as defined by Hanson (G.S.C.Mem.175 pp.5-25). These rocks are Jurassic in age and older than the intrusives of the Coast Range batholith. The Hazelton series was formerly considered by Hanson to contain 3 formations e.g.

Nass formation - argillites, quartzites.

Bear River formation - lava flows, tuffs and associated intrusives, minor interbedded argillites.

Bitter Creek formation-argillites, quartzites, limestones etc.

He found, however, that the Bear river formation represented periods of local volcanism during the deposition of the sediments,and that the volcanic rocks present in one area might be represented in an adjoining area by sediments of the same age. Hence the volcanics appear as huge lenses surrounded by sediments.

In the Alice Arm area Hanson named three of these lenses of volcanics and associated tuffs and intrusives the " Klayduc ", "Theophilus" and " Kisault " igneous bodies. Similar rocks (Bear River formation) are abundant on the Bear River. The volcanic rocks of the Wilby Creek area are probably near the eastern margin of the northwestward extension of the "Theophilus igneous body."

Associated with the flows and pyroclastics (tuffs) of the Bear River formation are small intrusives. They are dykes, sills and volcanic necks. Two types are of special interest. First the felspar porphyry characteristic of the area. This rock is of economic importance as it is a good host rock for ore and has played an important part in the localization of ore shoots in the Premier Mine and in certain properties in the Alice Arm area. In these cases the porphyry occurs in stock like bodies. Another intrusive associated with the volcanics is the augite porphyrite. On McGrath mountain zinc deposits are associated with this rock.

The Wilby Creek deposits lie twenty miles to the east of the eastern margin of the Coast Range batholith. On the Bear River - Meziadin Lake trail,10 miles to the north of Wilby Creek,a stock of granodiorite outcrops on Strohn Creek. This is a satellite of the batholith.

The general trend of the rocks in the area is about N 20° - 30° W, that is, about parallel to the face of the range. As shown on Hanson's map (G.S.C.Mem.175 Map 307A) the area between Meziadin Lake and the Nelson, Porter, and Wilby Glaciers, is underlain by sediments. These are mainly argillites and greywacke. The general dip is easterly at low angles. Going westward folding increases until at the glaciers the underlying volcanics appear along the cores of anticlines. In the vicinity of the Wilby Creek showings the volcanics extend nearly to the top of the mountain. This is the eastern margin of the belt of volcanics, probably 10 miles or so wide.

The accessible portions of the bluff at the Wilby Creek showing is of volcanic rock. The rocks are dacite tuffs. They are

bedded rocks. The lower portion of the bluffs is of coarse blockey tuffs wherein bedding is indistinct and fragments range up to 5 or 6 inches in diameter. Above the cut K. (see Brown's map 1" = 300') distinct beds of finer grained tuffs appear trending N 20 W and dipping at about 40° to the west i.e. into the bluffs. The unaltered portions of the tuff are greenish grey in color and weather greenish. In many cases the fragmental nature can be distinguished only on a weathered surface. This tuff is the rock that Mr. Brown has classed as a diorite breccia. The term may be misleading as the rock is composed of fragments of volcanic origin laid down in beds under air and/or water. It soes not appear to the writer to be an igneous breccia developed during the intrusion of a magma.

Augite porphrite float coming from the upper portion of the bluffs indicates what is probably a sill of that rock. A green sill-like body can be seen on the upper part of the face. There is the possibility that a stock of augite porphyrite may occur there.

To the north across the icefall argillites outcrop. Cutting the argillites are several dykes of felspar porphyry. One of these is at least 150' thick. The others are only a few feet thick. The porphyry is similar in appearance to the Premier porphyry.

DESCRIPTION OF
THE SHOWINGS:

When viewed from a distance about 25 - 30% of the bluff face weathers rusty. These rusty areas vary in color from yellowish brown to rusty brick red and chocolate brown. Cut K, where most of the sampling has been done, is on the most red of all the oxidized areas. Two areas outcropping just above the margin of the north ice-

fall are of a deep chocolate brown color - these were inaccessible. The balance of the dozen or so lenses show yellowish brown coloration. The outlines of the various rusty areas are not clearly defined. There does not appear to be any strong structure controlling the distribution of the areas. Such rusty patches are common in the tuffs in the Portland Canal, Alice Arm and Taku areas. These rocks seem to have frequently been altered to a light grey carbonatized or felsitized rock containing a small amount of pyrite. The altered zones form the rusty areas. Often the alteration is irregular in outline and distribution.

Only about one-fifth of the total surface of the bluff was examined by the writer, this being at the lower portion of the south end of the bluff.

The brick red rusty lense was examined in detail. Cut K angles across the lense. The cut seems to follow a bedding joint in the tuffs. In the central portion of the cut and lense there is a three foot width of massive pyrrhotite mineralization (355s - 0.27 oz.) This seems to be a lense having a length of less than 10 feet. It may lie at the intersection of a nearly vertical E - W joint with the bedding joint. This central pyrrhotite lense has an aureole of heavy pyritic mineralization about 20' wide and 30 feet long (354 - 6.0' - 0.04 oz and 356 - 8.5' - 0.04 oz). This pyritic zone in turn is enclosed in the lenticular area of altered tuffs containing only about 1% pyrite (351 - 5.0' - Tr. and 352 - 10.0' - 0.005 oz).

Judging from the various samplings one would expect the gold, the inner pyrrhotite lense to average possibly one-third oz. pyritic aureole $2.00 - $3.00 and the leaner alteration about 50¢

per ton. There is a likelihood of surface enrichment in and adjacent to the oxidized outcrop of the heavy sulphides. Premier company engineers channel sampled the cut K across this lense. Their results should be available shortly.

Two other lenses of alteration to the south were examined. They consist almost entirely of lean altered tuffs (weathering yellowish brown) with a light mineralization of pyrite (358 - Tr. and 359 - 0.005 oz). On the joint planes of an area of blocky tuffs in the larger lense are ¼" - 1" veinlets of fair mineralization (30% pyrite and 8% sphalerite, 360S - picked - 0.005 oz). Such material however represents only a small fraction of 1% of the total volume of the altered zone.

Those medial moraines on Wilby Creek glacier that carry the talus from the sides of the bluff should give a good indication of the character of the rock in the inaccessible portions of the bluff. They show about 65% carbonatized rusty weathering tuffs, 20% normal tuffs 8% augite porphyrite and 7% argillites. Only a few small fragments of what could be classed as possible ore are to be found on these moraines. These fragments are fairly heavily mineralized with pyrite sphalerite and galena (357S - picked - o.14 oz) and seem to come from narrow veins occupying faults in the augite porphyrite.

The chocolate brown zones mentioned above are inaccessible. They seem to offer the last remaining possibilities of the occurrence on the bluffs of ore bodies of fair size.

TUNNELSITE, MILLSITE AND POWERSITE:

The falls on Porter Creek, Wilby Creek and the Nelson river would each provide several hundred horsepower, but only during the

summer months. The nearest powersite of any size would be near the outlet of Meziadin Lake on the Meziadin River where about 8000 H.P. could be developed for year-round use. This is about 20 miles from the property.

The tunnelsite and millsite indicated by Brown would both be subject to heavy snowslides in winter. The same is true of tramline towers on the north side of the glacier. To obtain a good millsite it would be necessary to go down Wilby Creek a couple of miles below the glacier. This would be 6 or 7 miles from the showing. Perhaps the best tunnelsite, were such ever to be needed, would be in Porter Creek valley.

ACCESS:

Jim Robertson and crew of 3 - 8 men have been engaged during the field season constructing a pack horse trail into the property. They have cleaned out underbrush and rebuilt the bridges on the old pack trail starting from the end of the road at American Lake a distance of 26 miles. This trail goes up Bear River to Bear River Pass and down Strohn Creek to the head of Meziadin Lake. The glacier in the pass has receded greatly since the writer first saw it in 1929. At its present rate of recession it should be out of the Pass in twenty years or so. It is still necessary to climb to 800 feet above the ice level to get through the pass. However a tunnel 150 ft. long around a bluff is probably all the rock work that would be required to get a route over the glacier at about the level of the ice.

A raft driven by an outboard motor is used to freight supplies down Meziadin Lake a distance of 13 miles.

From the foot of the lake a pack trail has been constructed

heading southerly for about 6 miles. This trail is being continued westerly for another 4 or 5 miles to the crossing on the Nelson River. It was necessary to cross the Nelson River at the old log crossing above the canyon.

Meziadin Lake is at about 900 feet elevation. The highest point on the trail into the Nelson River is about 2100 feet.

From the crossing of Nelson River a route has been blazed across to Wilby Creek. This portion is about 6 miles in length. It goes through a pass at elevation 2300 feet. This pass lies between Porter and Wilby Creek Valleys and has been named Four o'clock Pass. In it is a lake, Robertson Lake, 3000-4000 feet in length that may be suitable for " bush " planes.

The route then follows up Wilby Creek gravel flats for 3 miles to the glacier. The showings are 4 - 5 miles up the glacier. It is doubtful if horses could be taken further than the first 2 - 3 miles.

CONCLUSIONS AND RECOMMENDATIONS:

The following are the writer's conclusions. They may be modified by results of assays from the Premier company not yet to hand.

The Wilby Creek property is ground in an area difficult of access. The showings that could be examined do not indicate a large tonnage operation, but possibilities of smaller deposits of commercial ore has not been entirely eliminated. Commonly such large rusty-weathering altered zones are in themselves too low grade to be of interest, but ore deposits have been found associated with them. The presence of felspar porphyry dykes and augite porphyrite near the

altered zones on Wilby Creek indicates the area merits prospecting.

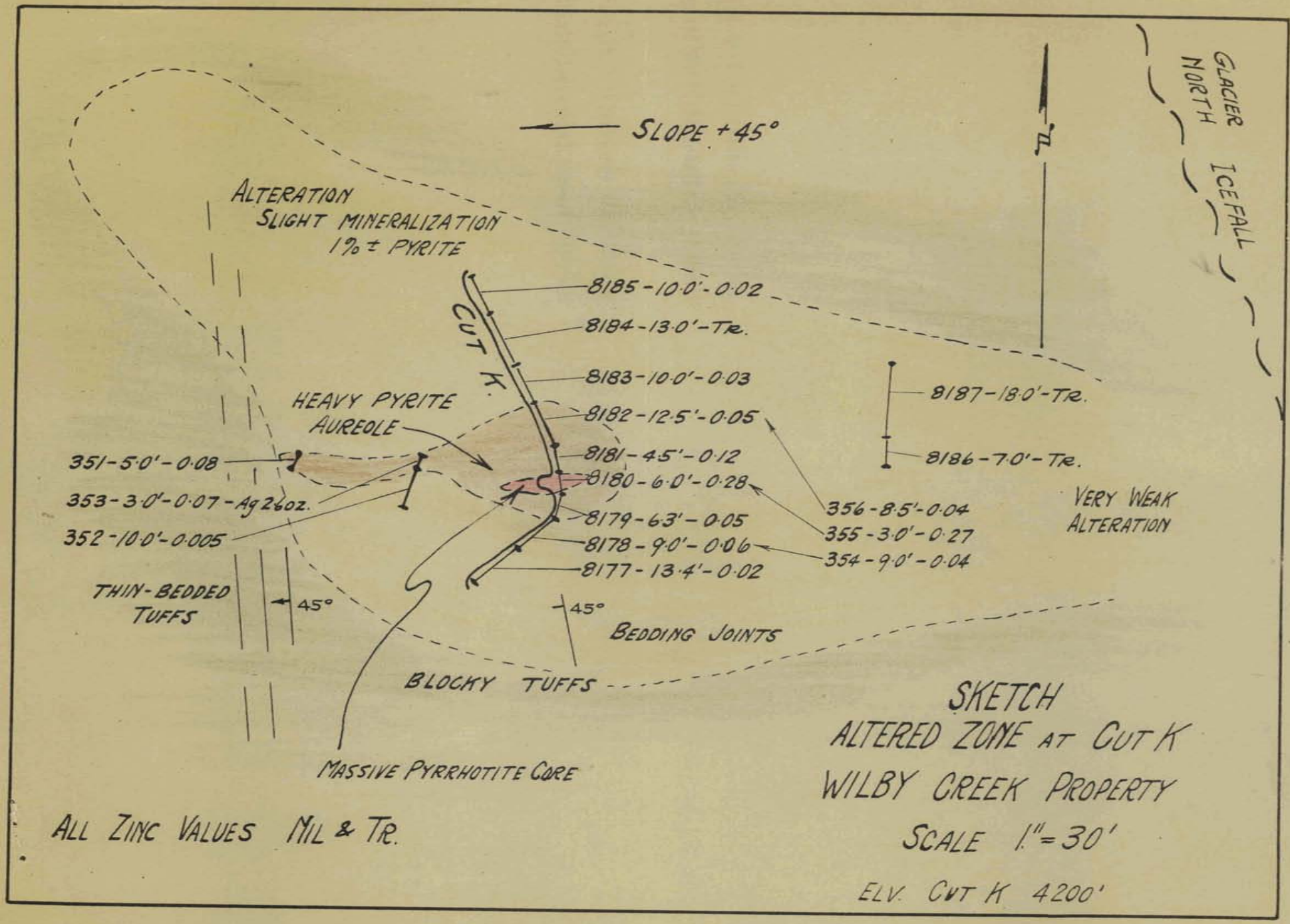
Completion of the trail into Wilby Creek in the early part of the summer of 1946 at an estimated cost of $3000 would enable a party to prospect the Wilby Creek and Porter Creek showings. In addition the trail would give access to the upper part of the Nelson River valley and to valleys further south along the face of the Cambria Range. As the company has gone to considerable expense to date in establishing a route nearly into the property the area should be prospected and any showings thoroughly sampled before the project is abandoned.

Unless such prospecting in 1946 discovered something of interest the $5000 payment due September 1946 should not be made.

The Premier and Pioneer company engineers who have been on the property are in general agreement with the writer's opinions as given herein.

Oct.13,1945.

Allen C. Smith.
Geologist.


SLOPE +45°
N
GLACIER
NORTH
ICE FALL
ALTERATION
SLIGHT MINERALIZATION
1% ± PYRITE
CUT K.
8185 - 10.0' - 0.02
8184 - 13.0' - Tr.
8183 - 10.0' - 0.03
8182 - 12.5' - 0.05
8181 - 4.5' - 0.12
8180 - 6.0' - 0.28
8179 - 6.3' - 0.05
8178 - 9.0' - 0.06
8177 - 13.4' - 0.02
8187 - 18.0' - Tr.
8186 - 7.0' - Tr.
HEAVY PYRITE
AUREOLE
351 - 5.0' - 0.08
353 - 3.0' - 0.07 - Ag 2.6oz.
352 - 10.0' - 0.005
356 - 8.5' - 0.04
355 - 3.0' - 0.27
354 - 9.0' - 0.04
VERY WEAK
ALTERATION
THIN-BEDDED
TUFFS
45°
45°
BEDDING JOINTS
BLOCKY TUFFS
MASSIVE PYRRHOTITE CORE
ALL ZINC VALUES NIL & TR.
SKETCH
ALTERED ZONE AT CUT K
WILBY CREEK PROPERTY
SCALE 1" = 30'
ELV. CUT K 4200'