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REPORT

on

THE MARJORY CLAIM GROUP

IN THE PEMBERTON AREA

LILLOOET MINING DIVISION, B.C.

for

ALWIN MINING COMPANY LTD.

by

G.D. DELANE, B.Sc.

Vancouver, B.C. January 24th, 1969.

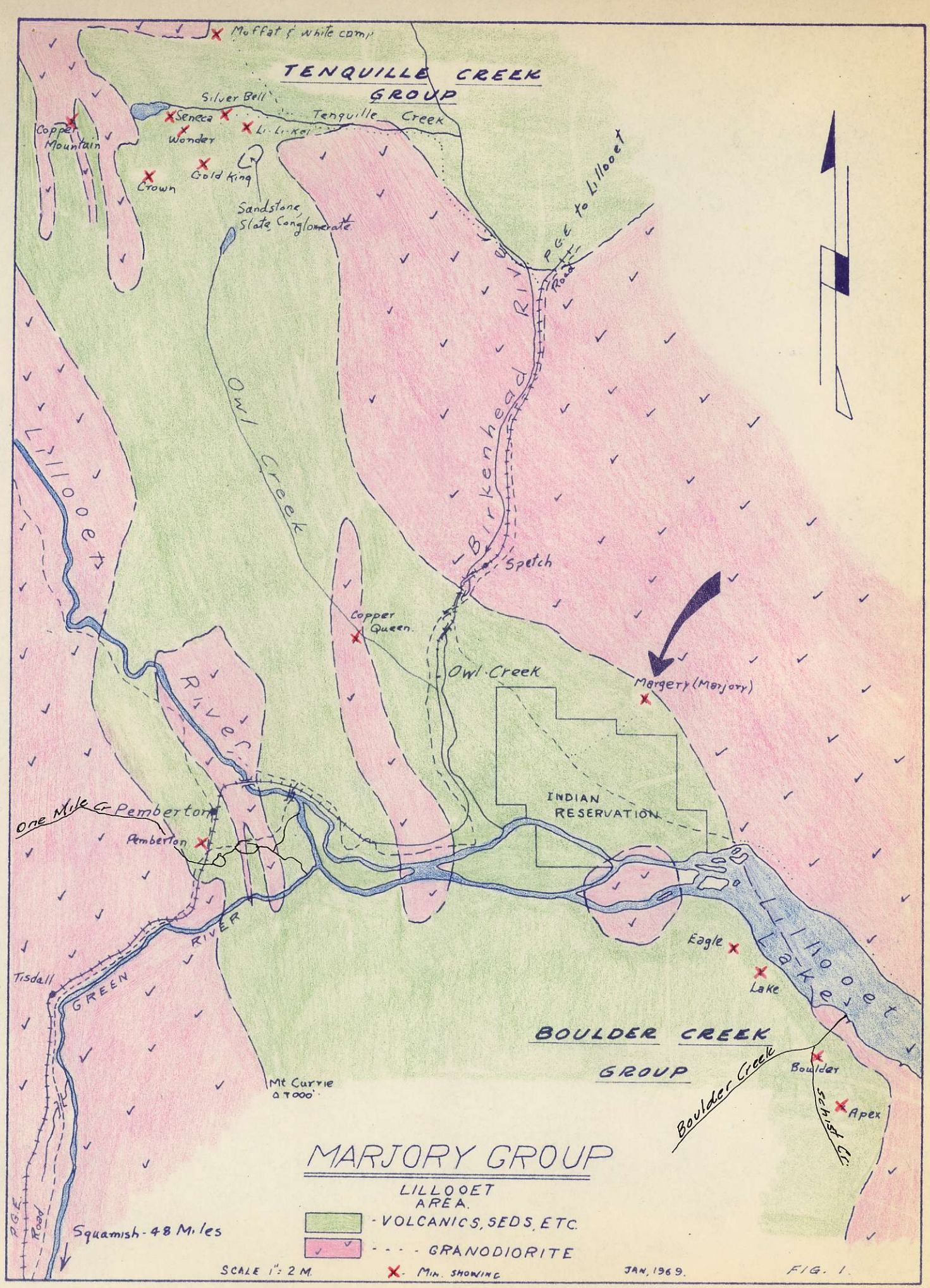
Moffat & White comp.
TENQUILLE CREEK GROUP
Silver Bell
Seneca
Tenquille Creek
Copper Mountain
Wonder
Li-Li-Kel
Gold King
Crown
Sandstone, Slate, Conglomerate
P.G.E. to Lillooet
Road
Birkenhead River
Owl Creek
Lillooet
Spetch
Copper Queen
Owl Creek
Margery (Marjory)
River
INDIAN RESERVATION
One Mile to Pemberton
Pemberton
RIVER
GREEN
Tisdall
Eagle
Lake
Lillooet Lake
BOULDER CREEK GROUP
Boulder
Boulder Creek
schist Gr.
Apex
Mt Currie
7000'
MARJORY GROUP
LILLOOET AREA.
- VOLCANICS, SEDS, ETC.
- - - - GRANODIORITE
P.G.E. Road
Squamish - 48 Miles
SCALE 1" : 2 M.
- MIN. SHOWING
JAN, 1969.
FIG. 1.

TABLE OF CONTENTS

A REPORT ON
THE MARJORY CLAIM GROUP
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SUMMARY AND CONCLUSIONS

The Marjory (or Margery) claim group consists of four claims which are situated about three miles northeast of the junction of the Birkenhead and Lillooet Rivers near the northern end of Lillooet Lake in the Pemberton area of British Columbia.

The area is underlain by granitic rocks which have intruded Upper Triassic volcanic and sedimentary rocks. Most of the mineral deposits in the area appear to be genetically related to neighbouring batholithic intrusives.

The mineralization on the Marjory Group occurs mainly as disseminations through a sheared skarn zone in limestone as well as on fracture planes. There is an abundance of intrusive rocks and considerable shearing and alteration in the vicinity. The minerals produced are chiefly pyrite, magnetite, and minor chalcopyrite and scheelite.

Four miles southeast of the area under discussion is the Boulder Group. Mineralization is reported to measure 3½ miles along strike by 600 feet wide in a similar geological setting to the Marjory group. It also lies in mixed volcanics and sediments near a granodiorite contact with hematite, magnetite, and pyrrhotite and low values in copper, silver, and gold.

The Tenquille Creek mineral showings lie 12 miles northwest of the Marjory Group in a complex contact zone. Although containing

high silver values, the mineralization is generally erratic and discontinuous due to the complexities of the faulting in the locality.

The mineralization found on all the groups in the region are of the limestone-skarn replacement type. Copper, lead, zinc, silver, gold, and scheelite mineralization have been reported but generally of low values, erratic, and of very limited dimensions.

LOCATION AND ACCESS

The Marjory claim group is situated in the Pemberton area of British Columbia in the Lillooet Mining Division. The property lies about three miles northeast of the junction of the Birkenhead and Lillooet Rivers or about three and a half miles east of the Owl Creek station on the Pacific Great Eastern Railway. The property may be reached by helicopter from Vancouver in about 90 minutes or by a truck-road from Owl Creek station.

The Lillooet River valley is the most prominent topographic feature in the district and reaches a maximum width of about two miles near Pemberton. The elevation of the valley is about 700 feet above sea level and the mountains on either side of it rise abruptly to heights of 7,000 feet or more.

PROPERTY AND TITLE

The Marjory Group consists of four contiguous claims, Marjory No. 1 to 4 inclusive, which are oriented in a north-south, east-west direction. These claims are bounded on the southwest corner by I.R. No. 6 which is part of the Mount Currie Indian Reservation.

Claim records indicate that the above claims were located by A. Starks of #42 - 1601 Comox Street, Vancouver, B.C., on September 18th, 1967, and are apparently in good standing until October 4th, 1969.

HISTORY

The area was first made accessible in the 1850's by the construction of the trail from Port Douglas near the north end of Harrison Lake to Lillooet during the early days of the Cariboo gold rush.

The construction of the Pacific Great Eastern Railway from Squamish to Lillooet from 1913 to 1915 provided a stimulus to prospecting activity in the Pemberton and Birkenhead River areas which led to some staking in the vicinity of the Owl, Tenquille, and Boulder Creek area. Prior to this, around 1895, only a little mining activity was recorded, mainly in the Pool Creek and One Mile Creek areas, and somewhat later, around 1910, prospecting was reported in the mountains west of Pemberton.

There is no record of production from any of the several properties in the general area.

GENERAL GEOLOGY

In the Pemberton area, the geological formations consist mainly of highly deformed volcanic and sedimentary rocks which have been intruded by broad belts of batholithic rocks, all of Upper Jurassic or Cretaceous age. It is believed that two periods of intrusion are represented by the batholithic rocks, one preceding and one following the deposition of the Cretaceous sediments.

The Upper Triassic rocks form a broad belt which extends northwesterly across the central part of the Pemberton area. These volcanic and sedimentary rocks consist mainly of andesitic flows, fragmentals, such as tuffs and breccias, conglomerates, slates, and limestones. Near the contacts of the batholithic intrusives, these older rocks have been considerably metamorphosed, particularly the limestone beds which were susceptible to replacement by mineralizing solutions.

The Cretaceous sediments strike about N15°W with gentle dips to the east. They occur in the area south of Tenquille Creek which is a tributary of the upper Birkenhead River. These rocks consist mainly of conglomerates, sandstones, shales and slates and tend to be less deformed and altered than the underlying Triassic rocks.

The principal areas of batholithic rocks form two belts crossing the Birkenhead and Green Rivers in a northwesterly direction and are separated by a broad band of Upper Triassic rocks. The easterly belt of intrusive rocks is about five miles wide at Spetch and trends southeasterly from here towards Lillooet Lake. The rocks are chiefly

massive, moderately coarse-grained granodiorite or quartz diorite. Some rocks to the south are of a hornblende-biotite composition with a prominent gneissic or foliated structure. The westerly belt of batholithic intrusive follows the eastern margin of the Lillooet River valley and is about 10 miles wide. The rocks of the belt are predominantly hornblende granodiorite, quartz diorite, and diorite with prominent foliation near its contacts with older rocks.

Between the two main intrusive belts are a number of dykes and plugs of intrusive rocks which have strongly metamorphosed the older rocks. They are related to the mineral deposits on Owl and Tenquille Creeks.

MINERAL DEPOSITS

Mining activity in the Pemberton area was largely confined to the Boulder Creek properties near the southwestern shore of Lillooet Lake, the Marjory Group near Pemberton portage, the Copper Queen Group on Owl Creek, and the properties near the head of Tenquille Creek.

The mineralization in all localities appears to be related to intrusives. Typically, the mineralization is the high temperature replacement of limestone by magnetite, hematite, pyrite, pyrrhotite, sphalerite, chalcopyrite, galena, and arsenopyrite, and minor gold and silver.

In addition to the limestone replacement deposits, there are some deposits in which the rocks have been replaced by minerals

along shear zones or other zones of weakness. Characteristic examples of this type of deposit are the Pemberton mine on One Mile Creek, the Gold King and Crown claims south of Tenquille Creek, Moffat and White's properties on the north side of Tenquille Creek and some of the properties in the Boulder Creek area.

There are also some vein deposits which may be close to or far from the supposed parent intrusive. The minerals (pyrite, arsenopyrite, galena, and sphalerite) are believed to have been formed under lower temperature conditions than the replacement deposits. These veins have well defined walls and occur in zones of shearing in rocks which have undergone little or no replacement. The deposits on the Li-Li-kel property at the head of Tenquille Creek are examples of this type.

(1) THE MARJORY GROUP

On the Marjory claims, the mineralization occurs in lenses of limestone and other sediments which have been intruded by diorite and porphyritic dykes. The resultant metamorphism has converted much of the limestone to a garnetite (skarn) rock into which were introduced pyrite, magnetite, sphalerite, arsenopyrite, and chalcopyrite.

The two main showings occur a few hundred yards apart in Marjory #2 claim. The east showing follows a shear zone which strikes about N45°W. The main mineralization occurs where this shear zone crosses a bed of limestone where an adit (now caved) was driven along the strike. The minerals (sphalerite, pyrite, arsenopyrite, and minor chalcopyrite) occur as disseminations in the skarn rock and along fracture planes.

Stripping on the west showing exposed a heavily mineralized (pyrite, magnetite, chalcopyrite) lens about 25 feet wide in the altered limey rocks near the footwall of a diorite dyke. Some mineralization was also observed on either side of the dyke for about 100 feet from the main mineral zone. Some free gold and platinum was reported from here but no sampling was ever done to authenticate this.

Samples recently taken from the property show massive pyrite and pyrrhotite, scheelite specks in a 1" quartz-pyrite vein, bornite blebs in a quartz vein, and pyrite specks in greenstone with minor malachite staining. Scheelite mineralization is reported to be "abundant" near the base of a large cliff (See figure 2).

(a) Sampling from Marjory Claims

The assays represent the results of samplings from the Marjory group and are tabulated as follows: (NEXT PAGE)

Sample Location	Au Oz./ton	Ag Oz./ton	Cu %	Zn %	Pb %	Sampled by
?	0.02	0.52	1.75	Tr.	Tr.	Anaconda Co.
North showing	0.05	Tr.	2.30	-	-	A. Stark
Float in creek	Tr.	0.25	0.10			A. Stark
North showing	-	-	0.13			Kennco Expl.
" "	-	-	0.18			" "
" "	-	-	0.50			" "
" "	Tr.	0.2	0.50			J.W. Decker
East showing	Nil	Tr.	1.41	0.69		" "
" "	Nil	Tr.		5.80		" "
Adit @ east showing	Nil	Tr.	0.10	3.80		" "
" " " "	Tr.	Tr.	0.08	5.1		" "
" " " "	Nil	Tr.	0.43	0.5		" "

In the same general region as the Marjory Group are the Boulder Creek, Copper Queen, Pemberton, and Tenquille Creek properties, all of which have similarities to the Marjory showings and hence will be briefly described.

(2) BOULDER CREEK PROPERTIES

The Boulder Creek properties were discovered in 1915, and consist of four claim groups, the Boulder, the Apex, the Lake, and the Eagle, which are situated near the southwest shore of Lillooet Lake. All of these claims lie within a mineralized zone which has been traced 3½ miles along a north-northwesterly strike trending towards the Marjory showings. This zone lies in a belt of sheared volcanic and sedimentary

rocks which weathers to reddish-brown stain. The limestone has been locally altered to a skarn accompanied by replacement by magnetite, hematite, pyrite, pyrrhotite, and to a lesser extent by chalcopyrite and sphalerite.

An adit 110 feet long was driven on the Eagle group through sheared and faulted rocks. Five feet of mineralization (pyrite and magnetite, with minor chalcopyrite, sphalerite, and pyrrhotite) was intersected. Nearby another adit 20 feet long was driven into stained rocks which were heavily mineralized with hematite, magnetite, and pyrite with very low assays in copper, silver, and gold.

The principal showings on the Lake group occur where dykes intersect limey rocks. The mineralization exposed is similar to that of the Eagle group mentioned above.

A 300-foot wide pyrite zone is exposed on the Boulder Group. Rusty iron stain is prominent on the surface of the rocks which are cut by several porphyrite dykes. Disseminated pyrite is the most abundant mineral with occasional high values of copper and minor magnetite, sphalerite and pyrrhotite. A series of four samples taken across the oxidized shear zone assayed as follows:

Sample No. 1 -	1.5% Cu,	0.68 oz. Ag,	Trace Au over 15'
Sample No. 2 -	0.45% Cu,	0.22 oz. Ag,	Trace Au over 20'
Sample No. 3 -	0.10% Cu,	0.52 oz. Ag,	Trace Au over 20'
Sample No. 4 -	0.30% Cu,	0.54 oz. Ag,	$1.40 per ton over 30'

The mineralized zone on the Apex group has a maximum width of 600 feet and occurs near the contact of easterly belt of intrusive

rocks. The most abundant mineral is pyrrhotite with very low values reported in gold, silver, and copper.

In general, the mineralization of the Boulder Creek properties is believed to be related to the main intrusive belt in the locality rather than to the numerous dykes. The main mineralization seems to be confined to the zone of shearing and fracturing which parallels the general trend of the deformation of the older rocks.

(3) The Copper Queen Group

This property is located on the east side of Owl Creek, about two miles upstream from its junction with the Birkenhead River. The property consists of twelve claims which straddle the eastern border of a tongue of intrusive rock which strikes north-northwesterly.

An adit, 230 feet long, was driven into the intrusive and intersected a number of shear zones up to a width of 8 feet, which were well mineralized with pyrite and chalcopyrite. Two samples were reported to have assayed 5.1% Cu over 5 feet and 5.4% Cu over 5 feet, with traces of gold and silver in both samples.

(4) Pemberton Claim

The Pemberton mineral claim is situated about 1/3 mile south of Pemberton. The mineralization (pyrite, chalcopyrite, pyrrhotite) occurs as a replacement along a shear zone in schistose Triassic rocks and is probably related to the west granodiorite intrusive belt. No assays are available but fairly heavy sulfides (mainly chalcopyrite) were traceable for one mile.

(5) The Tenquille Creek Properties

Several properties are situated near the headwaters of Tenquille Creek. These include the following claim groups: the Crown, Copper Mountain, Seneca, Wonder, Gold King, Silver Bell, Li-li-kel, and the Moffat and White.

Attention was first drawn to this area in 1916 by discoveries of "high grade silver" with copper. One sample from the Crown claims assayed 648.6 ounces of silver while a bulk sample of 100 pounds of ore from the same claim assayed 141.31 ounces of silver, 4.1% lead, and 3.2% zinc.

The upper Tenquille Creek area is mainly underlain by Upper Triassic rocks consisting of limestones, argillaceous and slaty sediments, tuffaceous rocks and schistose greenstones. In addition to bodies of batholithic dimensions, several dykes of quartz porphyry and quartz diorite are present which intrude the older volcanics and sediments. An abundance of shearing and faulting (generally transverse to the shearing) was developed which afforded convenient loci for development of mineral deposits. However, post-mineral faulting has complicated and hampered the development of the deposits.

In general, most of the showings near Tenquille Creek are of the replacement type in well-sheared garnetite rock near the larger intrusive bodies. The Li-li-kel deposits, however, are of the vein type, and are farther away from the main intrusive masses. On this group, it was noted that the principal veins coincide with the direction of cross-faulting but the largest single deposit occupied a shear zone

approximately transverse to the fault. Particular attention should be paid to the areas near their points of intersection for the best possibilities of finding ore.

CONCLUSIONS

All deposits in the Pemberton area are at or near the contacts between altered greenstones and granitic intrusives. Most are of the limestone-skarn replacement type but fissure filling veins are also present.

Copper, lead, zinc and silver have been reported throughout the area but no deposits of commercial size have yet been discovered. The Marjory claim mineralization appears to be rather limited in size with chalcopyrite and galena being present.

It was felt that a brief description of surrounding properties was in order to clarify more fully the environment of the showing under discussion (Marjory Group).

The erratic nature of the showing and the low copper and silver content indicate that the mineral zone at best has little possibility of developing into a producing property.

The extensive exploration in the area with generally poor results is not encouraging as is concluded from the numerous reports on the properties.

Respectfully submitted,

BACON & CROWHURST LTD.

G.D. Delane, B.Sc.

MARJORY CLAIM GROUP

PEMBERTON AREA, B.C.

LILLOOET MINING DIVISION

SCALE : 1" = 1/4 MILE

JAN. 24, 1969 G.D.D.

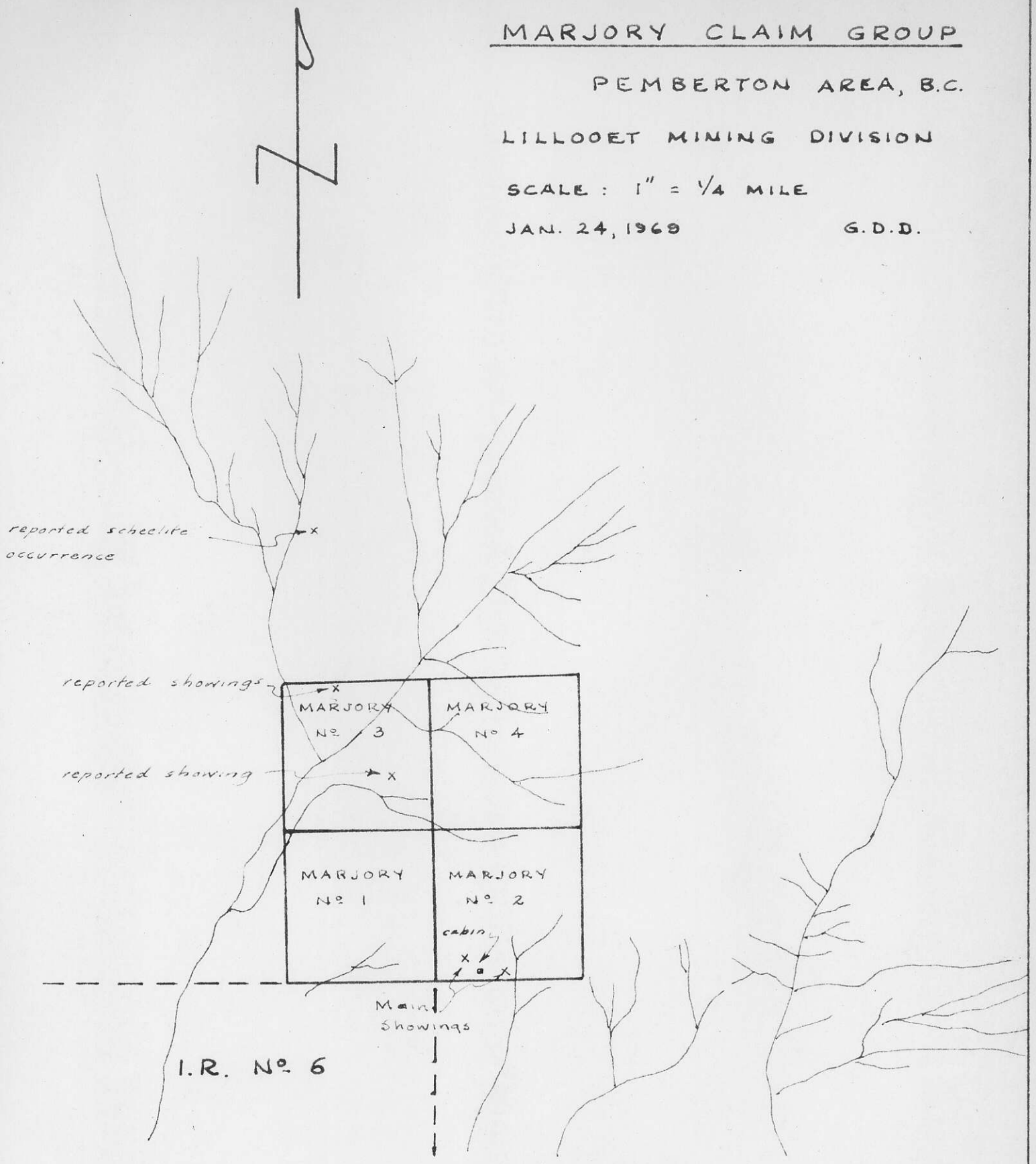

FIG. 2

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