

W.A. NO.

NAME *Outside Subscribers*

SUBJECT

82 FNW 216 Morning Star

04

PROPERTY FILE

002499

cut. A shaft and crosscut, 200 feet below, with short drifts in either direction, have opened up the lode. These workings are caved. They are credited with a small production in early days. The projection of No. 3 crosscut for an additional 300 feet or so should encounter this lode whose exploration at the intersection of limestone beds might be worth while.

A third lode, of doubtful importance, was encountered in No. 3 crosscut 200 feet north of the main drifts and a few feet of exploratory work was done on either side of the crosscut without revealing noteworthy mineralization.

Above No. 2 level most of the ore previously developed had been worked out, nor did it appear that anywhere in the mine had any important reserve been blocked out. On the other hand, and although the richer portions of the ore-bodies between levels 2 and 4 have been depleted, there still appeared to be possibilities in this section in the way not only of high-grade material but also of low grade, which a more efficient system of mining and milling might make pay. Stopping and crosscutting in the vicinity of No. 1 ore-body have opened up that section of the mine to easy exploration of the limestone bands, whose intersections with cross-fractures or with the main lode itself have not been thoroughly explored. Recent work below No. 4 level has been encouraging as indicating the strength and high-grade character of mineralization at these greater depths. Such discoveries should encourage prospecting the main lode at the extreme east end of No. 3 level where limestone is known to occur, and also investigating other parallel lodges where these may be expected to cross important limestone beds. In the meantime efforts might well be concentrated on blocking out a sufficient tonnage below No. 4 level where good ore has been discovered.

CORRIGAN GROUP

The Corrigan group consists of the Morning Star No. 2 claim and Rio fraction, Gladstone, Boon, Winona, Albatross, and Ada fractions, all Crown-granted, and the Custer fraction and Tarbolten, Maybole, and Craigie claims held by location. The group belongs to the estate of the late Phil Corrigan, % W. J. Corrigan, 552 West 52nd street, Chicago, and A. Shilland, New Denver, B.C. It extends from the lower west slopes of Jackson Creek valley westerly across the summit of the divide between Jackson and McGuigan creeks. The Crown-granted portion of the group, except for the Morning Star No. 2 claim, lies to the south and west of and adjoins the Jackson group and extends into the basin of McGuigan creek where it adjoins and lies south of the Dardanelles group. The non-Crown-granted claims of the Corrigan group and the Morning Star No. 2 Crown-granted claim are entirely on the Jackson slope to the north of and adjoining the Jackson group.

There are no extensive workings on the Corrigan group. A number of vein exposures have been explored by open-cuts, short adits, and shafts which aggregate several hundred feet of underground work. A considerable proportion of the work has been done on the claims held by location and which originally formed part of the New Era group operated by a French company. The Craigie claim was then known as the "Florida." The New Era group was subsequently restaked as the Custer-

T.P. group. Florida and available as and Craigie 1902 and ago of silver-lead

The group general strike and in part s about midwa belts of com where the sec bedded with by a great n they intersec the Winona high summit

Owing to the limited positions, a s adjoining Ja westerly strik Two crosscut west of the u where it stri degrees. Som crosscut on the tunnel. The sected by on fissure striking was encounte section with the cross-fiss the fissure int was extended exploring the another fissur tively above below the up objective. V Still farther is the old Ne Queen claim that strikes well defined. rock and ca New Era ha closely paralle Queen-Winon "Dublin Quee

Nelson Map-Area, West Half, British Columbia

fissure-filled veins. In the Lakeview some dissemination of sulphides occurs in the wall-rocks adjacent to the lenticular veins, and in the L.H. deposits, a most unusual type, the ore is composed entirely of disseminated sulphides in a shear zone that has been abundantly silicified.

The country rocks of the gold-silver properties of this belt vary greatly. The Oro Fino, Alpine, Goldstream, Kilo, Chapleau, and Lakeview deposits are in coarse-grained porphyritic Nelson granite which, on the Lakeview property, is highly crushed. Other phases of the Nelson such as medium-grained biotite-hornblende diorite and fine-grained granite are the host rocks of the Morning Star and Little Daisy veins, respectively. The L.H. deposit is in argillite and quartzite of the Slokan group. The gangue is quartz, with, in the Alpine, Lakeview, and Morning Star veins, minor carbonates. In all except the L.H., where pyrrhotite and arsenopyrite predominate, pyrite is the most abundant metallic mineral, and, except again in the L.H., it is accompanied by some galena and sphalerite. The Little Daisy, L.H., Chapleau, and Lakeview ores contain a little chalcopyrite and, in the Little Daisy and Lakeview, a little pyrrhotite and chalcocite respectively. Silver minerals are rare; minor tetrahedrite (?) is reported in the Morning Star ore, and possibly ruby silver with free gold in the Chapleau.

The major belt of gold-silver deposits is oval in shape and extends from the Good Hope, and Nevada and Royal Canadian properties west of Nelson south-eastward to the Sheep Creek camp. This belt may be divided into three smaller ones, a northwest division of irregular shape, and central and southeast divisions of elongate shapes, arranged *en échelon*. Within each of these divisions are mines of considerable economic importance but the most important is the southeast division which embraces the Sheep Creek camp.

Within the entire major belt the gold-silver deposits are all fissure-filled veins with, in the Canadian Belle, Blackcock, Ore Hill, and Sumit deposits, more or less disseminated sulphides adjacent to the vein, particularly in the last two named. Many kinds of country rock enclose the various deposits. The Good Hope, May and Jennie, Star and Alma N., Perrier, Daylight and Berlin, Starlight, Golden Age, Euphrates, Harriet, Porto Rico, Spotted Horse, Myrtle, and Clubine-Comstock veins are in greenstone, augite porphyry, or chlorite or sericite schists of the Rossland formation, and the Whitewater, Venus and Juno, Athabaska, Bear, and Fern veins lie partly within these rocks and partly in granodiorite or porphyritic granite. The Nevada and Royal Canadian, Venango, and Granite-Poorman veins are in pseudodiorite; the Catherine, and Blackcock are in granodiorite; the Golden Eagle, and Pilot-Good Hope are in porphyritic granite; and the Tamarac is in albite porphyry.

The remaining deposits in this belt occur in sedimentary rocks. These, with the exceptions of the Ore Hill and Sumit which occur mainly in limestone, are in quartzite, argillaceous quartzite, or in brittle, metamorphosed argillaceous rocks. Some of the gold-silver deposits in the western part of the belt are in argillaceous quartzite and related sedimentary rocks. The Canadian Belle, Second Relief, Second Chance, Keystone, Gold Hill, and Arlington are of this type, and it appears

significant that the country rock is contain the important Star properties. These camp, occur within tion, except in the rocks of the Reno (Mathews, 1953, p) been stated previous of disseminated sulph

The gangue in Relief, Myrtle, and Daylight and Berlin present and scheelite Age, and Porto Rico and scheelite as well the Protection veins.

Pyrite is the pr gold-silver belt. G abundant in some, s Protection, Ymir, B neither is reported Second Relief, Har properties. Chalco Royal Canadian, V Berlin, Fern, Cana Gold Hill ores, as w a little marcasite an the Canadian Belle Daylight and Berlin Comstock mines. Catherine, Perrier, I deposit contains mol

A minor belt o the Rossland camp. Columbia-Kootenay, the Columbia-Koote ore, are fissure-filled sulphides adjacent to deposits occur in gre last mentioned is als fine-grained monzon grained andesite wit The Golden Drip vei

The workings consist of two adits, No. 7 and No. 10, at elevations of 7,150 and 6,925 feet respectively. They follow the vein which strikes $S75^{\circ}W$ and dips 15° to $30^{\circ}N$. The lower adit is 1,131 feet long. The upper adit, whose exact length was not measured, is driven through the upper part of the peak to the cliff overlooking the basin of Alpine Creek to the northwest. The two levels are joined by gently dipping stopes that also extend above the upper level and below the lower.

The vein has been traced on the surface by open-cuts and underground for a length of more than 1,200 feet. It ranges in width from 2 feet to nearly 7 feet, the average width being about $3\frac{1}{2}$ feet. The gangue in the vein is quartz which in a few localities is brecciated and cemented by calcite that also forms short veinlets in the walls. The ore minerals are auriferous pyrite and lesser amounts of galena and sphalerite.

Morning Star (143)

References: Minister of Mines, B.C., Ann. Repts.: 1901, p. 1027; 1935, pp. A27, E33; 1936, p. E50; 1937, pp. A38, E50; 1940, p. 81; 1942, p. 73; 1947, p. 172; 1949, p. 192.

The Morning Star claim, held by record, is owned by W. Clements of Slocan City. It is situated on the north side of Springer Creek opposite Dayton Creek, a few hundred feet above their junction. The claim was staked about the turn of the century and nearly all the workings were driven in 1901. There is however no record of production at that time. Four tons of ore was shipped in 1935 by Mr. Clements and small shipments were made in 1936 and 1937 by lessees. G. A. MacMillan of Toronto optioned the property in 1946, 1947, and 1949 and shipped 2 tons of ore. It has remained idle since that time.

During the period 1935 to 1949, production totalled 25 tons of ore containing 42 ounces gold, 114 ounces silver, 1,121 pounds lead, and 913 pounds zinc. The property was examined in June 1950 by A. B. Irwin of the Geological Survey.

The rock underlying the property is mainly medium-grained biotite-hornblende diorite intersected by a few small felsite dykes. Near the veins the diorite is bleached and silicified.

The workings consist of two adits; the lower and more extensive is 410 feet above the mouth of Dayton Creek and $N20^{\circ}E$ from it. The portal of the upper adit is north of and 100 feet above the lower portal.

The main vein has been traced continuously for 380 feet in the lower working and a branch vein near the south end has been followed for 120 feet (*see* Figure 16). The north part of the main vein strikes $N10^{\circ}W$ and the south part $N30^{\circ}$ to $40^{\circ}W$. The branch vein has the same trend as the north part of the main vein. The dip of the vein varies along its length from 55° to $65^{\circ}W$. In the lower level the width of both veins ranges from 1 inch to 3 inches. In the upper level, where it has been stoped, the vein is 1 foot to 2 feet wide for a length of 30 feet, but on either side of the stopes it is 3 inches wide or less. It is terminated at the south end against a fault that strikes $N20^{\circ}E$ and dips $50^{\circ}W$. What may be the continuation of the main vein is exposed in the back of the lower working from the fault to the portal. There a vein 2 to 6 inches wide and 40 feet long occurs in

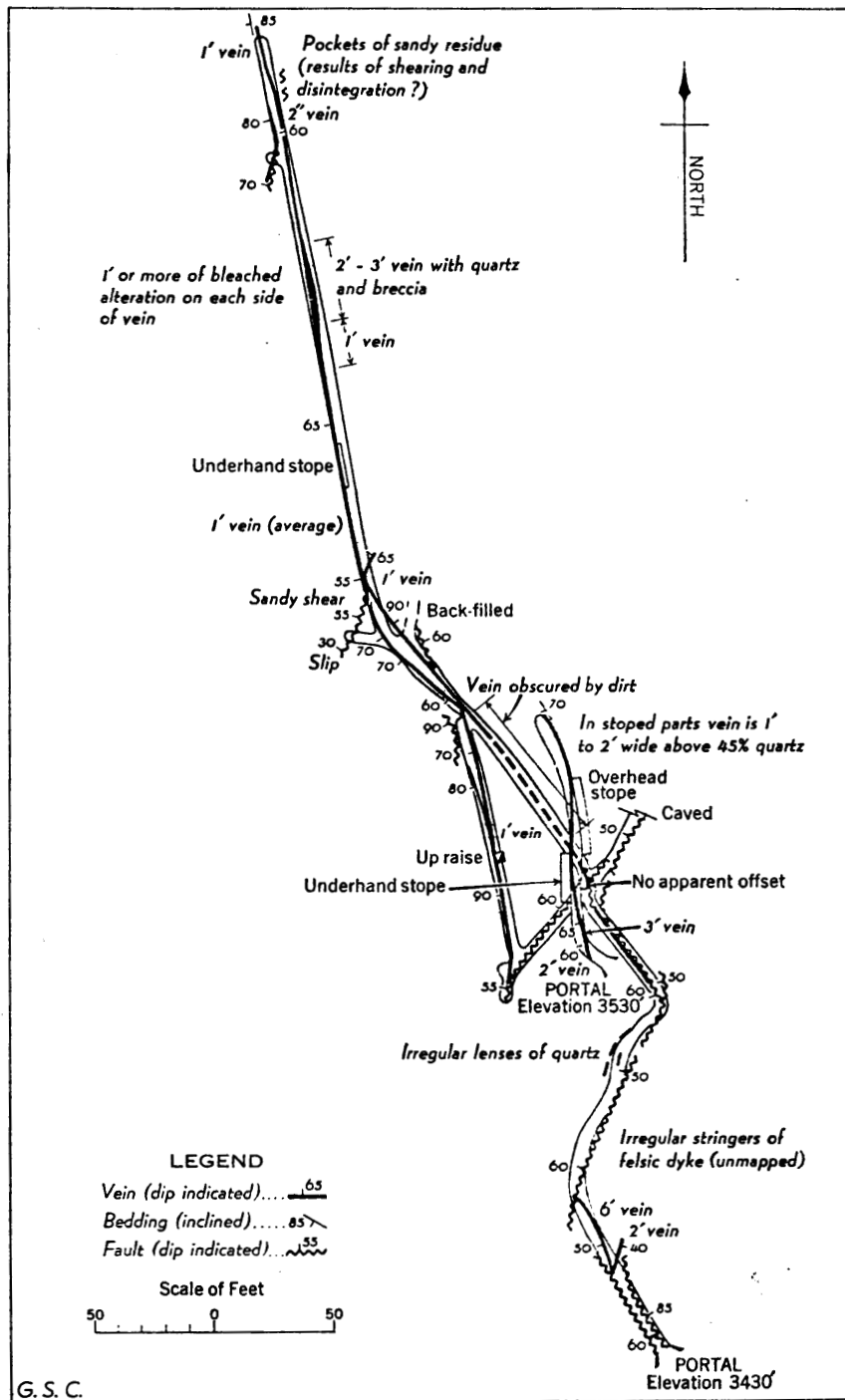


Figure 16. Plan of workings of Morning Star mine (geology by A. B. Irwin, 1950).

a broad zone of bleached alteration dipping 50°SW. Near the shears.

Metallic minerals include pyrite, and a little to ankerite and a little

References: Minister of Mines, F. G. Stoll, G. Soucey

The Goldstream area is accessible by road. Stripping the vein. Partners who drove ore produced was 3 ounces gold and 23

The property was surveyed.

Country rock which strikes N75°E has been followed underfoot. In many places composed of white quartz, the cubes being up to 1/2 inch and encased in the larger

References: Minister of Mines, p. 150; 1932,

The Kilo group is a Crown-granted claim second small tributary 8 miles long from the by Mrs. N. F. McNair

The property has a total content of ore including, a total of 2 ounces gold, 870 ounces silver

The first shipment was in 1912 a mill was devoted to hand-sorting in 1934, 1938, and 1939 geological Survey.

a broad zone of bleached and silicified diorite. This vein strikes N30°W and dips 50°SW. Near the portal it feathers out into a zone of branching veinlets and shears.

Metallic minerals in the vein consist of fine steel galena, sphalerite, cubes of pyrite, and a little tetrahedrite(?). The gangue is mainly of quartz with siderite or ankerite and a little calcite.

Goldstream (175)

References: Minister of Mines, B.C., Ann. Repts.: 1932, p. 179; 1938, pp. A37, E8. B.C. Dept. of Mines, Bull. 1, 1932, p. 116.

The Goldstream claim, held on location in 1938, is on the north side of Chapleau Creek about half a mile northeast of the Kilo mine, from which it is accessible by road. Initial exploratory work was carried out in 1931 and 1932 by G. Stoll, G. Soucey, and associates and it consisted of entirely trenching and stripping the vein. The property was leased in 1938 by C. Ritchie and one or two partners who drove a drift westward 50 feet from the bank of a creek. The only ore produced was stoped at this time and amounted to 40 tons, containing 22 ounces gold and 23 ounces silver.

The property was examined in July 1950 by A. B. Irwin of the Geological Survey.

Country rock on the claim consists of porphyritic Nelson granite. The vein, which strikes N75°E and dips 20°N, ranges in width from 6 to 16 inches and has been followed underground for 50 feet and intermittently on the surface for 200 feet. In many places the vein splits into two or three branches. The vein is composed of white quartz with tight walls and contains pyrite in cubes and clusters, the cubes being up to half an inch across. A little galena is also present, mainly encased in the larger pyrite cubes but also as isolated crystals.

Kilo (176)

References: Minister of Mines, B.C., Ann. Repts.: 1897, p. 535; 1899, p. 689; 1904, p. 168; 1912, p. 150; 1932, p. 179; 1933, p. 207; 1938, pp. E5-E8; 1939, p. 79. Bureau of Mines, 1936a.

The Kilo group, comprising the Kilo, Kilo No. 2, Violet, Wedge, and Pansy Crown-granted claims and fractions, is north of Chapleau Creek and west of the second small tributary east of Cameronian Creek. It is accessible by a road about 8 miles long from the Slocan highway near the Lemon Creek bridge. It is owned by Mrs. N. F. McNaught of Silverton.

The property has been operated intermittently since 1897, but the amount and content of ore shipped prior to 1900 is not recorded. From 1900 to 1939 inclusive, a total of 2,357 tons of ore was produced, and this yielded 953 ounces gold, 870 ounces silver, 106 pounds lead, and 46 pounds zinc.

The first shipments of ore were made direct to smelters or to custom mills. In 1912 a mill was reported to be in operation but appears to have been largely devoted to hand-sorting. Since then the mine was operated by lessees in 1932 to 1934, 1938, and 1939. It was examined in July 1950 by A. B. Irwin of the Geological Survey.