

REPORT OF THE OLD ENGLAND GROUP

812119

CAMP MCKINNEY,

GREENWOOD MINING DIVISION

December 5th, 1958

INTRODUCTION:

Under instructions from R. W. Wyllie I visited Camp McKinney in October, 1948. Mr. Wyllie had recently acquired the Old England, Snowdon and Lemon crown-granted mineral claims. He instructed me to stake a group of eight claims surrounding the crown-grants, and to arrange for the rehabilitation of old workings in the old England crown-grant with a view to making a geological examination at a later date, after the workings had been make accessible.

It was found, however, that a forest fire which swept the area in 1932 had destroyed most of the camps and timbered portals of tunnels and collars of shafts, and that subsequently a thick second growth of tamarack had masked the location of these workings even further. In addition, some of the workings which are in the creek canyon had been hidden by slides.

Such being the case it was decided that much more time would be needed to find these workings than was available and so search for them was postponed until the Spring of 1949.

Eight claims were staked, however, and a traverse was made down the canyon of Jolly Creek which resulted in the finding of some workings and mineralization which will be described in the following notes.

CLAIMS & OWNERSHIP:

All of mineral claims shown on the accompanying map, are owned by R. W. Wyllie of 1220 Homer Street, Vancouver, B. C., with the exception of the Victoria crown-granted mineral claim. They comprise:

Crown Granted Mineral Claims

| <u>NAME</u> | <u>LOT NO.</u> |
|-------------|----------------|
| Old England | LOT NO. 658 |
| Snowdon | LOT NO. 583 |
| Lemon | LOT NO. 760 |
| Victoria | LOT NO. 218 |

Claims Held by Location

Eight fractional mineral-claims named W-1 to W-8 inclusive.

LOCATION AND ACCESS:

The Old England Group is about nine miles north of the International Boundary and six miles north of Bridesville, a small village on the Provincial Highway between Greenwood and Osoyoos. A branch road of easy grade and in good condition leaves the

highway some four miles east of Bridesville and provides easy access to the claims which it crosses as is shown on the accompanying map. The workings found in the creek bottom are reached from this road by following a graded trail for a few hundred yards down to a placer camp and then following the creek-bottom upstream to the various workings.

A power-line of the West Kootenay Power Company passes by about one mile south of the claims.

BUILDINGS:

All of the old camp buildings have been destroyed by fire except a log cabin located at the placer camp shown on the accompanying map. This building could be rehabilitated cheaply and would house four or five men during preliminary investigations.

HISTORY:

Following is a summary of notes taken from the Annual Reports of the B. C. Department of Mines:

- 1894--Page 754 Shaft sunk 35 feet. Ore is high-grade gold ore similar to that found on neighboring Victoria claim.
- 1895--Page 705 Has 65 foot inclined shaft. Shaft was sunk to tap a chute of telluride ore carrying gold and silver, the ore being in talco-schist formation.
- 1896--Page 575 On this claim there are three veins running more or less parallel in a northerly and southerly direction the entire length of the claim. The dip of the veins is easterly. The main or centre vein is over 20 feet in width, and at a depth of 75 feet may be described as follows:- Commencing at the hanging wall is a gouge or salvage some 10 to 18 inches in thickness, composed of talc, impregnated with sulphides, adjoining which is a rich streak of ore some two or three feet in width, following which, towards the foot-wall, there are streaks of quartz and talc, intermixed, containing sulphides and galena, carrying gold. The shaft follows the hanging wall at a dip of about 45° for 50 feet; thence straightens to about 70°. The shaft is 6 feet by 8 feet 8 inches, securely timbered. A tunnel has been run a distance of 90 feet, with the object of tapping the vein at a depth of about 200 feet from the surface. The east vein is exposed by an outcrop of about 50 feet in length, and has been cross-cut 8 feet in ore carrying copper and iron sulphurets. This vein also crops out on the "Homestake" which is to the north of the "Old England". On the west vein

4 feet in width, and carries galena and sulpherets. The centre and east veins can be traced continuously through the claim, and the three veins are not more than 80 feet apart. The "Homestake" adjoins the "Old England" on the north end. The centre and east veins of the "Old England" have been traced through this claim. A tunnel to tap the east vein has been commenced and run about 60 feet about the centre of the claim. A prospecting tunnel of some 30 feet has been run lengthwise on the east vein. The character of the ore is gold quartz, containing copper.

1897--Page 576 Crown-granted. L 658 Shaft is a few feet from end line. Farther along a cross-cut did not reach vein. On opposite side of creek a tunnel is opening up a small quartz-vein. Strike N-S. Good gold content.

1898--Page 1118 Workings consist of three tunnels 90', 50' and 52', respectively, and an 80' shaft.

1899--Page 603 Sent samples to Paris Exhibition.

1926--Page 447 New crown-grant issued. L 658.

1930--Page 221 Pacific Copper Mines reconditioned camp buildings on Victoria, did ground sluicing, and cleaned out most of the tunnels on Old England. Two foot to twelve foot wide shear-zones plus pyrite.

1933--Page 157 Old England showings may be continuation of Waterloo-Fontenoy shear.

In 1936 W. E. Cockfield made a brief examination of the Camp McKinney area for the Geological Survey of Canada. He was unable to find most of the old workings because of the forest fire that swept the area in 1932 and because rock-slides had hidden some located in the steep canyon country.

The geology shown on the accompanying map is taken from Dr. Cockfield's Memoir 179.

TOPOGRAPHY:

Camp McKinney consists of a series of ridges which extend in a general southeasterly direction from Baldy Mountain which is the highest point in the district, having an elevation of 7,558' above sea-level. The ridges are separated from each other by the various branches of Rock creek. The lowest portion of Rock Creek is 2,600' above sea-level, so that the maximum relief is in excess of 4,950'. Most of the area, however, stands at

between 3,000 and 3,500 feet above sea-level, and the difference in elevation between the valley-bottoms and the crests of the founded ridges averages some 500 feet.

The highest elevation on the claims in question is 3,900 feet above sea-level, and lowest is 3,200 feet above sea-level.

Most of the area held by these claims is flat to gently rolling and is covered by deep glacial-drift. The branches of Rock Creek, however, have cut deep valleys in the overburden and in some places have cut through rock to form steep walled canyons. The only rock exposures found during this examination are in such a rock canyon on Jolly Creek, where it flows through the W-2 Fraction, Snowden C.G., Victoria C.G. and Old England C.G. In portions of this canyon slides of the overlying glacial drift have masked the rock and hidden old workings.

According to Cockfield's map, much of the Old England crown-grant is free of overburden, but this fact was not checked during my examination.

GEOLOGY:

The geology of the Camp McKinney area, as given by W. E. Cockfield, may be briefly described as follows:

The oldest rocks of the area are grouped in the Anarchist Series which consists largely of highly metamorphosed sedimentary rocks but includes also altered greenstones and possibly also altered intrusive rocks. The sediments include micaceous quartzites, mica schists, and crystalline limestone. They are provisionally classified as being upper Palaeozoic.

Intruding the Anarchist Series are several types of intrusive rock including light grey gneissic, granitic rocks and granodiorites of the Osoyoos Batholith, which is possibly Jurassic; sheared basic intrusives; and a belt of granodiorite which bears an unknown relationship to the Osoyoos Batholith. Dyke-rocks of various compositions intrude both the intrusive masses and the Anarchist Series.

The youngest rocks of the area are basic volcanics. They are thought to overlie the granitic rocks and Anarchist Series uncomformably and are considered to be of Tertiary age.

GEOLOGY OF THE CLAIMS:

As has been noted before the main object of this visit was to arrange the preparation of the workings for examination and to acquire more ground, and hence only a generalization of the geology can be given.

The claims are underlain mainly by green-stones of the Anarchist Series. These rocks are hard, competent, brittle, rocks capable of sustaining a strong break and are the rocks in which are found the main mineral showings of Camp McKinney.

In addition to the greenstones, however, a soft, schistose, sedimentary member of the Anarchist Series was noted covering a relatively short length of canyon near Workings No. 1 on the W-2 Fraction; an area of ultrabasic intrusive rocks has been mapped in the creek-canyon on the Old England claim W-3 Fraction, and W-8 Fraction; and the younger lavas cover much of the Lemon claim, W-6 Fraction, W-3 Fraction, and W-8 Fraction. It is probable that the Anarchist Series underlies the volcanics on these latter claims.

A traverse was made down Jolly Creek to look for old workings and to check the geology. The traverse started on W-2 Fraction where the road crossed Jolly Creek and ended at the old placer-camp just north of the Old England claim.

At the bridge the creek valley is in glacial drift and is about 20 feet deep. About 100 feet downstream, however, a rock canyon commences which continues for over 3,000 feet to the placer camp, interrupted by occasional stretches of glacial overburden.

The first working encountered is shown on the map as No. 1. It is about 400 feet below the bridge and I believe is the one described by Cockfield on Page 18 of Memoir 179, C.S.C. as being on the Gold Standard claim.

Exposed on the hillside immediately above the portal of the cross-cut adit, which was driven due South, is a quartz vein which varies in width from 6 to 8 feet.

The vein trends, on the average, N 70° and dips 35° S, but is broken into short segments by frequent faults and is somewhat contorted as it follows the folds in the incompetent, soft, schistose formation that is its host-rock. It is probable that this vein will be much consistent if it can be traced into a more competent host-rock, such as the nearby greenstone.

The vein on surface consists mainly of hard, white quartz which is only slightly iron-stained and contains only a small amount of iron-pyrite.

Not having a light with me, I was unable to examine the tunnel, which is open. Cockfield reports, however, that it is 400 feet long and that it exposed several stringers and bunches of quartz which carry pyrite and some coarsely crystalline galena. The large quartz-vein occurring near the portal was not encountered. This may be due to faulting or to the lousy nature of the vein where found in the schists.

Cockfield reports that 400 feet farther downstream and still on the Gold Standard (now the W-2 Fraction) a shaft was sunk for 90 feet on a small quartz-vein reported to carry free-gold. Slightly farther down-stream and still on the Gold Standard he reports a quartz-vein outcropping which is about one-foot wide, strikes E-W and dips 45° N. This carries pyrite and galena and is reported to have assayed 0.2 to 0.3 ounce of gold per ton.

On the Snowdon claim he reports that an adit has been driven 80 feet on a shear-zone about a foot wide carrying some quartz, pyrite, galena and zinc blends, and said to hold low values in gold. It is possible that this is the caved portal I observed on the south side of the creek 200' below No. 1 at the contact between the schist and greenstones.

The only other evidence of workings found by me on the Snowdon Claim is a large dump found on the west side of the creek. This dump is about 500 feet downstream from workings No. 1 and is 100 feet above the creek. This dump, which is designated as workings No. 2 on the map, is composed mainly of greenstone but contains also some quartz plus pyrite and galena. The actual workings from which this large dump came is not in evidence.

At the point designated as No. 3 on the west bank, and probably on the Victoria claim, is a 30 foot tunnel driven on a shear-zone varying in width from six inches to one foot. The shear contains quartz plus pyrite, galena and sphalerite. It trend $N 10^{\circ}E$ and dips $54^{\circ} W$. Between three and five tons of ore have been stored on the east side of the creek. It contains fairly plentiful pyrite and galena but was not sampled.

Cockfield reported that Victoria workings, from which several carloads of high-grade gold ore were taken, were hidden by a slide previous to his examination.

On the side-hill directly across the stream from Workings No. 3 I found considerable quartz float up to one foot thick containing pyrite.

About 200 feet farther downstream a small creek comes in from the east side, and 100 feet below this, on the west side of Jolly Creek is an old powder-house, indicating the presence of nearby workings which I did not find.

Several hundred feet farther downstream is workings No. 4 which is very near to the boundary between the Old England and the Victoria. It is a tunnel, now caved, which enters the east bank only a few feet above the creek. Its bearing is $S 80^{\circ}E$. Probably a days shovelling would permit entry

The final workings found are designated as No. 5, which are about 500 feet upstream from the old placer camp and barely above the stream. They consist of two tunnels, one on each side of the creek and probably on the same lead.

The tunnel on the east side is caved but it appears that a weeks work at the outside should open it up.

The tunnel on the west side is open, but being without a light I could not examine it. It appears to follow a strong shear-zone for 50 feet to 60 feet. The shear zone is about 2 feet wide and contains quartz, plus pyrite and galena. It trends N 10° W and dips 65° E.

Between 15 and 20 tons of ore has been stacked near the portal. Specimens were taken to determine the gold-content of the various types of mineralization. The assay results are surprisingly high.

Sample No. 1 was composed of very porous leached quartz and iron oxide. It ran 1.00 ounces of gold and 1.3 ounces of silver per ton.

Sample No. 2 consisted of almost solid pyrite containing considerable galena and little quartz. It ran 1.36 ounces of gold and 3.4 ounces of silver per ton, plus 16.7% lead.

Sample No. 3 consisted of more representative vein-matter. It was composed of quartz plus possibly 20% pyrite and a little galena. The pyrite was not very promising in appearance, consisting of some cubes but mainly of coarse irregular aggregates. Surprisingly enough this sample ran the highest, assaying 1.92 ounces of gold and 4.3 ounces of silver per ton.

The above assays are not presented as representative of the average grade of the vein in question, but they illustrate the high-grade nature of the mineralization of the area.

CONCLUSION AND RECOMMENDATIONS:

This investigation of the literature and the area has been too brief to yield sufficient evidence to warrant the recommendation of a major exploration programme. The information obtained, however, is sufficiently encouraging to cause me to recommend that all of the claims be prospected thoroughly, and that the Old England claim be subjected to an intensive search for three veins and the workings described as occurring thereon.

In view of the following data I believe it to be quite probable that the results of these preliminary investigations will warrant recommendation of a substantial expenditure to explore the showings further.

(1) Camp McKinney has already had one very profitable gold-producer, the Cariboo-Amelia Mine, which had a gross production of \$1,180,000.00 in gold and paid \$565,588.00 in dividends.

(2) The claims of the Old England Group are underlain mainly by the same rock-type as is host to the veins of the Cariboo-Amelia Mine, namely greenstones of the Anarchist Series.

(3) Three strong veins are reported in the old B. C. Minister of Mines reports to occur on the old England claim, and several other veins occur on the other claims of the group. The main vein on the Old England claim is described as being 20 feet wide and to contain, in addition to a great width of disseminated pyrite and galena, a two to three foot width of high-grade ore at the hanging-wall. In view of the high gold-content of the specimens that I have had assayed, it would be of great interest to know the gold content of this hanging-wall portion of the vein; and the current high price for lead may make the remainder of the 20 foot width of economic value.

(4) Copper content is noted as occurring in some of the veins. Here again, as with lead, the current high price for copper may make ore out of vein matter that was not of interest when these claims were last investigated around 1930 to 1934 when metal prices were greatly depressed.

(5) The presence of placer gold in Jolly Creek just below the Old England claims, while not a positive indication that vein-matter of commercial gold content occurs thereon, is certainly not a discouraging factor.

Respectfully submitted,

(Sgd.) _____

B. I. Nesbitt,
Consulting Geological Engineer

REPORT OF THE MINISTER OF MINES

CAMP MCKINNEY - 1894 - Page 754

The Victoria, owned by the Haynes Estate, Basche & Coericke, has an incline shaft 110 feet in depth. From this claim some very rich ore has been taken. An assay made for Mr. Nicholson gave \$480 per ton in gold. One lot of ore, amounting to 1,200 lbs., sent to the Selby Smelting Works, of San Francisco, gave a return of \$127, and another lot of 100 lbs. \$183.

CAMP MCKINNEY * 1896 - Page 575

THE VICTORIA GROUP

This group consists of the Victoria, Queen, and California claims. Mr. Bash, who has charge of the development work for a Victoria company, has done a very considerable amount of surface work, having built a waggon road, for about three-quarters of a mile to connect the claims with the Camp McKinney road, costing between \$200 and \$300; he has also erected a number of very substantial buildings on this property, and has had from 15 to 20 men continuously at work since the middle of September last. Two tunnels have been run on the Victoria, at a distance apart of about 700 feet, No. 1 in the centre of the claim and No. 2 at the extreme edge, close to the Old England claim. No. 1 has been driven 135 feet, and No. 2 97 feet; both tunnels are very securely timbered. It is expected to tap the ore body at a depth of about 125' on No. 1, and about 100 feet on No. 2. The ore lies in a talco-slate and diorite contact, running almost due north and south with the formation. Twenty-five assays have been made, giving an average of \$65 to the ton.

NOTES ON CAMP MCKINNEY, B. C. - Page 583

The camp is situated about 56 miles from Penticton, at the south end of Okanagan Lake. It is eight miles north of the International boundary line, and 32 miles west of Midway, at mouth of Boundary Creek on Kettle River. Altitude, 4,600 feet. The camp lies on a rolling plateau sur of a rounded mountain mass, of which Bald Mountain is the centre. This peak, 4 or 5 miles north-west of the camp, is a dome of granite (so I am told), which has been pushed up under the gneisses which lie west of it nearly to the Okanagan and the Cambrian (?) schists and quartzites, which extend east of it for a long distance. Bald Mountain is about 7,000 feet alt. These quartzites, etc., are highly tilted, and at Camp McKinney strike about north and south. Cutting these at right angles is a fissure vein (strike east and west, dip vertical) of quartz, on which are located the "Okanagan", "Amelia", "Cariboo", "Alice," "Emma," "Maple Leaf," and "Eureka" claims. Through all of them the vein is traced, and more or less proved.

Most of the work, and in fact the only work which amounts to much, is on the "Cariboo" and "Amelia", "the property of the Cariboo M.M. & S. Co., of Spokane. This company erected a ten (850 lb.) stamp mill in the spring of 1894, which has been in operation with success ever since. The ore carries about 3% of concentrates, that are shipped to the coast smelters, via Penticton and C.P.R.

The only other property which is being worked is the "Victoria" and "Old England" claims, about 3 miles east of Camp McKinney, but details are available as to the work being carried on.

REPORT OF THE MINISTER OF MINES

CAMP MCKINNEY - 1897 - Page 603

The history of the camp begins in 1884, when the "Victoria" vein on Rock Creek was discovered a short distance above the placer diggings of early days, but little was done until 1887, when the "Cariboo" vein was standing boldly out of the ground with free gold showing, but even then progress languished until the present company began work in earnest.

VICTORIA MINERAL CLAIM - 1898 - Page 1118

This claim is situated nearly two miles to the eastward of the Fontenoy, the intervening ground having been located since the strike on the Waterloo, and is owned by the Rock Creek Mining and Milling Company, of Victoria, but no work has been done on it this year. The Old workings consist of two tunnels, 234 feet and 205 feet, incline shaft 106 feet, upraise, 245 feet, and 300 feet of drifting and stopping. The character of the ore is iron pyrites, blende and galena in bluish quartz of high-grade; a shipment of 30 tons of sorted ore giving 2.15 oz. gold, and 5.2 oz. silver, net per ton.

VICTORIA MINERAL CLAIM - 1901 Page 1152

The Rock Creek Mines, Ltd., a Victoria company, owns the Queen, Victoria, California and Astor mineral claims, situated on the right bank of Rock Creek, about 4 miles east of McKinney. This was one of the first locations in the camp and the property has been already described in the Report of this Department for 1897, since which time the only additional work done has been to extend the incline downwards from the lower tunnel to a depth of 110 feet. As the property has not been operated since December 1st of the year mentioned, further description seems unnecessary. The mine below the tunnel was filled with water and could not be examined. The timbering in the upraise is covered up in the talcose matter of the lead, which prevented examination higher up. The surface buildings are in good shape, being still in charge of Mr. C. B. Bash, formerly superintendent of the mine.

PACIFIC COPPER MINES - 1930 - Page A 221

This company, with headquarters at 104 Motor Transport Building, Vancouver explored a group of seventeen claims in the vicinity of the Old England and Victoria claims, about 2½ miles in a westerly direction from the old main camp. Some of the old Victoria log cabins were reconditioned for camping purposes and water was flumed from a small stream originating in a beaver-dam for domestic use as well as sluicing operation. Several quartz veins traverse the schist in the neighborhood, varying in width from 1 inch to 6 feet. Slightly mineralized impregnations of pyrite and occasionally galena occur chiefly along the fracture joints of the quartz where it has been faulted. At the camp several block-faults have displaced the vein in sections for about 200 feet down the creek, Along this faulted zone several short tunnels and open-cuts have been driven. Occasionally free gold is said to have been found, but generally the quartz where developed is low grade. A new tunnel was commenced in the middle segment of the fault-zone

the results of which are not at hand. The old creek tunnel driven near the Old England claim developed a partly oxidized quartz vein averaging about 6 inches in width for a length of 20 feet. Beyond this the vein pinched to a fracture and the work was abandoned. Samples of this ore contained from \$10 to \$12 a ton of gold. Across the creek another tunnel was driven for over 100 feet on a highly sheared zone of faulting containing pyrite and a considerable amount of graphite along the fracture-planes. The country-rock here is a fine volcanic tuff. On the Old England claim the old workings, consisting of open-cuts and short tunnels, most of which were cleaned out, had been driven on a highly siliceous zone containing pyrite varying in width from 2 to 12 feet and containing pyrite. Some high-grade gold ore is said to have been mined from some of these workings, but this could not be substantiated. Possibly the workings from which the ore was taken had not been cleaned out.

CAMP MCKINNEY SECTION - 1933 - Page A 156

A considerable amount of activity was noticeable in this section during 1933 and many new claims were staked, reverted Crown grants leased, and groups of claims amalgamated prior to more extensive exploration. The chief consolidation appears to be the old Cariboo McKinney gold mines, Wlarton, Waterloo-Consolidated, Fontenoy group which embraces the old workings on the Cariboo-Amelia-Sawtooth claims, which are about 550 feet deep and 1,700 feet long, as well as the shaft-workings on the Waterloo, which are said to be about 300 feet deep and from which some attractive gold ore was found dipping on the Fontenoy ground. Another group, owned by Alec. Broomfield, Jack Malone, et al., of Princeton, and embracing sixteen claims and fractions adjoining the Cariboo Waterloo group on the north and south, are worthy of exploration. Indications of the persistency of the quartz-fissures are to be found striking along the right-of-way cut out by the West Kootenay Power Company to the south-east. It is also probable that the quartz veins found in the Old England and Victoria claims, several thousand feet east, are a continuation of the Waterloo-Fontenoy fissuring.

✓ On the *Occidental*, owned by the same parties, a 17-foot shaft, 4 feet by 7 feet, has been sunk.
 ✗ On the *Oro Fino* an open surface cut has been run for 40 feet and a shaft sunk 12 feet, by the owners, Messrs. Gwatkin and Winkler.

It is confidently expected that Camp Fairview will soon rank as one of the foremost mining camps in the District.

CAMP MCKINNEY.

✓ On the *Cariboo* and *Amelia* the mill has been running continuously during the year, and has produced 8,743 ounces in gold, valued at \$116,243, and 371,036 lbs. of concentrates, of a value of \$14,980: total output of the mine for the year 1896 is \$131,223.

The work consists of 540 feet of drift on the second and third levels, and 6,456 tons of ore stoped and milled. At present the work is being carried on at the third level, at a depth of 175 feet from the surface. About 30 men are constantly employed. I am informed that the owners intend shortly to increase the capacity of the mill to 15 stamps.

The Minnie-ha-ha.

✓ This claim, which lies south and west of and nearly adjoining the "Cariboo," has one shaft sunk 45 feet, and a second of about 15 feet. The vein averages about 18 inches in width. The claim has recently been surveyed and a Crown grant applied for.

On the *Lemon* an open cut, 20 feet in length by 6 feet by 9 feet, was run on the east side of the main shaft. The cut penetrates the shaft at a depth of about 10 feet below the surface. The vein, which crosses the claim diagonally and has been traced on the surface for a distance of 1,700 feet, is a true fissure vein, running north-east and south-west, and is capped by iron to a depth of 10 feet. The east wall is quartzite and the west wall a black slate. Mr. Greevy, the owner, informs me that arrangements have been made for extensive development work during the coming season.

The Victoria Group.

✓ This group consists of the *Victoria*, *Queen*, and *California* claims. Mr. Bash, who has charge of the development work for a Victoria company, has done a very considerable amount of surface work, having built a waggon road for about three-quarters of a mile to connect the claims with the Camp McKinney road, costing between \$200 and \$300; he has also erected a number of very substantial buildings on this property, and has had from 15 to 20 men continuously at work since the middle of September last. Two tunnels have been run on the *Victoria*, at a distance apart of about 700 feet, No. 1 in the centre of the claim and No. 2 at the extreme edge, close to the "Old England" claim. No. 1 has been driven 135 feet, and No. 2 97 feet; both tunnels are very securely timbered. It is expected to tap the ore body at a depth of about 125 feet on No. 1, and about 100 feet on No. 2. The ore lies in a talco-slate and diorite contact, running almost due north and south with the formation. Twenty-five assays have been made, giving an average of \$65 to the ton.

Old England.

✓ On this claim there are three veins running more or less parallel in a northerly and southerly direction the entire length of the claim. The dip of the veins is easterly. The main or centre vein is over 20 feet in width, and at a depth of 75 feet may be described as follows:—Commencing at the hanging wall is a gouge or salvage some 10 to 18 inches in thickness, composed of talc, impregnated with sulphides, adjoining which is a rich streak of ore some two or three feet in width, following which, towards the foot-wall, there are streaks of quartz and talc, intermixed, containing sulphides and galena, carrying gold. The shaft follows the hanging wall at a dip of about 45° for 50 feet; thence straightens to about 70°. The shaft is 6 feet by 8 feet 8 inches, securely timbered. A tunnel has been run a distance of 90 feet, with the object of tapping the vein at a depth of about 200 feet from the surface. The east vein is exposed by an outcrop of about 50 feet in length, and has been cross-cut 8 feet in ore carrying copper and iron sulphurets. This vein also crops out on the "Homestake," which is to the north of the "Old England." On the west vein a tunnel of about 30 feet has been run. The vein is 4 feet in width, and carries galena and sulphurets. The centre and east veins can be traced continuously through the claim, and the three veins are not more than 80 feet apart.

The *Homestake* adjoins the "Old England" on the north end. The centre and east veins of the "Old England" have been traced through this claim. A tunnel to tap the east vein has

The *Pandro* mineral claim, owned by Stephenson & James, has two shafts on the vein, 35 and 30 feet respectively, and several test pits sunk along the lead, which is traceable for 700 yards, having an average width of 2 feet, containing free gold, sulphurets and galena, and assaying very high.

The *Kamloops* mineral claim, owned by the McKinney-Kamloops Mining Co., has one working shaft 70 feet deep, 1 shaft 40 feet, on the vein, and two prospecting shafts of 12 and 15 feet, respectively. The mine is equipped with steam hoist, pump, two machine drills, and a 35 h. p. boiler.

Owned by Fontenoy Gold Mining and Milling Co., Ltd., Victoria;
Fontenoy, Jas. Dunsmuir, president. No. 1 shaft is 120 feet deep, and from it a drift has been run for 180 feet. No. 2 shaft is 65 feet deep, with a drift of 18 feet. The mine is furnished with steam hoist and pump, a steam drill, and a 35 h. p. boiler. The *Fontenoy* lies east of the *Waterloo* mineral claim.

The Lemon Gold Mining Co., of Omaha, Nebraska, U.S.A., is working principally on the *Gold Standard*, and has an incline shaft 210 feet deep, while a drift on the lead, at the 125-foot level, has been driven 165 feet, and one on the 210-foot level about 90 feet. A ditch has been constructed, about 2,120 feet long, to carry water from Rock Creek. The mine is equipped with steam hoist and pump. A 5-stamp mill is now on its way and, on its arrival, will be at once erected.

The Little Cariboo Mining and Milling Co. has on one of its properties, the *Annie L.*, sunk a shaft 74 feet on the vein, which is 5 feet wide. At the 70-foot level, a drift has been run 165 feet. Values run from \$8 to \$40 in gold. Six men are now employed, and a steam hoist is to be installed at once.

The *Shannon* and *Dolphin* mineral claims are owned by the Shannon-Dolphin Gold Mining Company. On these properties, a tunnel, 280 feet long, has been run to cross-cut the ledge at a depth of 320 feet. On the ledge, which is from 1 to 5 feet wide, a shaft has been sunk for 28 feet, and is still being continued. The ore assays, on an average, \$14 in gold.

The *Mammoth* mineral claim has a tunnel 85 feet on the ledge, which is well defined and from 3 to 6 feet wide, carrying iron sulphides and galena, with gold, and running in value from \$4 to \$200 to the ton. There are 4 men at work.

A very rich strike of free gold ore has been made recently in a claim called the *Dayton*, situated between the forks of Rock Creek, about 4 miles east of Camp McKinney, the assays going as high as \$80 in gold to the ton. It has been surmised that this section will prove equal to the old McKinney Camp, as the values are generally higher and the whole district is well mineralized. It is supposed that the numerous placer bars in this part of Rock Creek have been fed by the gold from the decomposed quartz on this claim, as no placer ground of any value has been found in this vicinity above the Falls, in fact none above the *Old England* mineral claim, which is situated near a part of Rock Creek from which several thousand dollars have been taken out in the last few years. The trend of the vein appears to be north-westerly and south-easterly. There are a number of locations in this camp, more or less developed, and the coming Spring is likely to see a considerable movement here.

CAMP FAIRVIEW.

The *Stemwinder* is owned by the Fairview Corporation, Limited
Stemwinder. President, Judge Spinks, of Vernon; Managing Director, R. Russell.
During the past year, work has been constantly going on on this claim. About the 1st of March, the vein was struck on the second or 175-foot level. On the main

There are a number of other properties to the south of the *Cariboo Group*, but on none of these has there been any important work done, and such as has been performed has not disclosed pay ore.

Waterloo. The Waterloo Milling and Mining Company's mine was not in operation, and as nothing special could be seen it was not inspected. On the west end of the property there is a shaft down 50 feet on a quartz vein, while 300 feet away there is a second shaft down 80 feet, at the 60-foot level of which some 300 feet of drifting had been done. There is a small hoist with vertical boiler, and the company erected in the fall of 1899 a 5-stamp mill, with a Blake crusher and Johnstone concentrator, operated by a 40-horse power boiler and engine—a very complete little plant. The mill is reported to have been run for a month in 1899, returning \$2,000, but it has since only been worked spasmodically. The vein is reported to be about 4 feet wide, running E. and W., consisting of a bluish quartz with bands of sulphides, and said to carry fair values in gold, while near the surface free gold is to be seen in the quartz. The property seems to have some merit, and the reason of its abandonment does not appear quite clear.

Lemon. The Lemon Gold Mining Co. owns the *Lemon, Pennsylvania, Last Chance, Gold Standard* and *Galena* mineral claims, situated about $2\frac{1}{2}$ miles east of McKinney. This property was shut down and could not be examined; it is learned, however, that a shaft had been sunk 228 feet, passing under the bed of Rock creek. From the 125-foot level drifts were set off 57 feet to south and 50 feet to north, with a 25-foot cross-cut from the south drift. All the ore which was run through the mill came from this level. At the 210-foot level drifts were run 18 feet to south and 38 feet to north. The plant consists of a 25-horse power boiler and hoist, sinking pump and steam drill. The mill consists of one battery of 5 stamps. The ore is a white quartz, mineralised with iron sulphides.

Victoria Mineral Claim. The Rock Creek Mines, Limited, a Victoria company, owns the *Queen, Victoria, California* and *Astor* mineral claims, situated on the right bank of Rock creek, about 4 miles east of McKinney. This was one of the first locations in the camp and the property has been already described in the Report of this Department for 1897, since which time the only additional work done has been to extend the incline downwards from the lower tunnel to a depth of 110 feet. As the property has not been operated since December 1st of the year mentioned, further description seems unnecessary. The mine below the tunnel was filled with water and could not be examined. The timbering in the upraise is covered up in the talcose matter of the lead, which prevented examination higher up. The surface buildings are in good shape, being still in charge of Mr. C. B. Bash, formerly superintendent of the mine.

Night Hawk. The *Night Hawk* mineral claim, owned by Messrs. Bash & Luce, is situated on the divide or ridge of land between the main Rock creek and the south fork of the same stream. The work done here is entirely superficial, of a prospecting character only, and consists of a number of large open cuts or trenches across the general trend of the mineral-bearing formation. From what development had been done, it would appear that there was a large dyke from 20 to 30 feet wide, with strike N. 50° W. (mag.) dipping slightly to the east and with, apparently, a crushed zone of from a few inches to 2 feet in width lying between the dyke and diabasic country rock. The dyke itself seems to be felsitic in character and is pretty generally mineralised throughout with yellow and white iron sulphides, from which values of from \$6 to \$14 were said to have been obtained, chiefly in gold with a little silver, although the samples taken at the time as an average did not give nearly as high results. The first open cut was 40 by 10 by 5 feet, while the second was 50 by 5 by from 6 to 10 feet deep.

The Camp McKinney Gold Mine

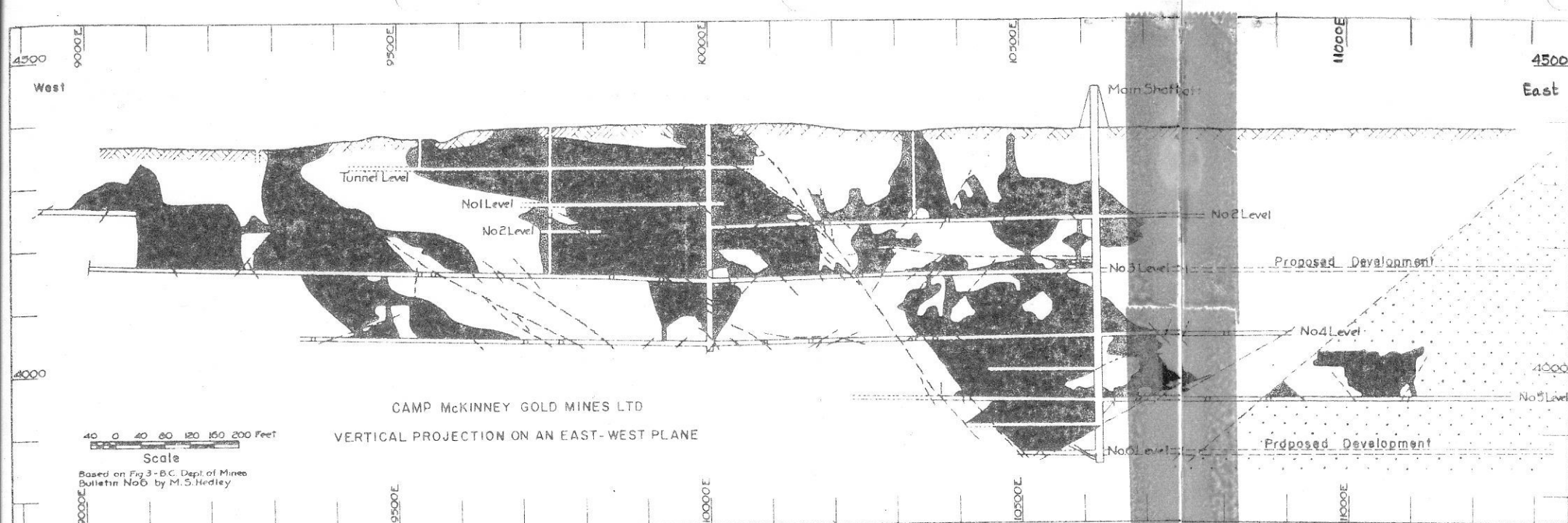
By H. L. HILL and L. P. STARCK
Consulting-Managing Engineers



*A paper to be presented at the 66th Annual Convention,
Northwest Mining Association, Spokane, Washington, Dec.
2 and 3, 1960.*



L. P. STARCK, P.Eng.



Washington Copper Co., and Clarke Gibson and Associates financed the property into production. Returns from the operation started in July, 1960.

and the central ore shoot is a 50-foot wide band of talcose material containing fragments of biotitic and siliceous rocks. The identity of the vein is lost in this material.

Geology

The Geology of the area has been described by W. E. Cockfield (1935), C. E. Cairnes (1937) of the Geological Survey of Canada, and M. S. Hedley (1940) of the B.C. Department of Mines.

(1) Rock Types

The rocks in the vicinity of the mine workings consist, for the most part, of a highly metamorphosed bedded series. Intruded into these are a number of dykes of varying age and composition. Strong alteration of the vein walls has obscured the identity of the rock types. While local variations occur, the general strike of the bedded rocks throughout the workings is northwest and the dip 45° to the northeast.

The most typical rocks forming the walls of the main ore shoots are calcareous greenstone and argillaceous quartzite. The former grades from a massive type of normal andesitic appearance and composition with irregular calcite veining to well banded rocks consisting of alternate parallel bands of greenstone and calcite from a fraction of an inch to several inches in thickness. The typical argillaceous quartzite consists of bands of almost pure silica separated by thin argillaceous partings. Gradations between the two rock types exist.

Occupying much of the unstopped section, indicated on the longitudinal projection between the west ore shoot

(2) Faulting

The vein within the mine workings is cut by numerous faults with displacements ranging from a few inches to several hundred feet which have greatly hampered mining and development. The faulting appears to be entirely post mineral with no effect on the vein other than to offset it.

The faults may be grouped as follows, from earliest to latest:

(a) A series of westward-dipping faults which offset the footwall block to the south from a few inches to 20 feet. The vertical component may be several times as large with the hanging wall probably moving downward.

(b) A series of major thrusts (including eastward dipping faults and flat faults) some of which are closely related, forming, as in the central section of the mine, a complex system. The hanging wall blocks have moved north and west. Displacement in the case of the flat fault above the east end of No. 3 level has been at least 400 feet.

(c) An eastward dipping fault, between the central and eastern ore shoots, in which the hanging wall block has moved relatively down and to the south with a total displacement of upwards of 300 feet.

(d) A westward dipping fault that cut off the vein at the end of 4, 5 and 6 levels of the old mine. The horizontal displacement is more than 300 feet with the hanging wall moving to the north.

Introduction

Camp McKinney Gold Mines Limited, a private company, operates the old Cariboo-Amelia mine at Rock Creek, B.C. Siliceous ore is mined and shipped directly to Cominco at Trail at a rate of about 700 tons per month.

Location

The property of Camp McKinney Gold Mines Ltd. consists of nine Crown-granted mineral claims, and is in the Greenwood Mining Division in south-central British Columbia about nine miles north of the International Boundary. It is reached by seven miles of branch road leaving Highway No. 3 three miles east of Bridesville. Rock Creek, a station on the Kettle Valley branch of the Canadian Pacific Railway, is nine miles east of the above road junction on Highway No. 3.

History

The history leading to the current operation of the Cariboo Amelia mine is as follows:

1860—Placer gold was recovered from Rock Creek and its tributaries.

1884—Lode gold was discovered on ground covered by the Victoria claim.

1887—The Cariboo vein was discovered.

1894—George McAuley and associates, of Spokane, Washington, after development of the Cariboo and Amelia claims, formed the Cariboo Mining and Milling Company, and erected a 10-stamp mill. This operation continued through 1897 producing \$380,000 and paying \$189,000 in dividends.

1898—McAuley and Toronto associates formed the Cariboo-McKinney Mining and Milling Company Limited to take over the operation. Property

controlled by this company included the Cariboo, Amelia, Alice, Emma, Maple Leaf, Soutooth and Okanagan claims. The milling capacity was increased by the addition of 10 stamps. This operation continued through 1903, produced \$803,000 and paid \$377,000 in dividends. The mine was closed down at the end of 1903 when exploration failed to find the vein beyond the fault at the east end of the mine.

Several years after the Cariboo-McKinney company closed down other interests dewatered the mine to the No. 4 level, but ceased operations when it was discovered that the old stopes were exhausted.

1917-1918—Twenty-nine claims in the area were optioned by the Consolidated Mining and Smelting Company and some surface exploration carried out.

1929—Shafts on the Waterloo and Fontenay claims were dewatered by C. F. Low of Vancouver, but no work was done.

1934—The Bralco Development and Investment Company of Vancouver optioned the Cariboo holdings and several other claims. Some surface was done and five diamond-drill holes put down to explore the westward extension of the vein and of the west and central section of the mine. Results were not encouraging and the option was dropped.

1939—Pioneer Gold Mines of B.C. Limited optioned the Cariboo-McKinney holdings and dewatered the mine. The workings were examined, surveyed and sampled. Three diamond-drill holes were drilled underground from the east end of No. 4 and No. 5 levels, and eight were drilled from the surface to explore the eastward ex-

tension of the vein to the north. Results were discouraging and the option was dropped.

Total production to 1939 amounted to 69,581 oz. gold and 6,359 oz. silver from 123,457 tons. Dividends totalled \$566,000.

1940—The property was leased by G. Boag and Associates, who mined pillars and stope remnants above the Tunnel level. During the summer of 1941 Highland-Bell Ltd., who had done some development work on the Warton claim in 1940, took over the lease, mined some ore and did 200 feet of drifting and crosscutting above the water level at the Tunnel level. The lease reverted to Boag and Associates late in the year.

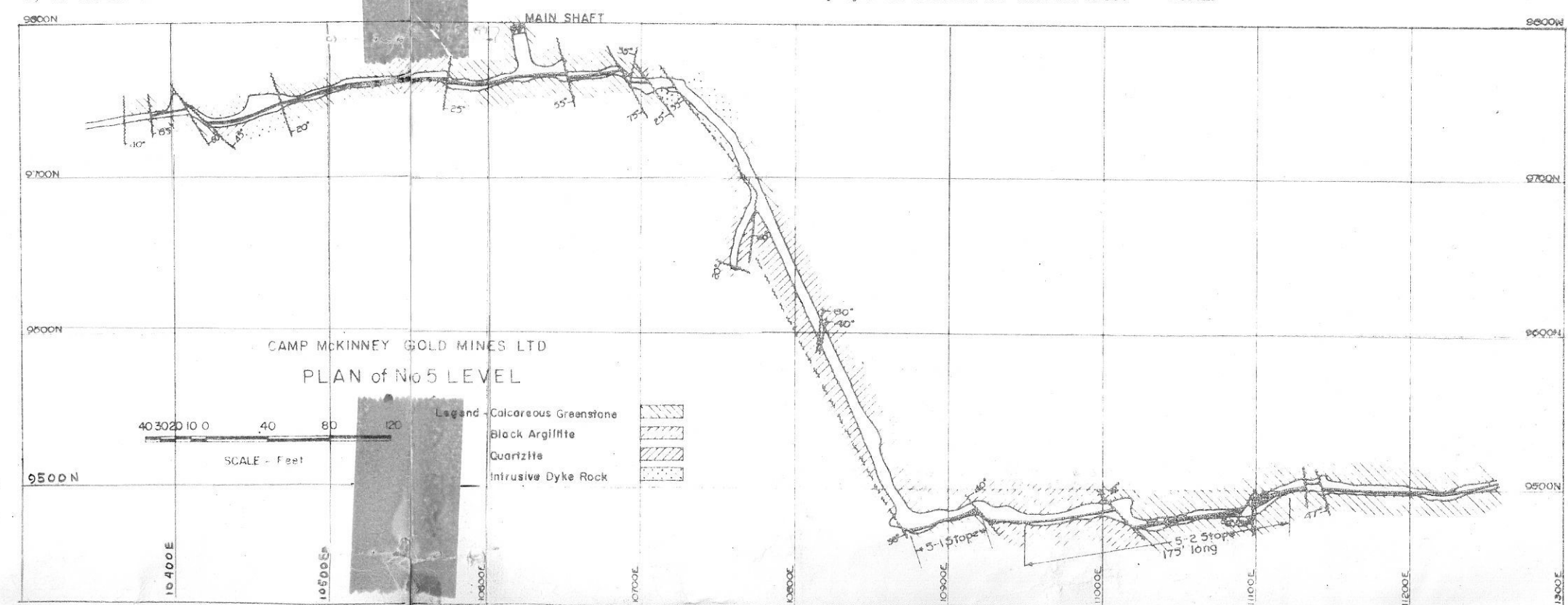
1942—Leases on the mine were taken by E. Wanke and Associates of Rock

Creek, B.C., who continued working through 1946 after dewatering the mine to the No. 2 level, and by Fritz of Midway, B.C., who worked through 1943. Ore was mined from surface pillars. Production from 1943 through 1946 totalled 1,570 tons, yielding 1,026 oz. gold and 1,496 oz. silver.

1957—W. E. MacArthur of Greenwood optioned the property, and with associates located the eastern extension of the main vein beyond the fault by surface diamond drilling.

1958—R. Hunstone and Associates then optioned the property from MacArthur and, after an examination by the writers, dewatered the mine and drove a 250-foot crosscut southeast on 5 level, and drifted 50 feet on the vein encountered.

1959-1960—Giant Mascot Mines, Mt.



(3) The Vein

The vein is a quartz-filled fissure occupying a well-defined fault fissure. Relative movement along the fissure is in the neighborhood of 30 feet with the north side moving east. The strike is almost due east and west, and the dip is vertical or steep southward. Widths range from a few inches to upwards of 10 feet. The walls are generally free and the vein filling consists of quartz containing bands of sulphide or shadowy dark colored material in the richer sections. Mineralization consists principally of disseminated pyrite with minor amounts of sphalerite, galena and chalcopyrite.

(4) Ore Shoots

The best ore in the old section of the mine seems to have been mined between walls of greenstone or largely greenstone. This rock appears to have been most competent to maintain a fissure with clean cut walls. The least competent rock exposed in the mine workings is the band of talcose material between the central and western ore shoots. Here the fissure has entirely disappeared.

Mine

Access to the mine is through the recently completed shaft from the surface to the No. 5 level. The two-compartment shaft was constructed by driving a pilot raise from the top of the old winze just above No. 4 level to the surface, later slashing the raise to full size and timbering down to No. 5 level. The shaft is 7 feet by 12 feet outside of timber and is inclined at 85 degrees.

Hoisting equipment consists of a one ton capacity self-dumping skip operating on rails, a counterweight operating in a timber slide in the service compartment of the shaft, and a 75 h.p. Mead-Morris hoist.

The section of the mine being developed at present is on the No. 5 level, 600 feet east of the shaft. Ore is being mined in the 5-2 stope, and the No. 5 level is being driven eastward on the vein.

Stoping by the shrinkage method is on a two-shift-per-day basis. Gardner-Denver R 68 stopers, using 7/8-in. Gardner-Denver Carborized steel and 1 3/8-in. - 1 1/2-in. Timken Taper bits, are employed. An average life of 275 feet per bit is obtained. Twenty 6-foot holes is average for a drill shift. 40% Forcite, in 1-in. by 8-in. cartridges, and fired by No. 6 caps, safety fuse and C.I.L. Thermalite Igniter Cord, is used. The cost of explosives is about \$1.00 per ton.

Ore is moved to the shaft by a

Mancha Little Trammer and one-ton ore cars.

Drifting is on a one-round-per-day basis. The drilling shift, consisting of one miner in a clean face, employs a Gardner-Denver S-58 Jackleg with 7/8-in. Gardner-Denver Carborized steel and 1 3/8-in. to 1 1/2-in. Timken Taper bits. A burn cut of 5 holes in quartz or 7 holes in waste is used. A total of 28 holes per round is drilled and a 6-foot break is obtained. A mucking crew, consisting of a motorman and an Eimco 12B mucking machine operator, cleans out a round in 3 to 4 hours.

The mine makes water at the rate of about 35 gallons per minute. Pumping equipment consists of a 40-h.p. 13-impellor centrifugal pump which operates automatically and runs 3 hours per day.

Ore is now being developed in a new stope, 175 feet long, east of the main fault. The back assays 2.1 oz. gold over an average width of 2.5 feet. Flat faults, with only minor movement, offset the vein and thus cause dilution during mining.

Two diamond-drill holes intersected the new ore shoot below 5 level. One hole assayed 4.32 oz. gold over 2.8 feet and the other 1.60 oz. gold over 3.0 feet.

Insufficient work has been completed to outline the ore-reserve potential east of the fault. Indicated reserves above and below the present ore shoot are estimated at 10,000 tons.

Surface Plant

The surface plant consists of a 60-foot headframe, a 100-ton ore bin and a 50-ton waste bin at the shaft head. Air for the mine is supplied by a 750 c.f.m. Belliss and Morcom automati-

cally operated compressor. Compressor and hoist are housed in a 25- by 40-ft. frame building. Smaller buildings house the change-room and office. The mine crew lives at Rock Creek and Bridesville, and supply their own transportation to the mine.

Power

Power is supplied to the mine from the West Kootenay Power and Light Company's main transmission line which passes within 2000 feet of the shaft. Transformers reduce the voltage from 60,000 down to 440, 220, and 110.

Power costs averaged \$570 per month for the past three months, or \$0.96 per dry ton shipped.

Ore Shipments

Ore is trucked from the mine to Rock Creek, a distance of 16 miles, by the E. Cox Transfer Company of Greenwood. Contract price is \$1.50 per ton. At Rock Creek the ore is dumped into 70-ton gondola cars and hauled to Trail by the Canadian Pacific Railway.

Personnel

Mr. A. G. Ditto is General Superintendent. Fifteen men are employed at the mine, distributed as follows:

| | |
|-------------|----|
| Underground | 12 |
| Surface | 3 |

Operating Data

During August, September and October of this year 1846 dry tons of ore were shipped. Assays were as follows:

| | |
|--------|-------------------|
| Gold | 1.438 oz. per ton |
| Silver | 1.99 oz. per ton |
| Silica | 68.0% |
| Lead | 1.0% |
| Zinc | 0.87% |

Operating data is shown below:

| | Average per month | Per ton | Per oz. gold |
|--|-------------------|---------|--------------|
| Dry tons shipped | 615.39 | | |
| Gross smelter returns | \$29,040.07 | \$47.19 | \$31.63 |
| Trucking and freight | 2,796.72 | 4.54 | 3.05 |
| Net Smelter Returns | \$26,243.35 | \$42.65 | \$28.58 |
| Operating Costs: | | | |
| Administration | \$ 1,938.17 | \$ 3.15 | \$ 2.11 |
| Mining | 7,040.54 | 11.44 | 7.67 |
| Current Development | 2,551.45 | 4.15 | 2.78 |
| Total operating costs | \$11,530.16 | \$18.74 | \$12.56 |
| Estimated returns to be applied against future development | \$14,713.19 | \$23.91 | \$16.02 |

General

To develop additional ore plans are now underway to sink the main shaft to the 6th level and then drift to the East, and also to extend the 3rd level to the East.

The object of this program is to develop sufficient ore to justify the construction of a mill with a capacity of at least 100 tons per day.