

August 1935.

British Columbia Department of Mines.

Victoria

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Geo. S. Pearson, Minister.

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REPORT ON THE PROPERTIES

of

GOLDSIDE MINES LIMITED

Lillooet Mining Division

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By:

B.T. O'Grady,

Resident Mining Engineer.

DEPARTMENT OF MINES

Office of the Minister.

Victoria, B.C.,
August 6th, 1935.

In explanation of the issuance of a Special Report on the properties of the Goldside Mines, Limited, it may be said that, as a result of publicity given the British Columbia properties of the Goldside Mining Company, Limited, a company incorporated in the Province of Ontario, and controlling Goldside Mines, Limited, a private company incorporated in British Columbia, the Department has been asked for information as to the progress of development on these properties, and the present conditions on the ground.

This report, by Mr. B.T. O'Grady, Resident Mining Engineer, is dated July 23rd, 1935, and will be found to contain an interesting description of the geology associated with the mineral showings under development on the company's properties, and to give a clear outline of the results of development done up to the time the author made his inspection.

Geo. S. Pearson

MINISTER OF MINES.

REPORT ON THE PROPERTIES OF

GOLDSIDE MINES LIMITED

Lillooet Mining Division

By: B.T. O'Grady.

This company's Taylor basin property, where work is proceeding, consists of the following eight claims, all held by location:- Polaris Peak, Tit Bit, Sunburst, Rapidian, Preference, Magma, Vortex, and Octopus Fraction. In addition five contiguous groups of claims have been acquired by the company under option agreements. These, which are also held by location, are as follows:

- (1) I.X.L. Nos. 1 to 6 inclusive.
- (2) Northern Light Nos. 1 to 8 inclusive.
- (3) Homestake Nos. 1 to 5 inclusive.
- (4) Viking Nos. 1 and 2.
- (5) Peak group, consisting of the Thunder Peak and Lightning Peak.

The property described is situated within Taylor basin at the head of Taylor creek, a tributary of Tyaughton creek which in turn flows into Bridge river. The mine camp, on the Homestake No. 4 claim, is located 1,600 feet measured south 30° west from the forks of Taylor creek which are shown on the Geological Survey of Canada map of Bridge river, publication No. 1882, in the north-western part of the map-area. The forks referred to can be described in terms of this map as being just south of the "T" in "Taylor" creek. The camp is situated on a wooded knoll within the basin, the boundaries of which consist of broad,

smoothly rounded, bare ridges rising to elevations of about 8,000 feet. The upper slopes consist of talus and rock slides, through which emerge rugged outcrops of solid rock. The middle slopes, covered by a heavy mantle of glacial drift, are traversed by snow-fed creeks and are covered with patches of a shrub-like growth of balsam fir together with a rank growth of grass and wild flowers. The low areas along Taylor creek and basin are well wooded with virgin balsam fir, and occasional spruce. The present means of access is by pack trail, about eight miles in length, which branches off the road near the south-western extremity of Tyaughton lake. This road, about 3.5 miles in length, leaves the Bridge river road east of the Pearson Ponds at a point about 35 miles from Bridge river station on the Pacific Great Eastern Railway. The trail, which is shown in part on the map previously referred to, climbs from 3,200 feet elevation at the lake to 7,200 feet at the Taylor basin pass, in a distance of about five miles. From this point the main trail, three miles in length, descends to the Goldside camp at 6,300 feet elevation. All elevations mentioned are relative being derived from aneroid readings. The natural grade for a new outlet, if warranted by future development, would be down Taylor and Tyaughton creeks to the Bridge river highway. A preliminary survey of this route is said to have been made. Interpreting the formations in the Taylor basin area from the

preliminary classification afforded by C.W. Drysdale and W.S. McCann in the Bridge River Map-area, the oldest underlying rocks exposed consist of highly metamorphosed sediments of the Bridge River series which has been referred to the Pennsylvanian-Permian. These are represented by thin-bedded cherty quartzites as exposed in shallow cuts along the edges of a small creek in the north-western corner of Northern Light No. 1 Mineral claim. Next in ascending order are serpentines tentatively assigned to the Triassic. Dense to porphyritic rocks of this general character, more or less altered from their original composition, are exposed in and around No. 2 adit in the northern section of the same mineral claim and at other points in the basin. The Eldorado series, assigned to the Lower Cretaceous, is represented locally by conglomerates lying across Taylor creek where it falls steeply at the eastern end of the property and by grey feldspathic sandstone in the north-western part of the Northern Light No. 5 claim. Included in this series interflows of greenstone, of andesitic type, are reported to outcrop in the area.

On the north-western side of the basin several areas of diorite, believed to be lenticular in outline, are exposed in extensive outcrops. These rocks, to which occasional patches of roof-pendant sediments adhere, have been mapped as being related to the Bendor batholith of Post Lower Cretaceous age. The

deposits of interest, found in the diorite, consist of curving fractures, with general north-easterly strike and dips from vertical or nearly so to the north-west. Mineralization consists of quartz containing banded and disseminated sulphides, the most abundant mineral being arsenopyrite, frequently accompanied by pyrite and occasionally with both pyrite and sphalerite. Chalcopyrite is reported to have been identified in some specimens. Oxidation is not much in evidence, being confined to staining of the sulphides at surface outcrops with seams of rusty decomposed material along fracture planes. Gold values appear to fluctuate in proportion to the percentage of arsenopyrite present. The assay and analysis of 4,643 pounds of ore shipped to the Tacoma Smelter by the Goldside Mines Ltd., in December 1934, is as follows:

Gold, 1.74 oz. per ton; silver, 0.06 oz. per ton; copper, 0.05 per cent; zinc, nil; arsenic, 19.56 per cent; antimony, trace; iron, 13.9 per cent; silica, 44.0 per cent; lime, nil; sulphur, 6.0 per cent; alumina, 5.9 per cent.

Mineralized fractures have been persistent as far as development work has gone. Widths are generally very narrow, the largest zone, from which the shipment was made, being 18 feet long and 10 to 12 inches wide with a local swelling to 20 inches in the central part. The first staking of mineral claims in the immediate area is reported to have been that done by Grant White

in 1910 on the divide between Taylor and Eldorado basins. These claims adjoin the I.X.L. group. In 1912 E.J. Taylor and his partner, while prospecting, are said to have panned gold colours along the upper reaches of Taylor creek leading to the subsequent discovery of auriferous arsenopyrite on what is now the Northern Light group, staked in 1932. Additional claims having been staked since. The workings examined are on the slope forming the northern side of the basin.

Taking the camp as a starting point, the No. 1 adit, which is the principal working, is on the Northern Light No. 6 claim 3800 feet distant along a bearing north 63° west. This is being driven as a crosscut to test the projected downward continuation of the surface showings which are as follows: At 7513 feet elevation a shallow pit, from which the previously mentioned test shipment was extracted, exposes a zone 18 feet long and from 10 to 12 inches wide, well mineralized with arsenopyrite, which strikes north 20° east, along the contour of the mountain-slope and dips 70° to the north-west, or into the hill. At the southern extremity of this zone the arsenopyrite mineralization, in streaks an inch wide or less, turns and follows a slip or fracture striking south 80° west up the hill and dipping at from 86° to the north to vertical. At 14 feet along this course a curving south-westerly-striking fracture, in which streaks of

similar mineralization, up to 3 inches wide are exposed by cuts at intervals, is traced for 155 feet to where another definite zone is exposed at an elevation of 7615 feet. At this point the mineralized fracture continues for a length of 20 feet along a strike of south 80° west, the dip being from 85° to the north to vertical. This 20-foot section, throughout which arsenopyrite mineralization occurs from 3 to 5 inches in width, is represented by sample No. 6678. This assayed: gold, 1.68 oz. per ton; silver, 0.3 oz. per ton. At the upper or western extremity snow prevented further tracing of the fracture.

At the northern end of the principal surface showing at the pit, elevation 7513 feet, seams of the typical mineralization follow a fracture down the hill along a course north 55° east for 19 feet then north 68° east for a length of 50 feet to the limits of the open cuts in this direction. Dips along these last two bearings are from 77° to 80° to the north-west. In the vicinity of the pit a triangular condition is indicated by the apparent junction of the curving, more easterly striking fractures, just west of the 18 foot length (striking north 20° east) combined with the slip mineralization striking south 80° west. The triangle so formed would be 18, by 14, by 28 feet, the first dimension representing the principal zone at the pit. Parallel fracturing accompanied by streaks of mineralization is indicated by cuts 100 feet westerly from the pit at

elevations between 7550 and 7600 feet. Farther up toward the summit other zones of similar character, are said to be exposed but snow conditions handicapped inspection at higher elevations. Before driving the No. 1 adit, hereinafter described, a hole was drilled, with a Boyle Bros. X-ray diamond drill, to a depth of 90 feet below the surface.

On July 10th, 1935, the face of this adit, at 7350 feet elevation, measured 414 feet from the portal, having been driven as a crosscut along a course of north 78° west which is in direct line with the centre of the principal surface showing at 7513 feet elevation. A point vertically below this surface exposure is reached at 239 feet in from the portal. Allowing for the 70 degree westerly dip the projected position of the objective, is about 298 feet in from the portal but a steepening of dip apparently occurred as conditions of mineralization somewhat similar to those at the surface were encountered at points 267 and 277.5 feet in from the adit portal. The details of this main working are as follows:

The formation cut is diorite grading from dark unaltered rock to light coloured phases.

Pronounced shearing striking north 53° east along which a drift, to be described, has been driven to the south-west. Shearing is accompanied in places with silification and scattered, irregular mineralization. Dip steep to the north-west.

Distance in feet
from portal

Description of intersections
in No. 1 adit

- 153 153 1-1/2 inch stringer containing arsenopyrite, strike north-easterly, dip 88° to the northwest. Company assay supplied by management: gold, 0.04 oz. per ton.
- 185 185 Similar stringer striking north 12° east, dipping 66° to the north-west. Not assayed.
- 255 255 2-inch fragmental veinlet, flat-lying. Company assay: gold, 1.50 oz. per ton.
- 263 263 Small patch pyritized silicified wall-rock no definition. Company assay from selected sample: gold, 1.10 oz. per ton.
- 267 267 Quartz vein 7 inches wide on which curving drift extends 103 feet to the north-east. Company assay, across 7 to 8 inches at intersection, gave: gold, 1.89 oz. per ton. The quartz is mineralized with disseminated pyrite and arsenopyrite. The strike is north 30° east, and the dip is from 53° to 55° to the north-west. The drift on this vein to the north-east will be described separately.
- 277.5 277.5 Well-defined fracturing, striking north 45° east with dip of 70° to the north-west, filled with partially decomposed gangue containing bands of arsenopyrite, the total width being 7 inches. The apparent continuation of this mineralized fracture is cut in the north-east drift at 47 feet from point 267 in the main adit (where it is 6 to 8 inches wide, containing bands of sulphides including arsenopyrite, pyrite, and occasional sphalerite.)
- 307 307 Pronounced shearing striking north 53° east along which a drift, to be described, has been driven to the south-west. Shearing is accompanied in places with silification and scattered, irregular mineralization. Dip steep to the north-west.

Distance in feet from portal	Description of intersections in No. 1 adit.
322	3 inches of quartz containing pyrite and sphalerite. Strike north 30° east, dip 55° to the south-west. Its apparent continuation cut in south-west drift, where it is 4 inches wide, at 62 feet from point 307 in main adit.
335	Fracture striking north 40° east, dip 78° to the north-west. Rusty sheared wall-rock with arsenopyrite and a little pyrite. Width varies from 3 to 10 inches. Company assays gave: gold, 0.20 and 0.16 across 9 and 8 inches respectively.
356	2 inches of white quartz sparingly mineralized with iron sulphides. Strike north 30° east, dip 52° to the south-east.
414	Face at July 11th, 1935. Some indefinite silification with scattered pyrite and sphalerite.

The writer's samples taken in the same adit are as follows:

Number	Location in feet from portal	Width in inches	A s s a y	
			Gold oz. per ton	Silver oz. per ton
6677	277.5	7	0.06	0.6
6680	335	5	0.14	0.3

The north-easterly drift, at 267 feet in from the portal of the adit crosscut, is 103.5 feet long measured from the centre line of the main working. From the point of commencement to 28 feet it is driven north 30° east; from 28 to 42 feet north 40° east; from 42 to 68 feet north 29° east; from 68 to 78 feet, north 70° east; and from 78 to the face at 103.5 feet north 20° east.

The quartz vein, followed by the drift for the first two courses, dips at from 70° to 55° to the north-west, and is from 3 to 8 inches wide exclusive of silicified, slightly mineralized adjacent wall-rock. Sample 6674 covering the section from 0 to 15 feet and representing an average width of 8 inches, assayed: gold, 0.06 oz. per ton; silver, trace. Sample 6675 representing the section from 15 to 30 feet from 7 to 3 inches wide, assayed: gold, 0.24 oz. per ton; silver, trace. Beyond the latter point tracing of this vein is difficult owing to pronounced shearing, accompanied by heavy gouges, having caused caving from the roof. At point 47, a quartz vein 6 to 8 inches wide, represented by sample 6676 which assayed: gold, 0.34 oz. per ton; silver 0.8 oz. per ton, appears in the western wall of the drift. This strikes north 40° east with a dip of 75° to the north-west, apparently being the continuation of the mineralized fracture intersected at point 277.5 in the main adit. Beyond this point caving from the roof made close inspection impracticable but the last-

mentioned vein can be seen at point 52 where it follows along the eastern wall of the drift for a short distance. From that point the roof was caving dangerously and the last thirty-foot section to the face was completely blocked. Company samples taken along this drift gave the following results:

Location measured in feet from point 267 in main adit	Width (inches)	Gold oz. per ton	Remarks
37	3	0.24	Quartz vein
44	5	0.07	Quartz vein
56	4	0.53	Quartz vein (solid arsenopyrite)
57	3.5	0.26	Quartz vein
60	12	0.28	Banded vein (strike north 40° east)
61	3	0.61	Separate stringer
78.8	Selected	0.89	Clean arsenopyrite.

Particulars of the drift run to the south-west, from point 307 feet in the main adit-crosscut (centre line) are as follows: From 0 to 31.2 feet the course is south 53° west; from 31.2 to 55 feet south 35° west; and from 55 to the face at 84.5 feet south 60° west. In the section towards the main adit the drift follows a zone of shearing accompanied by some silification and scattered, irregular, iron sulphide mineralization.

At points 20 and 36 feet, company samples across 4.75 and 4 feet respectively assayed: gold, 0.03 and 0.16 oz. per ton. At chainage 62 the drift cuts a 4-inch quartz veinlet, mineralized with banded sphalerite, pyrite, and arsenopyrite, which strikes north 45° east and dips at 56° to the south-east. This occurrence is the apparent continuation of the 3 inches of mineralized quartz cut at a point 322 feet in the main adit-crosscut. Continuing along the drift a 3-inch quartz stringer, mineralized with sphalerite and arsenopyrite, is intersected at point 68. Beyond here to the face nothing of interest was noted.

The No. 2 adit, at 6450 feet elevation, is on the Northern Light No. 1 claim 1300 feet measured along a bearing north 65° west from the camp. Exploration conducted in this vicinity has no connection with the previously described deposits in the No. 1 adit area. Extensive ground-sluicing, known as the "big open cut" was done from 6450 to 6475 feet elevation prior to the driving of the No. 2 adit crosscut immediately adjoining this surface working to the south-west and roughly parallel with it. The big open-cut, trending north-westerly up the hillside, is about 210 feet long, tapering from a narrow ditch at both extremities to a width of between 20 and 30 feet towards the centre. The

overburden is from 10 to 12 feet deep and the sides have largely caved in. According to the Report of the Minister of Mines for 1934, page F. 32, several narrow partially decomposed quartz stringers, mineralized with arsenopyrite, were originally exposed in the long ground-sluiice open cut. The writer's sample No. 6679, which assayed: gold, 0.30 oz. per ton and silver, trace, was of selected arsenopyrite in more or less decomposed gangue from what appeared to be a pocket or small lens in the central part of the big cut. Conditions were obscured by water and caving. The No. 2 adit, where work has been suspended, is 272 feet long following a bearing north 67° west. At a point 95 feet in from the portal a branch extends north 22° west for 33 feet to where it forks, one sub-branch being driven to north 25° east for 28 feet, the other north 45° west for 29 feet. The underground workings expose an irregular contact between diorite and serpentine. Measured from the portal the main adit is in serpentine for 174 feet, then in diorite for 250 feet and serpentine again from the last point to the face at 272 feet. From 122 to 224 feet the main adit is directly under the wider part of the big open cut. From near the portal to point 44.6 a highly metamorphosed dyke, 3 to 4 feet wide, trends with the adit, and dips from 30° to 50° to the north-east, cutting the serpentine. The branch workings, which also extend under the surface workings, are in

serpentine with the two extremities just entering the diorite. The only mineralization noted underground is in the main adit between 232 and 237 feet from the portal where it is very indefinite and consists of films of arsenopyrite in cleavage planes in diorite associated with a zone of fracturing striking from north 37° east to north 40° east. A grab sample of this mineralized rock, assayed for the company, gave: gold 0.04 oz. per ton.

All the underground workings described were driven since the inspection of A.M. Richmond, recorded in the Report of the Minister of Mines for 1934.

Summarizing existing conditions in the No. 1 adit area, widths of auriferous arsenopyrite mineralization are extremely narrow. It is not known if the fractures extend into other rock formations, the situation being obscured by snow at the upper or south-western end, and overburden at the north-eastern extremity of the area explored. In the No. 2 adit area no definite measurable mineralization is exposed. In addition to the workings mentioned a considerable amount of surface prospecting has been done on the company's Taylor basin property, consisting of test pits, open cuts, and trenches. The sides have in most cases caved, preventing inspection. However, no discovery of

importance has been reported in connection with them and efforts have been concentrated in the No. 1 adit area, considered the more important objective by the management. All work has been done by hand. S.H. Davis is in charge of the present crew of 8 men.

August 1935.

British Columbia Department of Mines.

Victoria

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Geo. S. Pearson, Minister.

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REPORT ON THE PROPERTIES OF

THE BONANZA CACHE GOLD MINES LIMITED

Cayoosh Creek,
Lillooet Mining Division.

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By:

B.T. O'Grady,
Resident Mining Engineer.

REPORT ON THE PROPERTIES OF
THE BONANZA CACHE GOLD MINES LIMITED

DEPARTMENT OF MINES

Office of the Minister.

Victoria, B.C.,
August 2nd, 1935.

In explanation of the issuance of a Special Report on the properties of the Bonanza Cache Gold Mines, Limited, it may be said that the Department of Mines has been in receipt of many enquiries during the past few months from widely scattered parts of the Dominion of Canada.

Those writing seek to obtain the latest information regarding the Development of the British Columbia mining properties named. This interest clearly is the result of an intense publicity campaign having as its object the sale of shares of the company.

The report deals with local geological conditions, the history of the company's mining properties, and with the results of development done up to the time the author made his inspection.

Geo. S. Pearson

MINISTER OF MINES.

REPORT ON THE PROPERTIES OF
THE BONANZA CACHE GOLD MINES LIMITED

Cayoosh Creek

Lillooet Mining Division

By: B.T. O'Grady.

The holdings of the Bonanza Cache Gold Mines, Limited, comprise the following ten Crown-granted claims:- Ruby, Mineral Point, Golden Stripe, Golden Eagle; the Bonanza group, Lots 123 to 128 inclusive; and the following thirteen claims and fractions held by location:- Bonanza Nos. 1, 2, 3 and 4, Gold Slide Nos. 1, 2, 3, 4 and 5, the Bonanza Fraction, Bonanza No. 1 Fraction, Cache Fraction, and Wedge Fraction. Also held by location are the following seventeen claims and fractions comprising the Morning Glory Group:- Morning Glory, Morning Glory Nos. 1 to 7 inclusive, Rainy Day, Rainy Day No. 1, Lapaloma, B.C. No. 3, B.C. No. 4, B.C. Fraction, Wood Fraction, Cotton Fraction, and Dot Fraction, and, also held by location, the Magic and Marygold known as the Marygold group. All told, therefore, there are forty-two claims held by this Company. The Bonanza Cache property, which is the only one being actively worked at the time of writing, adjoins Cayoosh creek to the south twelve miles by motor road from Lillooet, a station on the Pacific Great Eastern railway, or 9.5 miles from Craig Lodge at the eastern end of Seton Lake (see Biological Survey of Canada Map 196-A, "Vancouver Sheet." The Golden Cache lies to the northwewt of the Bonanza Cache with which it is connected by steep trail, extending from 1,500 to

2,850 feet elevation, on the northern side of Cayoosh creek. The Morning Glory group lies on both sides of Phair (Cottonwood) creek, some prospecting having been done at a point about 1.75 miles by trail from Cayoosh creek. The Marygold group is east of Seton lake in the angle between Cayoosh and Enterprise creeks. The claims comprising the Bonanza Cache, Golden Cache, and Morning Glory groups are shown on a plan prepared by Noel Humphrys B.C. Land Surveyor of Vancouver. This also shows the local topography in contours at 100-foot intervals. Within the area visited Cayoosh creek follows a narrow gorge with steep sides and in the vicinity of the Bonanza Cache the northern wall of the valley is nearly perpendicular. Elevations range from 750 feet at Seton lake to 1,500 feet at the Bonanza Cache camp adjoining the creek, and the mountains on both sides rise to between 6,000 and 7,000 feet above sea level. At this time of year (end of June) Cayoosh creek is reported to have a flow of about 1,000 cubic feet per second. Its gradient is very steep below the camp where the creek falls 112 feet in a distance of 1 mile. Except on the more precipitous rock bluffs, trees cover the mountain slopes. These include yellow pine, jack pine, balsam, and spruce. Cottonwood grows in the valley bottom of Phair (Cottonwood) creek with cedar, spruce and fir on the steep slopes. The trees are up to 18 and 24 inches in diameter. The flats at intervals along Cayoosh creek provide suitable places for camp-sites. The section

of road between Craig Lodge and the Bonanza Cache is narrow with many steep gradients but the road bed is in good condition and mine supplies are hauled by truck without difficulty.

Geological Survey of Canada publications covering the surrounding area include the following:- Summary Report 1933, part A, "Lillooet Map-area"; Memoir 130, "Geology and Mineral Deposits of the Bridge River Map-area"; and Memoir 118, "Mineral Deposits between Lillooet and Prince George". The first-mentioned approaches Cayoosh creek most nearly and the accompanying "Geological Sketch of Lillooet area", Fig. 5, adjoining page 70-A shows the formation in the vicinity of the Bonanza Cache to be composed chiefly of sediments. It is evident that the limited area thus mapped can be appreciably extended. These rocks are understood to have been correlated with the Bridge River series, mainly sediments. Argillites predominate in the vicinity of the properties under discussion, their composition ranging from carbonaceous argillaceous phyllite to calcareous argillite or argillaceous limestone. On the Bonanza Cache these rocks are dark to shiny black and much sheared so that the bedding planes are difficult to determine. On the Golden Cache rocks of similar character are a light grey. Dark argillaceous rocks are present on the Morning Glory group on Phair (Cottonwood) creek, a tributary of Cayoosh creek. The lower adit on the Golden Cache is driven in

massive greenish limy rock. Outcroppings of diorite, fine-grained in part, were noted on the Bonanza Cache and of fine-grained diorite (possibly quartz diorite) on the Morning Glory. These, occurring as dykes from a few inches up to 15 feet wide, or more, apparently follow the bedding planes of the argillites in most cases but may cut across the formation at some points. Altered hornblende diorite is exposed on the eastern side of Phair creek above the Morning Glory claim but structural relationships are not known. Mineralization, consisting mainly of quartz with small amounts of iron sulphides, chiefly pyrite, is referred to the period following dyke intrusion. In the Bridge River area the mineralization is attributed to the Bendor quartz diorite. Outcrops of similar rock are reported to have been noted in the Cayoosh creek area. The nearest definitely known area of quartz diorite related to the Bendor batholith is on Lost creek to the west of Cayoosh creek as shown in the Geological Sketch, Fig. 5, previously referred to.

In the area examined the character of the deposits can be summarized as consisting of elongated lenses and stringers of quartz conforming in strike and dip with the argillites. No definite fissuring or vein structure was noted. The general trend of the formation is to the north-west, with local variations, where strikes are northerly. Dips are from horizontal to 25 degrees to the north-west or south-east in accordance with the folding.

References to the past history of the Bonanza Cache and Golden Cache properties are contained in the Report of the Minister of Mines for the years 1888, 1889, 1891, 1895 and 1897. The following extract is from the report of W.A. Carlyle, Provincial Mineralogist, pages 553 to 555, Report of the Minister of Mines for 1897:-

"The Golden Cache Mines Co., Vancouver, capital stock \$500,000 in \$1 shares. Superintendent George T. Rives, Lillooet, owns the following claims:-- "Golden Eagle", "Ruby", "North Star", "Golden Stripe", "Moonlight" and "Intermediate" fractions, located on the steep mountain sides north of Cayoosh creek, twelve miles from Lillooet, and the "Jumbo" on the south side.

TOPOGRAPHY: The country traversed by Cayoosh creek is exceedingly rugged, the mountains being very precipitous and lofty, many of the cliffy sides being vertical, while the creek runs through a deep and narrow gorge. When this lead was discovered by a half-breed hunter, this country was almost too difficult for access even by a very bad trail. Now a fair waggon road with very steep grades both ways, has been built from Seton lake 10 miles up along the steep mountain sides, often crossed by rock slides, to the site of the stamp-mill on Cayoosh creek, where the three-rail gravity tramway leads up to the foot of the ore-chutes below the perpendicular face of rock,

in which is this body of quartz.

THE MINE: At the time of visit all entries to this mine were blocked up with ore awaiting the completion of the mill, hence the underground workings could not be seen. However near the summit (see illustration) of a nearly vertical bluff, and in the face of this bluff at a height of about 1,700 feet above Cayoosh creek, running diagonally across with a pitch to the north of about 20 degrees, was seen the ledge traceable for about 450 feet, or a lens-shaped body of quartz about 20 feet thick at the centre, and narrowing down to a narrow stringer at either end. It was claimed that the vein could be seen again along the trend of this vein, as on the "Alpha Bell" on one extension, and the "Golden Stripe" on the other, but this was not traced out.

This lead dips into the mountain at an angle of about 12 degrees from the horizontal, but when in a distance of about 100 feet, where there is a winze 28 feet at the end of a tunnel the dip is said to suddenly become much steeper, but not enough work had apparently been done to disclose just what the conditions are at this point. The vein is apparently conformable with the enclosing black argillite-schist, and while the main mass consists of bands of milk-white, barren-looking quartz, there are broad and narrow bands of quartz interbanded with a little slate, the whole mass being twisted and crumpled.

GOLD: Very fine samples of free gold have been taken from this ledge, but in the main body nearly all of the central mass appears to be very barren, while most of the gold is said to be in two or three feet of quartz near the foot and hanging walls. Free gold is visible in many samples but generally along the narrow seams or lines between the bands of quartz where there is also black, carbonaceous matter from the slates. But gold is seen both in the solid quartz and in the slates of the walls.

The proper development of the mine has just begun, and it is yet impossible to say what values this large body of quartz may carry in gold, but so far the returns from several hundred tons treated in the stamp-mill have been disappointing, or very much lower than were anticipated by the owners, the returns for 755 tons first crushed being about \$4.45 per ton. The amount of sulphides in this ore is extremely small so that the amount of concentrates will be practically nil, unless in depth the quartz carries more sulphides. In working the first openings into this body, it was very difficult to get at it on the bare surface of the cliff, but Mr. Rives now has a strong platform built with a short 3-rail tramway to the head of the chutes that lead down to the main tramway.

MILL AND TRAMWAY: A three-rail gravity tramway leads from the mill up to the ore-chutes, or to a point 270 feet below the ledge. It is 2,200 feet long with a drop of 1,400 feet, and has a 3/4 inch steel cable, with a 2-ton car on each end. According to the first designs and contracts let, the lower end of the tramway was so low that no allowance was made for the dumping of the car at the mill, so that after a short mill-run had been made to satisfy one of the largest purchasers then at the mine (and just at the time of the writer's inspection), the mill was stopped until the lower end of the tramway could be raised to permit the car to dump automatically. The cost of this tram was about \$10,000.

The mill, built by the Wm. Hamilton Manufacturing Co. Ltd., Peterboro, Ont., at a cost of about \$10,000, consists of two batteries of five stamps, each 850 lbs. dropping 6 inches, 96 times per minute, with inner copper plates, back and front, and outer coppers 4 by 8 feet, and 40 mesh slotted screens; Reliance Blake crusher above an 180 ton bin; two Reliance feeders; two 4 x 12 Frue Vanners; one, 90 h.p. engine, and one small 5 h.p. vertical engine for vanners; 1 boiler, saw-mill and planer; steam pump at creek.

This mill, built on the bank of the creek, can easily be enlarged to 20 stamps; Cayoosh creek carries a good supply of water and a fine water-power can be got a quarter of a

mile below the mill, where electric power and air compressor plants may be installed, but until the true value of this ore-body is accurately determined by the present mill, further erection of plant, etc., will be very inadvisable. This property attained a very sudden and far-reaching notoriety, by reason of the fine specimens found, and it is sincerely hoped that this large body of quartz will yet be found to carry high enough values to permit remunerative returns."

The old mill, operated for a short period during the late "nineties", adjoins the camp of the present company on Cayoosh creek. The Morning Glory and Marygold claims are recent locations. The several properties are described separately as follows:

BONANZA
CACHE

At point "A", elevation 2770 feet, exactly 300 feet from the south-east corner of Lot 124, on the boundary between Bonanza Lots 124 and 125, and on the apex of a sharp ridge, an approximately vertical shaft has been sunk about 60 feet (estimated, as lower portion inaccessible without a rope). Fifteen feet below the collar an adit, 16 feet long to the south, connects with the surface. The section of shaft above the adit develops a quartz showing, 12 to 21 inches wide, which strikes north-westerly with a dip of 85 degrees to the south-west, Minor amounts of pyrite occur in disseminations

through the quartz. In the adit the quartz, occurring as parallel bands and stringers in a zone 30 inches wide, spreads out flatly along the bedding planes of the enclosing argillites which at this point, due to local folding, strike north. On the southern side of the ridge, below the tunnel, quartz stringers dip at 20 to 25 degrees to the west. Sample No. 6665, which assayed: Gold, 0.04 oz. per ton, silver, trace per ton, represents the quartz lens 12 to 18 inches wide and 16 feet long in the adit.

Two thousand feet measured north 26° west from point "A", and on Bonanza Lot 123 claim, two adits, at 1,680 and 1,653 feet elevation, are connected by an inclined shaft 58 feet long on a 25 degree slope. These are designated for convenience as "B" workings. The shaft is sunk on the outcrop of a zone of quartz lenses and stringers. From the collar a drift adit extends 26 feet south then 16 feet south 15° east. Stoping has been done to a height of ten feet and a width up to ten feet along the 26-foot section of adit, also along the surface for a short distance northerly from the shaft collar. The dump here contains a considerable proportion of quartz mixed with dark argillite which forms the country-rock of the deposits. Occasional pyrite is present in the quartz some of which is iron-stained. Sample No. 6664, which assayed: gold, 0.14 oz. per ton; silver, 0.02 oz. per ton, represents selected quartz such as might be sorted out from the dump. The lower adit is driven south 35° east for 97 feet in from the portal, of which the first

25 feet is a caved timbered approach. Connection with the bottom of the shaft is made at 53 feet in from the portal. From point 97 feet the working continues south 25° east for 67.5 feet and the last course is south 47° east for 51 feet. At 64 feet back from the face a branch working extends south 27° west for 25 feet. The quartz occurrences are localized near the collar of the shaft, and there is but little quartz in evidence at the lower horizon. Nor was there any continuity of mineralization noted in the eastern extremities of the two adit drifts. The next working is at point "C" on the Surprise claim at 1,580 feet elevation, 445 feet distant from "B" workings along a bearing of south 44° west. Here a lenticular quartz occurrence, 10 feet long and up to 12 inches wide, has been explored by an adit 48.5 feet long driven south 50° east along a plane of local fracturing in the argillites which are crushed and contorted. As in the case of "A" and "B" workings the quartz showings at "C" have no specific definition but coincide with the stratification of the enclosing rocks, the planes of which are flat with a tendency to dip to the north-east. Sample No. 6663, which assayed: gold, trace; silver, trace, represents selected quartz, no definite sections being available to sample.

To test these quartz lenses and stringers at depth an exploratory adit-crosscut is being driven at point "D", elevation 1,480 feet, 290 feet distant from "C" adit along a

bearing of south 22° west. This crosscut, known as the Noel tunnel, was started in 1934 and had been driven 1,042 feet to June 30th, 1935. It is situated centrally in relation to "A" working, lying to the south, and "B" and "C" workings to the north. It passes through shiny black argillites, having been driven in a north 80° east direction cutting across the dip of the formation which is flat lying or gently folded. The rocks tend to strike north-westerly with dips up to 25 degrees to south-west and north-east. Numerous stringers and patches of quartz show in the northern or southern wall of the crosscut, apparently conforming to the attitude of the enclosing strata. The quartz occurrences, slightly mineralized with iron sulphides at some points, are indefinite and lack continuity. A lens between points 406 and 412 was explored by a drift run 12 feet south 32° east. This drift is now being continued according to reports. Sample No. 6672, taken by the writer, which assayed: gold, nil; silver, nil, represents selected quartz, containing scattered disseminations of iron sulphides, from stringers between points 960 and 1024 feet in from the portal of the crosscut. Sample No. 6662 which assayed gold, 0.10 oz. per ton; silver, 0.02 oz. per ton was selected from an indefinite patch of mineralization at 1,000 feet in from the portal.

Owing to the lack of definition or continuity of the lenses in the widely separated "A", "B", and "C" workings and the

three adits at the lower, or north-eastern end, enclosed
folding of the flat-lying argillites in the Noel crosscut it is
not evident to the writer what results might be looked for at the
deep horizon. Other lenses might be encountered. Their possible
interest would be indicated by the values found in the lenses ex-
plored by the upper workings. The writer's samples represent
selected material, the lack of continuity preventing samples being
taken over specific lengths and widths indicating tonnage. At
the portal of the Noel crosscut are combined engine-house and
blacksmith shop and dry-house. The compressor equipment, driv-
ing one machine and steel sharpener, includes a 75-horse-power
Ruston-Lister diesel engine. The camp, about one mile upstream
from the long tunnel site, provides accommodation for twenty men.
A crew of 15 are employed at present

GOLDEN
CACHE

The old workings of this group, hereinafter described,
are in the centre of the Golden Eagle claim 2500 feet
measured along a bearing of north $74^{\circ} 18'$ west from the
portal of the Noel tunnel of the Bonanza Cache group
and on the northern or opposite side of Cayoosh creek. There are
five short adits, within a length of 130 feet, which have been
driven into the face of a perpendicular cliff to explore and mine
flat-lying lenses of quartz which apparently dip and strike
parallel to the enclosing light grey argillites. Mineralization
in evidence consists of scattered pyrite. The adit portals ex-
tend south-westerly along the cliff face from elevations of 2,850
to 2,882 feet.

The three adits at the lower, or north-eastern end, enclosed within a length of 60 feet, give access to a stope of irregular outline. This stope, from which quartz was formerly trammed to the old 10-stamp mill, is about 105 feet long, up to 50 feet wide, and up to 20 feet thick. The longest dimension is along the strike which is approximately north-west. The width, measured along the dip to the north-east of between 14 and 25 degrees, is from 50 feet near the outcrop to 10 feet at the back or north-western end. Surrounding the edges of the stope, where small lenses and stringers of quartz remain, prospect workings, consisting of short levels, a raise, and a winze, failed to prove the continuity at depth or along the strike. Diamond drilling was done in 1934 as follows: Holes No. 1 and 2, 265 and 250 feet long respectively, were drilled to the north-east of the stope to explore the ground on the projected dip of the mined area. A third hole was put down 500 feet vertically to explore the ground along the strike to the south-east at the foot of the bluffs. Sample No. 6666, which assayed: gold, trace; silver, trace, represents selected quartz remnants from the big stope. The other two adits on the cliff face, in order from the southwestern extremity of the stope workings, are in 8 and 18 feet respectively. They explore flat-lying quartz stringers and lenses in the argillites. In the first or shorter adit sample No. 6667, which assayed: gold, trace; silver, trace, represents a sample across 4 feet on the north-east side of the portal, no

quartz conforming in attitude with the locally folded and overturned dark-coloured argillaceous rocks. Mineralization consists

appreciable amount of quartz being present on the south-west side. The quartz is slightly iron-stained and contained minor amounts of pyrite. At the portal of the other adit sample No. 6668 was taken across 2 feet of interbanded quartz stringers and country-rock, no mineralization being noted. This assayed: gold, trace; silver, trace. The ground along the strike of these lenticular quartz showings was tested without success by a branch working extending south-westerly from the stope below. At 2,650 feet elevation, on the edge of a rock slide at the base of the cliff, an old adit has been driven slightly west of north for a length of 180 feet in massive, greenish limy rock. Thin scales of calcite have been deposited on the walls of the working in places where water is dripping. This working explores the ground below the north-western extremity of the stoped area. It would have to be extended some distance easterly to test the projected downward continuation of the stoped area which dips flatly to the north-east.

MORNING
GLORY

On this claim on Phair (Cottonwood) creek, 1.75 miles by trail from Cayoosh creek, some shallow prospecting work was done in 1934 on a quartz showing outcropping along the edge of the creek which at this point flows through a narrow rocky canyon. The elevation is 2,280 feet. The small amount of work done indicates stringers and elongated lenses of quartz conforming in attitude with the locally folded and contorted dark-coloured argillaceous rocks. Mineralization consists

of scattered disseminations of pyrrhotite and pyrite. Individual lenses, up to 5 feet in width occur in a zone up to 12 feet in width. Samples Nos. 6670, 6671 and 6669 taken by the writer, represent first, silicified country-rock containing thin films of pyrrhotite; secondly, selected quartz mineralized with disseminated pyrrhotite; and thirdly, selected quartz with pyrite. These assayed ; gold, nil; and silver, nil. In the hanging-wall section of the quartz showings there is a dyke of fine-grained diorite, possibly quartz diorite, 10 to 15 feet wide, also apparently conforming in strike and dip to the bedding planes of the argillites. The dyke, apparently dipping to the south can be seen rising diagonally along the western side of the valley.

The two claims comprising this group were not visited. These are recent locations, two assessments having been recorded in connection with open cuts made.

MARYGOLD
GROUP

No work is being done there at present.