

3113

REPORT

TO THE

GRANBY
CONSOLIDATED
MINING, SMELTING & POWER
CO., LTD.

NAME OF PROPERTY

BAY FRACTION

DIVISION GREENWOOD

OWNERS

ROBERT FORSHAW

EXAMINED BY

D. B. MORKILL

DATE 1940

801985

July 12, 1963

TO..... Mr. P.R. Matthew (Manager)
 FROM..... George Addie (Geologist)
 SUBJECT..... Phoenix Field Geology

Most of the time was spent on field traverses, checking out theories developed during the winter and mapping new structures. The last week was spent on mapping the Idaho Pit.

Idaho Mapping:

The ore beds suggest cross folding to the east making an "S" shape with the ironstones ore beds which are cross folded to the west.

Assays Obtained:

South of the "Bay" Mine, on the power line, there is a remnant of limestone which has been extensively garnetized. One bed has been replaced with magnetite and chalcopryrite.

Cu. 0.77%
 Ag. 0.85 oz/T
 Au. Tr.
 Zn. 1.60%

This area is worthy of further investigation. A magnetometer survey should be made.

Bay Mine: High grades galena samples were picked from the dump.

Cu. 0.20%
 Ag. 10.0 oz/T
 Pb. 7.30%
 Zn. 1.75%
 Au. 1.315 oz/T

Providence Mine: Highgrade samples, 2" wide, were obtained which assayed

Ag. 97.10 oz/T
 Au. 0.49 oz/T

Jewel Mine: Highgrade sample from mine dump:

Ag. 7.0 oz/T
 Au. 1.0 oz/T

Morning Star Mine: Checking the "Mirror Image Theory". The mineralization is in a small magnetite dyke and assays

Cu. 2.90%
 Ag. 1.90 oz/T
 Au. 0.25 oz/T

The Ag/Au ratio of 7.5 would fit the Summit Camp, Ag/Au ratio curve exactly. However the mineralization is too small to warrant further investigation.

NOTES on BAY FRACTION, MAVIS and TIPTOP Claims
Greenwood, B.C. by D.B. Morkill

Work on the Bay Fraction created much interest in and about Greenwood, Phoenix and the Boundary country generally in the early 1900s, when most of the work which has been done on this claim was carried out. This was due to the high grade of gold ore which was taken from shaft and a limited amount of stoping.

The 1939 report (McNaughton) of the Geological Survey of Canada states that up to 1930 the Bay shipped 83 tons, containing 249 ozs of gold. No doubt considerably more ore than this was mined and shipped for, in the period 1904 to 1910 the Trail Smelter reports six shipments (weights not stated), as shown on attached statement, and other shipments are reported to have been made to Hall Mines Smelter at Nelson during the same period (See McArthur letter). Robert Forshaw estimates that 500 to 1,000 tons were shipped from the Bay to the Greenwood Smelter in early operations.

In 1905 I was one of a syndicate of six Phoenix men who took a working option on the Mavis claim, adjoining Bay, while the original operators were still working the latter claim. In a short time we picked up the Bay vein on Mavis ground, and then proceeded to sink a forty foot shaft from which we shipped forty tons of 2.10 oz gold ore. Getting into difficulties with some faulting of the vein and facing a major payment on our bond, we had to relinquish it.

A few weeks later a Spokane syndicate took over the Mavis (it was owned at the time by E. Wickwire, of Greenwood) and, within a few feet, again picked up the ore. This syndicate also shipped at least one carlot and ran a short drift from about 35 ft down our shaft, as is recorded by the Gold Commissioner at Greenwood in his 1906 report. In this he states that they had five feet of \$100 ore in the drift at one time. That would mean 5 oz ore. In the course of a year this syndicate disappeared and it is not known what other work was done by them before they left, or what now shows in the shaft as it has not been pumped out since.

Meantime the Bay had a change of operators and, either in conjunction with, or following after the Mavis Syndicate, a company was formed in 1908 to operate the TIPTOP claim, which contains the continuation of the BAY vein beyond the MAVIS. The property was equipped with a power plant and a shaft was sunk on the vein and some exploration work carried out from it. Unfortunately no maps of the work exist, and while the dump indicates that something like 250 feet of work was done, it is not known how much of it was sinking. The remains at surface show that the headworks and plant were destroyed by fire. During this work several shipments of ore are said to have been hauled away from the TIPTOP and one smelter return has come to light (1909 - copy attached). This company, known as the TIPTOP Mining Company was wound up in 1920, some years after operations ceased.

The original BAY enterprise came to an end about 1911 when the operators failed to pick up the BAY vein beyond a fault which cut it off, and the claim lay idle until recent years when it was acquired from the Government by Robert Forshaw, of Greenwood, who gave a lease and bond on it to W. E. McArthur, also of Greenwood. The latter has worked it at intervals since 1934 and still has possession. His work has been confined to surface and upper workings of the mine which, so far as I know, has not been unwatered below the sixty foot level since early days, so the amount of underground work is unknown.

The MAVIS and TIPTOP claims, also two adjoining claims NIGHTINGALE and MOUNTAIN VIEW, were recently acquired by the writer. No work, other than a survey and mapping of the ground, has since been done. Plans have been made and are attached, showing the relative positions and workings of the BAY, TIPTOP and MAVIS claims.

Work done on the BAY by original operators consists and an undetermined amount of development and exploration underground. As designated on my plans herewith, No.1 Shaft is on the vein south of the fault, No.2 is on the fault itself and No.3 is about 100 feet north of the fault. The last work done on this claim was by Franc

Joubin, now of Pioneer Gold Mine staff, who shipped some ore from a drift off No.3 shaft on a sublease of that portion of the mine from W. E. McArthur.

The geology of the BAY, MAVIS, TIPTOP area and description of ore occurrence on the BAY is given in the attached extract from the report of D. A. McNaughton on the Greenwood-Phoenix area (Geological Survey - Canada - 1939 --- Field work of 1936).

It is noted that McNaughton refers to the "galena" and "highgrade" as occurring in the same vein, which he calls the BAY vein.

Previous to his examination my notes were made in the belief that there were at least two separate veins, the one containing highgrade gold values being distinct from the other, or others, and all running approximately parallel in strike and dip.

The BAY vein, as will be seen from Map No.2, extends from a fault at Shaft No.2 southerly to and across the MAVIS claim and into the TIPTOP claim. On each of the latter two claims a shaft has been sunk on this vein. Beyond the TIPTOP shaft it is not further seen. About 400 feet from this shaft (along the continuation of strike) the grano-diorite is overlaid by other rocks (altered sedimentaries?) in which are found low grade chalcopryrite and pyrrhotite ores in place of the highgrade gold ore which features the Bay and similar fissures in the grano-diorite.

The fault referred to at No.2 Shaft struck S 65 E and dips 40 southerly. It definitely cuts off the BAY vein, as can be seen on surface and in the two shallow first levels in No.1 Shaft. The ore extracted in early operations came from above, or south, of this fault from workings in No.1 shaft. Recently what is believed to be the BAY vein has been found outcropping 25 ft east of the collar of No.3 Shaft, and approximately 100 feet north of the fault. This has all the characteristics and, in general, the values shown in that vein where it has been worked on the south side of the fault. Its surface position at No.3 Shaft indicates an offset of approximately 100 feet caused by the fault. That is to say, it should be found on the footwall of the fault about 100 feet along the same from where it was cut off on the hanging wall side. It is to be noted here that on the 2nd level in No.1 shaft a drift was started along the fault apparently looking for the continuation of the vein, but was not carried far enough to reach the point I describe as the probable position of it.

Surface Work, practically all performed by W. E. McArthur, consists of a number of open cuts on the BAY claim - one series being south of the fault, extending towards the MAVIS claim. All are on a vein mineralized with galena and showing none of the highgrade ore of the BAY vein. From a projection of the probable outcrop of the BAY vein between known points in shafts on the BAY and MAVIS claims, the vein would appear to outcrop somewhat to the west of the galena showings and would just be missed by the open cuts (?) All this area is covered by heavy overburden.

A second series of cuts was made north of the fault in an attempt to locate the continuation of the BAY vein in that direction. These are in increasingly heavy overburden. In most of them a quartz vein shows up running in the right direction for the BAY vein, but showing galena as in the case of the cuts south of the fault. It would appear from the position of what is now assumed to be the BAY vein at No.3 Shaft that its outcrop might be found a little east of the open cuts referred to.

On the BAY claim there are three shafts, and a considerable amount of underground workings. The depth of the shafts and the extent of the workings from them below an incline depth of sixty feet is unknown, as the mine has not been unwatered below that depth. The plans, therefore, show only the work above that level.

No.1 Shaft, the most southerly on the BAY, is sunk on the vein and it was from this shaft that the early shipments were made. The first level opens out at thirty feet down, and in the vicinity of the shaft the vein has been stoped out to surface. North of the shaft this level would come out to surface, and has already been extended to the surface hardpan. It continues south about 100 feet and a small amount of stoping

was done here in recent years. A continuation of this south drift on the vein would reach the MAVIS shaft in 450 feet at a depth, on dip, of 185 feet below surface.

The second level in No.1 shaft BAY mine opens out at sixty feet incline depth, with a drift 40 ft to the south and a short drift north. Some stoping was done south of the shaft between 1st and 2nd levels.

No.1 shaft at the second level (60 ft) intersects the downward continuation of the fault, and on this level a drift was run along the fault for 45 feet. This drift is intersected by No.2 shaft which was sunk on the fault from surface (or raised?) and continues for an undetermined distance below the level. An exploration of the lower workings may disclose the reason for No.2 shaft, but at present it is not apparent.

No.3 shaft was sunk approximately 100 feet north of the fault on a strong quartz vein showing galena, without any interesting gold values. About 35 feet down this vein changed suddenly to the (*) characteristic BAY vein makeup and values. It now appears that a slip has displaced the supposed BAY vein (already referred to as outcropping east of the collar of No.3) downwards into line with the galena vein on which the shaft was collared, so that it runs along as the apparent continuation, while the galena has been similarly displaced downwards into the floor of the shaft (See insert X Section of No.3 shaft on plan). As this occurs at about the standing water level there is not definite information as to what occurs lower down, nor in fact as to how far the shaft extends.--(*) Note: This supposed BAY vein is marked "NEW" vein on the plans.--- In No.3 shaft this new vein has been drifted on a short distance north and south and showed good values with, as is characteristic of the BAY vein, occasional free gold and tellurides. Franc Joubin, who had a lease on the north drift here estimated he had shown up \$10,000 worth of ore in the work he did. This was not taken out so far as I know.

On MAVIS claim, the BAY vein was first uncovered at the BAY-MAVIS boundary and a shaft was sunk, forty odd feet deep, slightly to the south of this cut, as already described in these notes. Whether this shaft was deepened by the operators who followed our syndicate is not known, nor how much drifting they did, though the dump does not indicate much work.

The next opening on the BAY vein (which does not show on the surface in the interval) is the TIPTOP shaft, and there is no information to be had about this, except the record of a shipment of ore to the Trail Smelter. The 300 foot tunnel which is shown on the maps some 400 ft to the south of TIPTOP shaft has no relation to the BAY vein, but was driven to develop a copper-pyrrhotite outcrop in the altered rocks overlying the diorite which shows in the vicinity of the contact. The tunnel is, however, entirely in grano-diorite and it so happens that a further extension of a few feet would bring it to an intersection with the BAY vein if that persists this far south.

There cannot be said to be any ore blocked out on any of the claims here described, unless we consider the small block already mentioned in reference to Franc Joubin's work, but in at least two places there is ore to work on in carrying out advisable exploration which can be removed and shipped as work proceeds; (1) In No.3 Shaft where Joubin had his sublease and (2) In upper level of No.1 shaft south, running towards MAVIS. McArthur was taking ore from here at the time of my last visit in 1937, and it was still showing when he stopped work.

All the claims here referred to are Crown Granted. The BAY FRACTION is in the name of Robert Forshaw, of Greenwood, B.C. (Option to purchase granted to W.E. McArthur, of Greenwood) and the four claims of MAVIS Group are in the name of D.B. Morkill, of Barkerville, B.C.

The property has been examined by the following Engineers within recent years:

C. M. Campbell, M.E., Vancouver, B.C.
Major Angus Daves, M.E., Nelson, B.C.
P.B. Freeland, M.E., District Gov't Engineer (Mines)
Franc Joubin M.E., Pioneer Gold Mines.

(Signed) D.B. Morkill

Extract from letter of W. E. McArthur, Greenwood, B.C.

W. E. McArthur
MINING

Greenwood, B.C., October 15, 1937

K. Gordon MacKenzie, Esq.,
Pioneer, B. C.

Dear Sir:-

In answer to your letter of September 20th regarding BAY Mine I regret that I was out of town and unable to answer your letter until my return.

The BAY mine is one of the oldest properties in this district and the writer, as a boy, hauled the first ore that was ever shipped from the claim. The first shipment ran about 2 oz gold per ton and later several cars were shipped from what is termed the old shaft which had an assay value of between 6 and 7 ozs gold per ton. I understand these shipments were made to Hall Mine Smelter at Nelson and no records appear to be in existence, this plant being out of business for a long time, however in hauling the ore free gold was perceptible in nearly every piece, later again, shipments were made to Trail, which I understand went about 4 ozs.

At this time a fault was encountered which cut off the ore but no work seems to have been done below this fault although the vein shows on the surface on both sides of the fault.

Since I have acquired the property the following shipments were made and the assay values were as follows:-

<u>Lot No.</u>	<u>Gold</u>	<u>Silver</u>
1	2.355	1.20
2	0.746	1.4
3	0.48	1.6
4	0.545	0.8
5	0.222	0.6
6	0.539	0.8
7	0.424	0.4
8	Appx 0.50	Settlement sheet missing
9	1.105	2.0
10	0.98	4.2

The last two shipments were made from the vein at a point north of the fault, the balance (lots 1 to 8) from the south above the fault, so that no work has been done to get below the fault where a continuance of the old rich ore should be expected.

Later memo from McArthur

"Present Freight rate to Trail, B.C., \$1.60 to \$2.00
according to value

"Treatment rates at Trail on silicious ores vary according to silica content and value; \$1.00 will handle the Bay ore.

"Cost of loading into cars from the mine - 60¢ to 75¢ per ton.

Summary of Ore Shipments

On Record

BAY - MAVIS - TIPTOP claims

BAY MINE

1904 - 1910	6 shipments	Gold assays 1.45 to 5.91 oz
1934 - 1937	10 "	" " .39 to 2.36 "

MAVIS

1905	1 shipment	Gold assay 2.10 oz
------	------------	--------------------

TIPTOP

1909	1 shipment	Gold assay 2.06 oz
------	------------	--------------------

(copy of letter)

THE CONSOLIDATED MINING AND SMELTING COMPANY
OF CANADA LIMITED

Cable Address
"COMINCO"

Trail, B. C.,
May 14th, 1935

Mr. D. B. Morkill,
Quadra Club,
Vancouver, B. C.

Dear Sir:

We have looked up our records and find a shipment from the Tip Top Mineral Claim - November 22nd, 1909. This assayed Gold 2.06 ozs., Silver 3.9 ozs., Copper .88%, Zinc tr., Sulphur 16.5%, Silica 48.9%, Iron 20.5%, Lime 2.3%.

We can find no shipments from the Bay Mavis Mine. We found shipments, however, from the Bay Fraction, during the years 1904, 1905, 1907, 1909, and 1910. We do not know whether this is the Bay property referred to or not. These latter shipments ran from 1.20 to 5.91 ozs. in gold, with Silica from 73.0 to 84.0%.

I trust this information will be of some value to you, although it appears to be very incomplete.

With best regards,

Yours truly,

"GEO. H. KILBURN"

G. H. Kilburn.

GHK:AJ
st

BAY MINE

References: Annual Report Minister Mines, B.C., 1922
and 1934. B.C. Dept. Mines, Lode Gold
Deposits B.C. Bull 1, 1932

"This claim is owned by R. Foreshaw of Greenwood and is situated 1 mile east of the town at an elevation of 3350 feet. Recorded production from the property prior to 1930 is 83 tons of ore containing 249 ounces gold and 114 ounces silver. The claim was worked by leasers during the past two years and they have made several shipments of high grade ore to the Trail smelter. Underground openings consist of two inclined shafts and about two hundred feet of drifting. Most of this drifting has been done on two levels from the southern inclined shaft which was full of water during the summer of 1936. Considerable stripping and trenching has been done on the property.

The country rock exposed in these workings is granodiorite intruded by narrow lamprophyre dykes. The granodiorite is the typical massive medium-grained rock of the Greenwood stock. Shearing and hydrothermal alteration of the grano-diorite adjacent to the mineral bearing fissures have produced a green schistose rock which is made up largely of chlorite, carbonate and some quartz. The lamprophyre dikes are fine- to medium-grained rocks and are typical of the dark colored tertiary dykes of the area.

The mineral deposit is a quartz vein which strikes north 15 degrees east and dips 35 degrees to 50 degrees east. It has been traced for 500 feet on the surface and varies from several inches to three ft in width. The vein is well defined in surface workings north of the inclined shafts, but elsewhere consists of branching quartz strands which enclose lenses of mineralized country rock.

The northern section of the vein has been offset by a fault which is exposed in surface workings between the inclined shafts. This fault strikes south 70 degrees east and dips 40 degrees south. The amount of offset is not known as the 100 ft section of the vein between the fault and northern shaft has not been explored. The northern shaft has been sunk on the vein to a depth of 100 feet and a small amount of "high-grading" has been done from the shaft. Most of the production from the property has come from the inclined shaft located on the south side of the fault, which has been sunk on the vein to a depth of 65 feet. At a depth of 65 feet the shaft passes from the hanging to the footwall of the southerly dipping fault. Exploration work designed to locate the faulted section of the vein on the under side of the fault was not successful. This work includes a 40 foot drift east from the bottom of the shaft, an inclined raise from this drift to the surface and a shallow winze, all of which are located in the crushed zone along the fault.

Other faults cut the vein but do not displace it more than a few feet. Broken fragments of vein material in the breccia zones and free gold in fault gouge indicate that there has been some post mineral movement along most of the cross faults. Shearing parallel to or at an acute angle to the walls of the vein, and along thin septa of altered country rock in the vein, fractured the quartz along closely spaced parallel planes before the close of mineralization. These fracture planes served as channelways for later mineralizing solutions and are now occupied in some places by thin seams of metallic minerals, chlorite, and carbonate, giving the vein quartz a distinctive banded appearance which is known as ribbon structure. Ribbon Quartz is commonly used to designate quartz possessing this structure.

Pyrite, galena, sphalerite, chalcopyrite, petzite and free gold comprise the ore minerals in the quartz-carbonate gangue. Finely crystalline petzite with well defined cubic cleavage has been mistaken for galena in the Bay vein but may be distinguished by its lighter colour, finer grain and common association with free gold. Pyrite and an occasional small piece of free gold are found in the altered diorite adjacent to the vein fissures. High grade ore

shoots are characterized by minutely fractured vitreous quartz of greenish blue cast, by the presence of finely crystalline petzite, and by the absence of coarsely crystalline galena and sphalerite.

The ratio of ore minerals to gangue varies throughout the length of the vein. The stoped section between the easterly striking fault and the southern inclined shaft contained high grade ore. Another well mineralized section of the vein has recently been found in the hanging wall in the northern inclined shaft. North of this shaft and south of the southern inclined shaft the vein is not as well mineralized, and the future of the property appears to be dependent on the finding of high grade ore in the unexplored section of the vein north of the easterly striking fault."

BAY MINE

Suggested Preliminary Work

1. From No.3 Shaft drift both ways on vein - first toward the fault and explore that favorable area for a high grade ore shoot.
2. From No.1 Shaft drift south on the vein on the upper level after opening it out to surface so as to do away with hoisting and pumping. It is almost through to surface at present, the face of west drift being through to surface hardpan.
3. Pump out and explore the deeper workings in No.1 Shaft.

The first two suggested pieces of work will produce ore as they go along.

ASSAY SHEET

	Gold	Silver	Copper
# 1 Buckhorn, Deadwood, B. C.	.26 oz.	2.1 Oz.	8.62 %
# 2 " "	.31 "	2.7 "	28.06 %
# 3 " "	.05 "	.2 "	
# 3 " "	.16 "	.5 "	

Buckhorn, Deadwood B.C. Car Lots.

1 \$24.00 per ton

2 \$26.00 per ton

Buckhorn, Deadwood B.C. Major Davis Assays.

1 Gold .34 fifty yards North of Shaft

2 Gold .12 South of Shaft

3 Gold .08 750 feet West of Shaft

Samples from Iva Lanore M.C. Lot 1262, Deadwood, B.C.

May 17th 1935

1 Gold .07 Silver 1.1 Copper 4.66 %

2 Gold \$28.00 per ton, Silver 7 oz. copper 3 % on vein 18 inches

Sample from Iron Cap Fraction. M.C. Lot # 1574. Greenwood, B.C.

Siliceous Ore with Pyrrhotites.

Gold .17 Silver .9 Copper .58 % Value \$5.06

2 Lead 24%, Zinc .41% also a little Arsenic present.

*Adj. to & West of
Skylark Mine*

CONSOLIDATED MINING & SMELTING COMPANY
OF CANADA LIMITED

RECORD OF SHIPMENTS - BAY PROPERTY
Greenwood, B.C.

<u>Date</u>	<u>Lot No.</u>	<u>Wt.</u>	<u>Au. Oz.</u>	<u>Ag. Oz.</u>	<u>SiO₂</u>
1904 to 1910	#1 (Bay)*	--	5.91	2.1	84.6
"	#1 (Bay Fr)	--	4.79	1.3	73.4
"	#2 (Bay)	--	1.45	2.2	79.8
"	#3 "	--	4.48	1.8	79.0
"	#4	--	2.03	0.4	75.8
"	#5	--	1.54	2.1	74.0

<u>Bay Fraction, Greenwood, Shipped by McArthur</u>						<u>Fe.</u>
Feb 1934	#1	12 tons	2.36	1.2	72.8	8.0
Jun 1934	#2	13	.75	1.4	70.9	5.3
Apr 1935	#3	40	.48	1.6	61.1	5.9
Jul 1935	#4	43	.55	0.8	62	5.5
Aug 1935	#5	48	.222	0.6	62.7	5.0
Aug 1935	#6	48	.539	0.8	62.9	5.1
Sep 1935	#7	50	.42	0.4	62.3	4.9
Aug 1936	#8	35	.39	0.7	66.5	5.9
Nov 1936	#9	13	1.11	2.0	68.3	6.8
Apr 1937	#10	12	.98	4.2	66.9	7.4

Owner - Bob Forshaw

G. H. Kilburn:MS
Trail, B.C.
March 30, 1940

st

*Note by D.B. Morkill: Bay & Bay Fraction are the same.