

Examined
for Review to M. Std.
- Report not turned in.
- 505

Property File 003207
082FSW 134

NOTES ON THE
CLIFF - St. ELMO GROUP

ROSSLAND, B. C.

INTRODUCTION: A three day preliminary examination was made, ending October 25th 1942, accompanied by Messrs. Grubisic and Glover, P. O. Box 508, Rossland.
The examination was incomplete and was undertaken to determine whether a complete examination was justified, the conclusion being that it was not. The map herewith is merely a diagram, and is not accurate.

LOCATION: The group lies about a mile northerly from the town of Rossland, and is reached from there by a road extending across the Cliff and St. Elmo Consolidated claims which are on the southerly slope of Red Mountain.

PROPERTY: The property consists of three claims, 600 by 1500 feet and holding extra-lateral rights. They are old Crown Granted claims held under option by Messrs. Grubisic & Glover, and named as follows:- Cliff, St. Elmo Consolidated, and St. Elmo.

EQUIPMENT: There is no equipment belonging to the property, but the lessees have a small portable compressor and other necessary equipment installed.

HISTORY: The claims were located in the early days of Rossland and development has been done at various times since. On the Cliff the chief work was in 1904 when 1517 tons of ore were shipped averaging 0.23 Oz. gold, 0.7 Oz. silver, 1.4% copper, and about 20% iron. Small shipments of ore have been made from the St. Elmo Consolidated and the St. Elmo. In 1911 the Granby Copper Co. did some diamond drilling on the Cliff.

DEVELOPMENT: No maps of the workings were available and the sketches herewith are extremely rough so that it was not possible to correlate the veins on the different levels.

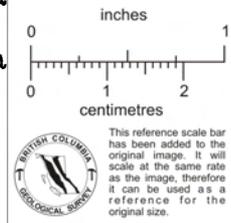
On the Cliff there is about 2400 feet of work in four tunnels, most of which is in the lower one.

On the St. Elmo Cons. there are two shallow shafts (caved) and some open-cuts.

On the St. Elmo there are three tunnels; in the lower, starting on the St. Elmo Cons. at 4500 feet elevation, there is about 2700 feet of drifts and crosscuts; in the other two tunnels there is about 400 feet of work; there are also a number of open-cuts.

GEOLOGY: (Largely from Memoir 77, Geological Survey of Canada)

The Mt. Roberts formation is the basal rock, of Paleozoic age, and consists of silicious and calcareous slates some tuff; it has a north south strike and dips 0° to 60°



It is widely exposed on the west half of Red Mountain, and there are some exposures on the lower eastern part.

The Mt. Roberts formation is intruded by sill like intrusions of Augite-porphyrity; on the east slope of Red Mountain the porphyrite is bounded by monzonite. The augite porphyrite may sometimes resemble the Mt. Roberts formation.

The granodiorite batholith outcrops sparingly and is connected with the origin of the ore deposits. A border facies of the granodiorite is gray to greenish diorite porphyrite (hornblende and feldspar phenocrysts). It is very irregular and in tongues and apophyses; veins may follow its borders.

The chief rock on the Cliff and St. Elmo Cons. claims is augite porphyrite, but there is some diorite porphyrite on the east end of the claim.

VEINS: In general the orebodies do not occur in clear-cut fissures, but are replacements along shear-zones. The ore-minerals are pyrite, pyrrhotite, zinc blende, galena, and sometimes small amounts of arsenopyrite and molybdenite. The vein, or more properly the lode, is believed to extend continuously from the Mountain View, through this group to the Monte Cristo, some distance east of the Cliff. The strike is about east and west and the dip 60° to 70° north.

Mt. Roberts formation outcrops strongly near the west end of the St. Elmo claim; in places it is strongly silicified and contains iron and copper sulphides. The No. 3 tunnel shows some fine grained dioritic rock, and a weakly mineralized shear at the end of the crosscut.

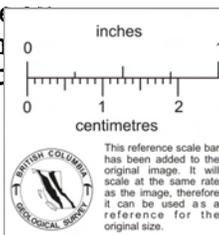
Between the No. 3 and No. 2 tunnels the surface rock is mostly Mt. Roberts formation, in which a number of open cuts show widespread, but weak, sulphide mineralization.

Tunnel No. 2 follows a three or four foot shear, striking westerly, for 225 feet. Some blende, galena, and molybdenite occur. The shear weakens at the face and the sulphides have disappeared; the first part of the tunnel is in augite porphyrite, and the latter in Mt. Roberts formation.

The main tunnel of the St. Elmo starts on the St. Elmo Consolidated and after crosscutting for 140 feet enters a strong east-west shear with about a 45° dip. Mineralization, consisting of pyrite, pyrrhotite, and chalcopryite, continues for about 300 feet to where it is apparently cut and offset by a mineralized fault. To the northwest the same, or perhaps a second shear showing weak mineralization, has been picked up but soon petered out. About 200 feet further north another shear was found, striking a little north of west and dipping about 55° north. Sulphides are rather spotty and occur in well silicified augite porphyrite. There is a small stope on this.

A parallel shear a hundred feet further north shows similar narrow mineralization, but weakens to the westward.

A footwall shear has also been opened, some 300 feet in the foot (south) of the first mentioned shear. It has been followed for about 400 feet; it is fairly strong and often heavy pyrrhotite and pyrite with fair amounts of chalcopryite.



a little zinc in highly silicified rock; the strong sulphides are narrow, but are bordered by more disseminated sulphides.

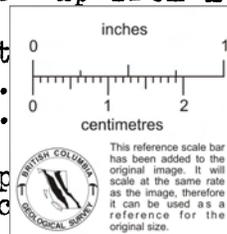
The "Main" tunnel shear has been traced by open cuts and shafts, now caved, ~~nearly to the Upper Cliff tunnels~~, which, however appear to be somewhat in the hanging wall. These Upper tunnels are short and were driven by leasers who stoped some ore from them. They are driven on two veins, or possibly one vein displaced by faulting, which have a westerly strike and dip nearly vertical. There are fault zones near the faces of both tunnels, in which the vein seems to peter out.

One hundred feet, or more, lower the Middle tunnel starts on a strong shear having a dip of about 60° northward; the first 100 feet is partially stoped. Beyond that point the drift seems to have veered off the shear to the northward, and a crosscut further west across its course does not expose it. A well silicified spot, or shear, of indefinite dip and strike has been cut in the first north crosscut, and contains a fair amount of sulphides. The remainder of the tunnel shows little mineralization.

The Lower Cliff tunnel encounters a weakly mineralized shear at 100 feet from the portal and follows it for about a hundred feet, where it is cut off by a fault. A shear showing some mineralization is found at the end of the first north crosscut; otherwise the tunnel shows no strong shears and no mineralization.

SAMPLES: Fifteen roughly moiled samples were taken at various points on the shears where mineralization was strongest, and were assayed for gold only. Some copper was present in most samples but the average is estimated to be less than 1%.

<u>Number</u>	<u>Width</u>	<u>Oz. Gold</u>	<u>Location & Remarks</u>
871	-	0.12	Cliff, Lowest Tunnel, chips from two small piles of ore on dump.
872	3.5 ft	0.01	St.Elmo, general sample from drift in #3 tunnel
873	5.5	0.01	St.Elmo Main tunnel. 6' E of Sta.5. Broken vein & no definite walls, weak sulphides.
874	1.5	0.04	St.Elmo Main Tunnel. 9' W of Sta.7. Fair sulphides; leaner sulph on both sides.
875	3.5	0.04	St.Elmo Main tunnel. Fair sulphides, not to foot
876	1.5	0.08	St.E. main tun. FW vein. 110' W of 1st S XC Strong sulph. from fresh blasting.
877	2.5	0.05	St.E. main tun. FW vein. 155' W of 1st S XC Well mineralized vein.
878	1.6	0.06	St.E. main tun. FW vein. 18' W of Sta 27 Strong pyrite & pyrrhotite
879	1.2	0.07	St.E. main tun. FW vein. 2' E of Sta 28 Strong pyrite & pyrrhotite
880	2.3m	0.16	St. E. main tun. FW vein. 33' W of Sta 29B Strong pyrrhotite & spots of zinc blende
881	4.5	0.04	St.E. main tun. N vein. At Sta 114. Silicified rock and much coarse sulphide.
882	2.0	0.01	St.E. main tun. N vein. In raise 25' up from Lev Quartz & weak sulphides.
883	2.5	0.06	St.E. main tun. N vein. 50' W of St Silicified rock & fair sulphides.
884	1.0	0.07	St. E main tunn. Last vein at E end. quartz & sulphides.
885	6.0	0.06	Cliff Middle tunnel. 1st N xc. Chip blasted down. Qtz., py, pyrrh. & c



CONCLUSION: Approximately 5500 feet of level work has been done on the property exclusive of many open cuts and a few hundred feet of shafts and raises. This has resulted in the finding and extracting of no more than a few hundred tons of ore, although the geology of some of the workings is fairly in line with that in the productive zones of the district.

There appear to be a number of shears which are weakly mineralized for limited distances, but they do not appear to be continuous very far either laterally or vertically.

There appears to have been a considerable amount of faulting which is quite obscure and difficult to solve.

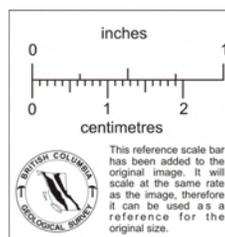
This preliminary examination has failed to indicate any great probability of profitable orebodies being found, and makes it seem inadvisable to undertake a thorough examination.

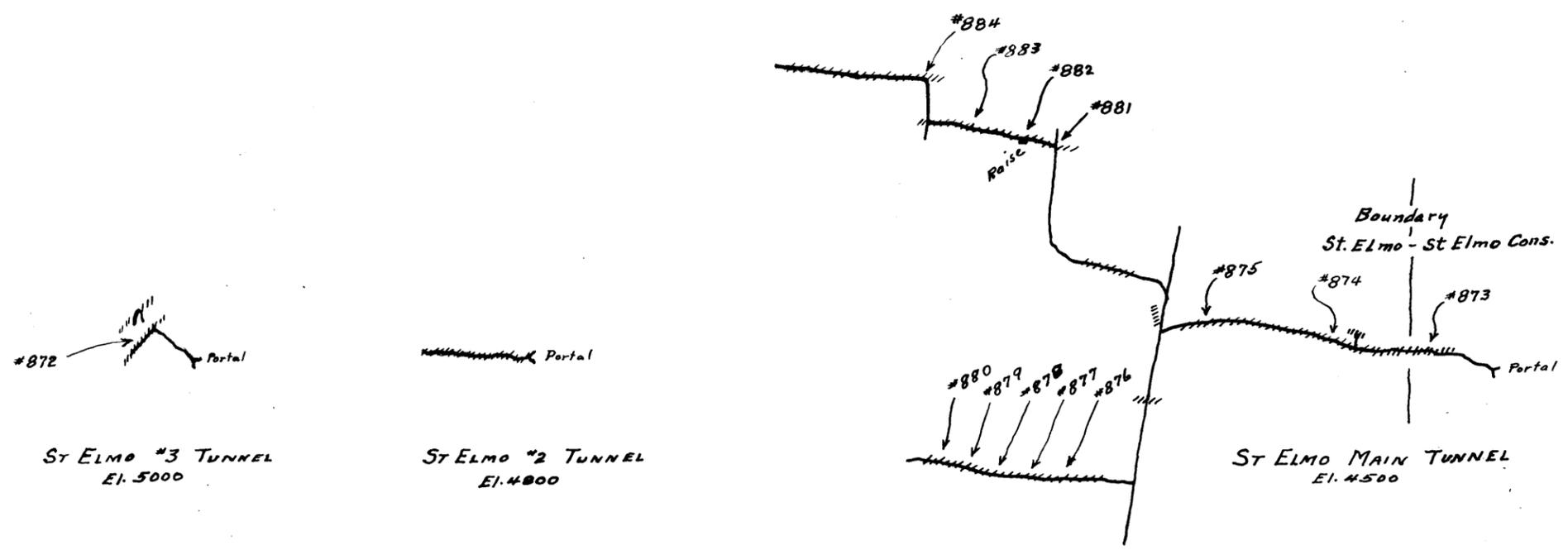
Respectfully submitted,

Chas. C. Starr

Examination Oct. 25, 1941
Report written May 22, 1942.

Sketch map accompanies report.

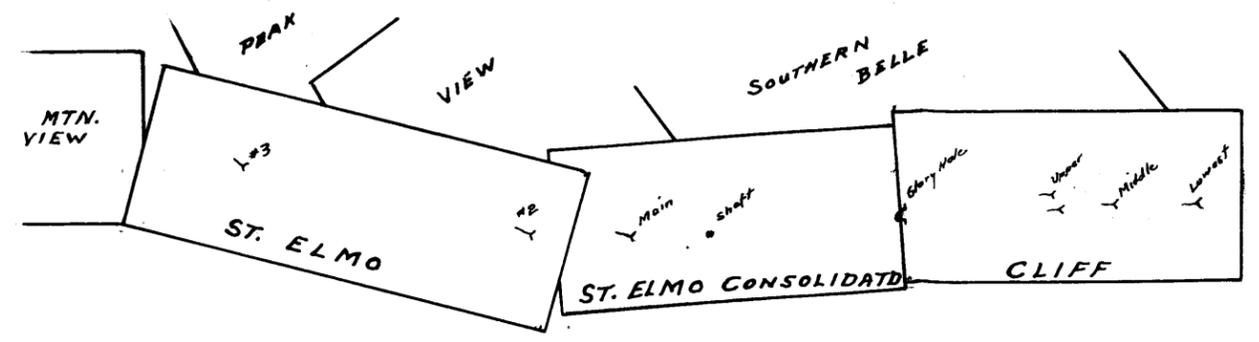




DETAIL OF TUNNELS SHOWING SAMPLE LOCATIONS
Approx. SCALE: 1" = 300'

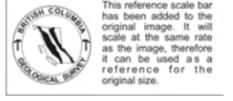
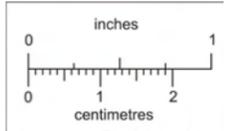
DIAGRAM OF
CLIFF - ST. ELMO GROUP
ROSSLAND, B.C.

NOT SURVEYED - Distances and Bearings are estimated.



CLAIMS SHOWING APPROX. LOCATION OF WORKINGS.
Approx. SCALE: 1" = 600'

Mineralized Shears
Tunnels



Property File
082F SW 134