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Joint venture

Lustdust option
1960. 673114 LUSTDUST OPTION
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BRALORNE PIONEER MINES LIMITED

REPORT ON

LUSTDUST PROPERTY

Omineca Mining Division

1960

INTRODUCTION

Camp was established on the Iustdust property August 8th. The three frame buildings, cookhouse, bunkhouse and office shack, were renovated, repaired and water supply line connected. Some work was done on the road from Takla Mercury Mine. The authorized work program of dozer trenching for assessment work at the north extension of #3 zone started on August 11th. Following the discovery of a new mineralized zone called #4B, access road was made to it and stripping and trenching commenced there on August 23rd which was carried on till the close of the season on October 7th. A crew of 4 men was employed. The D4 dozer was taken out to Manson Creek and stored in the old CMS cat shed at Slate Creek.

Four plans and sections accompany this report.

PROPERTY

The Lustdust property comprising 5 claims and 2 fractions, were acquired under option agreement from the owners Mrs. and Mr. J.P. O'Regan in April, 1960. The essential points of this agreement obligate the partners of the Joint Venture to keep the claims in good standing by doing a minimum of 3 years' assessment work and to come to a decision regarding development for production within 6 years. The vendors get 10 percent of the net profits from any ores or concentrates produced. No cash payments are called for except after 6 years if production plans are deferred, an annual payment of \$10,000.00 will keep the agreement in force.

With the owners' consent the 5 claims and 2 fractions were abandoned by notice filed August 22nd, and with permission from the Mining Recorder 10 new claims, Lustdust No. 1 to 10, were staked to cover the property. This was done because the old claims did not cover all the mineral showings and were staked in such a way that difficulties could arise. Following the discovery of #4B zone, an additional 5 claims, Lustdust No. 11 to 15, were staked for dip protection and the property now comprises 15 claims on which 3 years'assessment work has been recorded. Plan No. 4 shows the present claims and location of the various mineral showings on them.

DEVELOPMENT

The work done in 1960 was as follows:

Road Work:

2 miles of truck road from Takla Mercury Mine to Lustdust camp repaired and cleared.

1.5 miles of new access road to the mineral showings.

1.2 miles of new trail cut to connect showings.

Trenching:

7 cuts 4x6x2 drilled and blasted (for sampling purposes).

34 test pits 4x4*, 2 to 9* deep in overburden, by hand.

4950 lineal feet dozer trenching, 8' wide by 4 to 15' deep.

650 lineal feet hand cleaning of trenches, pick and shovel.

Magnetic Survey:

8 vertical intensity profiles of #4B zone.
Approximately 3000 feet of magnetic recommaissance cross sections.

Total cost of this work to end of Ootober, 1960, was \$7,144.27

Notes on Trenching:

The area is unglaciated and overburden consists of weathered bedrock with bands and lenses of silt and sandy soil. The D4 dozer is adequate for this material but not powerful enough to rip off the collapse breccia of limestone boulders which overlies some of the showings.

Bedrock surface at #4B zone is quite rough. Dozer trenching can only dig to the high spots and has to be followed up by hand cleaning with pick and shovel, a slow job. Much of the bedrock at #4B is overlain by a tough shell from 1 to 3 feet thick of limonite—oxide—sulfide breccia cemented to bedrock and requires drilling and blasting.

GEOLOGY

The general geology is shown on Plan No. 1. The property is underlain by permian Cache Creek rocks consisting of interbedded limestones, tuffs and greenschists, cherty quartzites and argillaceous ribbon cherts. The rocks have been subject to tight folding overturned to the east and practically all dips are to the west. The fold structures have a southerly plunge of 10 to 15 degrees. Some beds have been much thickened on crests and troughs. Anomalous structures such as cross folds and warps are present at all mineral showings on the property. Cleavage fracturing in the folded limestones and the tuff-greenschists contacts appear to be important ore controls. The rocks are cut by dike swarms of a composition varying from quartz porphyry to andesite. Larger dike like bodies

of quartz monzonite and quartz diorite occur along the western margin of the claims. It will be noted that dikes and mineralized zones show a prevalent north to northeasterly trend in contrast to the regional northwesterly trend of the country rock. This may be an effect of the permian-triassic contact fault now masked by the much later Pinchi thrust fault which caused the block faulting encountered in #1 and #3 zones on the property.

The #3 zone extension on which the initial trenching was done this year, is a replacement body in limestone east of #3 zone fault, and appears to lie along a minor anticlinal fold. It is completely oxidized but definitely in place.

The new discovery, #4B zone, also a replacement body in limestone, lies parallel to and 1200 feet west of the #3 zone structure. It lies on the western limb of an overturned, assymmetrical fold structure apparently anticlinal and containing an infolded band of calcareous tuff, now chlorite schist, which forms the core of the fold structure. This has a southerly plunge of about 12 degrees and both limbs contain dragfolds. The western limb of this limestone band shows westerly dips of from 58 to 64 degrees and is overlain by highly schistose, thinbedded quartzite and quartz-mica schists which are metamorphosed derivatives of argillaceous ribbon cherts and form the hanging wall of the sulfide body. The eastern limb shows much steeper to near vertical dips, also westerly and is underlain by cherty quartzites. Dike like bodies of quartz monzonite outcrop 200 and 400 feet west of the sulfide body and contain some disseminated pyrite. It will be noted that the 4B limestone band shows a rather sudden change of strike from northwesterly to northerly near coordinates 3500N - 3300W and that both the 4B showing and #3 zone extension are situated where this kink or cross fold intersects their respective limestone bands. It is a point for attention in future prospecting of other limestone bands to the east. To the north and down slope from #4B zone the limestone band widens out considerably and swings back to a northwesterly strike near Canyon Creek where previous prospecting in 1953 indicated copperzinc-gold values in #4A zone. Little is known of the 1500 ft. interval from 4B to 4A zones except that copper mineralization is present.

DESCRIPTION OF SHOWINGS

#3 Zone Extension

This is 300 feet long from where it first leaves the fault in K-2 trench, to the exposure in K-3 trench which shows a width of 18 feet. It is a compact mass of soft oxides showing a steeply inclined colour banding from deep red through greenish yellow to black manganese and probably represents massive sulfides oxidized and leached in place. A partial exposure in K-4 trench adds 50 feet to the length.

Channel samples gave the following assays:

K-3 Trench	<u>Section</u>	<u>Au</u>	Ag	<u>Zn</u>
	0 - 6	•22	•43	•20
	6 -1 2 °	•30	● 55	1.00
	12 - 18*	•03	1.20	${\tt Tr}_{\bullet}$
K-4 Trench	0 -11*	•11	3.20	•46

The appearance of silver and zinc indicates that the sulfide zone is not far below. Another trench K-5 was started to the north and at a lower elevation but abandoned in favour of work on 4B zone.

#4B Zone

This has an indicated length of 920 feet from M-6 to M-15 trench. The explored upper part of it is exposed in M-6 to M-13 trenches for a vertical height of 160 feet and a slope length of 650 feet. It shows widths of from 6 to perhaps 60 feet. It consists of massive sulfides with very little gangue and the shape of the body reflects the folded structure in which it occurs. I would liken it to a saddle reef with the main shoot indicated in M-10 to M-13 trenches occupying the crest of a minor fold bounded by greenschist on the east and quartz mica schist on the west, or hanging wall. The hanging-wall side of the sulfide body which I have called the West Shoot, continues up dip along the schist - limestone contact as a vein - like extension shown in M-6 to M-9 trenches. This picture is in part confirmed by the magnetic profiles and by the nature of gangue minerals which in the main body are essentially carbonates and unreplaced "horses" of limestone, while in the vein-like extension consist almost entirely of crystalline quartz. The West Shoot follows closely the limestone-schist contact which may be a shearzone and a supply channel. Shearing in the hangingwall schists parallel to the contact is evident for several hundred feet west and contains a number of thin but persistent veins with the same sulfides as in the main body. A couple of these are shown on the assay plan in M-8 and M-9 trenches for record purposes. The Main Shoot will in my opinion be found to continue southerly from M-10 trench along the crest of the fold which lies east of the vein sections in M-9 to M-6 trenches. It does not come to the surface because of the southerly plunge of the structure but its position is clearly indicated by the magnetic profiles of M-10 to M-6 trenches (marked Main Shoot), and also by the blocky, limonitic joint pattern of the limestone roof, suggesting a slight collapse. M-9A trench shows an 8 ft. sulfide band along the east contact of the central greenschist core. I have called it the East Shoot and it may or may not be connected with the others at depth.

ORE

Assays of 4B zone are shown on Plan No. 2. The body consists of massive sulfides, mainly pyrrhotite, pyrite and arsenopyrite as a variable and vary coarse grained aggregate. This contains bands, veins and pods of massive, coarse sphalerite in part accompanied by jamesonite. Chalcopyrite, tetrahedrite and an unidentified lead mineral are present. Some of the pyrrhotite show alteration rims of marcasite. The sphalerite contains appreciable cadmium and some indium. Gold values are present but highly variable. Silver is low. Pyrrhotite is the predominant sulfide in the West Shoot exposures in M-6 to M-9 trenches but is very subordinate in the Main Shoot M-10 to M-12 trenches.

The sample sections across the West Shoot show an exposed length of 260 feet with average width of 10 feet and average assay of

Silver and copper values are very low and lead assays not run on most. These samples were moiled after the sulfide sections had been drilled and blasted 1 to 2 feet into the solid and are probably representative.

No estimate of grade is possible for the Main Shoot in M-10 to M-12 trenches. After the initial sampling had been done and shortly before closing camp, some of these sample sections were blasted and found to be false bedrock. Oxidation has been more severe in this carbonate material and the sulfide body has a thick coating or shell 1 to 3 feet thick of very tough, cemented iron oxides with fragments of sulfides. This we were not equipped to handle. All the assays from M-10, 11 and 12 should therefore be discarded and the trenches re-sampled after blasting down to solid, unoxidized bedrock. In the meantime, I have summarized below some of the less unreliable sample sections.

M-10 trench shows a 10 ft. width on the hanging wall which was sampled in 3 sections with average assay of

.18 oz. Au, .65 oz. Ag, 7.2% Zn

This section appears to be in the solid and is bordered on the east by a 50 ft. width of oxidized material which was not sampled but is very probably underlain by sulfides.

M-ll trench shows a combined width of 22 feet of sulfides in 4 bands which average

.08 oz. Au, .9 oz. Ag, 9.6% Zn

At least two of these sample sections are doubtful and may not be all true bedrock. The trench shows an additional 4 bands of oxidized material with a combined width of 26 feet. Much of this is probably underlain by sulfides as two drill holes gave sulfide cuttings 2 to 3 feet down.

M-12 trench shows 4 sulfide bands three of which may be at least partly in the solid. Their combined width is 21 feet and average assay

.05 oz. Au, 5.2% Zn, 4.5% Pb

The trench shows an additional 4 bands of oxidized material with a combined width of 40 feet, much of it probably underlain by sulfides.

M-13 trench shows a partly uncovered sulfide band on the hanging wall. The rest is masked by oxide capping. Apparent width of zone is 90 feet.

To the north and downhill from M-13 trench there is a continuous oxide capping of unknown width for 200 feet. The slope is too steep for dozer trenching. M-15 cross section is 270 feet north of M-13 and was partly prospected by test pits. It shows a central band 15 feet wide of oxidized material sitting along a shear or fracture zone in limestone. A sample across it assays.02oz. Au and about 1% Zn. There is some gouge on the walls. In order to expose the sulfides, drilling and blasting would be necessary.

Some 1000 feet north of 4B zone, along the slopes towards Canyon Creek float of limestone-skarn with chalcopyrite were noted. They would run 2 to 4% Cu. Rusty soil and limonite deposits were noted. No work was done.

MAGNETIC SURVEY

Eight magnetic profiles were run of M-6 to M-13 trenches and are shown on Plan No. 3 together with their geological cross sections. The profiles are at right angles to the strike of the structure and for convenience oriented vertically rather than on true dips.

Note the close similarity in pattern for M-6, 7, 8, 9, and 10 profiles. The negative lows to the west of the West Shoot indicate a steep, westerly dip along the schist contact. The positive high over the West Shoot in M-6, 7 and 8 has disappeared in M-9 and 10 indicating less pyrrhotite. The corresponding surface sections show mainly pyrite and marcasite. Position of the Main Shoot along the fold axis and greenschist contact is shown in all 5 profiles from M-6 to M-10 and also in M-11 and the plunge effect by greater depth below observation point is noticeable by the flatter response towards M-6. The East Shoot has only been exposed in M-9A trench but incomplete profiles, not plotted, show it to continue at least to M-6 section. Preliminary readings along 5 cross sections to the south of M-6 indicate that the pyrrhotite body continues along the 4B structure for at least 400 feet farther and at increasing depth below surface. Another area of high vertical intensities lies near M-30 trench some 700 feet south of M-6 and probably indicates a pyrrhotite body at depth. No profiles were run north of M-13 but a few observations gave anomalous readings close to the limestone-schist contact. The intense negative low in M-12 and the characteristic reversal pattern in M-13 indicate that we are close to the end of 4B pyrrhotite body. Whether nonmagnetic sulfides continue northward to M-15 we do not know but there are indications they do. These magnetic profiles naturally show only the pyrrhotite and have only an indirect and unknown relation to possible ore. As to interpretation of profiles, no magnetic minerals or rock types have been found on the property except pyrrhotite and where this occasionally occurs disseminated in some quartzites, it appears to be non-magnetic. The magnetic profiles were of great practical value in that the sulfide sections in M-6, M-7, M-8 and M-9A were found under deep overburden directly below the indicated positive highs.

SUMMARY AND CONCLUSIONS

The 4B zone contains a body of massive sulfides which occurs in an environment that could mean appreciable size. It is the 5th showing of interest discovered along the 7000 ft. long mineralized "break" on this property.

It shows interesting but spotty values in gold, zinc and lead which may mean something, and again may not. A true picture of the showing can only be had by re-sampling after blasting down to solid, unoxidized vein material. There was no time nor equipment to do so this season.

On the basis of preliminary sampling, the indicated grade is submarginal and if the valuable minerals were disseminated or evenly distributed through the sulfide mass, the outlook would be poor. There are indications, however, that most of the values particularly zinc and gold, being later than the bulk of the iron sulfides, are concentrated in high grade shoots within the zone and if so, could put a different complexion on the economics.

From a metallurgical standpoint the ore is so coarse grained that separation would be simple.

Future work, if, and when done, should first of all consist of blasting down and sampling the trenches on 4B zone. This would require a gasoline drill and steel. Dozer trenching north of 4B zone towards Canyon Creek would explore very interesting ground.

Respectfully submitted

E. Bronlund

Manery

Vancouver, B.C. December 7, 1960 Attachments: 4 plans







