

Summary Report onLUSTDUST PROPERTY

Omineca Mining Division

B.C.By: E. Bronlund
February 1, 1960.PROPERTY

The Lustdust prospect is situated one mile west of the Takla Mercury mine and is connected with Canadian National Railways at Vanderhoof, B.C., by 210 miles of truck road. There are at present 5 claims and 2 fractions in good standing until August 30, 1960.

Bralorne explored the property by trenching, stripping, and diamond drilling in 1952 - 53, and '54, under option agreement with the owners, Mr. and Mrs. J.P. O'Regan, Quesnel, B.C. The option was terminated late in 1954 and the property has lain idle since.

The owners recently approached us regarding further work and stated they will agree to turn the property over to Bralorne Pioneer on behalf of the Joint Venture for a period of 6 years with no other obligation or commitment than to keep the claims in good standing and give them 10 percent of net profits if and when production starts.

The following summary is based on reports by Mr. Joralemon and myself for 1952, '53 and '54.

MINERAL DEPOSITS

The Lustdust showings contain values in gold, silver, copper, lead, zinc and antimony and outcrop at elevations from 4100 to 4800 feet along a partly wooded, steep hillside. They can be explored at depth by adit tunnels. Overburden is from nil to 12 feet deep. The mineral deposits lie along a northerly trending structural break which is 7000 feet long and about 1000 feet wide, in folded permian limestones, chert-argillites and derived schists. These rocks show prevalent westerly dips of 45 to 70 degrees and are cut by swarms of quartz-porphyry dikes in part more than 1000 feet long, aligned with the main structural trend. A small quartz-monzonite plug in Canyon Creek near the extreme north end of the break, is surrounded by an extensive, mineralized alteration halo suggesting an intrusive body down dip from the break.

The mineralization occurs mainly in the form of banded veins and bodies of massive sulphides along certain limestone beds, along fold structures in chert-argillite bands, and to a lesser extent in the porphyry dikes. Cleavage fracturing due to folding may be an important ore control in the limestones. Some of the schist bands and porphyry dikes have definitely influenced localization of ore shoots.

ORE ZONES

There are 4 distinct ore bearing structures or zones lying en echelon along the break, and these are numbered 1 to 4 from south to north. They show a noticeable mineral zoning, from the high temperature No. 4 zone which contains simple, pyritic copper ores in silicated schists and skarn near the quartz-monzonite outcrop in Canyon Creek, to No. 1 zone 7000 feet to the south which contains complex silver-lead ores with zinc and antimony. Gold values are present in all four zones but most prevalent in the intermediate No. 3 zone. The surface showings as a whole are impressive and show interesting values. Initial diamond drilling of No. 1 and No. 3 zones was disappointing and indicated a fault problem in both instances. In the case of No. 1 zone, this was resolved by later drilling which found the ore beyond the fault. A similar situation is indicated for one orebody in No. 3 zone but not actually proven.

It should be noted that the two faults are narrow, clean-cut fissures and that the rock formations as a whole are solid and relatively undisturbed. Core recovery was generally very good except for specific instances of drilling near-surface oxidized deposits.

A review of ore showings in each of the 4 zones follows.

No. 1 Zone

This contains stringer veins and bands of sulphides sitting in limestone, chert or porphyry and accompanied by much manganese-siderite and minor quartz. Values are mainly in silver. The ore is a coarse intergrowth of galena, freibergite, sphalerite, stibnite, jamesonite, arsenopyrite with occasional native silver and gold. The zone has a known length of 1300 feet and contains two principal surface ore shoots. The largest shoot is 3.5 to 16.5 feet wide and 255 feet long. Average values are -

<u>Au Oz.</u>	<u>Ag Oz.</u>	<u>% Combined Pb, Zn, Sb.</u>	<u>Width, Average</u>
.127	23.4	4.0	7.0 feet

The smaller shoot is 100 feet long, with average values -

.084	14.9	15.0	3.5 feet.
------	------	------	-----------

In addition there are 3 small shoots, from 6 to 13 feet wide with total length of 75 feet. Average values are -

<u>Au Oz.</u>	<u>Ag Oz.</u>	<u>% Combined Pb. Zn. Sb.</u>	<u>Width. Average</u>
.085	35.4	8.0	7.5 feet

Total surface ore in No. 1 Zone is therefore 2700 sq. feet with average grade -

.113	25.0	6.0
------	------	-----

These ore shoots were explored in 1953 by 8 diamond drill holes which showed that the surface showings along No. 1 Zone are drag ores in a post-mineral fault. Continuation of the ore was picked up the following year in drill hole No. 33 which showed down-faulting of 250 feet. The hole cut 114 feet of mineralized rock between 237' and 351' which contains 9 ore bands from 1 to 13 feet wide having a combined width of 31 feet. The upper 4 bands between 237' and 259' have a combined width of 9 feet and average grade of -

<u>Au Oz.</u>	<u>Ag Oz.</u>	<u>% Combined Pb. Zn. Sb.</u>	<u>Width. Combined</u>
.13	12.0	11.0	9 feet

The lower 4 bands between 318' and 329' have average grade of -

.08	18.9	7.5	9 feet
-----	------	-----	--------

The ninth ore band showed a width of 13 feet of massive sulphides from 338' to the bottom of the hole at 351' but due to an accident with the drill, no core or sludge was recovered. From correlation of drill and surface sections it seems likely that there is additional ore below 351'.

Two of the upper bands were actually cut the previous year in drillhole No. 2 between 236' and 240' beyond the fault and at a point 30 feet north of drillhole No. 33. The two bands have a combined width of 3 feet and average grade of -

.20	181.0	18.5	3 feet
-----	-------	------	--------

The reason for these ore bands not being cut in No. 1 and No. 3 drill holes 100 feet south and north respectively, is the divergence in dip and strike as between fault and ore bands.

The present situation in regard to No. 1 Zone is therefore that the promising surface ore was found to be cut off by down-faulting to the extent of 250 feet, and that the continuation of the ore beyond the fault has been proven by two drill holes which show comparable values to and three times the width of surface ore. This is a most interesting situation and could be very important. Proving up of this deep ore can best be done eventually by near vertical drill holes from set-ups west of the fault.

No. 2 Zone

This zone is really an upper ore band which is part of No. 1 Zone structure and lies 150 feet west at a higher elevation, unaffected by faulting. It is small and was explored by a few trenches only, but confirms the conclusions reached at No. 1 Zone in regard to ore control and attitude. No. 2 Zone has a length of 800 feet and contains one principal ore shoot which is 330 feet long, exposed in 4 trenches showing widths of 1 to 6 feet with average values of -

<u>Ag Oz.</u>	<u>Az Oz.</u>	<u>% Combined Pb-Zn</u>	<u>Width. Average</u>
.12	4.6	4.8	3.5 feet

Antimony not assayed. A small shoot is exposed in one trench 400 feet to the south and assays -

.40	3.5	2.0 feet wide.
-----	-----	----------------

The outcrops in No. 2 Zone are oxidized and will probably show oxidation for 100 feet down to the 4550' level at the top of No. 1 Zone. This level marks the ancient groundwater datum and bottom of oxidation zone.

The assays from No. 2 Zone illustrate the effects of oxidation in the lower silver and base metal ratios as compared to sulphides in No. 1 Zone.

No. 3 Zone

This zone is 2200 feet long and has the largest showings. It contains 6 shoots of oxidized, primary ore which lie mainly along fold structures in chert-argillite beds enclosed in limestone. These deposits turn into sulphides at depth. They are accompanied by 16 or more deposits of secondary zinc ores in the adjoining limestones.

A. Primary Ores

Four of the primary ore shoots are relatively small, vein-like deposits with some quartz-carbonate gangue. Oxidation products indicate sphalerite, galena, pyrite, arsenopyrite, and tetrahedrite but no stibnite. The most southerly of these shoots has a length of 135 feet with average assay of -

<u>Ag Oz.</u>	<u>Az Oz.</u>	<u>% Pb</u>	<u>% Zn</u>	<u>Width. average</u>
.07	2.1	4.8	5.3	13 feet

This shoot terminates against a minor cross fault and was picked up again 240 feet north where it grades -

.10	1.6	5.8	3.2	3 feet
-----	-----	-----	-----	--------

A second shoot of similar ore 500 feet further northwest, is 100 feet long, averages -

<u>Au Oz.</u>	<u>Ag Oz.</u>	<u>§ Pb</u>	<u>§ Zn</u>	<u>Width, average</u>
.11	3.5	2.7	1.1	4 feet

A third shoot is exposed 450 feet north of above, is 190 feet long and averages -

.07	2.0	N.A.	1.0	8 feet
-----	-----	------	-----	--------

Total surface area in the 3 shoots is 3700 sq. feet. A fourth shoot is indicated.

The fifth and sixth shoots are more substantial bodies of limonite-goethite, showing relict vein textures and boxworks with sulphides at the bottom. They represent more or less massive sulphide bodies, now almost completely oxidized and leached. Pyrite, sphalerite, galena, tetrahedrite and arsenopyrite are indicated.

The fifth shoot, which is the largest, is at least 400 feet long, from 25 to 80 feet wide with a surface area of about 18,000 sq. feet. It was tested by diamond drill holes to a depth of 185 feet and found to consist of limonite-goethite to 160 feet where it turns into massive sulphides. This oxide body contains an estimated 220,000 tons.

No drill cores were recovered, except from one 10 foot section of limonite-goethite at a depth of 150 feet which assays -

.35 oz. Au, .40 oz. Ag, 1.5% Zn.

Sludge recovery was very poor and erratic but all sludges showed metallic gold as extremely fine particles. Sludge assays vary from a low of .04 oz. to a high of .95 oz. Au but do not mean very much. Surface samples from a trench deepened to penetrate into the actual oxide zone show from .13 to .26 oz. Au across 40 feet. There are insufficient data on which to estimate the grade of this oxide body but the most reliable samples indicate a gold content from .20 to .35 oz.

The sixth and most northerly shoot is of similar type and probably comparable size to the above, was found by hand trenching late in the final season and has so far an indicated length of 300 feet and perhaps 25 feet wide, increasing to the north. One sample at the north end across 10 feet assays -

.28 oz. Au, 1.0 oz. Ag, 4.8% Zn

Another sample across 5 feet including wallrock assays -

.05 oz. Au, .90 oz. Ag, 2.35% Zn.

Lead and copper not assayed. The material is limonite.

The fifth and sixth sheets have therefore a combined surface area of about 25,000 sq. feet and may contain about 250,000 tons of oxide ore with an indicated gold content in the neighbourhood of .20 oz. This gold is in a free, metallic form and may possibly be recoverable at a profit by a simple concentration process. Both deposits can be cheaply mined by open cuts.

Two holes were drilled from set-ups west of the fifth sheet and show that this body is cut off by a fault 190 feet below the outcrop. The fault gouges assay 11.28% Zn and 17.05% Zn across 7 and 9 feet respectively, and consist of a clayey matrix containing zinc carbonates and limonite with partly corroded fragments of sphalerite, pyrite, arsenopyrite and galena. This is evidence of down-faulting which is estimated to be of the order of 150 feet vertical.

All the primary ore shoots now exposed along No. 3 Zone have therefore been subject to almost complete oxidation and leaching and this condition may be expected to persist for about 150 feet down to near the 4550' datum. Consequently the assays represent the residual values which have at best only a qualitative bearing on what to expect in the sulphide zone. In the presence of much pyrite and manganese oxides, leaching of silver, zinc and copper would be almost complete and the nearby secondary deposits, described below, are in fact conclusive evidence that such was the case. There is, as far as we can tell, very little difference in mineralogy between No. 1 Zone and No. 3 Zone and if we compare the metal ratios of the sulphide ores in the first, with those of the oxide ores in the latter, we find that the silver and zinc ratios against gold are ten times higher in the clean sulphide ores. An upgrading of the gold content has probably taken place in the oxide ores due to decrease in density and may amount to 20 to 25 percent but if we bring the secondary zinc deposits into the picture and assume they were formed by lateral or downward migration of leach solutions from the known primary deposits at or above their average elevation, they suggest zinc contents of from 5 to 20 per cent in the original sulphide ores.

B. Secondary Ores

No. 3 Zone is dotted with deposits of secondary zinc carbonate ores which lie in the limestones adjacent to oxidized, primary shoots. Sixteen of these deposits have been investigated by trenching, several more are indicated. They are clearly derived from oxidation of nearby sulphide deposits and were formed along joints and fractures in the limestones by the stoping action of sulphate solutions. Zinc, and some iron would immediately

precipitate as carbonates but silver, being derived mainly from tetrahedrite, forms no stable carbonate and would migrate further. The deposits consist of a soft, earthy mixture of clay minerals, zinc carbonates, siderite and limonite with occasional niggerheads of unreplaced limestone. The combined surface area of these deposits is about 16,000 sq. feet containing 32,000 tons of ore to a depth of 20 feet and the average of 32 samples across 2 to 30 ft. widths show -

<u>Ag Oz.</u>	<u>As Oz.</u>	<u>£ Pb</u>	<u>£ Zn</u>
Tr.	.90	.50	13.7

Copper not assayed but present.

To produce this amount of secondary zinc ore would take 87,000 tons of sulphide ore containing 5 percent zinc. Most of these source shoots have probably been eroded away but there may be undiscovered shoots at higher elevations. The two large oxide shoots, the fifth and sixth, lie at lower elevation than the described secondary deposits and could not have been the source of these.

The present situation in regard to No. 3 Zone is then that it contains a possible 280,000 tons of oxidized ores with residual values in gold, silver, lead and zinc, and perhaps 30,000 tons of carbonate ore with 13 percent zinc. Reconstituting oxidized and secondary ores into equivalent sulphides, and allowing for some obvious losses by recent erosion, it would appear that there could have been a total of 3 - 400,000 tons of sulphide ores in the 200 ft. interval from surface down to present oxidation level. The point of interest is that there could be a duplication of this at depth. However, the question of immediate importance is the actual grade of the sulphide ore and it may be possible to get this information cheaply, by trenching to the north of the sixth and most northerly shoot. The elevations here drop quickly 450 feet to Canyon Creek and would bring the sixth shoot below oxidation level less than 300 feet ahead. Surface cover is sandy gravel which our small dozer can handle without difficulty.

No. 4 Zone

This outcrops along the south bank of Canyon Creek 4000 feet northwest of No. 3 Zone and about 600 feet lower. A small amount of trenching and ground sluicing were done in 1953 and show a mineralized zone about 800 feet across in high grade metamorphic rocks near a small quartz-monzonite outcrop. Pyrrhotite and pyrite are abundant, accompanied by disseminated chalcopyrite. A composite sample across 70 feet assays .67 oz Ag, .06% Cu and is probably typical of the country rock.

Interesting copper and copper-zinc values occur in two places. A shear zone in quartzite contains two parallel bands of ore which run -

<u>Au Oz</u>	<u>Ag Oz</u>	<u>% Cu</u>	<u>% Zn</u>	<u>Width</u>
.02	.31	1.34	-	3 feet
Tr.	.94	1.96	-	7 feet

Two samples across a shear zone in carbonate rocks 500 feet downstream run -

.06	Tr.	1.87	5.8	4 feet
-----	-----	------	-----	--------

Full width not exposed. Adjoining this to the east is an indicated wide shear zone covered by slide rock containing heavy sulphide float. A composite sample runs -

.16	1.45	4.7	N.A.	Float
-----	------	-----	------	-------

There is a gap of 4000 feet southward to No. 3 Zone which has not been investigated. Mr. Joralemon points out that this would be a promising area in which to look for replacement ores of copper in the limestones. Much of this ground can be cheaply explored by ground sluicing. Float of granitic rocks with copper values were found to the north of No. 4 Zone.

SUMMARY

The Lustdust property has the following features to recommend it:

1. The initial stage of exploration work has been completed, which means a saving in time and costs.
2. This work has expanded the original showings more than tenfold in terms of outcrop area and has indicated surface deposits of possibly 30,000 tons of carbonate ore to a depth of 20 feet, 15,000 tons of sulphide ore to a depth of 50 feet and 280,000 tons of oxide ore to a depth of 120 feet. The carbonate ore is worthless in this locality. The sulphide ore is of value if more is found. The oxide ores may be of value now if an average gold content of .20 ounces can be established and the gold recovered by simple concentration, similar to placer operation. In themselves these deposits

are therefore of questionable economic value but their significance lies in the fact they are evidence of a rather profuse mineralization in a comparatively small part of a large structure. This is the principal reason for my conclusion that the property has good ore-making possibilities.

3. Furthermore, the work done has clarified the geology and made possible pinpointing two target areas where decisive information can be obtained in short order. These two target areas are:

No. 1 Zone, where the last hole drilled found the continuation of the surface ore. There is no question about the indicated grade and widths being profitable but the extent of the ore remains to be proven. This is a straight forward diamond drill job and 800 feet in two holes would probably decide the issue.

No. 3 Zone, containing a large tonnage of oxidized ore. The question of first importance is the actual grade of the sulphide ore and the answer to this might be found by surface stripping below the zone of oxidation at the extreme north end.

4. Chances of discovering additional ore are good, particularly at depth in No. 1 and No. 3 Zones, and in the gap between No. 3 and No. 4 Zones.

5. The property can be put into production at minimum expense because it has road connection to nearest shipping point, can be developed by relatively short adit workings and has nearby sources of hydro power.

6. The property can be obtained for free by keeping the claims in good standing until it is decided whether or not to go ahead with development. Our actual commitments would be about one thousand dollars per year for assessment work on say 10 claims.

RECOMMENDATIONS

Firstly, I recommend the property be taken up and an option agreement signed with the owners at an early date, on the terms outlined above.

Secondly, that we stake an additional 5 claims at least, so as to cover all the showings, and do assessment work this summer to the extent of three thousand dollars to hold 10 claims for 3 years. The work should consist of dozer stripping at the north end of No. 3 Zone, and sampling. I am suggesting not less than 3 years assessment work because it can be efficiently done now that our D4 dozer is available in the area. It can be done by a mobile crew of 3 men and fitted in with the proposed small work program on the Snell property.

Respectfully submitted

E. Bronlund

*200 miles
How much*