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**CONFIDENTIAL**

# Report on a visit to the Lustdust Cu-Au-Zn-Pb-Ag Skarn-manto property, north-central B.C.

by Gerry Ray & Ian Webster,
August 7th, 2000

**Introduction.**

On the 2nd of August 2000 we visited the Lustdust Cu-Au-Zn-Pb-Ag mineralization, located approximately 210 km NW of Prince George. The property lies <3 km W of the old Bralorne-Takla Hg mine (Minfile 093N 008), which itself lies on the major Pinchi Fault. The Lustdust Claims are held by Alpha Gold Corporation and they include the defunct Takla Silver mine (093N 009). The mineralization represents a classic metal-zoned system, with proximal Cu-Au skarns to the north that pass southwards into more distal Zn-Pb-Au-Ag manto ore-bodies and carbonate-replacements.

Takla-Rainbow gold

STYLE

Previous mining and drilling has been concentrated on the more distal Zn-Ag-rich mantos. However, the economic potential of the proximal Cu-Au skarns is now apparent and recent drilling has been centered on this more northerly style of mineralization. Drilling by LDS Ltd. was still in progress during our visit, and this summer over 15 000 feet of core in 27 holes had been recovered. Exploration and drilling are planned to end next week when the camp will be closed for the season.

We examined some drill-core, as well as numerous mineralized outcrops developed along a strike-length exceeding 3 km. We were accompanied by George Whatley, President of Alpha Gold, and consultants Jim McGlasson and Peter Megaw; who both have had considerable exploration experience in central America. Peter's work at Lustdust has been summarized in two reports written in October 1999 and April 2000. He regards the Lustdust to be part of a powerful, well-mineralized system that shows many similarities to the large skarn-manto deposits of Mexico. Hence, he believes that the Lustdust claims have a high economic potential. Much of the data and ideas in this report come from his work and from conversations in the field.

*Some of the assay and other drill-data mentioned in this report will be described in an upcoming news release by Alpha Gold. It should remain confidential until that time.*

**Metasedimentary rocks**

The geology of this NTS 93N/11-13 area has recently been compiled by Paul Schiarizza (Open File 2000-33). The Lustdust area is underlain by a northerly trending package of slatey argillites, tuffs and limestones belonging to the Cache Creek Group; the NNW-striking Pinchi Fault lies <3km E of the property and this major structure marks the eastern tectonic margin of the group. The metasediments have undergone a complex history of brittle-ductile deformation that was probably related to both the accretion of the group onto the north American continent and later recurrent dextral transcurrent movements along the Pinchi structure. This resulted in a moderate to strong slatey cleavage that has overprinted the argillaceous rocks. Very few bedding structures are

seen due to intense structural transposition. The cleavage and rarely observed bedding strikes N and generally dips steeply W. Small scale isoclinal folds have been identified and larger fold structures on the property are believed to plunge gently northwards.

Most of the intense brittle-ductile deformation is thought to be pre-mineralization, although some important post-mineral faults have been identified. The hydrothermal fluids were probably channeled along N-trending fault conduits and the resulting orebodies were controlled by the presence of limestones and also possibly by fold structures. In the vicinity of the mineralization, the following W to E sequence has been identified:

1. Strongly cleaved and deformed cherty argillite (in structural hangingwall).
2. Limestone.
3. Calcareous mafic tuff with abundant small limestone clasts.
4. Well cleaved carbonaceous argillite.
5. Limestone.
6. Well cleaved carbonaceous argillite (in the structural footwall).

Mineralization is mostly hosted in the two N-trending units of massive limestone (Nos 2 and 5 above). It is uncertain whether these are two distinct beds or represent fold repetitions of a single horizon (Peter Megaw favors the latter interpretation). The limestone units reach an outcrop width of approximately 500 m, but in many places along the belt they are narrower. The calcareous tuff (No. 3 above) comprises a distinctive fine grained mafic ash tuff matrix with numerous matrix-supported and stretched clasts of limestone. In the outcrops we examined the limestone clasts were generally < 8 cm in diameter. Peter Megaw suggests that this unit may represent an olistrostrome or syn-sedimentary gravity slide. There is a strong possibility that the two limestone units may also represent a number of very large mega-blocks that were transported down a paleoslope.

**Intrusive rocks**

Paul Schiarizza's open file map of the area shows a small ?early Cretaceous "granite-granodiorite" intrusion that lies < 1 km W and NW of the northernmost Cu-Au skarn mineralization on the Lustdust claims. Because the rock exposure throughout the area is extremely poor, this intrusion may be larger than shown on Paul's map. Peter Megaw mentions that the body contains some disseminated magnetite and is associated with a magnetic anomaly. This body is probably related to a series of dikes and sills that cut the area, some of which are spatially associated with the mineralized zones. These felsic minor intrusions vary from moderately to very strongly porphyritic with feldspar phenocrysts up to 0.75 cm in length (generally smaller); some contain crowded feldspar porphyry textures similar to those associated with many Cu-porphyry deposits. The examples we saw contained between 3 and 8 % mafic minerals which comprises highly chloritised biotite and hornblende. They probably range in composition from quartz monzonite to monzonite to granodiorite. Some may be alkalic (we collected 4 samples for whole-rock analysis to check this). Peter Megaw notes that some pale, less altered and shreddy biotite is locally present and this may secondary and hydrothermal in origin. Intrusions close to the mineralization are often bleached, weakly silicified and chloritized.

Where exoskarn alteration is present the dikes may be overprinted with minor amounts of garnet endoskarn assemblages.

The genetic relationship between the minor intrusions and the skarn-manto mineralization is unknown. In some cases, skarn is preferentially developed along some sill-dike margins. Peter Megaw suggests that all the intrusive types on the property form part of a related suite. However, he does not believe that the mineralizing fluids are directly related to the dikes and sill exposed on surface, but instead were derived from deeper-level intrusions. The presence of the crowded feldspar textures, hydrothermal biotite and certain quartz-sulphide vein mineralization raises the possibility that the area has some Cu-porphyry potential.

**Mineralization**

At least 4 different mineralized zones are recognized on the claims; these follow a narrow, NNW trending belt that extends for at least 3 km in strike length. From S to N, these are named the No. 1, the No. 3, the No. 4B and the "Canyon Creek" Zones. These four zones lie slightly en-echelon to one another, possibly due to dextral fault displacement of an originally single continuos elongate ore zone (Peter Megaw, personal communication).

From S to N the mineralization is strongly zoned; this metal zoning reflects a progressive proximity to intrusive rocks to the north and NW. Mineralization is separable into the following two types:

1. Massive, sphalerite-rich mantos, veins and carbonate replacement bodies, containing variable amounts of pyrite ± pyrrhotite ± magnetite ± galena ± sulphosalt minerals. These are marked by anomalous amounts of Zn, Au, Ag, As and Sb, with sporadic enrichment in Pb, Cu, As and Mn. Various styles of this mineralization are seen at the Nos. 1, 3 and 4B Zones. These are hosted mainly by limestones. Contacts between the massive sulphides and the hostrocks are generally very sharp. Replacement features include "scalloped" contacts and in some cases the sulphides contain small (< 0.3 m) remnant bodies of incompletely replaced limestone.

2. Cu-Au mineralization hosted by garnet-rich exoskarn that has mainly replaced limestone. This type of mineralization is seen at the "Canyon" Zone and is characterized by chalcopyrite-pyrite-magnetite with lesser amounts of bornite, pyrrhotite, sphalerite, stibnite and sulphosalt minerals. The exoskarn silicates mainly include large quantities of a paragenetically early, coarse crystalline green-yellow garnet, and lesser amounts of a later brown-red colored garnet. Pyroxene is present but is relatively uncommon. Trace amounts of vesuvianite may occur. Retrograde alteration is marked by dark chlorite, amphibole and minor epidote (epidote appears to be more common in the altered intrusions). Richer mineralization tends to be associated with the brown garnet rather than the pale green garnet, and in many holes the chalcopyrite-pyrite is spatially related to patches of dark chloritic retrograde alteration. However, these are not a firm rules since there are many sections where substantial amounts of interstitial chalcopyrite-pyrite mineralization are hosted by pristine, crystalline garnet skarn of both the green and brown varieties.

*Mantos & carbonate replacements*

This type of mineralization is well exposed close to collapsed adits at the Takla Silver Mine (UTM 347895-6160524), which lies in the **No. 1 Zone**. This represents the most southerly and distal type of alteration-mineralization seen on the property. Here there are at least four steeply dipping, fault-controlled massive sulfide veins, only one of which was apparently mined. These are hosted by bleached and recrystallized limestone that are cut by numerous white calcite veins. Some narrow sills of altered felsite lie adjacent to some veins. Skarn and calc-silicate alteration are absent. In addition to sphalerite, the NNW striking, steeping dipping narrow bodies contain an exotic group of Pb-As-Sb-As bearing sulphosalt and non-sulphosalt minerals, as well as stibnite. There is abundant scorodite alteration in these outcrops. The mine reported contained ore grading > 40 ounces of Ag per ton.

The **No. 3 Zone** is located further north at UTM 347541-6161102. It represents a deeply weathered and oxidized Zn-Au rich zone that is at least 25 m wide. The mineralization lies in an area that may have escaped glacial erosion; hence the preservation of the gossanous oxide zone which extends to a depth of 100m. At least 25 holes have been drilled on this zone. No sulphides are seen on surface but the zone is believed to have contained both sphalerite and ?pyrrhotite. On surface the yellow colored soils are Zn-rich (up to 10 %) while the deep red colored soil is marked by high Au values.

The most extensive Zn mantos are seen in the **No. 4B Zone** situated close to UTM 347096-6161459. Rich and massive sphalerite mineralization extends over a 300 m strike length, and together with less mineralized bodies it totals 500 m in length. However, drilling suggests that many of these bodies are rootless. Large surface ferrocrete bodies are developed down-slope from this zone. In places the mineralization is at least 25 m in outcrop width. It comprises dark colored, Cd-poor sphalerite together with variable amounts of pyrite, pyrrhotite, magnetite, sphalerite and trace chalcopyrite. George Whately reports some assays containing > 10 g/t Au. There are pyrite-rich and pyrrhotite-rich zones in the sphalerite, and in some parts the sphalerite is cut by chloritized veins of pyroxene.

*Cu-Au skarn*

Garnet-rich Cu-Au skarns lie in the so-called **"Canyon Creek" Zone**, at the northernmost end of the mineralized belt. This elongate zone occurs both N and S of an ENE trending canyon that drains eastwards toward the Pinchi Fault valley. The N and NW extents of the zone, towards the intrusive body outlined on Paul Schiarizza's compilation map, has not been established and there is excellent potential for the discovery of more skarn mineralization.

Road exposures of mineralized skarn were examined on the north slopes of the canyon at UTM 346991-6162139. At this locality, there is a wide section of garnet-dominant skarn containing rich pockets of chalcopyrite and pyrite with lesser bornite and trace amounts of sulphosalt minerals. Much of the chalcopyrite is associated with dark choritic retrograde alteration. In some drill core from this area, the magnetite is bladed

and is believed to be replacing early hematite. Radiating crystals of vesuvianite may also be present.

To the E and W, the skarn passes out into argillaceous hornfels and then into strongly sheared and cleaved cherty argillites. The skarn includes several sills of crowded feldspar porphyry that are bleached and altered. Quartz veins developed along the sill margins contain cubic casts of oxidized pyrite that exceed 1.5 cm in diameter.

The skarns north and south of the canyon have been the main focus of the current seasons drilling. In addition, holes LD 99-03, 04, 05 and 06 were drilled on the north side of the canyon in 1999 (Holes 03 and 04 at UTM 346991-6162139; holes 05 and 06 at UTM 346998-6162143). Drilling has intersected mineralized skarns grading 2 to 3 % Cu and up to 10 g/t Au over widths up to 22 feet. There appears to be a poor correlation between Cu and Au. Some zones exceeding 20 feet in width contain Au and As but virtually no Cu.

**Conclusions**

The Lustdust property represent an elongate, metal zoned Zn-Cu-Au-Ag manto-skarn system that extends over a 3 km strike length. Recent drilling in the northern-most skarn mineralization has intersected high grade Cu-Au values in zones exceeding 20 feet in thickness. This more proximal-style mineralization lies in a very poorly exposed area and its northern and northwestern limits are unknown. Hence the Cu-Au skarn system is believed to have a very good economic potential.

One model (suggested by Peter Megaw) is that the four mineralized zones (Nos. 1, 3, 4A and Canyon Creek) were placed into their current en echelon outcrop pattern through dextral strike slip faulting that sliced up a single elongate sulphide-rich belt. An alternative model (which is less likely, but which we favor because it is has exciting exploration possibilities!!) is that four separate en echelon mineralized belts were developed, each having a southern Pb-Zn rich manto zone and a northern Cu-Au skarn zone.

Prior to the recent Alpha Gold work, the Lustdust property was a poorly understood mineralized system. Ideas generated from Peter Megaw's knowledge of Mexican skarn-manto deposits have refocused the exploration with good results. It is our recommendation that prior to further drilling, the property needs to be carefully remapped by a structural geologist who preferably has had some experience with skarn-manto systems. Areas N of the Canyon Creek Zone and W and NW towards the major intrusive body appear to be highly prospective. Employing a reliable prospector to check these areas (and other selected parts of the district) might also be rewarding.

This promising district around the Lustdust Claims should be considered a target for future geological mapping by the B.C. Geological Survey.

Gerry Ray & Ian Webster
7th August 2000

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TOS → LUSTDUST
→ MEG
Short Case

**Schroeter, Tom EM:EX**

**From:** Ray, Gerry EM:EX
**Sent:** Monday, August 07, 2000 9:12 AM
**To:** Schroeter, Tom EM:EX
**Cc:** Brown, Derek EM:EX; Lane, Bob EM:EX
**Subject:** RE: Lustdust Hook-up
**Sensitivity:** Private

7th August 2000
Rm. 15, White Cap Motel
Wells, BC
Tel 250 994 3489

Hi Tom, Derek and Bob

8 days ago I had an e-mail from Peter Megaw saying that he was leaving Lustdust on the 5th, and that the camp would be packed up shortly after that. I tried to phone you (Tom & Bob) without success and I couldn't get Christie either. So Ian and I went up and spent a day at Lustdust, looking at some of the recent core and outcrops along the belt. Attached is a WORD document file of a summary report I wrote up. I will send you the assay and whole rock analyses of the samples I took when we get the results. Things at Lustdust were going very well and they were intersecting some excellent zones (20 - 23 feet) of good chalcopyrite and/or gold (up to 13 g/t) in garnet skarn. Peter Megaw and George Whatley was they (they are excellent fellows). The drilling has probably finished by now and the camp closed. I don't think it will be worth your while going in on the 13th, but if you do you should try and contact George to check up.

On another point (Tom) , Larry Dick is in town and said he would be happy to give a talk in November on the Productora Fe-Cu-Au system in Chile. I wasn't sure who he should contact to get on that workshop list of speakers. Could you let him know (Tel 604 926 9573 or 926 6120).

May see you at Barkerville. Kika Ross is here. Yesterday she showed us the latest drill hole (No. 27) - no assays yet but it looks good with lots of pyrite. We are trying to worm our way onto the property through


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diplomacy and beer-buying! ! May get a chance to get underground soon, and also hope to see, photograph and sample some of the holes where the data has been released. Hole 27 was a no-no since it is still confidential.

Cheers,

Gerry

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**From:** Schroeter, Tom EM:EX
**Sent:** Friday, July 28, 2000 11:54 AM
**To:** Lane, Bob EM:EX