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To: W.M. Sirola

From: J.C. Lund

October 30, 1970.

Subject: An assessment of Trans Columbia Exploration's property in the Casino area of the Yukon 115J

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(J)

Introduction:

During the 1970 field season Trans Columbia completed a soil survey over their Casino property in the Yukon. This assessment is based on a study of this work. In addition, a report on the Geochemistry of the Casino Silver Mines property by Archer and Main, Consulting Geologists, was examined for purposes of comparison.

The Trans Columbia property consists of 241 contiguous claims lying immediately west of Casino Silver Mines. It includes the Aztec, Squaw and Tlingit claim groups situated southeast of the confluence of Coffee Creek and the Yukon River within the Whitehorse M.D.

There is an airstrip at Casino Silver Mines property capable of handling DC-3 size aircraft. From here a cat road extends westerly to Trans Columbia's claims, a distance of 6 miles. A road has been pushed in from the Alaska highway near Burwash to the Casino area and a road also has been built from a barge launching point on the Yukon River to the north of Casino. Equipment can be brought in by barge from Dawson City via the Yukon River.

Geology:

There has been no recent mapping in the Casino area. Early work by the G.S.C. shows the area to be underlain mainly by granodiorite of the Klotassin Batholith. The batholith is upper cretaceous in age and intrudes the Yukon group, a metasedimentary sequence of schist, gneiss, amphibolite, quartzite with minor limestone and conglomerate.

On the Trans Columbia property rock samples collected by various

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people suggest that the claim area is mainly underlain by granodiorite. Two samples collected near Anomaly #Cu1 showed kaolinization and silicification; all other rocks were fresh. Samples collected from Anomaly #Mo2 showed some disseminated MoS_2 within an unaltered granodiorite and sparse MoS_2 rosettes in a quartz vein. No samples have been collected from the vicinity of anomalies Mo3 and Mo4.

To date the presence of more than one intrusive phase has not been established. The government aeromagnetic maps 115 J/11 and 115 J/10 suggest underlying rocks of differing magnetic intensities. At least three distinct magnetic highs occur within the claim boundaries. A northwesterly trending high occurs on the extreme northeast corner of the claims adjacent to Anomaly #Cu2. Anomaly #Cu2 straddles the claim boundary. A second high occurs southeast of Anomaly #Mo1. This forms part of a larger concentric magnetic high that trends northwest. Anomaly #Mo1 occurs between the magnetic peaks near the claim boundary. The third magnetic feature is situated in the centre of the claim group. No copper or MoS_2 anomalies are associated with it.

Mineralization on Casino Silver's property is closely associated with a magnetic high. If we assume that this is a normal relation in the Casino area, then only Anomalies #Mo1 and #Cu2 appear to be of any interest. Both of these anomalies occur on the claim boundaries. It may be significant that the only altered rocks came from the area near Anomaly #Mo1. If other intrusive phases exist it would likely be in the northeastern part of the claim group.

An examination of air photos reveals two prominent lineaments, one northeast, the other northwest. These features intersect near Anomaly #Mo2.

Geochemistry:

Overburden is believed by the owners to be between 2 ft. and 15 ft. It is mainly residual soil. Permafrost found at Casino Silver Mines can be expected here. Soils were taken on 400 foot centres and tested for copper and molybdenum. Several anomalous areas were outlined; only four appear to be of any interest.

Anomaly #Mo1 (Cu1) - occurs in the north part of the claim adjacent to a magnetic high. Anomalous areas outlined by values $>100\text{ppm}$ Cu is $800' \times 1,000'$ and $450' \times 400'$. Maximum value is 340ppm Cu; the average within the anomaly is about 140ppm Cu. This is low in comparison to the Casino Silver anomaly.

Anomaly #Mo2 - This has no coincident Cu anomaly. Values are comparable to that on the Casino ground. However, three rock samples from the heart of the anomaly, although carrying some MoS_2 , were relatively unaltered.

Size of this anomaly for values $>20\text{ppm}$ is $600' \times 3,600'$ trending east-west. It bears no relation to areas of high magnetic intensity.

Anomaly Mo3 (Cu3) - The anomaly is amoeboid in shape. For values $>20\text{ppm}$ Mo the dimensions of anomalous area ^{are} ~~is~~ $2,000' \times 1,600'$ and $800' \times 400'$. To the northeast and adjacent to Anomaly #Mo3 is a moderate to low value copper anomaly. No rock samples have been picked up from this area and consequently nothing is known about the geology.

Average molybdenum value in this anomaly is about 15ppm Mo. This value is about one-half that from Casino Silver's property. Maximum copper value is 96ppm Cu over a background of 21ppm Cu; average value is about 25ppm Cu. Again if we can draw a comparison with Casino, this anomaly is low in amplitude. It is, however, distinctly anomalous and

may reflect low grade mineralization in the underlying rock.

Anomaly #Mo3 occurs on the southwest slope of a hill--it is probable that solifluction or soil creep could influence the distribution of copper and molybdenum values.

Anomaly #Cu2 - straddling the northeastern boundary of the claim group is a marked copper anomaly. It appears that only a small part lies on Trans Columbia's ground. Anomaly #Cu2 is in close relation to a northwesterly trending magnetic high but because it appears to lie mostly on Casino Silver's ground it is of no interest.

If we use the Casino deposit as a model for interpretation it would appear that those anomalies coincident with or adjacent to a magnetic high should be the most significant. This would be Anomaly #Cu1 and #Cu2. Cu1, however, is small and Cu2 is on the claim boundary. These then have only a limited potential. Anomaly #Mo2 is in an area underlain by unaltered quartz monzonite with no coincident copper values nor associated magnetic high. By inference it may be regarded as a low priority target.

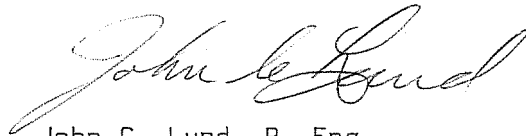
Anomaly #Mo3 has no coincident copper anomaly and no associated magnetic high. Bedrock geology has not been mapped, hence the composition of underlying rock is not known. I would not discount this area until more is known about the geology.

In conclusion I would say the property has some potential, particularly in the north and east areas of Mo1 and Cu2. Anomaly #Mo3 is of interest because of its more uniform and widespread distribution of values. None of the anomalies are as impressive as those on the Casino Silver property. If we can use this as a comparison then we

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might expect only low grade molybdenum mineralization in Mo₂ and Mo₃;
Cu₂ and Cu₁ remain of moderate interest.

I recommend that if Trans Columbia has not entered into an
agreement with another company by next summer, that we arrange an
examination of the ground.



John C. Lund, P. Eng.