CORANEX LIMITED

KLAZAN GROUP - GEOLOGICAL REPORT

(Colin J. Campbell)

North Vancouver, B. C., April 3, 1967

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SUMMARY

The Klazan Group of claims, owned by Coranex Limited, covers an area of relatively acid rocks situated near the northeast edge of a large body of syenite in the Dawson Range, Yukon Territory. Regional geochemical exploration found three creeks draining this area anomalous in copper and T.H.M. Detailed geochemistry indicated several soil anomalies on the Klazan Group. Geological mapping outlined an area of abundant quartz veins and a pyrite zone within the rhyolitic rocks. Two stocks which are thought to have intruded the rhyolitic rocks were also discovered. Mineralization on the Klazan Group is restricted to abundant pyrite and quartz and minor sphalerite and galena. There is a strong geochemical anomaly associated with a zone of shearing. It is recommended that this shear zone and associated geochemical anomaly be investigated by trenching with a bulldozer; geological mapping of the trenches should also be done.

LOCATION AND ACCESSIBILITY

The Klazan Group is situated approximately 140 air miles northwest of Whitehorse in the Yukon Territory. It is at Latitude 62°23', Longitude 137°29' on Geological Survey Map 340A. Maximum elevation is approximately 4000 feet with the valley floors at 3000 feet.

The nearest settlement, Carmacks, is about 45 air miles or 35 miles by gravel road and 25 miles by tractor road from the Klazan Group. Carmacks is accessible year round via the Mayo-Dawson Highway, a good gravel road.

A camp on the Klazan Group could be supplied during the spring and early summer, via the tractor road, by a bulldozer and trailer but during July and August several long stretches of the tractor road might be impassable.

The only consistent means of supply would be by helicopter or by tracked vehicle similar to a Nodwell.

CLAIMS AND OWNERSHIP

The 48 Klazan claims (Plate I) were staked June 7, 1966 by a crew of Coranex men and have been transferred to Coranex Limited.

PERSONNEL

The geological survey was carried out by:

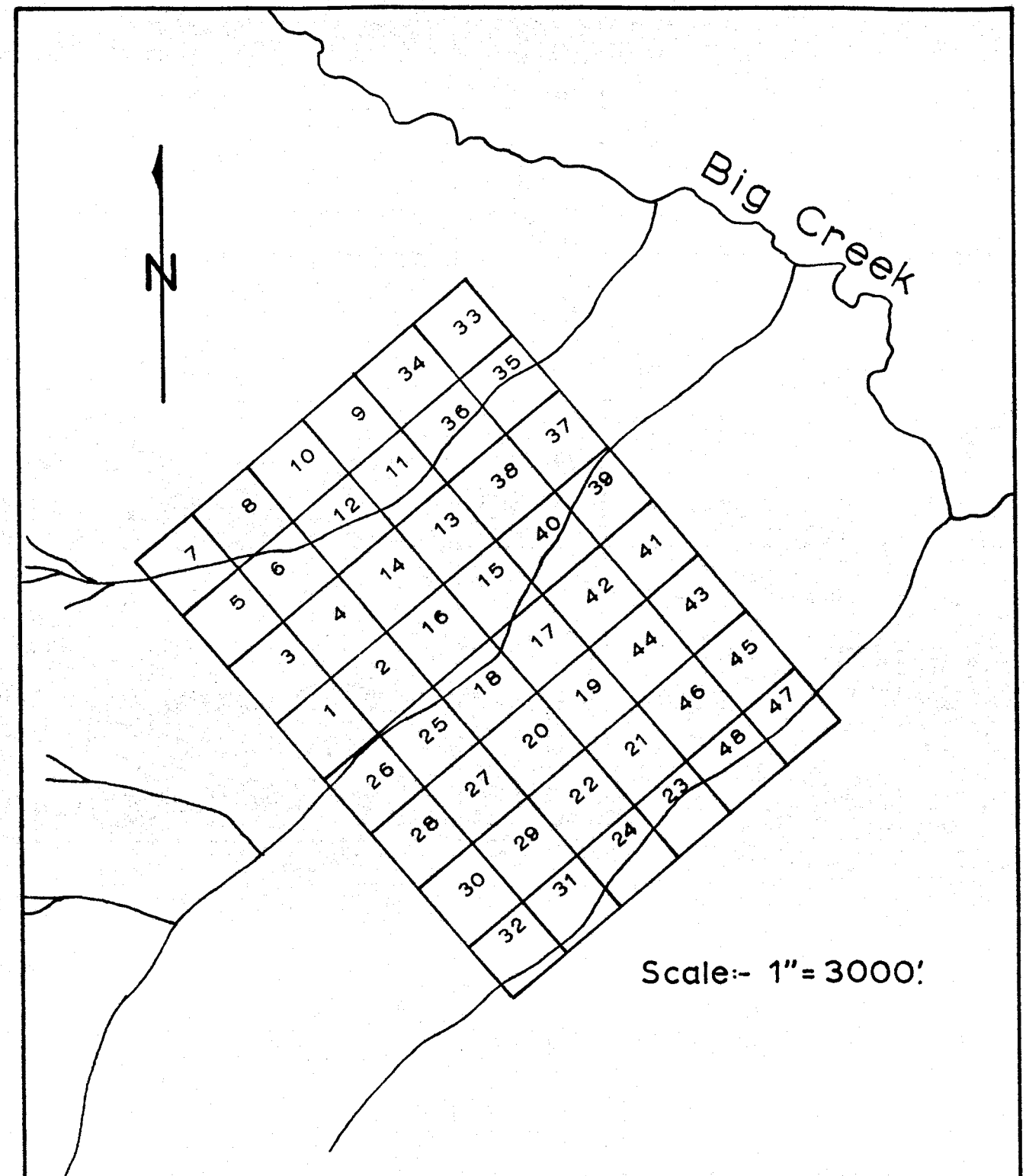
Colin Campbell, B.Sc. - geologist for Coranex Limited,
605-105 W. Keith Rd., North Vancouver,
B. C.

under the supervision of:

J. R. Woodcock, M.Sc., P.Eng.
c/o Coranex Limited,
1521 Pemberton Avenue,
North Vancouver, B. C.

EXPLORATION WORK

The area of interest was located during the 1965 field season



KLAZAN GROUP — LOCATION MAP

by Coranex silt sampling crews under the supervision of W. T. Meyer. Detailed silt sampling outlined an area of approximately one mile along Burgis Creek which had anomalous heavy metal values. Soil sampling was carried out near Burgis Creek and on the creeks immediately to the northwest (Foster Creek) and to the southeast (Etches Creek).

Samples of weathered rock were taken from an arsenic anomaly and from some quartz veins but assays revealed only low gold and silver values. However the large anomalous area, including heavy metals, arsenic, molybdenum and copper, near an area of abundant quartz veins was thought to warrant more intensive investigation.

The 48 Klazan claims were staked June 7, 1966 and during the latter part of July and August a crew of three attempted to tie down the anomalous area more closely by detailed geochemistry and subsequent trenching. Several days of geological mapping were done on the claim group.

REGIONAL GEOLOGY

Bostock (1948) has divided the Canadian Cordillera into three physiographic systems: the Eastern System consisting of the Rocky, Mackenzie and Arctic Mountain areas; the Western System including the Coast Mountain Area, the Coastal trough and Outer Mountain area; and the Interior System which includes the Yukon Plateau and other areas. Near the central part of the Yukon Plateau is the Dawson Range composed mainly of intrusive rocks.

A large irregular body of porphyritic syenite of Jurassic age occurring along the northeast flank of the Dawson Range has been intruded locally by Tertiary quartz porphyry, granite porphyry and rhyolite (Bostock, 1936).

The Klazan Group partially covers one of Bostock's Tertiary "plugs". However, our thin section examination of the rocks from this "plug" indicates that many of the rhyolite porphyries are crystal tuffs and flows.

GEOLOGY OF THE PROPERTY

Since over 90 percent of the area is covered by from two to ten feet of overburden most of the mapping was on float. The areas of abundant outcrop (Figure 4) are widely spaced. Specimens for thin sections are from float and from outcrop. Because the area remained unglaciated during the last period of glaciation the use of float in mapping can be quite accurate. Regional mapping was controlled by air photo coverage; detailed mapping by the picket lines (Figure 4).

GEOMORPHOLOGY:

The northwest slopes are typically covered by a layer of moss, two to ten inches of volcanic ash and below the ash by a normal soil horizon. The moss, being a good insulator, does not allow any melting of the permafrost during the summer.

The southeast slopes are dissimilar in that open areas typically consist of grass above soil mixed with small blocks of bedrock. Permafrost is generally not present near the surface.

Part of the Klazan Group is covered by alluvium (Figure 4) consisting of fine sand, gravel and rounded boulders of granite and syenite. Bostock (1936) notes that in recent times Big Creek has downcut its bed from 200 to 500 feet. The alluvium may be part of a series of old beds of Big Creek or glacial outwash from an earlier period of glaciation.

ROCK TYPES:

Syenite

Coarse-grained syenite is a prevalent rock type to the south of Big Creek. The syenite is generally porphyritic with large (up to 3 cm. long) phenocrysts of pink orthoclase and hornblende in a matrix of plagioclase and minor quartz (less than 5%). Accessory minerals include magnetite, apatite and sphene. Most of the syenite shows evidence of shearing and many of the fractures are filled with epidote.

Rhyolitic Rocks

The rhyolitic rocks consist of a sequence of crystal tuffs, flows and quartz porphyry. The crystal tuffs occur along the south and southwest parts of the area mapped as "rhyolitic rocks" (Figure 4). The tuffs consist mainly of crystal fragments of quartz, feldspar and rock in a matrix of partially devitrified glass. The flows in hand specimen look similar to both the tuff and the quartz porphyry and are distinguished from the tuff by lack of fragments and from the quartz porphyry (only in thin section) by the presence of flow banding. The contacts between the tuffs, flows and porphyry seem to be gradational.

Carbonatized Orthoclase Porphyry

In hand specimen the rock is grey with white phenocrysts of orthoclase and fresh crystals of pyrite up to 3 m.m. in diameter. Thin section examination reveals that the orthoclase is largely altered to carbonate (calcite) and minor kaolinite. The plagioclase which represents approximately one-half the total feldspar is slightly sericitized. Minor sphalerite and some chlorite were observed in some of the carbonatized orthoclase porphyry stock.

Quartz Monzonite Porphyry

Large quartz eyes (up to 2 cm. across) and orthoclase phenocrysts give this light grey-brown rock a definite porphyritic texture. In relatively unaltered specimens, plagioclase of composition An_{30} to An_{38} composes approximately 50% of the total feldspar. In one relatively unaltered specimen biotite was present.

GEOCHEMISTRY:

General Geochemistry

As previously mentioned the initial anomaly on Burgis Creek was a heavy metals and copper anomaly outlined by silt samples. Soil sampling provided further anomalies of arsenic, heavy metals, molybdenum and copper. Geochemical maps which include the soil sampling of 1965 and 1966 have been compiled under a separate report for assessment work.

The soil sampling done during 1965 resulted in the outlining of a main arsenic anomaly and a heavy metals anomaly to the northwest of Burgis Creek and a multi-metals (copper, heavy metals, arsenic and molybdenum) anomaly to the southwest of Burgis Creek.

VEINS AND MINERALIZED ZONES:

Quartz Mineralization

An area of abundant quartz veinlets has been outlined on Figure 4. These quartz veins have associated pyrite and low gold values (.005 oz. gold per ton). Within this area of abundant quartz veins to the southeast of Burgis Creek, in an area of sheared rhyolites, there are larger quartz breccia veins. In trench number 1 (Figure 1) these veins strike at 70° azimuth and are nearly vertical. The quartz fragments in these veins are cemented by coarsely crystalline quartz and minor barite. The quartz barite breccia has grey areas likely due to microscopic grains of galena disseminated in it (lead content in the quartz breccia is 1600 ppm.). In an exposure 125 feet to the northeast of trench number 1 is another breccia (pit 3 of Figure 1) -- here barite makes up 20 percent or more of the cementing material. Assays are listed on Figure 1.(Gold = .04 ounces per ton.)

Pyrite - Sphalerite Mineralization

The areas of high pyrite content are now seen as gossans along the banks of Burgis Creek.

These gossan areas are indicated on Figure 4. The remaining pyrite occurs as disseminated euhedral grains which originally (before oxidation) made up from two to five volume percent of the rock.

Near the contact between the carbonatized orthoclase porphyry stock and the quartz rhyolite (Figure 4) minor sphalerite (much less than one percent) is found with pyrite as disseminated grains in the carbonatized orthoclase porphyry.

Galena - Sphalerite Mineralization

In the southeast bank of Burgis Creek, 1000 feet north of the quartz breccia shear zone at pit number 1 (Figure 1) another shear zone was found. Here quartz and rock fragments are cemented by a calcite containing minor galena and sphalerite mixture. Three "grab" samples from here assayed:

	1	2	3
Gold	trace	.005 oz. per ton	trace
Silver	.28 oz. per ton	.20 oz. per ton	trace
Lead	trace	trace	.05%
Zinc	.2%	.3%	trace

STRUCTURAL DATA:

The rhyolitic rocks on the Klazan Group parallel the Big Creek lineament as do most of the major rock units, including the Jurassic syenites and granites, of the Dawson Range, which were mapped by Bostock (1936). The main structural features on the Klazan Group are the three sub-parallel creeks (Burgis, Etches and Foster) which strike at 55° azimuth and intersect the valley of Big Creek nearly at right angles. Two other lineations with an azimuth of 175° can be easily seen on air photos intersecting Burgis Creek on the Klazan Group (Figure 4). The significance of these lineations is unknown.

The attitudes of the rhyolitic fragmentals and flows are also unknown.

Three small or perhaps one large shear zone occurs at the contact of the carbonatized orthoclase porphyry stock and the quartz rhyolite porphyry (Figure 4).

GEOLOGICAL INTERPRETATIONS

It is noted again that most of the mapping was done on float and few contacts were seen in outcrop. The age relationships of the major rock units generally are ambiguous; however the carbonatized orthoclase porphyry stock seems to have intruded the rhyolitic rocks. Evidence for this includes pyritization of the rhyolitic rocks near two contacts with the carbonatized orthoclase porphyry and the areal extent of the two rock units. A shear zone (Figure 4) occurs along the northeast side of the carbonatized orthoclase porphyry. The presence of disseminated sphalerite in the carbonatized orthoclase porphyry and the lead—zinc mineralization in

TABLE OF FORMATIONS

QUATERNARY

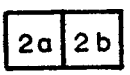
ALLUVIUM

TERTIARY

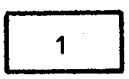
CARBONATIZED ORTHOCLASE PORPHYRY

QUARTZ MONZONITE PORPHYRY

MESOZOIC



SYENITE (2a) to DIORITE (2b)



RHYOLITIC ROCKS: lavas and crystal tuffs.

the shear zone indicates the carbonatized orthoclase porphyry stock is the most likely source of the lead and zinc.

The syenite—rhyolite contact relationship is unknown. The rhyolites show no contact metamorphic effects near the syenites. The syenites are generally sheared, with epidote filling the shears and fractures. Bostock (1936) believes the rhyolitic rocks to be younger, however no evidence for this was found on the Klazan Group.

The area of abundant quartz veins in the rhyolitic rocks may be similar in occurrence to the rocks described by Bostock (1936, p44). Bostock says these rocks with abundant quartz veins "occur abundantly in a belt extending southwestward from some eight miles northwest of Klaza Mountain across Victoria Mountain. They also occur abundantly between this belt and Big and Stoddart Creeks". It would seem that these areas of abundant quartz veins are quite extensive and of dubious economic significance.

RECOMMENDATIONS

Geologically the Klazan Group has little to recommend it other than:

i) A small shear zone with low grade lead—zinc values.

ii) Gold values over a large area, although extremely low, are general.

iii) A good geochemical anomaly (see Geochemical Report, Klazan Group - 1967) which has not been fully investigated; this anomaly is related to an alluvial covered shear zone and hence is considered geologically favourable as well.

On the basis of the geochemical anomaly and the geology it is recommended that the area be trenched with a bulldozer. The trenching would also allow more complete and accurate geological mapping to be done.

Colin J. Campbell.

Colin J. Campbell, B.Sc.

J. R. Woodcock

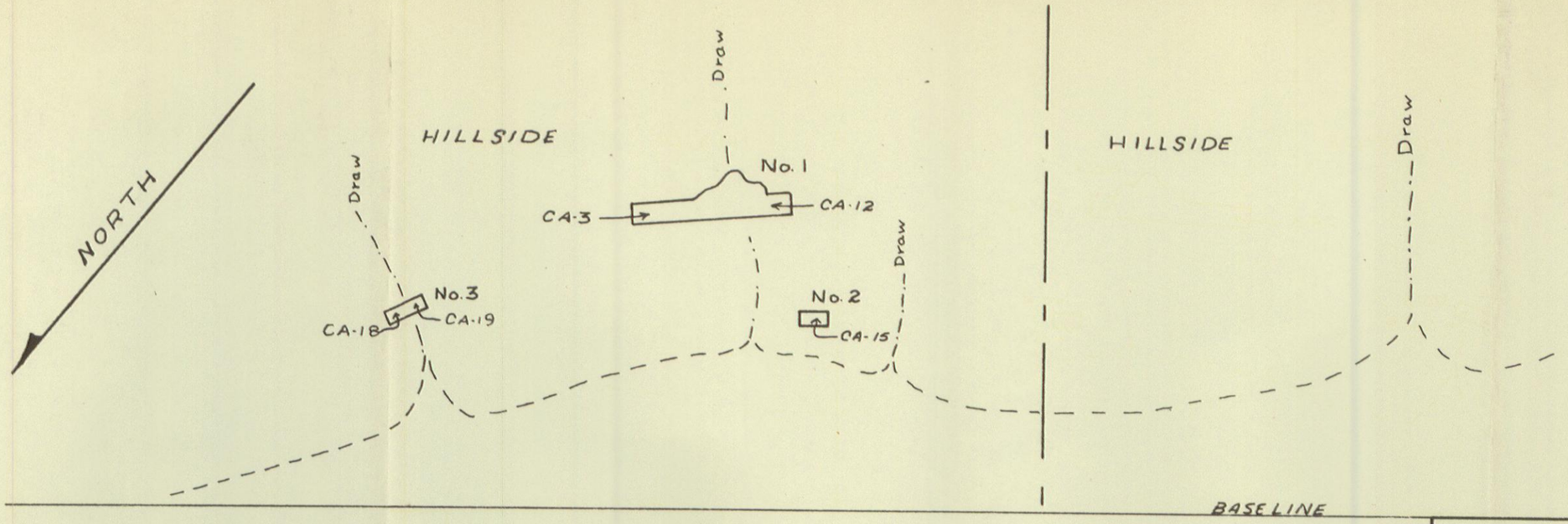
J. R. Woodcock, P.Eng.

April 3, 1967

REFERENCES

Bostock, H. S., (1936), Carmacks District, Yukon; Geol. Surv. Canada, Mem. 189.

Bostock, H. S., (1948), Physiography of the Canadian Cordillera, with Special Reference to the Area North of the Fifty-fifth Parallel; Geol. Surv. Canada, Mem. 247.



Scale :- 1" = 50'

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KLAZAN GROUP

A) Pit Dimensions

No. 1	60' x 6' x 4'
No. 2	10' x 4' x 2'
No. 3	15' x 6' x 4'

B) Bed Rock

All pits are in fractured and sheared rhyolitic rocks. Rock is removed with difficulty by pick and shovel.

C) Assay Results

	Au (oz./ton)
CA-3	.01
CA-12	.02
CA-15	trace
CA-18	.005
CA-19	.01

Drawn by :- C. Campbell. Febuary 15, 1967.

Figure 1

KLAZAN 4

KLAZAN 2

KLAZAN 16

NORTH

No. 4

CA-17 — CA-16

Scale :- 1" = 50'

CORANEX LIMITED
KLAZAN GROUP

A) Pit Dimensions

No. 4 20' × 10' × 6'

B) Bed Rock

No. 4 Pit is in rhyolitic rock and talus. removed by pick and shovel.

C) Assay Results

	Au. (oz/ton)
CA-16	.005
CA-17	trace.

Drawn by :- C. Campbell Febuary 15, 1967.

Figure 2.

KLAZAN 13

NORTH

No. 5

CA-20

800 Feet to
No. 2 Post of
Klazan 13, 14

No. 6

KLAZAN 15

Scale :- 1" = 50'

CORANEX LIMITED
KLAZAN GROUP

A) Pit Dimensions

No. 5 30' x 5' x 4'

No. 6 10' x 5' x 4'

B) Bed Rock

Pits in permafrost; bottomed in rhyolitic float.

C) Assay Results

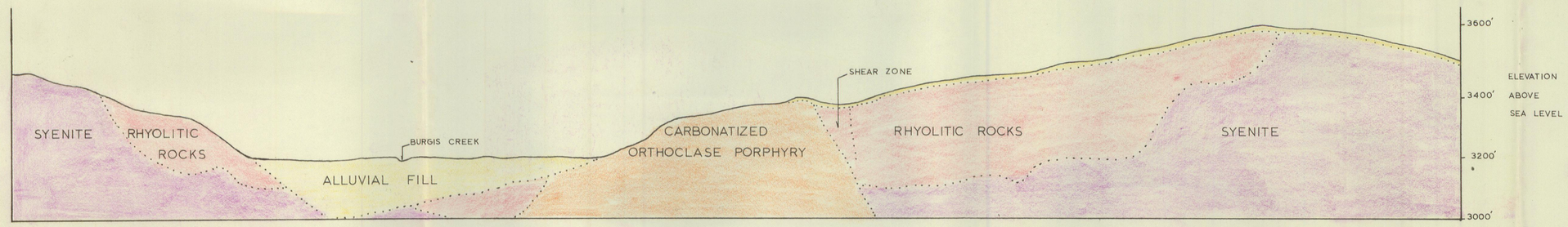
	Au
CA-20	trace.

Drawn by:- C. Campbell Febuary 15, 1967.

Figure 3.

KLAZAN 10 | KLAZAN 9
KLAZAN 12 | KLAZAN 11
FOSTER CREEK
KLAZAN 36
KLAZAN 38 | KLAZAN 37
KLAZAN 40 | KLAZAN 39
KLAZAN 42 | KLAZAN 41
KLAZAN 7 | KLAZAN 8
KLAZAN 5 | KLAZAN 6
KLAZAN 14 | KLAZAN 13
KLAZAN 16 | KLAZAN 15
BURGIS CREEK
LINEAMENT
Carbonate breccia with PbS-ZnS
Quartz-barite breccia
FeS₂ZnS
Shear Zone
KLAZAN 4
KLAZAN 3 | KLAZAN 2
KLAZAN 1
KLAZAN 18 | KLAZAN 17
KLAZAN 20 | KLAZAN 19
ALLUVIAL COVER
KLAZAN 44 | KLAZAN 43
KLAZAN 46 | KLAZAN 45
LINEAMENT
ETCHES CREEK
KLAZAN 48 | KLAZAN 47
KLAZAN 26 | KLAZAN 25
KLAZAN 28 | KLAZAN 27
KLAZAN 22 | KLAZAN 21
KLAZAN 24 | KLAZAN 23
KLAZAN 30 | KLAZAN 29
KLAZAN 32 | KLAZAN 31
N
A
A'
Scale:- 1" = 400'.

CROSS SECTION A A'



SCALE:- 1"= 400'

CORANEX PROJECT KLAZAN GROUP GEOLOGICAL MAP

LEGEND

TABLE OF FORMATIONS

QUATERNARY
- ALLUVIUM

TERTIARY
- CARBONATIZED ORTHOCLASE PORPHYRY
- QUARTZ MONZONITE PORPHRY

MESOZOIC
- 2a | 2b SYENITE (2a) to DIORITE (2b)
- RHYOLITIC ROCKS : lavas crystal tuffs

SYMBOLS

- LIMONITE GOSSAN
- NUMEROUS QUARTZ VEINLETS
- TRENCHES
- 12 JOINTING
- MAPPED CONTACT
- INFERRED CONTACT
- HYPOTHETICAL CONTACT
- PICKET LINE

DRAWN BY:- C.CAMPBELL. DATE:- MARCH 28, 1967.

Figure 4.

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