ASSESSMENT REPORTS

DAWSON M.D.

MAP No. 115 O 14 **TYPE OF WORK:** GEOLOGICAL, GEOCHEMICAL 091569

REPORT FILED UNDER	Dawson Eldorado Gold Explorations Ltd.
DATE PERFORMED	June 1984 DATE FILED: October 15, 1984
LOCATION – LAT.	63°55'N Soda Creek, Yukon
LONG.	139°03'W
CLAIM Nos.	KLOX 1-12 YA65695-706
WORK DONE BY	J.K. Mortensen (Archer, Cathro & Assoc. (1981) Ltd.)
WORK DONE FOR	Dawson Eldorado Gold Explorations Ltd.
REMARKS	

091569

In 1983, 40 samples of soil and silt were collected on the property and geochemically analyzed. This failed to identify any anomalies in the area of the showings, or in the immediate vicinity.

ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

BOX 4127, 3125 THIRD AVENUE
WHITEHORSE, Y.T. Y1A 3S9

Assessment Report

on

Klox 1-12 Claims

Dawson Mining District

NTS 1150/14

by

J.K. Mortensen, Ph.D.
Archer, Cathro & Associates (1981) Limited

June 13, 1984

091569

This report has been examined by the Geological Exploration Unit under Section 58 of the Yukon Quartz Mining Act and is considered as representation work in the amount of $_____.

Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

APPENDICES

Introduction

The Klox 1-12 claims were staked in June, 1983 by Archer, Cathro & Associates (1981) Limited on behalf of Dawson Eldorado Gold Explorations Ltd. to cover a known Cu-Pb-Ag-Au target.

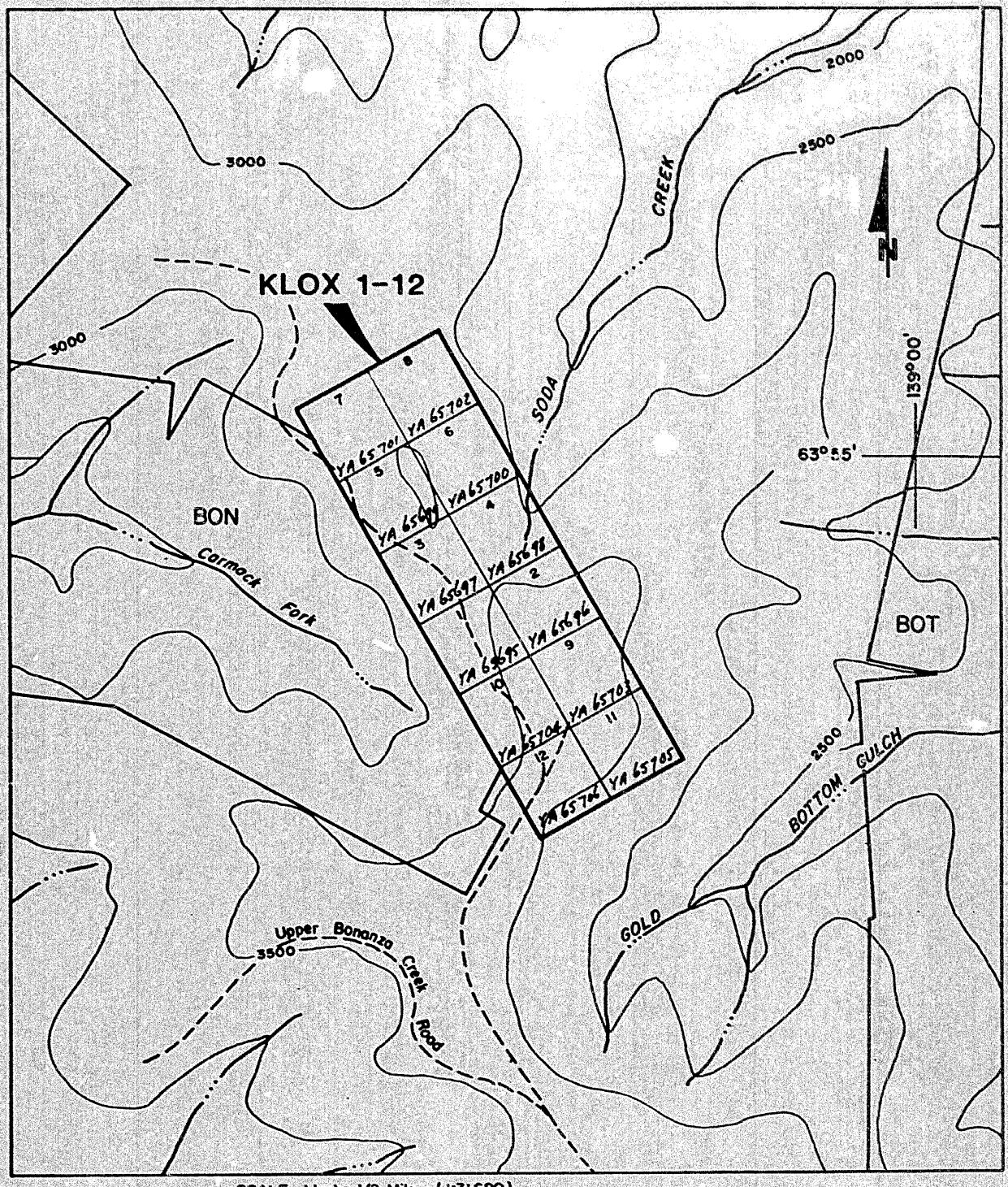
Location, Access and Vegetation

The Klox property is located on the ridge crest between the heads of Carmacks Fork, Gold Bottom Gulch and Soda Creek (Figure 1). Access is by a dirt road that branches from the Upper Bonanza Creek Road. This road follows the ridge crest to the south end of the Klox property, at which point it follows the old Klondike Mines Railway grade. A four-wheel drive track extends to the immediate area of the old workings.

Virtually the entire Klondike District, with the exception of the summit of King Solomon Dome, lies below treeline. Vegetation on south- and southwest-facing slopes consists of stands of aspen or mixed aspen and birch, with varying amounts of underbrush, which generally becomes denser at higher elevations. Permafrost is commonly absent on south-facing slopes, but is much more widespread on north-facing slopes. Such north-facing slopes are characterized by scattered scrub spruce or mixed spruce and aspen, with varying amounts of underbrush. The ground is commonly covered by very thick moss, which passes downward into frozen peat-like material and then into frozen soil.

History and Previous Work

The area was first staked as the 14 claim Box Car group (11063) in July, 1909 by Mrs. J. Orrell, etc, near the Box Car Station on the Klondike Mines Railway. Development prior to 1912 was restricted to the Jackpot and Keynote



NTS 115O/14

Figure 1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LOCATION MAP

KLOX 1-12 CLAIMS

KLONDIKE PROJECT

claims and consisted of several trenches and open cuts and a 65 ft shaft. The claims were later acquired by R.W. Brazil, who by November, 1920, had sunk a 50 ft shaft and incline near the original Jackpot shaft. The property was subsequently restaked as the Box Car claim (15456) in June, 1929 by E.W. Jackson, as the Chicago and Tenderfoot claims (57703) in September, 1951 by R.H. Williams and J.A. Gould, as the Kathleen claims (57266) in October, 1955 by G.W. Scott, as the Eldorado claims (78178) in October, 1956 by W.E. Wyatt, as the Cord claims (87522) in July, 1966 - March, 1968 by V. Sheck, as the Box Car claims (Y56918) in July, 1970 by V. Thornburg for the Orekon Syndicate, and as the Tom claims (&65102) in July, 1971 by M. Moule. The only work was extensive bulldozer trenching in 1967 and 1968 by V. Sheck. The Tom claims were surrounded by the Pup cliams (Y65465) in May, 1972 by R.G. Hilker for Sullivan and Rogers, who carried out mapping and sampling later in the year.

Regional Geology

The Klondike District lies within the unglaciated portion of the Northern Cordillera, and experienced strong surface weathering during the early and mid-Tertiary. As a result, bedrock exposure is extremely limited (considerably less than one percent), and surface weathering locally extends to depths of 80 m or more. The scarcity of outcrop necessitates a regional approach to understanding the geology of individual properties (many properties in the Klondike have only one or two outcrops on them). In the following report, the property geology is discussed and interpreted in the light of regional mapping carried out by the writer during the 1983 field season. The bedrock geology of the property and adjacent areas is based on data collected from available bedrock and subcrop (which is usually confined to road cuts, placer

workings, and ridge crests), as well as the distribution of various lithologies as rock chips in the overburden. Since solifluction and downslope creep are the only processes operating to transport the rock chips, the latter technique can be used (with caution) to approximately locate lithological contacts in overburden-covered areas.

The Klondike District is underlain by a series of thrust sheets that are separated by regional-scale thrust faults. Discontinuous lenses of altered ultrabasic rocks occur along the thrust faults. The rock units that make up the various thrust sheets are described briefly in Table I.

An early pre-thrusting, metamorphic foliation that parallels compositional layering is pervasive in all rock units except the ultrabasic rocks and the younger intrusions and volcanic rocks (units KTqfp, KTvs and Mzd). The thrust faults are deformed by at least three younger phases of deformation. The second phase event (F_2) produced west- to northwest-trending folds that are developed to varying degrees throughout the district. The third phase (F_3) includes northwest-trending folds and is only recognized in the northeastern portion of the district. Late, small-scale warping (F_4) is noted locally. Little evidence was seen for large-scale steep faulting in the area, although abundant topographic linears suggest that small-scale steep faults may be common.

Two distinct generations of quartz veins are recognized regionally in the Klondike District. The most abundant is an early generation of metamorphic quartz sweats (referred to as "foliaform quartz") that comprise narrow lenses and pods parallel to the F_1 foliation. Minor amounts of ferroan carbonate, pyrite and white to pale pink feldspar occur locally in the foliaform quartz. A younger set of quartz veins (referred to as "discordant quartz") form tabular veins that crosscut compositional layering in the schists as well as the F_1

TABLE I

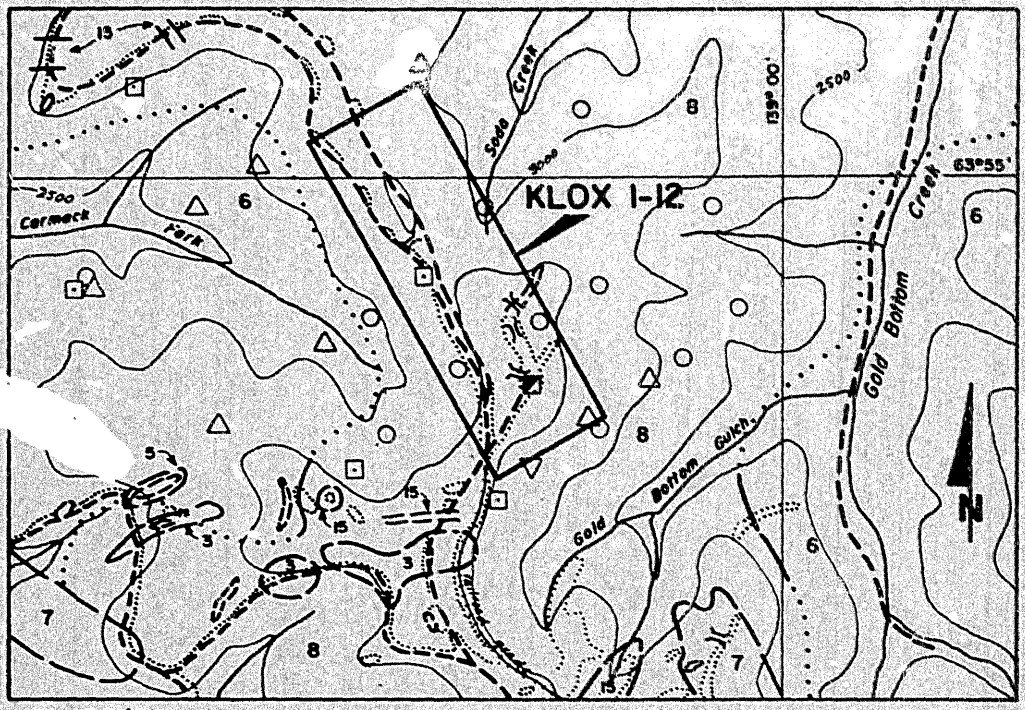
LITHOLOGIC UNITS IN THE KLONDIKE DISTRICT

Unit	Map Symbol	Description
15	KTqfp	- unfoliated quartz-feldspar porphyry
14	KTvs	- interbedded immature clastic rocks and intermediate to mafic volcanic rocks
13	Mzd	- unfoliated hornblende diorite and quartz diorite
12a	Pzub	- variably altered ultrabasic rocks (serpentinite, talc-carbonate rock, and silica-carbonate rock)
12b	Pzgr	- massive to weakly foliated greenstone
11	Pzm	- schistose impure marble
10	Pzmq	- muscovitic quartzite
9	Pzqs	- carbonaceous quartz-muscovite phyllite and schist (locally includes minor 6 undifferentiated)
8	Pzmcq	- fine-grained muscovitic and chloritic quartzite
7	Pzqms	- tan to rusty weathering quartz-muscovite, muscovite-quartz, and muscovite schist
6	Pzcs	- chlorite and chlorite-quartz-muscovite schist (includes minor amphibolite)
5	Pzqe	- "quartz-eye schist" (quartz-muscovite schist with abundant clear to bluish quartz [±feldspar] augen)
4	Pzqd	- weakly to moderately foliated, medium-grained, quartz dioritic orthogneiss
3	Pzmg	- weakly to strongly foliated metagabbro
2	Pzmd	- weakly to strongly foliated metadiorite
1	Pzog	- strongly foliated granitic to quartz monzonitic orthogneiss

and F_2 foliations. These veins reach 2.5 m in thickness in parts of the Klondike District. Pyrite is commonly present, usually as narrow selvages. Other sulphides, notably galena, sphalerite, tetrahedrite, stibnite, chalcopyrite and arsenopyrite, and free gold occur in trace elements in the discordant veins. Manganese staining is common on weathered samples of vein material. Sampling of veins from throughout the Klondike has shown that gold is confined almost exclusively to the discordant veins.

Property Geology

The geology in the area of the Klox property (Figure 2) was mapped by the writer during the course of regional mapping in the Klondike District. The property is underlain mainly by an interlayered sequence of tan to pale green weathering, slightly muscovitic and chloritic quartzite (Unit 8) and minor medium to dark green chlorite and quartz-chlorite schist (Unit 6). The quartzites are thinly banded and are blocky to platy weathering, and appear to be derived from an impure siliciclastic sediment. The chlorite schist was derived at least in part from volcanic or volcaniclastic rocks of intermediate to mafic composition. Interlayering of the two units is on a scale of a few centimetres to several metres. Layering and the pervasive F_1 recrystallization foliation that parallels it are nearly horizontal in this area. Shallow E-plunging F_2 crenulation wrinkles and low amplitude minor folds are locally developed. Small bodies of unfoliated quartz-feldspar porphyry intrude the schists along the ridge road to the north and south of the property. A small body of weakly to strongly foliated metagabbro is also present south of the property. This body crosscuts the layering in the schists in map pattern, and is probably an intrusive equivalent of some of the mafic metavolcanic



NTS 115O/14

Figure 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

BEDROCK GEOLOGY

KLOX 1-12 CLAIMS AND VICINITY

KLONDIKE PROJECT

SCALE – 1:50,000

0 1000 2000 3000 Metres

rocks (chlorite schists).

Foliaform quartz lenses up to 10 cm in thickness are common in the few outcrops on the property. Several very large masses of foliaform quartz (to 3 m in diameter) are also present locally in slumped outcrop or in subcrop. A narrow, northwest-trending, nearly vertical shear zone cuts the schist and quartzite in the main area of old workings on the property.

Mineralization

Cu-Pb-Ag-Au mineralization was discovered on the Box Car occurrence in 1909 and was explored by hand pits, shallow shafts and short inclines. MacLean (1914) examined and sampled the workings in 1912. Known mineralization is confined to two showings, referred to by MacLean as the Jackpot and Keynote showings. Two shafts (to depths of 50 and 65 ft) are present on the Jackpot and the immediate area around the shafts has been stripped by bulldozer. Mineralization exposed there consists of malachite, azurite, minor chalcopyrite and rare clots of galena disseminated in quartz-chlorite-muscovite schist within and adjacent to a 1.5 m wide shear zone oriented at 155/85 SW. Both shafts were sunk on this shear zone. There is no well-defined vein exposed at surface; the mineralization is more disseminated in nature. Small amounts of quartz have been introduced along the shear zone and fine-grained, clear, drusy quartz crystals line some of the fractures and cavities within brecciated rock in the other zone. Epidote is also relatively abundant in and near the shear zone, occurring both as fracture fillings and disseminations. Old newspaper accounts of the Jackpot workings describe a quartz-galena vein ranging from 0.5 to 1.2 m in width that was intersected at depth in the two shafts. The presence of this vein cannot be verified, as the shafts are both presently

inaccessible. Descriptions of the Box Car showings commonly refer to single vein structures up to 2000 ft long. Although exposures of quartz on the ridge crest that had been included in this strike length are not quite as abundant, most such exposures are of the foliaform variety of quartz rather than the younger, crosscutting vein type. There is therefore no evidence as yet for significant strike length to individual veins on shear structures on the property. MacLean took 4 samples from the Jackpot showing. All were from the head of the 50 ft shaft and from an adjoining trench. A sample from the head of the shaft (within the shear zone) assayed 0.02 oz/ton Au and 26.93 oz/ton Ag. Three channel samples across the trench floor (also within the shear zone) ranged from 0.03 to 0.04 oz/ton Au and 0.07 to 5.48 oz ton Ag. Several grab samples have also been assayed. R.W. Brazil reported assays of 10% Cu, 35% Pb, 0.24 oz/ton Au and 58.3 oz/ton Ag from the vein encountered by the 50 ft shaft. E. Kindle (pers. comm. reported in Gleeson, 1970) reports an assay of 3.25% Cu in one sample. A sample of galena-bearing schist collected by Debicki (1984) contained more than 0.4% Cu, 8.77% Pb, 7.1 oz/ton Ag and anomalous amounts of Zn, Ba, Sb and Bi.

A separate vein structure is exposed on the old Keynote claim, about 700 m north of the Jackpot shafts. This vein has been exposed over about 40 m by several hand trenches and small open cuts. It is oriented at 070/21 SE and ranges in thickness from 3 cm to 1 m. The vein consists mainly of white, coarse-grained quartz, with very rare galena and pyrite. MacLean took 3 samples of the vein material, none of which contained any values of Au and Ag. Samples of fines material in the waste dumps of two of the hand trenches were collected by the writer during 1983; they contained weakly anomalous amounts of Pb and Cu.

Geochemistry

A total of 40 soil and silt samples was taken on and near the Klox property during 1983. The samples were analyzed for 12 trace elements by ICP and for Au by NAA. Results for As and Ag, which have proven to be the most reliable indicato of gold mineralization in the Klondike District, are plotted on Figure 3. In almost all cases, values are at or below regional background levels for As and Au (calculated to be 15 ppm and 10 ppb, respectively). Scattered weakly to moderately anomalous values of Pb, Zn and Cu are also locally present. Carlson (1973) reported scattered high values of As (up to 70 ppm) in the area immediately north and northwest of the immediate area of the old workings on the Jackpot. Experience elsewhere in the Klondike District has shown that the geochemical response around known gold-bearing zones is very subtle and often somewhat erratic. The apparent absence of a geochemical signature on the Klox property therefore does not indicate that no significant mineralization is present.

Summary and Conclusions

Mineralization on the Klox property occurs within and adjacent to a steeply southwest-dipping shear zone that cuts impure quartzites and quartz-chlorite-muscovite schists. Mineralization consists of disseminated and, locally, fracture-filling quartz, galena and minor chalcopyrite containing significant values of Ag and traces of Au. A separate vein structure further north appears to be only very weakly mineralized. Geochemical sampling in the area failed to identify any anomalies in the area of the showings or in the immediate vicinity.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

/mjm

J.K. Mortensen, Ph.D.

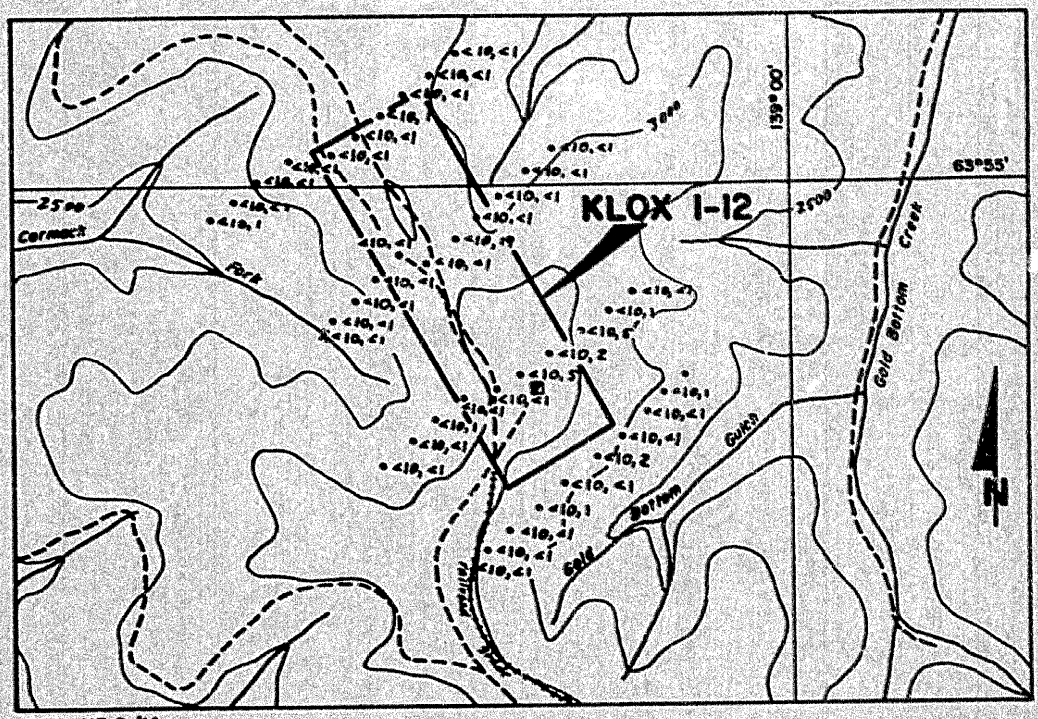


Figure 3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SOIL GEOCHEMISTRY

KLOX 1-12 CLAIMS AND VICINITY

KLONDIKE PROJECT

SCALE – 1:50,000

0 1000 2000 3000 Metres

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APPENDIX I

CERTIFICATE

I, James K. Mortensen, with residential address in Vancouver, British Columbia, do hereby declare

1. I am a geologist in the employ of Archer, Cathro & Associates (1981) Limited, 1016-510 West Hastings Street, Vancouver, B.C. V6B 1L8.

2. I am a graduate in geological engineering of the University of British Columbia (B.A.Sc., 1977, M.A.Sc., 1979) and graduate in geology of The University of California, Santa Barbara (PhD., 1983).

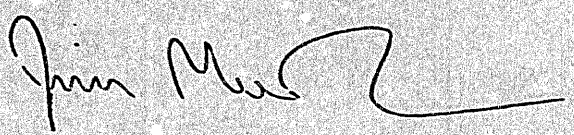
3. I am a member of the Geological Association of Canada and the Geological Society of America.

4. I am a registered Engineer-in-Training in the Association of Professional Engineers of British Columbia.

5. I have practised my profession as a geologist for the past eleven years.

6. I have supervised the work described in this report.

Respectfully submitted,



/mc

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APPENDIX II

REFERENCES

Carlson, G.C., 1973, Private Company Report on Pup 1-71 Claims for Sullivan and Rogers, 19 p

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Debicki, R.L., 1984, Bedrock Geology and Mineralization of the Klondike Area, DIAND Open File Map with Original Notes

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MacLean, T.A., 1914, Lode Mining in Yukon, Mines Branch Publication 222, 205 p

Northern Cordillera Mineral Inventory, NTS 115O, Occurrence 71, Archer, Cathro & Associates (1981) Limited, private publication

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APPENDIX III

April 17, 1984

Mining Recorder,
Dawson Mining District,
Box 249,
Dawson, Y.T.
Y0B 1G0

Dear Sir:

Re: Application of Regional Mapping Costs in Klondike District to Property Assessment

Part of the assessment work for 1983-84 filed on quartz claims in the Klondike area held by Dawson Eldorado Gold Explorations Ltd. or jointly by Dawson Eldorado and Archer, Cathro & Associates (1981) Limited consists of geological mapping outside of the individual properties for which the work was filed. We believe that this is justified because of the extreme scarcity of outcrop in the area and the lack of a detailed geological map of the Klondike which makes it impossible to interpret the geology of a particular property based solely on the very few bedrock exposures within the claim boundaries. In order to understand the bedrock geology of a claim group, it is therefore necessary to carry out more reconnaissance scale mapping in the general area of the property and extrapolate the regional geology onto the property.

Yours truly,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

/mc

J.K. Mortensen.

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