

ASSESSMENT REPORTS

Dawson M.D.

MAP No. 115 C 15 TYPE OF WORK: GEOLOGICAL, GEOCHEMICAL *091566*

REPORT FILED UNDER	Dawson Eldorado Gold Explorations Ltd.	
DATE PERFORMED	June , 1984	DATE FILED: June 27, 1984
LOCATION - LAT.	63°55'N	<i>Hunker-Gold Bottom Creeks, Yukon</i>
	LONG.	
CLAIM Nos.	KLAW 1-24	YA79121-128, 133-148
WORK DONE BY	J.K. Mortensen (Archer, Cathro and Associates (1981) Ltd.)	
WORK DONE FOR	Dawson Eldorado Gold Explorations Ltd.	
REMARKS		

091566

In 1983, 83 soil samples were collected on regional soil lines on or near the property. Contents of arsenic and gold are at or below background levels (15 ppm and 5 ppb respectively) in most samples, with a few scattered weakly anomalous values.

ARCHER, CATIRO

A ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

Box 4127, 3125 Third Avenue
Whitehorse, Y.T. Y1A 3S9

(403) 667-4415

Assessment Report

on

Klaw 1-24 Claims

Dawson Mining District

NTS 1150/15

by

J.K. Mortensen, Ph.D.

Archer, Cathro & Associates (1981) Limited

June 13, 1984

091566

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of \$ 3,723.05.

D A Emmond

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

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Introduction

The Klaw group of claims (Klaw 1-24, Figure 1) was staked by Archer, Cathro & Associates (1981) Limited on behalf of Dawson Eldorado Gold Explorations Ltd. in July, 1983 to cover a known lode gold occurrence and adjacent geologically favourable ground. Showings on the property include those described by MacLean (1914, p.108) on the Brandon, Hillsborough and Alphonse claims, which are collectively referred to as the Fawcett occurrence (NTS 1150/15, No. 69) in the Northern Cordillera Mineral Inventory (Archer, Cathro & Associates [1981] Limited).

Geological mapping and limited geochemical sampling of the Klaw property was carried out during 1983 in the course of a regional mapping and sampling program by the writer and one assistant.

Location, Access and Vegetation

The Klaw claims cover an area stretching from the left limit of the Right Fork of Hunker Creek across the divide between Hunker and Gold Bottom Creeks. Access is either via the road up the Right Fork of Hunker Creek or the ridge road from near King Solomon Dome, which passes through the centre of the claim group.

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.

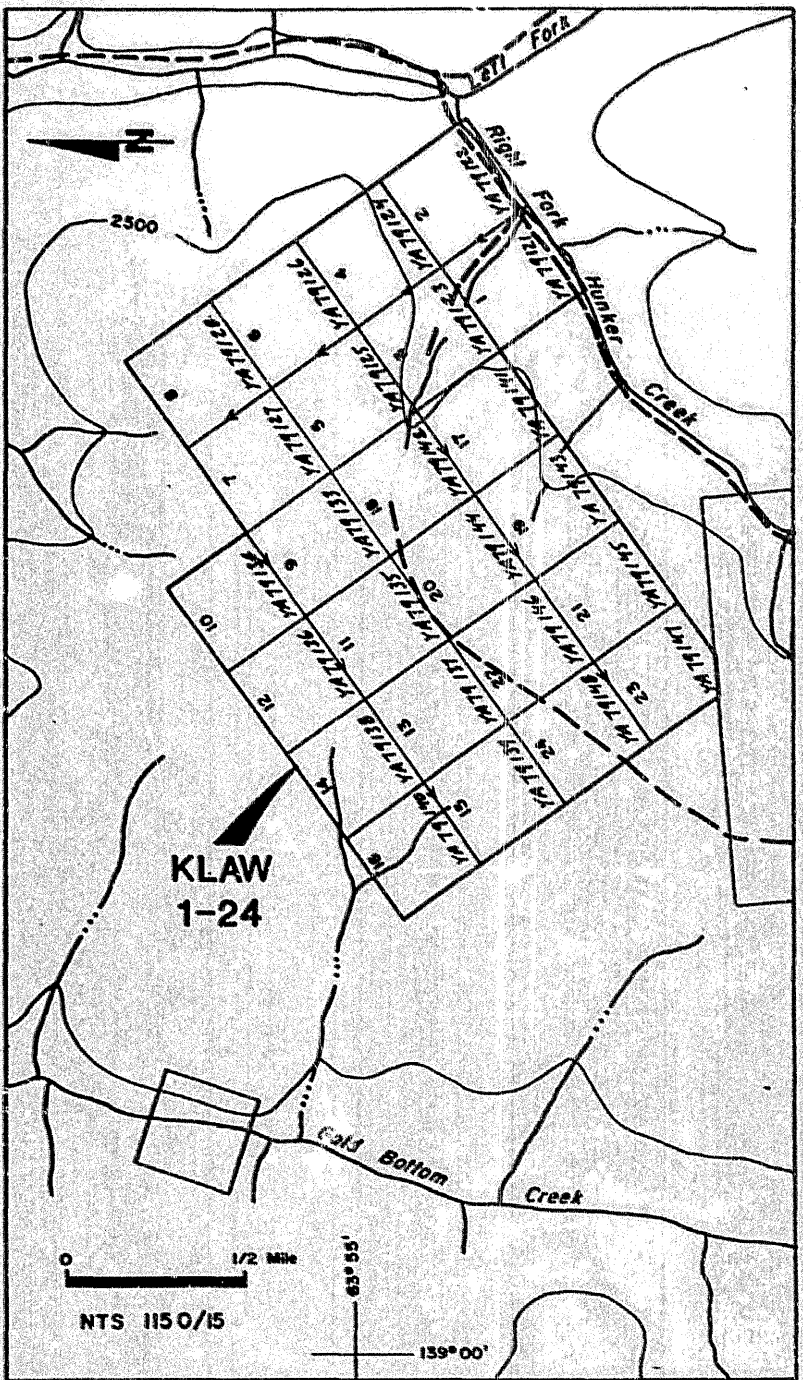


Figure 1
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
LOCATION MAP
KLAW CLAIMS
KLONDIKE PROJECT

History and Previous Work

The Fawcett occurrence was staked as the Brandon, Hillsborough and Alphonse claims (10910) in July, 1908 by T. Fawcett, who prospected and trenched prior to 1912. Nearby staking includes the Bunker Hill and BC claims (10606) in December, 1907 by J. Cameron, which was restaked as the Regina claims (1357) in February, 1909 and surveyed later in the year. The target was restaked as the Caribou, etc claims (79144) in August, 1962 by W. Robertson and as the KM and Golden Dream claims (86998) in August, 1965 by K.W. Miller and C. Anderson.

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 veins (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 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

TABLE I
LITHOLOGIC UNITS IN THE KLONDIKE DISTRICT

<u>Unit</u>	<u>Map Symbol</u>	<u>Description</u>
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 [\pm 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

the Klondike has shown that gold is confined almost exclusively to the discordant veins.

Property Geology

The geology of the Klaw property and its immediate area is shown on Figure 2. A major west-dipping thrust fault zone cuts across the claim group. Overlying the thrust is a sequence of chlorite and chlorite-quartz schist and minor metagabbro. A sequence consisting of, from bottom to top, rusty tan to orange weathering muscovite and quartz-muscovite schist, micaceous quartzite, and chlorite-quartz schist underlies the thrust. Thicknesses cannot yet be assigned to the individual units due to the lack of detailed information on the exact location and orientation of lithological contacts. The units appear to dip gently to the west, generally parallel to the thrust fault itself.

The thrust zone, which is best exposed in a bulldozer trench up the left limit of No. 24 Pup appears to be up to 100 m thick, and consists of an imbricate zone that includes discontinuous bodies of variably altered ultramafic rocks (serpentinite, carbonate-altered serpentinite, quartz-carbonate-Cr mica rock and talc-carbonate schist) as well as chlorite schist and metagabbro of the hanging wall and footwall sequences. Subsidiary shears that roughly parallel the main thrust zone are present as much as 200 m structurally beneath the main thrust.

One such zone is exposed in the creek bottom of the Right Fork of Hunker Creek, about 200 m above the mouth of 24 Pup, where a flat-lying, strongly hematitic, gouge zone at least 2 m thick cuts the relatively incompetent schist unit of the footwall sequence.

Lack of outcrop precludes a detailed structural analysis of the claim

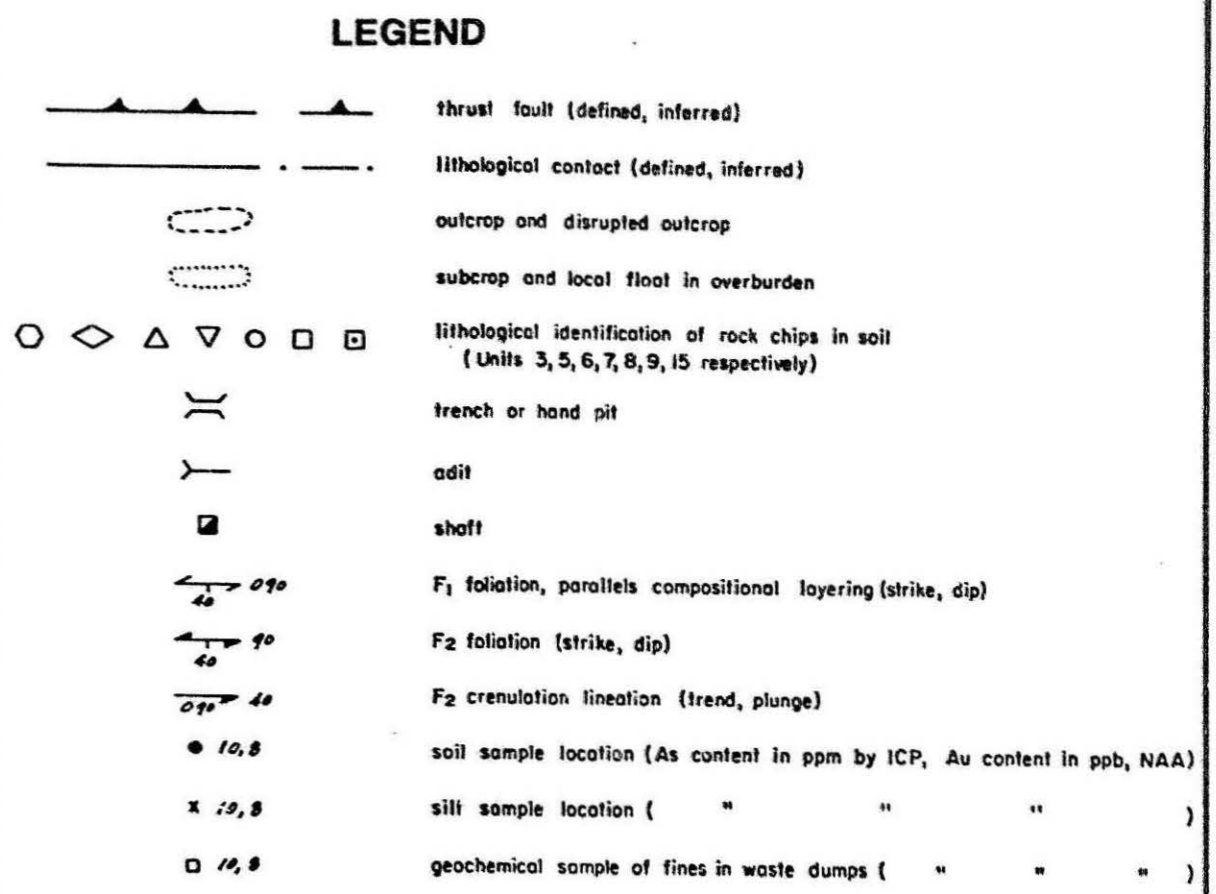
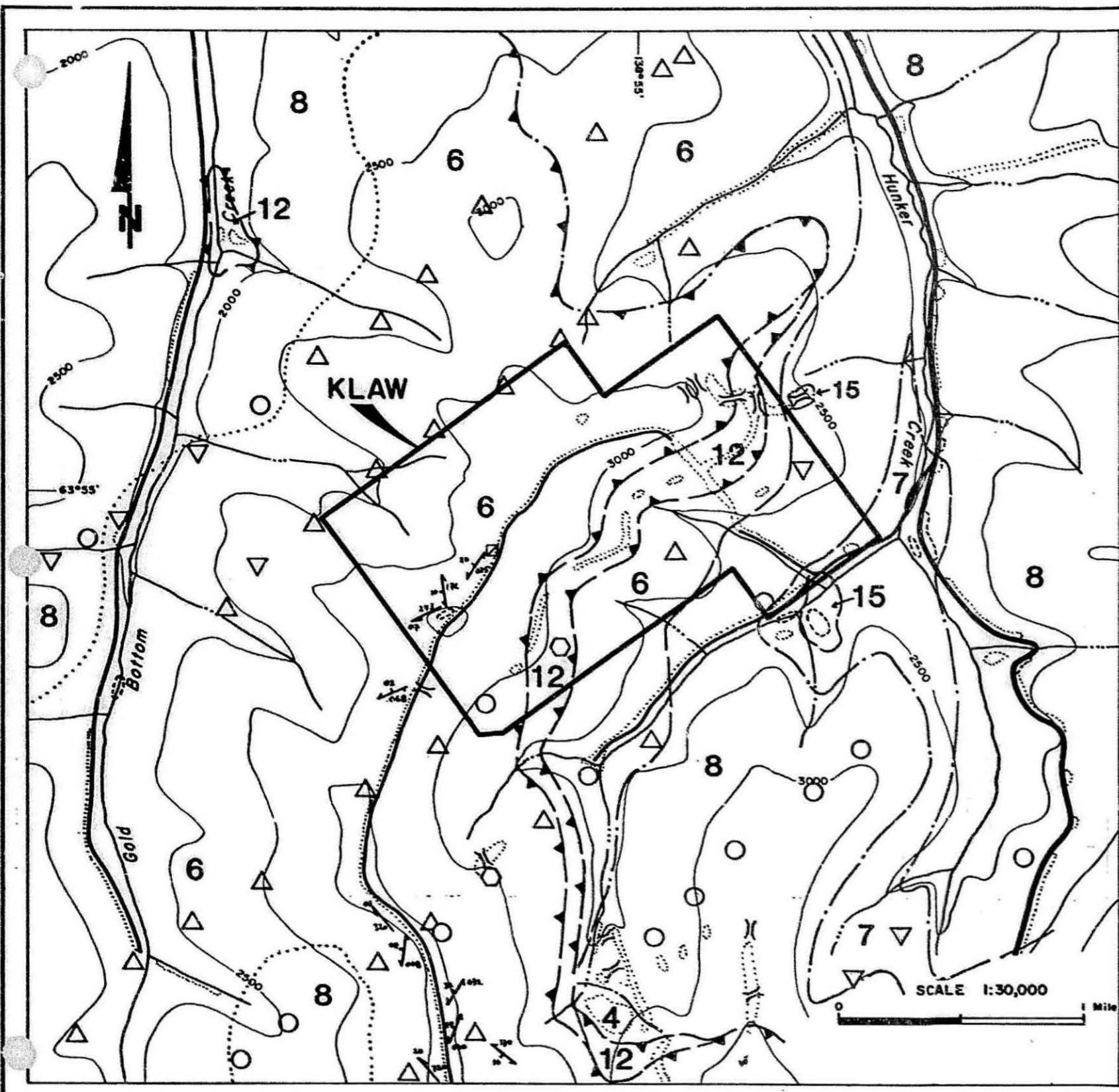


Figure 2
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
BEDROCK GEOLOGY
 Klaw PROPERTY AND VICINITY
 KLONDIKE DISTRICT, YUKON
 KLONDIKE PROJECT

group. Compositional layering in the schists above and below the thrust show rather flat dips. Second phase (post-thrusting) deformation appears to be minor, although a weak crenulation in fabric that is characteristic of the second phase is locally developed in the schistose units.

A small intrusive body of unfoliated quartz and quartz-feldspar porphyry of probably Cretaceous or Early Tertiary age cuts the schists on the right limit of the Right Fork of Hunker Creek immediately above the mouth of 24 Pup. Float of a similar porphyry was found in a small hand trench in overburden on the left limit of 24 Pup.

Mineralization

The richness of the placer paystreak on the Right Fork of Hunker Creek, and the rough, coarse nature of the placer gold in that paystreak, led to intense prospecting of the nearby ridges and the early discovery of the Mitchell and Orekon vein systems at the head of the Right Fork. A relatively rich paystreak is also present, however, on 24 Pup (presently being developed by G. Ahnert), indicating a lode source separate from the Mitchell-Orekon veins. The placer gold on 24 Pup is typically fine to coarse, and very rough, including wire gold and delicate crystalline forms. Quartz is locally found intergrown with the gold.

Early exploration of the area located several bodies of gold-bearing quartz on ground now covered by the Klaw claims. MacLean (1914) examined three of the showings in 1912, including those on the Brandon claim at the head of 24 Pup, the Hillsborough claim on the left limit of 24 Pup, and the Alphonse claim on the left limit of 39 Pup. MacLean took 9 samples, 6 of which contained higher than trace levels of gold. A sample of pyritic quartz from an open

cut on the Brandon claim assayed 0.04 oz/ton Au and 0.56 oz/ton Ag. On the Alphonse claim, a weakly pyritic quartz vein striking east and dipping moderately to the north had been uncovered by a series of 3 trenches over a strike length of 50 m. The vein ranged from 0.6 to 1.2 m in thickness. The best assay obtained by MacLean was a sample taken across the vein at its widest exposure, which returned 0.12 oz/ton Au.

Most of the old workings in the area are completely caved, and those on the Hillsborough claim have been largely destroyed by bulldozer trenching. Five samples of fines material from the Hillsborough claim, taken from the waste dump of one old shaft or trench and from the bottom of an adjacent bulldozer trench contained weakly anomalous copper values and background to strongly anomalous (to 63 ppm) arsenic values. Only one of the samples contained above background levels of Au (16 ppb Au vs a background level of 5 ppb Au). Two samples of fines material from the waste dumps of two of the trenches on the Alphonse claims were analyzed. They contained at or below background levels of all elements except Au which reached 21 ppb in one of the samples.

Eighty-three soil samples were collected on regional soil lines that passed over or near the property. The location of these samples and their As and Au contents are shown on Figure 3. Contents of As and Au are at or below background levels (15 ppm and 5 ppb, respectively) in most of the samples, with the exception of a few scattered, weakly anomalous values. The geochemical signature of gold-bearing veins in the Klondike, however, tends to be subtle and anomalies around veins do not generally cover large areas. Significant geochemical anomalies may therefore still be present on the property, in areas not traversed by the widely-spaced 1983 sample lines.

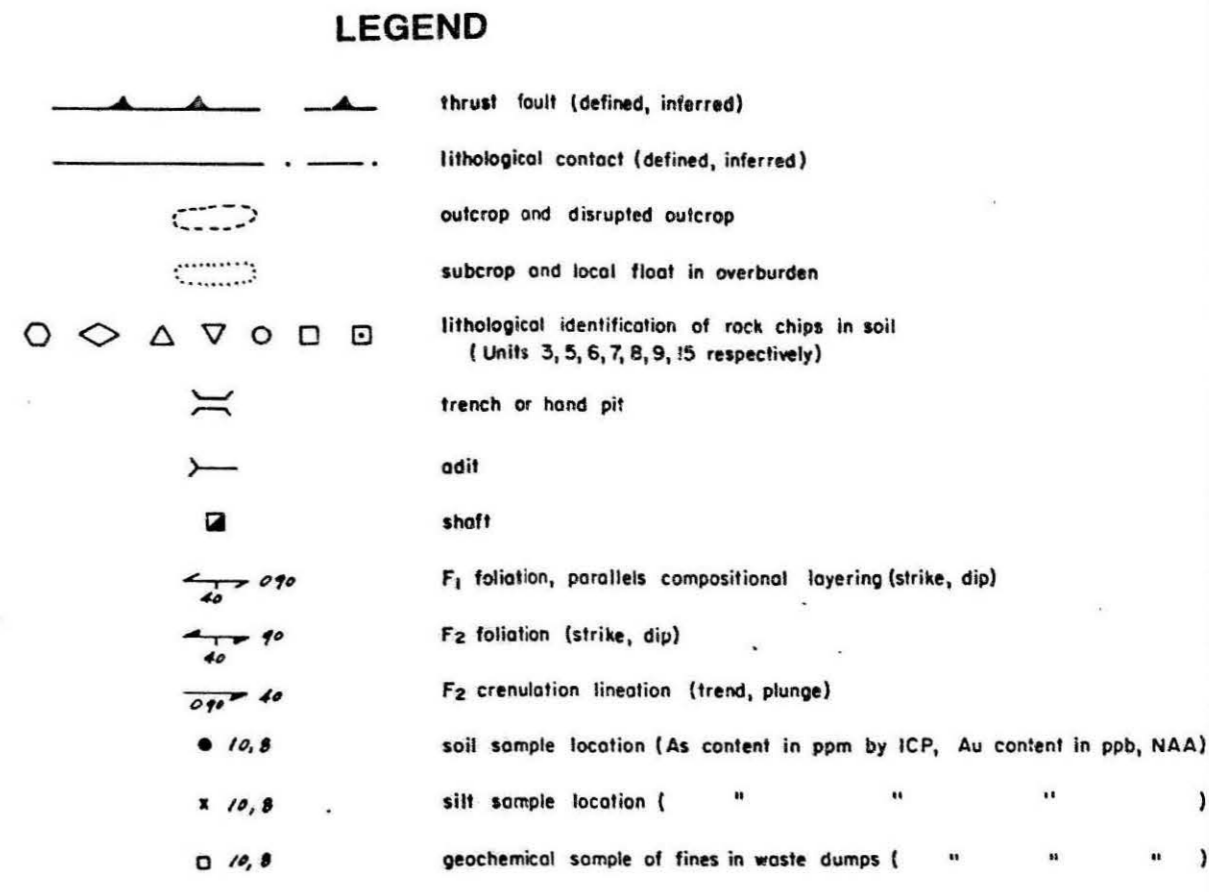
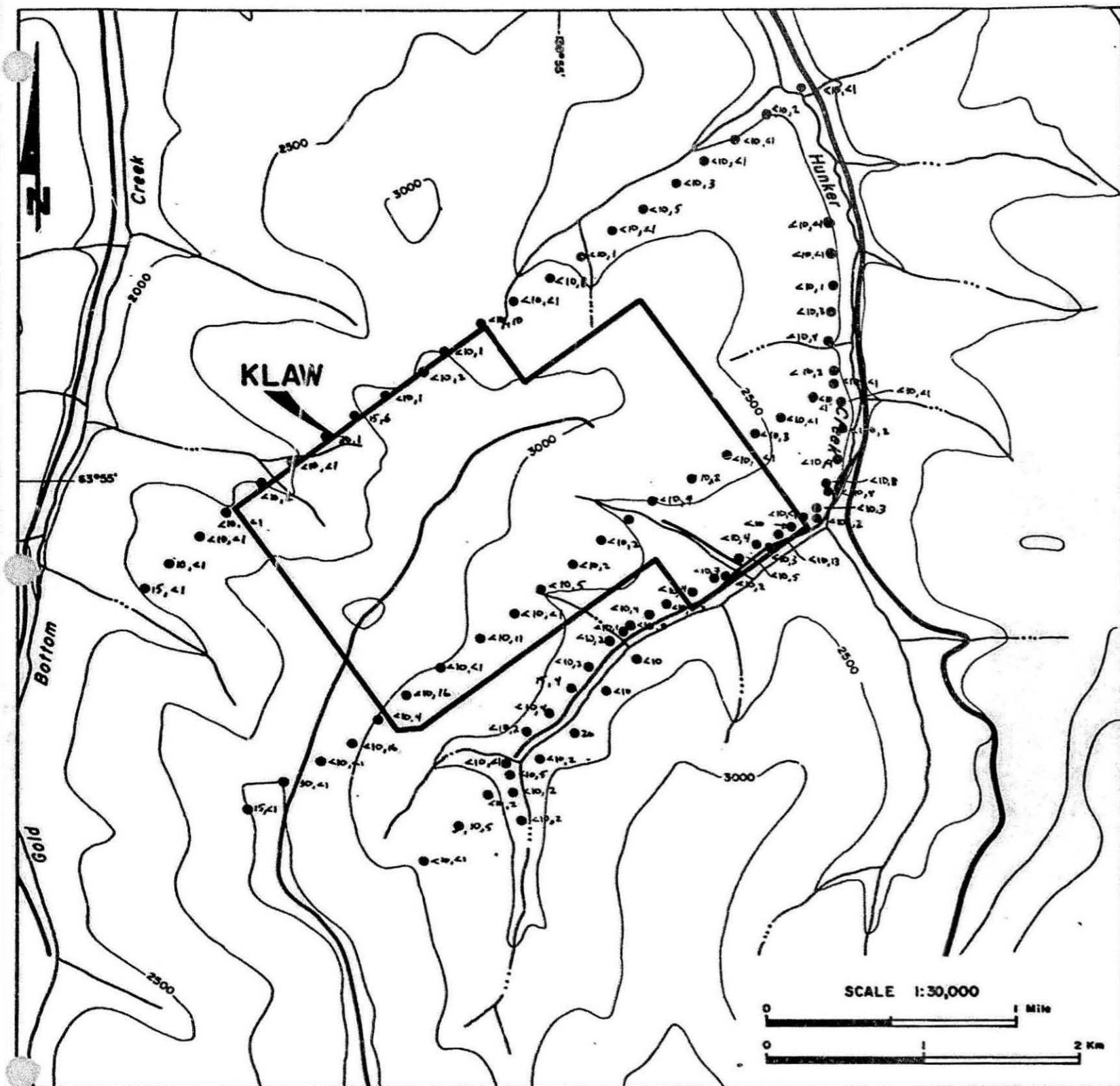


Figure 3
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
SOIL AND SILT GEOCHEMISTRY
 Klaw PROPERTY AND VICINITY
 KLONDIKE DISTRICT, YUKON
 KLONDIKE PROJECT

Conclusions

Gold-bearing quartz veins are known to be present on the Klaw property, but more detailed geochemical sampling will be required to evaluate their extent and significance. More detailed trenching and careful resampling of the known occurrences will also be required.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED



J.K. Mortensen, Ph.D.

/mjm

ARCHER, CATIRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

1016-510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

(604) 688-2568

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,


J.K. Mortensen, PhD.

/mc

APPENDIX II

REFERENCES

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

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

ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

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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

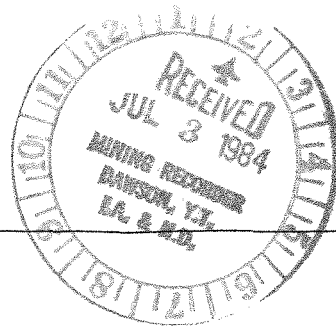
J.K. Mortensen.

ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

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VANCOUVER, B. C. V6B 1L8



(604) 688-2568

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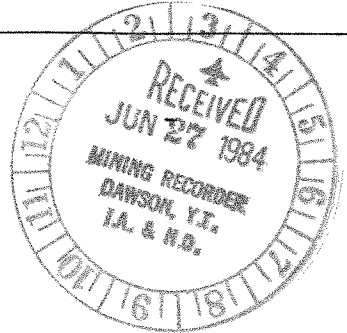
Yours truly,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

/mc

J.K. Mortensen.

1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8



AFFIDAVIT

I, Joan Mariacher, of Whitehorse, Y.T. make oath and say:


That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Klaw 1-24 mineral claims on Claim Sheet 1150/14 is accurate.


Joan Mariacher

Sworn before me at Whitehorse, Y.T.

this 27 day of

June, 1984



Notary, Yukon Territory

Statement of Expenditures
Klaw 1-24
June 13, 1984



Labour

J. Mortensen (geologist) - 6 days field at \$125/day plus 4 days report preparation and literature search at \$168.75/day	\$1,425.00
K. Opsetmoen & J. Cathro (samplers) - total 2 days at \$62.50/day	125.00
J. Mariacher - report preparation 1 1/4 hours at \$35/hour	43.75

Expenses

Camp & field costs, travel, truck, freight and office costs	\$ 870.70	
Drafting - 3.5 hours at \$30/hour	105.00	
Chemex Labs Ltd. - 90 samples	<u>1,153.60</u>	<u>2,129.30</u>
		<u>\$3,723.05</u>