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REPORT ON
GEOLOGY, PANNING AND GEOCHEMISTRY
HOWDEE 1-16 CLAIMS
YA45711-YA45726

WATSON LAKE MINING DISTRICT, Y.T.
CLAIM SHEET 105G/7

Latitude 61°15'N

Longitude 131°35'W

FOR CHEVRON CANADA LTD.

U. Schmidt, B.Sc.

R.J. Cathro, B.A.Sc., P.Eng.

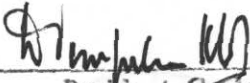
JANUARY, 1981

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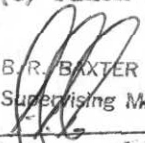
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 7,200.00




Resident Geologist or
Resident Mining Engineer

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.



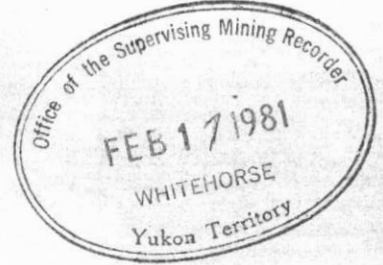
B. R. BAXTER
Supervising Mining Recorder

 Commissioner of Yukon Territory

000700

FROM Mining Recorder at WATSON LAKE

TO Supervising Mining Recorder at Whitehorse, Y.T.



FOR ACTION ARE:

NEW APPL'N for PLACER LEASE to PROSPECT: Name: _____ Lease No. _____

RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: _____ Lease No. _____

AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name: _____ Lease No. _____

ASSIGNMENT of PLACER LEASE No. _____
From: _____ To: _____

GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
Owner: _____

DIAMOND DRILL LOGS:
Claims: _____ Claim sheet no: _____

QUARTZ ASSESSMENT REPORT:
Claims: Howse 1-16 Claim sheet no: 105-G-2/7
Type of report: Geology, Panning & Geochemistry Submitted by: Archer, Cathro & Associates.
Cls. work performed on: Howse 1-16 \$ Req. for ren. application: \$7,200⁰⁰
Signature: [Signature]

REPLY ACTION.

Date Ret.

090733

Signature

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Figure GP80-H1	Geology, Howdee Claim Group (1:5000 scale)	IN POCKET
Figure GP80-H2	Panning, Tungsten, Tin and Gold Geochemistry Howdee Claim Group (1:5000 scale)	IN POCKET

SUMMARY AND RECOMMENDATIONS

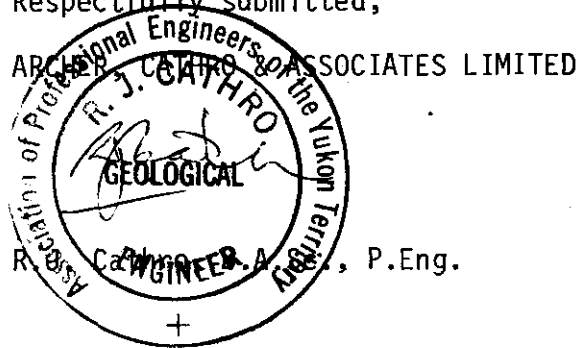
The Howdee claim group is situated 5 km north of Fyre Lake in claim sheet 105G/7. It was staked in August, 1979 by Archer, Cathro on behalf of Chevron Canada Ltd. to cover an unusual tungsten occurrence discovered by prospecting the previous year. The claims were explored in 1980 with soil panning and geochemical surveys, mapping and night lamping.

The mineralization consists of small pockets of scheelite within highly altered calc-silicate schist. Traces of disseminated scheelite and chalcopyrite also occur in muscovite and chlorite schist below the showing. Host rocks are part of the Allochthonous Schist Assemblage. This mineralization was investigated to determine if it was stratiform in origin. However, it was found to be related to quartz veins and skarn alteration and to have little economic potential.

Respectfully submitted,



Uwe Schmidt, B.Sc.



INTRODUCTION

The Howdee claims were staked in August 1979 to cover the Chapman showing, a discovery made in 1978 while prospecting stream panning anomalies. This was followed in 1979 by two days of prospecting and night lamping. The 1980 program consisted of detailed soil panning and geochemical surveys, followed by geological mapping and one night lamping traverse. The geology is shown on Figure GP80-H1, while panning, tungsten, tin and gold geochemistry are plotted on Figure GP80-H2.

PROPERTY, LOCATION AND ACCESS

The Howdee property consists of 16 contiguous claims that form a square block centered at latitude 61°15'N and longitude 130°35'W, within claim sheet 105G/7. The claims are registered under the name of Archer, Cathro & Associates Ltd. in the Watson Lake Mining District as follows:

<u>Claim Name</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Howdee 1-16	YA45711-YA45726	14 September, 1981

The nearest road is the Campbell Highway, which passes approximately 45 km north and connects Ross River with Watson Lake. Ross River is situated 126 km to the northwest. Access during 1980 was by helicopter from a camp on the Boot claims, located 34 km to the northwest. The nearest lake suitable for float-equipped aircraft is Fyre Lake, 5 km south of the Howdee property.

GEOLOGY (Figure GP80-H1)

The Howdee claims are underlain by allochthonous schists and gneisses of unknown age, which are intruded by Cretaceous quartz feldspar porphyry sills and a quartz monzonite stock. Schists and gneisses have been subdivided into two allochthonous suites on the basis of regional and property mapping at the Boot-Marmot claims located 35 km to the northwest. These are named Nisutlin Allochthon, the overlying structural package, and the Allochthonous Schist Package. The former is a GSC term while the other was coined by Grass Project to include units that do not readily fit into GSC interpretation but which are interpreted to be allochthonous by their structural position. Units within the Allochthonous Schist Assemblage are usually mapped as unit EPk₄ by the GSC whereas the Nisutlin Allochthon is designated as GSC unit EPk₁.

Allochthonous Schist Assemblage

The Allochthonous Schist Assemblage includes three units: Chlorite Schist (Pcs), Muscovite-Chlorite Schist (Pmcs) and Biotite-Chlorite Schist (Pbcs).

Chlorite Schist is lustrous, dark green, wavy banded, with coarser chlorite occurring in lensoid shapes. Fracture planes are commonly peppered with biotite porphyroblasts and, in some cases, abundant radiating prismatic crystals of tourmaline. Tourmaline has developed on foliation planes and is often kinked by later deformation. Altered feldspar and traces of finely disseminated sulphide grains, including chalcopyrite, occur in the schist matrix.

Muscovite-Chlorite Schist is a pearly, light brown to medium olive coloured, fine grained, well banded, blocky fracturing unit. Minerals are segregated into chloritic and quartzo-feldspathic bands with biotite replacing chlorite in some cases.

Rocks of the Biotite-Chlorite Schist unit are lustrous, dark brown, fine to medium grained, moderately laminated, moderately fissile and blocky fracturing. Interwoven sheets of biotite and chlorite are developed in a weakly feldspathic matrix. Contacts between units of Allochthonous Schist Assemblage are often gradational, as is the thrust contact between these rocks and the overlying Nisutlin Allochthon.

Nisutlin Allochthon

The dominant unit within Nisutlin Allochthon is Siliceous Phyllonite (Psp), which contains the less abundant units, Muscovite Schist (Pms), Black Micaceous Marble (Pcm), and a thin Pyritic Rhyolite (Psr).

The Siliceous Phyllonite unit is dark grey, fine grained, well laminated, highly fissile, with a slaty texture. The parting planes have a bright pearly lustre and greasy feel because of the muscovite-carbon lamellae along parting surfaces. Some sections of this unit contain thick elongated siliceous bands which may represent a highly developed flaser fabric. The Muscovite Schist is a light brown, well banded, moderately fissile unit comprised of medium grained muscovite in a fine grained carbonate-quartzo-feldspathic groundmass.

The Micaceous Marble unit is dull black to medium grey, finely banded, medium grained, granular, blocky fracturing and carbonaceous.

The Pyritic Rhyolite unit is translucent to rusty brown, extremely siliceous, very fine grained, massive and contains finely disseminated grains of pyrite.

Intrusive Rocks

Intrusive rocks consist of massive quartz monzonite (Kqm) and are found on the eastern and northern perimeters of the map area. A 3 to 5 m thick Quartz Feldspar Porphyry sill (KTqfp), which intruded Nisutlin Allochthon schist units and is presently exposed as a ring around the central peak, is related in origin. The Quartz Monzonite unit is leucocratic, homogeneous, containing 5 to 10 cm long, prismatic, white orthoclase crystals, in a medium grained, micaceous, quartzo-feldspathic matrix. A finer grained equivalent, Quartz Monzonite Porphyry (Kqmp), contains small porphyritic quartz and orthoclase grains in a fine grained, siliceous matrix. The Quartz-Feldspar Porphyry unit is a dull yellow brown colour and contains coarse, equigranular quartz and feldspar crystals in a matrix peppered with small, altered amphibole grains.

MINERALIZATION

Two small pockets of scheelite mineralization occur within highly altered calc-silicate schist (Pmsk) adjacent to quartz veins and silicified shear zones. The Chapman showing, discovered in 1978, consists of scheelite mineralization within calc-silicate-bearing, recessive weathering, highly deformed, discontinuous limy bands. A second, similar showing, found during the 1980 program, is located some 100 m east of the highest peak. The best coarse scheelite mineralization occurs within a banded calc-silicate schist that apparently formed between the lime-rich host rock, and a large quartz vein filled shear zone. Traces of mineralization occur as fine disseminations in the schists below this showing.

Traces of scheelite were also found in muscovite schist float above the cirque wall east of the Chapman showing. Traces of chalcopyrite were found within the Chlorite Schist unit.

STRUCTURE

The earliest recognizable major tectonic event on the Howdee property produced the allochthonous thrust sheets. Intense deformation is indicated by isoclinally folded bands within the muscovite chlorite schist near the south corner of the property. Within Nisutlin Allochthon, a series of large, horizontal sheets of aphanitic quartz may represent a well developed flaser fabric that was subsequently recrystallized and sheared in a second direction. Emplacement of the quartz monzonite stock and quartz feldspar porphyry sill produced a hornfelsic aureole.

The youngest structural feature is steep, brittle faulting caused by movement along the Tintina Fault, some 13 km to the southwest. The strongest faults parallel the Tintina Fault and have a vertical displacement of less than 100 m.

GEOCHEMICAL AND PANNING SURVEYS (Figure GP80-H2)

The 1980 geochemical and panning survey was carried out over all accessible areas of the Howdee property. A total of 169 soil samples were panned and geochemically analyzed for tungsten, tin, and gold. Two samples were taken at each site, a 2.5 kg bulk sample for panning and a smaller sample for geochemical analysis. Eight chip samples weighing 3 kg each were taken for geochemical analysis.

The threshold panning value for scheelite was about 200 fine grains per pan, considering one coarse grain as equal to four fine grains. This corresponds to a geochemical threshold of about 5 ppm W. The panning results are considered as a more reliable guide to scheelite mineralization because of the larger sample size being treated.

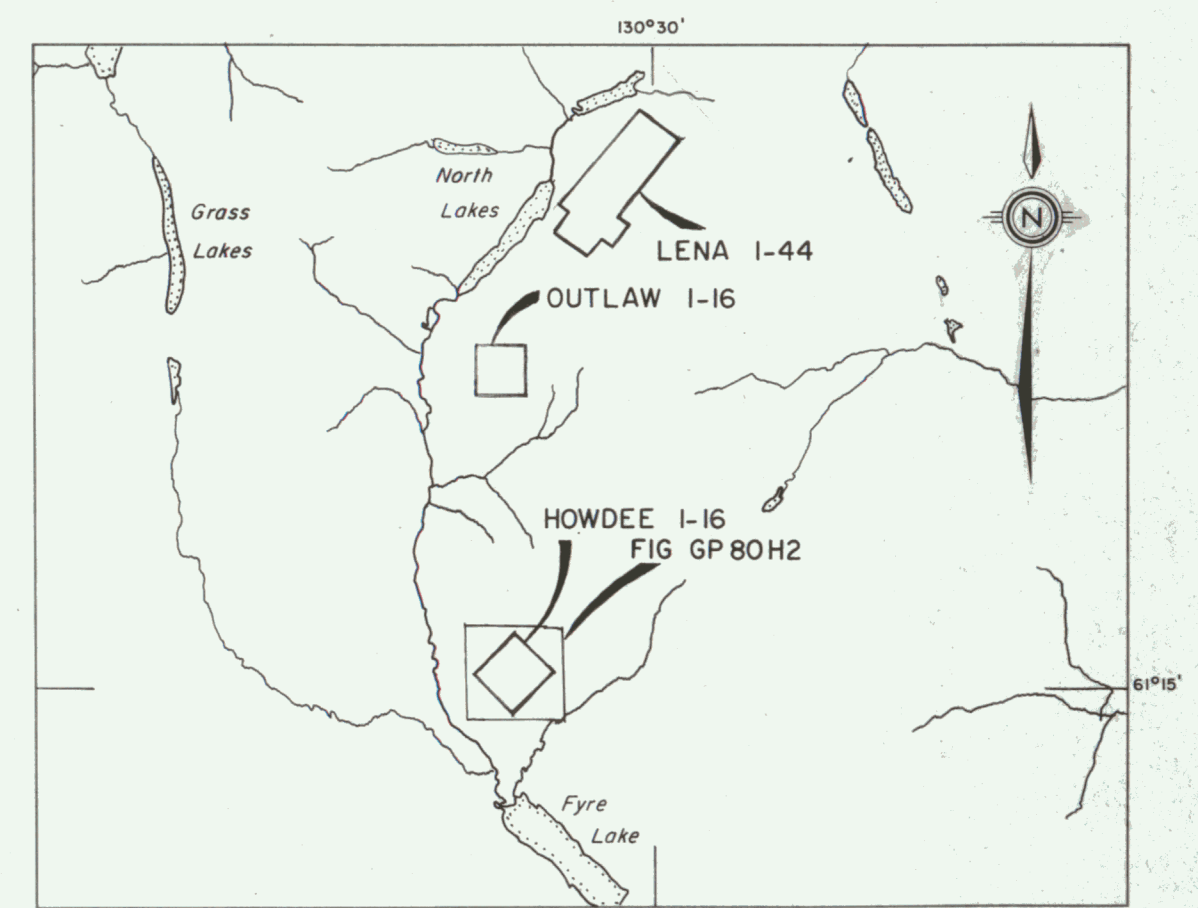
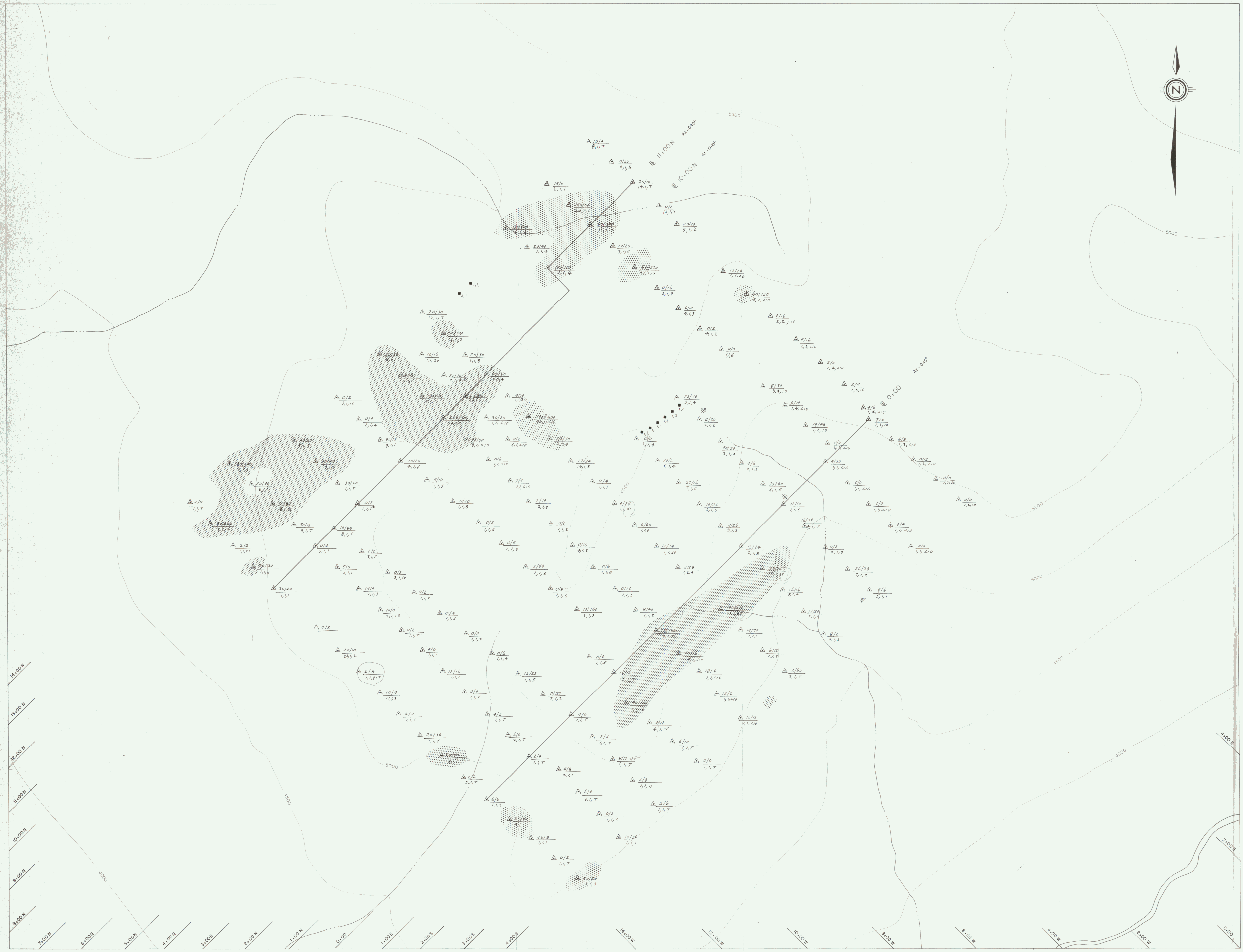
The anomalous areas at the north corner of the property appear to be related to the intrusive contact. Another large anomaly exists directly downhill from the Chapman showing, while a smaller anomaly is associated with mineralized float 100 m east of the showing. The large lenticular anomaly midway down the southeast slope is unexplained but occurs in thick soil on scree at the same elevation as the Chapman showing. Three small anomalies in the south corner have the same elevation, and may be stratigraphically related. A large panning anomaly near the western corner is unexplained and is underlain by massive chlorite schist. There is no panning anomaly downhill from the 1980 showing.

Tin background is about 3 ppm and no anomalies were found on the property. Two weak gold anomalies are present. One occurs with the large panning anomaly on the southeast slope, while the other is an isolated 317 ppb value found midway on the southwest edge of the grid. Gold threshold is about 10 ppb Au.

CONCLUSION

Scheelite occurs in two small, fault-related calc-silicate occurrences, and as fine disseminations in the muscovite schist unit (Pms). No skarn or mineralization is associated with the unexplained panning anomalies.

The small quantity of carbonate rocks, absence of dykes and sills, and poorly mineralized intrusive contacts make the economic potential for this property very poor.



LEGEND

- △ soil panning location
 - soil
 - x silt
 - rock (chip sample)
 - △ coarse/fine ppm W, ppm Sn, ppb Au
 - △ geochemistry ppm W, ppm Sn, ppb Au
- analyzed by Chemex Labs Ltd, North Vancouver
- Greater than 200 fine grains, shell 110 per pan, 1 coarse grain, equivalent to 4 fine grains.

FIGURE GP 80H2
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PANNING, TUNGSTEN, TIN & GOLD GEOCHEMISTRY

HOWDEE PROPERTY
 GRASS PROJECT

SCALE 1:5000