GEOPHYSICAL GEOLOGICAL REPORT

ON THE

FF 1 - 46 MINERAL CLAIMS

YA 65927-942; YA 67170-191;

YA 67206-213;

NTS MAP 105C/8

LATITUDE 60°22'N LONGITUDE 132°05'W

WATSON LAKE MINING DIVISION

YUKON

by

J.C. STEPHEN

H. AWMACK

WORK DONE: JULY 13-18,1983

BY: J.C. STEPHEN EXPLORATIONS LTD.

FUNDED BY: D.C. SYNDICATE

SEPTEMBER 3, 1983

This report has been examined by
the Geological Branch, Exploration
under Section 53 (4) of the Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ 3,000—

P Watson

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

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GEOPHYSICAL GEOLOGICAL REPORT

ON THE

FF 1 - 46 MINERAL CLAIMS

INTRODUCTION

Investigation of the contact areas of the Hake batholith lead to staking the FF claim group on an apparently flat lying tin - tungsten bearing skarn deposit. Systematic chip sampling of this main skarn, together with some prospecting and minor mapping was done during the 1981 season. In 1982 geological mapping was conducted and several small skarn zones were sampled.

The 1983 program described in this report was intended to investigate the apparent down dip extension of the main skarn exposure and to search for strike extensions both east and west by carrying out a magnetometer survey. A grid of picket lines was established to cover the skarn horizon except where rugged topography made surveying impractical.

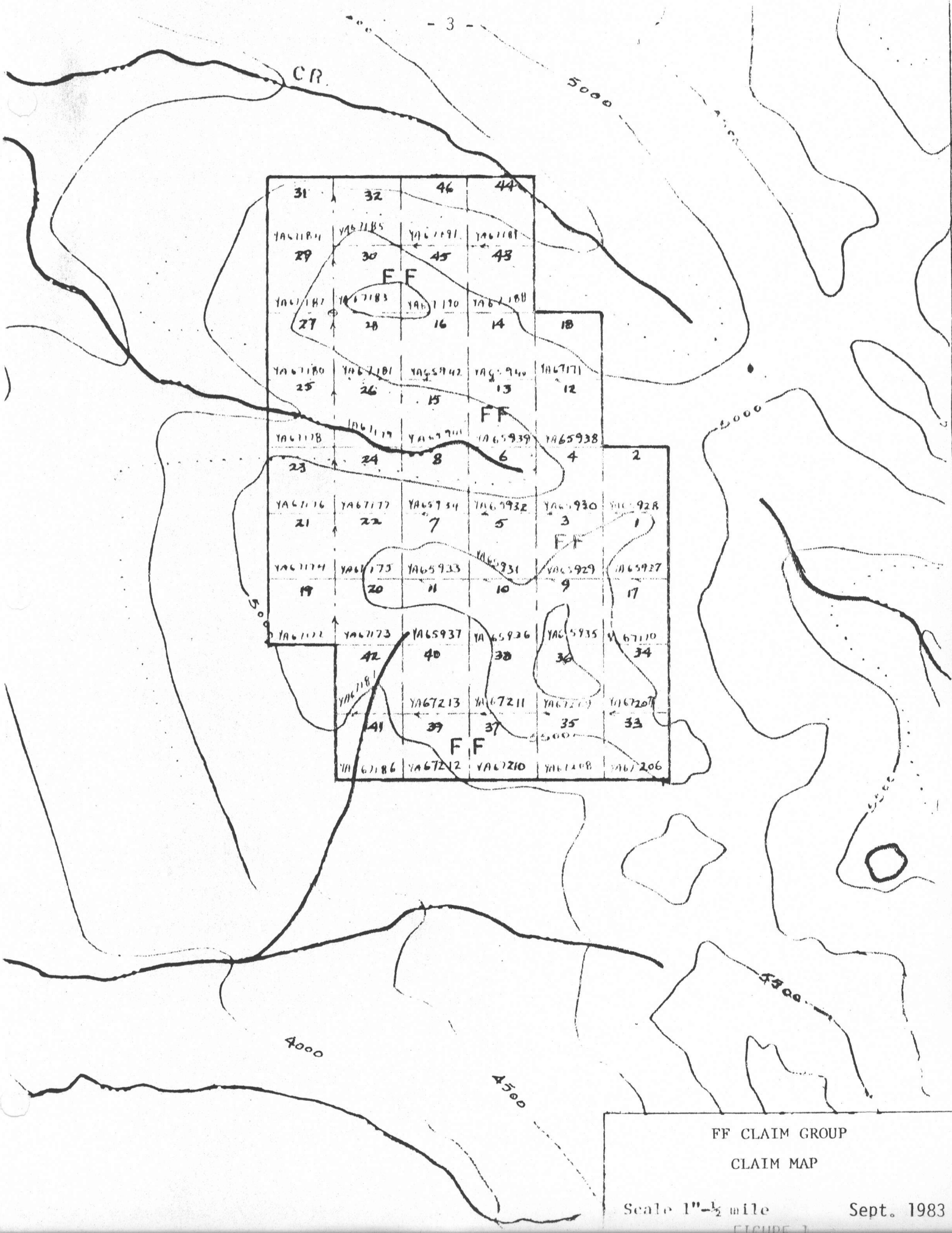
Geological mapping was extended in some outlying claims and detailed work was done in the headwall of Tarn Cirque.

REGISTER OF CLAIMS

NAME	RECORD NUMBER	RECORD DATE	EXPIRY DATE
FF 1 - 16	YA 65927-942	June 14, 1981	June 14, 1981
FF 17 - 32	YA 67170-185	Sept. 8, 1981	Sept. 8. 1983
FF 33 - 40	YA 67206-213	Sept. 8, 1981	Sept. 8, 1983
FF 41 - 46	YA 67186-191	Sept. 8, 1981	Sept. 8, 1983

Outline of the claim group is shown on Figure 1.

This report is filed to cover an additional one years assessment work on FF 17 - 46.



FF CLAIM GROUP

CLAIM MAP

Scale 1"-½ mile Sept. 1983

FIGURE 1

LOCATION AND ACCESS

The claim group is located on the south branch of English Creek approximately 45 kilometres east of Teslin. Mt. McCleery is located about two kilometres south of the south boundary of the property, see Figure 2 Location Map.

Access to the property has been entirely by helicopter. An old winter road runs north from Hayes Creek along the east side of Wolf River about 10 kilometres west of the property.

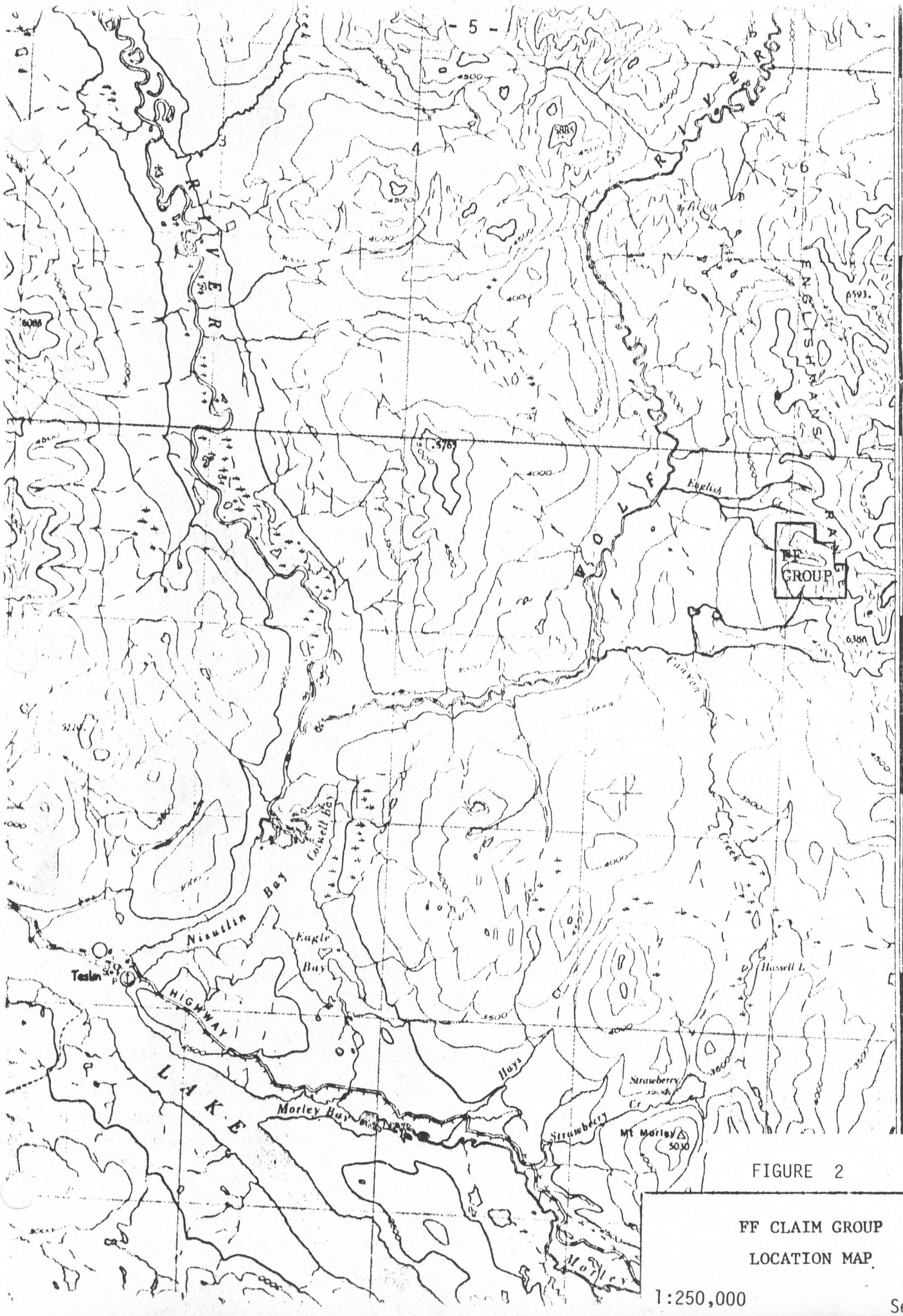


FIGURE 2

FF CLAIM GROUP

LOCATION MAP

1:250,000

Sept. 1983

GEOLOGY

The following description of rock types on the property is repeated from our "Geological, Geophysical and Geochemical Report on the FF Claim Group" dated September 25, 1982.

Regional geology is described in Memoir 326 by Robert Mulligan 1963. A summary of pertinent portions of that publication was included in our 1981 report on geology and sampling on this property.

The following describes field results of more detailed mapping done as part of the current program.

TABLE OF ROCK UNITS

12. PORPHYRITIC GRANITE	- Pink, fine to medium grained, K Spar phenocrysts, also includes white equigranular granite and aplitic dykes and sills.
11. HAKE BATHOLITH	- Coarse grained, massive quartz, feldspar, biotite granite.
	Intrusive Contact
10. PHYLLITE	- Silvery grey to rusty brown weathering.
9. CHERT PEBBLE CONGLOMERATE	- Thin bedded quartzite, greywacke, conglomerate, generally rusty brown weathering.
8. LIMESTONE	- Thin bedded, granular to sandy, dirty white to grey.
7. CHERTY QUARTZITE	- Argillaceous quartzite, greywacke, chert. Generally very siliceous, light rusty weathering.
6. TUFF, VOLCANIC BRECCIA, ANDESITE	- Grey to dark green massive rocks featuring dark green chlorite, actinolite, tourmaline filled fractures. Little or no apparent bedding or structure.
5. ARGILLACEOUS QUARTZITE	- Siliceous dark grey to purple-brown interbedded "tuffaceous" and argillitic formations. Some calc-silicate altered beds and lenses. Commonly contains blebs of pyrrhotite.

5(a)	- black argillite bed, possibly in part lapilli tuff. Possible marker horizon.
5(b)	- Chert
4. LIMESTONE	- Massive to thin bedded white to grey limestone. Minor skarn and calc-silicate interbeds.
3. SKARN	- Red and green garnet skarn, magnetite skarn epidote skarn etc.
2. TUFFITE	- Greygreen to dark grey siltstone, tuff, lapilli tuff and agglomerate. Minor skarn bands.
1. QUARTZ PLAGIOCLASE PORPHYRY	- Grey green fine to medium grained massive intrusive or flow. Numerous 2 - 3 mm grey white plagioclase phenocrysts."Microdiorite"

Rock Descriptions

1. Quartz Plagioclase Porphyry

A single outcrop in the creek west of the main skarn deposit consists of a fresh looking fine to medium grained massive dark grey rock. Grey white 1 to 3 mm anhedral feldspar phenocrysts are common. The groundmass appears brownish on weathered surface but dark grey to purple grey on the fresh surface. It may contain very fine secondary biotite as a result of metamorphism. Rare, very dark quartz eyes occur. Minor fractures are filled with thin pegmatitic quartz veins.

Somewhat higher in the outcrop the groundmass is fine to aphanitic with more prominent dark quartz eyes. Vertical narrow fractures are bleached on the margins and contain dark green chloritic material and small tourmaline crystals.

The rock is probably a relatively coarse grained volcanic flow rather than an intrusive. See Petrographic description J.C.S. 1.

2. Tuffite

Conformably above the quartz plagioclase porphyry is a sequence of thin bedded black siltstone, grey tuff and minor agglomerate. The sequence is apparently about 30 metres in thickness. Siltstone beds are very fine grained, black and massive. Interbedded with this siltstone are beds of variable grain size which appear to be mixtures of silt, volcanic ash and lapilli. See Photos 1 and 3. The agglomerate consists of siltstone and volcanic ash with sparse to numerous rounded pebbles of apparently tuffaceous and volcanic material. See Photo 2. These pebbles range from a few millimetres to about 8 centimetres in long dimension. They appear to be of uniform composition and some may be of fragments of underlying beds.

Thin bands of green skarn occur within the tuffite horizon. Below the main skarn deposit joints and fractures are often coated with fine black tourmaline.

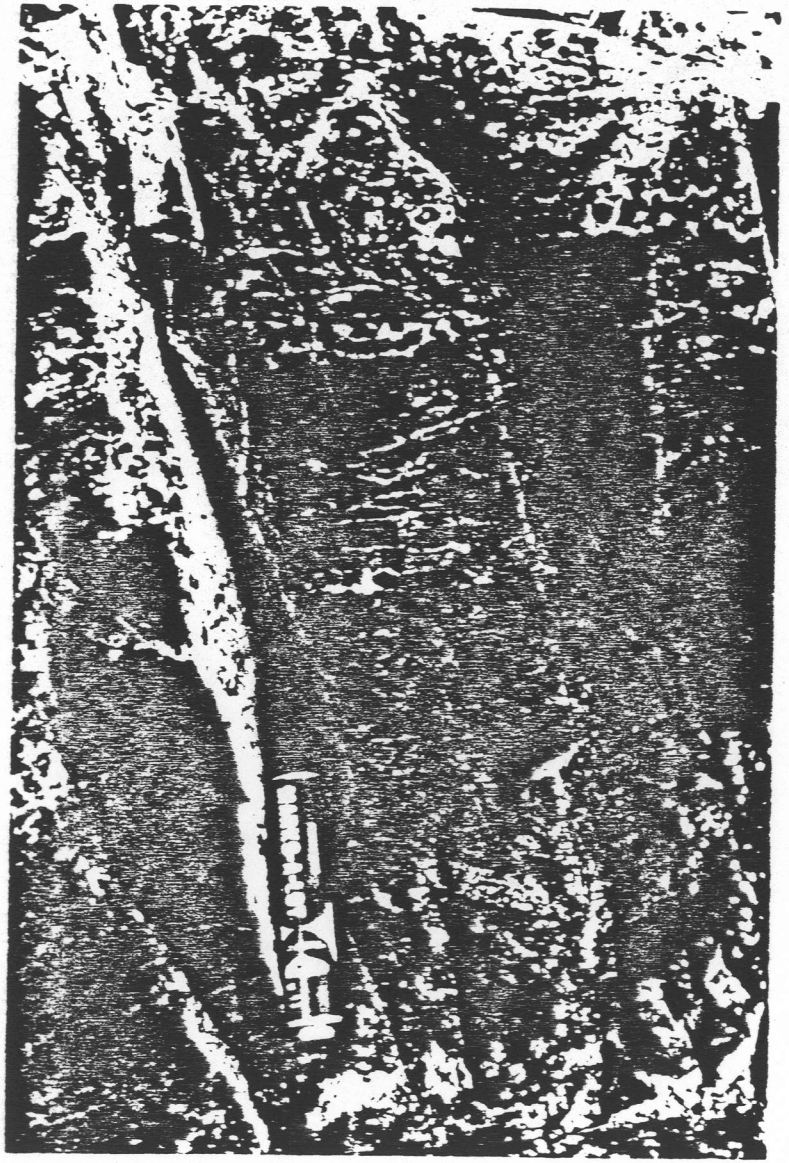


PHOTO 1 TUFFITE HORIZON 19+50E.

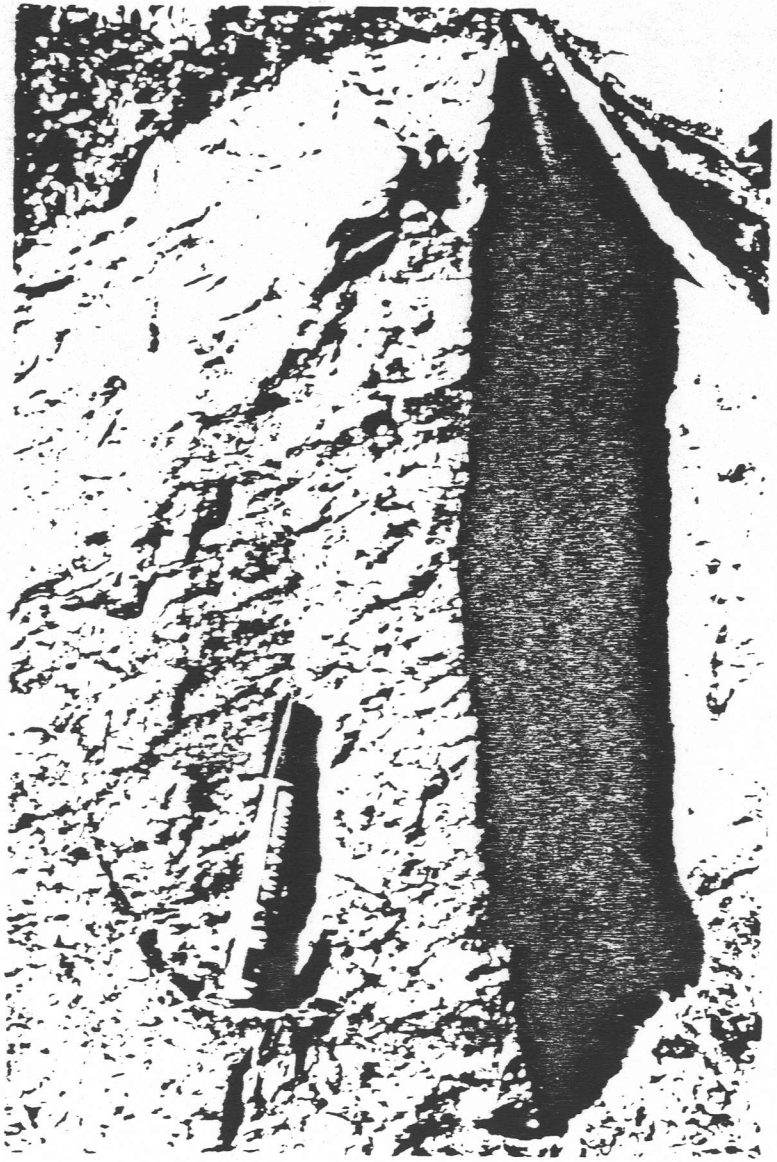


PHOTO 2 TUFFITE HORIZON 13+00E

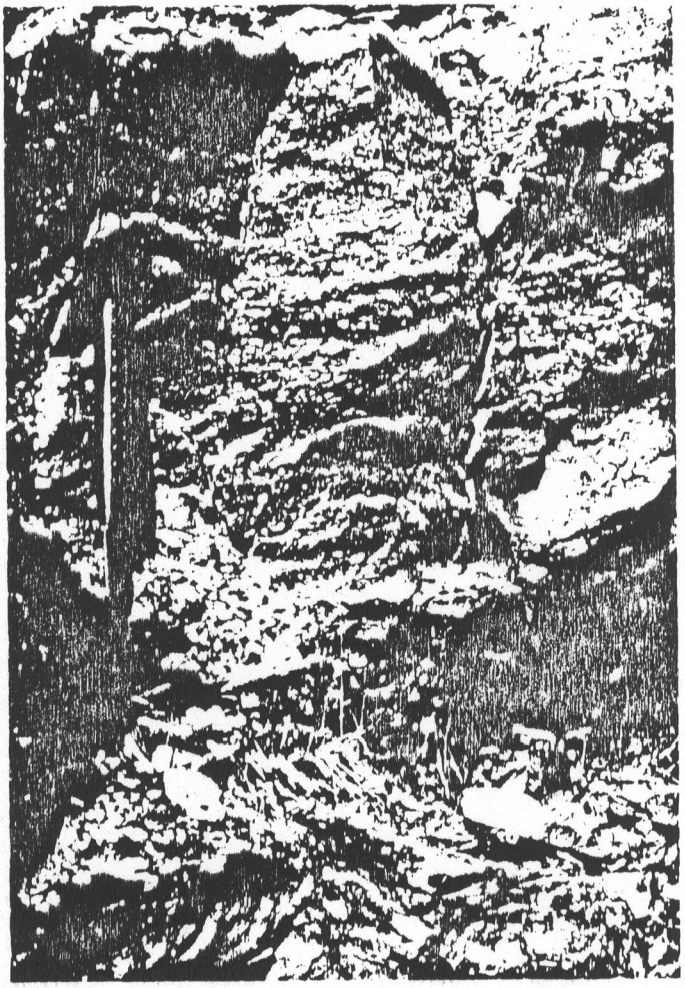


PHOTO 3 TUFFITE HORIZON 7+00W

3. Skarn

Skarns of varied character occur at several stratigraphic levels on the property. Most of these occur in association with carbonate horizons.

The main skarn horizon occurs on a north facing steep slope almost continuously for about 610 metres. The horizon can be traced westerly a further 200 metres to the creek containing the quartz plagioclase porphyry outcrop and good exposures of tuffite.

Along its length the main skarn generally exhibits a sharp lower contact with the underlying tuffite although the two formations interfinger in some areas. The lower portion of the skarn consists of reddish garnet and epidote at the west end, mainly red garnet in the central portion with a progressive change to a magnetite skarn in the east portion. Several lenses rich in pyrrhotite with some chalcopyrite and arsenopyrite occur at intervals.

Above the red garnet skarn a thin intermittant limestone bed occurs which is followed by a green garnet skarn. Contacts of the the skarn with the limestone beds are usually sharp but may be gradational over several inches with knots of garnet occurring in the limestone in places.

At the east end of the skarn horizon thin irregular vein like skarns cut the limestone beds.

Two large protrusions of magnetite and garnet skarn occur above the main skarn horizon. These follow what visually appear to be fault or fracture zones in the main limestone but no evidence has been found to indicate actual faulting. There is no fracturing through the main skarn nor in the tuffite below. Pegmatitic zones, apparent bedding and other structures apparent in the main skarn bend upward, unbroken, into the upper protrusions.

Relationships of several smaller skarn zones to surrounding rock types are described in a following section.

4. Limestone

The main limestone horizon occurs directly above the main skarn in the central part of the property. In places the limestone appears massive but it is generally bedded with individual beds varying from two or three centimetres to about 60 centimetres in thickness. Folding probably repeats some parts of the horizon but a maximum thickness of about 120 metres is suggested above the main skarn.

Beds of "silicified limestone." calc-silicate and weak skarn occur at irregular intervals throughout the formation.

A single outcrop presumed to belong to this horizon occurs on the north side of the valley near the head of the landslide area.

Chert nodules and lenses occur within the limestone particularly in its upper portions.

5. Argillaceous Quartzite

Rusty brown weathering hornfelsed quartzitic rocks overlie the main limestone formation. These quartzites are impure and quite variable and on claim F.F. 7 the following variations were observed.

(1) Light greenish grey weathering brown hornfelsed argillaceous (or tuffaceous) quartzite with abundant lenses and thin beds of calc-silicate, Schistosity is weakly developed.

(2) Lapilli tuff? beds to 15 cm thick in weakly skarned calc-silicate rock.

(3) Brown rusty tuffaceous quartzite with streaks and lenses of siliceous material which contain pyrrhotite. Rock is micaceous and sheared. Very similar rocks occur at the head of the landslide area on the north side of the main valley.

(4) brown and rusty weathering argillaceous hornfelsed quartzite

(5) Sub unit 5a a thin bed of black tuffaceous argillite (or lapilli tuff). A similar bed occurs at several places as indicated on the map and, if continuous, might prove a useful local marker horizon.

(6) black siltstone irregularly altered to pale white to greenish calc-silicate

(7) very rusty weathering cherty dark grey pyritic quartzite

(8) rusty weathering argillaceous quartzite similar to north ridge in part consists of dark brownish black very fine grained hornfelsed siltstone with pyrrhotite on quartz lenses and along fractures

6. Tuff, Volcanic Breccia, Andesite

Grey to dark green-black massive rocks with very little evidence of bedding or other structures. The rock is generally fine grained, dense and very hard. It is characterized mainly by intersecting fractures filled with chlorite, actinolite (?) and tourmaline. The coarsest grained varieties of these rocks are greenish grey granular rocks somewhat similar to the "micro-diorite" but without the abundant phenocrysts and containing small rounded knots of dark green volcanic? material. See petrographic descriptions J.C.S. 2,3 and 4.

7. Cherty Quartzite

These sediments are generally more siliceous than the lower quartzites with a greater abundance of chert. In the southwest portion of F.F. - 7 these are described as cherty hornfels, massive cherty sediments and pale rusty weathering quartzite.

This formation is widespread in the south west portion of the property and, in relation to unit 6, should be equivalent generally to unit 9 to the north. The then sandy limestone, unit 8, and the phyllite, unit 10, were not observed however.

8. Limestone

A thin bed of granular limestone 60 to 120 cm in thickness occurs near No. 1 Post F.F. 29. South of the post large rubble fragments consist of irregular limestone masses enclosed in dark "volcanic" material. The limestone bed probably lies on or close to the volcanics (unit 6) but may be separated by thin quartzite beds.

9. Chert Pebble Conglomerate

Thin bedded rusty brown quartzite, greywacke and fine chert pebble conglomerate occur immediately above unit 8 limestone. Going downhill to the south west and presumably up strata the conglomerate becomes somewhat coarser. These rocks are much more sheared in appearance than unit 7.

10. Phyllite

A single outcrop of silvery grey, black and rusty brown weathering phyllite occurs north of the small lake on F.F. 27. A series of small rusty rubbly areas trending to the east may be a continuation of this horizon but the trend is anomalous for the area. The phyllite is fairly soft and appears to be a highly sheared equivalent of the finest grained phases of unit 9.

11. Hake Batholith

The batholith consists of massive usually fresh looking quartz feldspar biotite granite. In some areas this rock disintegrates rapidly as the feldspars break down but in the north east portion of the property it is relatively hard and fresh.

12. Porphyritic Granite

A local "plug" of pale pink K-spar porphyry occurs as a local plateau in the east portion of Tarn Cirque. The rock is

relatively fresh in appearance. No tourmaline coated joints or signs of greisen alteration were seen.

Near the north west corner of "Tarn" lake an outcrop of medium grained white granite occurs and large blocks of similar rubble extend to the east beyond the creek to two large outcrops of similar equigranular granite at the north west corner of the ridge. This granite is fresh and apparently unaltered. The relatively common small pegmatitic and aplitic dykes and sills in the area are probably related to this granite phase.

1983 OBSERVATIONS

Map I Geology has been amended and added to as a result of mapping by H. Awmack during this program. In addition to new information provided on this map the following observations are taken from Awmack's field report.

SKARN OCCURRENCES UNIT 3

Three calc-silicate/skarn/limestone bands outcrop on the south wall of Tarn cirque. The bottom one has 10 m of calc-silicate overlain by 5 m of diopside-green-brown garnet-epidote skarn. (Specimen 32989) Unit 6 andesite (20 m thickness?) separates this band from the middle one, which consists of 5 m of chlorite-tourmaline-actinolite (?) - calcite-brown-axinite (??) skarn (Specimen 32990) overlain by about 10 m of thin-bedded unit 8 limestone. The upper band is similar in width and composition. Sulphides are rare and magnetite non-existent.

A series of faults on the east wall of the Tarn Cirque offset the calc-silicate/skarn/limestone units (They show up again as unit 3a, east of the tarn). There is much rusty pyrrhotite-chlorite-quartz-chalcopyrite-tourmaline skarn float below this wall. It is apparently not stratigraphic, but follows fractures and presumably the faults. (Specimen 32988) Sample 32988 ran 1750 ppb Au, 2100 ppm Cu, 4 ppm Sn.

Outcrops are rare but float of unit 12b fine grained granite hug the top of the limestone in Tarn Cirque. Skarn occurs sporadically along the length of this contact but is well developed along three zones (fractures?). The southern one is marked by a gully. Massive fg magnetite (80%)-chl-di-cal-fluor-qtz-scheelite skarn, (Specimen 32993) with many interfingered granitic dikes

occurs near the top of the limestone. Twenty meters further down the gully, red garnet and actinolite skarn occur. The gully trends 065°.

The middle zone, trending 070°, contains much juicy ankerite-vuggy quartz rock, limonitic and with minor sulphides (Specimen 32991). Skarn pods are developed locally in favourable rock (Skarns 2 and 3 are the uppermost; pods a few meters in diameter of garnet-magnetite-fluorite skarn - one with a single book of coarse molybdenite surrounded by fluorite - occur farther downhill). This zone is greater than a hundred meters long, petering out in the limestone. The third zone has its top at the pass where unit 4 is mapped across the ridgetop. Much vein quartz and ankerite-vuggy quartz rock occur there, but I didn't follow them down.

A mag high near 26+00E 18+00N is due to an apparently narrow band of magnetite-diopside-epidote-green mica skarn, trending 110° for at least 30 meters from 26+15E 17+70N. Hake granite, quite porphyritic at this chilled margin, lies north and limestone south of the skarn. (Specimen 32994). Presumably this skarn was sampled by M.P. Webster in 1982.

LIMESTONE UNIT 4

A small outcrop of unit 4 limestone in the bush of the north ridge far to the west of mapped outcrop probably indicates that a great length of unit 4 limestone occurs on the north ridge.

ARGILLACEOUS QUARTZITE UNIT 5

Unit 5 (argillaceous quartzite) contains the same variety of sediments as unit 2 on JAR. The argillite (unit 1) on JAR may be a facies equivalent of the limestone (unit 4) on FF.

TUFF, VOLCANIC BRECCIS, ANDESITE UNIT 6

The unit 6 andesites are equivalent (identical) to the unit 3 volcanics on JAR. No tourmaline was noted in the stringers, though actinolite is common (Specimen HA83-51).

CHERTY QUARTZITE UNIT 7

Unit 7, termed "cherty quartzite", was viewed only at the pass at the south end of tarn cirque. There it consisted of chert and some associated, very silicious, hornfelsed argillites and calc-silicates. The sediments may have been silicified or may have been cherty to start with. In either case, "cherty quartzite" is a contradiction in terms.

I see no need for a fault between the chert pebble conglomerate and the unit 6 volcanics on the north ridge. The volcanics become more tuffaceous to the west (i.e. up section), appear on both sides of the proposed fault-draw, and are overlain by a clastic limestone (unit 8), chert (1m thick) and a mainly volcanic sediment with a few chert pebbles (unit 9); quite a reasonable sequence.

CHERT PEBBLE CONCLOMERATE UNIT 9

The chert pebble conglomerate (Specimen HA83-53) contains clasts (??) of chloritic rock and has actinolite-chlorite stringers running through it. I think that it is a sedimentary bed of the unit 6 volcanics and of no great importance.

WHITE EQUIGRANULAR GRANITE UNIT 12

Unit 12a (white equigranular granite) is not, in my opinion, separable from the main body of the Hake batholith. The modal composition, the textures and the weathering characteristics are very similar. Specimen HA83-50 comes from the Hake exposed on the ridge north of camp. Specimen HA83-54 is from the eastern outcrop of "unit 12a". Specimen HA83-49 is from the western outcrop of "unit 12a" It is porphyritic and generally finer grained than the typical Hake, but this is a fairly common feature of the Hake near intrusive contacts . [Note: James says he can separate Hake from unit 12a. Maybe next year?]

Both Specimens HA83-50 and HA83-54 contain accessory powellite.

Unit 12b is a 'fine grained' two-mica granite (approximately 40% quartz, 50% felfspar, 7% muscovite, 3% biotite). Tourmaline-filled fractures are common. Near its upper exposure tourmaline-quartz-chlorite-fluorite fractures are common. Unit 12b forms a sill exposed for a width greater than 20 meters and a length of 50 meters. Extensive rubble in the gully (fault?) terminating the unit 4 limestone on the western wall of the tarn cirque indicates the probable presence of a dike filling this fault gully. (Specimen 32987 - f.g. granite-unit 12b)

Adjacent to the supposed dike of unit 12b is an irregular magnetite-calcite-wollastonite-minor chalcopyrite-minor pyrite skarn (Specimen 32985) which becomes poorer in magnetite and richer in actinolite farther up the gully. A small, variable skarn (partly fibrous actinolite, partly py-qtz-cpy-chlorite-fluorite-magnetite, partly galena bearing light grey silicious skarn - Specimen 32986) underlies part of the unit 12b sill.

Geochemical results for the rock samples mentioned above are listed on the following rock sample data sheet.

GEOPHYSICS

PURPOSE

A magnetometer survey was recommended because of the magnetite content of the tin-tungsten bearing skarn. The outcrop trace of the main skarn indicates an east striking zone dipping gently south. The skarn outcrops on the steep north face of a ridge but a small plateau provides relatively gentle topography rising from the skarn horizon at the west end to an elevation about 100 metres above the skarn horizon near the east end of the exposure. It was hoped that any significant thickness of gently south dipping magnetite skarn would be detected by the magnetic survey in this area.

METHOD

An MP-2 proton precession magnetometer was rented from Scintrex in Toronto. A base line was laid out by transit running east below the talus slopes downslope from the skarn exposures. The base line runs from 13+00E at the west end of the skarn exposure to 28+00 E well to the east of any known skarn exposure or float in an area which should be underlain by Hake batholith. Picket lines were then run south at 100 metre intervals as far as topography would permit.

A magnetometer base station was established on the base line at 20+00E. Readings were taken and repeated at least three times on the base line at the beginning of each south picket line. These stations served as check stations during survey of the picket lines.

On the plateau area a sub base line was established at 15+50N and short stub lines were run north and south for lines 17E, 18E and 20E where the north facing cliff was impractical to survey.

Layout of the magnetometer grid is shown on MAP I GEOLOGY with this report.

Upon completion of the survey it was intended to reduce all readings in relation to the base station check readings. Check readings were found, however, to be rather erratic within a range of about 50 gammas. One large discrepancy of 200 gammas occurred at 15+50N 20+00E on the sub base line. Because of the magnitude of the magnetic anomalies it was decided to use the readings just as they were taken, with no adjustment. The line of readings from 15+50N 20+00E was used using the lower, more conservative, value for 15+50N.

It is assumed small scale irregular magnetic disturbances occurred periodically during this survey making any plot of supposed diurnal corrections unreliable.

RESULTS

Magnetometer readings are plotted and contoured on Map II. Magnetometer Survey and profiles of readings for several lines are plotted on Figure 3 Magnetometer Profiles.

At two locations during the survey the instrument operator reported no reading due to wildly fluctuating read outs. On line 26E at 18+00N a negative value of <10 000 gammas was assigned arbitratily and at 19E 17+75N, a value of -200 gammas was assigned since that was the approximate value of the read out.

The magnetometer profiles show extreme changes from negative to positive values over the skarn exposure and the instrument manufacturer indicates the instrument will not read properly in areas of extreme magnetic gradient.

INTERPRETATION AND RECOMMENDATIONS

It is unfortunate that, due to topography, only one line, 19+00E, gives a complete magnetic profile over the main skarn horizon. As shown in plan view strong negative readings are obtained below the skarn changing abruptly to quite high readings above the skarn. The -1646 gamma reading on line 20+00E is reported to be 10 metres below the skarn.

The magnetite rich portion of the skarn extends east from 19+00E to about 21+50E where it appears to be folded down as shown on the geology map. The relative magnetic high running north westerly from 21E, 19+50N to 20E 20+00N may be the folded extension of this horizon which has not been detected by the short 21E line and the lack of readings between lines 21E and 22 E. Short stub lines should be run north from the base line at 19E, 20E 21E and 22E to explore that area under the valley overburden.

West from 19+00E the skarn horizon contains little or no magnetite where exposed although there are local lenses of pyrrhotite. The skarn exposure is not well shown by the magnetometer survey partly due to lack of magnetite in the western section but also due to lack of readings because of topography in the area from 16E to 19E. Comparison with the geological map shows the trace of the skarn to correspond approximately with the north side of the >400 gamma anomaly on lines 13E to 15E. Since the skarn dips south and the magnetic readings increase moderately in that direction this area constitutes a low priority drill target for magnetite in the skarn horizon.

In the plateau area on lines 17E, and 18E the magnetometer survey does not provide a significant anomaly to be used as a drill target.

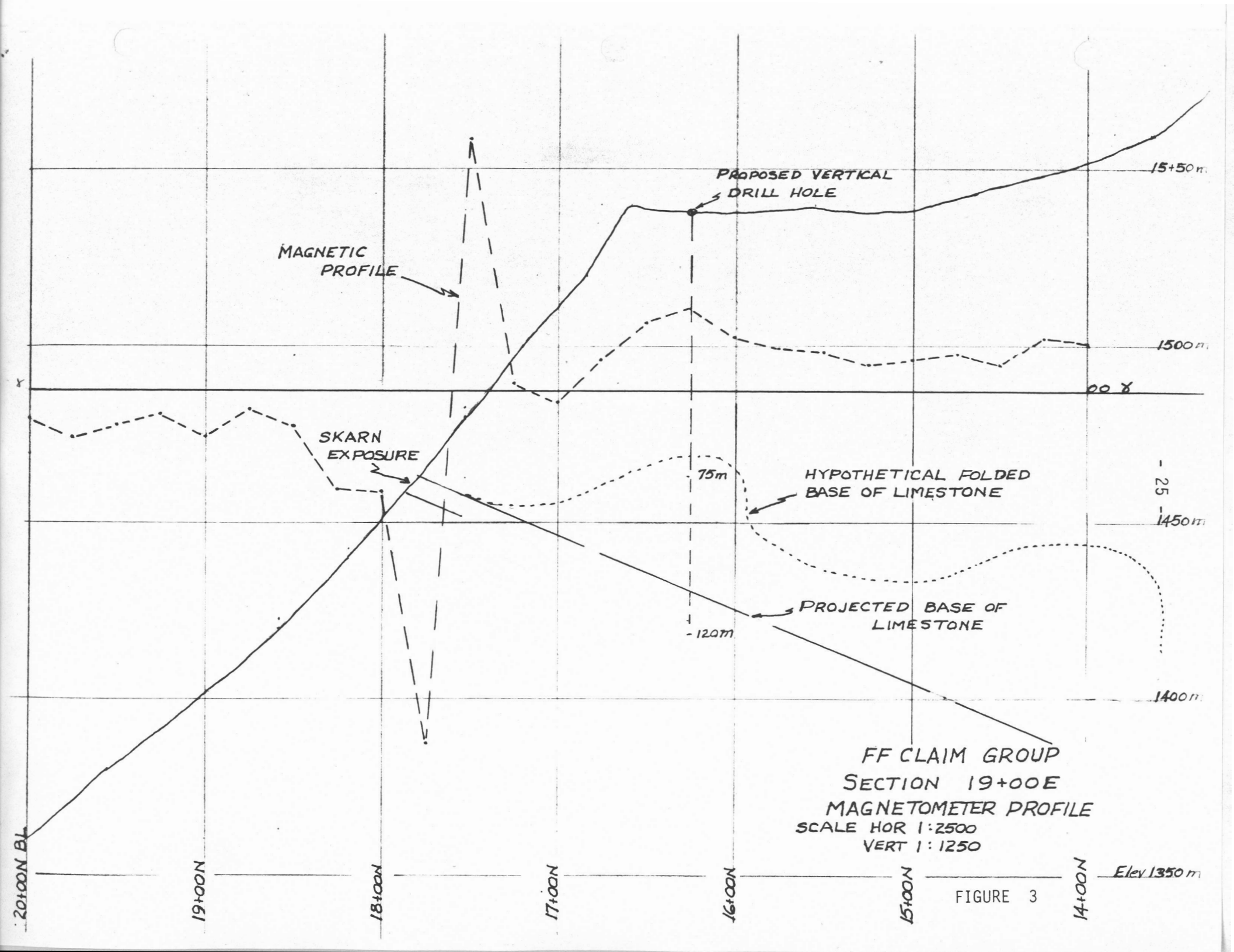
On line 20+00E in the plateau area irregular magnetic highs occur at 16N and 14N with moderately high anomalies trending apparently easterly. These highs probably are caused by magnetite skarn but because of the pattern of readings and the existence of long offshoots of skarn above the main skarn horizon it is not possible to predict the attitude or thickness of skarn causing these anomalies. It is likely the underlying skarn is of a complex geometric nature. One of these anomalous areas extends west to line 19E at 16N.

Magnetite float had been found north of Tarn Lake in an area of limestone outcrop near granitic rubble and sparse outcrop. The magnetic survey shows two very local magnetic highs at 25E, 15N and 26E, 17+50N. These do not constitute significant drill targets but they should be outlined by more detailed magnetic surveying, together with prospecting, to determine their nature.

At 27E, 19+75N a magnetic high occurs which might suggest a body of some size. Granite outcrops to the south of this anomaly and in the creek to the south east. No outcrop is available within the anomalous area. Some further magnetic surveying north of the base line may be warranted here to investigate the extent of this anomaly to the west or north west but in all likelyhood it is caused by magnetite in the Hake batholith.

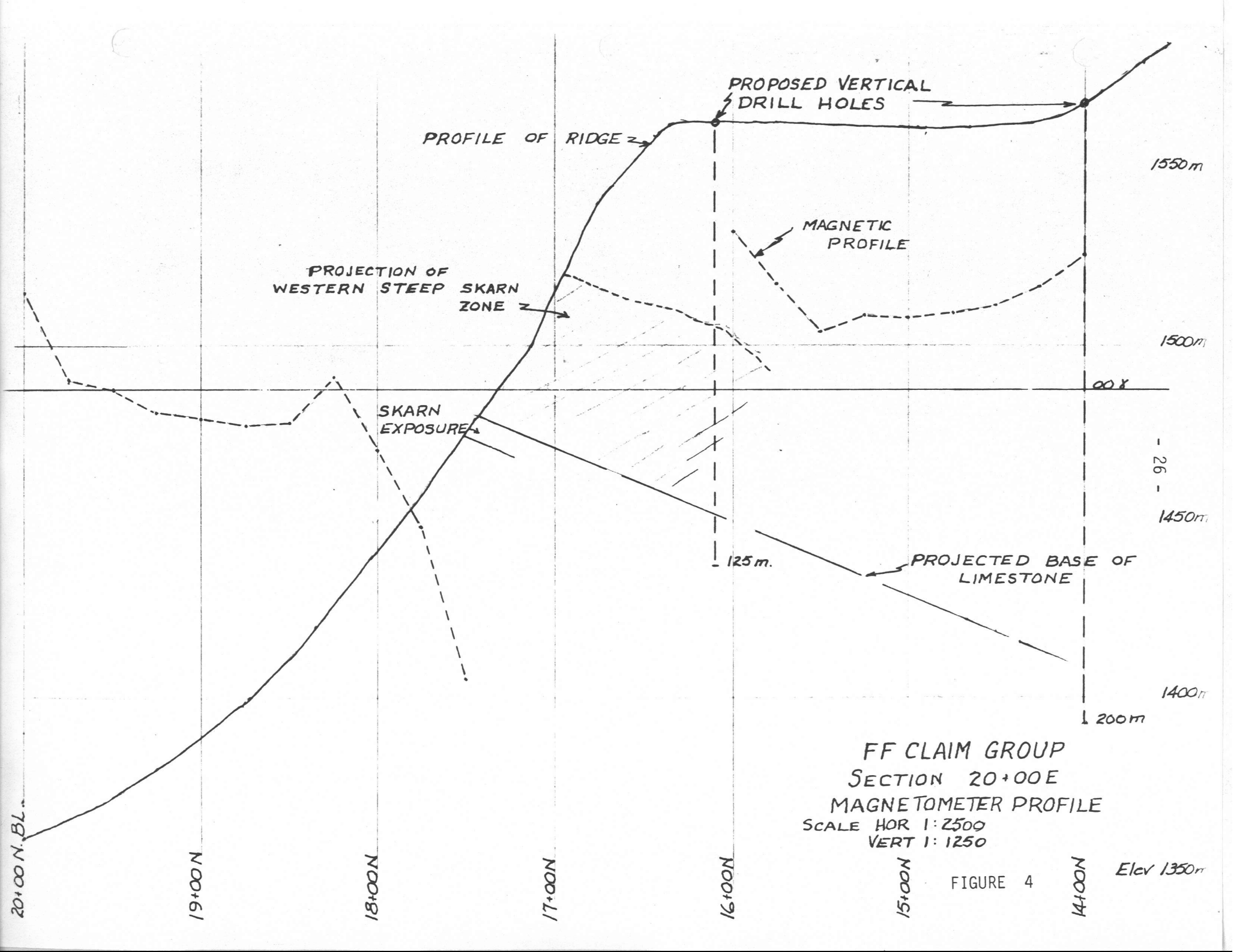
In general the most favourable location for drill holes to test the tin bearing potential of the skarn horizon would be from the plateau area along lines 19+00E and 20+00E where the magnetic anomaly is strongest. These holes should be planned to test through the limestone horizon into the underlying tuffite. Apophyses of magnetite skarn such as those which outcrop at 20+00E and about 21+25E may be expected below the local magnetic highs on line 20E. The more important gently south dipping skarn horizon

should occur at about 140 metres below the plateau elevation at the limestone-tuffite contact. Since granite outcrops in Tarn Cirque the better grade material should occur east from line 20 E toward the granite. Sections 3 and 4 illustrate the expected structure.



FF CLAIM GROUP
SECTION 19+00E
MAGNETOMETER PROFILE
SCALE HOR 1:2500
VERT 1:1250

FIGURE 3



FF CLAIM GROUP
SECTION 20+00E
MAGNETOMETER PROFILE
SCALE HOR 1:2500
VERT 1:1250

FIGURE 4

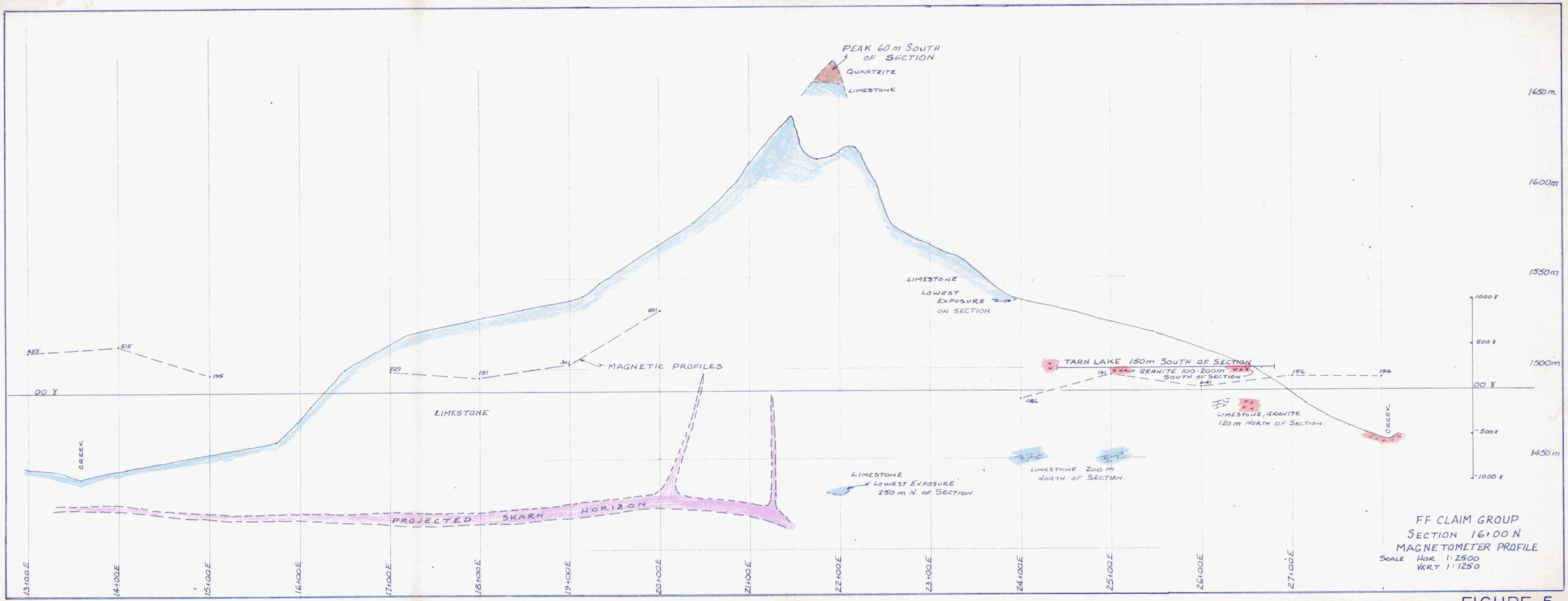
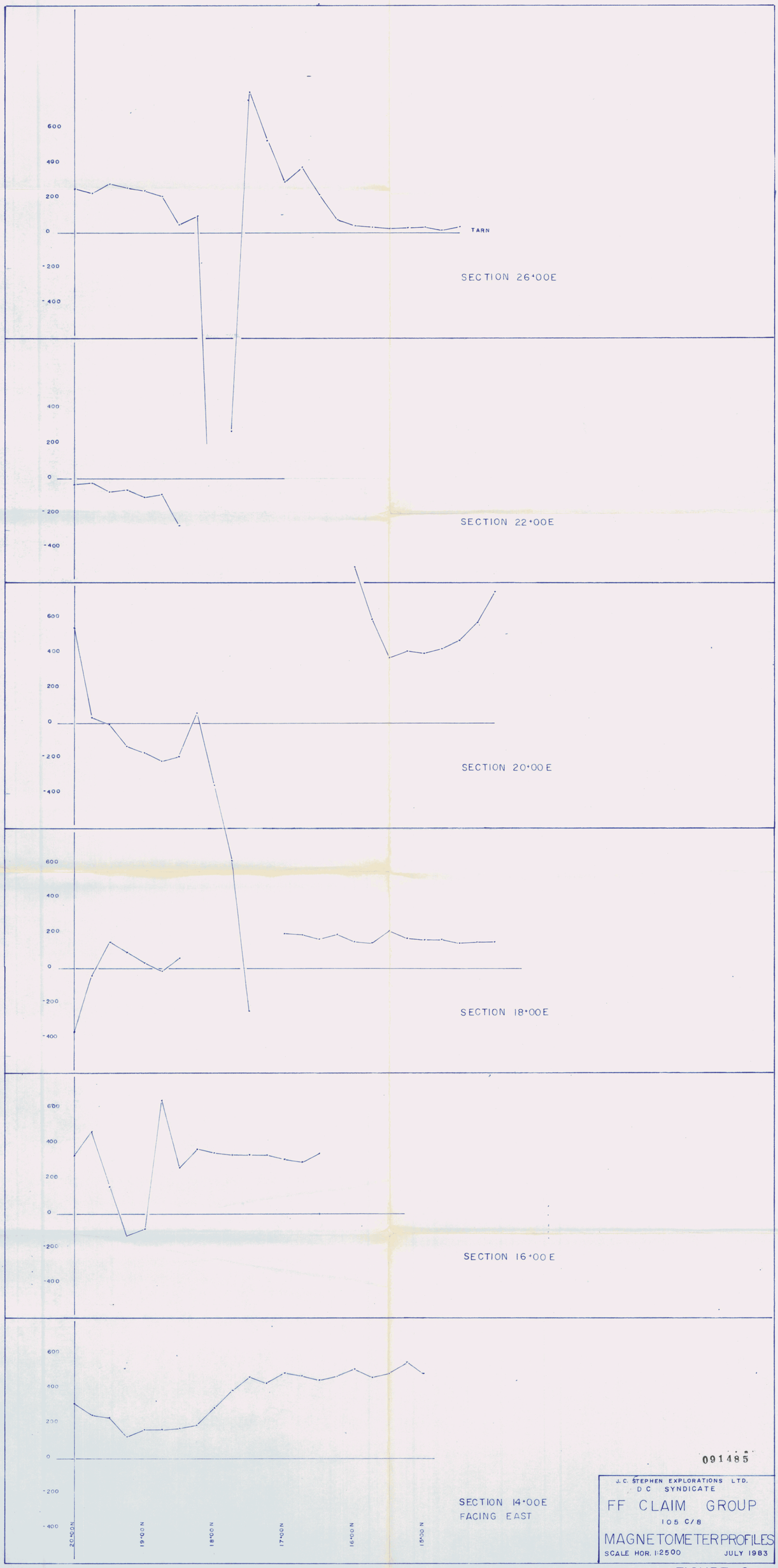

PEAK 60 m SOUTH OF SECTION
QUARTZITE
LIMESTONE
1650 m.
1600m
1550m
1500m
1450 m
LIMESTONE
LOWEST EXPOSURE ON SECTION
TARN LAKE 150m SOUTH OF SECTION
GRANITE 100-200m SOUTH OF SECTION
LIMESTONE, GRANITE 120 m NORTH OF SECTION.
CREEK
MAGNETIC PROFILES
LIMESTONE
CREEK
LIMESTONE LOWEST EXPOSURE 250 m N. OF SECTION
LIMESTONE 200 m NORTH OF SECTION.
PROJECTED SKARN HORIZON
13+00E
14+00E
15+00E
16+00E
17+00E
18+00E
19+00E
20+00E
21+00E
22+00E
23+00E
24+00E
25+00E
26+00E
27+00E
FF CLAIM GROUP
SECTION 16+00 N
MAGNETOMETER PROFILE
SCALE HOR 1:2500
VERT 1:1250

FIGURE 5



091485

J.C. STEPHEN EXPLORATIONS LTD.
D C SYNDICATE
FF CLAIM GROUP
105 C/8
MAGNETOMETER PROFILES
SCALE HOR. 1:2500 JULY 1983

FIGURE 6

CONCLUSIONS AND RECOMMENDATIONS

It unlikely that any significant outcrops of tin or tungsten bearing skarn will be found by further prospecting. Awmacks observation of a small limestone outcrop west of that previously mapped on the north side of the main valley indicates that lines should be established in that area and magnetometer profiles run across the limestone horizon in search of magnetite skarn.

The 1750 ppb gold content of sample 32988C suggests that particular skarn area should be more closely sampled for gold content. This sample was not run for silver.

Three drill holes are proposed as shown on Figures 3 and 4 These holes total 445 metres and are intended to test the lower limestone contact in areas of relative magnetic highs. If economic tin or tungsten values should be encountered more detailed work would follow.

Large thicknesses of magnetite bearing skarn occur on the CAL group to the south, These skarns have been sampled in only a rudementary fashion and, although no ore grade material has been indicated, if economic grades occur on FF group these skarns should be more closely examined.

The magnetometer, geological work described in this report is submitted as one years assessment work on FF 17 - 46. As a minimum, if drilling is not undertaken, some further assessment work will be required during the 1984 season.

Respectfully submitted,
J.C. Stephen Explorations Ltd.

J.C. Stephen

STATEMENT OF EXPENDITURES

WAGES				
H. Awmack	July 13-18	6 days @ $85.	$510.	
J. Lawton	July 13-18	6 days @ $60.	360.	
I. Stephen	July 13-18	6 days @ $45.	270.	
J.C. Stephen	July 16		150.	
				$1,290.00
FOOD AND CAMP SUPPLIES				
18 man days @ $12./man day				216.00
HELICOPTER	CAPITAL HELICOPTERS HUGHES 500C			
	2 HOURS @ $450. + Fuel (Portion of Invoices)			1,045.00
MAGNETOMETER RENTAL				
Scintrex MP-2 Portion of Total Invoices				200.00
ROCK GEOCHEM	CHEMEX LABS LTD.			
10 Rock Samples for one or more of Sn, W, Zn, Pb, Cu, Ag, Au				150.00
DRAFTING & REPORT PREPARATION				
E. Sidey	August 12, 13 @ $75.00/day			150.00
				3,051.00

APPENDIX I

GEOCHEMICAL DATA SHEETS

J.C. STEWART EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

NTS

SAMPLER AWMACK

PROJECT FF CLAIM GROUP - DC SYNDICATE

LINE

DATE JULY 12-18, 1983

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Sn	W	Au	Ag	Zn	Pb	Cu
1)	32985 C	FF 3	Magnetite - calcite - wollastonite skarn.		Minor cpy 60% magnetite	155	Southern end of limestone. Tourmalinized fg granite dike adjacent	> 1m		6%	105	<10	-	-		7%
2)	86	FF3	Skarn - py-qtz-	cpy - chl-fluor - mag / act / siliceous w. gal	Scheelite		Under fg. granite sill Very variable, only small o/c.	< 1m		440	7%	10	28	440	24	8000
3)	87	FF3	Fg. 2mica granite	Tourmaline (+ chl - qtz - fluor near top) on fractures			Sill > 20 m x 50m			10	60	<10	-			-
4)	88	FF 9	Skarn - pyrr -	chl-act- cpy	Fairly massive po Lesser cpy	~160/20W	Fault-related? Extensive	~1m		4	-	1750	-			2100
5)	89	FF9 South wall Tarn Cirque	Skarn - Di-gr gar - br gar - cal - ep		Rare Py, gal	~140/40S	Bottom skarn band.	~~5.0m~~	5.0m	4	-	20	-			
6)	90	FF9 "	Skarn - Chl - tour - act (?) - br gar			"	10 m limestone / calc silicate above		> 4m	35	2	<10	-			
7)	91	FF5	Ankerite - vuggy qtz		Minor cpy, Py, gal Wolframite?	Trends 070°	Zone > 100m long. Skarn (gar - mag - fluor - rare moly) in pods. (? skarns)	10m		10	3	10	7.3			
8)	92	FF5	Fg granite	Silicified (?) Ankeritized. Qtz-fluor veinlets	Aspy		20 m North of 32991 zone above limestone.			76	-	<10	0.5			
9)	93	FF5	Skarn - fg banded	magnetite (80%) - chl -	di-cal-fluor-qtz	Gully 065°	Red gar - act skarn 20m below & Minor ankerite, vuggy qtz above. Fracture controlled? Much aplite diking	Greater than 10m vertically 15m horiz		920	450	20	-			
10)	32994 C	FF4 26+15E 17+70N	Di - mag - ep green mica skarn		No schee, no sulphides	Rubble trends 110°	2m square outcrop + 30 m rubble Not much float	< 1m		200	-	<10	-			
11)																
12)																
13)																
14)																
15)																
16)																
17)																
18)																
19)																
20)																

A P P E N D I X II

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

J.C. STEPHEN

Academic

1950 Associate Member British Institute Engineering Technology

1950-1951 One year Geology University of Alberta

Experience Summary

1947-1955 Development and production experience in engineering and geology at Central Patricia Gold Mines, Eldorado Mining and Refining, Madsen Gold Mines, Hasaga Gold Mines, Pickle Crow Gold Mines as Surveyor, Assistant to the Engineer, Geologist.

1955-1959 Regional exploration experience with Pickle Crow Gold Mines, Combined Developments Ltd., R.C. Crosby and Associates, Jay-Kay Syndicate as Field Geologist.

1959-1961 Municipal construction including monolithic concrete tunnels as Senior Inspector.

1962-1968 Regional exploration with Mastodon Highland Bell Mines as field geologist.

1968-1976 Regional exploration with Bacon and Crowhurst Ltd., as supervisor of exploration syndicates.

1977-Present President J.C. Stephen Explorations Ltd.

During summer 1983 I supervised the program on FF claim group and prepared this report.

J.C. Stephen

STATEMENT OF QUALIFICATIONS

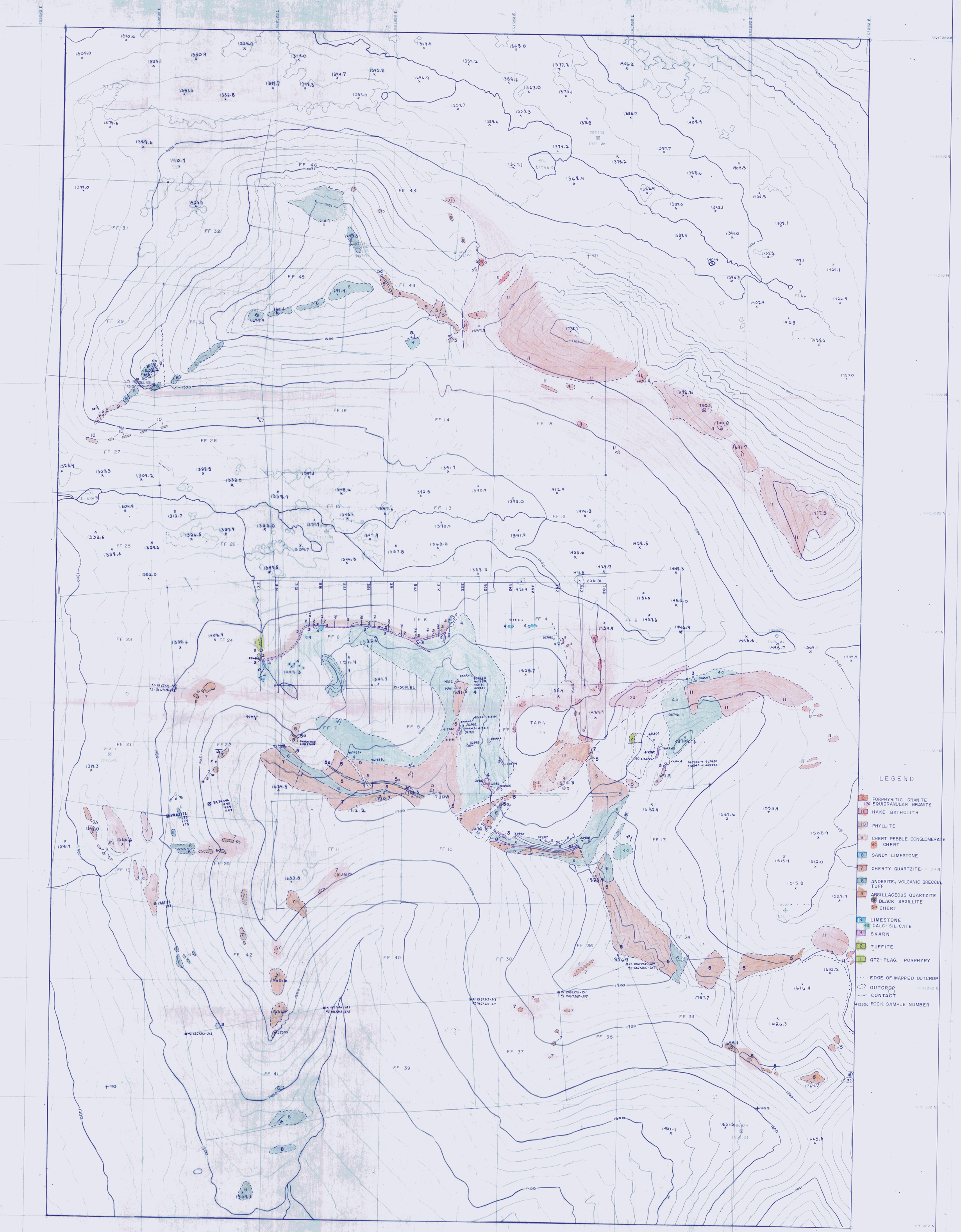
HENRY J. AWMACK

Graduated from University of British Columbia in May 1982 with Bachelor of Applied Science (Honors) in Geological Engineering (Mineral Exploration Option).

Registered as Engineer-In-Training with B.C. Association of Professional Engineers.

Six field seasons of work in all aspects of mineral exploration, most recently as Field Geologist with J.C. Stephen Explorations Ltd.

Henry J. Awmack



Scale of photography 1:30000 flown 1948

McElhanney Surveying & Engineering Ltd.
200-1166 Alberni Street, Vancouver, B.C., Canada.

Scale - 1:5000
Contour Interval - 20 Metres
Date - May 1982, July 1983
Job No. - 06944-0
Sheet No. 1 of 1

J.C. STEPHEN EXPLORATION LTD.

091 485 FF GROUP
GEOLOGY
PRELIMINARY RECONNAISSANCE TYPE MAPPING

MAP 1

13+00E 14+00E 15+00E 16+00E 17+00E 18+00E 19+00E 20+00E 21+00E 22+00E 23+00E 24+00E 25+00E 26+00E 27+00E 28+00E

20+00N
19+00N
18+00N
17+00N
16+00N
15+00N
14+00N
13+00N
12+00N
11+00N

POND

TARN
LAKE

N

J.C. STEPHEN EXPLORATIONS LTD.
D C SYNDICATE

FF CLAIM GROUP

MAGNETOMETER SURVEY

091485 105 C 8

1:2500 JULY 1983

MAP II