

SPARTAN EXPLORATIONS LTD. (N.P.L.),  
303-1035 West Pender Street,  
Vancouver 1, B. C.

1968 PROGRESS REPORT

AND

PROPOSED PROGRAM 1969

ITSI PROJECT

EASTERN YUKON TERRITORY

By

Clyde L. Smith,  
Exploration Manager.

OCTOBER 29th, 1968

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## INTRODUCTION

During June of the 1968 field season, an airborne geologic reconnaissance was conducted in a broad region located between the Itsi Range and Keele Peak in the eastern Yukon, about 100 miles northeast of Ross River. A 600 square mile area of high geologic potential was chosen for a comprehensive geochemical and geological exploration program. The Itsi project area is centred about at Macmillan Pass and straddles the Yukon-Northwest Territories boundary. The area includes a known large tonnage and high grade lead-zinc-silver deposit on the Tom claims held by Hudson Bay Mining & Smelting, as well as a tungsten deposit currently being drilled by Amax Explorations on the Jill-Judy claims. Several high level granitic stocks cut a sequence of complexly folded and faulted Lower Paleozoic sediments.

Within the Lower Paleozoic column the Ordovician black argillite and Lower Cambrian limestone units, which serve as host rocks respectively at the Hudson Bay and Amax deposits, occur widely distributed throughout the area chosen for exploration. Furthermore, the exploration area encompasses the locus of intersection of two regional fault zones. The most prominent of these zones trends northwest-southeast and may be traced through the South Nahanni and Hess River systems. The intersecting fault zone trends southwest-northeast and is expressed topographically by the Ross River-Keele River systems. It is believed that this area of regional intersection is related to the peculiar nature of folding observed in the Itsi project area. Contrary to other parts of the eastern Yukon, which are underlain by mountainously persistent northwest-southeast trending fold axis, folds in the Itsi region trend predominantly east-west to northeast-southwest and are cut by cross folds of northwest to northerly trends. In general, the region is one of complex local cross folding. It is

Introduction (continued)....

notable, particularly at the Hudson Bay deposit, that one of the major controls upon the mineralized zone is a locale of complex cross folding.

Spartan's primary exploration program began in July, 1968, and consisted of two three-man field parties conducting reconnaissance geochemical silt sampling as well as prospecting and geologic mapping on a scale of 1" = 1/2 mile. The program was designed for what may be called 'saturation coverage' of the project area. Geochemical samples were taken at no greater than 1/2 mile intervals, and all reasonably sized tributaries were sampled. Such a density of sampling was designed so that no locales of significant mineralization would be missed by geochemistry. In addition, all major tributaries were carefully prospected and all exposed areas were carefully geologically mapped. Reference to figures accompanying this report will attest to the density of geochemical sampling, as well as the detailed nature of geologic mapping.

The saturation approach was taken on this program, firstly, because it was believed that some amount of primary exploration coverage had been conducted by Hudson Bay Mining & Smelting, and that should further work be successful it would have to be of a more detailed nature, and secondly, the Itsi project was to act not only as a short term evaluation of a small area, but also as a base for future Spartan work in this important area of the eastern Yukon.

During a program of preliminary evaluation of the Itsi region in 1967, the Star Syndicate, the forerunner of Spartan Explorations Ltd., staked the Star 1-32 claims in an area of structural favourability northeast of the Tom group. The Star claims were subsequently evaluated during the 1968 program and found to be of little economic potential. The BEE 1-16 claims were staked in February, 1968, to cover known copper showings southeast of Wilson Lake. Again, these claims were evaluated during the 1968 season and indicated little potential.

Introduction (continued)....

As a result of the 1968 program, the BEN 1-6 and JOY 1-60 claim groups were staked. The BEN claims cover an intense geochemical anomaly in a structural geologic setting extremely similar to that found on the Tom claims, located about 5 miles to the northwest. The JOY claims cover an area in which high grade tungsten float boulders occur associated with intense geochemical silt anomalies, about 8 miles south of Itsi Lakes. The BEN and JOY claim groups have received only preliminary follow-up investigation, and further work is planned for the 1969 season. It is proposed that an \$80,000.00 project of follow-up evaluations in the current Itsi project area, and further primary exploration to the northwest and southeast of the project area be conducted during the 1969 field season.

LOCATION AND ACCESS

The Itsi project area is centred near Macmillan Pass, on the Yukon-Northwest Territories boundary, about 100 miles northeast of Ross River. The abandoned Canal Road passes through Macmillan Pass and during the second world war connected Norman Wells on the Mackenzie River with the Alaska Highway southeast of Whitehorse. The road has been open to Ross River since that time. The section between Ross River and Norman Wells was allowed to fall into a state of disrepair, however, beginning in August, 1968, the road was reopened by the Federal Government to a point near Sheldon Lake, which is about half the distance between Ross River and Macmillan Pass. It is understood that the road will be reopened through to the Pass in 1969. This, of course, will provide excellent access to the Itsi project area. Current access is very limited, in that very few lakes of sufficient length for landing with float and/or ski-equipped aircraft lie within the region.

Location and Access (continued)....

The Spartan Itsi project was conducted from Fuller Lake, on the north side of the Itsi Range, and personnel movements throughout the project area and to the claim groups were made by helicopter. It is notable that broad valleys occur throughout the area, and that traversing by foot is easily accomplished. Furthermore, hunting parties traverse the area on horseback.

TOPOGRAPHY AND CLIMATE

The topography of the Itsi region is characterized by rugged mountainous areas separated by broad valleys. Rock exposures in mountainous areas are excellent, but glacial debris fills the valleys up to assumed depths of several hundred feet. The region has been intensely glaciated and valleys are characteristically U-shaped. Small glaciers occur on north-facing slopes underlain by granite bodies. Tree-line ranges from 4,000 to 5,000 feet over most of the area, and all trees of significant size disappear suddenly at the Continental Divide which marks the Yukon-Northwest Territories boundary. All vegetation northeast of this line is small and scrubby.

HISTORY

The region was first entered by white men in 1943 during the construction of the Canol Road. At this time a large gossan was noted in Macmillan Pass, and it has been reported that the lead-zinc mineralization currently being developed by Hudson Bay Mining & Smelting on the Tom claims was recognized at that time. Hudson Bay conducted a very preliminary prospecting program throughout a broad part of the eastern Yukon in 1953. At this time the

History (continued)....

Tom claims were staked. It is understood that for three years following the staking of the Tom group Hudson Bay conducted very preliminary investigations of the claims. During the last three years, however, Hudson Bay has been conducting a diamond drilling program designed to outline sufficient tonnage and grade for an economic deposit. It is not known what outside work has been conducted in the Itsi region by Hudson Bay, however, in discussions with their personnel, as well as from evidence gained by Spartan prospectors, it has been concluded that their coverage has been of a preliminary nature. It is rumoured that the deposit on the Tom claims is a large tonnage (presumably in excess of 10 million tons) body grading 10%, or greater, combined lead-zinc, with between 6 and 10 ounces of silver. It is notable that the large amount of silver makes this a considerably higher grade lead-zinc deposit than is normally found for this classification of deposit.

The Jill-Judy claims of Amax Explorations were discovered during a reconnaissance airborne survey conducted in 1963. Since that time, preliminary geologic mapping has been done by Amax, and in 1968 the known tungsten showings were diamond drilled. It is understood that the results of this program are considered successful by Amax, and that they plan to conduct a larger program in 1969. It is believed that the deposit has a relatively large tonnage potential, and that the grade ranges between 0.5 and 1.0%  $WO_3$ .

A program of preliminary prospecting was conducted by the Star Syndicate in 1967. The favourable features found at that time, when combined with the highly favourable geological results of Spartan's 1968 airborne geological reconnaissance, led to the conclusion that the Itsi region constitutes one of the highest potential areas in the Yukon, and it is for this reason that the 1968 program was conducted.

GEOLOGYRegional Geology

The following is the stratigraphic column, as defined from 1": 1/2 mile scale geologic mapping in the Itsi project region:

	( 6	Hornfels (sediments not recognizable)
CRETACEOUS	( 5	Undivided "Granites"
	( 5c	Diorite
	( 5b	Quartz porphyry
	( 5a	Granite, granodiorite, quartz diorite, etc.
UPPER DEVONO- MISSISSIPPIAN	( 4	Undivided "Devonian slates"
	( 4b	Ferruginous slates
	( 4a <sup>1</sup>	Black chert
	( 4a	Conglomerate
LOWER DEVONO- MISSISSIPPIAN TO ORDOVICIAN	( 3	Undivided "Black argillite"
	( 3f	George dolomite
	( 3e	Undivided Black argillite, chert, pebble conglomerate, black chert, carbonaceous limestone.
	( 3e <sup>1</sup>	Black argillite
	( 3e <sup>2</sup>	Chert pebble conglomerate
	( 3e <sup>3</sup>	Black chert
	( 3e <sup>4</sup>	Carbonaceous limestone.
	( 3d	Light-coloured shales and George dolomite.
SILURIAN	( 3b	Platy carbonaceous limestone
ORDOVICIAN	( 3a	Black carbonaceous shale
LOWER CAMBRIAN	( 2	Undivided "Banded Carbonates"
	( 2d	Calc-silicate band
	( 2c	Quartzite, Swiss-Cheese limestone, conglomerate, skarn.
	( 2b	Argillite-Hornfels.
	( 2a	Quartzite Skarn, limestone.
PROTEROZOIC	( 1	Undivided "Proterozoic" including quartzite, phyllite, red and green shales.

A discussion of the stratigraphy in the Itsi project region is beyond the scope of this report, but it should be noted that two of the stratigraphic units in the above column are of economic importance. Firstly, skarn within

Regional Geology (continued)....

the Lower Cambrian unit 2a is host rock for tungsten mineralization at the Amax deposit. The skarn consists of diopside and garnet with minor amounts of quartz and calcite and finely disseminated scheelite. Pyrrhotite is almost entirely absent, which is in contrast to the pyrrhotite-rich diopside skarn host rock at the Cantung deposit, many miles to the southeast. It is notable, however, that the Cantung skarn occurs within a very similar stratigraphic section, and it is believed that both the Amax and Cantung deposits occur within the Lower Cambrian. The Lower Cambrian appears to have regional extent, and appears to be the most important ingredient for tungsten mineralization in the eastern Yukon. The second stratigraphic unit of economic importance is the Lower Devonian-Mississippian to Ordovician 3e units. This is a complex unit, consisting of black argillite, chert pebble conglomerate, black chert and carbonaceous limestone. The Hudson Bay deposit occurs in the upper stratigraphic levels of this undivided complex unit. It is difficult to say to what extent lithology and stratigraphic position is significant in the localization of the Hudson Bay deposit, but it is believed that lead-zinc mineralization in the region will be found to occur within, or in proximity to, rocks similar in character to those at the Hudson Bay deposit.

It is notable that both the Hudson Bay and Amax deposits occur in close proximity to granitic intrusive contacts. The skarn zone of main economic importance at Amax occurs immediately on the contact of the quartz feldspar porphyry stock. The Hudson Bay deposit occurs about 3 miles north of a major circular granitic stock, but is in close proximity to a small body of quartz feldspar porphyry exposed along the western margin of the Tom group. Although

Regional Geology (continued)....

structural position appears to bear little control upon the localization of the Amax deposit, the Hudson Bay setting is one of locally complex structural geology. In general, fold axis trend northwesterly through the area, but minor east-west and northeast-southwest trending structures attest to a general area of cross folding. Furthermore, the major northwesterly structures are tight and locally overturned in contrast to the generally open character of surrounding folds.

An examination of geologic map sheet 105-0-1 shows that the structural setting at the Hudson Bay Tom group and the BEN group are extremely similar. Firstly, both occur north of a major granitic stock and northeast of minor bodies of quartz feldspar porphyry. Secondly, major structures trend northwesterly and are crossed by a minor, northerly trending structures. Thirdly, the apparent host rocks are of similar age and character.

It is notable that the JOY claims cover an area of generally similar geology to that in the area of the Amax deposit. The above mentioned high grade tungsten boulders occur near the contact of overlying Devonian slates and limestones which appear to resemble the Lower Cambrian limestones found elsewhere in the Itsi region. In addition, numerous small bodies of feldspar porphyry, similar in character to the stock located north of the Amax deposit, occur scattered over a broad area to the north of the float locations.

BEN Group

The BEN claims are underlain by three major stratigraphic units separated by strong unconformities, which are, respectively, black argillites of Ordovician age, platy limestones of Silurian age, cherts and black slates of Devonian age. The strata are folded into a tight, northerly plunging anticline which is

Geology - BEN Group (continued)....

crossed by an open, easterly plunging anticline, outlined by gently dipping limbs of Middle-Upper Devonian slate. The cross folding in the area produces a complex locale of intersecting structural geology. A small quartz feldspar porphyry stock crops out south of the claims, and dykes associated with the stock cut the strata in the area of the intersecting folds. Careful prospecting was conducted in the area of an anomalous geochemical zone, however outcrop is limited and mineralization was noted only in a small skarn zone, as well as in zinc-copper bearing nodules in the black argillites of Ordovician age. Neither type is believed to be of major economic significance. It is notable, however, that the main area of geochemical intensity is overburden covered and has not been adequately explained.

JOY Group

Preliminary prospecting in the area of the JOY group, located north of Prevost River and south of Itsi Lakes located two boulders of skarn containing significant amounts of zinc, copper and scheelite. Scheelite grade in the boulders was estimated at about 3.00%  $WO_3$ . Following the prospecting discovery, a program of reconnaissance geological mapping and geochemical sampling was initiated. Geologic mapping showed the existence of an east-west trending synclinal structure, within which favourable limestone beds of Lower Cambrian (?) age are folded. Sediments are cut by quartz porphyry dykes, and the presence of an underlying stock is assumed.

GEOCHEMISTRYRegional Geochemistry

Accompanying this report are four geochemical maps on a scale of 1": 1/2 mile, which show the locations and values for stream silt samples taken during the Itsi project. The sequence of metals shown on the map is

Regional Geochemistry (continued)....

lead-zinc/moly-copper. Notations in parenthesis indicate sampler and number of sample. The diameter and colour of circle located near a notation, indicates the relative parts per million value of a particular metal in the sample.

During the course of the geochemical program, frequency distribution plots of all metals were kept. It was noted that threshold values for all metals constantly varied in relation to areas being sampled. This variation was logically explained in terms of differing trace metal content in bedrock formation being traversed. In general, however, it was possible to establish orders of anomalous values which could be applied on a regional basis. For zinc, three orders of magnitude were established - at 700, 1,000 and 1,300 parts per million; for lead, two orders of magnitude were established - at 75 and 115 parts per million; for molybdenum, two orders of magnitude were established - at 40 and 60 parts per million; and for copper, two orders of magnitude were established - at 140 and 220 parts per million.

One of the confusing aspects of the geochemical picture in the Itsi region is that bedrock formation containing relatively high amounts of trace metals apparently occur at several stratigraphic levels. The most common of these rocks apparently lie within the Ordovician black shales, and the Lower Devono-Mississippian black argillites. In several areas of anomalous values, this association was definitely established by rock geochemistry, and careful prospecting further proved that no significant mineralization was associated with these areas of high geochemistry which we have come to attribute to high trace metal content in bedrock formations. This dilemma is further increased by the fact that the lead-zinc-silver mineralization at Hudson Bay occurs within the black argillite formation, so that where background values are assumed the

Regional Geochemistry (continued)....

cause of high geochemistry, these areas cannot be disregarded, for these very rocks may well contain mineralization similar in character to that at Hudson Bay's deposit.

A further problem is that in orientation surveys on the north end of the Tom claim group of Hudson Bay, values are extremely low in comparison to the regional backgrounds. In fact, the values in zinc and lead, in particular, are anomalously low, and it has been concluded that the extreme acidity of ground and surface waters in the area of the actively oxidizing pyrite-rich deposit in this area has caused a carry-over of metals in stream waters to the extent little or no precipitation of these metals occurs in stream silts. Other areas in the Itsi region of anomalously low lead and zinc geochemical values have been carefully checked because of the possibility of similar geochemical environments being associated with mineralization.

A thorough review of geochemical data accumulated during the project is currently in progress, and research will be conducted on several geochemical aspects in the near future.

BEN Group Geochemistry

Reference to the BEN claim group geochemical soil grid map shows that a concentration of extremely high zinc values, up to 2,625 parts per million, occur just north of a westerly flowing creek in the centre of the claim group. Associated with the high zinc values are leads up to 100 parts per million, copper up to 352 parts per million, and molybdenum up to 48 parts per million. The high values occur in an area of overburden cover, and the cause of the anomalies have not been explained. It is notable, however, that favourable formations underly the anomalous area, and that a major quartz feldspar porphyry dyke cuts these formations near the heart of the anomaly. A thorough investigation of this geochemical anomaly will be conducted during the 1969 season.

Geochemistry (continued).....JOY Group Geochemistry and Geophysics

A composite geological and geochemical map accompanies this report. The locations of two large tungsten-copper bearing skarn float boulders are shown on this map. The general association of extremely high zinc and molybdenum geochemistry with the float locations, as well as a contact zone between favourable limestone overlying Devonian slates cut by quartz feldspar porphyry intrusives, makes the geological setting appear highly favourable. It is notable that high geochemical values were obtained from silt samples only in the southern flowing creek within the valley of which the northern float location occurs.

Two maps showing ground magnetic values on northerly trending lines spaced at an average of 1,000 feet apart over the JOY claim group show that little or no magnetic response was detected. It was assumed that due to the pyrrhotite content of the float boulders, any sub-outcropping body of pyrrhotite bearing skarn would be located magnetically. This was not the case, but it is entirely possible, based upon the usually small and erratic nature of such skarn, that they could be of shorter length than the line spacing used in the magnetic survey, and could, therefore, have been missed being detected by magnetic methods. A more careful magnetic survey will be conducted over this area during the 1969 season.

PROPOSED PROGRAM AND BUDGET FOR 1969 SEASON

Spartan currently plans to conduct a 7-man program of follow-up work on the BEN and JOY claims, as well as other areas of anomalous geochemistry in the Itsi project region during the 1969 season. In addition, a program of primary exploration is proposed for a broader region southeast and northwest of the 1968 project area. This program will be geologically based, in

Proposed Program and Budget for 1969 Season (continued).....

that work will be confined mainly to areas of high potential for tungsten mineralization. In particular, the favourable Lower Cambrian limestone unit will be traced over a broad region between the Cantung mine and the Hess River region northwest of the Amax deposit. The formation will be carefully explored in any area where granitic intrusives occur, for this association has been quite clearly established as being essential for tungsten deposits in the eastern Yukon. Furthermore, an attempt will be made to trace the host formations, as defined at the Hudson Bay deposit, over regional extent, and to carefully prospect and geochemically sample wherever complex structures are noted. Barite appears to be an important associate mineral in the deposit at Hudson Bay, and several locales of barite mineralization are currently known which also require detailed investigation.

The cost of proposed primary and follow-up programs is estimated as follows:

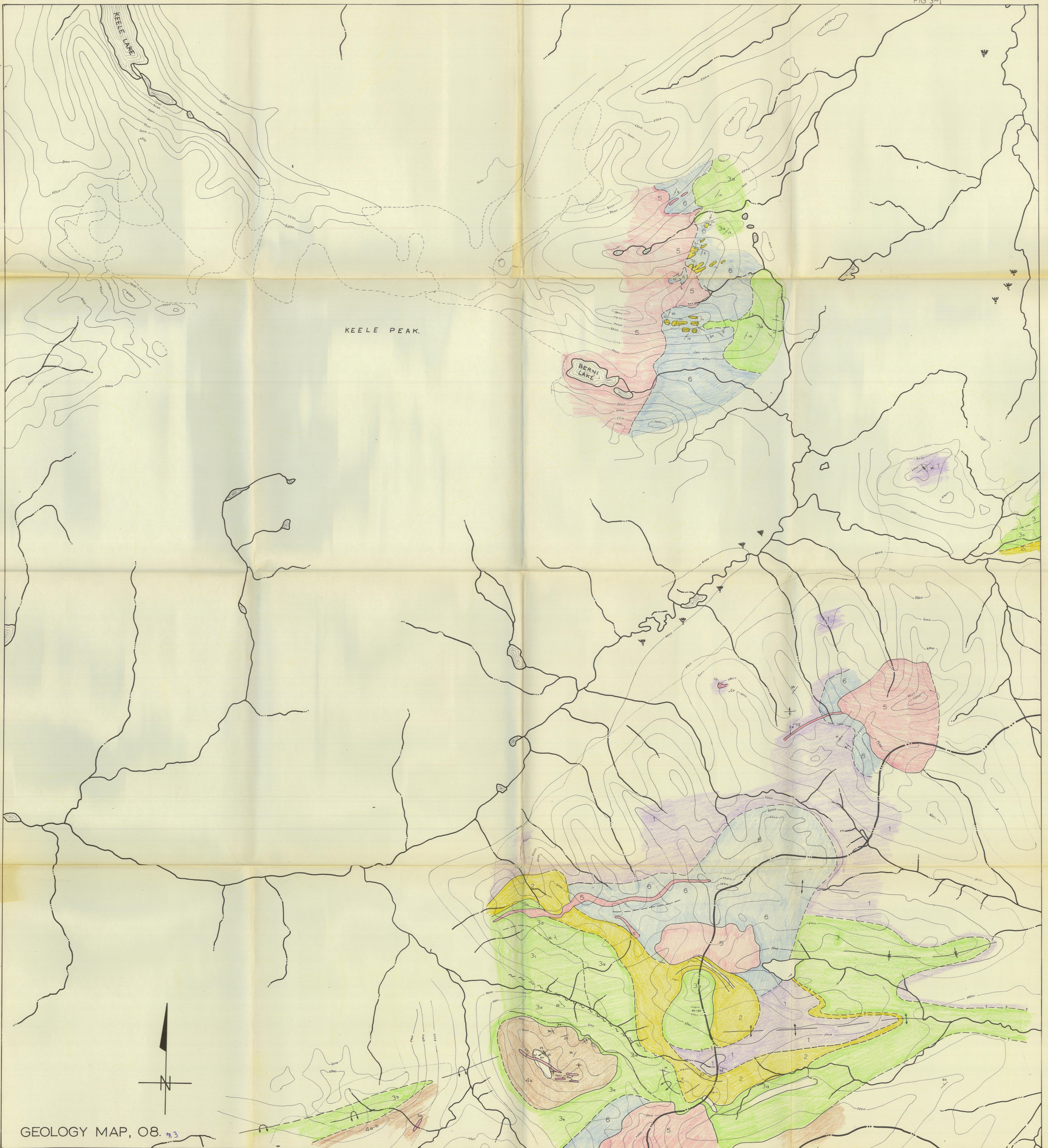
1. Transportation	
Helicopter, Super-cub and Beaver support	\$20,000.00
2. Personnel	
Salaries and subsistence of 7 men for 4 months, supervision, accounting-administration	30,000.00
3. Services-Purchases	
Assays, geochemical laboratory costs, equipment purchases, etc.	15,000.00
4. Bulldozer Trenching	
2 weeks of work @ \$30.00 per hour	5,000.00
5. Contingencies	
Diamond Drilling, claim staking, geophysical surveys	<u>10,000.00</u>
	<u>GRAND TOTAL ..... \$80,000.00</u>

Clyde L. Smith,  
Exploration Manager.

LIST OF ACCOMPANYING MAPS  
(Enclosed in Pockets)

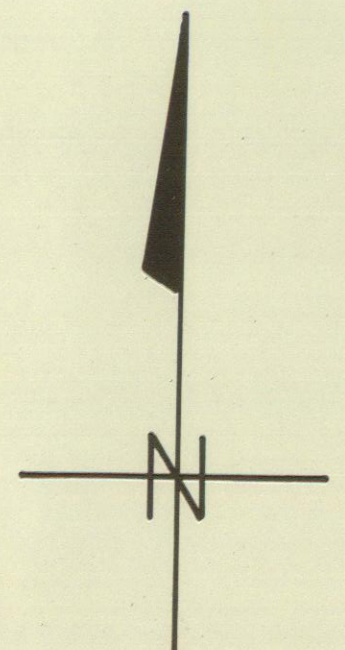
- Figure 1I - Itsi Area Index Map.
  - Figure 2I - Mineral Claim Sheet 105-0-1 Geology Map.
  - Figure 3I - Mineral Claim Sheet 105-0-8 Geology Map.
  - Figure 4I - Mineral Claim Sheet 105-P-5 Geology Map.
  - Figure 5I - Mineral Claim Sheet 105-P-4 Geology Map.
  - Figure 6I - Mineral Claim Sheet 105-0-1 Geochemical Map
  - Figure 7I - Mineral Claim Sheet 105-0-8 Geochemical Map.
  - Figure 8I - Mineral Claim Sheet 105-P-4 Geochemical Map.
  - Figure 9I - Mineral Claim Sheet 105-P-5 Geochemical Map.
  - Figure 10I - Joy Claim Group and Area Geology and Geochemical Map.
  - Figure 11I - Bee Group Geochemical Values Map.
  - Figure 12I - Star Group Geochemical Values Map.
  - Figure 13I - Ben Group Grid Geochemical Values Map.
  - Figure 14I - Ben Group Geology Map.
  - Figure 15I - Joy Group Ground Magnetic Values Map.
  - Figure 16I - Joy Group Ground Magnetic Profile Map.
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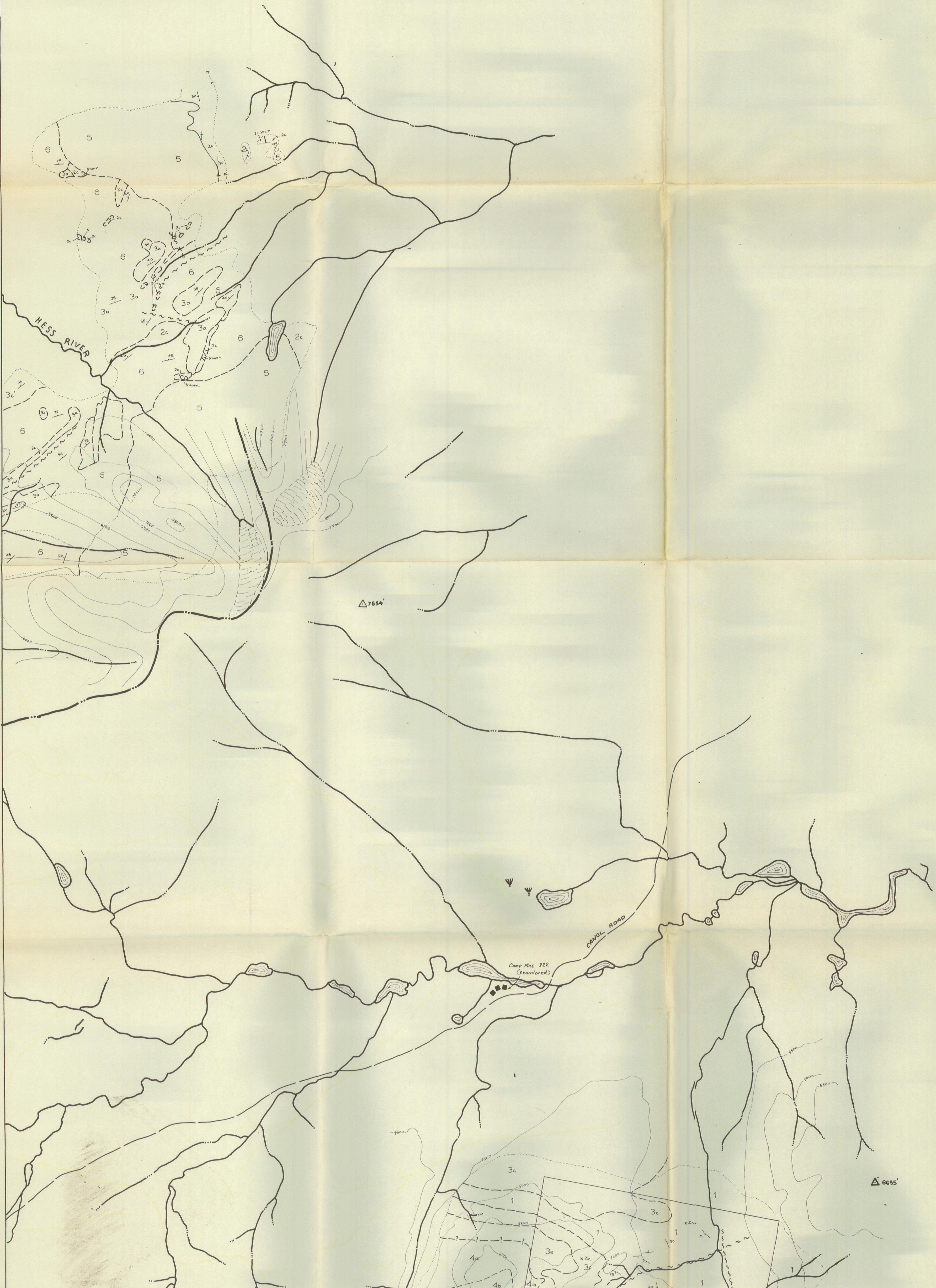




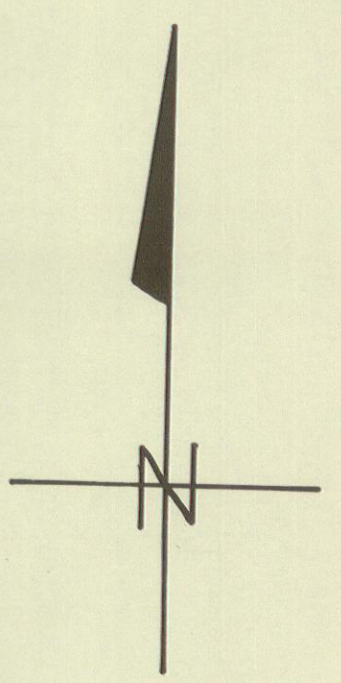
KEELE PEAK.

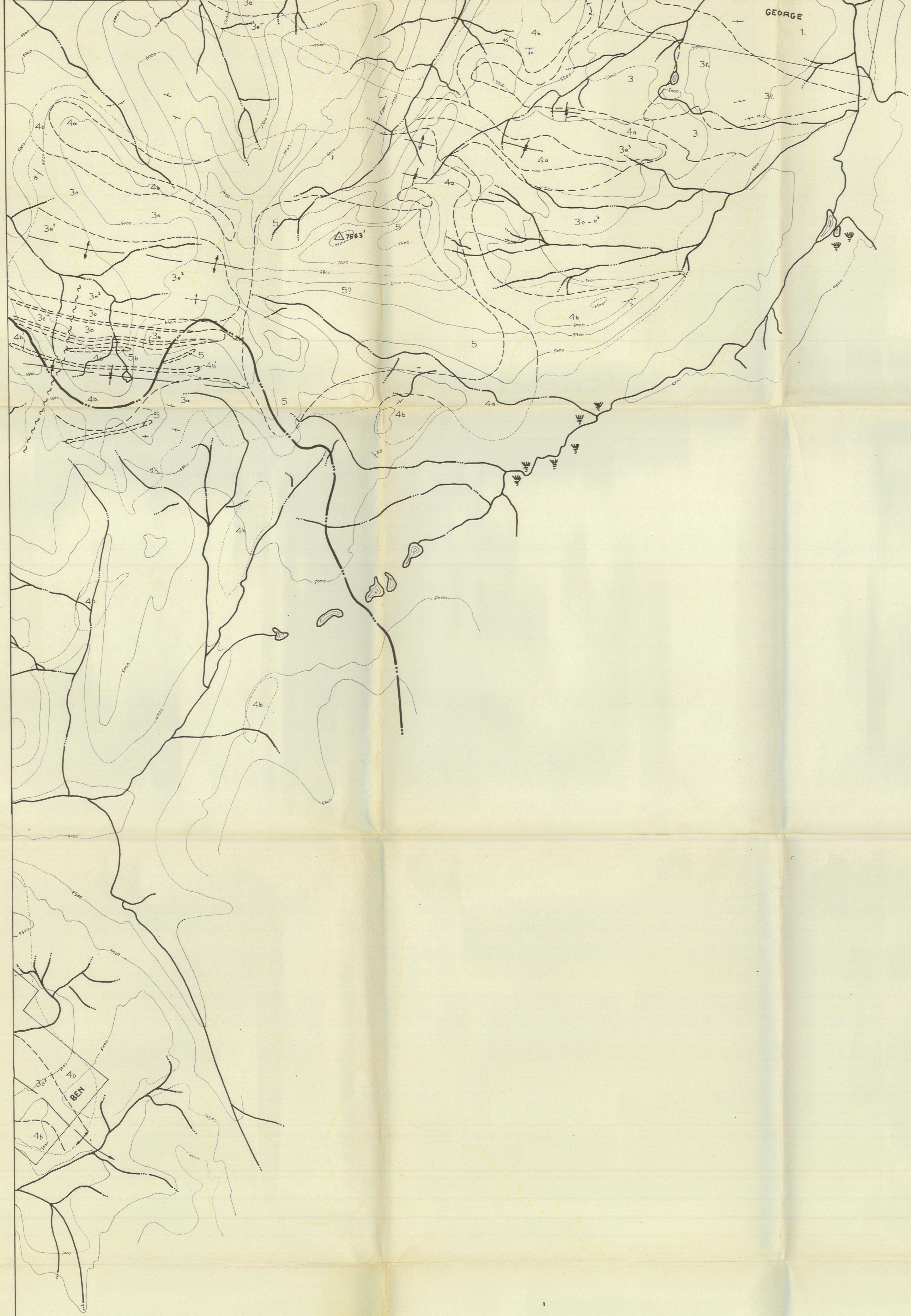
BERNI LAKE





GEOLOGY MAP P5





GEOLOGY MAP P4

56

Group of 4 Geological  
Maps scale 1/2 mile = 1 inch  
Claim map  
Numbers →

08	P5
01	P4



**LEGEND**

ZINC — LEAD / MOLYBDENUM — COPPER

● > 700	○ > 40	○ > 140
● > 1000	○ > 75	○ > 60
● > 1500	○ > 15	○ > 200

**SPARTAN EXPLORATIONS LTD.**  
 VANCOUVER BC.  
 ITSI PROJECT  
 Area Geochemistry 1 of 4 maps  
 Map numbers 008-01,08,P4,P5.

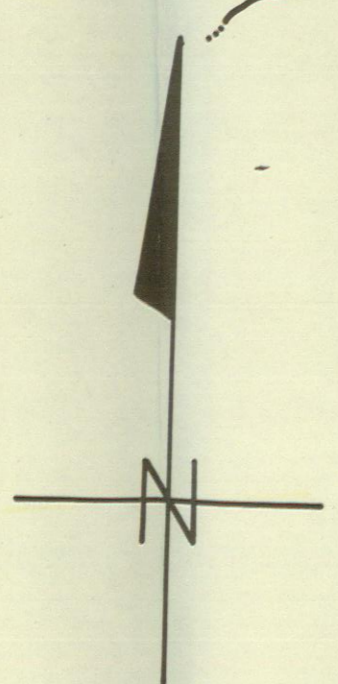
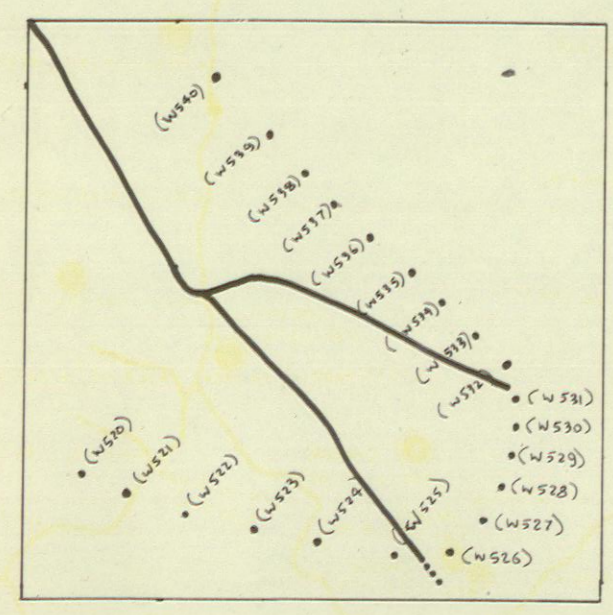
GEOCHEMISTRY: A.CARLOS, A.M'LEOD, C.OLLIE, W.ATKINSON, R.WOODSWORTH.  
 DRAWN BY: N.H.SIMMONS.  
 DATE: NOVEMBER 2, 1966.

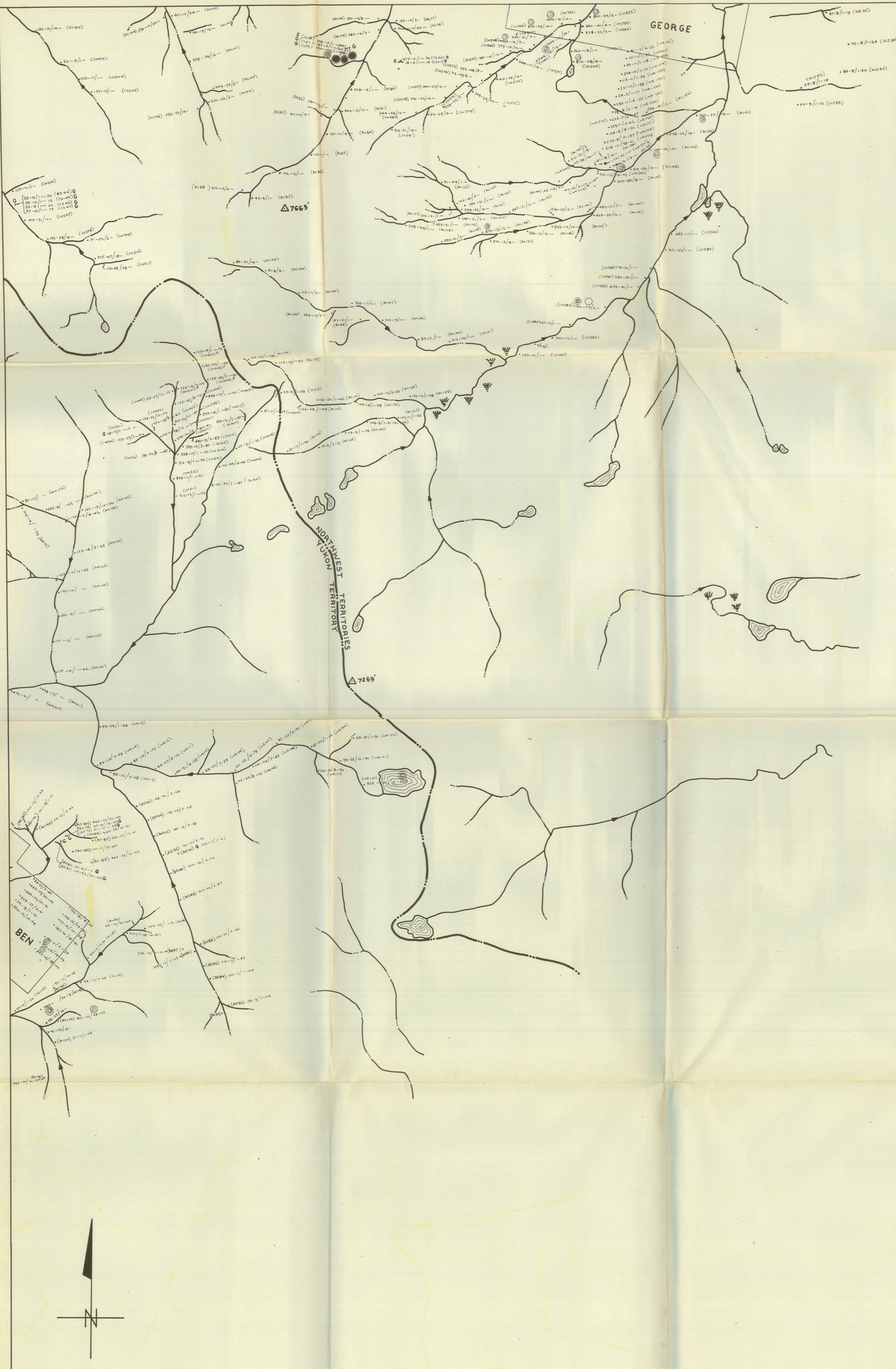
Scale in feet

Group of 4 Geochemical  
 Maps scale 1/2 mile = 1 inch  
 Claim map  
 Numbers →

08	P5
01	P4

GEOCHEMICAL MAP, 01.





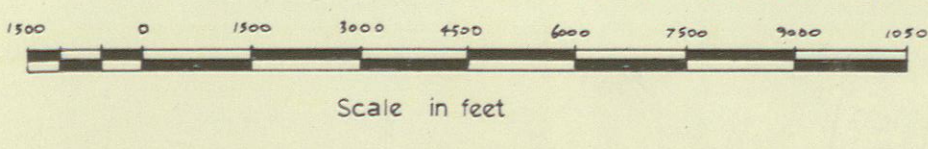
GEOCHEMICAL MAP, P4.





SPARTAN EXPLORATIONS LTD.  
 VANCOUVER B.C.  
 ITSU PROJECT  
 JOY CLAIM GROUP & AREA  
 GEOLOGY & GEOCHEMISTRY MAP

GEOLOGY: G. JAMES, W. ROBERTS. DRAWN BY: N.H. SIMMONS.  
 DATE: NOVEMBER 2, 1968.



**LEGEND**

ZINC — LEAD / MOLYBDENUM—COPPER

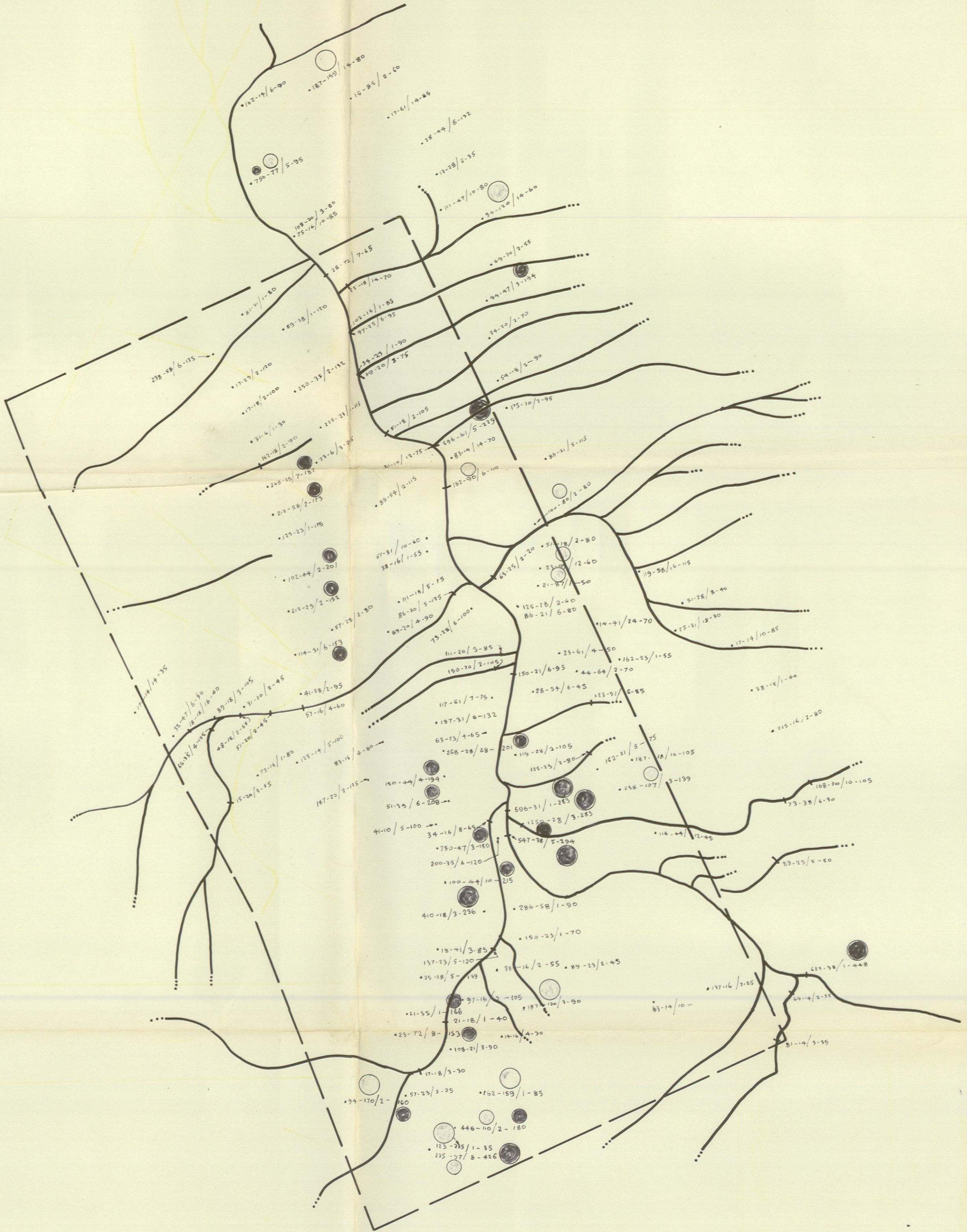
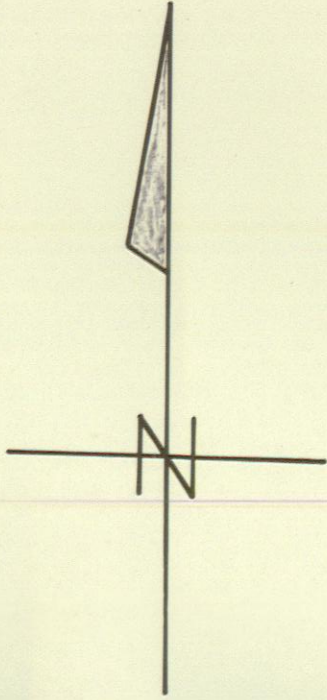
● >700	○ >100	○ >20	● >10
● >1000	○ >25	○ >5	● >150
● >1500			

5b	QUARTZ PEGMATITE
4b	FERRUGINOUS SLATES
3a	GEORGE DOUMITE
3e	LIMONITE-BLACK ARGILLITE PEGMATITE CONGLOMERATE, BLACK CHEST, CHEROKEE LIMESTONE
3e'	BLACK CHEST

**LEGEND**

---	CONTACT DEMONSTRATED, ASSUMED, INFERRED
---	FOLD AXIS ANTICLINE, SYNCLINE
X X	SEDM. STRATA
~ ~ ~	FAULT



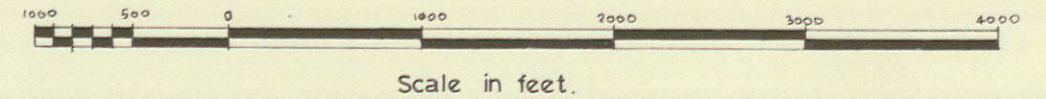


SPARTAN EXPLORATIONS LTD.  
 ROSS RIVER YUKON  
 ITSI PROJECT  
 STAR CLAIM GROUP  
 GEOCHEMICAL SILTS & SOILS  
 Zn-Pb / Mo-Cu.

SOIL SAMPLERS: B.DUNA, A. MACLEOD.

DRAWN BY: N.H.SIMMONS.

DATE: AUGUST 25, 1968.

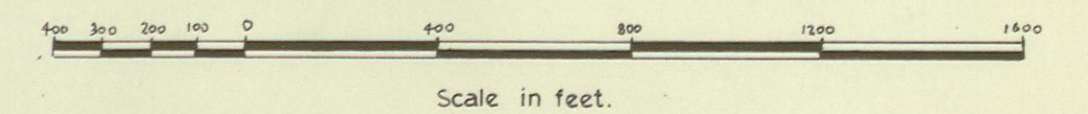


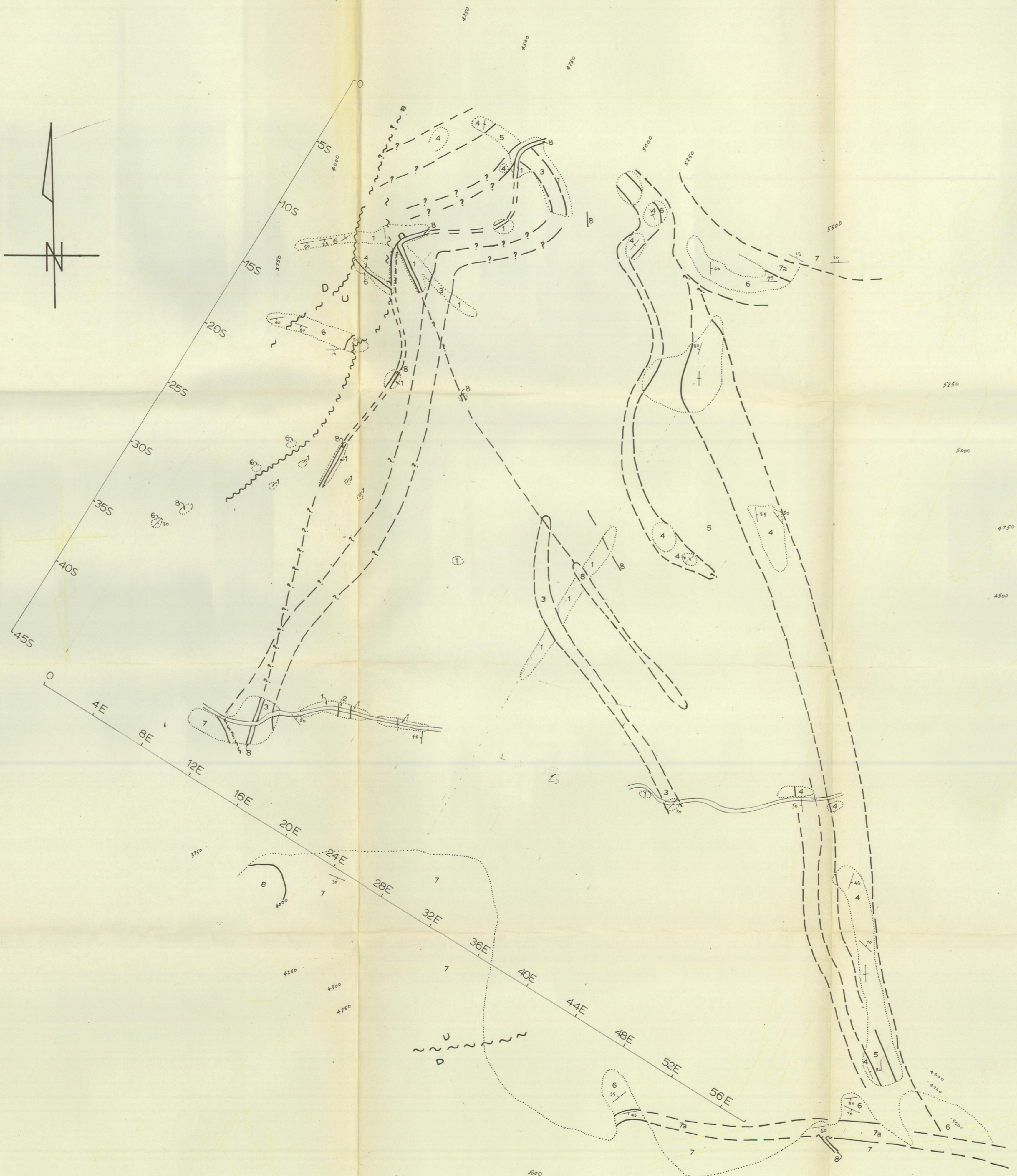
Scale in feet.



SPARTAN EXPLORATIONS LTD.  
 ROSS RIVER YUKON  
 ITSI PROJECT  
 BEN CLAIM GROUP  
 GEOCHEMICAL SOIL GRID  
 Zn-Pb / Mo-Cu

SOIL SAMPLERS : W. ATKINSON, A. CARLOS.      DRAWN BY : N.H. SIMMONS.  
 DATE: AUGUST 21, 1966.





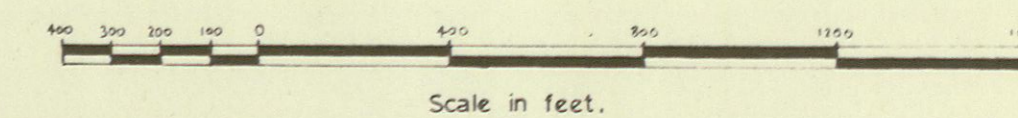
LEGEND

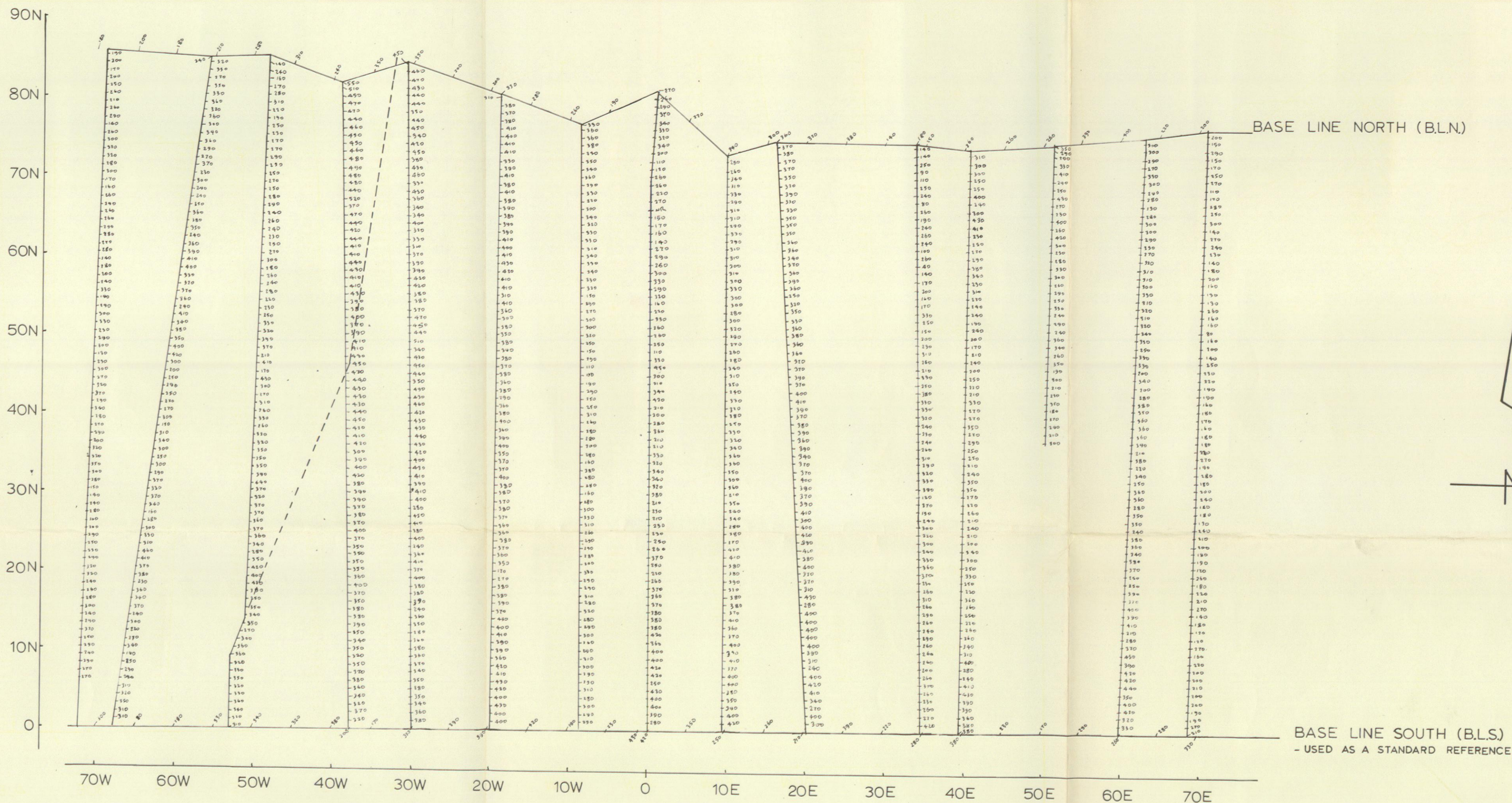
- 9. [9] ALIENED SEDIMENTS - VERY FINE GRAIN, LIGHT GRAY ROCK.
- 8. [8] QUARTZ MONZONITE - FINE CRYSTALLINE GROUND MASS, 10% BIOTITE, 2-4MM EKHEDRAL QUARTZ AND K-FELD.
- 4b [7] SLATE - THIN BEDDED, BLACK, FRACILE. LIGHT WEATHERING LAMINAE, OTHERWISE RUSTY WEATHERING.
- 4a [7a] BLACK CHEST.
- 3 [6] LIMESTONE AND ARGILLACEOUS LIMESTONE - BLACK, CARBONACEOUS, BLOCKY FRACTURE. OCCASIONALLY FRACILE, BLACK WEATHERING.
- 2a [5] SHALE - GRAY BROWN WEATHERING, BLACK.
- 3e+ [4] LIMESTONE - VERY LIGHT GRAY WEATHERING, DARK GRAY TO BLACK, FRACILE. SLIGHTLY CARBONACEOUS, ARGILLACEOUS.
- 3d [3] LIMESTONE - MEDIUM GRAY, MEDIUM GRAY WEATHERING, THIN BEDDED INTERCALATED SHALE AND GRAY CHEST.
- 3e [2] BLACK CHEST - FRACILE.
- 3e- [1] GNEISS - BLACK, BLACK TO RUSTY WEATHERING, CARBONACEOUS FIBRIL, SILTY IN PART, UNFRACTURED.

SPARTAN EXPLORATIONS LTD.  
 ROSS RIVER, YUKON.  
 ITSI PROJECT  
 BEN GROUP CLAIMS  
 GEOLOGY

GEOLOGY : M.R. WOLFHARD.

DRAWN BY: M.R. WOLFHARD.  
 DATE: AUGUST, 19, 1968.





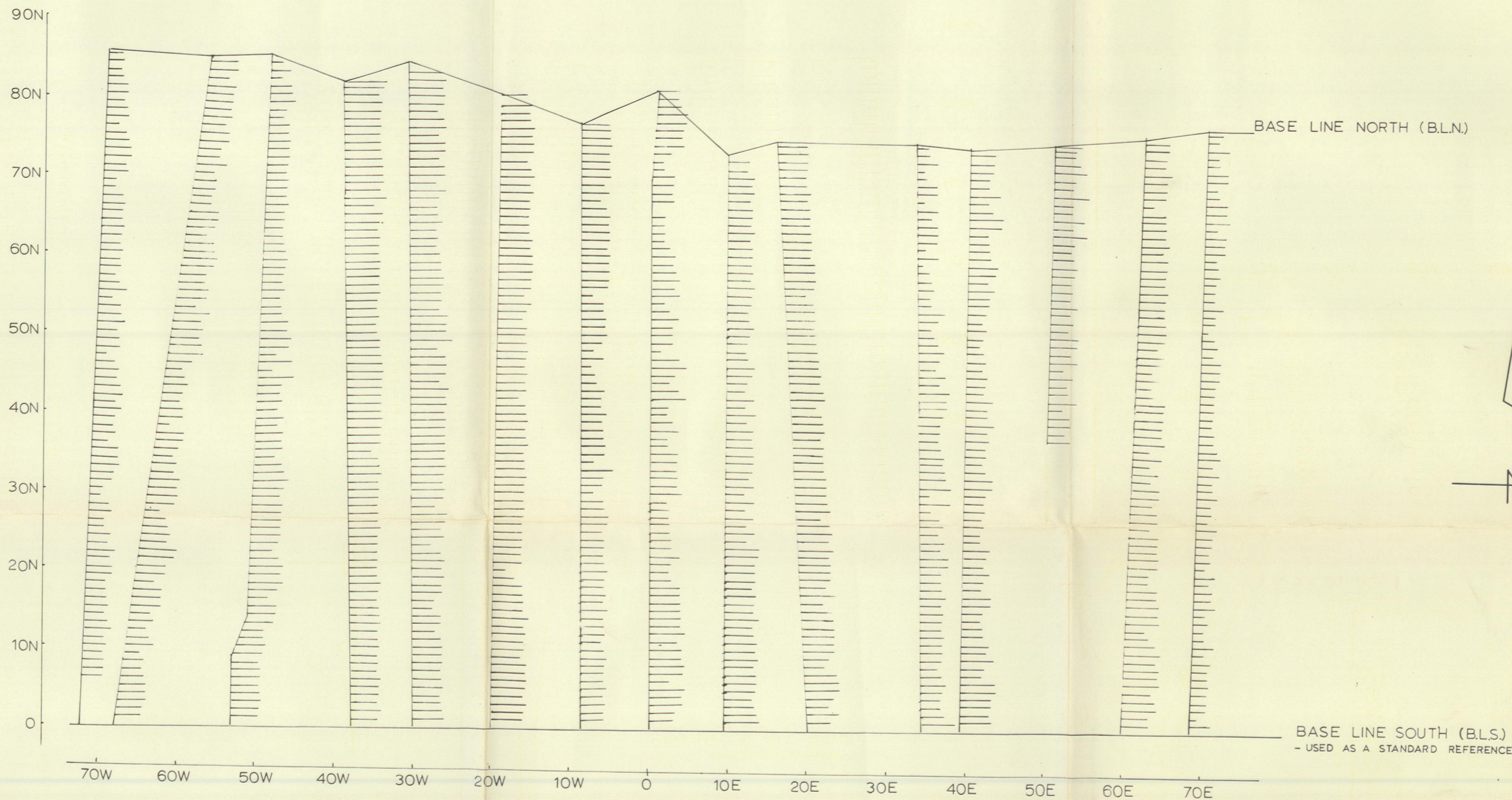
SPARTAN EXPLORATIONS LTD.  
 ROSS RIVER YUKON  
 ITSI PROJECT  
 JOY CLAIM GROUP  
 GROUND MAGNETIC CONTOUR MAP

INSTRUMENT : SHARPE MF1,  
 OPERATOR : G. JAMES.

DRAWN BY : N.H.SIMMONS.  
 DATE : SEPTEMBER 3, 1968.



Scale in feet



SPARTAN EXPLORATIONS LTD.  
 ROSS RIVER YUKON.  
 ITSI PROJECT  
 JOY CLAIM GROUPS  
 GROUND MAGNETIC PROFILE MAP  
 $\frac{1"}{10} = 100$  Gammas

INSTRUMENT : SHARPE, MF.1.  
 OPERATOR : G. JAMES.

DRAWN BY : G. JAMES.  
 DATE : SEPTEMBER, 1, 1968.



Scale in feet