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SUMMARY REPORT

The Investigation and Geology of
the Sheba Copper Mines 96 Claim Group
Highland Valley, British Columbia

For

THE DOWA MINING COMPANY LTD.
Vancouver, Canada

By

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October 30, 1971

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SUMMARY

The Sheba Copper Mines 96 claim group is located in the Highland Valley, British Columbia. The Dowa Mining Company optioned the property in 1971 and conducted diamond drilling, geological mapping and copper geochemical prospecting.

Twelve vertical holes of B.Q. core size, spaced approximately 1,600 feet apart were drilled for a total of 8,569 feet. Four holes, S-71-9, S-71-10, S-71-11 and S-71-12, encountered significant intersections of sulphide mineralization.

Geological mapping on a scale of 400 feet to one inch was conducted. The rock types mapped include granodiorite, quartz diorite, porphyry dykes and breccias. The major structural trend is north-northeast as exemplified by the Sheba porphyry. Sulphide mineralization is generally weak but in areas of intense fracturing and veining zones of sulphide concentrations have developed. Five zones that were recognized are: Tower, Den, Camp, Trench and the Jay 101 Showing. The most important alteration associated with mineralization is quartz-sericite.

Several low and high order copper geochemical anomalies were located by the soil survey. Drilling in the vicinity of the low order anomalies of the Den Zone encountered weak copper mineralization. Three substantial high order anomalies A, B and C are located north of and encompassed by the northern mineral zones.

In conclusion, the results of the 1971 field program are encouraging. Further work is recommended in the northern portion of the claims, especially in the area encompassed by and north of hole S-71-11, Den Zone, Camp Zone and Tower Zone. Additional investigation is warranted in the southern portion of the Trench Zone in the general vicinity of hole S-71-9.

INTRODUCTION

The Dowa Mining Company Ltd. optioned the Sheba Copper Mines Ltd. [NPL] 96 claim group located in the Highland Valley, Kamloops Mining Division, B.C. in 1971. During the summer between May 20th and August 26th, an exploration program consisting of BQ-wire-line diamond drilling, geological mapping and geochemical surveying was conducted. The field program was supervised by L. W. Saleken, consulting geologist, acting on behalf of Dowa Mining Company Ltd. Drilling was contracted to D. W. Coates Enterprises Ltd., Vancouver, B. C.

This report described the details and results of the above mentioned exploration program. The drill logs and assay results are in Folder Two that accompanies this report.

Property

The property consists of 96 full-sized and fractional mineral claims that are owned by Sheba Copper Mines Ltd. [NPL], Vancouver, B. C.

<u>Claim Name</u>	<u>Record Number</u>
Ann 1 Fr	44967
Ann 2 Fr	45131
Ann 5 Fr	45134
Ann 6 Fr	54135
Ann 14 Fr	45344
Ann 15 Fr	46150
Ann 16 Fr	46151
Ann 17 Fr	46152
CS 1 Fr	36023
CS 1 & 3	36021 - 36022
CU 1 - 6	38610 - 38615
CU 17 - 20	34763 - 34766
DAWN 1 - 8	38231 - 38238
DEE 1 Fr	60813
DEE 3 Fr	62540
DO 1 - 4	64166 - 64169
DO 5 - 6	64164 - 64165
DO 1 Fr - 3 Fr	64170 - 64172
DO 4 Fr - 6 Fr	64161 - 64163
DO 7 Fr - 8 Fr	64646 - 64647
J 1 - 8	38223 - 38230
J 11	36456
J 31 - 32	38986 - 38987
J 41 - 42	36463 - 36464
J 33 Fr	38988
J 34 Fr - 38 Fr	36457 - 36461
J 40 Fr	36462
Jay 9 - 10	38345 - 38346
Jay 12	44814
Jay 13 - 20	38348 - 38355
Jay 101	37921
Jay 104 Fr	37924
JJ 1 Fr	36455
JJ 2 Fr	38816
Lynn 1 - 6	38571 - 38576
Lynn 7 Fr	38577
Lynn 8	38578
Lynn 10 Fr	38579
Sheba 21 - 24	38700 - 38703
Sheba 25 - 26	44812 - 44813
VI 1 Fr	95213

Location, Access & Physiography

The Sheba 96 claim group is located in the Highland Valley area, Kamloops Mining Division, British Columbia. The claims are situated approximately 24 miles southeast of Ashcroft, B.C. The group is wedged between the Bethlehem, Lornex and Highmont mining properties. The claims are easily accessible by public road from either Ashcroft or Merritt, B.C. Several truck roads traverse the Sheba property.

The topography is characterized by a series of north-south and east-west trending gullies. Relief is moderate but locally rugged, with elevations ranging between 4,000 and 5,500 feet above sea level. Eskers, crevasse fillings, moraines, erratics and scoured surfaces are remnants of glaciation. Outcrop exposure on the property is approximately ten percent. The majority of the streams are seasonal. Spruce, pine and scrub brush cover the property.

Previous Work

Work conducted prior to the 1971 Dowa option consisted of several technical surveys with follow-up drilling. Early exploration by Peel Resources located the Jay 101 Showing, which contains significant copper mineralization. The claims were optioned and explored by Anaconda in 1964 and 1965 with I.P. and diamond drilling. In 1967, Sumitomo Metal Mining undertook a detailed program of geological mapping, geochemical and I.P. surveying with follow-up percussion and diamond drilling on the eastern portion of the Sheba claims. During 1969, Anaconda acquired the ground and conducted fill-in I.P. on the western claims, local geological mapping and widespread geological reconnaissance with additional diamond drilling.

Acknowledgment

The writers are indebted to the Dowa Mining Company Ltd. for the opportunity of working on the Sheba project. Special appreciation is extended to Mr. K. Hashimoto and Mr. K. Minami for their cooperation and assistance.

In addition, the writers wish to acknowledge the conscientious work of J. E. Sladen, field assistant, and the cooperation of the employees of D. W. Coates Enterprises and Sheba Copper Mines.

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FIELD PROGRAM - SUMMER 1971

The program consisted of diamond drilling, geological mapping and geochemical surveying. The field supervision of the project was done by L. W. Saleken, consulting geologist, acting on behalf of the Dowa Mining Company Ltd. A field crew of seven men including drillers was employed full time on the project. The field work commenced May 20th and finished August 26th, 1971. A base camp consisting of full facilities for ten men was established on the property [claim Jay 15].

Diamond Drilling

Drilling was contracted to D.W. Coates Enterprises Ltd., Vancouver, B. C., and began on May 26th and finished on August 10th, 1971. Twelve vertical holes of B.Q. core size, spaced approximately 1,600 feet apart, were drilled using a Longyear, Model 38, wireline drill. Two crews working twelve hour shifts completed 8,569 feet of drilling in 75 days for an average rate of 57 feet per shift including moves. Core recovery for all twelve holes averaged greater than 85 percent.

All the drill core was split, logged and sampled. Samples were taken every ten feet and bagged. Select samples from each hole were submitted to Bondar-Clegg and Company for copper-molybdenum analysis. Composite samples were routinely assayed for gold and silver.

Table I: Diamond Drill Data

<u>DDH</u>	<u>Claim</u>	<u>Location</u>	<u>Depth</u>	<u>Drilling Interval</u>
S-71-1	Jay 9	L26S, 41W	753'	May 26 - June 1, 1971
S-71-2	Ann 5 Fr	L26S, 24+50W	706'	June 2 - June 6, 1971
S-71-3	Cu 3	L42+50S, 24W	908'	June 7 - June 13, 1971
S-71-4	J 38	L12S, 26W	754'	June 14 - June 17, 1971
S-71-5	J 7	L11S, 40W	702'	June 18 - June 22, 1971
S-71-6	Jay 10	L19S, 55W	448'	June 23 - June 24, 1971
S-71-7	Cu 6	L58S, 21W	774'	June 27 - July 2, 1971
S-71-8	Cu 1	L43S, 41W	758'	July 3 - July 8, 1971
S-71-9	Cu 4	L58+50S, 36W	702'	July 9 - July 12, 1971
S-71-10	J 5	L8N, 40W	700'	July 13 - July 24, 1971
S-71-11	J 4	L22N, 54W	616'	July 25 - Aug. 3, 1971
S-71-12	Jay 104 Fr	L8N, 58W	<u>748'</u>	Aug. 4 - Aug. 10, 1971
Total			<u>8,569'</u>	

Geological Mapping

Detailed geological mapping on a scale of 400 feet to one inch was conducted over the 96 claim group. The major portion of the mapping was done by P.M. McAndless, geologist, between June 1st and July 15th, 1971. Outcrop control was governed by a topographic base map, scale: 400 feet to one inch with 20 foot contours [prepared from Lockwood airphotos]. Geological data was analysed by L.W. Saleken and P.M. McAndless. The location of outcrops and major geological features are illustrated on the Geology map [Figure 2]. The detailed structural data and analysis appear on the Structure map [Figure 3].

Geochemical Survey

A copper geochemical soil survey was conducted over claims J 1-7, J 33, J 37 Fr, J 38 Fr and Jay 104 Fr. Soil samples were taken at 100 foot intervals along a chain and compass grid. A total of 279 samples were collected from the B horizon. The samples were analyzed by Bondar-Clegg & Company for copper using the hot aqua regia-atomic absorption method. The results from the analysis are recorded on the Copper Soil Geochemistry map [Figure 4].

REGIONAL GEOLOGICAL SETTING

The Highland Valley is situated in south-central British Columbia and is underlain by the Guichon Creek batholith. The batholith forms a roughly ovate body with an axis striking slightly west of north. It covers an area of 400 square miles and is bounded on the west and east by major north trending faults.

The batholith is a semi-concordant composite intrusive pluton consisting of ten phases ranging in age from Upper Triassic to Middle Jurassic. The major phases show a nearly concentric arrangement and, in general, decrease in age inwards [Northcote, 1969, pp. 21]. The batholith is comprised of a quartz monzonite core and grades outward towards a dioritic margin. All phases of the batholith are cross-cut by late magmatic dykes and dyke swarms. Faults, shear zones and breccias are local tectonic features.

Deuteric and hydrothermal alteration is common throughout the batholith. Mineralization associated with the copper sulphide ore deposits include chalcopyrite, bornite and molybdenite. The ore deposits are structurally controlled.

GEOLOGY OF THE SHEBA PROPERTY

LITHOLOGY

General

The Sheba property is underlain by three general rock types: intermediate intrusives, dykes and breccias. They were distinguished by mineralogical, compositional and textural features. Their relative ages were established by contact relationships to each other. The classification and description of these rock types is based on Northcote [1969] and McMillan [1971].

Table II: Classification and Relative Ages of Rock Types

<u>Relatively Old</u>	<u>Intermediate Age</u>	<u>Relatively Young</u>
Highland Valley Phase Chataway variety *	Bethsaida/Bethlehem Contact Phase ** Medium-coarse grained variety Fine grained. foliated variety	Sheba Porphyry Pink Porphyry Aplites Breccias

Rock DescriptionsIntermediate Intrusives

The intermediate intrusives consist of fine to coarse grained granodiorites and quartz diorites. The unit is subdivided into the Bethsaida/Bethlehem Contact Phase and the Highland Valley Phase, Chataway variety. The Contact Phase is the predominant rock type on the property and is relatively younger than the Chataway variety.

* Northcote, 1969

** This phase has been recognized and mapped by McMillan, 1971.

Bethsaida/Bethlehem Contact Phase

This rock type comprises at least three-quarters of the outcrops on the property. The phase is separated texturally into a medium-coarse grained variety and a fine grained, foliated variety of which the former is the most abundant. The latter forms an irregular-shaped transitional zone separating the medium-coarse grained Contact Phase from the Chataway variety. This fine grained transitional zone is particularly evident in the north-central portion of the property.

Medium-coarse grained variety is a light green-grey, pink, medium to coarse grained granodiorite. The rock type is characterized by various-sized, unevenly distributed mafic minerals.

Quartz occurs as various-sized, anhedral and rounded, open interstitial grains. Irregular-shaped orthoclase is interstitially related to quartz. A wide range in size of biotite and hornblende occur as subhedral and anhedral plates and laths. Hornblende is frequently poikilitic. Biotite is commonly greater than hornblende in occurrence. Accessory minerals include sphene, apatite and magnetite. Approximate percentage modes are: quartz, 8-12; orthoclase, 5-10; plagioclase, greater than 60; mafics, 6-10; accessory minerals, 1.

Fine grained, foliated variety is a grey, green, relatively fine grained granodiorite. The rock is characterized by a weakly foliated fabric pronounced by evenly-spaced, uniformly-sized mafic minerals.

Quartz occurs as small anhedral, closed interstitial grains. Orthoclase is interstitially related to quartz. Biotite and hornblende occur as subhedral and anhedral, small

plates and laths that are relatively equal in occurrence. Magnetite is the predominant accessory mineral. Approximate percentage modes are: quartz, 8-12; orthoclase, 5-10; plagioclase, greater than 60; mafics, 10-15; accessories, 1.

Chataway Variety

The Chataway variety occurs in the northeastern section of the property. The rock type is mottled, light cream-green, light grey and pink and is medium to coarse grained with well-separated evenly disseminated, euhedral to subhedral mafic grains. A marked poikilitic texture of hornblende is characteristic of this variety [Northcote, 1969].

Quartz occurs as anhedral grains and exhibits a closed interstitial texture to plagioclase. Orthoclase occurs as unevenly distributed, interstitial masses. Mafic minerals have distinct outlines and are evenly distributed throughout the matrix. Hornblende is commonly in excess of biotite. Magnetite is a common accessory mineral. Approximate percentage modes are: quartz, 13-20; orthoclase, 5-20; plagioclase, 45-60; mafics 10-15; accessories, 1.

Dykes

The property is traversed by individual and swarm-like bodies of quartz feldspar porphyries as well as intrusive and aplitic dykes. The prominent feature of the dyke system is a centrally located, north-northeast trending, coarse grained, quartz feldspar porphyry.

Quartz Feldspar Porphyries

The quartz feldspar porphyries are subdivided texturally and mineralogically into two distinct types: a grey and a pink quartz feldspar porphyry.

Grey Quartz Feldspar Porphyry

This porphyry referred to as the Sheba porphyry is the major dyke-feature on the property. It is a medium to coarse grained rock, characterized by large euhedral and subhedral quartz eyes and plagioclase laths unevenly distributed in a fine grained light grey matrix. Hornblende and biotite are minor constituents. A narrow chilled margin is often associated with the dyke. The Sheba porphyry is similar in texture and composition to the Gnawed Mountain porphyry located to the south of the property [see Northcote, 1969].

The main body of the Sheba porphyry is located approximately in the center of the property and generally trends N10E to N30E @ -65° NW. The southern extent of the main body appears to be truncated and offset to N40W @ -65° NE. Other poorly exposed occurrences to the east of the main body trend N60E @ -80° SE and N30E @ -65° NW. The dykes range up to 50 feet in width.

Pink Quartz Feldspar Porphyry

The pink quartz feldspar porphyry occurs as irregular dyke swarms of varying widths throughout the property. It is a medium grained rock, characterized by rounded subhedral quartz grains and stubby plagioclase laths enclosed in a fine grained pink orthoclase-rich matrix. The phenocrysts are generally uniform and evenly distributed. Mafic content is minor with biotite exceeding hornblende. Dyke contacts are gradational.

The porphyry frequently occurs adjacent to the main Sheba porphyry body and is often inter-related with aplites.

Aplites and Intrusive Dykes

Aplites and intrusive dykes are minor features and thus were not recorded on Figure 2. The notation "Areas of numerous dykes" designates their general area of occurrence and association with other dykes.

Breccias

Breccias are local features commonly associated with faults and porphyry dykes. They are small, discontinuous zones that seldom exceed 50 feet in length and a few feet in width. Three breccias were recognized and distinguished according to color and field occurrence.

Green Breccia

The green breccia is restricted to the northern section of the property and is locally associated with the main Sheba porphyry in fault zones. It is comprised of angular and subrounded, various-sized intrusive rock fragments embedded in a fine grained quartzo-feldspathic, sericite, light green matrix. Minor matrix minerals include epidote, chlorite, carbonate and magnetite.

Black Breccia

This breccia is texturally similar to the green breccia although magnetite is a major matrix constituent in this rock. The black breccia occurs in two locales in the southern portion of the property as indicated in Figure 2. In both cases, the breccia is associated with fault zones and related quartz veins.

Vein Breccia

The vein breccia occurs in a few concentrated areas as indicated on Figure 2. The breccia is primarily associated with faulting. It is comprised of a zone of numerous, undulating, sub-parallel epidote-chlorite-quartz veinlets which form a discontinuous fragmental mass.

STRUCTURE

Structural features include faults, shear zones, joints, fractures, breccias, dykes and veins. Faults and shear zones are characterized by gullies, swamps and lakes. In general, all structural features are reflected by joints.

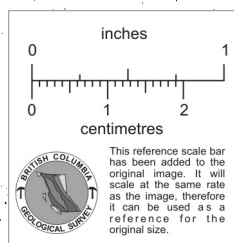
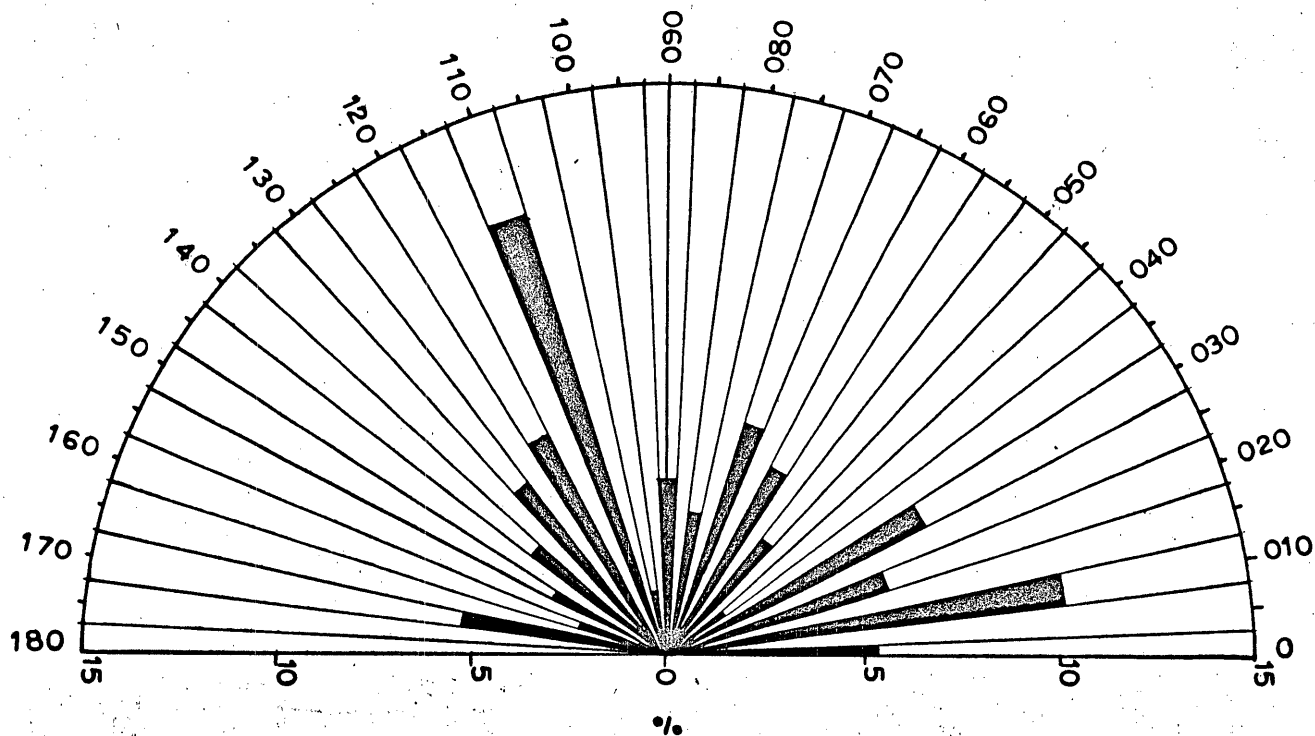
A detailed structural analysis of the measured joints was conducted and the results of the study are discussed below:

- a] Figure 5 illustrates the direction of surface joints and their frequency of occurrence on the property. Most frequently occurring trends are: N20W [110°], N10E [010°] and N30E [030°] respectively.
- b] Figure 6 is an equal-area lower hemisphere projection of 770 joints illustrating areas of attitude concentrations. The most predominant attitudes are: N10E [010°] @ -65° to -70° NW and -80° to -90° NW, N20W [110°] @ -80° to -90° NE, N30E [030°] @ -75° to 80° NW, N60E [060°] @ -85° to -90° NW, and N70E [070°] @ -80° NW and N90E [090°] @ 85°N, respectively.

① 010 ③ 030 ⑤ 070
 ② 110 ④ 060 ⑥ 090

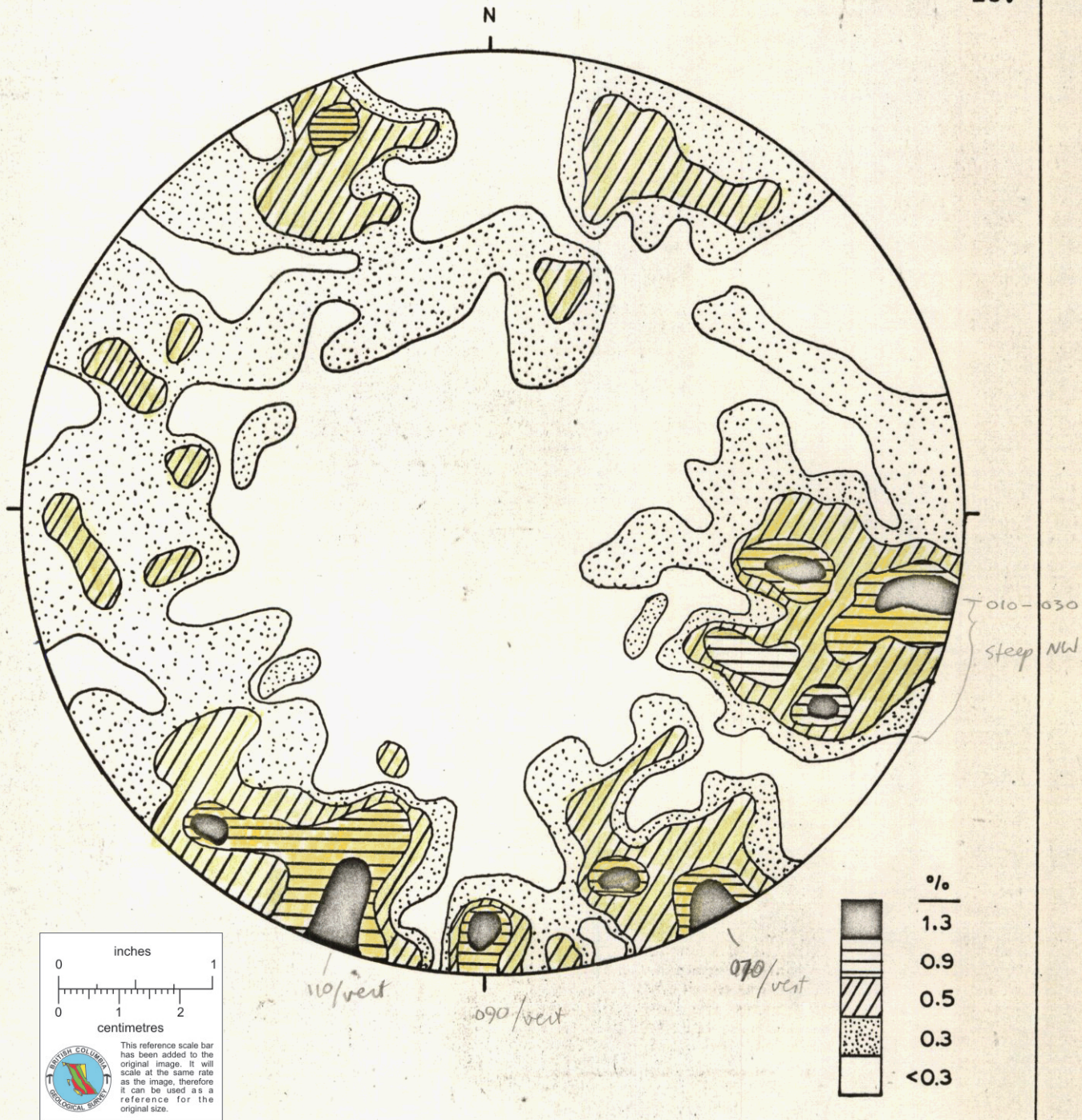
- c] Figure 7 illustrates the frequency of joint dips in drill core. Most frequent dips are : -60° , -70° , -80° and -50° respectively.
- d] Figures 8a, b, and c are an equal area lower hemisphere projection of mineralized joints illustrating areas of attitude concentrations. The most prominent attitudes are:

Chalcopyrite: N10E [010 $^{\circ}$] @ -80° to -90° NW
Bornite: N10E [010 $^{\circ}$] @ -60° to -65° NW
Molybdenite: N30E [030 $^{\circ}$] @ -65° to -75° NW



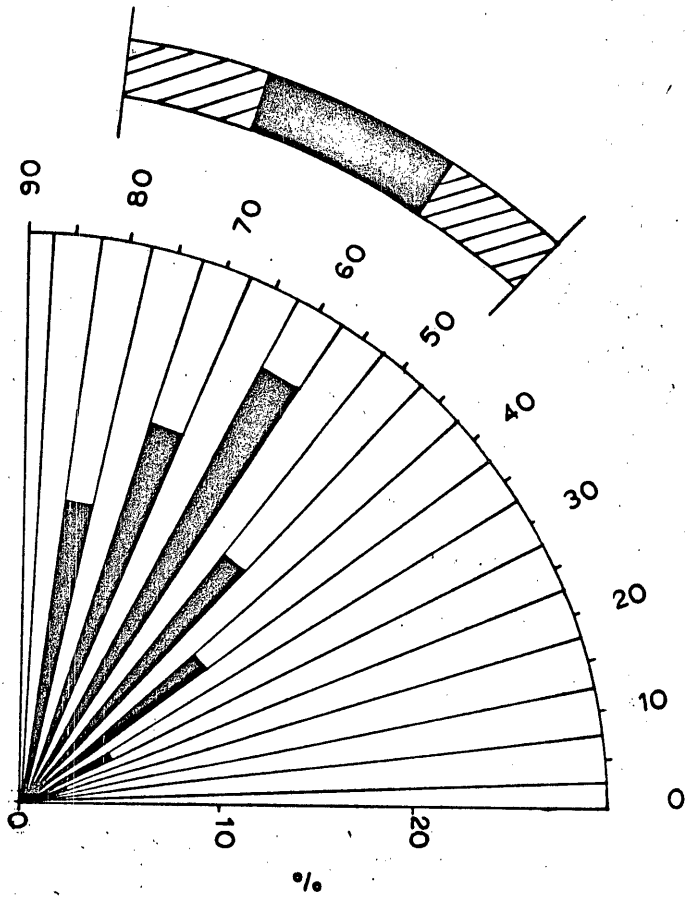
DIRECTION OF SURFACE JOINTS,
PERCENT FREQUENCY DIAGRAM
[770 joints]

Fig. 5

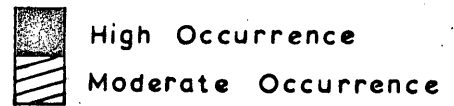
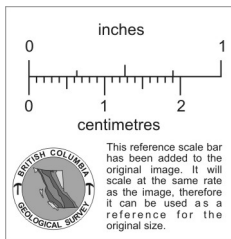


EQUAL-AREA LOWER HEMISPHERE PROJECTION OF JOINTS
[770 poles]

Fig. 6

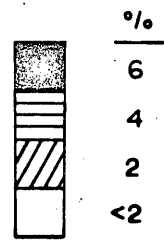
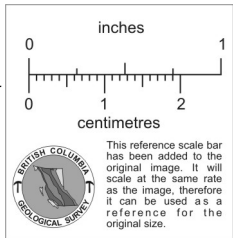
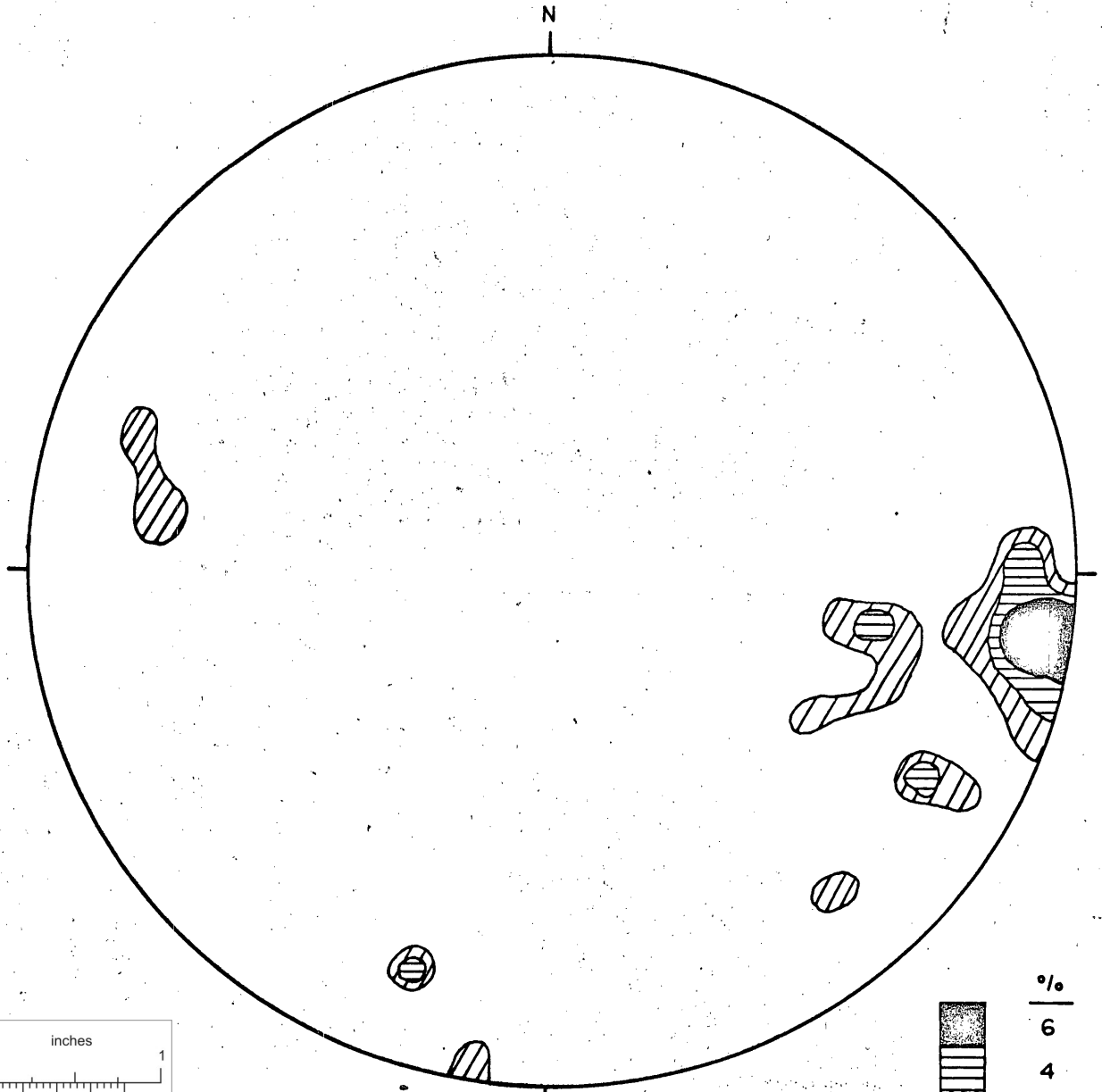


TOTAL SULPHIDES



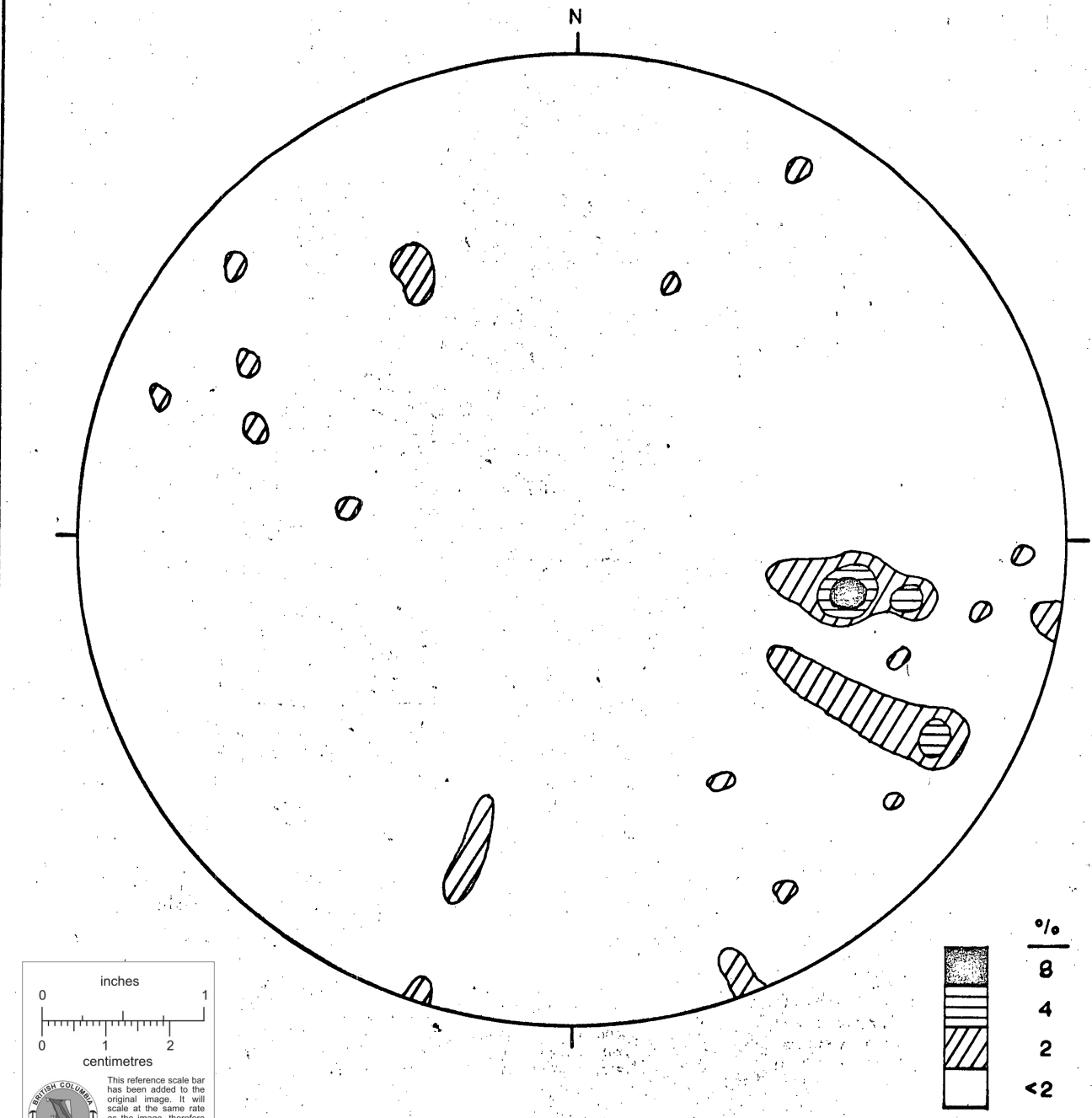
DIP OF DRILL HOLE JOINTS, PERCENT FREQUENCY DIAGRAM

Fig. 7



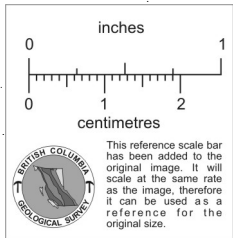
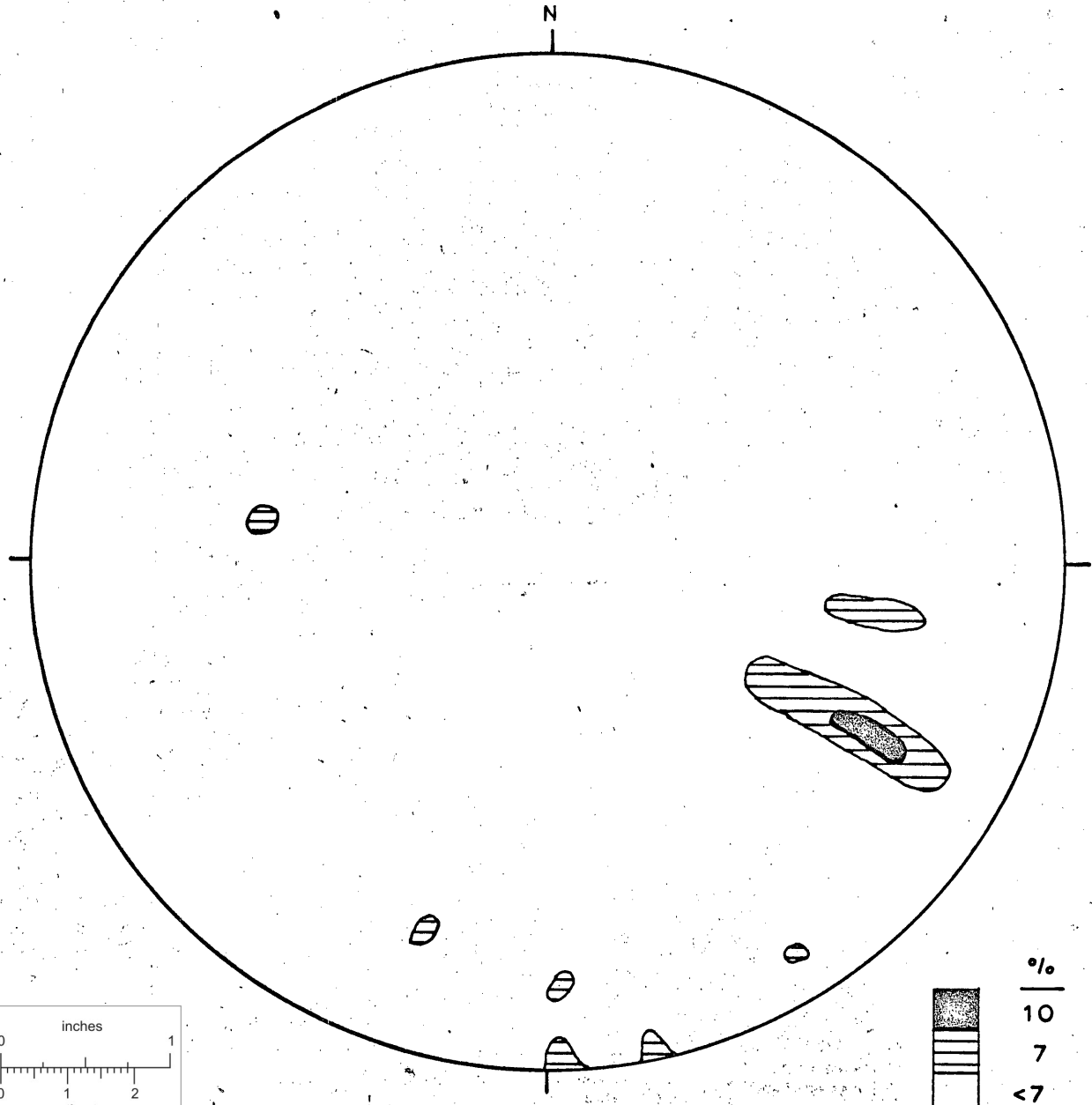
EQUAL-AREA LOWER HEMISPHERE PROJECTION
OF JOINTS CONTAINING CHALCOPYRITE
[145 poles]

Fig. 8a



EQUAL-AREA LOWER HEMISPHERE PROJECTION
OF JOINTS CONTAINING BORNITE
[44 poles]

Fig. 8b



EQUAL-AREA LOWER HEMISPHERE PROJECTION
OF JOINTS CONTAINING MOLYBDENITE
[13 poles]

Fig. 8c

ALTERATION

Alteration minerals that occur on the property include: chlorite, epidote, sericite, quartz, albite, carbonates, hematite, pyrite, tourmaline, clay minerals, zeolites, limonite, orthoclase, gypsum, ferrimolybdate and malachite.

Four major types of alteration that have been recognized are:

Weathering
Propylitic
Argillic
Quartz-sericite

Weathering

Surface weathering is restricted to intensely fractured areas. Minerals commonly associated with this type of alteration include limonite and clay. In areas of mineralization, malachite and ferrimolybdate frequently occur.

Propylitic

Weak to intense propylitic alteration is irregularly distributed throughout the property. It is best developed in areas of concentrated fracturing and shearing. Characteristic features of this alteration are:

- a] Replacement of mafic minerals by chlorite and epidote.
- b] Replacement of plagioclase by a fine grained sericite that gives the rock a greenish, waxy appearance.

Other minerals commonly associated with this alteration are carbonate, clay minerals, and silica.

Argillic

Argillic alteration is locally extreme and is confined to areas of shearing and quartz veining. This alteration is characterized by kaolinite and sericite that imparts a white-green color and a bleached, often chalky, appearance to the rock. Hematite is commonly associated with this alteration.

Quartz-sericite

Quartz-sericite alteration is characterized by a light green, flaky, coarse grained sericite [muscovite]. The sericite occurs as envelopes around quartz veins and as coarse grained plates disseminated in shear zones. Epidote, chlorite, carbonate, gypsum, clay minerals and hematite are common associates. Sulphides are best developed with this alteration.

Minor potassic alteration occurs and is restricted to areas of intense veining. Weak biotitization has been noted adjacent to veinlets.

MINERALIZATION

Mineralization consists of chalcopyrite, bornite and molybdenite along with minor pyrite. The sulphides occur in all rock types and are associated with shear zones, fractures and veins. Disseminated sulphides are almost non-existent.

Mineralization on the property is generally weak although there are several zones of interesting sulphide concentrations [Figure 3]. These zones are characterized by an extensive area of intense fracturing and veining.

Tower Zone [located 1971]

The Tower Zone is located north of the campsite. The main features of the zone are:

1. Weak bornite with minor chalcopyrite.
2. Strong malachite associated with flaky sericite occurring in 3" to 6" moderately dipping shear zones.

The overall extent of the zone is not clearly defined due to overburden.

Camp Zone [located 1971]

The Camp Zone is an ill-defined area occurring in a canyon, northwest and adjacent to the campsite. It is an area of complex structure. The main features of this zone are:

1. Weak chalcopyrite and bornite.
2. Weak malachite occurring with the Green breccia.

The zone appears to crudely parallel the Sheba porphyry located to the west and is in line with the Tower Zone to the North.

Den Zone [located 1971]

The Den Zone is located west of the camp and includes drill hole S-71-10. The zone is characterized by:

1. Weak gossan.
2. Chalcopyrite with minor pyrite.

An extensive oxide zone with malachite was encountered in the drill core.

Trench Zone

The Trench Zone is located south of Lorne Lake and extends towards Gnawed Mountain. The main attributes of the zone are:

1. Strong gossan with argillic alteration.
2. Chalcopyrite, bornite and molybdenite with minor pyrite and specularite.

Strong mineralization is associated with quartz-sericite veins and the Black breccia but, in general, surface and drill core mineralization is weak. The main Sheba porphyry traverses the zone.

Jay 101 Showing

The showing is one of the original mineral discoveries on the property. Bornite and chalcopyrite associated with flaky sericite occur in a shear zone. Malachite staining is strong on surface.

DRILL HOLE SUMMARY

Weak mineralization was encountered in all twelve drill holes. Interesting mineralized sections were located in holes S-71-3, S-71-8, S-71-9, S-71-10, S-71-11 and S-71-12. The best mineralization occurs in hole S-71-11.

In drill hole S-71-3, molybdenite is the primary sulphide occurring with quartz veins and shear zones in areas of intense argillic alteration. A section from -90 to -100 feet assayed 0.21% molybdenum. Three separate 10 foot sections assaying 0.25% copper with negligible molybdenum were encountered in hole S-71-8. All three occurrences were with quartz veinlets and fractures containing

bornite and chalcopyrite. The main feature in hole S-71-9 is a 120 foot section [-290 to -410 feet] of weak copper mineralization [averaging 0.10%]. Sulphides occur with poorly developed quartz-sericite alteration along veins and fractures. Drill hole S-71-10 is typified by a deep oxide zone of limonite and malachite. A feature of this hole is a 210 foot section [-290 to -500 feet] of weak copper [averaging 0.10%] occurring with moderate propylitic alteration and strong fracturing.

The best mineralized section is located in hole S-71-11; 50 feet [-450 to -500 feet] of 0.77% copper and 0.11 oz/ton silver. Bornite and minor chalcopyrite with associated quartz-sericite alteration occurs in a shear zone. A similar section in hole S-71-12 from -670 to -690 feet of 0.45% copper was encountered.

RESULTS OF THE COPPER GEOCHEMICAL SURVEY

From the results of the copper analysis, the following were statistically determined:

Background	-	0 - 100 ppm
Threshold	-	150 ppm
Low order anomaly	-	200 - 400 ppm
High order anomaly	-	greater than 400 ppm

The anomalies are located on Figure 4. The shape of the anomalies conform to the north-south trending fabric of the property suggesting structural and topographic controls. Small and discontinuous low order anomalies reflect areas of weak surface mineralization such as the Den Zone. The high order anomalies A, B and C, suggest areas of stronger subsurface mineralization. Anomaly A appears to be a northerly extension of the Den Zone.

CONCLUSIONS

The geological mapping revealed important structural trends exemplified by the north-northeast striking Sheba porphyry. Trends, N10°E to N30°E with steep NW dips, often contained sulphide mineralization.

Five zones of weak mineralization that were recognized on the property are: Tower, Camp, Den, Trench and the Jay 101 Showing. These zones are characterized by an extensive area of intense local fracturing and veining with related chalcopyrite, bornite and minor molybdenite. Prominent attitudes for sulphides that occur with these zones are: N10°E @ -80° to -90° NW, chalcopyrite; N10°E @ -60° to 65° NW, bornite; and N30°E @ -65 to 75° NW, molybdenite. The most important alteration associated with sulphide mineralization is quartz-sericite.

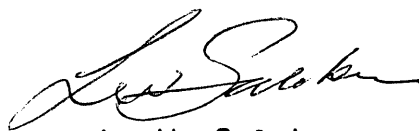
The geochemical survey located several low and high order copper anomalies that correspond to areas of weak surface mineralization, such as the Den Zone.

The diamond drilling established four holes containing significant intersections of mineralization. Hole S-71-9 located in the Trench Zone contained a 110 foot section of weak copper values associated with quartz-sericite alteration. Hole S-71-10 substantiated that the low order copper anomalies of the Den Zone are associated with weak copper mineralization at depth. Holes S-71-11 and S-71-12 intersected strong copper values associated with a shear zone containing quartz-sericite alteration. The alignment of S-71-11, S-71-12 and Jay 101 showing suggests a north-east trend that closely parallels important structural trends on the property.

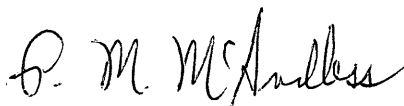
In conclusion, this summer's work was encouraging and established areas of potential economic copper mineralization. An area encompassed by and north of hole S-71-11, Den Zone, Camp Zone and Tower Zone is very favourable. Another area of lesser importance is in the southern portion of the Trench Zone in the general vicinity of hole S-71-9. Further work is recommended for these areas.

Respectfully submitted,

L. W. SALEKEN & ASSOCIATES LTD.

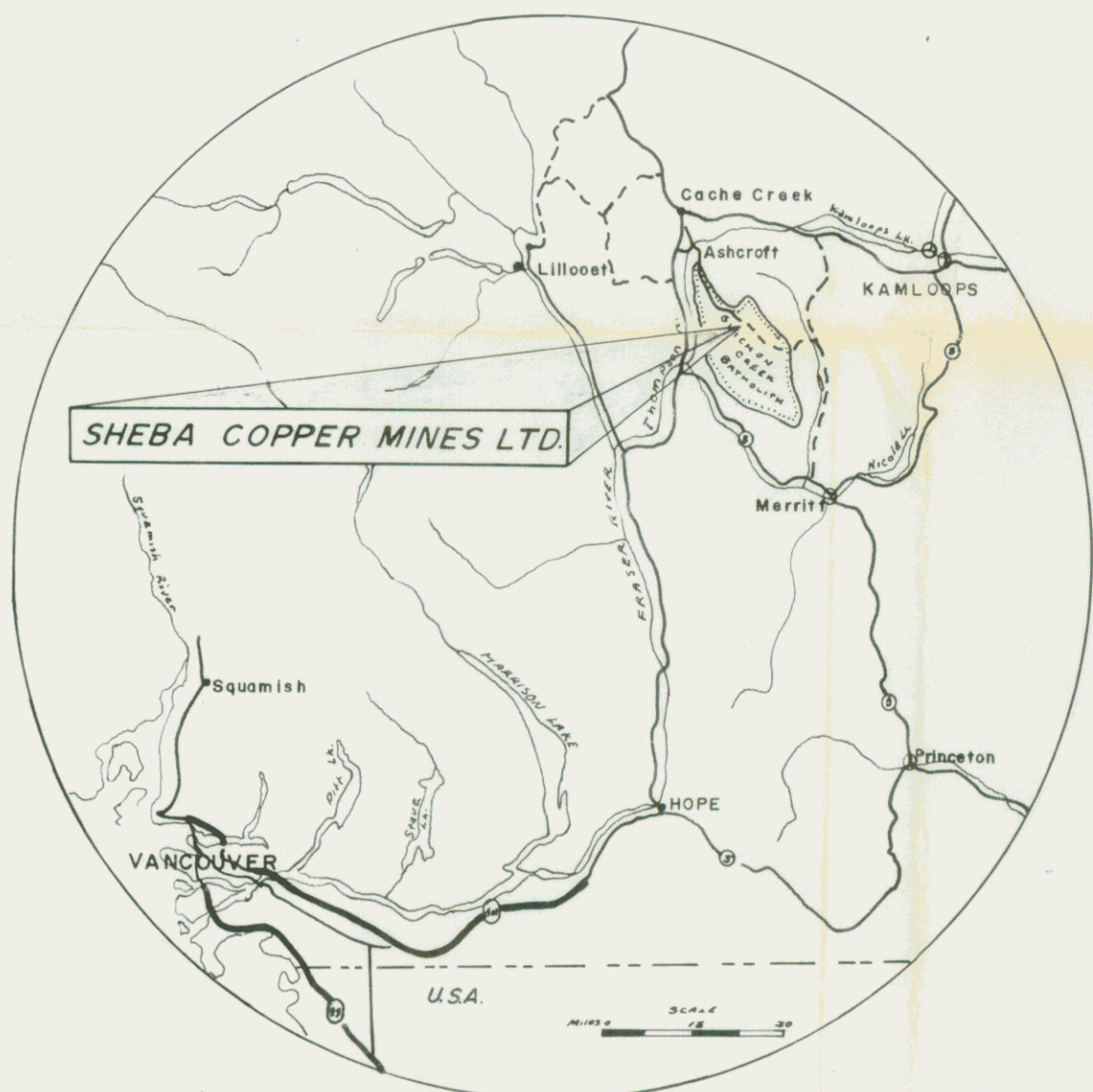
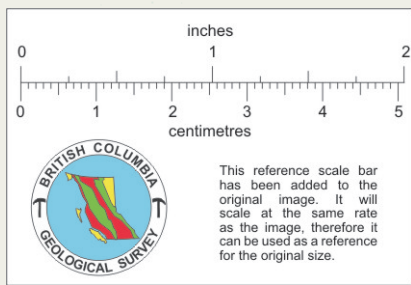
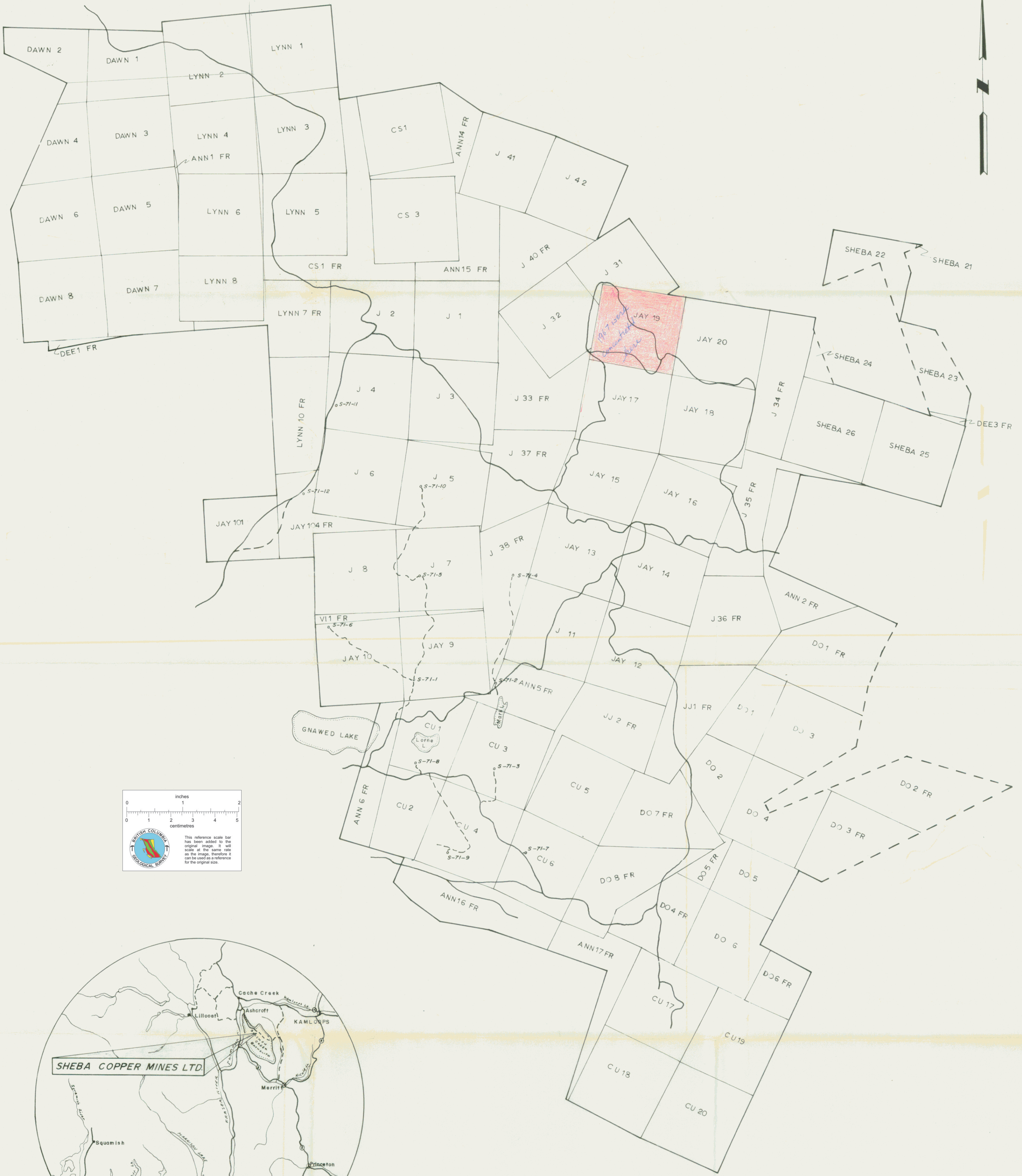


L. W. Saleken



P. M. McAndless

Fig 124



LEGEND

- ⊙ S-71-1 Drill Hole Location
- Roads

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PROPERTY LOCATION MAP



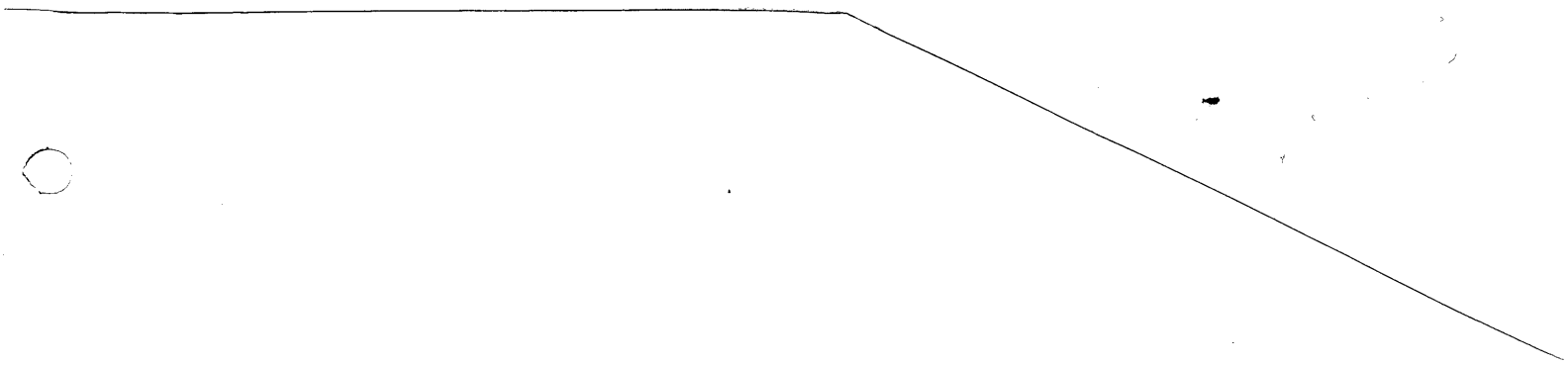
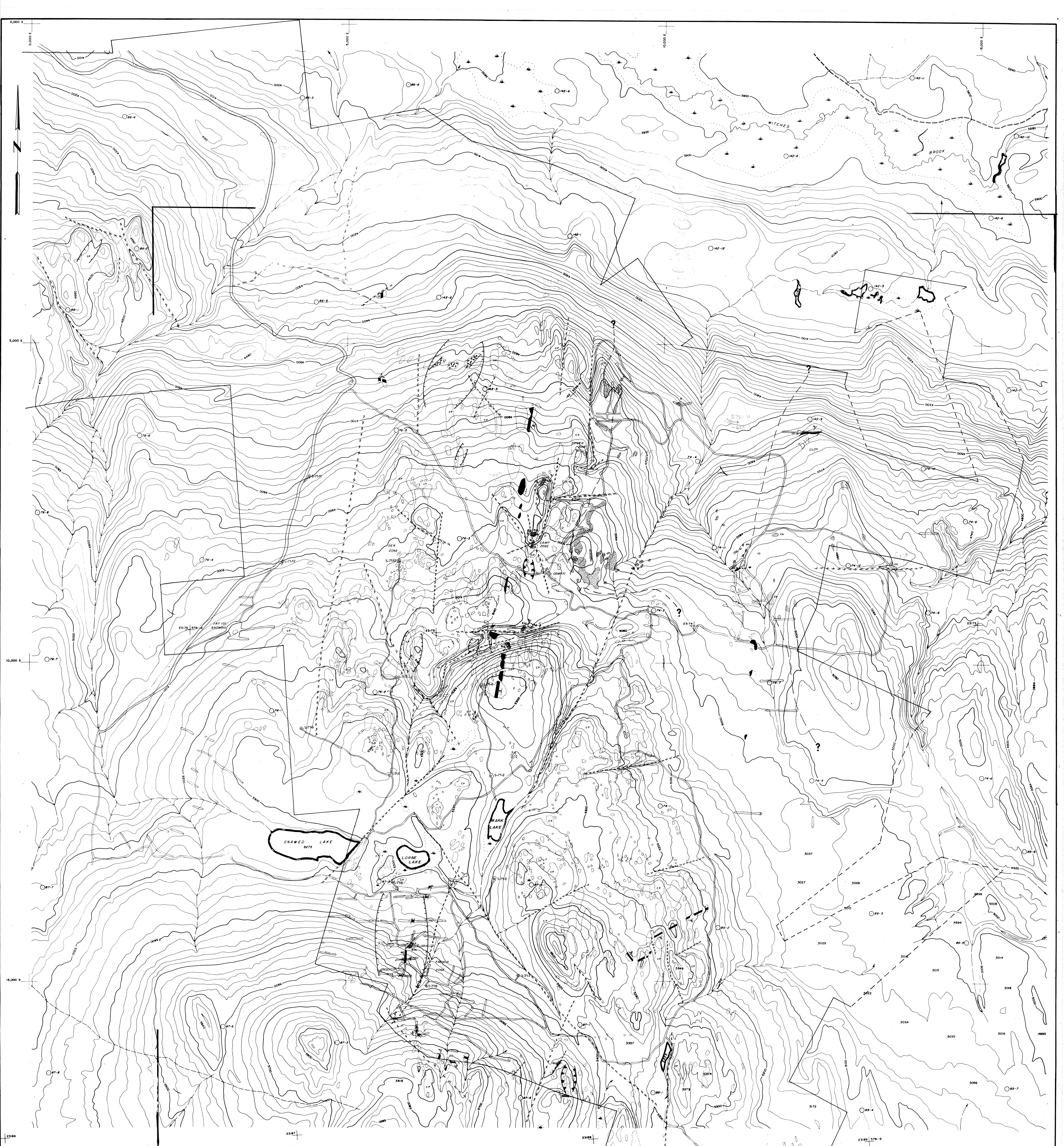


FIG. 2



LEGEND

INTERMEDIATE INTRUSIVES (Granodiorite, Quartz Diorite)

CONTACT PHASE (Bethesda/Bethlehem)

CP medium to coarse grained variety

CG the grained, foliated variety

CHATAWAY VARIETY

CH Grey quartz feldspar porphyry (Sheba Porphyry)

CP Pink quartz feldspar porphyry, associated apatites

Area with numerous dykes

BRECCIAS

Green breccia (Bsg)

Black breccia (Bsb)

Vein breccia area

Outcrop

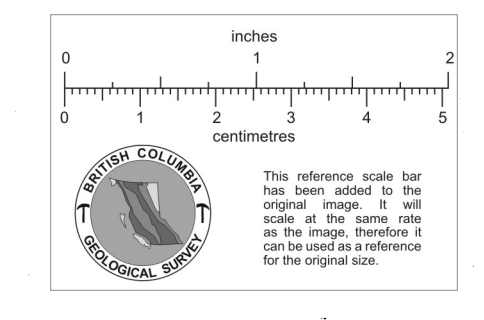
Contact, inferred

Fault, inferred

Trench

Roads

*S-71-1 Drill Hole Locations

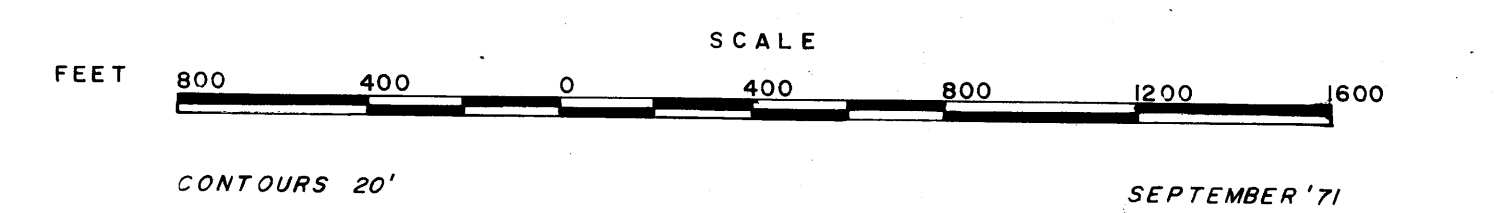


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GEOLOGY

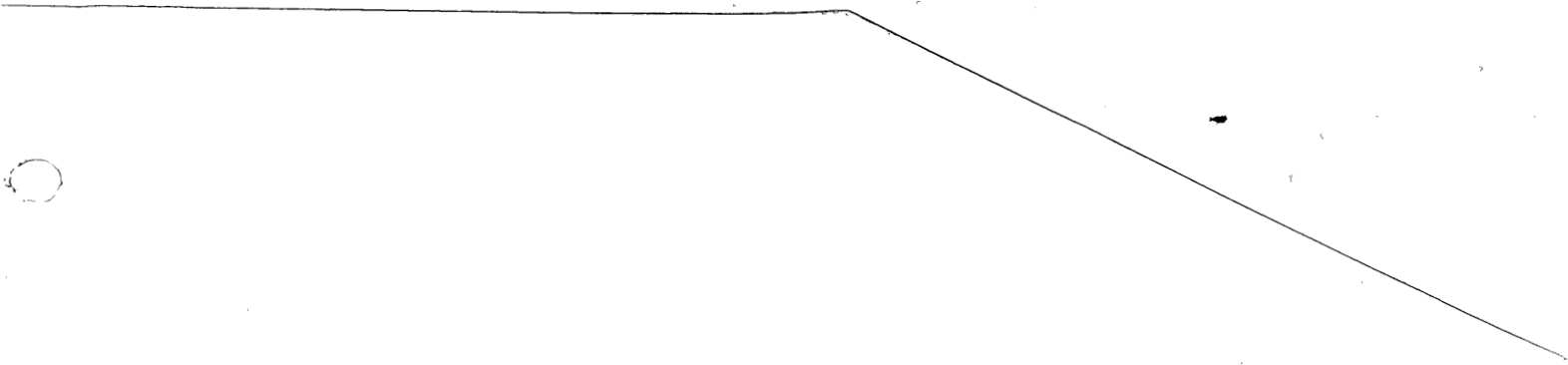
GEOLOGY BY: H.M. CANDLESS & L.W. SALEKEN

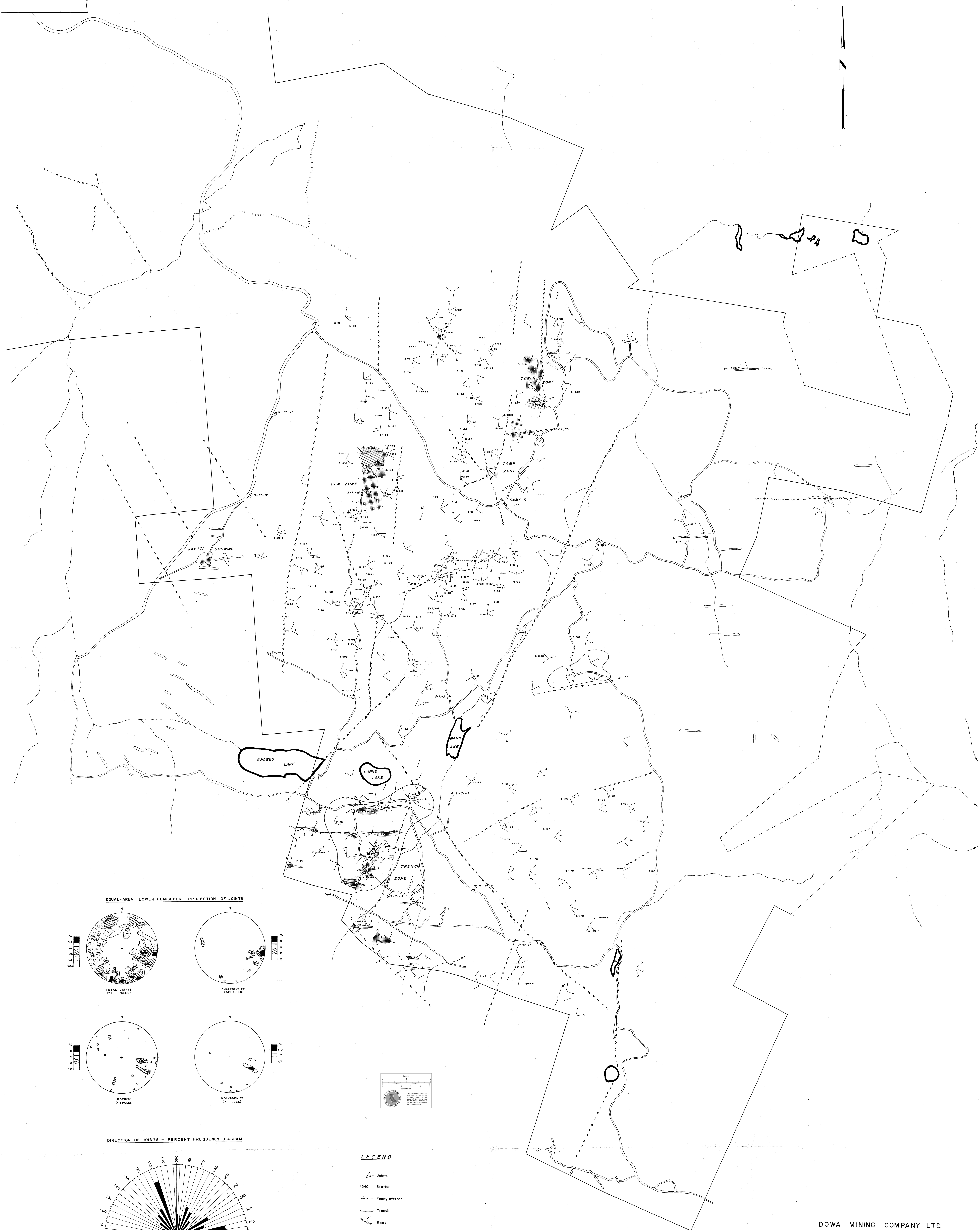
Fig 2



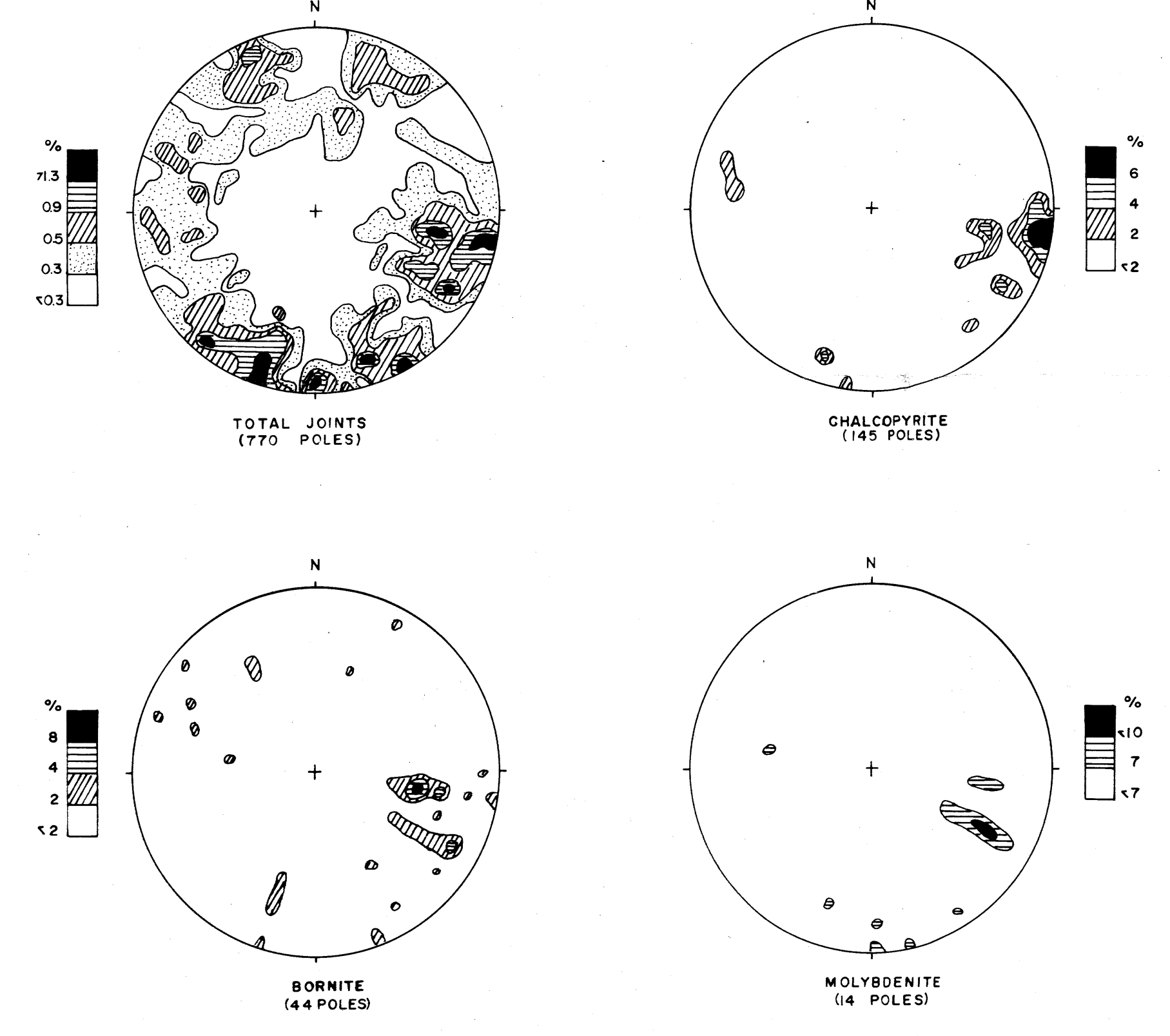
CONTOURS 20'

SEPTEMBER 71

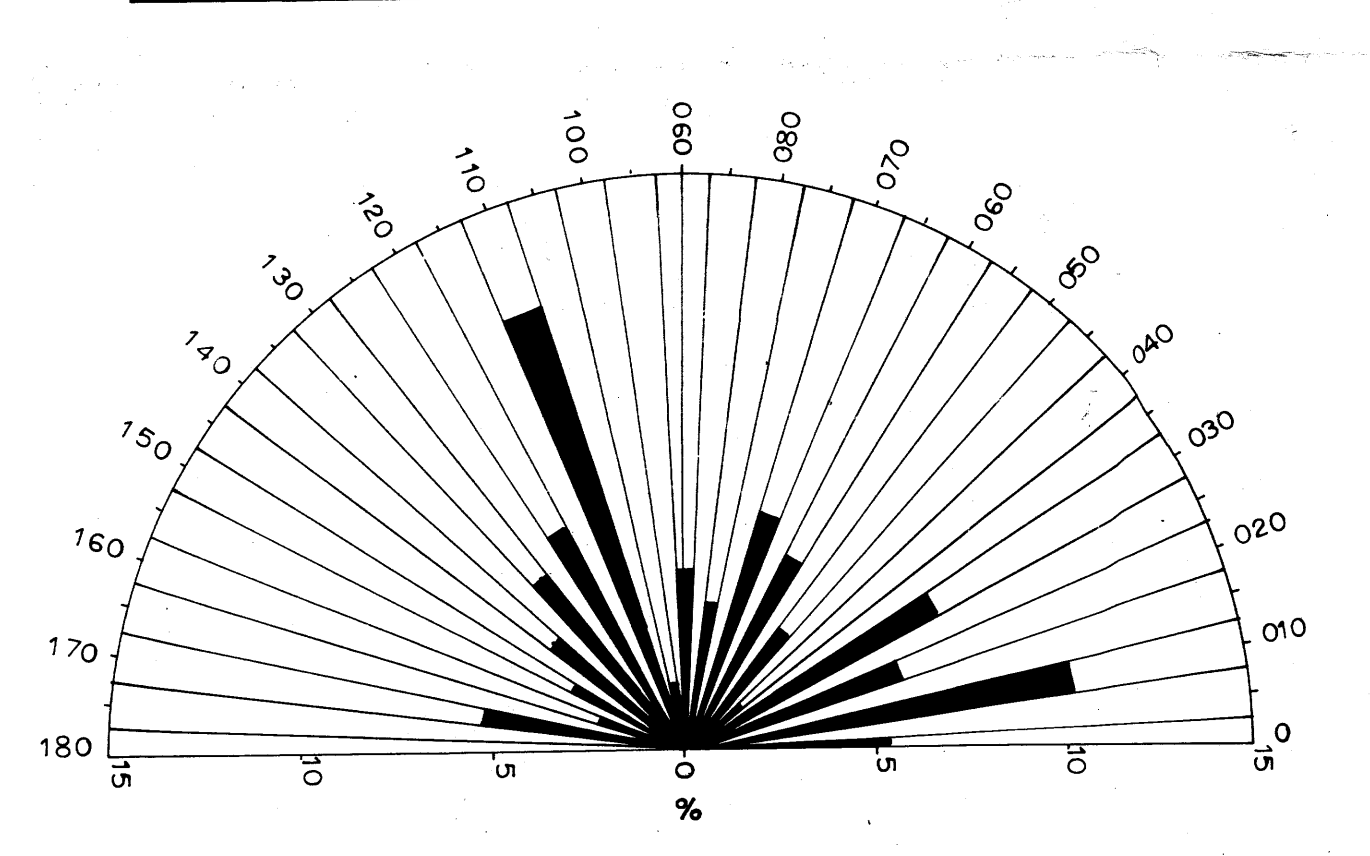




EQUAL-AREA LOWER HEMISPHERE PROJECTION OF JOINTS



DIRECTION OF JOINTS - PERCENT FREQUENCY DIAGRAM



LEGEND

- ↘ Joints
- *S10 Station
- Fault, inferred
- Trench
- Road
- Area of surface mineralization
- Gossan Area
- + S-74 Drill Hole Location

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STRUCTURE

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