GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BE CLAIMS

BEMA
Industries Ltd.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $ 16,600.44

Resident Geologist or
Resident Mining Engineer

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

B. R. BAXTER
Supervising Mining Recorder
for Commissioner of Yukon Territory

INDIAN and
NORTHERN AFFAIRS

TRANSMITTAL FORM

M R File No ______

S. M. R. File No ______

Date Fwd. 8/4/81

FROM: Mining Recorder at ...... Mayo ....

TO: Supervising Mining Recorder at Whitehorse, Y.T.

[Stamp: Office of The Supervising ... APR 10 1981 Yukon Territory]

FOR ACTION ARE:

☐ NEW APPL'N for PLACER LEASE to PROSPECT: Name:

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

☐ AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name Lease No. ....

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

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

☐ DIAMOND DRILL LOGS:
Claims: Claim sheet no.

☑ QUARTZ ASSESSMENT REPORT
Claims: "BE" Claim sheet no. 105-M-14

Type of report: GEO. GEOCHEM

Submitted by: BEMA INDUSTRIES LTD.

Cls. work performed on:

$ Req. for ren. application $16,600.44

____
Signature

REPLY ACTION Date Ret

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Signature

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BE CLAIMS

Mayo Mining Division

N.T.S. - 105 M/14

Centered on 63°57' Latitude, 135°02' Longitude

Owned by:

CANADA TUNGSTEN MINING CORPORATION LIMITED
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February, 1981

Field work conducted August 6-23, 1980

090782

BEMA
Industries Ltd.

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SUMMARY

The BE property consists of 283 quartz mineral claims and 38 fractional mineral claims which are owned by Canada Tungsten Mining Corporation Limited. The claims are located 13 kilometres east of Keno Hill townsite and extend over a north-south length of 13 kilometres.

During the period of August 6 to August 23, 1980 a program of reconnaissance geological mapping, prospecting and reconnaissance geochemical sampling was conducted over the central and southern portions of the claim group.

Four vein structures were outlined by the reconnaissance survey on the BE claims and are given below:

1) Located 800 metres northeast of Caribou Hill. A 1.0 to 1.5 metre wide vein breccia with limonite-manganese oxide - siderite; no anomalous rock geochemistry.

2) Located 500 metres south of Caribou Hill. Manganese-limonite breccia vein float with rock geochemical values up to 670 ppm lead.

3) Located 900 metres north of the headwater lake of Lightning Creek. A 1 to 2 metre wide fracture zone with several quartz-limonite-pyrite veinlets; rock geochemical sample contains 5,900 ppm zinc, 21 ppm silver and 2,020 ppm lead.

4) Located 1500 metres south of the mouth of McNeill Gulch. A 1 metre wide fracture zone with several quartz-pyrite-limonite veinlets; rock geochemical sample contains 1,500 ppm zinc, 10.2 ppm silver, 143 ppm lead, 180 ppb gold.

In addition, known gold-bearing quartz-arsenopyrite-scorodite veins occur just south of the BE claims at the head of McNeill Gulch.

No significant quartz-arsenopyrite-scorodite veins were discovered within the BE claims as a result of the 1980 reconnaissance mapping and prospecting.

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BE CLAIMS

1.0 INTRODUCTION

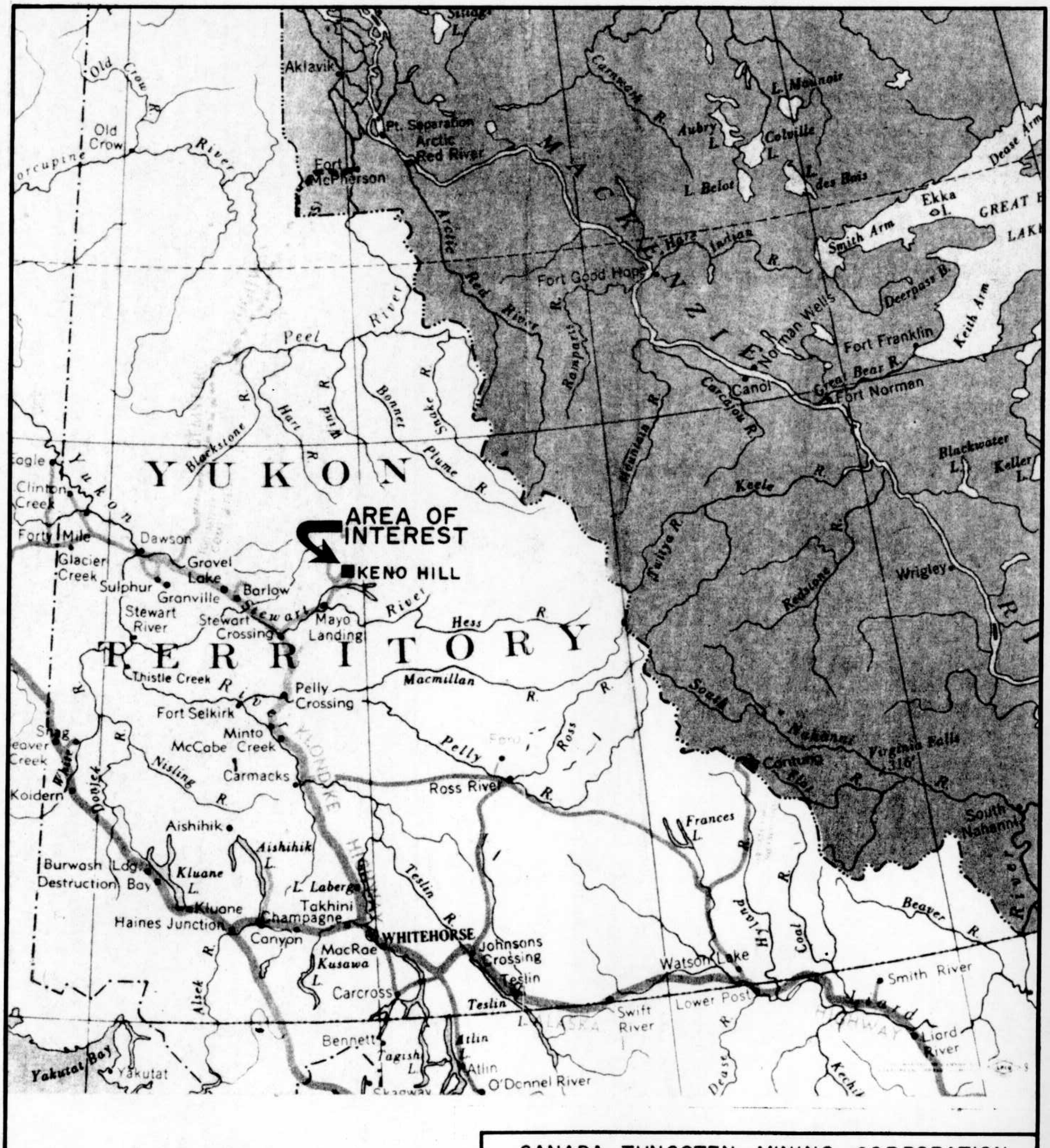
The BE claim group consists of 281 quartz mineral claims and 38 fractional mineral claims which are owned by Canada Tungsten Mining Corporation Limited. Bema Industries Ltd. was contracted by Canada Tungsten Mining Corporation Limited to carry out a geological exploration program on these claims during the 1980 field season.

Work done in 1980 consisted of reconnaissance geological mapping at 1:5,000 scale, prospecting and reconnaissance geochemical survey of the central and southern portions of the claims. The claims that were covered in the above survey include: BE 1 to 155 and BE 178 to 188.

1.1 LOCATION AND ACCESS

The northern BE claim group is located in the Ladue and Gambler Lake Valley and adjoin the ZAP claim group on the western boundary. The eastern BE claims are situated on the eastern slopes of Caribou Hill and Keno Hill. The southern portion of the BE claims straddle the valleys of McNeill and McMillan Gulch.

Access to the central BE claims is by 3 kilometres of good gravel road and 7 kilometres of rough 4x4 road east of Keno Hill townsite along Lightning Creek. There is no road access to the northern and southern portions of the BE claims and they are reached by helicopter or fixed wing aircraft.



CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y·T·

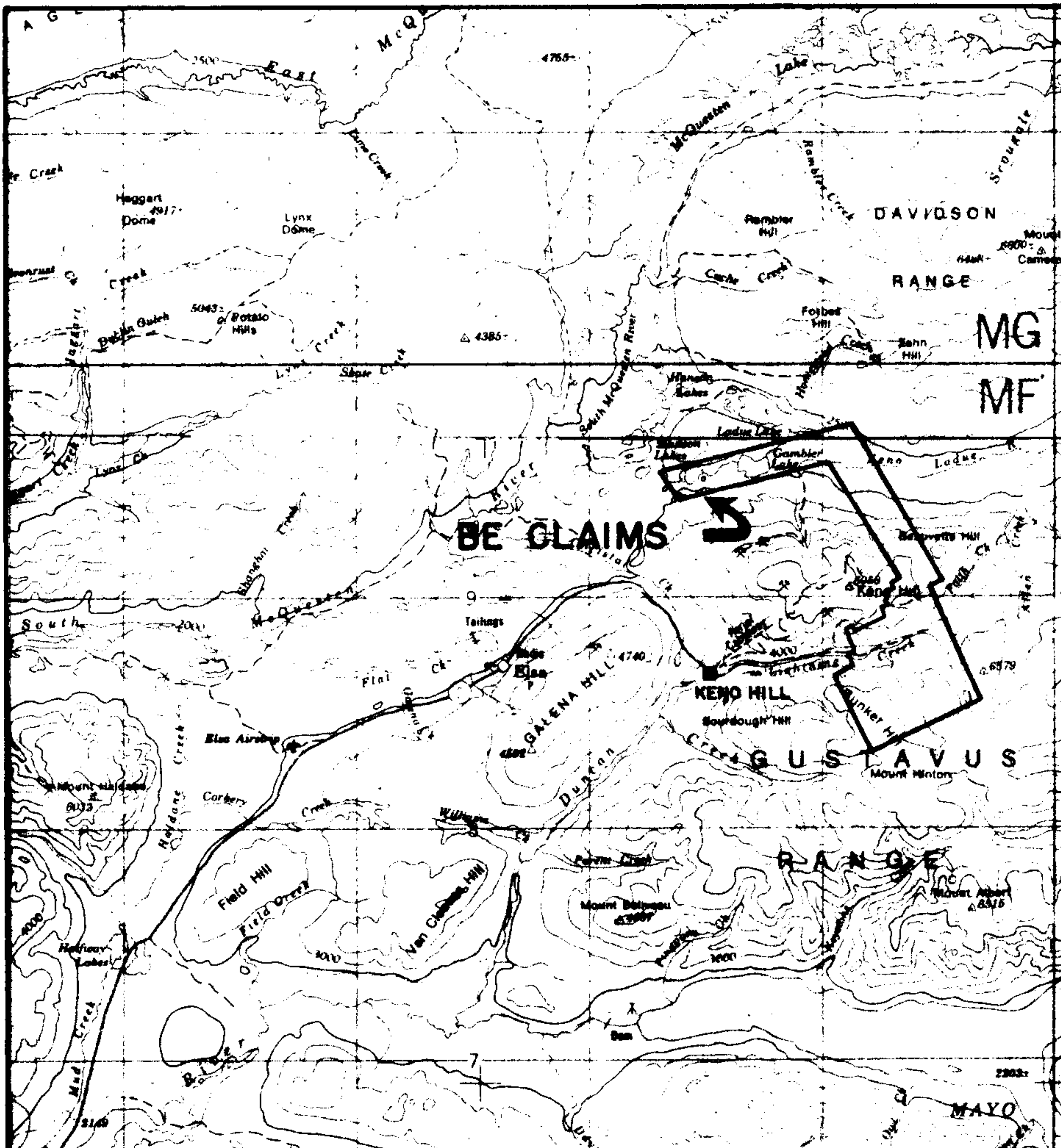
1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS

KEY MAP

DATE: *FEBRUARY 1981*	JOB NO.: 80-09-C
REVISED BY:	FIG. NO.: 1

BEMA INDUSTRIES LTD.



Scale 0 50 100 km

1 : 2,500,000 APPROXIMATE

CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y·T·

1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS

REGIONAL PLAN

DATE: *FEBRUARY 1981*	JOB NO.: **80-09-C**
REVISED BY:	FIG. NO.: **2**

BEMA INDUSTRIES LTD.

1.2 PHYSIOGRAPHY

The BE claims extend over a 13 kilometre length from the Ladue River Valley in the north to the divides of the McNeill and McMillan Gulches in the south. The northern region along Ladue River is flat and swampy and the vegetation consists of alder buckbrush and stunted spruce. The topography of the central and southern region east of Caribou Hill and south of the McNeill and McMillan Gulch divides, consists of moderate to steep alpine slopes with grass and moss cover. The alpine region is transected by Lightning Creek, McNeill Gulch and McMillan Gulch and the vegetation in the valley floors consists largely of thick alder buckbrush.

1.3 PROPERTY

The BE claim group, located in the Mayo Mining District, is comprised of the following contiguous 283 quartz mineral claims and 38 fractional mineral claims:

CLAIM NAME	GRANT NUMBERS	EXPIRY DATE
BE 1 - 279	YA 38967 - YA 39245	March 2, 1984
BE 281 - 284	YA 39246 - YA 39249	March 2, 1984
BE 285 Fr - 322 Fr	YA 42494 - YA 42531	September 2, 1981

All claims are owned by Canada Tungsten Mining Corporation Limited.

1.4 HISTORY

Northern BE Claims

The northern BE claims are situated in the Ladue River - Gambler Lake Valleys. They have not been extensively explored due to deep overburden and the lack of outcrop. During 1979 Bema Industries Ltd. carried out a MaxMin E.M. Survey on a portion of the claims as an extension of the western ZAP claim geophysical survey. There is no other history of exploration in this area.

Central BE Claims

Numerous people have intermittently held claims within what is now the central BE claims area. Reconnaissance geological mapping in 1980 outlined three areas explored by previous operators to the east of the Idaho General Mines optioned claims and the Faith silver-lead vein. These areas are given below:

1) Located 250 metres northeast of Caribou Hill. A vein structure 1 to 2 metres wide has been explored by extensive caterpillar trenches.

2) Located 500 metres south of Caribou Hill. Several hand trenches explore a series of quartz-pyrite veins.

3) Located 1500 metres east of the head of Faith Gulch. An underground shaft of unknown depth explores a 10 centimetre wide quartz-pyrite vein within a greenstone body.

Southern BE Claims

Numerous claims have been located in the past in the area of the southern BE claims and sporadic prospecting has been carried out for gold and silver. An adit was driven in the headwall of the McNeill Gulch in 1940 by C. Brefalt. In 1964 the Geological Survey of Canada carried out a stream sediment survey in the Keno Hill area including the streams draining the BE claims. United Keno Hill Mines Ltd. staked 276 claims in 1965-66 as a follow-up to this survey. Keno Hill Mines Ltd. exploration survey located 22 veins in McNeill Gulch with encouraging gold-silver assay values. An exploration shaft was sunk on the No. 21 vein and 404 tons of ore was blocked out grading 1.20 oz/ton gold and 18.3 oz/ton silver over an average width of one metre.

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1.6 PRESENT WORK

Geological mapping at 1:5,000 scale and talus prospecting was conducted along the base of talus aprons and along ridge tops. This work was carried out to locate vein mineralization float within the talus and in outcrops on the ridge tops.

Reconnaissance geochemical sampling was carried out in conjunction with the talus prospecting. Soil, talus fines, spring or stream samples were taken at intervals of approximately 100 to 200 metres and analysed for lead, zinc, silver and copper.

The area covered by the above work was restricted to the south and central portions of the BE claims. The claims actually covered by the survey include BE 1 to 155 and BE 178 to 188. Some areas peripheral to these claims were also worked on in order to project the geology and mineral potential onto the BE claims.

2.0 GENERAL GEOLOGY

The Keno Hill - Galena Hill area containing the BE claims is located at the northwestern end of the Selwyn Basin. The Selwyn Basin is a Pb-Zn-Ag bearing province which covers central Yukon, western N.W.T. and north central B.C. The basin is bounded to the east, in the MacKenzie Mountains by a marginal carbonate shelf facies. To the west, the basinal shale facies gives way to the carbonate shelf complex of the Pelly-Cassiar Fold Belt or terminates abruptly against the Tintina Trench. The Tintina Trench, which passes 100 kilometres south of Keno Hill, contains a strike-slip fault with 450 kilometres of right lateral displacement (Tempelman-Kluit, 1970).

The rocks underlying the Keno Hill - Galena Hill area are predominantly metasediments of the Yukon Group. Until recently the Yukon Group was thought to be of Precambrian age. Boyle (1965) considered the section to be a simple homocline of metasediments of probable Precambrian age. Tempelman-Kluit (1970) and Green (1971) have interpreted Mesozoic ages for the Lower Schist (Jurassic) and Central Quartzite (Lower Cretaceous) formations and a Precambrian age for the allochthonous Upper Schist formation. Blusson (1978) suggested that the Lower Schist and Central Quartzite formations resemble the Upper Devonian to Mississippian Canol and Imperial formations.

The Lower Schist formation consists predominantly of graphitic schists with minor intercalated chlorite-sericite schist and thin bedded quartzite, conformably overlain by the Central Quartzite formation.

The Central Quartzite formation consists of thick and thin bedded quartzite with intercalated graphitic phyllite, argillite and schist.

The Upper Schist formation overlies the Central Quartzite formation. The nature of the contact between Central Quartzite and Upper Schist is controversial. It is considered to be conformable by Boyle, 1965; or a thrust fault by Green, 1971. The Upper Schist formation consists primarily of quartz-mica schists, graphitic schists and thin bedded quartzites with minor limestone lenses.

TABLE 1

TABLE of FORMATIONS

ERA	PERIOD	MILLIONS of YEARS	BOYLE, R.W 1965	GREEN, L.H. 1971 TEMPELMAN–KLUIT 1970	BLUSSON, S.L. 1978	BEMA 1980
CENOZOIC	TERTIARY	65		Quartz-Feldspar Porphyry		
		* 87		Greenstone		Granodiorite
	CRETACEOUS	136	Quartz-Feldspar Porphyry Biotite Lamprophyre	Keno Hill Quartzite fm		Quartz-Feldspar Porphyry Biotite Lamprophyre
	JURASSIC	190	Greenstone	Lower Schist fm		Greenstone Keno Hill Quartzite fm Lower Schist fm
MESOZOIC	TRIASSIC	225				
	PERMIAN	280				
	CARBONIFEROUS	345			Central Quartzite	
	DEVONIAN	395			Lower Schist	
	SILURIAN	430				
	ORDOVICIAN	500				
PALEOZOIC	CAMBRIAN	570				
PRECAMBRIAN		4600	Upper Schist fm Central Quartzite fm Lower Schist fm	Upper Schist fm		?Upper Schist fm

NOTE • AGE of MINERALIZATION
SINCLAIR et al, 1980

This stratigraphic sequence has been intruded by several plutonic phases. The oldest of these are the greenstone sills. These sills, originally diorite to gabbro in composition, were deformed into lens-shaped "boudins". These boudins are discontinuous but tend to align, en echelon, in certain stratigraphic horizons.

The second plutonic phase in the area is the granitic rocks which have intruded along the hinge zone of the Mayo Lake anticline. These intrusions range between quartz monzonite to diorite in composition and give ages between 81 million years and 109 million years (Wanless, et.al., 1966, 67, 71, 73; Armstrong, 1978; cited by Tessari, 1979).

The youngest intrusions in the area are dykes and sills of biotite lamprophyre and quartz-feldspar porphyry. As these units have not been observed in a crosscutting relationship, their relative ages cannot be ascertained.

In the Keno Hill - Galena Hill area there have been at least two periods of structural deformation (Green, 1971). The oldest period of deformation produced isoclinal and recumbent folding with extensive bedding-plane movement. Rocks involved in this earliest deformation developed a strong foliation and retained a few original sedimentary structures. Many of the greenstones have been intensely foliated which indicates that they were intruded prior to this period of deformation. Also others, including some of the larger greenstone sills were probably intruded during this period of deformation (Green, 1971). The intensity of this early deformation is indicated by the boudinage of pre-existing greenstone sills. It has also been hypothesized by Green and others that it was during this period of deformation that the Upper Schist formation was thrust over the Central Quartzite and Lower Schist formations.

The second period of deformation superimposed open folds and a pervasive wrinkle lineation on the already deformed rocks. The broad northwest trending, southeast plunging Mayo Lake anticline formed during this later period of deformation. Later, but during this second period of deformation, two subsidiary anticlines, the McQuesten River and Lynx Creek anticlines, formed (Tessari, 1978). These sub-parallel structures trend northeast-southwest and plunge to the west. The Keno Hill-Galena Hill area is on the southern limb of the McQuesten River anticline.

Granitic rocks intruded these rocks after the second period of deformation was ended.

Three ages of faulting are known to exist; a) early formed bedding plane and low angle faults, b) vein faults and c) late cross faults, low angle faults and bedding faults.

The early bedding plane and low angle faults show small displacements and are the result of thrusting accompanying regional folding. They may follow bedding planes or crosscut the strata at a low angle and are seldom ore-bearing.

The vein faults create breccia, sheeted zones and void spaces when cutting through competent rock such as greenstone or quartzite. These zones range from 1.5 to 15.0 metres wide and are responsible for localizing ore. Two types of vein faults are recognized; transverse faults which strike between 0^{o} and 45^{o} azimuth; and more commonly, longitudinal faults which strike between 35^{o} and 80^{o} azimuth.

In schists, the faults are tight and pose a barrier to migrating fluids.

Late cross faults commonly strike northwesterly, dip about 60^{o} and show horizontal displacement of 0 to 150 metres. Most of these appear as a series of slips and fractures with an associated breccia zone 6 to 30 metres in thickness.

Vein faults and cross faults can both be shown to post-date the younger deformation because they contain fragments of lineated phyllites (Green, 1971). It is clearly evident that cross faults post-date vein faults as many vein faults are offset by cross faults. Several periods of movement in the vein faults are indicated by brecciation of ore minerals. The relative ages of the vein and cross faults to the period of mineralization is controversial. This is an extremely significant relationship as 95% of the district's silver production is from deposits associated with cross faults. Boyle (1965) considers that the cross faults are post-mineralization and the presence of cross faults in nearly every mine is incidental. Franzen (1979) on the other hand, states that the cross faults are pre-mineralization and acted as barriers to ore solutions thereby having a damming effect on mineralizing solutions and creating ore pods.

Favourable locations for ore lodes exist where vein faults cut through competent greenstone or quartzite and especially where these faults are truncated by a cross fault or transition between different rock types.

Two stages of mineralization are evident. In the first stage, quartz, pyrite, arsenopyrite and minor gold were deposited along vein faults. Later brecciation allowed the deposition of siderite, galena, sphalerite, pyrite, freibergite, chalcopyrite, meneghinite, boulangerite, dolomite, quartz and minor barite. Later reworking, leaching, oxidation and remobilization of ore minerals played important roles as secondary concentrating processes. Vein mineralization probably originated from a circulating hydrothermal system driven by thermal energy from nearby granitic intrusives as K-Ar dating of mineralization (87 million years) coincides with K-Ar ages for a number of Cretaceous intrusives (81 million years to 109 million years) in the area (A.J. Sinclair, et.al., 1980).

2.1 PROPERTY GEOLOGY

The northern portion of the claims are underlain predominantly by graphitic phyllite with minor units of sericite schist and thin bedded quartzites of the Lower Schist formation. These rocks have been intruded by numerous greenstone sills which have been subsequently transformed into boudins.

The central and southern portion of the BE claims are underlain by thin to thick bedded quartzites of the No. 9 Quartzite unit. Distribution of outcrop and rock lithologies are shown in Figures 3 to 6.

2.2 LITHOLOGICAL UNITS

Unit 1 - Lower Schist

The Lower Schist formation on the BE claims is composed of a lower sequence of graphitic phyllite with minor thin bedded quartzite and an upper sequence of thick bedded quartzites of the No. 9 Quartzite unit with interbedded thin bedded quartzite and sericite schist. The minimum thickness of the Lower Schist in this area is 700 metres.

Graphitic phyllite comprises the bulk of the lower sequence and crops out throughout the nothern BE claims. It is dark grey, fissile and contains minor 1 to 3 centimetre interbeds of thin bedded quartzite.

The upper sequence consists primarily of thick bedded quartzite of the No. 9 Quartzite unit. The No. 9 Quartzite is the most competent member found on the Gold Hill #2 claim and is favourable host rock for vein mineralization. It is usually light grey to dark grey in colour and is composed of thick bedded quartzites (1.0 to 6.0 metres) interbedded with graphitic phyllite and thin bedded quartzites.

The upper part of the Lower Schist formation contains several quartz-chlorite-sericite schist units. They crop out at the top of Faith Gulch and along the north slope of Lightning Creek opposite Thunder Gulch.

Unit 4 - Greenstone

Greenstones are found predominantly within the schistose formations and occur as conformable sills and boudins. They are schistose to coarse grained and consist of diorite, gabbro and their altered equivalents. The greenstones vary from one metre to hundreds of metres. One body commonly thins or pinches out and another appears in its thickest width in overlying or underlying beds. The greenstone is dark green or grey to brownish green in colour and has a varied texture due to the alteration and replacement of mafic minerals (amphibole and biotite) and feldspar by secondary amphiboles, saussuritization, chloritization and silicification. The greenstone has a diabasic texture with some evidence of original grain size and layering in large bodies and intense foliation in small bodies.

Graphitic phyllites of the Lower Schist formation in the northern and central portion of the BE claims contain numerous boudins and bodies of greenstone. These bodies occur along definite horizons and are thought to be sills which have been transformed into boudins.

A series of discontinuous greenstone bodies crop out on the crest of Bunker Hill and extend southeasterly to the headwaters of McNeill Gulch. They are contained in a sequence of thin bedded quartzites with interbedded graphitic phyllite and schist.

2.4 VEIN STRUCTURE AND MINERALIZATION

Five mineralized zones were found within or adjacent to the BE claims during the 1980 exploration program and have been outlined below:

1) Located 800 metres northeast of Caribou Hill.

A strong vein structure strikes 030° azimuth and occurs within graphitic phyllite and greenstone. It is explored by extensive recent caterpillar trenches over a strike length of 200 metres. The structure is 1.0 to 1.5 metres in width and mineralization consists of limonite and manganese oxide gouge with abundant siderite. From south-west to northeast the vein structure widens from 1 metre within graphitic phyllite to 2 metres within a greenstone body. Beyond the trenched area to the southwest, it trends into a 1 metre wide fracture zone with several quartz veins within a greenstone body. To the northeast it passes into an area of highly bleached limonitic sericite schist exposed on a steep talus slope.

Two rock samples were taken of the vein breccia mineralization. They were not geochemically anomalous in silver, lead or zinc.

2) Located 500 metres south of Caribou Hill on the north slope of Faith Gulch.

Vein breccia float was observed in a steep talus slope below several hand trenches containing numerous quartz-pyrite-limonite veinlets. The vein mineralization consists of manganese-limonite breccia and a rock geochemical sample has an anomalous zinc value of 670 ppm.

At the head of Faith Gulch the Faith Lead-Silver Vein, held by United Keno Hill Mines Ltd., is exposed in numerous trenches along a strike of 060° to 070° azimuth. One rock sample gave geochemical values of 20,000 ppm zinc, 26 ppm silver and 285 ppm lead. This vein occurs within sericite schist and its projection to the east-northeast coincides with the vein breccia float observed on the north slope of Faith Gulch. The Faith Vein may extend to the northeast under a thick blanket of talus and may widen within the quartzite unit on the western boundary of the BE claims.

3) Located 900 metres north of a small unnamed lake at the headwaters of Lightning Creek.

On a steep talus slope, several hand trenches explore the suboutcrop of a 1 to 2 metre wide fracture zone. The fracture zone appears to strike 030° azimuth and mineralization consists of pyrite-limonite within numerous quartz veins. No vein breccia was seen. A geochemical rock sample taken gave values of 5,900 ppm zinc, 21 ppm silver and 2,020 ppm lead. The fracture zone occurs within thick bedded quartzite and there is good potential for locating economic silver mineralization in this area.

4) Located 1500 metres south of the mouth of McNeill Gulch at the 1400 metre elevation.

Exposed on a steep outcrop face is a one metre wide fracture zone with several quartz-pyrite-limonite veinlets. The structure strikes 030° azimuth and occurs within thin bedded quartzite. A rock geochemical sample gave values of 1,502 ppm zinc, 10.2 ppm silver, 143 ppm lead and 180 ppb gold. The potential of this zone is unknown and further geological mapping and prospecting is required.

5) On the south headwall of upper McNeill Gulch at the 1,520 metre elevation.

Mineralization vein float was observed in a steep talus slope of thin bedded quartzite. The vein is 0.5 metres wide and mineralization consists of quartz-arsenopyrite-scorodite. This mineralization occurs outside of the BE claims on claims owned by United Keno Hill Mines. There is potential for locating other gold-bearing quartz-arsenopyrite-scorodite veins on the northern slope of McNeill Creek.

3.0 GEOCHEMISTRY

During 1980 a reconnaissance geochemical survey was conducted over the southern and central BE claims. Soil, rock and stream silt samples were taken at intervals of 100 to 200 metres along the base of talus aprons to prospect for vein mineralization. In addition, rock samples were taken of mineralized vein structures outlined by prospecting.

A total of 96 soil samples, 18 stream silt samples and 29 rock samples were taken during the geochemical survey. The samples were sent to Bondar-Clegg and Company Ltd. in Whitehorse for analysis for lead, zinc and silver. At the lab, rock samples were crushed and ground before processing, then all the samples were dried at 100°C and screened to -80 mesh. Extraction was by hot aqua regia and analysis was by standard atomic absorption methods. Results were given in parts per million (ppm) and are plotted in Figures 3 to 6.

The small number of samples and their wide geographic distribution precludes a statistical study. Regional anomalous values for Pb, Zn, Ag were taken from statistical analysis of other properties in the Keno Hill area. The threshold anomalous values for soil and silt samples are:

TABLE 2

SOIL AND SILT GEOCHEMICAL THRESHOLD VALUES

	Soil (ppm)	Silt (ppm)
lead	30	30
zinc	150	150
silver	1	1

RESULTS

Soil and Stream Silt Geochemistry

Nine areas with anomalous silver-zinc-lead values were outlined and their description appears below in Table 3.

TABLE 3

SOIL AND STREAM SILT GEOCHEMISTRY

Anomaly Number	Location	Description
1	400-1000 metres north of Lightning Creek Headwater Lake	2 samples moderate to strong silver-lead-zinc soil anomaly downslope from vein occurrence No. 3.
2	East slope of Beauvette Hill	1 sample - weak silver-zinc soil anomaly on a talus slope below outcrops of greenstone.
3	North slope of headwaters of Faith Gulch	2 samples - moderate silver silt anomaly below vein occurrence No. 2.
4	Western headwaters of Faith Gulch	6 samples - moderate to strong silver-lead-zinc silt anomaly draining trenches on Keno Hill mines property to the west.
5	Western headwaters of Hope Gulch	4 samples - moderate silver-lead-zinc soil and silt anomaly on United Keno Hill Mines property associated with the Faith vein occurrence and quartz-limonite-pyrite veins in fracture zones.
6	Western slope of Bunker Hill south of the Homestake vein occurrence	1 sample - moderate silver anomaly below outcrop of massive quartzite.
7	North slope of Thunder Gulch	1 sample - moderate silver-zinc soil anomaly below outcrop of thin bedded quartzite.
8	North slope of Bunker Hill	1 sample - moderate silver-lead anomaly below outcrop of thin bedded quartzite.
9	Western headwaters of McNeill Gulch on the southern boundaries of BE claims	3 samples - moderate silver-lead-zinc silt and soil anomaly below outcrop of thin bedded quartzite. These anomalies are associated with quartz-scorodite-arsenopyrite and galena veins on United Keno Hill claims.

Anomaly Number	Location	Description
10	Eastern headwaters of McMillan Gulch on the southern boundary of the BE claims	5 samples - moderate silver-lead-zinc silt and soil anomaly below outcrops of thin bedded quartzite. These samples drain known mineralization on Keno Hill Mines claims.

Rock Geochemistry

Three of the four mineralized vein structures have anomalous rock geochemical values.

1) Vein 2 - 500 metres south of Caribou Hill;

vein breccia float with values of 63 ppm lead, 1.7 ppm silver and 670 ppm zinc.

2) Vein 3 - 900 metres north of Headwater Lake on Lightning Creek;

quartz-pyrite-limonite veins within 1 to 2 metre wide fracture vein with values of 2,020 ppm lead, 21 ppm silver, 5,900 ppm zinc.

3) Vein 4 - 1500 metres south of the mouth of McNeill Gulch;

quartz-pyrite-limonite veins within 1 metre wide fracture vein with values of 143 ppm lead, 10.2 ppm silver, 1,502 ppm zinc.

4.0 CONCLUSIONS

1) Four mineralized vein structures were outlined by reconnaissance geological mapping and prospecting during 1980. Three of the vein structures have coincident anomalous silver, lead, zinc rock geochemistry.

2) An area of gold-bearing quartz-arsenopyrite-scorodite vein mineralization was observed just south of the BE claims at the head of McNeill Gulch on claims owned by United Keno Hill Mines Ltd.

3) Nine geochemically anomalous areas were outlined by a reconnaissance geochemical survey. Anomalies 3, 4, 5, 6 and 9 occur outside the BE claims and single sample soil anomalies 2, 7, 8 are not considered significant. Three of the anomalies are considered significant:
(a) Anomaly (1) downslope from vein occurrence No. 3.
(b) Anomaly (3) downslope from vein occurrence No. 2.
(c) Anomaly (10) north and eastern headwaters of McNeill Gulch.

Report by:

Robert T. Holland, B.Sc.
Geologist

Gary D. Nordin, B.Sc.
Senior Geologist

K.E. Northcote, Ph.D., P.Eng.
Geological Supervisor

RTH/pcd

APPENDIX I

STATEMENT OF COSTS

APPENDIX I

STATEMENT OF COSTS

A. FIELD PERSONNEL SALARIES (August 6 to 23, 1980)

	Salary/day	No. of days	Total Salary
G.D. Nordin Geological Consultant	$275.00	11	$3,025.00
G. Norman Senior Project Geologist	$275.00	4	1,100.00
M.D. Philpot Geologist	$175.00	3	525.00
G.M. Rodgers Geologist	$175.00	2	350.00
D.N. Bonnar Field Technician #2	$110.00	6	660.00
D. Schatz Geological Assistant #2	$ 85.00	3	255.00
J. Donnelly Geological Assistant #2	$ 75.00	1	75.00
	TOTAL FIELD SALARIES		$5,990.00

B. OFFICE PERSONNEL SALARIES (August 23, 1980 to March 2, 1981)

	Salary/day	No. of days	Total Salary
G.D. Nordin Senior Geologist	$325.00	11	$3,575.00
R.T. Holland Project Geologist	$275.00	3	825.00
	TOTAL OFFICE SALARIES		$4,400.00

C. CAMP COSTS (Average over field season - 30 field man-days)

	Rate/man-day	Total Costs
Construction	$ 2.74	$ 82.20
Equipment	4.08	122.40
Groceries	12.50	375.00
Fuel	1.01	30.30
Cook's wages	9.00	270.00
Camp Assistant's wages	6.60	198.00
Camp Manager	7.80	234.00

C. CAMP COSTS Cont.

	Rate/man-day	Total Costs
Expediting	$13.06	$ 391.80
	TOTAL CAMP COSTS	$1,703.70

D. VEHICLE COSTS (Average over field season - 30 field man-days)

	Rate/man-day	Total Costs
Rental	$8.68	$ 260.40
Maintenance	7.33	219.90
Fuel	2.59	77.70
	TOTAL VEHICLE COSTS	$ 558.00

E. TRANSPORTATION AND COMMUNICATION (Average over field season - 30 field man-days)

	Rate/man-day	Total Costs
Transportation, Travel	$5.14	$ 154.20
Freight	1.61	48.30
Telephone, Radio	3.22	96.60
	TOTAL TRANSPORTATION AND COMMUNICATION	$ 299.10

F. GEOCHEMICAL ANALYSIS (Pb, Zn, Ag)

	Number of samples	Cost/sample	Total Costs
Soil	96	$3.50	$ 336.00
Silt	18	3.50	63.00
Rock	29	5.00	145.00
	TOTAL GEOCHEMICAL ANALYSIS		$ 544.00

G. HELICOPTER

3.4 hours @ $4 00/hour		$ 1,360.00
42 gallons of fuel @ $1.42/gallon		59.64
	TOTAL HELICOPTER COSTS	$ 1,419.64

H. DRAFTING SERVICES

79.5 hours @ $20.00/hour		$ 1,590.00
Materials		96.00
	TOTAL DRAFTING COSTS	$ 1,686.00

TOTAL COSTS	$16,600.44

March 5, 1981

Robert Holland, B.Sc.
Geologist

APPENDIX II

STATEMENTS OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, ROBERT T. HOLLAND OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia and hold the following degree(s):

   B.Sc., Geology, 1976

2. I have practised my profession as a geologist since 1976.

3. I have no interest, direct or indirect, in the property or shares of Canada Tungsten Mining Corporation Limited, nor do I expect to receive any such interest.

4. That the information contained in this report entitled Geological and Geochemical Report on the BE Claims is both true and correct to the best of my knowledge.

Signed: Robert Holland

Robert T. Holland, B.Sc.
Geologist

Date: April 3, 1981

STATEMENT OF QUALIFICATIONS

I, GARY D. NORDIN OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of Alberta and hold the following degree(s):

   B.Sc. Honours Geology, 1970

2. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and a fellow of the Geological Association of Canada.

3. I have practised as a professional Geologist since 1970, gaining a wide variety of geological experience with mining companies, petroleum companies and the British Columbia government.

4. I have no interest, direct or indirect in the property or shares of Canada Tungsten Mining Corporation Limited, nor do I expect to receive any such interest.

5. I have conducted the 1980 summer field program on the BE claims and written the accompanying report for the submittal for assessment purposes.

Signed: [signature]

Gary D. Nordin, B.Sc.
Senior Geologist

Date: April 3, 1981

STATEMENT OF QUALIFICATIONS

I, KENNETH E. NORTHCOTE OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia and hold the following degree(s):

   B.A. Honours Geology, 1953

   M.Sc. Geology, 1961

   Ph.D. Geology, 1968

2. I am a member of the Association of Professional Engineers of the Province of British Columbia.

3. I have practised as a professional Geologist since 1953, gaining a wide variety of geological experience with petroleum companies, mining companies and Federal and Provincial governments.

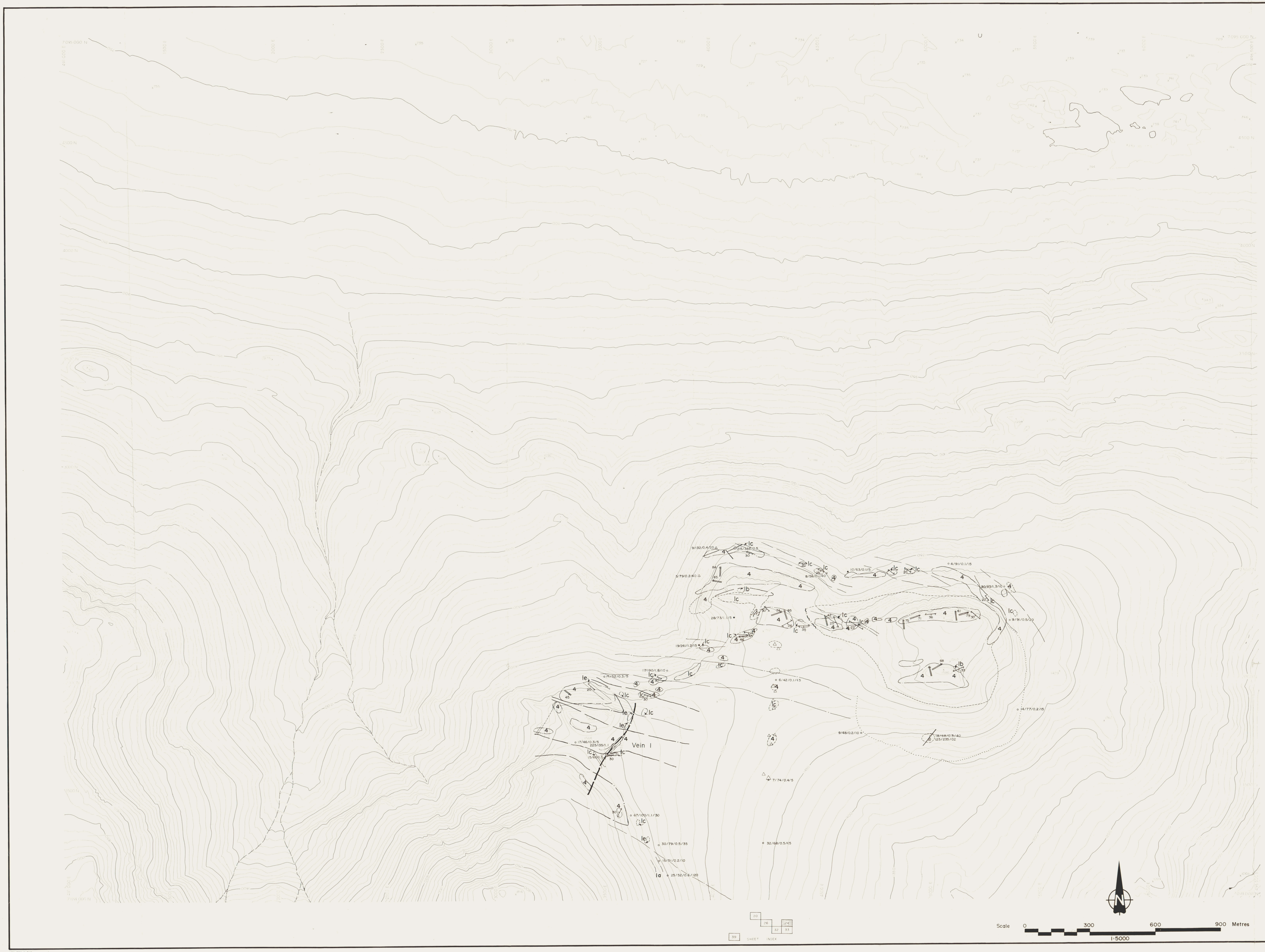
4. I have no interest, direct or indirect, in the property or shares of Canada Tungsten Mining Corporation Limited, nor do I expect to receive any such interest.

5. I have supervised the 1980 summer field program on the BE claims and approved the accompanying report for submittal for assessment purposes.

Signed: K.E. Northcote

K.E. Northcote, Ph.D., P.Eng.
Geological Supervisor

Date: April 3, 1981



LEGEND

SYMBOLS

GEOLOGICAL BOUNDARY
- defined
- approximate
- ? assumed

LIMIT of GEOLOGICAL MAPPING

OUTCROP

FELSENMEER

TALUS

FAULTS
- defined
- approximate
- ? assumed

VEIN STRUCTURE
- defined
- approximate
- ? assumed

BEDDING
- horizontal
- vertical
- inclined
- overturned

FOLIATION
- horizontal
- vertical
- inclined
- unknown

ANTICLINE
- defined
- approximate
- overturned

SYNCLINE
- defined
- approximate
- overturned

JOINTING
- vertical: weak, moderate, strong
- inclined: weak, moderate, strong

MINOR FOLDS
- S 10°, Z 10°, M 10° style & direction

GLACIAL STRIAE
- movement known
- movement known

GEOCHEMISTRY
- ○ SOIL / SILT
- ⊗ ROCK

PPM (Pb / Zn / Ag 19/157/0.8) PPB (Au 20)

SHAFT

RAISE

WINZE

ADIT or TUNNEL
- caved

QUARRY or MINE
- active
- abandoned

TRENCH
- closed end
- open end

PIT

GRAVEL PIT
- active
- dormant

DUMP or TAILINGS

DDH & NUMBER
- 80-00 location
- 45 surface projection

OVERBURDEN DRILL HOLE
- OBH-80 location

CHIP SAMPLE

ROCK SAMPLE

FLOAT
- 2 with rock type

SURVEY STATION

TRIANGULATION POINT

CLAIM POST

CLAIM BOUNDARY

ROAD

CAT TRAIL

CABIN

SPRING

LITHOLOGY

DRIFT
- 8

LAMPROPHYRE
- 7

QUARTZ-FELDSPAR PORPHYRY
- 6

GRANITIC ROCKS
- 5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
- 4

UPPER SCHIST FORMATION
- 3
  - 3a Quartz-sericite schist
  - 3b Quartz-chlorite-sericite schist
  - 3c Thin-bedded quartzite
  - 3d Phyllite, graphitic phyllite
  - 3e Limestone

CENTRAL QUARTZITE FORMATION
- 2
  - 2a Massive quartzite
  - 2b Thin-bedded quartzite
  - 2c Graphitic phyllite

LOWER SCHIST FORMATION
- 1
  - 1a Thin-bedded quartzite
  - 1b Quartz-chlorite sericite schist
  - 1c Graphitic schist
  - 1d Phyllite and argillite
  - 1e Quartz-sericite schist
  - 1f Massive quartzite — No·9

CANADA TUNGSTEN MINING CORPORATION

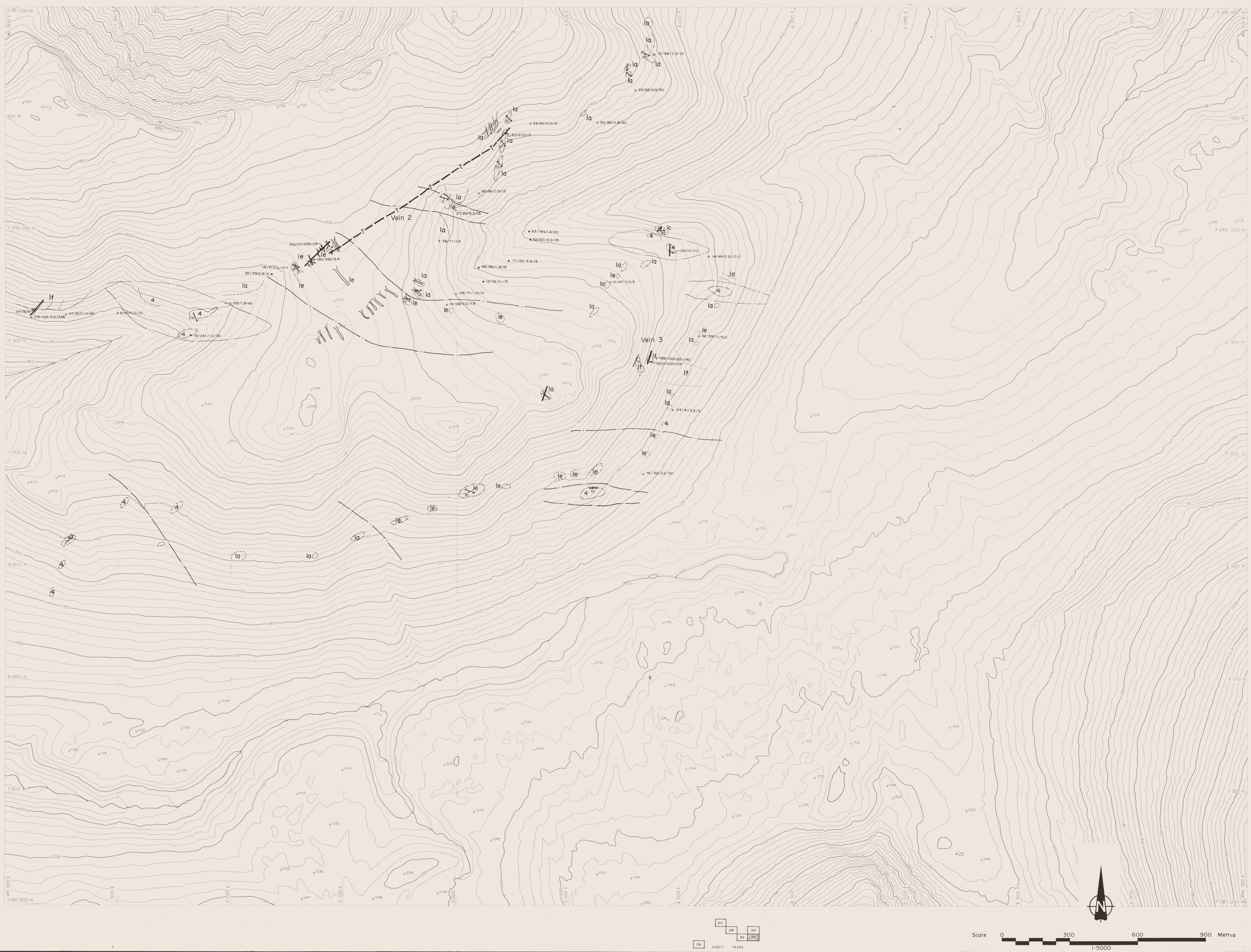
KENO HILL Y.T.

1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS GEOLOGY and GEOCHEMISTRY

DATE FEBRUARY 1981	JOB NO. 80-09-C	FIG NO. 3
DRAWN BY		
REVISED BY	SCALE 1:5000	METRES

BEMA INDUSTRIES LTD.



LEGEND

SYMBOLS

GEOLOGICAL BOUNDARY
- defined
- approximate
- assumed

LIMIT of GEOLOGICAL MAPPING

OUTCROP

FELSENMEER

TALUS

FAULTS
- defined
- approximate
- assumed

VEIN STRUCTURE
- defined
- approximate
- assumed

BEDDING
- horizontal
- vertical
- inclined
- overturned

FOLIATION
- horizontal
- vertical
- inclined
- unknown

ANTICLINE
- defined
- approximate
- overturned

SYNCLINE
- defined
- approximate
- overturned

JOINTING
- vertical: weak, moderate, strong
- inclined: weak, moderate, strong

MINOR FOLDS
- 10° style & direction
- 10°
- 10°

GLACIAL STRIAE
- movement known
- movement known

GEOCHEMISTRY
- ○ SOIL / SILT
- ⊗ ROCK

PPM (Pb / Zn / Ag 19/157/0.8) PPB (Au 20)

SHAFT

RAISE

WINZE

ADIT or TUNNEL
- caved

QUARRY or MINE
- active
- abandoned

TRENCH
- closed end
- open end

PIT

GRAVEL PIT
- active
- dormant

DUMP or TAILINGS

DDH & NUMBER
- 80-00 location
- 45 surface projection

OVERBURDEN DRILL HOLE
- OBH-80 location

CHIP SAMPLE

ROCK SAMPLE

FLOAT
- 2 with rock type

SURVEY STATION

TRIANGULATION POINT

CLAIM POST

CLAIM BOUNDARY

ROAD

CAT TRAIL

CABIN

SPRING

LITHOLOGY

DRIFT
- 8

LAMPROPHYRE
- 7

QUARTZ-FELDSPAR PORPHYRY
- 6

GRANITIC ROCKS
- 5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
- 4

UPPER SCHIST FORMATION
- 3
  - 3a Quartz-sericite schist
  - 3b Quartz-chlorite-sericite schist
  - 3c Thin-bedded quartzite
  - 3d Phyllite, graphitic phyllite
  - 3e Limestone

CENTRAL QUARTZITE FORMATION
- 2
  - 2a Massive quartzite
  - 2b Thin-bedded quartzite
  - 2c Graphitic phyllite

LOWER SCHIST FORMATION
- 1
  - 1a Thin-bedded quartzite
  - 1b Quartz-chlorite sericite schist
  - 1c Graphitic schist
  - 1d Phyllite and argillite
  - 1e Quartz-sericite schist
  - 1f Massive quartzite – No·9

CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y.T.

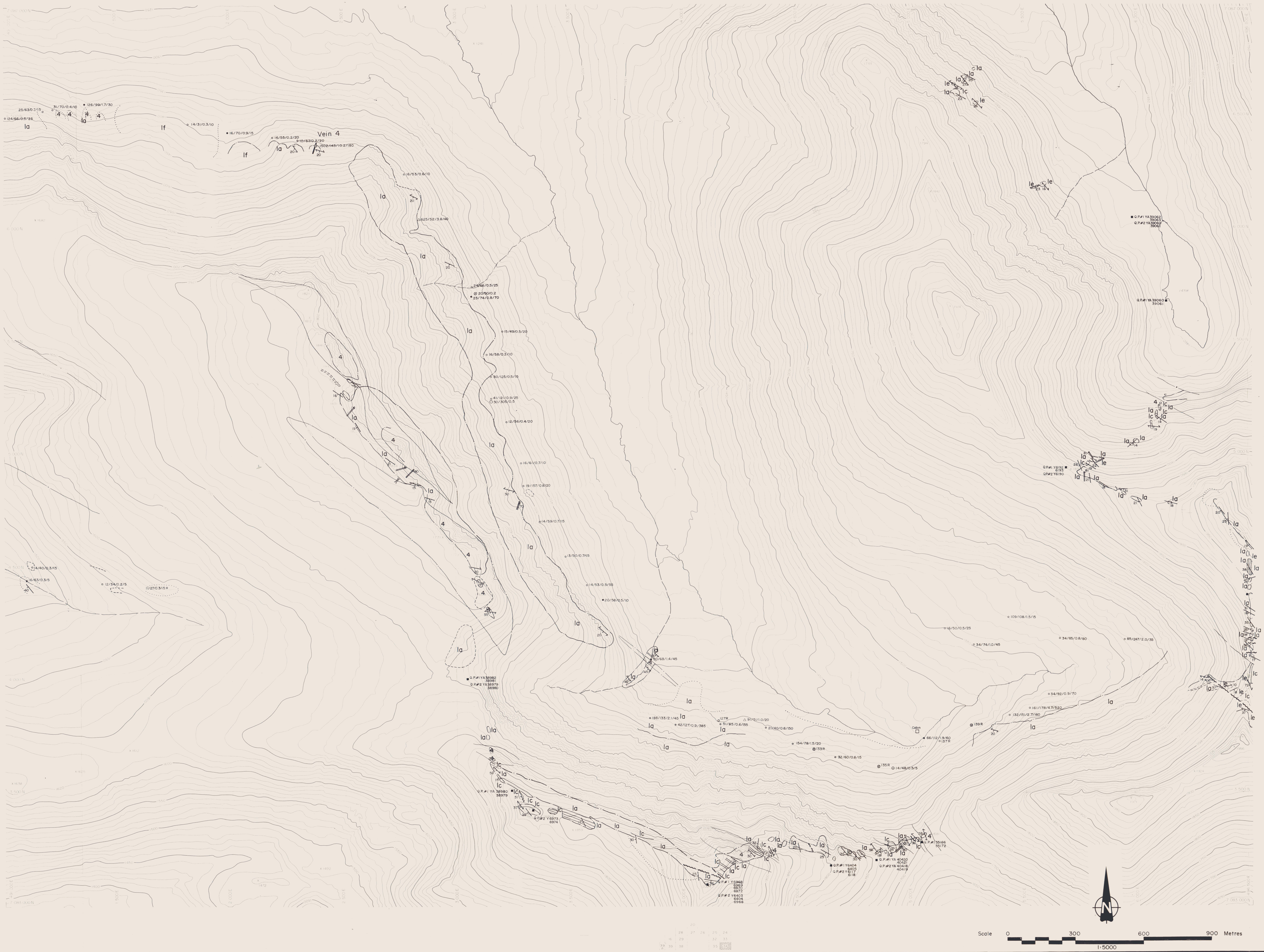
1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS

GEOLOGY and GEOCHEMISTRY

DATE *FEBRUARY 1981*	JOB NO. 80-09-C	FIG NO. 4
DRAWN BY		
REVISED BY	SCALE *1:5,000*	METRES

BEMA INDUSTRIES LTD.



LEGEND

SYMBOLS

GEOLOGICAL BOUNDARY — defined — approximate — assumed

LIMIT of GEOLOGICAL MAPPING

OUTCROP

FELSENMEER

TALUS

FAULTS — defined — approximate — assumed

VEIN STRUCTURE — defined — approximate — assumed

BEDDING — horizontal — vertical — inclined — overturned

FOLIATION — horizontal — vertical — inclined — unknown

ANTICLINE — defined — approximate — overturned

SYNCLINE — defined — approximate — overturned

JOINTING — vertical: weak, moderate, strong — inclined: weak, moderate, strong

MINOR FOLDS — S 10°, Z 10°, M 10° — style & direction

GLACIAL STRIAE — movement known — movement known

GEOCHEMISTRY — ○ SOIL / SILT, ⊗ ROCK — PPM (Pb / Zn / Ag 19/157/0.8) PPB (Au 20)

SHAFT

RAISE

WINZE

ADIT or TUNNEL — caved

QUARRY or MINE — active — abandoned

TRENCH — closed end — open end

PIT

GRAVEL PIT — active — dormant

DUMP or TAILINGS

DDH & NUMBER — 80 00 location — 45 surface projection

OVERBURDEN DRILL HOLE — OBH-80 location

CHIP SAMPLE

ROCK SAMPLE

FLOAT — 2 with rock type

SURVEY STATION

TRIANGULATION POINT

CLAIM POST

CLAIM BOUNDARY

ROAD

CAT TRAIL

CABIN

SPRING

LITHOLOGY

DRIFT — 8

LAMPROPHYRE — 7

QUARTZ-FELDSPAR PORPHYRY — 6

GRANITIC ROCKS — 5 — Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE — 4

UPPER SCHIST FORMATION — 3

- 3a Quartz-sericite schist
- 3b Quartz-chlorite-sericite schist
- 3c Thin-bedded quartzite
- 3d Phyllite, graphitic phyllite
- 3e Limestone

CENTRAL QUARTZITE FORMATION — 2

- 2a Massive quartzite
- 2b Thin-bedded quartzite
- 2c Graphitic phyllite

LOWER SCHIST FORMATION — 1

- 1a Thin-bedded quartzite
- 1b Quartz-chlorite sericite schist
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CANADA TUNGSTEN MINING CORPORATION

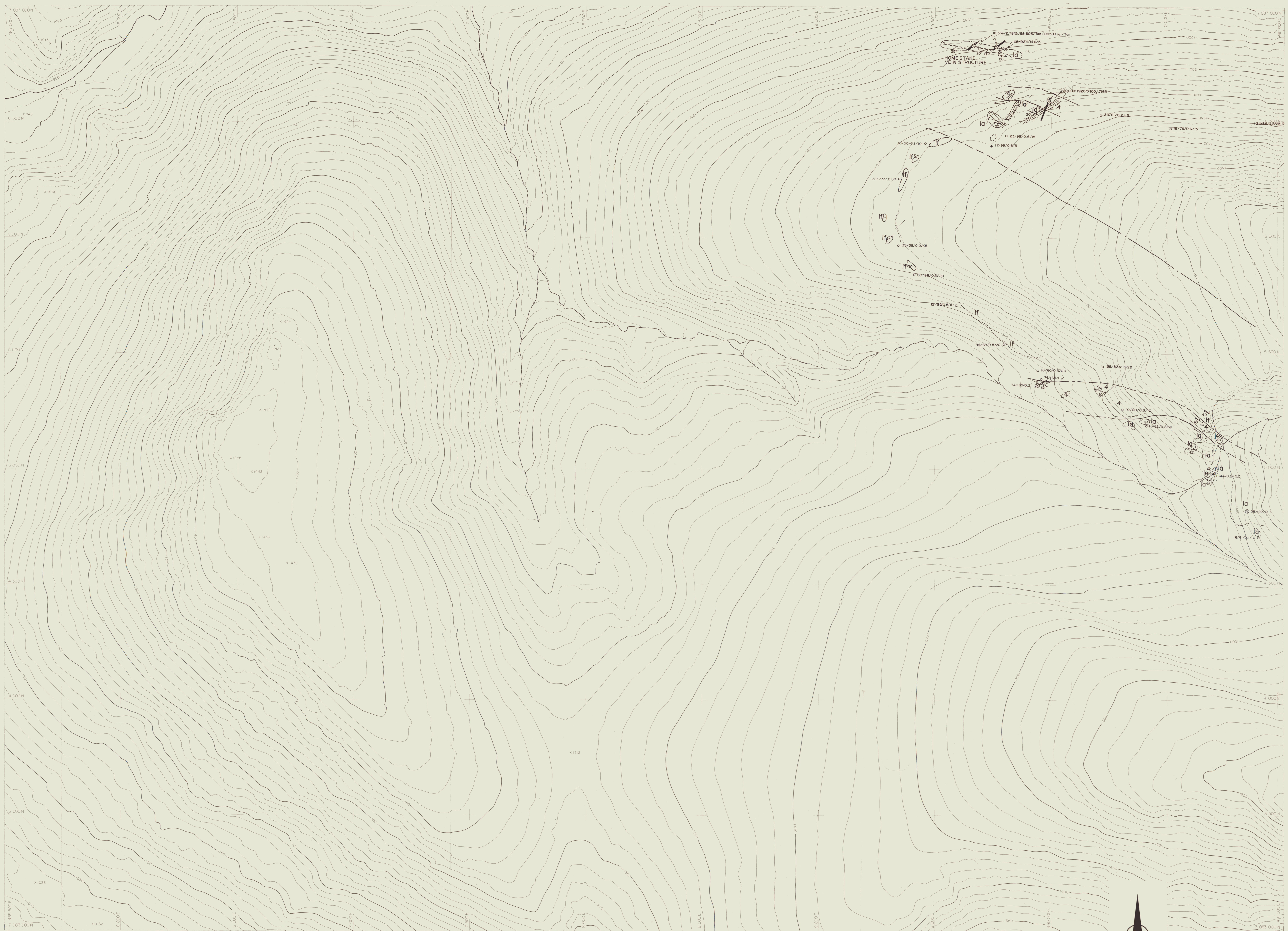
KENO HILL Y.T.

1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS GEOLOGY and GEOCHEMISTRY

DATE FEBRUARY 1981	JOB NO. 80-09-C
DRAWN BY	FIG NO. 5
REVISED BY	SCALE 1:5000 METRES

BEMA INDUSTRIES LTD.



LEGEND

SYMBOLS

GEOLOGICAL BOUNDARY — defined, approximate, assumed
LIMIT of GEOLOGICAL MAPPING
OUTCROP
FELSENMEER
TALUS
FAULTS — defined, approximate, assumed
VEIN STRUCTURE — defined, approximate, assumed
BEDDING — horizontal, vertical, inclined, overturned
FOLIATION — horizontal, vertical, inclined, unknown
ANTICLINE — defined, approximate, overturned
SYNCLINE — defined, approximate, overturned
JOINTING — vertical: weak, moderate, strong; inclined: weak, moderate, strong
MINOR FOLDS — style & direction
GLACIAL STRIAE — movement known, movement known
SHAFT
RAISE
WINZE
ADIT or TUNNEL — caved
QUARRY or MINE — active, abandoned
TRENCH — closed and open and
PIT
GRAVEL PIT — active, dormant
DUMP or TAILINGS
DDH & NUMBER — location, surface projection
OVERBURDEN DRILL HOLE — location
CHIP SAMPLE
ROCK SAMPLE
FLOAT — with rock type
SURVEY STATION
TRIANGULATION POINT
CLAIM POST
CLAIM BOUNDARY
ROAD
CAT TRAIL
CABIN
SPRING

GEOCHEMISTRY
○ SOIL / SILT
⊗ ROCK
PPM (Pb / Zn / Ag 19/157/0.8) PPB (Au 20)

LITHOLOGY

DRIFT
8

LAMPROPHYRE
7

QUARTZ-FELDSPAR PORPHYRY
6

GRANITIC ROCKS
5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
4

UPPER SCHIST FORMATION
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- 2a Massive quartzite
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LOWER SCHIST FORMATION
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- 1a Thin-bedded quartzite
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- 1c Graphitic schist
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CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y.T.

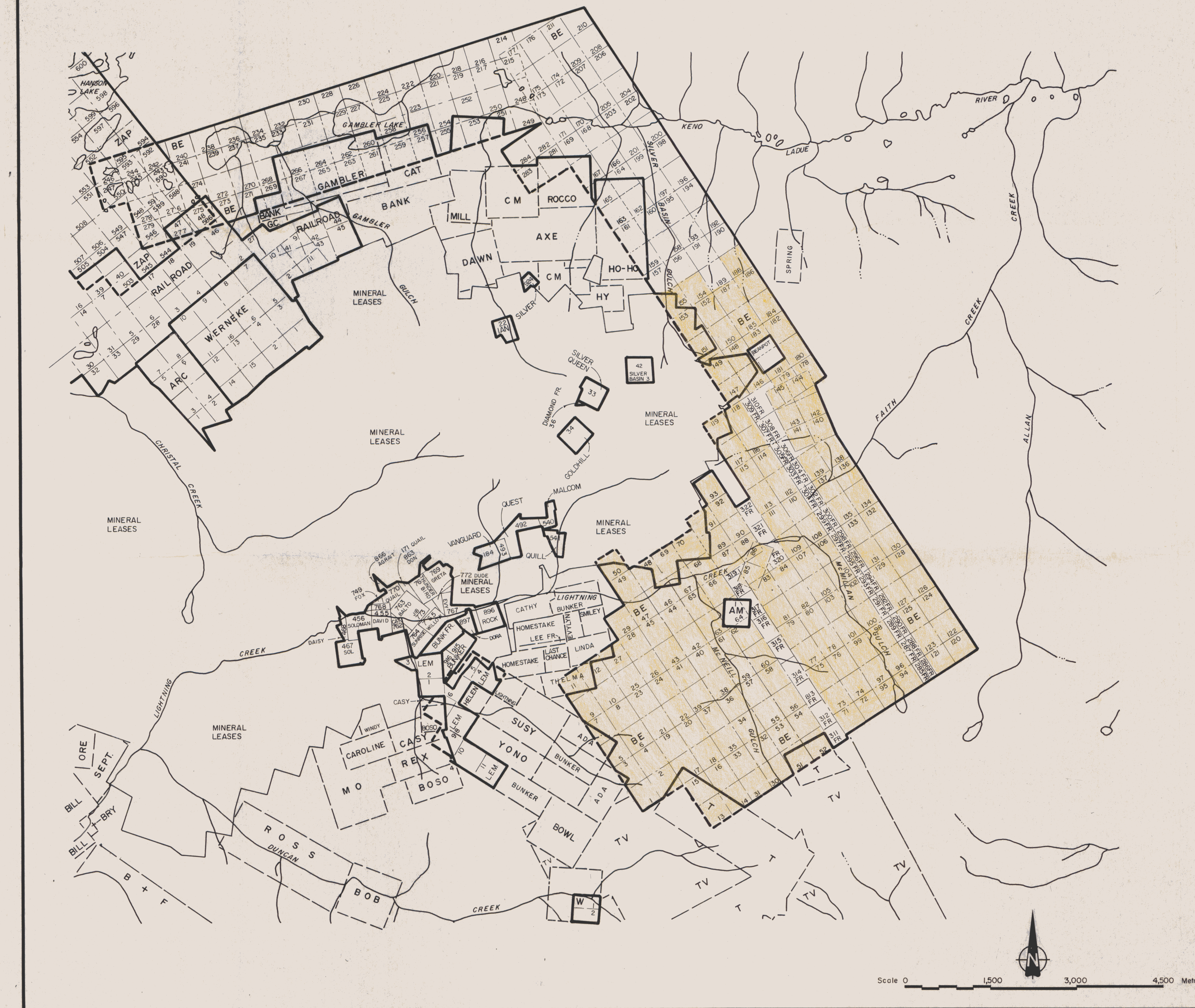
1980 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS

GEOLOGY and GEOCHEMISTRY

DATE FEBRUARY 1981	JOB NO. 80-09-C	FIG NO. 6
DRAWN BY		
REVISED BY	SCALE 1 : 5000	METRES

BEMA INDUSTRIES LTD.



LEGEND-

OUTLINE OF CLAIM & MINERAL LEASES OWNED OR CONTROLLED BY CANADA TUNGSTEN MINING CORPORATION LTD.

OUTLINE OF CLAIM GROUPS OWNED BY OTHERS.

OUTLINE OF MINERAL LEASES OWNED BY OTHERS.

BE CLAIMS ON WHICH ASSESSMENT WORK WAS CONDUCTED IN 1980.

Scale 0 — 1,500 — 3,000 — 4,500 Metres

CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y.T.

1981 GEOLOGICAL EXPLORATION PROGRAMME

BE CLAIMS
CLAIM LOCATION MAP

DATE: MARCH 1981	JOB NO. 81-09	FIG. NO. 7
DRAWN BY: B.H.		
REVISED BY:	SCALE: 1:31680	(1" = 0.5 miles)

BEMA INDUSTRIES LTD.

T. J. Cl. 2728 (h.c.c.)