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GEOLOGICAL AND GEOCHEMICAL REPORT 12
MICA 20 - 36 Mineral Claims

Revelstoke Mining Division
82M/10E 82M/15E 51°46'N/118°37'W
December 06, 1982
G. Gibson
E & B Explorations, Inc.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

MICA 20 - 36
MINERAL CLAIMS

Revelstoke Mining Division

82M/10E 82M/15E

51°46'N 118°37'W

for

E & B EXPLORATIONS, INC.
1440 - 800 W. Pender Street
Vancouver, B.C.

....- owner/operator

by

GORDON GIBSON
Geologist

December 06, 1982

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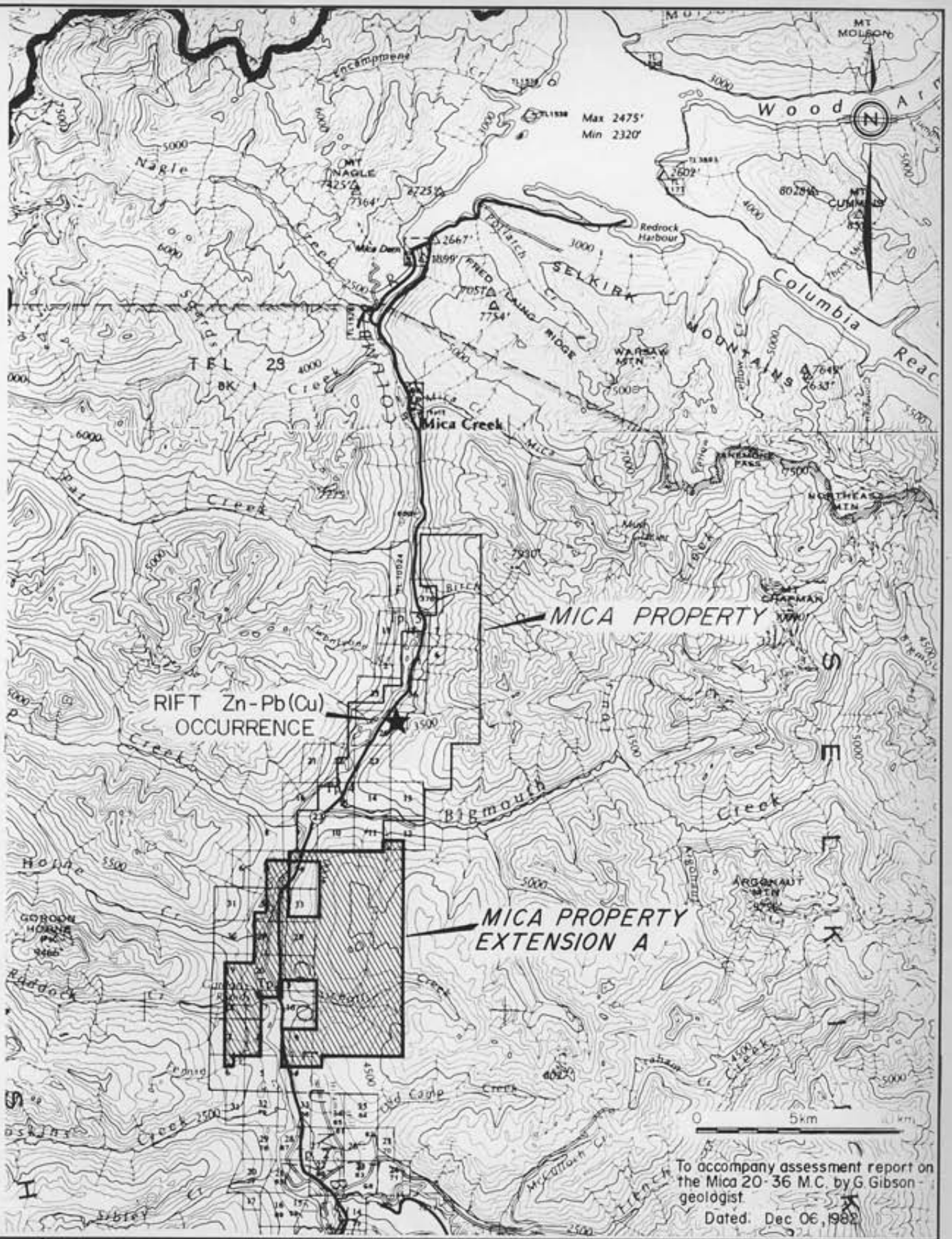
INTRODUCTION

Location, Access and Physiography

The MICA 20 - 36 mineral claims, collectively called the MICA property - Extension A, are located in the northern Selkirk Mountains of southeastern British Columbia approximately 90 km north of Revelstoke and 25 km south of Mica Creek. The claims comprise 285 units in a single block lying mainly east of the Columbia River in the vicinity of its confluence with Nicholls Creek and Ruddock Creek. The approximate geographic center of the block has coordinates: 51°46'N / 118° 37'W, NTS 82M/10E and 82M/15E. Figure 1 is an index map, Scale 1:250,000 showing the location of the claims.

Access to the claim area is provided by Route 23 - a permanent hard surface highway connecting the communities of Revelstoke and Mica Creek. Portions of Route 23 within the property are currently being relocated to higher elevations in order to accomodate the Columbia Reservoir, the maximum flood level of which will fall at 573m upon completion of the Revelstoke dam. East of the Columbia River, a good system of private logging roads (Canadian Cellulose Co. Ltd.) provides excellent access to the central portion of the claim area. West of the Columbia River the MICA 24 and MICA 25 claims can be reached via private ferry and logging roads of Beaumont Timber Co. Ltd.

Rugged alpine topography with serrate ridges, glaciers, nevé and deep U-shaped valleys typifies the northern Selkirk and Monashee Mountains. In the immediate claim area elevations range from 525m A.S.L.



To accompany assessment report on the Mica 20-36 M.C. by G Gibson - geologist.

Dated. Dec 06, 1982

E & B EXPLORATIONS INC. VANCOUVER CANADA	WOOD RIVER PROJECT				
	INDEX MAP 82M/10E, 82M/15E				
DATE	OFFICE	DEPARTMENT	MAP INDEX NO.	SCALE	DRAWING NO.
DEC./1982				1: 250,000	FIG. 1

at the Columbia River to 1770m A.S.L. on slopes to the east. In general the MICA 20 - 36 claims occupy heavily woooded west-facing slopes cross-cut in an east-west direction by the deeply incised valley of Nicholls Creek. Virtually all of the property is below tree line. Vegetation consists of dense stands of cedar, hemlock, balsam and spruce with a locally abundant undergrowth of alder and devil's club. An estimated 10 to 15% of the claim area has been logged by clear-cut methods. Bedrock exposures are limited primarily to stream canyons and road cuts especially along logging roads where cut-and-fill and numerous borrow pits provide reasonable geological control. Low lying areas adjacent to the Columbia River are floored by thick deposits of glacial till and alluvium.

Climate is that of the Interior Rain Belt with temperatures ranging between -15 °C and +30 °C. Annual precipitation averages 1.15m, more than half of which falls as up to 6m of snow. Snowpack at any one time rarely exceeds 1.5m.

Claims and Ownership

All claims are within the Revelstoke Mining Division and are owned and operated by:

E & B Explorations Inc.
1440 - 800 West Pender Street,
Vancouver, B.C. V6C 2V6

Claim Name	Size	Record No	Record Date
MICA 20	6	1367	December 07, 1981
MICA 21	10	1368	December 07, 1981
MICA 22	18	1369	December 07, 1981
MICA 23	9	1370	December 07, 1981
MICA 24	20	1371	December 07, 1981
MICA 25	20	1372	December 07, 1981
MICA 26	20	1376	December 15, 1981
MICA 27	20	1387	January 15, 1982
MICA 28	18	1377	December 15, 1981
MICA 29	20	1388	January 15, 1982
MICA 30	16	1378	December 15, 1981
MICA 31	18	1389	January 15, 1982
MICA 32	18	1390	January 15, 1982
MICA 33	12	1391	January 15, 1982
MICA 34	20	1392	January 15, 1982
MICA 35	20	1393	January 15, 1982
MICA 36	20	1394	January 15, 1982
	Total 285 units		

Claim locations are shown on Drawings 1 and 2 of this report - scale 1:10,000.

History

During the 1980 field season, a joint-venture reconaissance prospecting and geochemical exploration program, operated by J.M. Leask of 507 - 14th Ave.S, Cranbrook, B.C. and funded by E & B Explorations Inc. was undertaken in the northern Selkirk and Rocky Mountains near Mica Creek. This work led to discovery in August 1980 of a Zn, Pb, Cu massive sulfide showing now known as the RIFT occurrence. The showing was subsequently protected in August, September and October by 321 units (MICA Property) - see Figure 1. Assessment work during the remainder of the 1980 field season was limited to cursory prospecting and widely spaced silt and soil sampling. In May 1981, the writer was engaged by Leask and E & B to do geological mapping and prospecting over the claim block and

to supervise the establishment of a control grid for detailed geochemical and geophysical surveys. Results of the geological and geochemical surveys were applied for assessment - see Gibson 1981a. At this time sixty units (MICA 1 - 4 claims) were allowed to lapse from the north end of the block bringing the total property size to 261 units. In December 1981 and January 1982 an additional 285 units (MICA Property - Extension A) were staked to the south of the original block - see Figure 1, and operatorship on the enlarged property switched from Leask to E & B. The writer was re-employed in June 1982 to extend the geological mapping and prospecting coverage into the newly claimed area and to undertake concurrent silt and soil sampling. Results of these geological and geochemical surveys are presented herein.

Assessment Work - 1982

Geological mapping and prospecting were carried out during the period June 15 to October 07, 1982. B.C. Government air photographs (1:37,000 and 1:20,000), enlargements of standard NTS 1:50,000 topographic maps (1:25,000) and detailed forest cover maps of Canadian Cellulose Co. Ltd. (approx. 1:20,000) were used for field control. Geological data are compiled on Drawing 3 of this report - scale 1:25,000. Total area surveyed is approximately 10,800 hectares.

Silt and soil sampling took place concurrently with mapping and prospecting. Most samples were collected along logging roads and streams where control could be maintained by truck odometer, beltchain, pacing or altimeter methods. A total of 530 samples were taken, with coverage on

all claims except MICA 20, 23 and 25. Results are compiled on Drawings 4, 5, 6, and 7 - scale 1:25,000.

GEOLOGY

Regional Setting

Portions of four major tectonic elements of the Columbian Orogen underlie the Mica Creek area. From east to west these are:

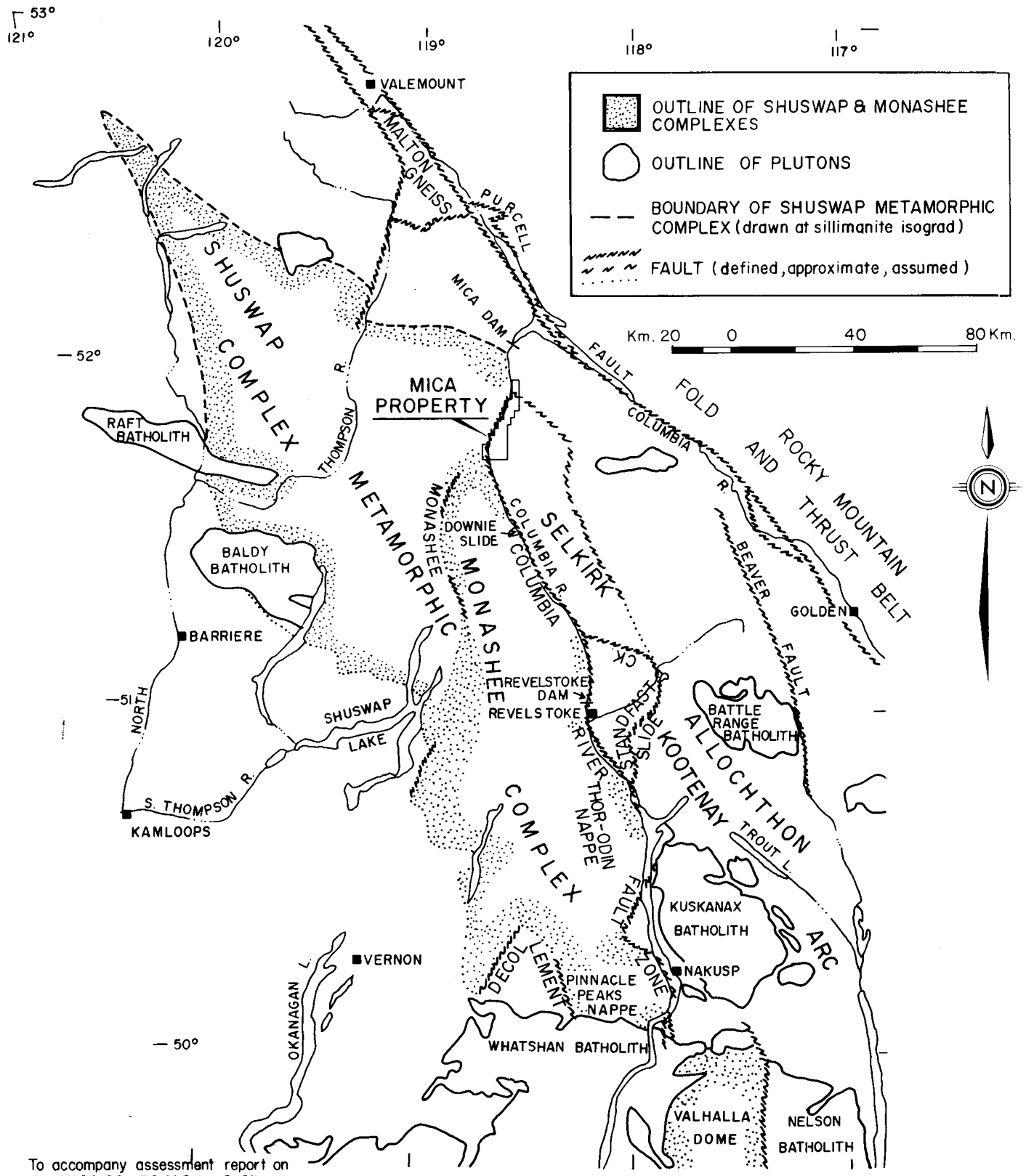
1. Rocky Mountain Fold and Thrust Belt
2. Selkirk Allochthon
3. Shuswap Metamorphic Complex
4. Monashee Complex

The MICA Property and extensions are located along the western margin of the Selkirk Allochthon where it contacts the eastern edge of the Shuswap Metamorphic Complex and Monashee Complex - see Figure 2 (after Read and Brown, 1981).

Property Geology

Intoduction

In the area of the MICA Property - Extension A the Selkirk Allochthon embraces regionally metamorphosed Eocambrian through Cambrian and younger(?) sedimentary rocks cut by Cretaceous(?) granitic intrusions. The sequence has undergone three superimposed phases of Jurassic/Cretaceous deformation, the second of which created large northeast - trending isoclinal folds with nearly flat dipping axial surfaces. A major fold of this generation is well exposed in the north canyon wall of Nicholls Creek where marble units are greatly thickened in the core of an



To accompany assessment report on the MICA 20 - 36 M.C. by G. Gibson - geologist.

Dated : Dec 06, 1982

E & B EXPLORATIONS INC. VANCOUVER CANADA			WOOD RIVER PROJECT REGIONAL TECTONIC MAP Adapted from Read and Brown (1981)		
DATE	OFFICE	DEPARTMENT	MAP INDEX NO.	SCALE	DRAWING NO.
DEC./1982					FIG. 2

east closing synform - see Drawing 3. Further west, near the lower reaches of Ruddock Creek and Holden Creek, highly metamorphosed and deformed sedimentary and volcanic strata of the Shuswap and Monashee Complexes are separated from the Selkirk terrane by the gently east - dipping Columbia River Fault Zone.

Lithology

Sedimentary strata mapped within Extension A of the MICA property, are the southern continuation of deformed units hosting the RIFT conformable Zn - Pb(Cu) massive sulfide occurrence north of Bigmouth Creek - see Figure 1. These units are broadly correlated with the Eocambrian Hamill Group and overlying Lower Cambrian Mohican Formation, Badshot Formation and (Lower Paleozoic) Lardeau Group. At present however, definite assignment of individual map units to a precise stratigraphic interval is not possible.

In general, Extension A of the MICA Property is transected in a north - south direction by three belts of deformed stratigraphy: a western belt dominated by two marble units each 150 to 200m thick separated by pelites, a central belt of mainly pelitic rocks with an aggregate thickness of approximately 200m and an eastern belt of interbedded grit and pelite at least 900m thick but with an unknown depth to base - see Drawing 3. Limited top determinations from graded grit units in the eastern belt suggest that stratigraphy youngs toward the core of the Nicholls Creek synform. That is, the eastern grit - dominated sequence is the oldest and the western carbonate - dominated sequence is

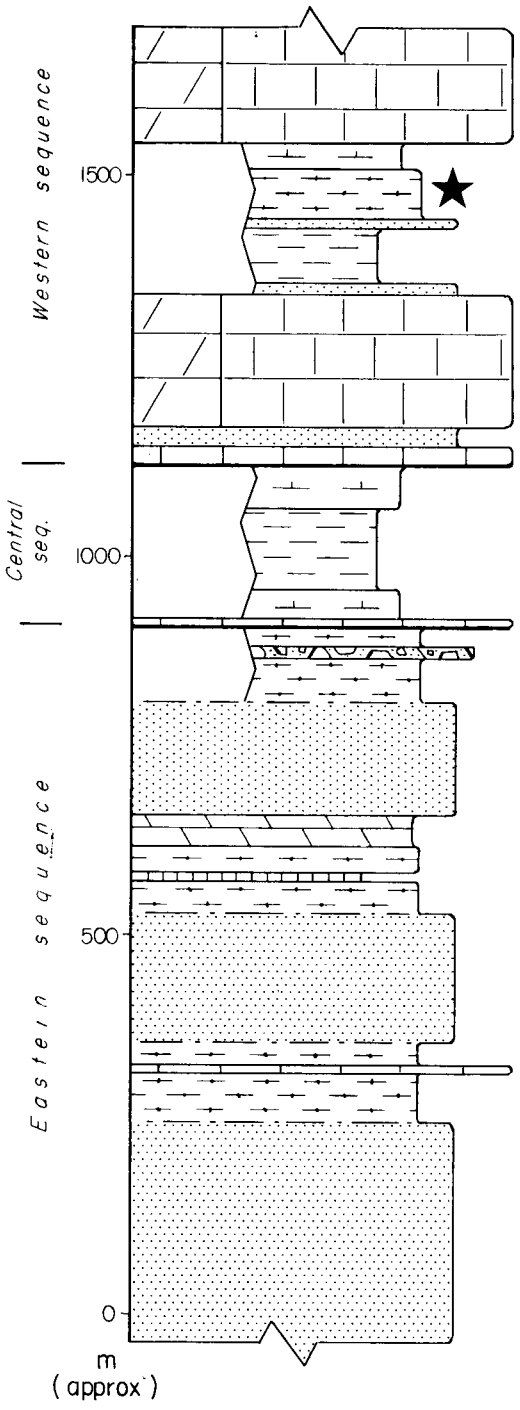
the youngest. This provides the basis for the restored stratigraphic section shown on Figure 3. Note that Figure 3 is intended to be diagrammatic only; thicknesses of individual units are approximations and the appearance of specific rock types in the column denote the predominance of that lithology and not the detailed internal stratigraphy which is exceedingly more complex. Rock units on Figure 3 and Drawing 3 are labelled to be in harmony with earlier mapping north of Bigmouth Creek - see Gibson 1981a.

A - Marble

Marble units are a major component of the western sequence and are well displayed in cliffs and road cuts east of the Columbia River and in canyons near the lower reaches of Nicholls Creek and Ruddock Creek - see Drawing 3. Marbles are also well exposed along both banks of the Columbia River at Gordon Rapids where the river narrows to 100m between carbonate bluffs up to 120m high.

In general, the thickest marble units are resistant to weathering, tending to form prominant castellate outcrops with pale grey to white weathering colours. Upper and lower contacts of carbonate rock units are usually not well defined but comprise zones of pure and impure marbles alternating with pelites and other clastic rocks.

Calcitic marbles (map unit Aa) are medium to coarse grained, pervasively recrystallized, and range from massive to very well banded with white and grey layers alternating on a scale of 2 - 10cm. Layering is



A a — Calcitic MARBLE

b — Dolomitic MARBLE

B a — Calcareous PELITE

b — Dark banded PELITE

c — Quartz feldspar muscovite biotite PELITE

d — Chloritic PELITE

e — Talcose PELITE

C a — GRIT, QUARTZITE

b — META-CONGLOMERATE

D a — Hornblende garnet CALCSILICATE

★ Projected position of RIFT Zn, Pb (Cu) massive sulfide layer

E & B EXPLORATIONS INC.
VANCOUVER CANADA

WOOD RIVER PROJECT

SIMPLIFIED STRATIGRAPHY
NICHOLLS CREEK - BIGMOUTH CREEK AREA

DATE	OFFICE	DEPARTMENT	MAP INDEX NO.	SCALE	DRAWING NO.
DEC./1982					FIG. 3

often enhanced by variations in calcite grain size and by intercalations of argillaceous and/or micaceous material. Although usually smooth and uniform, the layers are locally disrupted into complex disharmonic folds reflecting the rock's overall tendency toward plastic flow during regional deformation. Calcitic marbles decompose on weathering into granular carbonate "sand" and with prolonged exposure into tan - coloured limy soils.

Dolomitic marbles (map unit Ab) are generally denser, cleaner, and finer grained than calcitic varieties and are usually massive although occasional vaguely banded units have been noted. The rock characteristically breaks down along numerous closely - spaced orthogonal joints into a fine hackly talus. Large masses of silicified marble locally replace dolomitic marbles with fronts of silicification advancing along networks of fractures in the dolomitic host.

B - Pelite

Pelitic rocks make up the bulk of the central sequence but also occur between major carbonate units in the western sequence and as interbeds with grit in the eastern sequence - see Figure 3. They are thinly - layered, recessive, and contain a widespread penetrative mineral foliation outlined by mica grains that is axial planar to macroscopic second phase folds - see Structure. Pelites have been subdivided on the basis of their mineralogy, internal fabrics and weathering characteristics into five catagories for mapping purposes. Note that these subdivisions are somewhat arbitrary and that many gradations exist between the five types.

Calcareous pelites (map unit Ba) are transitional between banded impure calcitic marbles of map unit Aa and the darker banded (±graphitic) pelites of unit Bb. They comprise medium grained quartz - muscovite lamellae alternating on a scale of <1 - 5mm with layers and lenses of crystalline calcite. Most exposures weather to a dull grey - brown. Dissolution and plucking of carbonate grains during weathering lends a characteristically "rotten" - looking aspect to most outcrops of this unit.

Dark banded pelites (map unit Bb) are fine to medium grained quartz, biotite, muscovite rocks with considerable graphite in some exposures. The common alignment of numerous lensoidal quartz segregations with dark carbonaceous and/or micaceous lamellae and abundant limy partings give the unit a distinctive layered appearance. Pyrrhotite is ubiquitous, occurring as fine disseminations or layer - parallel streaks locally comprising up to 10% of the rock and leading to rusty weathering colours in most outcrops. Dark greenish - black "greasy"-lustered chloritic(?) partings mimic graphite in some exposures and with increasing chlorite content this rock is indistinguishable from dark chloritic pelites of map unit Bd - see below.

Quartz - feldspar - muscovite - biotite pelites (map unit Bc) are grey - brown weathering, medium crystalline and non - calcareous. Numerous beads and lenses of white quartz to 5cm in width define compositional layering. Garnet and staurolite occur locally as euhedral porphyroblasts in a mica matrix. This unit may, in part, be laterally equivalent to other pelitic rock types in areas of elevated metamorphic

grade, as north of Bigmouth Creek - see Figure 3 and Drawing 3.

Chloritic pelites (map unit Bd) have two occurrences. In the eastern sequence they are repetitively interbedded with grit units as discrete layers <1cm to >5m in thickness. In this association they are dense, fine grained and siliceous with a paper - thin lamination and distinctive pale green weathering colors. Biotite and pyrite often occur as fine scattered grains along the lamination and rare octahedral magnetite crystals (<1mm) were observed in one locality. Porphyroblastic garnet and (rarely) staurolite devolop locally, particularily in more northern exposures. In the central and western sequences chloritic pelites are closely associated with dark banded pelites and calcareous pelites near contacts with marble units. Here they are coarser grained, dark green in color and contain lensoidal quartz segregations and chert(?) layers. Pink garnets and pyrite/pyrrhotite disseminations are common and black Mn - crusts develop on fractures cutting the unit.

Talcose pelites (map unit Be) are relatively uncommon, occurring in the eastern sequence in close association with chloritic pelites and grits - see Figure 3. They are soft, friable rocks that weather to shades of pale green or white.

C - Quartzite, grit, conglomerate

Grit and quartzite (map unit Ca). Grit units comprise the bulk of the eastern sequence. They occur as massive to graded beds, 10 - 50cm thick, rhythmically interlayered with about equal proportions of pale

green chloritic pelite. Subrounded pea - sized (2 - 8mm) clasts of quartz, feldspar and siliceous rock fragments are suspended in a matrix of finely crystalline quartz, muscovite and chlorite. Sorting of clasts is moderate. Most grit exposures are very hard, typified by coarse blocky talus and pale green or grey weathering colors. Internal textures are best studied on stream - worn blocks.

Narrow horizons (10 - 30m) of a distinctive white weathering orthoquartzite were mapped in the western sequence near contacts with major carbonate units - see Figure 3. These may serve as useful marker horizons in future work.

Meta - conglomerate (map unit Cb). A single roadside exposure of strained polymictic conglomerate was mapped within chloritic pelites near the top of the eastern sequence - see Drawing 3 and Figure 3. Subrounded clasts in the conglomerate vary in size from 5mm to 50cm, are strongly flattened in the plane of the foliation, and consist mainly of green - white micaceous quartzite with subordinate limy calcsilicate. These are densely packed in a medium grained calcareous matrix containing radiating clusters of dark hornblende crystals.

D - Calcsilicate

Hornblende - garnet calcsilicate (map unit Da). This is a relatively uncommon lithology, occurring mainly as dark greenish - grey layers up to 10m in thickness within grit and chloritic pelite of the eastern sequence. Corroded salmon - pink garnet crystals and matted

aggregates of greenish hornblende laths make up the bulk of the rock. North of Bigmouth Creek calcsilicate units may be associated with narrow layers of hornblende - plagioclase (±garnet) amphibolite.

Isolated pockets of calcsilicate (skarn) also develop wherever limy units are intruded by granitic material such as along the contacts of the small quartz monzonite plug(?) near the northwestern corner of the MICA 26 claim - see Drawing 3.

Structure

Structures in the area of the MICA 20-36 claims are dominated by large recumbent isoclinal second phase folds with northeast trending axes. These folds comprise a structural stack at least 2000m thick in the immediate hanging wall of the Columbia River Fault Zone - see Cross Section CD on Drawing 3. Marble units that outline the fold patterns can be traced northward along the Columbia River from Nicholls Creek to north of Bigmouth Creek where they gradually deflect eastward to resume the regional northwest structural grain. In so doing the attitudes of second phase isoclines change from northeastward with flat - lying axial surfaces to northwestward with southwest - dipping axial surfaces and shallow southeast plunges. Superimposed third phase folds are broad upright arches plunging northwest in the southern part of the map area but become compressed and isoclinal north of Bigmouth Creek where second and third phase structures are approximately coaxial. These variations in attitude and style of second and third phase folds from south to north in the MICA Property coincide with the northwest termination of the

Selkirk Fan Axis in the Bigmouth Creek area.

Along the western margin of the Selkirk terrane second and third phase folds are thought to have developed in previously overturned stratigraphy ; Brown, Hoy, and Lane(1977), Brown and Tippett(1978), Read and Brown(1979), Simony et al(1980). To the south and east of the MICA Property, Brown and Tippett(1978) call on a large east - facing phase 1 nappe structure - the Goldstream Nappe, to invert a panel of rocks at least 15km wide. Although the present mapping falls entirely within Brown and Tippett's theorized panel of inverted stratigraphy, data on stratigraphic tops and facing directions are at present insufficient to either support or oppose their claim.

At the outcrop scale, first and second phase fabrics are difficult to separate. The prevailing minor structure is a penetrative mineral foliation, outlined by mica grains in pelitic rocks, that is axial planar to both phase 1 and phase 2 (designated S2). Throughout the map area S2 and primary layering (S0) are parallel or near parallel, indicating isoclinal deformation. The limbs of associated second phase minor folds are severely attenuated along the S2 foliation with complete transposition to rootless intrafolial isoclines common in many examples.

A steeply dipping crenulation cleavage, designated S3, is axial planar to open third phase minor folds. Mica grains aligned along and defining S2 are bent and transposed by S3. Porphyroblasts of garnet commonly grow across S2 but are kinked by S3 indicating that the peak of regional metamorphism occurred between the second and third phases of

deformation. Attitudes of layering and second/third phase minor structures for the domain south of Bigmouth Creek have been compiled on three synoptic equal - area projections - see Drawing 3.

Along the western edge of the MICA Property the Columbia River Fault Zone dips gently eastward - dividing severely strained rocks of the Selkirk terrane from the underlying Monashee and Shuswap Complexes. Eastward displacement of hanging wall rocks up to 80km relative to footwall rocks has recently been proposed for this structure by Read and Brown(1981).

In the southern part of the map area some elimination of stratigraphy may have occurred by sliding along the limbs of reclined second phase isoclinal folds - see Cross Section CD on Drawing 3.

Metamorphism and Plutonic Activity

Regional metamorphism of the medium pressure Barrovian - type has profoundly affected all lithologies in the MICA 20-36 claim area. Metamorphic grades increase from south to north toward a culmination in the sillimanite/K-feldspar zone north of the map area near Birch Creek. South of Bigmouth Creek the widespread assemblage chlorite - biotite - muscovite - quartz in pelitic rocks defines a broad chlorite/biotite zone. This gives way northward to garnet - biotite - muscovite - quartz (feldspar) assemblages of the garnet zone and, north of Bigmouth Creek, to staurolite zone rocks containing staurolite - garnet - biotite - muscovite - quartz and feldspar. West of the Columbia River rocks of the

Monashee and Shuswap Complexes are metamorphosed to kyanite and sillimanite grades.

The Bigmouth Creek Stock is a syn-kinematic quartz monzonite pluton of probable Cretaceous age outcropping immediately east of the claims - see Drawing 3. Porphyry, with large rimmed orthoclase phenocrysts embedded in a matrix of quartz, orthoclase, plagioclase and biotite is a characteristic rock type throughout most of the pluton. Numerous late - stage dikes of leucocratic granite and aplite cut the quartz monzonite and locally invade into the surrounding metasediments. Several sill - like bodies and small plugs(?) of quartz monzonite with associated aplite were noted elsewhere in the MICA Property - these probably represent tongues or satellites of the Bigmouth Creek Stock, which they closely resemble.

Mineralization

North of Bigmouth Creek, the RIFT occurrence (Figure 1) is a conformable layer of massive and disseminated pyrrhotite, pyrite, sphalerite and galena with subordinate chalcopyrite and arsenopyrite - Hicks(1982), Gibson(1981a). An upper massive section 0 to 1.4m thick grades 29.47% Zn/ 6.93% Pb and a lower disseminated and interlayered section 0.3 to 1.6m thick grades 2.39% Zn/ 0.39% Pb. Associated copper and silver values are less than 0.07% and 0.5 oz/ton, respectively. Stratabound sulfides are contained in a varied, but largely pelitic assemblage bracketed by carbonate units.

Figure 3 indicates the projected stratigraphic position of the RIFT mineralization in the MICA 20-36 claim area. To date, no additional base metal occurrences have been located.

GEOCHEMISTRY

Field Methods

Concurrent silt and soil sampling augmented mapping and prospecting over the MICA 20-36 claims. Sampling took place mainly along logging roads where a sample interval of not greater than 100m was maintained between roadside outcrops - see Drawings 4 - 7. Sample locations were determined in the field by odometer, hipchain, pacing and/or altimeter methods and plotted on the same 1:25,000 topographic base maps used to compile the geological information.

During roadside traverses care was taken to sample only undisturbed material well upslope from the road bed in order to minimize the effects of contamination. When available, silt samples from major and minor drainages were taken in preference to soil samples. Silt was collected by hand from the finest material available, free of locally derived sluff, and placed into appropriately labelled Kraft 9cm X 16cm paper sample bags. Soil samples were extracted with a mattock from the B horizon at a minimum depth of 10cm and bagged in the same fashion as the silts.

Samples were shipped in two lots to:

Vangeochem Lab Ltd., 1521 Pemberton Ave, North Vancouver, B.C. V7P 2S3

and

MIN-EN Laboratories Ltd., 705 W. 15th St., North Vancouver, B.C. V7M 1T2

All samples were analysed for Zn, Pb, Cu and Ag.

Analytical Procedure

Vangeochem Lab Ltd.

Samples were dried in a ventilated oven and then sifted in a stainless steel seive to separate the -80 mesh fractions. Subsequently the fines were weighed out into 0.50 gram samples using a top loading balance. These were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively). Digested samples were then diluted to a fixed volume with demineralized water.

Zinc, lead, copper and silver analyses were determined by using a Techtron Model AA-5 atomic absorption spectrophotometer. Digested samples were aspirated directly into an air and acetylene mixture flame. The results, in parts per million, were calculated by comparison to a set of standards used to calibrate the atomic absorption unit.

MIN-EN Laboratories Ltd.

Samples were dried at 95 °C in a ventilated oven then sifted in a stainless steel seive to separate the -80 mesh fractions. The fines were weighed out into 1.00g samples and digested for 6 hours in a mixture of 2ml concentrated nitric and 5 ml concentrated perchloric acids. Digested samples were then diluted to 25ml with demineralized water.

Analyses for zinc, lead, copper and silver were performed on a Techtron Model AA-5 atomic absorption spectrophotometer employing an air and acetylene mixture flame. Results in parts per million were calculated by comparison to standards.

Results and Interpretation

Cumulative frequency distributions were plotted for each of Zn, Pb, Cu and Ag. Results are summarized below:

	Vangeochem		MIN-EN	
	SILT N = 64	SOIL N = 191	SILT N = 33	SOIL N = 212
Zn	61* [96]**	62 [110]	39 [70]	59 [95]
Pb	15 [21]	19 [28]	20 [31]	25 [40]
Cu	25 [42]	26 [49]	29 [51]	29 [50]
Ag	.23 [.43]	.22 [.40]	.57 [.72]	.84 [1.3]

* median value of population in ppm
** threshold value of population in ppm

"Threshold" values were arbitrarily chosen to isolate the upper 10% of each population and "anomalous" values were defined as those exceeding four times the median value.

Samples taken from areas of pelitic rock generally yeilded more values in the threshold range for Zn, Pb and Cu than those from adjacent carbonate or grit units, probably reflecting the pelite's higher overall background in those metals - see Drawings 4 - 6.

A wide zone of elevated Pb, Cu and Zn geochemistry along the eastern boundary of the MICA 22 claim contains one anomalous Pb value - see Drawing 5. This zone is developed over pelitic rocks in a part of the western sequence considered by the present mapping to be correlative with the RIFT mineralized section - see Drawing 3. More work is definitely recommended to better define the anomaly and to ascertain its significance in terms of possible recurring base metal horizons in a section known to be mineralized further north.

Anomalous Pb and associated high Zn and Cu values also occur near the southwestern corner of the MICA 33 claim where high metal values appear to be related to narrow impure marble layers in the eastern grit/pelite sequence.

West of the Columbia River on the MICA 24 claim an isolated Cu and Zn anomaly with high Pb values may be associated with pockets of silicification or brecciation in massive dolomitic marble.

CONCLUSIONS

1. The MICA 20-36 mineral claims (Extension A of the MICA Property) contain the southern continuation of deformed metasedimentary units hosting the RIFT stratabound Zn - Pb(Cu) massive sulfide occurrence. These units can be subdivided into three north - south trending belts: a western marble - dominated sequence (youngest?), a central pelite sequence, and an eastern grit/pelite sequence (oldest?).

2. Structures are dominated by large - scale recumbent isoclinal second phase folds with superimposed open third phase arches. Second and third phase structures may have developed on previously inverted stratigraphy (phase 1). Regional metamorphic grade increases from chlorite/biotite facies in the south to staurolite facies in the north. Small intrusive bodies of quartz monzonite are probably related to the Bigmouth Creek Stock exposed east of the property.

3. No new base metal occurrences have been located on the MICA 20-36 claims to date but high Pb, Cu, and Zn values were recovered from silt and soil. One such anomaly likely records geochemical dispersion from sulfide - rich pelites which are on strike with the RIFT mineralized sequence further north.

Respectfully submitted,

Gordon Gibson

Gordon Gibson
Geologist

References

Brown, R.L., Hoy, T., and Lane, L.S., 1977. Geology of the Goldstream River - Downie Creek area, southeastern British Columbia; B.C. MIN. EN. MIN. PET. RES., Preliminary map 25.

Brown, R.L., Perkins, M.J., and Tippett, C.R., 1977. Structure and stratigraphy of the Big Bend area, British Columbia; in Report of Activities, Part A, GEOL. SURV. CAN. Paper 77-1A, pp. 273-275.

Brown, R.L., and Tippett, C.R., 1978. The Selkirk Fan Structure of the southeastern Canadian Cordillera; GEOL. SOC. AM. BULL., Vol. 89, pp. 548-558.

Gibson, G., 1981a. Geological and geochemical report, RIFT, RIFT 2, OMEGA, MICA 5-18, and MICA 19 FR mineral claims; B.C. MIN. EN. MIN. PET. RES., Assessment report, 23p.

Gibson, G., 1981b. Final report on the Wood River Project - 1981; E & B Explorations Inc., Unpublished document, 46p.

Hicks, K.E., 1982. Geology and mineralogy of the "RIFT" Zn-Pb massive sulfide deposit, southeastern British Columbia; unpublished B.Sc. thesis, University of British Columbia, Vancouver, B.C., 55p.

Leask, J.M., 1980a. Wood River prospecting proposal. Year end report; E & B Explorations Inc., Unpublished document, 19p.

Leask, J.M., 1980b. Wood River (1981) proposal; E & B Explorations Inc., Unpublished document, 14p.

Read, P.B., and Brown, R.L., 1979. Inverted stratigraphy and structures, Downie Creek, southern British Columbia; in Current Research, Part A, GEOL. SURV. CAN. Paper 79-1A, pp. 33-34.

Read, P.B., and Brown, R.L., 1981. Columbia River Fault Zone: southeastern margin of the Shuswap and Monashee Complexes, southern British Columbia; CAN. JOUR. EARTH SCI., Vol. 18, pp. 1127-1145.

Simony, P.S., Ghent, E.D., Craw, D., Mitchell, W., and Robbins, D.B., 1980. Structural and metamorphic evolution of northeast flank of Shuswap complex, southern Canoe River area, British Columbia; GEOL. SOC. AM., Mem. 153, pp. 445-461.

Wheeler, J.O., 1965. Big Bend map area, British Columbia; GEOL. SURV. CAN. Paper 64-32, 37p.

Statement of Costs

1. Wages (June 15 - Oct 07, 1982; see timesheet)			
Project geologist	78 days § $150	11,700	
Geologist	76 days § $ 90	6,840	
Geologist/prospector	3 days § $125	375	
			18,915
2. Food and Accomodation (June 15 - Oct 07, 1982)			
Motel - Revelstoke			
10 days § $41		410	
Trailer rental (Jun 21 - Oct 07, 1982)			
ATCO 10x52 staff quarters			
3.5 mo § $1055		3,692	
Mob / demob		1,730	
Installation		450	
Pad rental 3.5 mo § $39		136	
Propane		115	
Electricity		181	
Food			
157 man-days § $20		3,140	
			9,854
3. Transportation			
Truck rental			
1981 GM 4x4 3/4T PU with canopy			
3.5 mo § $830		2,905	
Excess km. 1737 § $0.12		208	
Fuel		1,100	
Maintenance		585	
Misc. vehicle rental			
3/4T PU crew cab			
3 days § $35		105	
			4,903
4. Geochemical Analyses			
Silt/soil samples; anal. for Zn, Pb, Cu, Ag			
530 § $4.60		2,438	
			2,438
5. Maps and Airphotos		500	
			500

Statement of Costs (Continued)

6.	Field Equipment		
	Sample bags, acid, flagging tape, etc.	100	100
7.	Freight Charges	60	60
8.	Report Preparation	700	700
	Total		$37,470

Timesheet

June 15 - October 07, 1982

Project geologist G. Gibson

June	15 - 30	(16)	August	30 - 31	(2)
July	01 - 31	(31)	September	09 - 12	(4)
August	01 - 05	(5)		23 - 30	(8)
	18 - 20	(3)	October	01 - 07	(7)
	25 - 26	(2)			

Total: 78 days

Geologist K. Hicks

June	15 - 30	(16)	September	02 - 03	(2)
July	01 - 31	(31)		09 - 12	(4)
August	18 - 20	(3)		18	(1)
	25 - 26	(2)		23 - 30	(8)
	30 - 31	(2)	October	01 - 07	(7)

Total: 76 days

Geologist/prospector G. Crooker

September	18	(1)
	23 - 24	(2)

Total: 3 days

Statement of Qualifications

I, Gordon Gibson, do hereby certify that:

1. I am a geologist with residence at 201-2020 West 2nd Avenue, Vancouver, British Columbia, V6J 1J4.

2. I am a graduate of the University of British Columbia with a Bachelor of Science degree in geology (1975).

3. I have practised in the field of mineral exploration since 1975.

4. I am a member of the Canadian Institute of Mining and Metallurgy.

5. I was employed as an independent consultant by E & B Explorations Inc. of 1440 - 800 West Pender St., Vancouver, B.C., to manage the exploration program outlined in the accompanying report. I have no other financial or legal interest in the mineral properties therein described.

Respectfully submitted,

Gordon Gibson

Gordon Gibson
Geologist

MICA 22

MICA 28

MICA 29

MICA 36

MICA 24

MICA 23

MICA 25

MICA 30

MICA 31

MICA 32

MICA 33

Ruddock Creek

Nicholls Creek

Holden Creek

Fernie Creek

2000 2500 3000 3500 4000 4500 5000 5500

23

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

Gordon Gibson

TO ACCOMPANY ASSESSMENT REPORT ON THE
MICA 20-36 MINERAL CLAIMS BY G GIBSON - GEOLOGIST

DATED: DEC. 1982

2

MAP SCALE

200 0 200 400 600 M

NTS _____

REVISIONS	No.	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
11/16/82	J.V.		

E & B Explorations Inc.

OFFICE	DEPARTMENT

WOOD RIVER PROJECT

CLAIM MAP

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1:10,000	1

MICA 20

MICA 21

MICA 22

MICA 26

MICA 27

MICA 28

MICA 34

MICA 35

COLUMBIA RIVER

Bigmouth Creek

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

Gordon Gibson

TO ACCOMPANY ASSESSMENT REPORT ON THE MICA 20-36
MINERAL CLAIMS BY G.GIBSON - GEOLOGIST.
DATED: DEC. 1982

MAP SCALE
200 0 200 400 600 M
N.T.S.

REVISIONS	No.	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
11/16/82	J.v.V.		

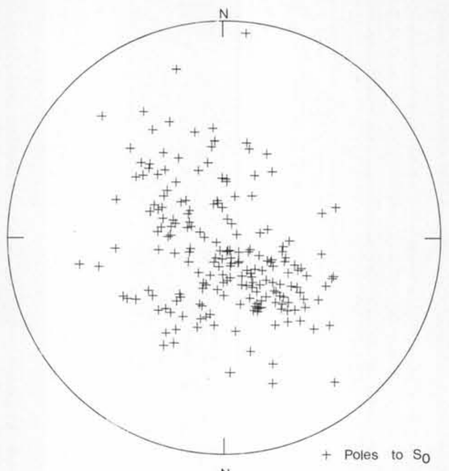
E & B Explorations Inc.

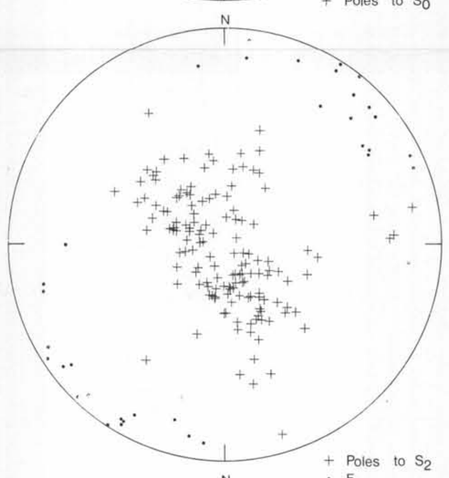
OFFICE | DEPARTMENT

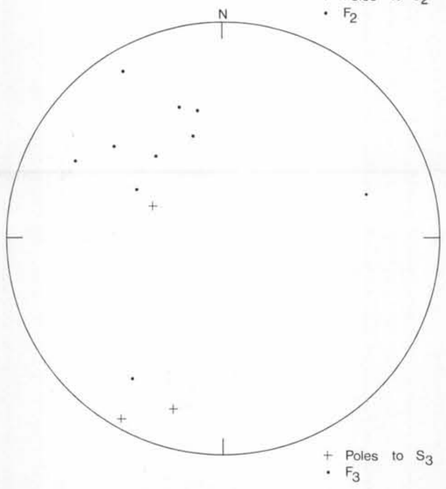
WOOD RIVER PROJECT

CLAIM MAP

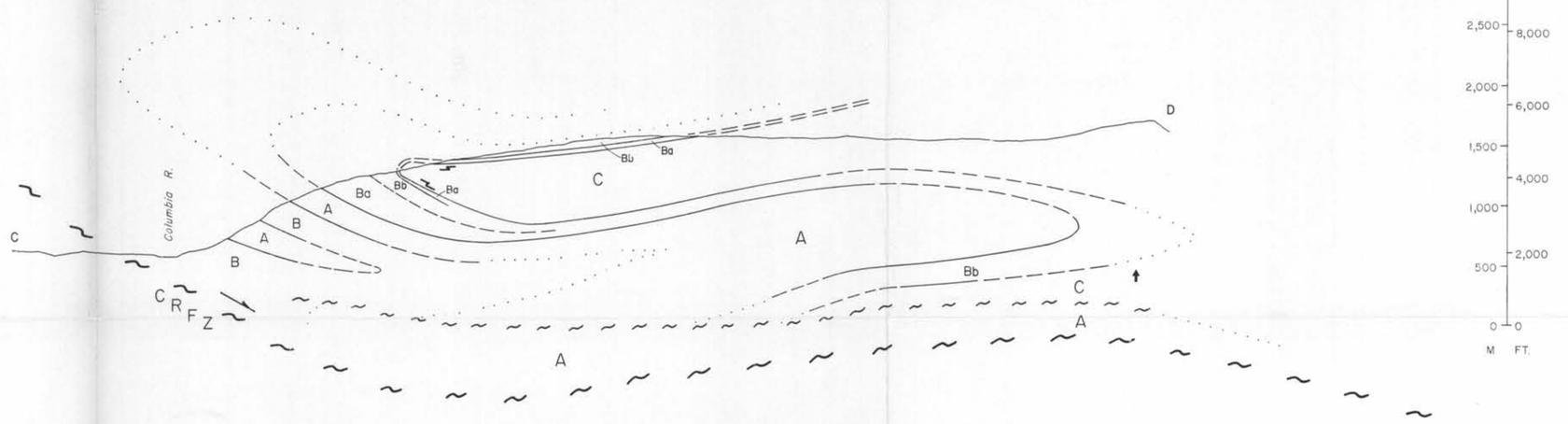
MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1:10,000	2







VERTICAL CROSS SECTION – CD



CRFZ – Columbia River Fault Zone

LEGEND

MESOZOIC AND / OR LATER

- QM — QUARTZ MONZONITE
- GR — GRANITE AND APLITE

LOWER PALEOZOIC

Unassigned HAMILL GP., MOHICAN FM., BADSHOT FM., LARDEAU GP.

- A — MARBLE
  - a. CALCITIC MARBLE
  - b. DOLOMITIC MARBLE; locally silicified
- B — PELITE
  - a. CALCAREOUS PELITE; marble interlayers
  - b. DARK BANDED PELITE; variably graphitic and calcareous, disseminated pyrrhotite.
  - c. QUARTZ FELDSPAR MUSCOVITE (BIOTITE) PELITE; locally garnetiferous.
  - d. CHLORITIC PELITE; lesser quartz feldspar biotite pelite, calcareous pelite and marble, occasional disseminated pyrrhotite, locally garnetiferous.
  - e. TALCOSE PELITE
- C — QUARTZITE
  - a. GRIT and QUARTZITE; lesser chloritic pelite
  - b. META – CONGLOMERATE
- D — CALC – SILICATE
  - a. HORNBLENDE GARNET CALC – SILICATE; lesser amphibolite

MONASHEE COMPLEX / SHUSWAP METAMORPHIC COMPLEX
Data from Wheeler, 1965

- E — QUARTZ BIOTITE FELDSPAR PARAGNEISS
- Db — QUARTZITE

SYMBOLS

- Geological contact; defined, approximate, assumed
- Major fault; defined, approximate
- Fault ; defined, approximate
- Phase 2 Antiform; Synform; defined, approximate
- Phase 3 Antiform; Synform; defined, approximate
- So Bedding, primary layering; inclined, vertical, horizontal
- S2 Foliation, schistosity
- S3 Crenulation
- F2 Fold axis; sense of vergence as viewed down-plunge, vergence unknown
- F3 Fold axis;
- Stratigraphic top determination
- Trend of outcrop
- Edge of mapping or outcrop
- Route 23; relocated section
- Haul road; loose surface

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

Gordon Gibson

Note:
To accompany Assessment Report on the MICA 20-36 Mineral Claims by G. Gibson, Geologist. December 1982

MAP SCALE
500 0 500 1000 1500
METERS
NTS 82 M/10E, 82 M/15E

REVISIONS	No	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
DEC, 1982	G.G.		

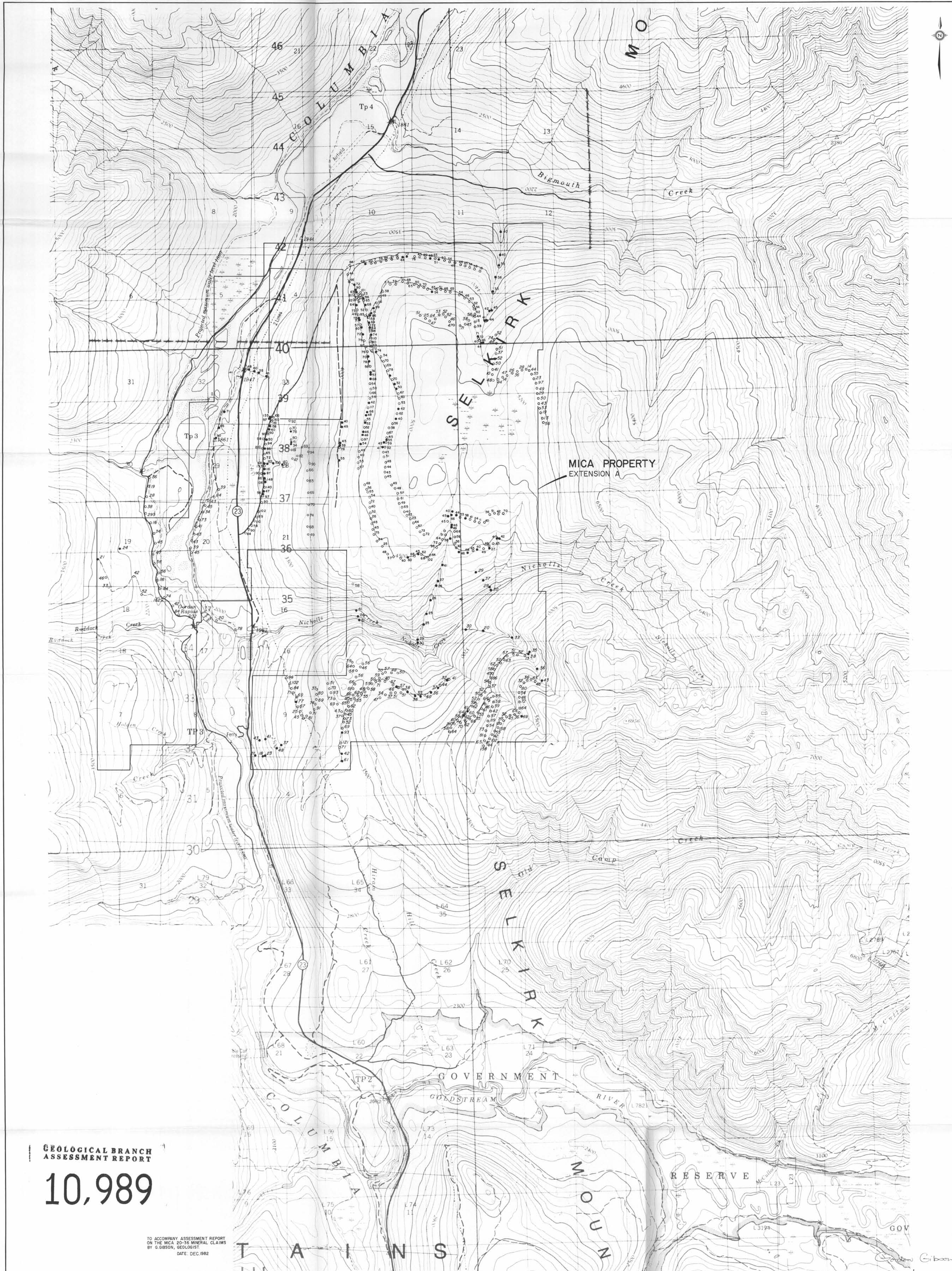
E & B Explorations Inc.

OFFICE	DEPARTMENT

WOODRIVER PROJECT

GEOLOGY

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1 : 25,000	3



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

TO ACCOMPANY ASSESSMENT REPORT
ON THE MICA 20-36 MINERAL CLAIMS
BY G.GIBSON, GEOLOGIST.
DATE: DEC.1982

40 - MIN-EN SAMPLES
80 - VANGEOCHEM SAMPLES
• - SILT
o - SOIL

MAP SCALE
500 0 500 1000 1500 M.

NTS ______

REVISIONS No	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
	J.v.V.		

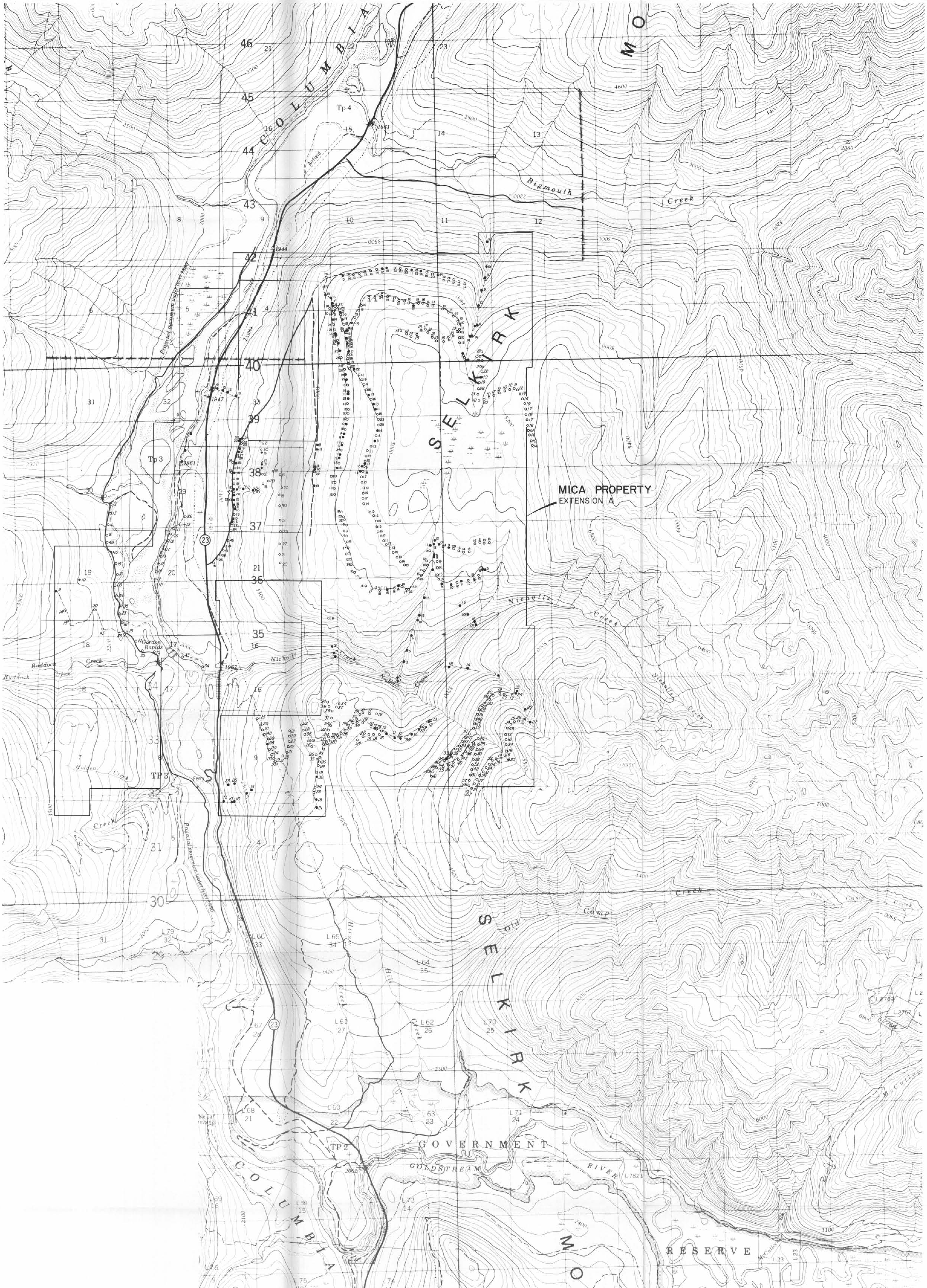
E & B Explorations Inc.

OFFICE | DEPARTMENT

WOOD RIVER PROJECT

SILT - SOIL GEOCHEMISTRY
Zn in P.P.M.

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1: 25,000	4



16 — MIN-EN SAMPLES
12 — VANGEOCHEM SAMPLES
• – SILT
○ – SOIL

MAP SCALE

500 0 500 1000 1500 M.

NTS ________

REVISIONS No	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
	J.v.V.		

E & B Explorations Inc.

OFFICE	DEPARTMENT

WOOD RIVER PROJECT

SILT – SOIL GEOCHEMISTRY
Pb in P.P.M.

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1:25,000	5

MICA PROPERTY
EXTENSION A

COLUMBIA MOUNTAINS

SELKIRK MOUNTAINS

GOVERNMENT RESERVE

Bigmouth Creek

Nicholls Creek

Old Camp Creek

Goldstream River

Hill Creek

Ruddock Creek

Holden Creek

Jordan Rapids

Projected maximum water level 1980

Projected maximum water level 1980

Airfield

Ferry

2 Lines

Die Car Crossing

Tp 4

TP 3

TP 2

TO ACCOMPANY ASSESSMENT REPORT
ON THE MICA 20-36 MINERAL CLAIMS
BY G.GIBSON, GEOLOGIST
DATED: DEC. 1982

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

Gordon Gibson

25 – MIN-EN SAMPLES
20 – VANGEOCHEM SAMPLES
• – SILT
o – SOIL

MAP SCALE
500 0 500 1000 1500 M.
NTS.

REVISIONS	No	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
	J.v.V.		

E & B Explorations Inc.

OFFICE	DEPARTMENT

WOOD RIVER PROJECT

SILT – SOIL GEOCHEMISTRY
Cu in P.P.M.

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1:25,000	6

MICA PROPERTY
EXTENSION A

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,989

TO ACCOMPANY ASSESSMENT REPORT
ON THE MICA 20-36 MINERAL CLAIMS
BY G.GIBSON, GEOLOGIST.
DATED: DEC. 1982

1.5 - MIN-EN SAMPLES
I.5 - VANGEOCHEM SAMPLES
• - SILT
o - SOIL
blank - None detected

MAP SCALE
500 0 500 1000 1500 M.
NTS.

REVISIONS	No	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
	J.v.V.		

E & B Explorations Inc.

OFFICE	DEPARTMENT

WOOD RIVER PROJECT

SILT - SOIL GEOCHEMISTRY
Ag in P.P.M.

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
	1: 25,000	7