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WESTERN CANADA

COMINCO LTD.

EXPLORATION  
NTS 83D/1E

ASSESSMENT REPORT  
GEOLOGICAL - ACCESS ROAD AND DRILL SITE CONSTRUCTION REPORT  
BEND GROUP  
GOLDEN MINING DISTRICT  
CUMMINS RIVER AREA

LATITUDE: 52°03'N

LONGITUDE: 118°<sup>24"</sup>W  
13'24"

FILMED

OWNER OF CLAIMS:  
COMINCO LTD.  
700-409 GRANVILLE STREET  
VANCOUVER, B.C.  
V6C 1T2

OPERATOR: COMINCO LTD.

WORK PERFORMED DURING AUGUST, 1987

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VANCOUVER, B.C.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

OCTOBER, 1987

REPORTED BY: A.B. MAWER

16,544

ASSESSMENT REPORT

BEND GROUP

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ASSESSMENT REPORT  
BEND GROUP

1. INTRODUCTION

This report outlines preliminary development work on the Bend Group of 12 mineral claims (12 units) situated within the Golden Mining Division, B.C.

During 1987 the exploration program consisted of road access, drill site construction and geological mapping performed by Cominco Ltd.

2. SUMMARY

The Bend property is located within the Golden Mining Division at latitude 52°03'N, longitude 118°14'W on map sheet NTS 83D/1. The area is approximately 137 km NW of Golden, B.C. and lies on the east side of McNaughton Lake at the confluence of Cummins River. The claims are underlain by a mixed assemblage of Lower to Middle Cambrian age sediments consisting of quartzite, limestone, calcareous and garnet-staurolite schists. The units strike northwesterly, dip steeply west and isoclinally folded with 10° northerly plunges.

The showings are exposed on the Cummins River canyon walls and consist of banded massive to stringer pyrite, sphalerite, galena and minor magnetite interbedded with manganiferous and sideritic carbonate and white fine laminated to medium bedded quartzite. The exposures in the canyon walls possibly represent the upper and outer edge of a large stratabound - strataform sulphide sheet or bed. Exploration to date indicates a dip length in excess of 200 metres and a partially exposed strike length in excess of 400 metres. The showings were first located in 1949, staked by Cominco Ltd. in 1966 and explored by geological mapping and 240 metres of short hole drilling in 13 holes. In 1972 Laura Mines optioned the property and carried out a program of soil geochemistry, geological mapping and 480 metres of core drilling in four holes. This work indicated a sulphide sheet averaging 7.3 metres in thickness, in excess of 200 metres of dip length and 250 metres of strike length with an indicated north plunge of 10°. The average grade indicated is 7 gm/T Ag, 0.6% Pb, 2.3% Zn. Surface showings to the south and uppermost exposure (now at the high flood level of McNaughton Lake at 2500 ft. (762 m)) assayed 2.1 m of 142 g/T Ag, 8.4% Pb, 2.0% Zn with some of the included bands, 7 cm thick assaying 130 to 615 g/T Ag, 3.8 to 25% Pb, 0.1 to 15% Zn. The program proposed for 1987 consisted of road access, drill site construction and geological mapping, in an effort to prepare the property for a subsequent drill program.

During 1987 approximately 1.5 km of access road and four drill sites were constructed by a D-7 Caterpillar bulldozer. Further access road work was deferred to a later date when it became apparent that rock drilling and blasting would be necessary to safely proceed.

Due to the steep slopes (30° to 50°) and very dense second growth brush and young timber it was necessary to cut line and establish control points for geological mapping, in this way additional showings were discovered on the south slope above previously known showings. The uppermost showing of consequence located at an elevation of 2900' consists of five bands of pyrite sphalerite galena and magnetite in the host manganiferous carbonate approximately five metres thick. The area was hand trenched and chip sampled across 4.7 m and the weighted assay average is as follows: 12.9 g/T Ag, 1.2% Pb, 4.5% Zn. Selected banded sulphide material of 7-10 cm assayed 432 ppb Au, 40.69 g/T Ag, 4.1% Pb, 10.0% Zn.

The results of the 1987 program although only partially completed, indicate that stratabound mineralization of interesting grade occurs over a longer strike/dip distance than previously inferred, and that good grade mineralization does occur but only in thin bands as exposed at the surface.

It is therefore recommended that the access road and drill site construction be continued down slope as previously planned, but drilling and blasting will be necessary. In addition a core drilling program be done to test the down dip extension of surface mineralization for improvement of grade and thickness.

### 3. PROPERTY

The present Bend Group comprises 12 units in 12 located two post claims as follows:

<u>Claims</u>	<u>Record Nos.</u>	<u>Recorded</u>	<u>Assessment Work Due</u>
Bend Nos. 1 to 10	11736 to 11745	September 9, 1966	September 9, 1987
Bend Nos. 34 & 35	13212 and 13213	June 22, 1967	June 22, 1988

\*NOTE: Assessment credits for work reported herein shall extend these due dates

### 4. OWNERSHIP

The Bend Group of 12 claims (12 units) is 100% owned by Cominco Ltd., 700-409 Granville Street, Vancouver, B.C. V6C 1T2.

## 5. LOCATION AND ACCESS

The Bend Group is located within the Golden Mining Division on map sheet NTS 83D/1 at latitude 52°03'N, longitude 118°14'W. The claims are situated astride the Cummins River on the east side of McNaughton Lake approximately 137 km north of Golden, B.C. The area is in part, very precipitous as along the deeply incised Cummins River and is covered by dense overgrowth of old burn and mature timber, which in part has been removed by recent logging. The lower part of the Bend showings lie in the Cummins River canyon which is now submerged by flooding of the Mica hydro electric dam to a high flood level of 2500 feet (750 m) elevation. The showings trend southeasterly and northwesterly and have been traced to the south to the 3500 foot (1066.8 m) elevation.

Access to the property is by helicopter from Golden or by boat from Bush Harbour, a distance of 55 km or from Red Rock Harbour, 19 km. During the current program a barge-tug combination of Mica Marine was utilized as transport of equipment and crew to Tsar Creek Landing and camp of Evans Products and then by 8 km of logging road to the property.

## 6. HISTORY AND DEVELOPMENT

The mineralized showings in Cummins River canyon were first discovered and staked during the construction of the Big Bend Highway in 1949, these claims lapsed and the area restaked by the Bend Group of 45 one unit claims by Cominco in 1966. In 1967 Cominco conducted an exploration program of geological mapping and 240 m of core drilling in 13 short holes.

In 1971 Laura Mines optioned the property and conducted a program consisting of geological mapping, geochemical soil testing and core drilling of 490 m in four holes.

During the period of 1968 to 1974 the claim group was gradually reduced to the 12 claims now being held.

In the last few years Evans Products Ltd. of Golden, B.C. has gradually built access roads to and logged the southern area of the claim group.

In 1987 Cominco conducted a preliminary program of access road construction drill site preparation and geological mapping and sampling.

## 7. GEOLOGY

### (1) Regional - Refer to Plate 3

The Cummins River area is dominately underlain by Proterozoic to Lower Paleozoic miogeosynclinal rocks that form a thick conformable stratigraphic succession in the western limb of the Porcupine Creek anticlinorium. The units strike northwesterly and dip southwest. These sedimentary rocks have been metamorphosed to garnet - staurolite grade and the region exhibits well defined metamorphic isograds that trend northwest with grade increasing to the southwest.

The Lower Cambrian Gog and Middle Cambrian Chancellor Groups overlie the Hydrinian Miette Group in the property area. Three formations of the Gog Group, McNaughton, Mural and Mahto, and two of the Lower Chancellor Group formations Tsar Creek and Kimbasket outcrops in the Cummins River canyon. The lower Tsar Creek formation hosts the sulphide showings. Within the Tsar Creek formation many layers exhibit tight folds with axial planes striking northwest and dipping steeply southwest. The formations are in part repeated by folding and cut by southwest dipping thrust faults as indicated on the regional map.

There are no late intrusive or volcanic rocks in the immediate Cummins River area.

### (2) Property - Refer to Plates 4 & 5

The property is underlain by a conformable sedimentary sequence of Lower to Middle Cambrian age, striking northwesterly and dipping steeply to the southwest, previous mapping had indicated easterly overturned folds in the claim area and it appears that the sulphide showings are on the east limb of a syncline. Thrust faulting has been mapped, but as the fault lies entirely within the Tsar Creek formation, the amount of repetition or offset is difficult to infer.

#### (2-a) Stratigraphy

The oldest rock units exposed on the property belong to the Upper McNaughton formation of the Gog Group and consist of medium to coarse grained white quartzite overlain by quartzite with pelitic interbeds. Buff weathering dolomite and green phyllite occur near the top.

The McNaughton formation is overlain by a 20 to 150 m thick white, pure medium grained in part dolomitic marble and minor calcareous sandstones of the Mural formation. The Mural formation is overlain by the MAHTO formation consisting of 75 to 600 m of quartzite. The quartzite is grey to white and pinkish, thin to medium bedded in part biotitic, ankeritic and or calcareous, the beds in places

carry trace amounts of pyrite, sphalerite and are stained with pyrolusite.

Overlying is the undivided Tsar Creek formation of 200-600 m in thickness. The formation consists mainly of dark pelitic schists with lenses of sandy carbonate and white marble. The formation locally contains abundant garnet staurolite and biotite and is phyllitic to schistose. The units generally weather reddish with reddish soil.

In the Cummins River area, where the Bend Group sulphide showings are located, the Tsar Creek formation has been subdivided into the following units beginning at the base:

- (a) Lower pelitic schist approximately 80 m thick consisting of dark coloured biotitic garnetiferous staurolite schist, in part calcareous and with minor interbedded (alamandine), thin bedded pure white-grey quartzite and minor dolomite.
- (b) Quartzite: (possibly a recrystallized chert) white, pure with sericitic partings, thin bedded to laminated contains local streaks, small pods and disseminations of pyrite, magnetite, sphalerite and galena.

This unit has been subdivided into the following members:

- (b-1) Dolomite: 0 to 10 m thick, a cream to white coloured medium crystalline medium bedded and manganiferous, in part micaceous and weathers a chocolate brown to black due to the manganese content. This member is the main host for the sulphides and locally contains as many as five to six bands of pyrite, sphalerite, galena and minor magnetite, in addition there are areas of fracture mineralization with abundant white quartz.
- (b-2) Sulphide: siliceous (cherty?) sulphide layers alternating with massive sulphide bands consisting of pyrite, pyrrhotite, sphalerite galena, magnetite with minor arsenopyrite and chalcopyrite.
- (c) Upper pelitic schist: silvery grey garnetiferous, (large garnets to 40 m diameter - mostly spessartine) staurolitic, in part calcareous, with interbedded garnetiferous sandy and biotitic marble, also contains lenses up to 20-25 metres thick of pure white-grey marble and minor laminated quartzite.

Overlying the Tsar Creek formation is the Kimbasket formation of at least 1,000 metres in thickness with no upper contact established. The formation consists of sandy and silty carbonate, minor pelitic in part garnetiferous with grey marble lenses as much as 200 m thick.

### (2-b) Structure

The property covers an area on the western limb of the Porcupine Creek anticlinorium, the rock units strike northwesterly and dip steeply to the southwest. Foliation attitudes are similar in strike but dip more steeply to the south than the bedding. Previous mapping has established an easterly overturned anticline-syncline pair in Cummins River canyon and these folds have an approximate plunge of ten degrees northwesterly. Studies by Simony et al (1980) and Reddy-Godwin (1987) have indicated that stratigraphic tops are younging to the west and Simony (1980) has indicated westerly dipping thrust faults passing through the claim area, but as the indicated thrust is totally within the Tsar Creek formation very little is known about the amount of repetition or offset.

### (2-c) Metamorphism

Within the claim area the sediments have been metamorphised to garnet-staurolite grade with garnets up to 4 cm diameter and staurolite crystals to 3 cm long, in part some of the calcareous schists and impure marbles contain biotite porphyroblasts to 1 cm diameter. The region exhibits well defined metamorphic isogrades that trend northwest with increasing grade to the southwest.

### (2-d) Mineralization - Refer to Maps 3, 4, 5 & 6

The sulphide zone is a conformable layer within the manganiferous dolomite and partly within overlying sericitic quartzite. Preliminary mapping indicates that this host dolomite and sulphide layers may in fact be a facies of the quartzite (recrystallized chert). Intense deformation has folded, brecciated, mylonitized and recrystallized most if not all of the sulphide layers.

The mineralized zone can be divided into three units, massive sulphide, siliceous sulphide and mineralized manganiferous dolomite (Reddy 1981). The thickness of the combined layers is five metres at lake level (2500') and thickens down dip to 10 metres (Dodson 1971) below the canyon floor at 2000 feet elevation. The average grade of this showing and drill intersection is 3% zinc, 1% lead and less than 16 grams of silver per tonne.

However one drill intersection (DDHC) drilled in 1967 on the south side immediately above the present flood level at 2500', has a grade of 3% Pb, 12% Zn over 2.0 m (Ag not assayed for) and surface sampling of 2.1 m of 140 gm/T Ag, 8% Pb, 2% Zn. Some individual bands (collected in 1987) 10 cm thick assayed 615 gm/T Ag, 25% Pb, 0.3% Zn and 130.5 gm/t Ag, 3.8% Pb, 14.4% Zn.



Due to the apparent better grade of mineralization on the south side of the Cummins River canyon the 1987 efforts were concentrated in this area to try to establish the actual outcrop trace and to sample wherever possible. Additional mineralized exposures were located to the south and cleaned off, mapped and sampled at the following locations:

(a) at 2600 feet elevation, three metres of 34.0 gm/T Ag, 1.2% Pb, 2.2% Zn. Note this outcrop is highly oxidized and it is possible a considerable amount of zinc has been leached. Along strike @ 10 metres to the south a 1.5 metre section of partially oxidized sulphides in manganiferous dolomite assayed 132 gm/T Ag, 7.0% Pb, 4.5% Zn.

(b) at 2700 feet elevation specimens were collected from a rubbly outcrop of manganiferous dolomite with poor exposure and assayed 21 to 87 gm/T Ag, 1.1 to 4.5% Pb, 7 to 16% Zn, the exposed mineralization would not be more than one metre thick.

(c) at 2900 feet elevation subcrop in a slide area was hand trenched, cleaned off and chip sampled. This showing is in the manganiferous dolomite member and consists of five bands of mineralization more or less evenly spaced across a width of 4.7 metres and the assay average is 4.7 gm/T Ag, 1.2% Pb, 4.5% Zn, a 2.0 metre section a few metres above the hand trench assayed 136 ppb Au, 28 gm/T Ag, 2.2% Pb, 5.2% Zn. Specimens from the individual bands of sulphide from east to west assayed as follows: (R222) @ 116 ppb Au, 4.3 gm/T Ag, 0.1% Pb, 6.1% Zn; (R225) @ 384 ppb Au, 40.4 gm/T Ag, 3.4% Pb, 9.7% Zn; band three not sampled; (R226) @ 422 ppb Au, 55 gm/T Ag, 4.7% Pb, 12.4% Zn and (R227) 152 ppb Au, 31.2 gm/T Ag, 2.1% Pb, 10.3% Zn. In addition the overlying sericitic quartzite unit contains fine lenses and rodded disseminations of pyrite black sphalerite and magnetite. This was not sampled.

(d) at the 3000 foot elevation some small rods and fine lenses of pyrite, sphalerite and galena were noted in the sericite quartzite; these were mapped but not sampled. The more favourable hosts, the manganiferous dolomite is not exposed at this location but does subcrop at 3500 foot elevation and does contain small oxide zones and few fine mineralized quartz filled fractures.

## 8. GEOPHYSICS

None were done.

## 9. GEOCHEMISTRY

All rock samples were analyzed geochemically and consisted of measured rock chip samples or selected character specimen samples from various types of mineralization. The samples were collected in 9x11 plastic bags and shipped to Cominco Laboratories at 1486 East Pender Street, Vancouver, B.C. The rock samples were crushed, split and pulverized to -200 mesh before hot aqua-regia digestion for Ag, Pb, Zn, Cd determination. Au analysis was by solvent extraction, Ge and Ga by x-ray fluorescence.

## 10. ACCESS ROAD BUILDING AND DRILL SITE PREPARATION

During this program five days were spent building access roads and preparation drill sites. For this work a D-7 Caterpillar tractor owned and operated by O.W. Braisher Contracting Ltd. was trucked and barged to and from the property from Parsons, B.C. Approximately 1.5 km of access road, 10 metres wide and four possible diamond drill sites were constructed. The access road down the steep slope to the lower showings was stopped when it became evident that further progress would require drilling and blasting of outcrop on the inside corners of the road. This is necessary to provide adequate footing for the tractor as no fill would stay on this steep hillside (38 to 45°). Any further road construction should consider a smaller bulldozer and compressor for drilling and blasting as this would require a smaller cut into the hillside.

## 11. ORE POTENTIAL AND POSSIBILITIES

Previous sampling and drilling has in the lower Cummins River canyon established continuity of the sulphide bed but the grades of Ag, Pb, Zn area subeconomic.

The present preliminary program has established that the favourable host units and mineralization extend for at least 250-300 metres to the south with some improvement of grade and local zones of much higher grade of Ag, Pb, Zn with anomalous Au values. The possibilities all lie in the down dip and to the southwest of the exposed mineralized strata.

## 12. EQUIPMENT AND BUILDING

None established in the property. Evans Products Ltd., Tsar Creek logging camp was in operation during this project and accommodation was provided at a fixed cost per manday.

### 13. CONCLUSIONS AND RECOMMENDATIONS

The preliminary program of geological mapping, road building and drill site construction has enhanced and partially prepared this attractive stratabound-strataform Ag Pb Zn deposit. The potential lies in testing the southwest down dip projection of the surface showings and this can be best accomplished by establishing drill sites in that direction.

It is recommended that the access road and drill site preparation be continued down the slope to at least the 2600-2700 foot level and core drilling be done for these sites.

Reported by *A. B. Mawer*  
A.B. Mawer  
Senior Geologist

Authorized for release by *John Hamilton*  
J.M. Hamilton  
Manager, Exploration  
- Western Canada

ABM/jd

## REFERENCES

- (1) Cominco Files  
BEND GROUP of Mineral Claims  
Reports 1967-87
- (2) GSC Open Files, Reports and Maps
- (3) Fyles, J.T., 1960  
Big Bend of Columbia River, Geological Reconnaissance of the Columbia  
between Bluewater Creek and Mica Creek MMR - 1959
- (4) Reddy, D.G., 1969  
Geology of the Bend Zn Pb Ag Sediment Hosted Massive Sulphide Prospect  
SE B.C., B.Sc. Thesis U.B.C.
- (5) Simony, P.S., Chert E.D., Cran. D. Mitchell and Robbins, D.B., 1980,  
Structural and Metamorphic Evolution of the Northeast flank of Shuswap  
Complex, SothernCanoe River Area, B.C., G.S.A. Memoir 153 p. 445-461

## APPENDICES

- (1) Appendix A - Affidavit
- (2) Appendix B - Statement of Expenditures
- (3) Appendix C - Statement of Qualifications
- (4) Appendix D - Assay Data

APPENDIX "A"

IN THE MATTER OF THE B.C. MINERAL ACT AND IN THE MATTER OF A PRELIMINARY GEOLOGICAL AND GEOCHEMICAL SURVEY CARRIED OUT ON MINERAL CLAIMS OF THE BEND PROPERTY LOCATED IN THE CUMMINS RIVER AREA, BRITISH COLUMBIA MORE PARTICULARLY N.T.S. 83D/1.

A F F I D A V I T

I, A.B. MAWER, OF THE DISTRICT OF NORTH VANCOUVER, IN THE PROVINCE OF BRITISH COLUMBIA, SENIOR GEOLOGIST, MAKE OATH AND SAY: -

- (1) THAT I am employed as a senior geologist by Cominco Ltd., and, as such have a personal knowledge of the facts to which I hereinafter depose;
- (2) THAT annexed hereto and marked Appendix "B" to this my affidavit is a true copy of expenditures on geological mapping and geochemical sampling on the Tach Property;
- (3) THAT the said expenditures were incurred between the 8th day of August, 1986 and the 15th day of November, 1986 for the purpose of mineral exploration on the above noted property.

Signed: A. B. Mawer  
A.B. Mawer,  
Senior Geologist

October, 1987

APPENDIX "B"

BEND GROUP ASSESSMENT REPORT  
Statement of Expenditures - 1987

Field work period August 5-9, road construction supervision 5 days @ \$233.20/day	\$1166.00
August 17-29, geological mapping 12 days @ \$233.20/day	2798.40
Office - report writing and map preparation - A.B. Mawer October 7, 8, 9, 13, 14 - 5 days @ \$233.20/day	1166.00
Communications mobile radio rental and call charges 19 days @ \$10/day	170.00
Geochemical analysis - 20 @ \$23.85	477.00
Cat work - road access and drill site preparation 5 days including mob and demobilization	6832.00
Transportation - barge - geological work to and from bush landing to Tsar Creek	1080.00
Vehicle - Toyota 4x4 rental and fuel cost 17 days	1052.00
Domicile - 17 days A.B. Mawer @ \$45/day - 5 days H. Boggs cat skinner @ \$45/day	990.00
Drafting - reproduction, salaries and supplies	<u>1400.00</u>
TOTAL EXPENDITURE APPLICABLE FOR ASSESSMENT CREDITS	\$17,131.40

APPENDIX "C"

STATEMENT OF QUALIFICATIONS

I, A.B. MAWER, SENIOR GEOLOGIST WITH BUSINESS ADDRESS IN VANCOUVER, BRITISH COLUMBIA AND RESIDENTIAL ADDRESS IN NORTH VANCOUVER, BRITISH COLUMBIA HEREBY CERTIFY THAT:

- (1) From 1944 to the present, I have been actively engaged as a prospector and geologist in mineral exploration.
- (2) I am a Fellow of the Geological Association of Canada.
- (3) I am a member of the Canadian Institute of Mining and Metallurgy.
- (4) I personally supervised the field work on the Bend Group and have interpreted the data resulting from this work.

*A. B. Mawer*

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A.B. Mawer,  
Senior Geologist

October, 1987

APPENDIX "D"

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LAB NO	FIELD NUMBER	AU PPB	WT AU GRAM	AG PPH	PB PPH	ZN PPH	GA(1) PPH	GE(1) PPH	Hg PPB	Cd PPM	
R8714247	M87R213	156	5	38.3	E20600	E55800	(5	4		64	2600' Elev.
R8714248	M87R214	34	5	30.8	E15000	E10160	(5	1		15	
R8714249	M87R215	154	5	14.7	7370	E41600	(5	2		33	1.5 m
R8714250	M87R216	108	5	15.4	E11900	E41600	(5	2		53	0.9 m
R8714251	M87R217	20	5	8.8	4320	E20500	(5	5		30	1.0 m
R8714252	M87R218	120	5	28.9	E24100	E69900	(5	4		86	1.3 m
R8714253	M87R219	136	5	28	E21600	E51700	(5	1		61	2.0 m
R8714254	M87R220	(10	5	3.3	1370	874	10	5	380	(1	Tsar Cr. Rd.
R8714255	M87R221	422	5	55	E46700	E123500	7	6	E3350	137	spec 2900'
R8714256	M87R222	116	5	4.3	1040	E61000	(5	4	E2150	38	spec 2900'
R8714257	M87R223	80	5	46	E27200	E157000	(5	(1	E6200	115	spec 2700'
R8714258	M87R224	58	5	E132	R69500	E44700	(5	4	E1775	64	2600' elev.
R8714259	M87R225	328	5	26.5	E20300	E108500	(5	5	E2425	153	spec. 2900'
R8714260	M87R226	432	5	40.6	E41050	E100400	(5	7	E3125	153	" "
R8714261	M87R227	152	5	31.2	E21200	E103500	(5	4	E5950	137	" "
R8714262	M87R228	88	5	E200	E101500	E30400	(5	2	E2200	21	1m by DDH-c-3
R8714263	M87R229	384	5	40.4	E34100	E96900	5	10	E1900	132	spec. 2900'
R8714264	M87R230	82	5	E615	E247500	2700	(5	4	E1450	4	2550' Lake level
R8714265	M87R231	46	5	21	E11000	E104900	(5	1	E4100	97	2700' A
R8714266	M87R232	80	5	87.2	E45300	E78600	5	(1	E2900	78	2700' B

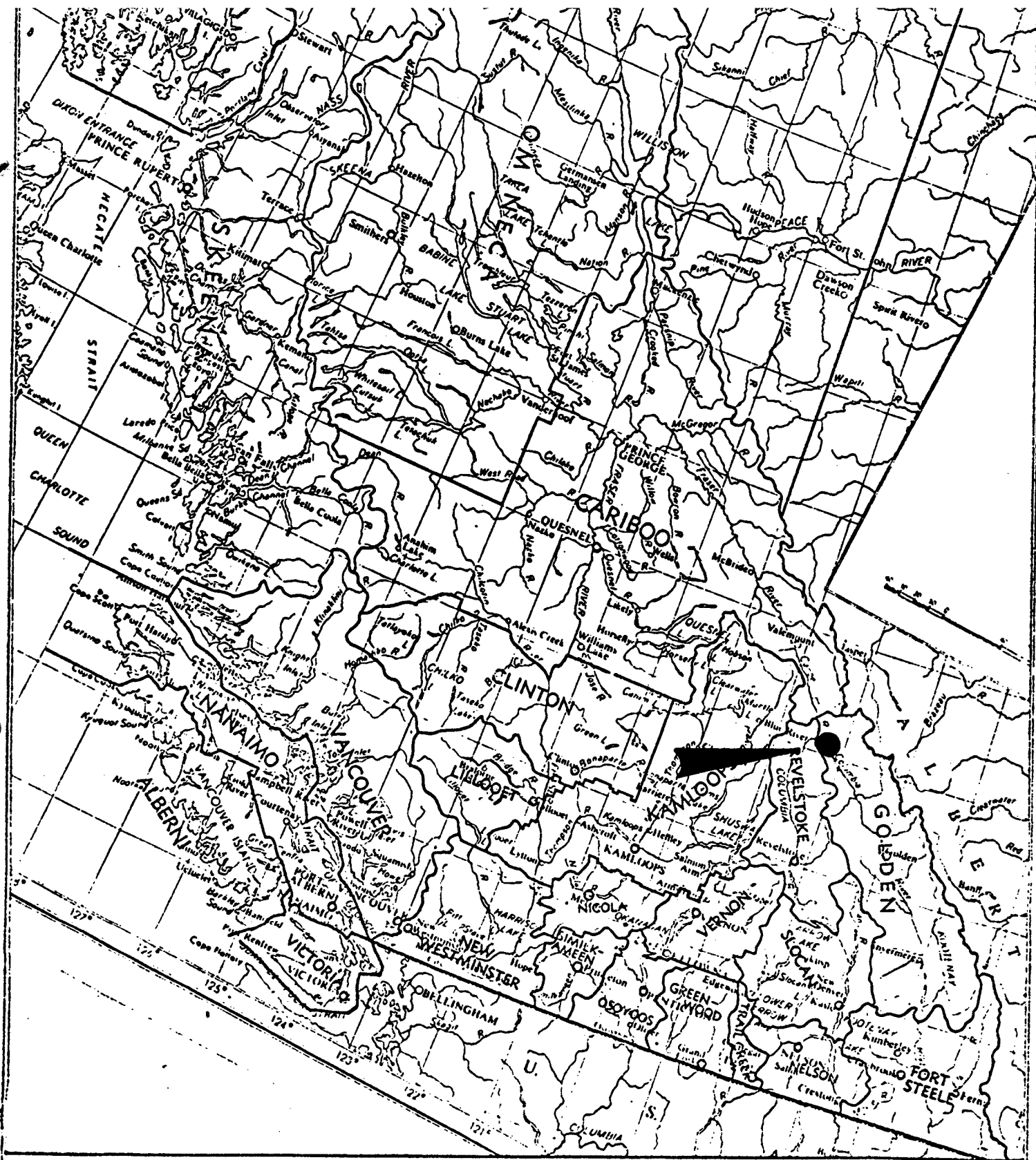
I=INSUFFICIENT SAMPLE X=SMALL SAMPLE E=EXCEEDS CALIBRATION C=BEING CHECKED R=REVISED  
 IF REQUESTED ANALYSES ARE NOT SHOWN RESULTS ARE TO FOLLOW

ANALYTICAL METHODS

- AU AQUA REGIA DECOMPOSITION / SOLVENT EXTRACTION / AAS
- WT AU THE WEIGHT OF SAMPLE TAKEN TO ANALYSE FOR GOLD (GEOCHEM)
- AG AQUA REGIA DECOMPOSITION / AAS
- PB AQUA REGIA DECOMPOSITION / AAS
- ZN AQUA REGIA DECOMPOSITION / AAS
- GA(1) ACID DECOMPOSITION / SOLVENT EXTRACTION / AAS
- GE(1) ACID DECOMPOSITION / SOLVENT EXTRACTION / AAS
- Hg FLAMELESS AAS
- Cd AQUA REGIA DECOMPOSITION / AAS

## ATTACHMENTS

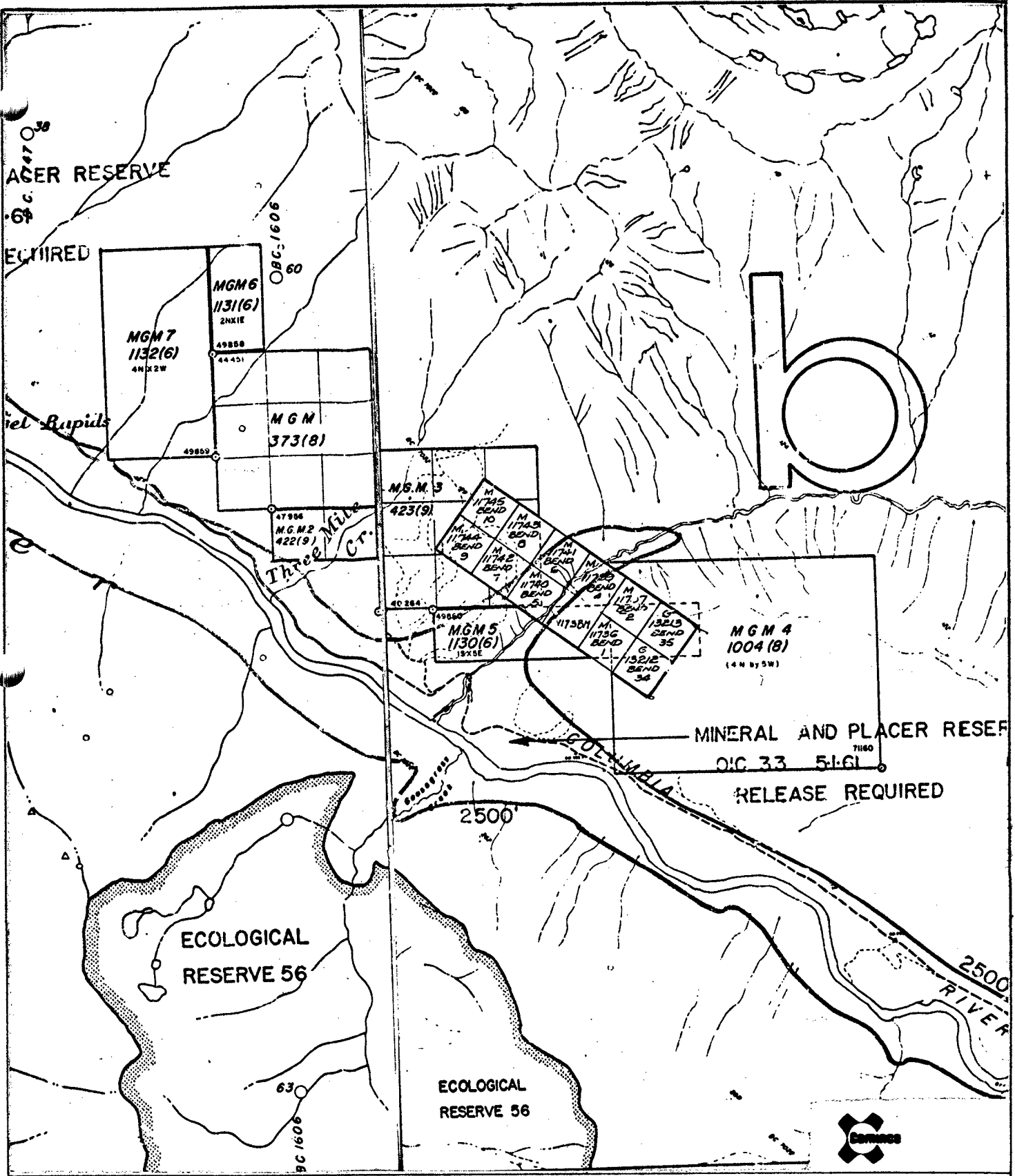
	<u>Scale</u>
(1) Location Map	
(2) Claim Map	
(3) Generalized Geological Map	1:50,000
(4) Geological Map	1:50,000
(5) Geological Plan	1:2,500
(6) Road Access and Proposed Drill Site Plan	1:2,500
(7) Sketch Plan 2900 Elevation Showing	1:40



Drawn by:		Traced by:	
Revised By	Date	Revised by	Date

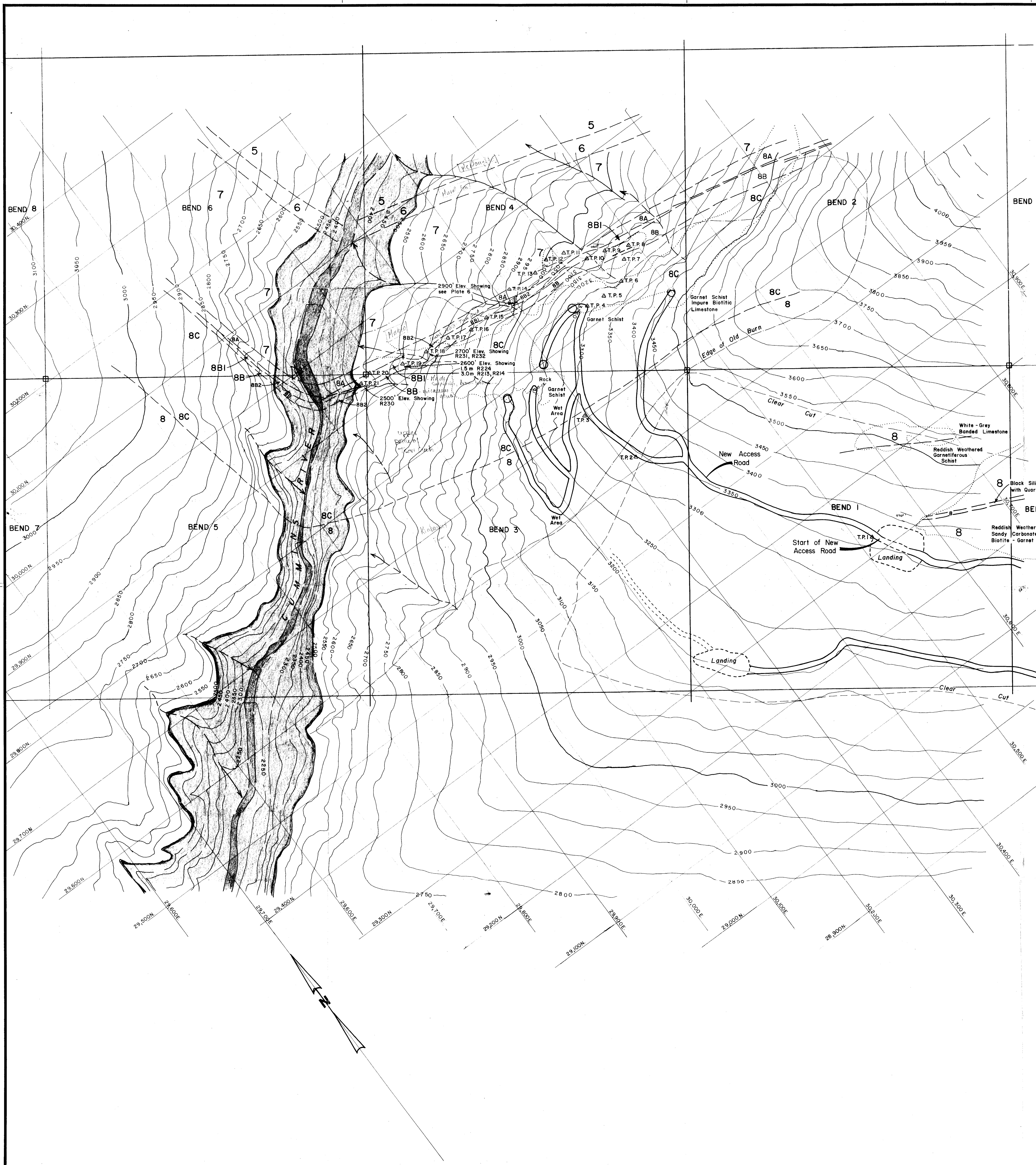
# BEND PROPERTY Location

Scale: *1 inch = 84 mi*      Date:      Plate: /

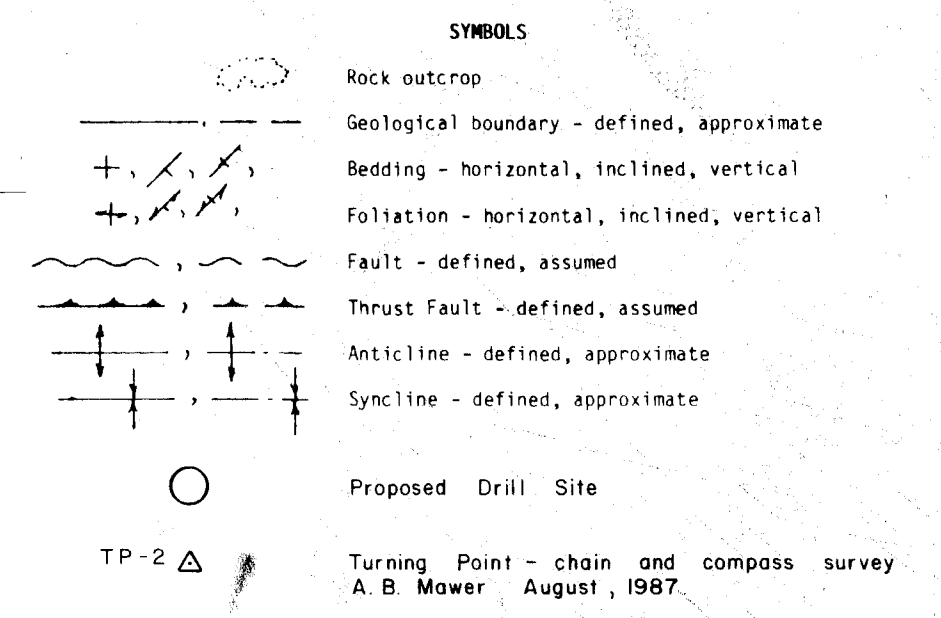


Drawn by:	Traced by:		
Revised by	Date	Revised by	Date
Scale:		Date:	Plate: 2





CHANCELLOR GROUP		Thickness in Metres	LEGEND
Middle Cambrian	KIMBASKET FORMATION	>1000	Sandy and silty limestone, minor pelite in part garnetiferous. Pelite with grey marble lenses as much as 200 m. thick.
	TSAR CREEK FORMATION	200-600	Undivided dark pelitic schist with lenses of sandy carbonate, locally garnetiferous and biotitic, generally weathers reddish with reddish soil.
		>150	Upper pelitic schist, silvery grey, garnetiferous to (4 cm dia.) in part calcareous, interbedded pure marble and laminated quartzite.
		0-100	Quartzite (recrystallized chert) white pure to micaceous, thin bedded to laminated, disseminated to rodded pyrite pyrrhotite sphalerite and galena.
Lower Cambrian		0-10	Dolomite - manganese cream to brown on fresh surface, weathers to a chocolate brown colour; in part micaceous and contains fractures and lenses of massive pyrite, sphalerite and galena.
		0-10	Sulphides, siliceous sulphide layers alternating with massive sulphides of pyrite pyrrhotite, sphalerite, galena, magnetite with minor arsenopyrite and chalcopyrite.
		80	Lower pelitic schist, dark biotitic garnetiferous schist; in part calcareous interbedded quartzite and minor dolomite.
GOG GROUP	WHITE FORMATION	75-600	Quartzite: grey to white and pinkish, thin to medium bedded, biotitic, in part ankeritic and calcareous, traces of pyrite and sphalerite, little manganese stain.
	MURAL FORMATION	20-150	Marble: white pure medium grained in part dolomitic and calcareous sandstone.
	MCAUGHTON FORMATION	600	Quartzite medium to coarse grained white quartzite at base overlain by quartzite with pelitic interbeds, buff weathering dolomite (50), and green phyllite occur near the top.



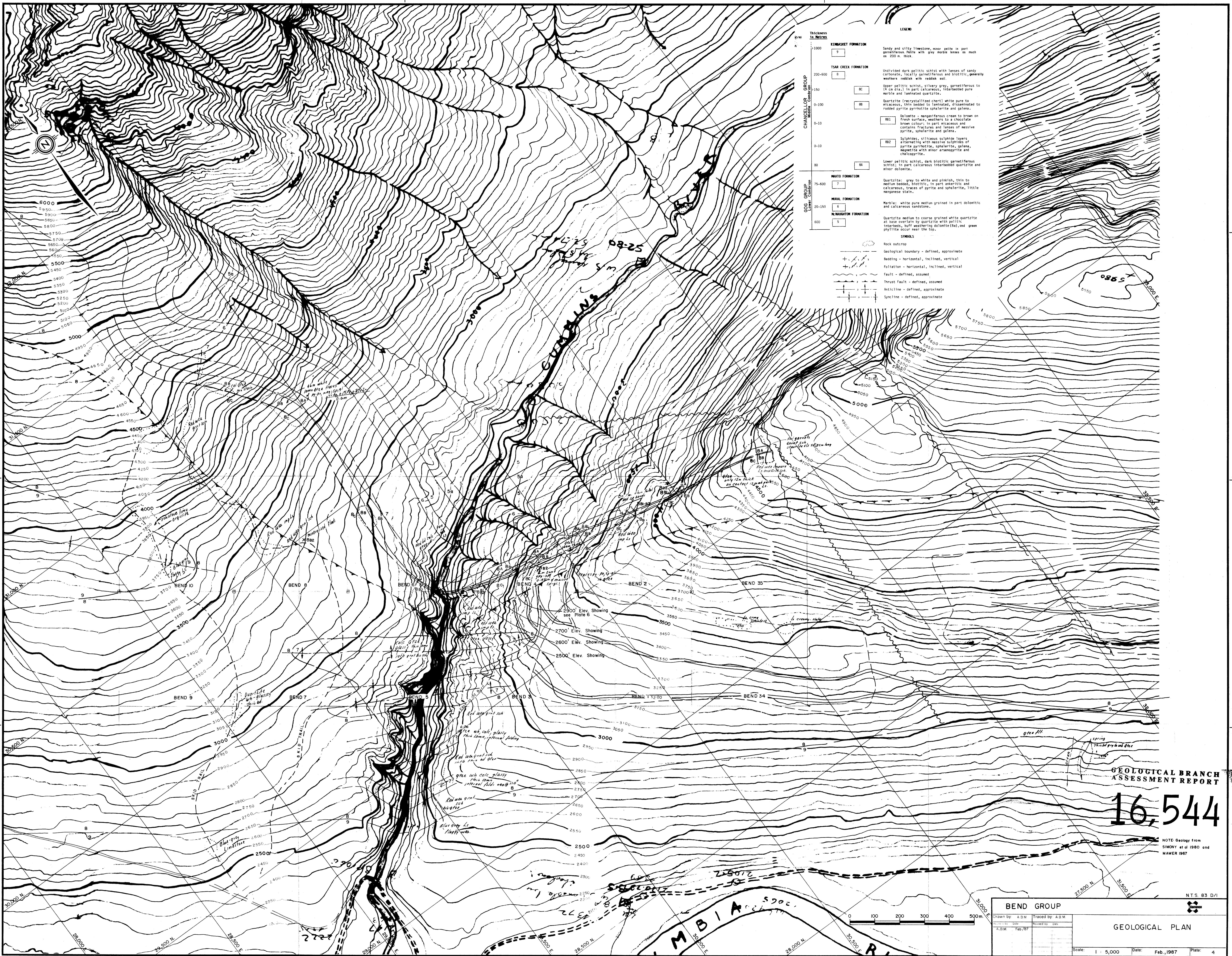
**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**16,544**



BEND GROUP				GEOLOGICAL PLAN	
Drawn by: ABM	Traced by: ABM	Revised by: Date	Revised by: Date	Scale: 1:2500	Date: FEB/87
ABM	EAH/87	ABM	Aug/87		Plate: 5

NTS. 83D/1



CHANCELLOR GROUP Middle Cambrian	THICKNESS in METERS	DESCRIPTION
9	1000	KEMASSET FORMATION Sandy and silty limestone, minor calcite in part graniferous, beds with grey micrite lenses as much as 200 m thick.
8	200-400	TSAR CREEK FORMATION Undivided dark pelitic schist with lenses of sandy carbonate, locally garnetiferous and biotitic, generally weathers reddish with reddish soil.
7C	150	Upper pelitic schist, silvery grey, garnetiferous to (10 cm dia.) in part calcareous, interbedded pure marble and laminated quartzite.
7B	0-100	Quartzite (recrystallized chert) white pure to micaceous, thin bedded to laminated, disseminated to rounded pyrite pyrrhotite sphalerite and galena.
7B1	0-10	Dolomite - manganeseiferous cream to brown on fresh surface, weathers to a chocolate brown colour; in part micaceous and contains fractures and lenses of massive pyrite, sphalerite and galena.
7B2	0-10	Sulphides, siliceous sulphide layers alternating with massive sulphides of pyrite pyrrhotite, sphalerite, galena, magnetite with minor arsenopyrite and chalcopyrite.
7A	80	Lower pelitic schist, dark biotitic garnetiferous schist; in part calcareous interbedded quartzite and minor dolomite.
WHITE FORMATION	75-400	Quartzite: grey to white and pinkish, thin to medium bedded, biotitic, in part anorthitic and calcareous, traces of pyrite and sphalerite, little manganese stain.
MARAL FORMATION	20-150	Marble: white pure medium grained in part dolomitic and calcareous sandstone.
MCNAUGHTON FORMATION	600	Quartzite: medium to coarse grained white quartzite at base overlain by quartzite with pelitic interbeds, buff weathering dolomite (20%), and green phyllite occur near the top.

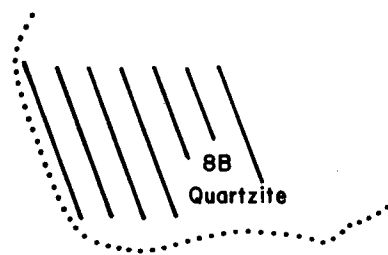
- SYMBOLS**
- Rock outcrop
  - Geological boundary - defined, approximate
  - Bedding - horizontal, inclined, vertical
  - Foliation - horizontal, inclined, vertical
  - Fault - defined, assumed
  - Thrust Fault - defined, assumed
  - Anticline - defined, approximate
  - Syncline - defined, approximate

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

16,544

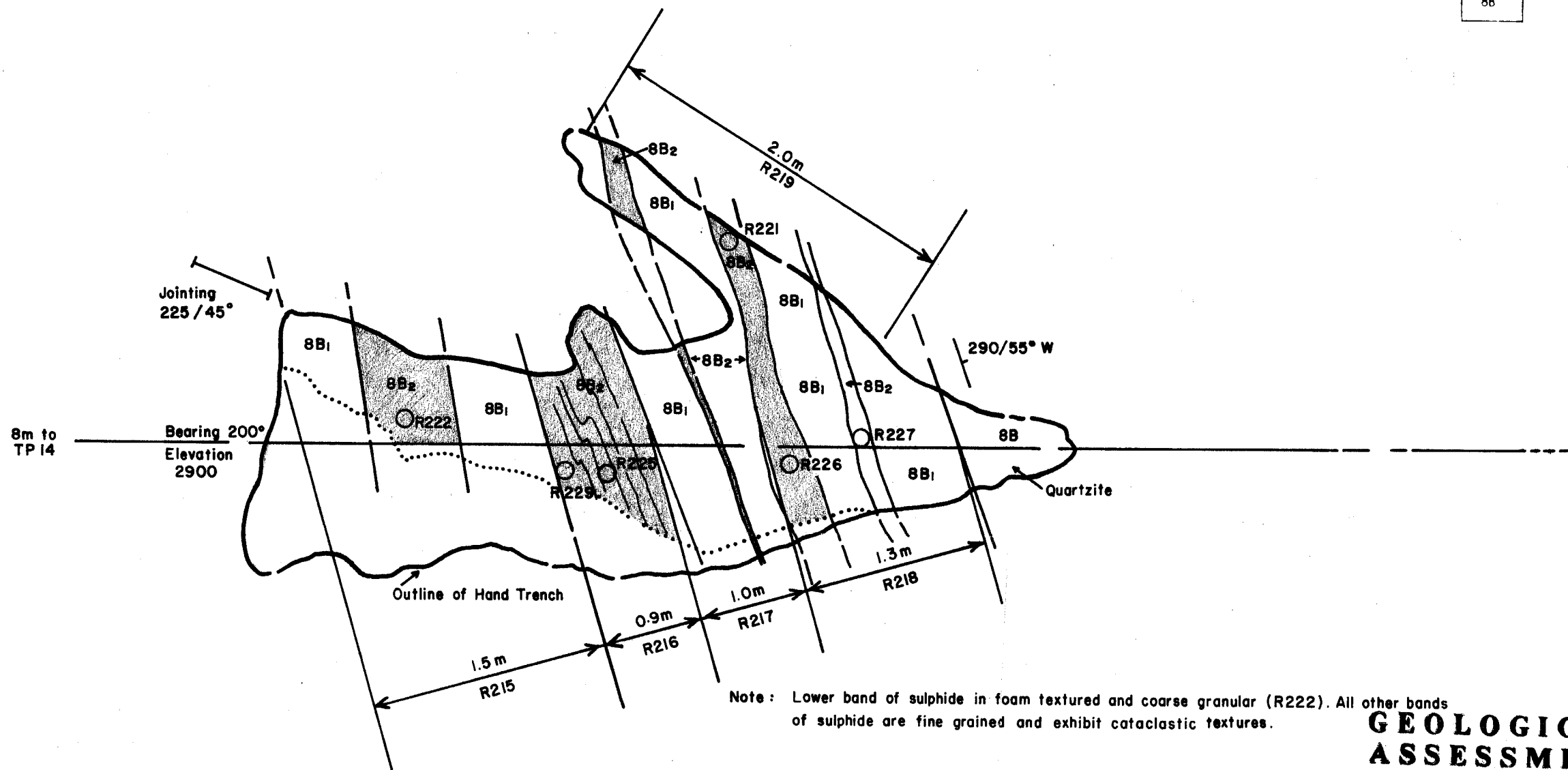
NOTE: Geology from  
SIMONY et al 1980 and  
MAWER 1987

BEND GROUP		NTS: B3 D/1	
Drawn by: A.B.M.	Traced by: A.B.M.		
Checked by: G.M.	Revised by: G.M.		
A.B.M. Feb/87		GEOLOGICAL PLAN	
Scale: 1 : 5,000	Date: Feb, 1987	Plate: 4	



**LEGEND**

- 88 Quartzite (recrystallized chert) white pure to micaceous, thin bedded to laminated, disseminated to rodded pyrite pyrrhotite sphalerite and galena.
- 881 Dolomite - manganiferous cream to brown on fresh surface, weathers to a chocolate brown colour; in part micaceous and contains fractures and lenses of massive pyrite, sphalerite and galena.
- 882 Sulphides, siliceous sulphide layers alternating with massive sulphides of pyrite pyrrhotite, sphalerite, galena, magnetite with minor arsenopyrite and chalcopyrite.



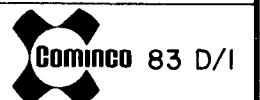
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

16,544



Sample No.	Width/m	Au ppb	Ag ppm	Pb %	Zn %	Ga ppm	Ge ppm	Hg ppb	Cb ppm
R215	1.5	154	14.7	0.7	4.2				33
R216	0.9	108	15.4	1.2	4.2				53
R217	1.0	20	8.8	0.4	2.1				30
R218	1.3	120	28.9	2.4	7.0				86
R219	2.0	136	28	2.2	5.2				61
								380	<1
○ Specimen									
R221		422	55	4.7	12.4			E3350	137
R222		116	4.3	0.1	6.1			E2150	38
R225		328	26.5	2.0	10.9			E2425	153
R226		432	40.6	4.0	10.0			E3125	153
R227		152	31.2	2.1	10.4			E5950	137
R229		384	40.4	3.4	9.7			E1900	132

**BEND GROUP**



Drawn by: A.B.M.		Traced by: L.R.B.	
Revised by	Date	Revised by	Date

Sketch Plan  
2900' Elevation showing

Scale: As shown

Date: Oct., 1987

Plate: 6





MINING DIVISIONS & RECORDING OFFICES			
Mining Divisions	Location of Offices	Mining Divisions	Location of Offices
Atlin Mining Division	Atlin	Ashcroft Min. Div.	Ashcroft
Stikine Mining Division	Telegraph Creek	Nicola Mining Div.	Lytton
Liard Mining Division	Telegraph Creek	Yale Mining Division	Yale
Skeena Mining Division	Telegraph Creek	Vernon Mining Division	Vernon
Nass River Mining Div.	Portland Canal Min. Div.	Similkameen Min. Div.	Princeton
Fortland Canal Min. Div.	Bella Coola Min. Div.	Greenwood Min. Div.	Greenwood
Bella Coola Min. Div.	Princess Rupert	Hope	Hope
Ouseau Charlotte Min. Div.	Princess Rupert	Grand Forks Min. Div.	Grand Forks
Omineca Mining Div.	Princess Rupert	Osoyoos Mining Division	Penticton
Peace River Min. Div.	Fort St. John	Golden Mining Division	Golden
Cariboo Min. Div.	Fort St. John	Windsor Min. Div.	Windsor
Quesnel Min. Div.	Fort St. John	Fort Steele Min. Div.	Fort Steele
Clinton Min. Div.	Fort St. John	Alnsworth Min. Div.	Alnsworth
Kamloops Min. Div.	Fort St. John	Stocan Min. Div.	Stocan
		Trout Lake Min. Div.	Trout Lake
		Nelson Min. Div.	Nelson
		Arrow Lake Min. Div.	Arrow Lake
		Revelstoke Min. Div.	Revelstoke
		Lardou Min. Div.	Lardou
		Trail Creek Min. Div.	Trail Creek
		Nanaimo Min. Div.	Nanaimo
		Alberni Mining Division	Alberni
		Clayoquot Min. Div.	Clayoquot
		Quatsino Min. Div.	Quatsino
		Victoria Min. Div.	Victoria
		Vancouver Min. Div.	Vancouver
		New Westminster Min. Div.	New Westminster
			Agassiz
			Chilliwack

  
 THE GOVERNMENT OF  
 THE PROVINCE OF BRITISH COLUMBIA  
 DEPARTMENT OF MINES  
 HONOURABLE WILLIAM SLOAN, MINISTER

## BRITISH COLUMBIA

### MINING DIVISIONS

Scale, 50 miles to 1 inch

1926

**LEGEND**

- Mining Recorder's Offices
- Sub-offices
- Mining district boundaries
- Mineral Survey Districts
- Railways
- Roads
- Trails and portages

NOTE: — The boundaries of Mining Divisions generally follow the height of land separating watersheds.