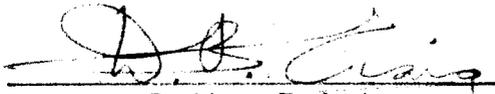


This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 8436.00

  
Resident Geologist or  
Resident Mining Engineer

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

A  
GEOLOGICAL REPORT  
ON

  
~~Commissioner of Yukon Territory~~  
ADMINISTRATOR OF THE YUKON TERRITORY

MOD 15-18 (inclusive), 33-36 (inclusive), BON 16-19 (inclusive),

26, 27, 34, 35

MINERAL CLAIMS

SHEET 116-J-5

16 MILES SOUTH-WEST OF BEAR CAVE MOUNTAIN

N 66°20', W 139° 45'

DAWSON MINING DIVISION, Y.T.

by

H.R. BULLIS

May 15 - August 31, 1974



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Introduction and Summary

The Mod 15-18 (inclusive), 33-36 (inclusive), Bon 16-19 (inclusive), 26, 27, 34,35 mineral claims were staked in September, 1973 under the supervision of L. W. Saleken of Brascan Resources Limited. The decision to stake was made after the discovery by Mr. Saleken and others of strata-bound zinc mineralization in the area.

During the following winter plans were made to further explore the claims and the setting-up of a geological reconnaissance programme was begun. Brascan personnel carried out prospecting, geological mapping and a claim survey of the above claims during May, June, July and August of 1974.

Through prospecting and geological mapping it was discovered that the rock formations hosting zinc mineralization further to the south and east carry on through the above claim group. Therefore, it is recommended that Brascan retain title to the mineral claims and that application for assessment credits be made accordingly.

An application to group the above claim block will be filed in September with the Mining Recorder in Dawson City, Y.T.

Cont/d.

Ownership

The Mod 15-18 (inclusive), 33-36 (inclusive), Bon 16-19 (inclusive), 26, 27, 34, 35 mineral claims were staked in September, 1973 as full-size mineral claims as described by the Yukon Quartz Mining Act and were recorded in Dawson City, Yukon Territory on September 18 and October 2, 1973 with the following record numbers:

<u>Claim</u>	<u>Record Number</u>	<u>Date Recorded</u>
Mod 15	Y81938	September 18, 1973
Mod 16	Y81939	September 18, 1973
Mod 17	Y81940	September 18, 1973
Mod 18	Y81941	September 18, 1973
Mod 33	Y81956	September 18, 1973
Mod 34	Y81957	September 18, 1973
Mod 35	Y81958	September 18, 1973
Mod 36	Y81959	September 18, 1973
Bon 16	Y82201	October 2, 1973
Bon 17	Y82202	October 2, 1973
Bon 18	Y82203	October 2, 1973
Bon 19	Y82204	October 2, 1973
Bon 26	Y82211	October 2, 1973
Bon 27	Y82212	October 2, 1973
Bon 34	Y82219	October 2, 1973
Bon 35	Y82220	October 2, 1973

Brascan Resources Limited has one hundred per cent ownership in the above mineral claims.

Application to group the above mineral claims will be filed in September with the Mining Recorder in Dawson City, Yukon Territory.

Location and Access

Mod 15-18 (inclusive), 33-36 (inclusive),  
Bon 16-19 (inclusive), 26, 27, 34, 35 lie approximately  
sixteen miles southwest of Bear Cave Mountain and are  
located on the N.T.S. sheet 116-J-5.

Approximately 170 air-miles north of Dawson,  
the claims are accessible during the summer months only  
by helicopter. Winter roads provide access when rivers  
are frozen and the ground becomes solid enough to support  
wheeled or tracked vehicles. The Dempster Highway, an  
all-weather gravel road, provides year-round access for  
vehicles to within seventy miles of the claims. A number  
of airstrips are located along the Dempster and provide  
staging points for material being air-lifted into the  
property.

An all-weather airstrip, the Mallard, lies about  
50 miles to the south of the claims and provides access for  
light aircraft. From there it is necessary to use a heli-  
copter to reach the claim group.

Geography

Relief in the claims area is moderate. Valley floors are generally 1,500 feet A.S.L. and the mountain ridges seldom are higher than 4,000 feet A.S.L. The mountains have low, gentle profiles and are seldom peaked. Absence of glaciation and severe frost-heaving resulting from active perma-frost have combined to produce mountains resembling piles of rubble.

The claims lie within ten miles of the Arctic Circle and the vegetation varies from sub-Arctic to cold-temperate. The ridges above 3,000 feet have very little growth other than moss, lichen and alpine flowers. The valleys, on the other hand, are filled with spruce, tamarack, alder and a wide variety of small broad-leaf plants. The growing season is short - from the first of June through to mid-August - and the growth-rate is very slow.

## Geology

### Regional

A series of sedimentary rocks ranging in age from Silurian to Devonian are exposed in sections on three over-thrust plates the major and western-most of which is the North Dewdney Thrust. The thrust-faults strike approximately north-west. The strike of the bedding planes of the sediments corresponds to that of the thrusts and the dip of the beds is generally to the east.

The local thrust-faults appear to terminate in a broad anticline to the south of the claim block. Further to the east the sediments form a shallow syncline the eastern edge of which is terminated by the Fishing Branch River Valley. This valley seems to be controlled by older faulting and thrusting striking toward the south-east.

The rocks from the Silurian to Devonian are a series of limestones, cherty limestones, shaley limestones and dolomites. The boundary between the Silurian and Devonian is difficult to determine because dolomitization has taken place in most rocks and has destroyed minor distinguishing characteristics. However, it is felt that a series of dolomites containing masses of black, nodular chert belong in the Silurian age and, for the purposes of this report, shall be considered the boundary between Silurian and Devonian.

The upper-most rocks that are seen in the Devonian are massive limestones composed of up to sixty per cent crinoidal debris. These rocks are resistant, dark-gray cliff-formers. Below the crinoidal limestones

are a recessive series of bedded shaley to sandy limestones with the occasional bed containing reefal debris and ostracode fossils. Next in the sequence come massive light-to dark-gray aphanitic limestones containing gastropod and coral fossils. These limestones are also cliff-formers. Below these cliffs are a series of undifferentiated light-to dark-gray, fine-to coarsely-crystalline dolomites that carry on down-section to the Silurian cherty dolomites.

Local Geology

The geology underlying the claim group consists of a series of limestone and dolomite units having a strike of N10°W (approximately) and a dip of about 20°E. Uppermost in the sequence is the crinoidal limestone unit which is underlain by a shaley limestone unit, in turn underlain by a light-gray aphanitic limestone unit. At the bottom of the sequence are a series of undifferentiated dolomites which are the host rocks for sphalerite mineralization in the area. Outcrop on the claims is minimal but geological contacts can be traced in talus with little difficulty.

Directly to the west of the claim group is a thrust fault striking about N10°W. The rocks to the east of the fault have been thrust over those to the west so that there is a repeat of section from the east to the west. The thrusting is probably related to the Dewdney Thrust Fault, a regional feature found about three miles to the west.

Mineralization

The sphalerite-smithsonite-pyrite showings occur along the strike length of the limestone-dolomite contact for over two miles but appear to be "poddy" and discontinuous.

Four distinct modes of mineralization are found in the area: breccia, fracture-filling, vug-filling and replacement. The description of each mode is as follows:

1. Breccia - sulphide mineralization is found along shear planes and within the matrix of fault (?) breccias containing angular fragments of various sizes. In most cases these breccias have within them coarse crystals of remobilized calcite.

Generally the mineralization associated with breccias is very low grade (0.5%) and has about a 1:1 ratio of sphalerite:pyrite.

2. Fracture-filling - in dolomites that are not intensely sheared (as in faults) but rather are "crackled" the sulphides occur along the fracture planes. As in the breccia-type fracture-filling produces mineralization of a low grade.
3. Vug-filling - sulphides have filled interstitial cavities in the dolomites. Mineralization is intimately associated with the development of sparry white dolomite.

4. Replacement - sulphides, as well as filling interstitial cavities, have replaced the host dolomite. Where this type of mineralization has taken place the host rock may be replaced by up to 50% sulphides.

It should be noted that although iron pyrite is present in the rock no gossans form. Iron oxides are not mobile in basic environments and, as a result, limonite and goethite form from the pyrite in situ. As an example, specimens were found of goethite in crystals pseudomorphous after pyrite cubes and pyritohedrons.

Recommendations and Conclusions

Although the mineralization on this claim group appears to be uneconomic, the showings constitute an extension along strike of more promising mineralization to the south. Until the commercial viability of the mineralization on Brascan's claims to the south has been proven or disproven the group should be retained by Brascan Resources.

It is therefore recommended that assessment work on Mod 1-6, 8, 19-24 mineral claims be filed with the Mining Recorder in Dawson City.

Respectfully submitted,

A handwritten signature in cursive script, reading "H.R. Bullis", with a horizontal line underneath the name.

H.R. BULLIS

CERTIFICATION OF REPORT

I hereby certify that the work described in  
this report was carried out under my supervision.

A handwritten signature in black ink, appearing to read 'F.B. Whiting', written in a cursive style.

F.B. WHITING

Member: Assoc. of Prof. Engineers  
(Yukon)

Member: Assoc. of Prof. Engineers  
(B.C.)

APPENDIX I

Work done on the claim group

A survey of the claims using the chain and compass method was carried out and the map produced from this survey was used as a base map for the geological mapping.

During the time work was being done on the claim group a camp established on a seismic road near Fishing Branch Creek served as a work base. From this camp, a Bell 47GB2 helicopter was used to place personnel on traverse.

Personnel involved in work on the claim group are as follows:

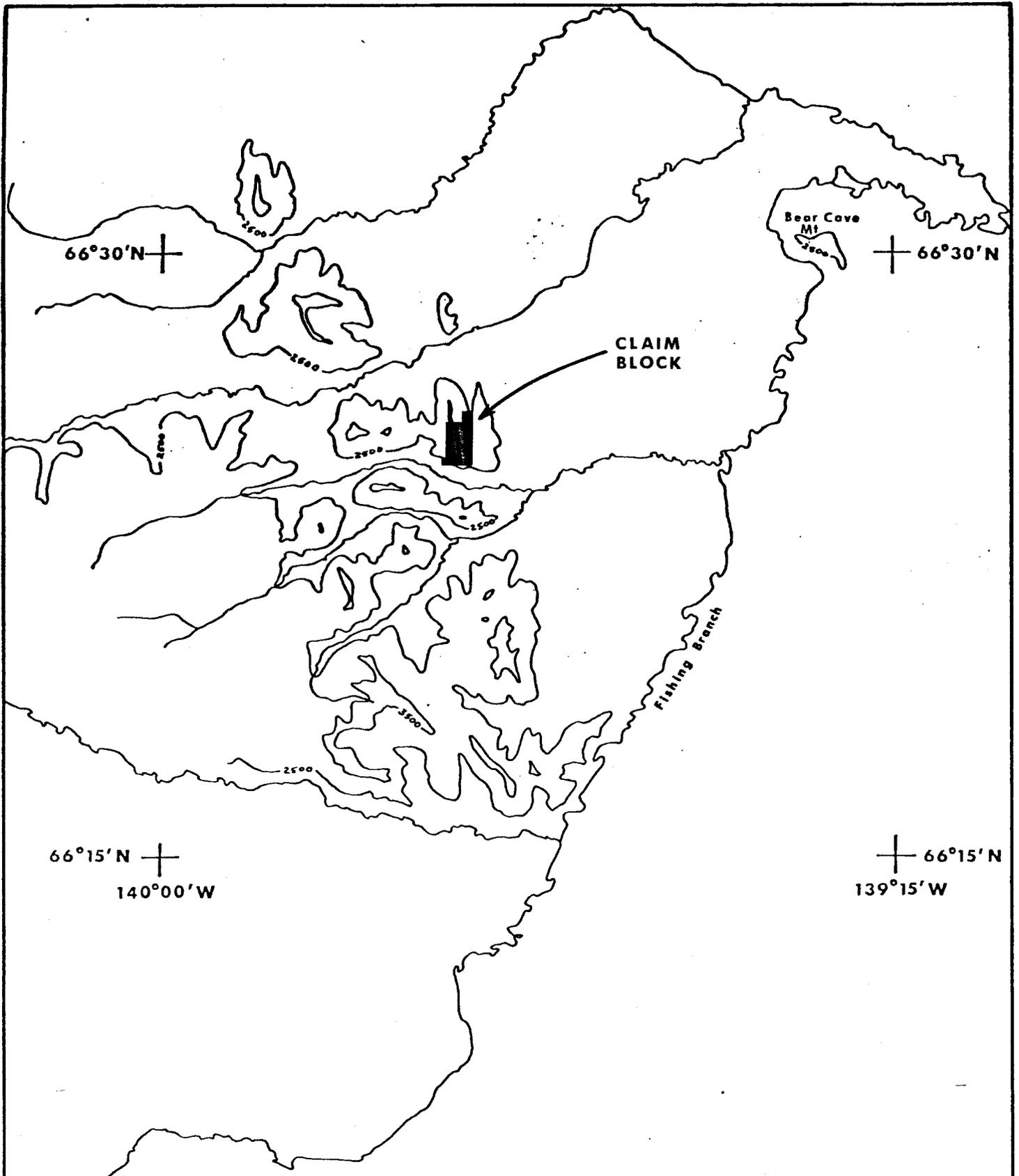
R. Bullis	)	
G. McArthur	)	C/O Brascan Resources Limited
M. McArthur	)	502 - 1155 West Pender Street
A. Cook	)	Vancouver, B.C. V6E 2P4
T. Hubl	)	

The helicopter was chartered from Trans North Turbo Air out of Whitehorse, Y.T.

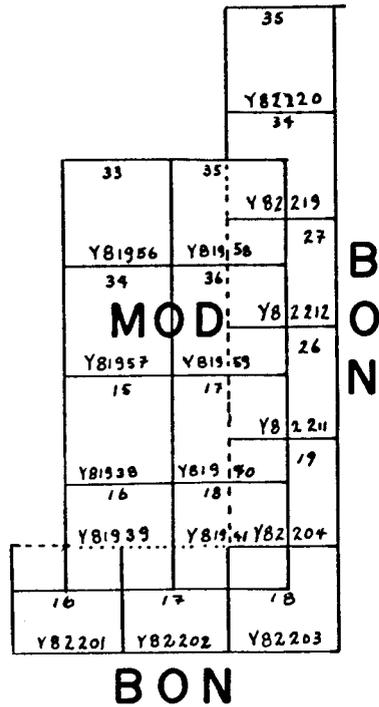
The expenses on assessment of the claim group are as follows:

Consulting fees	\$ 368.00
Charter flying	4,722.00
Salaries	1,824.00
Fuel	592.00
Truck rental and gasoline	160.00
Incidental expenses	320.00
Report and drafting	<u>400.00</u>
Total expended	\$8,436.00

Cont/d.



<b>Brascan Resources Ltd.</b>		
<b>CLAIMS LOCATION MAP</b>		
Scale 1:250,000	Contour Interval 1000'	
Date Sept 1974	By MLM <sup>CA</sup>	Fig. 1



Brascan Resources Ltd.

CLAIM GROUP

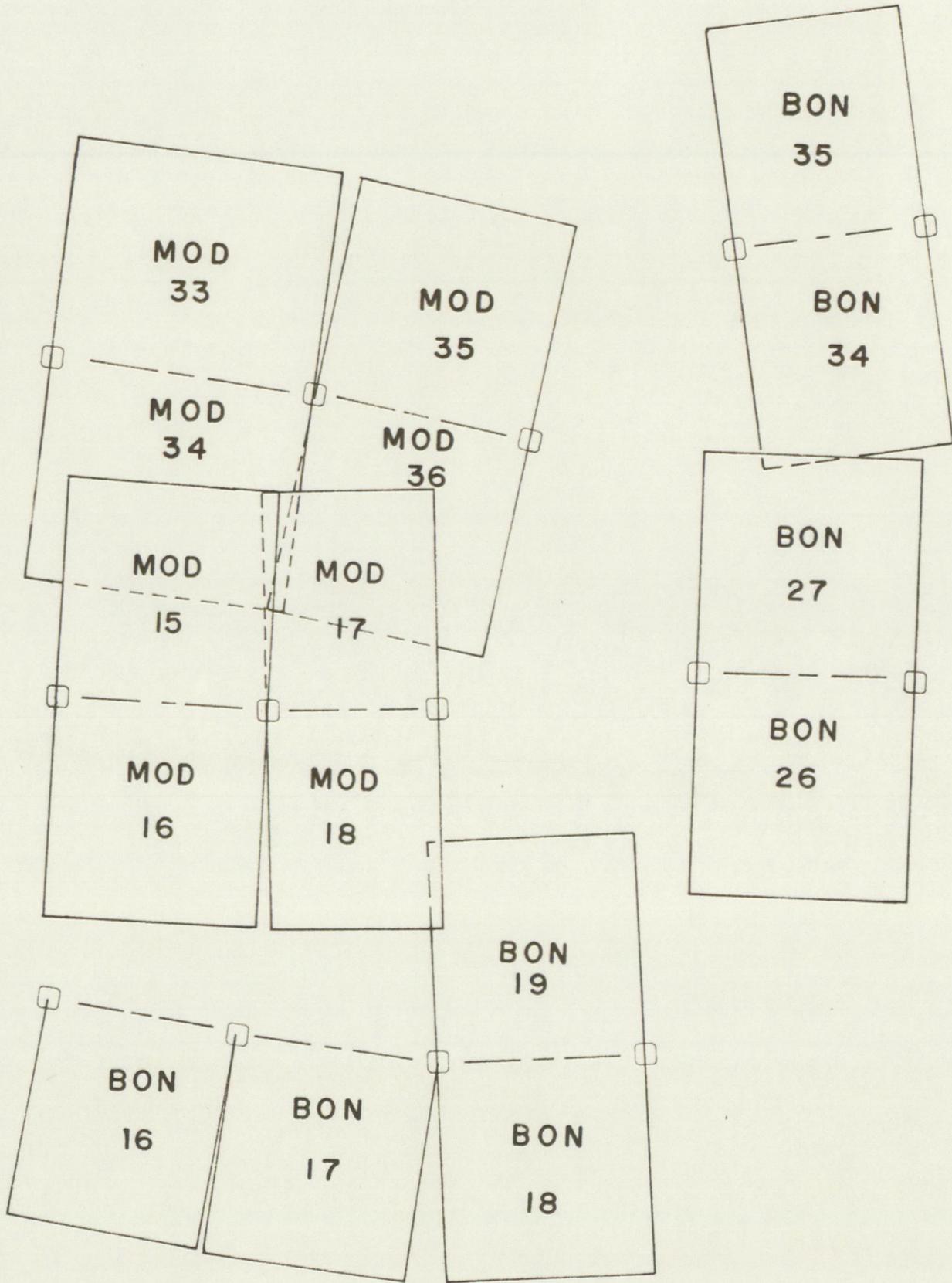
(from Dept. of Mines Sheet 116J-5)

Scale 1 inch: 1/2 mile

By M<sup>c</sup>A

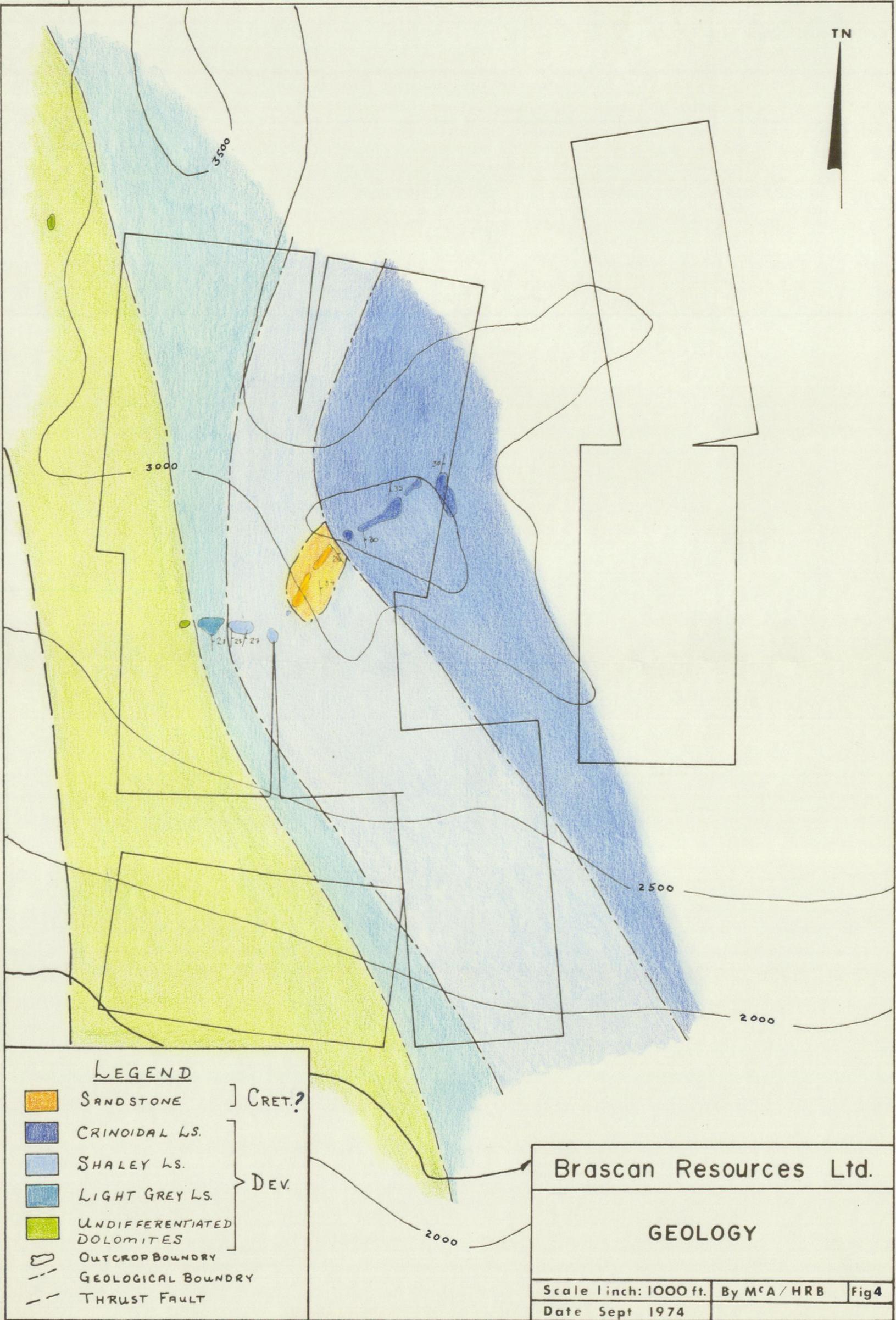
Date Sept 1974

Fig. 2



Brascan Resources Ltd.		
CLAIM SURVEY		
Scale 1 inch: 1000 feet	By AGC	Fig 3
Date Sept 1974		

TN



LEGEND

- SANDSTONE ] CRET.?
- CRINOIDAL LS. ]
- SHALEY LS. ] DEV.
- LIGHT GREY LS. ]
- UNDIFFERENTIATED DOLOMITES ]
- OUTCROP BOUNDARY
- GEOLOGICAL BOUNDARY
- THRUST FAULT

Brascan Resources Ltd.

GEOLOGY

Scale 1 inch: 1000 ft.	By MCA/HRB	Fig 4
Date Sept 1974		