

OGILVIE PROJECT



1974

(65° - 67° 138° - 141°)

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

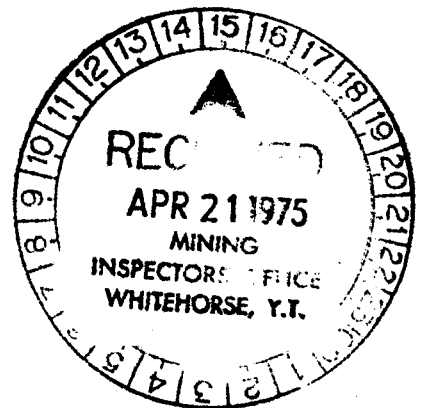
\$ 42,500.00

J.R. Craig

Resident Geologist or
Resident Mining Engineer

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

[Signature]
Commissioner of Yukon Territory



42,500

H. R. BULLIS, B.Sc.
February 1, 1975

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A 2. INTRODUCTION

Plans for an exploration programme in 1974 were drawn up after a short but successful prospecting venture in the Ogilvie Mountains by Brascan personnel in September, 1973. At that time, 441 mineral claims were staked for Brascan Resources to cover several new discoveries of sphalerite mineralization in Devonian carbonates. The aim of exploration in 1974 was two-fold; first, to map and prospect in detail the claims held by Brascan and, second, to carry out regional reconnaissance over all carbonate units within the project area.

The project area was designated the following boundaries: N65°-N67°, W138°-W141°. A base camp was set up and from there exploration, both on the claims and regionally, was carried out. Stationed at the base were an exploration crew of nine, one cook and a helicopter crew of two. Helicopters were supplied by Trans North Turbo Air out of Whitehorse, Y.T.

During the course of reconnaissance work, new mineral showings were discovered and staked by Brascan Resources personnel. Work on the claims staked in 1973 revealed numerous showings within a dolomite bed that can be followed for more than sixteen miles.

The summer's field work terminated on September 10, 1974. Further regional reconnaissance and drilling the major showings is recommended for 1975.

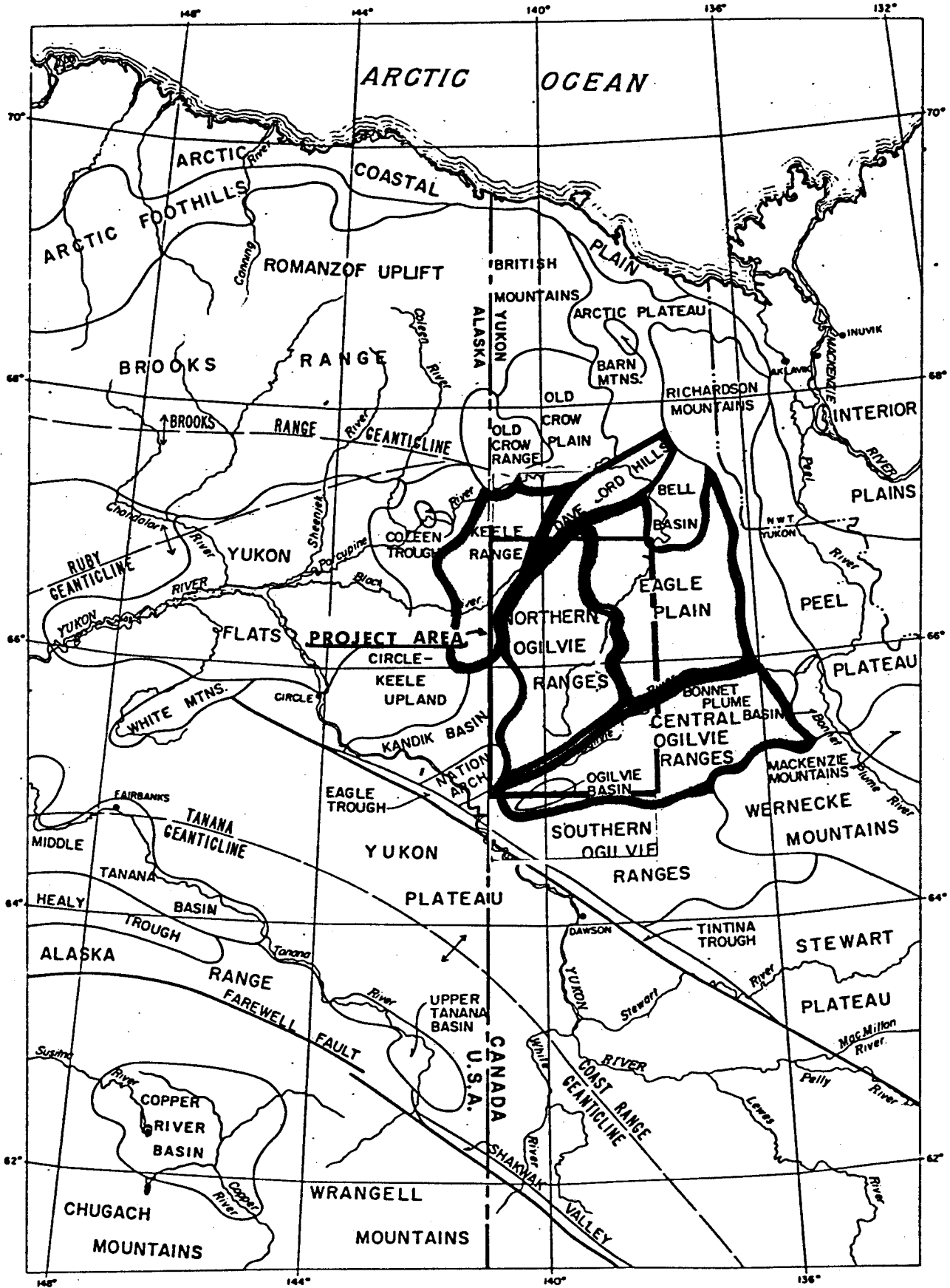
The project was supervised by H.R. Bullis and directed by L.W. Saleken and F.B. Whiting of Brascan Resources.

A 3. AREA HISTORY

Developing interest in stratabound lead-zinc mineralization of the Mississippi Valley-Pine Point types has, in recent years, lead to increased exploration activity in the carbonate belts of the Yukon and Northwest Territories. Discoveries of lead-zinc showings in the Summit Lake, Godlin Lakes and Bonnet Plume River areas helped spark, in 1974, one of the busiest years ever for exploration in the Yukon. Drilling programmes were carried out in the Bonnet Plume area, local and regional reconnaissance programmes were carried on throughout the Yukon by numerous companies (including Noranda, Dynasty, Amax, Hudson's Bay, Amoco, Great Plains, Cominco, McIntyre, Serem, B.P., Cordilleran Engineering, Welcome North, Archer-Cathro).

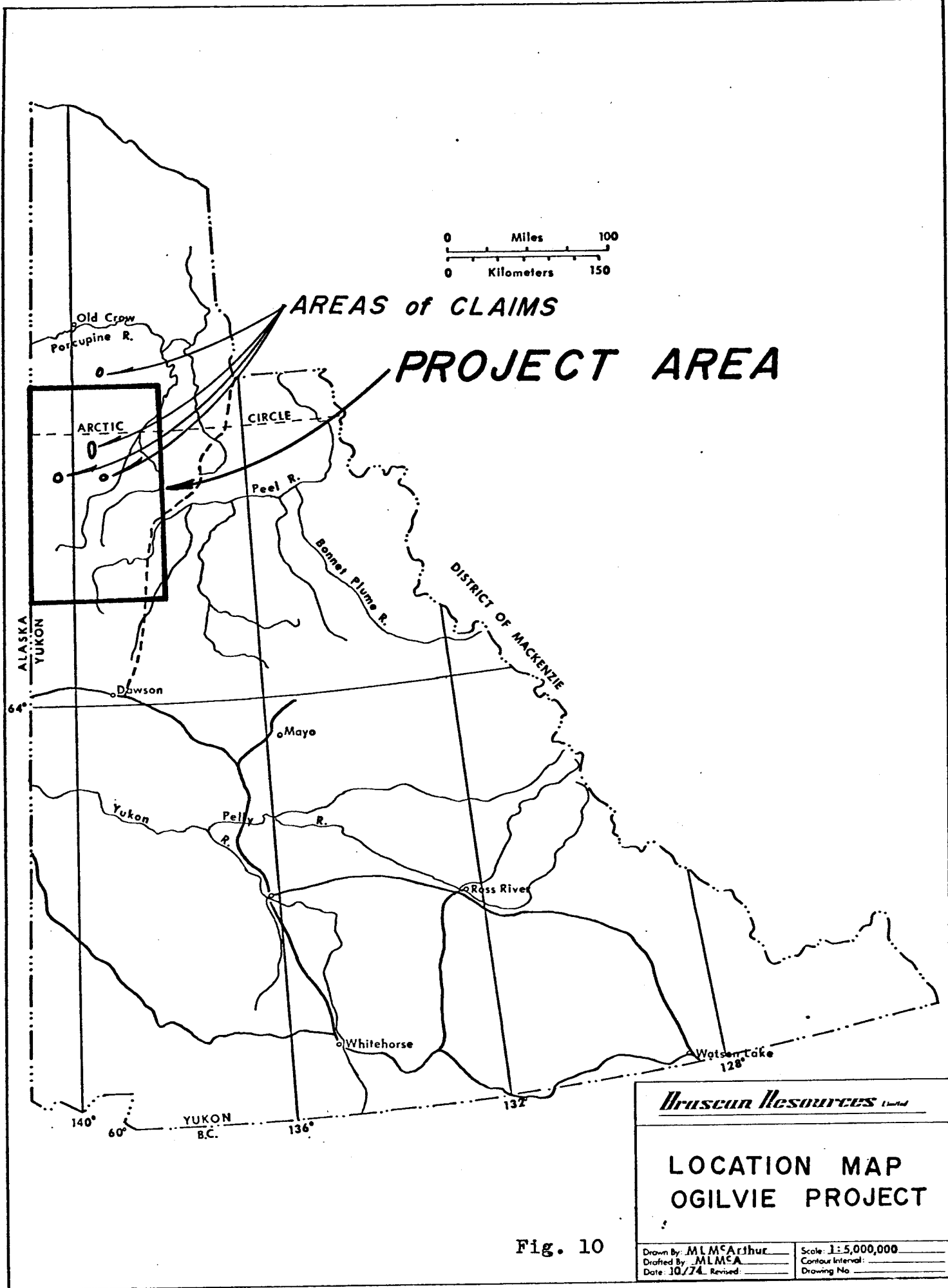
Brascan's interest in the Ogilvie Mountains area began in August of 1973 when L.W. Saleken, acting on information provided by Dr. F.B. Whiting, carried out a two-week prospecting programme that resulted in the staking of 417 mineral claims to cover several new sphalerite showings in Mid-Devonian carbonate formations. Prior to the staking by Brascan, C. Smith staked 24 claims on the same carbonate formations. These claims were later optioned by Brascan and were investigated during the 1974 field season.

Other claims staked in the Ogilvie Project area prior to 1974 were the Mink and Bear groups both held by Inexco-Husky. To our knowledge, no work was done on these groups during 1974 by Inexco-Husky.



REGIONAL PHYSIOGRAPHIC-STRUCTURAL FEATURES

SCALE 1:5,000,000



AREAS of CLAIMS
PROJECT AREA

0 Miles 100
 0 Kilometers 150

Brascan Resources Limited

LOCATION MAP
OGILVIE PROJECT

Fig. 10

Drawn By: <u>MLMCArthur</u>	Scale: <u>1:5,000,000</u>
Drafted By: <u>MLMCA</u>	Contour Interval: _____
Date: <u>10/74</u> Revised: _____	Drawing No: _____

During the 1974 field season other companies working within the Ogilvie Project area were Hudson's Bay, Amoco, Noranda, Dynasty and Great Plains. It is understood that these companies conducted reconnaissance silt sampling and prospecting programmes. It is expected that some, if not all, the above companies will have follow-up programmes in the area in 1975.

A 4. PROJECT AREA AND CLAIMS

The boundaries of the Ogilvie Project were designated to be N65°-N67° and W138°-W141°. These co-ordinates cover an area some 140 miles by 80 miles or roughly, 11,000 square miles. Physiographic-structural features within these boundaries include portions of the Central and Northern Ogilvie Ranges, the Eagle Plains, the Dave Lord Hills and the Keele Range (Figure 9). Regional geology in the area initially was interpreted by Geophoto Services Ltd. in 1969 from aerial photographs. This interpretation, as well as the photo coverage was purchased by Brascan in 1973 and proved very helpful during field work.

By the end of the 1973 season Brascan Resources held a total of 441 full-sized mineral claims. Of these, 417 were 100% owned by Brascan and 24 were under option from C.L. Smith. In the spring of 1974 a further 66 claims were staked and during the summer an additional 75 full-sized claims and 6 fractional claims were staked by Brascan personnel.

After geological mapping, prospecting and a geo-chemical survey had been done on the ground a decision was made to drop the option on C. L. Smith's claims. It was also decided to allow 121 of the claims staked in 1973 to lapse. These decisions were made after it became evident that no economic mineralization existed on the ground. Sufficient field work was done on the balance of the claims staked in 1973 to fulfil assessment work requirements for four years. This amount was filed on these claims in October. There are zinc or zinc-lead showings on each of the blocks. Also requested for the claims was a common dating of October 31. The claims for which such assessment was filed are listed below:

Mineral Claims	Recording Date	Grant No.	Assessment Applied to	
Mod	1 - 36	Sept. 18/73	Y81924-81959	Oct. 31/78
Bon	1 - 41	Oct. 2/73	Y82186-82226	Oct. 31/78
Lucky	1 - 60	Oct. 2/73	Y82126-82185	Oct. 31/78
Girly	1 - 72	Sept. 18/73	Y82016-82087	Oct. 31/78
Girly	73 - 89	Oct. 2/73	Y82241-82257	Oct. 31/78
Rox	1 - 56	Sept 18/73	Y81960-82015	Oct. 31/78
Rox	57 - 70	Oct. 2/73	Y82227-82240	Oct. 31/78
Julie	12 - 17	Aug. 27/74	Y90007-90012	Oct. 31/78

During the 1974 field season additonal showings of zinc or zinc-lead mineralization were found and staked. These claims are at present valid only until the anniversary of their various recording dates, which range from April 29 to August 27. Sufficient work was also

done on these claim blocks to fulfil assessment work requirements for three years. As these blocks cover some of the best mineralization discovered, it is planned to record this work. The claims are as follows:

<u>Mineral Claim</u>		<u>Recording Date</u>	<u>Grant No.</u>
Lord	1 - 36	April 29, 1974	Y82406-Y82441
Rat	1 - 18	April 29, 1974	Y82442-Y82459
Lynx	1 - 12	April 29, 1974	Y82460-Y82471
Jim	1 - 8	June 21, 1974	Y82735-Y82742
Gun	1 - 8	June 21, 1974	Y82743-Y82750
Moko	1 - 8	August 13, 1974	Y89737-Y89744
Chopper	1 - 8	June 11, 1974	Y82671-Y82678
Yum	1 - 8	June 11, 1974	Y82679-Y82686
Brandy	1 - 8	July 11, 1974	Y82871-Y82878
Toad	1 - 8	June 11, 1974	Y82687-Y82694
Peach	1 - 8	July 11, 1974	Y82863-Y82870
Julie	1 - 8	August 13, 1974	Y89729-Y89736
Julie	9 - 11	August 27, 1974	Y90004-Y90006

Note: this work was recorded in January of 1975.

A 5. LOCATION AND ACCESS

The base camp (N66°22', W139°40') for the Ogilvie Project was located about 160 air miles north of Dawson City, Yukon (Figure 10). Positioned in the centre of the largest claim block - the Girly, Rox, Lucky, Bon and Mod groups (296 claims) - the camp serviced both the regional and the property work. Other claim blocks and their locations are: the Lord group (N67°07',

W139° 15'); the Rat and Lynx groups (N66° 07', W140° 10'); the Jim, Moko and Gun groups (N66° 28', W139° 48'); and the Chopper, Yum, Brandy and Toad groups (N66° 04', W139° 25').

Major river systems having tributaries within the Project area are the Ogilvie and Porcupine Rivers. Waters in the Ogilvie River flow north to the Mackenzie and the Porcupine is a tributary to the westerly-flowing Yukon River.

There are a number of winter airstrips that provide staging points for fuel and material, but access directly to the claim groups in summer is limited to helicopters. The only all-weather road in the project area is the Dempster Highway and this comes to within 70 miles of the main claim blocks. Winter roads branching from the Dempster Highway cross the Project area from east to west at several latitudes. The base camp was sited on one such winter road, which crosses the Girly and Lucky claim groups. Other similar winter roads cross or approach close to the Rox, Rat and Lynx claim groups. Airstrips along the highway provide staging points for material being flown into the Project area. The closest centre is Dawson City but the closest reliable supply point for goods such as food and lumber is Whitehorse.

A 6. GEOGRAPHY

6 a. Physiography

A great variety of land forms, including low undulating river valleys, rolling foothills and rugged

mountains, are found within the Project area. Valley floors are at 1,300 feet A.S.L., and the highest peak (Mt. Burgess) at 5,100' A.S.L. gives a maximum relief of 3,800 feet. The mountains are unglaciated and to the north are rounded and talus-covered but in the south are precipitous with high cliffs and peaks. The dominant feature in the north half of the Project area is the Eagle Plains. This area of low rolling hills and meandering rivers is a basin formed by a broad, shallow syncline in Cretaceous sediments.

Permafrost is found throughout the area from six inches to six feet below ground surface.

Vegetation in valley bottoms consists of spruce, tamarak and alder along with smaller broad-leaf plants, flowers and moss. The moss provides an insulating blanket over the permafrost and where the moss is disturbed or destroyed, as along foot-paths, the frost begins to melt and creates mud problems. Above 3,500' A.S.L. vegetation becomes scarce, consisting of moss, lichens and alpine flowers.

6 b. Climate

Summers are short (three months) and warm; winters are long and cold. During the summer months, daytime temperatures may reach 70°F while daytime lows in winter reach -50°F. Rainfall is moderate at about six to ten inches and snowfall averages four to five feet.

Water for drilling purposes is readily available during and shortly after the spring thaw; however, by

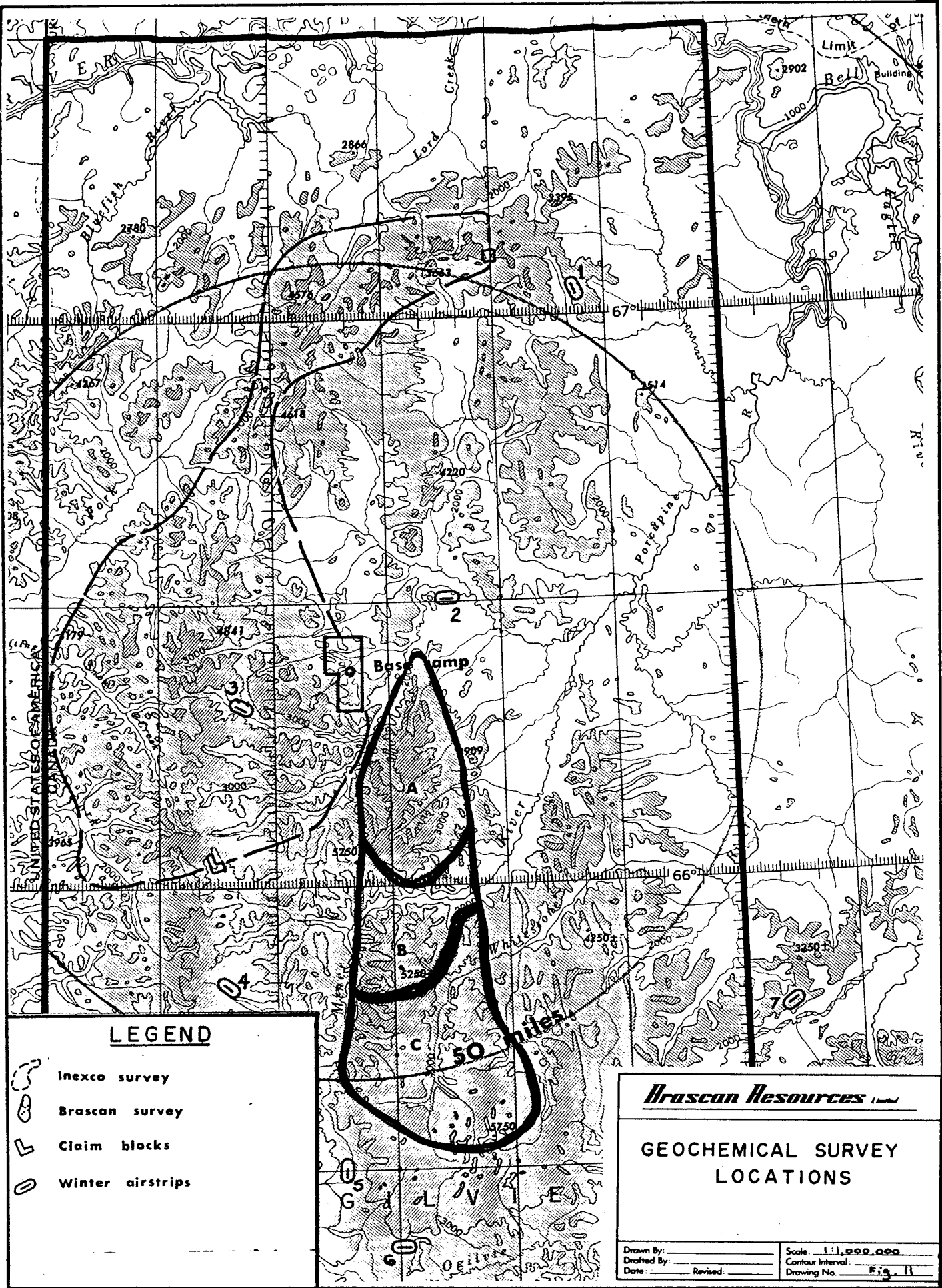
mid-summer the creeks become intermittent as the water-table lowers.

A 7. LOGISTICS AND WORK SCHEDULE





The remote setting of the base camp created logistical problems and made supply lines expensive to maintain. Fuel and lumber supplies were placed in the Project area during the last week of March to take advantage of snow on winter airstrips. Supplies were trucked via White Pass Freight Lines from Whitehorse to the airstrip at Mile 166 on the Dempster Highway. From that point a Twin Otter aircraft was used to place fuel supplies at various airstrips in the area. These airstrips cannot be used by fixed-wing aircraft after the spring thaw.

During the first week of May, camp equipment was shipped by truck from Vancouver to Mile 166 on the Dempster Highway and then via 206B helicopter into the base-camp site some sixty miles west of the highway. At this time a crew of five constructed the camp.

By the fifteenth of May regional reconnaissance had begun. Exploration was done in two stages: first, a regional reconnaissance of the whole area using prospecting and geochemical methods was done, and any mineralization found was staked. This part of the programme lasted up to the middle of June. After that time detailed mapping and prospecting of previously-staked ground was carried out. This detailed work resulted in the location



LEGEND

-  Inexco survey
-  Brascan survey
-  Claim blocks
-  Winter airstrips

Brascan Resources Limited

**GEOCHEMICAL SURVEY
LOCATIONS**

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 Drafted By: _____
 Date: _____ Revised: _____

Scale: 1:1,000,000
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 Drawing No. Fig. 11

of additional showings, some of which lay outside the then-existing claim boundaries. Additional claims were staked to cover these extensions. A claim survey was done for each claim group and any major fractions found to exist within the block were staked.

Food supplies for the camp were shipped every second week from Whitehorse to Dawson via White Pass Freight Lines. A small van, hired for the summer by Brascan, was used to carry the supplies from Dawson to Mile 166 on the Dempster Highway, from where a helicopter ferried goods into the base camp. Radio contact through the CN Tel system was maintained for constant communication between the base camp and outside telephones.

At the end of the field season two plywood huts were constructed at the base camp site and some of the bulkier camp equipment was stored for winter. The balance of the equipment was taken to Vancouver for warehouse storage.

A 8. EXPLORATION PROCEDURE

Regional prospecting and stream sediment sampling were carried out in three areas (Fig. 11) to investigate a belt of carbonate rocks ranging in age from Cambrian to Mid-Devonian. Similar rocks host zinc-lead mineralization on the Girly, Rox, et al claims. Because of the large areas involved and to avoid delays caused by the two-week time-lapse between sending out samples for analysis and receiving results if reliance is placed wholly on

off-site analytical laboratories the following method of exploration was used: first, a 47G3B1 helicopter was used to collect the silt samples on an average of one sample every half mile of stream. In this way two people collected a total of 59 samples in Area A using only 11.7 hours of flying time. Second, the samples were dried and analysed in camp using "Bloom" and "Holman" field geochemical kits. Any anomalous results were followed up by detailed prospecting. In this manner the Toad, Brandy, Chopper and Yum mineral showings were discovered and staked. Third, the samples were packaged and sent to Min-en Laboratories in North Vancouver for analysis using hot extraction. Any anomalies indicated by hot extraction not previously detected by the field kits were then investigated. It should be noted that the semi-quantitative field tests were found to be more successful in locating mineralization than the more rigorous hot extraction method.

Areas A, B and C were sampled and prospected in a similar manner. Several anomalous areas have been noted (Fig.6,7) and should be the subjects of more intensive prospecting during the 1975 field season. In Area C several zinc highs were prospected in detail with no resulting mineral finds; however, the anomalies are intense enough to warrant further investigation. The sampling in Area B was done at the end of the field season and no follow-up work has been done there. Anomalous areas are shown on Figure 6 .

Out of the total Project area of 11,000 square miles, reasonably intensive prospecting and geochemical coverage was given to approximately 2,300 square miles. The

prospecting and geochemical surveys covered about 75% of the exposed carbonates within the project area. The total number of geochemical silt samples taken and analysed during the summer was 400.

During the first month of the project several anomalous areas located by the Inexco silt survey were investigated. Most of the anomalous areas were in regions of non-carbonate rocks younger than Devonian age; although the areas were well searched no mineralization was discovered.

Section B

Geology and Property
Description

B 1. REGIONAL GEOLOGY

North of the Ogilvie River the rock units present consist of north-trending carbonate and clastic sediments ranging in age from Precambrian to Tertiary. The formations are generally broadly folded although locally they show tight folding combined with faulting and thrusting.

The prime prospecting targets for the 1974 programmes were carbonate units of all ages. Carbonate beds exist throughout the stratigraphic succession from Precambrian to Pennsylvanian, with major units in the Silurian to Mid-Devonian. Similar carbonate layers are hosts to lead-zinc mineralization in the Bonnet Plume, Godlin Lakes and Robb Lake districts in similar fold-fault belts to the southeast. In the Summit Lake area, lead-zinc mineralization is found in black shales of probable Mid-Devonian age. There are shales within the Ogilvie Project area but these received superficial investigation during 1974 as the emphasis was on carbonates.

Several prominent tectonic features are found in the Ogilvie Project area and are usually seen as topographic lows. The largest of these features is the Ogilvie River Trough. Its location probably controlled by large-scale movement in the crust, the trough separates north-south-trending features in the north from east-west-trending features to the south.

Several thrust zones were observed and mapped. The principal one is the Dewdney Thrust; it may have some control over mineral deposition within the Girly, Rox et al claims' areas. Several smaller thrusts are associated with the Dewdney. It appears as if the relative

movement of the thrusting has been from east to west, as the main thrust planes seem to dip east.

B 2. STRATIGRAPHIC SUCCESSION

Precambrian to Cambrian(?)

The oldest rocks mapped in the project area are red and green clastics thought to be of Precambrian or Cambrian age and part of the Tindir Group (Pl. 1, fig. 1). Only the upper 200 feet of this unit are exposed in the region mapped. The redbeds (Pe) are composed of thin-bedded siltstone, sandstone and pebble conglomerate. The sandstone is made up mainly of well-rounded quartz grains and the conglomerate includes rounded pebbles of red sandstone and siltstone as well as quartz grains. The composition of the conglomerate at the top of the redbeds suggests an erosional unconformity.

Cambrian(?) to Ordovician

Unconformably overlying the redbeds are 1,000 feet or more of buff, brown, light-grey to dark-grey weathering dolomites (eOd). At the base of the unit are interbedded light-grey to buff weathering, silty dolomites and dark-grey weathering medium-to coarse-crystalline dolomites. This part of the unit weathers characteristically into alternately recessive and resistant bands (Pl. VI, fig. 2). Within the silty dolomites there is a five-foot bed of algal stromatolites (Pl. 1, figs. 2, 3). The diameter of the algal mounds averages one inch. The silty dolomites also contain abundant intraclasts in some

beds and possible birdseye structures. This evidence suggests a very shallow marine, possibly supratidal, environment of deposition for the silty dolomites. The interbedded, dark-grey dolomites show gradation from dolomite with bituminous laminae into pods of coarse-crystalline dolomite with white dolomite and calcite in veins and vugs. This cyclic member of light- and dark-grey dolomites may be developed, although less distinctly, throughout the entire map unit. Where it is not continuous upward, it is overlain by less well-bedded, grey and dark-grey dolomites. These dolomites commonly contain abundant silica in the form of botryoidal quartz and irregular chert nodules. More rarely, thin beds of light-grey laminated chert are found. The "cyclic unit" is referred to elsewhere in the report and shall be denoted by quotation marks (" "). This unit is a good marker horizon.

Ordovician to Silurian(?)

Of possible Ordovician or Silurian age is a unit composed of approximately 1,000 feet of light-grey to white, fine- to coarse-crystalline, vuggy-weathering dolomite (Od). This unit is semi-resistant and often forms small cliffs (Pl. IV, fig. 1; Pl. V, fig. 2). These dolomites have a high inter-crystalline porosity which may be as much as 15%. Light-grey to buff chert is common in the vuggy dolomites. Most characteristic are the two beds of chertified stromatolites (Pl. VII, fig. 2) found in the upper part of the unit. The larger of the two beds reaches a thickness of five feet. Near the upper contact of the dolomites is a bed of dark-weathering irregular chert nodules. Because of the stratigraphic position of these dolomites, they are thought to be the possible facies equivalent of the Road River Formation.

Silurian(?)

The vuggy, white dolomites grade into a series of brown-weathering dolomites (**S_d**). This unit varies in thickness from 100 to 600 feet. Fossils are generally poorly preserved in these grey dolomites; however, in the south of the region there are abundant silicified gastropods, brachiopods and cephalopods with minor crinoids. To the north only vague fossil shadows, thought to be either digital corals or stromatoporoids, are found. The change in the fossil assemblage suggests a shallowing of the depositional environment northward. Occasionally, planispiral gastropods are found in the upper beds of dolomite.

Above the dolomites are up to 200 feet of light-grey weathering, resistant limestones (**S_l**). The limestones are fine-grained with a micritic matrix and thus appear dense in hand specimen. The lower contact of the limestone is gradational; the limestones becoming more intensely veined with dolomite until the rock becomes an actual dolomite. Since a second bed of partly dolomitized limestone was mapped locally within the underlying brown-weathering dolomite unit it is possible that the lower unit is, at least in part, dolomitized light-grey limestone. Fossils are rare in the limestone with only minor occurrences of planispiral gastropods, cephalopods and corals.

Upper Silurian to Lower Devonian(Emsian)

The Gossage Formation (**D_G**) averages 400 feet in the area of the claim groups. The formation is composed of two members, a lower orange-brown weathering, member of

interbedded silty dolomite and argillaceous limestone and an upper dark-grey to black pelletal limestone. The rocks are evenly thin-bedded and recessive (Pl. V, fig. 1). Minor chert nodules were encountered near the top of the formation in one locality. The occurrence of abundant large ostracods is characteristic of the upper, black limestones of the Gossage Formation. Corals are also found in a few brown-weathering dolomitic beds of the formation.

The section of the Gossage Formation at Mount Burgess is atypical. There it is composed of a basal chert-pebble conglomerate with a matrix of red-brown silty shale overlain by hematitic silty and sandy shale. Orange-brown weathering, fine-crystalline, dark-grey dolomites top the section.

Lower to Middle Devonian

The Ogilvie Formation (D_0) consists of grey, fine-grained, thin-bedded to massive, resistant limestones (Pl. IV, figs. 1 & 2). The thickness averages 300 feet in the mapped region but reaches 2,000 feet at Mount Burgess. The lower contact with the Gossage Formation is gradational and is arbitrarily drawn where the platy carbonates become subordinate to the grey, resistant limestone. The upper contact is diachronous with the youngest beds (Giventian) developed at Mount Burgess (Norris, 1968). Overlying the Ogilvie Formation is an unnamed shale which seldom crops out.

Two-holed crinoid ossicles are the most common fossil in the Ogilvie Formation, at times composing up to 70% of the rock. Beds of coarse-grained fetid encrinite, commonly with minor amounts of pyrobitumen, are most common near the top of the formation. Corals, stromato-

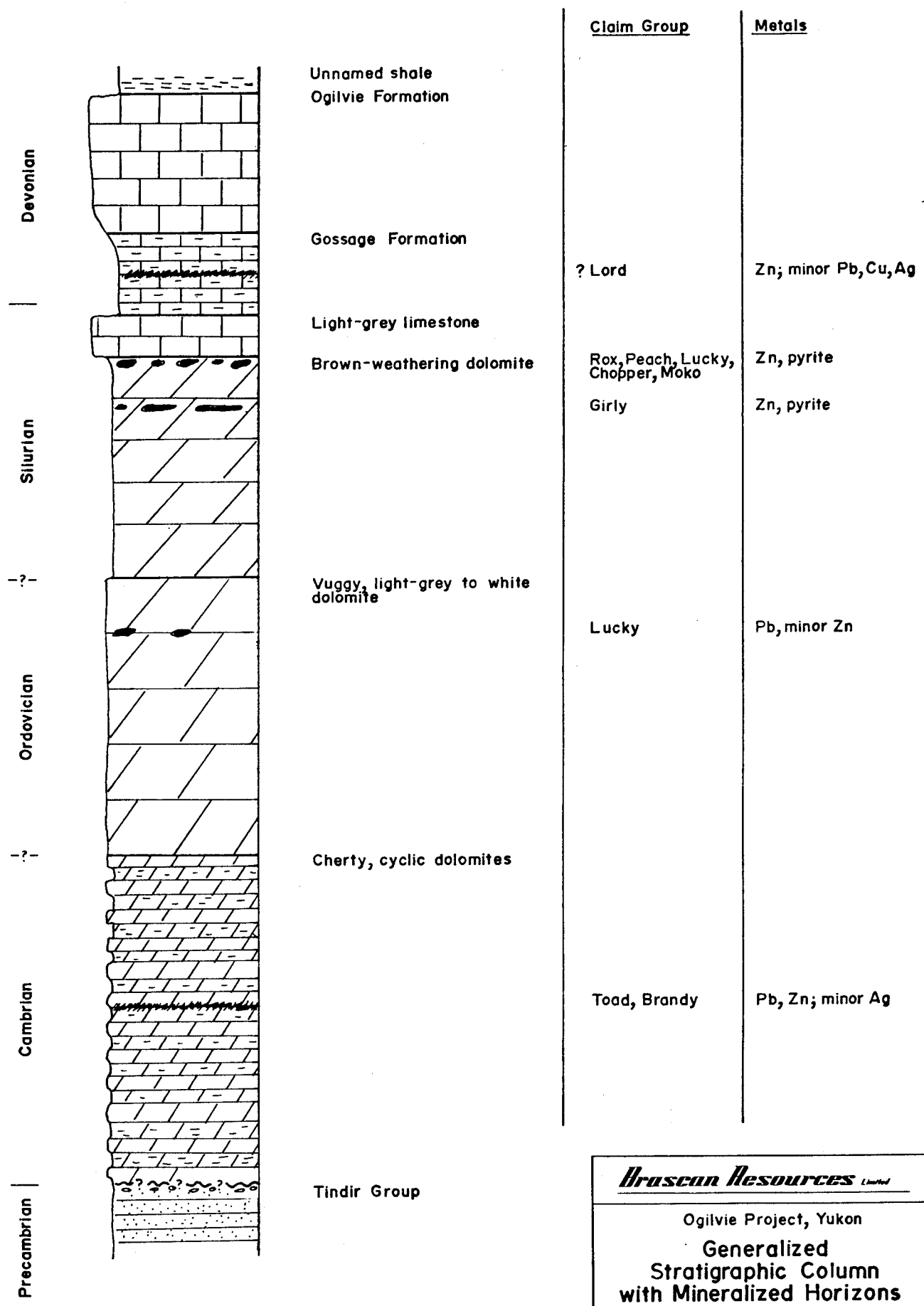
poroids, brachiopods, gastropods, cephalopods and trilobites are also present in the Ogilvie Formation and are locally found in such abundance that a reefal palaeo-environment is suggested. Chert nodules are found locally in the upper part of the formation.

B 3. TOAD, BRANDY, CHOPPER, YUM CLAIMS

3 a. Regional Geology

The Lower Palaeozoic carbonates near the Toad, Chopper, Yum and Brandy claims were mapped and prospected on a regional basis (Figure No. 16) in search of zinc-lead mineralization. The rocks in the northern part of the area are exposed along two northwest-trending thrust sheets. The Dewdney Thrust is a major regional structure, over forty miles in length, which thrusts Ordovician(?) dolomites (Od) over Devonian limestones (D_c) along most of its length. West of the Dewdney is a second major thrust which brings Silurian and Ordovician(?) dolomites over Devonian and Silurian limestones (Pl. II, fig. 1, 2). The beds dip to the west at 15° to 50° , but approach 90° near the thrust zone.

Rocks in the south part of the map area are separated from those to the north by an east-west-trending fault. South of the fault the rocks are dominantly Precambrian to Ordovician(?) in age and are exposed in a large basin-like structure.



after Norris, 1968

Alaskan Resources Limited

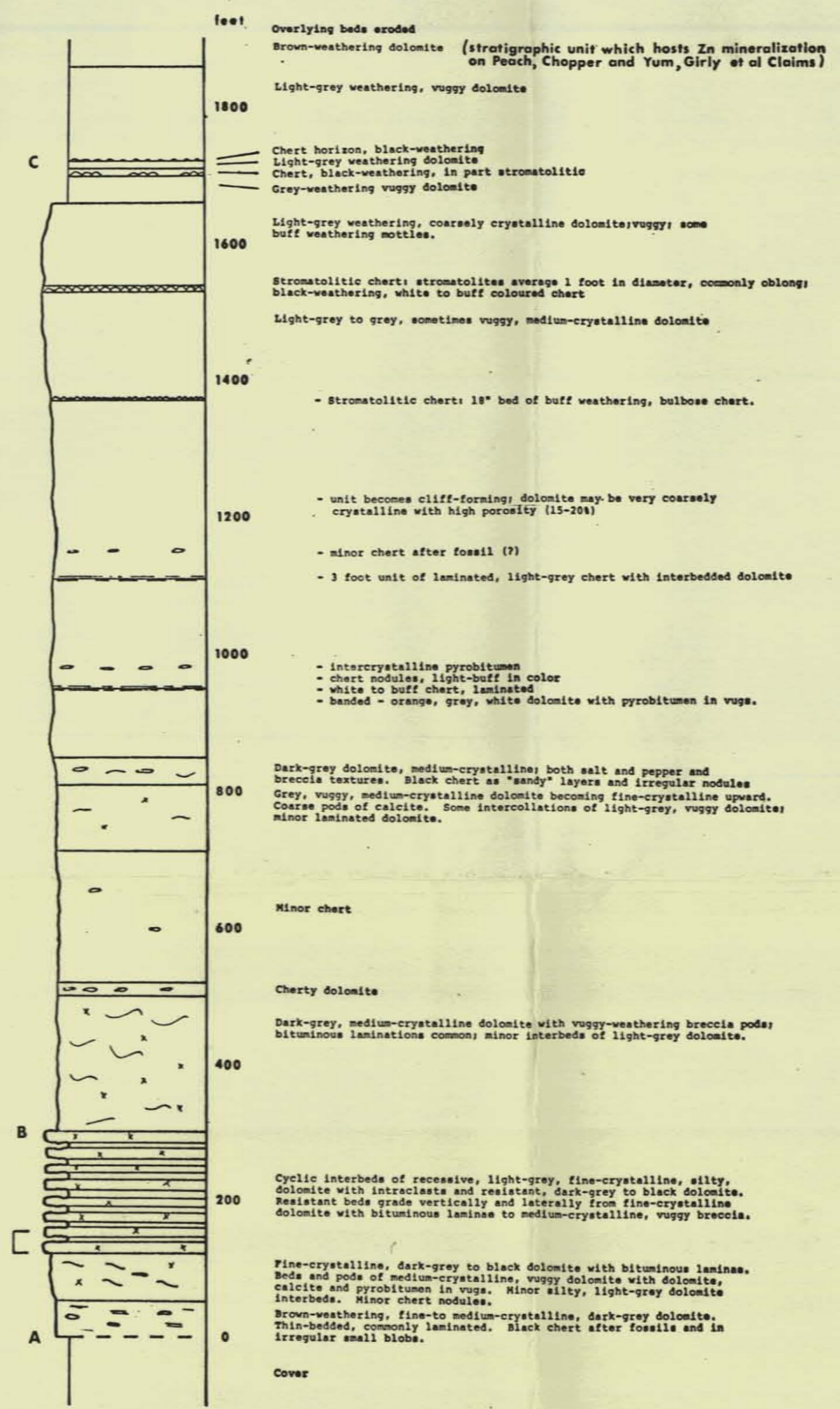
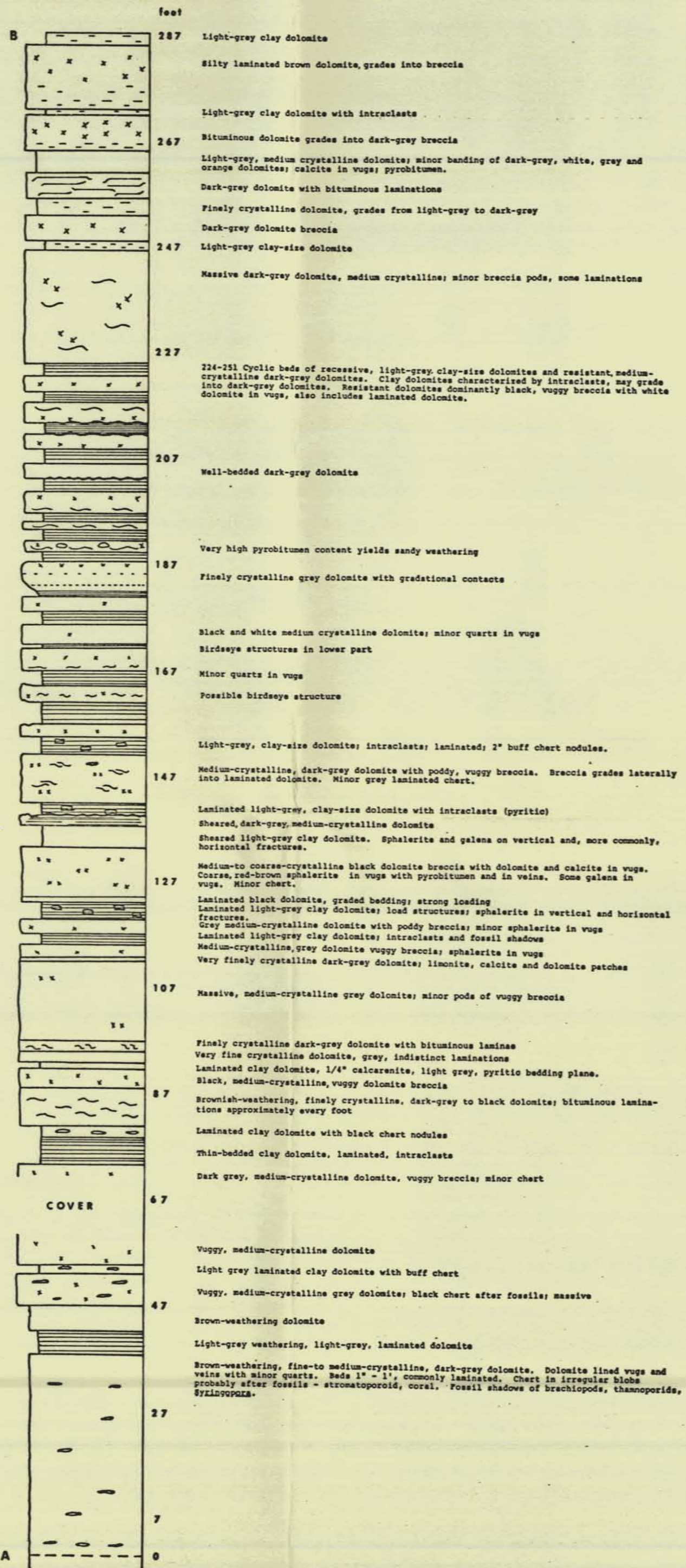
Ogilvie Project, Yukon

Generalized Stratigraphic Column with Mineralized Horizons

Drawn By: **MLMcArthur** Scale: 1" = 500'

Drafted By: _____ Contour Interval: _____

Date: 12/74 Revised: _____ Drawing No. **Fig. 12**



Legend

chert nodule ○ bituminous lamination ~

breccia x x intraclast □

laminated = stromatolite ≡

Dolomites of possible Ordovician age, may be facies equivalent to Road River Formation shales

Orascan Resources Limited

Ogilvie Project, Yukon

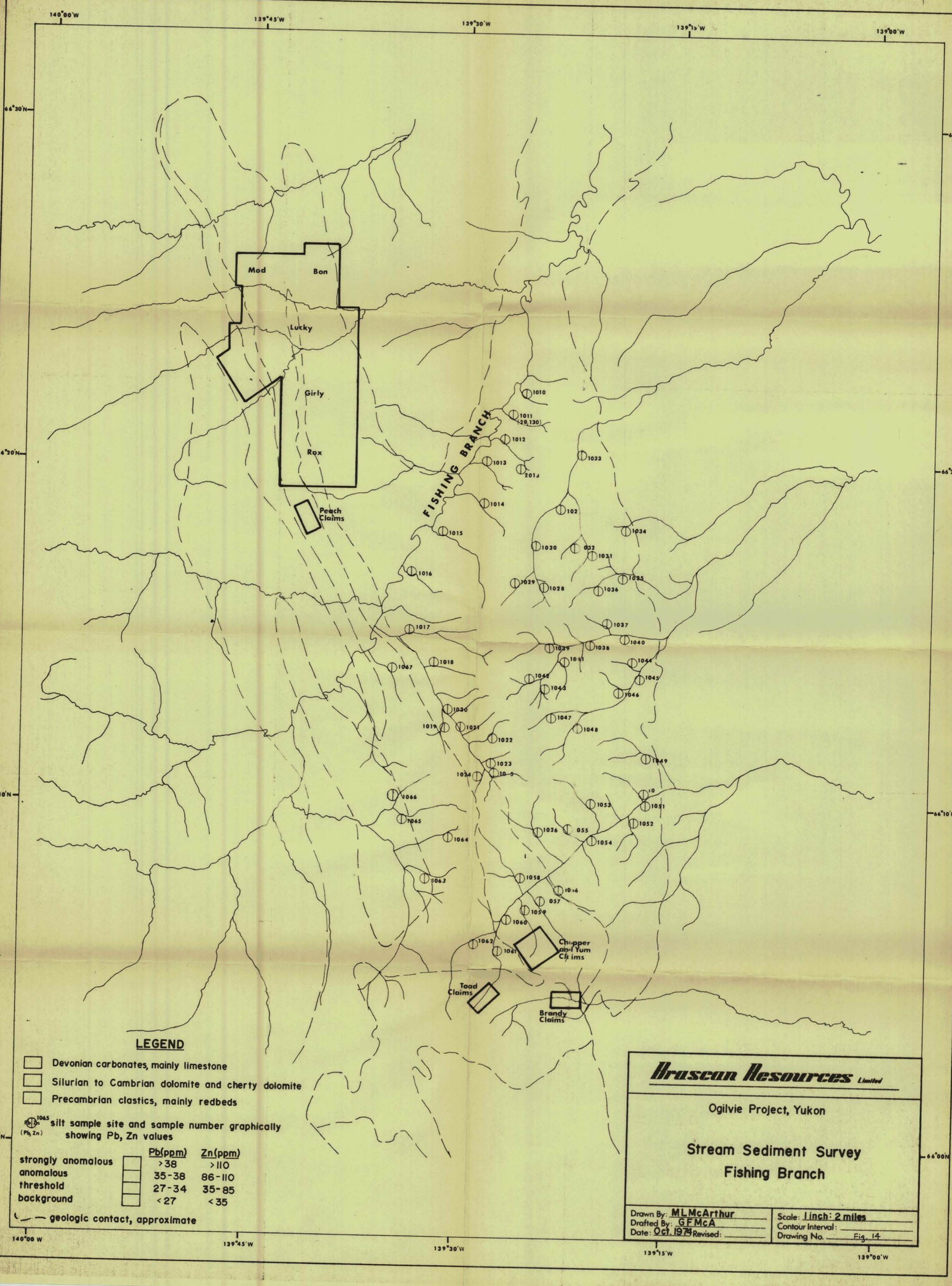
Stratigraphic Sections AB, AC

Toad Claims

Drawn By: MLMcA/GFMcA Scale: 1" 20' / 1" 200'

Drafted By: Contour Interval:

Date: 10/74 Revised: Drawing No. Fig. 13



Mod
Bon
Lucky
Girly
Rox

FISHING BRANCH

Peach Claims

Chipper
and Yum
Claims

Toad
Claims

Brandy
Claims

LEGEND

- Devonian carbonates, mainly limestone
- Silurian to Cambrian dolomite and cherty dolomite
- Precambrian clastics, mainly redbeds

silt sample site and sample number graphically showing Pb, Zn values

	Pb(ppm)	Zn(ppm)
strongly anomalous	>38	>110
anomalous	35-38	86-110
threshold	27-34	35-85
background	<27	<35

geologic contact, approximate

Brascan Resources Limited

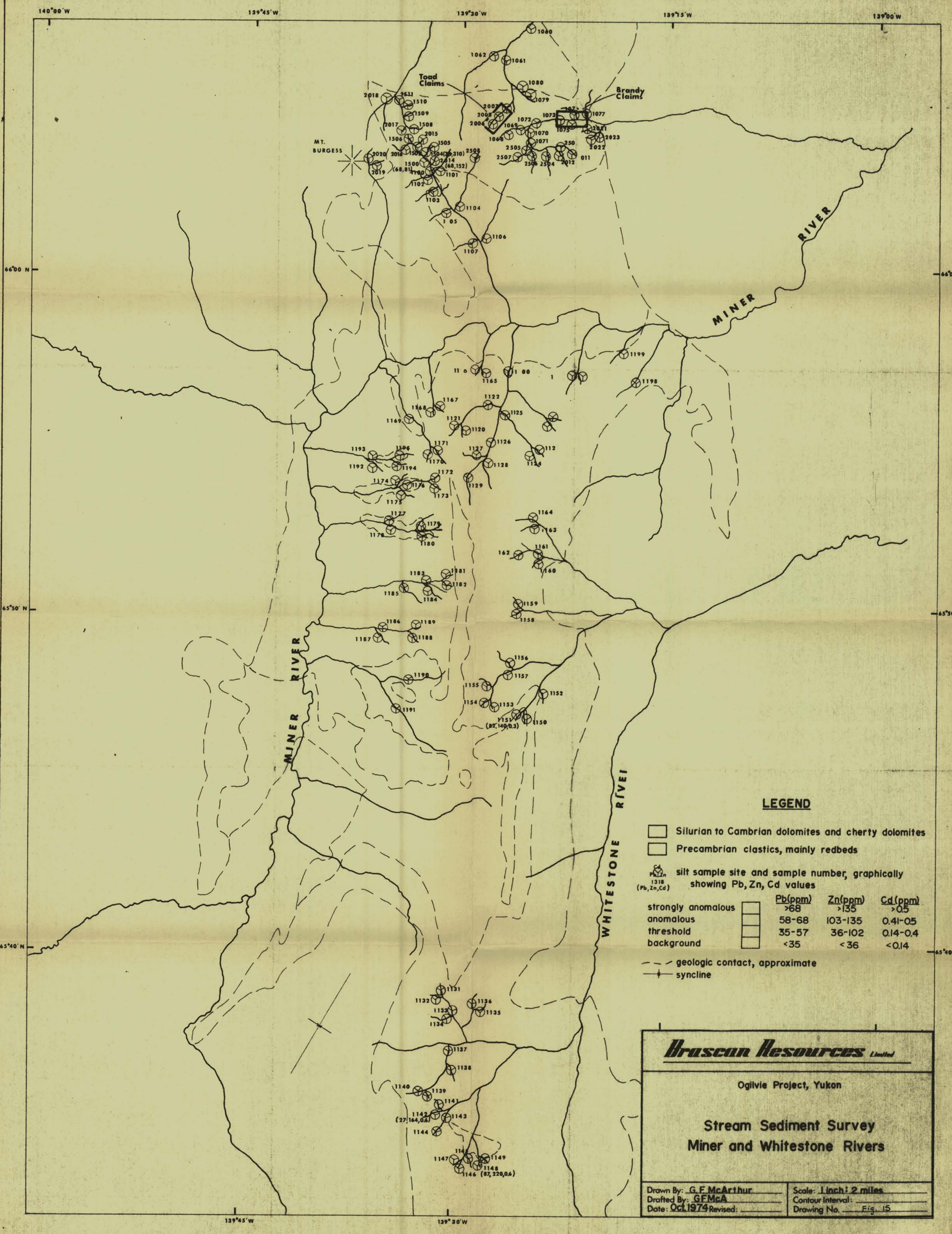
Ogilvie Project, Yukon

**Stream Sediment Survey
Fishing Branch**

Drawn By: MLMcArthur Drafted By: GFMCA Date: Oct. 1974 Revised: _____	Scale: 1 inch = 2 miles Contour Interval: _____ Drawing No. Fig. 14
--	---

140°00'W 139°45'W 139°30'W 139°15'W 139°00'W

66°30'N 66°20'N 66°10'N 66°00'N



LEGEND

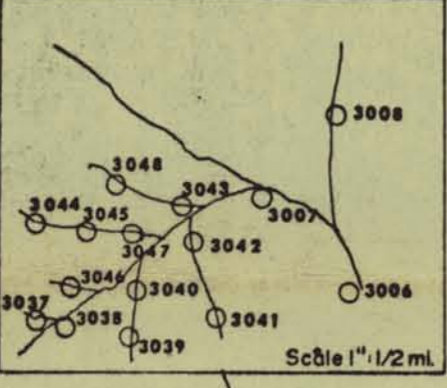
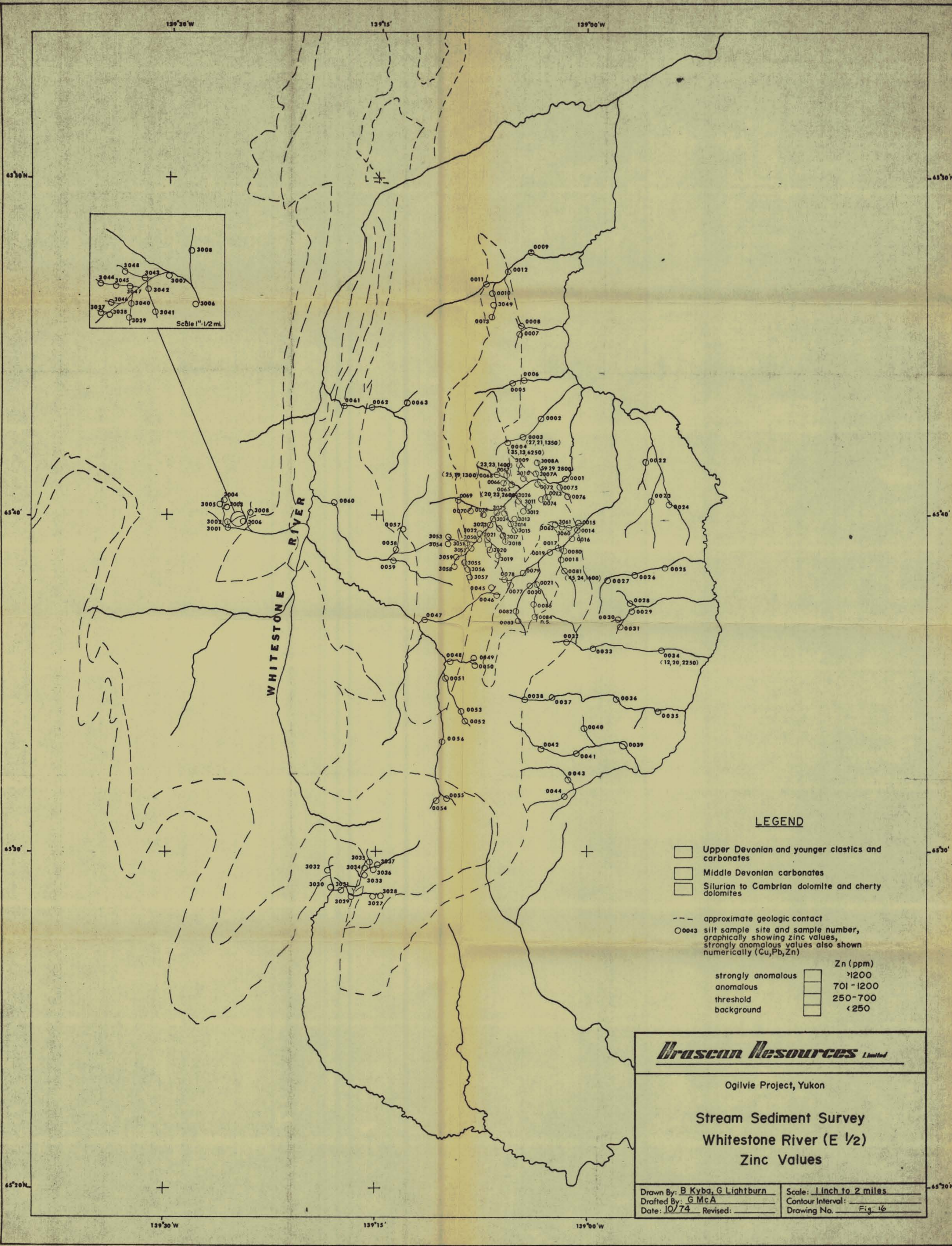
- Silurian to Cambrian dolomites and cherty dolomites
 - Precambrian clastics, mainly redbeds
 - silt sample site and sample number, graphically showing Pb, Zn, Cd values
- | | | | |
|--------------------|----------------------|-----------------|-----------------|
| | 1318
(Pb, Zn, Cd) | | |
| strongly anomalous | | Pb(ppm)
>68 | Zn(ppm)
>135 |
| anomalous | | 58-68 | 103-135 |
| threshold | | 35-57 | 36-102 |
| background | | <35 | <36 |
| | | Cd(ppm)
>0.5 | 0.41-0.5 |
| | | 0.14-0.4 | <0.14 |
- - - geologic contact, approximate
 - + syncline

Brascan Resources Limited

Ogilvie Project, Yukon

**Stream Sediment Survey
Miner and Whitestone Rivers**

Drawn By: <u>G.F. McArthur</u>	Scale: <u>1 inch = 2 miles</u>
Drafted By: <u>GFMCA</u>	Contour Interval: _____
Date: <u>Oct. 1974</u> Revised: _____	Drawing No. <u>Fig. 15</u>



LEGEND

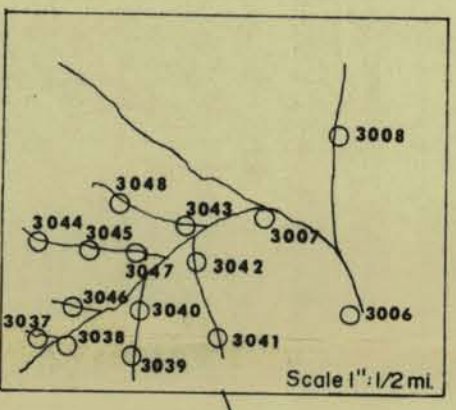
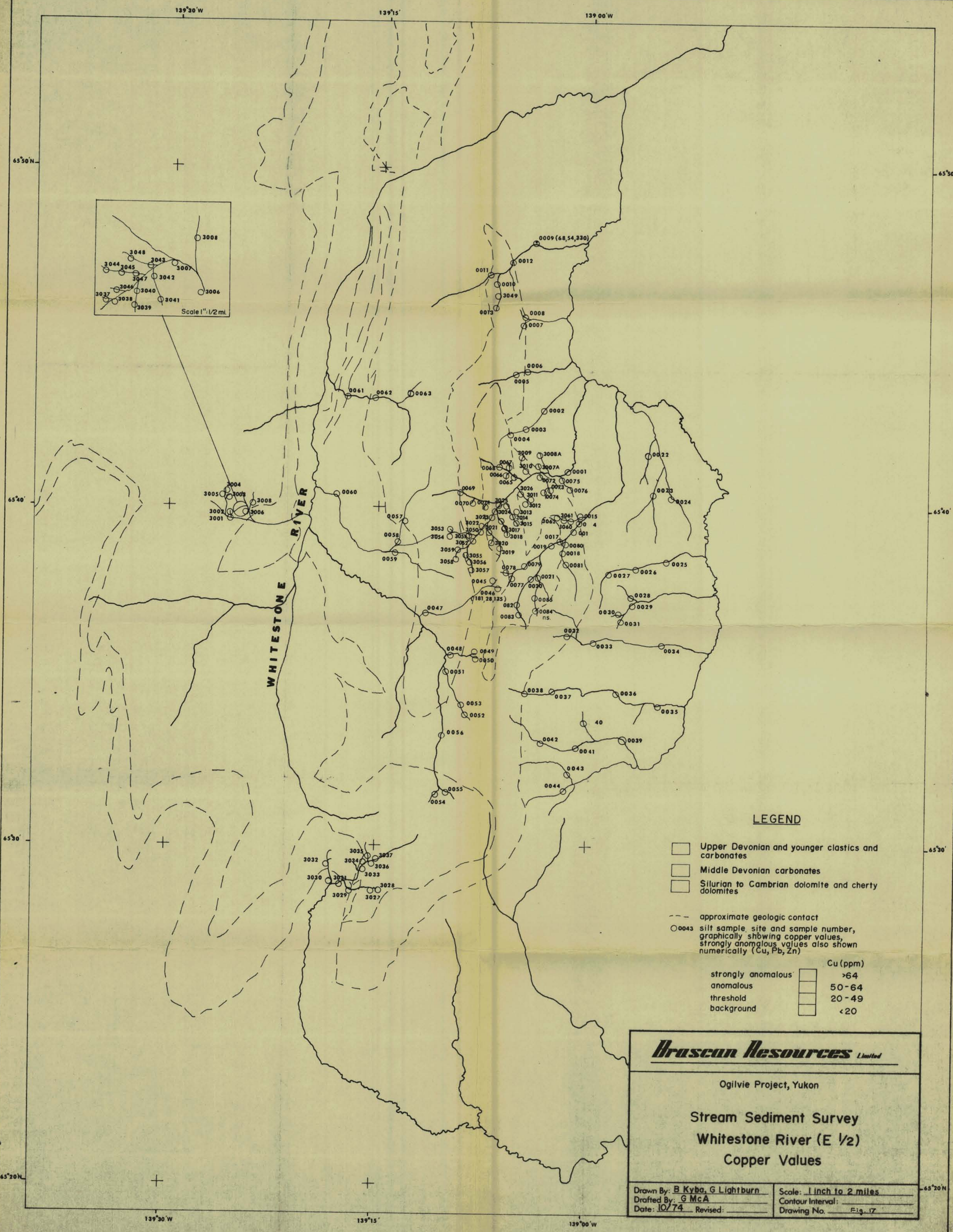
- Upper Devonian and younger clastics and carbonates
 - Middle Devonian carbonates
 - Silurian to Cambrian dolomite and cherty dolomites
 - - - approximate geologic contact
 - 0043 silt sample site and sample number, graphically showing zinc values, strongly anomalous values also shown numerically (Cu,Pb,Zn)
- | | |
|--|--------------------------|
| | Zn (ppm) |
| | strongly anomalous >1200 |
| | anomalous 701 - 1200 |
| | threshold 250 - 700 |
| | background <250 |

Orascan Resources Limited

Ogilvie Project, Yukon

**Stream Sediment Survey
Whitestone River (E 1/2)
Zinc Values**

Drawn By: B Kyba, G Lightburn	Scale: 1 inch to 2 miles
Drafted By: G McA	Contour Interval: _____
Date: 10/74 Revised: _____	Drawing No. Fig. 16



LEGEND

- Upper Devonian and younger clastics and carbonates
- Middle Devonian carbonates
- Silurian to Cambrian dolomite and cherty dolomites

- - - approximate geologic contact
- 0043 silt sample site and sample number, graphically showing copper values, strongly anomalous values also shown numerically (Cu, Pb, Zn)

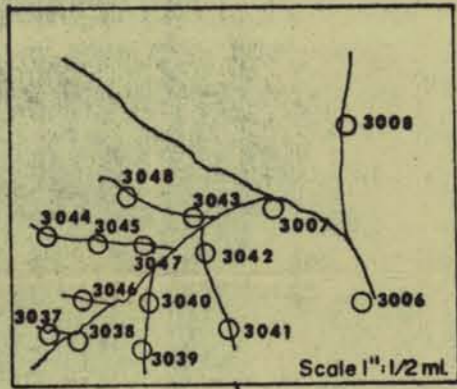
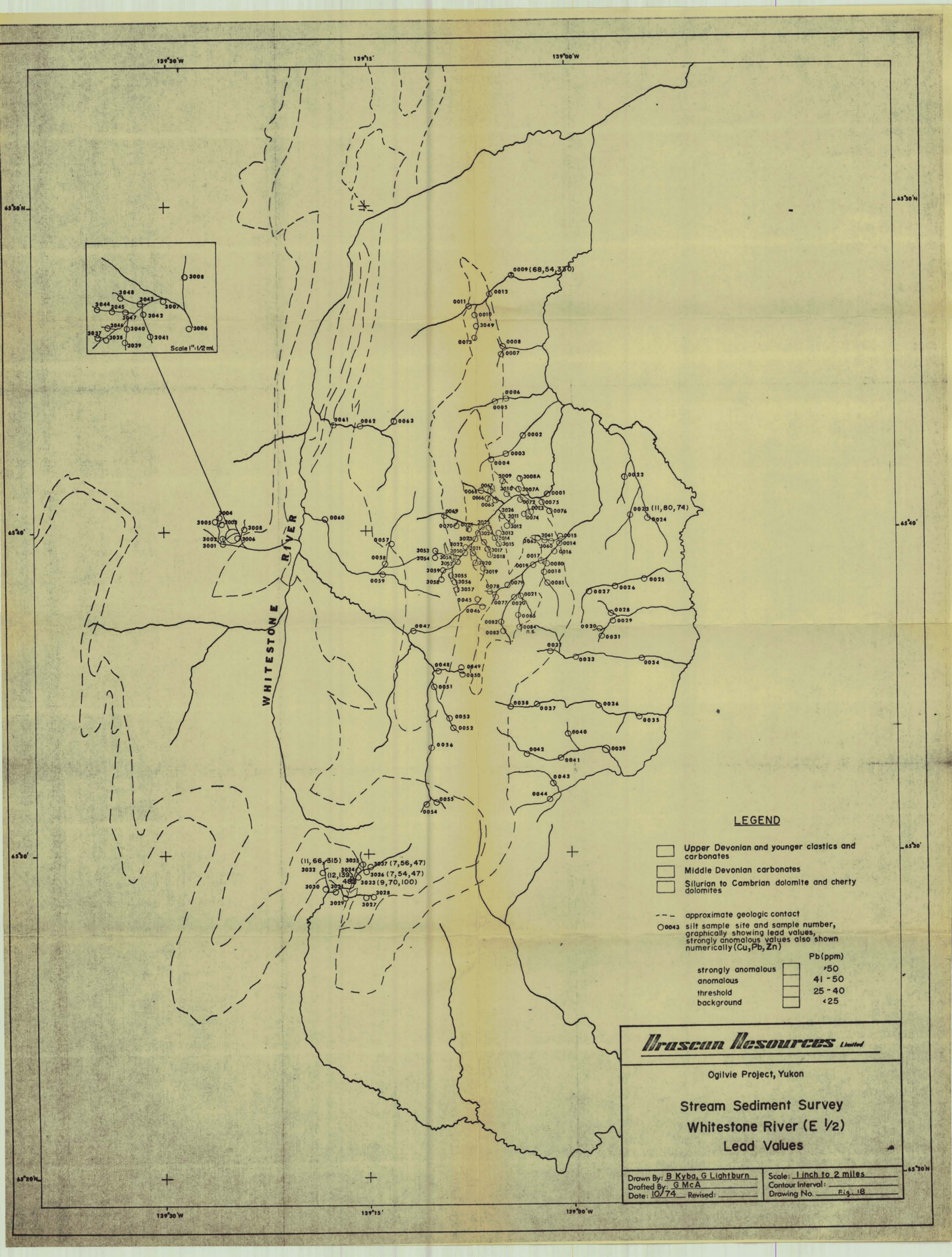
	Cu (ppm)
strongly anomalous	>64
anomalous	50-64
threshold	20-49
background	<20

Brascan Resources Limited

Ogilvie Project, Yukon

**Stream Sediment Survey
Whitestone River (E 1/2)
Copper Values**

Drawn By: B Kyba, G Lightburn	Scale: 1 inch to 2 miles
Drafted By: G McA	Contour Interval: _____
Date: 10/74 Revised: _____	Drawing No. Fig. 17



WHITESTONE RIVER

LEGEND

- Upper Devonian and younger clastics and carbonates
- Middle Devonian carbonates
- Silurian to Cambrian dolomite and cherty dolomites

- - - approximate geologic contact
- 0043 silt sample site and sample number, graphically showing lead values, strongly anomalous values also shown numerically (Cu, Pb, Zn)

	Pb (ppm)
strongly anomalous	>50
anomalous	41 - 50
threshold	25 - 40
background	<25

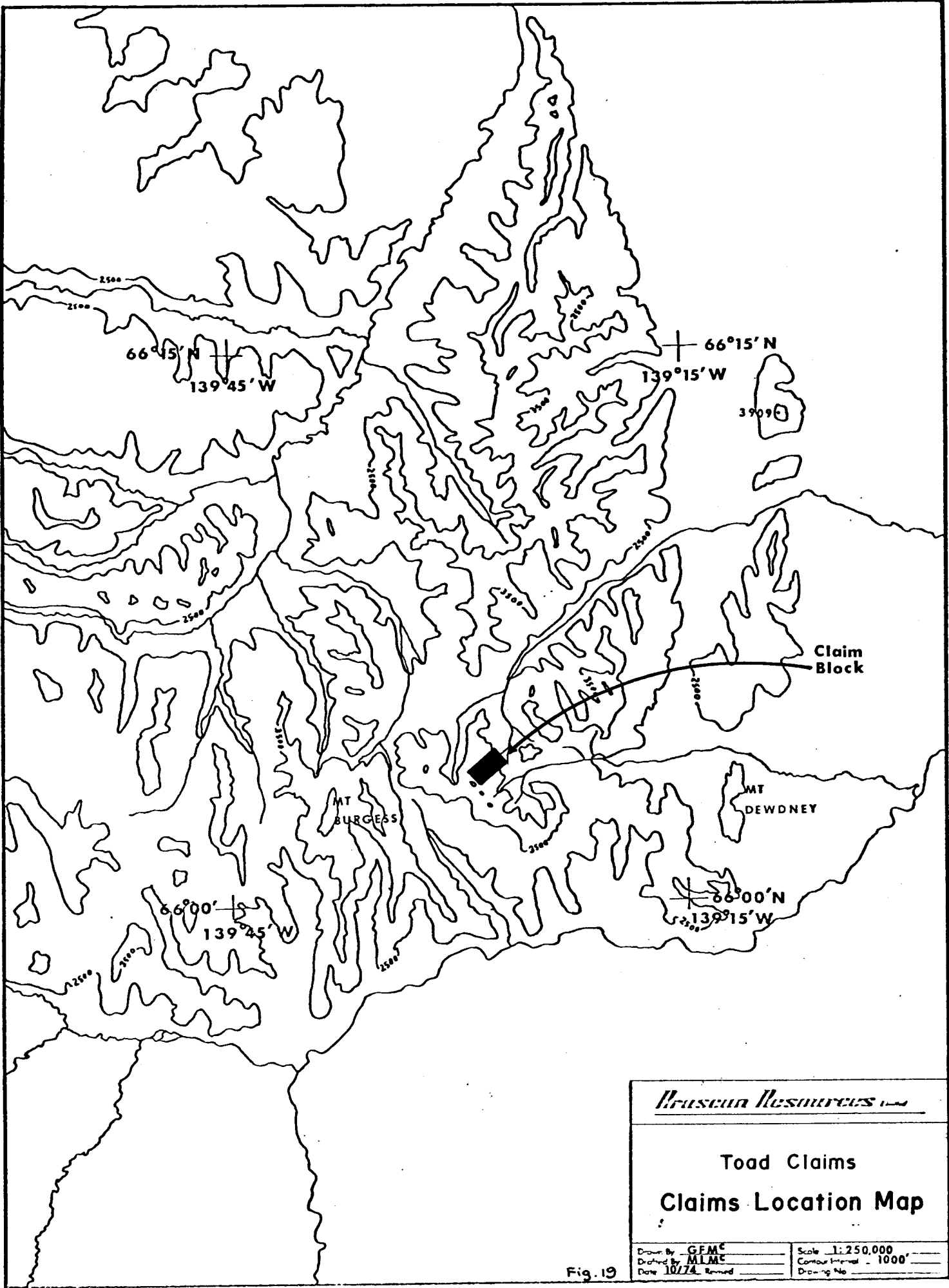
(11, 66, 315) 3033
 3032 (12, 139) 3034
 3030 3031 3035 (7, 56, 47)
 483 3036 (7, 54, 47)
 3033 (9, 70, 100)
 3029 3027 3028

Nascan Resources Limited

Ogilvie Project, Yukon

**Stream Sediment Survey
Whitestone River (E 1/2)
Lead Values**

Drawn By: B Kyba, G Lightburn	Scale: 1 inch to 2 miles
Drafted By: G McA	Contour Interval: _____
Date: 10/74 Revised: _____	Drawing No. Fig. 18

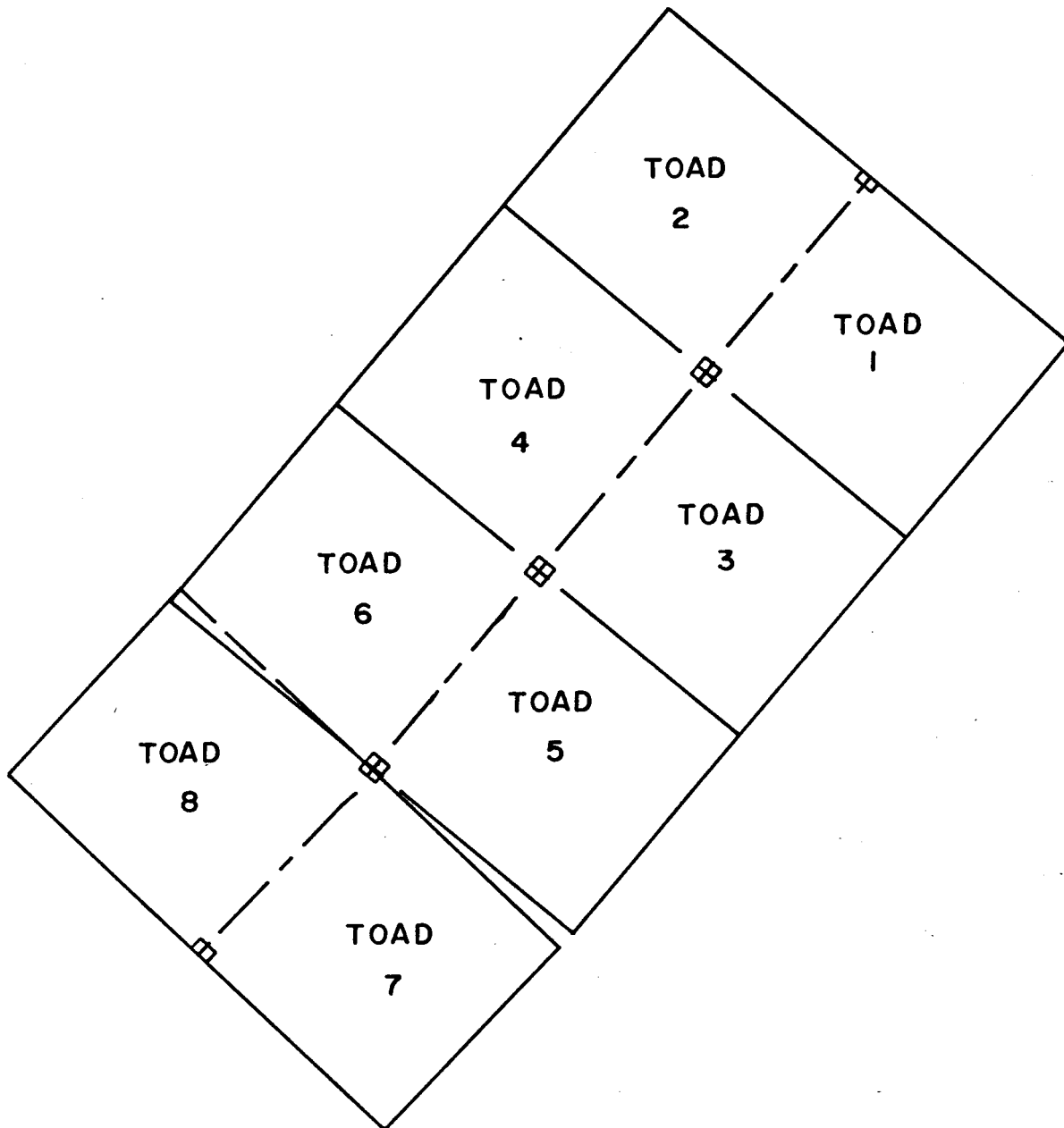


Prusca Resources Ltd.

Toad Claims
 Claims Location Map

Drawn By <u>G.F.M.C.</u>	Scale <u>1:250,000</u>
Drafted By <u>M.L.M.C.</u>	Contour Interval <u>1000'</u>
Date <u>10/74</u> Revised _____	Drawing No _____

Fig. 19



Bruscan Resources Limited

CLAIM SURVEY

Drawn By: <u>GEM^c/AGC</u>	Scale: <u>1" = 1000'</u>
Drafted By: <u>MLMC</u>	Contour Interval: _____
Date: <u>10/74</u> Revised: _____	Drawing No. _____

Fig. 20

3 b. Toad Claims

Introduction

The Fishing Branch Stream-Sediment Survey (Figure No.14) showed two anomalous samples, 4B1061, 4B1062, on the southern margin of the survey area. Detailed prospecting of an anomalous drainage region resulted in the finding of lead-zinc mineralization and the staking of the Toad 1-8 Claims. These claims are located 5 miles east-northeast of Mount Burgess (66° 04'N, 139° 28'W) (fig. 19).

Geology

Rocks which crop out on the claim block are dolomites of probable Cambrian to Ordovician age (Figure No. 22). The carbonate section (Figure No. 13) can generally be divided into a lower 850 feet of black to light-grey dolomites (E0d) overlain by 800 feet of vuggy, white dolomite (Od). On the Toad Claims the Cambrian to Ordovician dolomites are made up of a brown-weathering, cherty dolomite (map-unit 1) overlain by 250 feet of banded-weathering resistant, dark-grey dolomite and recessive, light-grey dolomites (map-unit 2, the "cyclic unit"). This cyclic unit is overlain by 600 feet of less well-bedded grey, dark-grey and light-grey dolomites with minor chert (map-unit 3).

Outcrop is generally limited to the creek beds and ridges, with most of the area being talus-covered. Bedding varies from horizontal to dipping gently northeast.

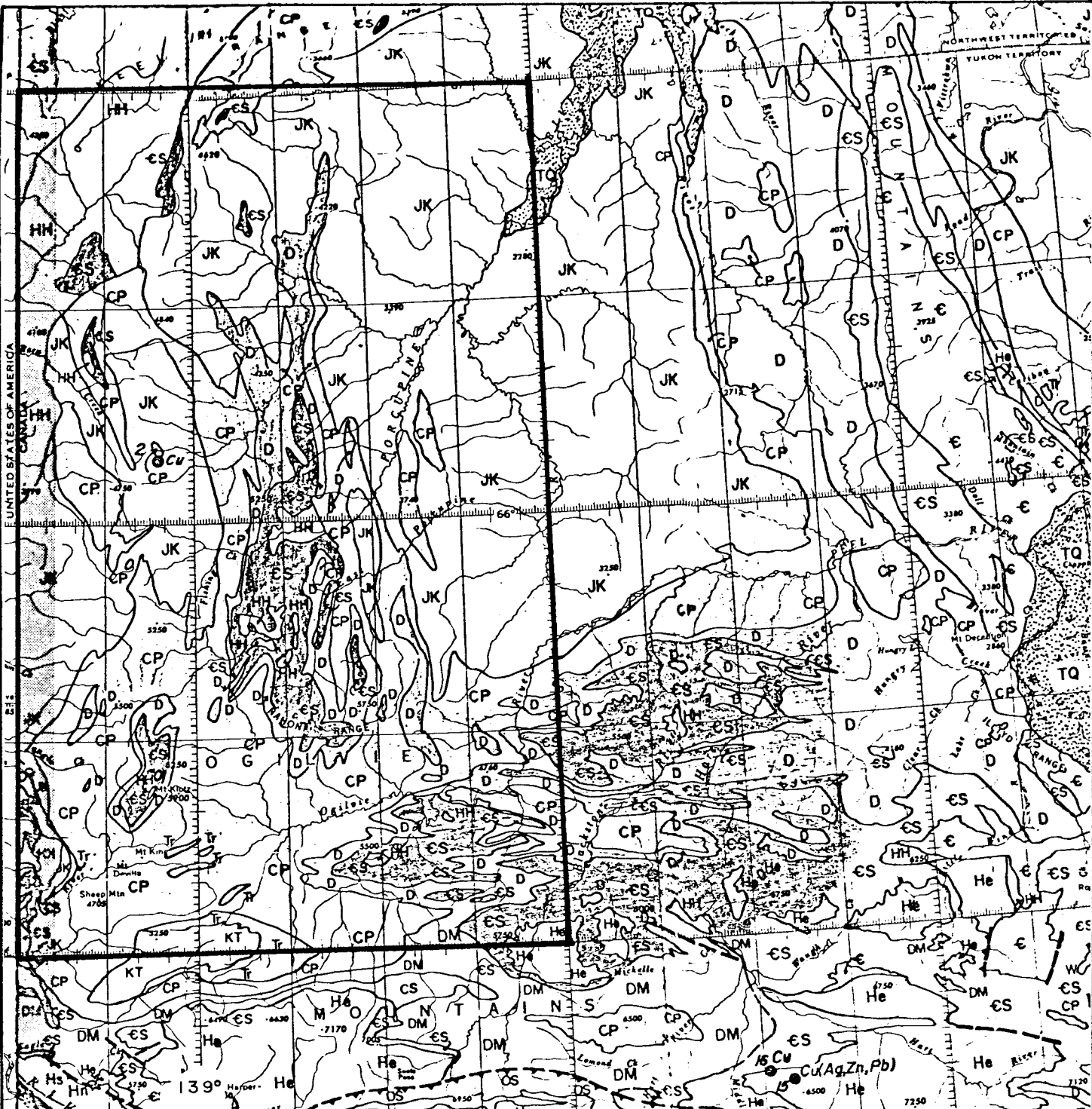
Although major faults are mapped to the north and east of the claim block (Figure No. 21) there is very little deformation on the claims themselves. Minor faults are mapped along the ridge to the west and a two-foot horizontal shear zone overlies the mineralization.

Mineralization

The mineralized zone on the Toad Claims has a stratigraphic thickness of at least 25 feet and runs 135 feet along strike. Mineralization dies out toward the east while on the west, the horizon is talus-covered. The mineralized zone is bounded above by a two-foot horizontal shear zone and continues downward into the creek bed. The host rock is part of the cyclic dolomite unit (EOd). Both the light-grey, fine-crystalline dolomite and the dark-grey, coarse-crystalline dolomite contain mineralization.

The mineralization consists of red-brown sphalerite and galena which occur along fractures and in veins and less commonly as vug-fillings. Not all vugs and fractures are mineralized. The veins and fractures are both parallel and perpendicular to bedding. The sulphides occasionally are associated with crystalline white dolomite and pyrobitumen in vug-fillings. The highest grades of mineralization (3% Pb, 12% Zn, 0.30 oz/ton Ag) are taken from two ten-foot by three-foot pods of mineralization one-hundred feet apart found immediately below the shear zone.

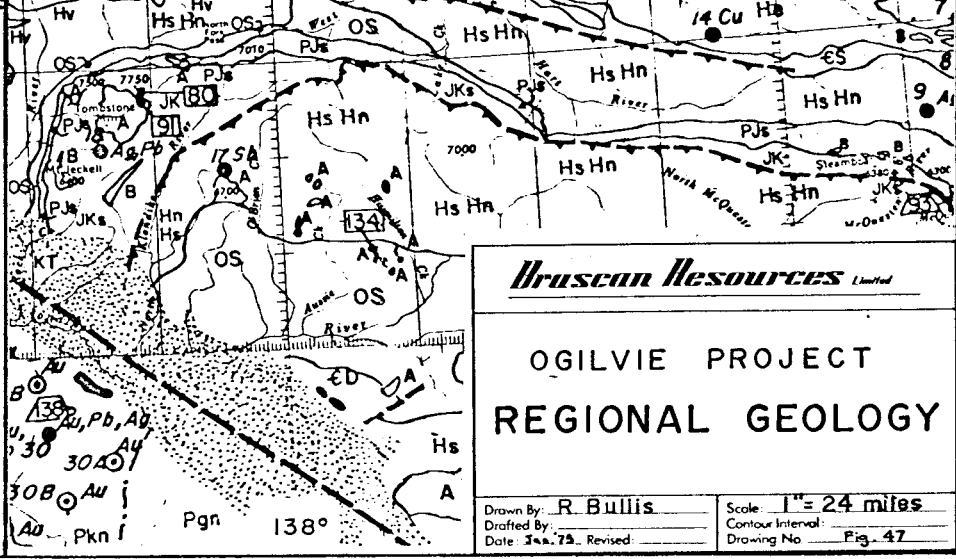
Two ten-foot trenches were blasted in the outcrop. The chip-sample assays are listed in the table on Figure No.22.



LEGEND

- C-D Permian - Carboniferous
- D Devonian
- E-S Ordovician - Silurian
- Outline of Ogilvie Project Area

from G.S.C. Open File map no. 87



Bruscan Resources Limited

**OGILVIE PROJECT
REGIONAL GEOLOGY**

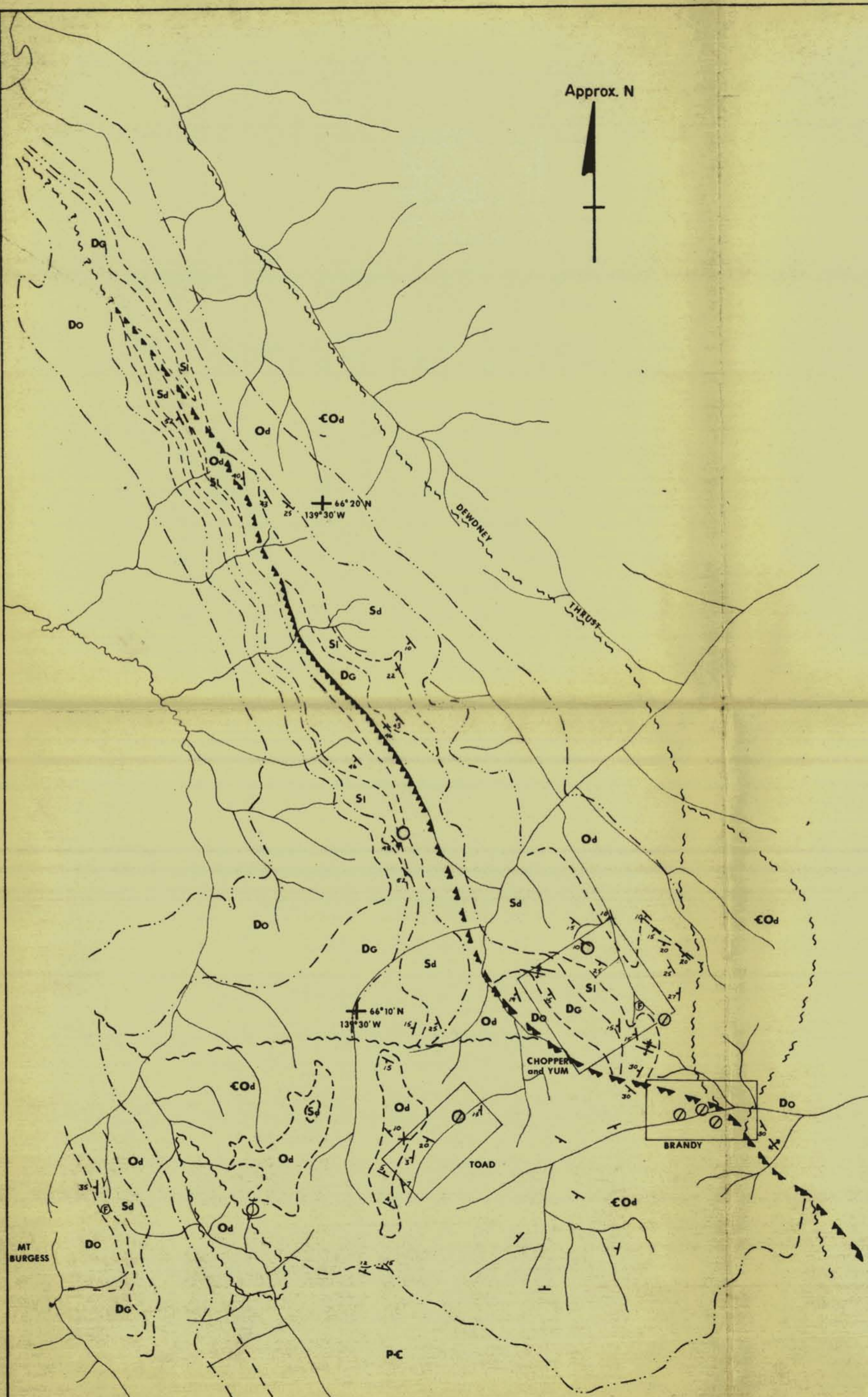
Drawn By: R. Bullis Scale: 1" = 24 miles
 Drafted By: _____ Contour Interval: _____
 Date: Jan. 78 Revised: _____ Drawing No: Fig. 47

Approx. N

Legend

PERIOD	Symbol	Description
DEVONIAN	Do	Ogilvie Formation - resistant, dark-grey weathering crinoidal limestone
	Dg	Gossage Formation - thin-bedded, recessive, argillaceous limestone and lesser dolomite; brown-weathering; large ostracods common
SILURIAN	Sl	Light-grey weathering limestone, massive, resistant, may be pelletal
	Sd	Brown-weathering, fine-crystalline, grey dolomite; occasionally fossiliferous
ORDOVICIAN	Od	Resistant, light-grey to white dolomite, medium- to coarse-crystalline, commonly vuggy weathering
	COd	Regularly bedded dark-grey dolomite and cherty dolomite, often bituminous, some laminated beds
PRECAMBRIAN	PC	Tindir Group - thin-bedded redbeds, varies from fine sandstone to pebble conglomerate

Bedding (inclined, horizontal, dip unknown)	
Fault (approximate, assumed)	
Thrust fault (defined, approximate, assumed)	
Geologic contact (defined, approximate)	
Fold (syncline, anticline)	
Fossil locality	
Mineralization (Pb - purple, Zn - pink)	



Truscan Resources Limited

Toad, Brandy, Chopper & Yum Claims

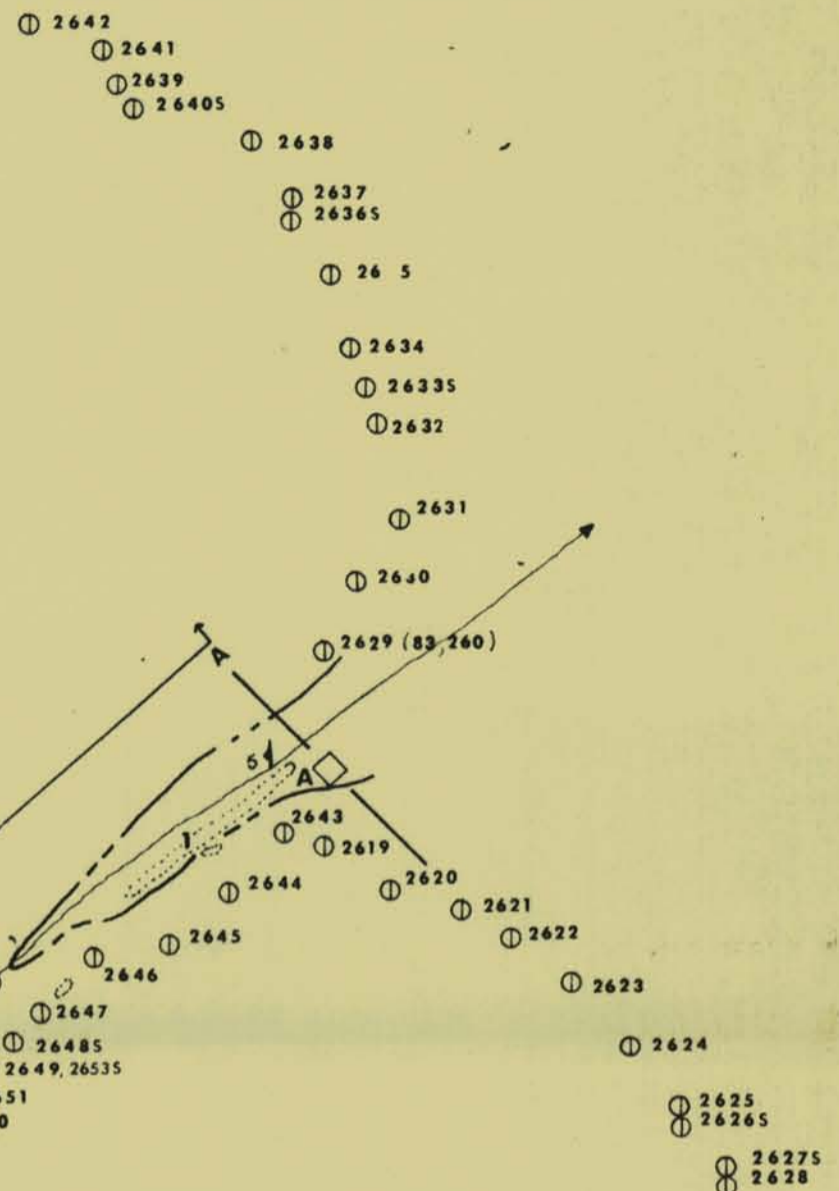
Regional Geology

Drawn by: G.F. McArthur
Checked by: M.L.M.A.
Date: 10/74 Revised

Scale: approx 1:1 mile
Contour Interval: 10m
Drawing No.

Fig. 21

TN



Legend

- ORDOVICIAN?**
- 5 White to light-grey, medium-to coarse-crystalline dolomite; often vuggy-weathering
 - 4 Chertified stromatolite bed, up to 5' thick, stromatolite mounds average 1' in diameter
 - 3 Interbedded grey and light-grey dolomites, minor chert
 - 2 Cyclic recessive, light-grey, silty dolomites and resistant dark-grey dolomites. Silty dolomite contains abundant intraclasts. Dark-grey dolomites contain pods of medium-crystalline, vuggy dolomite which grade into finer dolomite with bituminous laminae.
 - 1 Brown-weathering, fine- to medium-crystalline, dark-grey dolomite; thin-bedded, commonly laminated; black chert possibly after fossils

bedding, inclined, horizontal	—	+
geologic contact, definite, approximate	—	—
minor fault	—	—
outcrop	—	—
claim post	□	□
stratigraphic section ABC	—	—
limit of mineralized outcrop	—	—
soil sample site and number	○	○

	Pb(ppm)	Zn(ppm)
strongly anomalous	>83	>208
anomalous	64-82	143-207
threshold	44-63	79-142
background	<44	<79

	Pb(ppm)	Zn(ppm)
strongly anomalous	>68	>135
anomalous	58-68	103-135
threshold	35-57	36-102
background	<35	<36

Assay Results

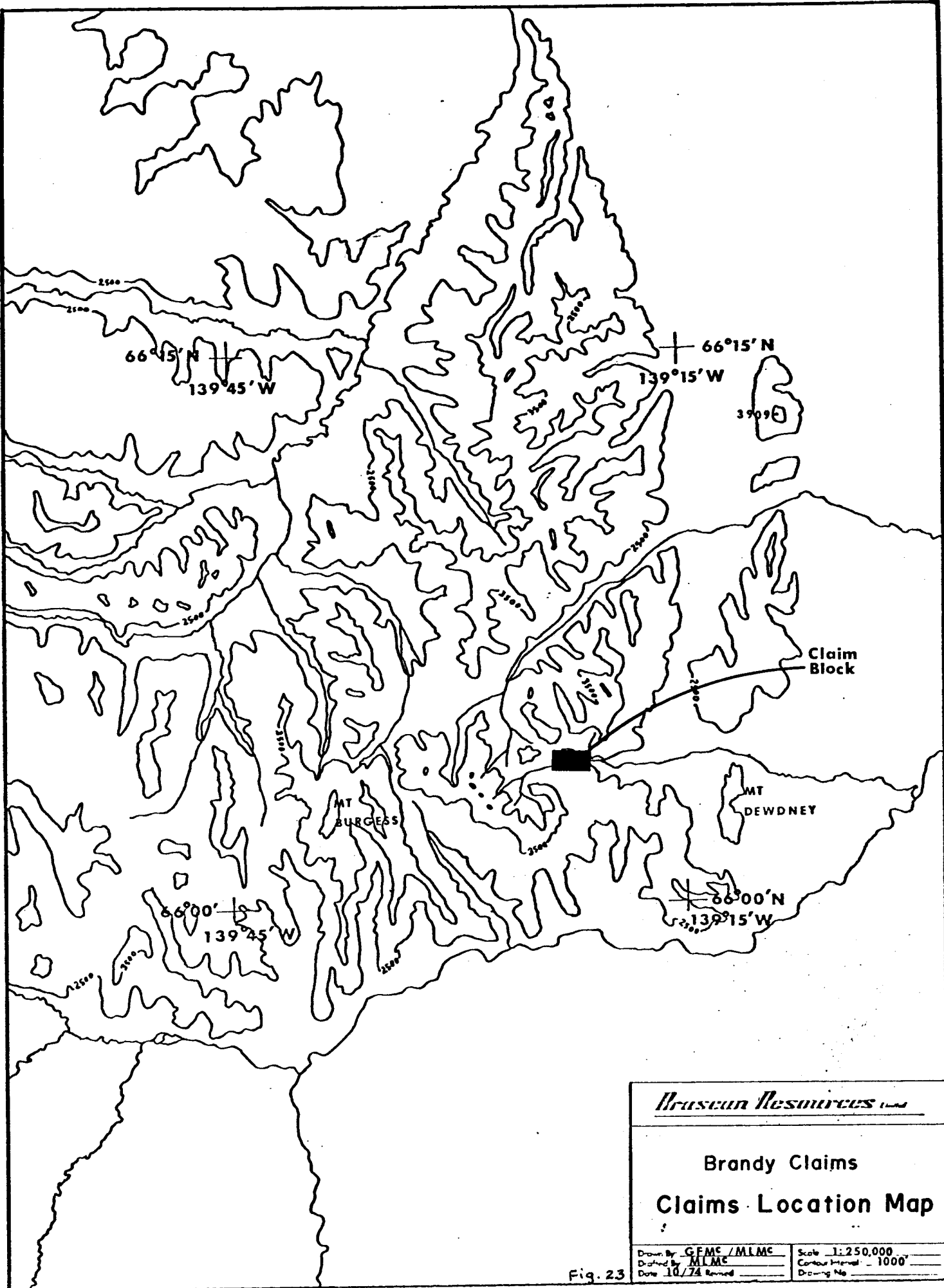
	Pb(%)	Zn(%)	Ag(oz/T)
Pit A: 10' horizontal	1) 0.65	3.45	trace
	2) 0.43	4.45	0.08
Pit B: 10' horizontal	1) 0.69	3.36	0.11
	2) 1.25	5.20	0.24
3' vertical	3.00	12.40	0.30

Brascan Resources Limited

OGILVIE PROJECT

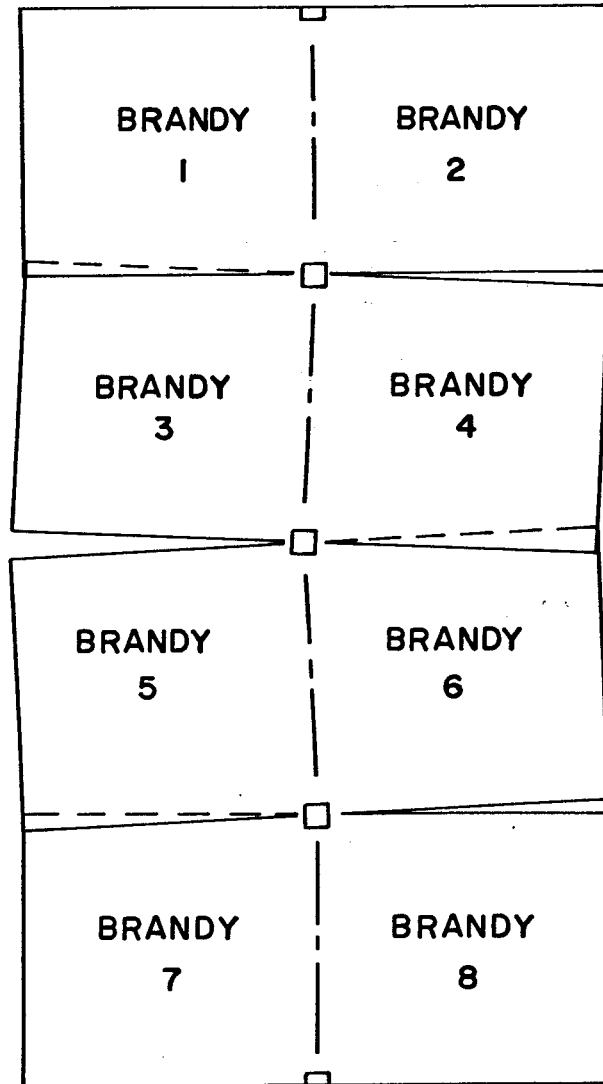
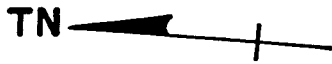
**Geology and Geochemistry
Toad Claims**

Drawn By: GFMCA / MLMCA Scale: 1 inch = 500 feet
 Drafted By: _____ Contour Interval: _____
 Date: 10 / 74 Revised: _____ Drawing No. Fig. 2-2



<i>Prascan Resources Ltd.</i>	
Brandy Claims	
Claims Location Map	
Drawn By <u>GEMC / MLME</u>	Scale <u>1:250,000</u>
Drafted By <u>MLME</u>	Contour Interval <u>1000'</u>
Date <u>10/74</u> Revised _____	Drawing No _____

Fig. 23



Brascan Resources Limited

CLAIM SURVEY

Fig. 24

Drawn By: <u>GEMC/MLMC</u>	Scale: <u>1" = 1000'</u>
Drafted By: <u>MLMC</u>	Contour Interval: _____
Date: <u>10/74</u>	Revised: _____
	Drawing No. _____

Geochemistry

Forty-six soil and stream sediment samples were taken along a bench in the creek valley and around the flanks of the mountain. Anomalous results were obtained on the south side of the creek across from the mineralized zone suggesting a possible extension of mineralization. High geochemical values in samples taken near the mouth of the creek are probably the result of the known sulphides upstream.

Recommendations

Both the mineralized zone in the creek and the possible extensions of that mineralization as denoted by the anomalous soil samples should be further examined either by trenching or by drilling. The problems involved in trenching have already been discussed elsewhere in this report and it is with these difficulties in mind that drilling is suggested as the means to further test this area. At the moment it is impossible to put overall grade or tonnage figures on this prospect.

3 c. Brandy Claims

Introduction

The Brandy 1-8 Claims are located eight miles east of Mount Burgess (66° 04'N, 139° 23'W). Exposure within the claim boundaries is very poor with less than 5% outcrop. What rocks are seen are highly-sheared carbonate. The rocks have been strongly deformed by faulting and cannot be positively identified. They are tentatively correlated with the "cyclic" dolomites of Cambrian to Ordovician Age (EOd) which crop out west of a northwest-

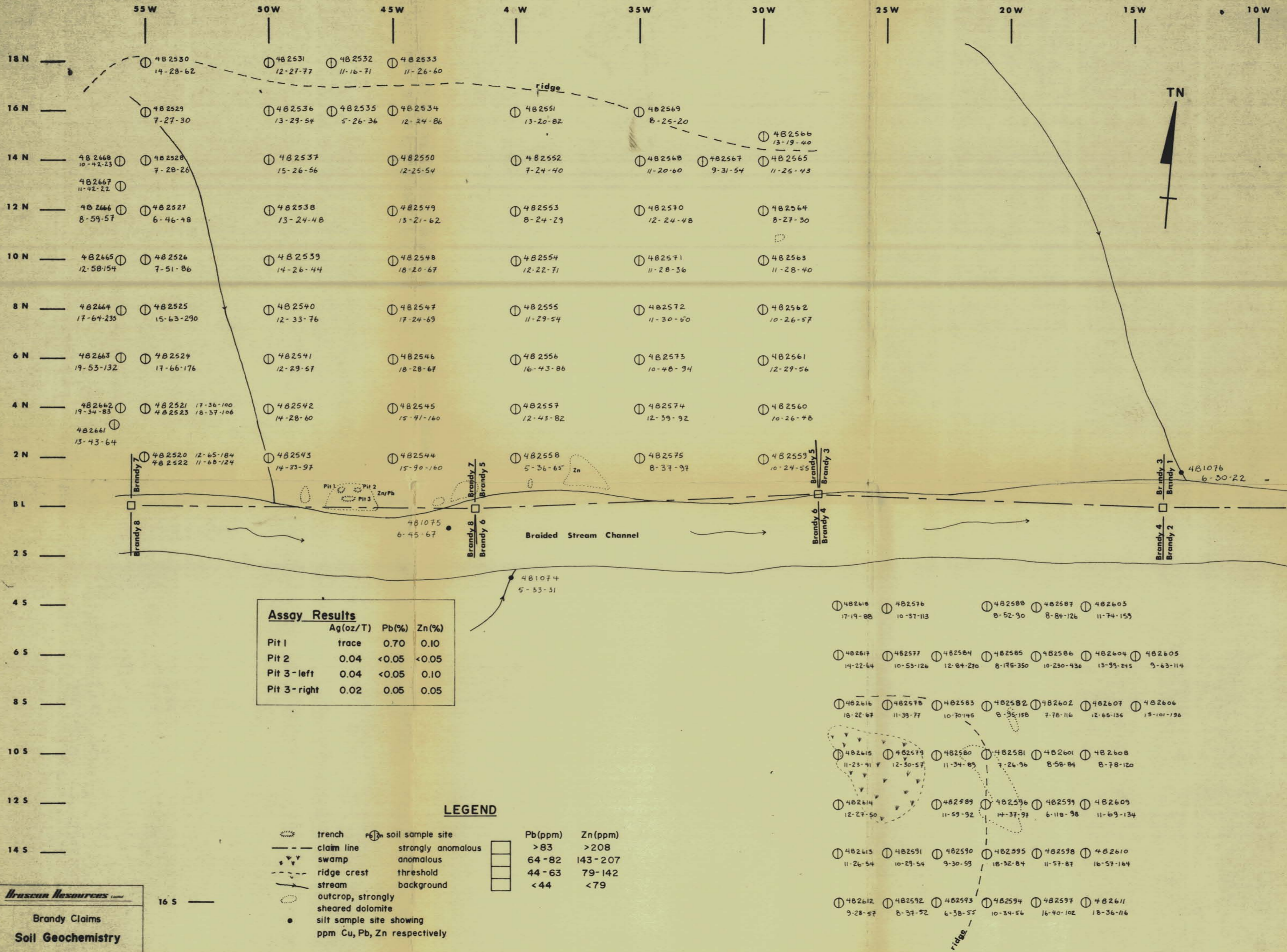
trending fault on the Brandy No. 7 claim. In the south-east corner of the claims is a small, folded, fault block of Ogilvie Formation (Pl. III, fig. 2).

Mineralization

On the Brandy Claims there are three small showings; two along the north bank of the stream and one on the south bank. In the larger of the northern showings, sheared sphalerite and galena occur in outcrop over a length of 100 feet. Sulphides occur along fractures; in the outcrop they have been strongly leached. One ten-foot long trench and two five-foot long trenches were blasted in this outcrop; however, unweathered rock was not reached. Assays of chip samples taken from the trenches gave very low results. Maximum values were 0.04% oz/ton silver, 0.70% lead and 0.10% zinc. (Figure No. 25). The smaller northern showing is a minor occurrence of sphalerite veins in outcrop. Sphalerite and galena were found only in float on the south side of the stream.

Geochemistry

A soil geochemistry survey was carried out over mineralized areas of the claim block (Figure No. 25). The 104 samples were analyzed using a hot extraction method and the results treated statistically. On the Brandy No. 4 claim there is a 800' x 1,000' anomaly which remains open to the east. A 100' x 600' anomaly was found along the boundary of Brandy No. 7. This anomaly is bounded uphill to the west by outcrop (E0d). Lesser anomalies on lines 2N, 4N and 6N suggest a possible



Assay Results			
	Ag(oz/T)	Pb(%)	Zn(%)
Pit 1	trace	0.70	0.10
Pit 2	0.04	<0.05	<0.05
Pit 3-left	0.04	<0.05	0.10
Pit 3-right	0.02	0.05	0.05

LEGEND			
	Pb(ppm)	Zn(ppm)	
strongly anomalous	>83	>208	[shaded box]
anomalous	64-82	143-207	[light shaded box]
threshold	44-63	79-142	[medium shaded box]
background	<44	<79	[white box]

- trench
- claim line
- swamp
- ridge crest
- stream
- outcrop, strongly sheared dolomite
- silt sample site showing ppm Cu, Pb, Zn respectively
- Pb/Zn soil sample site

Brascan Resources Limited

Brandy Claims

Soil Geochemistry

Drawn by: M.L.M.C. Scale: 1" = 250'

Checked by: G.P.M.C. Contour Interval: 10'

Date: 10/24/88 Drawing No.:

Fig. 25

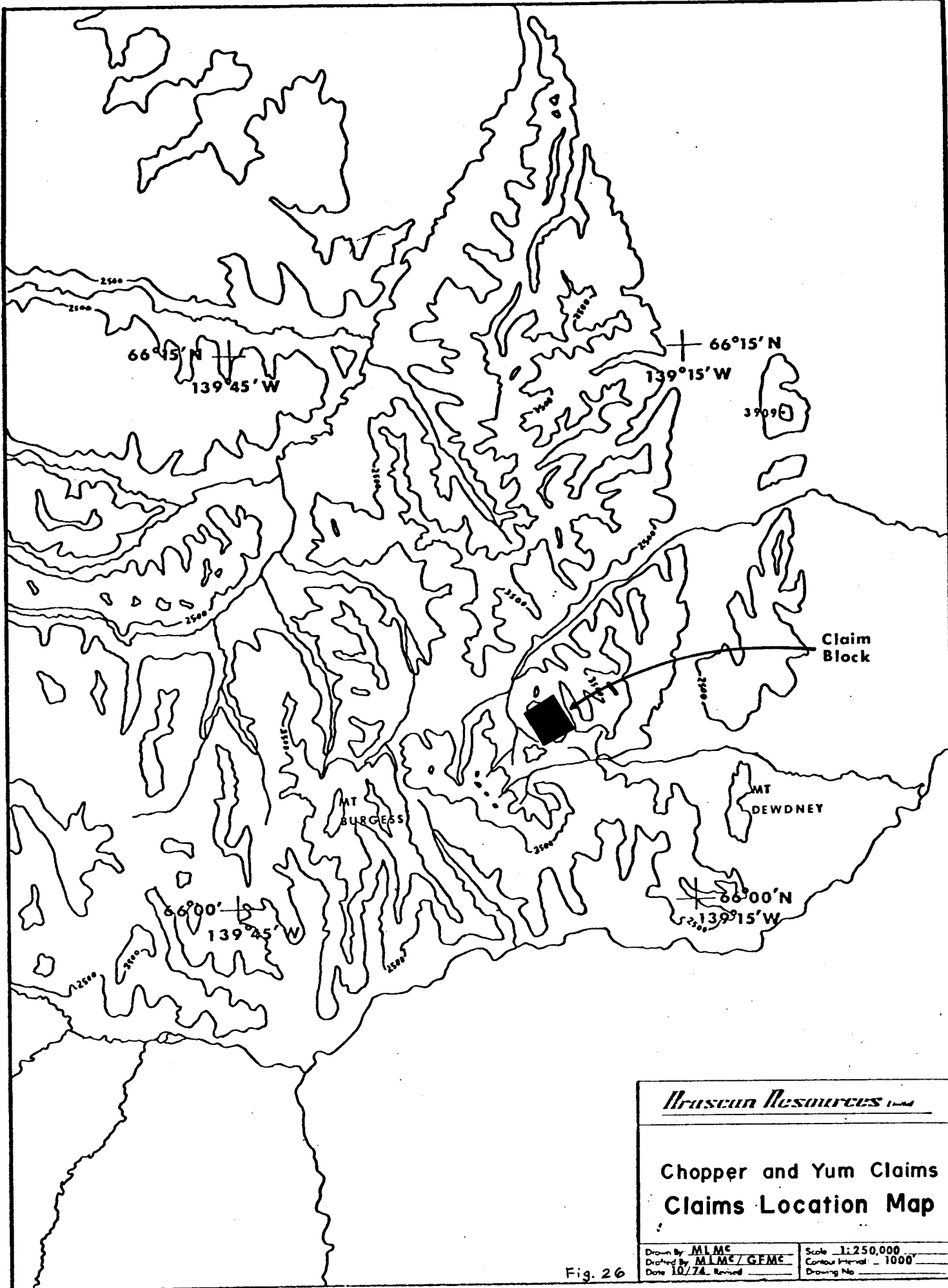
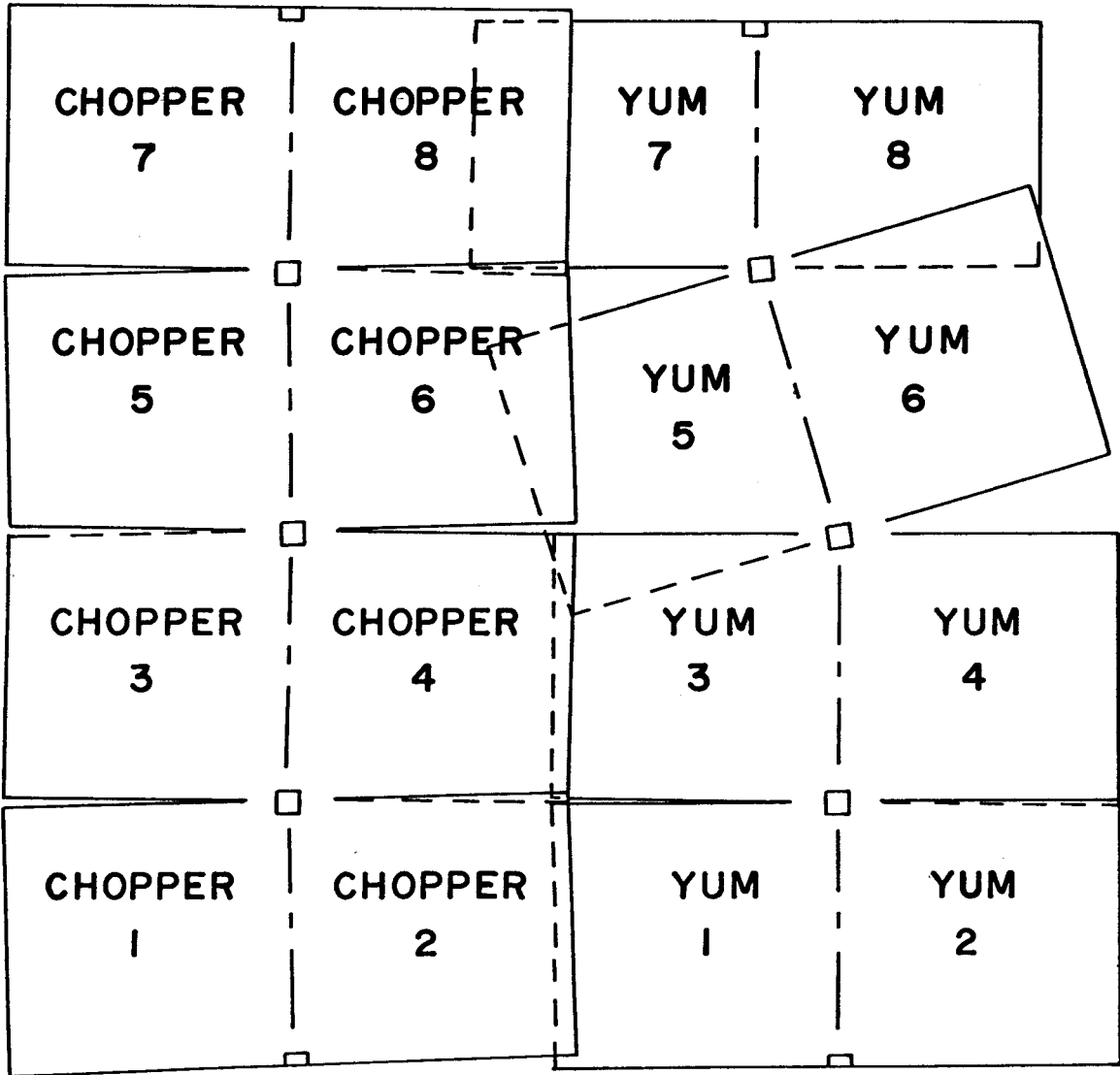
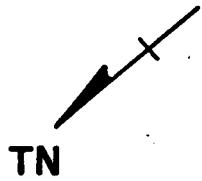


Fig. 26



Bruscan Resources Limited

CLAIM SURVEY

Drawn By: GFM ^c / MLM ^c	Scale: 1" = 1000'
Drafted By: MLM ^c	Contour Interval: _____
Date: 10/78 Revised: _____	Drawing No. _____

Fig. 27

covered extension of mineralization between the two northern showings.

Recommendations

Further sampling on a smaller grid (100' x 100') should be considered for the areas of anomalous soils on the Brandy claims. Rock geochemical sampling of rocks on and around the claims may also provide helpful data.

3 d. Chopper and Yum Claims

Introduction

The Chopper 1-8 and Yum 1-8 Claims are located 7 miles northeast of Mount Burgess (66° 05'N, 139° 24'W). The claims were staked after follow-up prospecting of an anomalous stream sediment sample (4B1059), Figure No. 22) resulted in the finding of mineralized float.

Geology

The Chopper and Yum Claims are located on a westerly-dipping thrust block of Ordovician to Devonian carbonates. The oldest rocks (Od) are exposed in the creek (Pl. V, fig. 2) and in the northeastern part of the claim block (Figure No. 28). Near the upper contact of the vuggy, white dolomite there is a one-to two-foot bed of black-weathering, grey chert. Overlying these dolomites is a sequence of thin-bedded, brown-weathering, dark-grey, fine-crystalline dolomites (Sd). Silicified fossils were found in this unit at several localities in the claim area and it is hoped that they will give a more definite age to the dolomites. Near its upper contact, this unit

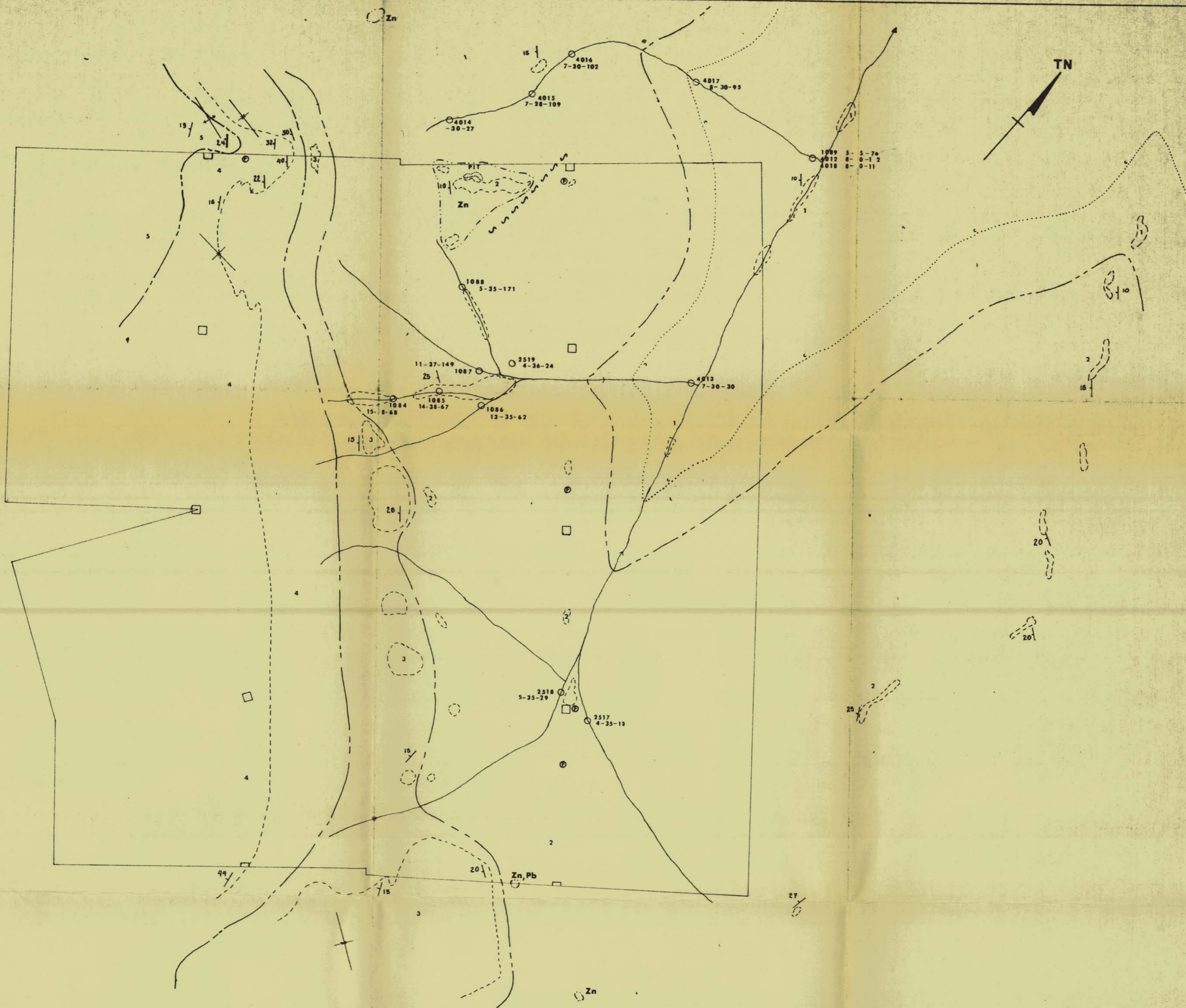
hosts zinc and lead-zinc mineralization. Overlying these dolomites is the light-grey, fine-grained limestone (S1). This unit thins from 500 feet in the south to less than 100 feet in the north. The thin-bedded limestones and dolomites of the Gossage Formation overly the light-grey limestone. The lower 50 to 100 feet of the Gossage Formation are quite silty in this region. Uppermost on the thrust sheet is the Ogilvie Formation. A thickness of less than 50 feet is exposed on the Yum claims.

Associated with the faulting are small folds in the upper beds of the thrust sheet. Asymmetric anticline-syncline couples are mapped in the Gossage Formation at the north end of the claim block and in the light-grey limestone at the south end (Pl. VI, fig. 2).

Mineralization

Minor zinc and lead-zinc mineralization was found in float south of the Chopper No. 8 Final Post. Here, sulphides occur in the brown-weathering dolomite (Sd) below the light-grey limestone. Near the north end of the Chopper and Yum claims, sphalerite was found in talus and outcrop of brown-weathering dolomite as disseminations, in vein breccia and as fracture fillings. This mineralized zone extends beyond the claim boundary. Immediately to the north, the mineralized horizon has been eroded; however, it is possible that it does extend southward toward the other showings.

Three small trenches were blasted in the northern area of mineralization; however, only very low grade sphalerite coating fractures was found. Grades comparable to those found in float were not found in outcrop.



Legend

DEVONIAN	5	Ogilvie Formation - resistant, dark-grey weathering crinoidal limestone	outcrop boundary.....
	4	Gossage Formation - brown-weathering, thin-bedded, argillaceous limestone; more silty at base; large ostracods common, abundant corals and shell debris in some beds	geologic contact.....
SILURIAN	3	Light-grey weathering limestone, massive, resistant, in part pelletal	calcite shear zone.....
	2	Brown-weathering, fine-crystalline, grey dolomite; silicified brachiopods, gastropods, and cephalopods common	mineralized zone.....
ORDOVICIAN	1	Light-grey to white dolomite, medium- to coarse-crystalline, commonly vuggy weathering; includes dark-weathering chert horizons	bedding, strike and dip.....
			fold axis; anticline, syncline.....
			claim post.....
			fossil locality.....
			chert horizon.....
			silt sample site and sample number giving ppm Cu, Pb, Zn respectively.....

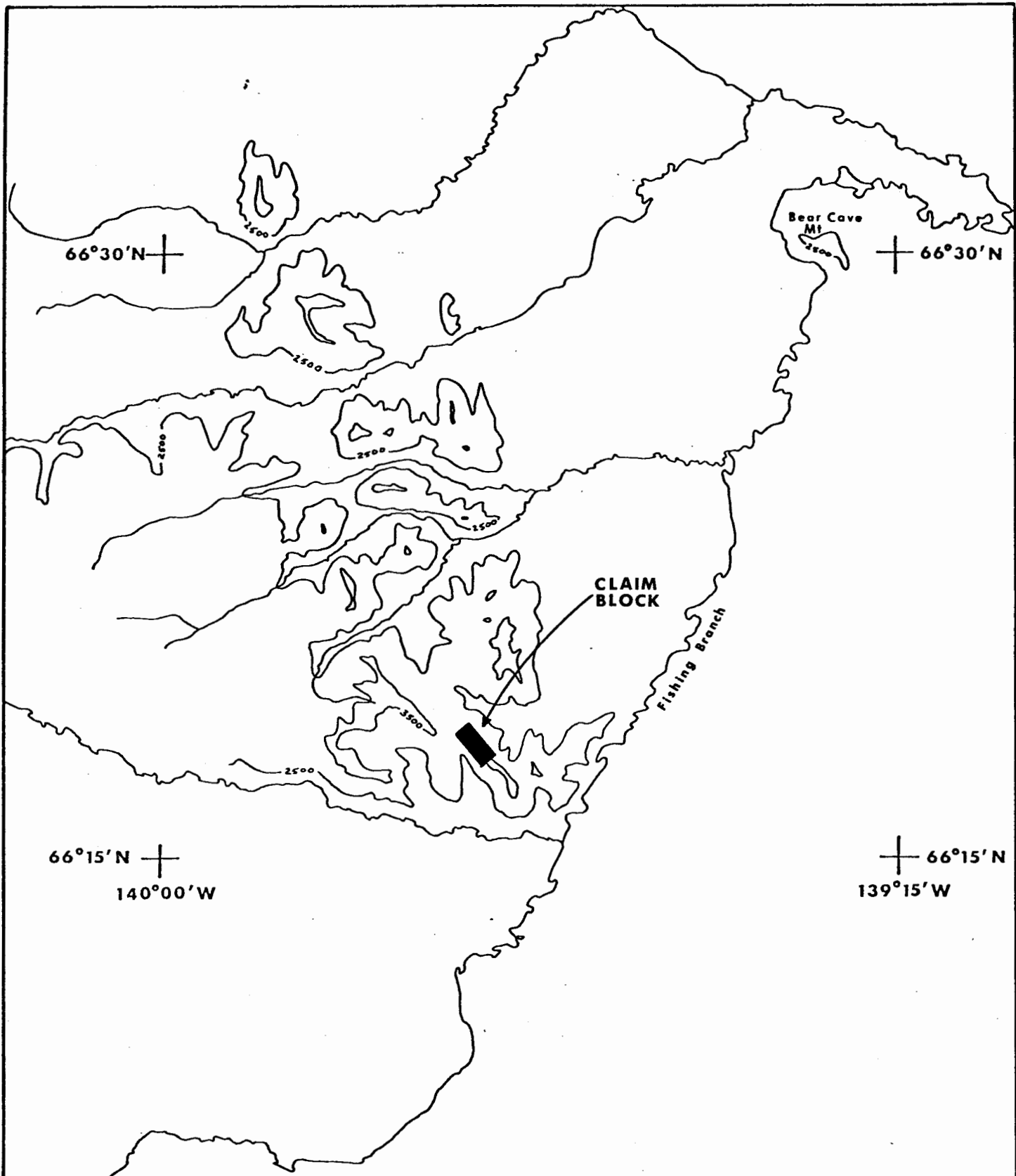
Bruscan Resources Limited

OGILVIE PROJECT, YUKON

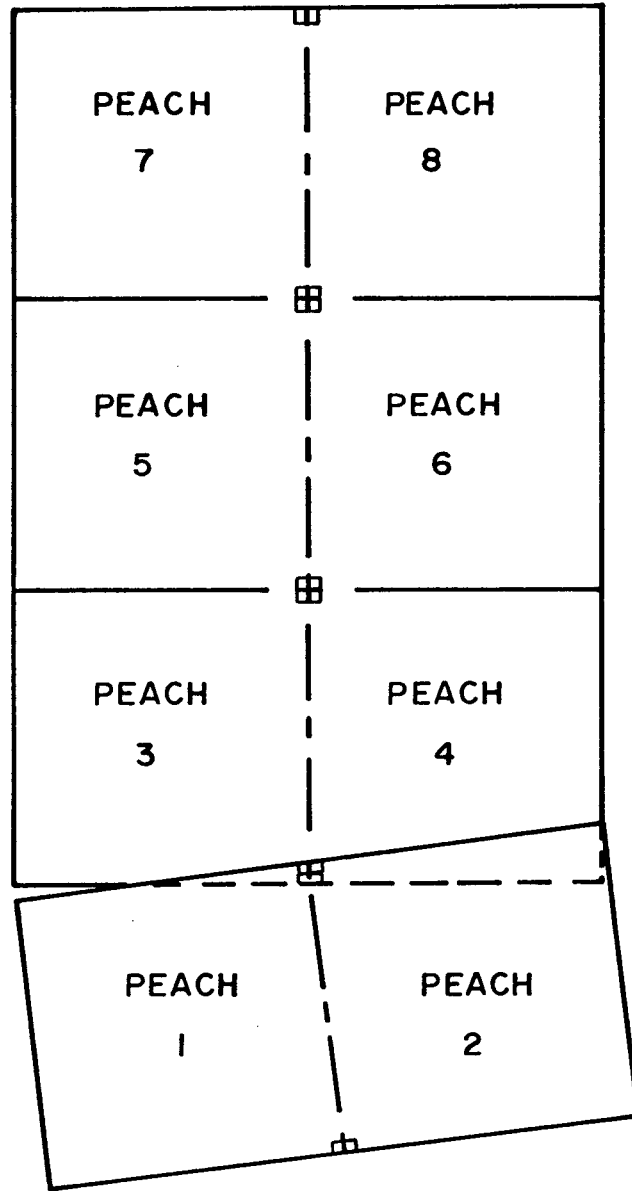
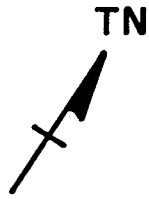
Geology and Geochemistry
Chopper and Yum Group

Drawn By: GF McA / MLMcA
Drafted By:
Date: Oct, 1974 Revised:

Scale: 1 Inch = 500 feet
Contour Interval:
Drawing No. Fig. 28



Brascan Resources Ltd.		
CLAIMS LOCATION MAP		
Scale 1:250,000	Contour Interval 1000'	
Date Sept 1974	By MLM ^c A	Fig. 29



Brascan Resources Limited

CLAIM SURVEY

Drawn By: BK
Drafted By: MLMC
Date: 10/74 Revised: _____

Scale: 1" = 1000'
Contour Interval: _____
Drawing No: _____

Fig. 30

Recommendations

No further work is recommended at this time.

B 4. PEACH CLAIMS

Introduction

The Peach 1-8 Claims are located 17 miles southwest of Bear Cave Mountain (139° 40'W, 66° 17'N) (fig. 29). In the claims area, a westerly dipping sequence of Lower Palaeozoic carbonates is exposed along a northwest-trending thrust fault (Figure No. 31). The thrust block is cut by an east-west trending tear fault.

Geology

South of the major east-west fault, the oldest rocks mapped are quartz-rich dolomites (E0d). These are overlain by a 300-foot section of vuggy, white dolomite (Od) which is in turn overlain by up to 100 feet of grey- to brown-weathering, fine-crystalline, grey dolomite (Sd). North of the fault, brown-weathering fine-crystalline dolomite (Sd) is the oldest unit exposed. It is overlain by 100 feet of resistant, cliff-forming, light-grey limestone (S1); the Gossage Formation, which, on the Peach claims, consists of 200 to 300 feet of thin-bedded, brown-weathering limestone with minor dolomite; and about 100 feet of crinoidal limestone of the Ogilvie Formation.

Mineralization

Zinc mineralization was found in brown- and grey-weathering fine-crystalline dolomite (Sd), both north and south of the fault. Sphalerite and pyrite occur as disseminations and as fracture fillings in vein breccia with coarse-crystalline, white dolomite and calcite. The development of smithsonite is of local extent.

Recommendations

A soil survey on a 400' x 200' grid should be run in the valley north of the Peach claims. This valley separates the Rox and Peach claims and the unit hosting zinc mineralization on both the Rox and Peach claims traverses this valley.

B 5. LORD PROPERTY

Geology

In the center of the claims group is a hill formed by resistant Mid-Devonian carbonates. The south section of the hill is made up entirely of black, fine-grained limestone. The limestone has many calcite-filled fractures generally up to 1/8 inch and sometimes up to 1/2 inch wide. Calcite fracture fillings are found in every outcrop. (Some recrystallization of the limestone around calcite-filled fractures has taken place but is not extensive.) Large chert nodules define bedding planes in some areas but do not form continuous beds.

The northern section of the hill is composed mostly of black, fine-grained crinoidal limestones with some minor limestone detritus. Here, also, there are calcite fracture fillings with associated recrystallization and minor silicification has also taken place.

The one mineralized outcrop on the property is approximately 15 feet by 8 feet. The outcrop is isolated from other nearby unmineralized outcrops, and structural relationships between the unmineralized and mineralized outcrops cannot be determined without extensive trenching. At the showing the rock has been well brecciated and silicification has been extensive, with quartz accounting for up to 80% of the composition. Sphalerite is the main ore mineral; it occurs as disseminations and pods in calcite veinlets and masses. Sphalerite also occurs as disseminations in the siliceous host and as linings in quartz and calcite-filled vugs. Minor malachite-staining occurs and a few flecks of chalcopyrite were found.

In most of the outcrops there has been secondary calcite introduced into fractures of all orientations. Where the fracturing has been severe calcite replacement masses have developed. These masses consist of large clean crystals in all orientations, and the contacts between the replacement masses and the host are sharp. In one location on the crest of the anticline barite is associated with the calcite masses.

Silicification has been found only in the main mineral showing, in one outcrop of limestone detritus, and in mineralized and unmineralized float.

Structure

The main structure is a south-easterly plunging symmetrical anticline. The limbs dip on the average of 40° and the measured plunge in one location was 20° towards 136°. The anticline appears to be displayed by cross-cutting faults where the crest of the anticline changes direction sharply. A strong lineation, probably a fault trace, cross-cuts the anticline in the centre of the hill. Structural information north of the lineation is sparse and no definite structure can be inferred.

Generally the fracturing can be grouped into four general categories:

1. north-trending, east-dipping
2. north-trending, west-dipping
3. east-trending, north dipping
4. east-trending, south-dipping

If these groups are conjugate fractures the impression given would be that the anticline has a double plunge i.e. being dome-like. Fractures are used to interpret structure in this case because the north half of the dome is down-faulted and measurements of bedding attitudes on the north half of the dome are unobtainable.

Fossils - Age: Fossils indicate a Devonian age - crinoids, colonial rugose corals - Synaptophyllum, bulbose and massive stromatoporids - Clathrodictyon.

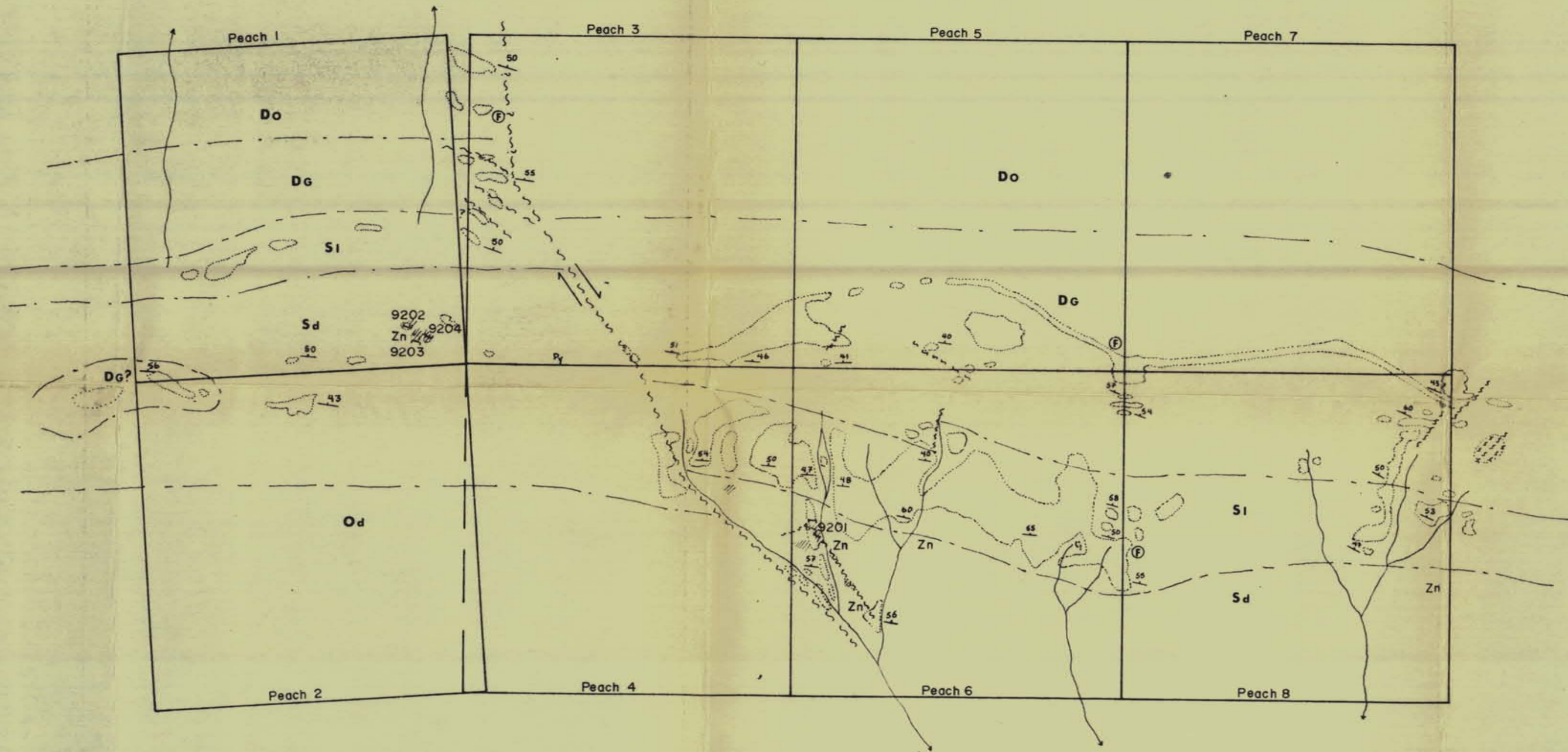
Geochemistry

To test possible extensions of mineralization along the strike of bedding planes as well as along the strike



Legend

- DEVONIAN
- Do** Ogilvie Formation - resistant, blocky-weathering, dark-grey limestone; crinoids abundant
 - Dg** Gossage Formation - rubbly, dark grey-brown, thin-bedded limestone; contains crinoids, gastropods, colonial corals and ostracods
- SILURIAN - ORD
- Si** Light-grey limestone, slightly dolomitic; resistant; thick-bedded; goethite common along bedding planes and joints perpendicular to bedding; minor planispiral gastropods
 - Sd** Thin-bedded, buff to grey-brown dolomite; fine-crystalline
 - Od** Light-grey to white, medium-to coarse-crystalline dolomite
- outcrop
 stream
 bedding, inclined
 fault or shear zone
- geologic contact
 mineralization
 chip sample site and number
 fossil locality



Assay Results

sample number	sample length	Cu(%)	Pb(%)	Zn(%)
9201	10'	<0.01	<0.05	0.20
9202	10'	<0.01	<0.05	0.20
9203	5'	<0.01	<0.05	0.80
9204	12'	<0.01	<0.05	<0.05

Brascan Resources Limited

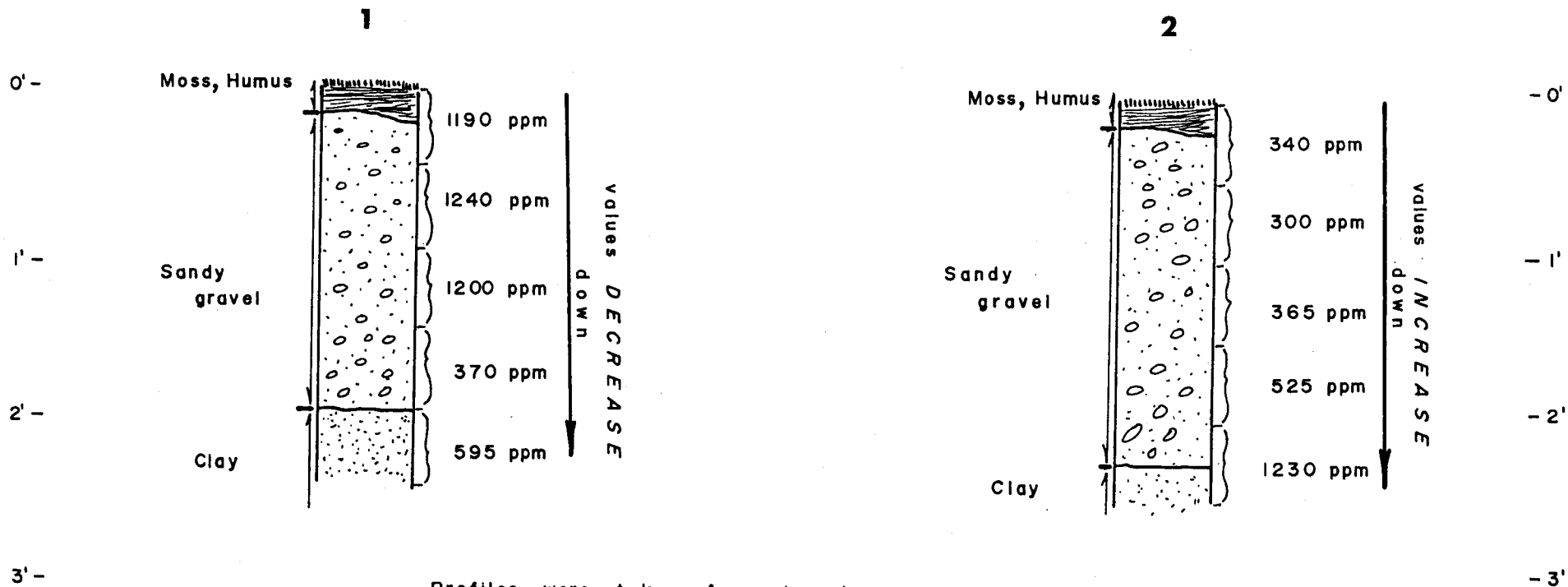
Ogilvie Project, Yukon

Geology

Peach Claims

Drawn By: B. Kyba
 Drafted By: GF, ML McArthur
 Date: 10/74 Revised: _____

Scale: 1 inch = 500 feet
 Contour Interval: _____
 Drawing No. _____ Fig. 31



Profiles were taken from trenches about 250' apart. Trench 1 was in permafrost, trench 2 was not.

Bruscan Resources Limited

GEOCHEMICAL SOIL PROFILE

LORD CLAIMS

Drawn By: **R. BULLIS** Scale: _____
 Drafted By: _____ Contour Interval: _____
 Date: **Jan/75** Revised: _____ Drawing No: _____

Fig. 32

of possible fault-controlled mineralization a geochemical soil-sample survey was done. The area around the hill of carbonates and the area around the high-grade float was sampled on a 400' x 200' grid pattern, and in the main area of interest, samples were taken on a 100' x 200' grid. Samples collected were from the B horizon at a depth of approximately one foot. A soil profile (Figure 32) was taken in one deep trench in the saddle area. Sample locations were scarce in some areas because of either swamp areas or lack of soil. The soils in the area are of three origins. The soil derived from the Upper Devonian shale, sandstone and conglomerates consists of clay and angular rock fragments with some organic material. This soil was permanently frozen a few feet from the surface. The soil from the Devonian limestone is a dry soil with sand and gravel. Both of these soils have been transported downslope by flow and creep. In the saddle area these two soil types interlayer each other and have been actively mixed by frost heaving. The water table in the saddle area is close to the surface, (perched?) and a gossan has developed. The presence of a metal from a source near the saddle area should be reflected distinctly in the soil but the soil depth, clay-sand interlayering, and permafrost would inhibit the development of anomalies.

Geochemical anomalies in zinc occur in the mixed soil zone and the Devonian colluvial zone. The soil anomalies trend parallel to the geologic structure. The arithmetic average for the Upper Devonian derived soils was 130 ppm zinc and could be considered background. Samples taken from residual soil derived from unmineralized limestones ran as low as 15 ppm zinc. Anomalous active soils assayed as high as 1090 ppm zinc. The arithmetic average is 171 ppm zinc.

In an attempt to locate either mineralization in bed-rock or more specimens of high-grade float two trenches eight feet along and five feet deep were dug using dynamite and spades. Bed-rock was reached in neither of the trenches nor were more specimens of mineralized float found at depth. The well-mineralized float must have been rafted down-hill from a site near the limestone ridge although similar specimens are not found in outcrop. This would indicate that, although the specimens were silicified, the formation or zone hosting mineralization is recessive, possibly due to fracturing.

The results from the geochemical survey do indicate several areas around the limestone hill that contain anomalously high values in zinc and lead. These anomalies indicate extensions of mineralization on strike from the known areas of mineralization.

What is needed in the way of work in this area is (1) extensive trenching to uncover the source of the well-mineralized float and (2) a more detailed soil survey to further outline any areas of possible mineralization.

Regional reconnaissance

Approximately 5 miles to the west of the Lord claim group there is a window of Mid Devonian limestones and dolostones covering an area of approximately one square mile. This window is surrounded and unconformably overlain by Upper Devonian conglomerates, sandstones and

TN



0+00N —

— 0+00W

Lord I-36, claim tags
Y82406 - Y82441

Note: claim posts surveyed
by chain and compass

Alaskan Resources Limited

Ogilvie Project, Yukon

CLAIM SURVEY
Lord I-36 Claims

Drawn By: G. Lightburn
Checked By: MC
Date: 10/74

Scale: 1:12000
Drawing No.

Fig. 33



Assay Results
(from sample site)

	vertical feet	silver (oz/T)	copper (%)	lead (%)	zinc (%)
grab samples		trace	0.01	<0.05	3.75
		trace	<0.01	<0.05	0.35
		trace	0.02	<0.05	7.85
chip samples	0-3	0.04	0.03	<0.05	8.60
	3-6	0.04	<0.01	<0.05	0.03
	6-9	0.02	<0.01	<0.05	0.20
	9-10	0.02	<0.01	<0.05	0.05

Legend

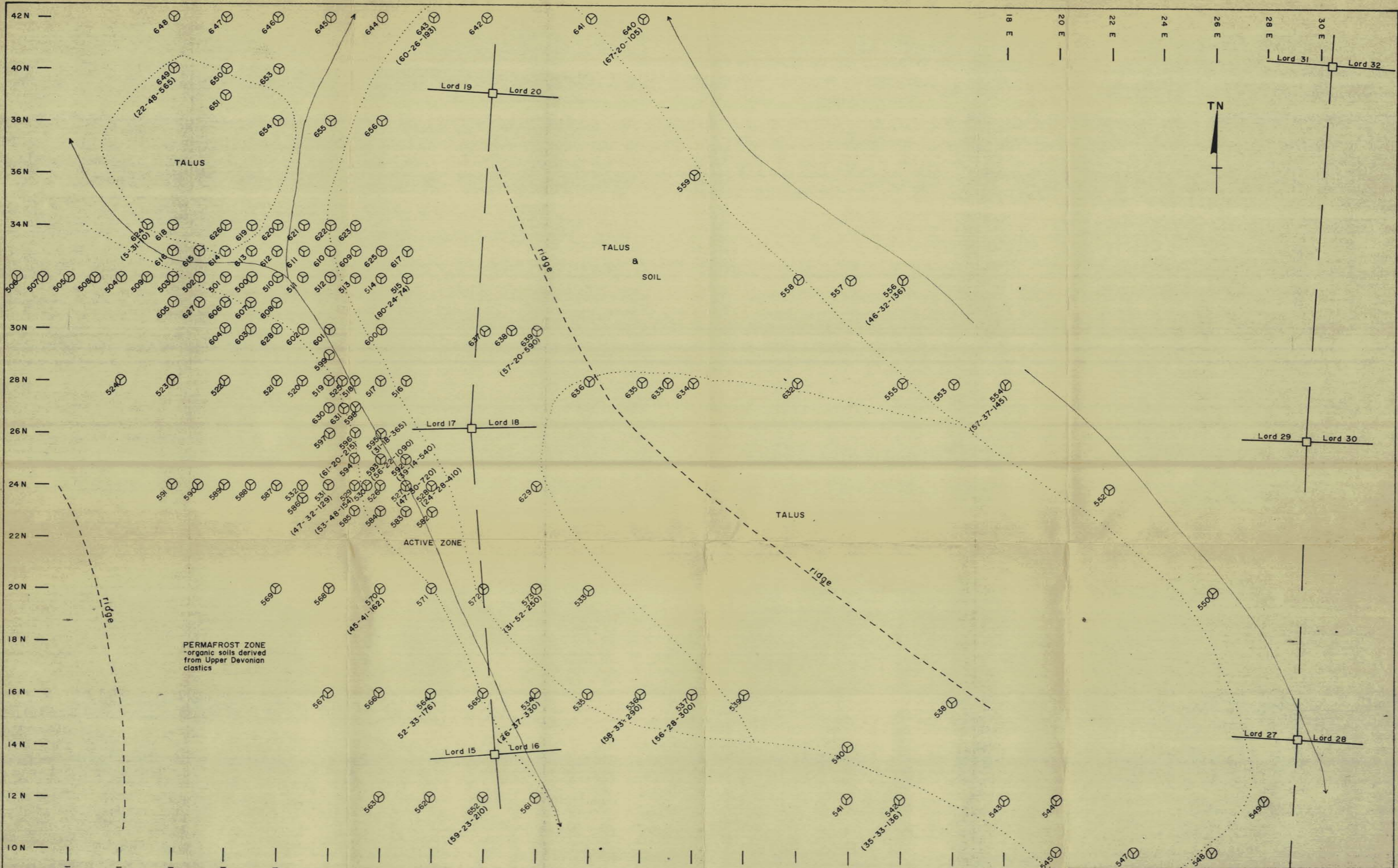
- crinoidal limestone (Middle Devonian)
- argillaceous limestone (Lower Devonian)
- mineralized outcrop
- outcrop boundary
- ridge crest
- claim line
- claim post
- bedding, inclined
- fracture, inclined, vertical
- fault
- mineralized float
- anticline axial trace, plunging
- massive calcite replacement
- drainage line

Brascan Resources Limited

Ogilvie Project, Yukon

**Geology
Lord Claims**

Drawn By: G Lightburn	Scale: 1 inch to 250 feet
Drafted By: G McArthur	Contour Interval:
Date: 10/74 Revised:	Drawing No. Fig. 34



Legend

ridge	-----			
drainage line	-----			
claim line	-----			
claim post	□			
soil type boundary	-----			
soil sample site and sample number, graphically showing copper, lead, zinc values. Strongly anomalous values also given numerically (Cu, Pb, Zn)	○			

strongly anomalous	■	Cu(ppm)	Pb(ppm)	Zn(ppm)
anomalous	■	>53	>30	>360
threshold	■	37-53	25-30	250-360
background	■	30-37	23-24	200-249
	■	<30	<23	<200

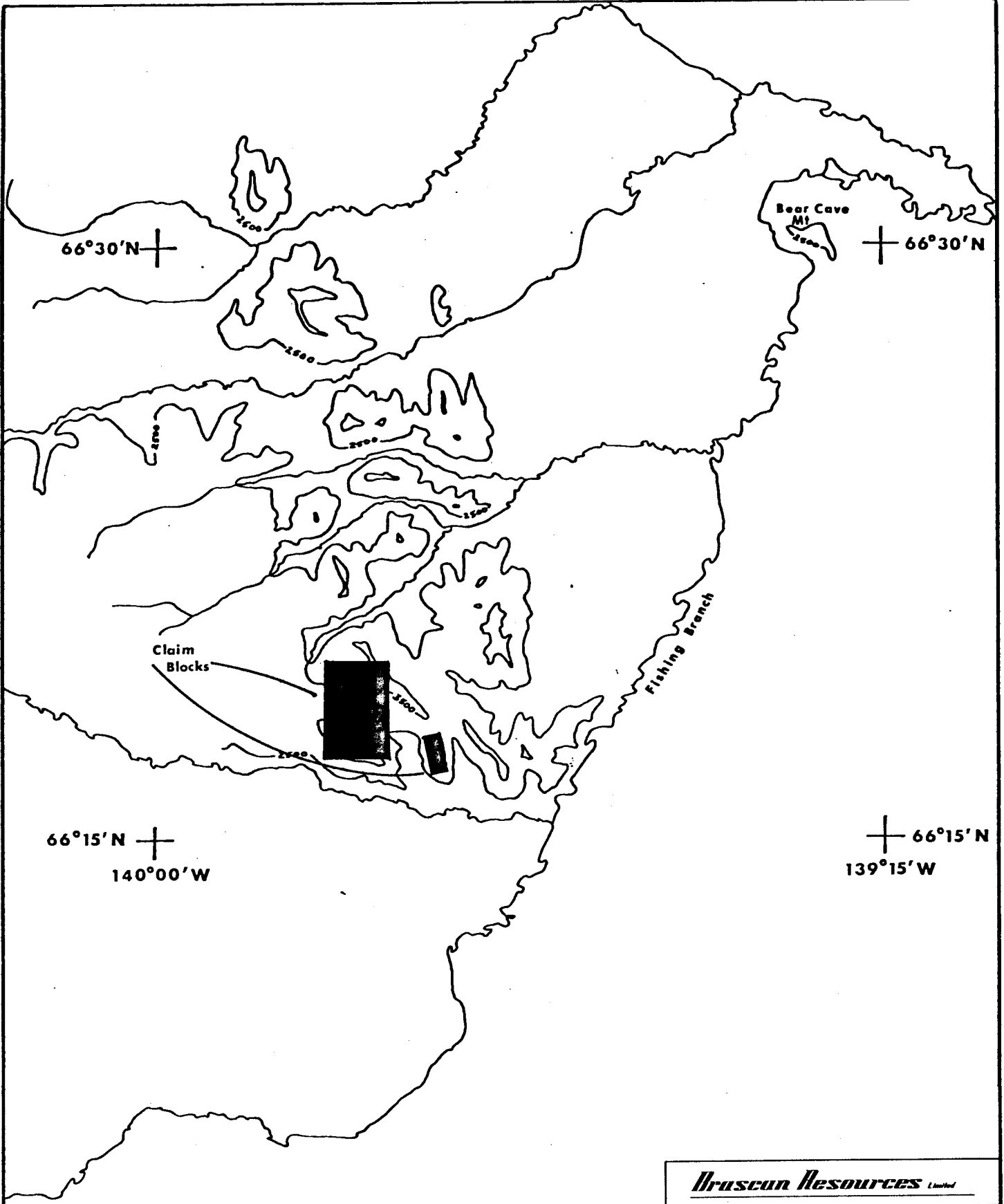
Brascan Resources Limited

Ogilvie Project, Yukon

Soil Geochemistry Lord Claims

Drawn By: G Lightburn
 Drafted By: GF and ML McArthur
 Date: 10/74 Revised: _____

Scale: 1 inch to 250 feet
 Contour Interval: _____
 Drawing No. Fig. 35



Muscun Resources Limited

Good, Bad, Sin, Ugly and
Dav Claims

Claims Location Map

Drawn By: MMCA	Scale: 1:25,000
Drafted By: _____	Contour Interval: 1000'
Date: 10/74 Revised: _____	Drawing No: _____

Fig. 36

siltstones. This window is the only large section of Devonian limestones that gives any indication of stratigraphy. Upper-most in the section are crinoidal limestones and black, fine-grained limestones with crinoidal debris. Below the crinoidal beds is a unit of light brown, fine-grained dolomite. Contained in this dolomite are biostromes made up of dolomitized tabulate and rugose corals - Favosites and Synaptoporida? with minor crinoid debris and abundant other unidentifiable fossils. The biostrome beds are only a few inches thick. A breccia or pseudobreccia with fragments of brown dolomite and fillings of white dolomite also occur. Some beds are up to 2 feet thick. The most interesting feature is the presence of silicified beds with vuggy cavities of quartz crystals. At one place these beds are only 2" - 3" thick but to the east and west, apparently along strike, suboutcrop of siliceous material is of good thickness - at least 20 feet. This gives outcroppings along a distance of one mile.

The real significance of these silicified beds is that they are similar to the silicified, mineralized outcrop on the Lord Property. Farther down in the section, a white, coarse-grained vuggy dolomite is found. This dolomite is identical to the dolomites found in the Base Camp area. No zinc mineralization was found here, either in outcrop or in float.

B 6. GOOD, SIN, BAD, UGLY AND DAV CLAIMS

Introduction

The Good, Sin, Bad, Ugly and Dav claims are located

approximately 20 miles southwest of Bear Cave Mountain in the northern Ogilvie Mountains ($66^{\circ} 20'N$, $139^{\circ} 45'W$). There are 24 claims owned by Brascan Resources Limited and 8 claims (Dav Group) optioned by Brascan from C. Smith (Fig.36).

The area is included in the airphoto geology map compiled by Geophoto in 1963 (116J SW). Air photos available for the area are A13140-7, A13140-9. A geochemical survey done in 1972 by International Nuclear Corporation shows stream sediment anomalies of up to 1500 ppm zinc on the claim blocks.

Fourteen man-days were spent prospecting, mapping and stream sampling on the properties. No mineralization was found in the area. Check sediment samples from International Nuclear's anomalous streams returned back-ground values in zinc.

Geology

Rocks cropping out in the mapped area are predominantly Middle Devonian and older carbonates with peripheral outcrops of Cretaceous clastic sediments (Figure No.37). Normal faulting and open folding are the dominant styles of deformation. Descriptions of the various formations underlying the claims are as follows:

Cretaceous:

Cretaceous clastic sediments crop out to the east of the major northwesterly trending normal fault. The resistant quartz arenite (K_{55}) is a brown-weathering,

marine sandstone with limonitic cement. Some beds contain abundant pelecypod shells including Buchia and Pholadomys. A recessive black shale over- and underlies the sandstone.

Middle to Lower Devonian (Emsian):

The Ogilvie Formation, a dark-grey- to black-weathering crinoidal limestone (D_o), is 300' thick in the area. The unit is characteristically massive and cliff-forming. These limestones vary from those having a very fine matrix containing less than 5% crinoid debris to a rubbly-weathering crinoid coquina (encrinite). Crinoids are the most abundant fossil in the unit; however, corals (Hexagonaria, thamnoporids, Syringopora(?), Billingsastrea(?), horn corals, encrusting corals) and stromatoporoids are common with minor brachiopods, gastropods, trilobites and bryozoans. Black chert nodules were found in two outcrops of crinoidal limestone.

Lower Devonian (Emsian) to Upper Silurian(?):

In sharp contrast with the cliff-forming Ogilvie Formation is the underlying, recessive Gossage Formation (D_g). It is composed of about 200 feet of thin-bedded, black, argillaceous limestone which weathers brown-grey. The Gossage is in part dolomitized and, in places, is a buff- to brown-weathering, silty dolomite. Fauna is generally sparse in this formation save for a few beds which contain abundant corals and ostracods. An abundance of the large leperditiid-like ostracod is characteristic of the Gossage Formation in this area.

Silurian (?) and older:

Underlying the Gossage Formation are 150 to 200 feet of resistant, light-grey limestone (S1). The rock is fine-grained and in part pelletal with a micritic matrix.

Below the limestone is a thin-bedded, buff-weathering, silty dolomite (Sd), which is medium-grey and fine-crystalline on the fresh surface. This unit occurs in local outcrops in thickness up to 100 feet. In places it appears to be absent from the sequence and the light-grey limestone directly overlies a vuggy white dolomite.

Underlying the grey dolomites is a thick section (700 feet) of sucrosic, white to light-grey dolomite which is commonly vuggy-weathering (Od). Crystallinity varies from medium to coarse and intercrystalline porosity may be as high as 15%. Minor chert, mainly light-grey in color, is found in the dolomite both as irregular nodules and as a two-foot thick chertified stromatolite bed.

Structure

Rocks within the map area have been deformed by both normal faulting and folding. The main structure is a normal fault trending northwesterly along the eastern edge of the map area. This fault juxtaposes Cretaceous clastics and Palaeozoic carbonates. It appears that a second fault branches off the main structure bringing a small wedge of the Ogilvie Formation between the two major fault blocks. Along the traces of these faults bedding is often vertical, and strong vertical fractures are developed. Parallel to the main

structure are three smaller normal faults. Within the central part of the claims block an east-west trending fault has been tentatively mapped.

The carbonates of the southern high peak have been folded into an open syncline, the axis of which trends at 330°. A parallel anticline is mapped in the dolomites to the west. Near the northeastern corner of the Dav Claims there is a minor S-fold in the Ogilvie and Gossage Formations. This fold may be related to faulting.

Only a limited amount of time was spent mapping on the Sin, Bad, Good, Ugly and Dav Claims and since the structure is complex, this interpretation is provisional.

Geochemistry

A regional stream silt sampling survey was carried out by International Nuclear Corporation in 1969. Analysis of this data showed several streams draining the carbonates within the claim block to be anomalous. Resampling of anomalous streams by Brascan in 1974 gave consistently lower values, particularly for lead (Figure No.38). Hot extraction was used in both analyses, so discrepancies in the results are thought to be caused by contamination of International Nuclear Corporation samples.

Two anomalies did, however, remain after resampling. Sample 4B1082 is high in both zinc and copper, as is soil sample 4B1083, taken uphill from the anomalous creek. The soil is derived from an iron-rich siltstone which overlies the Ogilvie Formation and this siltstone is the probable source of the anomaly.

The second remaining anomaly is sample 4B2510 which gives a zinc value of 295 ppm. Since the creek drains the top of the Ogilvie Formation it is possible that a pod of siltstone is the cause of this second anomaly as well. Because there is a major fault near the anomaly it is also possible that there is some zinc mineralization associated with faulting. Further prospecting could be carried out in this area.

Conclusions

Both the vuggy, white dolomite (Od) and the silty, buff dolomite (Sd) are suitable host rocks for zinc mineralization. Elsewhere in the region Unit Sd has been found to host zinc mineralization. Since after 14 man-days of prospecting no mineralization was found at surface, we conclude that any sphalerite is below the surface or is of low grade and a poddy nature.

TN



Legend

CRETACEOUS	K _{ss}	Sandstone, medium-grain, limonitic cement, pelecypods common
	K _{sh}	Black shale
DEVONIAN	Do	Ogilvie Formation - resistant, dark-grey weathering crinoidal limestone
	Dg	Gossage Formation - thin-bedded, recessive, argillaceous limestone; large ostracods common; includes minor silty dolomite
SILURIAN	Si	Light-grey weathering limestone, massive, resistant, in part pelletal
	Sd	Brown-weathering, fine-crystalline, grey dolomite
ORD.	Od	Light-grey to white dolomite, medium- to coarse-crystalline, resistant, commonly vuggy-weathering; minor chert

- contour..... 3500
- outcrop.....
- geologic contact (defined, approximate).....
- normal fault showing relative movement (approximate, assumed).....
- fold axis: anticline, syncline (approximate, assumed).....
- bedding (inclined, vertical).....
- fossil locality.....
- stream.....

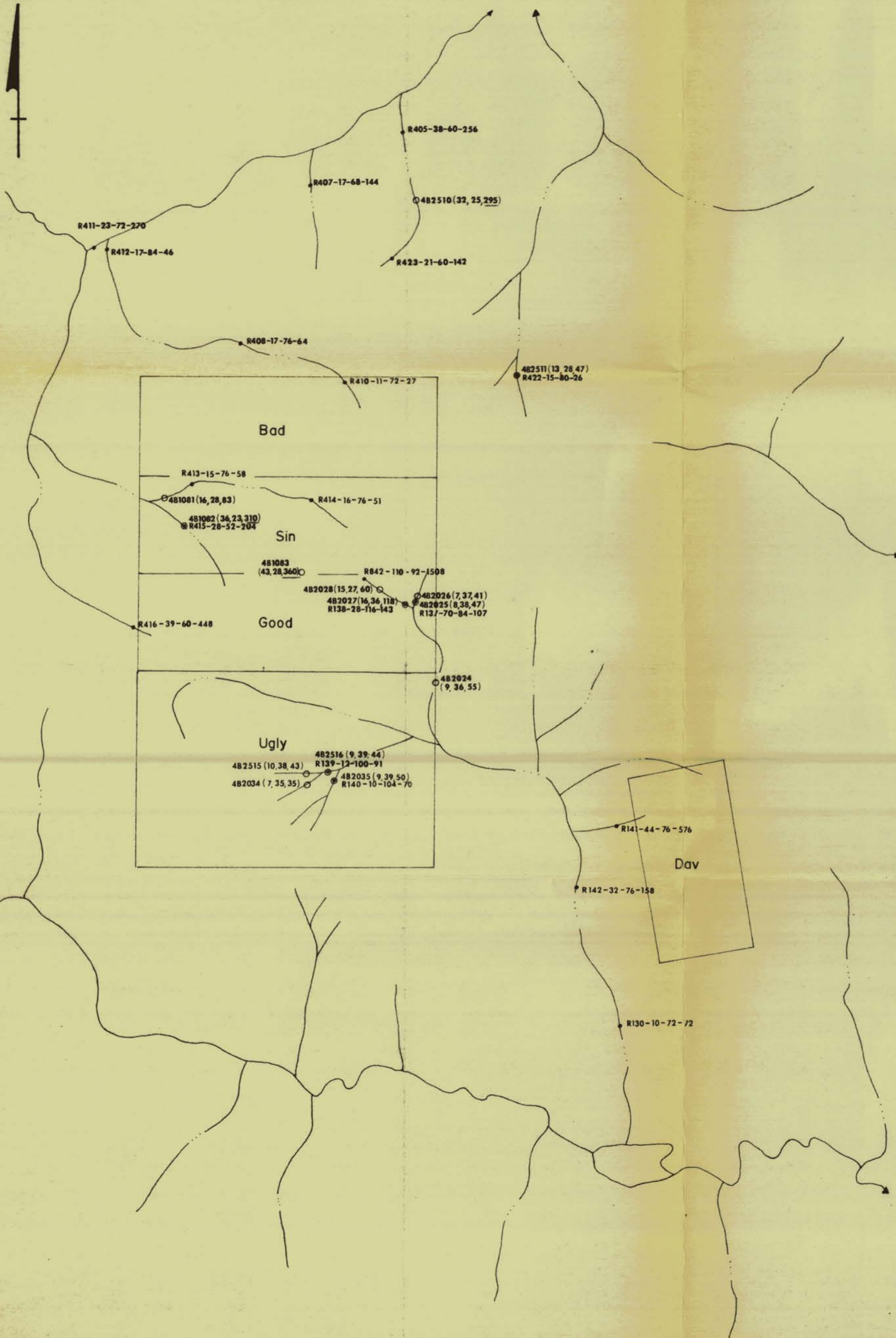
Brascan Resources Limited

Good, Bad, Sin, Ugly and Dav Claims

General Geology

Drawn by: MLMCA/GFMSA Scale: 1 inch = 1/2 mile
 Drafted by: Contour Interval: 500
 Date: 10/74 Revised: Drawing No:

TN



Legend

- R842-110-92-1508
Silt sample taken by International Nuclear Corp. indicating in sequence:
sample number
copper (ppm)
lead (ppm)
zinc (ppm)
- 482028 (15, 27, 60)
Geochemical sample taken by Brascan Resources indicating in sequence:
sample number
copper (ppm)
lead (ppm)
zinc (ppm)
anomalous values underlined in red

Brascan Resources Limited

Good, Bad, Sin, Ugly and
Dav Claims
Stream Geochemistry

Drawn by GFM/A/MLM/A Scale: 1 inch = 1/2 mile
Dated: 10/74
Cartour Interact
Drawing No.

Fig. 38

B 7. GIRLY, ROX, MOD, BON, LUCKY, BOB, ERIN
AND JULIE CLAIMS.

General Geology

The claims are underlain by a series of carbonates ranging in age from Mid Devonian to Ordovician (?). The various units represented are described in detail on pages of this report and will be mentioned only by name at this point. South of the Rox group the carbonates form a broad, north plunging anticline the west limb of which is truncated by the Dewdney Thrust. Several smaller thrusts associated with the Dewdney play a major role in exposing the carbonates in the claims area. The anticline south of the Rox group is breached by an uplifted block of older carbonates and further to the north the faults bordering the older rocks strengthen and flatten into thrusts. The relative movement of the thrusting is from east to west and creates a repeat of section on east-west traverses (Figure No. 40). Although the rocks have been subjected to faulting and thrusting only minor deformation has taken place and units can be followed along strike for almost twenty miles.

Although outcrop is minimal in the claims area geological mapping of talus and rubble can define contacts to within ten feet. Different weathering characteristics of the various units also aid in defining geological boundaries.

Crinoidal limestones of the Ogilvie Formation are uppermost in the stratigraphic section and have a minimum

thickness of 600 feet in this area. They form ridges and cliffs on the eastern and western edges of the claim groups. Underlying the crinoidal limestones are shaley limestones of the Gossage Formation. These limestones are a recessive unit that can be seen forming troughs and saddles in ridges. Next in the section is a unit of light grey aphanitic limestone which is, in turn, underlain by a thick section of dolomites. The dolomites are the host for sulphide mineralization and range in age from Ordovician to Silurian (?). The aphanitic limestones were used as marker beds to locate mineralization because they are easily seen as resistant ridges and cliffs. In almost all cases mineralized dolomites were found within 100 feet of the aphanitic limestone/dolomite contact.

Mineralization in the dolomites consists of green-to honey-coloured sphalerite, minor pyrite and white sparry dolomite. The dolomite unit is recessive and minimal outcrop is found; some with sulphides. Spectacular samples of replacement-type mineralization (Plate XVI) were found in talus but trenching failed to locate the sources of this material. It appears from the way mineralization is found in talus that the sulphides occur as pods along a well-defined horizon of two or more beds. The density of the pods is yet to be determined. Associated with replacement-type mineralization are lower-grade vug- and fracture-filling types of mineralization. Sphalerite can be found in dolomites along a strike-length of eight miles in the claims area.

The strike of the carbonate beds is an almost constant N15°W in the claims area. The dips of the beds

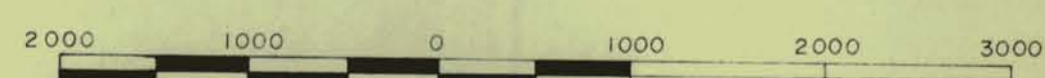


REGISTRATION DATA

CLAIM	DATE RECORDED	GRANT No.
MOD	1 - 36 Sept. 18/73	Y81924 - 81959
BON	1 - 41 Oct. 2/73	Y82186 - 82226
LUCKY	1 - 60 Oct. 2/73	Y82126 - 82185
GIRLY	1 - 72 Sept. 18/73	Y82016 - 82087
GIRLY	73 - 89 Oct. 2/73	Y82241 - 82257
ROX	1 - 56 Sept. 18/73	Y81960 - 82015
ROX	57 - 70 Oct. 2/73	Y82227 - 82240
JULIE	1 - 8 Aug. 13/74	Y89729 - 89736
JULIE	9 - 11 Aug. 27/74	Y90004 - 90006
JULIE	12 - 17 Aug. 27/74	Y90007 - 90012
BOB	1 - 36 Sept. 18/73	Y81888 - 81923 (allowed to lapse)
ERIN	1 - 16 Aug. 29/73	Y81793 - 81808 (released from option)

LEGEND

- Claim boundaries
- ⊠ Claim post location
- Location line - direction
- ~ Streams



Truscan Resources Limited

GIRLY, ROX, BOB, LUCKY, MOD, BON,
and ERIN CLAIMS

CLAIM SURVEY

OGILVIE PROJECT, Y.T.

Drawn By: COOK, BULLIS
 Drafted By: Cook, Bullis
 Date: Nov/74 Revised

Scale: 1" = 1,000'
 Contour Interval:
 Drawing No.: Fig. 39



ASSAY RESULTS

Sample Number	Mineralization Type	Percent Zinc
15926	Fracture-filling	1.95
15927	Fracture-filling	0.15
15928	Fracture-filling	0.30
15929	Fracture-filling	0.10
15930	Fracture-filling	2.20
15931	Fracture-filling	0.95
15932	Vug-filling / Replacement	12.55
15933	Fracture-filling	1.30
15934	Fracture-filling	1.15
15935	Partial replacement	0.65
15936	Fracture-filling	0.65
15951	Vug-filling / Replacement	3.55
15952	Vug-filling	2.15
15953	Fracture-filling	0.30
15954	Fracture-filling	1.50
15955	Replacement	4.05
15956	Vug-filling	0.45
15957	Fracture-filling / Vug-filling	3.80
15958	Vug-filling	1.35
15959	Replacement	9.30
15960	Fracture-filling	0.65
15961	Vug-filling	2.50
15962	Replacement	16.00
15963	Fracture-filling	0.15
15964	Fracture-filling	1.65
15965	Fracture-filling	0.45
15967	Fracture-filling	0.50
15968	Fracture-filling	0.30
15969	Fracture-filling	0.20

ROCK TYPES	AGE	SYMBOLS
Sandstone and Siltstone	Cretaceous	Outcrop
"Crimoidai" Limestone - Ogilvie Fm.	Mid-L. Dev.	Geological contacts (mapped)
"Shaley" Limestone - Gossage Fm.	Dev.-M. Sil.	Strike and dip of bedding
Light to dark grey, aphanitic Limestone	MSil.-L. Ord.?	Strike and dip of jointing
Undifferentiated Dolomites	L. Ord.-E.?	Shear
Dolomite with nodular chert	L. Ord.-E.?	Major fault ("u" on up-thrust side) (mapped)
		Major thrust ("C" shows direction of upper plate) (mapped)
		Mineralization in talus
		Pit
		Grab sample site
		Soil sample site
		Contour line (500-foot interval)
		Stream
		Winter road
		Claim boundaries

Horcon Resources Limited

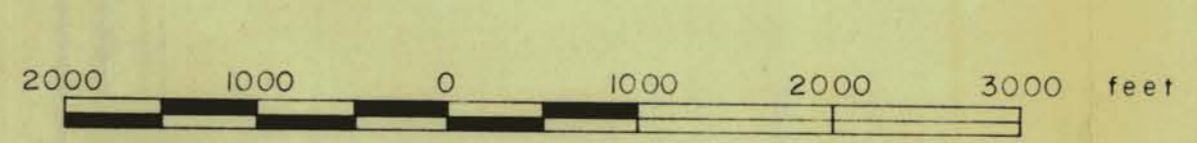
GIRLY, ROX, BOB, LUCKY, MOD, BON,
and ERIN CLAIMS

GEOLOGY

OGILVIE PROJECT, Y.T.

Drawn By: BULLIS, McARTHER
 Drafted By: Bullis
 Date: Nov. 74 Revised

Scale: 1" = 1,000'
 Contour Interval: 500'
 Drawing No.: 63-40



can range from moderate (up to 30°) on the flanks of the anticline to horizontal at the crest. Where the Dewdney Thrust truncates the western limb of the anticline, bedding is nearly vertical. The strike of the thrust faults in the area is generally the same as that of the bedding i.e. roughly north-north-west and conforms with the overall regional fabric of north-north-west features.

Work done on the claim groups included mapping, prospecting, soil sampling and trenching in areas of mineralized float. Twelve trenches were dug on the Rox and Girly claims and ten failed to uncover bed-rock. Of the two pits that did reach bed-rock, neither uncovered mineralized bed-rock. The other ten pits did not penetrate the thick cover of frost-heaved boulders, even though the trenches were dug to a depth of 6 feet.

Mineralization

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. For example, specimens were found of goethite in crystals pseudomorphous after pyrite cubes and pyritohedrons.

The highest grade mineralization is replacement-type; it assays as high as 25% zinc. The locus for this type of mineralization seems to be in the centre of the Girly claim group. On the outer edges of the high-grade centre there is lower-grade material in which sulphide mineralization is primarily fracture and vug-filling. Such material usually contains less than 2% zinc. The dimensions of the replacement bodies are not known although strike lengths of individual pods appear to be a maximum of about one hundred feet. To define the dimensions of the pods extensive trenching or drilling will have to be done.

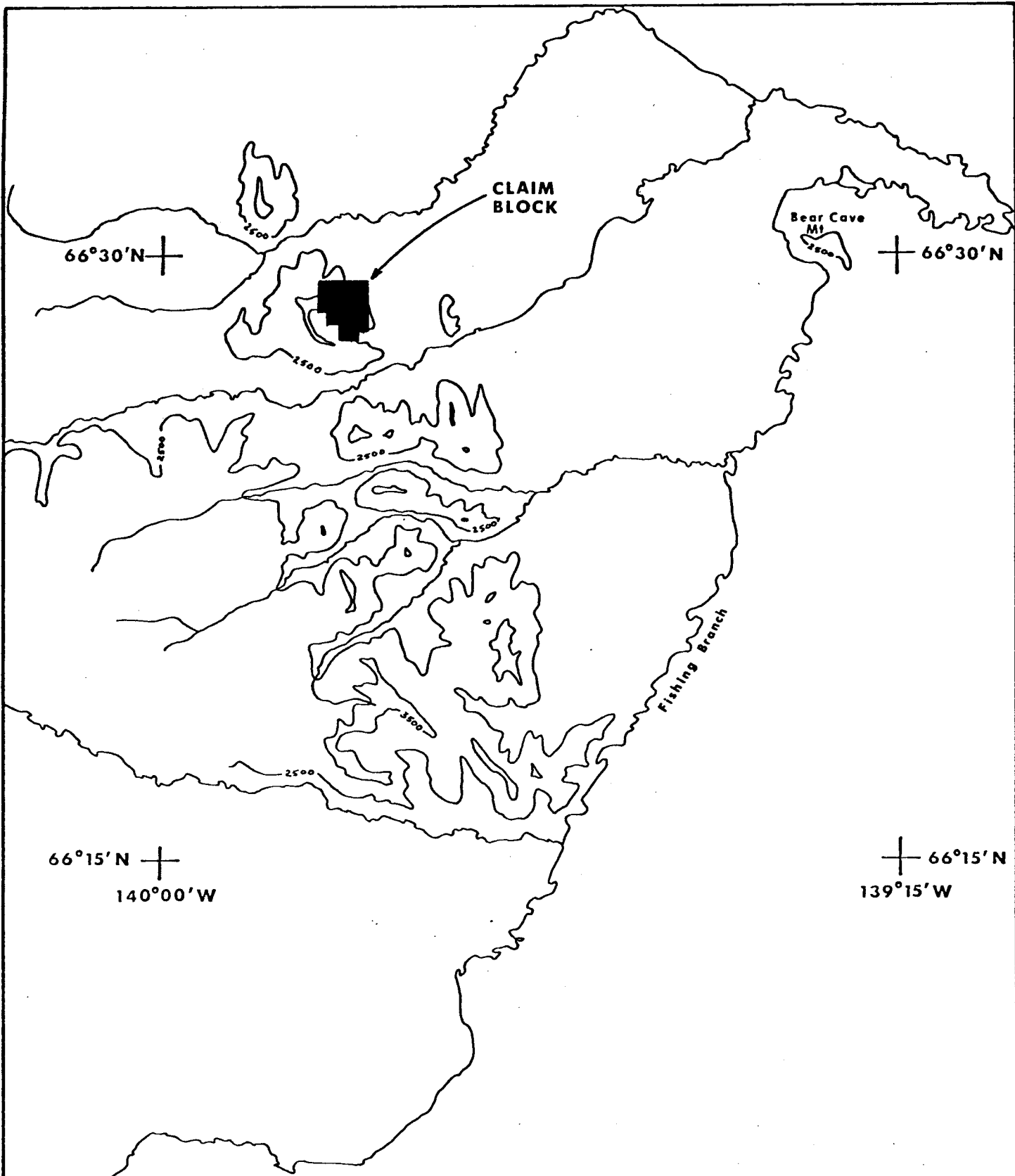
SUMMARY

Mineralized float has been found in talus originating from a dolomite bed that has been mapped over a continuous strike-length of about six miles on the claim groups. The mineralized float has an irregular distribution along the strike-length of the bed and there are areas, notably on Girly 26 to 32, and 34 claims and Girly 39,40 and 42 claims, in which sulphide deposition is most intense. The over-all picture seems to be one in which major loci of intense replacement mineralization exist surrounded by areas of lower-grade fracture-controlled sulphide deposition. As one proceeds outward from these major centres the intensity of mineralization weakens.

Sulphide mineralization has been noted over a maximum stratigraphic thickness of one hundred feet. Down-dip mapping of the dolomite host has shown that mineralization occurs over a minimum distance of about 1,000 feet. The most intensive deposition of sphalerite and pyrite occurs in porous material that resembles reefal debris although positive identification is difficult because dolomitization has masked the original rock fabric and textures. Sulphide depositional controls may be rock porosity, chemical compositional changes (ie - pH, organics, etc.) and tectonic remobilization of sulphides associated with faulting and thrusting in the area.

In order to discover the true dimensions of the mineralized zones either extensive trenching to bed-rock and/or drilling will have to be done.

Soil-sample grids were laid out in two separate areas on the claim groups to test down-dip extensions of mineralization under soil cover. In both cases the presence of mineralization was indicated along strike from known occurrences of sphalerite in float.

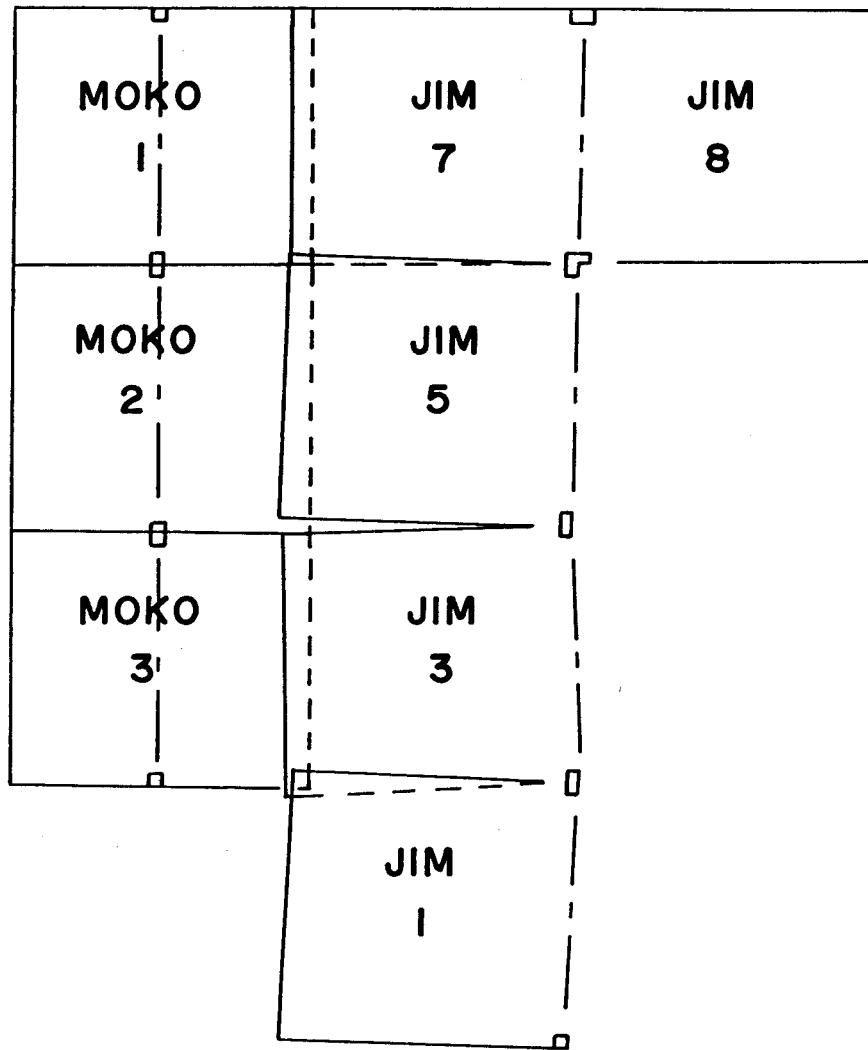


Brascan Resources Ltd.

CLAIMS LOCATION MAP

Scale 1:250,000	Contour Interval 1000'
Date Sept 1974	By MLMCA Fig. 41

TN



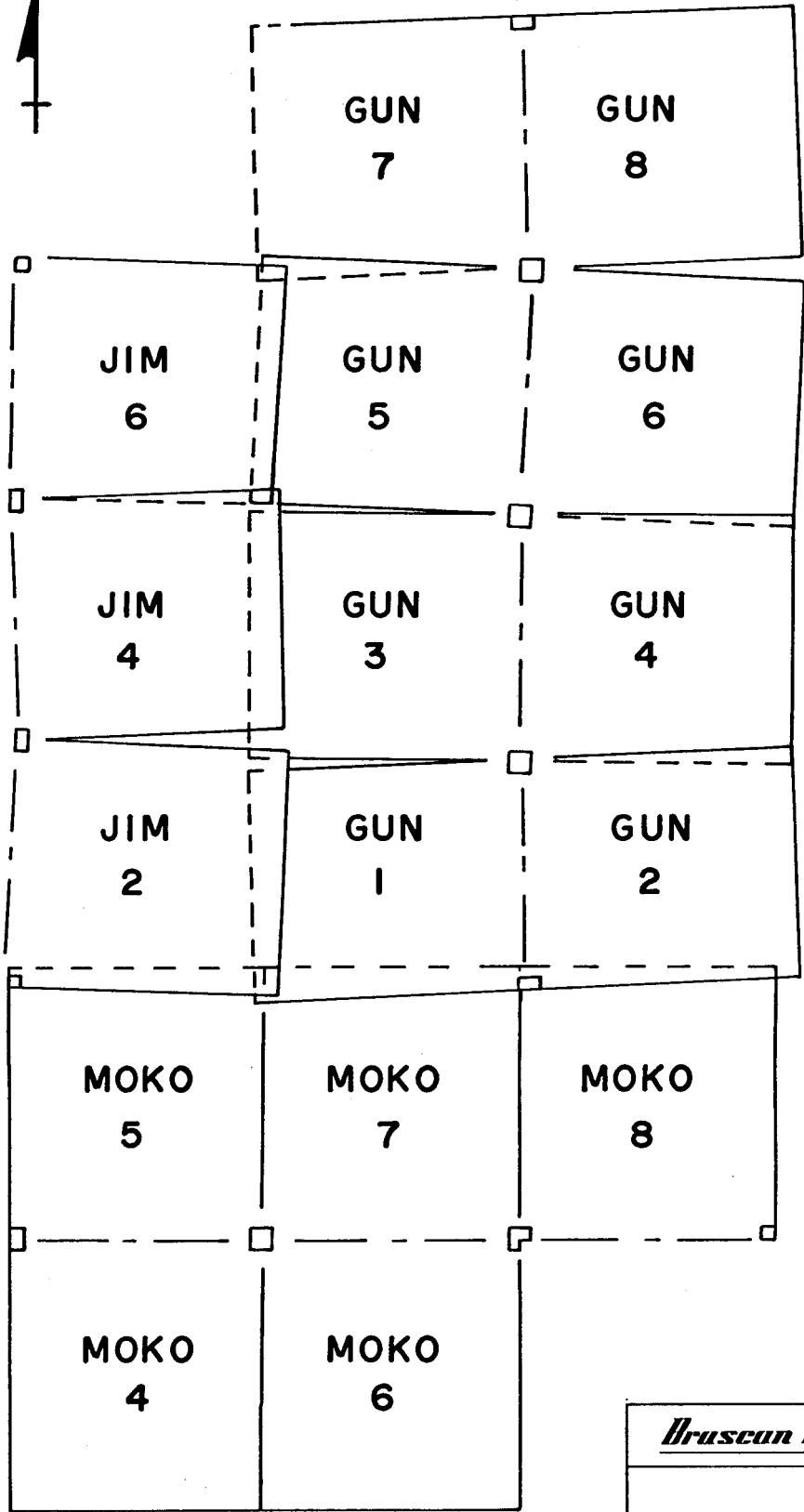
Brascan Resources Limited

CLAIM GROUP

Drawn By: AGC
Drafted By: MLM
Date: 10/74 Revised: _____

Scale: 1" = 1000'
Contour Interval: _____
Drawing No. Fig. 42

TN



Bruscan Resources Limited

CLAIM GROUP

Drawn By: <u>AGC</u>	Scale: <u>1" = 1000'</u>
Drafted By: <u>MLMC</u>	Contour Interval: _____
Date: <u>10/74</u> Revised: _____	Drawing No. <u>Fig. 43</u>

B 8. JIM, GUN AND MOKO CLAIMSGeology

The rock units and geologic features underlying these claims are a northern extension of the Girly/Rox, et al geology. Similar rocks are represented (i.e. crinoidal limestones, shaly limestones, light grey, aphanitic limestones and dolomites all ranging in age from Silurian to Devonian) and the regional trend of bedding planes (i.e. a N20°W strike with an easterly dip) is continued.

The first mineral occurrences were found on the Jim claims when prospecting of the aphanitic limestone/dolomite contact was done. Several more areas of mineralized talus were found along the trace of the contact and these areas were subsequently sampled.

Further investigation of the limestone/dolomite contact north of the Jim/Gun/Moko groups revealed that the carbonate beds close off the nose of an anticline that plunges north beneath Upper Devonian (or later) shales and sandstones. Additional areas of mineralized float in dolomites were found but were not of sufficient grade to warrant staking.

The distance between showings on the Jim/Gun/Moko claims and those of the Girly/Rox et al claims represent about fourteen miles over which a continuous unit of dolomites was found to carry zinc mineralization in various localities.

Because the host formation is recessive very few mineralized outcrops were seen. Almost all the mineralization was observed in float. Samples were taken of mineralized float in areas roughly ten feet by ten feet square. In any one area only samples containing sphalerite and pyrite were chosen. Therefore the true dimensions of areas of mineralization in bedrock are not known but the grades within the mineralized areas are known. The grades run from 0.1% zinc to 5.45% zinc and the arithmetic average of all the assay samples taken is 1.53%.

[NOTE: 1.5% zinc equals 30 lbs. per ton. At 20¢ per pound net to the mine this works out to \$6.00 per ton. At an 80% recovery rate the net received by the mine would be \$4.80 per ton. The value of 5% zinc on the same basis would be \$16.00 per ton. These figures are offered for reference only.]

These samples were taken at various places from dolomite talus over a strike-length of 6,000 feet and a dip-length of 3,000 feet. Here as on the Girly/Rox et al claims, there seem to be loci of intense sulphide deposition surrounded by zones of lesser-grade mineralization. The most intensive mineralization is found on the Moko 3 and Jim 1 claims. The thickness of the beds hosting mineralization probably does not exceed one hundred feet. The loci of intense mineralization appear to be in the order of 150 feet long (along strike-length) and are found about 1500 feet apart with lower-grade material in between.

In order to determine the true dimensions and grade of the mineralized zones extensive trenching and/or drilling will have to be done.

B 9. RAT AND LYNX CLAIMS

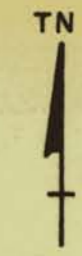
The Rat and Lynx groups lie along the nose and western limb of a south plunging anticline the weathered core of which exposes Devonian (?) carbonates. Overlying and topographically surrounding the carbonates is a unit of Mississippian (?) shales, quartzites and siltstones. The Mink Claims, staked by Inexco and Husky Oil in March, 1973, cover the unit of carbonates in the core of the anticline. This staking was done after a copper-lead-zinc showing was discovered in the well-fractured and silicified crest of the carbonates. The mineralization occurs in resistant knobs of silicified carbonates surrounded by topographic lows (Plate XIX). The Rat and Lynx claims were staked by Brascan to cover possible down-dip extensions of the mineralization. No further work on the Mink Claims was done by Inexco-Husky during 1974.

Work done by Brascan included a soil-sample survey on parts of the Rat/Lynx claims, as well as prospecting and mapping the Mink claims and surrounding areas. No showings other than those already known on the Mink claims were noted. The presence of permafrost made interpretation of the soil survey results difficult since permafrost inhibits development of soil horizons. However, there are areas within the soil survey that contain higher than background values (Figure 45). These values could be the expression of mineralization on strike or in the same bed as that of the main Mink showing.

The work done by Inexco-Husky on the main showing includes a soil survey on 100-foot centres, blasting and trenching. It is important to note that although the weathered surface of various mineralized outcrops showed no or very little sphalerite, massive smithsonite was well-developed on the protected under-sides of mineralized outcrops as well as in the trench. This is important because outcrop that appears at first glance to be barren may contain significant amounts of zinc.

The soil sampling was done to pick up any traces of the mineralization that may have been carried by ground water up through fractures, etc. in the barren beds presumed to be overlying the carbonate host formation. The sampling on the Lynx claims gave generally lower metal values than was expected for the area and lower metal values than those from the Rat claims. However, the sampling on the Lynx claims was in permafrost, and this may affect metal concentrations in the soil. The sampling on the Rat claims was not in permafrost and several anomalous samples were noted there.

An attempt should be made by Brascan to option the Mink ground. Suggestions for further exploring the Mink, Rat and Lynx claims are as follows: 1] Extend the soil grid on the Mink showing; 2] do further blasting and trenching to uncover more of the silicified carbonate host; and 3] drill to determine the extensions to the north, west and east of the mineralized zone.



Location of Mink Showing

Mink Claims owned jointly by Husky Oil and Inexco

Rat 1-18, claim tags Y82442 - Y82459

Lynx 1-12, claim tags Y82460 - Y82471

Note: claim posts surveyed by chain and compass

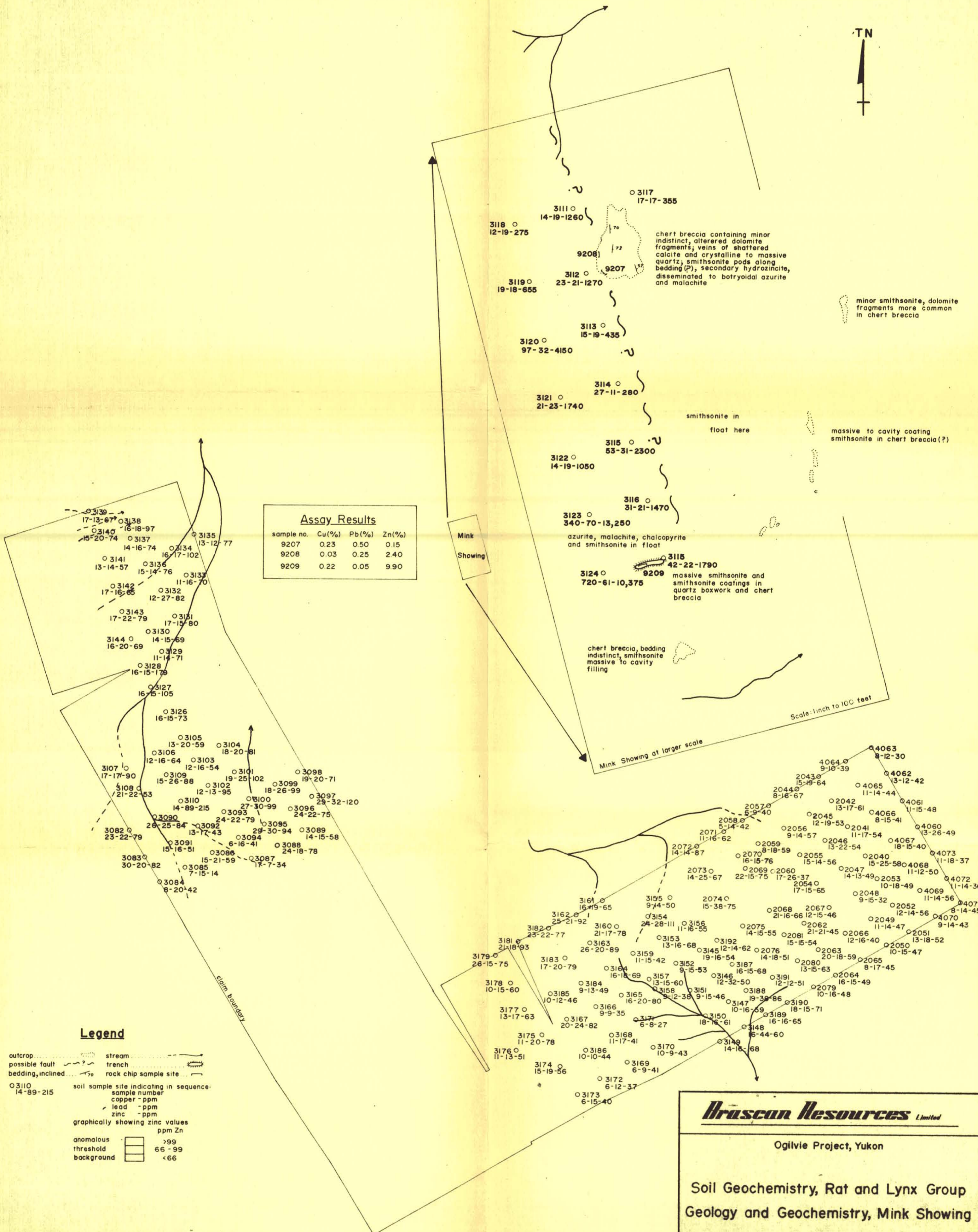


Brascan Resources Limited

Ogilvie Project, Yukon

Claim Survey Rat and Lynx Group

Drawn By: B. Kyba	Scale: <u>1 inch to 1000 feet</u>
Drafted By: M. McArthur	Contour Interval: _____
Date: <u>10/74</u> Revised: _____	Drawing No. <u>Fig. 45</u>



Assay Results

sample no.	Cu(%)	Pb(%)	Zn(%)
9207	0.23	0.50	0.15
9208	0.03	0.25	2.40
9209	0.22	0.05	9.90

Legend

outcrop stream
 possible fault trench
 bedding, inclined rock chip sample site

○ 3110 14-89-215 soil sample site indicating in sequence:
 sample number
 copper - ppm
 lead - ppm
 zinc - ppm

graphically showing zinc values
 ppm Zn

anomalous >99
 threshold 66 - 99
 background <66

Brascan Resources Limited

Ogilvie Project, Yukon

**Soil Geochemistry, Rat and Lynx Group
Geology and Geochemistry, Mink Showing**

Drawn By: B. Kyba	Scale: 1:12000 (1 inch to 1000 feet)
Drafted By: M. McArthur	Contour Interval: _____
Date: 10/74	Revised: _____
	Drawing No. E.g. 46

B 12. REFERENCES

- Arrow Inter-America Corporation (1973): Company Reports and Files on Northern Yukon.
- Brascan Resources Limited: Company Report "Ogilvie Project, 1974" and files.
- Churkin, Michael Jr. and Brabb, Earl E., 1968, Devonian rocks of the Yukon-Porcupine River area and their tectonic relation to other Devonian sequences of Alaska, in Oswald, D.H. ed., Proc. Intern. Sympos. Devonian Syst.: Calgary, Alberta Soc. Pet. Geol. (1968), v. 2, p. 227-258.
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- Norris, A.W., 1968, Descriptions of Devonian Sections in Northern Yukon Territory and Northwestern District of Mackenzie, G.S.C. Paper 66-39, 209 p.
- Norris, A.W., 1968, Devonian of Northern Yukon Territory and Adjacent District of Mackenzie, in Oswald, D.H. ed., Proc. Intern. Sympos. Devonian Syst.: Calgary, Alberta Soc. Pet. Geol. (1968), v. 2, p. 753-780

A P P E N D I X I

PROJECT EXPENDITURES (1974)

(INCLUDING FIELD AND OFFICE EXPENSES TO DECEMBER 31, 1974)

1. TRANSPORTATION \$122,501.93

Charter Flying Charges

A. Jet Ranger (206A, 206B)		
167.61 hours @ \$240	\$	40,226.40
19.4 hours @ \$250		4,850.00
13.4 hours @ \$255		3,437.10
B. Bell 47G3B2		
373.3 hours @ \$145		54,128.50
C. Twin Otter (DHC-6)		
4,326 miles @ \$1.75		<u>7,570.50</u>
		\$110,212.40
D. Fuel: \$17,884.53		
(less drum credit of		
\$5,595.00)		<u>12,289.53</u>
		\$122,501.93

2. CLAIMS \$ 11,855.00

Contact staking	\$	1,320.00
Recording fees		1,772.50
Holding fees		<u>8,762.50</u>
		\$ 11,855.00

3. PERSONNEL \$ 45,838.94

R. Bullis, Supervisor	- 8 x	\$1,000/mo.	\$	8,000.00
G. McArthur, Geologist	- 7 x	850/mo.		5,950.00
M. McArthur, Geologist	- 6 x	800/mo.		4,800.00
B. Kyba, Geologist	- 4 x	850/mo.		3,400.00
G. Lightburn, Geologist	- 5 x	850/mo.		4,250.00
D. Dickenson, Assistant	- 4 x	650/mo.		2,600.00
A. Cook, Assistant	- 4 x	650/mo.		2,600.00
T. Hubl, Assistant	- 4 x	700/mo.		2,800.00
E. Kyba, Assistant	- 4 x	650/mo.		2,600.00
G. Chadillon, Cook	- 4 x	1,000/mo.		4,000.00
			\$	<u>41,000.00</u>
Bonuses, holiday pay, etc.				4,838.94
				\$ 45,838.94

4. PROJECT EXPENSES \$ 51,539.91

Camp equipment and supplies	\$ 16,422.61
Food	3,222.68
Shipping	6,668.89
Assays and Geochemical Analysis	3,725.20
Maps and Reports	1,079.07
Miscellaneous (telephone, drafting material, etc.)	1,833.11
Project Travel and Accommodation	<u>13,588.35</u>
	\$ 51,539.91

TOTAL PROJECT EXPENDITURES: 1974:

\$231,735.78

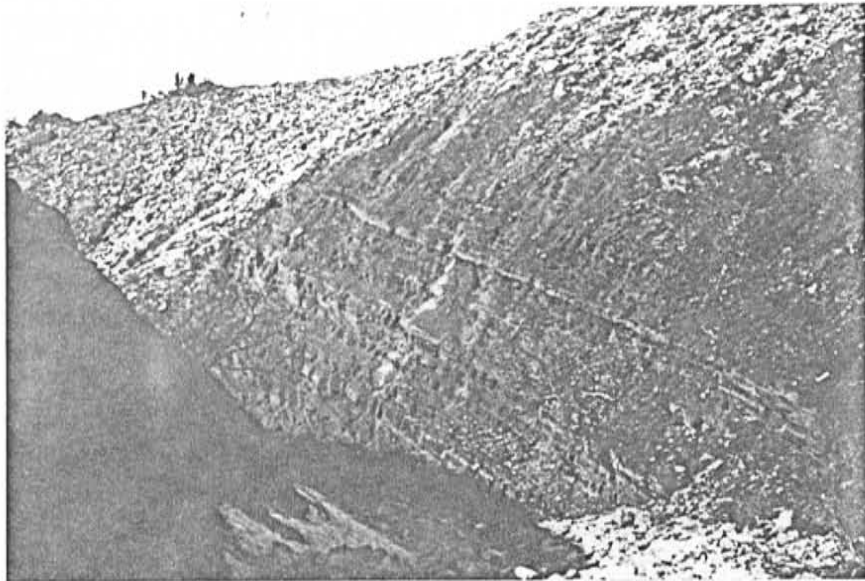


Figure 1. Precambrian (?) redbeds of the Tindir Group.



Figures 2 and 3. Algal stromatolites in silty dolomites which unconformably overly the Tindir Group.

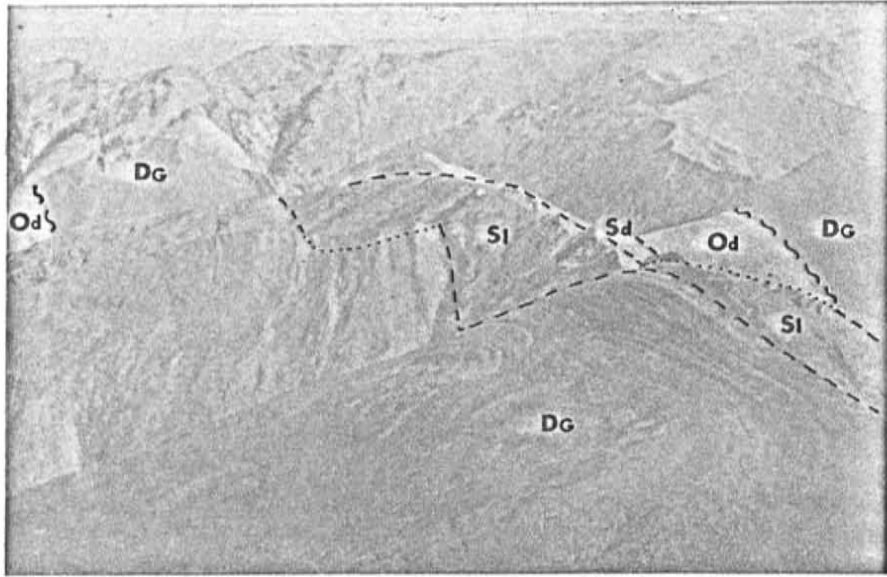


Figure 1. Major north-south trending thrust fault which repeats the Ordovician(?) to Devonian carbonate section. Note color contrast where white dolomites (Od) are faulted against darker weathering Gossage Formation (Dg). (Looking to the northeast)

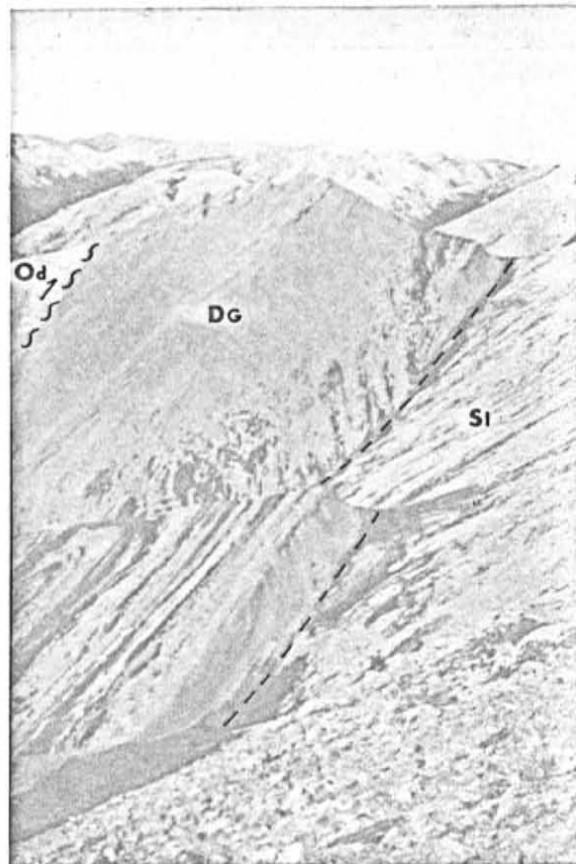


Figure 2. The same thrust as seen above viewed along the plane of thrusting. (Looking northward)

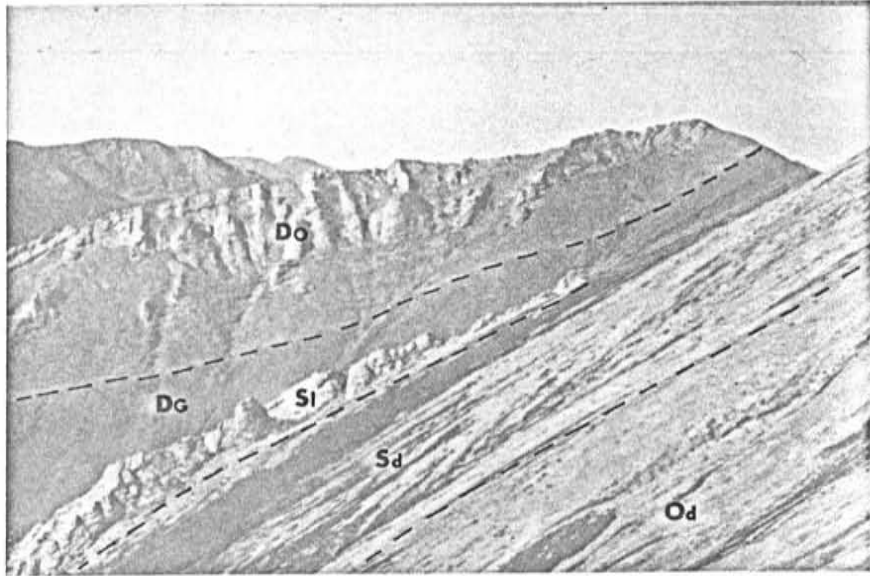


Figure 1. Ogilvie (Do) and Gossage (Dc) Formations, light-grey limestone (Sl), brown-weathering dolomite (Sd) and vuggy, white dolomite (Od) sequence exposed on western thrust sheet.

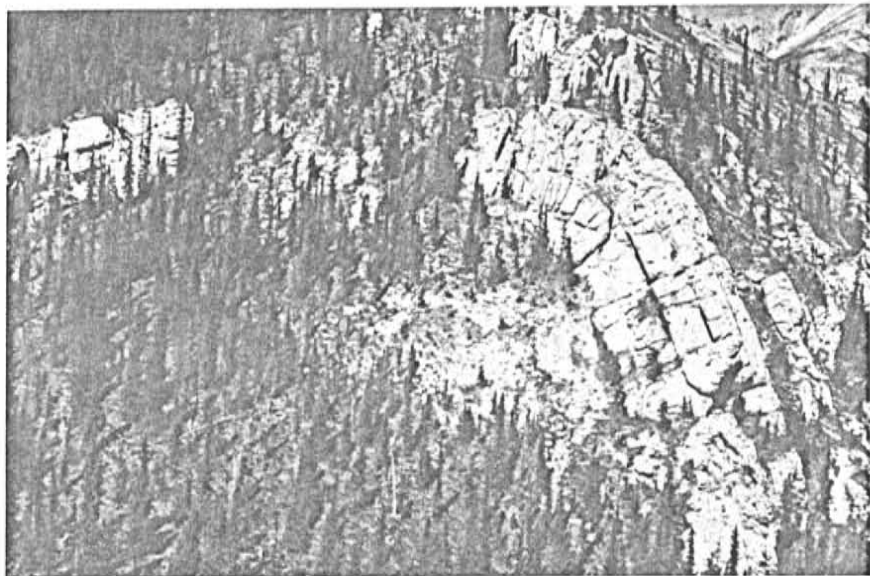


Figure 2. Small asymmetric anticline in Ogilvie Formation, southeast of the Brandy Claims.



Figure 1. Unnamed mountain east of Mount Burgess showing cliff forming nature of the Ogilvie Formation.



Figure 2. Ogilvie Formation in mountains east of Fishing Branch; note hoodoo-like structures.



Figure 1. Well-bedded argillaceous limestone of the Gossage Formation on the Yum Claims.



Figure 2. Resistant beds of vuggy, white dolomite on Chopper Claims forming small canyon in stream.

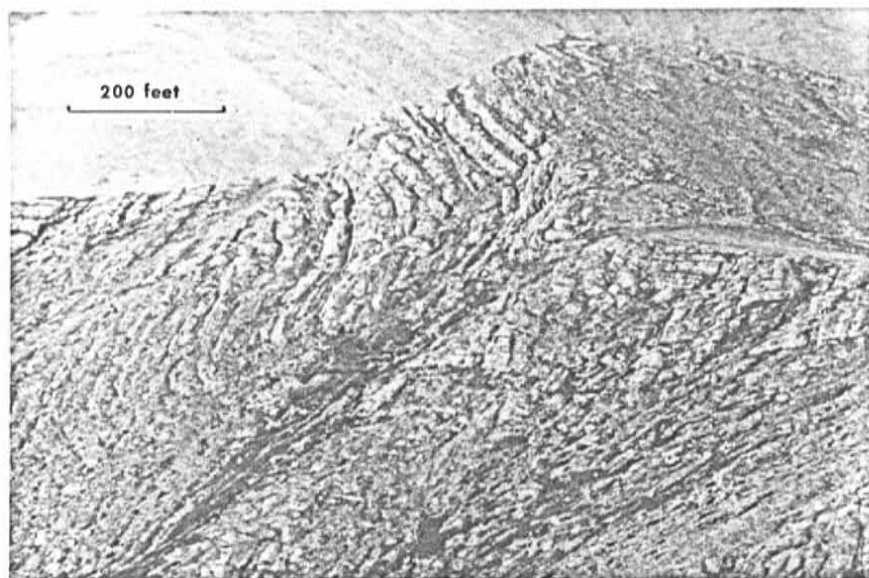


Figure 1. Folded light-grey limestone at south end of Chopper and Yum Claims. (Looking north)



Figure 2. Cyclic dolomite unit on Toad Claims.

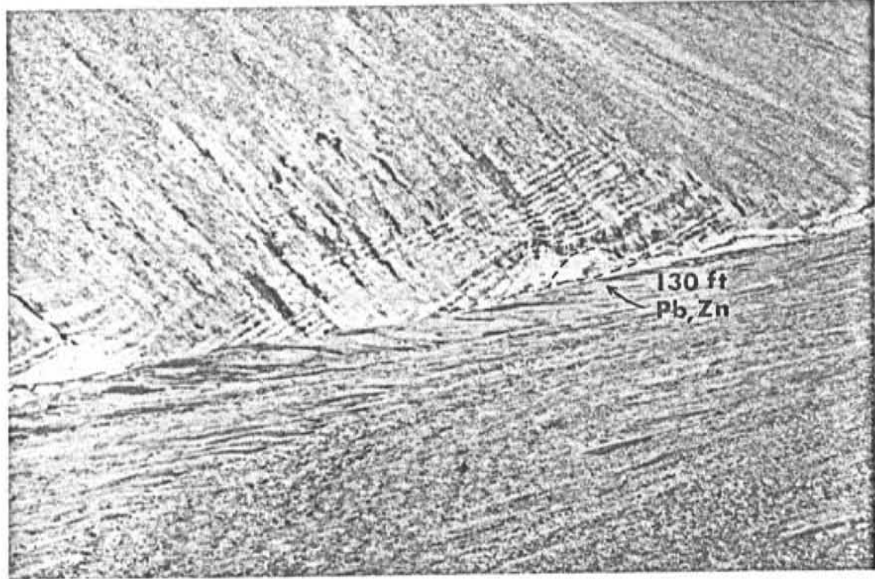


Figure 1. Lead-zinc vein mineralization in cyclic dolomites on Toad Claims.

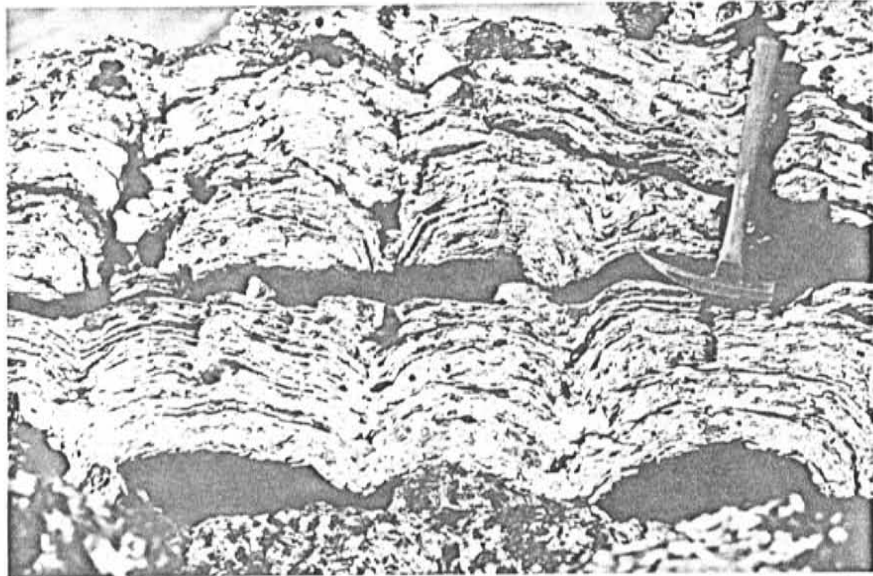


Figure 2. Chertified algal stromatolites within vuggy, white dolomite on Toad Claims.

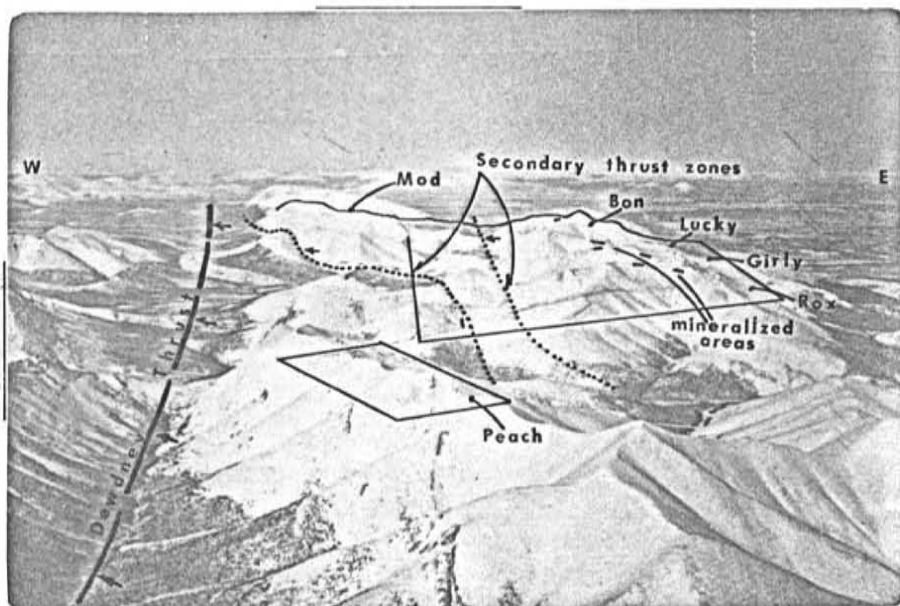


Plate VIII: looking north over the Peach, Rox, Girly et al claims. The photo shows the Dewdney Thrust and related faults and thrusts within the claims groups.

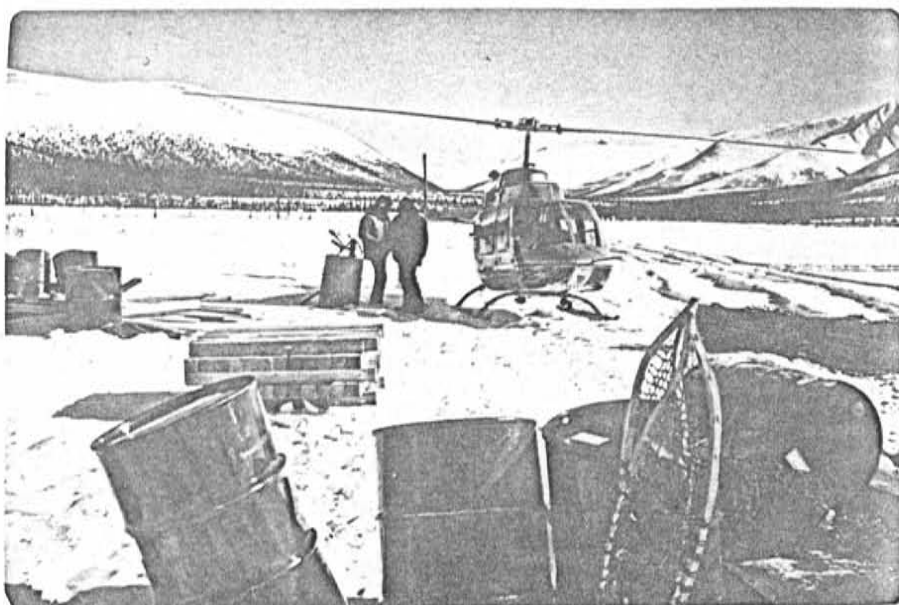


Plate IX: Blackfly airstrip in April. Winter airstrips provided staging points for fuel and equipment later to be moved by helicopter.



Plate X : site of base camp in early May.



Plate XI: completed base camp strung out along a seismic road.

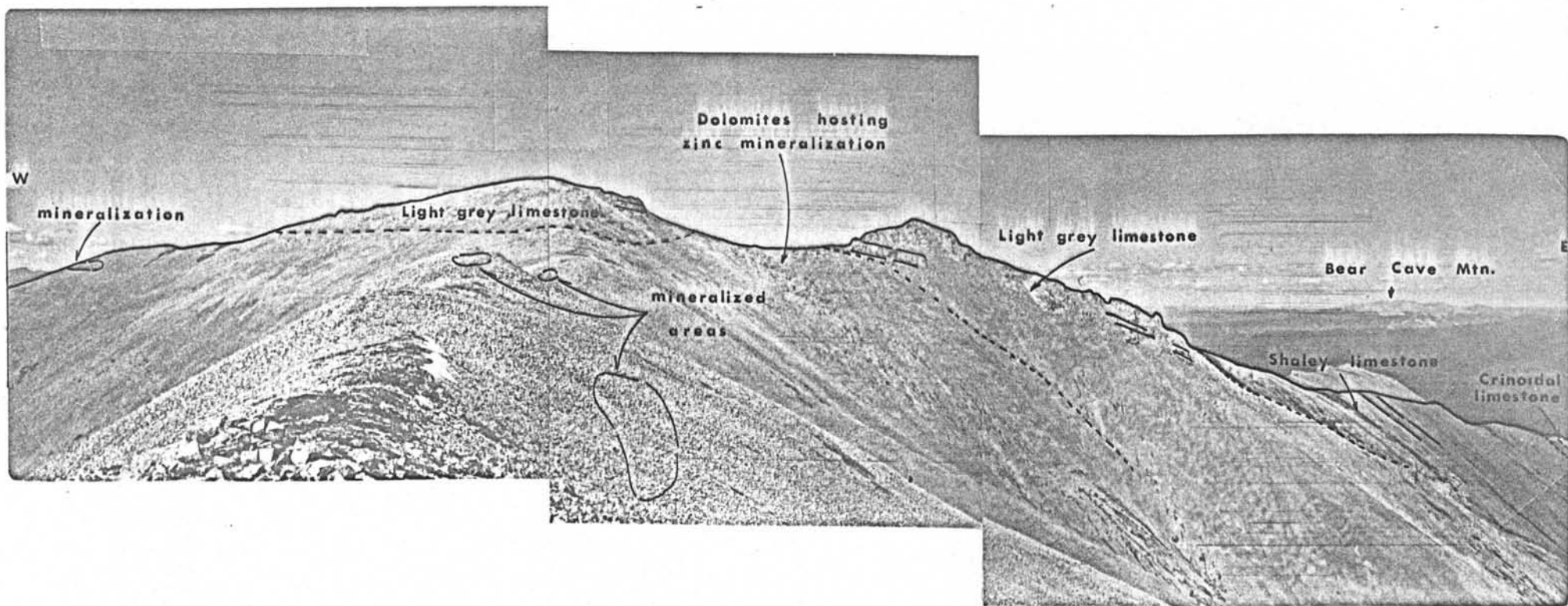


Plate No. XII: composite photograph looking north to the main ridge on the Girly/Rox groups. The antiformal structure of the rocks can be seen and the various carbonate units with their different weathering characteristics are indicated. Note the broken rubble of the weathered dolomites. These mountains have not been subjected to glaciation.

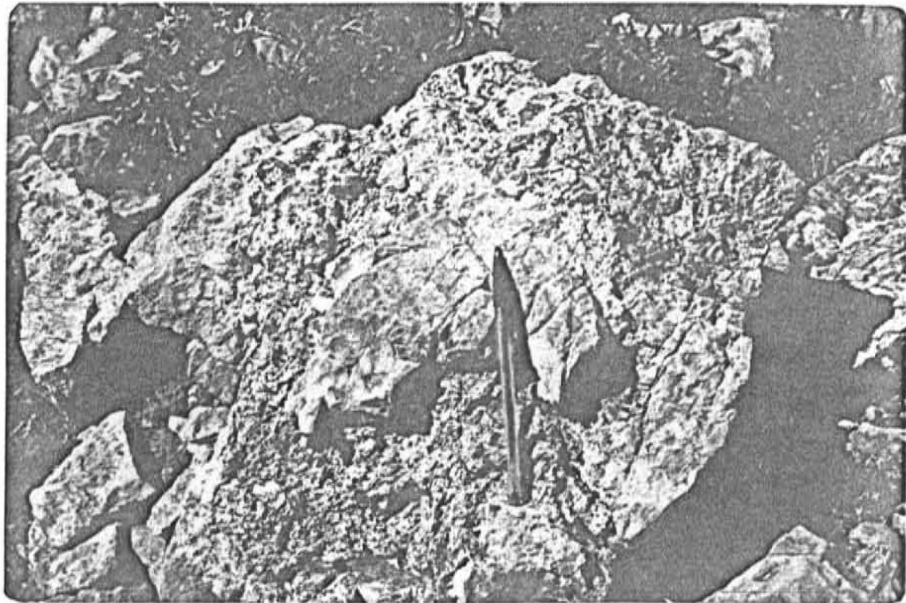


Plate XIII.

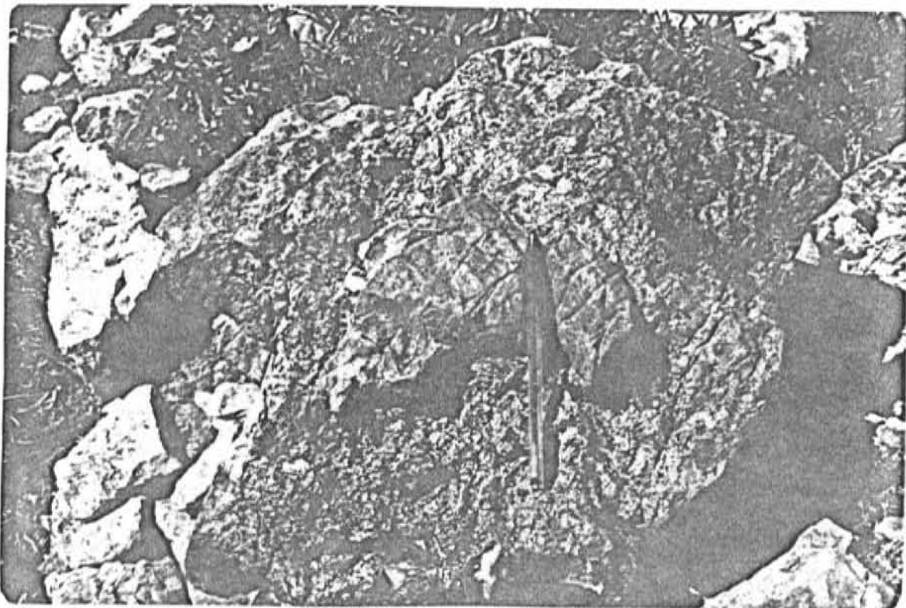


Plate XIV.

These photos illustrate the effectiveness of the field test used to show up zinc oxides. The rock is a dolomite pseudobreccia well-mineralized with sphalerite. The upper photo was before; the lower photo was after spraying with the test.



Plate XV: showing the resistant crinoidal limestones and the recessive shaley limestones on the Girly claims

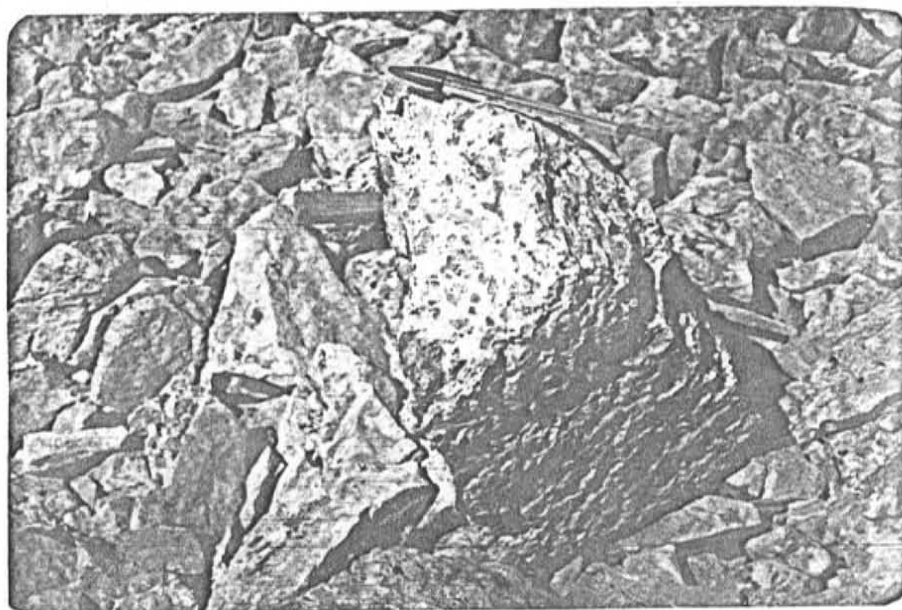


Plate XVI: a well-mineralized sample of reefal material. The rock has been dolomitized to a medium-grey dolomite then has been flooded by white, sparry dolomite.



Plate XVII: blasting on the Rox claims.



Plate XVIII: one of the trenches on the Girly/Rox groups. Rubble from weathered dolomites usually deeper than six feet.

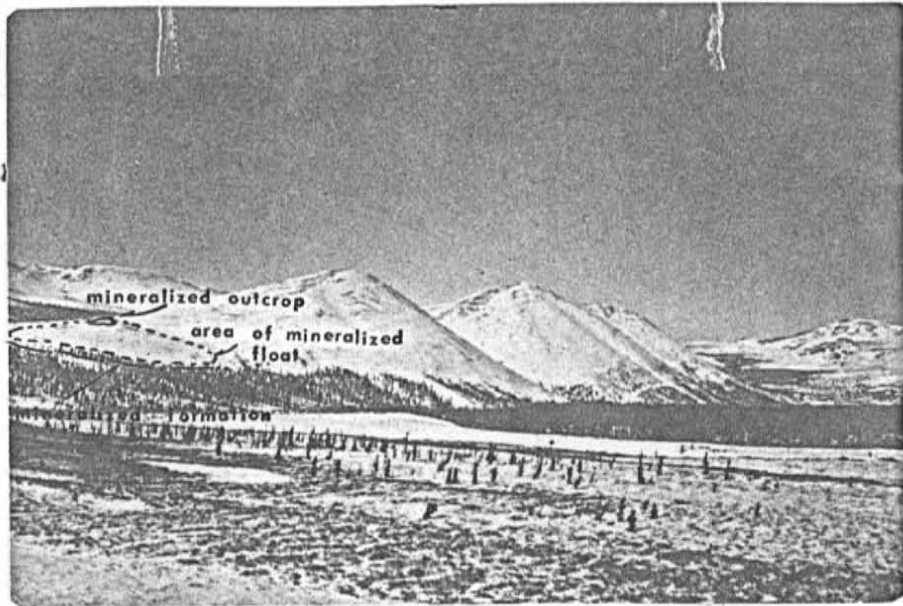


Plate XIX: Site of mineralization on the Mink Claims.

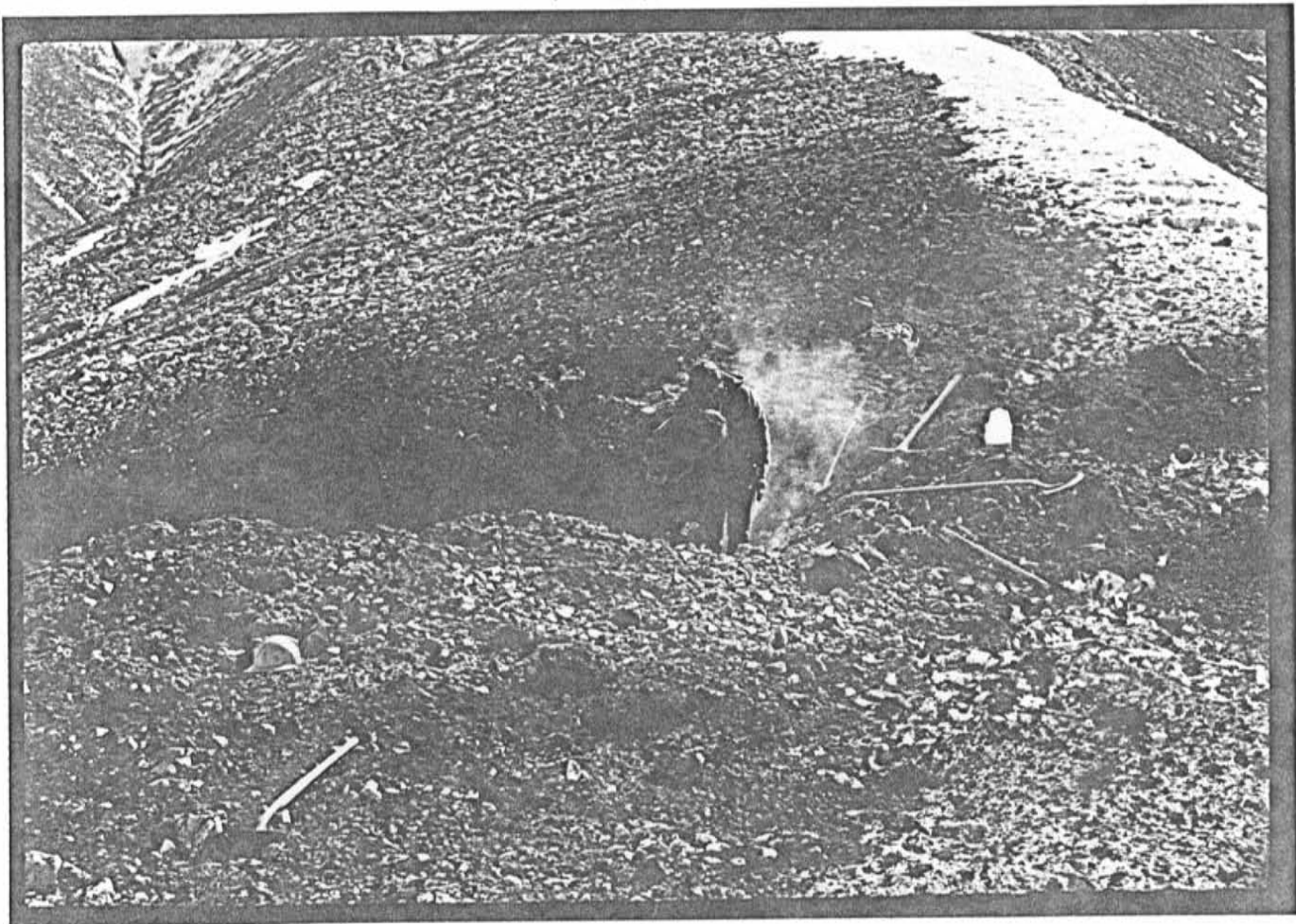


Plate XX: A trench on the Girly Claims.