

GEOLOGICAL REPORT

ARGO CLAIMS

- YUMACK SYNDICATE -

NTS 105-0-1

Macmillan Pass Area, Y.T.

by

R.W. Spence, P. Eng.

Exploration Superintendent

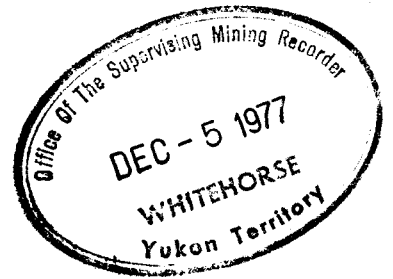
Giant Yellowknife Mines Limited

Yellowknife, Northwest Territories

22 - 31 August, 1977



YUMACK SYNDICATE  
EXPLORATION WORK  
SUMMER 1977



Geological Report: R.W. Spence, P. Eng.  
Geochemical Report: D.G. Thomas, P. Eng.

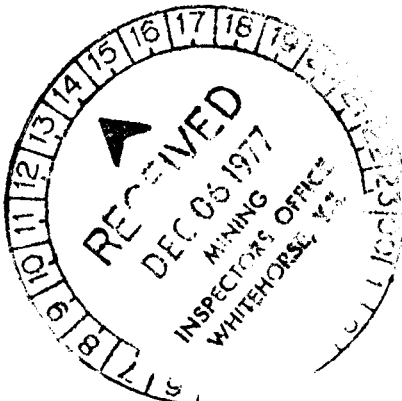
This report has been examined by the Geological Inspector and is recommended to be registered as a report of exploration work under Section 20 of the Yukon Mining Act.

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Considered to be exploration work under Section 20 of the Yukon Mining Act.

*[Signature]*  
B.R. BAXTER  
Supervising Mining Recorder  
Yukon Territory



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## GEOLOGICAL REPORT

### ARGO CLAIMS

#### INTRODUCTION

The Argo claims adjoin the northern boundaries of the Jason and Tom claims, on each of which has been outlined significant quantities of lead, zinc, silver, barite. These properties are described in a report by R.C. Carne (1976 Geology of the Tom and Jason zinc, lead, barite deposit, Macmillan Pass, Yukon, Territory; Open File Report, EGS1976-16; Department of Indian and Northern Affairs), which report will be quoted extensively in this report. The relative locations of the properties are shown on the Key Map. The description of the Argo claims is based upon my field work on the claims during the last part of August this year, and upon the study of coloured vertical air photographs, other photographs and the Carne report.

#### LOCATION AND ACCESS

The sixty-six Argo claims are located at latitude  $63^{\circ}20'$  north and longitude  $130^{\circ}10'$  west, on NTS map sheet 105-0-1. The Canol Road passes close to the southeast boundary of the property. We camped at mile 275. A gravel air strip parallels the road at this point. Access may be by the road in summer or by air in all seasons.

HISTORY

The Argo claims were staked in the summer of 1976 by the Yumack Syndicate. The Syndicate, whose members are Giant, Highwood, Nemco, Canada Southern and J.D. Murphy and was formed to conduct regional geological prospecting based upon an earlier geochemical survey. The results of the program were essentially negative and the culmination was the staking of the Argo group for location only. No other work was done on the claims by the Syndicate until this examination.

TABLE OF FORMATIONS

The following table is taken directly from Carne's report. While only units 2, 2a and 3b were recognized on the Argo claims, the table is applicable to this property.

Formation	Map Unit	Lithology	Approximate Thickness (metres)
	4	silty mudstone, silty shale and calcareous, silt and stone	100 (top not seen)
	3d	tuffaceous shale and tuff	0-60
Canol Formation	3c	welded tuff, pyritic chert cherty argillite amygdaloidal andesite (?)	0-40
	3b	carbonaceous shale, cherty argillite	30-1300
	3a	shaly pyritic mudstone and silty shale, minor intraformational and chert pebble conglomerate	4-40
	2	massive chert pebble conglomerate, minor chert granule conglomerate, coarsegrained chert turbidite, minor interbedded silty shale	45 (varies locally)
	1	pyritic silty shale and rhythmite, siltstone beds and minor chert pebble conglomerate and greywacke	120 (base not seen)

### DESCRIPTION OF UNITS

Unit 2 rocks are primarily massive chert pebble conglomerate. The pebbles are poorly sorted, sand-to-pebble sized, sub-rounded to rounded, black-brown and white chert with disseminated pyrite.

Unit 3a rocks consist of evenly thin bedded, brown weathering, pyrite, silty shale rhythmite and of medium to thick bedded, interbedded siltstone, mudstone, greywacke and silty shale.

Unit 3b rocks consist primarily of silver-grey weathering, siliceous, pyritic, carbonaceous black shale. Carne says that the unit may also be described as argillaceous dirt, cherty argillite, siliceous shale and carbonaceous "sooty" shale.

Only one of the porphyry dykes was observed, much north of, and parallel to, the north boundary. It is a quartz-feldspar porphyry, light tan brown in colour with a distinctive orange-brown weathered surface.

### GEOLOGY OF THE ARGO CLAIMS

Rocks are generally well exposed along the crest of the ridges. Few, if any, outcrops may be found in the stream valley and none in the flood plain of the Macmillan River. Consequently, more than two thirds of the property is covered by thick overburden.

The crests of the ridges were mapped using a compass, topofil chain and altimeter. Plotting of the traverses was aided by the use of coloured vertical air photos, with a scale of 2000 feet to the inch, and by the use of coloured photos taken from the ground.

Because unit 2 is relatively resistant, it was found on three of the crests examined. Unit 3b is recessive and probably underlies most of the map area (as on the TOM and JASON claims). According to Carne, unit 3a shales fill in paleo-topographic lows formed by an uneven depositional surface on the Unit 2 conglomerate; on this map sheet the silty shale is usually found in contact with the conglomerate. If the silty shale appears to be missing from what would be expected to be the upper contact of the conglomerate, it is probably because a dearth of outcrop prevented its observation.

The most interesting geology on the Argo claims is found in the southwest corner. This may be because there is more rock exposed here and the assumption that the covered area is mostly underlain by black shales could be incorrect. However, the observable geology indicates that the southwest corner is the most interesting. Not only is there a variety of rock types in the southwest corner, but they appear to be more grouped around an overturned syncline, or basin, with tight isoclinally folded units around the rims.

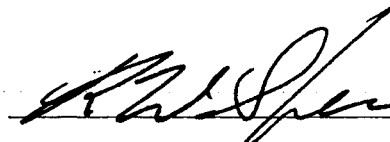
#### INTERPRETATION

Carne's report on the Tom and Jason properties shows that the zinc, lead, barite deposits are stratabound within the silty shale, near its lower contact with the conglomerate. Whatever other conditions were necessary, this is the most obvious essential. Since most of the Argo claims appear to be underlain by steeply dipping black shales, only the southwest corner, where there are half a dozen contacts between silty shale and the conglomerate, provides this requirement.

CONCLUSIONS AND RECOMMENDATIONS

The mineralized horizons on the adjoining Tom and Jason claims are stratabound within silty shale near the lower contact. Isoclinal foldings has left at least six settings where the lower contact of the silty shale can be found. These are all on the ridge in the southwest corner of the property.

It is recommended that a gravity survey be conducted over the eighteen claim block making up the southwest corner of the property. Since barite, which has a high specific gravity, invariably makes up part of the mineralization, it should show up as a high gravity anomaly. The potentially favorably horizons in this area strike north-south, so the picket lines should run east-west. It is estimated that this survey would cost about \$20,000.00



R.W. Spence, P. Eng.



GEOCHEMICAL REPORT

ARGO CLAIMS

- YUMACK SYNDICATE -

NTS 105-0-1

MacMillan Pass Area, Y.T.

by

D.G. Thomas, P. Eng.

HIGHWOOD RESOURCES LIMITED

22-31 August, 1977

Calgary, Alberta

October 6, 1977

(to accompany Geological  
Report by R.W. Spence)

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                 ii)   Geochemical Map

## SUMMARY

The ARGO 1-66 claims were staked in July, 1977 to cover favorable geology adjoining the TOM and JASON claim blocks. Substantial tonnages of shale hosted barite, lead, zinc and silver occur on the latter ground. Work on the ARGO claims during August, 1977 was intended to outline favorable areas for further geophysical exploration. To this end both geological and geochemical surveys were conducted over the claims. The geology is described in an accompanying report by R.W. Spence. The geochemical stream silt survey located one significantly anomalous creek within a geologically favorable area. It is recommended that further detailed geochemical follow-up be carried out in conjunction with the gravity survey recommended by R.W. Spence.

### SAMPLING PROCEDURE

An attempt was made to sample as many of the streams draining the property as possible. Fifty samples were collected at approximately 1000 ft. intervals along the four main creeks. Particular attention was paid to junctions and seeps.

Samples were taken from the active stream channel and sieved at the sample site to -20 mesh. This enabled a larger more representative sample to be collected. Samples were later dried at camp and shipped to Bondar-Clegg's, Whitehorse laboratory.

### ANALYTICAL METHOD

Trace analysis for silver, copper, lead and zinc was carried out at Bondar-Clegg. Estimation was by the Atomic Absorption method after acid digestion of the -100 mesh fraction. Results are in ppm.

### RESULTS

The results of the survey are plotted on the accompanying map at approximately 1" = 1000 ft. Classification of anomalous values was done by procluding erratic highs and considering 2½% of the remaining values as being anomalous. This gave background and threshold values for the basemetals as follows:

<u>Metal</u>	<u>Mean Background</u>	<u>Threshold Value</u>
Copper	100 ppm	160 ppm
Lead	30 ppm	45 ppm
Zinc	900 ppm	1600 ppm

Values in excess of threshold are considered of significance and are as follows:

<u>#</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Priority</u>
2	<u>165</u>	17	<u>480</u>	D
7	<u>260</u>	<u>85</u>	<u>3900</u>	A
21	82	<u>50</u>	1000	E
42	115	28	<u>1720</u>	C
43	<u>170</u>	<u>80</u>	1404	B

The most significant of these results is sample #7 since it is anomalous in all metals and is taken from a creek draining an area of favorable geology. Since the mobility of lead is rather low its value may indicate relative proximity to source. It is the only creek directly draining the area underlain by geological units 2, 3a and 3b.

The silver results are somewhat different to those of the basemetals. There is only one distinct silver anomaly present (ie #31) but this also occurs in an area of high silver

background. Both creeks C & D contain noticeably higher values in trace silver than A & B. This is probably a formational background feature and makes the anomaly somewhat less significant. Conversely, the background silver values in creeks A & B add significance to the silver value of 1.4 ppm in Sample #7.

#### CONCLUSIONS

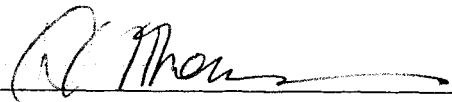
It is concluded the geochemical results indicate an anomalous area which is coincident with favorable geology. Further geochemical work is therefore essential to (a) determine the validity of this single high (b) to outline the anomalous area by both stream and soil geochemistry.

Other anomalies within the claims are of lower priority though further follow-up should probably be carried out in the vicinity of Sample #43

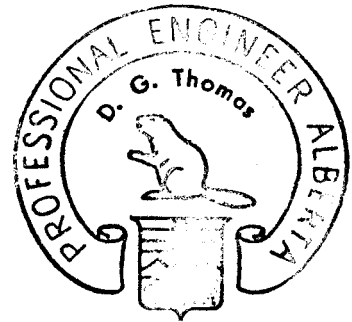
#### RECOMMENDATIONS

1. Further geochemical sampling of creeks draining the southwest block of claims is necessary. This work should include:
  - (a) Sampling of tributaries to the creek off the southwest boundary which area has not yet been sampled.

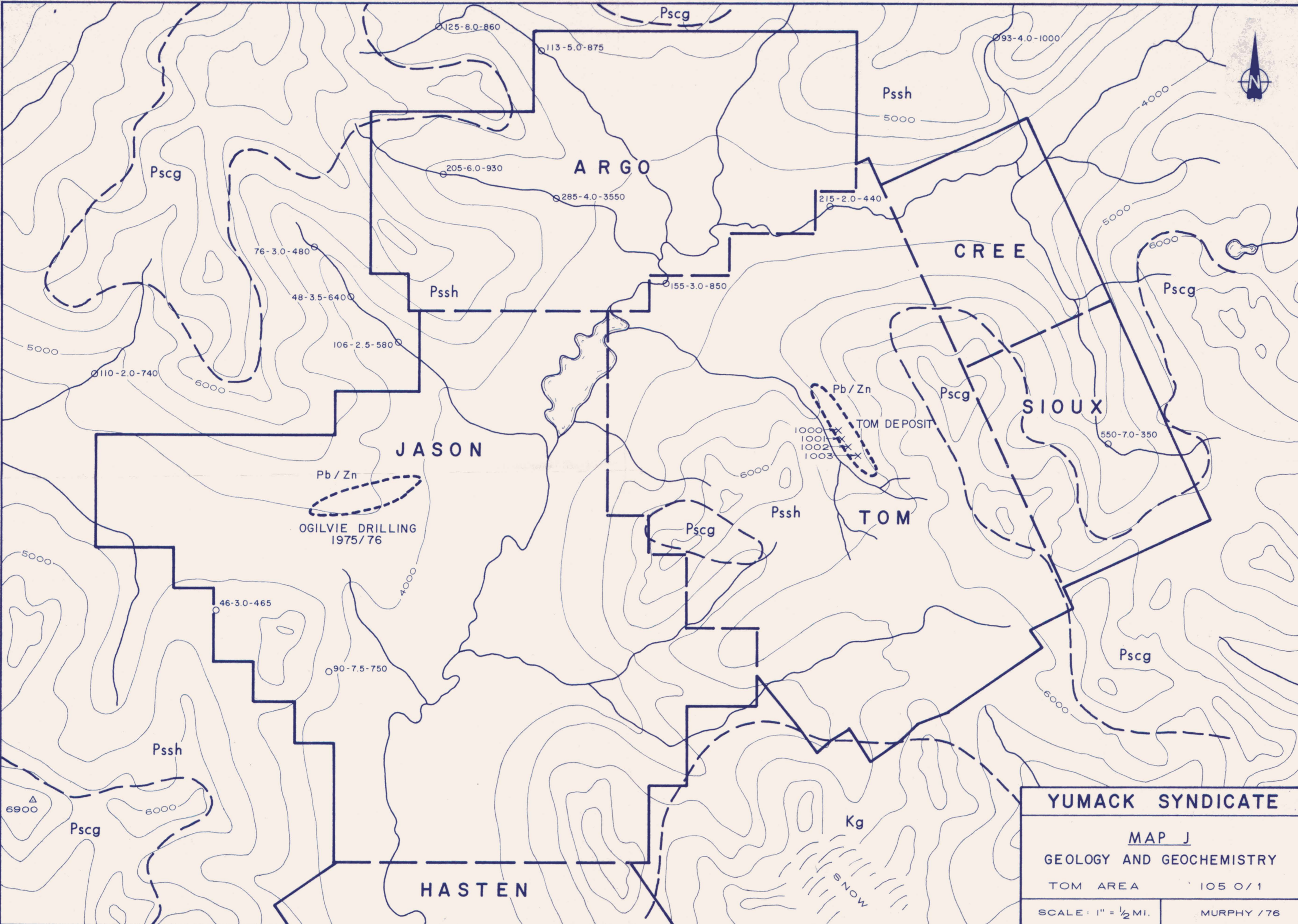
- (b) Follow-up stream silt surveying along the anomalous creek.
  - (c) Follow-up stream silt surveying along any other creeks draining the anomalous area to the east.
  - (d) Soil geochemistry near the source of the anomalous creeks.
2. Some further prospecting and geochemistry on a low priority basis is recommended for the area in which samples #42 and #43 were collected.

  
D.G. Thomas, P. Eng.

DGT/fsb





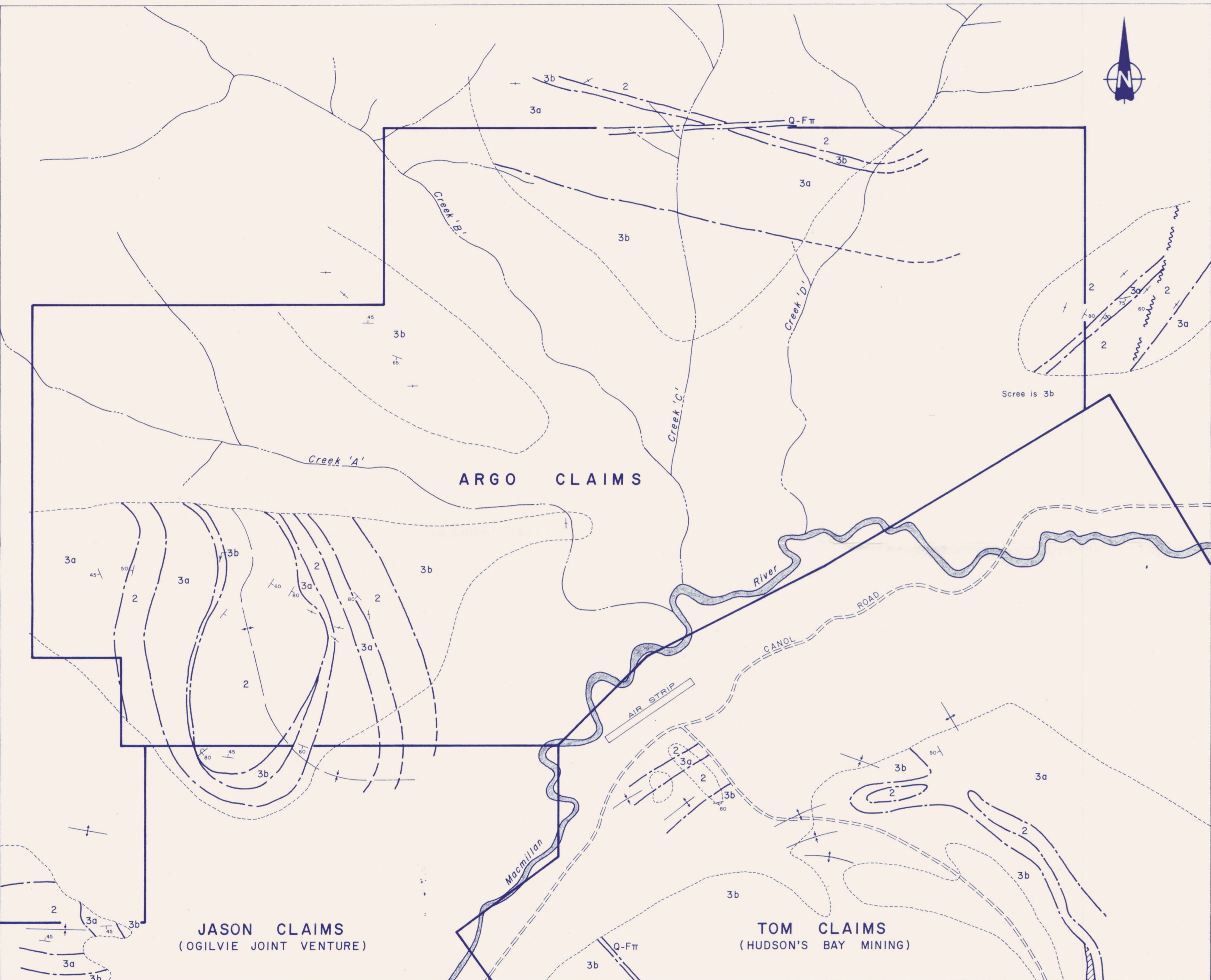


<b>YUMACK SYNDICATE</b>	
<b>MAP J</b>	
<b>GEOLOGY AND GEOCHEMISTRY</b>	
TOM AREA	105 0/1
SCALE: 1" = 1/2 MI.	MURPHY /76

**LEGEND**

- Q-Fπ QUARTZ-FELDSPAR PORPHYRY
- 3b BLACK SHALE
- BARITE-LEAD-ZINC HORIZON
- 3a SILTY SHALE
- 2 CHERT PEBBLE CONGLOMERATE

- AREA OF OUTCROP
- GEOLOGIC BOUNDARY
- CLAIM BOUNDARY



**YUMACK SYNDICATE**

**GEOLOGY**


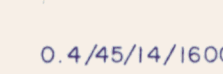
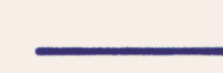
-ARGO CLAIM GROUP-

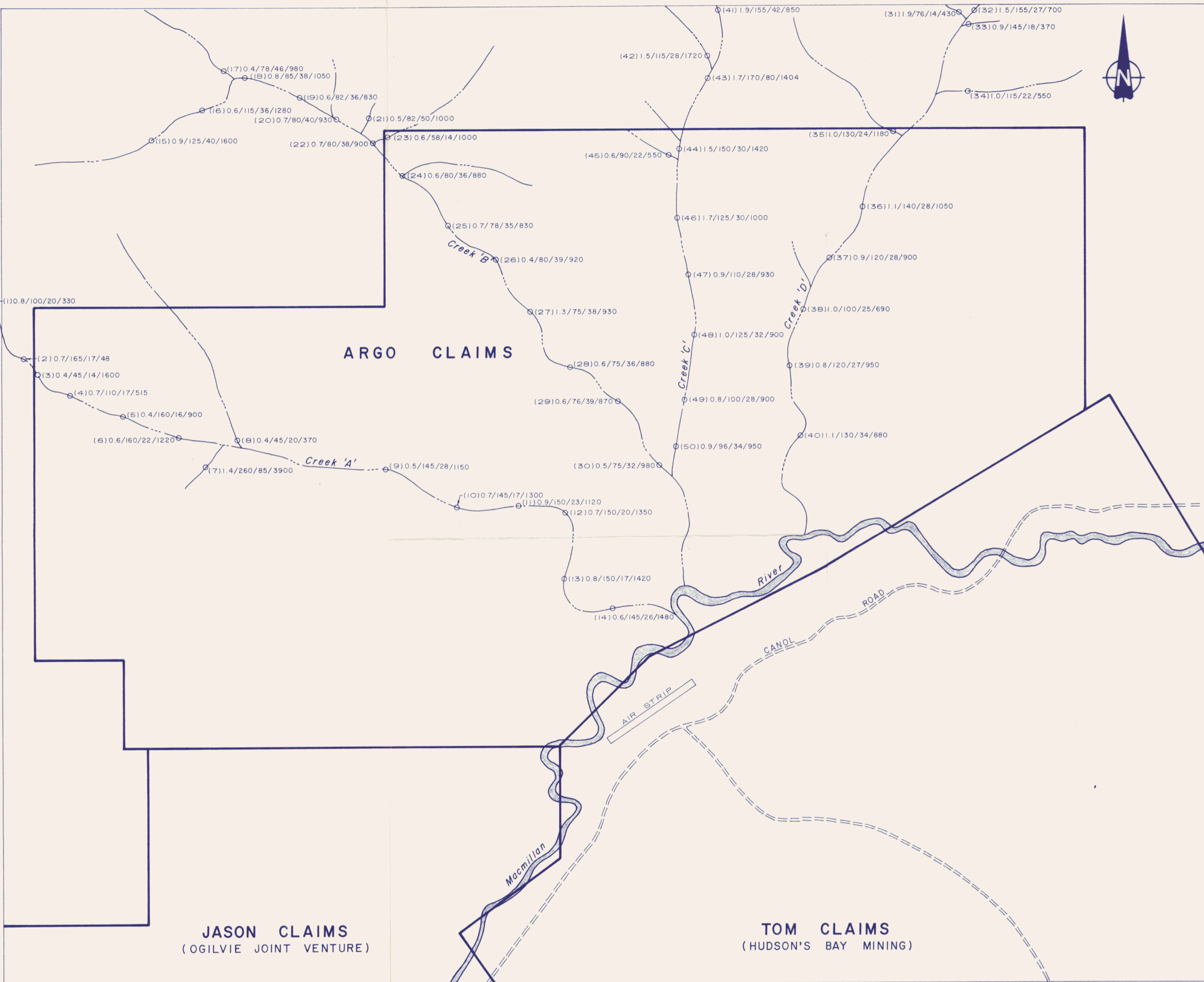
MACMILLAN PASS AREA - YUKON TERRITORY

**HIGHWOOD RESOURCES LTD.**

DATE: OCT., '77	BY: R.W.S.	SCALE: 1" = 1000'	N.T.S. 105 0/1
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**LEGEND**

-  SAMPLE LOCATION & NUMBER
-  0.4/45/14/1600  
Ag/Cu/Pb/Zn  
VALUES IN ppm
-  CLAIM BOUNDARY



**JASON CLAIMS**  
(OGILVIE JOINT VENTURE)

**TOM CLAIMS**  
(HUDSON'S BAY MINING)

<b>YUMACK SYNDICATE</b>				
<b>GEOCHEM</b>				
-ARGO CLAIM GROUP-				
MACMILLAN PASS AREA - YUKON TERRITORY				
<b>HIGHWOOD RESOURCES LTD.</b>				
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