



COMINCO LTD.

EXPLORATION  
N.T.S. 105-0-2

WESTERN DISTRICT

GEOLOGICAL ASSESSMENT  
REPORT ON THE  
KOBUK GROUP OF MINERAL CLAIMS

MACMILLAN PASS AREA  
YUKON TERRITORY

63° 13' NORTH  
130° 34' WEST

VANCOUVER, B.C.

M.S. TRAVIS

090210

This report has been prepared by the  
Geological Evaluation Unit and is recom-  
mended to the Department to be consid-  
ered as representing work that costed  
\$1600.00

*D.B. Craig*

~~Geological Engineer~~  
or  
~~Professional Engineer~~

Credited as presentation work under  
§ 2 of the Quartz Mining Act.

*E.R. Baxter*

E. R. BAXTER  
Supervising Mining Recorder

*for* \_\_\_\_\_  
of Yukon Territory



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COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

SUMMARY

The Kobuk group, consisting of 8 mineral claims is located in the MacMillan Pass area of the Yukon Territory, approximately 110 air miles northeast of the town of Ross River. Cominco Ltd. staked the Kobuk property in August, 1976, and owns 100% interest in all claims.

The property lies near the center of the geological province known as the Selwyn Basin. It is underlain by Ordovician to Mississippian sediments, largely of deep marine origin. The sediments are correlative with the Road River and Besa River Formations.

Structurally the area is characterized by large east-plunging folds with small normal faults occurring rarely. Locally, no thrust faulting was observed but regionally the area is marked by numerous thrust faults of widely varying displacements.

A program of geological mapping and prospecting was carried out on the Kobuk claims for part of the 1977 field season. Although no visible base metal showings were found, laterally equivalent stratigraphy to other economic deposits of the area was located on the Kobuk group.

INTRODUCTION

A. Property Description

The Kobuk group consists of 8 mineral claims, the particulars of which are as follows:-

<u>CLAIM</u>	<u>CLAIM NO.</u>	<u>STAKED BY:</u>	<u>DATE RECORDED</u>	<u>RECORDED HOLDER</u>
KOBUK 1	YA 6587	K.R. PRIDE	Sept. 3, 1976	COMINCO LTD.
KOBUK 2	YA 6588	" "	"	"
KOBUK 3	YA 6589	" "	"	"
" 4	YA 6590	" "	"	"
" 5	YA 6591	" "	"	"
" 6	YA 6592	" "	"	"
" 7	YA 6593	" "	"	"
" 8	YA 6594	" "	"	"

B. History

Interest in the MacMillan Pass area has been sporadic for the past 25 years since the discovery of the TOM orebody. In 1975 interest was again renewed in this area with the discovery of

the Jason deposit approximately 4 miles west of the TOM orebody. In 1976, Cominco staked the 8 KOBUK claims in this area. From June 17th to 19th, 1977, Cominco personnel carried out a prospecting and geological mapping program over these claims.

### C. Location and Access

Physiographically, the KOBUK group lies with the Hess Mountains of the Yukon Territory, approximately 110 miles northeast of the town of Ross River. It lies 25 miles ESE of Nidderly Lake and has coordinates of 63° 14' North and 130° 34' West. The property is located on claim sheet 105-0-2 and is situated in the Mayo Mining District.

Topographically, the area is one of high relief, the higher peaks reaching over 2000 meters (6500 feet) A.S.L. and the valley bottoms between 1000 and 1300 meters (3400 to 4200 feet) A.S.L. The KOBUK group, is located between 1200 and 1700 meters A.S.L. Access to the KOBUK group is by fixed wing to the MacMillan Pass airstrip and then 12 miles by helicopter to the property.

## GEOLOGY

### - Regional

The MacMillan Pass area is underlain by a sequence of sediments from Upper Proterozoic-Cambrian to Mississippian with minor interbedded volcanic rocks of Ordovician age. These rocks are intruded by numerous small quartz monzonite and granodiorite stocks of Cretaceous age.

The Upper Proterozoic-Cambrian rocks are predominately dark grey to brown and minor silty green slate with some areas of interbedded laminated slate and phyllite. This interbedded unit also contains minor bands of laminated siltstone and platy brown quartzitic sandstone. Locally a thick member of orange weathering dolomitic shale occurs which grades into quartzite to the east of MacMillan Pass.

The Cambrian and lower Ordovician section is exposed to the northeast and east of MacMillan Pass as dolomite and limestone of the Sekwi Formation and overlying black calcareous shales and black silty limestone (unnamed).

The Upper Ordovician and Silurian stratigraphy consists of platy silvery grey to tan weathering black graptolitic calcareous shale of the Road River Formation (or correlative Whittaker Fm.). Locally within the Road River Formation there are thin horizons containing dark green basic volcanic flows and associated greywackes.

Overlying the Road River Formation is a sequence of rhythmites, turbidites and deep marine clastic sediments belonging to the Imperial Group. The strata are correlative with the Besa River Formation and probably range in age from Upper Devonian to Mississippian.

Included in this sequence of rocks is a chert pebble and conglomerate, which is the main geological marker horizon used for

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mapping stratigraphy. Also a black carbonaceous and siliceous shale, which contains baritic and pyritic sections is found in this unit and is host for some of the basemetal deposits of the area.

These Paleozoic sediments are intruded by Cretaceous stocks of medium grained biotite-hornblende quartz monzonite and granodiorite.

#### - Local Geology

The KOBUK claims cover a sequence of rocks which are part of the Imperial Group. The oldest unit exposed on the property belongs to a combination rhythmite, siltstone and shale unit which directly overlies the chert pebble conglomerate marker horizon. This unit contains minor thin beds and lenses of chert pebble and chert granule conglomerate. It weathers typically reddish brown in the more silty sections and dark grey in the shales.

The unit has a well developed slaty cleavage which parallels the axial plane of the major folds in the area.

The next oldest rock unit has been called the Canol Formation (Blusson, 1976). This unit consists of black carbonaceous siliceous shale which typically weathers silvery-grey. This unit frequently contains bedded pyrite and/or disseminated, nodular and massive barite beds over a stratigraphic interval of up to 75 meters. The Canol Formation is also marked by local abrupt variations in thickness. Thickness in the MacMillan Pass area ranges between 30 and 1300 meters for this unit.

The youngest rocks exposed on the KOBUK claims are rhythmites, siltstones and shale of the upper Imperial Group. The rhythmites and siltstones are pyritic and commonly weather orange-brown. The shales are dark grey in colour, are thinly bedded and weather dark grey.

#### - Structural Geology

The KOBUK claims lie on the north limb of a large overturned syncline. The axial plane strikes approximately east and dips between  $45^{\circ}$  and  $60^{\circ}$  to the south. The fold is overturned to the south and plunges to the east.

Small scale folding is extremely extensive. Orientation of these folds varies greatly but some folds seem to be the result of parasitic drag folding around the large regional folds. These folds have a somewhat uniform orientation.

There are few normal faults in the area and only a small number are visible in outcrop. The observed faults around the KOBUK property were of small displacement and of widely varying orientations. Only one small fault, of questionable orientation, was located within the property boundaries. No evidence of thrust faulting was found on the property.

#### MINERALIZATION

Bedded pyrite was frequently visible in the lower part of unit 2a (see Plate 3). The baritic section rarely shows a positive reaction for secondary zinc but no zinc or lead sulphides were observed. The baritic horizons

4.

and the underlying black shale are host rocks for the large lead-zinc-silver deposits in the MacMillan Pass area. Mineralization in these deposits has been found to grade up to 16% combined lead-zinc with 2.0 oz of silver per ton.

CONCLUSIONS AND RECOMMENDATIONS

The geological evaluation of the KOBUK claims shows that stratigraphy that contains interesting sulphide deposits in the area is present on the property. Although no visible mineralization was found the property still remains potentially interesting and warrants further, more detailed work.

Report by: M.S. Travis  
M.S. TRAVIS,  
Geologist

Endorsed by: D.W. Heddle  
D.W. HEDDLE,  
Assistant Manager

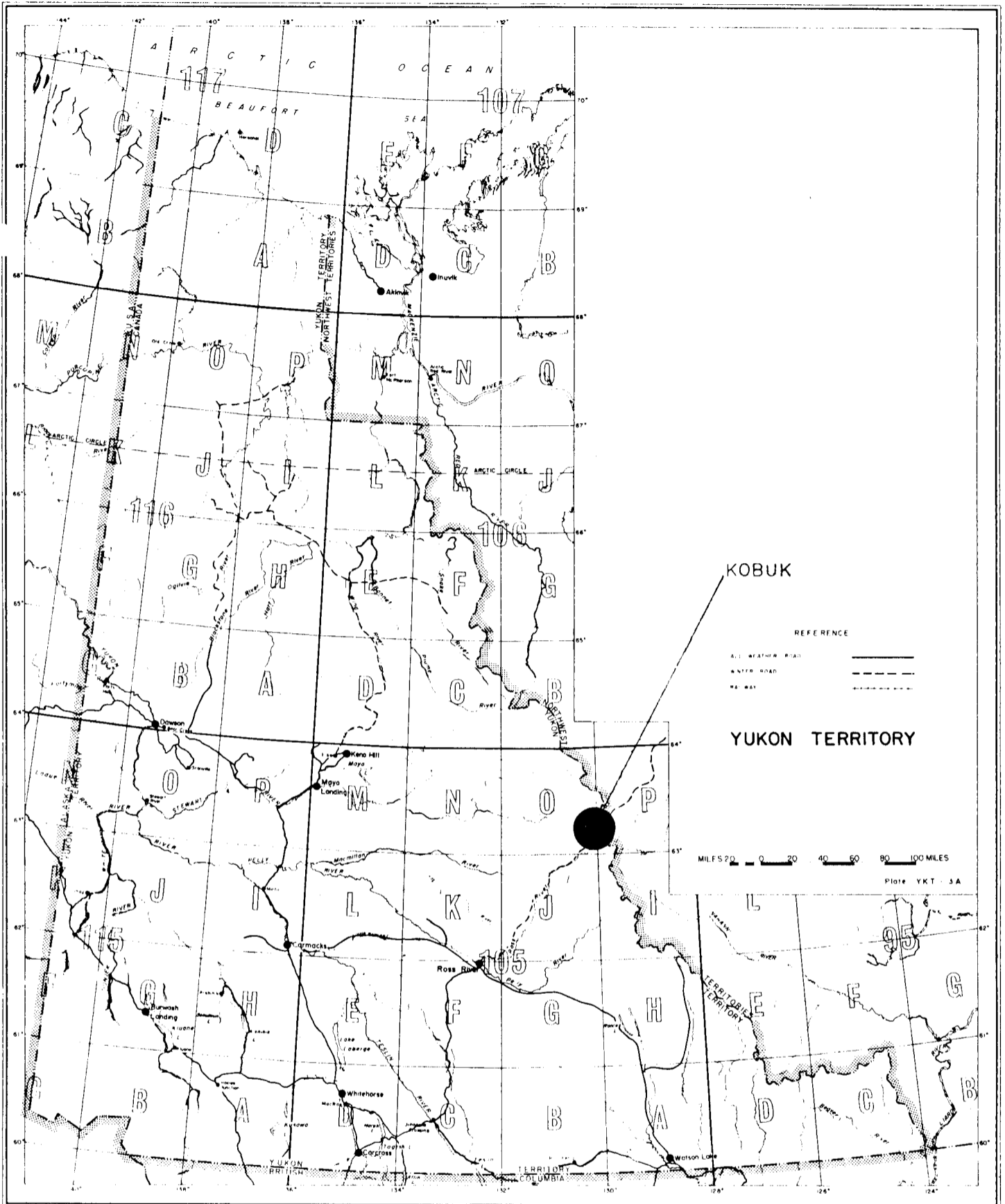
Approved for  
Release by: G. Harben  
G. HARBEN,  
Manager, Exploration  
Western District

MST/gk

Reference: Blusson, .SL.; Selwyn Basin, Yukon and District of MacKenzie; Geol. Surv. Can., Paper 76-1A, pp. 131-132

Distribution

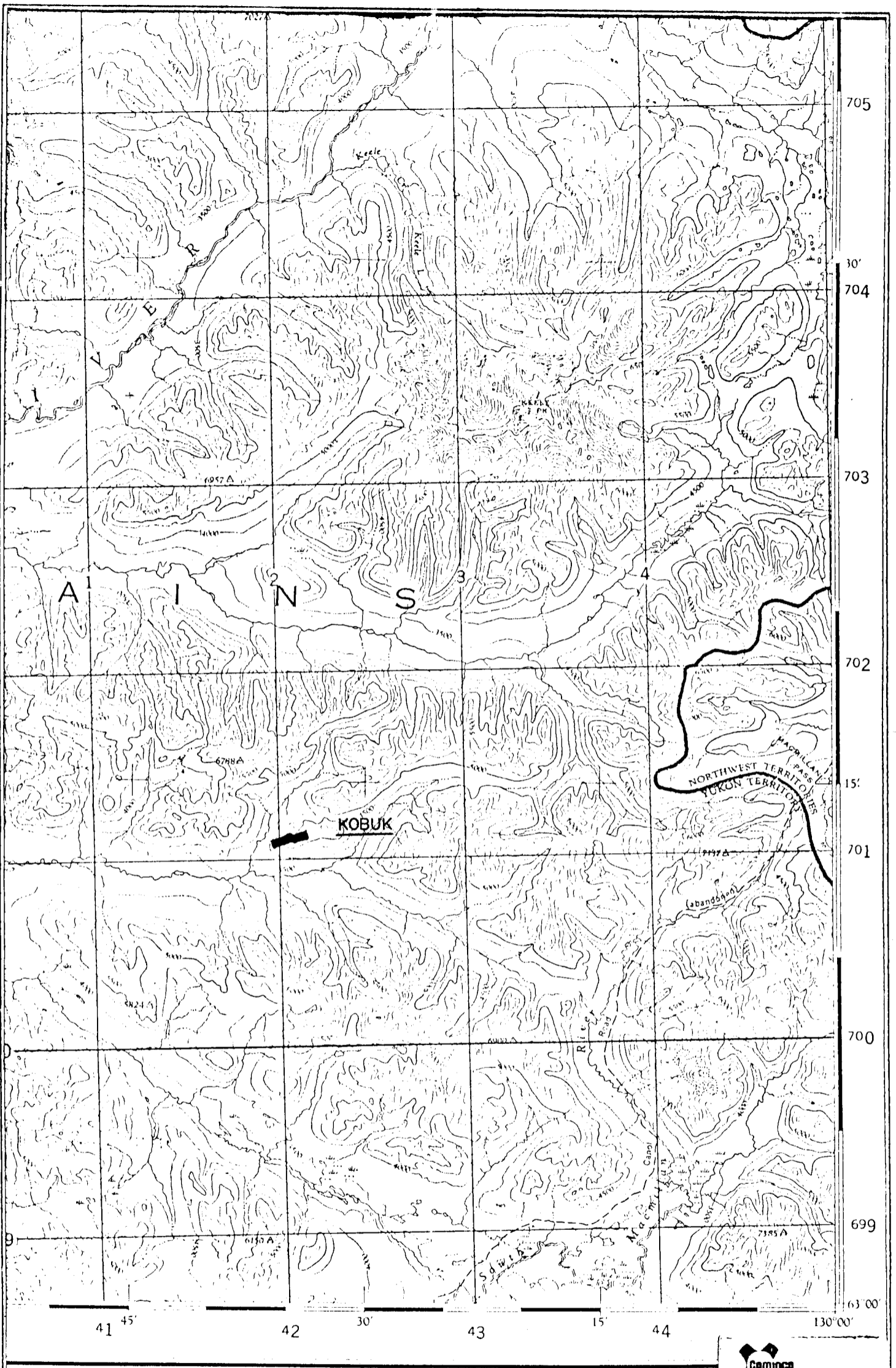
Mining Recorder (2)  
Admin.  
West. Dist.  
M.S.T.



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

## LOCATION MAP - KOBUK GROUP

Scale: 1" = 80 miles      Date:      Plate: 1



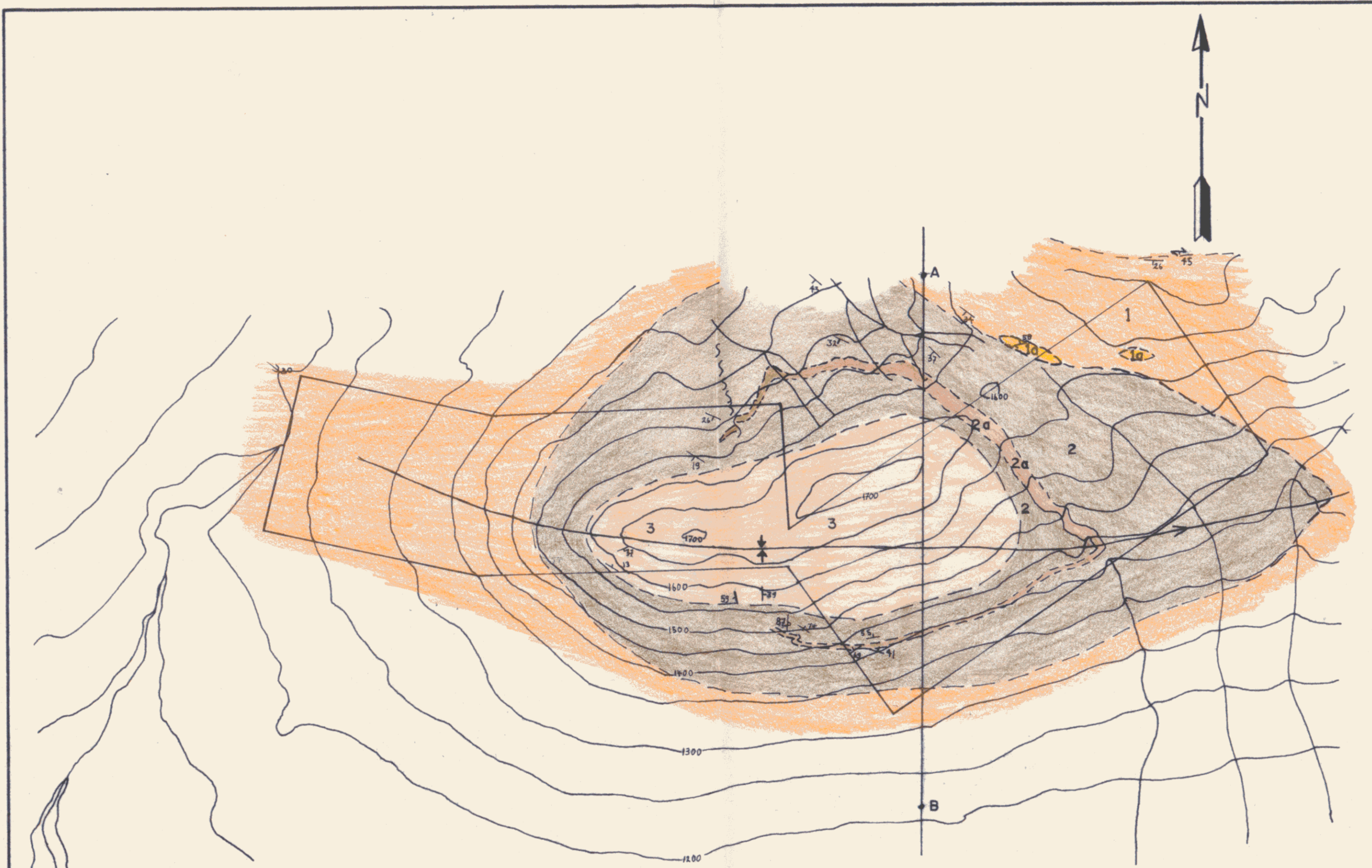
Contour interval 500 Feet  
 Elevation in Feet above Mean Sea Level

13  
 65°N  
**Cominco**  
 NTS 105-0-2

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

## LOCATION MAP-KOBUK GROUP

Scale: 1" = 4 miles      Date:      Plate: 2

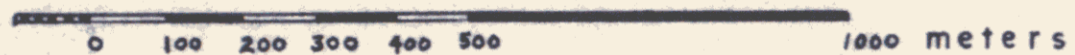


LEGEND

IMPERIAL GROUP

- 3** Shale and siltstone: grey-brown weathering, thickly laminated pyritic rhythmite  
Canol Formation
- 2** Shale - black, carbonaceous, siliceous; partly pyritic and/or baritic;  
2 a - massive, buff weathering, light grey barite.
- 1** Shale - silty, grey-brown weathering; 1a, minor intraformational chert-  
pebble conglomerate; shaly, pyritic mudstone.

SCALE



contour interval: 50 meters

N.T.S. 105-0-2



KOBUK GROUP

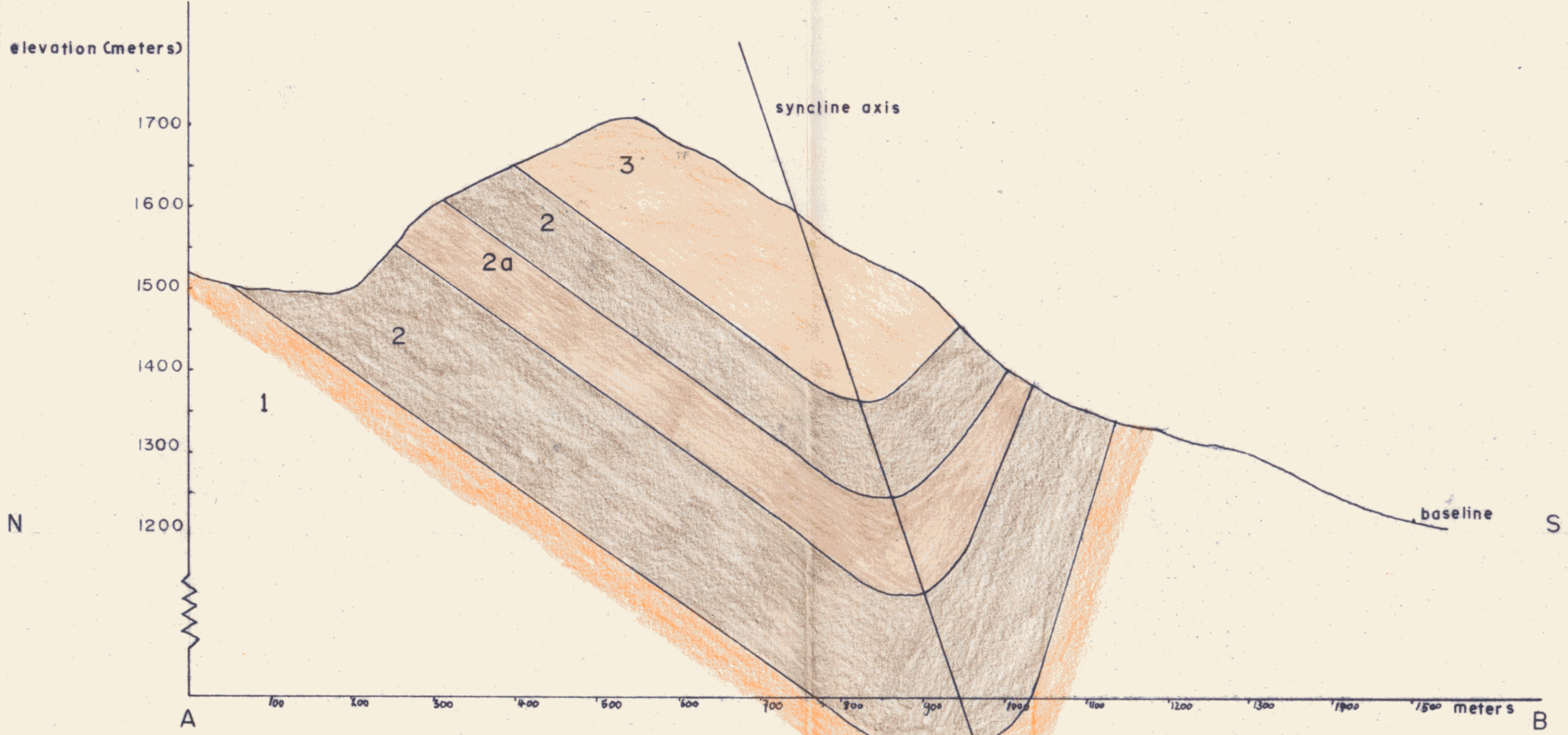
GEOLOGY

Drawn by: JJR	Traced by:
Revised by:    Date:	Revised by:    Date:

Scale: 1:10,000

Date:

Plate: 3

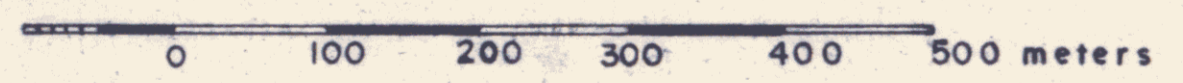


**LEGEND**

IMPERIAL GROUP

- 3** Shale and siltstone grey-brown weathering, thickly laminated pyritic rhythmite  
*Canol Formation*
- 2** Shale-black, carbonaceous, siliceous; partly pyritic and/or baritic;  
2a-massive, buff weathering, light grey barite.
- 1** Shale-silty, grey-brown weathering;  
1a-minor intraformational chert pebble conglomerate;  
shaly, pyritic mudstone.

**SCALE**



**KOBUK GROUP**



Drawn by: JJR		Traced by:	
Revised by	Date	Revised by	Date

**GEOLOGICAL CROSS-SECTION  
A-B**

Scale:                      Date:                      Plate: **4**

EXHIBIT "A"

GEOLOGICAL REPORT ON THE  
KOBUK GROUP OF MINERAL CLAIMS

situate at

63<sup>o</sup> 13' North Latitude  
130<sup>o</sup> 34' West Longitude

N.T.S. 105-0-2

SALARIES:

M.S. Travis	3 days @ \$100/day	\$ 300.00
M. Simpson	3 days @ \$80/day	240.00
W. Sikombe	3 days @ \$67/day	200.00

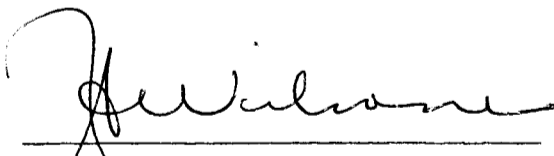
TRANSPORTATION:

Helicopter (2.7 hr @ \$363)	982.00
TOTAL:	<u>\$1,722.00</u>



M.S. Travis

THIS IS EXHIBIT "A" TO THE STATUTORY DECLARATION OF EXPENDITURES RELATING TO THE GEOLOGICAL SURVEY DECLARED BEFORE ME ON THE 13<sup>th</sup> DAY OF SEPTEMBER, 1977.



A NOTARY PUBLIC IN AND FOR  
THE PROVINCE OF BRITISH COLUMBIA.

