

APPENDIX "A" TO THE APPLICATION OF BOW RIVER RESOURCES LTD.  
AND NORTH AIR MINES LTD., EXECUTED ON 12TH JULY, 1974.

REPORT ON THE  
ROD AND AL CLAIM GROUPS  
OF  
BOW RIVER RESOURCES LTD.  
AND  
NORTHAIR MINES LTD.

by

E. D. Cruz, M.A.Sc., P. ENG

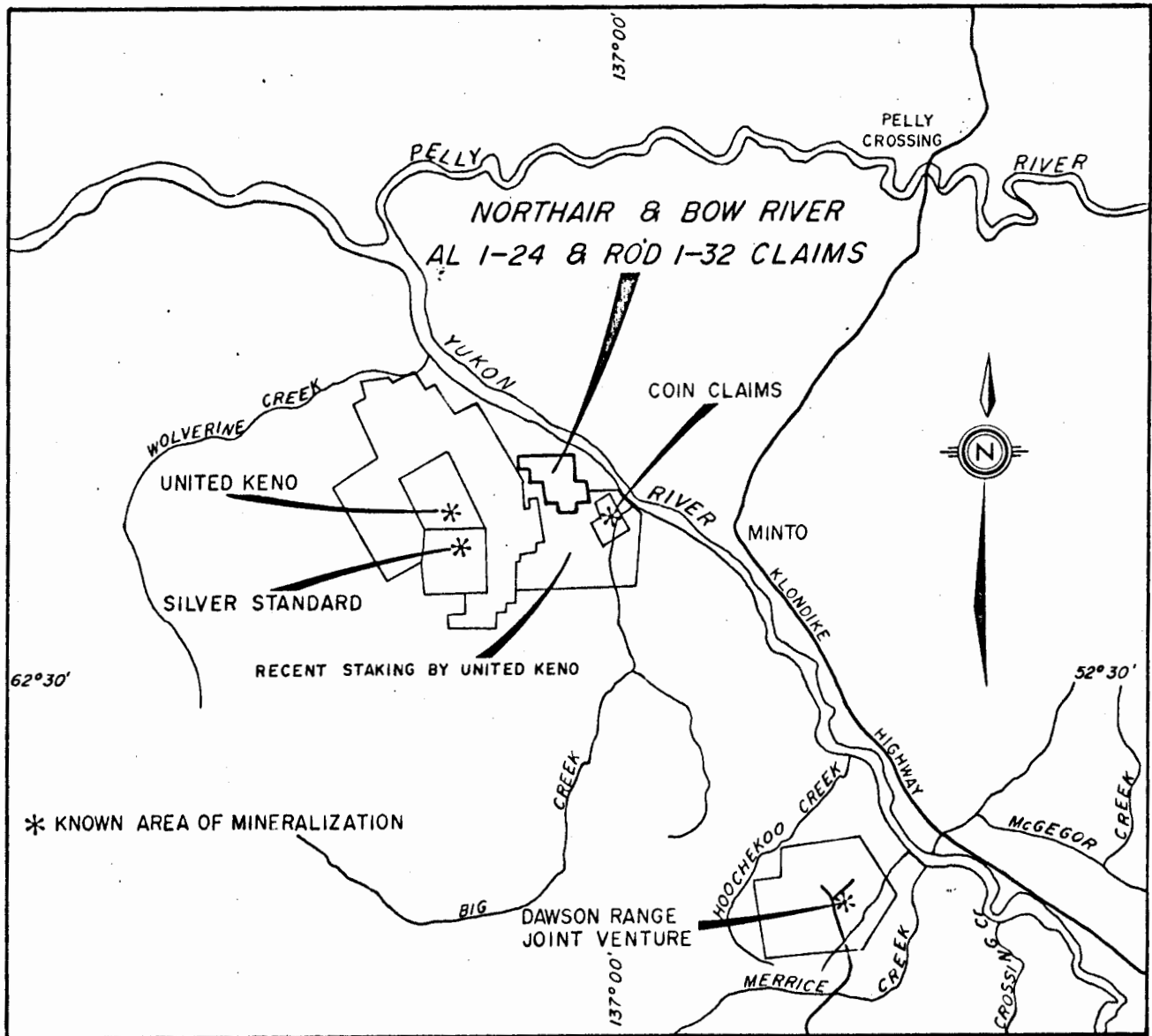
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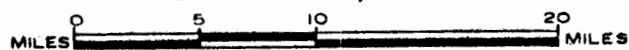
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N.M.E.A.P.  
Received Ottawa  
Oct. 10, 1974.



NORTHAIR MINES LTD. &  
BOW RIVER RESOURCES LTD.  
LOCATION MAP

SCALE: 1:500,000



E. CRUZ P. ENG.

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## INTRODUCTION

This report is an evaluation of the ROD and AL mineral claim groups based on geological, geochemical and geophysical information supplied by Bow River Resources Ltd. and from published government reports of the region.

The writer has not visited the property.

## LOCATION AND ACCESS

The claim groups lie immediately west of the Yukon River, about 8 miles northwest of Minto and 4 miles north-east of the recently discovered copper property of Silver Standard Mines in the Yukon Territory. Present access to the claims is by helicopter from Minto, the nearest road point along the Dawson-Whitehorse highway.

## PROPERTY

The ROD and AL claims shown on the attached claim location map are jointly owned by Bow River Resources Ltd. and Northair Mines Ltd. on a 50-50 participation. The property consists of 56 mineral claims recorded at Whitehorse, Yukon Territory, as follows:

<u>Claim Name</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Rod 1-32	Y66907 - 66938	August 11, 1974
Al 1-24	Y63624 - 63647	October 27, 1974

## PREVIOUS WORK

The initial geochemical and geological exploration program on the property was conducted by Archer, Cathro and Associates under the direction of A. Archer, P. ENG. The fieldwork was undertaken on July 8-12, 1972 on the AL claims and August 4-10, 1973 on the ROD claims. The program consisted of geological mapping and soil sampling on a 400' x 400' grid system.

From September 24 to October 3, 1973, S. Presunka conducted a program of magnetometer and VLF electromagnetometer surveying covering 9 lines varying from 400' to 1400' apart on the previously established geochemical grid. Interpretation of this survey by the writer and Glen E. White, consulting geophysicist, is discussed under the appropriate heading of this report.

## REGIONAL GEOLOGY

The recently discovered copper properties of Silver Standard Mines and United Keno Hill occur in a large batholithic mass of granodiorite to diorite in composition correlative with the Coast Range intrusive of probably Cretaceous age. The Rod and Al claims appear to lie on the eastern edge of the same batholith and about 4 miles northeast of Silver Standard claims. This batholith and other related satellite intrusives in the region, intrude older rocks, namely the Yukon group metasediments and the Mount Nansen group volcanics.

The Yukon group is a metamorphic complex of Pre-Cambrian age consisting of mica-quartz schist, graphite schist, quartzite, serpentine, gneiss and limestone members forming the basement sequence of the region. Mount Nansen volcanics of Cretaceous age are comprised of basalt, andesite and dacite flows, tuffs and breccias. This volcanic sequence forms a northwesterly trending belt along the Yukon River marking the northwestern continuity of the Teslin lineament, the major structural feature in the region.

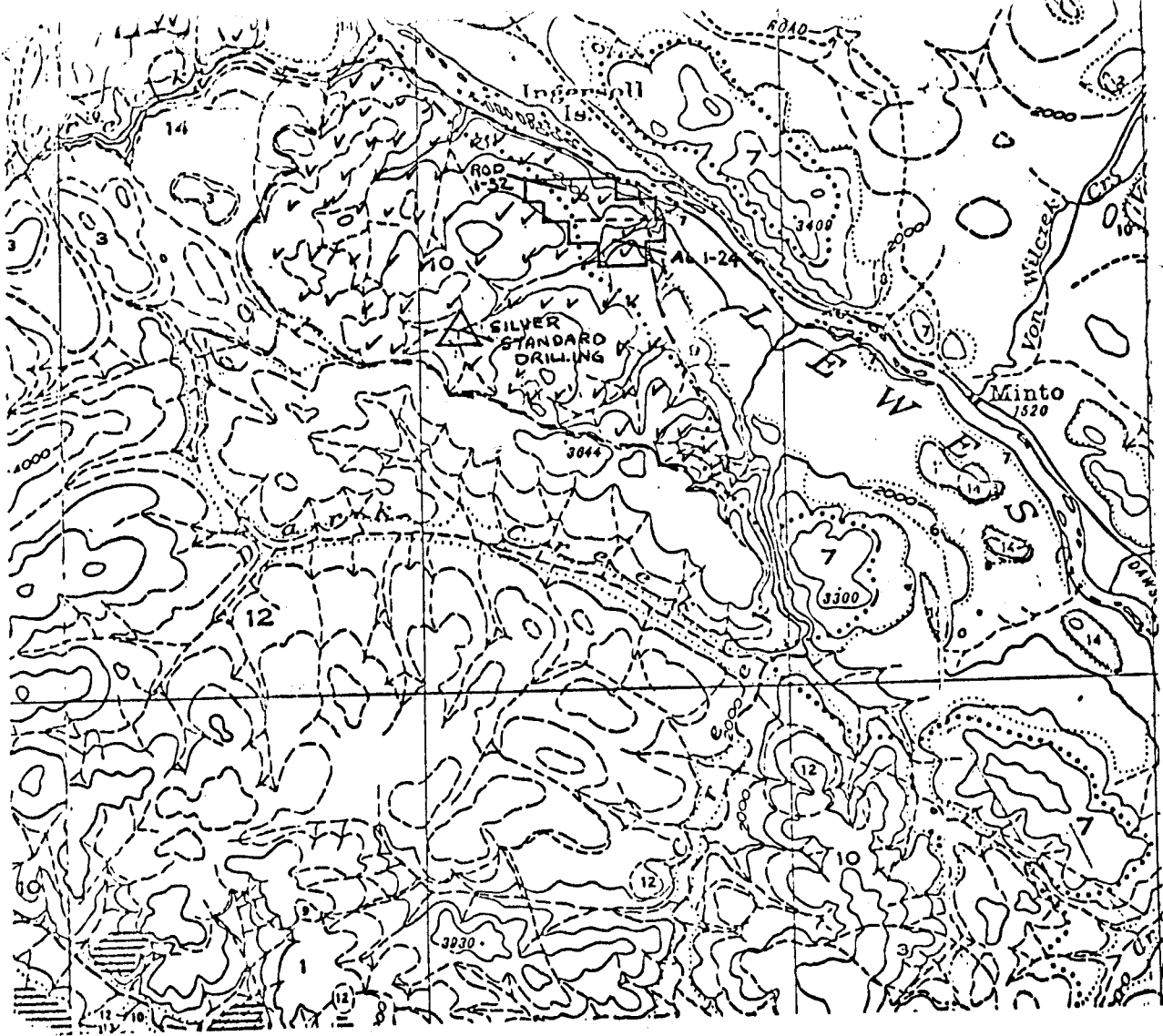
The above formations are capped by volcanics of Tertiary age.

## LOCAL GEOLOGY AND MINERALIZATION

The ROD and AL claim groups occupy an area on the eastern edge of the same batholithic mass that hosts the Silver Standard Mines and United Keno Hill ore zones. This batholith, measuring about twelve miles long and six miles wide is bounded on the east and southeast by Mount Nansen volcanics and capped by Tertiary and younger Carmacks volcanics and Selkirk series to the south and west.

Locally, scattered outcrops, accounting for less than one percent of the claim area, are reported to be intrusive rocks of granite to diorite in composition, exhibiting foliated texture. Predominant mafic minerals are biotite and hornblende.

No mineralized outcrop was reported on the property. Weak chloritic alteration and considerable hematite staining was reported by the previous investigator.



**TERTIARY**

- 14** SILKIRK SERIES : Basalt, andesite flows, breccias and tuffs.
- 12** CARMACKS VOLCANICS : Basalt, andesite, dacite and trachyte flows, breccias and tuffs.

**JURASSIC or LATER**

- 10** Granite, granodiorite and allied rock types.
- 9** Syenite, monzonite, and allied rock types.
- 7** Mt. NANSON GROUP : Basalt, andesite, and dacite flows, breccias and tuffs.

**TRIASSIC or OLDER**

- 3** Granite gneiss, diorite gneiss.
- 1** YUKON GROUP : Mica-quartz schist, some chlorite schist, graphite schist quartzite, serpentine, gneiss, limestone.

**GENERAL GEOLOGY MAP**

Adapted from : MAP 340A  
 GSC Memoir 189  
 by : H.S. Gostook 1936

SCALE : 1" = 4 MILES

*E.H.C.*  
 FEB. 10, 19

Mineralization in the nearby Silver Standard Mines and United Keno Hill properties occurs in gneissic zones and/or lenses within the main dioritic intrusive. The ore minerals are bornite, chalcopyrite and chalcocite with associated magnetite. Through oral communication with a Silver Standard Mines geologist, it was learned that the mineralized gneiss lenses are flat lying and are mainly blind ore zones. Geochemical soil sampling located the outcropping and near surface mineralizations which guided the initial drilling program. The ore zones were however found by drilling to underlie areas with relatively poor geochemical response. Induced polarization surveying was reportedly not successful in defining the mineralized zones. This may possibly be attributed to the characteristic occurrence of the ore zones which are flat lying lenses with limited vertical dimension.

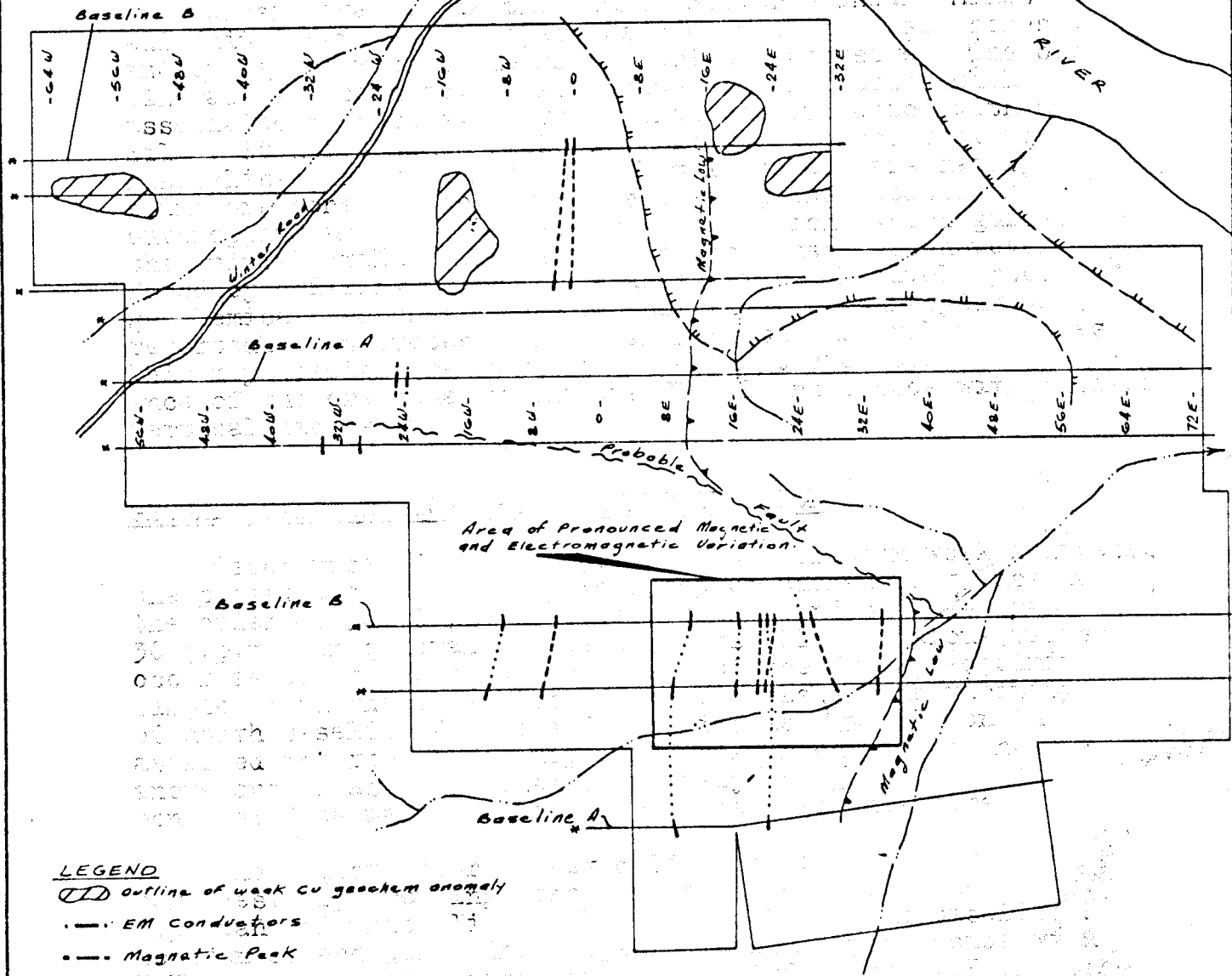
#### GEOCHEMICAL AND GEOPHYSICAL INTERPRETATION

Geochemical data from previous exploration work indicates the presence of relatively weak copper anomalous values in the order of 30-50 p.p.m. over a background of less than 30 p.p.m. In general, these geochemically anomalous values occur as point anomalies comprised of one or two adjoining samples with the exception of three areas in the vicinity of north baseline B on the ROD claims as outlined on the attached interpretation map. The weak intensity of these anomalous areas makes them relatively insignificant to be considered as major exploration targets at this time.

The magnetometer survey delimited several north to northwesterly trending zones of magnetic highs, the most important of which lie in the vicinity of south baseline B between 8E and 32E. This appears to roughly coincide with N-NW trending conductive zones indicated by the VLF electromagnetic survey. This area of pronounced magnetic and electromagnetic variation could be indicative of blind ore zones similar to the nearby Silver Standard copper property.

The government aeromagnetic map of the area showed that the nearby Coin claims, with known mineralization, and the ROD and AL claims, lie on the flank of a significant northwesterly trending magnetic high that roughly parallels the mineralized structural zone of the Silver Standard and United Keno Hill properties. This magnetic feature could be indicative of an important geological structure.

YUKON RIVER



- LEGEND**
- Outline of weak Cu geochem anomaly
  - EM Conductors
  - Magnetic Peak
  - Magnetic Low
  - Geophysical Survey Lines
  - Steep Bluff

**INTERPRETATION MAP**  
**BOW RIVER RESOURCES**  
**&**  
**NORTH AIR MINES LTD.**  
**ROD 1-32 & AL 1-24 CLAIMS**  
**MINTO AREA, YUKON**



CONCLUSION AND RECOMMENDATIONS

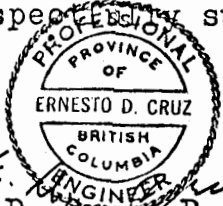
The ROD and AL claims of Bow River Resources Ltd. and Northair Mines Ltd. appear to lie on the edge of the same batholithic mass hosting the mineralized zones of Silver Standard Mines and United Hill copper discoveries in the Minto area. Similar to the nearby Coin claims with known mineralization, the property is on the flank of a significant northwesterly trending magnetic high that roughly parallels the mineralized structural zone of Silver Standard and United Keno Hill properties.

The initial geophysical survey data indicates an area of pronounced magnetic and electromagnetic variations trending N-NW. The magnetic highs in particular, which appear outstanding, warrant verification by diamond drilling. It is however suggested that closer spaced magnetometer surveying, with lines spaced 200 feet apart, should be undertaken as a guide in locating test holes. VLF electro-magnetometer surveying should also be undertaken to locate fault structures that may be related to mineralization.

RECOMMENDED PROGRAM

Grid layout - 8 miles @ \$75/mile.....	\$600.00
Magnetometer Survey - 8 miles @ \$65/mile.....	520.00
VLF Electromagnetometer Survey - 8 miles @ \$65/mile.....	520.00
Transportation.....	750.00
Helicopter.....	1,000.00
Food and Lodging (Survey Crew).....	200.00
Diamond Drilling - 800' @ \$15/foot.....	12,000.00
Transportation of Equipment.....	3,000.00
Engineering, reports, etc.....	2,000.00
Total.....	\$20,590.00

Respectfully submitted,

  
E. D. CRUZ, P. ENG.

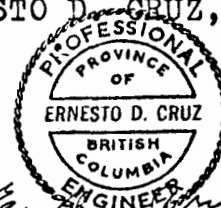
C E R T I F I C A T E

I, Ernesto D. Cruz, DO HEREBY CERTIFY AS FOLLOWS:

- (1) That I am a Consulting Mining Engineer and reside at 8596 Terrace Dr., Delta, B.C.
- (2) That I am a Graduate of Mapua Institute of Technology Phillipines (B.A.Sc.) and University of Washington (M.A.Sc.) in the Faculty of Mining Engineering.
- (3) That I am a registered P. ENG in the Association of Professional Engineers in the province of British Columbia.
- (4) That I have practised geological engineering for ten (10) years.
- (5) That this report consists of 5 typewritten pages.
- (6) That I have no interest directly or indirectly in the ROD or AL mineral claims or the securities of Bow River Resources Ltd. or Northair Mines Ltd. nor do I expect to receive or acquire any.

DATED at Vancouver, British Columbia, this 18th day of February, 1974.

ERNESTO D. CRUZ, P. ENG



Ernesto D. Cruz, P. ENG