## TAM PROJECT JOINT VENTURE

Varitech Resources Ltd. is seeking a partner for our option to earn a $50 \%$ interest in the TAM Project from Major General Resources Ltd.

The TAM Cu-Au-Ag property, located in northern B.C., contains the Boundary Deposit of 7.23 million tons averaging $0.55 \% \mathrm{Cu}$ and 0.12 opt Ag .

There are nine other anomalous zones on the property indicated by rock and soil geochemistry and geophysical surveys which should contribute significantly to the above tonnage figure.

The enclosed information package on the TAM property includes:
i) a geochemical assessment report from 1991 by E. McCrossan, (\#22.265)
ii) a property geology map,
iii) the Summary and Conclusions section of Colin V. Dyson's 1974 paper on the TAM - Boundary Deposit,
iv) a detailed anomaly compilation map of the Boundary Deposit (Figure 6),
v) a TAM property drill hole summary (Table 2),
vi) a summary of mineralized intervals for the Boundary Deposit (Table 3),
vii) Boundary Deposit cross sections (Figures 7 \& 8),
viii) the Recommendations section from P. Peto's 1991 report on the TAM property, and
ix) a compilation map for the entire property (Figure 5; 1:10,000).

Drill intersections at the Boundary Deposit include 585 ft . of $0.75 \%, 300 \mathrm{ft}$. of $0.37 \%$ and 191 ft . of $0.55 \% \mathrm{Cu}$. Rock samples from other locations on the property contain up to $3.83 \% \mathrm{Cu}, 0.029$ opt Au and 1.38 opt Ag.

Promising zones on the property that remain to be drill tested are the Upper Slide, Lower Slide, Creek, Ridge and Sam Zones. New footage could also be drilled at the Boundary Deposit. Finally, further ground work should be conducted over the remainder of the property to investigate the many other silt, soil, and rock geochemical anomalies.

We do not expect to retain a Net Smelter or Net Profit Interest and have composed a simple Cash Payments and Expenditures schedule as follows:

| Year | Payments | Expenditures | Interest Earned |
| :---: | :---: | :---: | :---: |
| 1992 | \$ 25,000 | 250,000 | 25\% |
| 1993 | 25,000 | 500,000 | 25\% |
| 1994 | 25,000 |  |  |
| 1995 | 25,000 |  |  |
| 1996 | 50,000 |  |  |
| 1997 | 50,000 |  |  |
| 1998 | 50,000 |  |  |
| 1999 | 50,000 |  |  |
| 2000 | 100,000 |  |  |
| 2001 | 100,000 |  | - |
|  | \$ 500,000 | 750,000 | 50\% |

Partial substitution of stock for cash would be considered.

If you have any questions or would like to view the detailed data call (604) 685-9700 or fax (604) 685-9744.

Sincerely,
VARITECH RESOURCES LTD.

Ed McCrossan F.G.A.C., P.Geo.


## UMEX

## UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED

REPORT ON A PRELIMINARY FEASIBILITY
AND FINANCIAL ANALYSIS OF THE
BOUNDARY DEPOSIT, TAM PROPERTY
IN BRITISH COLUMBIA

## Copay 7

 $x^{2} 2=4$by
Colin V. Dyson

REPORT ON A PRELIMINARY FEASIBILITY AND FINANCIAL ANALYSIS OF THE BOUNDARY DEPOSIT, TAM PROPERTY IN BRITISH COLUMBIA

## SUMMARY AND CONCLUSIONS

Diamond drilling of the Boundary Showing on the Tam Property in the 1973 and 1974 field seasons outlined a mineral deposit with probable ore reserves of $7,227,269$ tons averaging $0.55 \% \mathrm{Cu}$ and approximately 0.12 oz Ag per ton (or 784,800 tons averaging $1.19 \% \mathrm{Cu}, 0.23 \mathrm{oz} \mathrm{Ag}$ per ton). Feasibility and financial analysis of the deposit indicated that both conventional openpit mining of the entire deposit or of only the high-grade ( $+1 \%$ ) portions of the deposit is non-profitable ${ }^{2}$ and any such operation is non-viable under current economic conditions.

## INTRODUCTION

The Tam property is looated in north-central British Columbia, at a latitude and longltude of $55^{\circ} 59^{\prime}$ north, $125^{\circ} 30^{\prime}$ west, in the Omineca Mining Division (see Figure 1). Access to the property is by helicopter. The Omineca Mines Assessment Road from Fort St. James is located some twelve miles east of the property and a tote road that extends to the Lorraine Copper Deposit (Kennco) terminates some three miles to the south. The new northern extension of the B.C. Railway passes to within approximately 35 miles of the property and to the west. A total of 5434 feet of diamond drilling in ten holes has been completed on the Boundary Showing over the 1973 and 1974 field seasons.

## FEASIBILITY STUDY

Sufficient diamond drilling was completed to allow construction of three parallel cross-sections and a plan view of the deposit (see Figure 2). The mineralization occurs in and along near vertically dipping foliation - in a

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| DDR $\ddagger$ | LOCATION | LEHGTH MRTERS | Cu $\& /$ IhtBrval (I) | 1 POLIATSS | \% LSUCOSYK | \% MRSOSTM | SHOHING |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 72-1 | Off grid | - | 0.31/18.3 | 8.4 | - | - | cirque |
| 72-2 | Off Grid | 145.5 | <0.01 | 0 | - | - | cirque |
| 72-3 | Off grid | 146.8 | <0.01 | 0 | - | - | Pault |
| 72-1 | Off Grid | 161.8 | <0.01 | 0 | $\bullet$ | $\bullet$ | fault |
| 12-5 | Off Grid | 153.1 | 0.64/6.1 | 9.0 | - | - | Paolt |
| 73-1 | $0+00$ | 60.5 | 0.55/58.25 | 50.5 | B. 8 | 27.0 | Boundary |
| 73-2 | 0+611/0+6011 | 14.9 | 0.146/12.5 | 25.0 | 75.0 | - | Boundary |
| 74-3 | 2+258/2+404 | 85.1 | Ho Assays | 0 | 23.2 | 73.0 | Saba ck. |
| 74-4 | 3+408/0+25i | 91.5 | 0.2/2.13 | 0 | 41.0 | 59.0 | Miduay |
| 14-5 | ? | 60.4 | Ho Assays | 100.0 | - | - | Ho core |
| 74-6 | 0+00\%/0+858 | 208.1 | $0.75 / 178.4$ | 91.2 | 8.8 | - | Boundary |
| 74-7 | 0+501/1+008 | 206.7 | 0.37/91.5 | 82.8 | 11.1 | 6.6 | Boundary |
| 74-8 | 0+501/1+008 | 17.0 | 0.19/9.15 | 68.0 | 22.0 | 9.8 | Boundary |
| 74-9 | 0+854/14508 | 458.6 | 0.29/98.8 | 50.6 | 46.9 | 2.5 | Boundary |
| 74-10 | 0+45M/1+25s | 132.7 | <0.01/33.5 | 19.7 | 76.3 | 4.0 | Boundary |
| 74-11 | 4+108/0+808 | 182.1 | 0.16/18.3 | 60.0 | 40.0 | - | kidray |
| 74-12 | 5+358/17758 | 183.0 | 0.22/9.15 | 56.0 | 41.8 | 1.2 | Miduay |
| 74-13 | 0+00N/2+108 | 310.5 | 0.25/9.15 | 36.0 | 51.8 | 12.2 | Boundary |
| 74-14 | 0+001/0+608 | 206.6 | Spot Assays | 37.2 | 55.5 | 7.3 | Boundary |
| 75-15 | 1+75\%/1+008 | 212.8 | Spot Assays | 36.4 | 63.6 | - | Boundary |
| 75-16 | 5+75s/1+254 | 119.1 | 0.31/6 | 36.0 | 63.3 | 0.7 | slide |
| 75-17 | 0+505/0+3014 | 117.3 | 0.43/3.0 | 46.0 | 12.0 | 42.0 | no core |
| 75-18 | 2+55M/0+558 | 122.6 | Ho Assays | 16.8 | 26.8 | 40.6 | Boundary |
| 74-19 | $2+85 \pi / 0+458$ | 120.0 | 0.1/5.3 | 14.3 | 57.6 | 6.8 | Boundary |

TABLE 3
SUMMARY OF MINERALIZED INTERVALS-BOUNDARY DEPOSIT



zones tend to be contact - or fault - related disseminations and fracture fillings of chalcopyrite, K-spar and biotite with lesser bornite, chalcocite, malachite, azurite, magnetite, quartz, sericite and chlorite. As such, they belong to the potassic assemblage of porphyry alteration, with much lesser amounts of phyllic and argillic alteration and no propylitic assemblage. These deposits tend to be smaller, higher grade endo-porphyries compared to the larger, lower grade exo-porphyries at Mt. Milligan, and they have more modest geophysical and geochemical signatures.
4) Of the many geochemical copper-gold soil anomalies on the property, the most important are the Sam (BD), Creek (BC), Lower slide (SA) and Upper Slide (SB) prospects. Each of them occupy a surface area exceeding 50,000 square meters, with copper high's up to ore grades ( $0.2 \%$ Copper or higher) and sporadic gold values up to ore grades ( $0.01 \mathrm{oz} /$ ton gold or higher). The best gold values occur in the sam prospect, coincident with anomalous lead and molybdenum values, overlying leucosyenites rather than foliates, containing abundant quartz veinlets in bedrock and float.
5) Several geophysical techniques are useful in detecting buried mineralization in alkali porphyry systems but there is no rule of thumb as to which technique is the best. Induced polarization and resistivity surveys display anomalies of up to five times background in the Boundary, Midway and slide zones, but give poor responses of less than two times background in the Creek Ridge and sam prospects. Magnetic surveys show a moderate association of up to 2500 gamma highs with the Boundary, slide and Midway zones, but they show little relationship with the creek, Ridge and sam prospects. VLF-EM anomalies tend to trace faults and have only an indirect relationship to any mineralization related to faulting. The lack of a strong IP anomaly in a mineralized alkali endoporphyry zone is not negative because these systems tend to be low sulphide, laoking the pyrite halo typical of other exo-porphyry systems.
11.0 RECOMMENDATIONS (from $P$. Reto, 1991).

Several mineralized zones on the Tam property require further work, the most important of which are the Sam, Creek, Lower Slide and Upper slide. Other zones of lesser priority that should be explored further include the Boundary and Midway prospects, as well as the many anomalous rocks found north of Haha Creek.

A program of road building, backhoe trenching, diamond drilling and reverse oirculation drilling is proposed to further test the top priority zones. More reconnaissance prospecting, mapping, (including the assaying of old Umex samples for gold) and sampling are recommended to follow up on the anomalous rocks and to explore other areas of the claim group.

1) A two phase $\$ 308,467.00$ work program is recommended to test the porphyry copper-gold potential of the Tam property. phase 3 (continuing from the first two phases of work last year) calls for
$\$ 143,797.00$ to be spent from June to August. Phase 4 (which can overlap with Phase 3) will require $\$ 163,570.00$ in expenditures from July to October.
2) Phase 3 consists of co-operating with Findlay Forest Products on pushing a spur road along Haha Creek in May-June; building roads as far up the slide grid as possible for trenching and drilling, and accessing the Boundary grid for trenching and drilling if possible; trenching of the Boundary, Creek, Midway Sam, Lower slide and Upper slide prospects; assaying of old Umex rock, silt and soll samples for gold and for trace metals; prospecting to follow-up on anomalous samples and explore the property on a reconnaissance basis; and mapping and sampling to further define reconnaissance anomalies.
3) Phase 4 is comprised of 5000 feet of drilling in about 12 holes, RCH where road access is possible and DDH elsewhere, to test the Creek, Sam, Lower slide and Upper slide prospects; a formal budget, more detailed trenching, drilling and prospecting locations will be prepared prior to commencing phase 3.

## Phase 3 - Expenditure Estimate

Program: Property access road building; grid access road building; backhoe trenching on the Boundary, Creek, Midway, Sam, Lower slide and Upper slide prospects; reanalysing old Umex sample rejects (pulps) for gold; reconnaissance prospecting, mapping and sampling.

## Personnel:

Project Manager/Senior Geologist: 35 days x $\$ 350 /$ day
\$ 12,250.00
Field Assistants/Samplers:
2 men $x 35$ days $x \$ 200 /$ man/day $14,000.00$
Cook: 35 days $x \$ 200 /$ day 7,000.00
Prospector/Junior Geologist: 35 days $x$ \$275/day $9,625.00$
Supervision: 5 days $x \$ 350 /$ day $1,750.00$
Road Building: (Assuming cost sharing with Findlay Forest Products; estimate only)

15,000.00
Backhoe: (Including operator and fuel) $\$ 100 / \mathrm{hr} \times 250 \mathrm{hrs}+$ mobilization \& demobilization

28,000.00
Analyses: 500 samples $\mathrm{x} \$ 15 /$ sample 7,500.00
Camp \& Equipment Costs:
(Camp, generator, etc.) 8,000.00
Vehicle Rental: 35 days $x$ 2,500/day + fuel $\quad 2,00$
Communication:
1,000.00
Transportation: (airfares, expenses, mobllization \& demobilization, etc.)

6,000.00
Expediting:
4,000.00
Helicopter: 6 hrs x \$650/hr
3,900.00

| Food: 35 days $\times 6$ men $\times \$ 20 /$ day $/$ man | $4,200.00$ |
| :--- | ---: |
| Fuel: | $1,000.00$ |
| Report preparation and Drafting: | $5,000.00$ |
| Sub Total | $130,725.00$ |
| 10\% Contingency | $13,072.00$ |
| Total Estimated Expenditures | $\$ 143,797.00$ |

## Phase 4 - Expenditure Estimate

Program: 5,000 foot ( 1524 m ) drilling program to utilize reverse circulation drilling if road access is available and diamond drilling if helicopter support is required (estimate is based on road access availability).

## Personnel:

Sr. Gealogist/project Manager: 40 days $x \$ 350 /$ day $\$ 14,000.00$
Sampler: 30 days $x \$ 200 /$ day
Cook: 30 days $x \$ 200 /$ day 6,000.00

Supervision: 10 days $\mathbf{x} \$ 350 /$ day
6,000.00
3,500.00
Camp Equipment Costs:
Vehicle Rental \& Fuel:
Communication:
Expediting:
Transportation: (Mobilization \& Demobilization, Airfares, expenses, etc.)

7,000.00
2,500.00
1,000.00
3,500.00

Fuel:
6,000.00
Food: 7 men x 30 days $\times \$ 20 /$ man/day
1,000.00
4,200.00
Drilling: 5,000 ft. x $\$ 14 / \mathrm{ft}$.
70,000.00
Drill site Preparation and
Trenching: $100 \mathrm{hrs} \mathrm{x} \$ 100 / \mathrm{hr}$
Analyses: 600 samples $x$ \$15/sample
10,000.00
Report Preparation \& Drafting:
9,000.00
5,000.00

| Sub Total | $148,700.00$ |
| :--- | ---: |
| $10 \%$ Contingency | $14,870.00$ |
| Total Estimated Expenditures | $\$ 163,570.00$ |

(Note: diamond drilling utilizing helicopter support could add $\$ 60,000$ to $\$ 70,000$ to the Phase 4 estimate).

Total estimated expenditures: Phase 3 and Phase 4: \$307,367.00


[^0]:    $1_{\text {"Probable" }}$ ore is here defined to be ore for which tonnage and grade are computed partly from specific measurements and partly from projection for a reasonable distance on geologic evidence.
    2
    ${ }^{2}$ A financially sucessful operation is here defined to be one which shows a return on capital investment of at least 15\% (after taxes and all operating costs) over the life of the operation.

