THE BAGUIO MINERAL DISTRICT, A GIANT MULTI-EPISTEMIC CLUSTERED COPPER-GOLD SYSTEM

Tom Malihan (Exploration Manager, Benguet Corporation)
Nonny Ruelo (Consultant, Indophil Itogon Mineral Resources Inc.)

Telescoped porphyry copper system – diverse genetically related deposit styles

Geologic Resource /Potential = +40 Moz Au and +5 Mt Cu

GOLD million ounces (Moz)
Geologic Resource / Potential = +40 Moz Au and +5 Mt Cu

COPPER million tonnes (Mt)

- 5 Mt (98%)
- 0.10 Mt (2%)

Porphyry copper
Skarn

hosts 3 giant deposits

- Sto. Tomas II porphyry copper
  = +20 Moz Au eq
  ranked 14th largest in the world

- Acupan-Itogon epithermal vein/breccia
  = +17 Moz Au
  ranked 3rd and 6th largest in the world

- Antamok epithermal veins
  = +8.3 Moz Au

... more large copper/gold targets recently identified

31.5 million ounces gold produced

- Sto. Tomas II
  7.8 (24%)
- Acupan
  5.9 (19%)
- Antamok
  7.2 (23%)

2.6 million tonnes copper produced

- Sto. Tomas II
  2.14 (82%)
- Sto. Nina
  0.37 (14%)
- Thanksgiving
  0.04 (1%)
- Black Mt.
  0.02 (1%)

31.5 million ounces gold produced

- Ste. Nina
  1.3 (4%)
- Black Mt.
  0.2 (1%)
- Thanksgiving
  0.6 (2%)
- Atok-Kelly-Chico
  7.5 (6%)
- Baguio Gold
  0.7 (2%)
- S&S
  0.5 (17%)

rich mining history; once the country’s largest gold producer
Regional Geologic Evolution

The Baguio district geologically evolved from a marginal basin to an island arc since Eocene (50 Ma) times, with arc subduction polarity reversal from west to east in Early Miocene.
Transpressional zone developed along a releasing bend of the Philippine Fault.

Advanced Argillic Lithocap deposits were generated during active strike slip movement in the pre-eminent Philippine Fault zone.

**Mineralization styles**

Epithermal veins

**Major mines and deposits**

Padcal (Sto. Tomas II deposit) copper-gold mine

- Discovered by Philex in mid-1950s, copper production started in 1958 until today.
- 400 x 500 m and extends some 800 meters at depth.
- Original outcropping reserves were just 16 Mt @ 0.80 % Cu.

Antamok

- Once the largest single gold operation in the Philippines, produced 7 Moz Au.
- Grand Antamok Vein system – largest single gold deposit.
Antamok gold mine

Global resource at 52 Mt @ 5 g/t Au (8.3 Moz Au)

Gold mineralisation influenced by splay of the Philippine Fault

Focused fluid flow along A. dilational sinistral fault jogs and E-W tension gashes

STRUCTURAL MODEL

Acupan gold mine

Total pre-mine resource: 65 Mt @ 4.50 g/t Au (9.43 Moz Au)

Produced 21.7 Mt @ 9.25 g/t Au (5.9 Moz Au)

- Epithermal vein/breccia/stockwork style, selective and bulk-mined underground, produced 5.5 Moz Au in 1906-1992
- Substantial vein and bulk mineable remaining gold resource

Acupan conceptual model

Acupan gold mine

Balatoc diatreme breccia

BLOCK DIAGRAM OF THE BALATOC DIATREME
Itogon gold mine
Eastern extensions of Acupan vein system; produced 1.5 Moz Au

Sto. Nino copper-gold mine
discovered in 1974
Southwatt orebody
125 Mt @ 0.34% Cu + 0.26 g/t Au
Ullman orebody
36 Mt @ 0.34% Cu + 0.33 g/t Au

Thanksgiving gold/base-metal mine
• once the 3rd largest gold producer; mined UG in 1957-1987
• also mined for zinc (10% Zn), silver (40 g/t Ag), copper (0.45% Cu) and iron
• produced 0.412 Moz gold averaging 12.8 g/t Au
• Zn-rich gold skarn (pods/lenses, veins & disseminations)
• hosted in limestone, abuts porphyry copper deposit (Black Mountain)

Acupan – Itogon gold mines
• One single epithermal vein/breccia stockwork gold system
  3 km long, 2 km wide, and 600 m vertical (still open at depth)
• World-class global resource (17 Moz contained Au)
• Produced 7 Moz Au in the past (1906 – 1996)

Sto. Nino copper-gold mine
Southwest orebody
125 Mt @ 0.34% Cu + 0.26 g/t Au
Ullman orebody
38 Mt @ 0.34% Cu + 0.33 g/t Au

Black Mountain copper-gold mine
• discovered in 1966
• 2 orebodies, mined UG 1969-1983 (14 Mt @ 0.40% Cu + 0.38 g/t Au)
• Total known resource of 65 Mt @ 0.40% Cu + 0.38 g/t Au

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Wildcat copper deposit
• discovered in 1968
• concealed massive sulphide (chalcopyrite)
• conglomerate-hosted
• Mid-Miocene?
• Zn-rich gold veins
• Mined in 1970-1977 (1.46 Mt @ 2.24% Cu)
Challenges and Issues

Artisanal Miners
Traditional small-scale miners are deeply entrenched - livelihood
- about 7,000 grouped in about 70 small-scale mining associations

Public Perception and Social Acceptability
- mining in general
- "sins of the past"
- challenges to gain the speedy acceptance of a mining operation

Geologic hazards
- earthquakes
- landslides

Good CSR initiatives
- social & economic benefits
- IP rights

Opportunities

Why the Baguio district?
- good location / excellent infrastructure
- proven gold/copper producing brownfields
- favourable geological setting for telescoped / clustered deposit styles
- substantial known undeveloped gold/copper resources / for re-development
- new quality mineralization finds remain untested by drilling
- excellent potential for further new discoveries

Maraming Salamat po