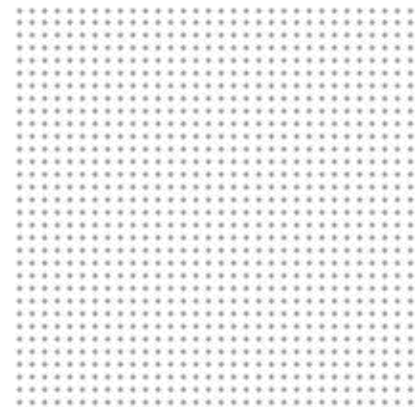
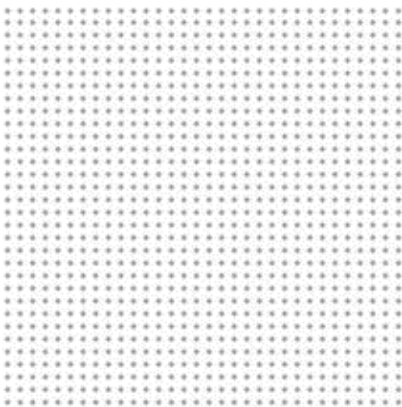


# Discovering ounces in PNG

Bernard Kavanamur  
**PNG Mining and Petroleum Conference**  
**25 November 2015**



# Disclosure and Competent Person statement



## Private Securities Litigation Reform Act Safe Harbour Statement

This presentation contains forward-looking statements within the meaning of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended, with respect to our financial condition, results of operations, business strategies, operating efficiencies, competitive positions, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters. These include all statements other than statements of historical fact, including, without limitation, any statements preceded by, followed by, or that include the words “targets”, “believes”, “expects”, “aims”, “intends”, “will”, “may”, “anticipates”, “would”, “should”, “could”, “estimates”, “forecast”, “predict”, “continue” or similar expressions or the negative thereof.

These forward-looking statements, including, among others, those relating to our future business prospects, revenues and income, wherever they may occur in this report and the exhibits to this report, are essentially estimates reflecting the best judgment of our senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. As a consequence, these forward-looking statements should be considered in light of various important factors, including those set forth in this presentation. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation: overall economic and business conditions in South Africa, Papua New Guinea, Australia and elsewhere, estimates of future earnings, and the sensitivity of earnings to the gold and other metals prices, estimates of future gold and other metals production and sales, estimates of future cash costs, estimates of future cash flows, and the sensitivity of cash flows to the gold and other metals prices, statements regarding future debt repayments, estimates of future capital expenditures, the success of our business strategy, development activities and other initiatives, estimates of reserves statements regarding future exploration results and the replacement of reserves, the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, fluctuations in the market price of gold, the occurrence of hazards associated with underground and surface gold mining, the occurrence of labor disruptions, power cost increases as well as power stoppages, fluctuations and usage constraints, supply chain shortages and increases in the prices of production imports, availability, terms and deployment of capital, changes in government regulation, particularly mining rights and environmental regulation, fluctuations in exchange rates, the adequacy of the Group’s insurance coverage and socio-economic or political instability in South Africa and Papua New Guinea and other countries in which we operate.

For a more detailed discussion of such risks and other factors (such as availability of credit or other sources of financing), see the Company’s latest Integrated Annual Report and Form 20-F which is on file with the Securities and Exchange Commission, as well as the Company’s other Securities and Exchange Commission filings. The Company undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this presentation or to reflect the occurrence of unanticipated events, except as required by law.

## Competent Person Statement

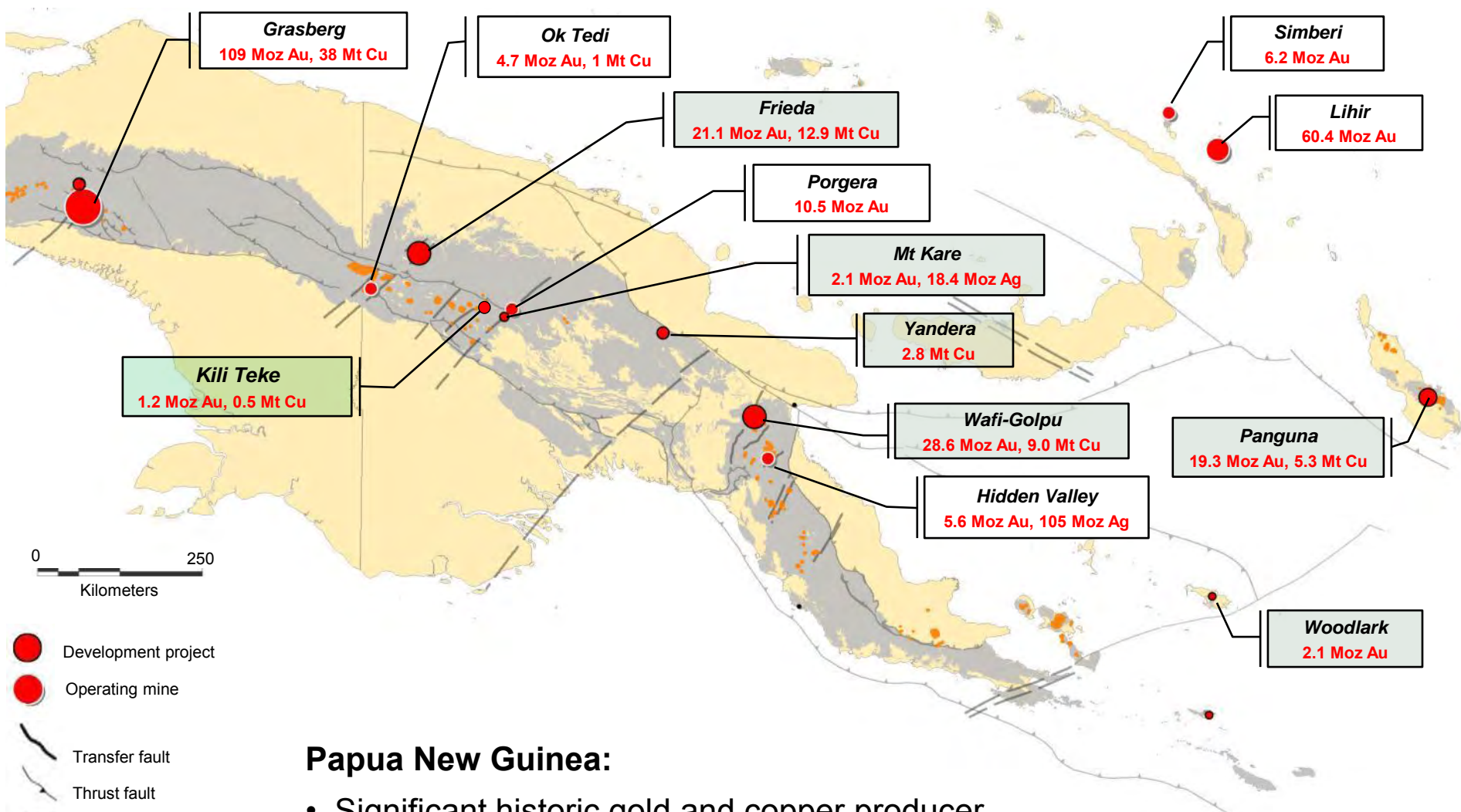
The information in the presentation that relates to Exploration Results was compiled by Mike Humphries. Mr Humphries is a full time employee of Harmony Gold Mining Company Limited. Mr Humphries is a member of the Australian Institute of Geologists and has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “JORC Code” and SAMREC. Mr Humphries consents to the inclusion in this presentation of the matters based on this information in the form and context in which they appear.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Greg Job. Mr Job is a full time employee of Harmony and a member of the Australasian Institute of Mining and Metallurgy. Mr Job has sufficient experience that is relevant to the styles of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in 2012 Edition of the ‘Australasian Code for Reporting of Exploration Reports, Mineral Resources and Ore Reserves’ and SAMREC. Mr Job consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

- 1** Exploration overview
- 2** Kili Teke – EL2310
- 3** Conclusion

1000 ppm Cu  
1000 ppm Cu

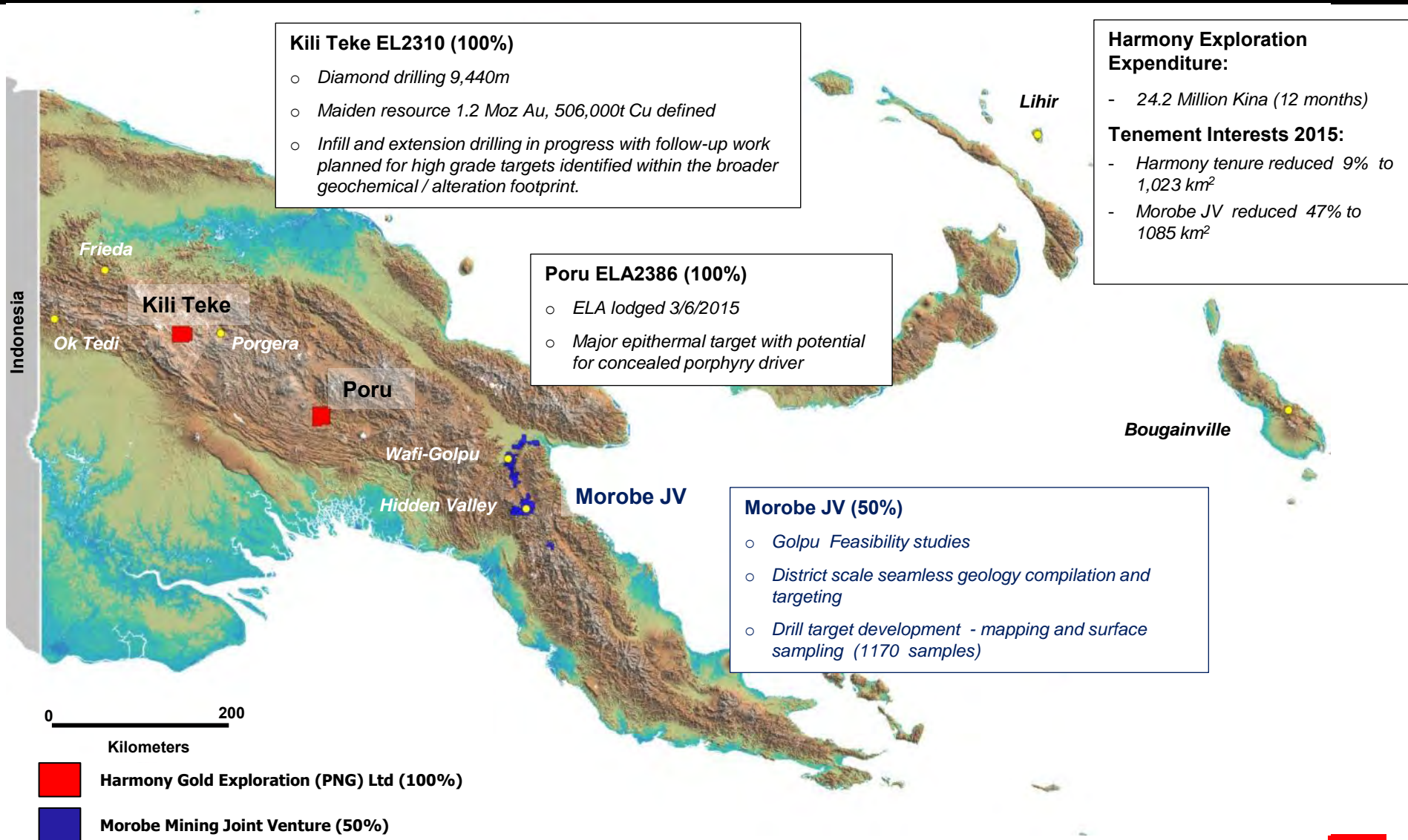
# PNG is an exceptional copper-gold country



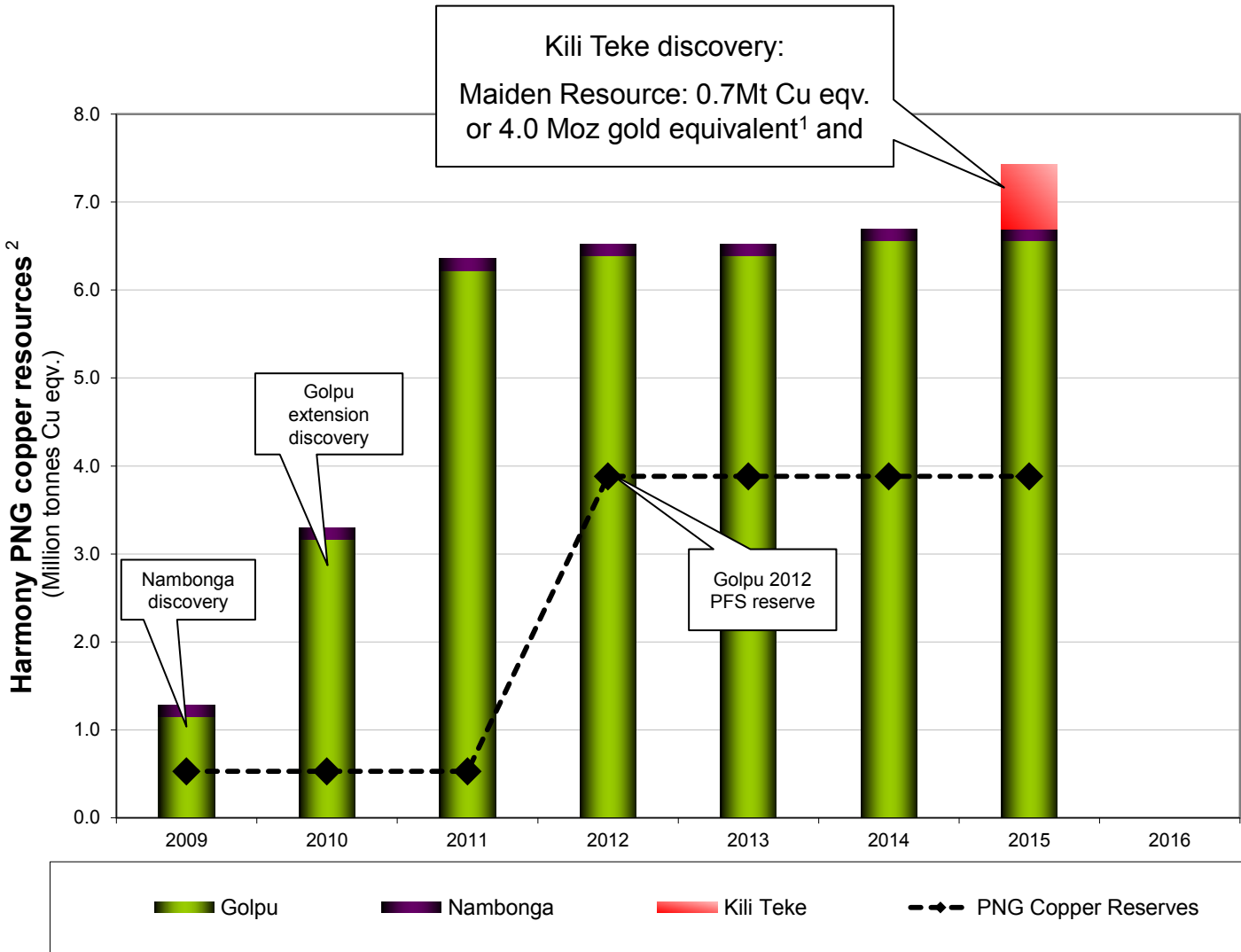
## Papua New Guinea:

- Significant historic gold and copper producer
- In excess of 30 Mt Cu and 73 Moz Au in development pipeline

# Harmony PNG exploration portfolio 2015



# Discovering mines in PNG



- Development of new high margin Cu-Au resources to replace depletion
- Value accretive at excellent discovery cost: < \$10 per oz of gold equivalent<sup>1</sup>
- Diversification:
  - Commodity
  - Geographic

<sup>1</sup> Copper equivalent based on US\$1200/oz Au, US\$3.00/lb Cu, with 100% recovery for all metals.  
<sup>2</sup> Harmony 50% equity tonnes held in MMJV and 100% owned Kili Teke project 2015.

- 51 employees
  - 92% PNG national
- 28 permanent staff:
  - Geologists, environment, community affairs, safety, logistics professionals
- Operational hub at Mt Hagen
  - Morobe JV (50%)
  - Hela Province (100%)
- Flow-on work:
  - Helicopter
  - Drilling
  - Assay
  - Construction contractors



# Safety is our top priority

- Training in systems awareness and embed foundation health and safety tools
  - job safety environment analysis utilisation
  - emergency management systems and communication protocol
  - hazard identification / risk assessment and closing out corrective actions fully
- Management of high risk activities
  - helicopter slinging, vehicle operation, tree felling, isolated field work, working at heights
  - ensure critical controls in place and verification of competency and currency
- Initiatives
  - safety visits
  - debrief sessions on helicopter rig moves
  - hazard hunts and reporting





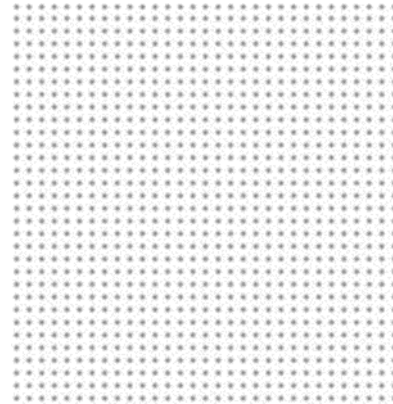
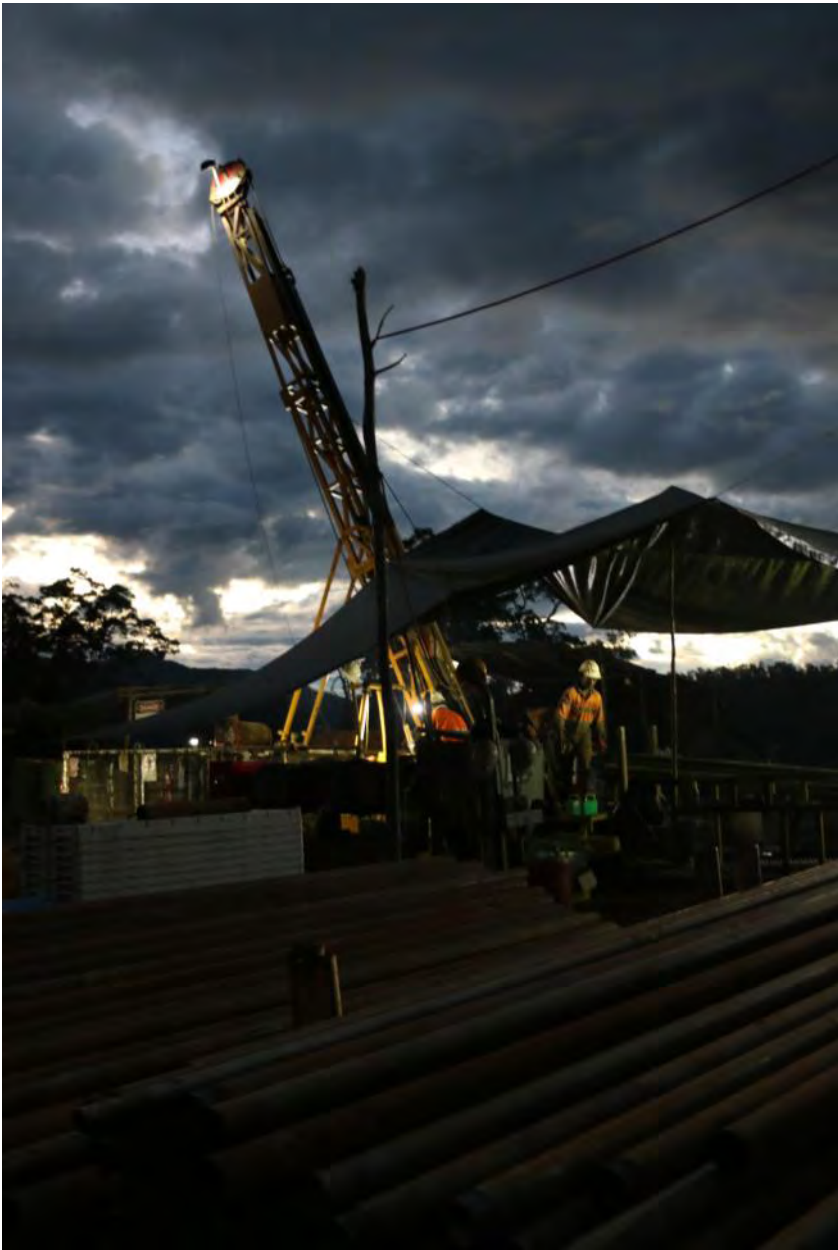


- Established community affairs guideline
  - structured engagement process
  - preliminary social mapping
  - community engagement and compensation agreements
- Community projects
  - Community meeting hall and water supply completed
  - Health & police patrols
  - Elementary school support
  - Medivacs
- Local labour/ employment

## Environment

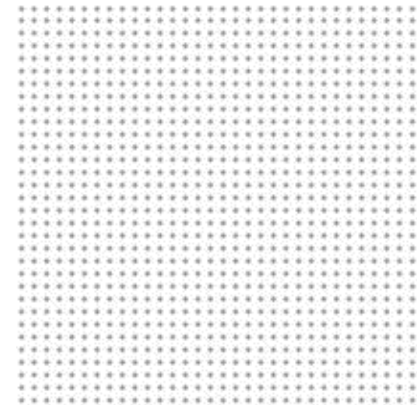
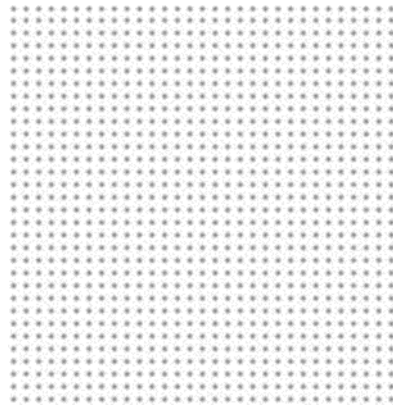
- Water quality - sensitive topic with local communities
- Dedicated environment officer
- Baseline watercourse sampling regime
- Environmental database
- Rehabilitation of cleared areas
- Permit compliance



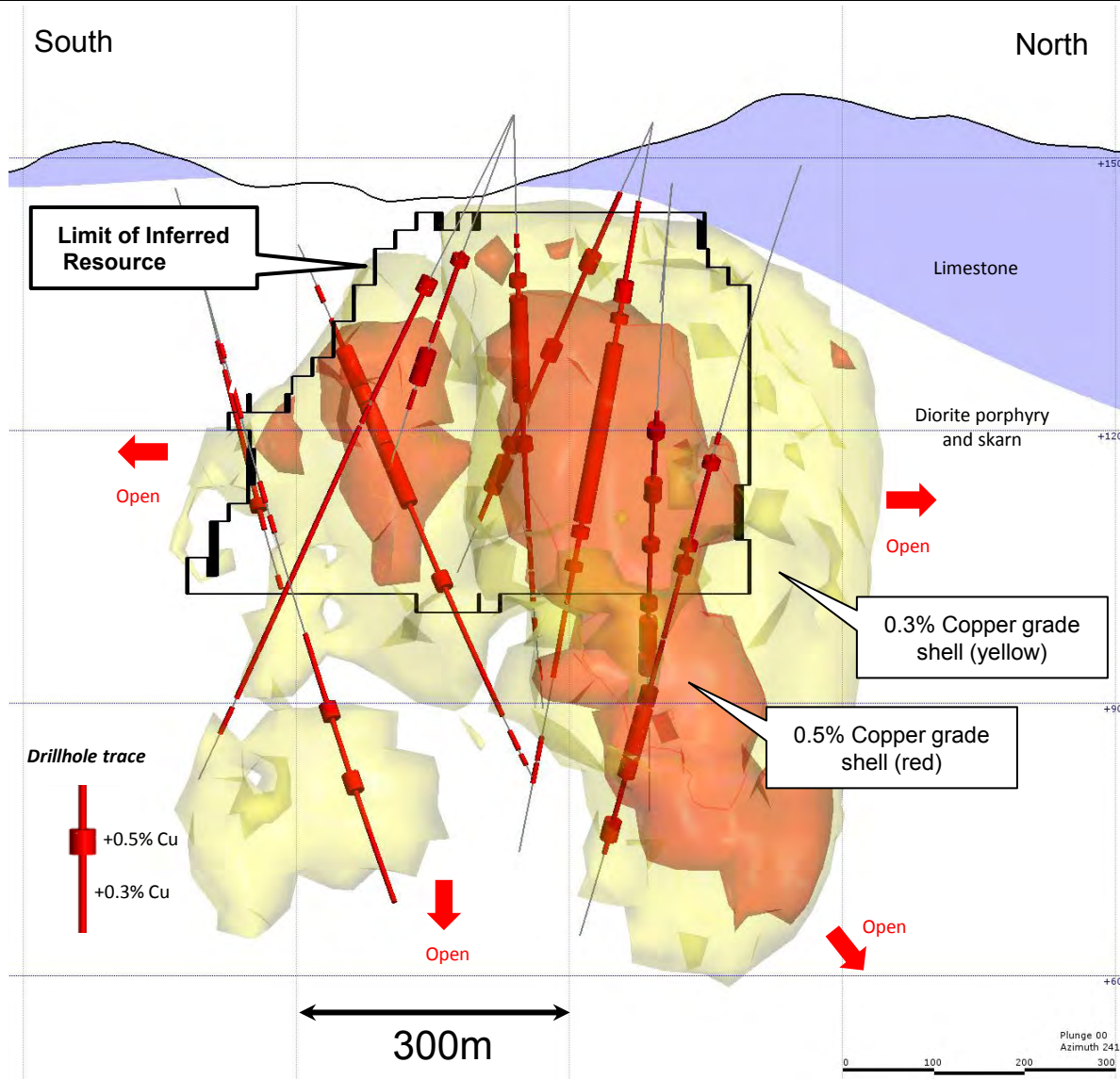


# **KILI TEKE**

## **RESOURCE AND DRILLING UPDATE**



# Inferred resource – schematic long section

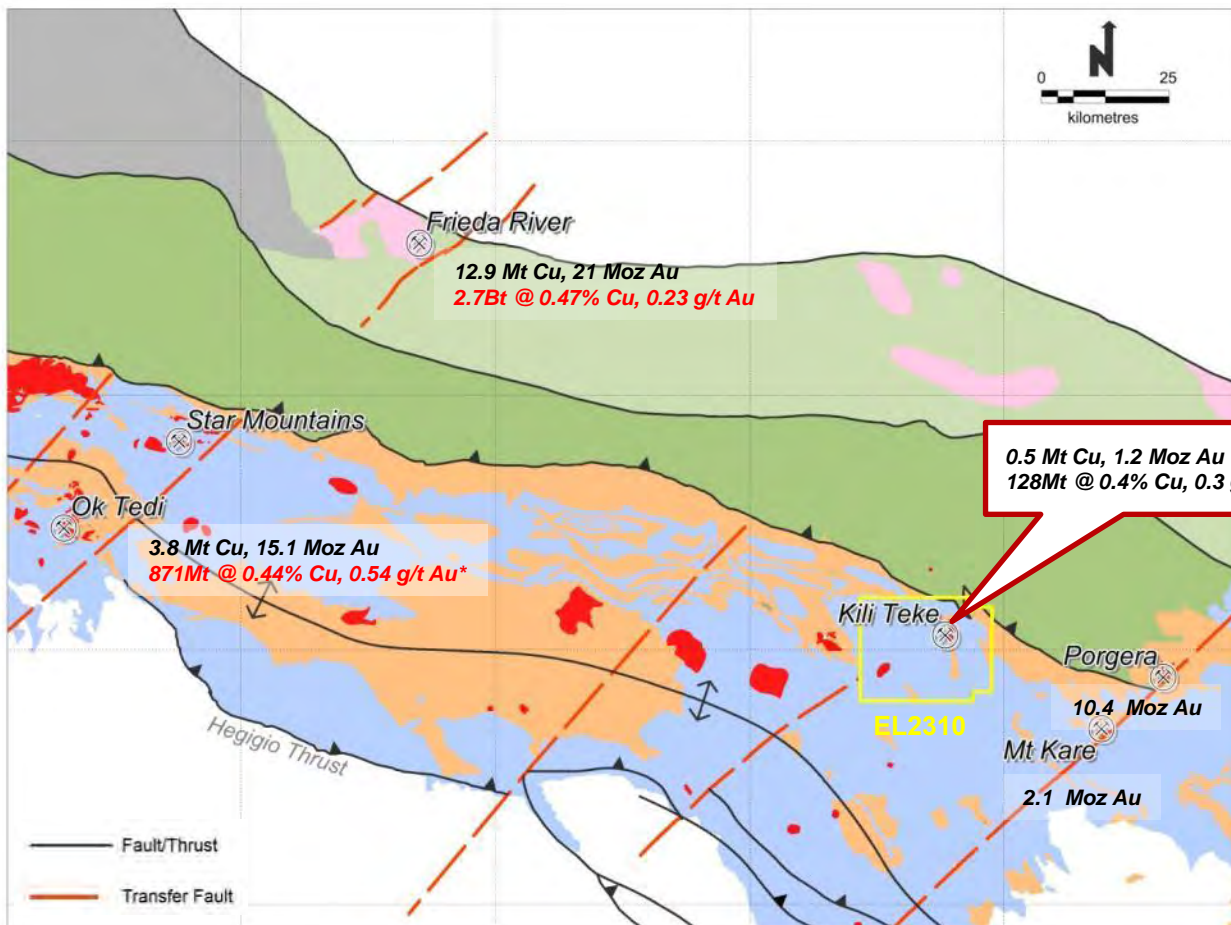


- **Maiden 4 Moz Au eqv<sup>1</sup> Resource**
  - 128 Mt @ 0.4% Cu, 0.3 g/t Au, 170 ppm Mo
  - 506 Kt Cu, 1.2 Moz Au
- **Inferred resource is a portion of the overall mineralised zone defined to date:**
  - 600m long, 300m wide, 400m deep
  - Constrained to above 1000RL
- **Mineralisation remains open and drilling continues**
  - Along strike to the north (under limestone cover) and south
  - Extension at depth

<sup>1</sup> Copper equivalent based on US\$1200/oz Au, US\$3.00/lb Cu, with 100% recovery for all metals.

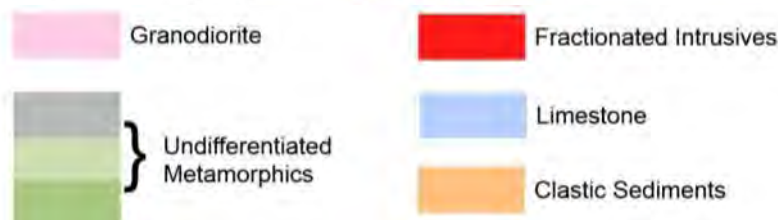
## Papuan Fold Belt

- Recognised world class metallogenic belt for copper and gold
- Large, long life deposits:
  - Ok Tedi (Cu-Au),
  - Porgera (Au)
  - Grasberg (Cu-Au)
- Favourable geological setting:
  - reactive host rocks
  - multiphase intrusive complexes
  - northeast transfer structures
  - widespread alteration footprint with accompanying high order geochemical Cu-Au anomalies
  - porphyry Cu-Au and Cu-Au skarn mineralisation styles

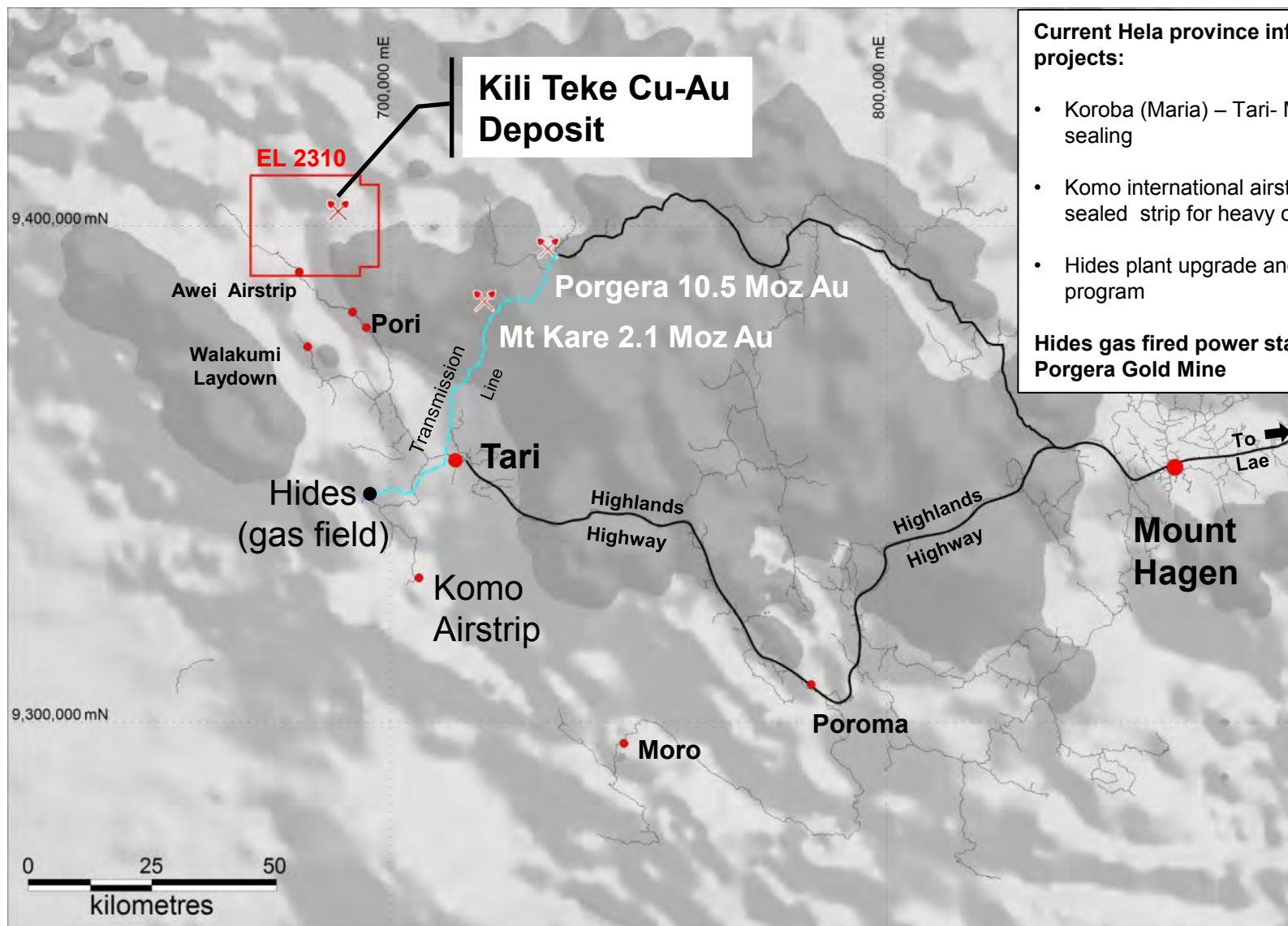


\* Datasource OTML website

## New Guinea Mobile Belt Geology



# Regional infrastructure

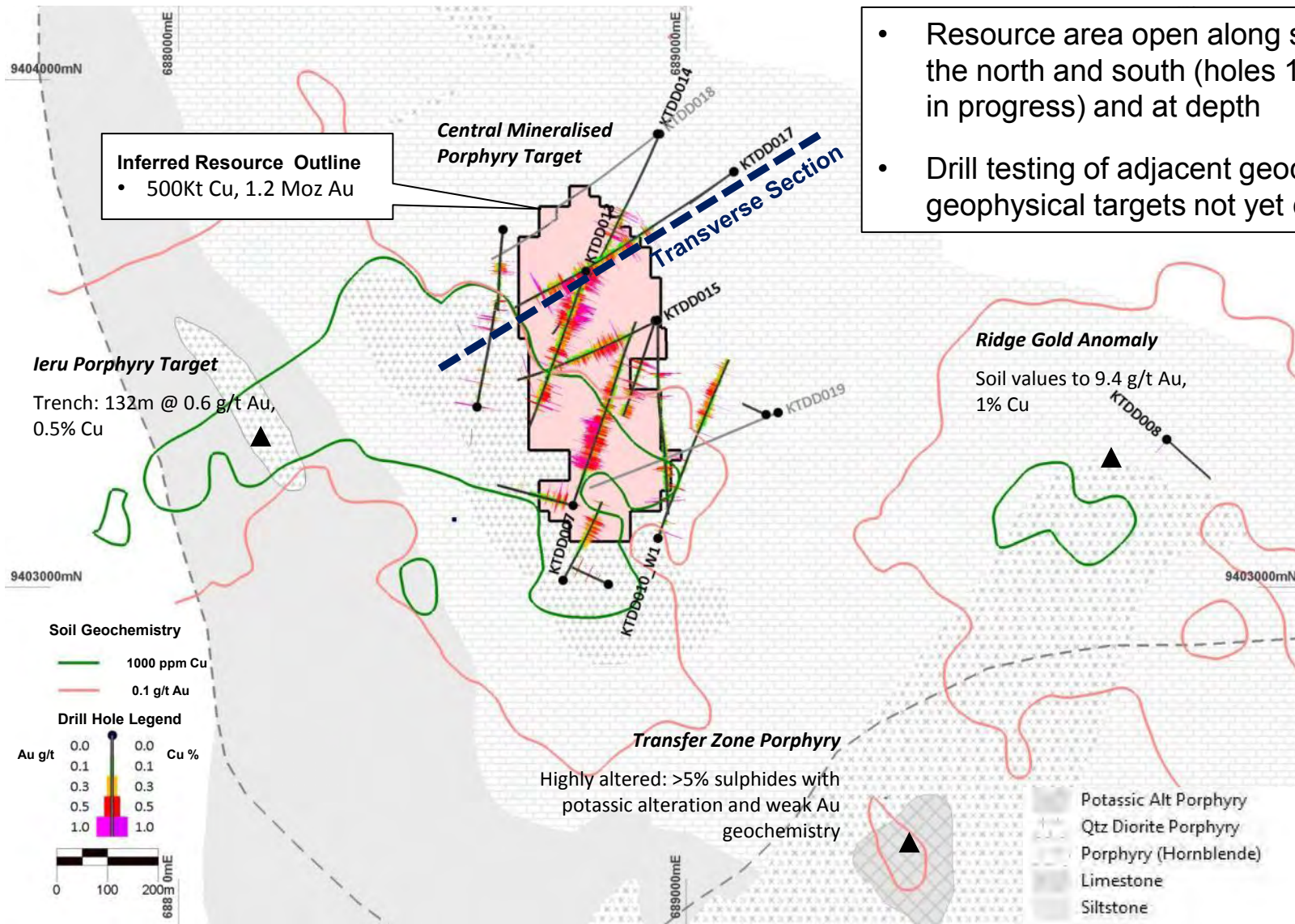


## Current Hela province infrastructure projects:

- Koroba (Maria) – Tari- Mendi- Komo road sealing
- Komo international airstrip gifted to the State sealed strip for heavy cargo planes
- Hides plant upgrade and rural electrification program

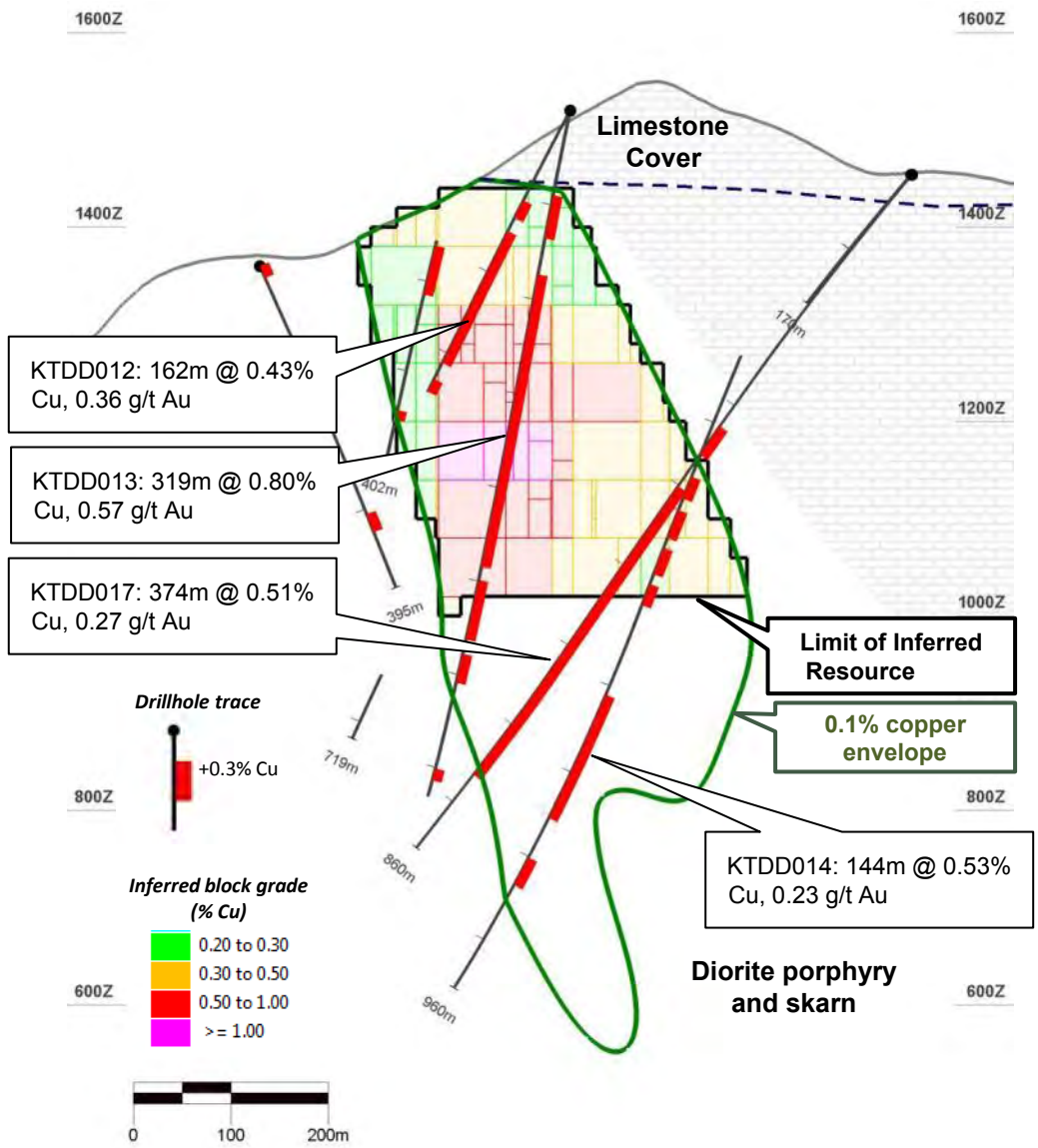
**Hides gas fired power station supplies the Porgera Gold Mine**

# Prospect summary plan



- Resource area open along strike to the north and south (holes 18 and 19 in progress) and at depth
- Drill testing of adjacent geochemical / geophysical targets not yet completed

# Transverse section



## • Inferred Resource

- 128 Mt @ 0.4 % Cu, 0.3 g/t Au
- 506 kt Cu, 1.2 Moz Au
- 600m Long, 300m wide and 400m deep
- Constrained to above the 1000m RL

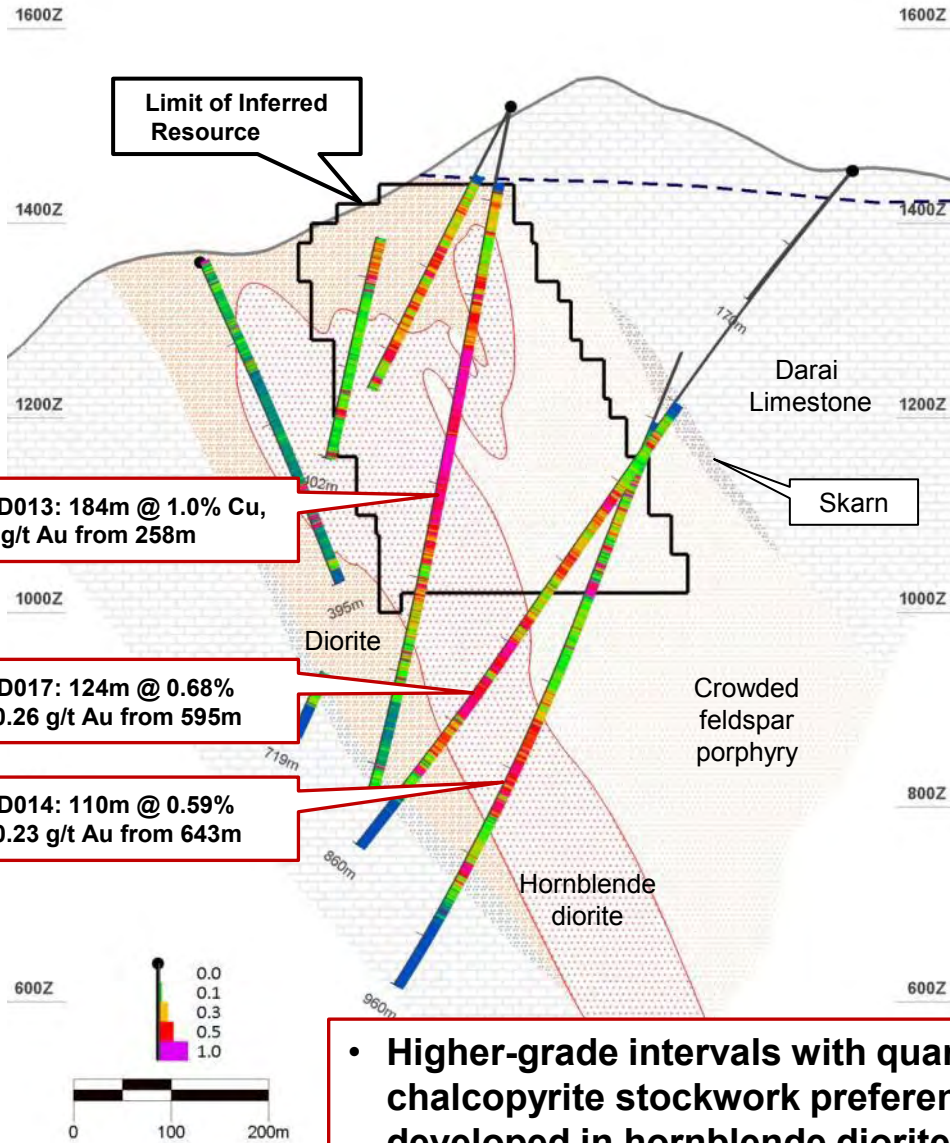
## • Mineralisation

- Two main copper mineralisation events identified in the porphyry:
  1. Early quartz-sulphide vein stockwork
  2. Late chalcopyrite veining
- High grade intervals of associated copper-gold skarn mineralisation not yet modelled

## • Alteration

- Widespread pervasive potassic alteration (biotite, kfeldspar)
- Localised pervasive phyllic overprint
- Late structurally controlled argillic alteration

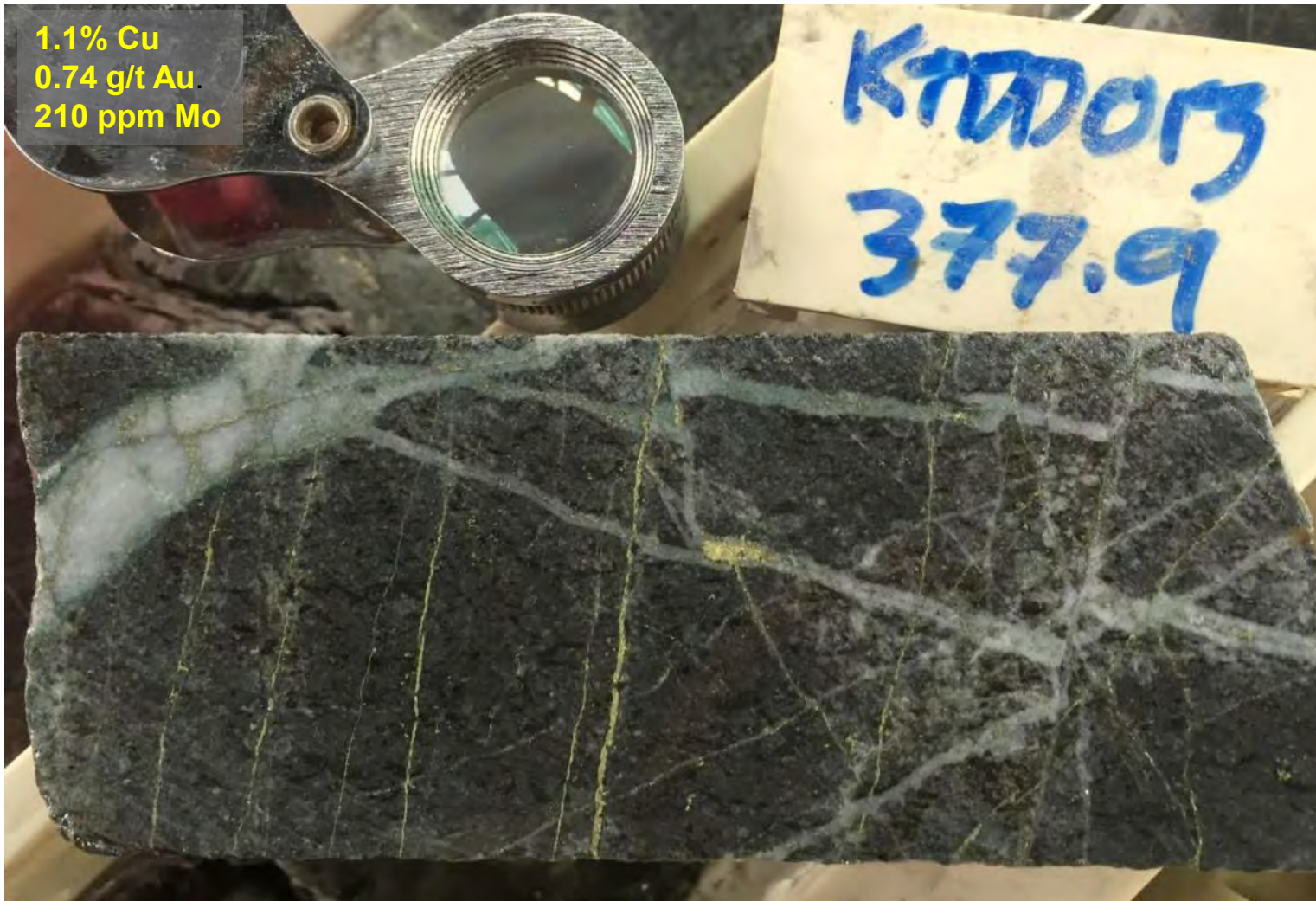




• Higher-grade intervals with quartz-chalcopyrite stockwork preferentially developed in hornblende diorite

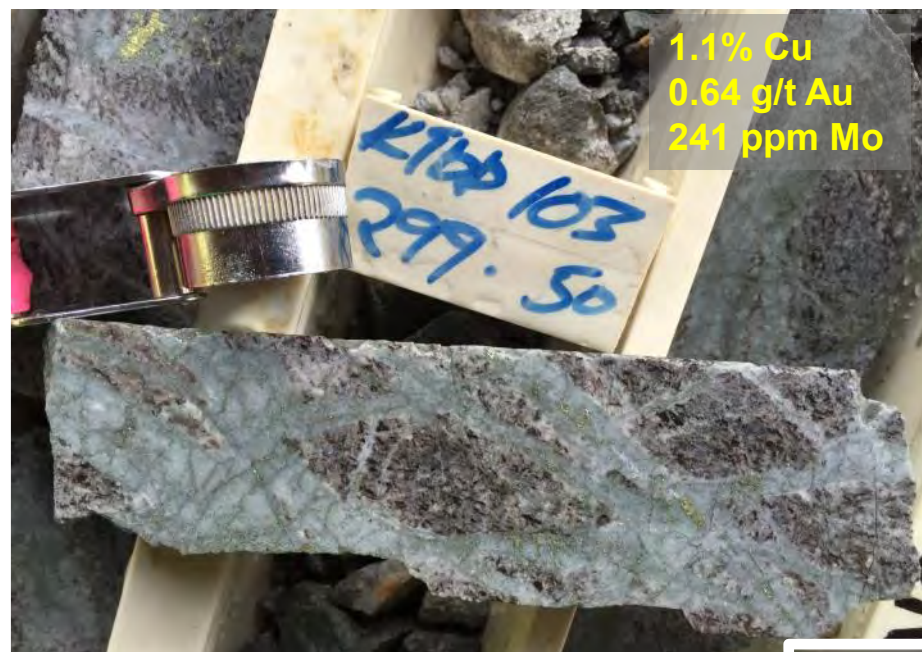
- **Host sequence**
  - Early-late Cretaceous Ieru Formation
  - Miocene Darai Limestone
- **Multiphase intermediate dioritic porphyry intrusives**
  - Crowded feldspar porphyry, Hornblende Diorite & Diorite
- **Mineralisation**
  - Multiple copper mineralisation events:
    1. Early quartz-sulphide vein stockwork
    2. Late chalcopyrite veining
    3. Copper-gold skarn mineralisation
- **Alteration**
  - Widespread pervasive potassic alteration (biotite, kfeldspar)
  - Localised phyllic overprint
  - Late structurally controlled argillic alteration

# Drill core: Mineralised hornblende diorite



Potassic altered hornblende diorite. Multiple copper mineralisation stages with (1) Early quartz-chalcopyrite stockwork veins crosscut by (2) late chalcopyrite veins

# Drill core: Mineralised hornblende diorite, cont'd

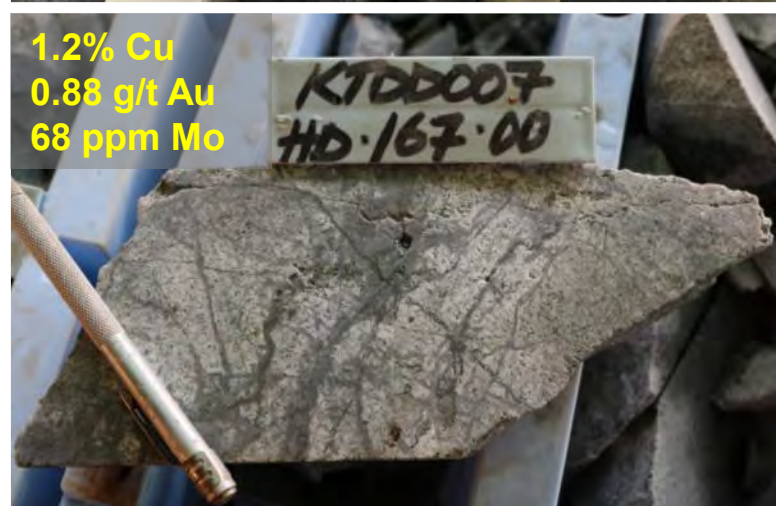


1.1% Cu  
0.64 g/t Au  
241 ppm Mo

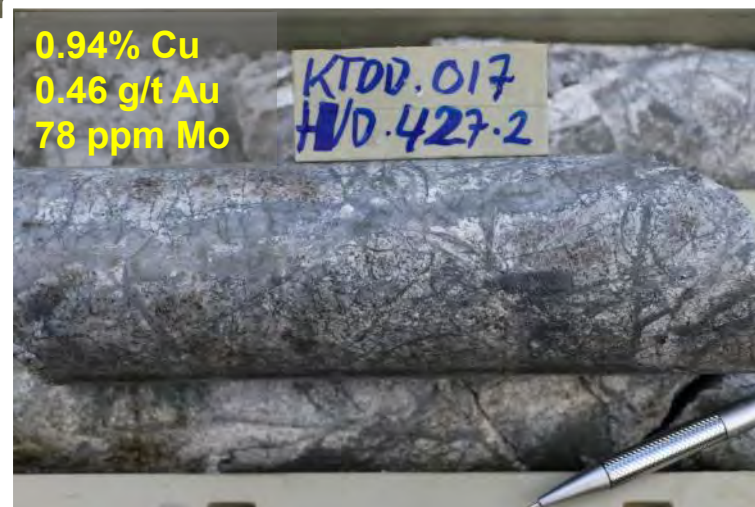


0.55% Cu  
0.87 g/t Au  
24 ppm Mo

**Upper photos:**  
KTDD013,  
KTDD009: Potassic  
altered with quartz  
chalcopyrite  
stockwork



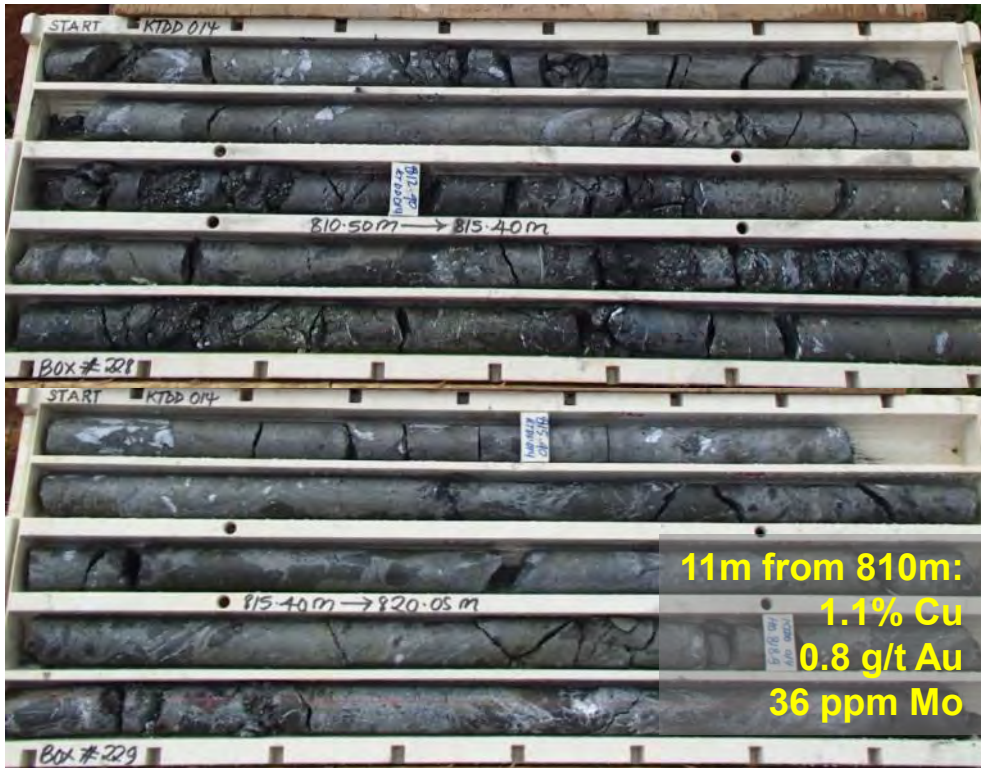
1.2% Cu  
0.88 g/t Au  
68 ppm Mo



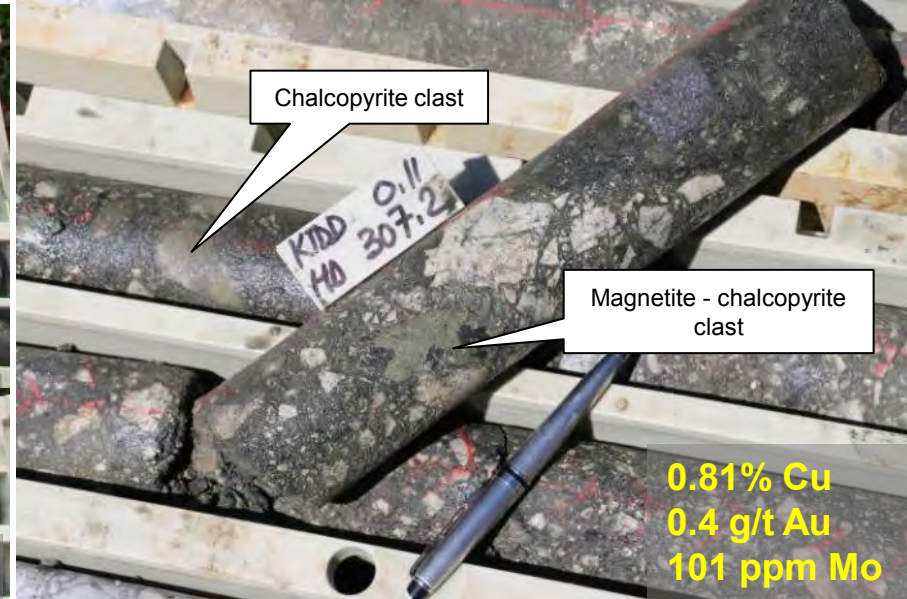
0.94% Cu  
0.46 g/t Au  
78 ppm Mo

**Lower photos:**  
KTDD007,  
KTDD017: Quartz  
sulphide stockwork  
with pervasive  
phyllitic alteration  
overprint

# Drill core: copper-gold skarn and skarn breccia

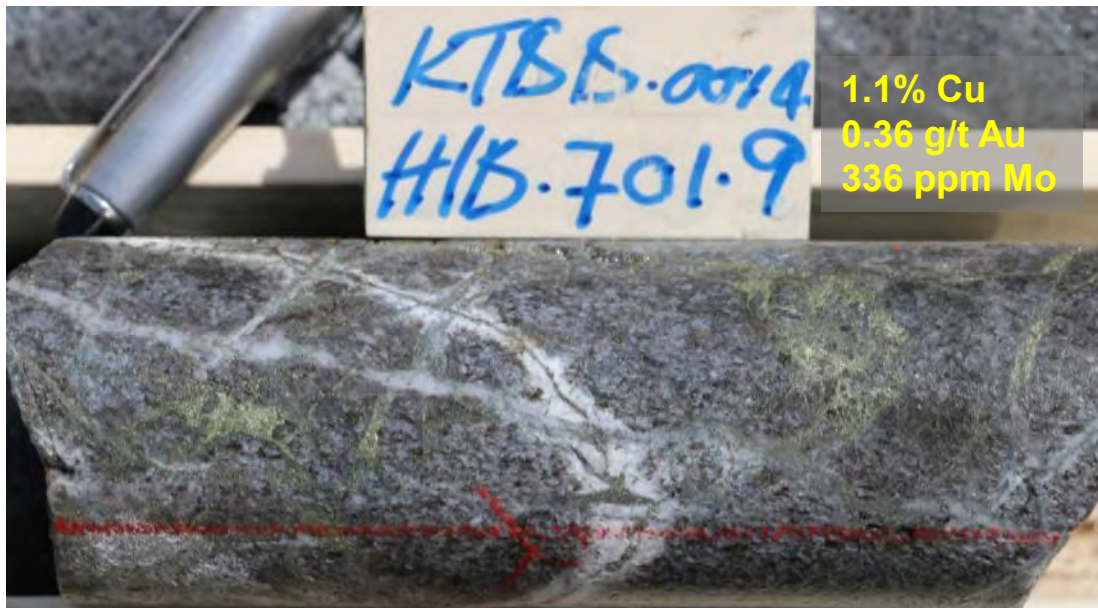


KTDD014; Drill core 810m - 820m pictured. Massive sulphide / skarn mineralisation developed at the limestone diorite contact.

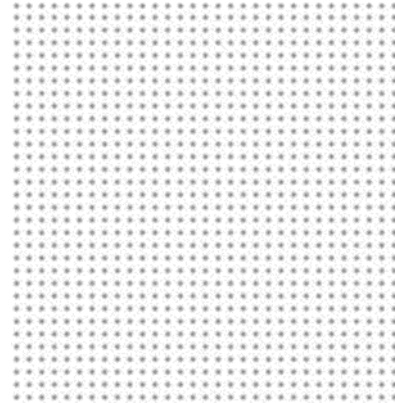


KTDD011; Drill core @ 307.2 pictured. Polyolithic breccia interval, highlighting clast of magnetite-chalcopyrite skarn and sulphide rich matrix.

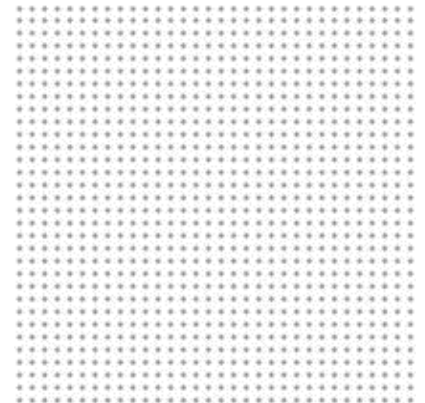
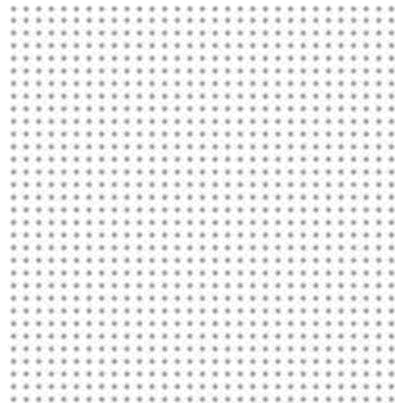
- Skarn mineralisation has not yet been modelled in the current resource



- Latest intercepts include:
  - KTDD014:  
110m @ 0.59% Cu, 0.23 g/t Au from 643m
  - KTDD017:  
124m @ 0.68% Cu, 0.26 g/t Au from 595m
- Represents the depth extension of the higher grade hornblende diorite vein stockwork mineralisation
- Located 200m below the base of the current resource
- Remain open at depth and along strike
- Infill drilling accelerated with 2 drill rigs operating onsite



# CONCLUSION



- ✓ We are one of a few companies who invest in exploration – ensuring that investors benefit in the long term from an increase in commodity prices
- ✓ PNG is hugely prospective for gold and copper-gold deposits
- ✓ Harmony's exploration expenditure in PNG is value adding and building a world class copper-gold portfolio
  - On a gold ounce equivalent ounce basis over 37 million ounces equivalent<sup>1</sup> added to the resource base<sup>2</sup>
  - low cost of discovery
- ✓ Favorable climate for undertaking exploration work
  - availability of contractors and resources
  - competitive rates
- ✓ Kili Teke - 2015 discovery and maiden inferred resource is just the beginning:
  - potentially a major new copper-gold system in PNG

<sup>1</sup> Gold equivalent based on US\$1 200/oz Au, US\$3.00/lb Cu, with 100% recovery for all metals.

<sup>2</sup> Resource growth includes Harmony's equity interest in PNG JV resources and PNG 100% owned resources post 2003





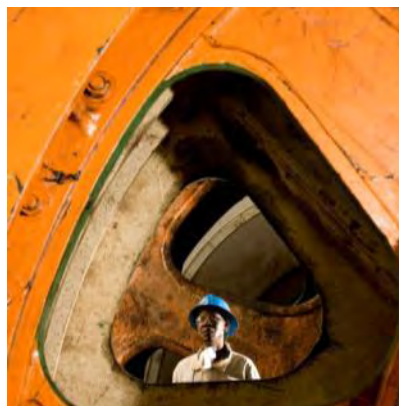
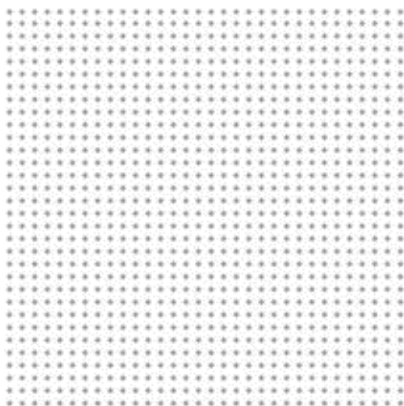


## OUR KEY VALUE DRIVERS

- 1 We are efficient miners
- 2 We are positioned for future growth and profitability
- 3 We are experienced explorers, mine developers and operators in emerging economies
- 4 Golpu will develop into a world-class copper-gold mine

## CONTACT US

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