

# The Alaska Range Project; new Cu-Au porphyry discoveries in the USA

**Investor Update** 

**20 November 2019** 



# POLAR LIMITED

# First hole at Mars discovers porphyry-style veins containing Cu and Mo

"Visual confirmation of porphyry-style veins containing chalcopyrite and molybdenite in the first hole at Mars is extremely encouraging. Given the large size of the co-incident copper-gold-molybdenum geochemical anomaly and the geophysical anomalies at Mars, this has the potential to be a very large mineralised system and clearly warrants considerable follow-up drilling. We look forward to further results from this very exciting prospect."

Dr Frazer Tabeart, PolarX MD











## Summary of 2019 achievements

#### PolarX has two high-grade, expandable resources + One new porphyry Cu-Au discovery + High-rank porphyry targets

- > Entered into a strategic partnership with Lundin Mining
- > Discovered Cu-Au-Mo porphyry mineralisation at Mars
- > Drilled the northern edge of porphyry system at Saturn
- > Completed 28.7 line-km IP at Saturn
- > Drilled 6 holes for 3,041m at Saturn and Mars
- > Completed gravity survey at Saturn on 400m x 200m grid
- > Trenching and mapping at Zackly to improve targeting







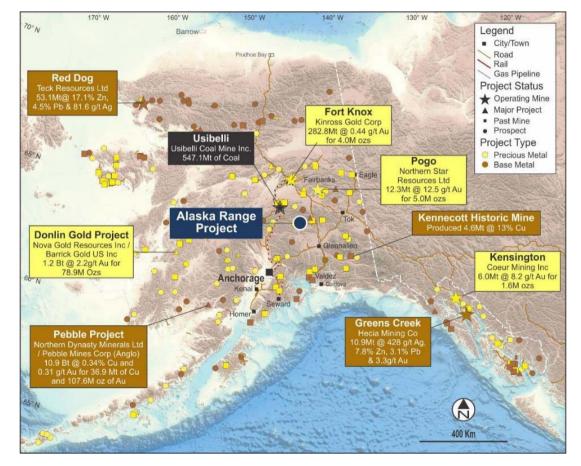


## Alaska is low risk: Under-explored TIER 1 geology in a TIER 1 jurisdiction

- ➤ **Pro-mining state and a Global Top 10** investment destination per 2019 Fraser Institute Rankings
- Over 40Moz Au mined to date
- Considerably under-explored compared to other TIER 1 provinces new deposits are still being found at surface
- > Growing Australian presence in major projects:
  - ☐ Northern Star acquisition of Pogo (Au)
  - ☐ South32 investment in Trilogy (Cu, Co)
  - ☐ Sandfire investment in Whiterock (Zn, Ag)

#### **ALASKA RANGE PROJECT** is in a great location:

- ➤ 250km due north-east of Anchorage, <6 hours by road
- > Nearby lodges for accommodation & support
- ➤ Easy road/rail access to all year ports





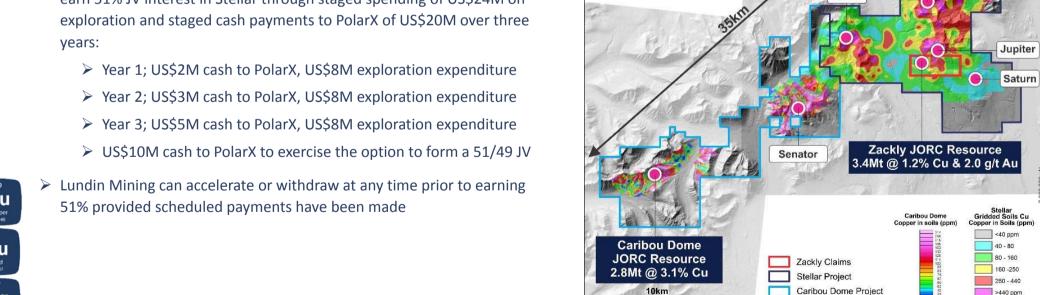






### Strategic Partnership with Lundin Mining Corporation

- > Strategic earn-in into PolarX's 100% owned Stellar Project
- > The Zackly Cu-Au skarn claims and Caribou Dome Project are excluded and remain 100% PolarX
- Lundin Mining invested A\$4.3M, now PolarX's largest (12.8%) shareholder
- > Exclusive option, exercisable by 31 December 2019, for Lundin Mining to earn 51% JV interest in Stellar through staged spending of US\$24M on exploration and staged cash payments to PolarX of US\$20M over three



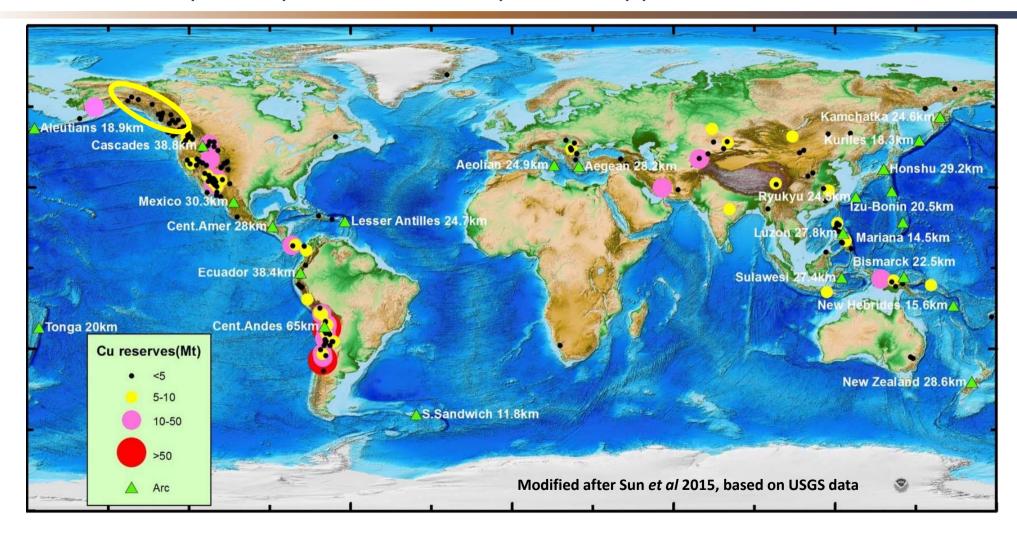
Alaska Range Project





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In the least explored part of the most prolific copper belt in the world

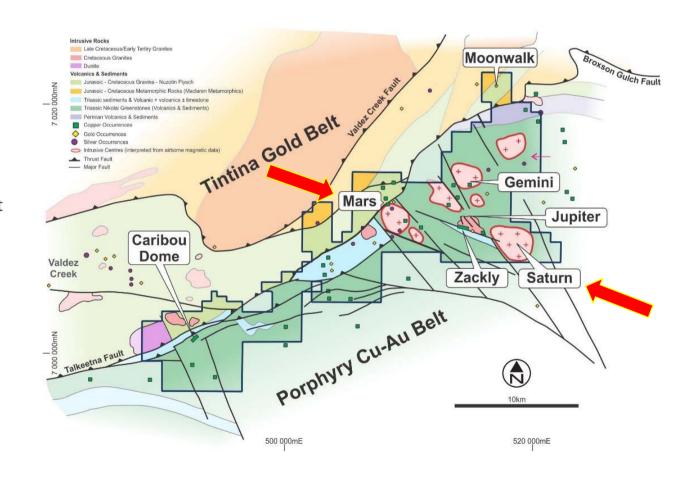






## At the intersection of two major crustal-scale faults

- Straddles the major structure between the Tintina Gold Belt and the main Porphyry Cu-Au Belt in Alaska-Yukon-British Columbia-Montana
- Intersected by a major NW crustal-scale fault which contains known porphyry systems at its southern end
- Prominent, 12 km-long WNW trending structural corridor hosts mineralization at Zackly and Mars and contains the Saturn porphyry target





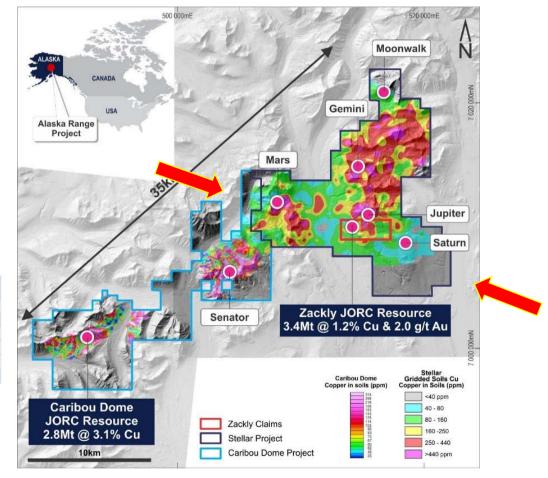


## Rapidly growing resource with huge upside

- ➤ 15km x 7km district scale copper anomaly associated with the interpreted intrusive cluster
- Mars, Jupiter, Gemini and Zackly display Cu-Au-Mo-Ag-As anomalism (the classic porphyry indicators)
- Well defined 12 km-long WNW trending structural corridor is a focus for oxidized intrusions and mineralised fluid flow, and
- May host multiple mineral deposits

Table 2. Alaska Range Project Resource Estimates (JORC 2012), 0.5% Cu cut-off grade

|         | Category  | Million<br>Tonnes | Cu % | Au g/t | Ag g/t | Contained<br>Cu (t) | Contained<br>Cu (M lb) | Contained<br>Au (oz) | Contained<br>Ag (oz) |
|---------|-----------|-------------------|------|--------|--------|---------------------|------------------------|----------------------|----------------------|
| ZACKLY  | Inferred  | 3.4               | 1.2  | 2.0    | 14.0   | 41,200              | 91                     | 213,000              | 1,500,000            |
| CARIBOU | Inferred  | 1.6               | 3.2  | - 2    |        | 52,300              | 115                    | -                    |                      |
| DOME    | Indicated | 0.6               | 2.2  | -      |        | 13,000              | 29                     |                      |                      |
|         | Measured  | 0.6               | 3.6  | -      |        | 20,500              | 45                     | -                    |                      |
|         |           |                   |      |        | TOTAL  | 127,000             | 280                    | 213,000              | 1,500,000            |





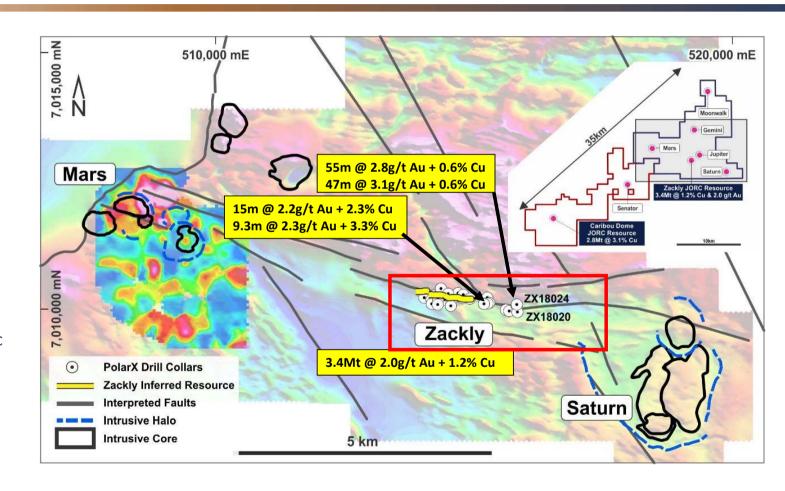






# 12km long mineralised corridor – rapid near term growth

- ➤ 100% owned Zackly skarn likely to rapidly increase in size with further drilling to the east.
- Mars porphyry target has anomalous Cu-Au-Mo-As geochemistry and geophysical anomalies consistent with porphyry target. First drill hole has confirmed Cu-Au-Mo bearing veins consistent with nearby porphyry!
- Saturn comprises a blind geophysical target under >70m cover – compelling 3D magnetic signature. Geology and alteration in scout drilling is entirely consistent with a nearby large porphyry system





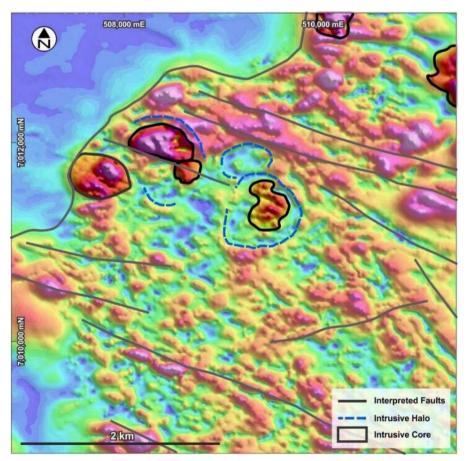




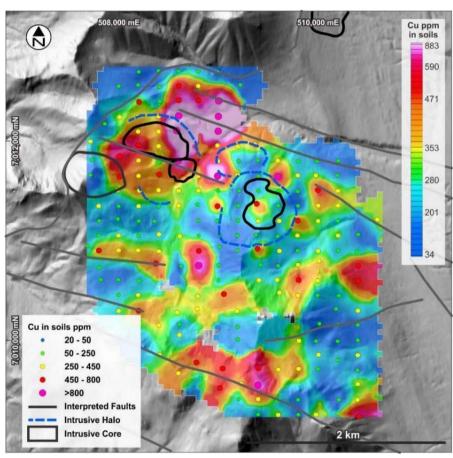


# Mars: magnetic anomaly, IP anomaly and soil anomaly (Cu-Au-As-Mo)

#### Magnetic data (Analytical signal)



#### Copper in soil anomalism

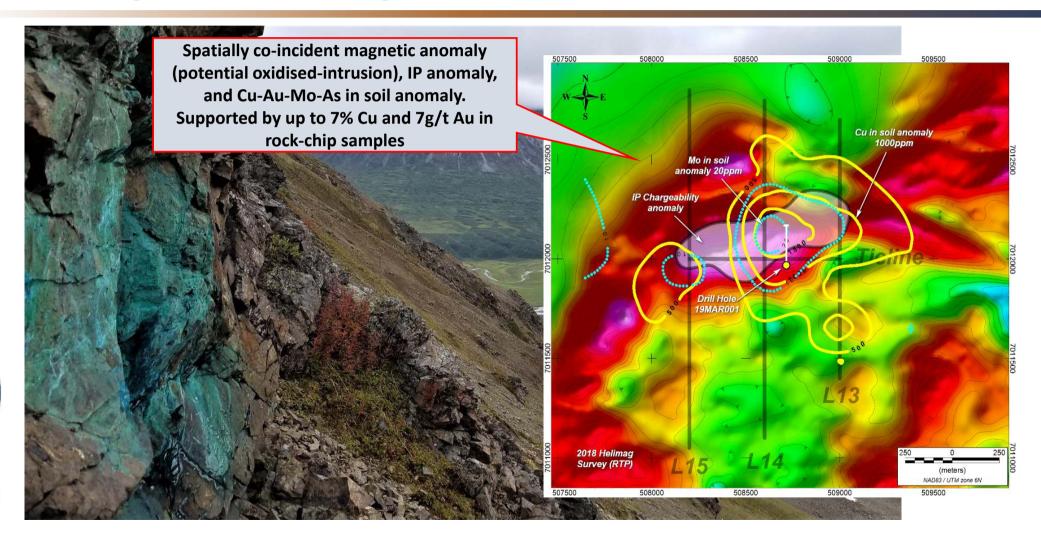








# Mars Target: co-incident magnetic, IP and Cu-Au-As-Mo anomalism









# Mars drill core samples with multiple Cu and Cu-Mo veining events

#### Vein types below are usually found just outside the main mineralised zones in porphyry deposits











19MAR001 at 114.9m depth. Early phase (i) epidote-quartz veins with epidote haloes overprinted by three later phases of veining including (ii) quartz-chlorite-magnetite-chalcopyrite, (iii) quartz-carbonate-biotite and (iv) quartz-carbonate-hematite.

19MAR001 at 176.5m depth. Quartz-carbonate-chalcopyrite vein with weak selvage of chlorite and sericite(?).



19MAR001 - 192.3m

# Multiple Cu and Cu-Mo veining events, potassic and phyllic alteration

#### Copper and molybdenum sulphides associated with hydrothermal alteration near a porphyry source





19MAR001 at 192.3m depth. Quartz-carbonate-pyrite-chalcopyrite veins with biotite and feldspathic/sericitic haloes. Likely to be multiphase.







# Multiple Cu and Cu-Mo veining events: more drilling required!

#### Noticeable increase in mineralisation intensity below 300m depth, with copper more prevalent than iron





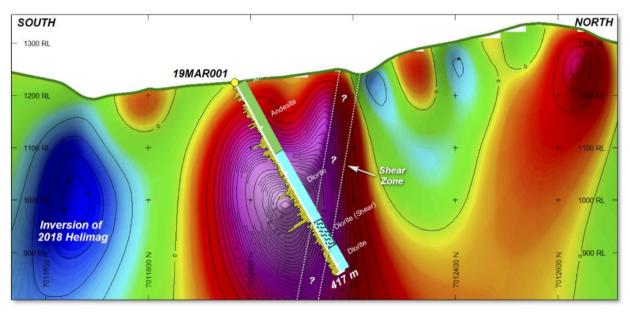








### Mars drill cross-section and mineralisation summary



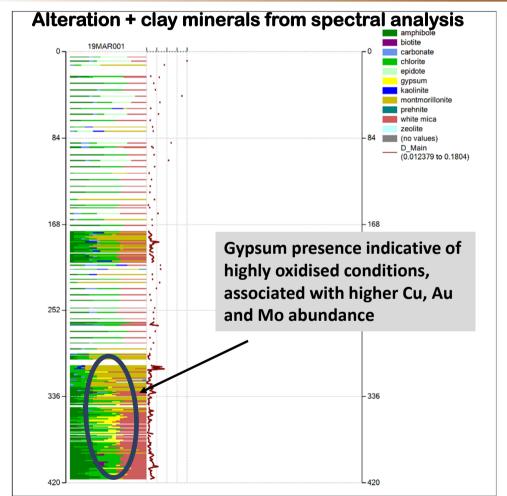
Six phases of veining have been identified throughout drill hole 19MAR001, four of which contain copper mineralisation;

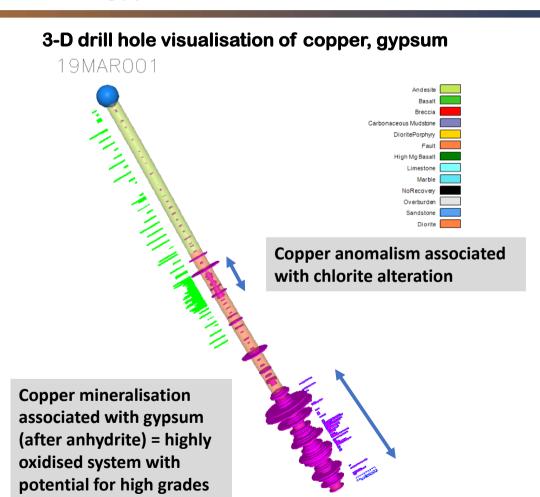
- i. Epidote-silica vein with an epidote rich halo
- ii. Chlorite-pyrite +/- chalcopyrite
- iii. Carbonate-quartz-pyrite +/- chalcopyrite with chlorite halo overprinting earlier epidote
- iv. Red carbonate-hematite, pyrite +/- chalcopyrite+/- molybdenum veins with epidote halo
- v. Thick colloform banded carbonate (early on margins), quartz (later in vein core) veins and pyrite +/- chalcopyrite, open space textures, strong epidote-titanite (?),alteration halo
- vi. Wispy white quartz veinlets overprinting early chlorite +/- magnetite alteration and open space colloform banded carbonate-quartz vein.



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## Relationship noted between copper grade and gypsum alteration









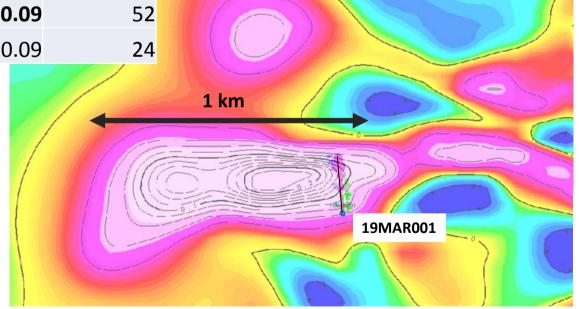
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# Assays for 19MAR001 – good grades for the edge of a porphyry system

| F | rom (m)     | To (m) | Interval (m) | Cu %  | Au ppm | Mo ppm |
|---|-------------|--------|--------------|-------|--------|--------|
|   | 308.02      | 410.09 | 102.07       | 0.22% | 0.07   | 20     |
|   | incl 322.02 | 329.02 | 7.00         | 0.32% | 0.10   | 6      |
|   | and 347.86  | 384.09 | 36.23        | 0.26% | 0.08   | 43     |
|   | incl 355.85 | 384.09 | 28.24        | 0.28% | 0.09   | 52     |
|   | and 365.91  | 384.09 | 18.18        | 0.30% | 0.09   | 24     |

The first hole at Mars, 19MAR001 intersected mineralisation and alteration consistent with the outer edges of a porphyry system.

There is potential for a large body of mineralisation which will require further drilling.



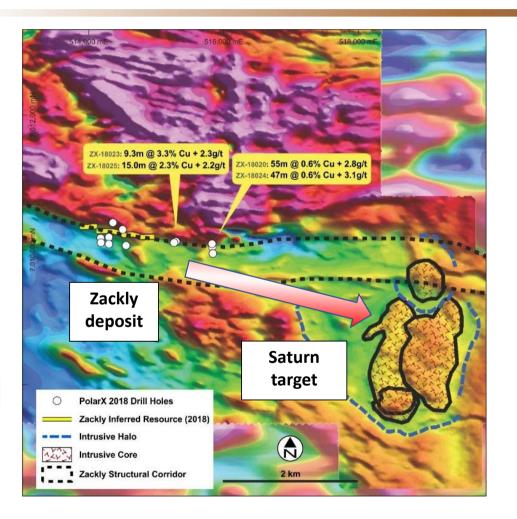
Magnetic susceptibility plan at 1100m RL







### Saturn porphyry Cu-Au target



- Blind target generated from egional magnetic data
- High-resolution aeromagnetic data validates target, particularly the 3-D inversion modelling
- Validated by strong interest from numerous international mining companies, including our strategic partner, Lundin Mining Corporation
- Multiple lines of evidence to support porphyry target:
  - Interpreted to be a cluster of magnetic, oxidized intrusions
  - Surrounded by a zone of intense magnetite destruction, interpreted to represent propylitic alteration
  - Nearby skarn mineralization (Zackly) as proof of magmatichydrothermal process
  - Strong vectors from Zackly mineralization with grades, thickness and intensity of alteration at Zackly increasing from west to east towards Saturn



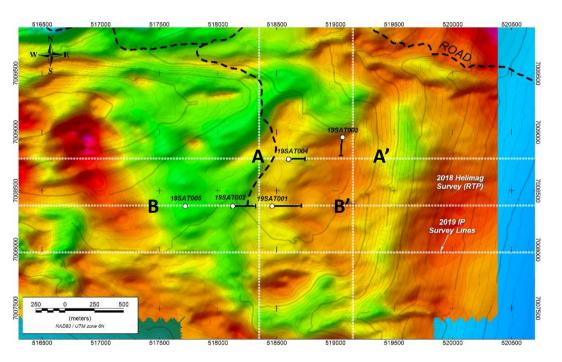




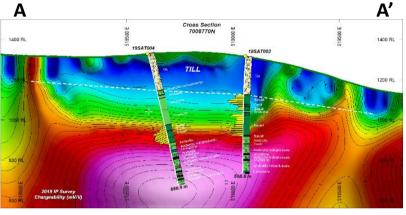


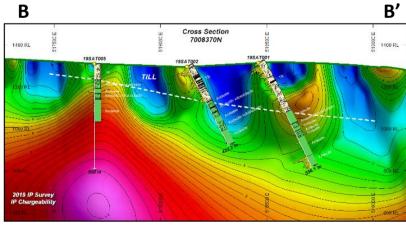
# Saturn Drill Plan and Cross-section Summary – 5 deep holes in 2019

#### **Drill Plan on Magnetic Data**



### **Drill Sections on IP Data**













## Saturn drilling: key observations

- Saturn is covered by a thick layer of unconsolidated post-mineral cover which slowed drilling progress.
- While further work is required to analyse the geological, geochemical, spectral and petrographic information, current consensus is that a nearby porphyry source may be present at Saturn.
- Evidence supporting this interpretation includes:
  - The presence of altered andesitic basalts and basalts with up to 100m of intense oxidation and argillic (clay) alteration immediately below the cover in 19SAT001 and 19SAT002.
  - This argillic alteration overprints propylitic (epidote-chlorite-carbonate) and minor phyllic (chlorite-sericite-clay) alteration – fits the porphyry model.
  - > Sporadic veins containing quartz and pyrite are present, with intense silica-sericite-pyrite alteration haloes representing local phyllic alteration.
  - Petrographic analysis of samples from holes 19SAT001 and 19SAT002 concluded that a porphyry style intrusion may be nearby and caused contact metamorphism and hydrothermal alteration.
  - A gravity survey to help identify buried intrusions has identified a significant low to the immediate south of the drilling this might be the signature of the porphyry intrusion itself.



19SAT001 at 332m depth. Argillic alteration overprinting brecciated andesite.



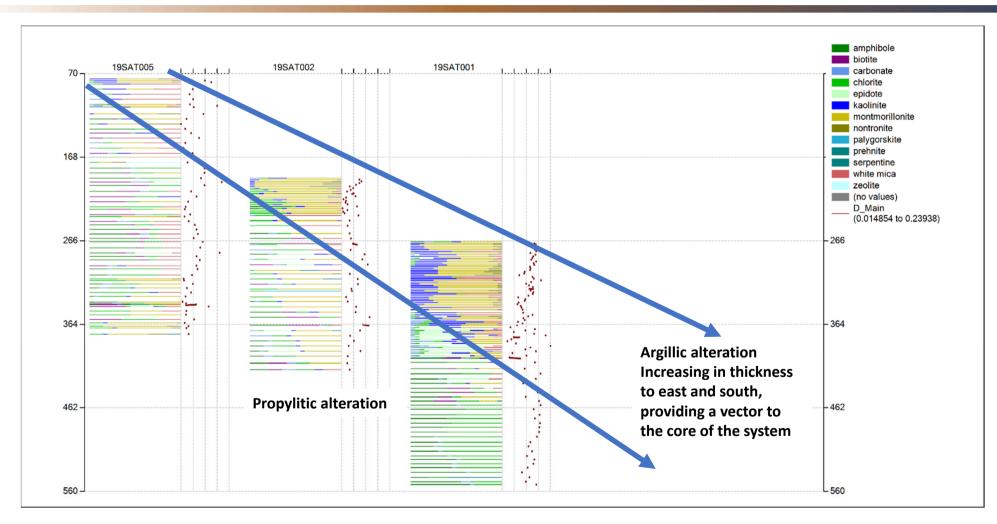
 $19SAT004\ at\ 540 m\ depth.\ Quartz-sericite-pyrite\ veining\ and\ alteration\ overprinting\ and esitic\ volcanic\ rocks.$ 







# Hyperspectral data shows vectors from clay (argillic) alteration









# Interpretation based on observations to date: more drilling required

#### Schematic porphyry alteration zonation

Overprinted advanced argillic ?

Argillic

Preserved phyllic

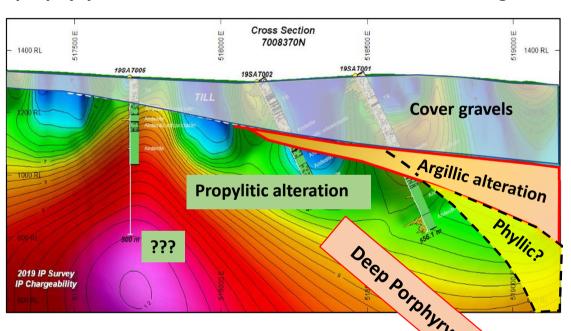
Propylitic

Preserved K-Silicate

eap 113.cdr

Potential mineralised shell

# Interpretation of the 7,008,370N cross-section suggests potential porphyry source below and to the east of current drilling



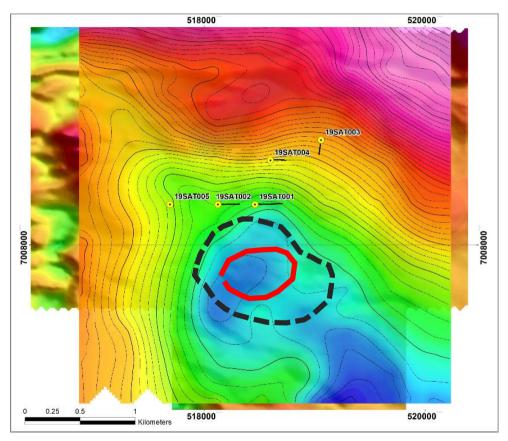


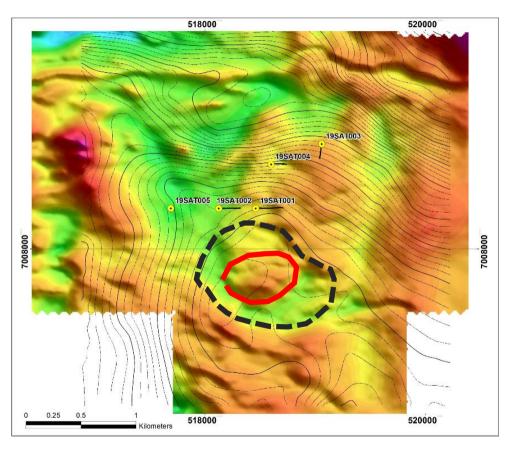




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# Preliminary gravity data shows density low (intrusion/target) to south





Cu Copper 63:546 79 Au Gold

**Gravity grid plotted over RTP magnetic image** 

**Gravity contours plotted over RTP magnetic image** 

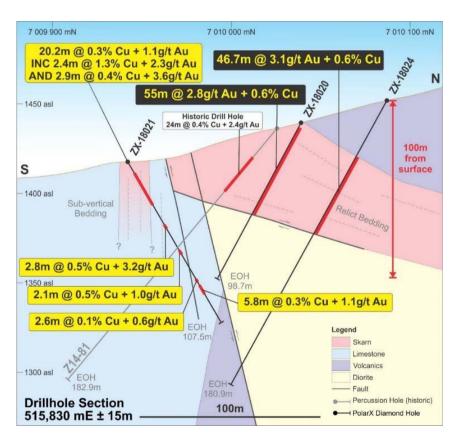
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## Plus, low-risk upside at Zackly: high grades 850m east of current resource

#### **PLAN VIEW**

#### 514.500mE 514.000mE 515.000mE 515.500mE 850m 1.050m ZX 18032 16.7m @ 1.2% Cu + 0.5g/t Au INC 2.4m @ 2.7% Cu + 1.1g/t Au AND 2.1m @ 3.1% Cu + 0.8g/t Au ZX 18024 47m @ 3.1g/t Au + 0.6% Ci ZX 18020 ZACKLY INFERRED RESOURCE 55m @ 2.8g/t Au + 0.6% C ZX 18033 ZX 18016 ZX 18026 ZX 18030 ZX 18029 ZX 18028 ZX 18032 ZX 18017 ZX 18019 ZX 18023 ZX 18018 9.3m @ 3.3% Cu + 2.3g/t Au ZX 18021 25m @ 0.6% Cu + 1.1g/t Au 20.2m @ 0.3% Cu + 1.1g/t Au AND 13.8m @ 0.6% Cu + 1.1g/t Au ZX 18025 INC 2.4m @ 1.3% Cu + 2.3g/t Au AND 4.7m @ 1.3% Cu + 2.1g/t Au 15.0m @ 2.3% Cu + 2.2g/t Au AND 2.9m @ 0.4% Cu + 3.6q/t Au **Potential Mineralised Corridors**

#### **CROSS-SECTION**









# **Concluding Statements**

- ☐ Big holding of high quality, high-grade copper-gold-silver assets in mining friendly Alaska, USA
- ☐ Advanced projects in a TIER 1 jurisdiction early exploration risk has been removed
- ☐ Fully funded for near-term expansion and longer term discovery growth
- ☐ Drilling and exploration programs at Saturn and Mars have confirmed porphyry potential
- ☐ Management and strategic partner with proven expertise and experience in US permitting and successful mine development









### Experienced management team with track-record

#### **MARK BOJANJAC**

B.Com, ICAA
EXECUTIVE CHAIRMAN

#### FRAZER TABEART

Ph.D, B.Sc (Hons), ARSM, MAIG MANAGING DIRECTOR

#### **JASON BERTON**

Ph.D, B.Sc (Hons), MAUSIMM EXECUTIVE DIRECTOR

#### IAN CUNNINGHAM

B.Com, LLB, ICAA, FGIA
CFO and COMPANY SECRETARY

#### **ROBERT BOAZ**

B.A. (Hons), M.A. Economics
NON-EXECUTIVE DIRECTOR

A Chartered Accountant with over 25 years' direct experience in developing resource companies. A founding director of Gilt-Edged Mining Limited which discovered East Kundana, one of Australia's highest grade gold mines and managing director of a public company which successfully developed and financed a 2.4m oz gold mine in Mongolia (Boroo). Co-founded a 3m oz gold project in PR China later sold for \$180M. Previous CEO of Adamus Resources Limited and oversaw its advancement from an early stage exploration project through definitive feasibility studies and managed the debt and equity financing to build its successful Ghanaian gold mine on time/budget. Current Director of Kula Gold Limited.

Geologist with 30-years international experience in exploration and project development, with strong technical background in porphyry copper-gold systems in SE Asia, SW Pacific, the American Cordillera and central and northern Asia. After spending 16 years with WMC Resources and managing exploration portfolios in the Philippines, Mongolia and Africa, he left to join the Mitchell River Group. Has served on ASX-listed Company Boards at Executive level over last 11 years. Director and Principal at Mitchell River Group, and current Executive Director at African Energy Resources Limited and Non-Exec Director at Arrow Minerals Limited.

Geologist with over 17 years' mining and exploration experience including working for Homestake, Barrick and BHP Billiton and SRK Consulting. Jason has also previously spent two years in private equity investment and four years as Managing Director of ASX- listed Estrella Resources. Jason holds two Degrees, a Bachelor of Economics and a Bachelor of Science (Hons) plus a PhD in Structural Geology, all from Macquarie University.

A Chartered Accountant and Chartered Secretary with a Bachelor of Commerce degree and Bachelor of Laws degree from the University of Western Australia. He also holds a Graduate Diploma in Applied Corporate Governance from the Governance Institute of Australia and a Graduate Diploma of Applied Finance and Investment from the Securities Institute of Australia. Mr. Cunningham has some 15 years' experience in the resources industry in executive and senior management roles, including with Adamus Resources Ltd, during which time Adamus developed the Nzema Gold Mine (Ghana) before merging with Endeavour Mining Corporation.

Mr Boaz graduated with honours from McMaster University of Hamilton, Ontario with a Bachelor of Arts in Economics and has a Masters Degree in Economics from York University in Toronto. He is a highly respected financial and economic strategist in Canadian bond and equity markets with experience related to equity research, portfolio management, institutional sales and investment banking. Mr Boaz has over 20 years' experience in the finance industry, most recently as Managing Director, Investment Banking with Raymond James Ltd and Vice-President, Head of Research and in-house portfolio strategist for Dundee Securities Corporation. He is currently President & CEO of Aura Silver Resources Inc.







## Strong institutional support from major international funds

|                                  | Shares (M) | Options (M)  | Cash (30 Sept) |  |
|----------------------------------|------------|--------------|----------------|--|
| TOTALS                           | 416.2      | 33.8         | \$3.4M         |  |
| SHAREHOLDERS:                    | %          |              |                |  |
| <b>Lundin Mining Corporation</b> | 12.8       | TIGHTLY HELD |                |  |
| Management/Directors/MRG Team    | 12.2       | HOHIEI HELD  |                |  |
| JP Morgan (UK)                   | 8.3        | Top 20       | 68%            |  |
| U.S. Global (US)                 | 8.1        | •            |                |  |
| Ruffer Gold Fund (UK)            | 7.5        | Top 40       | 75%            |  |
| Lowell Resources Fund (Aus)      | 1.9        |              |                |  |



Mark Bojanjac – Executive Chairman Frazer Tabeart – Managing Director Jason Berton – Executive Director

#### **KEY ADVISORS & CONTRACTORS:**

Mitchell River Group: technical, permitting

Millrock Resources Inc: in-country exploration

**Read Corporate: PR and corporate communications** 





### **Cautionary Statements**

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This presentation includes certain "Forward- Looking Statements". The words "forecast", "estimate", "like", "anticipate", "project", "opinion", "should", "could", "may", "target" and other similar expressions are intended to identify forward looking statements. All statements, other than statements of historical fact, included herein, including without limitation, statements regarding forecast cash flows and potential mineralisation, resources and reserves, exploration results, future expansion plans and development objectives of PolarX involve various risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements.

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The information contained in this announcement has been presented in accordance with the JORC Code and references to "Measured Resources", "Inferred Resources" and "Indicated Resources" are to those terms as defined in the JORC Code.

Information in this report relating to Exploration results is based on information compiled by Dr Frazer Tabeart who is a member of The Australian Institute of Geoscientists. Dr Tabeart has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person under the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Tabeart consents to the inclusion of the data in the form and context in which it appears.

The information in this announcement that relates to Mineral Resources for the Zackly Project is based on information compiled by Mr Lauritz Barnes (a consultant to and shareholder of PolarX Limited) and Dr Frazer Tabeart (an employee and shareholder of PolarX Limited). Both Mr Barnes and Dr Tabeart are members of The Australian Institute of Geoscientists. Mr Barnes and Dr Tabeart have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity undertaken to qualify as Competent Persons as defined in the JORC Code. Mr Barnes and Dr Tabeart consent to the inclusion in the announcement of the matters based on the information in the form and context in which it appears.

There is information in this presentation relating to:

- the Mineral Resource estimate for the Zackly deposit, which was previously announced on 20 March 2018;
- · the Mineral Resource estimate for the Caribou Dome deposit, which was previously announced on 6 April 2017; and
- Exploration Results which were previously announced on 5 November 2018, 12 November 2018, 29 January 2019, 25 March 2019, 5 August 2019, 1 October 2019, 21 October 2019 and 19 November 2019.

Other than as disclosed in those announcements, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements, and that all material assumptions and technical parameters have not materially changed. The Company also confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.





