



# The Alaska Range Project; An Emerging Cu-Au District

Investor Update

10 October 2019

ASX: PXX  
[www.polarx.com.au](http://www.polarx.com.au)



# 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 Tabcart, PolarX MD



29  
**Cu**

Copper  
63.546

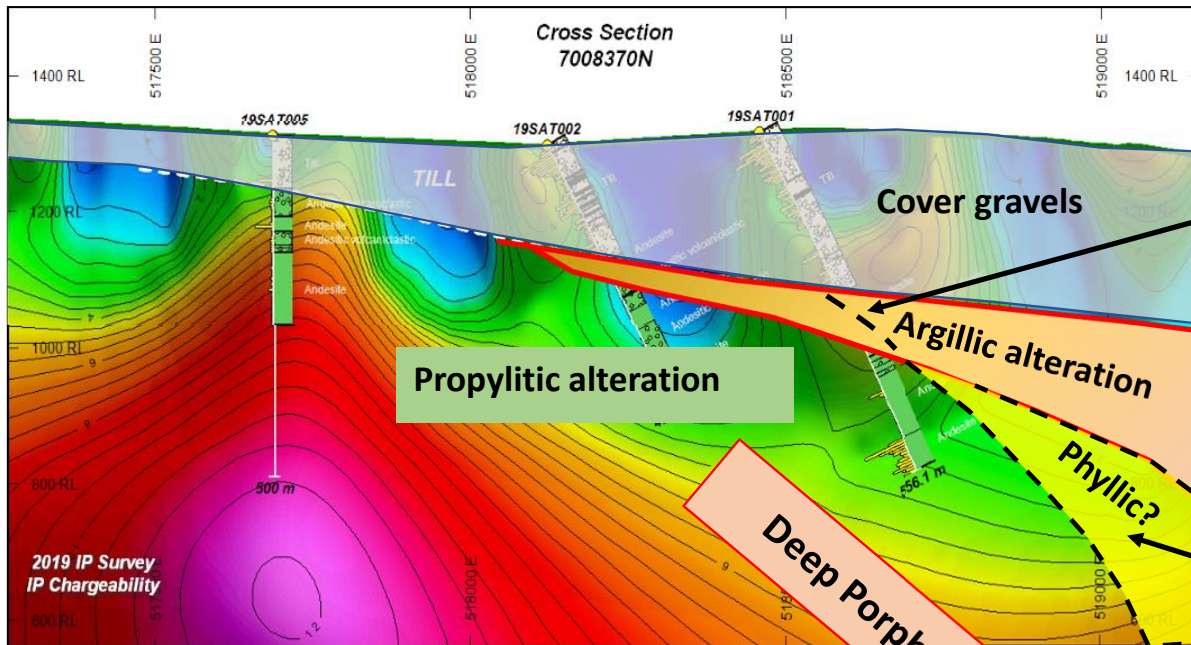
79  
**Au**

Gold  
196.97

47  
**Ag**

Silver  
107.87

# First holes at Saturn indicate deep porphyry potential



19SAT001 - 332m  
Clay altered andesitic breccia

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



19SAT004 - 540m  
Quartz-sericite-pyrite altered volcaniclastic.

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

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# High-grade copper and gold: well funded rapid growth strategy

## Advanced projects, high-grade from surface

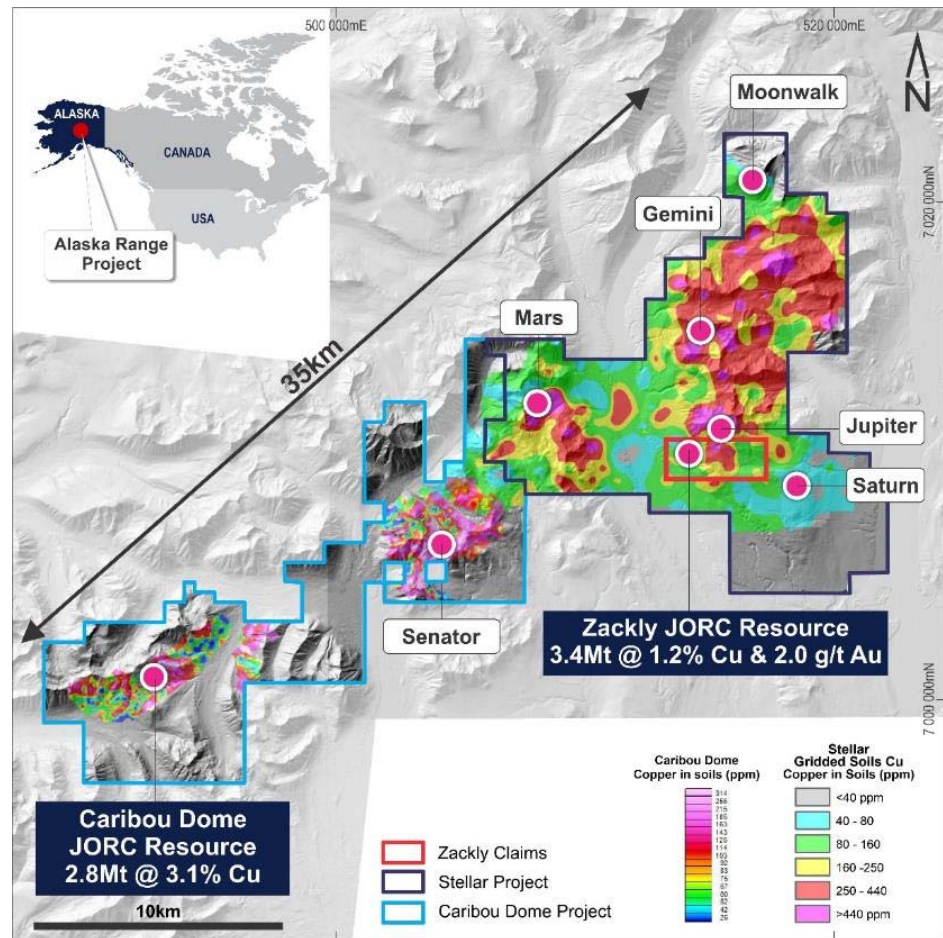
- Strong fundamentals for copper and gold
- Located in a TIER 1 jurisdiction
- Fully funded with a new strategic partner
- De-risked projects through our own exploration

## Two Goals:

- Advance high ranking porphyry Cu-Au targets at Saturn and Mars to a major new discovery
- Expand the high grade Zackly Cu-Au-Ag resource to critical-mass for an economically viable project

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

	Category	Million Tonnes	Cu %	Au g/t	Ag g/t	Contained Cu (t)	Contained Cu (M lb)	Contained Au (oz)	Contained 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	-	-	52,300	115	-	-
DOME	Indicated	0.6	2.2	-	-	13,000	29	-	-
	Measured	0.6	3.6	-	-	20,500	45	-	-
<b>TOTAL</b>						<b>127,000</b>	<b>280</b>	<b>213,000</b>	<b>1,500,000</b>



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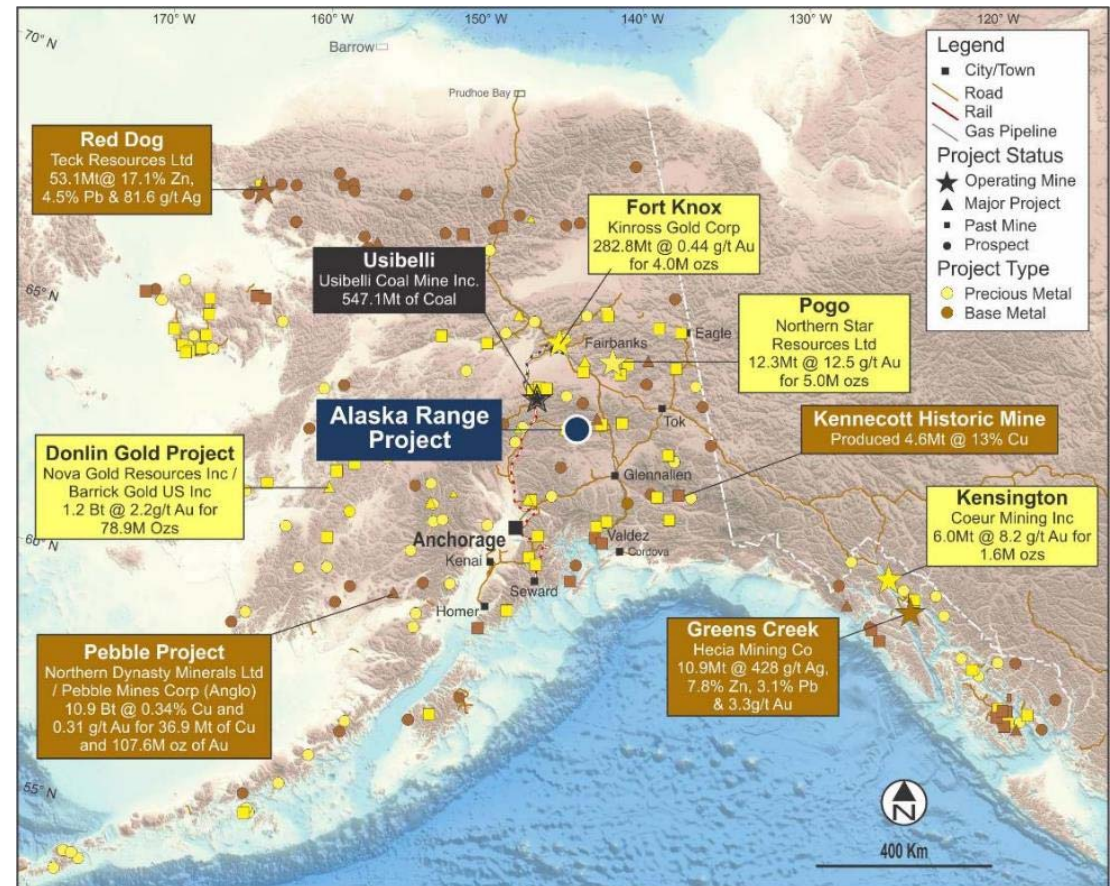
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# Alaska is low risk: Under-explored TIER 1 geology in a TIER 1 jurisdiction

- 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 good location:

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



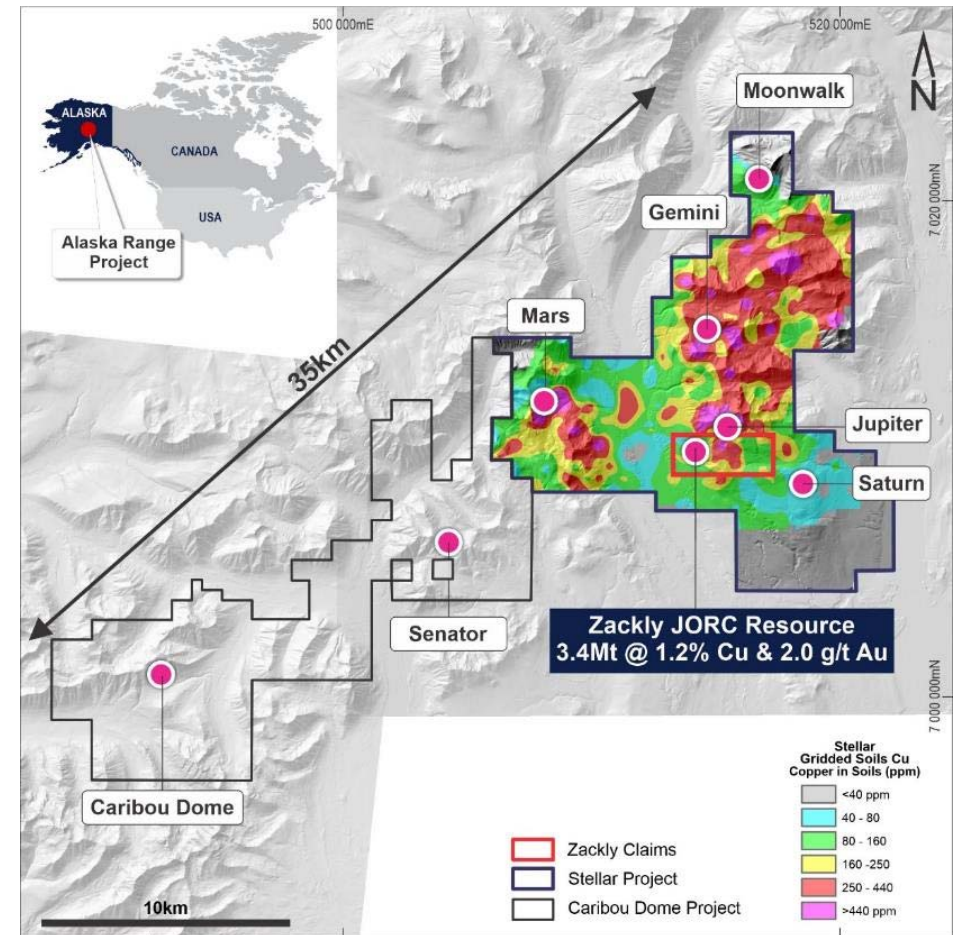
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# Strategic Partnership with Lundin Mining Corporation

- 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 years:
  - Year 1; US\$2M cash to PolarX, US\$8M exploration expenditure
  - Year 2; US\$3M cash to PolarX, US\$8M exploration expenditure
  - Year 3; US\$5M cash to PolarX, US\$8M exploration expenditure
  - US\$10M cash to PolarX to exercise the option to form a 51/49 JV
- Lundin Mining can accelerate or withdraw at any time prior to earning 51% provided scheduled payments have been made

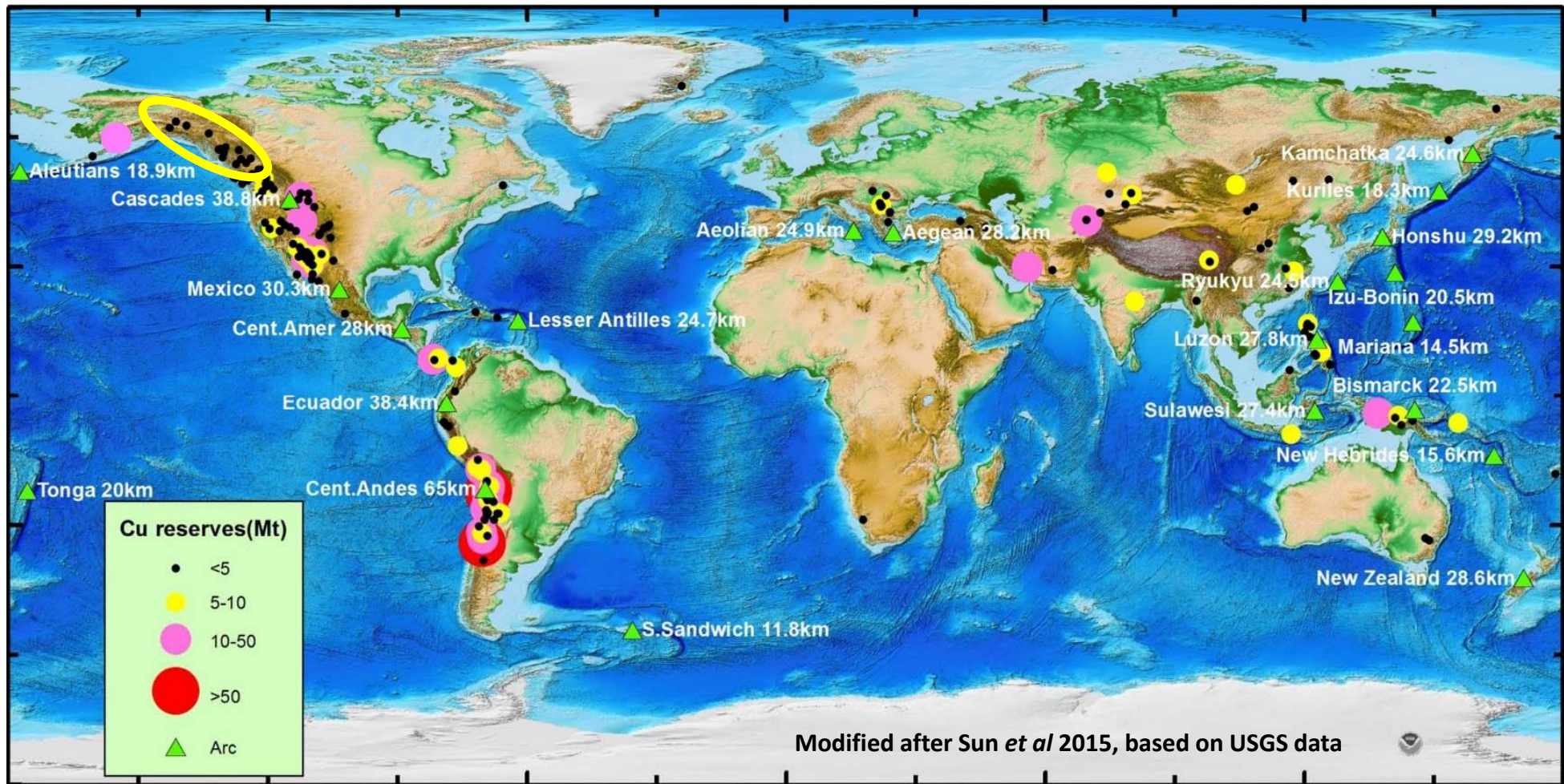


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In the least explored part of the most prolific copper belt in the world



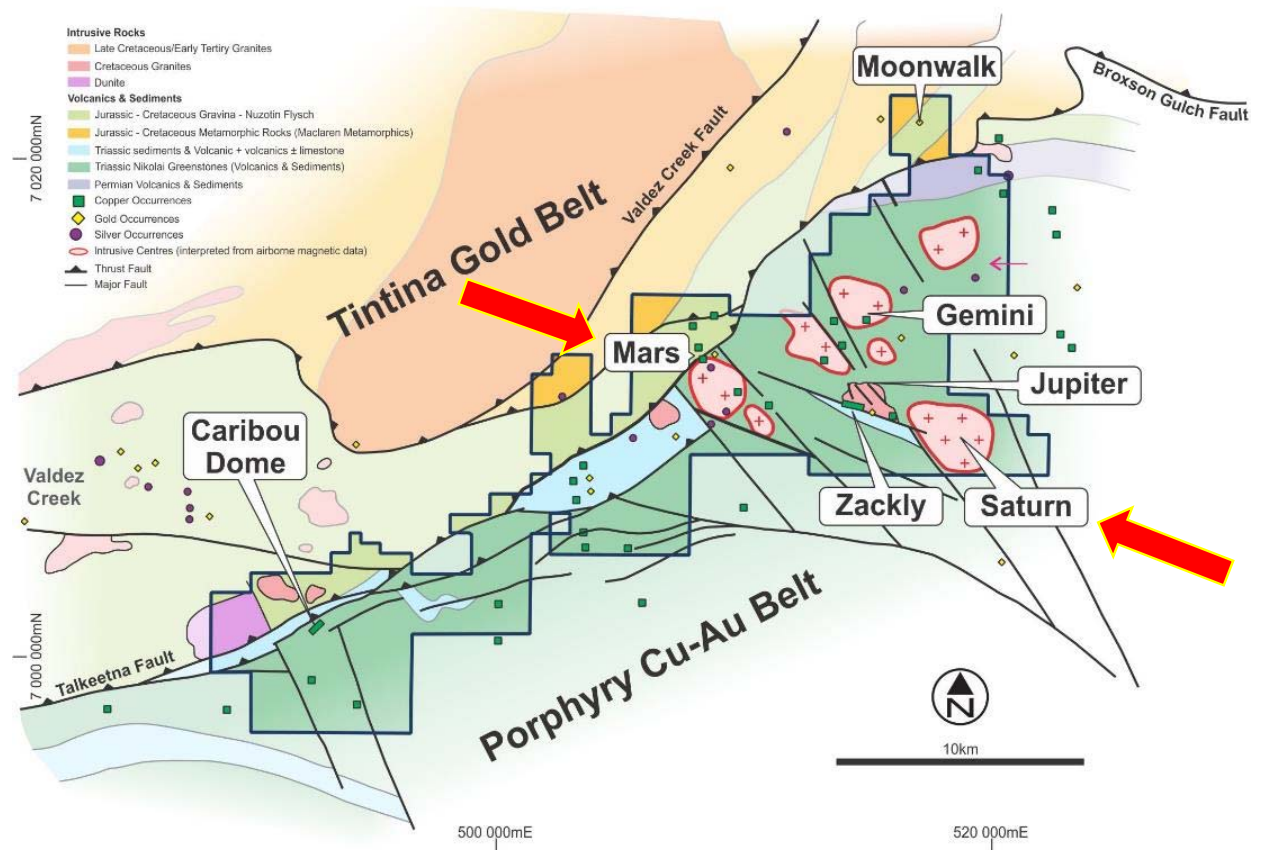
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# At the intersection of two major crustal-scale faults

- 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



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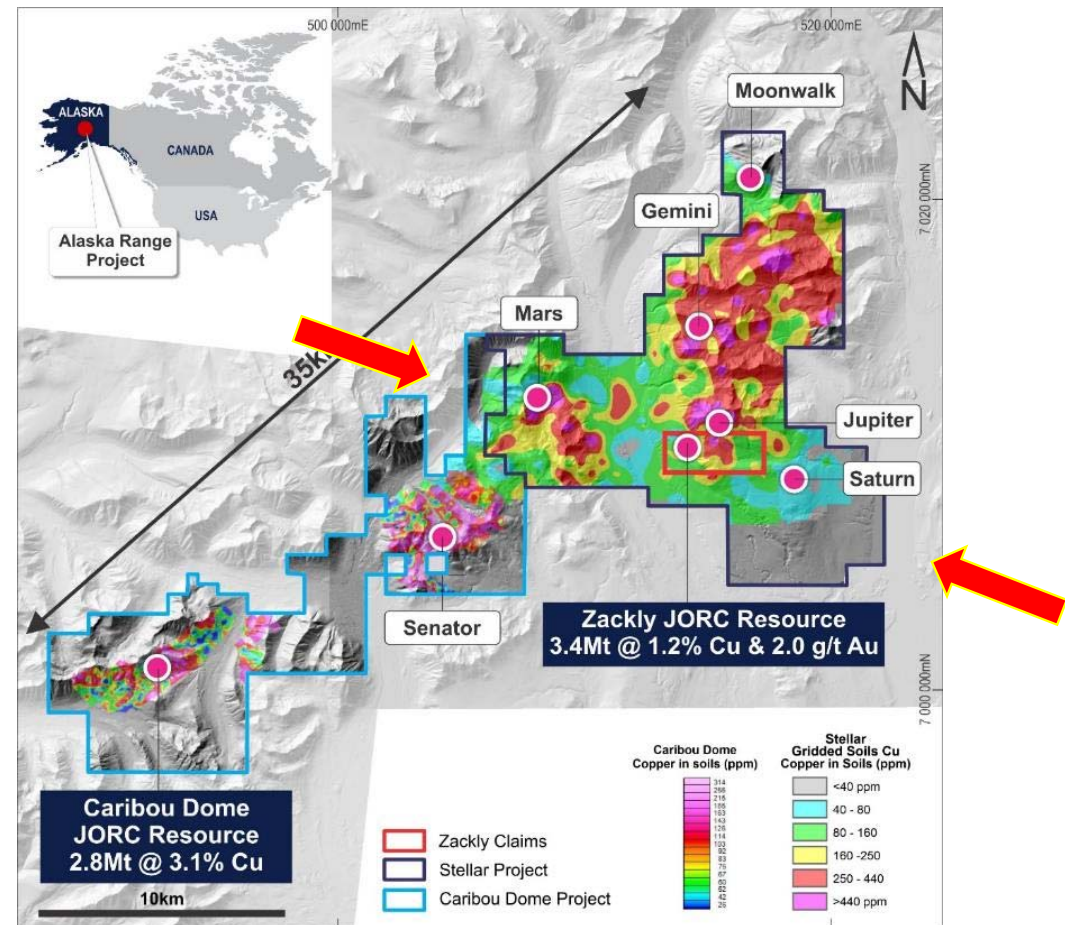
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# Rapidly growing resource with huge upside

- 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



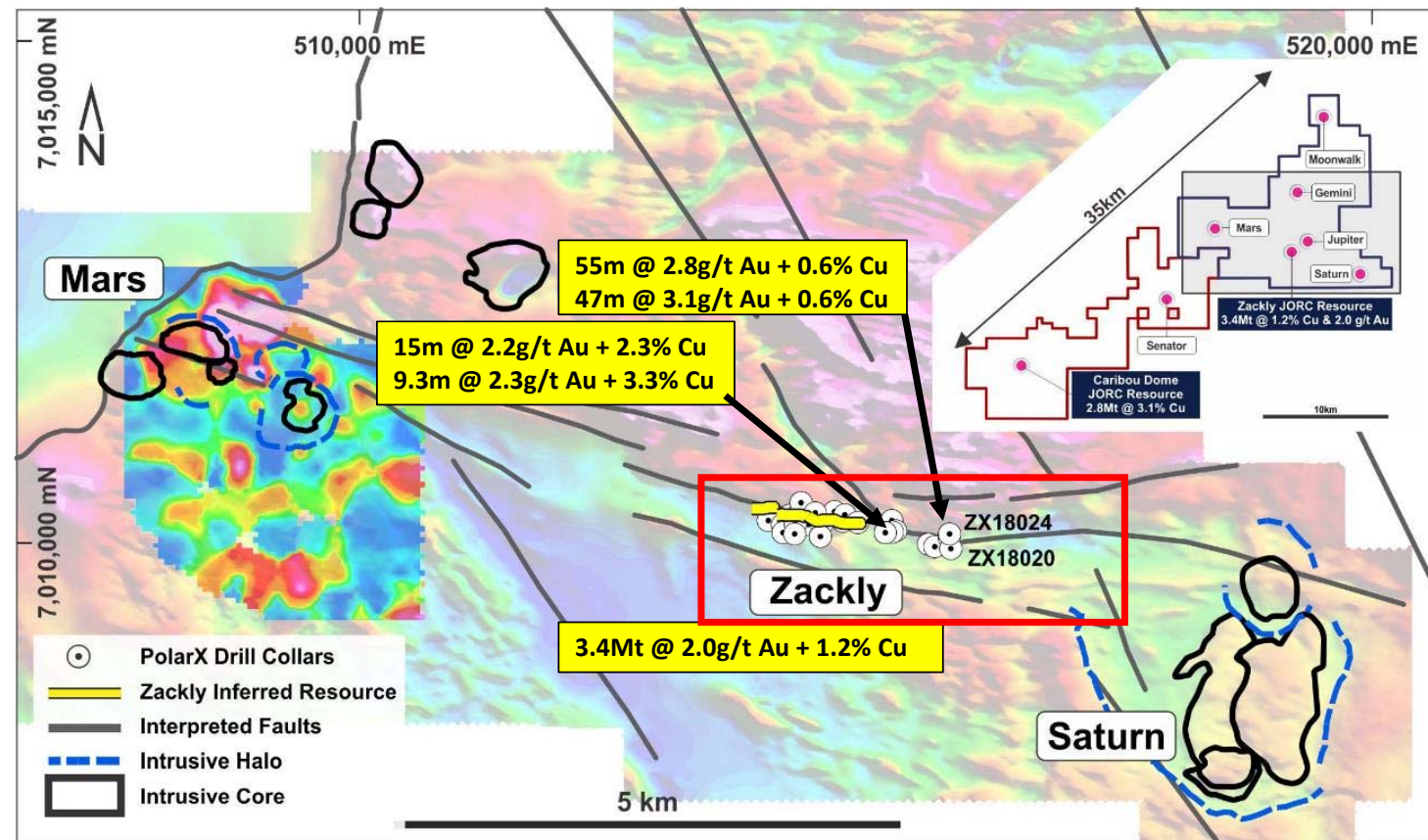
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# 12km long mineralised corridor – rapid near term growth

- 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 and 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**



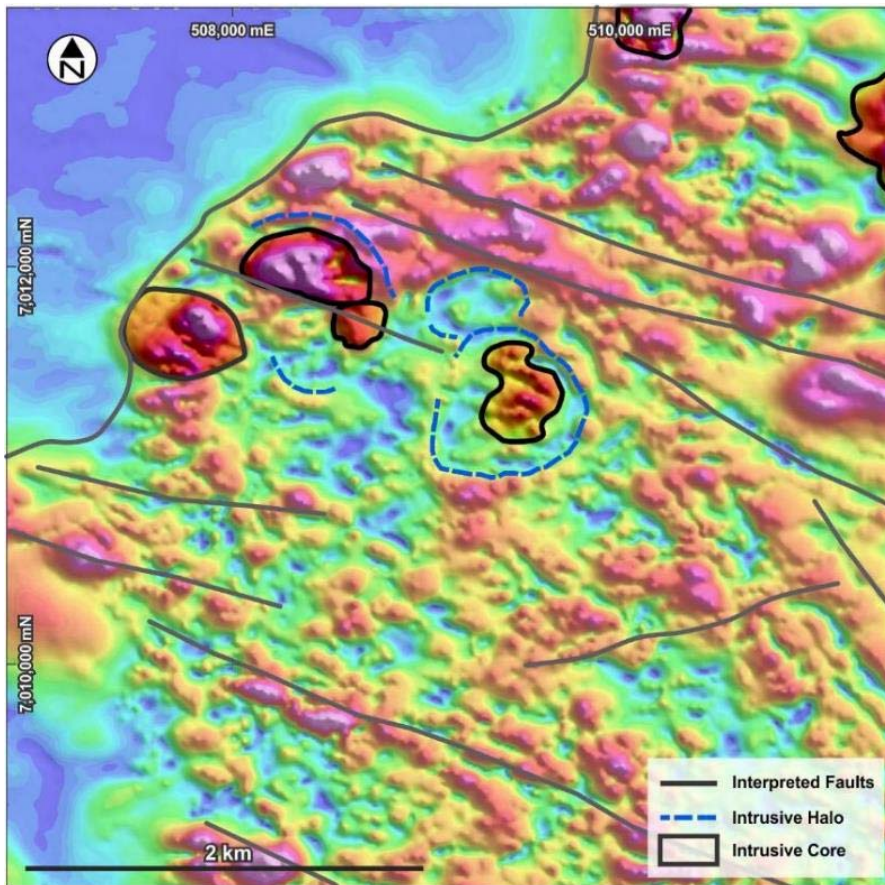
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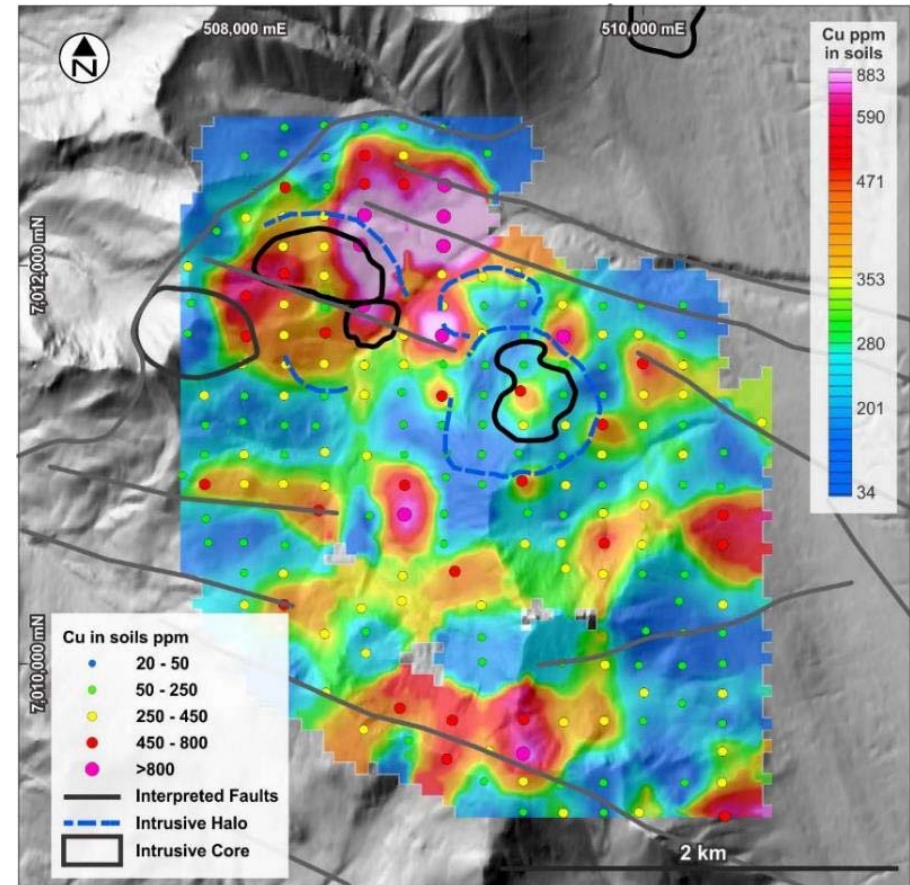
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# Mars: strong co-incident anomalism in surface sampling (Cu-Au-As-Mo)

Magnetic data (Analytical signal)



Copper in soil anomalism

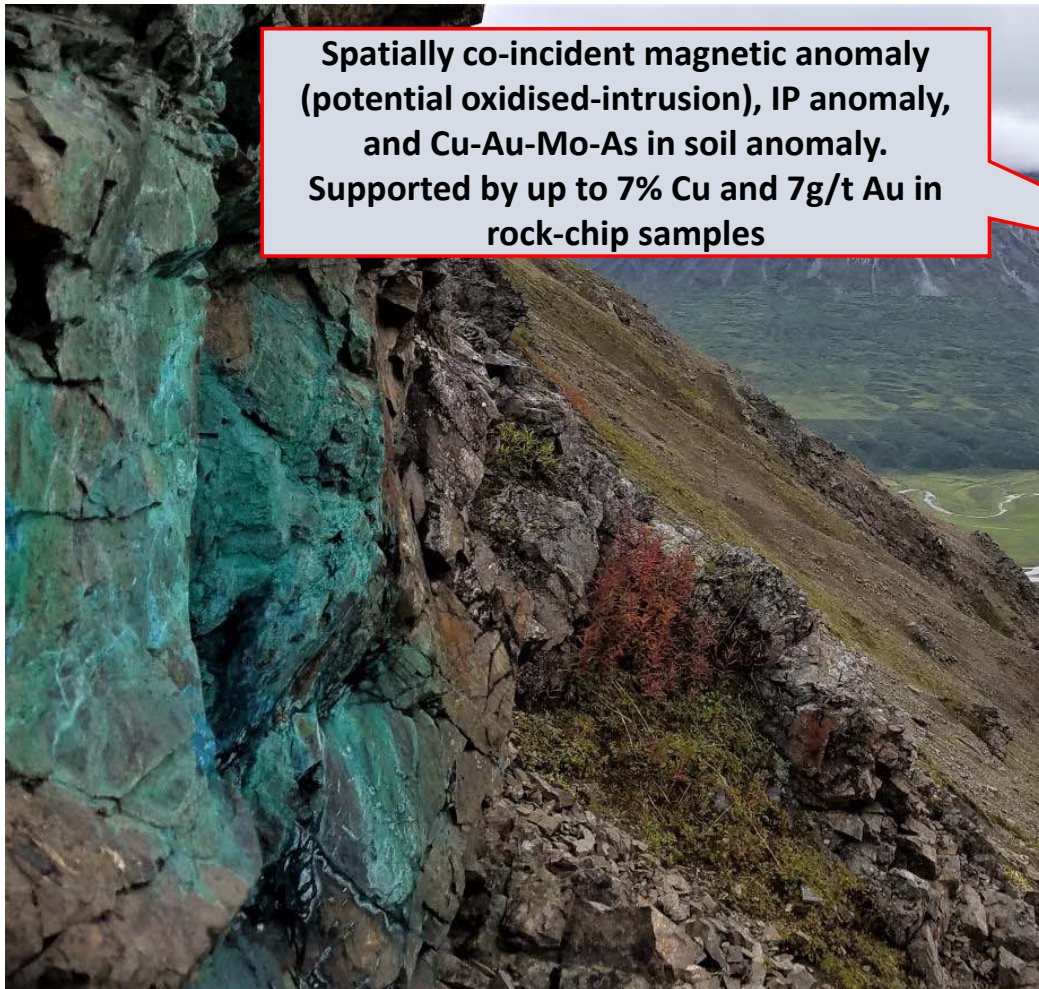


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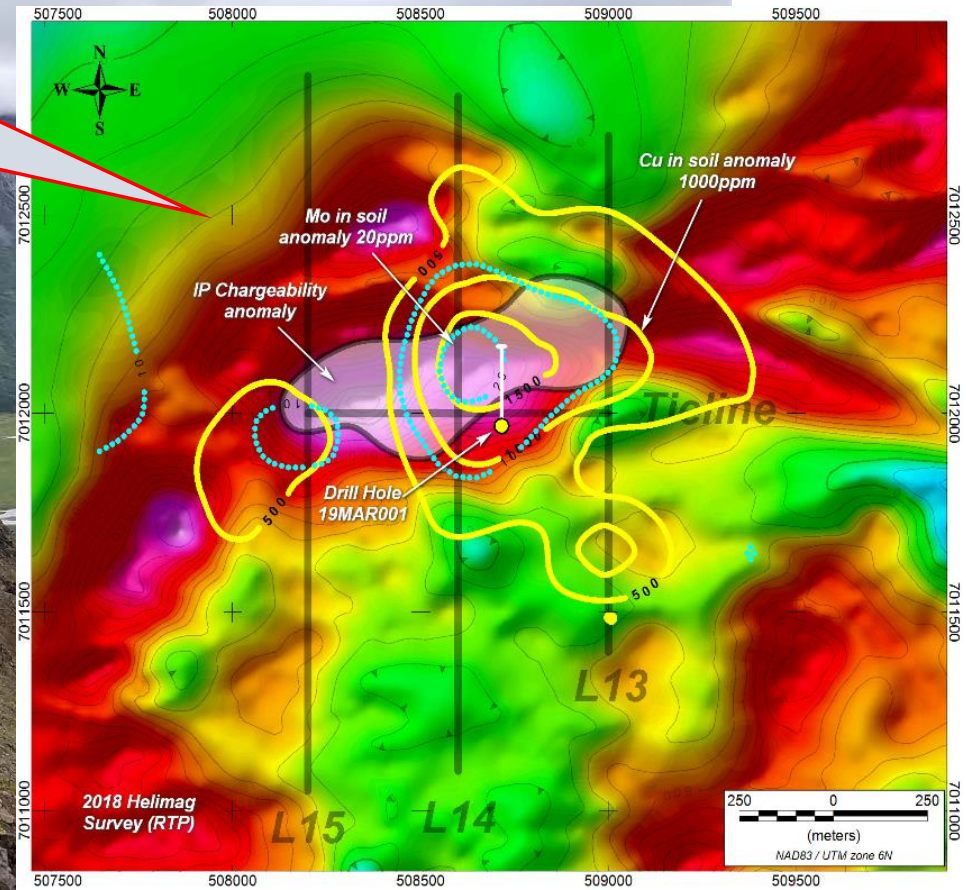
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# Mars Target: co-incident magnetic, IP and Cu-Au-As-Mo anomalism

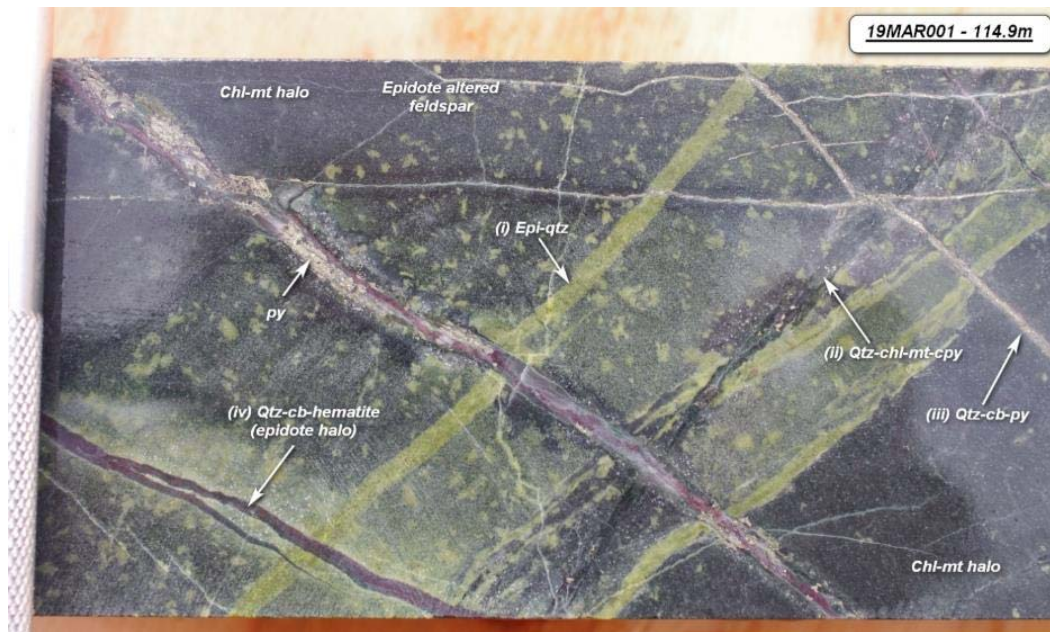


**Spatially co-incident magnetic anomaly (potential oxidised-intrusion), IP anomaly, and Cu-Au-Mo-As in soil anomaly. Supported by up to 7% Cu and 7g/t Au in rock-chip samples**



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



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(?).

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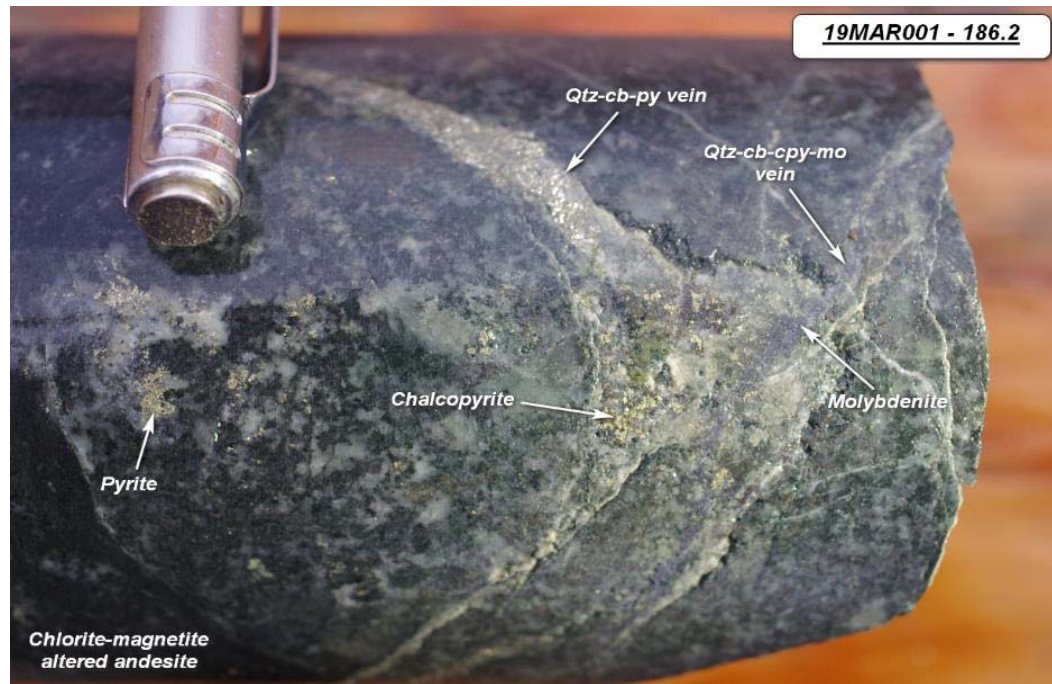
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# Multiple Cu and Cu-Mo veining events, potassic and phyllic alteration



19MAR001 at 186.2m depth. Chalcopyrite and molybdenite in quartz-carbonate-pyrite veins.



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

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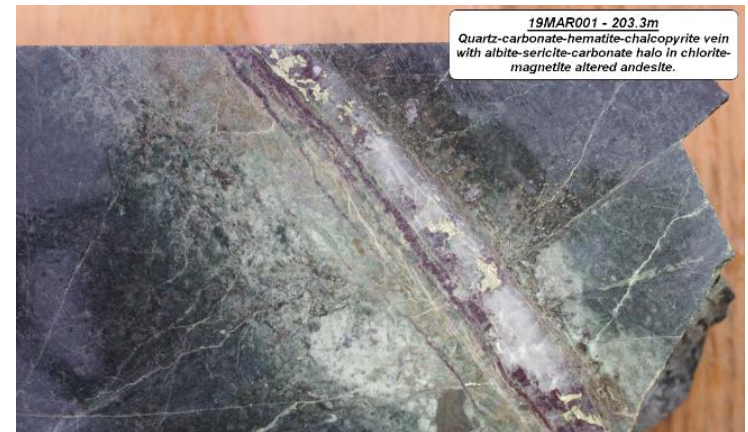
# Multiple Cu and Cu-Mo veining events: more drilling required!



19MAR001 at 303.2m depth. Quartz-carbonate-pyrite-chalcopyrite-molybdenite vein cutting epidote chlorite-magnetite altered andesite.



19MAR001 at 265.2m depth. Pyrite and chalcopyrite vein networks overprinting sericite-chlorite-magnetite altered andesite.



19MAR001 at 203.3m depth. Carbonate-quartz-hematite-chalcopyrite vein with carbonate-sericite-feldspar halo overprinting chlorite-magnetite altered andesite.

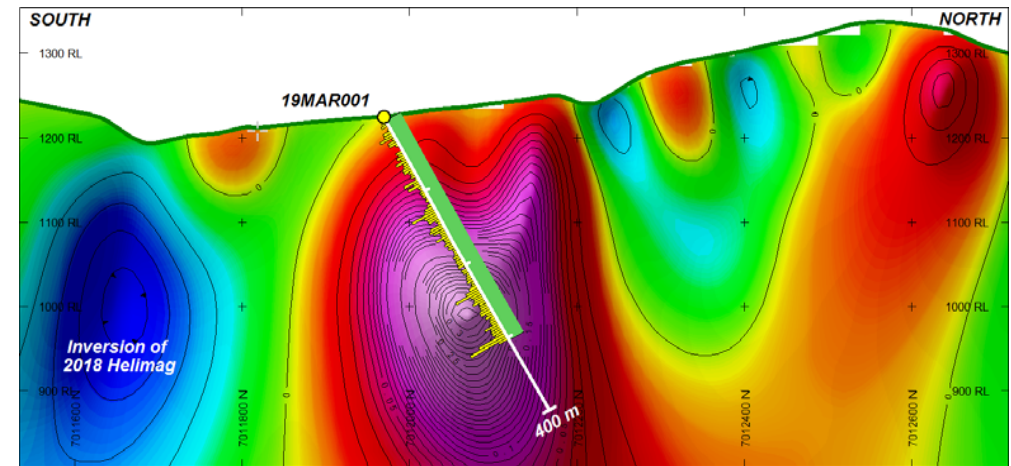
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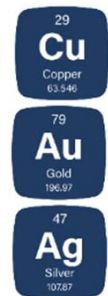
# Mars drill section and summary log

From (m)	To (m)	Lithology	19MAR001 Comments
0.0	5.3	Talus	Talus
5.3	13.4	Andesite	Epidote-chlorite altered fine grained massive andesite. Epidote appears to replace feldspars. Rare quartz-actinolite-magnetite-pyrite- <b>chalcopyrite</b> veins to 20mm.
13.4	16.0	Andesite	Very strongly clay-epidote altered zone associated with quartz-pyrite veins.
16.0	158.0	Andesite	Dark green, chlorite altered, fine grained massive andesite. Strongly magnetic and strongly epidote altered near quartz-pyrite +/- <b>chalcopyrite</b> veinlets. At least 6 phases of veining. More frequent and wider zones of early epidote +/- quartz alteration and the late carbonate-quartz +/- pyrite becoming thicker with more complex overprinting of multiple vein phases. <b>Chalcopyrite</b> restricted to early chlorite-magnetite alteration/veining and quartz-carbonate-pyrite +/- <b>chalcopyrite</b> veining.
158.0	170.0	Andesite	Coarse grained with abundant coarse-grained magnetite and very minor, fine-grained disseminated <b>chalcopyrite</b> . Minor veining.
170.0	220.0	Andesite	Pervasive chlorite-magnetite alteration of coarse-grained andesite. Increasing intensity of alteration down-hole (feldspar-pyrite-sericite) associated with veins up to 4-5cm thick. Quartz-carbonate- <b>chalcopyrite</b> veins at 176.5m, 197.7m, 203.3m and carbonate-quartz- <b>chalcopyrite-molybdenite</b> vein at 186.2m. Some broader zones of up to 40cm with intense epidote-carbonate-quartz and feldspar-sericite-pyrite.
220.0	>305.0	Andesite	As above with less veining. Sporadic quartz-carbonate-pyrite veinlets with minor <b>chalcopyrite</b> . Fine <b>chalcopyrite</b> and pyrite veinlets at 265.0m. Quartz-carbonate-pyrite- <b>chalcopyrite-molybdenite</b> vein at 302.3m.



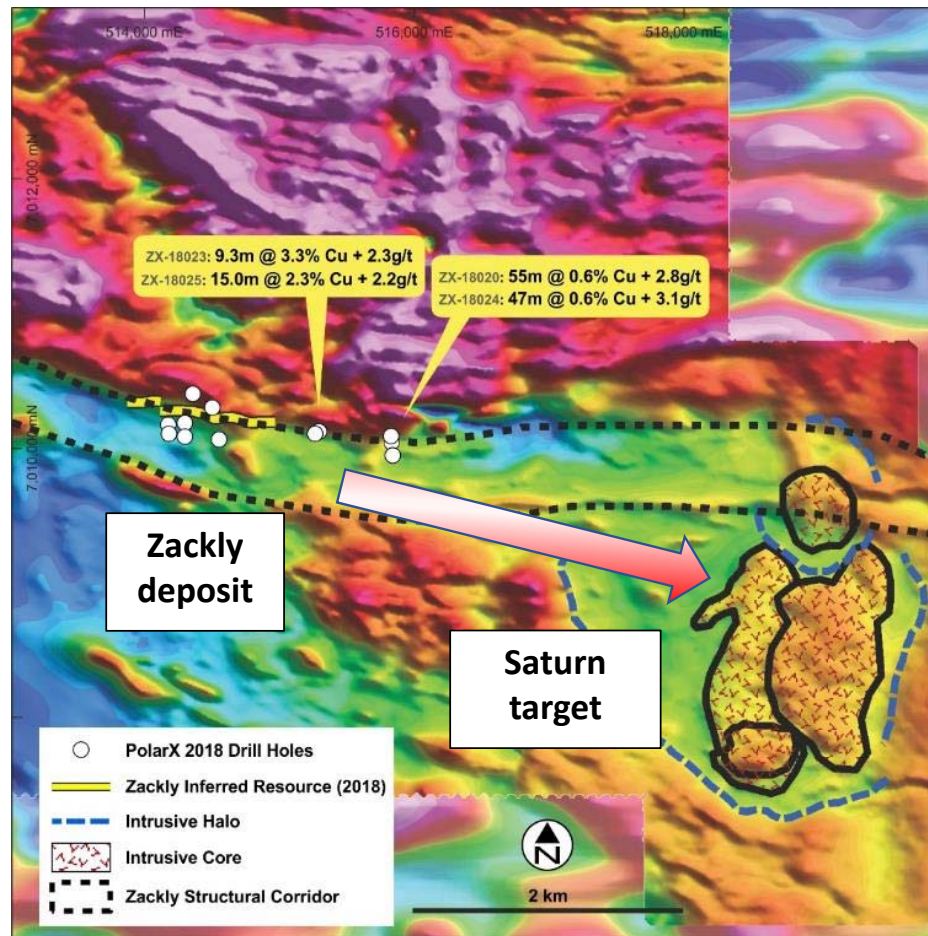
Six phases of veining have been identified throughout drill hole 19MAR001, four of which contain copper mineralisation;

- 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.





# Saturn porphyry Cu-Au target



- Blind target generated from re-processing historical regional magnetic data
- High-resolution aeromagnetic data validates target, particularly the 3-D inversion modelling
- Validated by strong interest from numerous international mining companies, including new 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 magmatic-hydrothermal process
  - Strong vectors from Zackly mineralization with grades, thickness and intensity of alteration at Zackly increasing from west to east towards Saturn

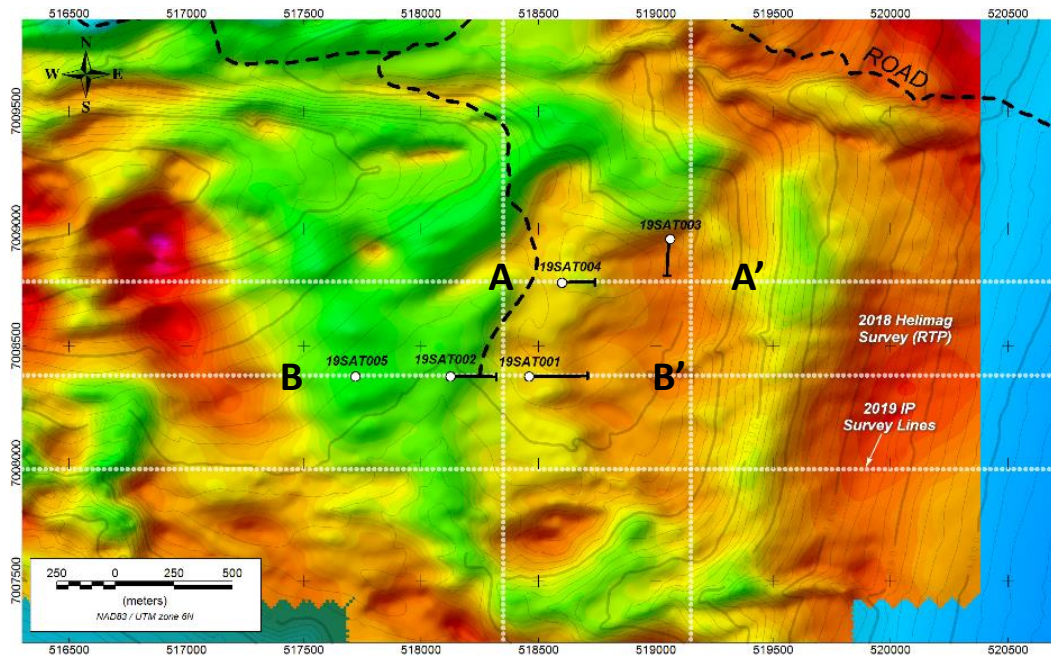
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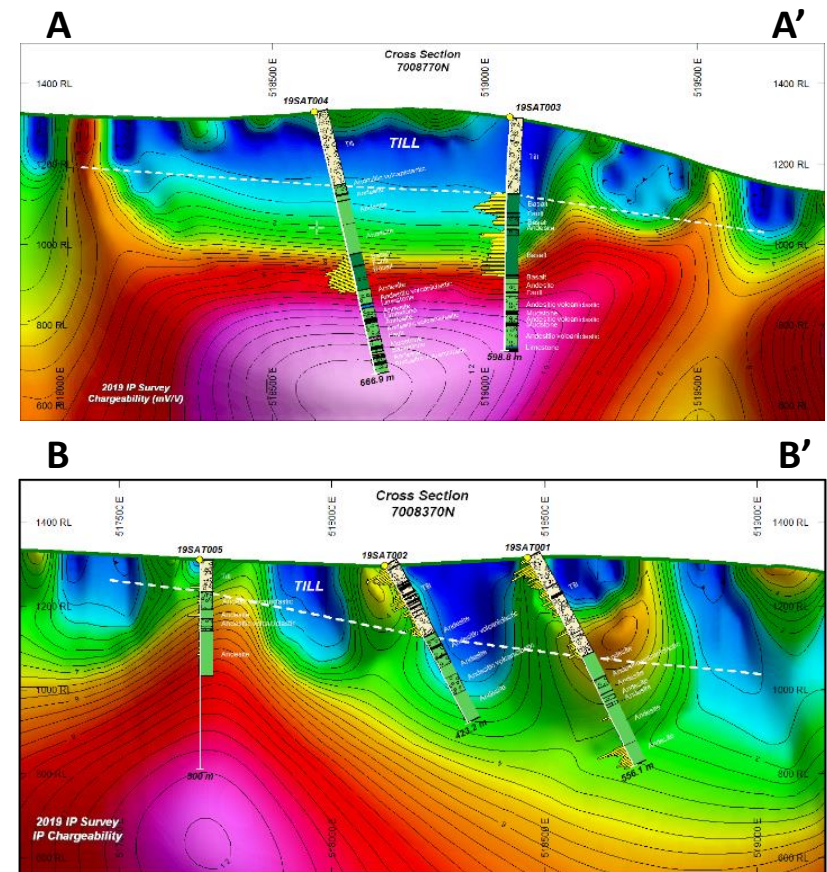
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# Saturn Scout Drilling: Plan and Cross-Sections – 5 deep holes in 2019

### Drill Plan on Magnetic Data



### Drill Sections on IP Data



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## Saturn scout drilling: key observations

- Core drilling into the extensive Saturn magnetic anomaly has identified geology, alteration patterns and local hydrothermal veining consistent with a deeper porphyry source.
- Saturn is covered by a thick layer of unconsolidated post-mineral cover which has slowed drilling progress. Five holes for a total of ~2,700m have been drilled at Saturn to date.
- **While further work is required to combine the forthcoming geological, geochemical, spectral and petrographic information, current consensus is that a deeper 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.
  - Sporadic veins containing quartz and pyrite are present, with intense silica-sericite-pyrite alteration haloes representing local phyllic alteration.
- A gravity survey to help identify buried intrusions has started.



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



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

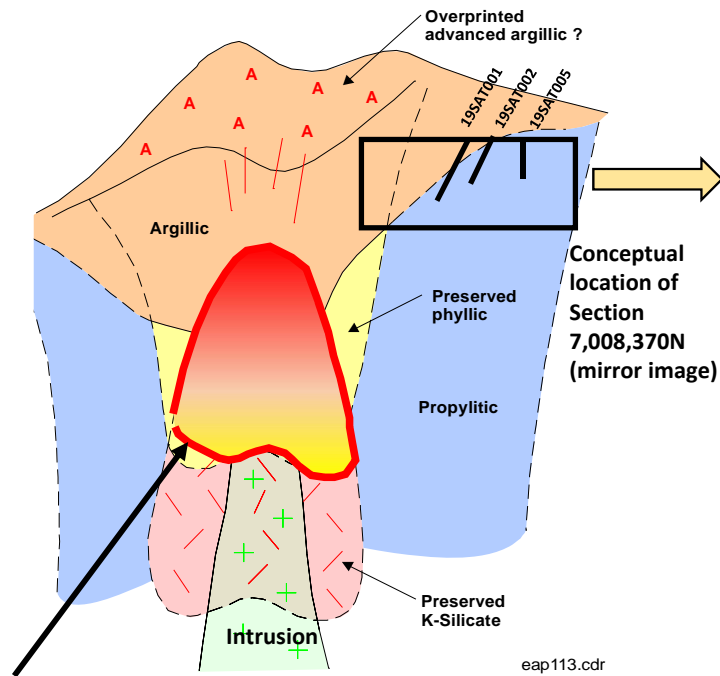
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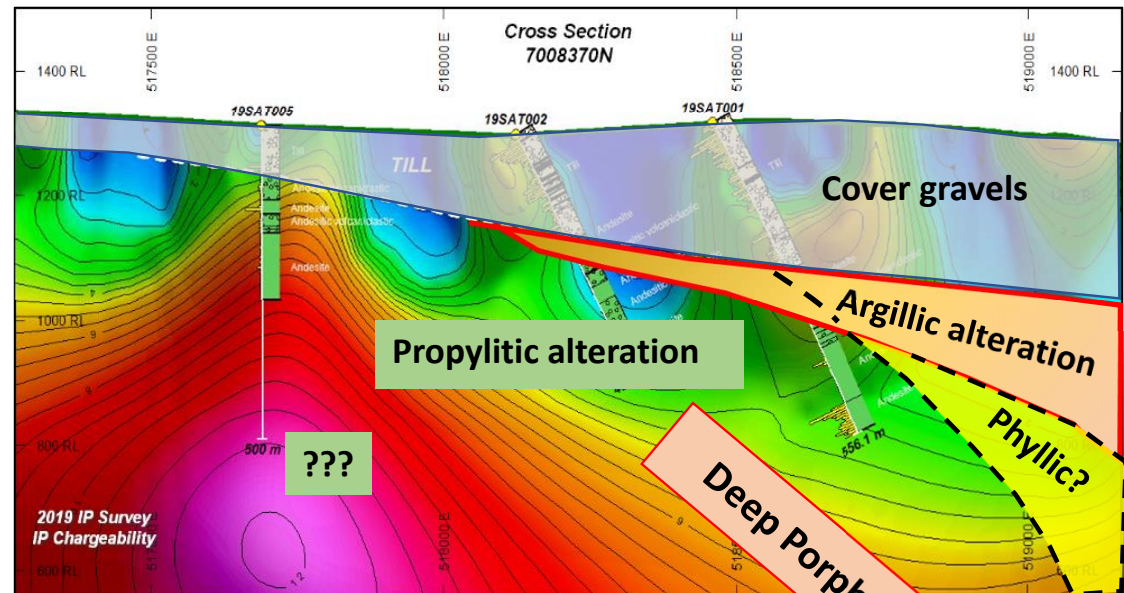
# Interpretation based on observations to date: deeper drilling required

## Schematic porphyry alteration zonation



Potential Cu-Au-Mo mineralised shell

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



Deep Porphyry Source?

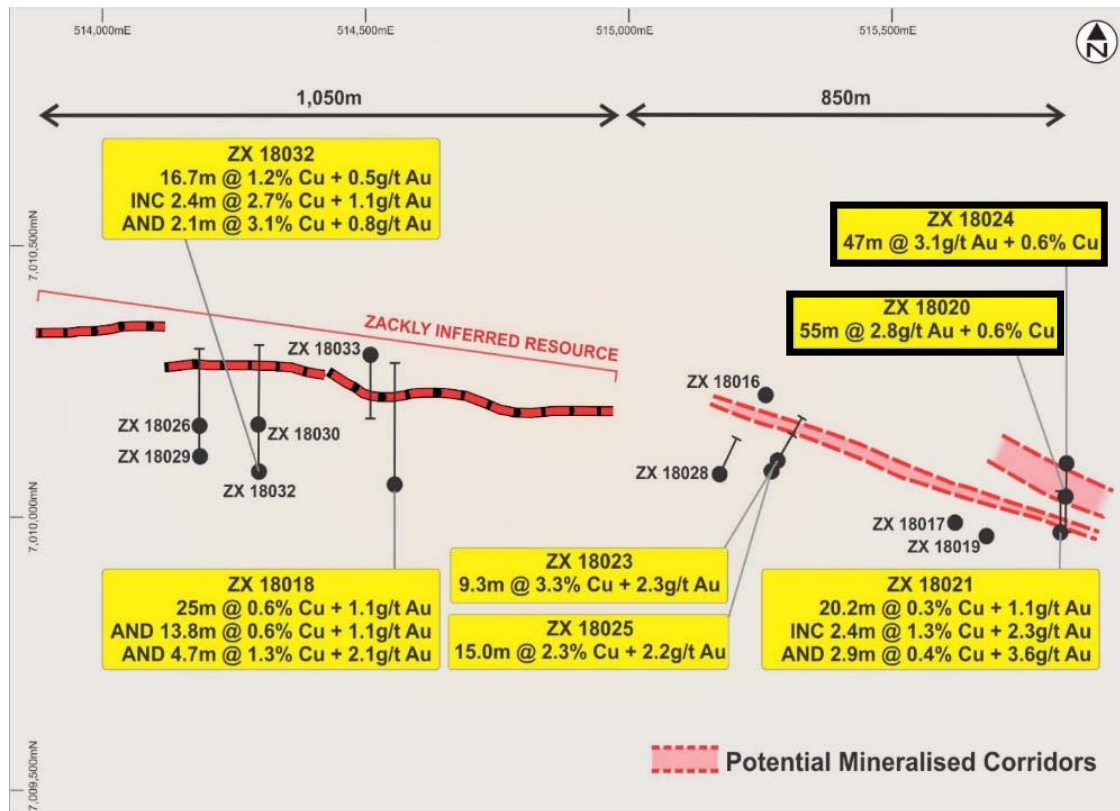
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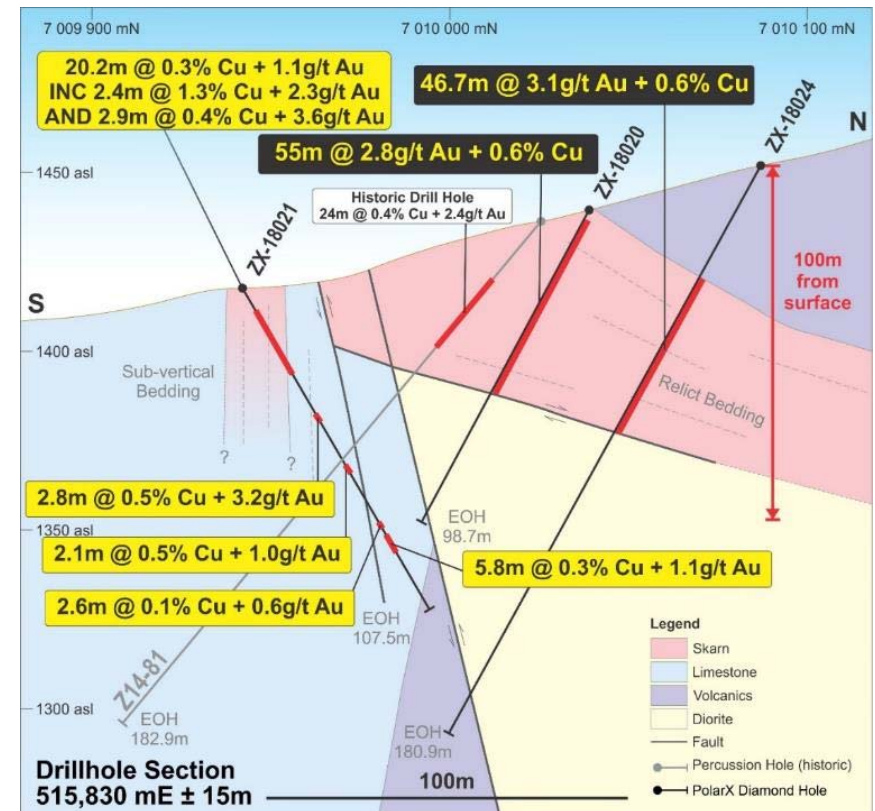
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# Upside at Zackly: high grades 850m east of current resource boundary

PLAN VIEW



CROSS-SECTION



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## 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
- ❑ Major 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



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## Experienced management team with track-record

### MARK BOJANJAC

B.Com, ICAA  
*EXECUTIVE CHAIRMAN*

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.

### FRAZER TABEART

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

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.

### JASON BERTON

Ph.D, B.Sc (Hons), MAusIMM  
*EXECUTIVE DIRECTOR*

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.

### IAN CUNNINGHAM

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

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.

### ROBERT BOAZ

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

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.

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## Strong institutional support from major international funds

	Shares (M)	Options (M)	Cash (30 Sept)
<b>TOTALS</b>	<b>416.2</b>	<b>33.8</b>	<b>~\$3.5M</b>

<b>SHAREHOLDERS:</b>	<b>%</b>
Lundin Mining Corporation	12.8
Management/Directors/MRG Team	12.2
JP Morgan (UK)	8.3
U.S. Global (US)	8.1
Ruffer Gold Fund (UK)	7.5
Lowell Resources Fund (Aus)	1.9

### TIGHTLY HELD

<b>Top 20</b>	<b>69%</b>
<b>Top 40</b>	<b>77%</b>

### EXECUTIVES:

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





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*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 Tabearth who is a member of The Australian Institute of Geoscientists. Dr Tabearth 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 Tabearth 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 Tabearth (an employee and shareholder of PolarX Limited). Both Mr Barnes and Dr Tabearth are members of The Australian Institute of Geoscientists. Mr Barnes and Dr Tabearth 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 Tabearth consent to the inclusion in the announcement of the matters based on the information in the form and context in which it appears.*

*In relation to the disclosure of visual mineralisation, the Company cautions that the veins pictured above occur at wide spacings in the drill hole, and as such the drilling is unlikely to have encountered economically viable grades of copper or molybdenum in this initial hole. Furthermore, the Company cautions that visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analysis, particularly in systems where gold may be present. Laboratory assay results are required to determine the widths and grade of the visible mineralisation reported in preliminary geological logging. The Company will update the market when laboratory analytical results become available.*

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 and 1 October 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.

