PALLAS RESOURCES LIMITED

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22 July 2021

Pallas Resources Granted 317km^2 Sulukol Exploration License in the >40Moz Stepnyak-Kokshetau Gold Belt of Northern Kazakhstan

- Pallas granted 317km^2 (31,700ha) Sulukol license within the highly prospective >40Moz Stepnyak-Kokshetau Gold Belt of Northern Kazakhstan, home to Glencore's 15 Moz Vasilkovskoye Mine.
- Sulukol selected after extensive regional data compilation and digitization process, followed by supervised Machine Learning and traditional empirical targeting applications. The company has leveraged in-house generative expertise, its large proprietary geospatial datasets, and the application of cutting-edge data science to help identify Sulukol as a highly attractive district target.
- Work in the Stepnyak-Kokshetau Gold Belt is part of an ongoing systematic country-wide data sourcing, digitization and targeting strategy. To the best of the Company's knowledge, it now holds the largest regional digital dataset for Kazakhstan of any company.
- Pallas has a second license (374km^2) provisionally granted in the same belt, further cementing our foothold in Northern Kazakhstan. Permitting of field activities has commenced in parallel with detailed reviews of Soviet era exploration reports.

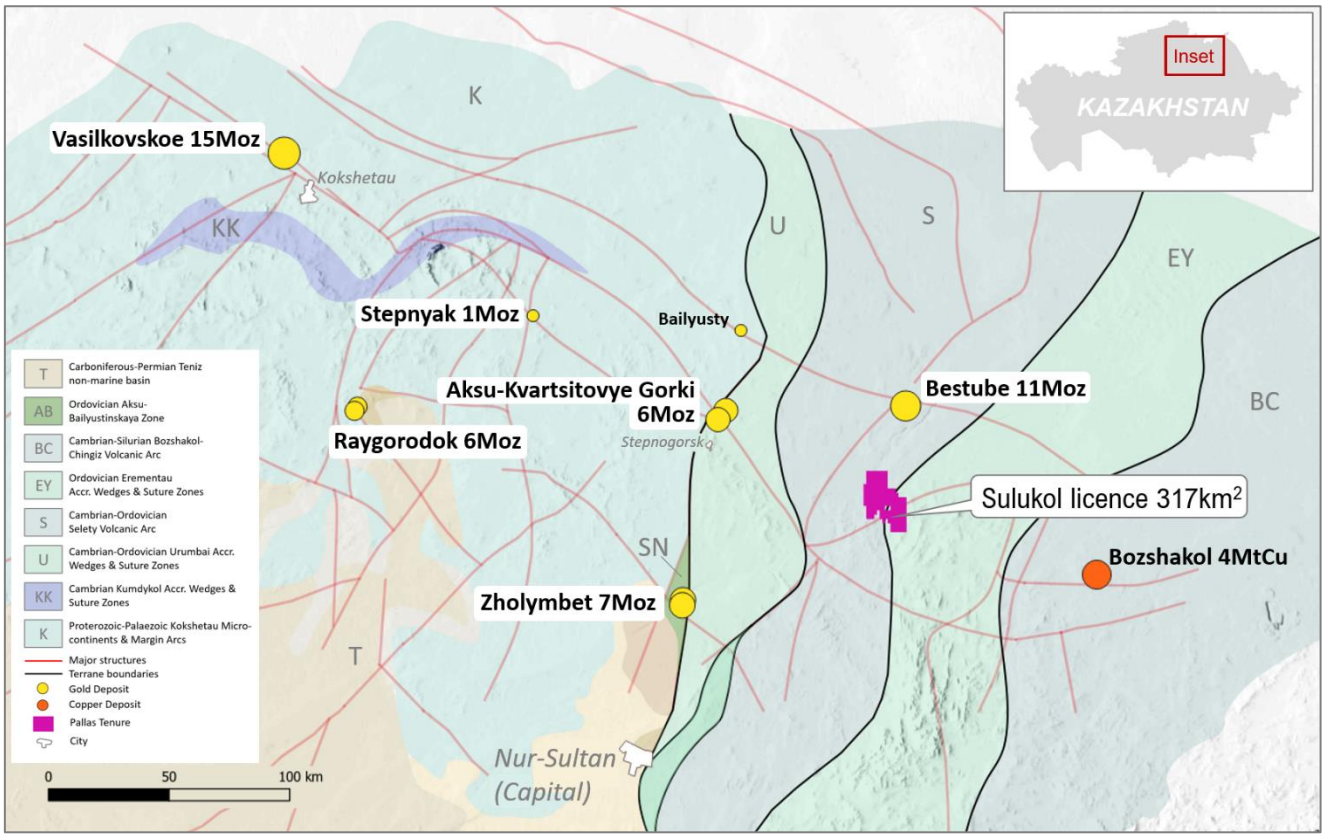

Figure 1: Location of Sulukol license within the Stepnyak-Kokshetau Gold Belt of Northern Kazakhstan. The 100% owned 317km^2 license lies just 150km northeast of the Kazakhstan capital Nur-Sultan, and 40km south of the 11 Moz Bestube Deposit. Geology map modified from Windley etal. (2007) and Sprirodonov (1995).

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Stepnyak-Kokshetau Gold Belt Focus and Prospectivity

Pallas' Technical Advisor David Groves, a specialist in orogenic gold globally, highlighted the area for its unique combination of significant endowment but lack of modern exploration and discovery. Of the top six deposits in the belt that host some 46Moz, all were discovered during or prior to the 1930s except for Vasilkovskoye which was discovered in 1963 (Table 1).

"The Stepnyak-Kokshetau Gold Belt is a highly endowed orogenic gold belt that includes two world-class gold deposits including Vasilkovskoye (15Moz gold). Despite this endowment and self-evident prospectivity, there has been minimal integrated modern exploration to follow up early Soviet work in the belt. The exploration scenario is similar to that of the Yilgarn of Western Australia before the modern exploration cycle of the 1980-1990s which led to many new world-class greenfield and brownfield gold discoveries. There is a very high probability of discovery of five to ten further large deposits between known deposits and along subparallel crustal-scale shear zones." – **David Groves.**

Deposit	Size	Year of Discovery	Discovered By	Current Ownership	Status
Stepnyak	1 Moz	1886	N. Pulzunovy, ancient workings	Alhambra	Resource
Aksu	6 Moz	1929	F.G. Lapina, gold prospector	KazakhAltyn	Operating
Kvartsitovye-Gorki		1929	F.A. Rybintsev, geologist	KazakhAltyn	Operating
Bestube	11 Moz	1931	Unknown, ancient workings	KazakhAltyn	Operating
Zholymbet	7 Moz	1931	Small scale miners	KazakhAltyn	Operating
Raygorodok	6 Moz	1937	F.A. Rybintsev, geologist	RG Gold (Verny Capital and RCF)	Expansion
Vasilkovskoye	15 Moz	1963	State Geology Party	Kazzinc Gold (Glencore & Kazakh Government)	Operating

Table 1: The top six deposits within the Stepnyak-Kokshetau Belt and their year of discovery.

Stepnyak-Kokshetau Gold Belt Geology and Metallogeny

The Northern Kazakhstan province consists of Vendian to early Palaeozoic turbidite and island-arc terranes and Precambrian metamorphic blocks. Middle to Late Ordovician granitoids of the Stepnyak Complex stitch these terranes. These intrusives can now be seen along the early to middle Palaeozoic strike-slip faults, such as the N-S Tselinograd fault along which the Zholymbet (7 Moz) and Aksu-Kvartsitovye Gorki (6 Moz) deposits occur.

Major gold deposits are generally spatially but not genetically associated with the intrusives of the older Stepnyak Complex. The exception being Vasilkovskoye which has been dated to within a few million years of the host intrusion. Like orogenic gold belts around the world, deposit locations at Stepnyak-Kokshetau Gold Belt appear controlled by regional strike slip structures and often their intersection with major oblique structures including terrane sutures.

Host rocks are variable, from all phases of the Stepnyak Complex (granodiorite, tonalite, norite, diorite and gabbro), to the intruded flysch (greywacke, lithic sandstone, siltstone, mudstone) and mixed volcanics. Mineralisation occurs as typical orogenic style quartz-veining with associated quartz-carbonate sericite alteration along controlling near-vertical structures. Broader stockworks and disseminated mineralisation are also common up to tens of metres wide at some deposits.

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Mining occurs by open pit and underground operations at Bestube, Aksu-Kvartsitovye Gorki and Zholymbet, while Vasilkovskoye and Raigorodok are open pit only. Open pit mined grades at all deposits are quoted at between 2.5 to 3.0g/t with the exception of Raigorodok which is ~1.3g/t. Underground mining was historically focused on high grade zones with reserves at 10.7 and 21.2g/t quoted in 2006 for Aksu-Kvartsitovye Gorki and Zholymbet respectively. However more recently bulk mining and processing has allowed underground grades of 3.8 to 4.0g/t respectively.

Gold is generally associated with sulphides – pyrite, pyrrhotite, arsenopyrite, although generally non-refractory. Up until recently gravity separation and flotation were most commonly used, however CIP and heap leaching have been introduced more recently. Aksu-Kvartsitovye Gorki and Bestube contain a high percentage of gravity-recoverable free gold. Mining of the partially refractory primary ore at Vasilkovskoye only began in 2010, however a HPGR-Ball Mill- Gravity-Flotation-UFG-Leachox–CIL flowsheet now achieves >80% recovery at an ~8Mtpa throughput.

Historic total production has been estimated at around 25 Moz. 2020 production at Vasilkovskoe was 580Koz, Raigorodok is ramping up to 180kozpa while Bestube, Aksu-Kvartsitovye Gorki and Zholymbet produce <100Koz per annum each.

Figure 2: The 580Kozpa Vasilkovskoye Mine, Kokshetau District, Northern Kazakhstan *image credit*

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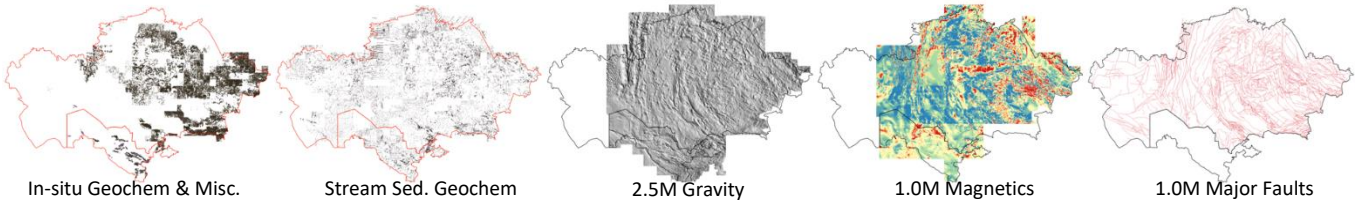
Targeting Process

Sulukol was selected after an extensive regional data compilation and digitization process, followed by supervised Machine Learning and traditional empirical targeting applications. Since incorporation, Pallas has worked extensively to source, collate and digitize datasets across Kazakhstan and Uzbekistan. These datasets were critical in the target selection process. Key country-wide datasets digitized to date include:

- 200K Scale Map Sheet Geochemical Data including stream sediments, in-situ sampling, occurrences and deposits and drilling (see announcements **here** and **here**)
- 2.5M Scale Map Gravity
- 1.0M Scale Map Magnetics
- 1.0M Scale Structural Map



In-situ Geochem & Misc. Point Data | Stream Sed. Geochem | 2.5M Gravity | 1.0M Magnetics | 1.0M Major Faults

Supervised Machine Learning

Pallas' Technical Advisors Bartosz Karykowski and Thomas Woolrych were responsible for applying Supervised Machine Learning (ML) to the Stepnyak-Kokshetau Gold Belt. Predictive exploration targeting using Supervised ML is a relatively efficient and cost-effective solution for interpreting large geo-datasets and assessing prospectivity on a regional scale. This approach can rely entirely on primary quantitative data rather than qualitative geological interpretation.

ML Methodology

Gravity, magnetic, geological, elevation and geochemical data, a total of 9 predictors, covering the entire Stepnyak-Kokshetau Gold Belt were standardized to a 500-m-pixel-size. A Supervised ML workflow was applied, and the algorithm trained on known major mines, projects and prospects in the area, including Vasilkovskoye (15 Moz), Bestube (11 Moz), Zholymbet South and Central (7 Moz), Raigorodok South and North (6 Moz) and Aksu-Kvartsitovye Gorki (6 Moz).

Several ML-based algorithms were tested, such as Logistic Regression, Neural Network and Random Forest, and the accuracy of each approach was calculated and evaluated. Multiple models were created including:

- A model with and without qualitative structural data,
- A model removing Vasilkovskoye and Bestube to assess the model's efficacy at locating Tier 1 deposits (the model identified both).

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The model which contained the structural dataset showed these data provided the highest information gain indicating a strong bias and was therefore removed. Random Forest was selected due to it having the highest accuracy. The model was then applied to the entire dataset and predictions were calculated for each pixel in the Stepnyak-Kokshetau area. In addition, this approach ranks all parameters with regards to their importance to the prediction. License-sized target areas (200-400 km^2) containing high prospectivity ratings were then selected, ranked and manually audited against available data layers. Sulukol ranked the highest amongst six target areas and was successfully applied for and granted.

Ground Acquisition in Keeping with Pallas Strategy in Kazakhstan

Pallas was founded to take advantage of world class potential in under explored mineral belts. We leverage a strong generative team to employ a targeted discovery thesis on the hunt for Tier 1 deposits. We're focused on a belt-scale approach in regions where there is minimal competition to entry, allowing the Company to acquire large land positions. The acquisition of Sulukol is in keeping with this strategy, providing the following exposure:

- A district scale position in a world-class gold belt (>40Moz historic endowment) within a region that hosts over 250 Moz.
- A clear gap in the application of modern exploration techniques, with a lack of grassroots exploration in Stepnyak-Kokshetau Gold Belt extending back 40 to 50 years in most cases.
- Extensive historic datasets (compiled and digitized by Pallas) as well as detailed Soviet era exploration reports.
- Licence granted on a 100% basis to our wholly owned Kazakh subsidiary (Ibex Resources LLP) under the newly modernized 2018 Kazakh Mining Code, which was modelled on Western Australia's mining legislation.

The Company continues to progress several additional district-scale opportunities including in the Chu-Sarysu sediment hosted copper basin, home to the 22MtCu Dzhezkazgen deposit (see **announcement**).

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