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Kavango Resources PLC
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**KAVANGO RESOURCES PLC**

("Kavango" or "the Company")

**Upgrade of B1 Conductor**

Botswana focussed metals exploration company Kavango Resources plc (LSE:KAV) ("Kavango") is pleased to announce an operational update for its Kalahari Suture Zone North ("KSZ North") project.

**STRATEGIC REVIEW**

- Kavango has prioritized the cluster of three identified "B Conductors" (>>> announced 11 July 2022) on the KSZ North Project for drill testing.
- The B1 Conductor ("B1") was recently remodelled with a conductance of 28,700 Siemens using Downhole Electromagnetic ("DHEM") survey data. This is well into the range accepted by nickel-copper specialised geophysicists for pyrrhotite bearing massive sulphides.
- New Controlled Source AudioMagnetotelluric ("CSAMT") data suggests that B1 lies at a lithological boundary in Karoo sediments within mudstones and gabbro sills. Kavango believes these gabbro intrusive sills could host massive sulphides if sulphur saturation has occurred.

The B3 and B4 conductors ("B3" and "B4") have been modelled at 4,100 and 2,760 Siemens respectively. These are also in the range of possible massive sulphides.

**DRILLING PARAMETERS**

- Kavango intends to drill test the B Conductors and the KSZ North geology host environment at the same time, along with the geochemistry of the gabbro intrusions at/near the conductors.
- On the suggestion of a senior external advisor, the Company will also test the chemistry of historically intersected coaly sediments to determine if they represent a viable sulphur source for the system. This was postulated by Holwell and Blanks in 2020, who endorsed the KSZ North program and proposed that Karoo intrusive gabbros could undergo sulphur saturation to form massive sulphide deposits.
- Kavango believes that drilling the B Conductors could validate its entire KSZ North exploration program.

**Jeremy S. Brett, Executive Director at Kavango Resources and Senior Geophysical Consultant through Jeremy S. Brett International Consulting Ltd, commented:**

*"The B1, B3 and B4 cluster of conductors is significant and drill ready. The high conductance of the B1 conductor modelled from the Downhole Electromagnetic data is considered by nickel-copper geophysicists to be typical of massive sulphides with pyrrhotite, which in turn can be associated with nickel mineralization. Conductance is one of the most powerful discrimination factors in nickel copper exploration.*

*I feel that most exploration companies exploring for nickel and copper would want a target with a conductance as high as the B1 conductor. These are also critical targets to the entire KSZ project.*

*Success in drilling these could confirm the presence of not only massive sulphides, but also confirm the ore deposit model proposed by Kavango and our senior advisors. This would open up the rest of the KSZ Project for intense exploration using more Time Domain Electromagnetics. The only one remaining step is to drill and find out the cause of these conductors."*

**Further details**

Kavango considers the KSZ North to be an advanced and high potential exploration project. The B Conductors are located at the north edge of the Great Red Spot intrusive, which was probably structurally favourable for intrusive Karoo gabbro feeders and sills that could have undergone sulphur saturation and sulphide immiscibility (per Holwell and Blanks, 2020). The Great Red Spot itself sits at the nexus of seven regional scale structures. This context is viewed as a prime location for potential ore deposits (q.v. Graham Begg, 2010).

Kavango identified B1 from Surface Time Domain Electromagnetic ("TDEM") surveying and drill tested it in early 2022 with hole KSZDD002 (announced >>> 28 February 2022). Downhole Electromagnetics ("DHEM") showed that the hole had narrowly missed the conductor and that it remained untested. This is not uncommon in nickel/copper exploration

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Surface TDEM surveys were expanded in 2022 to cover the B1 conductor area thoroughly for improved resolution. The new data allowed the B1 conductor to be remodelled by a leading TDEM specialist in Australia at 12,840 Siemens, which itself is well into a range for massive sulphides.

The DHEM data for B1 was also remodelled, resulting in a higher resolution on the conductor geometry and a higher conductance of 28,700 Siemens. Conductances of this magnitude are possible to resolve using DHEM since the EM sensor is closer to the causative body than with surface TDEM. Kavango is now confident that it can intersect the B1 target via drilling.

Kavango believes that B1's conductivity could result from the presence of pyrrhotite content. Pyrrhotite is very highly conductive and often associated with the nickel-bearing mineral pentlandite in nickel/copper/platinum group element massive sulphide bodies.

Following remodelling, the new model plate for B1 now has a more discrete dimension of 255 x 440 metres using Surface TDEM, and 150 x 475 metres using DHEM data. These conform to a typical size range for massive sulphide bodies.

Kavango recently calculated the probable conductive responses of geological features other than potential massive sulphides in the Karoo in the B Conductor area, using physical properties collected from Kavango drill core. These included fossiliferous saline aquifers, coal, and coaly sediments. All calculations fell short of the range for massive sulphide bodies, this is a positive pre-drilling indicator, suggesting a low probability of these formational conductors being responsible for the B Conductors.

Under Kavango's target ranking system in the KSZ, B1 represents a high priority drill target that should be drill tested using 2 holes plus DHEM.

While testing B1 with "out of loop surveys" for improved insight into its geometry, Kavango identified two new conductors that it named B3 and B4.

Kavango has modelled B3 and B4 at 4,100 and 2,760 Siemens respectively, and as much larger spatially than B1. Kavango has upgraded them as priority drill targets due to their proximity to B1. The Company believes they could be larger but thinner massive sulphides zones at the bases of gabbro intrusive sills. These targets will require a minimum of one hole each plus DHEM for future guidance.

Further information in respect of the Company and its business interests is provided on the Company's website at www.kavangoresources.com and on Twitter at #KAV.

For further information please contact:

**Kavango Resources plc**

Ben Turney

bturney@kavangoresources.com

+46 7697 406 06

First Equity (Joint Broker)

+44 207 374 2212

Jason Robertson

**Kavango Competent Person Statement**

The technical information contained in this announcement pertaining to geophysics have been read and approved by Mr. Jeremy S. Brett, M.Sc., P.Geo., Senior Geophysical Consultant, Jeremy S. Brett International Consulting Ltd. in Toronto, Canada. Mr. Brett is a member of the Professional Geoscientists of Ontario, the Prospectors and Developers Association of Canada, the Canadian Exploration Geophysical Society, and the Society of Economic Geologists. Mr. Brett has sufficient experience that is relevant to geophysics applied to the styles of mineralization and types of deposits under consideration to act as a Qualified Person as defined under the Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects.

**Note to Editors:**

**THE KALAHARI SUTURE ZONE**

Kavango's 100% subsidiary in Botswana, Kavango Minerals (Pty) Ltd, is the holder of 16 prospecting licences covering 8,831.1km$^2$ of ground, including 14 licences over a significant portion of the 450km long KSZ magnetic anomaly in the southwest of the country along which Kavango is exploring for Ni-Cu-PGE rich sulphide ore bodies. This large area, which is entirely covered by Cretaceous and post-Cretaceous Kalahari Sediments, has not previously been explored using modern techniques.

The area covered by Kavango's KSZ licences displays a geological setting with distinct similarities to that hosting World Class magmatic sulphide deposits such as those at Norilsk, Siberia (D. Holwell and D. Blanks, 2020).

**KSZ DEFINITIONS**

***Chalcopyrite*** **:** A copper rich sulphide mineral ($CuFeS_2$), widely occurring in magmatic sulphide ore bodies.

***EM Conductors:*** Bodies of highly conductive minerals such as graphite, magnetite and metal sulphides conduct electricity very effectively, provided the mineral grains are in contact with each other. These respond to electromagnetic ("EM") surveys as conductors.

***Gabbro/gabbroic:*** A coarse grained, medium to dark coloured rock, formed from the intrusion of mantle derived molten magma into the earth's crust. Gabbroic rocks (or "gabbros") are formed as the molten magma crystallizes and cools.

***Gabbroic sills:*** Relatively thin, planar, horizontal bodies of solidified gabbroic magma that intruded into layers of sedimentary rock whilst still molten.

**Karoo:** The Karoo System covers 1.5 million $km^2$ of the semi-desert region of Southern Africa. Rocks in this system formed 180-310 million years ago.

***Massive Sulphide:*** When mineralization consists almost entirely of sulphides it is termed "massive". When these sulphides are in high enough concentration and the mineral grains are in electrical contact, they become electromagnetic conductors and detectable via TDEM surveys.

***Metal/Magmatic sulphide:*** Deposits of sulphide mineral concentrations in mafic and ultramafic rocks, derived from immiscible sulphide liquids. To view a video of how metal/magmatic sulphides form please visit -

https://twitter.com/KavangoRes/status/1316004057895645186?s=20

***Norilsk Model:*** An ore deposit model pertaining to the Norilsk mining camp in Siberia, also referred to as the Talnakh and Kharaelakh Ni-Cu-PGE Deposits. Norilsk is located 2,800km northeast of Moscow and accounts for 90% of Russia's nickel reserves, 55% of its copper and virtually all of its PGMs. Kavango's licenses in the KSZ display a geological setting with distinct geological similarities to the magmatic sulphide deposits at Norilsk.

Major Ni-Cu-PGE sulphide camps are associated with rifted environments along craton margins, where voluminous mafic-ultramafic magmas ('large igneous provinces') derived from mantle plumes were channeled up through lithospheric fault systems and emplaced into sedimentary basins that contain abundant sulphur-bearing country rocks. (D. Holwell and D. Blanks, 2020)

Magma plumbing systems that lie beneath food basalts are a key feature of these deposits, especially when they intersect Siberian type traps. Magma that intrudes into sedimentary basins digests coal as a sulphur source, triggering sulphur saturation, sulphide immiscibility and ore deposit formation. These sedimentary basins tend to be erosionally preserved.

***Pegmatitic*** **:** Pegmatites are very coarse grained igneous rocks having grain sizes in excess of 3cm. Pegmatites are thought to form as a result of very slow crystallisation and may contain exotic minerals from a volatile-rich melt.

***Sulphide mineralisation:*** If there is sufficient sulphur in the molten magma, it will tend to combine with metals (Cu, Zn, Ni, Co, Pb, PGEs etc.) to form metal sulphide complexes, which may coalesce to form massive sulphide deposits. If the melt is sulphide poor, the metals will be taken up into the silicate minerals that form as the magma cools and will not usually form economic deposits.



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