

# TSODILO RESOURCES LIMITED

## 441 Mt Initial Resource Estimate for Block 1 of the Xaudum Iron Project, Botswana

FOR IMMEDIATE RELEASE

September 2, 2014

TORONTO, CANADA - Tsodilo Resources Limited (TSX-V:TSD) ("Tsodilo" or the "Company") is pleased to announce the release of its maiden NI43-101 Technical Report including CIM compliant Inferred Mineral Resource Estimate of 441 million tonnes (Mt) with an average grade of 29.4% Fe for Block 1 of its flagship Xaudum Iron Project, North West Botswana.

James M. Bruchs Chairman and CEO of Tsodilo Resources Ltd commented on this announced resource saying, "We are delighted to say that we have defined large mineral resource tonnage in the Block 1 area of 441 Mt. This is a major step for the project and confirms that the Xaudum Iron Project can be a major iron ore project for Botswana. The project has the potential to supply iron ore and iron products to not only the whole southern African region but to the world. This resource is also only the 'Tip of the Iceberg' given the previously reported Exploration Target of between 5 and 7 billion of tonnes."

The Xaudum Iron Formation (XIF) NI 43-101 Mineral Resource Estimate (MRE) report (entitled; *Mineral Resource Estimate for the Xaudum Iron Project (Block 1), Republic of Botswana*) was completed by SRK Consulting (UK) Ltd and is the report referred to in this press release. This report has been uploaded to the System for Electronic Document Analysis and Retrieval (SEDAR) website [www.sedar.com](http://www.sedar.com). SEDAR is the System for the electronic filing system for the disclosure documents of public companies and investment funds across Canada. A copy of this document along with this press release is available on the Company's web site, [www.TsodiloResources.com](http://www.TsodiloResources.com).

### Highlights

- **Inferred Mineral Resource of 441 million tonnes** at average grades of **29.4% Fe**, 41.0% SiO<sub>2</sub>, 6.1% Al<sub>2</sub>O<sub>3</sub> and 0.3% P for Block 1 of the Xaudum Iron Formation (XIF).
- Davis Tube Recovery (DTR) magnetic concentrate mass recoveries of **33.2%** at P80 grind size of 80 microns.
- Iron ore grade DTR magnetic concentrate at **67.2% Fe**, 4.2% SiO<sub>2</sub>, 0.5% Al<sub>2</sub>O<sub>3</sub>, 0.07% P at P80 grind size of 80 microns, although higher grades are possible at finer P80's see the press release from December 17, 2013 available on the Company's website at [www.TsodiloResources.com](http://www.TsodiloResources.com).
- Significant potential to increase the Mineral Resource through ongoing exploration. The reported Mineral Resource represents only a fraction of the potential XIF mineralization delimited by the ground magnetics. Tsodilo has previously reported an Exploration Target\* for the XIF of **5 to 7 billion tonnes** with grades ranging between 15-40% Fe, see the press release from January 22, 2014 available on the Company's website at [www.TsodiloResources.com](http://www.TsodiloResources.com).
- Tsodilo is currently drilling the next exploration area referred to as Block 2a, where the company expects to define a significant Inferred Mineral Resource in due course which will **significantly increase the Xaudum Iron Project total Mineral Resource**.

\* The XIF exploration target was generated using inversion modelling of the ground magnetic signal which was compared to a local drill-hole model to create inversion model volume conversion factors. For a more detailed description of the process used to create this exploration target please see the press release of January 22, 2014 available on the Company's website at [www.TsodiloResources.com](http://www.TsodiloResources.com). It is important to note that the tonnages and grade quoted in this exploration target is conceptual in nature, there has been insufficient exploration to define this fully as a mineral resource and that it is uncertain if further exploration will result in the full target being delineated as a mineral resource.

## XIF Resource Summary

The Inferred Mineral Resource for Block 1 (Table 1) presented in this press release comprising 441 Mt grading 29.4% Fe, 41.0% SiO<sub>2</sub>, 6.1% Al<sub>2</sub>O<sub>3</sub> and 0.3% P (see Table 1 for breakdown), was prepared under the direction of Howard Baker (of SRK Consulting (UK) Ltd) the Qualified Person (QP) as such term is defined by National Instrument 43-101 and the companion policy 43-101 CP. The definitions of Inferred Resources in this Mineral Resource statement conform to the definitions and guidelines of the CIM Definition Standards for Mineral Resource and Mineral Reserves, May 2014. For more details please see the XIF NI 43-101 Mineral Resource Estimate (MRE) report that can be downloaded from [www.TsodiloResources.com](http://www.TsodiloResources.com) and also from the SEDAR website [www.sedar.com](http://www.sedar.com).

**Table 1. Mineral Resource Statement for XIF Block 1.**

| <b>Geodomain Zone</b> | <b>Resource Category</b> | <b>Tonnes (Mt)</b> | <b>Fe %</b> | <b>SiO<sub>2</sub> %</b> | <b>Al<sub>2</sub>O<sub>3</sub> %</b> | <b>P %</b> |
|-----------------------|--------------------------|--------------------|-------------|--------------------------|--------------------------------------|------------|
| MBA                   | Inferred                 | 236                | 35.6        | 34.0                     | 4.0                                  | 0.3        |
| DIM                   | Inferred                 | 148                | 20.9        | 51.0                     | 9.1                                  | 0.2        |
| MBW                   | Inferred                 | 21                 | 34.3        | 35.4                     | 4.4                                  | 0.2        |
| DMW                   | Inferred                 | 29                 | 20.5        | 49.5                     | 8.2                                  | 0.2        |
| MGS                   | Inferred                 | 7                  | 22.1        | 50.8                     | 8.9                                  | 0.2        |
| <b>TOTAL</b>          | <b>Inferred</b>          | <b>441</b>         | <b>29.4</b> | <b>41.0</b>              | <b>6.1</b>                           | <b>0.3</b> |

Notes:

- (1) Geodomains MBA = Magnetite Banded (BIF), DIM = Magnetic Diamictite, MBW = Weathered Banded Magnetite (oxidized MBA), DMW = Weathered Magnetic Diamictite (oxidised DIM), and MGS = Magnetic Garnet Schist.
- (2) The Mineral Resource is not a Mineral Reserve and has no demonstrated economic viability.
- (3) The effective date of the Mineral Resource is August 29, 2014.
- (4) The Mineral Resource estimate for Xaudum was constrained within lithological and grade based solids and within a Lerchs-Grossman optimized pit shell defined by the following assumptions; metal price of USD 1.5 / dmtu; slope angles of 26°, 45° and 50° in the sand, calcrete / oxide and fresh material; a mining recovery of 95.0%; a mining dilution of 5.0%; a base case mining cost of USD 2.20 / t ore and an incremental mine operating costs of USD 0.05 / t / 10 m; process operating costs of USD 5.00 / t ore; iron processing recoveries of 78.1% (MBA); 54.0% (DIM); 46.3% (MBW); 53.6% (DMW); 23.7% (MGS); G&A costs of USD 5.00 / t / ore; transport costs of USD 5 / t concentrate.
- (5) The Mineral Resource is reported using a 12% Fe cut-off grade.
- (6) Mineral Resources at Xaudum have been classified according to the “CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines (May 2014)” by Howard Baker (FAusIMM(CP)), an independent Qualified Person as defined in NI 43-101.
- (7) The quantity and grade of reported Inferred Mineral Resource is uncertain in nature and there has been insufficient exploration to report this as an Indicated or Measured Mineral Resource; and it is uncertain if further exploration will result in upgrading it, or a portion of it, to an Indicated or Measured Mineral Resource category.

Metallurgical testwork carried out on drill core composites indicates that it is possible that a high grade magnetite concentrate could be produced from a combination of all of the mineralized Geodomains shown in Table 1 with an average magnetite concentrate grade of between 67.2% and 68.5% Fe and with a silica content of between 4.2% and 3.0% SiO<sub>2</sub> dependent upon grind size. This work has also shown that the high P levels within the XIF are

substantially reduced to during concentration to between 0.07% and 0.05% P. The grade ranges expressed here reflect P80 grind sizes of 80 and 60 microns respectively. All other deleterious elements within the concentrate are very low and well below acceptable levels for premium grade iron ore. All DTR sizer concentrate testwork was completed independently by ALS Minerals Division, Iron Ore Technical Centre (Wangara, Perth, Western Australia).

The Block 1 Mineral Resource estimate quoted in this press release is based on the in-house XIF geological wireframe modelling of Block 1 which was verified by SRK. A block model was then coded using the geological wireframes, block grades interpolated, and Mineral Resources defined and reported using a pit shell optimization in conjunction with a 12% Fe cut-off grade. The XIF geological (wireframe) model can be seen in Figure 1 but can also be seen as an animation video on our website by following this link, <http://player.vimeo.com/video/104426385>. For more details on the process of modelling, resource estimation and resource reporting using pit shell optimization techniques by SRK please see the XIF NI 43-101 MRE report.

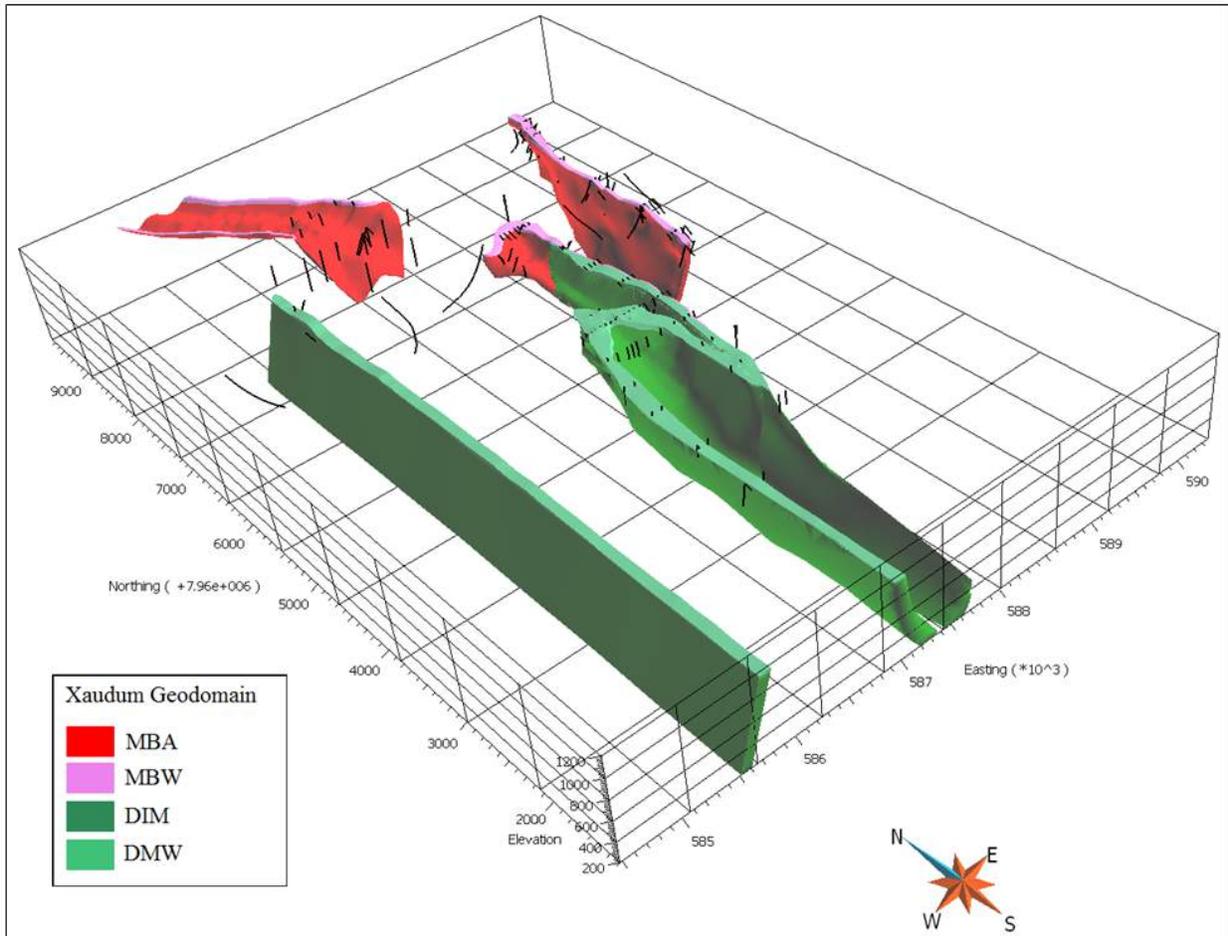


Figure 1. MBA, MBW, DIM and DMW wireframe units and drill holes – looking NE.

## **Next Phase**

The company is now moving into its next phase of exploration and is targeting a significant increase in the Mineral Resource by drilling out the Block 2 area which is split into Block 2a and Block 2b areas, see Figure 2. Significant tonnages of material are expected from these areas based on our exploration target mentioned above. We are anticipating a NI 43-101 MRE report following exploration at both Block 2a and Block 2b. The exploration priority is targeting MBA type material which is the higher grade material over 25% Fe and in Block 1 averaged 35.6% Fe. We are currently reviewing the ground magnetic signature intensity and inversion model to locate areas of higher grade potential MBA type material. We will use this to priorities the drilling order in Block 2a and Block 2b drill plans, and could modify the drill plans around the outcomes of this review. The drill holes in Block 2 is on a general spacing of around 800 meters along strike (North-South) and 100 meters across strike (East-West). This drill spacing aims to delineate an Inferred Mineral Resource, providing the mineralization is simple and continuous along strike and down-dip. If there are areas in Block 2 which are more geologically complex, in a similar manner to some complicated areas in Block 1, then extra holes may have to be drilled at a closer spacing.

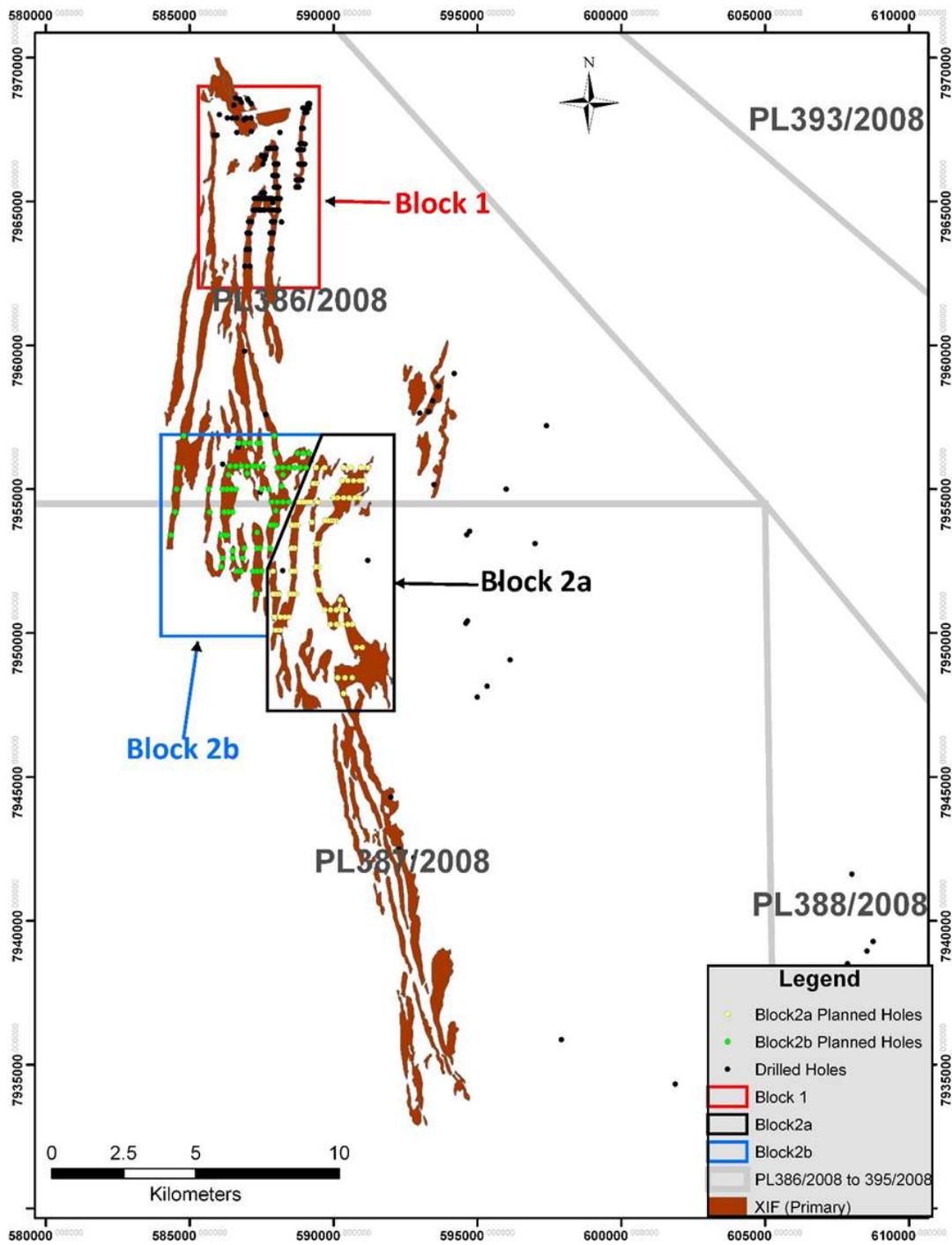


Figure 2. Map showing ground magnetic interpreted first derivative outline of the Xaudum Iron Formation (XIF). The figure shows the Block 1 area for which the mineral estimate presented in this report applies and the holes drilled in Block 1. Also shown are the Block 2a and Block 2b areas and drill plan, yellow and green dots respectively. The ground magnetic intensity and the ground magnetic inversion model are currently being reviewed to help priorities areas of potential MBA type mineralization, and due to this the drill plans may be modified to fit with the results of this review.

The company will maintain its on-going metallurgical testwork program and will also look to invite structural expertise to enhance our knowledge of the XIF. Ground magnetic work is on-going and is focusing on a more detailed spacing of 20 meters (normally 50 meters) along drill lines to give us higher resolution data on drill hole section/fence lines and help with refining drill hole locations to maximize the drill plan efficiency.

## Mineral Resource Estimate

The company began exploring in the XIF region for metals in 2008. A major program of ground magnetic surveying was conducted, and this greatly refined the XIF regional airborne magnetic anomaly and defined a very strong striped magnetic north-south orientation anomaly in the region that has a strike length up to 40 kilometers. Some initial holes drilled into the anomaly indicated the presence of XIF material which was identified as banded iron formation (BIF). Exploration drilling for the XIF began in more detail in 2011, however only ramped up into resource definition drilling in 2012 culminating in the completion of Block 1 in June 2014. The MRE is based on 157 holes totaling 31,149 meters drilled by Tsodilo within the Block 1 area, containing 9,221 assays from 13,824 meters of samples.

The geological modelling of Block 1 was carried out in-house by the company using Paradigm GOCAD geological modelling software, which was completed by geo-referencing interpreted cross sections into GOCAD and digitizing these sectional interpretations. These formed the basis of further interpretation and detailed geological modelling of wireframe surfaces of both mineralization and waste zones (geodomains).

The geodomains delineated in the model comprise: three separate magnetite-banded (MBA) zones (along with associated weathered MBW), three separate magnetic diamictite (DIM) zones (along with associated weathered DMW), seven MBA pods, one DIM pod, three magnetite schist (MGS) pods, eight garnet schist (GST) waste pods, one diamictite (DIA) waste pod, along with other waste lithology units. Mineralization has been delineated over a strike length of 8.5 kilometers within Block 1 which is based on diamond drilling and geophysical magnetic interpretation.

Using the geological wireframes, a single block model was created using block sizes 100 mY by 25 mX and 10 mZ. Grades of Fe, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, Mn, P, S, CaO, LOI, MgO, K<sub>2</sub>O, and TiO<sub>2</sub>, were interpolated into the model using Ordinary Kriging (OK) for major geodomains and Inverse Distance Weighting to the power of 3 (IDW<sup>3</sup>) for minor geodomains using assay data from the diamond drilling completed by Tsodilo. This interpolated block model was run through a pit optimization process using reasonable operating and processing cost parameters along with a long-term commodity price to ensure the reported Mineral Resource comprises only material with reasonable potential for eventual economic extraction. The resulting reported Mineral Resource is therefore restricted to material falling within the optimized pit shell, and above a cut-off grade of 12% Fe. Details of these pit optimization parameters can be found in the XIF MRE resource report. Table 1 shows the resulting Mineral Resource statement for the Block 1.

**About Tsodilo Resources Limited:** *Tsodilo Resources Limited is an international diamond and metals exploration company engaged in the search for economic diamond and metal deposits at its Newdico (Pty) Limited ("Newdico") and Gcwihaba Resources (Pty) Limited ("Gcwihaba") projects in northwest Botswana. The Company has a 98% stake in Newdico (851 km<sup>2</sup> under Precious Stone - diamond licenses). The Gcwihaba project area: 494 km<sup>2</sup> under Precious Stone - diamond licenses; 11,158 km<sup>2</sup> Metal (base, precious, platinum group, and rare earth) licenses; and, 6,925 km<sup>2</sup> under Radioactive Minerals licenses is 100% held by the Company. Tsodilo manages the exploration of both the Newdico and Gcwihaba license areas. Overall supervision of the Company's exploration program is the responsibility of Dr. Mike de Wit, President and COO of the Company and a "qualified person" as such term is defined in National Instrument 43-101. Dr. de Wit has reviewed the information contained herein and approved the contents of this Press Release. Further to this, the supervision of the Xaudum Iron Ore project is the responsibility of Dr. Alistair Jeffcoate, Chief Geologist and Project Manager for the Company and a "qualified person" as such term is defined in National Instrument 43-101. Dr. Jeffcoate has also reviewed the information contained herein and approved the contents of this press release.*

The Company has offices in Toronto, Canada and Gaborone and Maun, Botswana. Please visit the Company's website, [www.TsodiloResources.com](http://www.TsodiloResources.com), for additional information and background on our projects.

This press release contains forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future (including, without limitation, statements relating to the development of the Company's projects) are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of the Company based on information currently available to the Company. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, changes in equity markets, political developments in Botswana and surrounding countries, changes to regulations affecting the Company's activities, uncertainties relating to the availability and costs of financing needed in the future, the uncertainties involved in interpreting exploration results and the other risks involved in the mineral exploration business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not guarantees of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

The TSX Venture Exchange has not reviewed and does not accept responsibility for the adequacy or accuracy of this news release. This news release may contain assumptions, estimates, and other forward-looking statements regarding future events. Such forward-looking statements involve inherent risks and uncertainties and are subject to factors, many of which are beyond the Company's control, which may cause actual results or performance to differ materially from those currently anticipated in such statements.

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**Glossary of Terms:**

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|---------------------------------|--|
| Xaudum Iron Formation (XIF)     | The region of magnetite iron formation in the Xaudum and Shakawe region, north west Botswana. Defined initially by the very high intensity ground magnetic signal, and by resource drilling. The XIF has been identified as a Rapitan style BIF of Neoproterozoic age. Neoproterozoic BIF formations have been proposed to have formed during or in the immediate aftermath of the so called Neoproterozoic "Snowball Earth" state at that time (considered to be around 0.6-0.8 Ga in age). |
| Banded Iron Formation (BIF)     | Banded sedimentary iron formation of repeating thin layers (millimeters to centimeters) of iron oxides. These layers are typically either magnetite or hematite alternating with quartz rich material or chert and intermittent shale layers.  |
| Mineral Resource                | A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.  |
| Mineral Resource Estimate (MRE) | A Mineral Resource estimate is the process of estimating tonnage and grade of mineralisation in a defined area. In this case, a block model was used to define   |

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|  | volumes, and assay data from diamond drilling was used to populate the model with grades and density.   |
| Inferred Resource  | An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.   |
| Ordinary Kriging (OK) and Inverse Distance Weighting to the power of 3 (IDW <sup>3</sup> ) | Geostatistical techniques used in mineral resource estimates to interpolate values at unobserved locations on the basis of statistical observations at nearby locations where values are known.   |
| Pit Optimization   | A process using mining software that produces an open pit shell using reasonable operating and processing cost parameters along with optimistic long-term selling prices, in order to report Mineral Resources demonstrating reasonable prospects for eventual economic extraction.   |
| Davis Tube Recovery (DTR)  | An analytical technique used to separate ferromagnetic and non-magnetic fractions of a sample. This equipment is ideally suited to establishing the mass recoveries likely from a magnetic separation process. Where the mass recovery is the percentage of material recovered in the concentrate after the non-magnetic fraction is removed. So a mass recovery of 33.2% means that of a 100 tonnes of material passed through the magnetic concentrate process 33.2 tonnes will be recovered in the concentrate (at the higher Fe grade) and 66.8 tonnes will be removed to tailings (waste). |
| P80  | P80 is a mill circuit product size in microns (micrometers), and stands for the mesh size at which 80% (80% percentile) of the material passes.   |
| Ground Magnetics Survey  | Ground magnetics survey is a geophysical survey method whereby the magnetic intensity of a material is measured using ground magnetometers. Because the magnetometers are on the ground this defines a far higher resolution of the magnetic signature of an area than the more common airborne magnetic surveys.   |
| Magnetite  | Iron oxide material, black in color, with the chemical formula Fe <sub>3</sub> O <sub>4</sub> .   |
| Fe   | Iron (total)%   |
| SiO <sub>2</sub>   | Silicon dioxide (Silica)%   |
| Al <sub>2</sub> O <sub>3</sub>   | Aluminium oxide%  |
| P  | Phosphorous%  |
| TiO <sub>2</sub>   | Titanium Oxide %  |
| S  | Sulphur%  |
| Mn   | Manganese%  |
| K <sub>2</sub> O   | Potassium oxide   |
| MgO  | Magnesium oxide   |
| CaO  | Calcium oxide   |
| LOI  | Loss on ignition  |