

12 June 2018

## TANDO GEARS UP FOR MAIDEN DRILLING PROGRAMME AT SPD VANADIUM PROJECT

- **Phase 1 drilling to verify the historic foreign resource of > 500Mt at a whole rock grade of 0.78% V<sub>2</sub>O<sub>5</sub> at the SPD Vanadium Project.**
- **New Mineral Resource within 2 months of drilling commencing.**
- **At the same time drilling will test the sub surface extent of high grade magnetite pipes, located outside the resource area.**
- **Phase 2 drilling will then aim to increase the category and confidence of the Mineral Resource.**
- **Wide diameter drill core to provide samples for metallurgical testwork.**
- **Scoping Study to be completed by Q4 2018 utilising updated Mineral Resources and metallurgical results.**
- **The Company is fully funded to complete the drilling programme and associated studies.**

Tando Resources (“**Tando**” or “**the Company**”) is pleased to advise that preparations are well advanced for its maiden drilling campaign at the SPD Vanadium Project, a large, high grade vanadium deposit located in the established vanadium production hub of South Africa.

### ***Phase 1 Drilling Programme to confirm resource and convert to JORC Code***

The Phase 1 drill programme is planned to be 18 holes for 1,650m and aims to verify historical drilling so that the existing “foreign resource” (Table 1) can be converted to a Mineral Resource as defined by the JORC Code. The planned hole locations are shown on Figure 1.

Drilling will comprise both RC and DD drilling with 2 rigs to be mobilised to site. An updated JORC compliant Mineral Resource should be available 8 weeks after the commencement of drilling should drill production and analysis turn around match forecast timeframes.

### ***Additional drilling to provide first sub surface tests of magnetite pipes***

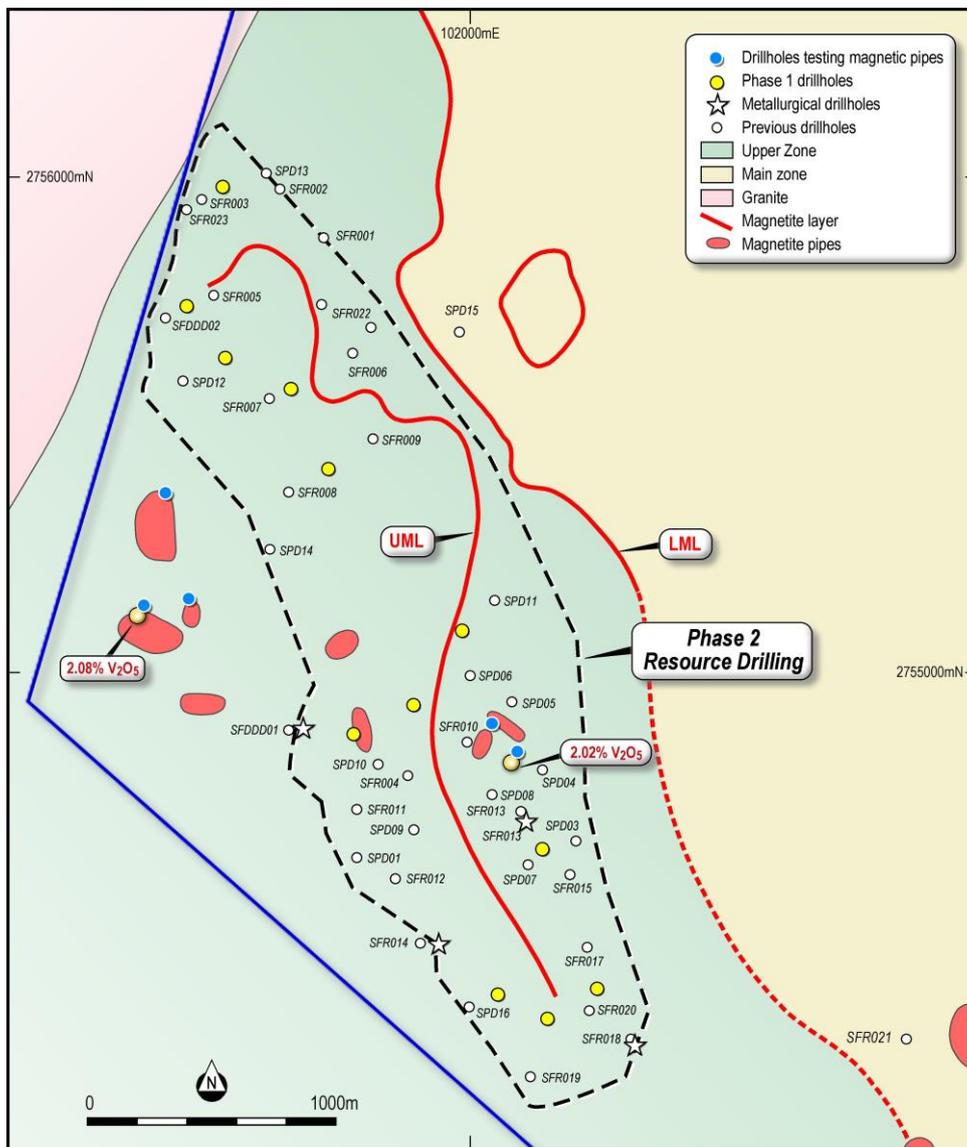
Five holes for 500m will also be carried out to provide an initial sub surface test of the depth extent of the high grade magnetite “pipes” which have been identified in the SPD Vanadium Project, away from the resource area described above and outlined on Figures 1 and 4 (refer ASX Announcements 7 May 2018 and 21 May 2018). Samples from two magnetite pipes at the SPD Vanadium Project returned results of **2.08% V<sub>2</sub>O<sub>5</sub>** and **2.02% V<sub>2</sub>O<sub>5</sub>** (Figure 1, ASX Announcement 7 May 2018). These are whole rock (or in situ) results, not concentrate grades, and compare favourably to the already high in situ resource grade of the SPD Project (0.78% V<sub>2</sub>O<sub>5</sub>).



**Table 1.** SPD Vanadium Project resource (classified as inferred under the SAMREC Code).

Reef	Avg Thickness (m)	Tonnes (Mt)	Whole Rock V <sub>2</sub> O <sub>5</sub> %	Mt%	Magnetite Tonnes	V <sub>2</sub> O <sub>5</sub> % in Magnetite
Upper Layer	24	184.2	0.73	42.4	78.1	1.99
Lower Layer	22	329.1	0.81	41.6	136.0	2.20
<b>Averages &amp; Totals</b>	<b>23</b>	<b>513.3</b>	<b>0.78</b>	<b>41.9</b>	<b>215.0</b>	<b>2.09</b>

**Table 1 Notes:** This resource is classified under the SAMREC Code and therefore is a qualifying “foreign resource” as defined in the ASX Listing Rules. While this foreign resource is not reported in compliance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**), it is the Company’s opinion (and the opinion of the Competent Person for this document), that the data quality and validation criteria, as well as the resource methodology and check procedures, are reliable and consistent with criteria as defined by the JORC Code (as detailed in the ASX Announcement of 22 March 2018). All tabulated data has been rounded to one decimal place for tonnage and two decimal places for grades. %V<sub>2</sub>O<sub>5</sub> is derived from XRF analysis by multiplying %V by 1.785.



**Figure 1.** Planned Drilling at the SPD Vanadium Project.



### ***Budget and Timing for the Drilling Programme***

The Company has sourced quotes from drilling contractors and other service providers enabling budgets for the drilling programme to be finalised. The cost to complete the entire Phase 1 and Phase 2 drilling programme and the resultant resource estimations is estimated at A\$1.4 million. The Company has current cash reserves in excess of A\$4 million and therefore is fully funded for the drilling programme as well as the metallurgical and mining studies which will follow completion of the drilling programme. Mobilisation of drilling rigs is anticipated to commence in the next few weeks once contracts and approvals are finalised. It is noted that commencement of drilling is subject to the formal grant of the Mining Right for the SPD Vanadium Project.

### ***Phase 2 Drill Programme comprises infill drilling aimed at upgrading Mineral Resource***

Following completion of Phase 1 the Company will move into Phase 2 which aims to infill the drillhole spacing within the resource area to 150m x 150m. 58 holes for 5,550m have been planned to achieve this spacing. Independent resource geologists have indicated to the Company that this data density should be adequate to **delineate Mineral Resources in the Indicated category**, based on the dataset available to date and assuming results are consistent with expectations. Mineral Resources in the Indicated category will be able to be used in a Scoping Study into the economics of the SPD Vanadium Project, to be completed by Q4 2018.

Wide diameter PQ drilling will be carried out to provide samples for metallurgical testwork, which will then be input into the Scoping Study. Testwork will assess the likely capital and operating costs of both the established salt roasting process as well as the direct leaching approach.

### **Background on the SPD Vanadium Project**

Global vanadium projects are summarised in Figure 2. Currently approximately 85% of the world's vanadium is produced in China, Russia and South Africa. The SPD Vanadium Project is located in one of these producing regions and has the potential to be globally significant based on its tonnage and grade in concentrate (Figure 2).

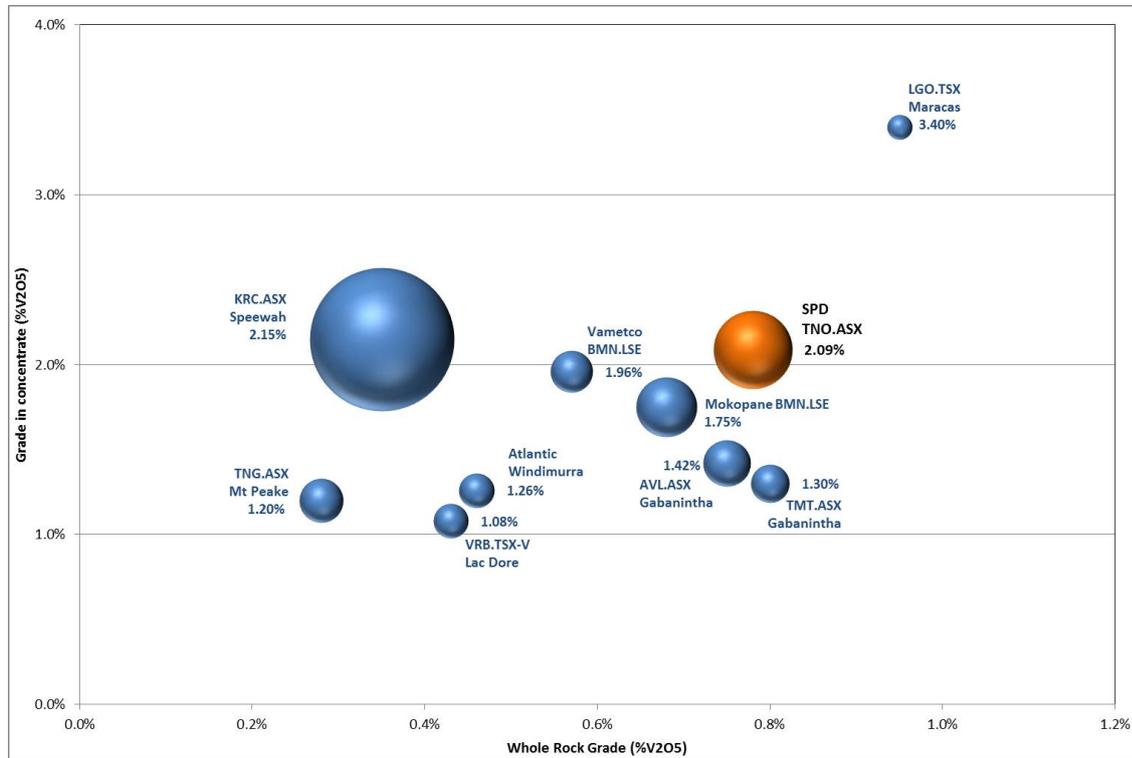
The SPD Vanadium Project is located in a similar geological setting to the mining operations of Rhovan (Glencore), Vametco (Bushveld Minerals) and Mapochs (International Resources Ltd) in the Gauteng and Limpopo provinces of South Africa (Figure 3). Both the Rhovan and Vametco processing plants include refining to generate products used in the global steel making industry and aim to develop downstream processing to produce materials used in the battery market. The SPD Vanadium Project is located only 30km from the currently dormant Mapochs mine which has a processing plant and railway infrastructure.

The region around the SPD Vanadium Project contains critical infrastructure such as:

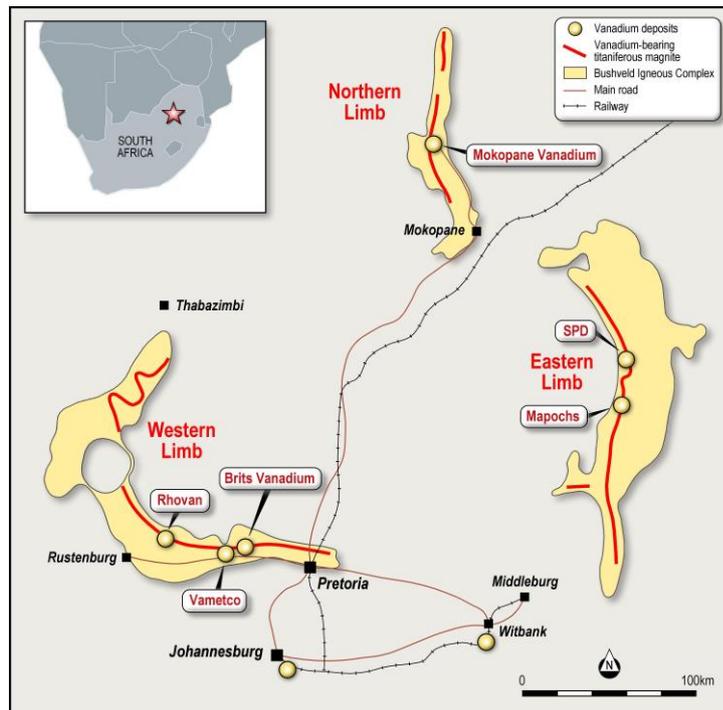
- High voltage power lines and sub stations operated by the state provider ESKOM,
- Water resources including the De Hoop Dam 15km south of the project,
- Rail links,
- Sealed roads around the project area,
- Mining service companies and support business in the immediate area,



- Skilled workforce within the local community and the region.



**Figure 2.** Global vanadium projects categorised by resource grade and grade in concentrate. Label states concentrate grade based on reported testwork. Bubble size denotes tonnage. Tonnes and grade based on reported total resources, due to different host exchanges these are reported under differing reporting regimes (JORC, 43-101 or SAMREC). Source: Company websites, ASX / TSX / LSE announcements.

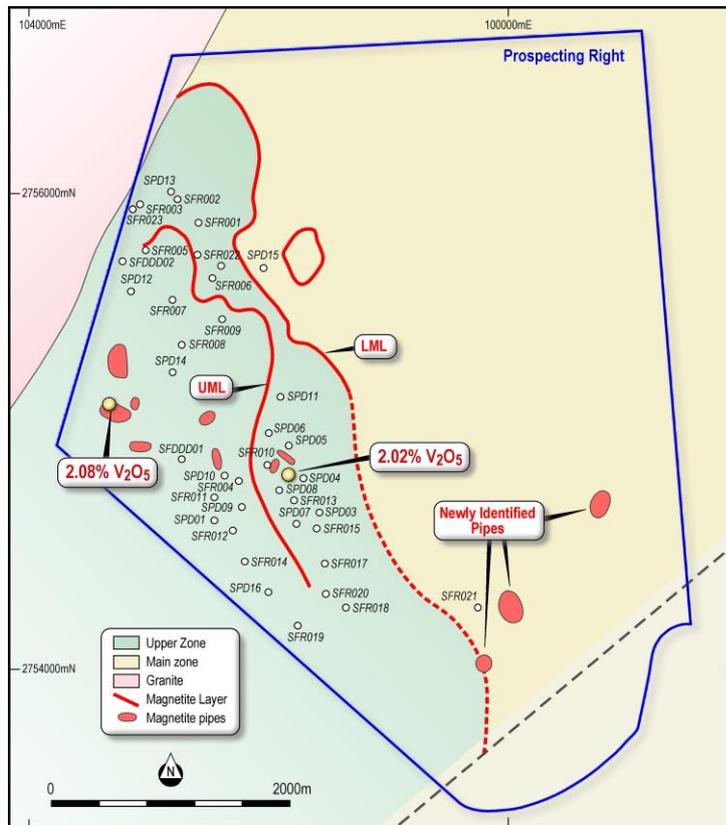


**Figure 3.** Location of the SPD Vanadium Project and other vanadium deposits in the Bushveld Igneous Complex.

The SPD Vanadium Project was discovered in the 1990's during a regional exploration campaign to find new supply for active vanadium operations including the Kennedy's Vale Mine. Vanadium mineralisation at the SPD Project is hosted in two vaniferous titanomagnetite layers, the Upper Magnetite Layer and Lower Magnetite Layer, which dip shallowly (10-12deg) to the west (Figure 4). Initial exploration by Vantech in 1997 comprised 16 diamond core drill holes for 1051.6m (refer Figure 4 and ASX Announcement 22 March 2018) as well as detailed geological mapping. VanRes held a prospecting right over the SPD Project from 2009 until 2015 when an application for a Mining Right was lodged. Exploration by VanRes comprised 23 RC drillholes for 1,073m and 2 diamond core drillholes for 278m drilled in 2010 (refer Figure 4 and ASX Announcement 22 March 2018). Best whole-rock drilling results included:

- 9m at 1.34% V<sub>2</sub>O<sub>5</sub> + 10.5% TiO<sub>2</sub> from 9m (SFR019)
- 13m at 1.13% V<sub>2</sub>O<sub>5</sub> + 7.43% TiO<sub>2</sub> from 10m (SFR017)
- 14m at 1.08% V<sub>2</sub>O<sub>5</sub> + 7.07% TiO<sub>2</sub> from 9m (SFR013)
- 20m at 0.96% V<sub>2</sub>O<sub>5</sub> + 8.35% TiO<sub>2</sub> from 11m (SFR011)
- 15m at 0.92% V<sub>2</sub>O<sub>5</sub> + 6.44% TiO<sub>2</sub> from 8m (SFR018)
- 12.2m at 0.90% V<sub>2</sub>O<sub>5</sub> from 127.2m & 26.9m at 0.80% V<sub>2</sub>O<sub>5</sub> from 43.1m (SFDD001)

Drill samples were passed through a Davis Tube to obtain a magnetic concentrate. Vanadium and titanium content analyses in the concentrate was very consistent, **averaging 2% V<sub>2</sub>O<sub>5</sub> and 13% TiO<sub>2</sub>** (ASX Announcement 22 March 2018).



**Figure 4.** Plan showing location of surface samples and magnetite pipes at the SPD Vanadium Project along with historical drilling and geology.

The current resource for the SPD Vanadium Project as shown in Table 1 was estimated by GEMECS Pty Ltd based on all available drilling data in accordance with the SAMREC Code (2007) and is therefore a “qualifying foreign resource estimate” as defined in the ASX Listing Rules (further detail below and in the ASX Announcement of 22 March 2018). The resource was classed as inferred under the SAMREC Code. Bill Oliver, Managing Director of Tando, is acting as the Competent Person and has reviewed reports and data compiled and used in the resource estimation. The authors of the report on the 2010 exploration activities and the resource estimate have confirmed that there are no material changes to the resource or underlying data since the date of the report (June 2010), and that the information presented here is consistent with the data it reported.

The Competent Person has not yet completed sufficient review on the qualifying foreign resource estimate to classify it in accordance with the JORC Code at this time and consequently it is uncertain that, following evaluation and/or further exploration work that the qualifying foreign resource estimate will be able to be reported as a Mineral Resource in accordance with the JORC Code. The Phase 1 drilling programme outlined in this announcement aims to provide a test of the SAMREC resource with the aim, should results be consistent with historical, to state a Mineral Resource under the JORC Code.

## Background on Vanadium

The Company has targeted vanadium as a commodity of interest due to its usage in energy storage, specifically vanadium redox flow batteries (VRFB). It is anticipated that forecast increase in battery usage for large scale energy storage will lead to a significant increase in the demand for vanadium. VRFB technology was developed in Australia and has the following advantages:



- a substantially longer lifespan than most current batteries (up to 20 years),
- being able to hold charge for a substantial time (up to 12 months),
- the ability to discharge 100% of its charge without damage,
- scalability to enable larger scale storage facilities to be constructed, and
- greater chemical stability as only a single element is present in the electrolyte.

These features make VRFBs attractive for household or small town sized energy storage requirements. According to research conducted by Lazard (NYSE.LAZ) VRFB's already have a levelised cost of storage that exceeds Li-ion battery storage by 26 to 32% on a comparative basis (full report available at <https://www.lazard.com/perspective/>). Current VRFB facilities in usage or in development are located in China and Japan with development of further facilities constrained by an absence of supply of "battery grade"  $V_2O_5$ .

The price for >98% Vanadium Pentoxide ( $V_2O_5$ ), a more commonly traded intermediate product, has increased from US\$3.50/lb at the start of 2017 to current prices around US\$15/lb (source: Metal Bulletin) and a substantial premium is currently ascribed for higher purity "battery grade" vanadium electrolyte.

Current day demand for vanadium arises from its use in steel making. Vanadium is principally used to add strength via various alloys as well as other speciality uses. This usage accounts for over 90% of current vanadium demand in today's market (with the balance supplying chemical usages). Demand from steel makers is forecast to increase with stricter standards on the strength of steel to be used in construction (specifically rebar).

#### **For and on behalf of the board:**

Mauro Piccini

Company Secretary

#### **Competent Persons Statement**

The information in this announcement that relates to Exploration Results and other technical information complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**) and has been compiled and assessed under the supervision of Mr Bill Oliver, the Managing Director of Tando Resources Ltd. Mr Oliver is a Member of the Australasian Institute of Mining and Metallurgy and the Australasian Institute of Geoscientists. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Oliver consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in Appendix 1.

#### **Disclaimer**

Some of the statements appearing in this announcement may be in the nature of forward looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and



uncertainties include factors and risks specific to the industries in which Tando operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward looking statement. No forward looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Tando's control.

Tando does not undertake any obligation to update publicly or release any revisions to these forward looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this announcement. To the maximum extent permitted by law, none of Tando, its Directors, employees, advisors or agents, nor any other person, accepts any liability for any loss arising from the use of the information contained in this announcement. You are cautioned not to place undue reliance on any forward looking statement. The forward looking statements in this announcement reflect views held only as at the date of this announcement.

This announcement is not an offer, invitation or recommendation to subscribe for, or purchase securities by Tando. Nor does this announcement constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.