Advanced Geological Research Paper Publication

OD6 Metals Limited (**OD6** or the **Company**) is pleased to present a peer reviewed and recently published scientific paper in the international scientific journal, Ore Geology Reviews, associated with the Splinter Rock Rare Earth Project, located northeast of Esperance, Western Australia.

Highlights:

- The Paper entitled, "Unsupervised geochemical characterisation of deeply weathered terrains and regolith-hosted REE deposits: Rationale and benefits for exploration" has been compiled by lead author Tobias Bamforth who is a Postdoctoral Research Fellow, Monash University

- The Paper has utilised the last 3 years of geological research undertaken by CSIRO, Murdoch University, Monash University, James Cook University's and OD6 Metals at the Splinter Rock Rare Earth Project, all of whom have representatives as co-authors

- In simple terms the research paper explains how statistical methods may expedite the characterisation of regolith samples across large, buried regolith hosted mineralised formations

- At Splinter Rock, the process identified and mapped two regolith horizon groups: one generally unmineralised transported sediment group, which sits above a mineralised saprolite-saprock group. These two horizon groups were then further separated into five laterally consistent regolith horizons, which the paper delves into in considerable detail

- OD6 to prioritise the two mineralised saprolite-saprock horizons that represent superior project economics. Value is driven by these being near surface and with extensive thickness.

- These two mineralised horizons have also shown to have the best metallurgical outcomes, which further assists in geo-metallurgical targeting of priority future development areas

- Notably the high grade Inside Centre Prospect is a clear standout from these investigations and already consists of an Indicated Resource of 119Mt @ 1,632ppm TREO

Brett Hazelden, Managing Director, commented:

"OD6 is leading the way in developing the necessary technologies to discover and extract the rare earth elements associated with our clay hosted rare earth prospects at Splinter Rock. We are proud to be a Company that embraces next generation science, and we benefit enormously from working alongside key researchers at CSIRO, Murdoch, Monash and James Cook Universities, in order to unlock value at our Australian Rare Earth Projects.

In the current geopolitical environment, Western Governments are looking to create resource security for Rare Earth products. As one of Australia's largest and highest-grade clay-hosted REE deposit, Splinter Rock represents a highly valuable and unique opportunity in Western Australia. We look forward to releasing more research with our partners and we are eager to share some of the metallurgical advances we are achieving with ANSTO, which continues to develop multiple potential processing pathways, with initial results due during this quarter"

Unsupervised geochemical characterisation of deeply weathered terrains and regolith-hosted REE deposits: Rationale and benefits for exploration

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ARTICLE INFO

ABSTRACT

The accurate characterisation of regolith materials is crucial for mineral exploration, yet distinguishing visually indistinct clay-rich samples can be challenging and labour-intensive. This study conducts unsupervised k-means clustering and principal component analysis (PCA) on a geochemical dataset of over 3000 regolith samples from the Splinter Rock rare earth element (REE) prospect, Western Australia, to determine how unsupervised statistical methods may expedite the characterisation of regolith samples across large, buried and/or regolith-hosted ore deposits. K-means clustering identified five laterally consistent regolith horizons at Splinter Rock, which were manually interpreted into three REE-barren transported horizons and two mineralized saprolite-saprock horizons. The mineralogical and metallurgical features of all 3000 samples were then extrapolated from hyperspectral and metallurgical data of a select few reference samples within their clusters, to provide a preliminary understanding of the deposit's overall structure and properties. Despite being a first-order approach, this method highlighted several consistent, statistically robust and previously unidentified patterns across the entire prospect: 1) the highest REE grades exist predominantly in the granitic saprolite and saprock; 2) relative to the light REEs (La–Sm), the heavy REEs (Eu–Lu) experience enrichment at the saprolite-saprock boundary and depletion with increasing depth in the saprock; 3) optimal metallurgical conditions occur near this saprolite-saprock interface; 4) relative accumulation of the economically- and environmentally-important 'magnet' REEs (MagREE, Pr, Nd, Tb, Dy) occurs mostly in the saprock; and 5) relative MagREE enrichment can be linked to the formation of negative Ce anomalies at lower stratigraphic positions. Lastly, PCA facilitated the development of tailored geochemical ratios to classify future samples into their appropriate horizons. This study highlights unsupervised statistical analysis of existing geochemical data as a robust, rapid and effective first-pass method for classifying and characterising extensive sets of regolith samples, as well as an efficient method of outlining deposit-scale trends and zones of consistent economic REE enrichment in large regolith-hosted deposits/prospects.

Forward Looking Statements

Certain information in this document refers to the intentions of OD6 Metals, however these are not intended to be forecasts, forward looking statements, or statements about the future matters for the purposes of the Corporations Act or any other applicable law. Statements regarding plans with respect to OD6 Metals projects are forward looking statements and can generally be identified by the use of words such as 'project', 'foresee', 'plan', 'expect', 'aim', 'intend', 'anticipate', 'believe', 'estimate', 'may', 'should', 'will' or similar expressions. There can be no assurance that the OD6 Metals plans for its projects will proceed as expected and there can be no assurance of future events which are subject to risk, uncertainties and other actions that may cause OD6 Metals actual results, performance, or achievements to differ from those referred to in this document. While the information contained in this document has been prepared in good faith, there can be given no assurance or guarantee that the occurrence of these events referred to in the document will occur as contemplated. Accordingly, to the maximum extent permitted by law, OD6 Metals and any of its affiliates and their directors, officers, employees, agents and advisors disclaim any liability whether direct or indirect, express or limited, contractual, tortuous, statutory or otherwise, in respect of, the accuracy, reliability or completeness of the information in this document, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and do not make any representation or warranty, express or implied, as to the accuracy, reliability or completeness of the information in this document, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and disclaim all responsibility and liability for these forward-looking statements (including, without limitation, liability for negligence).

No new information

Except where explicitly stated, this announcement contains references to prior exploration results, all of which have been cross-referenced to previous market announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements.

The information in this report relating to the Mineral Resource estimate for the Splinter Rock Project is extracted from the Company's ASX announcements dated 18 July 2024. OD6 confirms that it is not aware of any new information or data that materially affects the information included in the original announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply.

This announcement has been authorised for release by the Board of OD6 Metals Limited

About OD6 Metals

OD6 Metals is an Australian public company pursuing exploration and development opportunities within the critical minerals sector, namely rare earths and copper.

Copper

The Company is advancing the recently acquired **Gulf Creek Copper-Zinc VMS Project** located near the town of Barraba in NSW, Australia.

Gulf Creek was mined at around the turn of the 20th century and was once regarded as the highest grade copper mine (2% to 6.5% Cu) in NSW until its closure due to weak copper prices in 1912. Very little exploration has occurred at the project in over 100 years, with OD6 aiming to apply modern day exploration technologies.

Mineralisation is associated with magnetite, with geophysics showing significant greenfields and brownfields exploration potential exists with over >3km of untested strike in the immediate mine-stratigraphy, and over >10km across the tenement.

Rare Earth Elements

OD6 Metals has successfully identified clay hosted rare earths at its 100% owned **Splinter Rock Project** which is located in the Esperance-Goldfields region of Western Australia.

The Company released a Mineral Resource Estimate (MRE) for Splinter Rock in May 2024, confirming that the project hosts on of the largest and highest-grade clay-hosted rare earths deposit in Australia with an Indicated Resource of 119Mt @ 1,632ppm TREO and an Inferred Resource of 563Mt @ 1,275ppm TREO with an overall ratio of ~23% high-value Magnetic Rare Earths (MagREE).

OD6 Metals believes that Splinter Rock has all the hallmarks of a world class rare earths project with a conceptual development which utilises the large and high-grade Splinter Rock resource to support a long-life REE operation supported by a low strip ratio

Corporate Directory

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