Locksley Resources

IMARC

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MOJAVE RARE EARTH PROJECT - USA

Within 1.4km of the only producing Rare Earth Mine in USA Mountain Pass is one of the richest deposits of rare earth elements in the world

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CONSIDERATION

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The information in this document that relates to exploration targets, exploration results, mineral resources or ore reserves is based on information compiled by David Ward BSc, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AUSIMM), (Member 228604). David Ward is a shareholder of Locksley Resources Ltd . David Ward has over 25 years of experience in metallic minerals mining, exploration and development and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a 'Competent Person' as defined under the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Ward consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

CAUTIONARY **STATEMENT VISUAL**

Estimates described in the announcement are a quide only and should never be considered a proxy or substitute for laboratory analysis. Only subsequent laboratory geochemical assay can be used to determine arade of mineralisation. LKY will always update shareholders when laboratory results become available.



SHAREHOLDINGS

UNIQUE REE OPPORTUNITY

Bighly Prospective REE Project

Adjacent to the Giant High-Grade Mount Pass Mine

Exceptional TREO Results up to 12.14%

> 201 Mineral Claims





CURRENT STRUCTURE

ASX Code	LKY
Shares on Issue	146,666,665
Options on Issue ¹	18,700,000
Market Capitalisation (\$0.041)	\$6.0m
Cash at Bank (30 Sep 2023)	\$3.5m
Enterprise Value	\$2.5m



MOJAVE PROJECT OVERVIEW

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Portfolio of **Rare Earths** projects located in **California USA**

Mojave Project comprises of 201 claims referred to as the El Campo Prospect and the North Block & South Block

Claims are **surrounded & abutting the** Mountain Pass mine claims

Mountain Pass is **one of the highest grade REE mines in the world** the only producing facility in USA²

Rare earth elements (REE) are indispensable for the functioning of modern society, powering technological innovations and enabling advancements in **renewable** energy, electronics, and defence systems





MOJAVE PROJECT OVERVIEW



- The Mojave North Block lies just 1.4 km to the northeast of the Mountain Pass Mine
- Proven metallurgy & ore processing evident at the Mountain Pass Mining operations
- Mountain Pass is **one of the highest grade REE mines in the world** and the **only producing facility in USA**²
- Multiple REE targets identified within the Mojave Project
- **Drilling application** underway and **well-resourced** for implementation in 2024



MOJAVE PROJECT - 12.1% TREO



Multiple REE targets identified within claim areas

- Five (5) rock-chip samples initially collected at the El Campo Prospect returned high grade **TREO results of** 3.74% to 9.49% within a 6-metre-wide mineralised zone
- Stream sediment sampling returned anomalous results ranging from 0.103% (1,030 parts per million) to 0.26% (2,600 parts per million) total rare earth oxide (TREO)
- **12 high-grade rock-chip** samples returning results ranging from **1.03% to 12.1% TREO** along the interpreted mineralised horizon at the El Campo Prospect





- Surface sampling program returned very high-grade **assays up to 12.1% (121,388 ppm) Total Rare-Earth Oxide (TREO's) and 3.19%** (31,940 ppm) NdPr
- The mapping and sampling program identified an **860m long interpreted prospective horizon** associated with high-grade outcropping samples between 1.03% and 12.1% TREO.
- Drillholes will target the **El Campo 'lode'**





Historic prospecting pits developed on REE gossan

The surface expression of the sampled gossan was seen as an **oxide stain shedding down slope** in detailed drone orthomosaic imagery but could not be traced further than **46m under a steep scree slope** to the north-west so **remains open under cover along strike**





South-West dipping structure

Interpreted to be a **pre-existing favourable structural horizon** with REE rich fluids from a nearby carbonatite

Higher than background radioactivity due to **elevated Thorium** identifies the mineralisation using simple personal gamma detectors





- Mineralized structure dips at **45-70 degrees** to the south-west
- **Significant down dip strike** extent of high-grade structure within the claims
- The El Campo **'lode' runs close to parallel** to the footwall of the mapped prospective horizon



STREAM SEDIMENTS – NORTH BLOCK



Highly Anomalous TREO Results from the Stream Sediment Sampling Program Conducted Over the North Block

- Seven (7) stream sediment samples returned assays ranging from 0.103% to 0.26% TREO (2,600ppm)
- Six (6) catchment areas have been identified as prospective for ongoing REE exploration
- Suggests potentially **multiple El Campo style high-grade structurally controlled REE lodes** within the North Block
- Catchments are interpreted to be **feeding topographic low stream sediments** with elevated REE
- Follow-up North Block sampling program forthcoming



REE GLOBAL DEMAND



Garside, M. (2021, April 27). Rare earth oxide demand worldwide from 2017 to 2025. Statista. Retrieved June 20, 2023, from https://www.statista.com/statistics/1114638/global-rare-earth-oxide-demand/

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(2019, January 29). *Electric vehicles and rare earths*. Edison. Retrieved June 19, 2023, from <u>https://www.edisongroup.com/insight/electric-vehicles-and-rare-earths/23277/</u>

The total demand for Rare Earth Oxides (REOs) is expected to increase from 208,250 metric tons in 2019 to a forecasted 304,678 metric tons by 2025

- In **2021**, the **REE market** was worth around **\$7 billion**, which is projected to reach almost **\$15.5 billion by 2030**
- 73% of REE are used in mature industries and the remaining 27% are used in the production of permanent magnets, which are essential components in EVs
- Global sales of electric vehicles (EVs) continued to be strong. A total of 10.5 million new (both EV and hybrid) EV's were delivered during 2022, with an increase of +55% compared to 2021
- EV sales in the **USA and Canada** increased by 48% year-on-year
- EV sales in China increased by +82% year-on-year



FUTURE OF REE



(n.d.). The Future of Rare Earth Elements. Science History Institute - Museum and Library. Retrieved June 19, 2023, from https://sciencehistory.org/education/classroom-activities/role-playing-games/case-of-rare-earth-elements/history-future/#:~:text=The%20Future%20of%20Rare%20Earth%20Elements&text=The%20growth%20of%20wind%20farms,rare%20eart h%20magnets%20and%20batteries

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Cho, R. (2023, April 5). The Energy Transition Will Need More Rare Earth Elements. Can We Secure Them Sustainably? Columbia Climate School - Climate, Earth, and Society. Retrieved June 20, 2023, from https://news.climate.columbia.edu/2023/04/05/theenergy-transition-will-need-more-rare-earth-elements-can-we-secure-them-

sustainably/#:~:text=Demand%20is%20growing&text=Global%20demand%20for%20neodymium%20is,exceed%20supply%20by% 20175%20percent.

REE are likely to remain an important part of our future
from quantum computing and material sciences, to medical applications and advances in green technology

The growth of wind farms will continue to drive demand for **neodymium** and **dysprosium** used in wind turbine motors and the move from internal combustion cars to **EVs** will also increase demand for permanent magnets

The International Energy Agency (IEA) forecasts the **EV fleet will grow from 3.1 million in 2017 to 125 million in 2030**. Given that an electric vehicle requires between 1 kg to 2 kg of permanent magnets, the REE market is set to expand massively over the next decade

Global demand for neodymium is expected to grow
48% by 2050, exceeding the projected supply by 250%
by 2030, and the need for praseodymium could
exceed supply by 175%



TOTTENHAM PROJECT OVERVIEW



RECENT DRILLING AT TOTTENHAM RETURNED UP TO 5.03% COPPER AND 0.53G/T GOLD

- Recent results received for 18 RC drillholes totalling 3,267m
- Drilling was designed to add to known resources and extend into new areas
- Global Inferred JORC Mineral Resource stands at 9.86Mt @ 0.72% Cu, 0.22g/t Au
- Mount Royal Orange Plains infill drilling
 - 8m @ 1.57% Cu and 0.16g/t Au from 65m (TORC030)
 - Including 2m @ 5.03% Cu and 0.53g/t Au from 67m



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