

## 4th QUARTER ACTIVITIES

Cassius Mining Limited (“Cassius” or “the Company”) (ASX Code: CMD) is pleased to provide shareholders with the Company’s Activities Report and Appendix 5B for the quarter ending 30 June 2023.

### SOALARA LIMESTONE PROJECT, MADAGASCAR

#### Highlights

- Phases 1 & 2 coring confirm multiple “High to Very High” Limestone<sup>1</sup> sequences in all 9 holes
- ~73% of Phase 1 assays<sup>2</sup> show average 97.02% wt CaCO<sub>3</sub>, classed as “High” purity
- ~80% of Phase 2 assays<sup>3</sup> show average 97.44% wt CaCO<sub>3</sub>, classed as “High” purity
- ~77% of all assays from Phases 1 & 2 show average 97.26%wt CaCO<sub>3</sub>, classed as “High” purity
- “High to Very High” purity Limestone sequences remain open at 100m final depth in all 9 holes
- Flat-bedded geology, with easy all-weather access to the entire 26 drill-collar grid
- Current Soalara JORC Exploration Target<sup>4</sup> has 491 to 818 Mt of “High to Very High” purity Limestone
- Initial Mineral Resource Estimation (MRE) is in progress, expected to be concluded in August 2023
- Post-MRE consideration expected to be given to pathways to potential development, subject to MRE

#### CEO James Arkoudis:

*“The Soalara Project has reached a critical stage. The very near future MRE result is keenly awaited with high expectations. It may open options to review early development potential based on the initial 9 holes, with or without potential JV partners.*

*The Company may alternatively pursue further coring phases targeted to increase any mineral resource, alongside any review of early development, as the full coring programme allows up to 26 holes. We remain extremely optimistic on the future success of this Project.”*

<sup>1</sup> Mitchell Limestone Purity Classification (2011) – **Table 2**

<sup>2</sup> ASX – “SOALARA Limestone – Phase 1 Core Results – 11 July 2022

<sup>3</sup> ASX – “SOALARA Limestone Project Phase 2 Core Assay Results” – 26 June 2023

<sup>4</sup> The potential quantity and grade of the defined Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource

## Phases 1 and 2 Coring

9 holes were vertically cored in HQ3 size for a total 900.79m (**Table 1**), shown in the 26 hole 500m grid (**Fig 1**).

Collar ID	Easting	Northing	RL	Azimuth	Inclination	Depth
CMDD001	370,601	7,389,501	108	0	-90	100.00
CMDD002	370,600	7,388,999	113	0	-90	100.12
CMDD003	371,103	7,389,502	101	0	-90	100.00
CMDD004	371,099	7,389,000	100	0	-90	100.00
CMDD005	371,598	7,389,002	89.35	0	-90	100.25
CMDD006	371,600	7,389,499	87.42	0	-90	100.25
CMDD007	371,599	7,390,001	90.79	0	-90	100.03
CMDD008	371,099	7,389,999	94.81	0	-90	100.04
CMDD009	370,600	7,390,000	93.45	0	-90	100.10

**Table 1: Soalara Phases 1 & 2 drill collars**



**Fig 1: Soalara Phase 1 (red) and Phase 2 holes (green) with all-weather access in white**

Limestone classification	CaO (wt%)	CaCO <sub>3</sub> (wt %)
100% limestone	56.03	100.0
Very high purity	> 55.2	> 98.5
High purity	54.3 - 55.2	97.0 - 98.5
Medium purity	52.4 - 54.3	93.5 - 97.0
Low purity	47.6 - 52.4	85.0 - 93.5
Impure	< 47.6	< 85.0

**Table 2: MITCHELL Classification - Pure Limestone is 56.03% CaO (Calcium Oxide), 100% CaCO<sub>3</sub> (Calcium Carbonate)**

Examples of the “High” and “Very” purity cored in both phases are shown in the following photos (**Figs 2-6**).



Fig 2 - “VERY HIGH” purity core (CMDD003), 43.60 to 53.74m, weighted average 55.45% CaO (98.97% CaCO<sub>3</sub> Limestone)



Fig 3 - VERY HIGH purity Limestone (CMDD006) from 23.02 to 34.70m, with weighted average 99.86% CaCO<sub>3</sub>

For personal use only

For personal use only



Fig 4 - VERY HIGH purity Limestone (CMDD008) from 37.88 to 49.53m, with weighted average 99.29% CaCO<sub>3</sub>



Fig 5 - HIGH purity Limestone (CMDD008) from 71.55 to 81.84m, with weighted average 97.24% CaCO<sub>3</sub>



Fig 6 – “HIGH” purity core (CMDD003), 8.00 to 21.30m, weighted average 54.92% CaO (98.04% CaCO<sub>3</sub> Limestone)

For personal use only

### ***About the SOALARA LIMESTONE PROJECT***

The Soalara deposit is a horizontal sequence of Eocene limestones of ~70-100m thickness, overburden free. It currently has a JORC Exploration Target of 491 to 818 Mt of Limestone with a purity of “High” to “very High”.

Up to 26 holes may be cored on a 500m grid pattern in the overall programme, from which the Exploration Target is derived.

The coring programme is designed to quantify lateral and vertical purity, consistent flat bedded geology and continuity of the limestone sequence for possible future open pit mining.

The programme is targeting a potential upgrade to a JORC Mineral Resource.

## CHENENE LITHIUM PROJECT, TANZANIA

The Company has previously reported<sup>5</sup> assay results from its surface rock sampling programme at Target 1 (Figs 7-8) in the Company's PL 11921. The Dulu area was confirmed as hosting Lithium pegmatites, along with significant associated Caesium and Tantalum.

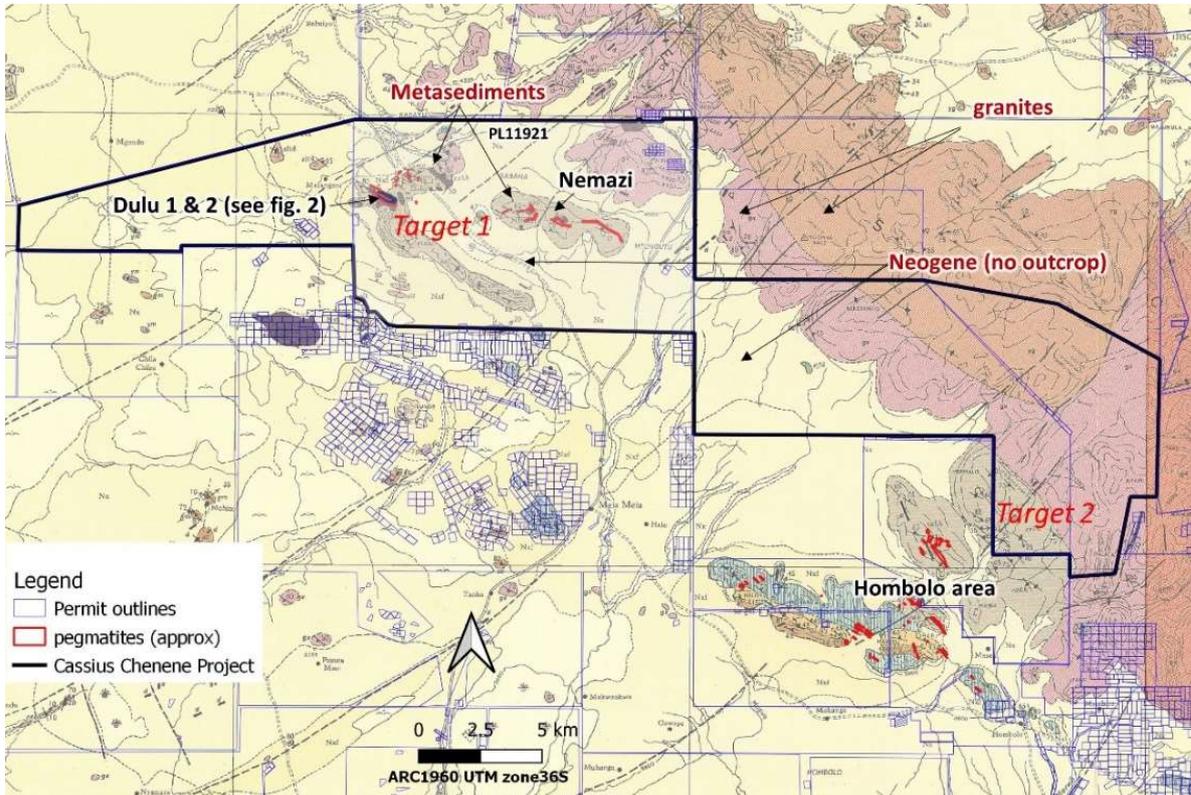


Fig 7: Targets 1 and 2 in the Chenene Lithium Project (300 km<sup>2</sup>), with pegmatites in red

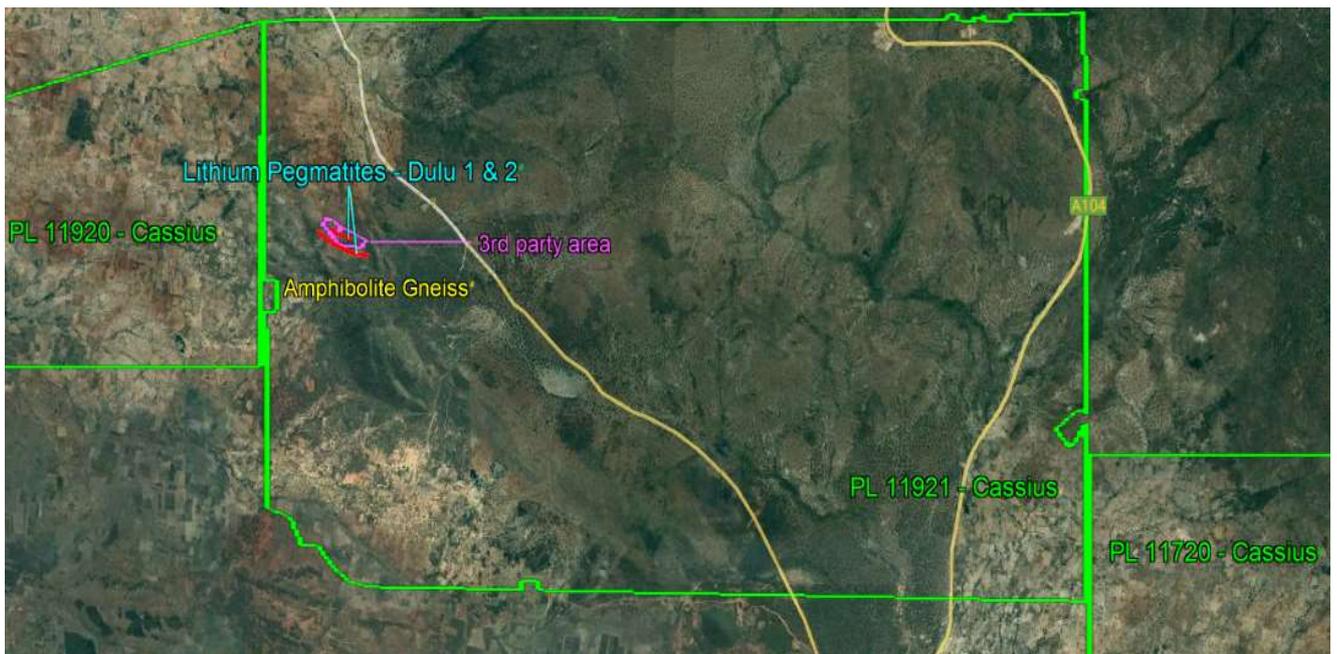


Fig 8: Dulu location in PL 11921, Dulu 1 & 2 pegmatites in red, 3<sup>rd</sup> party area in pink, rock type in yellow

<sup>5</sup> ASX – “Chenene Lithium Project - Rock Sample Assays To 1.08% Li<sub>2</sub>O” 16 February 2023

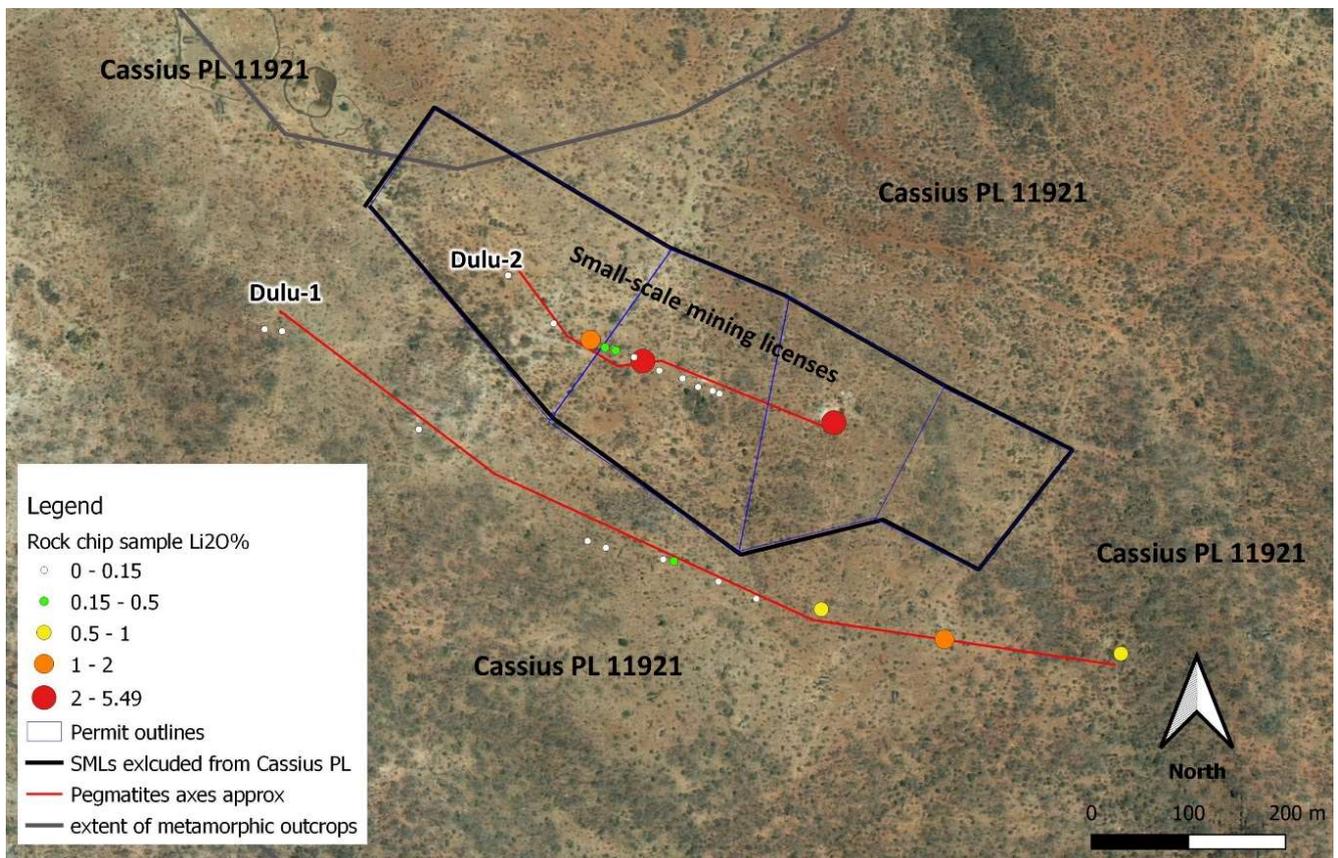
For personal use only

The 950m long “Dulu 1” pegmatite (**Fig 9**) assayed to 1.08% Lithium (as  $\text{Li}_2\text{O}$ ) in the Company’s PL 11921, where Caesium and Tantalum strongly correlated at elevated levels of 2,782 and 181 ppm respectively with elevated Lithium.

The 370m long “Dulu 2” pegmatite (**Fig 9**) in a 3<sup>rd</sup> party license (an extremely small license at only 0.14  $\text{km}^2$ , fully enclosed by Company’s substantial PL 11921 of  $\sim 115 \text{ km}^2$ ) assayed from  $\sim 2\text{m}$  depth to a very high 5.49%  $\text{Li}_2\text{O}$ , with highly elevated 7,624 ppm Caesium and 4,970 ppm Tantalum.

Of key significance is proximity and a parallel orientation of Dulu 1 to Dulu 2 (**Fig 9**) separated laterally (north-south) by only  $\sim 160\text{m}$ , with a potential ESE extension of Dulu 2 sub-surface into the Company’s PL 11921 (Dulu 2 is at surface in the very small 3<sup>rd</sup> party area only  $\sim 180\text{m}$  distant along strike to the Company’s license border).

For personal use only



**Fig 9: Dulu-1 and Dulu-2 pegmatites with Lithium ( $\text{Li}_2\text{O}$ %) rock sample results**

Lower assays in Dulu 1 pegmatite compared to Dulu 2 may be a function of leaching of minerals due to surface exposure, common in Lithium deposits, whereas the recently exposed Dulu 2 pegmatite was sampled at 2-5m sub-surface (more protected from leaching).

The Company is planning a trenching and/or auger/aircore drilling programme at Dulu to:

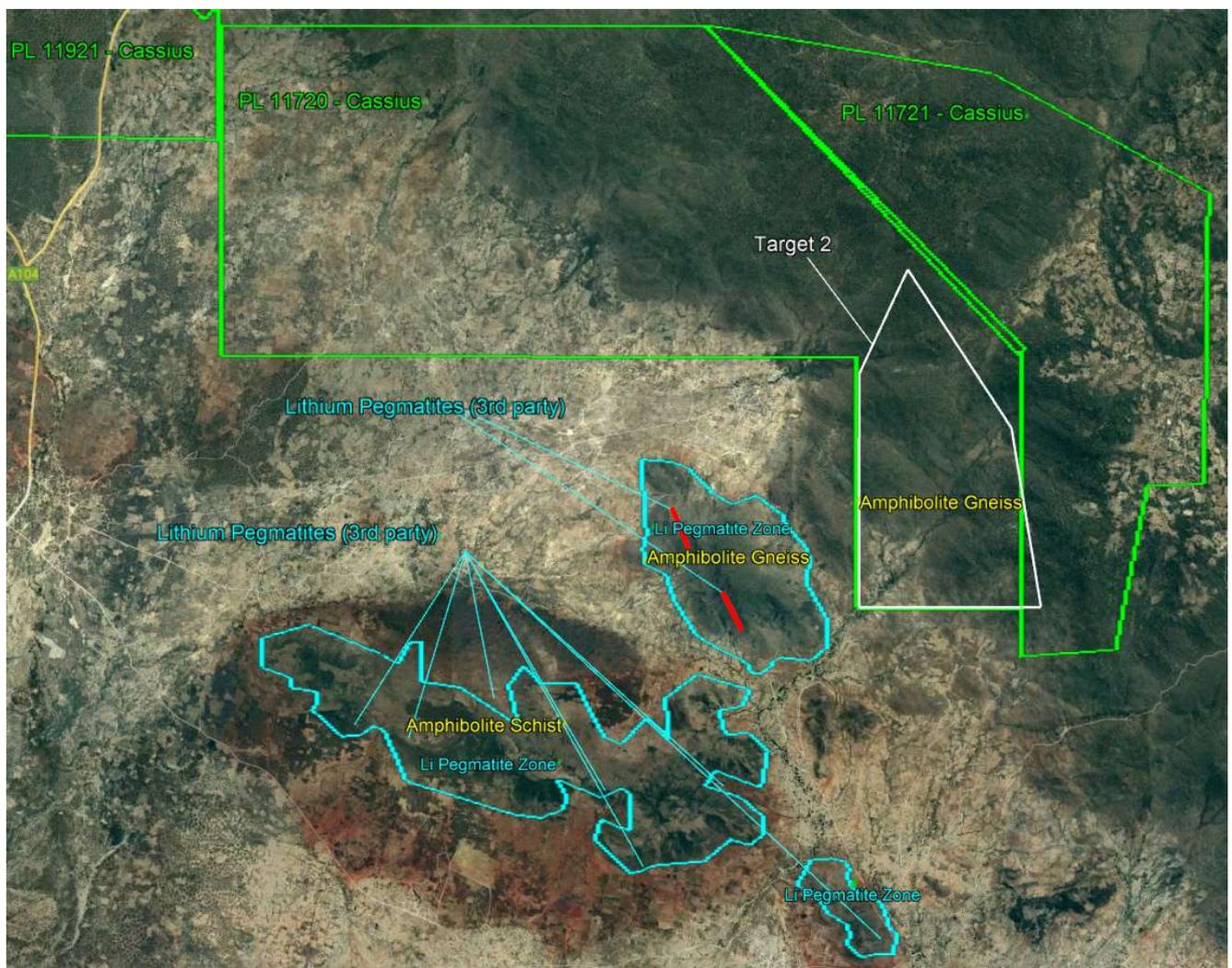
- access sub-surface samples at/near the current elevated  $\text{Li}_2\text{O}$  assay locations in the Dulu 1 LCT pegmatite to eliminate/reduce surface leaching risk, whilst also testing for lateral extensions of Dulu 1 along strike to the WNW and ESE, and
- test for extensions of the Dulu 2 pegmatite along strike to the WNW and ESE, across the license border into the Company’s PL 11921, to also sample sub-surface to reduce leaching effects

- the success of trenching will depend on the hardness of the pegmatite and surface/surrounding rock cover, therefore the potential for shallow auger and/or aircore has been introduced into the planning
- trenching and drilling contractors are being sourced for quotation and availability
- subject to successful contractor negotiations and availability, its expected the programme would start in around 2 months time

The Company's additional Target 2 (**Fig 10**) lies in the Company's adjacent PL 11720 to the east, within ~2.5 km of the known multiple spodumene-bearing pegmatites in the Hombolo area (within adjacent 3<sup>rd</sup> party licenses). This remains under planning for initial surface sampling and mapping, though timing is not yet set.

Multiple Lithium pegmatites have been historically reported by 3<sup>rd</sup> parties in several locations at up to 5.2% Li<sub>2</sub>O (Lithium Oxide) and 0.12% Ta<sub>2</sub>O<sub>5</sub> (Tantalum Oxide), including by Liontown (ATR: LTR) in 2015, in the same/similar metasediment rock types.

For personal use only



**Fig 10: Target 2 exploration area, with neighbouring 3<sup>rd</sup> party historical Lithium pegmatite occurrences**

### About the CHENENE LITHIUM PROJECT

The Chenene Lithium Project consists of four contiguous Lithium exploration licenses totalling ~300 km<sup>2</sup> in central Tanzania, ~40 kms N of the capital city Dodoma (**Fig 11**), accessible by major road and unaffected by the annual wet season further south.

The main features are the NW-trending Chenene Hills of sheared granite within rolling plains formed mainly of eroded granitic soils. A belt of metamorphosed amphibolite schists and amphibolite gneiss rocks outcrops along the margins of the sheared granites within the Company’s licenses, exposed intermittently above granitic soil plains. Its these metasediments that the Company is targeting in its Lithium exploration.



**Fig 11: Chenene Lithium Project in Tanzania**

Pegmatites are hosted in these metamorphosed rocks in the “Hombolo-Msangani belt”, a NW-SE belt ~35 km long and 13 km wide. Folding was deformed by NW shearing, with the pegmatites emplaced prior to shearing. Lithium-bearing pegmatites (lepidolite and/or spodumene), together with elevated Caesium and Tantalum, have been identified in this belt at Dulu and Hombolo.

### GHANA – International Arbitration

On 3 February 2023 the company commenced international arbitration against the Government of the Republic of Ghana (“Ghana”) seeking damages in excess of **USD 275 million** as a consequence of Ghana’s breach of the Large Scale Prospecting License Agreement entered into with the Company.

The following steps have been taken by the Company to progress its International Arbitration against Ghana:

- 10 May 2023** - Cassius files and serves an amended Notice of Arbitration (“NOA”) appointing its nominee as an Arbitration Tribunal member.
- 15 June 2023** - Ghana fails to appoint its nominee as an Arbitration Tribunal member within the time specified under the UNCITRAL rules (United Nations Commission on International Trade Law).
- 5 July 2023** - Cassius makes Application to the Permanent Court of Arbitration at the Hague (“PCA”) in the Netherlands for the “Appointment of a Designating Authority”, which will then appoint an Arbitration Tribunal member on behalf of Ghana.
- 6 July 2023** - PCA writes to the parties and invites Ghana to make any comment in respect of Cassius’s application by **20 July 2023**.

For personal use only

- 6 July 2023** - Ghana files legal process in its domestic court in Ghana for an injunction purporting to prevent Cassius from pursuing its claims in an international forum.
- 12 July 2023** - initial hearing of Ghana injunction adjourned to **20 July 2023**.
- 20 July 2023** - hearing on injunction concluded, with the Judge reserving judgment (due by **31 July 2023**). As at the time of this ASX release there has been no injunction granted or order made restraining Cassius in any way. If an injunction is granted against Cassius in Ghana, it would have no effect or power to restrain the PCA or any other appointed international authority from proceeding with Cassius' International Arbitration against Ghana.
- 20 July 2023** - Ghana writes to the PCA attempting to object to its power to designate an Appointing Authority.
- 20 July 2023** - PCA writes to Cassius inviting any comment on Ghana's objection by **27 July 2023**.
- 25 July 2023** - Cassius makes submissions answering Ghana's objection and again requesting the PCA to designate an Appointing Authority.
- 26 July 2023** - PCA invites Ghana to make any further comment by **28 July 2023**. Thereafter it will decide as to whether it will designate an Appointing Authority. In the absence of any appointment by Ghana, Cassius expects that the PCA will designate an Appointing Authority as requested.

The Company will provide shareholders with regular updates on progress of the proceedings.

## **CORPORATE**

During the quarter the company raised \$1,500,000 (before expenses) from a placement of 88,235,294 new fully paid ordinary shares in the capital of the Company at 1.7c per Share.

708 Capital acted as Lead Manager to manage the Placement.

The Directors of the company will also subscribe for up to an additional \$100,000 of new shares in the Company on the same terms as the placement which will require shareholder approval at the next General Meeting of the Company.

**Payments to related parties of the Company** - The company paid non-executive directors' fees, statutory superannuation and consulting fees of \$23,000 for the quarter.

## **OTHER OPPORTUNITIES**

The Company continues to review opportunities to expand its portfolio where a significant benefit can be identified for its shareholders.

***This announcement is authorised for release to the ASX by the Board.***

## **FURTHER INFORMATION**

James Arkoudis (Director)

e: [james@cassiusmining.com](mailto:james@cassiusmining.com)

## SCHEDULE OF TENEMENTS AS AT 30 JUNE 2023

Location		Tenement / Mining Lease Number / Special Licence Number					
<b>Madagascar</b>		<b>R14542 – 100%, R14960 – 100%</b>					
Permit	Company	Int (%)	Type	Expiry date	Grant date	Area (km <sup>2</sup> )	Commodity
14542	Soalara Calcaire SARLU	100	Exploitation (Mining)	03 Nov 2055	04 Nov 15	12.50	Limestone
14960	Soalara Calcaire SARLU	100	Exploitation (Mining)	03 Nov 2055	04 Nov 15	6.25	Limestone
<b>Tanzania</b>		<b>11720/2021 – 100%, 11721/2021 – 100%, 11920/2022 – 100%, 11921/2022 – 100%</b>					
Permit	Company	Int (%)	Type	Expiry date	Grant date	Area (km <sup>2</sup> )	Commodity
11720	Cassius Mining (T) Limited	100	Prospecting (Exploration)	03 Oct 2025	29 Mar 22	92.63	Lithium
11721	Cassius Mining (T) Limited	100	Prospecting (Exploration)	03 Oct 2025	29 Mar 22	45.55	Lithium
11920	Cassius Mining (T) Limited	100	Prospecting (Exploration)	12 May 2026	13 May 22	47.00	Lithium
11921	Cassius Mining (T) Limited	100	Prospecting (Exploration)	12 May 2026	13 May 22	115.40	Lithium

License Permits are held by wholly owned subsidiary “Soalara Calcaire SARLU” in Madagascar and “Cassius Mining (T) Ltd” in Tanzania

### Competent Person Statement - Chenene

Information in this “ASX Announcement” relating to Exploration Targets, Exploration Results and Mineral Resources has been reviewed by Mr. Andrew Pedley who is a member in good standing with the South African Council for Natural Scientific Professions (SACNASP). Mr. Pedley has sufficient experience that is relevant to the types of deposits being explored for and qualifies as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves” (JORC Code 2012 Edition). Mr. Pedley consents to the inclusion in this document of the matters based on the information in the form and context in which it appears. The market announcement is based on, and fairly represents, information and supporting documentation prepared by the Competent Person. Mr. Pedley is not an employee of the Company; he is a Senior Associate with the MSA Group of Johannesburg who are providing consulting services to Cassius Mining Ltd.

### Competent Person Statement - Soalara

The information in this statement that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Jannie Leeuwner – BSc (Hons) Pr.Sci.Nat. MGSSA and is a full-time employee of Vato Consulting LLC. Mr. Leeuwner is a registered Professional Natural Scientist (Pr.Sci.Nat. - 400155/13) with the South African Council for Natural Scientific Professions (SACNASP). Mr. Leeuwner has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and the activity being undertaken to qualify as a Competent Person as defined in the Note for Mining Oil & Gas Companies, June 2009, of the London Stock Exchange and the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’ (JORC Code). Mr. Leeuwner consents to the inclusion of the information in this release in the form and context in which it appears.

**Ghana Office**  
 HNO. 4, 9<sup>th</sup> Street,  
 Adjiringanor  
 Greater Accra, GHANA  
 P.O Box GP 17867  
 ACCRA

**Madagascar Office**  
 Lot II 99 ABA  
 Soavimasoadro,  
 Antananarivo,  
 MADAGASCAR

**Cassius Mining Limited**  
  
**ACN 115 027 033**  
  
[www.cassiusmining.com](http://www.cassiusmining.com)

**Sydney Office**  
 189A St John’s Rd,  
 Forest Lodge,  
 NSW 2037  
 AUSTRALIA  
 PO Box R383  
 Royal Exchange  
 NSW 1225

**Tanzania Office**  
 Plot 890, House 19  
 Yacht Club Road,  
 Masaki  
 PO Box 11085  
 Dar Es Salaam,  
 TANZANIA