RNS Number: 4455J Neometals Ltd 24 October 2024

## 24 October 2024

#### Neometals Ltd

("Neometals" or "the Company")

# Quarterly Activities Report For the quarter ended 30 September 2024

# **Highlights**

## **CORPORATE**

- Cash balance of A 7.8M, investments and net receivables of A 13.8M and no debt; and
- Executed restructure and right-sizing of the organisation to focus on the commercialisation of Primobius and raised US 3M (~A 4.5M) from a placement to a long-term shareholder.

#### **OPERATIONS**

Lithium-ion Battery Recycling (50% Neometals Ltd ("NMT") via Primobius GmbH, an incorporated JV with SMS group GmbH ("SMS"))

- Primobius continued the installation and commenced commissioning of the Spoke section, and commenced installation of the refinery Hub section of the integrated 2,500tpa lithium-ion battery recycling facility for Mercedes-Benz at Kuppenheim, Germany; and
- Primobius continued to grow and advance its business development pipeline ahead of 'product readiness' target for commercial-scale Spoke and Hub plants in 1H and 2H of 2025, respectively.

# PRE-COMMERCIAL TECHNOLOGIES

Lithium Chemicals (70% NMT, 30% Mineral Resources Ltd via Reed Advanced Materials Pty Ltd ("RAM"))

- Completion of the electrolysis stage of pilot program to increase confidence in electricity consumption and membrane life assumptions on a natural salar brine, and confirm the sustainable cost advantage of the technology; and
- Commenced the final stage crystallisation of electrolysed solution to confirm the purity of the lithium product.
   Completion and results expected to be reported in the DecQ 2024.

Vanadium Recovery (IP 100% NMT, via Avanti Minerals Ltd; technology licensee 87.1% NMT, via Recycling Industries Scandinavia AB ("**RISAB**"))

- EIT RawMaterials provided €0.5M in grant funding and became a minority shareholder in RISAB, the developer of a Vanadium Recovery Project in Finland ("VRP1"), at a pre-money valuation of €50M; and
- RISAB commenced project financing process for VRP1, targeting production of high-purity, low-cost vanadium, from the recycling of steel slag by-products, for use in vanadium flow batteries and alloys.

# **UPSTREAM MINERAL PROJECTS**

Barrambie Gold and Titanium/ Vanadium ("Barrambie") (100% NMT)

- Completed maiden evaluation of gold potential resulting in a Gold Exploration Target<sup>1</sup> ranging between 8Mt and 10.5Mt at an average grade of 1.3g/t Au - 2.3g/t Au, for 335,000 - 775,000 oz Au; and
- · Advanced discussions in relation to the separate divestment of the Barrambie titanium and vanadium Mineral

Resources.

 $[1]_{\textit{For full details refer to Neometals ASX announcement headlined "Barrambie Gold Exploration Target" released on 23^{rd} September 2024}$ 

# **Company Overview**

Neometals facilitates sustainable critical material supply chains and reduces the environmental burden of traditional mining in the global transition to a circular economy.

The Company is commercialising a portfolio of sustainable processing solutions that recycle and recover critical materials from high-value waste streams.

Neometals' core focus is its patented, **Lithium-ion Battery ("LiB") Recycling technology (50% NMT)**, being commercialised in a 50:50 incorporated JV (Primobius GmbH) with 150-year-old German plant builder, SMS group GmbH. Primobius is supplying Mercedes-Benz a 2,500tpa recycling plant and operates its own LiB Disposal Service in Germany. Primobius' first 21,000tpa commercial plant will be offered to Stelco under an existing technology licence for North America.

Neometals is also developing two advanced battery materials technologies for commercialisation under low-risk, low-capex technology licensing business models:

- Lithium Chemicals (70% NMT) Patented ELi™ electrolysis process, co-owned 30% by Mineral Resources
  Ltd, to produce battery quality lithium hydroxide from brine and/or hard-rock feedstocks at lowest quartile
  operating costs. Pilot scale test work planned for completion in DecQ 2024; and
- Vanadium Recovery (100% NMT) Patent pending hydrometallurgical process to produce high-purity vanadium pentoxide from steelmaking by-product ("Slag") at lowest-quartile operating cost and carbon footprint.

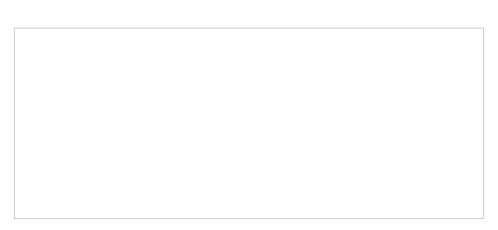
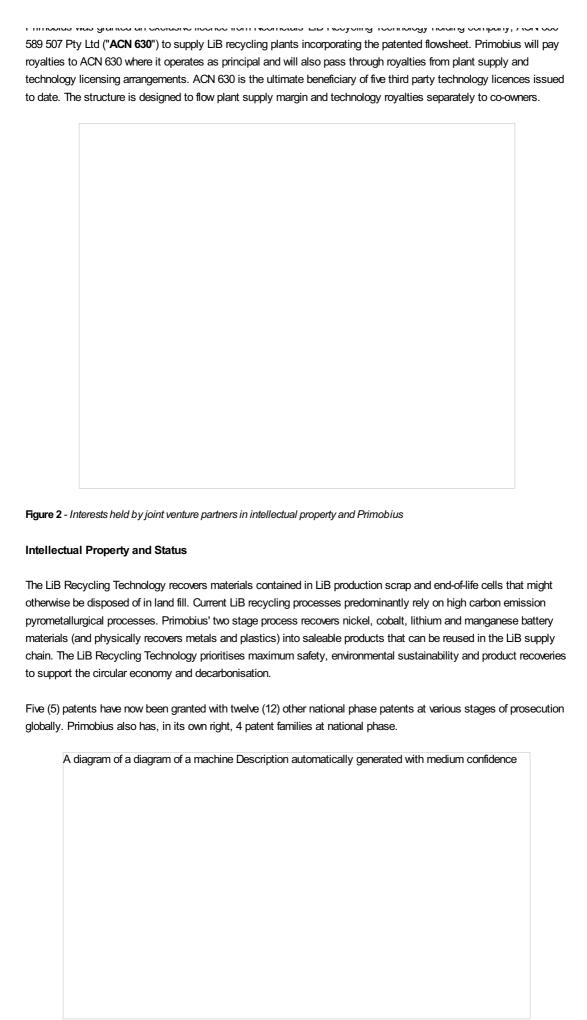


Figure 1 - Neometals' Technology Projects and Technology Readiness Level Commercialisation System.

# **OPERATIONS**

Lithium-ion Battery Recycli	ng
(Intellectual Property via A	CN 630 589 507 Pty Ltd - NMT 50%, SMS
50%)	(Plant construction via Primobius GmbH - NMT 50%
SMS 50%)	

Primobius GmbH ("**Primobius**") is the incorporated joint venture established in 2020 to commercialise Neometals' lithium-ion battery ("**LiB**") recycling technology ("**LiB Recycling Technology**"). The co-owner is SMS group GmbH, a 150-year old German plant builder, with in excess of 14,000 employees globally and fabrication facilities in Europe, USA, India and China.



**Figure 3** - High level flowsheet showing the movement of materials from Shredding and Beneficiation ('**Spoke**') through to refining ('**Hub**') stages for the LiB Recycling Technology.

#### Commercialisation Status

The LiB Recycling Technology is at Technology Readiness Level (TRL) 8: Industrial Validation.

Primobius/ ACN 630 is currently deriving revenue from gate fees and product sales from its LiB Disposal Operation in Hilchenbach, Germany, and its business model is targeting future revenues from:

- 1. Mechanical equipment and plant supply agreements (e.g. Mercedes-Benz plant); and
- Royalties from the sale by customers of refined products from future commercial plants supplied by Primobius which utilise the LiB recycling technology.

# Hilchenbach Disposal Operation

Primobius has upgraded the Spoke section of its demonstration plant in Hilchenbach, Germany ("Hilchenbach Spoke"), providing a commercial LiB disposal service to the German EV and lithium battery supply chain. Primobius receives a gate fee to accept batteries for disposal. The Hilchenbach Spoke produces an intermediate mixed nickel/cobalt product ("Black Mass") and a mixed copper/aluminium product ("Black Copper") which are sold on a spot basis with pricing set according to nickel/cobalt and copper content respectively. During the quarter Primobius' Hilchenbach Spoke operations continued.

## Mechanical Equipment and Plant Supply

Primobius entered into a Co-operation Agreement with Mercedes-Benz ("Mercedes") ("Mercedes Cooperation") in March 2022. Under the Mercedes Cooperation, Primobius entered into a five (5)-year research collaboration aimed at jointly developing an industrial-scale recycling solution for Mercedes [1]. Primobius accepted purchase orders from Mercedes for the Spoke section of the Mercedes plant in August 2023 and the Hub section in January 2024.

During the quarter, Primobius completed the installation of the Spoke and commenced installation of the Hub section of the Mercedes Pilot Plant. The official opening of the Mercedes recycling plant in Kuppenheim Southern Germany was held post the quarter end in the presence of Federal Chancellor, Olaf Scholz.

Plant

# **Technology Licensing**

- Technology licensing and joint venture option agreements are in place with a subsidiary of Stelco Inc. ("Stelco") ("Stelco Agreements"). The Stelco technology licence is exclusive in North America in the field of end-of-life EV batteries, with the exception of the German carmakers. Additionally, Primobius has the right to acquire a 25-50% equity interest in the technology licensee at any time up to 30 June 2025<sup>[2]</sup>. During the quarter Stelco announced its acquisition by US based Cleveland-Cliffs Inc., the largest supplier of steel to the automotive industry in North America. Primobius looks forward to offering the first fully integrated commercial plant in 2H 2025.
- Three (3) exclusive licences have been issued for Scandinavia, the Balkans and Italy and one non-exclusive licence
  to the UK. Neometals is the largest individual shareholder in the licensees and ACN 630 is entitled to receive a
  10% gross revenue royalty from the technology licenses.

# Commercial

- During the quarter, Primobius representatives attended an official Neo Mobility Asia signing ceremony in Bangkok
  to commence the collaboration between the parties to create a LiB recycling ecosystem in Thailand. NEO Mobility
  Asia is a joint venture of MGC-Asia Green Tech Company Limited, an affiliate of Millennium Group Corporation
  (Asia) Public Company Limited ("MGC") and Arun Plus Mobility Holding Company Limited, an affiliate of PTT
  Public Company Limited ("PTT").
- During the quarter, Primobius entered into a non-binding MoU with a leading Indian non-ferrous metal recovery business for the potential supply of a turn-key LiB recycling plant.

 Continued recruitment activities to expand the Primobius technical, operational, commercial and management teams associated with offering mechanical plant and equipment package supply contracts.

# PRE-COMMERCIAL TECHNOLOGIES

Lithium Chemicals (Intellectual Property via Reed Advanced Materials Pty Ltd ("RAM") - NMT 70%, Mineral Resource Ltd 30%)

RAM is an incorporated joint venture commercialising the patented ELi<sup>TM</sup> Process ("ELi<sup>TM</sup>") which produces lithium hydroxide and carbonate from lithium chloride solutions using electrolysis. RAM has successfully converted lithium chloride solutions from both natural spodumene and synthetic brine feedstocks into battery-quality lithium hydroxide, at semi-pilot scale. ELi<sup>TM</sup> has the flexibility to produce lithium hydroxide and/or lithium carbonate at potentially significantly lower operating cost and carbon footprint compared to conventional production processes. ELi's key economic advantage lies in the potential to replace costly, imported bulk chemical reagents with electricity and low-cost internally generated reagents.

# Intellectual Property Status

RAM now holds nineteen (19) granted patents in hard rock and brine producing countries and has a further fourteen (14) pending national phase patents at various stages of prosecution globally.

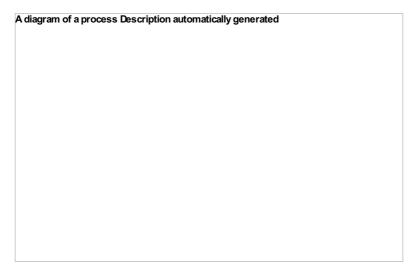


Figure 6 - Schematic showing a comparison of the conventional flowsheet for the production of lithium hydroxide from brines with the patented  $\boxminus^{\text{im}}$  process.

# Commercialisation Status

The ELi™ Process is at TRL 6: Continuous Pilot. RAM's current business model is to generate royalties from licensing the ELi™ Process to lithium brine and hard-rock operators, developers and processing equipment suppliers.

RAM has been completing staged pilot-scale trials ("ELi Pilot") on a natural lithium chloride brine provided by the owners of an operating South American lithium operation since June 2023. RAM successfully concluded the first stage purification trials in the DecQ 2023. This quarter RAM completed the second stage electrolysis of the purified lithium chloride. The final stage of the ELi Pilot is the evaporation and crystallisation of the intermediate solution from the electrolysis stage into lithium hydroxide monohydrate, for assessment and evaluation by LiB cathode producers.

# Technical

- A long-duration (1000hr) electrolysis trial was undertaken at an electrolyser vendor in the USA. The test is
  designed to confirm historic test results obtained on synthetic brines, and increase confidence in the expected
  power consumption and membrane assumptions in the 2023 Engineering Cost Study; and
- Commenced the crystallisation test work to confirm product purity and quality. The results are due in the December quarter.

Commercial

The successful completion of the ELi Pilot and the receipt of final test work reports will allow RAM to finalise the documentation and data room for a formal partner selection process to fund the next stage of commercialisation, the industrial validation through continuous demonstration plant trials.

Vanadium Recovery
(Intellectual Property via Avanti Materials Ltd - NMT 100%)
Vanadium Recovery Project 1 via Recycling Industries Scandinavia AB ("RISAB") - 87.1% NMT

Neometals has developed a proprietary sustainable vanadium recovery process ("VRP Technology") that produces vanadium products for battery and aerospace alloying applications from vanadium-bearing steel slag by-products. The VRP Technology offers:

- 1. A processing flowsheet utilising conventional equipment at atmospheric pressure, mild temperatures, and non-exotic construction materials; and
- 2. Potential lowest-quartile operating costs<sup>[3]</sup> and carbon-footprint from processing steelmaking waste ("Slag"), eliminating the cost, risks and environmental impact of mined upstream feedstocks.

#### Intellectual Property Status

Neometals' Vanadium Recovery IP holding company, Avanti Materials Ltd, has eight (8) pending national phase patents for the VRP Technology across one patent family, with two patents at examination stage.

#### **Commercialisation Status**

The VRP Process is at TRL 6: Continuous Pilot. The current business model is to generate royalties from licensing the VRP Technology to steel slag producers.

## Vanadium Recovery Project 1 ("VRP1") - Finland

RISAB was incorporated to evaluate the feasibility of recovering high-purity vanadium pentoxide ("V2O5") from highgrade vanadium-bearing steel Slag in Scandinavia. In March 2023, Neometals announced the results of a feasibility study that confirmed the potential for lowest-quartile operating costs with a low-to-negative carbon footprint<sup>5</sup>. In the ensuing 6 months the vanadium price fell more than 50% and equity financing could not be secured. Neometals advised the market in October 2023 that it could not commit to a positive final investment decision on VRP1 and would pursue commercialisation through a technology licensing business model while supporting RISAB to become independently funded<sup>[4]</sup>.

## **Technical**

No substantive technical activity was undertaken during the quarter.

# Commercial

During the quarter, Neometals continued assisting RISAB to explore value realisation options and advance discussions with potential licensees of the VRP Technology. More specifically:

- RISAB executed a project agreement with EIT RawMaterials GmbH ("EIT RawMaterials")("EIT RawMaterials Agreement") to support the development of VRP1. Specifically, EIT RawMaterials has committed to provide €0.5M (c. A 829k) in grant funding to RISAB's 100% owned VRP1 holding company, Novana Oy ("Novana"), and become a minority shareholder in RISAB at a pre-money valuation of €50M (c. A 82.9M)[5] ("Pre-Money Valuation"); and
- Funding to be applied towards progressing project financing, with improved economics arising from an additional €15M conditional investment grant provided by the EU backed Finnish State NextGeneration fund and potential new 20% investment tax credit from the Finnish State.

# Corporate

Under the EIT RawMaterials Agreement, EIT RawMaterials has been issued approximately 1.1% of the issued capital of RISAB at the Pre-Money Valuation and has the option to subscribe for up to a further €10M in additional RISAB equity at the Pre-Money Valuation.[6]

# **UPSTREAM MINING PROJECTS**

	Barrambie Gold and Titanium/Vanadium Project
	(Neometals 100%)

Barrambie, located approximately 80km north-west of Sandstone in Western Australia ("WA"), is one of the largest vanadiferous titanomagnetite ("VTM") Mineral Resources globally (280.1 Mt at 9.18% TiO<sub>2</sub> and 0.44% V<sub>2</sub>O<sub>5</sub>), containing the world's second highest grade hard rock titanium Mineral Resource (53.6Mt at 21.17% TiO2 and 0.63%  $V_2O_5$ ). The Mineral Resource is secured under a granted Mining Lease and has a granted Mining Proposal to mine approximately 1.2Mtp of mineralisation, annually.

#### **Activity Summary**

During the quarter the following activities were undertaken to support monetisation of the Barrambie asset:

#### **Technical**

- Maiden assessment completed on gold exploration potential at Barrambie using historical data from previous explorers[7], Neometals has not conducted any exploration for gold since 2003;
- Barrambie Greenstone Belt ("BGB") historically produced ~27,000 gold ounces at 27.8g/t;
- · Camp-scale gold potential with significant identified structural corridors;
- The identified Exploration Target along the 40km strike of BGB within Neometals tenure is between 8Mt at an
  average grade of 1.3g/t Au and 10.5Mt at an average grade of 2.3g/t Au, for an implied 335,000 ounces to 775,000
  ounces gold; and
- The Exploration Target considers a drill dataset across ten prospects, observed mineralogical characteristics, various geometries, dimensions and styles of known mineralisation and current understanding of structural and lithological controls on the location of mineralisation.

#### Corporate

- The exploration target highlights a rare opportunity to potentially uncover a substantial gold camp, and Neometals
  will now explore the most effective strategy and corporate structure to allow shareholders to capitalise on the gold
  potential; and
- Advanced discussions in relation to the separate divestment of the Barrambie titanium and vanadium Mineral Resources.

# **CORPORATE**

During the quarter Neometals provided a strategy update [8] that outlined the following key measures:

- Restructuring and right-sizing of the organisation and its underlying cost base to reflect strategic refocus and
  prioritisation of the commercialisation of Primobius, the LiB Recycling joint venture with SMS group GmbH; and
- Capital management initiatives through the targeted sale of non-core assets and strategic partnering to facilitate
  the ongoing development of the Company's other technologies.

The strategic initiatives coupled with an equity placement of US 3 million to a long-term shareholder during the quarter <sup>[9]</sup> and a A4 million placement settled post the quarter end <sup>[10]</sup>, support Neometals' progression of its short-term objectives.

## Financial

# Finances (unaudited)

Cash and term deposits on hand as of 30 September 2024 totalled 7.8 million, including 0.3 million in restricted use term deposits supporting contractual obligations. The Company has investments totalling 13.3 million, with net receivables of 0.5 million.

Related party payments for the quarter outlined in the ASX Appendix 5B released contemporaneously at section 6.1 total 305,750, comprising Director fees and superannuation.

## Issued Capital

The total number of shares on issue as at 30 September 2024 was 689,898,094.

# Redivium Ltd (Formerly Hannans Limited) (ASX: RIL) ("Redivium") (Battery Recycling)

As at 30 September 2024 Neometals held 879,812,014 ordinary fully paid shares (~26% of the issued capital) in Redivium, on an undiluted basis. Redivium holds exclusive technology licences to Neometals' original LiB Recycling Technology in Italy, Greece and the Balkans, a non-exclusive licence in the United Kingdom and it is earning a 50% interest in an exclusive licence for Scandinavia held by Critical Metals Limited.

## Critical Metals Limited (Unlisted, Scandinavian Lithium/Cobalt/Base Metals)

Neometals holds ~18% of unlisted public company, Critical Metals Ltd, a company which holds an exclusive licence to Neometals' original LiB Recycling Technology in Scandinavia.

Authorised on behalf of Neometals by Christopher Reed, Managing Director.

For more information, please contact:

## Neometals Ltd

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#### **Compliance Statement**

The information in this report that relates to Mineral Resource Estimates for the Barrambie Vanadium/Titanium Project is extracted from the ASXAnnouncement listed below, which is also available on the Company's website at <a href="https://www.neometals.com.au">www.neometals.com.au</a>.

17/04/2018 Barrambie - Updated Barrambie Mineral Resource Estimate

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

# Competent Persons Statement - Exploration Target

The information in this Quarterly Activities Report that relates to Exploration Targets is based on information compiled by Jeremy Peters. Mr Peters a Director of Burnt Shirt Pty Ltd, a geological and mining consultancy, and has sufficient experience relevant to Western Australian orogenic gold mineralisation and to the reporting of Exploration Targets to qualify as a Competent Person as defined in the December 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Data compiled from historic WAMEX reports by the Neometals Exploration Team has been reviewed by Mr Peters, who has consented to the inclusion of the matters in this Quarterly Activities Report based on this information in the form and context in which it appears.

## **About Neometals**

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- Vanadium Recovery (100% NMT) Patent pending hydrometallurgical process to produce high-purity

vanadium pentoxide from steelmaking by-product ("Slag") at lowest-quartile operating cost and carbon footprint.

For further information, visit: www.neometals.com.au.

# **APPENDIX**

# Appendix 1: Global Resource

Table 1: Barrambie Mineral Resource Estimate, April 2018\*

A screenshot of a graph Description automatically generated	

# Appendix 2: Tenement Interests

As at 30 September 2024, the Company has an interest in the following projects and tenements in Western Australia.

Project Name	Licence Name	Beneficial Interest	Status
Barrambie	M57/173-I	100%	Live
Barrambie	E57/769-I	100%	Live
Barrambie	E57/770-I	100%	Live
Barrambie	E57/1041-I	100%	Live
Barrambie	E57/1401	100%	Pending
Barrambie	E57/1437	100%	Pending
Barrambie	L57/0030	100%	Live
Barrambie	L57/0066	100%	Pending
Barrambie	L20/0055	100%	Live
Barrambie	L20/0080	100%	Live
Barrambie	L20/0081	100%	Live
Queen Victoria Rocks	E15/1416-I	100%	Live

Project Name	Licence Name	Acquired or increased
N/A	N/A	N/A

# Interests in mining tenements relinquished, reduced, or lapsed

Project Name	Licence Name	Relinquished, reduced, or lapsed
Barrambie	E57/1220	Withdrawal
Barrambie	E57/1244	Withdrawal
Barrambie	E57/1245	Withdrawal
Barrambie	E57/1379	Outright Surrender
Barrambie	E20/1037	Withdrawal
Barrambie	L57/0064	Withdrawal
Barrambie	L57/0065	Withdrawal

[1] For full details refer to Neometals ASX announcement headlined "Cooperation Agreement with Mercedes Benz" released on 13<sup>th</sup> May 2022

[2] For full details refer to Neometals ASX announcement headlined "Primobius Commercial Update" released on 22nd December 2023

[3] For full details refer to Neometals ASX announcement headlined "Vanadium Recovery Project Delivers Strong Feasibility Results" released on 8<sup>th</sup> March 2023

[4] For full details refer to Neometals ASX announcement headlined "Vanadium Recovery Project Delivers Strong Feasibility Results" released on 8th March 2023.

[5] For full details refer to Neometals ASX announcement headlined "Finnish Vanadium Project receives EU supported capital injection" released on 16 September 2024

[6] For full details refer to Neometals ASX announcement headlined "Finnish Vanadium Project receives EU supported capital injection" released on 16 September 2024

[7] For full details refer to Neometals ASX announcement headlined "Barrambie Gold Exploration Target" released on 23<sup>rd</sup> September 2024

[8] For full details refer to Neometals ASX announcement headlined "Neometals Strategy Update" released on 22 August 2024

[9] For full details refer to Neometals ASX announcement headlined "US 3M Placement" released on 19 August 2024

[10] For full details refer to Neometals ASX announcement headlined "Neometals successfully closes A 4 million placement and announces entitlement offer" released on 11 October 2024

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