Quarterly Activities Report

CobaltBlue
green energy technology

31 January 2023

Cobalt Blue Holdings Limited

A Green Energy Exploration Company

ASX Code: **COB**

Commodity Exposure:

Cobalt & **Sulphur**

Directors & Management:

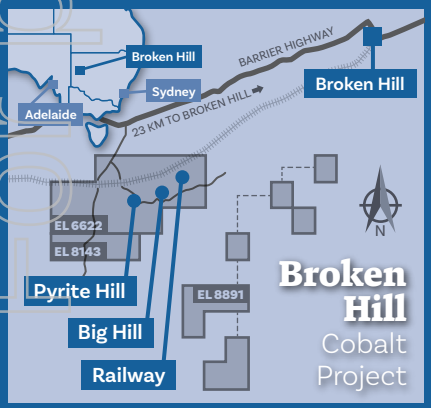
Robert Biancardi	Non-Exec Chairman
Hugh Keller	Non-Exec Director
Robert McDonald	Non-Exec Director
Joe Kaderavek	CEO & Exec Director
Danny Morgan	CFO & Company Secretary

Capital Structure:

Ordinary Shares at 31/01/2023:	**370.1m**
Unlisted Options/Rights:	**9.5m**
Market Cap (undiluted):	**$215m**

Share Price:

Share Price at 31/01/2023:	**$0.58**



Cobalt Blue Holdings Limited

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Highlights

December 2022 Quarterly Activities Report

BROKEN HILL COBALT PROJECT (BHCP)

- Feasibility Study update
- Concentrator operations
- Demonstration Plant update
- Resource, groundwater and waste rock drilling
- Government grants

COBALT TRENDS

- Weak 2022 cobalt market fundamentals – drivers expected to rebound
- Positive momentum in near and long-term demand outlooks

COBALT IN WASTE STREAMS PROJECT UPDATE

- Initial sample test work completed. Second sample test work underway shortly.

CORPORATE

- Investor webinars
- Expenditure
- Other

Broken Hill Cobalt Project (BHCP)

Feasibility Study update

Work on the Feasibility Study continued during the quarter. Activities included:

- Demonstration Plant operations
- Feasibility Study engineers progressed mine layout concepts, power and water infrastructure reviews continued
- Resource, groundwater and waste rock drilling
- Continuation of soil investigations and ecological studies

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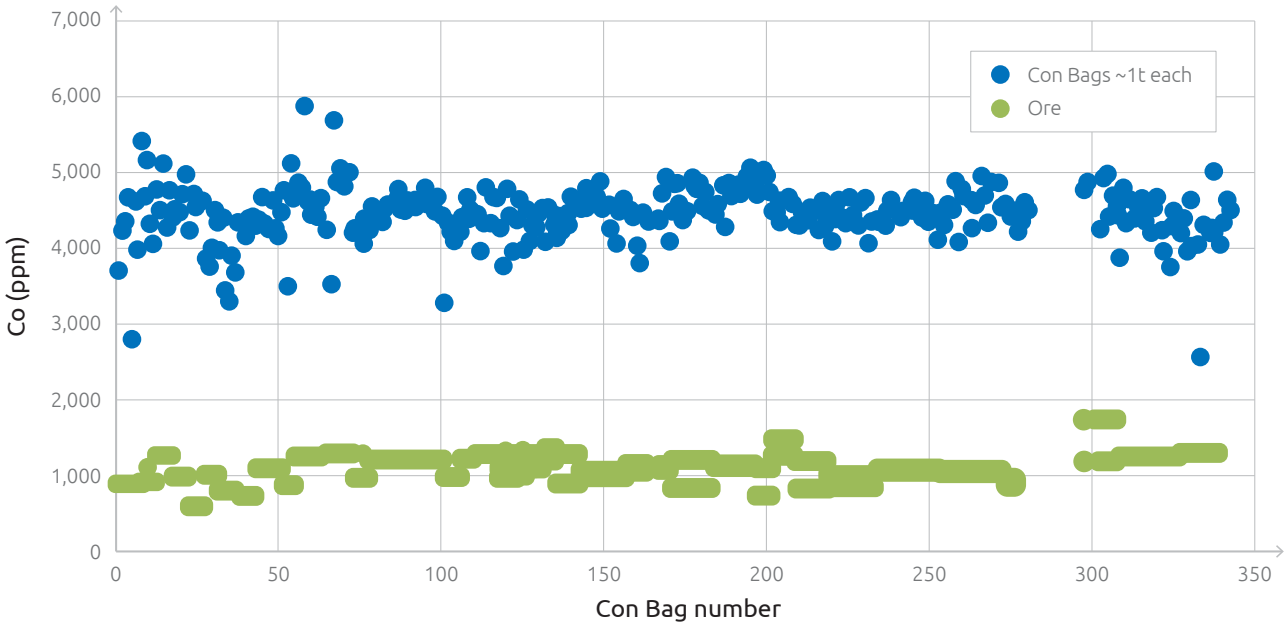
Concentrator operations

During the quarter concentrator activities were completed. The concentrator used gravity separation to separate the cobalt-pyrite from the ore. The ore was milled from 4 mm top size to a target of 1.5 mm top size using a roller mill. This simulated the use of a High-Pressure Grinding Roll (HPGR) mill in the circuit.

A total of 4,200 t of ore was processed to produce 680 t of wet concentrate (typical moisture 5–10%). A further 800–1,000 t of ore remains for optimisation studies in the future. Operations were held over 65 days with the longest run of over 100 hours recorded. Mass recovery of ~ 17–20% was consistently achieved, with average concentrate grade of 4,434 ppm Co (see Figure 1).

Figure 1 – **Grade of ore and concentrate for operations**



Ore processed via the concentrator circuit was extracted from the Pyrite Hill deposit, by means of underground development (as released on 1 September 2022 in the market announcement 'Demonstration Plant – Ore Extraction Completed'). The Pyrite Hill deposit extends over 1.2 km along strike, over 300 m down dip and varies in thickness from 10 to 100 m. Mineralisation is hosted by a quartz-albite gneiss and is characterised by the presence of disseminated pyrite concentrated parallel to primary foliation. Ore drive development extracted material between 257 mRL and 262 mRL, approximately 40 to 50 m below surface and 3 to 6 m below the interpreted top of fresh rock.

Figure 2 – **Collection of concentrate into 1 tonne bulka bags with float concentrate on the left, and gravity concentrate in the centre**

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Figure 3 – **Operating spiral with separation of pyrite on the inner spiral and cutter gap, and gangue to outer edge of the spiral**

Figure 4 – **Feed ore milled to <4 mm on left hand, and gravity concentrate on right hand**

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Demonstration Plant update

During the quarter COB continued concentrate operations at the Demonstration Plant.

The treatment of cobalt-pyrite concentrate involves two key steps – (1) conversion of pyrite into pyrrhotite and elemental sulphur and (2) leaching of the pyrrhotite. The solubilised cobalt is then recovered by precipitation as a mixed hydroxide with grades of 30% cobalt and 7% nickel (typical Pilot Plant results from 2021).

Following initial commissioning in September 2022, the kiln was operating during the quarter with operating parameters optimised to maximise pyrite to pyrrhotite conversion. During the quarter, the kiln was operating on a continuous basis with feed rates between 150-200 kg/hr. The kiln was initially focused on the production of calcine for leaching, with clean sulphur to be recovered once a specialised heat-exchange condenser is operational and sulphur prilling equipment installed in Q1 2023.

The leaching autoclave was commissioned during the quarter. Ahead of leaching, the kiln calcine was upgraded to 75–85% pyrrhotite and 0.6% cobalt, with residual gangue to be recycled to the float cell to recover unreacted pyrite. This upgrade step reduces the load of inert material progressing into the leach. First MHP was produced during the quarter, with continuous operation of the leach and MHP circuits planned during Q1 2023.

The Demonstration Plant operations are on track to deliver the initial 'process plant design criteria' for the Definitive Feasibility Study. The Plant will continue to run through 1H 2023, to obtain large samples of cobalt and sulphur products for market acceptance, and to obtain reliability data for the DFS.

Figure 5 – **Kiln product separated into pyrrhotite for leaching (left hand side) and gangue (right hand side) for recycle to the float cell for recovery of unreacted pyrite.**

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Overall Process Cobalt Recovery

The concentrator circuit recovers cobalt-pyrite from the gravity spirals and the float cell. The deportment of cobalt-pyrite between the two methods depends on the particle size, with coarse particles recovered on the gravity spiral, and fine particles recovered in the float cell. The combined recovery for the demonstration plant concentrator circuit was typically 95%. This exceeds the previous recoveries obtained in the 2020 Project Update (PFS level study) of 90%.

	Project Update 2020	Demonstration Plant 2022
Mass of Ore	45 t	4,200 t
Feed type	RC drilling chips, screened at 1,180 µm	Fresh ore, crushed, ball mill
Co recovery to concentrate	90%	95%

Further work is ongoing to validate the recovery of cobalt from the concentrate through the remaining downstream processing circuits.

Resource, groundwater and waste rock drilling

Phase 1 of the resource definition, geotechnical and waste rock characterisation drilling program commenced during the quarter.

Initial drilling has focussed on:

- fulfilling requirements of the Sampling, Analysis and Quality Management Plan ('SAQMP') for waste rock characterisation;
- investigating zones of potential resource extension, particularly where these have potential to influence pit morphology; and
- completing dedicated geotechnical drilling to inform pit slope stability analysis for mine design and optimisation at the Railway deposit.

During the quarter, a total of 40 drill holes were completed for 7,113.5m, inclusive of 4,637m reverse circulation and 2,476.5m diamond drilling.

Government grants

During the quarter COB executed the Critical Minerals Accelerator Initiative Grant agreement with the Australian Government.

The grant totals $15m and is payable over time – instalments are to be made between December 2022 and March 2025. During the quarter, COB received the initial grant instalment of $1.5m.

The grant agreement includes standard industry conditions, including anticipated payment dates, reporting requirements and using monies only on eligible project expenditure.

The grant funding will enable COB to accelerate the development of the BHCP by expanding the scope of Feasibility Studies, bring forward infrastructure and services work packages, and decrease start-up commissioning risks.

The grant will deliver significant benefits and value by:

- accelerating BHCP to "Execution Ready Status" for Project Finance. This is defined as having offtake agreements, approvals/permits, contracts, or deposits paid for long-lead items, and a defined schedule and contract for Engineering, Procurement, Construction & Management (**EPCM**).
- reducing BHCP implementation risks, by expanding the technical scope of FS-DFS studies and commencing workforce planning and regulatory approvals earlier. In turn, this would improve investor or lending institution confidence to support the project.

During the quarter COB was notified by the NSW Government, that it was successful with its application for a grant under Stream 1 of the NSW Government's Critical Minerals and High-Tech Metals Activation Fund (**Fund**). The Fund is designed to drive investment into the critical minerals and high-tech metals sectors. The grant is for up to $0.5m and is subject to execution of a funding deed (yet to be received). The funding deed is expected to contain standard industry grant conditions, including anticipated payment dates, expenditure and reporting requirements.

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Cobalt Trends

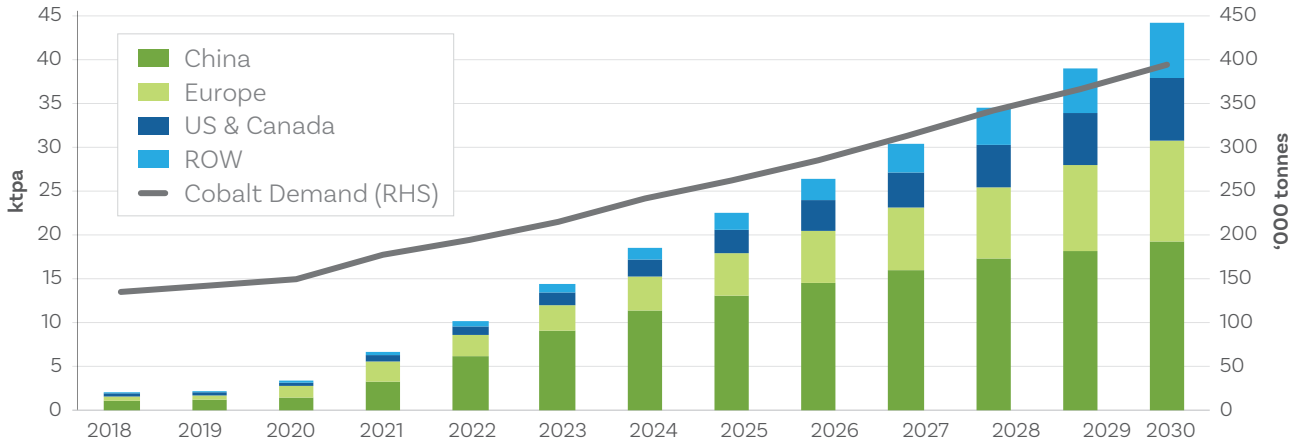
Weak 2022 cobalt market – drivers expected to rebound

Cobalt prices weakened over 2022, ending the year below US$20/lb. A temporary weakening of fundamentals was the primary factor of this price deterioration. On the demand side, global EV sales continued to grow at a record pace, with EV sales making up around 50% of global cobalt consumption (with analysts forecasting this increasing to 60% by 2030). Consumer electronics currently comprise 45% of cobalt consumption in batteries, with a large proportion of that demand stemming from China, which struggled last year, largely because of the country's sustained covid-zero policy. Meanwhile, large-scale expansion of major projects in the DRC pushed global supply growth close to 20% in 2022, an unsustainable annual increase in any commodity market. We believe that the market will revert over the course of the next 12 months as a result of the prevalence of supply side risks in Central Africa combined with escalating global legislation that will escalate EV penetration rates faster than currently expected. These trends are likely to push cobalt prices back above their long-term averages with significant market deficits looming into 2024+. We note consensus expectations forecast a ~30% uplift in prices this year from current spot levels.

Positive momentum in near and long-term demand outlooks

Last year saw a continuation of stellar EV sales growth, with the global market rising 54% to 10.2 million units. Rho Motion expects 41% growth in 2023 to 14.4 million units. China led that rise, almost doubling the level sold in 2021 and increasing the EV penetration rate to 26% vs 13% the previous year. Sales in China this year will potentially touch 10 million units (nearly equalling 2022's global sales figure) as covid reopening reinvigorates consumption demand. Although China's EV subsidy scheme ended on 31 December 2022, it is not expected to have a major impact on EV purchasing as price differences to petrol vehicles are minor. According to Rho Motion, some EV makers announced they will release strategies to smooth the price gap.

Figure 6 – **EV sales and cobalt demand outlooks**

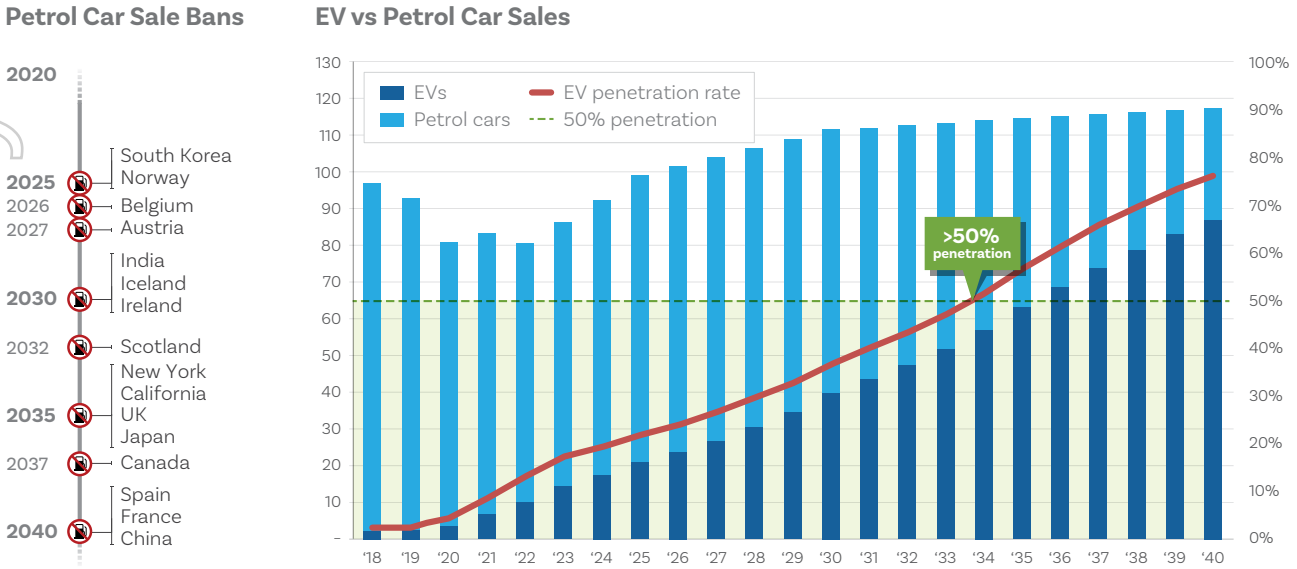


Source: Rho Motion, Wood Mackenzie, COB

Beyond China, legislation supporting the rollout of EVs and critical minerals production continues to have major impacts across the battery supply chain. In the US, 20 companies have so far been awarded US$2.8bn in funding stemming from the US Inflation Reduction Act (IRA). For example, in January 2023, the US Department of Energy's (DOE) Advanced Technology Vehicles Manufacturing loan program announced a US$700m loan to an Australian lithium producer to accelerate the expansion of domestic critical minerals production. This loan is just a small cog in the legislative machine designed to support the increase of battery manufacturing in the US from 55 GWh/year in 2021 to nearly 1000 GWh/year by 2030.

Policy makers in other major economies are expected to soon roll out similarly supportive legislation. We monitor these with great interest as such policies will determine the multi decade demand trajectories of key global EV economies.

Figure 7 – **Petrol car sale bans and EV vs Petrol Car sales**



Cobalt in Waste Streams Project (CWSP) update

Testing of the first sample from the Queensland Department of Resources was finalised last quarter. Second sample test work is currently in process. Ongoing commercial discussions supporting the development of CWSP opportunities continue with prospective partners.

Corporate News

Investor webinars

COB conducted two investor webinars during the quarter. The webinars provided a business/BHCP update and a joint presentation with Rho Motion (energy transition consultants). The webinars were well attended. A copy of the webinar presentations can be found on COB's website.

Expenditure

COB's activities primarily relate to exploration and evaluation of the BHCP. There were no activities related to production or development. During the quarter COB incurred[1] $7.3m on exploration and evaluation activities, primarily relating to technical services, including for the bulk sample works, demonstration plant operations and other Feasibility Study works.

COB's accompanying Appendix 5B (Quarterly Cashflow Report) includes an amount in item 6.1 which constitutes directors' fees and salaries.

Other

During the quarter COB's share price fluctuated between 52.5 cents and 76 cents.

During the quarter the Company completed a placement, entitlement issue and shortfall placement, raising a total of $22.3m (before costs). The entitlement issue was well supported. The entitlement issue and shortfall placement represented 95% of the maximum amount available for issue.

1 *Refers to expenditure incurred on an accounting accruals basis as distinct from expenditure reported in the Appendix 5B, which refers to expenditure on a cash basis. The amounts were extracted from the unaudited records of the COB Group.*

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Previously Released Information

This ASX announcement refers to information extracted from the following announcements, which are available for viewing on COB's website http://www.cobaltblueholdings.com

- 9 December 2022: Demonstration Plant – High Grade Concentration Results
- 5 December 2022: Non-Renounceable Issue Results and Shortfall Placement
- 1 September 2022: Demonstration Plant – Ore Extraction Completed

COB confirms it is not aware of any new information or data that materially affects the information included in the original market announcements and where applicable in the case of estimates of Mineral Resources or Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. COB confirms that the form and context in which any Competent Person's findings presented have not been materially modified from the original market announcement.

Tenement Holding

The COB Group held the following mining tenements at the end of the quarter:

Tenement	Location	Interest at end of quarter
EL 8891	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 6622	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 9254	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 8143	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 9139	Broken Hill Region, New South Wales	100% legal and beneficial interest
ML 86	Broken Hill Region, New South Wales	100% legal and beneficial interest
ML 87	Broken Hill Region, New South Wales	100% legal and beneficial interest

No tenements or farm-in or farm-out agreements were disposed of during the quarter.

COB Timeline

The expected development schedule for the Broken Hill Cobalt Project ('**BHCP**') is shown below.

Figure 8 – **BHCP development schedule**

	PRE-2021	2021	2022	2023	2024	2025
Business Achievements	100% Project Ownership CRC-P Grant	Global Cobalt Sample Program Major Project Status and CMAI grant	Offtake Cobalt Qualification Program – 2022 Major Project Status and CMAI Grant	Final Investment Decision	Construction Period Mine Development EPC Renewable Power Contracts	Refinery Commissioning First Commercial Production
Technical Studies	Project Update 2020 PFS 2018	Feasibility Study	Feasibility Study	Definitive Feasibility Study and Approvals		
Process Testing	Pilot Scale Testwork	Pilot Plant – 30 Tier 1 Partners Offtake Contract Negotiations (begin)	Larger Scale (24/7) Operations Bulk Sample	Larger Scale (24/7) Operations continue Commercial Qualification Samples		First On Specification Production
Environmental Approvals		EIS Field Studies	EIS Field Studies	EIS Submission SSD Determination	ESG/CO_2 Reporting	ESG/CO_2 Reporting Operating Permits (approved)
	PRE-2023			MILESTONES		

Cobalt Blue Background

Cobalt Blue (ASX: COB) is a mining and mineral processing company focussed on the development of the Broken Hill Cobalt Project in New South Wales, Australia. The portfolio of three granted tenements in a total area of 49 km^2 containing large-tonnage cobalt- bearing pyrite deposits are located 23 km west of Broken Hill. COB has developed a patented minerals processing technology for treating pyrite feedstocks targeting 85–95% recovery of cobalt from ore to product (as Mixed Hydroxide Precipitate or Cobalt Sulphate). The Broken Hill Cobalt Project has a targeted project life of +20 years and will be a significant employer in Regional NSW with around 400 full-time jobs generated. COB will become a global top 10 producer of cobalt, a critical mineral that is integral in the global journey to decarbonize via electrification.

The expected timeline for the BHCP is subject to various risks, some of which are outside the control of the Company, and which include successful and timely completion of project milestones, funding availability, government and other third-party approvals.

Looking forward, we would like our shareholders to keep in touch with COB updates and related news items, which we will post on our website, the ASX announcements platform, as well as social media such as Facebook (f) and LinkedIn (in). Please don't hesitate to join the 'COB friends' on social media and to join our newsletter mailing list at our website.

This announcement was approved by the Board of Directors.

For more information, please contact:

Joel Crane
Investor Relations/Commercial Manager
joel.crane@cobaltblueholdings.com

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Rule 5.5

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

COBALT BLUE HOLDINGS LIMITED

ABN	Quarter ended ("current quarter")
90 614 466 607	December 2022

Consolidated statement of cash flows		Current quarter $A'000	Year to date (6 months) $A'000
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	-	-
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(322)	(871)
	(e) administration and corporate costs	(829)	(1,658)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	11	15
1.5	Interest and other costs of finance paid	-	(1)
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Other (provide details if material)	18	80
1.9	**Net cash from / (used in) operating activities**	**(1,122)**	**(2,435)**
2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(803)	(893)
	(d) exploration & evaluation	(7,901)	(13,223)
	(e) investments	-	-
	(f) other non-current assets	(34)	(52)

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Consolidated statement of cash flows	Current quarter $A'000	Year to date (6 months) $A'000
2.2 Proceeds from the disposal of:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (Research and development incentive refund & government grants)	1,554	2,149
2.6 Net cash from / (used in) investing activities	**(7,183)**	**(12,019)**

3. Cash flows from financing activities		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	22,312	22,312
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	3,750
3.4 Transaction costs related to issues of equity securities or convertible debt securities	(369)	(369)
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other	-	-
3.10 Net cash from / (used in) financing activities	**21,943**	**25,693**

4. Net increase / (decrease) in cash and cash equivalents for the period		
4.1 Cash and cash equivalents at beginning of period	8,132	10,530
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(1,122)	(2,435)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(7,184)	(12,019)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	21,943	25,693

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Consolidated statement of cash flows		Current quarter $A'000	Year to date (12 months) $A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	**Cash and cash equivalents at end of period**	**21,769**	**21,769**

5.	**Reconciliation of cash and cash equivalents** at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter $A'000	Previous quarter $A'000
5.1	Bank balances	359	6,329
5.2	Call deposits	3,210	1,803
5.3	Bank overdrafts	-	-
5.4	Other (short-term deposits)	18,200	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**21,769**	**8,132**

6.	**Payments to related parties of the entity and their associates**	Current quarter $A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	142
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

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7.	**Financing facilities** *Note: the term "facility' includes all forms of financing arrangements available to the entity.* *Add notes as necessary for an understanding of the sources of finance available to the entity.*	**Total facility amount at quarter end $A'000**	**Amount drawn at quarter end $A'000**
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	**Total financing facilities**	-	-
7.5	**Unused financing facilities available at quarter end**		-

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

On 17 January 2020 the Company executed agreements with American Rare Earths Limited (ASX: ARR) to acquire 100% ownership and legal title of the Broken Hill Cobalt Project (including all tenements). The consideration included a five-year $3,000,000 secured promissory note (PN) issued to ARR, with interest of 6% per annum payable in years 4 and 5. The PN can be repaid by the Company at any time in whole or in part without penalty. Once the PN is repaid in full, the security will be extinguished.

8.	**Estimated cash available for future operating activities**	**$A'000**
8.1	Net cash from / (used in) operating activities (item 1.9)	(1,122)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(7,901)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(9,023)
8.4	Cash and cash equivalents at quarter end (item 4.6)	21,769
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	21,769
8.7	**Estimated quarters of funding available (item 8.6 divided by item 8.3)**	2.4

Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Not applicable

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Not applicable

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8.8.3	Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?
Answer: Not applicable	

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.

Date: 31 January 2023

Authorised by: The Board
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.

2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".

5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

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