



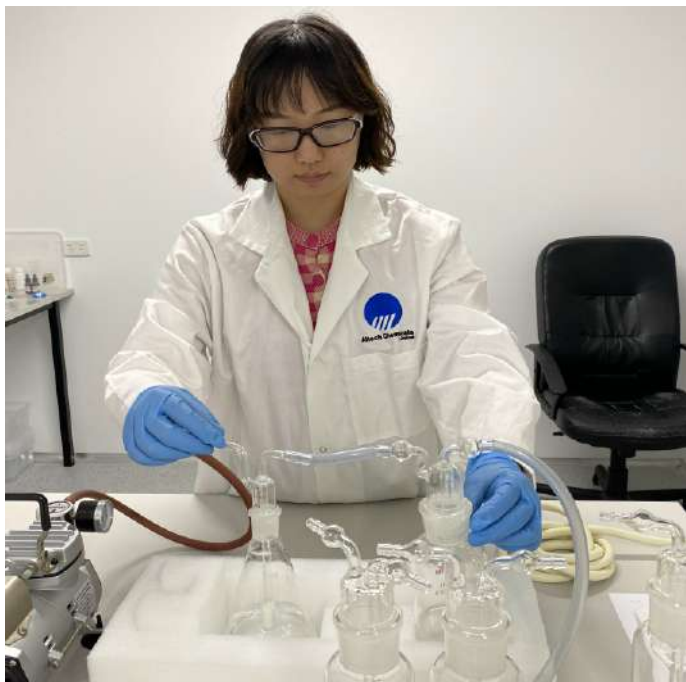
Altech Chemicals
Limited

DOCK³
LAUSITZ

BREAKTHROUGH 30% HIGHER ENERGY DENSITY ANODE ACHIEVED IN LITHIUM-ION BATTERY

During the quarter, Altech was delighted to announce a significant breakthrough in lithium-ion battery technology by the Company's team at its research and development laboratory in Perth, Western Australia.

After almost 12 months of challenging work, Altech "cracked the silicon barrier" and successfully produced and tested a series of lithium-ion battery anode materials that have ~30% higher retention capacity compared to conventional lithium-ion battery anode materials. To achieve its breakthrough, the Company successfully combined silicon particles that had been treated with its innovative proprietary technology with regular battery grade graphite, to produce a lithium-ion battery electrode containing a composite graphite / silicon anode. When energised, these materials held 30% more capacity compared to a conventional graphite only anode material. The materials were then subjected to a series of battery tests over a period of time, including charge and discharge cycling. The previously unresolved obstacles for using silicon in lithium-ion battery anodes, which were: silicon particle swelling; prohibitive first-cycle-capacity-loss of up to 50%; and rapid battery degradation, appears to be improved significantly during the laboratory testing of Altech's composite graphite/silicon batteries.



This major achievement is not just a significant breakthrough for Altech, but also for the lithium-ion battery industry generally. Especially so given the 2020 public statement by US electric vehicle manufacturer Tesla, which stated that its aim is to increase the amount of silicon in its batteries to achieve step-change improvements in energy density and battery life. A 30% higher energy capacity lithium-ion battery would translate not just to significant cost benefits, but also to potentially increased range in the case of electric vehicles. Phase 2 of Altech's planned research and development program will see the Company strive to improve on the 30% energy increase achieved in this first phase. In terms of potential commercialisation of its technology, the Company's 75% owned subsidiary Altech Industries Germany GmbH, has already commenced a pre-feasibility study for construction of a 10,000tpa battery materials plant in Saxony, Germany to service the burgeoning European lithium-ion battery market.

GERMAN BATTERY MATERIALS PLANT AWARDED GREEN STATUS

During the quarter, the independent Centre of International Climate and Environmental Research (CICERO) in Norway awarded a “Green” assessment to the proposed German battery materials coating plant that is the subject of a Preliminary Feasibility Study (PFS) being undertaken by Altech Industries Germany GmbH (AIG).

CICERO were engaged by AIG as part of its PFS to conduct the independent evaluation of AIG’s proposed battery materials coating plant, which would be located at the Schwarze Pumpe Industrial Park, Saxony, Germany. The plant is being designed with a specific focus on minimising environmental impact, and in accordance with prevailing German, European and International environmental standards.

CICERO’s review determined a rating of “Medium Green” be awarded to the project. This positive project evaluation, formally termed a “Green Bond Second Opinion”, confirms that the project would be suitable for future green bond financing.

In determining the overall project framework rating of “Medium Green”, CICERO assessed the proposed governance procedures and transparency as “Good” and confirmed that the project aligns with all green bond principles. In assessing the proposed plant design and coating process, CICERO noted “The plant has near zero Scope 1 and 2 emissions as the plant’s processes, including steam generation, are fully electrified, and it will use renewable electricity sourced from on-site solar panels and renewable energy certificates”. Although CICERO acknowledges the project is still in the development phase, in assessing governance and transparency considerations, it has encouraged Altech “to implement and enforce a robust supply chain sustainability policy, as well as to engage with its suppliers to address their sustainability impacts”, given that >90% of the plant carbon footprint is attributable to plant feedstock such as graphite and silicon.

A CO₂ footprint assessment of the proposed 10,000tpa plant determined that, when compared to the incumbent lithium-ion battery technology that uses a graphite only anode, coated silicon anode material could result in a CO₂ emissions reduction of ~19% where 5% coated silicon is used in a battery anode, and a reduction of up to ~ 52% if 20% coated silicon was used (refer Table 1).



CICERO
Medium Green

CICERO’s independent assessment of AIG’s proposed battery materials coating plant, and its suitability for possible future green bond financing, is an important inclusion for the current preliminary feasibility study – and certainly adds credibility to this proposed project.

Table 1: Estimated reduction in CO₂ footprint from use of coated silicon in Lithium-ion battery anode

Silicon Content%	Reduction in CO ₂ footprint in LiB (equivalent power)
5%	18.7%
10%	34.9%
15%	44.9%
20%	51.8%



Mr. Thomas Schmidt (Saxony State Minister for Development), Mr Uwe Ahrens (AIG) in front of Dock3

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\$10.3 MILLION RAISED VIA SHARE PLACEMENT AND SHARE PURCHASE PLAN TO ADVANCE BATTERY MATERIALS DEVELOPMENT

Altech successfully completed a \$8.1 million share placement (Placement) in November 2021, following strong demand for new shares, from a variety of new and existing shareholders. The placement shares were issued at \$0.107 each. The Company led the Placement (without a lead broker), which was oversubscribed.

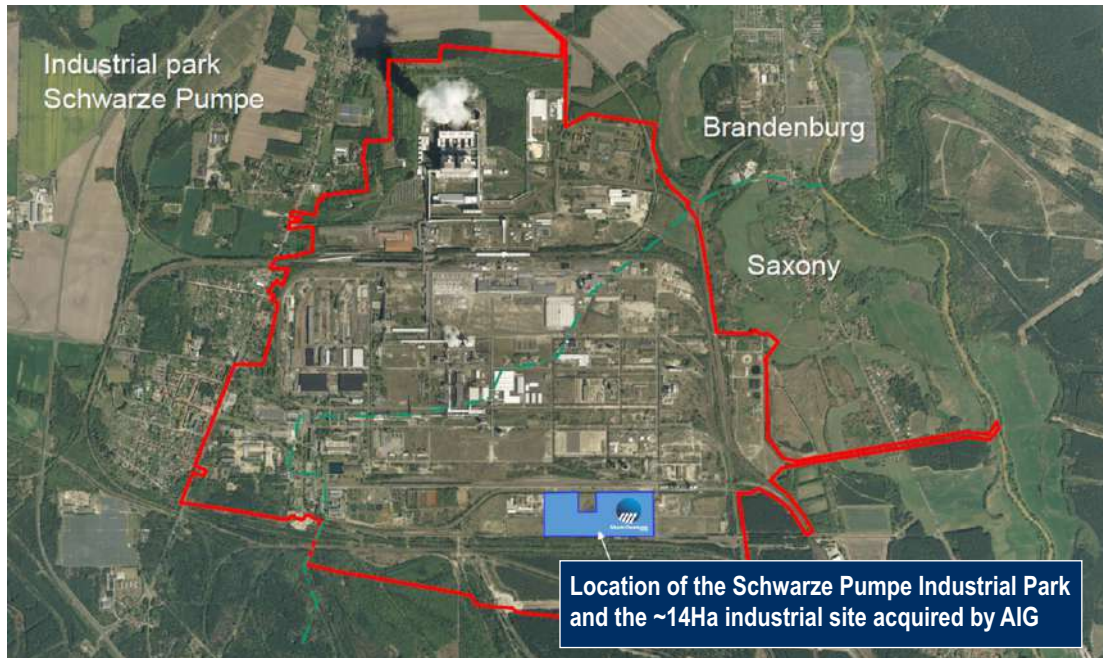
Following the Placement, the Company initiated a Share Purchase Plan (SPP) whereby existing shareholders were able to apply for up to \$30,000 of new Altech shares at the same price as the Placement participants, being \$0.107 per share. \$2.1 million was raised from the SPP, resulting in a combined \$10.3 million being raised. These funds will be applied to Altech's 75% portion of funding Altech Industries Germany GmbH including its completion of the preliminary feasibility study for the construction of a 10,000tpa battery materials coating plant; a likely definitive feasibility study for the plant's construction; the purchase of land at the Schwarze Pumpe Industrial Park to house the plant; the construction of a battery materials coating pilot plant; for Altech's head office and administration cost; and general working capital.





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GERMAN LAND PURCHASED FOR BATTERY MATERIALS PROJECT

In January 2022, Altech's 75% owned German subsidiary, Altech Industries Germany GmbH (AIG), exercised its option to purchase a ~14-hectare industrial site within the Schwarze Pumpe Industrial Park, municipality of Spreetal, Saxony, Germany. The site is an ideal location for a proposed 10,000tpa high purity alumina (HPA) battery materials coating plant, which is the subject of a preliminary feasibility study that is being finalised by AIG. The plant would produce alumina coated silicon / graphite anode materials to supply the lithium-ion battery and electric vehicle (EV) markets, using Altech's proprietary coating technology. The site's location is well positioned to supply alumina coated anode materials to European markets.

An official land handover ceremony was recently concluded at the Schwarze Pumpe Industrial Park. Attendees included the Saxony State Minister for Development Mr Thomas Schmidt; the Mayor of Spreetal, Saxony Mr Manfred Peine and Lady Major of Spremberg, Brandenburg Ms Christine Herntier. Members of the board of Altech Advanced Materials AG (AAM) and several other political and industrial dignitaries were also present. The ceremony was held in the Dock3 facility of the industrial park, which is directly adjacent to the land, and is where AIG is proposing to construct a HPA battery materials coating pilot plant.

The site handover and an accompanying information update about the proposed battery materials coating projects attracted wide German print and television media coverage. A German television report can be viewed on Altech's web site www.altechchemicals.com, or at <https://youtu.be/JJOS1zbxAxk>.

The Schwarze Pumpe Industrial Park is located in north-eastern Saxony and is well serviced by existing infrastructure including reticulated electricity and natural gas, rail and roads. The industrial park is 120 km from Berlin and 78 km from Dresden. This area, in the eastern part of Germany, is considered the new automotive nucleus in Europe and hosts production sites for Volkswagen, BMW, Porsche, Daimler and Tesla, as well as a number of key resource and technology players within the value chain of lithium-ion batteries. The region is a leading engineering training ground and has excellent research facilities including the Fraunhofer Institute for Electronic Nano-systems, which is very focussed on ceramic (HPA) nano technology in energy storage.

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GERMAN BATTERY MATERIALS PILOT PLANT DESIGN COMPLETED

The Company announced in January 2022, that a preliminary design has been completed for a pilot plant for demonstration of Altech's proprietary alumina battery materials coating technology. The plant will be constructed in Germany by Altech Industries Germany GmbH (AIG). The pilot plant is designed to produce up to 36,680 kilograms of anode grade alumina coated battery material per year (120 kg per day). AIG, which is 75% owned by Altech and 25% owned by Frankfurt Stock Exchange listed Altech Advanced Materials AG, hold the exclusive rights for use of Altech's battery materials coating technology within the European Union.

The pilot plant design is intended for installation in the Dock3 facility adjacent to AIG's designated site at the Schwarze Pumpe Industrial Park. AIG has secured approximately 300m² of floorspace within the Dock3 where the pilot plant will be located. Also, an on-site analytical laboratory is planned adjacent to the pilot plant. This will allow for the rapid assessment of pilot plant product purity and monitor physical parameters which will enable changes in processing parameters and operational setpoints to be modified quickly, as required. The Dock3 space is already connected to all required utilities and includes office space for the project and operations team.

The pilot plant design has been separated into two distinct areas of processing; precursor production and battery material coating and calcination.

Precursor production equipment shall be operated in batch mode, producing approximately 10kg per batch. Production is sufficient to feed the downstream anode material coating stage for approximately 30hrs of continuous production. Due to the nature of the metallurgical leach and crystallisation processes, and the high purity requirements of the plant end product, the process equipment shall be manufactured using fluoropolymer and ceramic materials. The design for the pilot plant also leverages the knowledge that Altech and selected equipment suppliers have developed during the design of its Johor HPA production facility. Centrifuge, filtration and calcination equipment shall be supplied by equipment vendors of full scale designs to enable the assessment of operating parameters and sizing scale up calculations.

The coating and calcination section of the pilot plant has been designed to operate continuously with minimal shutdowns, to ensure consistency in the product material. Final product purity has been the major design consideration when selecting process equipment and the main materials of construction. Production from the battery material pilot plant shall be used to confirm that the process consistently achieves product purity requirements, optimise equipment design and process parameters for a full scale 10,000 tpa production plant, and to produce qualification samples for potential offtake partners and end users.

AIG is currently in the final stages of engineering contractor selection, with the chosen company to be responsible for detailed engineering design, equipment procurement and installation.



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ANNUAL GENERAL MEETING HELD 29 NOVEMBER 2021

Altech's AGM was held on 29 November 2021 and all Resolutions were passed by shareholders. The Board of Directors would like to express their gratitude to all shareholders who were able to attend the meeting.

ABOUT ALTECH CHEMICALS LTD (ASX:ATC) (FRA:A3Y)

Altech Chemicals Limited is a specialty alumina technology and production company that has finalised Stage 1 and Stage 2 construction of its high purity alumina (HPA) plant in Johor, Malaysia, and continues with innovative research and development of its downstream alumina coating technology used to improve the battery life and performance in lithium-ion batteries. Altech's alumina coating technology is successful on both silicon and graphite particles, typical of those used in the anode of lithium-ion batteries, particularly within the burgeoning electric vehicle industry.

A preliminary feasibility study (PFS) has commenced for the construction of a high purity alumina (HPA) battery materials coating plant in Saxony, Germany. The PFS is being undertaken by Altech's 75% owned German subsidiary, Altech Industries Germany GmbH (AIG). Work on the preliminary engineering design for the 10,000 tpa battery materials plant is in the final stages of completion. Altech has also finalised an independent green accreditation of the environmental credentials of the proposed battery materials process, with a "green" certification being awarded.

Altech is further aiming to become one of the world's leading suppliers of 99.99% (4N) high purity alumina (Al₂O₃) through the construction and operation of a 4,500tpa high purity alumina (HPA) processing plant at Johor, Malaysia. Feedstock for the plant will be sourced from the Company's 100%-owned near surface kaolin deposit at Meckering, Western Australia and shipped to Malaysia.

HPA is a high-value, high-margin and highly demanded product as it is the critical ingredient required for the production of synthetic sapphire. Synthetic sapphire is used in the manufacture of substrates for LED lights, semiconductor wafers used in the electronics industry, and scratch-resistant sapphire glass used for wristwatch faces, optical windows and smartphone components. Increasingly, HPA is used by lithium-

ion battery manufacturers as the coating on the battery's separator, which improves performance, longevity and safety of the battery. With global HPA demand approximately 19,000t (2018), it is estimated that this demand will grow at a compound annual growth rate (CAGR) of 30% (2018-2028); by 2028 HPA market demand is forecast to be approximately 272,000t, driven by the increasing adoption of LEDs worldwide as well as the demand for HPA by lithium-ion battery manufacturers to serve the surging electric vehicle market.

German engineering firm SMS group GmbH (SMS) is the appointed EPC contractor for construction of Altech's Malaysian HPA plant. SMS has provided a USD280 million fixed price turnkey contract and has proposed clear and concise guarantees to Altech for plant throughput and completion. Altech has executed an off-take sales arrangement with Mitsubishi Corporation's Australian subsidiary, Mitsubishi Australia Ltd (Mitsubishi) covering the first 10-years of HPA production from the plant.

Conservative (bank case) cash flow modelling of the HPA plant shows a pre-tax net present value of USD505.6million at a discount rate of 7.5%. The project generates annual average net free cash of ~USD76million at full production (allowing for sustaining capital and before debt servicing and tax), with an attractive margin on HPA sales of ~63%. (Refer to ASX Announcement "Positive Final Investment Decision Study for 4,500TPA HPA project" dated 23 October 2017 for complete details. The Company confirms that as at the date of this announcement there are no material changes to the key assumptions adopted in the study).

The Company has been successful in securing senior project debt finance of USD190 million from German government owned KfW IPEX-Bank as senior lender. Stage 1 and Stage 2 early works construction has been completed on time and on budget.



Altech Chemicals
Limited

QUARTERLY REPORT

December 2021

Company Snapshot

Altech Chemicals Limited (ASX:ATC) (FRA:A3Y)
ABN 45 125 301 206

FINANCIAL INFORMATION

(as at 31 December 2021)

Share Price:	\$0.12
Shares:	1,385.8m
Options:	178.8m
Performance Rights:*	27.7m
Market Cap:	\$166m
Cash:	\$12.6m

DIRECTORS

Luke Atkins	Non-executive Chairman
Iggy Tan	Managing Director
Peter Bailey	Non-executive Director
Dan Tenardi	Non-executive Director
Tunku Yaacob Khyra	Non-executive Director
Uwe Ahrens	Alternate Director
Hansjoerg Plaggemars	Non-executive Director

CHIEF FINANCIAL OFFICER

Martin Stein

COMPANY SECRETARY

Shane Volk

HEAD OFFICE

Suite 8, 295 Rokeby Road, Subiaco,
Western Australia, 6008 T +61 8 6168 1555

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*subject to vesting conditions

FORWARD-LOOKING STATEMENTS

This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward-looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.

COMPETENT PERSONS STATEMENT

The information in this report that relates to exploration results is based on information compiled by Jeff Randell, a Competent Person, who is a Member of the Australian Institute of Geoscientists. Mr Randell is a Senior Consultant of Geos Mining and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Mr Randell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix 5B

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

Name of entity

ALTECH CHEMICALS LTD

ABN

45 125 301 206

Quarter ended ("current quarter")

31 December 2021

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 (if expensed)	-	-
(b) development (if expensed)	-	-
(c) production	-	-
(d) staff costs	(530)	(849)
(e) administration and corporate costs	(384)	(832)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	114	114
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other	-	-
1.9 Net cash from / (used in) operating activities	(800)	(1,567)

2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	(270)	(302)
(d) exploration & evaluation (if capitalised)	(91)	(144)
(e) investment in Altech Advanced Materials AG	-	(1,714)
(f) development (if capitalised)	(261)	(569)

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

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	-	-
2.6	Net cash from / (used in) investing activities	(622)	(2,729)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	10,331	10,331
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	234	234
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(410)	(410)
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 – repayment of lease liability	(28)	(28)
3.10	Net cash from / (used in) financing activities	10,127	10,127

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	3,855	6,729
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(800)	(1,567)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(622)	(2,729)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	10,127	10,127

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

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	(3)	(3)
4.6	Cash and cash equivalents at end of period	12,557	12,557

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	12,527	3,825
5.2	Call deposits	30	30
5.3	Bank overdrafts	-	-
5.4	Other (bank security deposit)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	12,557	3,855

6. Payments to related parties of the entity and their associates

- 6.1 Aggregate amount of payments to related parties and their associates included in item 1
- 6.2 Aggregate amount of payments to related parties and their associates included in item 2

**Current quarter
\$A'000**

(206)

-

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

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

7. Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
<i>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.</i>		
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.

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (Item 1.9)	(800)
8.2 Capitalised exploration & evaluation (Item 2.1(d))	(91)
8.3 Total relevant outgoings (Item 8.1 + Item 8.2)	(891)
8.4 Cash and cash equivalents at quarter end (Item 4.6)	12,557
8.5 Unused finance facilities available at quarter end (Item 7.5)	-
8.6 Total available funding (Item 8.4 + Item 8.5)	12,557
8.7 Estimated quarters of funding available (Item 8.6 divided by Item 8.3)	14.09

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

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:

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:

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:

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 2022

SHANE VOLK – Company Secretary

Authorised by:
On behalf of the Board of Directors

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.