

ASX ANNOUNCEMENT

31 July 2024

Activities Report Quarter Ended 30 June 2024

Blue Star Helium Limited (ASX: BNL, OTCQB: BSNLF) (**Blue Star** or the **Company**) is pleased to provide an update on its activities during the quarter ended 30 June 2024.

Highlights

Galactica/Pegasus

- Significant helium discovery confirmed at the State 16 SWSE 3054 development well with laboratory analysis of reservoir samples showing air corrected helium concentrations up to 1.90%, consistent with offset discovery wells.
- Peak flow rates as high as 313 Mcfd, stabilised at 285 Mcfd, consistent with adjacent Red Rocks commercialised development.
- Independent engineering consultants advise the State 16 well is capable of a maximum rate of 441 Mscfd with more stabilised rates constrained for production optimization projected to be between 250 Mscfd and 350 Mscfd.
- Blue Star currently formulating plan of development ahead of the HRU to monetise CO₂ from the raw gas (up to 70% concentration) that flows in addition to the helium.
- Potential CO₂ gas stream offers substantial enhancement of Galactica/Pegasus project revenues.
- Galactica/Pegasus development significantly de-risked by successful third-party commercialisation of adjoining Red Rocks helium project using an IACX midstream leased process facility arrangement.

Serenity

- Blue Star increased ownership in Serenity project to 100% at zero cash or scrip outlay.
- The Serenity project is a source of natural very high-grade carbon dioxide with raw gas concentrations approaching 98-99% CO₂ concentration.
- Targeted addition of primary, premium CO₂ product from Serenity to Blue Star's high-grade helium and CO₂ co-product offering from Galactica/Pegasus offering streamlined commercialisation pathway for the latter.
- An initial low capex, small-scale production facility for Serenity has been selected.
- Initial facility processing 500 Mcf/d raw gas is expected to produce over 20 tons per day of beverage-grade CO₂ product gas.
- Targeting first CO₂ product gas output from Serenity in H1 2025.
- Commercial offtake discussions continue with planned contracting of full output.

Corporate

- Quarter end cash balance of A\$1.225 million and zero debt.

OPERATIONS

Galactica/Pegasus Project

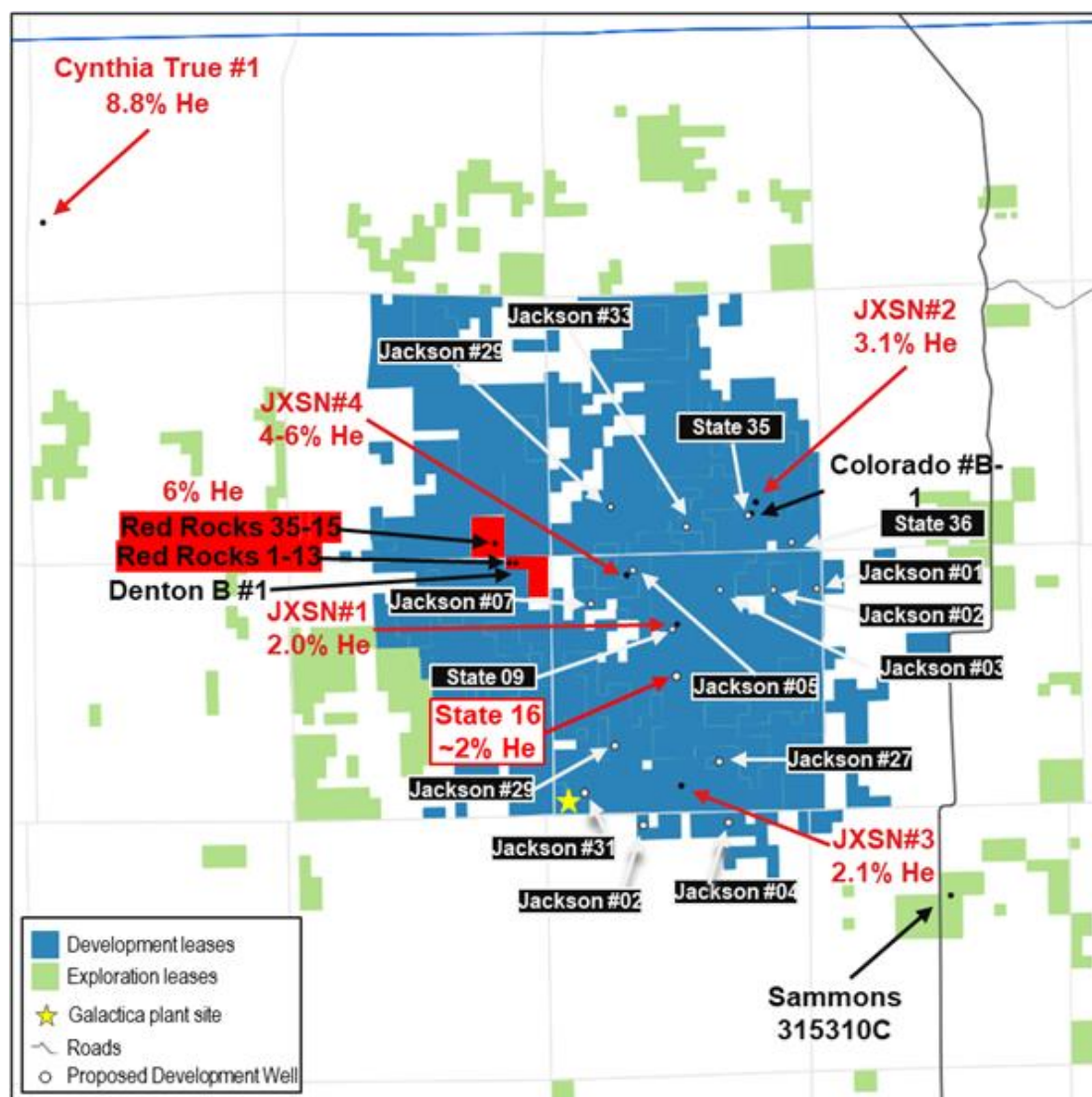


Figure 1: Planned development well locations at the Galactica/Pegasus prospect including the neighbouring Red Rocks Helium Project

Background

The Galactica/Pegasus helium development is a larger-scale project with multiple potential product streams.

Four existing Blue Star discoveries at Galactica/Pegasus via exploration wells JXSN#1 to JXSN#4 delivered gas flowing at 125 - 412 mcf/d and high air-corrected concentrations of 2.0 - 6.1% helium (see Table 1 and BNL ASX releases dated 7 June 2022, 29 September 2022 and 5 October 2022).

Table 1: Key results from recent Galactica/Pegasus State 16 and exploratory wells

Key parameters	JXSN#1	JXSN#2	JXSN#3	JXSN#4	State 16
Helium concentration (%)	1.98	3.14	2.14	4.20 & 6.06	1.90
Gas column in Lyons formation (ft)	217.5	101+	230	233.5	96+
Net pay in Lyons formation (ft)	143.5	101	153.4	133.5	96
Stabilized initial flow rate (Mcf/d)	412	202	412	125	285

The Galactica/Pegasus development is further de-risked by the successful third-party commercialisation of adjoining Red Rocks helium project using an IACX midstream leased process facility arrangement.

There are currently a range of development and commercialisation pathways under review, including a leased plant and third party operated option. The final development is expected to include a CO₂ production stream, in addition to helium revenues. Engineering and market work continues to refine the development configurations, forecast production and cost estimates. As part of the project advancement activities, Blue Star is evaluating a range of financing options including, but not limited to, farm out opportunities.

Field Development

Blue Star's primary focus over the June quarter was on the maiden drilling of the State 16 SWSE 3054 development well.

State 16 SWSE 3054 is located 3 miles southeast from the Red Rocks project that is currently producing from the Lyons Formation being targeted by the Company.

Throughout the quarter, preparatory works were conducted to facilitate the drilling of the well. This included site access and preparation works, construction of the drilling pad and the mobilisation of the rig to site.

On 27 May 2024, Blue Star drilled the well to a total depth with logs confirming gas. The well encountered the Lyons formation at a depth of 1,111.5 feet and was completed at its planned TD at the base of the upper sand of the Lyons formation at 1,211 feet. Significantly, no water was encountered during drilling. Wireline logs confirmed this and showed approximately 96 feet of high-quality sands in the upper Lyons production section (1,111.5 to 1,211 feet) to be gas saturated.

State 16 Gas Composition

Lab analysis of representative reservoir samples taken during flow testing contained an average helium percentage of 1.65% and up to 1.90% when air-corrected. The reservoir gas composition was approximately 1.65% helium, 28.05% nitrogen and 70.29% carbon dioxide from the lab analysis and 1.90% helium, 28.54% nitrogen and 69.56% carbon dioxide when air-corrected.

These results are in line with offset wells and the Company's geological model. Helium concentration is currently modelled to increase to the southwest where the Company is permitting further development wells and where the proposed helium processing site is to be

located. Importantly, the CO₂ content allows for this additional product stream to be captured, purified and sold, significantly contributing to revenues. Blue Star continues to advance commercial discussions with interested buyers for this purified product, which remains ongoing since Q4 2023.

State 16 Flow testing

A flow test was undertaken comprising a 12-hour natural flow period. This was followed by an additional 12-hour flow period under vacuum compression after which a 48-hour pressure build up was performed.

Positively, results during testing showed that the well will naturally flow at a sustained rate of 150 Mcfd with 5.5 psig flowing well head pressure, starting at a rate of 208 Mcfd and 6.5 psig flowing pressure.

During the flow test with vacuum compression a draw down to atmospheric pressure (0 psig) at the well head was maintained with rates of 285 Mcfd starting as high as 313 Mcfd with 2.5 psig flowing pressure. Immediately after testing the wellhead pressure quickly built up to 8 psig, higher than previously seen when the well was shut in post drilling.

These results indicate strong pressure and reservoir communication due to the high quality and highly permeable Lyons formation.

These results are in-line with the Company's ongoing development planning and economic modelling and are consistent with the results from the adjacent commercialised helium development at Red Rocks (refer Figure 1).

Reservoir Engineering and Production Update

Subsequent to end of quarter, Blue Star advised on 1 July 2024 that it had integrated the State 16 well results with the test data from the JXSN#1 – #4 discovery wells drilled by Blue Star and compared this data to the public information available from the adjacent Red Rocks development.

These results indicated that at State 16 the calculated permeability for the Lyons formation is 405 mD, with a producing wellhead pressure of 6 psia the well would be capable of 441 Mscfd.

The range of permeabilities calculated in the JXSN discovery wells and State 16 well is 300 to 750 mD which would result in initial flow rates at 6 psia wellhead pressure of between 334 and 780 Mscfd.

As part of the development planning various vacuum compression will be considered for each well from 11 psia (-1 psig) wellhead pressure to 6 psia (-6 psig) wellhead pressure, resulting in stabilised flow rates ranging from 250 Mscfd to 615 Mscfd based on the range of permeabilities seen to date. For the State 16 well (405 mD) these rates would equate to 250 Mscfd to 350 Mscfd.

These rates represent constrained rates to maximise the initial production rate plateau which is standard practice in gas developments to maximise recovery and reservoir pressure maintenance while providing a more constant feed rate to be achieved through the plant.

To date, the well is completed and awaiting potential tie-in to production facilities. The Company is targeting Q4 of this year for installation of the facility and tie in of wells.

Additional Well Permitting

Blue Star currently has 10 helium development locations approved for drilling across the greater Galactica/Pegasus development project of which three are fully approved for drilling.

Following the helium discovery at the State 16 well, Blue Star filed a new OGD, "OGDP I" for 5 additional development wells. These wells are located to the south and southwest of the State 16 well toward the proposed Galactica plant site (refer Figure 1) and are expected, together with State 16, to form part of the initial gas gathering into the Galactica helium production facility.

On 3 July 2024, subsequent to end of quarter, the Colorado Energy and Carbon Management Commission (ECMC) advised it will hear the application to approve Galactica Pegasus OGD I on 18 September 2024. Following this hearing, the Company will apply for final permits to drill these wells.

Serenity Project

Acquisition

On 6 June 2024, Blue Star agreed to acquire the interests of and Vecta Oil & Gas Ltd (Vecta) and its partners for all related mineral leases pertaining to the agreement signed by Blue Star to jointly develop the Serenity Prospect (see BNL ASX release dated 22 December 2021 "Agreement to Jointly Develop Blue Star's Serenity Prospect"). This includes the Sammons 315310C well and three additional approved drilling locations. Blue Star subsequently terminated the participation agreement, joint operating agreement and other arrangements relating to the area of mutual interest which were originally entered into in December 2021.

In consideration for these leases, the Company agreed to assign mineral leases located in T28S R54W comprising 1,640 net mineral acres to Vecta and its partners. The transaction does not include any cash or scrip consideration. The completion of the transaction elevated Blue Star's interest in the Serenity leases from 50% to 100% ownership. Blue Star's landholdings at Serenity now equal 18,141 net acres.

Sammons 315310C well

The Serenity prospect was drilled and tested through the Sammons 315310C well in Q3 2022. This well produced a high-grade natural carbon dioxide accumulation during testing.

Lab analysis of representative reservoir samples taken during natural flowing of the well contained a combined average composition from both the upper and lower Lyons reservoirs of 98.77% carbon dioxide, 1.15% nitrogen and 0.09% helium, with the lower Lyons reservoir consistently showing higher CO₂ up to 98.95%. Flow testing was conducted at various stages throughout the upper Lyons drilling with gas rates as high as 500 Mcfd through a 1.25-inch orifice.

During drilling the upper Lyons sand was fully penetrated between 1,155 feet and 1,238 feet, representing an 83 ft gas column in high-quality reservoir. The upper Lyons is completely gas filled with no water being encountered during drilling or testing. Casing was set at 1,270 feet in the shale that separates the upper and lower Lyons sands.

The lower Lyons sand was penetrated at 1,308 feet and the well was TD'd at 1,323 feet as planned penetrating 15 feet of the lower Lyons sands. The drilled lower Lyons section was also completely gas filled with no water being encountered during drilling. Initial flow testing was conducted with gas rates of around 115 Mcfd through a ¾ inch orifice. No water was encountered during testing. Based on offset wells there is approximately 40 feet of high-quality lower Lyons sand in addition to the 15 feet penetrated.

The Company has three additional approved drilling locations which require final drill Form 2 approvals in order for additional wells to be drilled. It is expected that a second well will be drilled and the existing Sammons well will be completed for production in anticipation of installation of the initial facility.

Development concept

Post end of quarter, Blue Star advised it had undertaken a review of various development concepts for the Serenity CO₂ project. The Company has selected an initial small-scale, low capex development targeting first production of beverage-grade CO₂ from H1 2025. The proposed facility is a chilled distillation system producing high-purity liquid CO₂. The system concept supports processing of approximately 500 Mcf/d raw gas from an initial two-well development producing between 20 and 25 tons per day of beverage-grade CO₂.

The Company is in discussions with several process facility suppliers and expects to be in a position to let contracts for the construction of the facility shortly. The facility is expected to cost in the order of US\$1.3m.

Expected synergies with primary Helium production strategy

The development of Blue Star's CO₂ resources represents a highly significant and scalable opportunity.

On successful development of the initial facility, the Company expects to be able to develop up to 18 further locations at Serenity as an expanded commercialisation of this asset. Further evaluation of this larger-scale development is in progress in consultation with key engineering consultants and end-market participants. Recent drilling shows expected total well costs of approximately US\$400k.

Blue Star is also continuing to refine its development case for Galactica-Pegasus, which envisages production of both helium and CO₂ product streams. Ongoing evaluation here is demonstrating the considerable opportunity presented by processing larger raw gas volumes through a CO₂ plant prior to feeding what is then helium-enriched feed gas into a helium processing plant.

Ultimately, Blue Star's goal is the production of high-grade helium from Galactica-Pegasus and the sustainable production of food/beverage-grade CO₂ from both Serenity and Galactica/Pegasus.

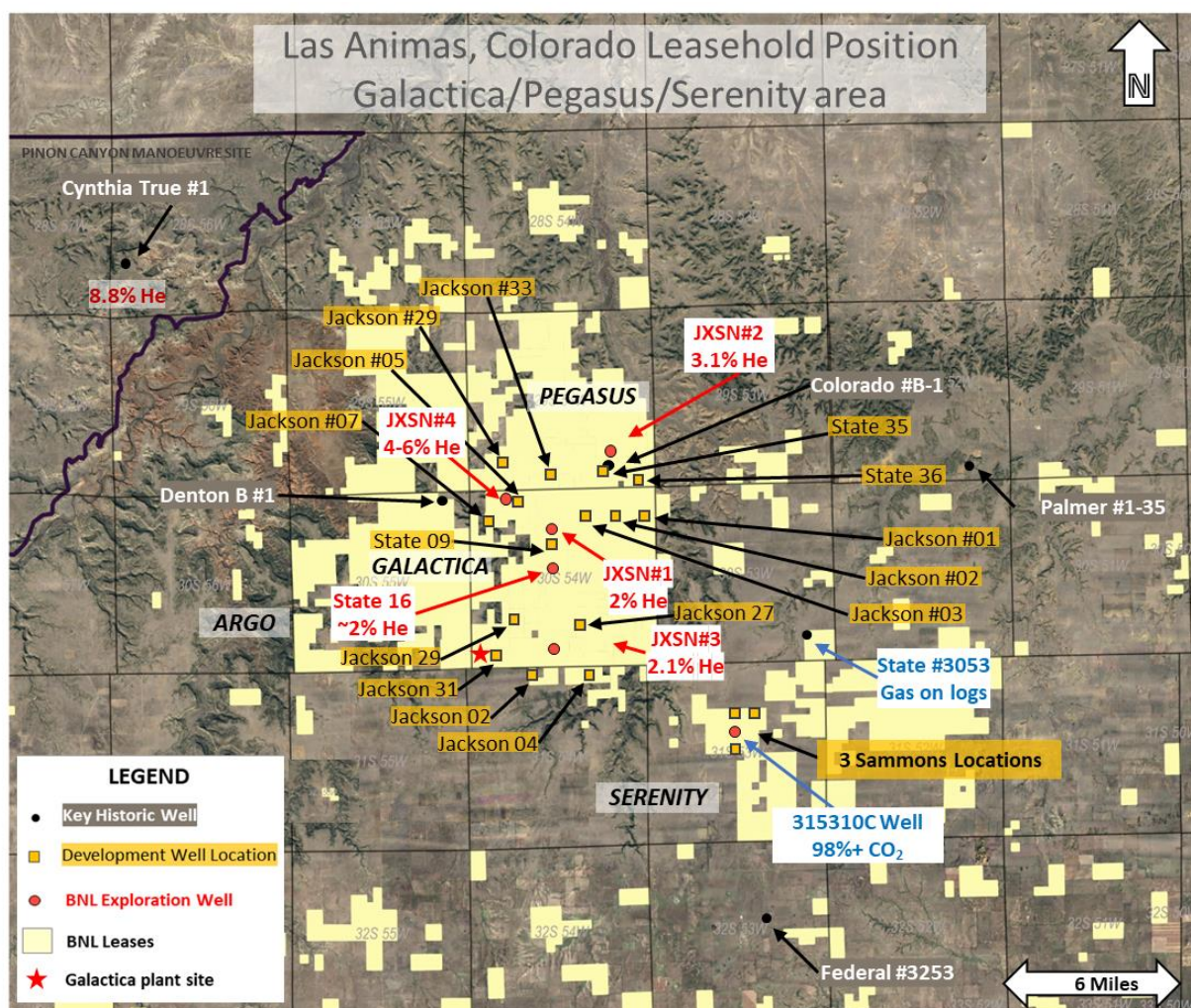


Figure 2: Las Animas Colorado Leasehold Position – Galactica/Pegasus/Serenity Area

CORPORATE

Balance sheet

Blue Star's cash balance at 30 June 2024 was approximately A\$1.225 million. The Company has zero debt, excluding typical trade creditor balances.

TENEMENT TABLE

Tenements held at the end of the quarter and changes thereof.	Acreage held at the beginning of the Quarter	Acreage held at the end of the Quarter	Acreage acquired (disposed/lapsed)
Project Name			
Helium Project, Las Animas, Colorado, USA*	Circa 325,214 gross (235,522 net) acres	Circa 328,367 gross (235,782 net) acres	Circa 3,153 gross (860 net) acres

5B COMMENTARY

Description of Selected Items in Appendix 5B

Appendix 5B Reference		Commentary
1.2 (a)	Expensed exploration and evaluation costs	Expenditures associated with the P&A of a legacy oil well in Texas.
1.2 (c)	Payments for production	Expenditures associated with the Company's Big Star Project in Texas USA.
2.1 (b)	Payments to acquire tenements	Costs associated with the acquisition of helium leases in Colorado, USA including land manager fees.
2.1 (d)	Capitalised exploration and evaluation costs	Capitalised expenditures associated with exploration and evaluation of the Company's helium acreage in Colorado USA. Includes drilling preparation, permitting, subsurface evaluation and field costs.
6.1 and 6.2	Payments to Related Parties	Includes directors' fees and superannuation paid to directors.

The Board has authorised the release of this announcement to ASX.

For further information, please contact:

Trent Spry

Managing Director & CEO

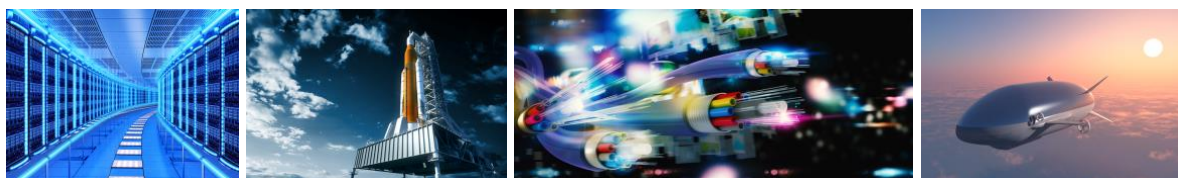
info@bluestarhelium.com

About Blue Star Helium:

Blue Star Helium Ltd (ASX:BNL) is an independent helium exploration and production company, headquartered in Australia, with operations and exploration in North America. Blue Star's strategy is to provide its shareholders with exposure to multiple high-value helium projects in North America. For further information please visit the Company's website at www.bluestarhelium.com

About Helium:

Helium is a unique industrial gas that exhibits characteristics both of a bulk, commodity gas and of a high value specialty gas and is considered a "high tech" strategic element. Due to its unique chemical and physical qualities, helium is a vital element in the manufacture of MRIs and semiconductors and is critical for fibre optic cable manufacturing, hard disc manufacturing and cooling, space exploration, rocketry, lifting and high-level science. There is no way of manufacturing helium artificially and most of the world's reserves have been derived as a by-product of the extraction of natural hydrocarbon gas.



Appendix 5B

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

Name of entity

Blue Star Helium Limited

ABN

75 009 230 835

Quarter ended ("current quarter")

30 June 2024

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	2	4
1.2 Payments for		
(a) exploration & evaluation	-	(1)
(b) development	-	-
(c) production	(158)	(179)
(d) staff costs	(430)	(831)
(e) administration and corporate costs	(392)	(560)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	6	22
1.5 Interest and other costs of finance paid	(1)	(1)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	-	-
1.9 Net cash from / (used in) operating activities	(973)	(1,546)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) tenements / leases	(123)	(164)
(c) property, plant and equipment	(40)	(234)
(d) exploration & evaluation	(979)	(3,292)
(e) investments	-	-
(f) other non-current assets	-	-

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 / leases	-	-
	(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 (return of bonds)	-	-
2.6	Net cash from / (used in) investing activities	(1,142)	(3,690)
3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(2)	(2)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	(388)	(388)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	(390)	(390)
4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	3,714	6,869
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(973)	(1,546)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,142)	(3,690)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(390)	(390)

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	16	(18)
4.6	Cash and cash equivalents at end of period	1,225	1,225

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	1,225	3,714
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	1,225	3,714

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	123
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
<i>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.</i>		

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.	N/A	

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (item 1.9)	(973)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(979)
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(1,952)
8.4 Cash and cash equivalents at quarter end (item 4.6)	1,225
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	1,225
8.7 Estimated quarters of funding available (item 8.6 divided by item 8.3)	0.63
<i>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.</i>	
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: The Company does not expect to incur the current level of net operating cash flows again in the coming quarters. The second quarter of 2024 saw significant work on the drilling of one helium well and expenditure related to first quarter drilling and facility planning activities. It is anticipated that the capital program will be lower in the coming quarters. As part of its Galactica Pegasus project advancement activities, Blue Star is evaluating a range of financing options including, but not limited to, farm out opportunities.	
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: The Board regularly evaluates market appetite for equity financing and believes that the Company will be able to continue to access funding as required.	

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: Yes, with a reduced capital spend profile and continued access to funding, the Company expects to be able to meet its business objectives.

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 July 2024

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.