

## ASX ANNOUNCEMENT

30 April 2025

### JACKSON 27 FLOW TEST AND GAS ANALYSIS UPDATE GALACTICA PROJECT

#### Highlights

- **Strong Reservoir Flow:** Jackson 27 flowed naturally during drilling and at TD.
- **Increasing Natural Flow Rates:** Flow rate since TD has increased to over 320 Mcfd.
- **Projected Stabilised Flow Rates:** 350 to 450 Mcfd constrained to optimise production, with a maximum potential rate of 550 Mcfd.
- **Helium Concentration:** Early samples return helium concentration of up to 0.41% and 98.31% CO<sub>2</sub>.

Blue Star Helium Limited (ASX:BNL, OTC:BSNLF) (**Blue Star** or the **Company**) is pleased to announce initial results from the Jackson 27 SESW 3054 development well at its Galactica helium project in Las Animas County, Colorado.



## Blue Star Managing Director & CEO, Trent Spry, said

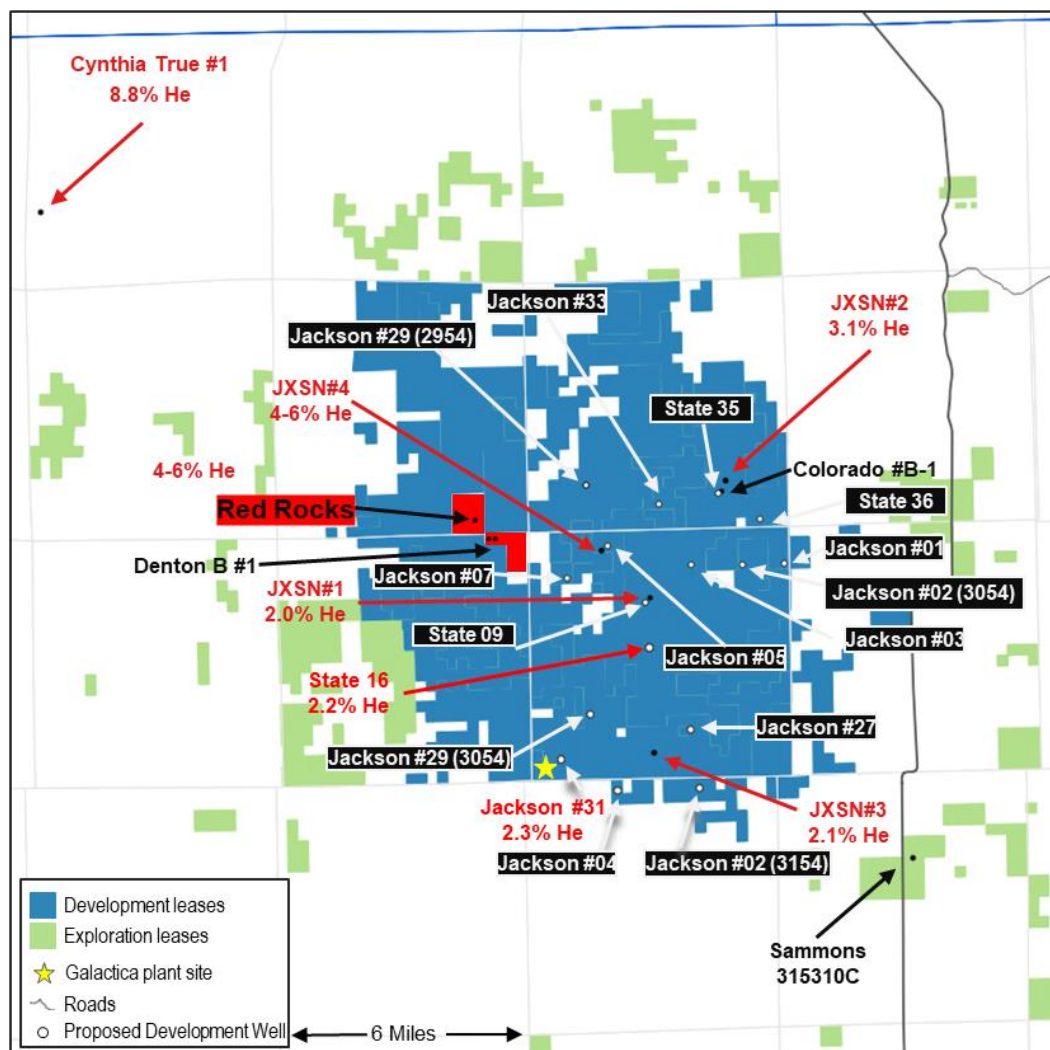
"We are pleased to have another strong producer on the eastern flank of the Galactica project area. Extending the resource and gaining strong flow potential and reservoir gas composition in this part of the field is key to defining the development going forward for this high-quality helium and CO<sub>2</sub> field"

## Summary Results

The Jackson 27 well reached TD at 1,183 feet within the upper Lyons Formation, encountering the Lyons Sandstone at 1,123 feet. As expected, no water was encountered during drilling of the Lyons Sandstone with wireline logs confirming the penetrated Lyons sands to be high-quality and gas saturated.

Flow testing since TD has revealed increasing natural flow rates, reaching approximately 320 Mcfd so far. Strong pressure build-up post-testing indicates high permeability and good reservoir communication. Based on the previous engineering study described below, and the observed flow rates, the projected stabilised flow rates constrained for production optimisation are expected to be between 350 to 450 Mcfd, with a maximum of 550 Mcfd.

Initial laboratory analysis of gas samples from Jackson 27 showed a helium concentration up to 0.41% and 98.31% CO<sub>2</sub> (and 1.27% nitrogen). The well has tested the far eastern extent of the Galactica project area. Understanding the flow potential and reservoir gas composition in this part of the field is key to defining the development going forward.



## Detailed Jackson 27 Well Flow Testing Results

The Jackson 27 well reached a total depth (TD) of 1,183 feet, encountering the Lyons Formation at 1,123 feet. The well was deliberately completed 60 feet into the upper sand of the Lyons Formation. (See BNL ASX announcement of 23 April 2025 *Jackson 27 Well Drilled to TD with Gas Confirmed*). Wireline logs confirming the penetrated Lyons sands to be high-quality and gas saturated.

The well exhibited natural gas flow during drilling and at TD. Flow testing has continued, with increasing results demonstrating natural flow rates of up to approximately 320 Mcfd. Strong pressure build-up post-testing confirms high permeability and good reservoir communication.

On 1 July 2024 (BNL ASX announcement *State 16 Well Status and Development Update*), the Company released results of an independent engineering analysis of wells in the Galactica/Pegasus project. This analysis established maximum stabilized rates and drawdown for development planning and economic modelling.

The analysis integrated results from the State 16 well with test data from the JXSN#1, JXSN#2, JXSN#3, and JXSN#4 discovery wells, and compared to public information from the adjacent Red Rocks development.

The study concluded:

- Calculated permeabilities across the project based on the JXSN discovery wells and State 16 well range from 300 to 750 mD.
- This permeability range suggests initial flow rates at 6 psia wellhead pressure of 334 to 780 Mscfd.
- The State 16 well showed a calculated permeability of 405 mD in the Lyons formation.
- For State 16 (405 mD) stabilized initial flow rates constrained for production optimisation would be 250 to 350 Mcfd with a maximum of 441 Mcfd.

Development planning includes considering vacuum compression ranging from 11 psia (-1 psig) to 6 psia (-6 psig) wellhead pressure which provides the ranges above.

The Jackson 27 well has shown a natural flow rate of approximately 320 Mcfd which compares favourably to the State 16 well which showed a sustained natural flow rate of 150 Mscfd.

Given the higher natural flow at Jackson 27, due to greater permeability in the high-quality Lyons sand, and the previous independent engineering study, projected potential stabilized flow rates, constrained for production optimization, are expected to be 350 to 450 Mscfd with a maximum potential rate of around 550 Mscfd.

The information required by ASX Listing Rule 5.30 in relation to these Galactica development wells is set out in the Appendix.

*This ASX Announcement has been authorised for release by the Board of Blue Star Helium Limited.*

### **For further information, please contact:**

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## Appendix

### Information Required by ASX Listing Rules 5.30

5.30	Rule Summary	Company Statement
(a)	Name & type of well	Jackson 27 SESW 3054 helium development well
(b)	Location of well and permit details	<p>Location: Section 27 SESW in Township 30 South Range 54 West (see map in this announcement).</p> <p>Mineral Lease: Oil and gas lease between a private mineral owner and Blue Star's wholly owned subsidiary, Las Animas Leasing Inc (LAL). The lease has an effective date of 22 January 2022, the total area of the lease is 4,895 acres, the term is 5 years from the effective date and so long thereafter as gas is produced in paying quantities, and the royalty is 17.5%.</p>
(c)	Working interest in well	50% (see BNL announcement dated 28 August 2024 <i>Helium One Farms into Galactica / Pegasus Project</i> )
(d)	Net pay	Production hole section from 1,123 to 1,183 feet, containing approximately 61 feet of high-quality gas filled sandstone and remains open at depth.
(e)	Geological rock type drilled	Lyons Formation
(f)	Depth of zones tested	1,123 to 1,183 feet
(g)	Test types	Flow tests were conducted with an orifice plate tester directly off of the well-head (more details below).
(h)	Hydrocarbon phases recovered	Nil
(i)	Other recovery	Helium, carbon dioxide, nitrogen
(j)	Choke size etc	Natural flow at up to 190 Mcfd through a 1.25" orifice plate.
(k)	Pressures etc	See announcement text and paragraph (n) below.
(l)	No. of fracture stimulation stages	Nil
(m)	Other volumes	See paragraph (j) above.
(n)	Other information	<p>Gas Sample Analysis</p> <p>While flowing gas samples were taken from a 2" nipple directly off the well-head.</p> <p>The sample analysis was carried out by Gas Analysis Service, Farmington NM using a single thermal conductivity detector (TCD) for gas compositional analysis for the determination of C1-C6+ hydrocarbons, helium, nitrogen and CO2 adopted from Gas Processors Association standard 2261-00. Concentrations of the compounds are measured using thermal conductivity detectors using ultra-high purity hydrogen as a carrier gas.</p> <p>A number of secondary samples were also sent to EMPACT Analytical Systems, Inc. Address: 365 S. Main Street, Brighton, Colorado. EMPACT uses a two TCD GC system with Ultra High</p>

	<p>Purity (UHP) carrier gases. Natural Gas Analysis is performed to GPA 2261 and ASTM D1945 standards.</p> <p>Flow Testing</p> <p>Flow tests were conducted with an orifice plate tester. Specific gravity of the gas was calculated using data obtained from Gas Analysis Services (GAS) (gas gravity of 1.43; 41.413 molecular weight). Tests were conducted over a multiple 15 min (until stabilised flow was established) periods over a number of days flowing through a 1.25" orifice plate to atmospheric pressure at approximately 60° F.</p> <p>Independent Project Engineering Analysis of Flow Potential (referred to in this announcement as the Engineering Study)</p> <p>On 1 July 2024 (see BNL ASX announcement of 1 July 2024, State 16 Well Status and Development Update) the Company announced the results of its independent engineering analysis of the wells drilled across the Galactica / Pegasus project establishing maximum stabilised rates and drawdown that will be modelled for incorporation into development planning and economics for the project.</p> <p>At the time the State 16 well results were integrated with the test data from the JXSN#1, JXSN#2, JXSN#3 and JXSN#4 discovery wells drilled by Blue Star and compared to the public information available from the adjacent Red Rocks development.</p> <p>Results show 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, and that at the State 16 well 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.</p> <p>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.</p> <p>The Jackson 27 well has shown a natural flow rate of approximately 250 Mcfd which compares favourably to the State 16 well which showed a sustained natural flow rate of 150 Mscfd.</p> <p>Given the higher natural flow at Jackson 27, due to greater permeability in the high-quality Lyons sand, and the Engineering Study, projected potential stabilized flow rates, constrained for production optimization, are expected to be 250-350 Mscfd with a maximum potential rate of 450 Mscfd.</p> <p>In this announcement, Mcfd means thousand standard cubic feet per day.</p>
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5.30	Rule Summary	Company Statement
(a)	Name and type of well	State 16 SWSE 3054 helium well
(b)	Location of well and details of lease	<p>Location: Section 16 SWSE Township 30 South Range 54 West (see map in this announcement).</p> <p>Lease: Oil and Gas Lease No.112989 between the State of Colorado and Blue Star's wholly owned subsidiary, Las Animas Leasing Inc (LAL). The lease has an effective date of 21 November 2019, the total area of the leases is 640 gross acres (640 net acres), the term is 5 years from the effective date and so long thereafter as gas is produced in paying quantities, the rental is payable annually at a rate of \$2.50 per acre per year, the royalty is 20% and LAL's working interest in the lease is 100%.</p>
(c)	Working Interest	100%
(d)	Net pay (if gross pay reported)	Production hole section from 1,111.5 to 1,211 feet, containing approximately 96 feet of high-quality gas filled sandstone
(e)	Geological rock type of formation	Lyons sandstone
(f)	Depth of zones tested	1,111.5 to 1,211 feet
(g)	Types of tests and duration	Flow tests comprising a 12 hour natural flow period followed by a 12 hour flow period under vacuum compression after which a 48 hour pressure build up was performed.
(h)	Hydrocarbon phases recovered	Nil
(i)	Any other recovery	Helium, carbon dioxide, nitrogen
(j)	Choke size, flow rates and volumes measured	Natural flow at up to 208 Mcfd through a 1" orifice plate, stabilized at 150 Mcfd. Vacuum flow at up to 313 Mcfd through a 1.375" orifice plate, stabilized at 285 Mcfd.
(k)	Pressures associated with flow and duration of test	See announcement text and paragraph (n) below.
(l)	Number of fracture stimulation stages	Nil
(m)	Material volumes of non-hydrocarbon gases	See paragraph (j) above.
(n)	Any other material information	<p>Gas Sample Analysis</p> <p>While flowing gas samples were taken from a 2" nipple directly after the flow meter.</p> <p>The sample analysis was carried out by Gas Analysis Service, Farmington NM using a single thermal conductivity detector (TCD) for gas compositional analysis for the determination of C1-C6+ hydrocarbons, helium, nitrogen and CO2 adopted from Gas Processors Association standard 2261-00. Concentrations of the compounds are measured using thermal conductivity detectors using ultra-high purity hydrogen as a carrier gas.</p> <p>A number of secondary samples were also sent to Dolan Integration Group of 11025 Dover Street, Suite 800, Westminster, Colorado, for cross calibration.</p>

		<p>Gas compositional analysis methodology for the determination of C1-C6+ hydrocarbons and permanent gases (nitrogen, oxygen, argon, carbon dioxide, helium and hydrogen) are adopted from Gas Processors Association standard 2261-00. Concentrations of the compounds are measured using an Agilent 7890 gas chromatograph equipped with dual thermal conductivity detectors (TCD), each of which uses either ultra-high purity hydrogen or nitrogen as a carrier gas.</p> <p>The laboratory reports un-normalized concentrations in parts per million (ppm). The laboratory runs multiple mixed calibration gases with each sample, so it has multi-point calibration curves for each compound reported.</p> <p><b>Flow Testing</b></p> <p>Flow tests were conducted with a ABB XFC 6413 Total Flow Meter using AGA 1992 calculation method . Flow rate calculations used an assumed gas gravity of 1.3 (37.661 molecular weight) based on offset wells and a pressure base of 14.7 psia. Natural flow tests were conducted over a 12 hour period flowing through a 1” orifice plate to atmospheric pressure. Vacuum flow tests were conducted over a 12 hour period flowing through a 1.375” orifice plate to atmospheric pressure.</p> <p>In this announcement, Mcfd means thousand standard cubic feet per day.</p> <p>The information in this table applies to the procedures and results referred to in the original State 16 well results announcement of 4 June 2024 and to the announcement of 6 March 2025 subject to the comments in the following paragraphs.</p> <p>The new samples were taken from a 2” nipple directly from the wellhead. The sample analysis was carried out by Gas Analysis Service, Farmington NM using a single thermal conductivity detector (TCD) for gas compositional analysis for the determination of C1-C6+ hydrocarbons, helium, nitrogen and CO2 adopted from Gas Processors Association standard 2261-00. Concentrations of the compounds are measured using thermal conductivity detectors using ultra-high purity hydrogen as a carrier gas.</p> <p>Independent Project Engineering Analysis of Flow Potential (referred to in this announcement as the <b>Engineering Study</b>)</p> <p>On 1 July 2024 (see BNL ASX announcement of 1 July 2024, State 16 Well Status and Development Update) the Company announced the results of its independent engineering analysis of the wells drilled across the</p>
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		<p>Galactica / Pegasus project establishing maximum stabilised rates and drawdown that will be modelled for incorporation into development planning and economics for the project.</p> <p>At the time the State 16 well results were integrated with the test data from the JXSN#1, JXSN#2, JXSN#3 and JXSN#4 discovery wells drilled by Blue Star and compared to the public information available from the adjacent Red Rocks development.</p> <p>Results show 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, and that at the State 16 well 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.</p> <p>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.</p> <p>The State 16 well has shown a natural flow rate of approximately 150 Mcfd. 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.</p>
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