

ASX Release

30 October 2023

Mbelele-1 tophole helium

Noble Helium Limited (ASX:NHE) (“Noble Helium” or “the Company”) provides an update on drilling results for the tophole section at Mbelele-1 at the Company’s North Rukwa Helium Project in Tanzania.

Over the weekend, the Mbelele-1 12 ¼” tophole section was drilled from the bottom of the surface conductor to section Total Depth (TD) of 130.5mRT. At 85mRT, after drilling through what was later revealed as a 5-10m clay seal, significant bubbling and emulsification of the mud system was observed. The Company’s preliminary interpretation is that the drillbit intersected free gas, accumulated within the upper reservoirs and seals of the Mbelele structure, in line with expectations of gas saturation in the shallow section from the recently acquired seismic data¹.

Simultaneously, helium in the mud gas spiked to up to three times background, clearly demonstrating helium presence in the free gas, though it is not possible to back-calculate reservoir helium concentrations from the mudgas due to it being heavily diluted by mud and atmospheric gases. SLB’s mudgas helium log spiked several more times as drilling progressed toward the base of the tophole section, and also demonstrated a notable trend of increasing helium with depth, despite slight mud losses from an increased mud weight to control the gas inflow. Measurements further showed that CO₂ and methane remained at background levels consistent with our modelling work with Oxford University.

While not our primary target, with these highly encouraging results the Company elected to undertake a contingent wireline logging run, which SLB then carried out. Preliminary petrophysical analysis demonstrates a series of interbedded sand reservoirs and clay/silt seals, with approximately 60% net potential reservoir.

The presence of effective sealing formations at this shallow depth bodes well for the deeper primary zones of interest. The Neogene sandstone sediments are porous and unconsolidated as expected and the prudent decision was made to run casing and prioritise wellbore stability and our ability to complete the Mbelele-1 well to the planned well TD of 450m. The upcoming Mbelele-2 will intersect these upper Lake Beds reservoirs approximately 100m deeper than in Mbelele-1, allowing an opportunity for further data acquisition in these shallow zones.

¹ ASX Release 25 July 2023– Mbelele Resource Increase

At time of writing, 9 5/8" casing was run and cemented in for this tophole section. Marriott rig #16 is performing nominally and the Company expects to drill out the 9 5/8" casing shoe during the day on Monday local time and continue to TD followed by further SLB wireline logging.

The Company's CEO and Co-Founder Justyn Wood commented:

"An excellent start to our maiden drilling campaign. These initial results at Mbelele-1 are in line with our interpretation of the exploration and seismic data and support the Company's well-researched thesis that the North Rukwa rift basin has the potential to emerge as a new globally significant primary helium province."

"While it was not prudent to acquire helium concentrations in the reservoir, we look forward to further results from the deeper, primary targets at Mbelele-1 and of course Mbelele-2, both of which also demonstrate anomalies on seismic consistent with gas presence."

This announcement has been authorised for release on ASX by Noble Helium's Board of Directors.

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Forward-looking statements

This announcement may contain certain “forward-looking statements”. Forward looking statements can generally be identified by the use of forward-looking words such as, “expect”, “should”, “could”, “may”, “predict”, “plan”, “will”, “believe”, “forecast”, “estimate”, “target” and other similar expressions. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements. Forward-looking statements, opinions and estimates provided in this presentation are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements including projections, guidance on future earnings and estimates are provided as a general guide only and should not be relied upon as an indication or guarantee of future performance.

Competent Persons Statement

The technical information provided in this announcement has been compiled by Mr. Ashley Howlett, Exploration Manager, Professor Andrew Garnett, Non-Executive Director, and Mr. Justyn Wood, Chief Executive Officer, all of Noble Helium Limited. The resource estimates have been prepared in accordance with the definitions and guidelines set forth in the Petroleum Resources Management System, 2018, approved by the Society of Petroleum Engineers.

Mr Howlett is a qualified geologist with over 20 years technical, and management experience in exploration for, appraisal and development of, oil and gas resources. Mr Howlett has reviewed the results, procedures and data contained in this announcement and consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

Cautionary Statement for Prospective Resource Estimates

With respect to the Prospective Resource estimates contained within this report, it should be noted that the estimated quantities of gas that may potentially be recovered by the future application of a development project relate to undiscovered accumulations. These estimates have an associated risk of discovery and risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable helium.

Green helium for a high-tech world.

Noble Helium is answering the world's growing need for a primary, ideally carbon-free, and geo-politically independent source of helium. Located along Tanzania's East African Rift System, the Company's four projects are being advanced according to the highest ESG benchmarks to serve the increasing supply chain fragility and supply-demand imbalance for this scarce, tech-critical and high-value industrial gas.

Our flagship North Rukwa Project has an independently certified, summed unrisked mean Prospective Helium Resource of 176 billion cubic feet (equivalent to approximately 30 years' supply). The project lies within the Rukwa Basin, which has the potential to be the world's third largest helium reserve behind USA and Qatar.

Priced at up to 50 times the price of LNG in liquid form, helium is now essential to many modern applications as an irreplaceable element in vital hi-tech products such as computer and smartphone components, MRI systems, medical treatments, superconducting magnets, fibre optic cables, microscopes, particle accelerators, and space rocket launches – NASA is a major consumer. Rising demand and constrained supply are fuelling growth prospects within the global marketplace, particularly for cleaner "green helium" sourced from non-carbon environments. At present, more than 95% of the world's helium is produced as a by-product of the processing of hydrocarbon-bearing gas.

Additionally, Noble Helium has commissioned the first ever Helium Atlas, with an exclusive five-year agreement allowing the Company to identify additional prospective areas to target for diversification. The Atlas uniquely positions Noble Helium as a world leading helium explorer.

