



7 February 2024

Jesse-1A Side-track Drilling Planned for Early 2024

- Walsh Engineering and Production (Walsh Engineering) has completed the Jesse-1A side-track design planned for early 2024.
- Case and perforation design provides full zonal isolation, allowing focused stimulation to optimize Leadville formation gas production.
- Well design provides for multiple chances of success by testing several deeper known helium producing formations, including the highly prospective Devonian McCracken Sandstone.

Grand Gulf Energy Ltd (ASX:GGE) (“Grand Gulf” or the “Company”) is pleased to advise that, following the recent Jesse-1A flow-test (which flowed gas at one million cubic feet per day (mmcf^d)¹), Walsh Engineering and Production (Walsh Engineering) has finalized the operational design to facilitate the drilling of a sidetrack at the Jesse-1A well. The relatively inexpensive sidetrack drilling operation is scheduled for early 2024 and will be completed for production in a success case.



Figure 1: Jesse-1A flare-stack venting reservoir gas and helium at a rate of 1mmcf^d¹

¹ ASX Announcement 21 December 2023 - Jesse-1A Flows 1 Million Cubic Feet of Gas Per Day

Jesse-1A Side-track Design

Based on the highly encouraging flow-test results¹, project manager Walsh Engineering recommended drilling a sidetrack at Jesse-1A to achieve effective isolation and maximise gas production flow rates.

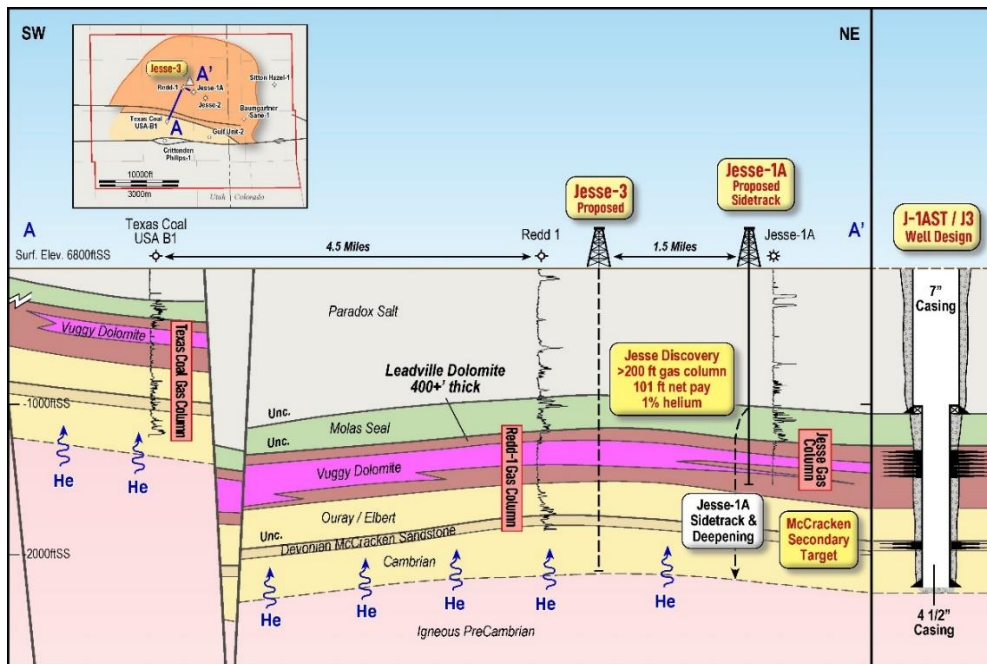


Figure 2: Stylised cross-section showing primary Leadville primary target and the independent secondary McCracken target, one of multiple prospective deeper formations to be interrogated that produce in the region, with the planned reservoir completion design for the Jesse-1A side-track & deepening, and the Jesse-3 new drill.

The Jesse-1A sidetrack will be cased to the bottom of hole which, given the kick-off trajectory from the original wellbore, will be located several hundred feet laterally and approximately 700 feet below the original wellbore total depth (TD). Once petrophysical logs are run, gas bearing zones will be perforated for stimulation and production, maximising gas production flow-rates. All other zones will be isolated behind cement and casing, mitigating any potential water production.

Acid stimulation is best practice in the primary target Leadville formation. An effective acid stimulation programme has the potential to provide multiples of initial pre-stimulation production flow rates by both removing wellbore damage and connecting the wellbore to hydrothermal dolomitic porosity.

The case and perforate well design also facilitates testing multiple highly prospective secondary independent reservoir targets below the primary Leadville reservoir target, including the Devonian McCracken sandstone², which can be immediately completed for production in a success case.

All regulatory approvals and long lead items are on schedule to be completed prior to end Q1 2024 with indicated rig availability supporting an early 2024 operation.

² ASX announcement 22 June 2023 – Bonus McCracken Adds 1.8BCF to Prospective Helium Resource



Managing Director Dane Lance commented:

“We were thrilled to announce highly significant helium concentrations flowing to surface at material rates with the recent Jesse-1A flow-test. We look forward to being back in the field shortly for the forthcoming Jesse-1A sidetrack which provides a low-cost/risk pathway to near-term production and free cash flow from the primary Leadville reservoir target.

The well engineering provides significant flow-rate upside based on effective isolation and stimulation of the Leadville reservoir, whilst interrogating highly prospective independent deeper formations than can be near immediately completed for production in a success case.”

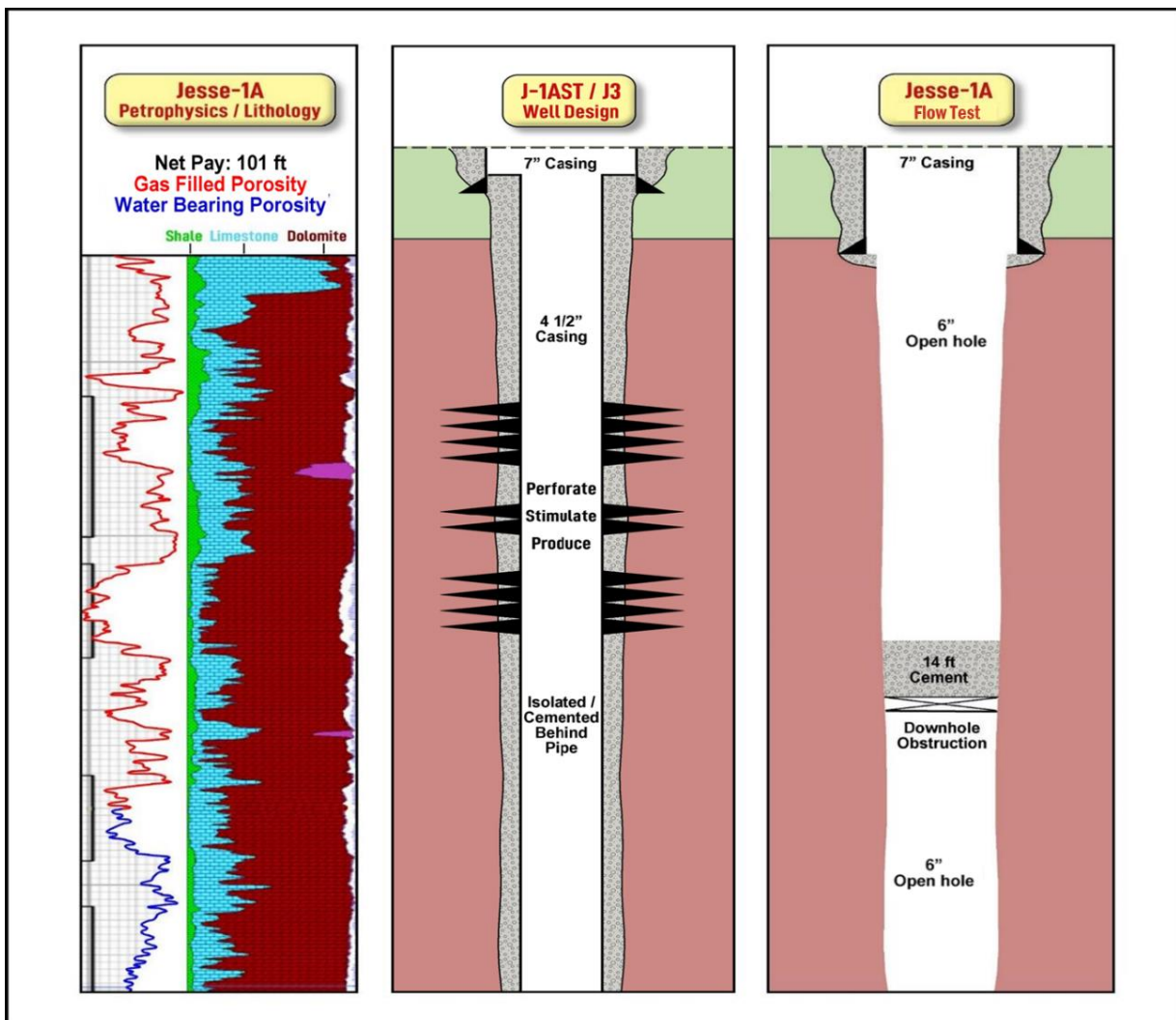


Figure 2: Jesse-1A Leadville porosity, saturation, and lithology logs, showing Jesse-1A current wellbore configuration and proposed Jesse-1A side-track Leadville completion. The Jesse-1A side-track will also be drilled deeper to test multiple highly prospective deeper formations.



Jesse-1A Background

Jesse-1A was drilled and tested with the maiden Red Helium project discovery announced in June 2022, encountering a greater than 200-foot gas column, with 101 feet of net pay (independently audited) and 1% helium³.

Based on an initial petrophysical evaluation, the entire Jesse-1A wellbore appeared gas saturated, and the entire open-hole section was stimulated with a 28% HCl acid at 20 gallons per foot (gpf). The high strength acid was essentially to remove near well-bore drilling damage, based on regional operator Kinder Morgan's best practise at the analogue Doe Canyon field 15 miles to the east.

Post acidization, produced formation waters were fresher than regionally observed, leading to an updated analysis with the lower intersected Leadville zone interpreted as potentially water bearing.

In December 2023, GGE contractor Walsh Engineering re-entered the Jesse-1A wellbore and attempted to isolate the lower Leadville formation with a cement plug. After encountering a downhole obstruction, the operation successfully placed a 14-foot cement plug above the lower, potentially water bearing, Leadville member.

Jesse-1A flowed at 1 million cubic feet per day of raw gas at high helium concentrations consistent with the 1% helium downhole sample⁴. The flow-test results indicate limited isolation and potential preferential stimulation of the lower Leadville water bearing member.

The potentially water bearing lower Leadville member could be indicative of a field gas/water contact, however the lowest Leadville section at the base of the well indicates gas charge on the petrophysical logs, and the 1.5 mile offset well Redd-1 has gas below the interpreted gas/water contact in Jesse-1A. Studies on the adjacent analogue Doe Canyon and Lisbon helium fields indicate potential for thin perched water zones.

Based on the flow-test results and petrophysical results, the case and perforate side-track design will address issues with the current bare-foot well-bore configuration, which renders it sub-optimal for production, and facilitates stimulation of the upper Leadville helium reservoir(s).

This ASX announcement has been authorised for release by the Board of Grand Gulf Energy Ltd.

For more information about Grand Gulf Energy and its projects, contact:

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³ ASX announcement 19 October 2022 - Jesse 1A Downhole Sample Increases Helium Grade

⁴ ASX Announcement 21 December 2023 - Jesse-1A Flows 1 Million Cubic Feet of Gas Per Day



About Grand Gulf Energy:

Grand Gulf Energy Ltd (ASX:GGE) is an independent exploration and production company, headquartered in Australia, with operations and exploration in North America. The Red Helium project represents a strategic pivot to a pure-play helium exploration project, located in Paradox Basin, Utah, in the prolific Four Corners region. For further information please visit the Company's website at www.grandgulfeenergy.com

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 are required to determine the existence of a significant quantity of potentially moveable helium.

Competent Person's Statement

The information in this report is based on information compiled or reviewed by Mr Keith Martens, Technical Director of Grand Gulf. Mr Martens is a qualified oil and gas geologist/geophysicist with over 45 years of Australian, North American, and other international executive oil and gas experience in both onshore and offshore environments. He has extensive experience of oil and gas exploration, appraisal, strategy development and reserve/resource estimation. Mr Martens has a BSc. (Dual Major) in geology and geophysics from The University of British Columbia, Vancouver, Canada.

Forward Looking Statements

This release may contain forward-looking statements. These statements relate to the Company's expectations, beliefs, intentions or strategies regarding the future. These statements can be identified by the use of words like "anticipate", "believe", "intend", "estimate", "expect", "may", "plan", "project", "will", "should", "seek" and similar words or expressions containing same. These forward-looking statements reflect the Company's views and assumptions with respect to future events as of the date of this release and are subject to a variety of unpredictable risks, uncertainties, and other unknowns. Actual and future results and trends could differ materially from those set forth in such statements due to various factors, many of which are beyond our ability to control or predict. These include, but are not limited to, risks or uncertainties associated with the discovery and development of oil, natural gas and helium reserves, cash flows and liquidity, business and financial strategy, budget, projections and operating results, oil and natural gas prices, amount, nature and timing of capital expenditures, including future development costs, availability and terms of capital and general economic and business conditions. Given these uncertainties, no one should place undue reliance on any forward-looking statements attributable to GGE, or any of its affiliates or persons acting on its behalf. Although every effort has been made to ensure this release sets forth a fair and accurate view, we do not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.