

ASX:GGE
OTCQB:GRGUF

GRANDGULF
ENERGY LIMITED

Red Helium Project Update

AUGUST 2023

GRANDGULFENERGY.COM

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COMPETENT PERSON'S STATEMENT

The information in this report is based on information compiled or reviewed by Mr Keith Martens, Technical Director. 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.

PROSPECTIVE RESOURCE ESTIMATES

The Prospective Resource estimates for Grand Gulf's Red Helium Project are presented in this report are prepared as at 8 Dec 2021 for the Leadville and 22 June 2023 for the McCracken. The estimates have been prepared by the Company in accordance with the definitions and guidelines set forth in the Petroleum Resources Management System, 2018, approved by the Society of Petroleum Engineer and have been prepared using probabilistic methods. The Prospective Resource estimates are unrisks and have not been adjusted for both an associated chance of discovery and a chance of development. The Company confirms that there have not been any material changes to the resource estimate since the release of the updated Prospective Resource Estimate on 22 June 2023. See Independent Prospective Resource Estimate on 8 December 2021. See Slide 17

Red Helium Project

Pure-play Helium, Potential for Near Immediate Production

Helium Prolific Location

- Four Corners area
- Drill friendly Utah
- Dominant lease position (Private Fee / State)
- >29,000 acres leased

Giant Adjacent Helium Field

- Doe Canyon – 15 miles east
- 3 – 5 Bcf helium recovery
- High helium rate wells
- Same geology de-risks all play elements

12.7 Bcf Helium Resource¹

- US\$6B resource in the ground (@\$500/mcf)
- 4 wells with proven helium
- Multiple independent prospects and horizons

Jesse Discovery 1% Helium

- >200ft gross gas column, 101 feet of net pay
(Independently audited, Sproule²)
- Strong bottomhole pressure

Low Capex / Booming Commodity

- Pipeline connected to Lisbon helium plant
- Binding offtake agreement
- Structural deficit in helium supply
- **Spot prices >US\$2000/mcf ~700x natural gas**

Near Term Catalysts / FCF Potential

- Jesse-1A re-completion Q3/Q4
- Jesse-3 Q4 2023 spud
- Production 6 months from success
- Minimal time delay / Capex

1. The Prospective Resource estimates are unrisks and have not been adjusted for both an associated chance of discovery and a chance of development. The Company confirms that there have not been any material changes to the resource estimate since the release of the updated Prospective Resource Estimate on 22 June 2023. See Independent Prospective Resource Estimate ASX announcement 8 Dec 2021 (Sproule Report), ASX announcement 22 June 2023 Sproule Due Diligence. Detailed in Slide 17.

US-Focused Pure-play He Explorer

Red Helium Project

- Operated by Incorporated Joint Venture Company Valence Resources LLC (Valence)
- Current Working Interest 77.5%
- Right to earn 85% by US\$1.5m spend on third well

Multiple Independent Targets

- Jesse Discovery (Jesse-3 / Jesse-1A)
- Multiple targets in Horstal Region
- Drill-ready Earp Prospect

12.7 bcf Gross Prospective Resource

- Leadville P50 – 10.9 bcf (Primary Target)¹
- McCracken P50 – 1.8 bcf (Secondary Target)¹

Financial Information

ASX Trading Symbol (OTCQB)	GGE (GRGUF)
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Total Shares	1,675 million
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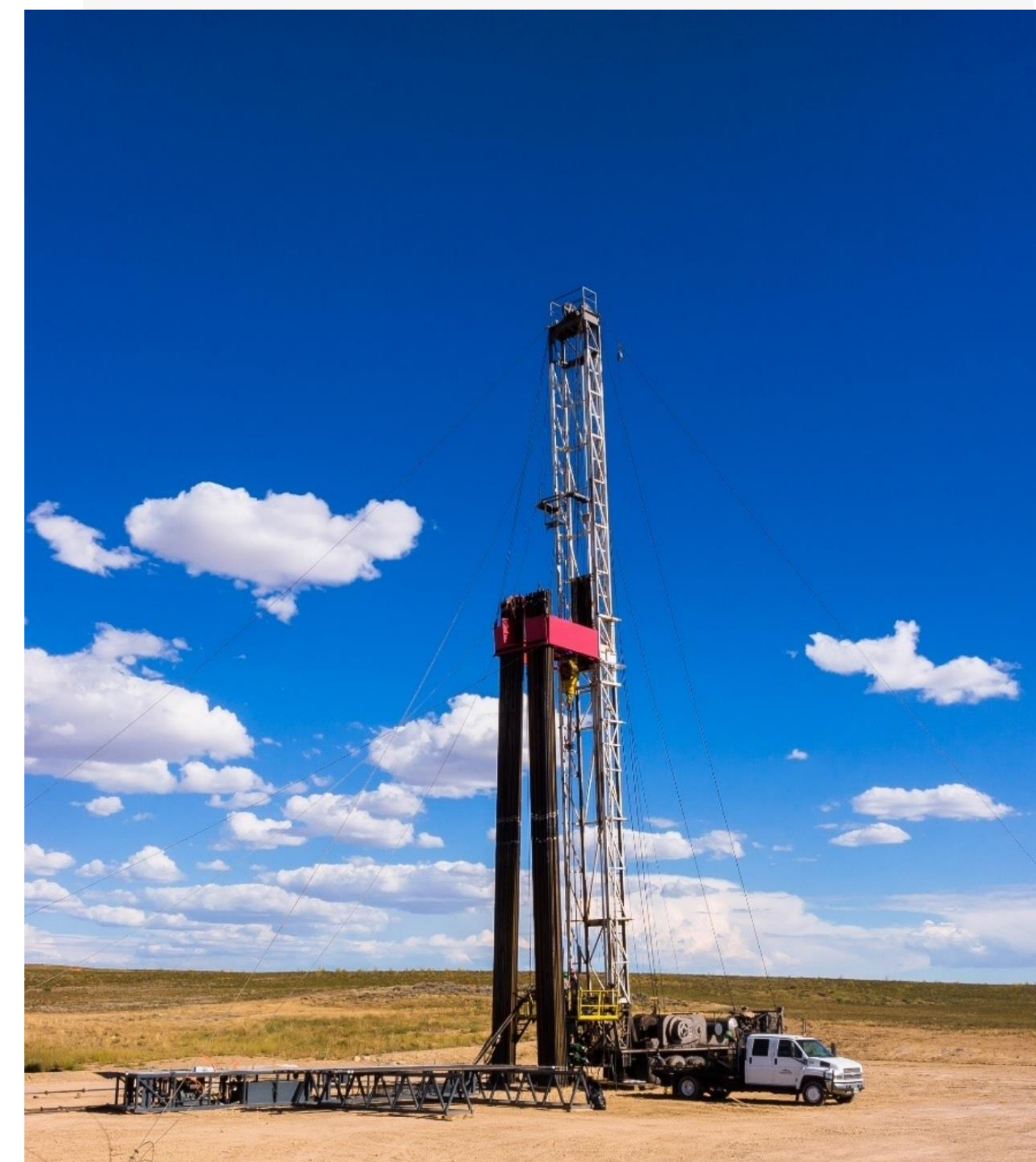
Market Cap @ 1.1c	A\$18.7 million
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Net Cash @ June 2023	A\$1.2 million
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Performance Shares/Rights	150 million
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Unlisted Options (varying)	155 million
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Listed Options (3 years at 8.0c)	103 million
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He Demand - Irreplaceable Technological Enabler

Major growth predicted in all areas, particularly: **Space, Defense, Medical, Semiconductor & Fibre-Optic**



Inert

Doesn't react with other elements & non-flammable unlike hydrogen



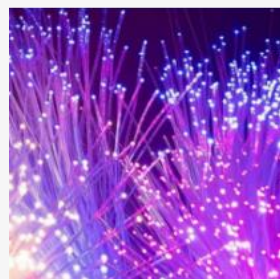
Non-toxic

Can be used in many applications without posing health risks



Lighter than air

Ability to lift or float. Atmospheric molecules escape to space



Boiling point -269°C

Liquid at ultra cool temperatures enables superconductivity

High Thermal Conductivity

Removes heat in space applications & electronics manufacturing

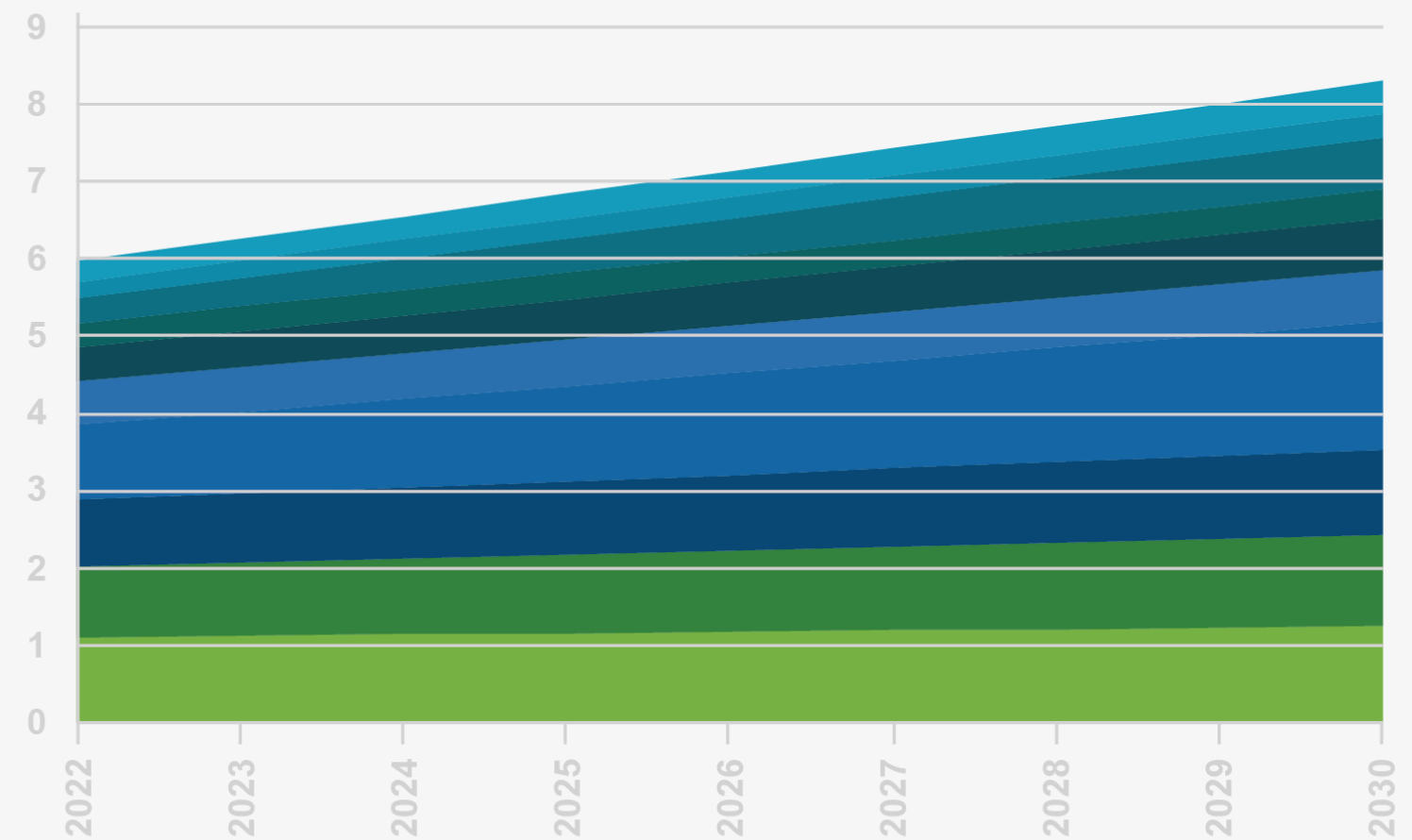
Small molecular size

Can be used to find the smallest of leaks

Industry

- MRI/NMR
- Lifting
- Laboratory/Space
- Semiconductors
- Welding/Cutting
- Fibre Optics
- Leak Detection
- Military & Space
- Diving
- Other

Forecast helium consumption 2022 - 2030E (bcf/y)



Helium Usage by Industry



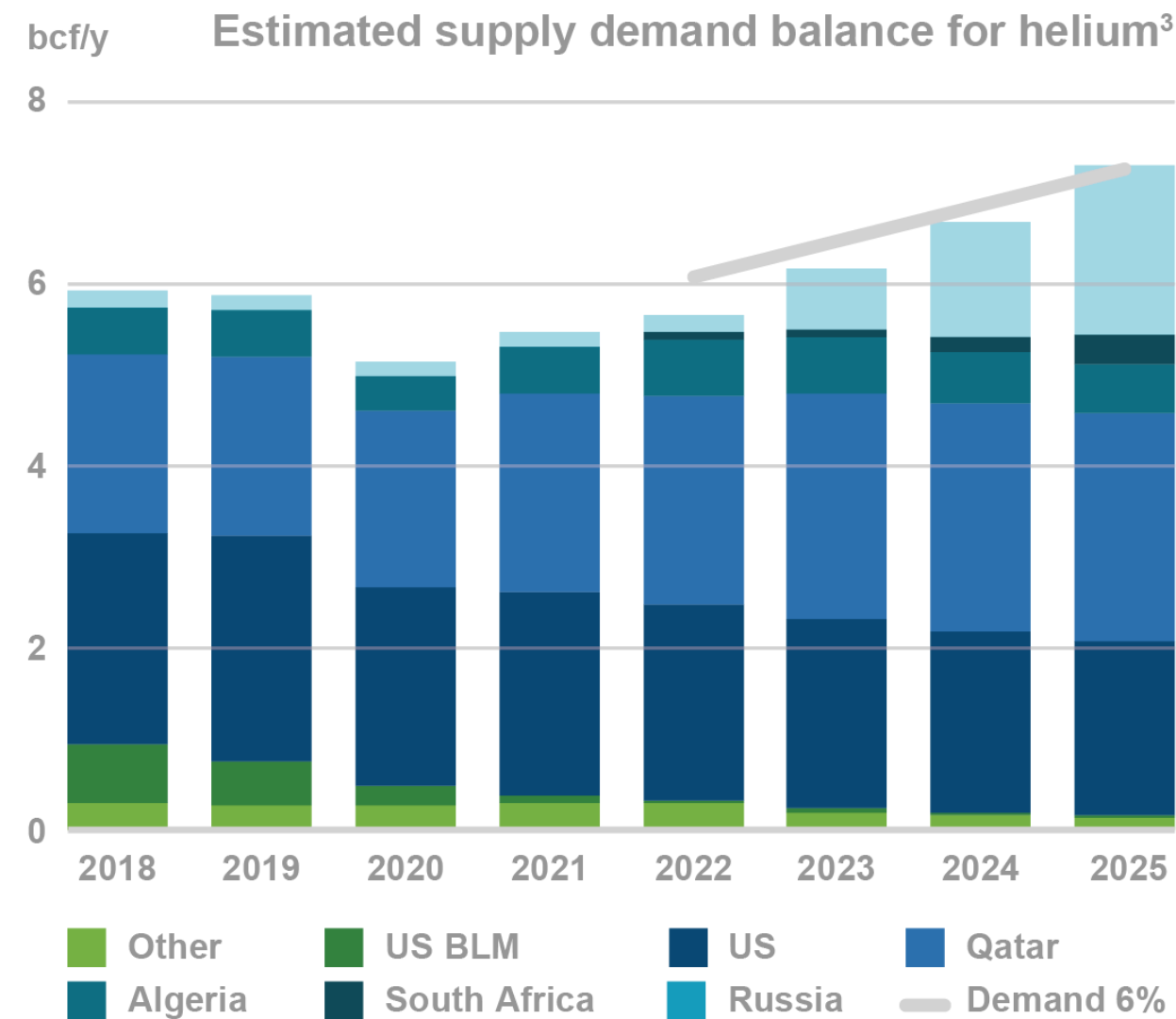
Helium - Strong Market Fundamentals

Global Helium Supply Shortage

US Spot Prices >700x Natural Gas
>US\$8B Market by 2030 (>6% CAGR) ⁴

Helium Shortages

- Simply not enough supply, even before outages.
- US Helium production in decline
- US BLM helium storage depleting, multiple shut-downs and sale of assets
- Devastating Russian Amur facility explosion affecting 20-30% of global helium supply
- Other major suppliers historically unreliable, majority of supply shifting from US to Russia / Qatar.
- Algeria diverting gas from LNG and helium to Europe



US Market

Most US majors are in Force Majeure, unable to meet supply contracts and rationing helium

US premium spot market prices **>US\$2,000/mcf**

- Gaseous helium at \$450-600/mcf

US\$52B CHIPS act to promote domestic semiconductor fabrication

Helium hungry plant construction proximal to Red Helium project:

- Intel and TSMC investing >US\$60B in Arizona.
- TI Largest ever Utah economic investment \$13B
- Market Cap⁵
 - TSM: US\$510B
 - INTC: US\$150B
 - TXN : US\$162B

NASA⁶ 2022 long-term contract

- US\$1.07B for 0.9Bcf helium implies **>US\$1200/mcf**

Air Products, NYSE:APD, Market Cap US\$68B, operates Giant Doe Canyon helium field

2. <https://www.gasworld.com/helium-markets-now-experiencing-helium-shortage-40/2022650.article>

3. Source: H&P Equity Research / Akap Energy estimates Feb 2022,

4. Edison Research Global Helium Market Update, May 2021

5. <https://finance.yahoo.com/quote/TXN?p=TXN&tsrc=fin-srch>

6. <https://www.gasworld.com/story/air-products-inks-potential-1bn-helium-deal-with-nasa/2118880.article>

“Saudi Arabia of Helium”

Four Corners Area: Established Helium Production

Development Friendly Regulator

- Dominant lease position >29,000 acres
- Private Fee / State land

Giant Adjacent Doe Canyon Helium Field

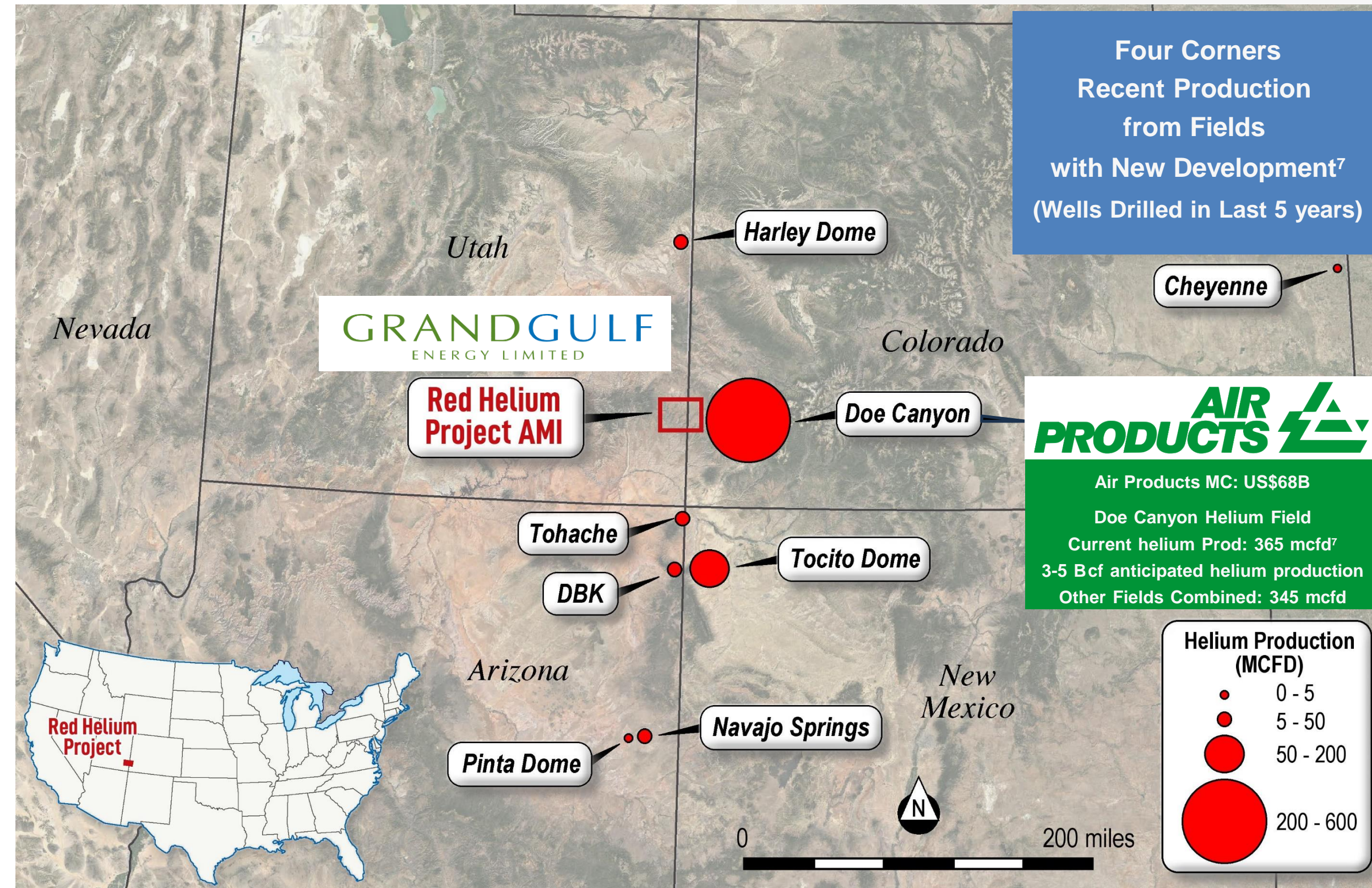
- Up to 50% of new US Helium production is from the Doe Canyon Field
- Located 15 miles to the east
- Same geology: de-risks all play element

Four Corners Near Term Development Areas

- Paradox Basin (UT/CO inc. Red Helium Project)
- Holbrook Basin (AZ) / Tocito (NM)

Greater Eastern Rockies

- Prolific LaBarge field to the North (WY, Exxon)
- Similar geology provides majority of US production
- LaBarge provides ~20% of world supply



7. Estimated recent field production for fields with new development activity (wells drilled in the last 5 years): Four Corners Helium LLC Internal Estimates

Red Helium Project

Field Overview

Jesse Discovery (Jesse-1A)

Jesse-1A drilled and tested mid-2022, flowing 1% helium to surface. Suspended, awaiting completion.

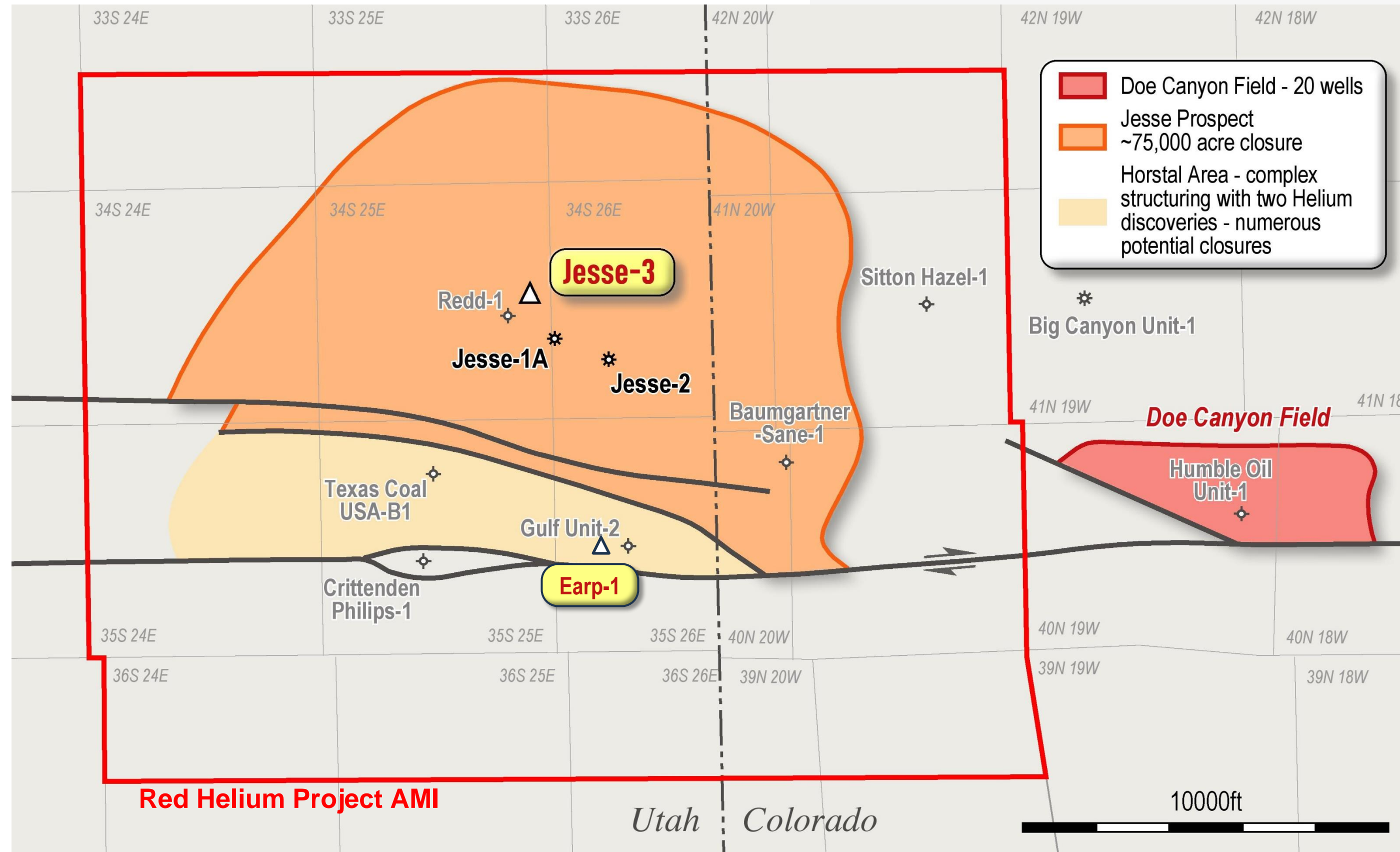
Jesse-2 drilled April 2023, flowed 0.9% helium to surface. Suspended, with ongoing study work for stimulation / short radius lateral.

Jesse-1A / Redd-1 and the historic horstal wells have evidence of good reservoir development defining a potential reservoir play fairway targeted by Jesse-3

Jesse structure has the capacity to support over 20 wells based on the Doe Canyon analogue

Multiple Independent Targets

- Jesse-3 (Redd-1 twin, subject to permitting)
- 2 mature prospects in the horstal area
- 2 drillable permits (Earp, Jesse)
- Deeper under-explored potential



Jesse Helium Discovery

Pure-play Helium

1% Proven Helium Concentration ✓

- Commercial grade
- Evidence for upside helium charge model
- Jesse-1A / Jesse-2 show high quality helium is pervasive over the Jesse structure and project

Offtake agreement / existing pipelines ✓

- Binding offtake agreement with Lisbon helium plant
- 20 miles to the north connected by pipeline
- Minimal time / Capex

Strongly Pressured Reservoir ✓

- 2,465psi bottom hole pressure at Jesse-1A
- On trend with Doe Canyon virgin pressure

10.9 Bcf Primary Leadville Target ✓

- >70,000 acre closure at Jesse
- ~4x closure of nearby Doe Canyon helium field
- Proven helium

200ft Gross Gas Column at Jesse-1A ✓

- 101ft net pay (independently audited) - Leadville
- Vugular porosity with extensive hydrothermal dolomitization and productive reservoir

1.8 Bcf McCracken Bonus Target ✓

- Highly Prospective Devonian Sandstone
- Independent (non-binary) secondary target
- Under-explored, proven gas

Commercial production from Jesse-3 / 1A

- Reservoir development at Jesse-1A / Redd-1
- Redd-1 well control
- Jesse-3 up to 70 ft structurally high to Jesse-1A
- Independent secondary target

**Proven Helium, Potential for
Near Immediate Production
with Minimal Time and Capex**

Jesse Development

Proven Helium, Multiple High-graded Opportunities

Red Helium 12.7 bcf Prospective Helium Resource

- Leadville P50 – 10.9 bcf (Primary Target)¹
- McCracken P50 – 1.8 bcf (Secondary Target)¹

Jesse-3 New Drill Q4 2023

Proximal to Redd-1 well control

- Leadville / McCracken proven gas
- Within reservoir play fairway (Jesse-1A / Redd-1)
- Up to 70 ft structurally high to Jesse-1A

Jesse-1A Completion Q3/Q4 2023

Leadville proven gas – 101 feet of net pay

Within Redd-1 McCracken gas zone - **deepen**

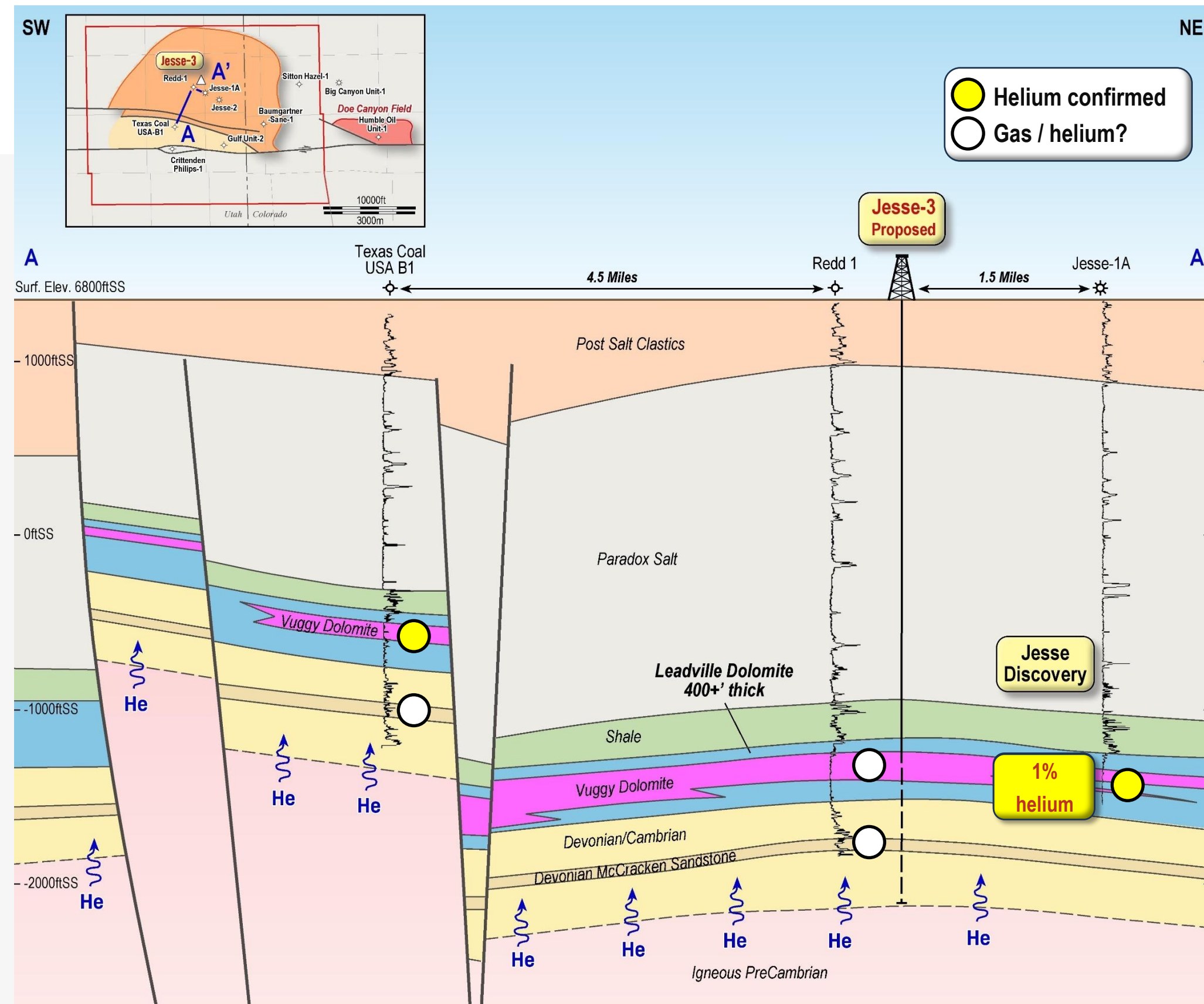
Independent Expert:

- Upper Leadville flow potential 5 mmcf/d or greater
- Meets Contingent Resource criteria

Completion / Testing Plan

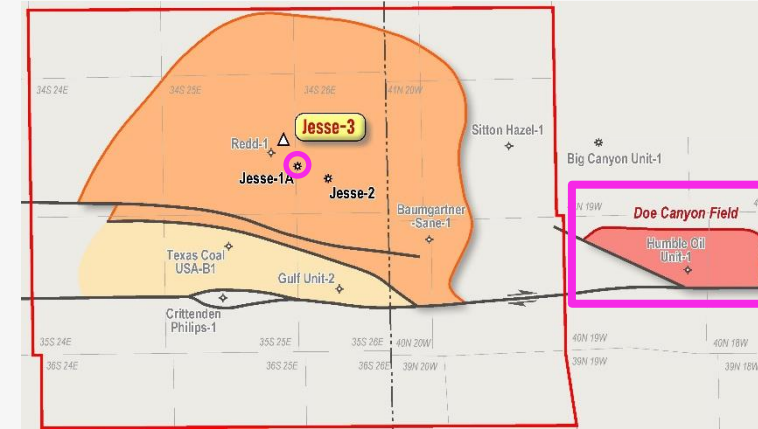
- Case and Perforate
- Zonal isolation
- Focused acid stimulation
- Flow-testing

Complete for production



Doe Canyon Helium Field

Prolific Producing Analogue 15 miles to the East



Field Performance

- Est. Field EUR: ~3 – 5 Bcf helium
- Avg. Well Raw Gas IP: ~20 mmcf/d
- Avg. Well Raw Gas EUR: ~57 Bcf
- Avg. helium Conc.: ~0.4%

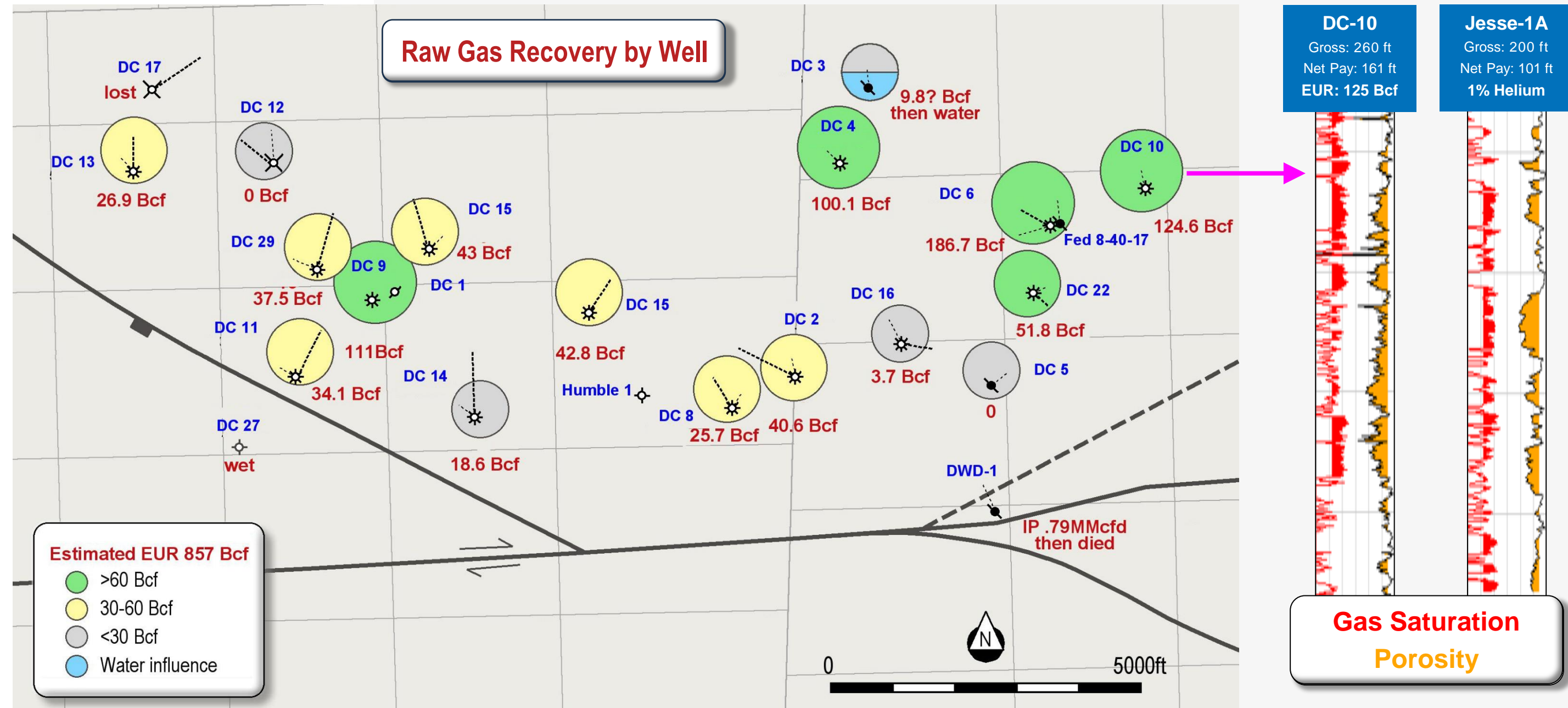
At 1% helium an average analogue Doe Canyon well would produce:

- 200 mcf/d helium
- 0.57 Bcf helium
- @US\$500 - \$2000 per thousand cubic feet (mcf)

High Helium Rate = High Revenue per Well

High Helium Recovery = High Value Wells

16 out of 18 wells drilled on structure were commercially successful



McCracken Sandstone - 1.8 Bcf Helium¹

Deeper Potential, Highly Prospective, Under-explored

Bonus Independent (Non-binary) Secondary Target

Devonian McCracken Sandstone

Redd-1 (Jesse-3) / Gulf-Unit-2 (Earp-1) proven gas

Main sand untested: 8-10% Porosity

Proximity to helium source provides upside for helium concentrations

Producing Lisbon analogue 20 miles to the north, produced for oil with gas management, IPs of >5mmcf, 1% helium

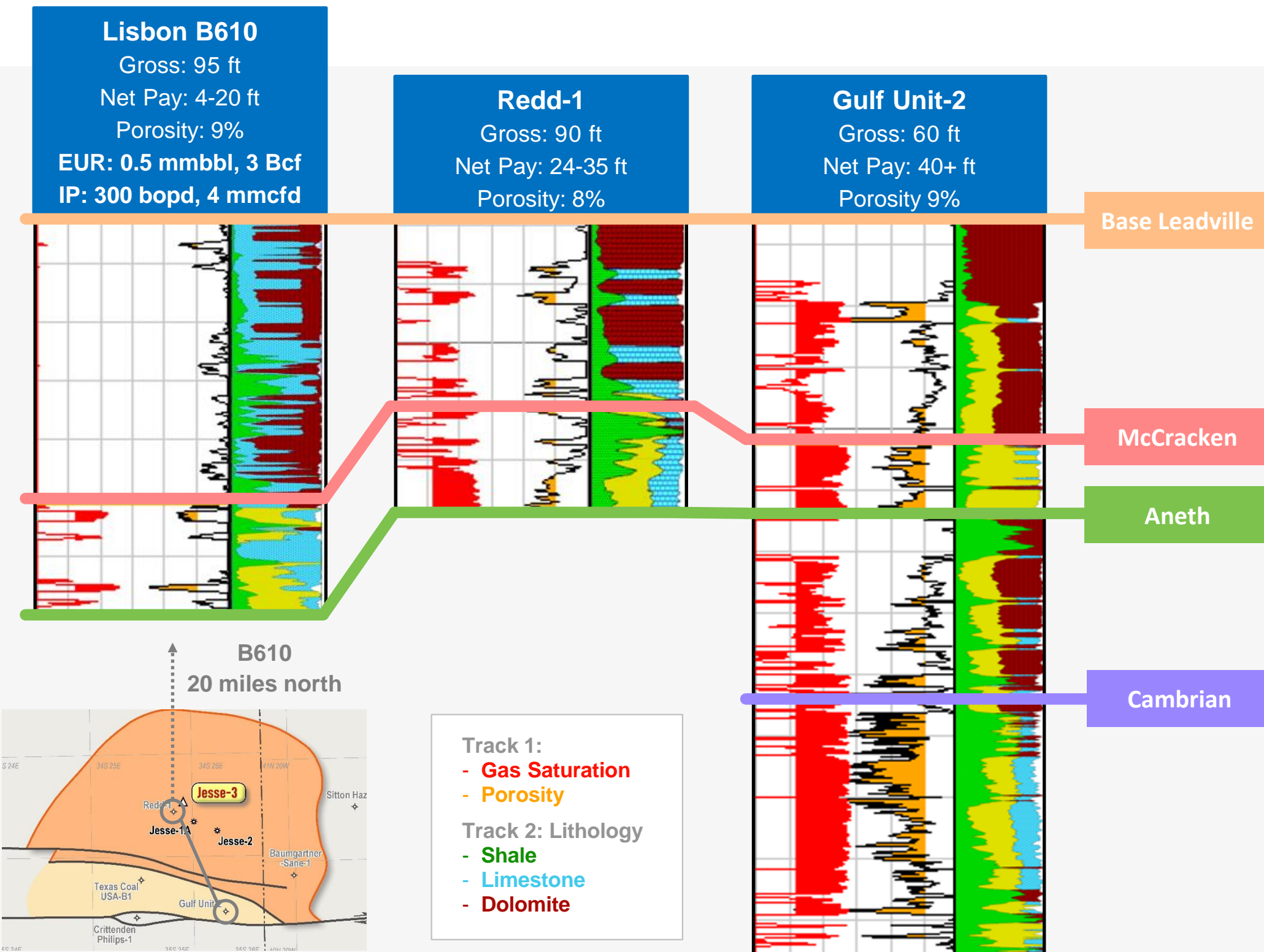
Prolific Tocito Dome helium field produces from the McCracken to the south in New Mexico at 7-8% helium at 4-6% porosity

Running Room

Deeper potential with high porosity in the Cambrian Granite Wash

Multiple independent prospects in horstal region with similar areal footprint to Doe Canyon

Permitted drill-ready Earp prospect twins Gulf-Unit-2



Jesse-3 Planned for Q4 2023 Spud

Structural High / Reservoir Definition through Well Control

Targets Structural High on Seismic

Potentially up to 70 ft high to Jesse-1A

Maximise stand-off to gas / water contact and net reservoir in the gas column
Optimally located to test the McCracken

Reservoir Definition through Redd-1 Well Control

Leadville: 140ft zone with strong evidence of hydrothermal dolomitization and secondary vugular porosity

McCracken: 90ft gross zone with over 24 feet net pay gas sands on logs

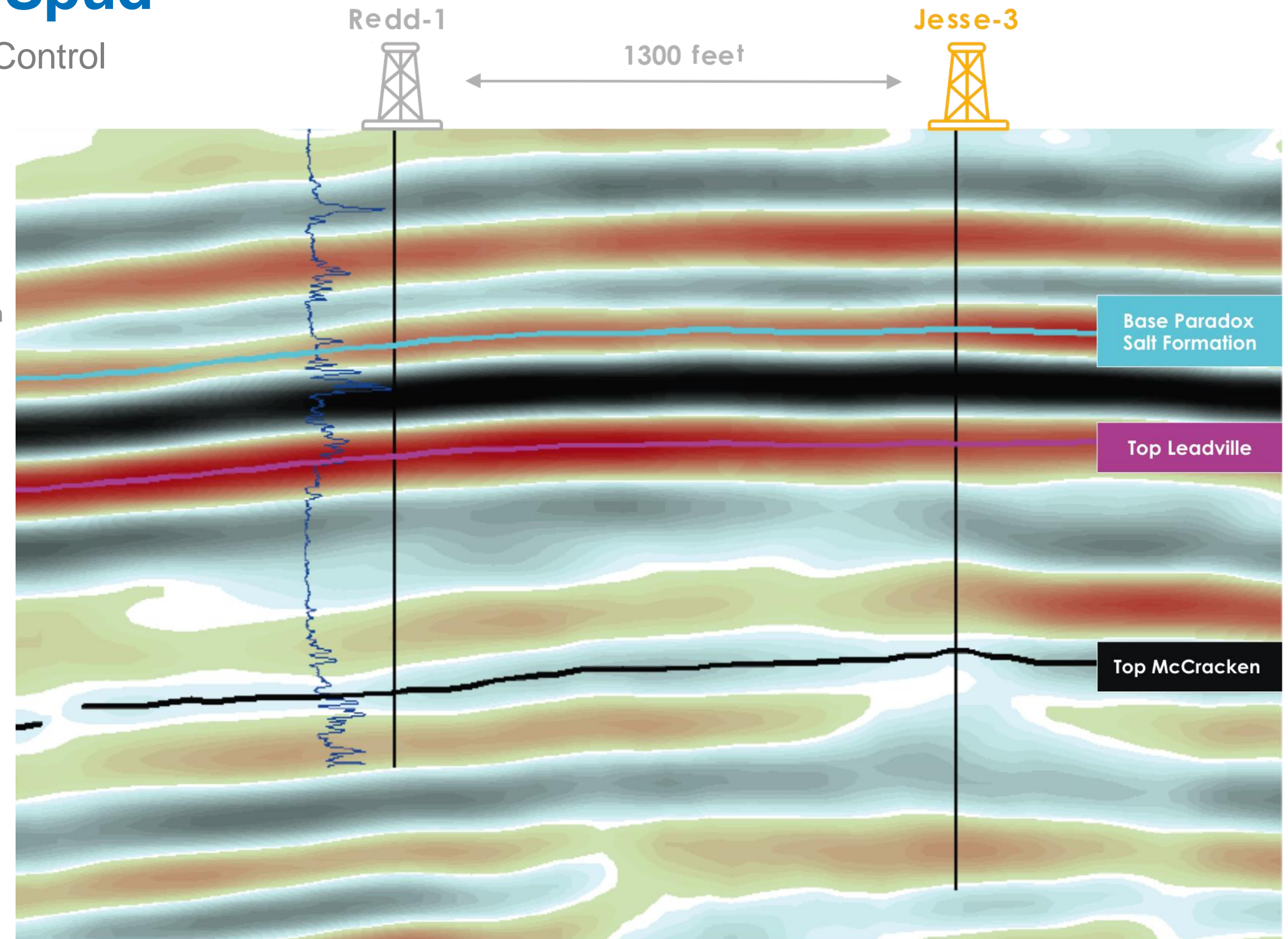
Key Objectives

Reservoir characterisation through high quality subsurface log suite
Zonal isolation and focused stimulation

Flow test to determine reservoir deliverability

Obtain high quality gas samples and helium concentrations

Complete for production



Helium Offtake Agreement Secured / Pipeline to Lisbon Helium Plant

Gas Sales & Processing Agreement (GSPA) executed with Paradox Resources LLC⁸

Helium export US\$4m Capex minimal wellhead facilities

6 months from a commercial well to production
 10mmscfd @ 1% helium = 100 mcf helium
 = US\$50,000/d revenue @\$500/mcf

Payback < 1 year

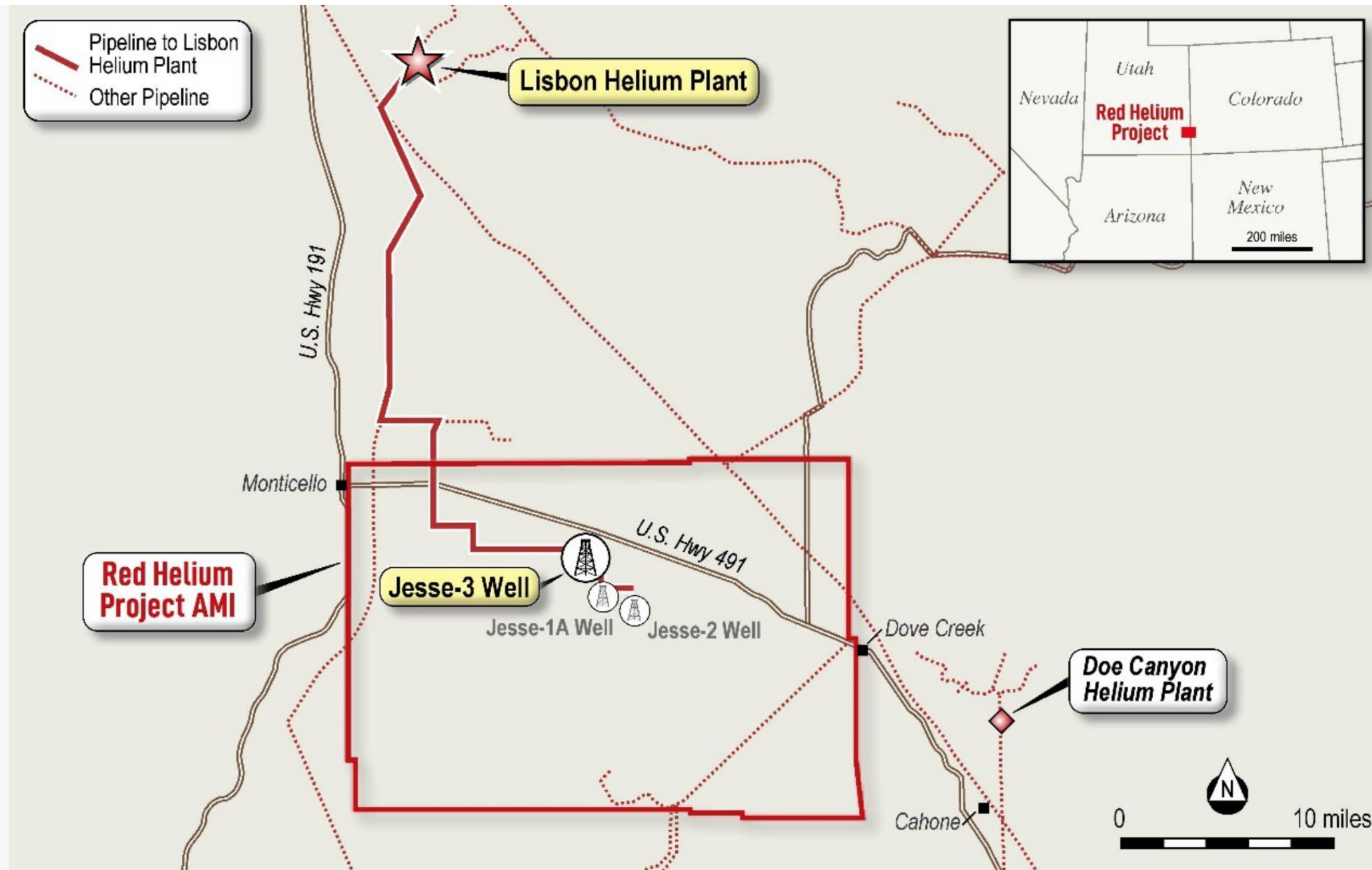
Lisbon Valley Gas Plant Specifications

60mmcf treating plant, 45mmcf cryogenic plant
0.5mmcf liquefaction high purity 99.9995% helium – “5½ Nines”
Demands premium pricing multiplier (x4 – 5 ~\$2000/mcf)
 0.6mmcf 99.989% gaseous helium
 Currently sequestering CO₂ well advanced in permitting to qualify for carbon capture tax credits (Revenue - 45Q Tax Credits)

2 of 8 helium purification plants in the US are within 20 miles

Binding Offtake Agreement: Jesse to Lisbon

Industry standard commercial terms such as:
 80/20 revenue split, gas gathering / treatment tariffs
 Success case monetisation / FCF with minimal time / Capex



US\$6B Resource in the Ground

Minimal Time / Capex to Monetise

Multiple Near-Term Catalysts

- Jesse-3 Q4 2023
- Jesse-1A Completion Q3/Q4 2023
- McCracken Secondary Target

De-risked Geology / He Grade (1%)

- Jesse-1A / historic wells on acreage with helium prove all play elements
- Jesse-3 up to 70 feet high to Jesse-1A
- Reservoir Fairway: Jesse-1A / Redd-1

GGE Positioned to Capitalise

- Connected by pipeline to Lisbon Helium Plant
- Potential for near immediate production
- Binding Offtake, minimal time / Capex
- Significant near term FCF potential

Running Room

- Multiple Independent Prospects
- Drill-ready Earp
- Deeper Potential – Devonian / Cambrian

Asset Play

- 12.7 Bcf He, sufficient to fill Lisbon plant and a standalone project, 20+ wells
- Helium is multi-\$B global market of ~6bcf/yr
- High tech end users (Space / Semiconductor)
- Target long term, large volume contracts

Booming Commodity

- Structural deficit / acute shortage
- De-coupled to normal commodity cycles
- Extreme price pressure
- US helium for the US, world's largest consumer



Strong Board & Management



Craig Burton
Chairman

Experienced active investor in emerging oil and gas companies

Provides financial backing and legal advice



Dane Lance
Managing Director

>18 years' experience across E&P Lifecycle, Reservoir Engineer, including many major/mega development projects with significant exploration and MA&D

Woodside Energy, Oil Search, Ophir



Keith Martens
Technical Director

>40 years' experience as an oil finder:

North America; Hudson Bay, Home Oil, Marathon, & Sactasco. Australia; SANTOS, Tap Oil, Bow Energy, Victoria Petroleum/Senex.

Kazakhstan; Jupiter



Lloyd Flint
CFO / Company Secretary

+25 years experience in corporate and financial services. Chartered Accountant, BAcc, FINSIA and MBA.

Numerous management positions, and corporate advisory services as a consultant to clients

Red Helium Project (Valence Resources LLC) Joint Venture Partner: Four Corners Helium LLC – fourcornersheliumllc.com

Four Corners Helium is a powerhouse of professionals with over 400 years of combined experience and expertise that are committed to finding and producing helium reservoirs.

Tim Rynott

CEO, Exploration Geologist

40 years of oil and gas experience

Has generated or endorsed discoveries with a gross net worth of almost US\$1Bn

Held leadership positions on numerous national and regional Boards, including AAPG, GCAGS, and LOGA.

Eric Cummins

Vice President, Exploration and Production

30yrs experience in exploration and as production geologist

Ex Geological Manager for Apache – instrumental in reaching goal of 150,000 BOPD in the Permian.

David McCarver

COO, Contracts/Land

+46 years experience in LNG
Ex State and Federal basins in TX and LA Gulf Coast, Ark-La-Tex, Mid-Continent, Permian, Rockies and the Gulf of Mexico

Leased over 200 drilling prospects, managed E&P programs, created JVs, raised capital and promoted industry partners.

Sabina Kraushaar

Partner, Petrophysicist, Structural Geologist

Geoscientist with expertise mapping subsurface geology utilizing Petra software.

Manages a database with >100,000 wells, 17,000 geologic tops and >10,000 digital logs.

Jake Cammack

Partner, Geochemist, Specialist in Geographic Information Systems (GIS)

Created a database with >17,000 gas-composition and helium analyses - comprises the most complete gas geochemistry dataset ever assembled for Utah, Colorado, New Mexico and Arizona.

Prospective Resource

US-Focused Pure-play Helium Explorer

Recoverable Helium (Bcf) ¹⁰	P90(1U)	P50(2U)	P10(3U)
Gross to Valence (28,046 gross acres)	8.1	12.7	17.6
Net to Valence (18,959 net acres)	5.6	8.7	11.7
Net to GGE (earning 85% of Valence)	4.7	7.4	9.9
Red Project Total	9.3	25.7	71.1
Leadville Recoverable Helium (Bcf) ⁹	P90(1U)	P50(2U)	P10(3U)
Gross to Valence (28,046 gross acres)	7.6	10.9	12.9
Net to Valence (18,959 net acres)	5.2	7.4	8.5
Net to GGE (earning 85% of Valence)	4.4	6.3	7.2
Red Project Total	7.9	20.8	57.6
McCracken Recoverable Helium (Bcf) ¹⁰	P90(1U)	P50(2U)	P10(3U)
Gross to Valence - (19,508 gross acres)	0.5	1.8	4.7
Net to Valence - (13,336 net acres)	0.4	1.3	3.2
Net to GGE (earning 85% of Valence)	0.3	1.1	2.7
Red Project Total	1.4	4.9	13.5

9. ASX announcement 8 December 2021, Sproule,

10. ASX Announcement 22 June 2023.

The Company is not aware of any new information or data that materially affects the information included in the referenced ASX announcement and confirms that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed



The estimated quantities of helium that may potentially be recovered by the application of a future development project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal is required to determine the existence of a significant quantity of potentially moveable helium.

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