

Corporate Presentation

December 7<sup>th</sup>, 2023

TSXV: PLSR



The Force in Helium



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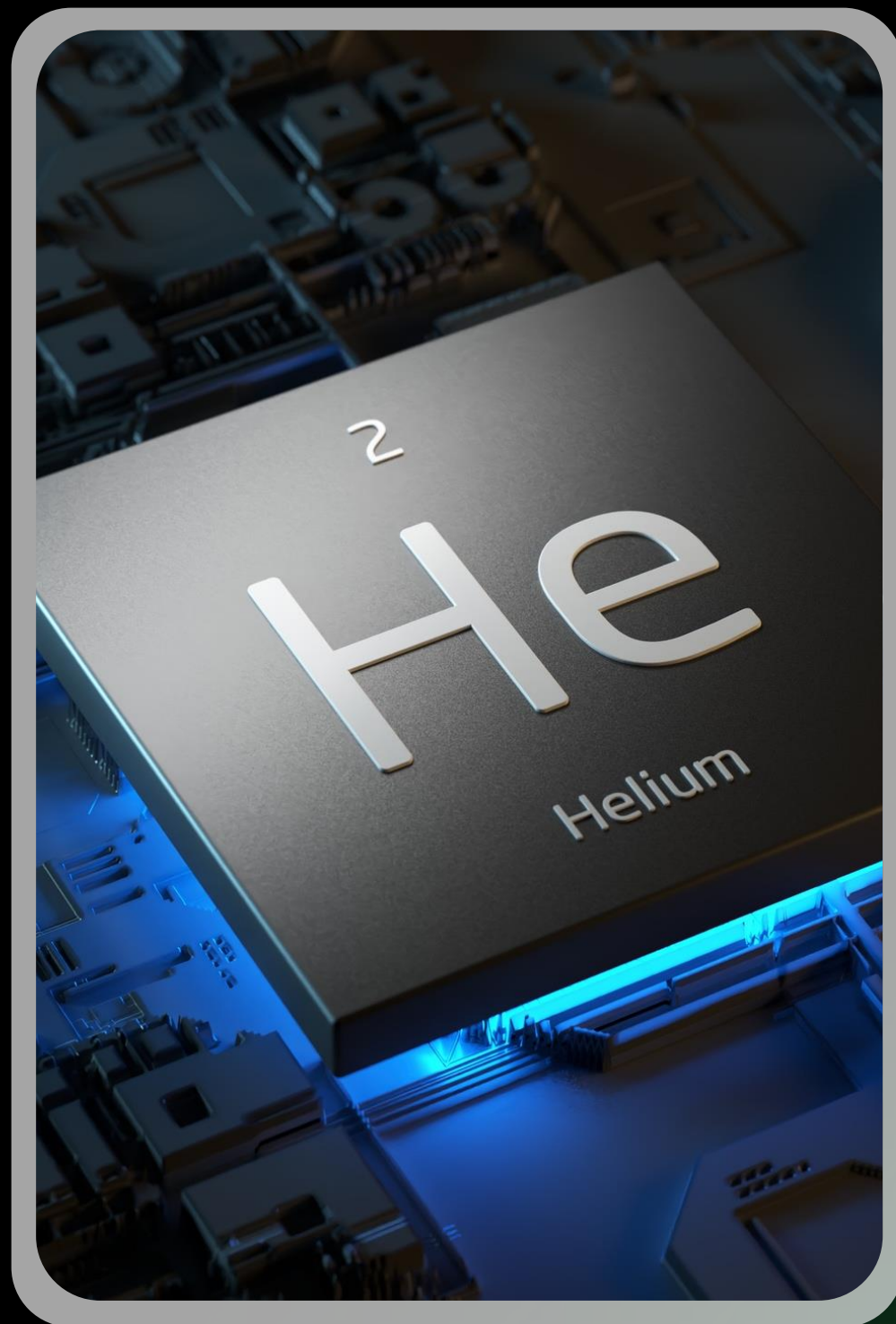
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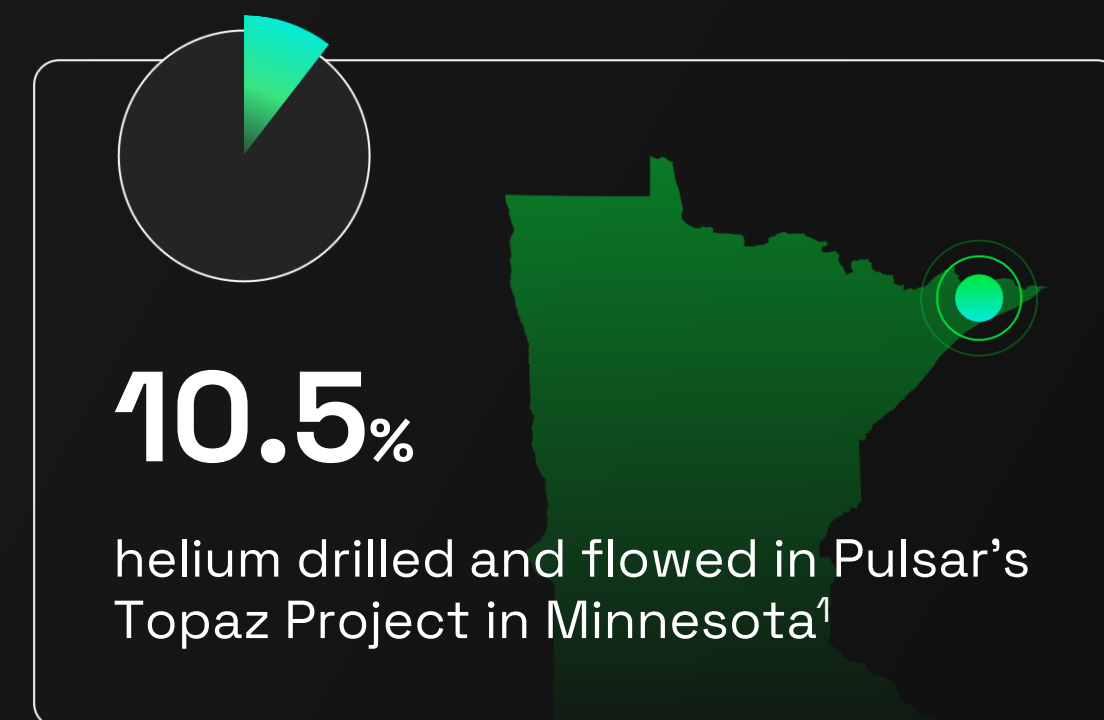
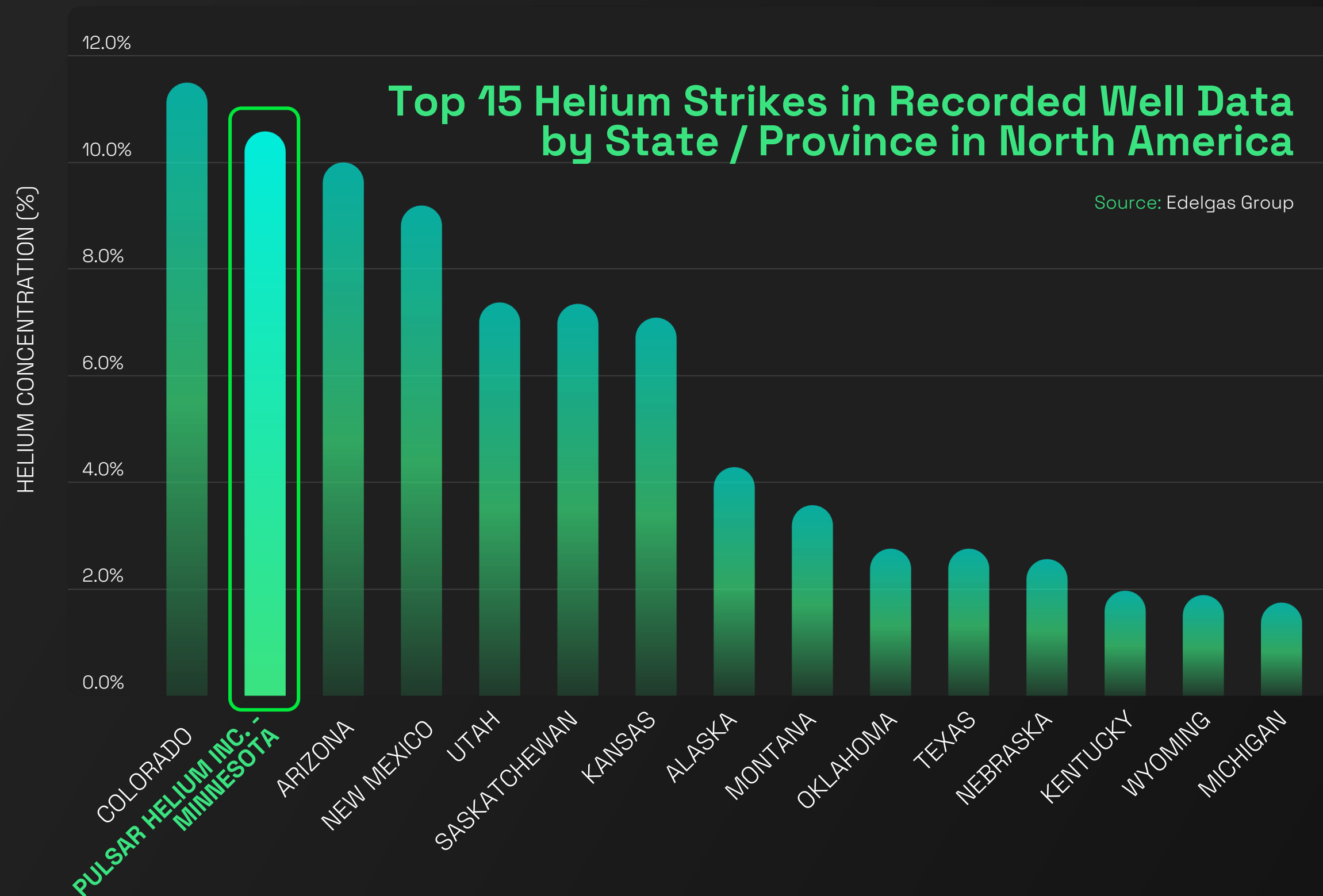


” Helium is essential for the fabrication of semiconductors, therefore all electronics from EVs to AI are reliant. For more than a decade helium demand has been throttled by supply - Pulsar exists to change that. ”

- Pulsar President & CEO, Thomas Abraham-James



# ✦ 2nd Highest Grade in North America



**>0.3%**

helium concentration is considered economically significant<sup>2</sup>

Sources: <sup>1</sup> Refer to slide 15 for analytical results  
<sup>2</sup> <https://repository.mines.edu/handle/11124/172822>

# Corporate Snapshot

## CAPITAL STRUCTURE

TSXV TICKER .....	PLSR
SHARE PRICE (TSXV CLOSE, DECEMBER 6, '23) .....	C\$0.245
ISSUED SHARE CAPITAL .....	74.1 M
WARRANTS .....	11.3 M
BASIC MARKET CAPITALIZATION .....	C\$18.2 M
CASH (JUNE 30, 2023)* .....	C\$3.1 M

\* includes cash at June 30, 2023 of C\$140,000 plus IPO proceeds of C\$3.0M

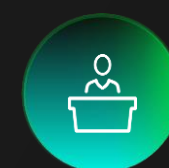
## SHAREHOLDER BASE

THOMAS ABRAHAM-JAMES (PRESIDENT & CEO) .....	16%
CAMBRIAN LIMITED (NEIL HERBERT) .....	16%
ARCHEAN PTY LTD (JOSHUA BLUETT) .....	13%
REMAINING BOARD & MANAGEMENT .....	3%
PUBLIC SHAREHOLDING FLOAT .....	52%

## NEWLY LISTED VIA IPO ON THE TSXV



Pulsar listed on the TSX Venture Exchange on August 15th, via initial public offering (IPO)



## EXPERIENCED BOARD & MANAGEMENT

### Neil Herbert Executive Chairman

- Corporate executive & accountant
- Former chairman of Helium One Global Ltd (LSE: HE1)
- 30+ years in mineral resources

### Thomas Abraham-James President & CEO

- Corporate executive and chartered geoscientist
- Co-founder & former managing director of Helium One Global Ltd (LSE: HE1)
- 17+ years in mineral resources

### Jon Ferrier Independent Director

- Corporate executive & geoscientist
- Former CEO of Gulf Keystone Petroleum Ltd (LSE: GKP)
- 35+ years in oil and gas

### Doris Meyer Independent Director

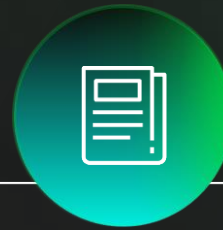
- Financial professional & corporate executive
- 37+ years in mineral resources

### Stu Crow Independent Director

- Corporate executive & financier
- Chairman of Lake Resources NL (ASX: LKE)
- 30+ years in mineral resources

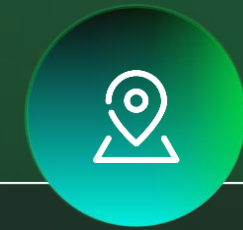
# ✦ Competitive Advantages

## HIGH-IMPACT, NEAR-TERM NEWS FLOW



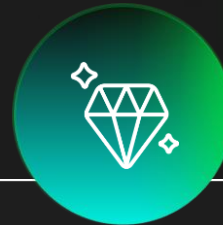
- ✦ Appraisal well to be drilled at the Topaz Project in Q1 2024
- ✦ Seismic survey completed

## LOCATION, LOCATION, LOCATION



- ✦ The Topaz project is in the USA, the world's largest consumer of helium
- ✦ No exports!

## HIGH-VALUE PRODUCT IN SHORT SUPPLY



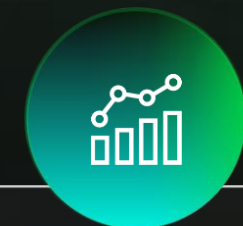
- ✦ Essential for semiconductor fabrication, space rocket launches, MRI scanners, and beyond

## WIDELY EXPERIENCED TEAM

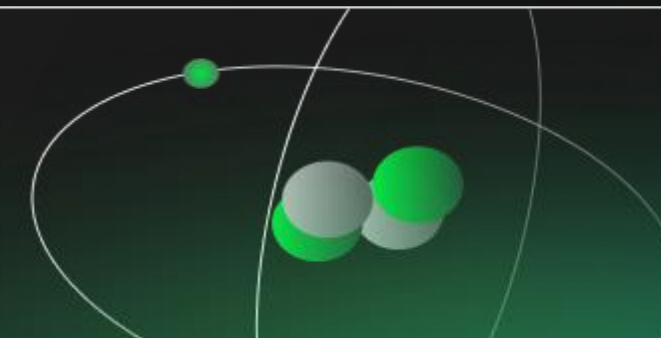


- ✦ The CEO, chairman and technical manager have been in the helium industry since 2014

## HELIUM IS THE PRIMARY ECONOMIC DRIVER



- ✦ ~95% of the world's helium is produced as a byproduct of hydrocarbon production<sup>1</sup>
- ✦ We focus only on projects where helium is the **primary** economic driver



# ★ Pricing



>100x

Helium is valued at over 100x the natural gas price

638%

price increase for Grade-A gaseous helium since 2000 (data from the United States Geological Survey (USGS))<sup>1</sup>

### Air Products <sup>3</sup>

major 5-year off-take with NASA in 2022, valuing the liquid helium and ancillaries at ~US\$1,100 per mcf

### Prices in excess of US\$1,000 per mcf

in the past 12 months data has shown several liquid helium shipments being traded globally for >US\$1,000 per mcf<sup>4</sup>

### Royal Helium Ltd. <sup>2</sup>

(TSXV: RHC): off-take with a private North American company valued at US\$625 per mcf of Grade-A gaseous helium (announced in 2023)



Sources: (1) <https://www.usgs.gov/centers/national-minerals-information-center/helium-statistics-and-information>  
(2) <https://royalheliumltd.com/investors/corporate-presentation/>  
(3) <https://www.nasa.gov/press-release/nasa-awards-contract-for-liquid-helium-acquisition-at-kennedy>  
The 5-year contract includes unit prices for the helium commodity per year (including transportation expenses), the lease of six helium pumps, and other ancillary services.  
(4) Edelgas Group

# ✦ The Helium Market

8.1 bcf

(2030 EST.)

6.6 bcf

(2025 EST.)

6.1 bcf

(2023)

## Forecast Total Market

2030

8.1B

Cubic Feet

\$750

Per mcf

~\$6.1B

## Forecast Total Market

2025

6.6B

Cubic Feet

\$750

Per mcf

~\$5.0B

## Total Market

2023

6.1B

Cubic Feet

\$750

Per mcf

~\$4.6B

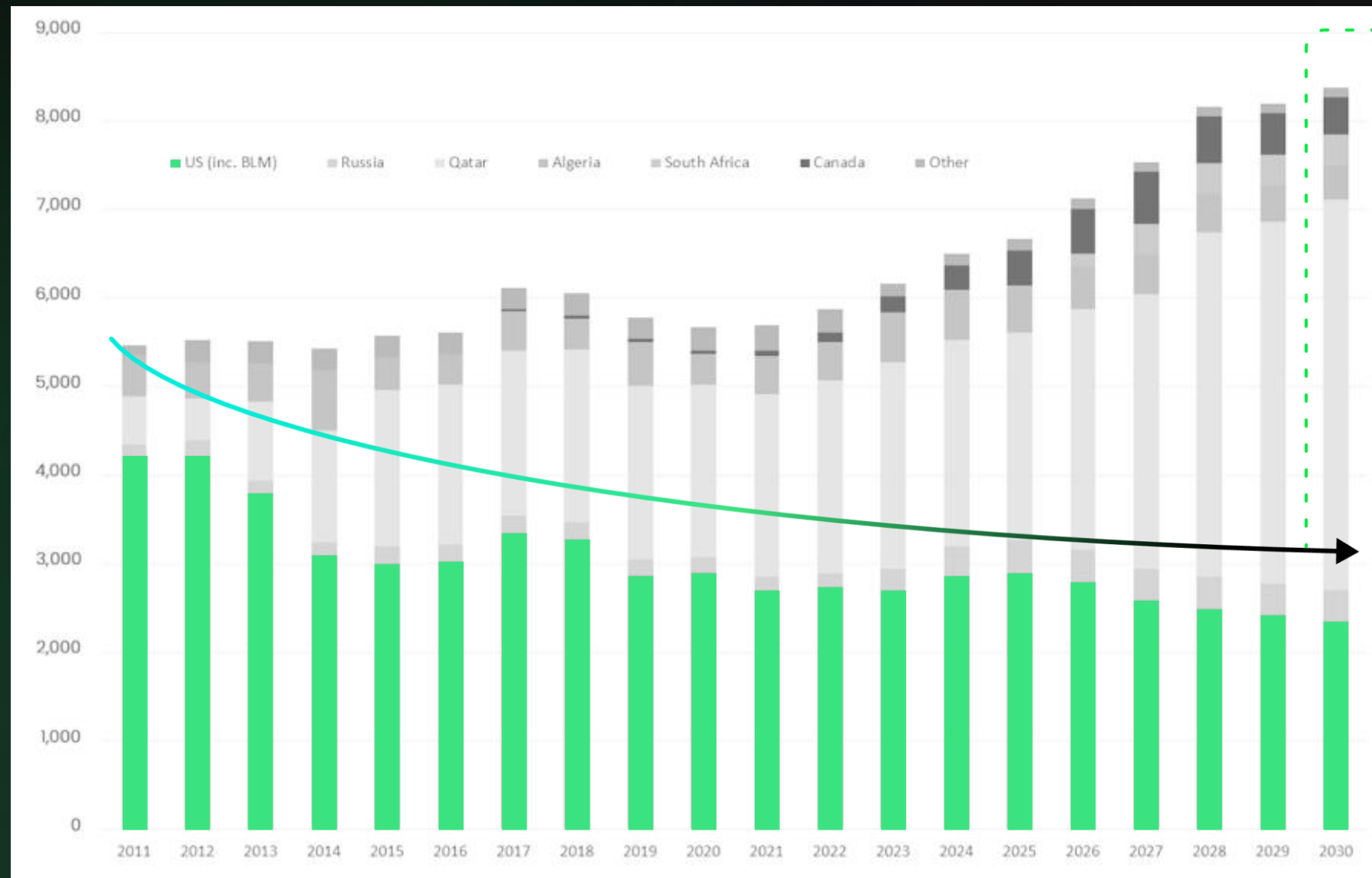
Source: Edelgas Group

Disclaimer: Subject to market conditions, risks, and uncertainties. No assurances can be made that such forward-looking market information will occur or prove to be correct.



# Supply - USA in Decline

## Worldwide Helium Production by Supply Source to 2030 (million ft<sup>3</sup>/year)



Source: Edelgas Group

Disclaimer: Subject to market conditions, risks, and uncertainties. No assurances can be made that such forward-looking market information will occur or prove to be correct.



USA PRODUCTION IS IN SIGNIFICANT DECLINE

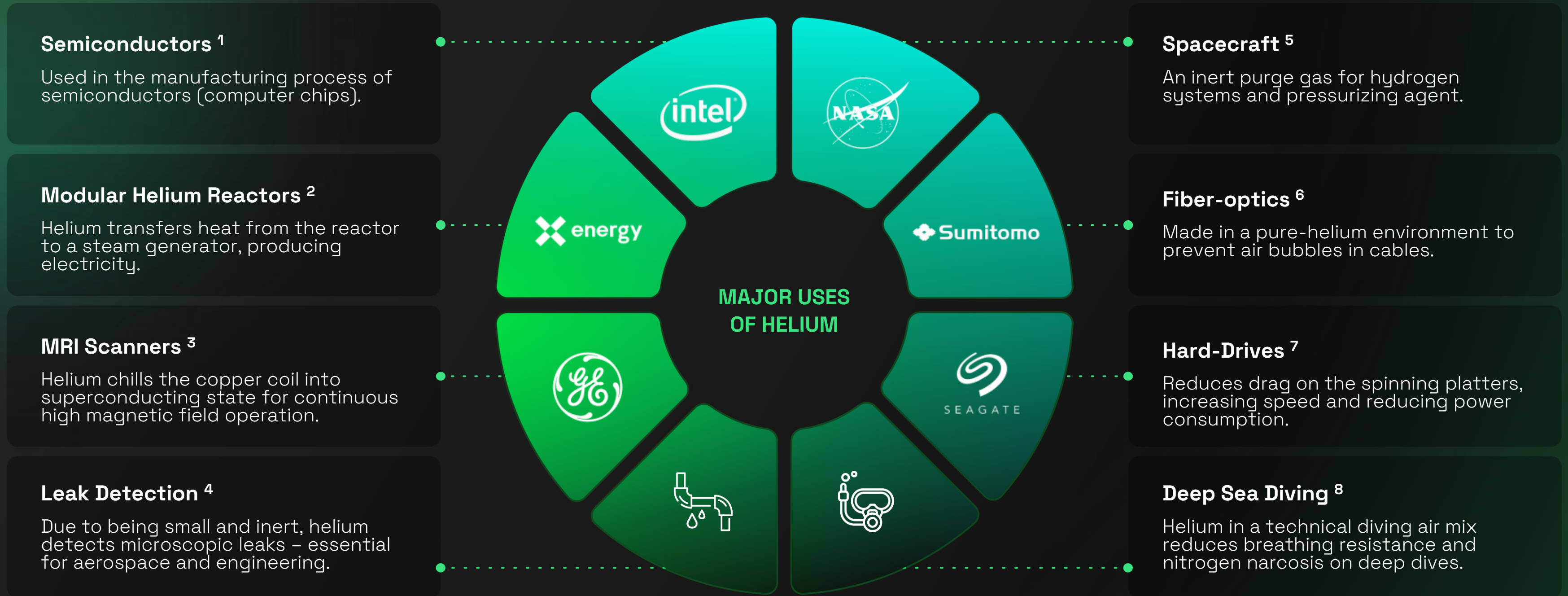
- ✦ Exxon Mobil Corporation (USA) stands as the most reliable source.
- ✦ The USA Federal Reserve is decreasing rapidly.
- ✦ Algeria is influenced by Europe's varying LNG demand.
- ✦ Qatar is overshadowed by constant geopolitical risk.
- ✦ Both Russian and South African supply are displaced from demand.



Reliability and sustainability of any supply outweigh price and volume.

# Uses

Helium is critical for electronics (semiconductors), the internet (fiber-optics) and other everyday items that we rely upon.



**Sources:** (1) <https://www.instituteeforenergyresearch.org/fossil-fuels/helium-is-instrumental-in-semiconductor-manufacturing/>. (2) <https://www.energy.gov/ne/articles/x-energy-developing-pebble-bed-reactor-they-say-cant-melt-down>  
(3) <https://www.europhysicsnews.org/articles/epn/pdf/2012/04/epn2012434p26.pdf>. (4) <https://www.tqc.co.uk/our-services/leak-testing/helium/guide-to-helium-leak-testing/>  
(5) <https://www2.jpl.nasa.gov/basics/cassini/he.html#:~:text=Helium,valves%20in%20the%20propulsion%20system>. (6) <https://summitsourcefunding.com/helium-used-for-internet-access-fiber-optics/>  
(7) <https://blog.westerndigital.com/race-to-seal-helium/> (8) <https://www.envinsci.co.uk/use-helium-deep-sea-diving/#:~:text=Benefits%20of%20helium%20for%20divers&text=In%20some%20dives%2C%20both%20nitrogen,surface%2C%20without%20suffering%20decompression%20sickness>



# ✦ The Portfolio



## First mover in two new primary helium regions

### Topaz, Minnesota, USA

- ✦ Drilled and flowed gas with a concentration of 10.5% helium<sup>1</sup>, the 2<sup>nd</sup> highest in North America
- ✦ The USA is the largest market for helium
- ✦ Appraisal well scheduled for Q1 2024
- ✦ Exclusive leases secured for up to 4,181 acres of land<sup>2</sup>, including the original discovery site

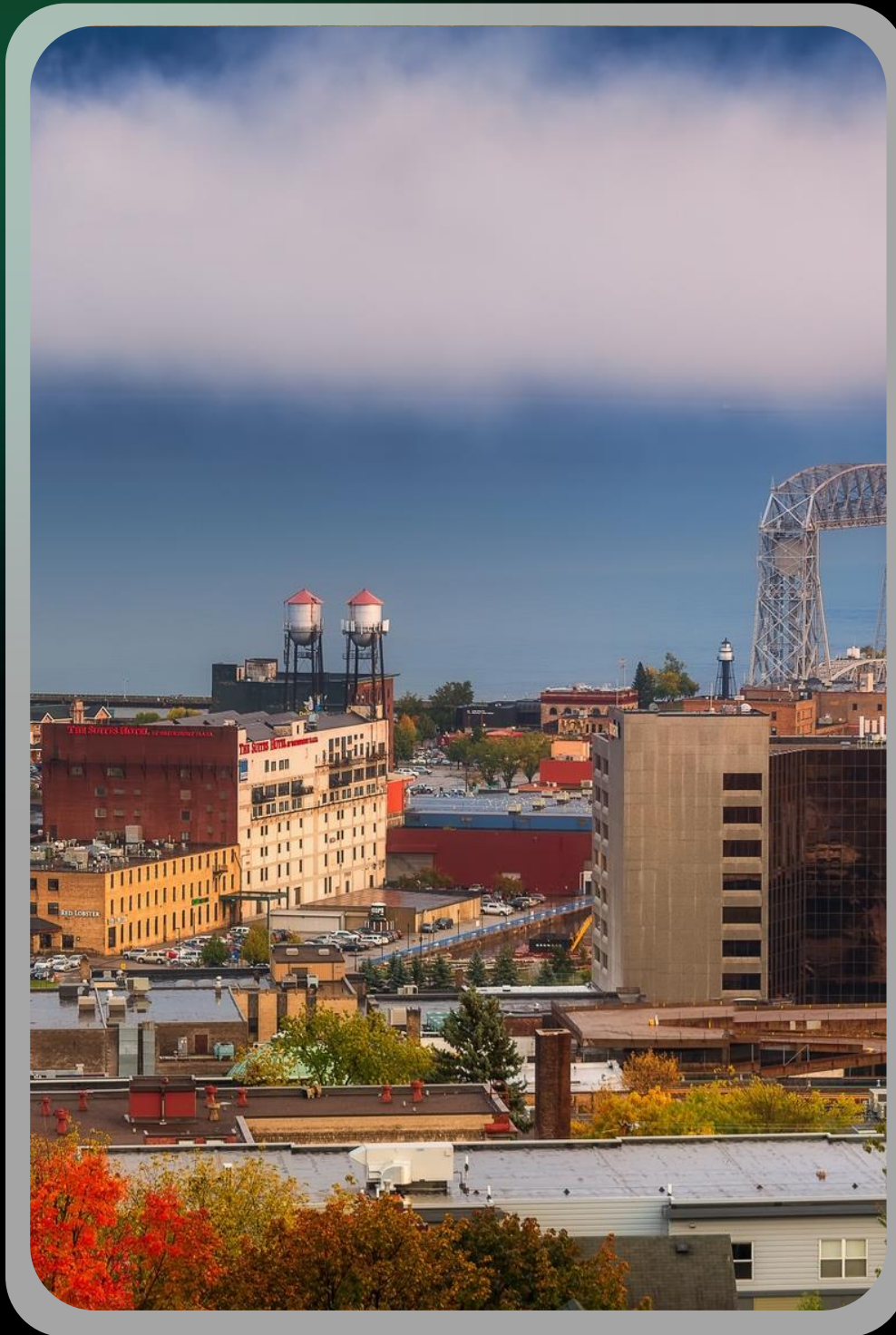
### Tunu, Greenland

- ✦ Large land position of 2,772 km<sup>2</sup> (~685,000 acres)
- ✦ A European Union (EU) overseas territory and helium is on the European Commission's list of critical raw materials
- ✦ Helium concentration at least 0.8%
- ✦ The only helium explorer in Greenland

Sources: (1) Refer to slide 15 for analytical details  
(2) Refer to slide 16 for lease details



# ✦ Topaz, Minnesota



Duluth, Minnesota



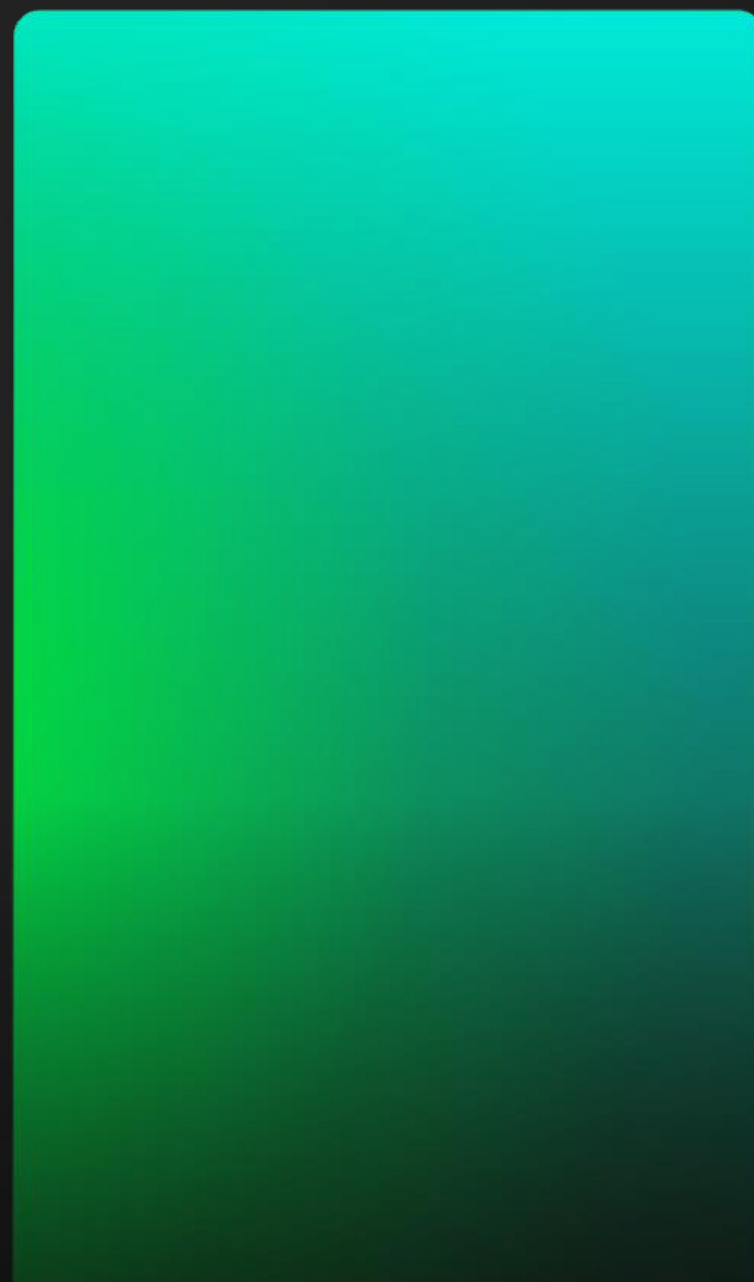
Location of the helium discovery



SEISMIC SURVEY



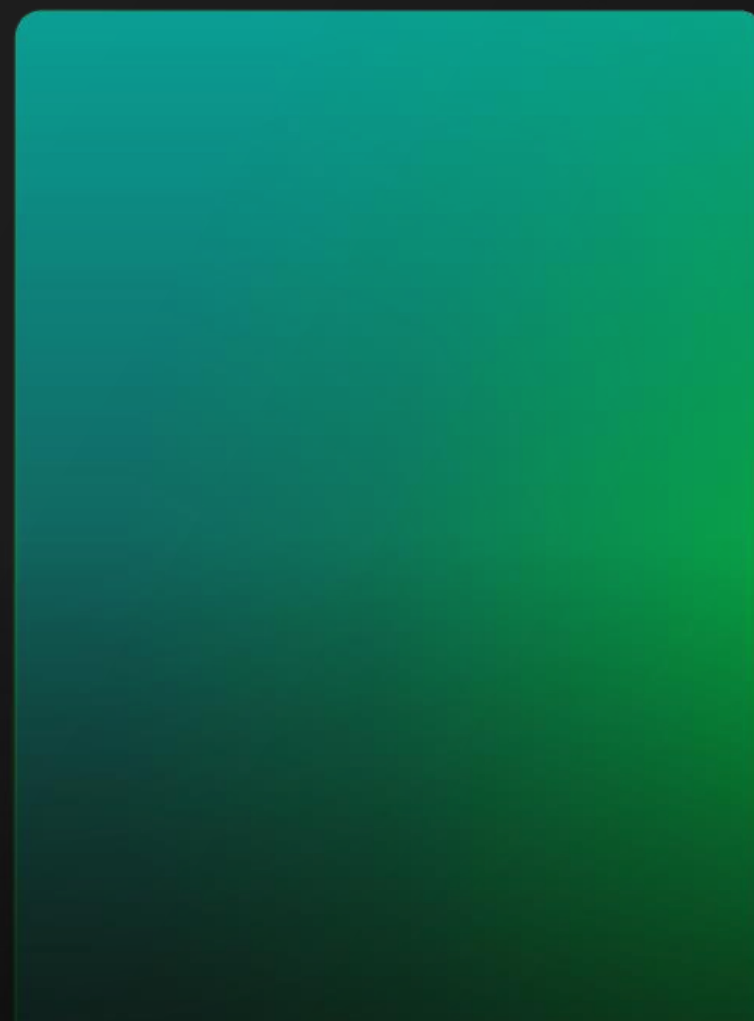
Processed data in December



NEW LEASE APPLICATIONS



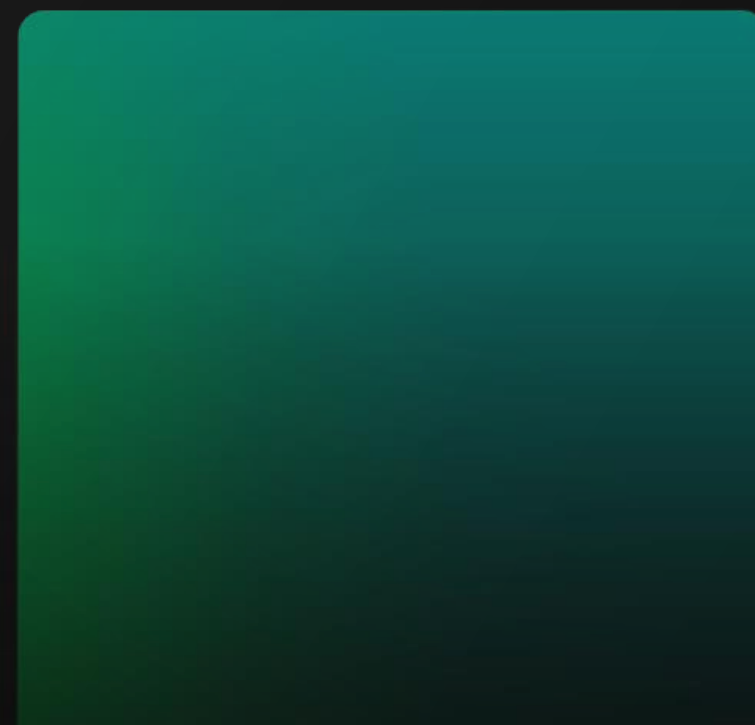
Lodged with private, State  
and Federal mineral right  
owners



APPRAISAL WELL



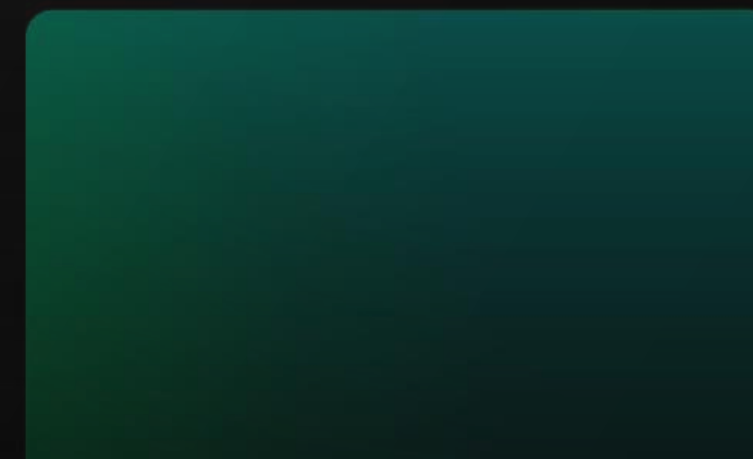
To be drilled in Q1 2024



RESOURCE / RESERVE  
CALCULATION



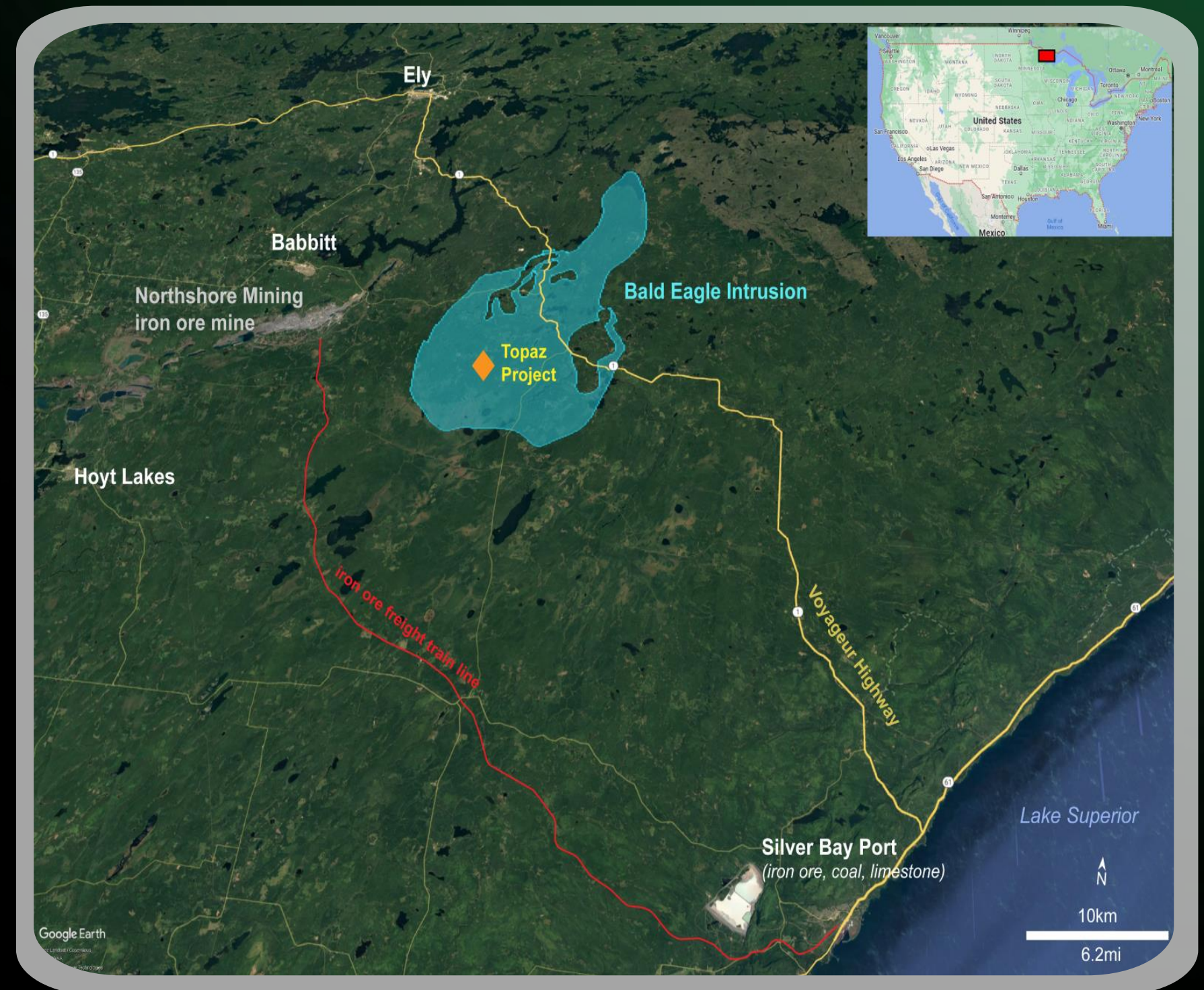
To commence immediately  
post-appraisal well  
completion





# ✦ Location, location, location

- ✦ Located in Lake County, northern Minnesota.
- ✦ Within 8 kilometers of the Northshore Mining iron ore mine, and the towns of Babbitt and Ely. Natural resources are the backbone of the local economy.
- ✦ Next to the Voyageur Highway that leads to Duluth (125 kilometers) and Minneapolis (380 kilometers).
- ✦ Location is everything as liquid helium is notoriously difficult to transport long distances. Modern 40' helium ISO containers can hold at 90% capacity for 45 days before loss of product occurs<sup>1</sup>.
- ✦ The Topaz project is within 2 days drive of anywhere in the contiguous United States. No bottlenecks at ports, no customs clearance, minimal opportunity for product loss – reliable.



Topaz location map

Source: (1) [https://indico.cern.ch/event/90787/sessions/113901/attachments/1093425/1559937/Helium\\_Storage\\_and\\_Transport.pdf](https://indico.cern.ch/event/90787/sessions/113901/attachments/1093425/1559937/Helium_Storage_and_Transport.pdf)



# ✦ The Discovery

## Helium Discovery at Topaz

- ✦ In 2011, a drill-hole targeting nickel intersected gas at 1,778 feet (542 meters)
- ✦ Gas flowed for 4 days with no apparent reduction in pressure
- ✦ Samples of the gas were sent to:
  - The University of Toronto, that reported a concentration of 10.5% helium, and
  - Pace Analytical also reported a consistent concentration of 10.5% helium after correction for air contamination
- ✦ Gas analysis measured CO<sub>2</sub>, N<sub>2</sub> and helium as the main constituents

Topaz is not an isolated helium occurrence in Minnesota. Review of publicly available data has identified a well that measured 2.0% helium located 160km southwest of Topaz, and numerous records of “non-flammable” gas having been encountered but not analyzed for helium<sup>1</sup>.



Drill core from the discovery drill-hole

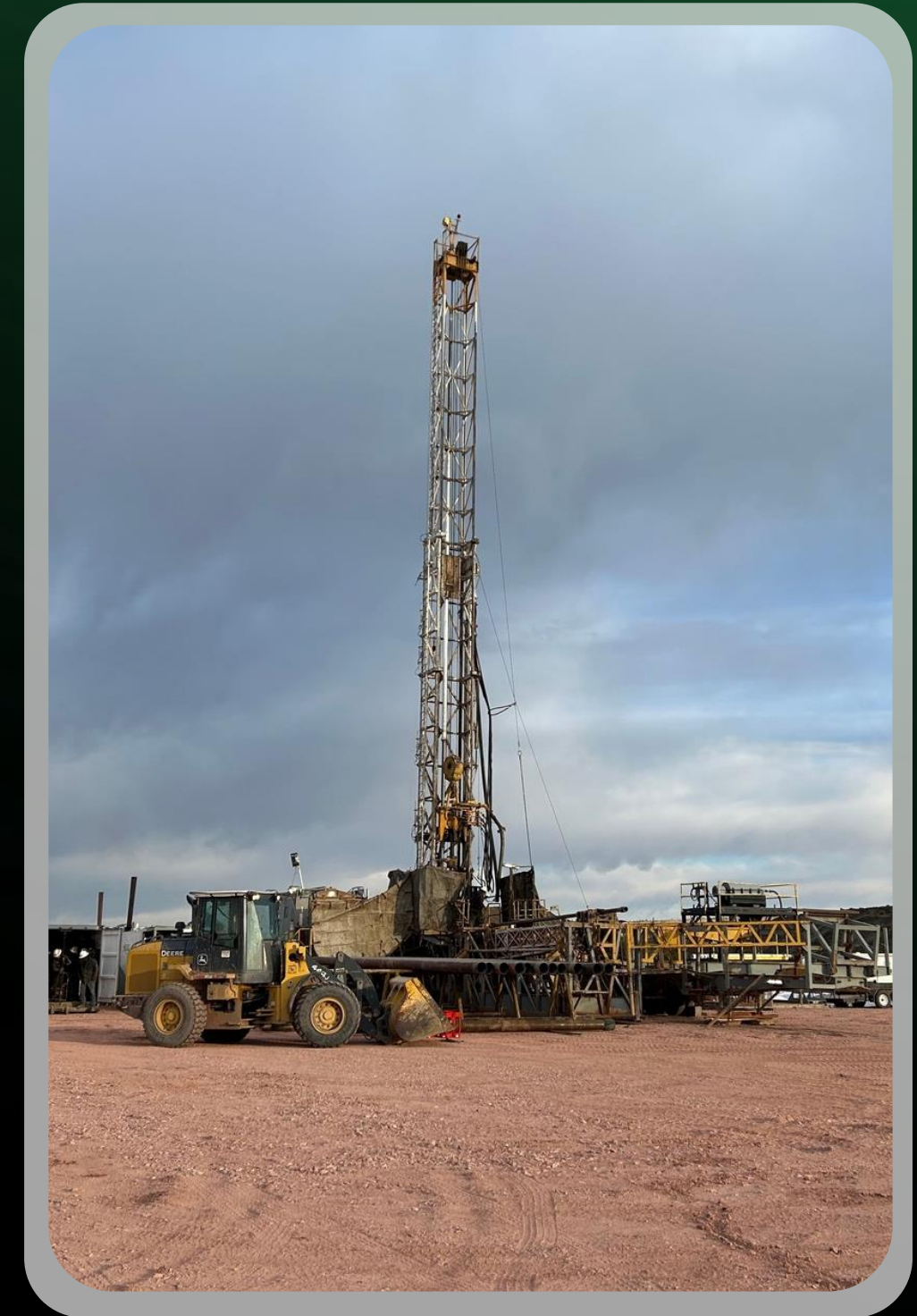
# ✦ Drilling & Mineral Rights

## Appraisal Well Preparation

- ✦ Appraisal well scheduled for Q1 2024, to be drilled within 20 meters of the discovery well
- ✦ All necessary permits have been granted
- ✦ Preliminary access works have been completed
- ✦ Rig inspections have begun

## Mineral Rights

- ✦ Exclusive private leases have been issued over the discovery well and immediate areas of interest, a total of 2,089 net acres
- ✦ An exclusive option for additional private leases is in place for an additional 2,092 net acres
- ✦ Surface rights are privately held
- ✦ Applications have been lodged for additional private, Federal and State mineral rights



A rig that was inspected in March 2023

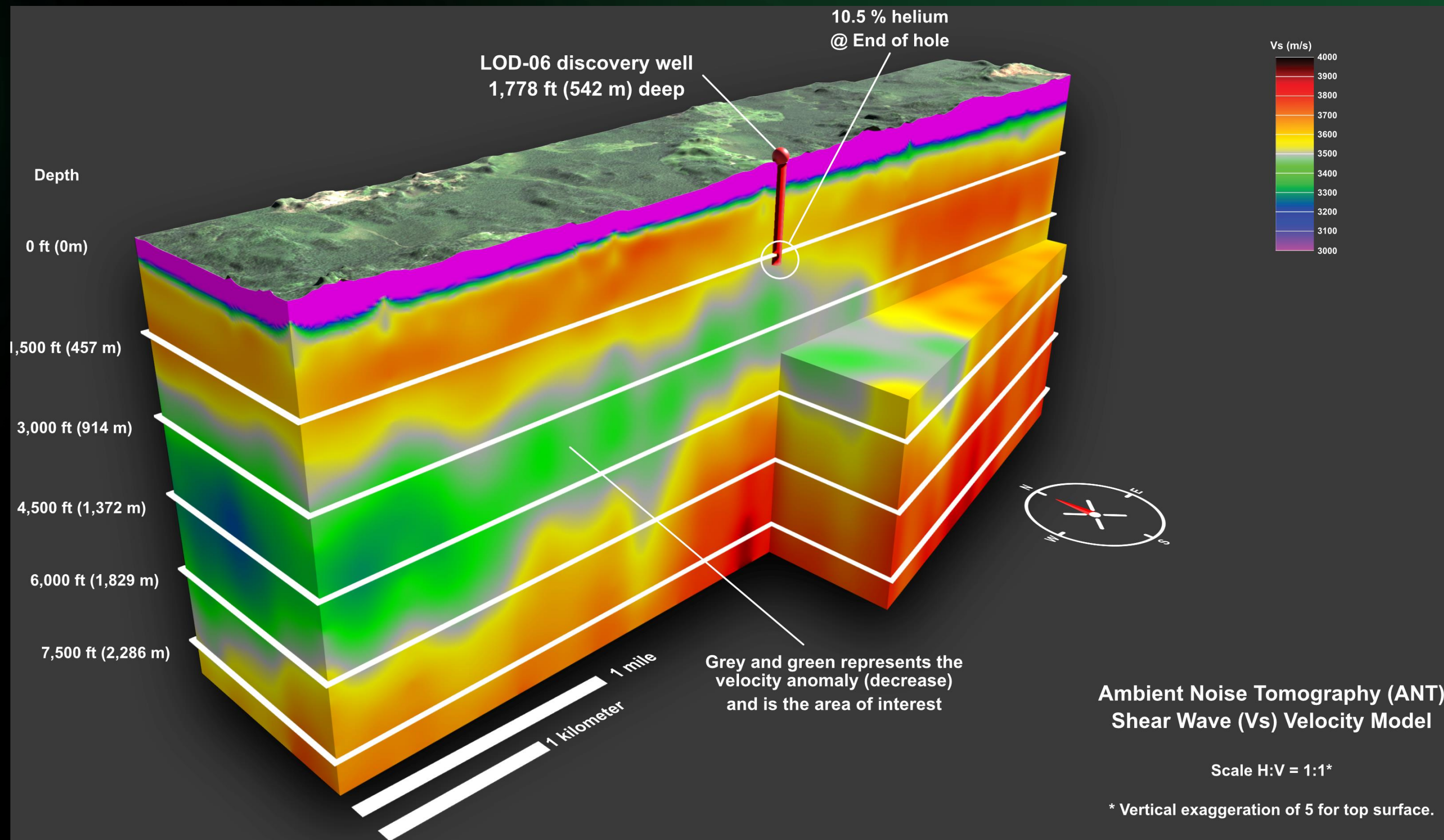


# ✦ Seismic Survey – cross section

Passive seismic survey  
processing complete

A significant and distinct shear wave velocity anomaly (velocity decrease) has been identified at the same depth (1,778ft / 542 metres) where gas containing 10.5% helium was encountered in the LOD-6 discovery well. This is illustrated in the grey and green colors.

The rock type above the helium is impermeable igneous rock which acts as an excellent sealing unit.



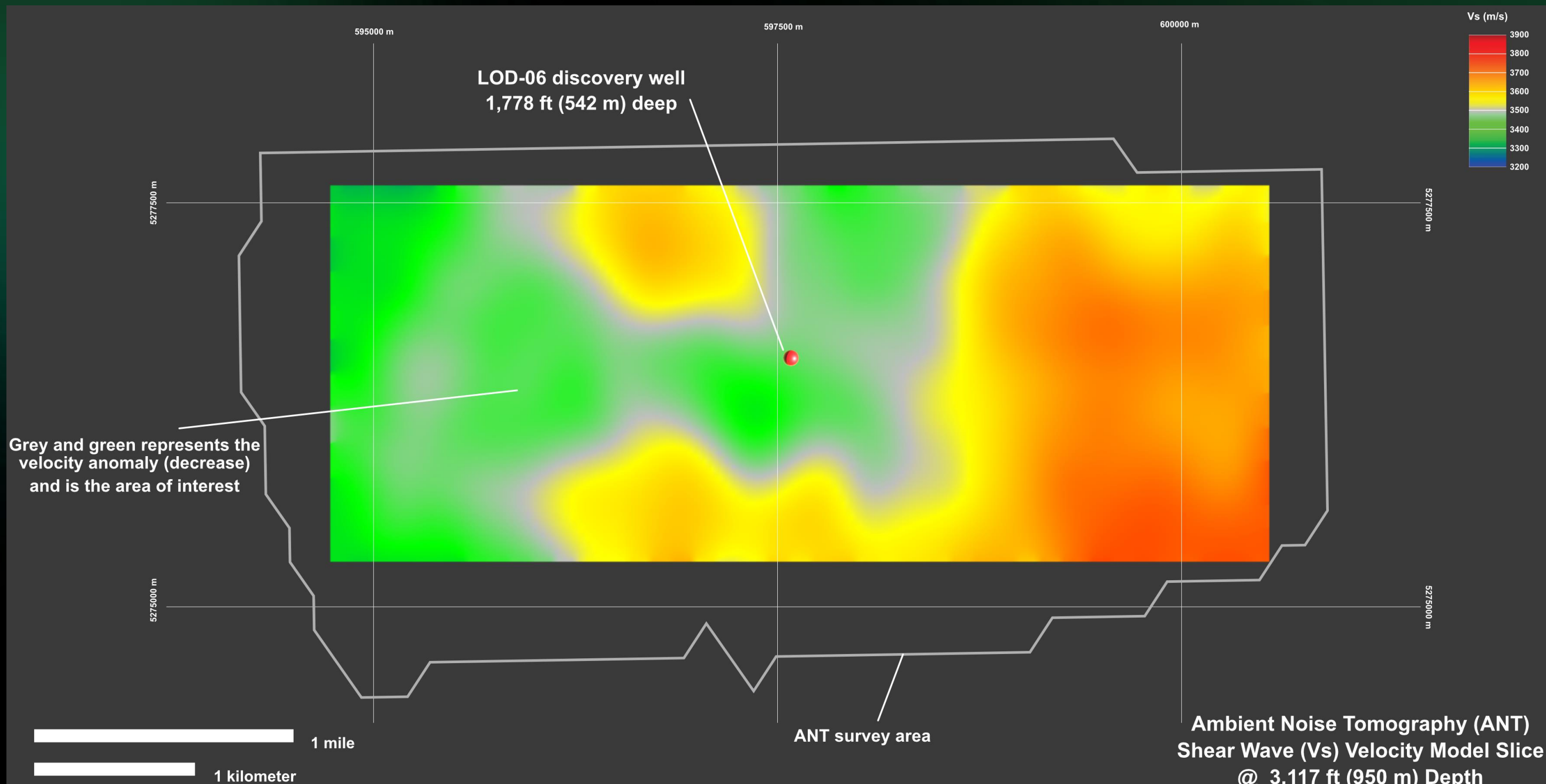


# ✦ Seismic Survey – plan view (950m depth slice)

This image shows a depth slice of the shear wave velocity anomaly at 3,120ft (951m) depth. This is illustrated in grey and green colors.

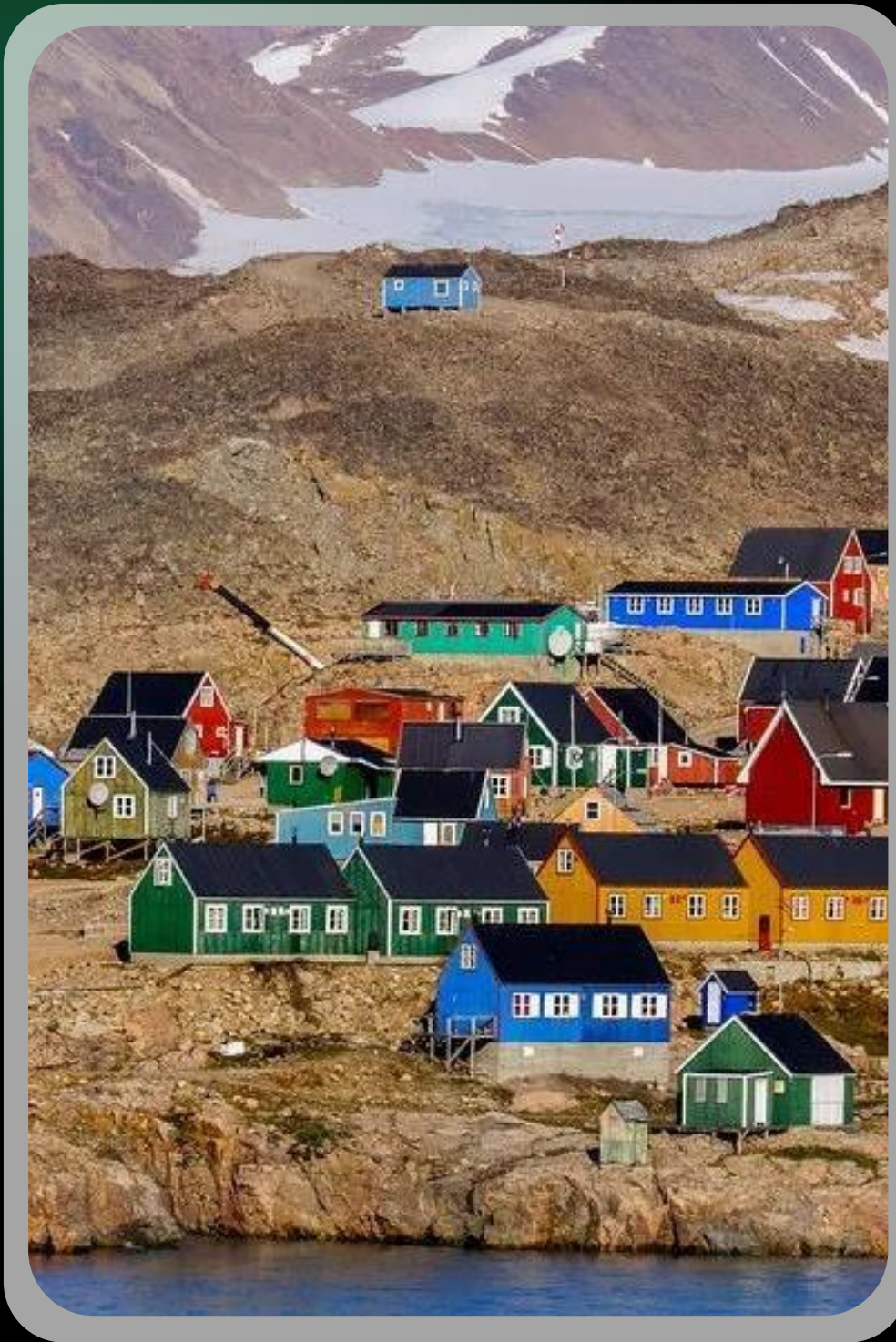
The shear wave velocity anomaly extends below the base of the discovery well LOD-6 and is interpreted to represent the lithology which hosts the helium-bearing gas reservoir(s).

The velocity anomaly persists to a depth of approximately 3,750ft (1,143 metres), giving it a vertical thickness of approximately 2,000ft (610 metres) and covers an aerial extent of ~7 square kilometres. It is open to the north and the west.

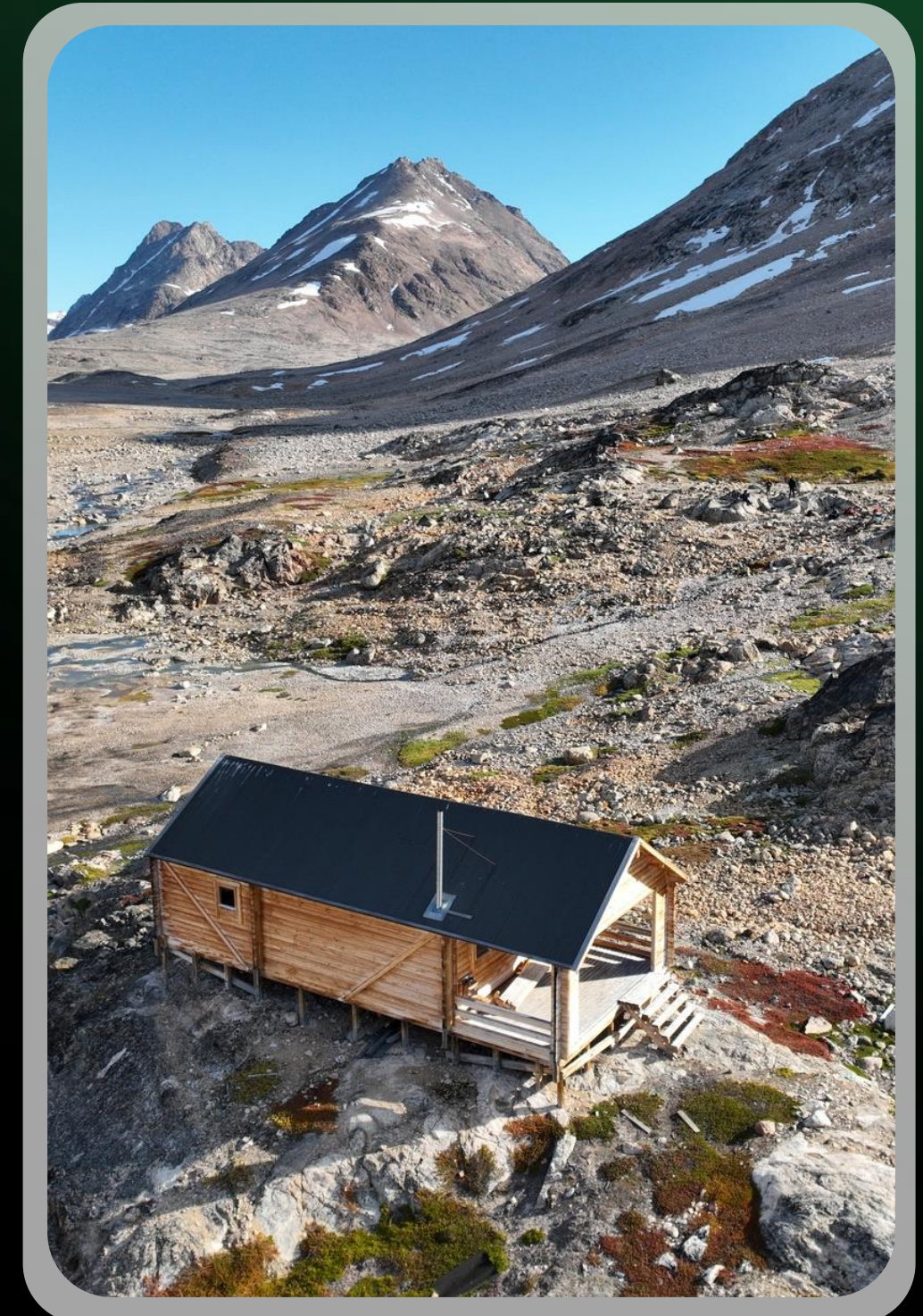




# ✦ Tunu, Greenland



Ittoqqortoormiit, Greenland



2022 sample site



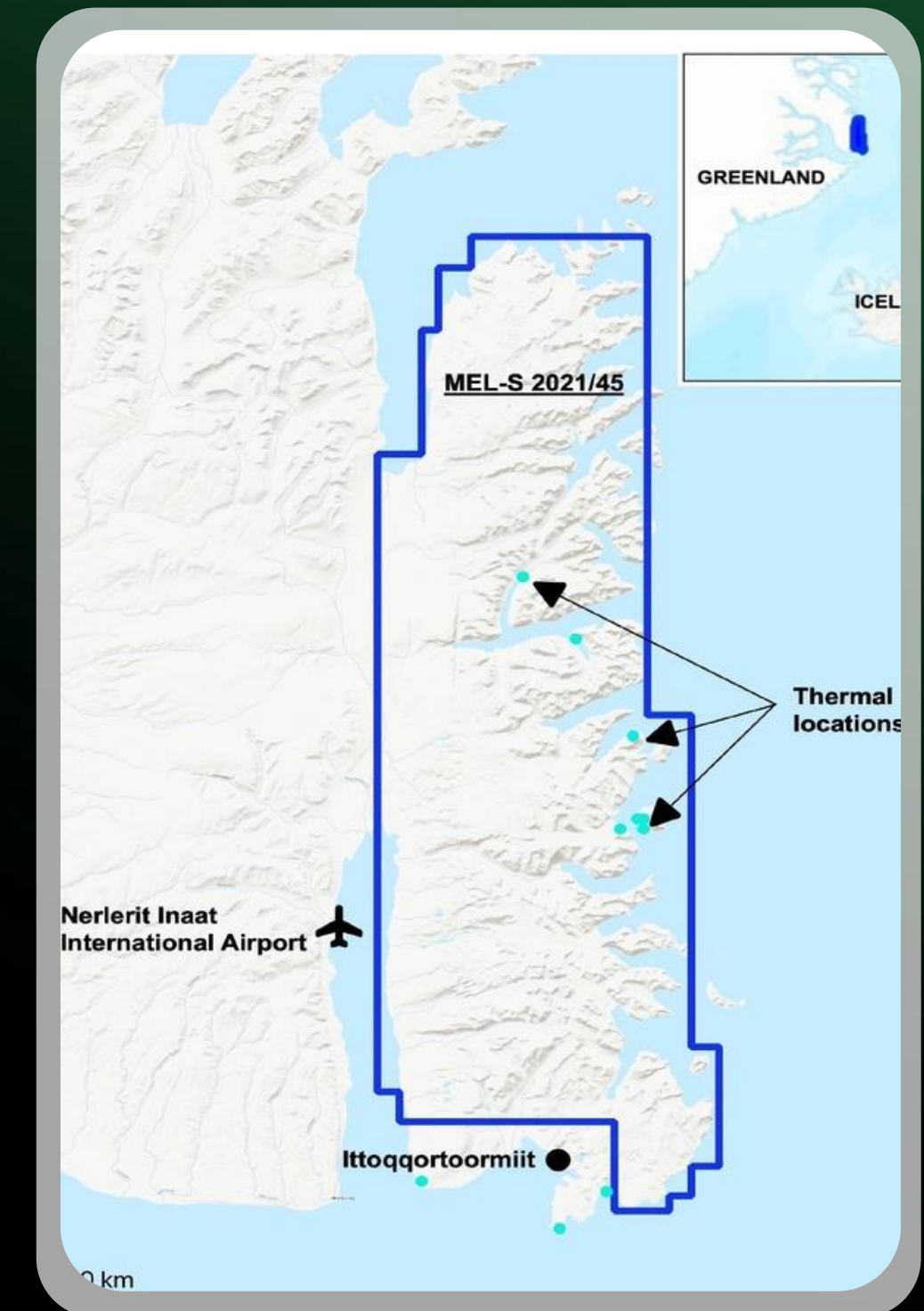
# Overview

## Overview

- ✦ Helium is on the European Commission's list of critical raw materials<sup>1</sup>
- ✦ East coast of Greenland, Europe facing
- ✦ Competent Person's Report written by Sproule International Limited (2022) & exploration potential report written by SRK Exploration Services Ltd. (2023)
- ✦ Helium concentrations of up to 0.8% from hot spring sampling<sup>2</sup>
- ✦ Close to the EU market:
  - Shipping to Aarhus, Denmark = ~4 days\*

## Licence Terms

- ✦ A total licence area of 2,772km<sup>2</sup>
- ✦ Exclusive rights to all mineral resources (including helium and hydrogen), except hydrocarbons and radioactive elements
- ✦ The first mineral licence in Greenland to be granted rights for helium and hydrogen



The Tunu licence area

Sources: (1) [https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials\\_en](https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials_en)

(2) Analyses conducted by Woods Hole Oceanographic Institute & the University of New Mexico

\* Distance is ~2,500 kilometers, and a container vessel averages 29.6km/hr. Therefore 2,500 / 29.6 = 84.5 hours



# ✦ Field Work

## Proposed Field Activities

- ✦ Ambient Noise Tomography (ANT) seismic survey over helium spring localities
- ✦ Additional hot spring surface seep sampling
- ✦ Resource calculation
- ✦ Assess geothermal energy potential with partners in Iceland

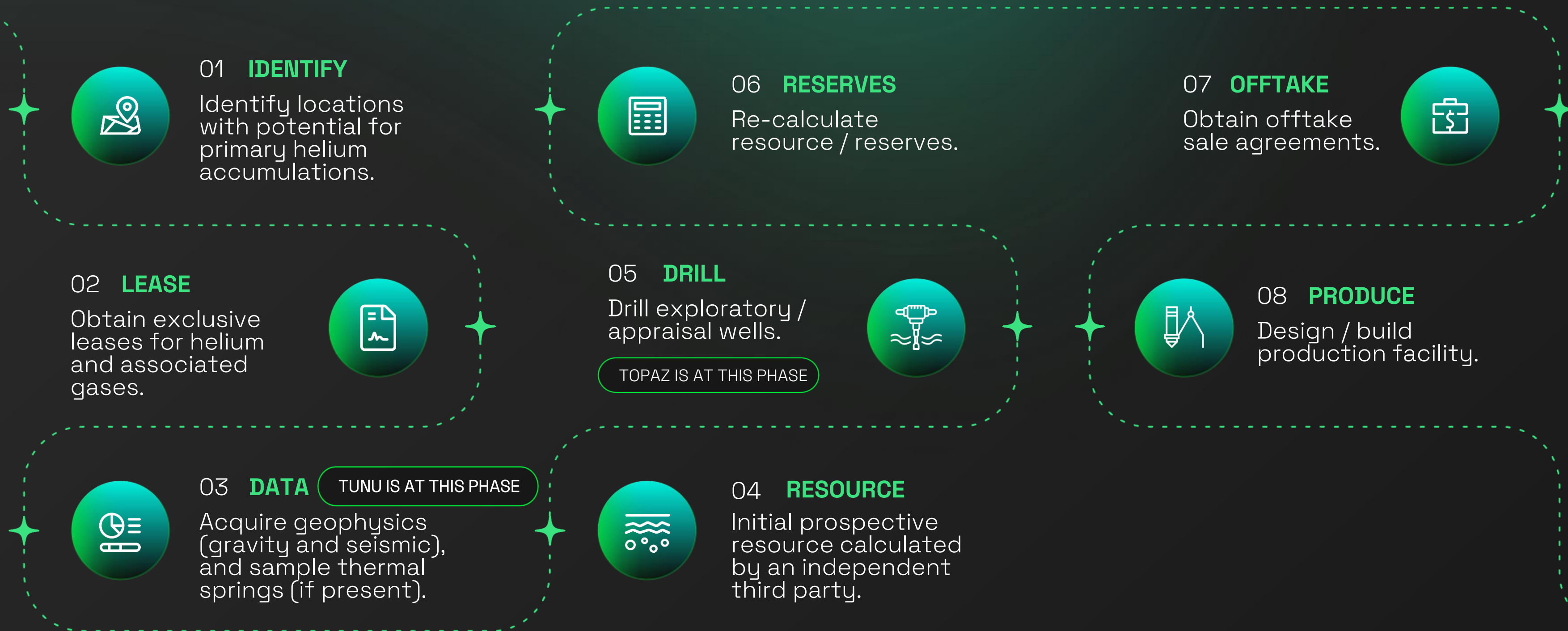
## Summary

- ✦ The results to date justify the theory that East Greenland has the required geology for an active primary helium system
- ✦ Economically viable grades of helium are considered by industry to be 0.3% or greater<sup>1</sup>
- ✦ Only a small fraction of seeps have been sampled



2022 hot spring sampling

# ✦ Roadmap to Success





# ✦ ESG Commitment

Primary helium not associated with hydrocarbon production is a significant opportunity to reduce the carbon footprint of a commodity.

Pulsar is committed to being a positive addition to the communities we operate. Applying the highest environmental standards, transparency via consistent dialogue and local job creation.

We have also commenced:

## #PulsarScholars

Each quarter, applications are open for the award of a financial bursary to final-year STEM students. Their project must be innovative and align with Pulsar's values of reducing reliance on hydrocarbons,

## #PulsarIgnite

Each month we highlight an industry that utilises helium and give away experiences for lucky participants. Recently, winners attended the London Formula E race, and visited the UK's largest offshore windfarm. Both industries using helium for their manufacturing.

Pulsar is a proud partner with the Envision Racing Formula E team. The only certified carbon neutral team on the grid, and the most successful – winning the 2023 Championship.



# ✦ Contact



**Connect today and join  
our vibrant community  
of investors!**



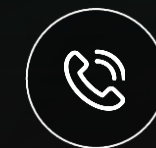
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<https://pulsarhelium.com>

#PULSARHELIUM

#PULSARSCHOLARS

#PULSARIGNITE





# Glossary & Units

Term	Description
Air contamination	Contamination of atmospheric air within a sample
Appraisal well	Exploration well drilled to establish the extent and size of a helium deposit that has already been discovered by a wildcat well
bcf	Billion cubic feet
Concentration	For a gas mixture, concentration refers to the number of gas particles (percent) of a particular type that exists in the mixture
Grade-A	Means a grade that is 99.995 percent pure helium, or better by volume
ISO container	An intermodular container, also referred to as a shipping container
Lease	An agreement between a mineral owner (lessor) and a mineral right holder (lessee) permitting the lessee to explore, drill and produce helium and associated gases from the tract of property. Typically, the lease provides that lessee will pay a Royalty to the lessor. Also referred to as a "mineral lease"
LNG	Liquified Natural Gas
mcf	Thousand cubic feet
Mineral right	The legal ownership rights to underground mineral resources
Net acre	The minerals in a tract of land may be owned by one or more owners. Each owner may lease its respective percentage share of the minerals. The "net acres" refers to the lessor's percentage share of the gross acres
Reserve	A subcategory of resources, where gas deposits are regarded as technically and economically feasible to extract from a geological formation
Resource	Gas deposits that have been considered to be physically present in a geological formation using a method of exploration
Royalty	A percentage share of production, or the value derived from that production, paid from a producing well
Surface right	The legal ownership rights to land or property