



MOSMAN OIL AND GAS  
LIMITED

AIM: MSMN

**SEAAOC  
CONFERENCE**  
**Darwin**  
**Northern Territory**  
**Australia**

OCTOBER 2021



Falcon-1 production equipment



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## About Mosman

### *Mosman Oil and Gas is an Australian Company*

*shares traded on AIM market in London (AIM:MSMN)*

*The strategic objective is to acquire and operate opportunities which provide operating cash flow and have development upside, together with exploration in areas with high potential.*

#### **Business Model**

- Conventional Oil and Gas Exploration, Development and Production
- Focus on Production and re-development assets in the USA
- Exploration for Hydrocarbon, helium & hydrogen in Central Australia

#### **Progress**

- Acquisitions and 100% drilling success has delivered strong production growth in USA
- Exploration in Australia continues with positive results from a recent gravity survey and basement modelling study described in this presentation





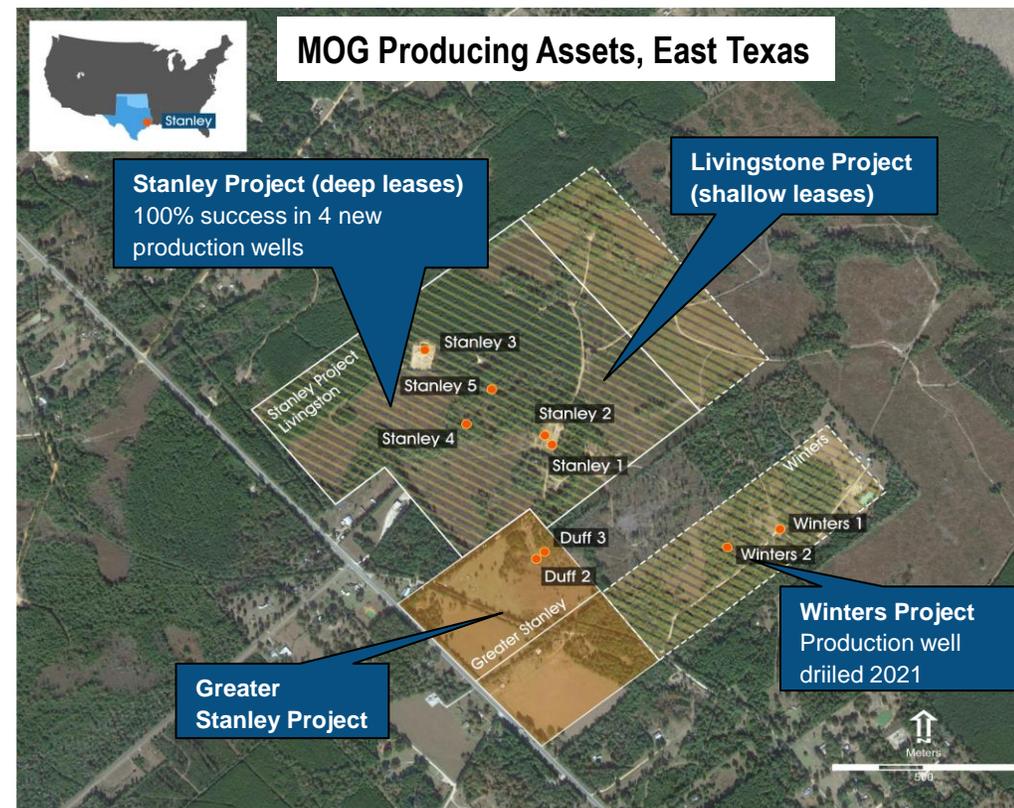
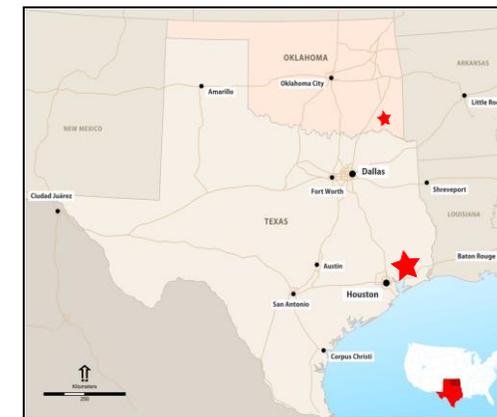
# Mosman holds interests in 5 producing and 2 undeveloped oil assets in Texas

## Current USA Projects



PRODUCING		
Project	Location	Approx Working Interest
Falcon (Falcon-1 well)	Texas	75%
Stanley (various wells)	Texas	34.85% to 38.5%
Livingston	Texas	20%
Winters	Texas	29% Winters-1 23% Winters-2
Greater Stanley	Texas	40%
Arkoma Stacked Pay	Oklahoma	27% (held for sale)

UNDEVELOPED		
Project	Location	Approx Working Interest
Galaxie	Texas	85%
Cinnabar	Texas	100% (85% after JV)



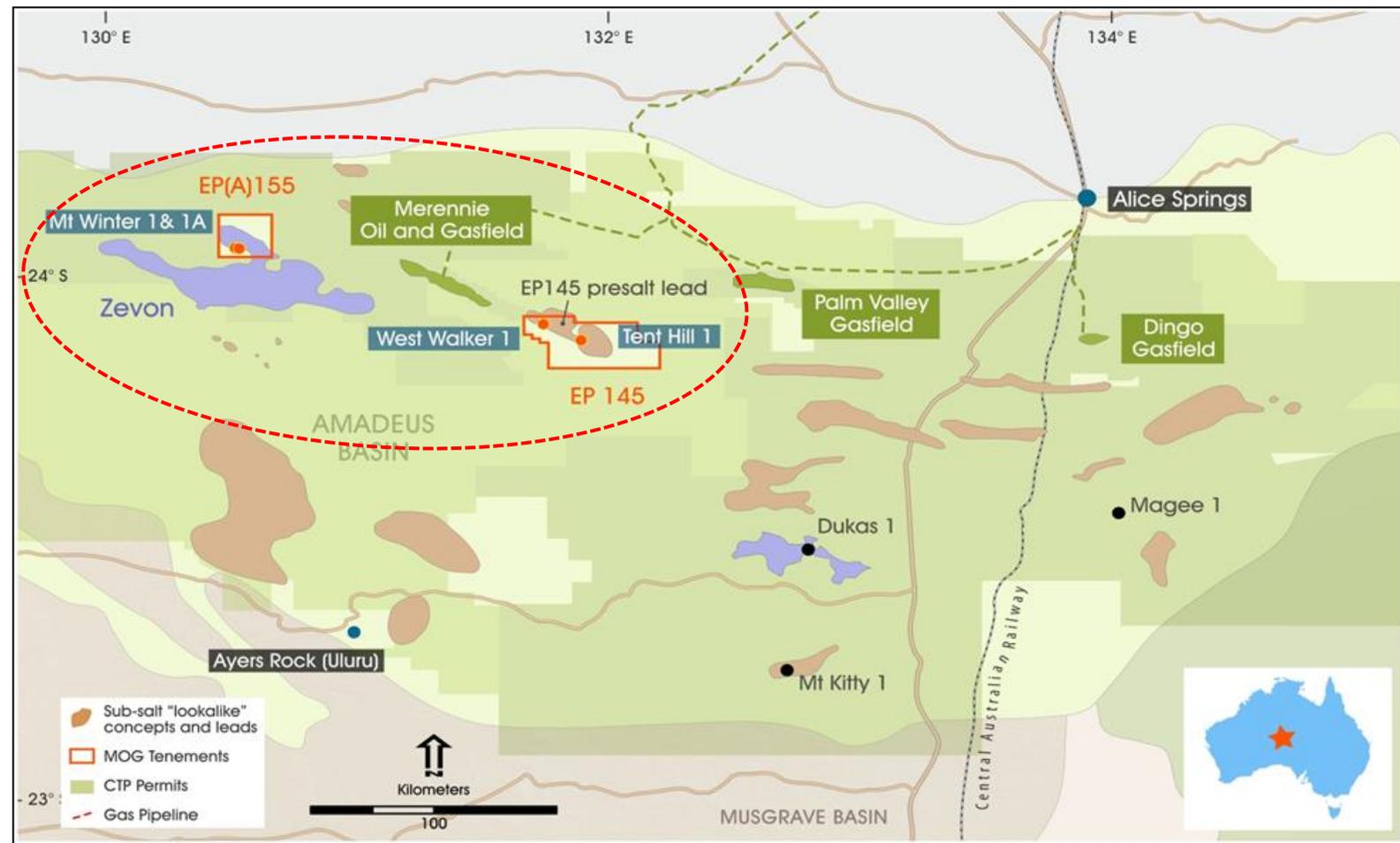


# Australia

## Amadeus Basin Exploration Projects



# Amadeus Basin Northern Territory Australia



- Proven hydrocarbon basin with 30+ years of oil and gas production, relatively underexplored
- Opportunities for multiple stacked plays including TCF sized subsalt prospects
- Proven naturally occurring Helium and Hydrogen opportunities in addition to hydrocarbons, Helium % at Mt Kitty-1, and Magee-1 are some of the highest worldwide
- New infrastructure and access to markets on the east coast of Australia have significantly improved the economic viability of discoveries in the basin

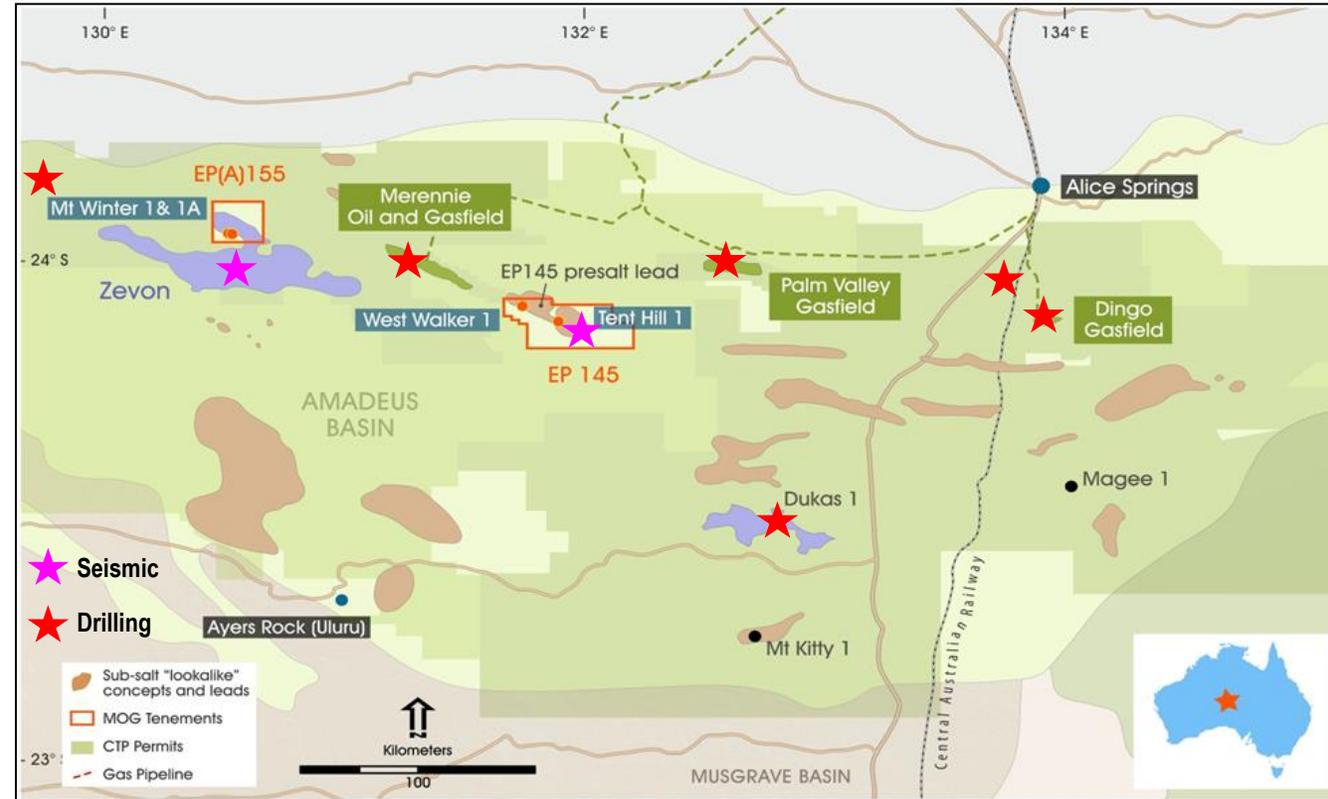




Exploration activity in the Amadeus basin has increased significantly in the last 5 years with the opening of the Northern Gas Pipeline making major projects commercially attractive

## Amadeus Basin

## Recent & Future Drilling Activity



- Low cost appraisal targets at Palm Valley, Dingo, Orange & Ooraminna Fields
- Development of Stairway sandstones at Merenie, 2021
- Drilling of potential oil target at Surprise Field
- Dukas-1, drilled 2019 targeting pre salt Heavitree play – target not reached for technical reasons. Follow up drilling planned
- Multiple 2D seismic projects planned across the basin for 2022, including MOG permit

(CTP, Annual report 2021)

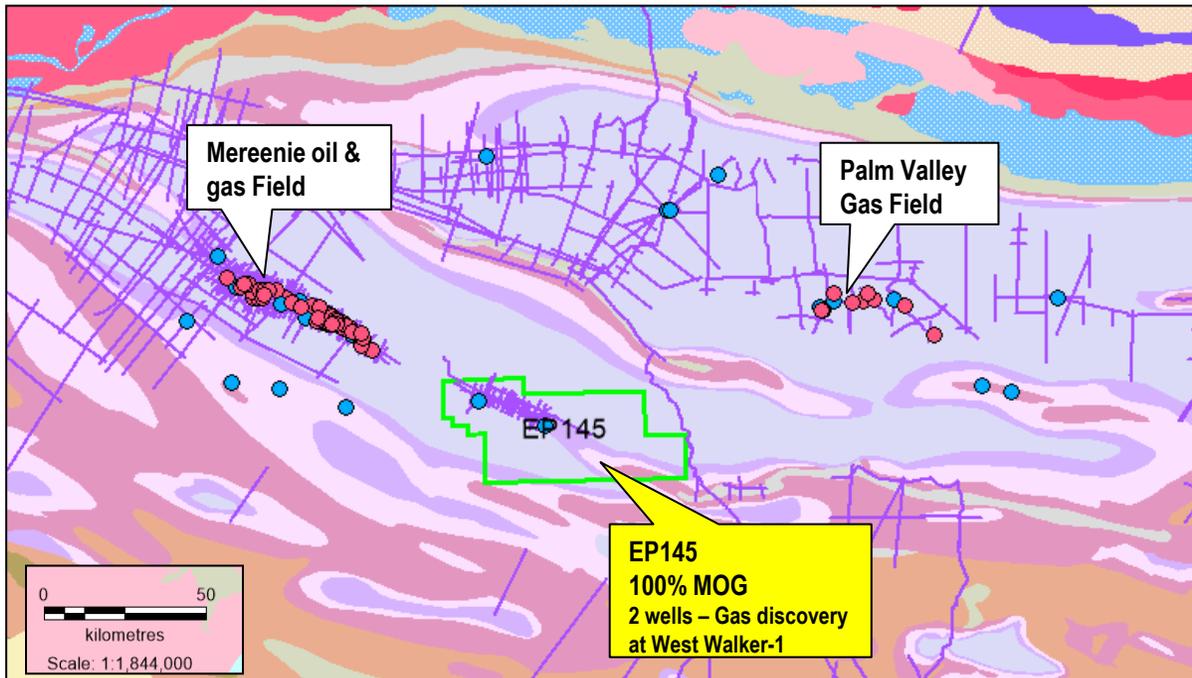
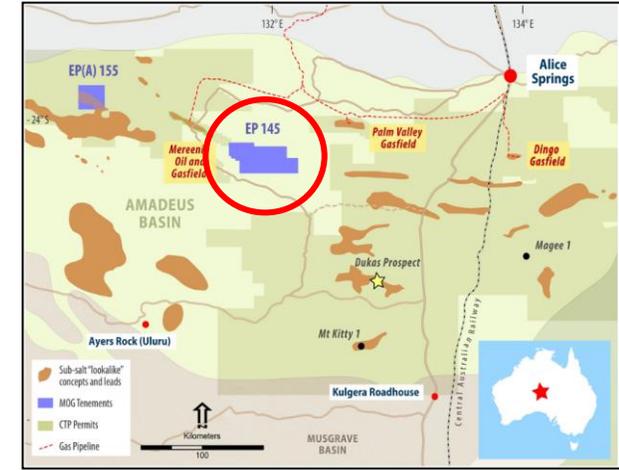




# Exploration EP145 Amadeus Basin

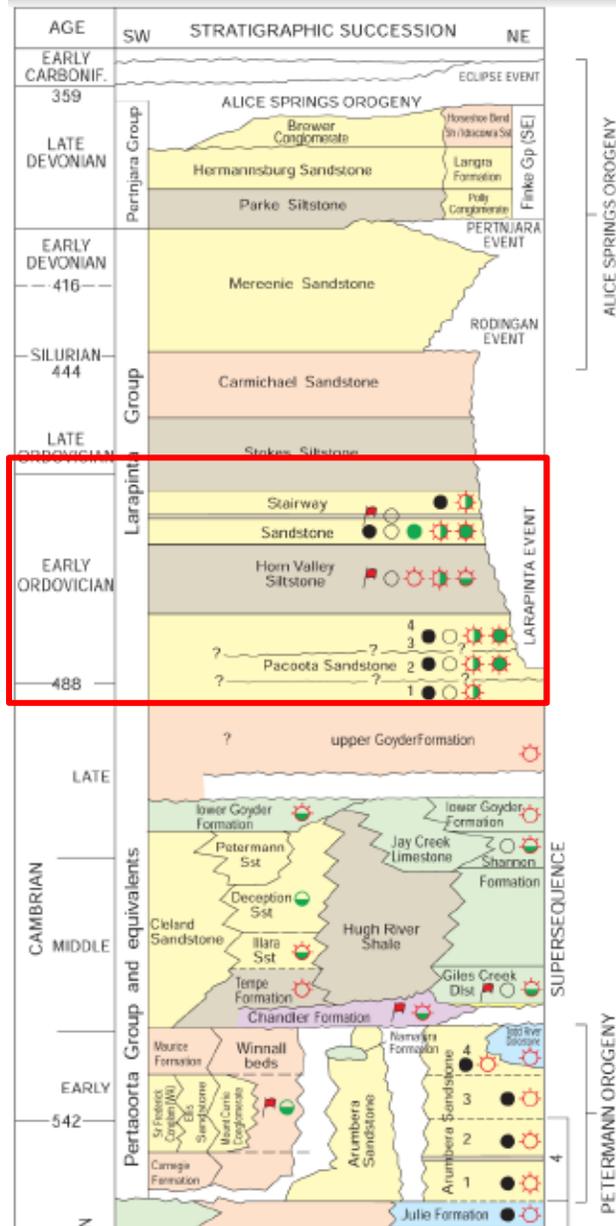
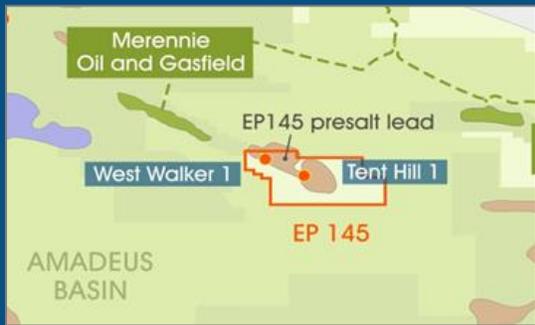
## EP 145 Highlights (MOG 100%, Operator)

- Mosman 100% operator of EP145 in the Amadeus Basin
- EP145 was acquired by Mosman in 2014
- Located on trend with Mereenie & Palm Valley producing fields
- Proven petroleum resources in the Pacoota Sandstone – 2 wells drilled in the permit (1980's); both encountered gas but sub optimally located
- Significant unrisks prospective conventional and unconventional resources identified by independent expert (SRK)





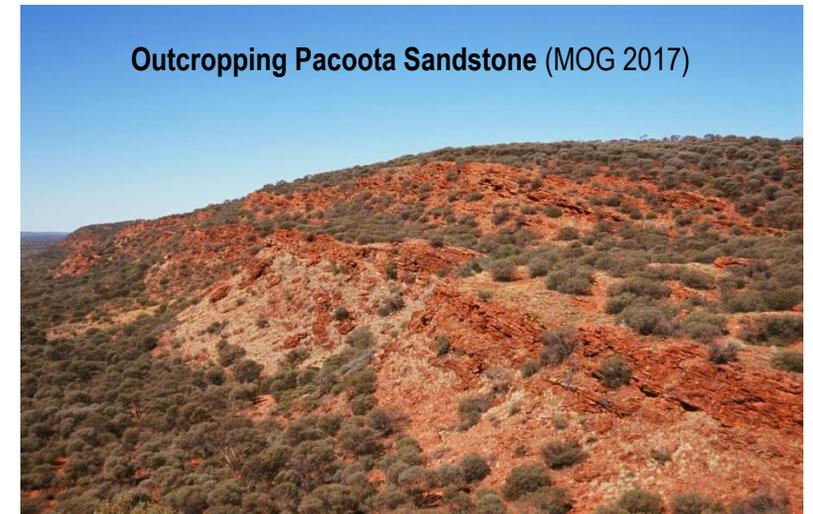
# Proven Hydrocarbon Play EP145



## Proven hydrocarbon play in EP145 within Ordovician Pacoota Sandstones which comprise the main producing interval in the Merenie & Palm Valley Fields

Observations from Fieldwork and drilling in other parts of the basin support potential for additional untested targets in the permit

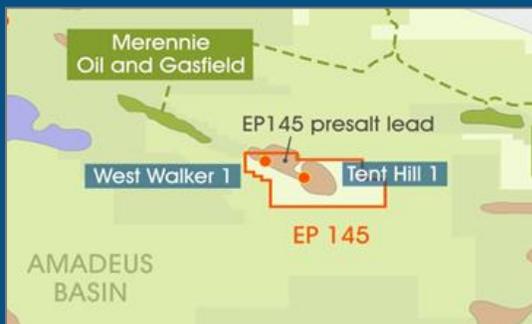
- **Basal Stokes Siltstone** – untested slump & channel sandstones associated with submarine canyon development
- **Upper Stairway Sandstone**: Shallow marine sandstones, focus of development drilling at Merenie (Well WM28, Central Petroleum 2021)
- **Horn Valley Siltstone**: proven source rock across the basin & excellent seal for underlying Pacoota Sst. Potential unconventional resource



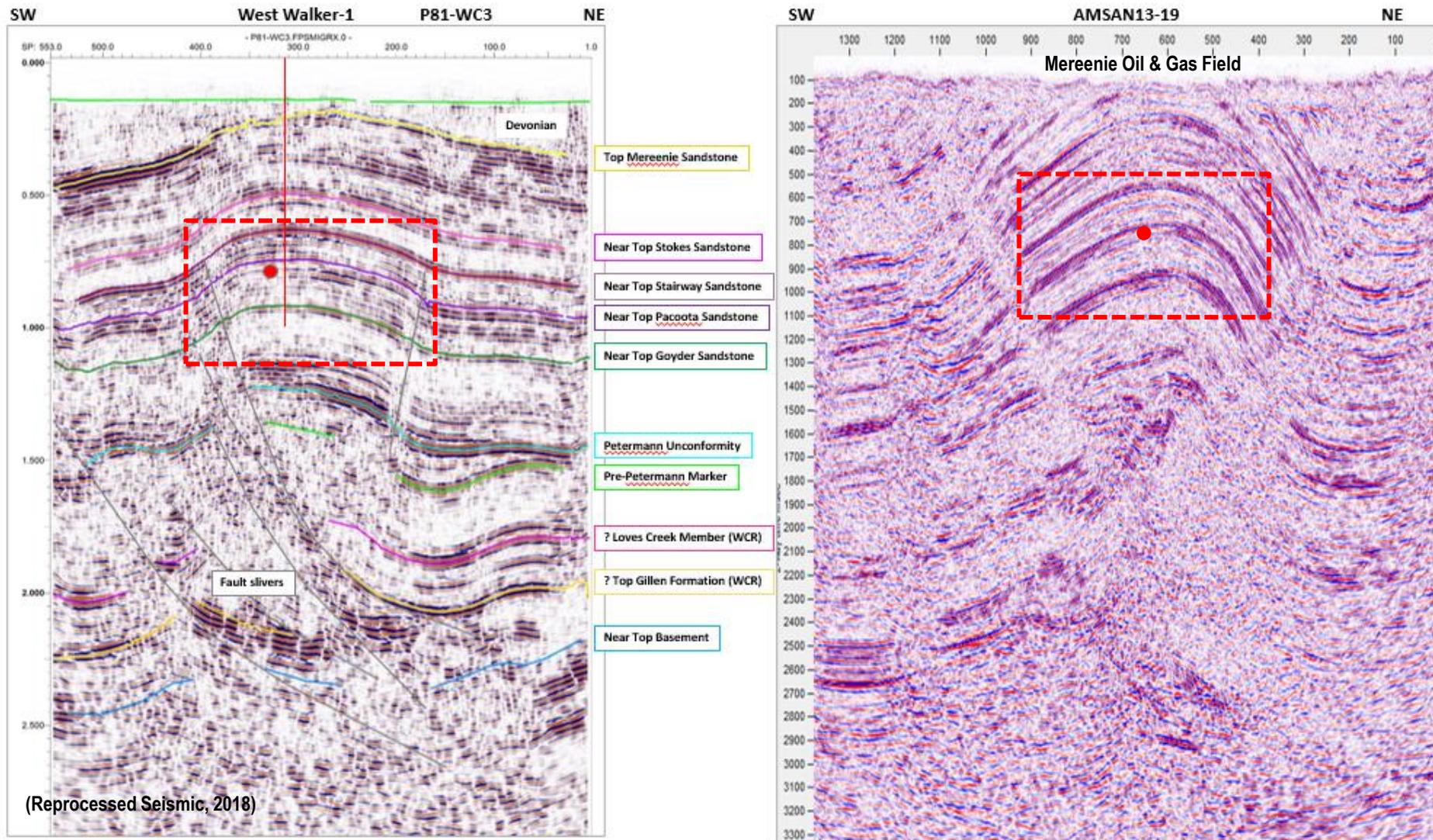
Outcropping Pacoota Sandstone (MOG 2017)



# Exploration EP145 Amadeus Basin



## Structural Comparison of Walker Antcline (EP145) and Merenie Oil and Gas Field



- Walker anticline >30km in length
- Structural trapping style analogous to Merenie, relatively simple 4-way dip closure
- 20+ years production from the Pacoota Sandstones at Merenie
- Stacked reservoir targets - Successful appraisal well drilled in 2021 to test the potential of the overlying Stairway Sandstone

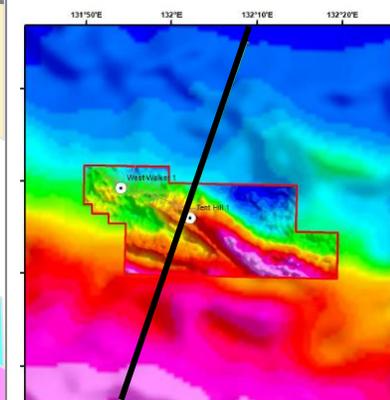
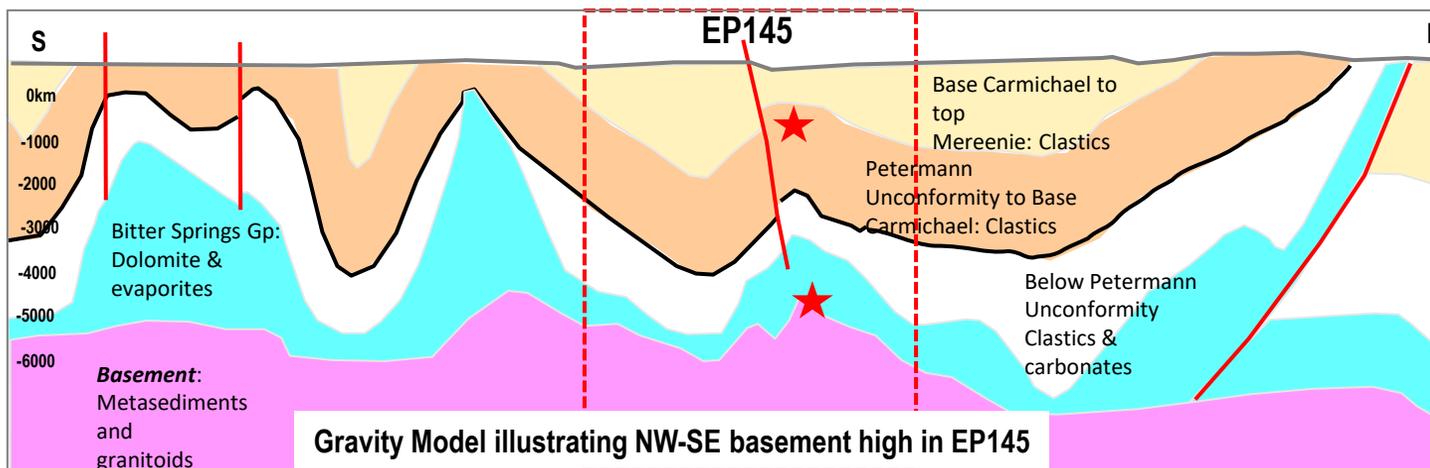
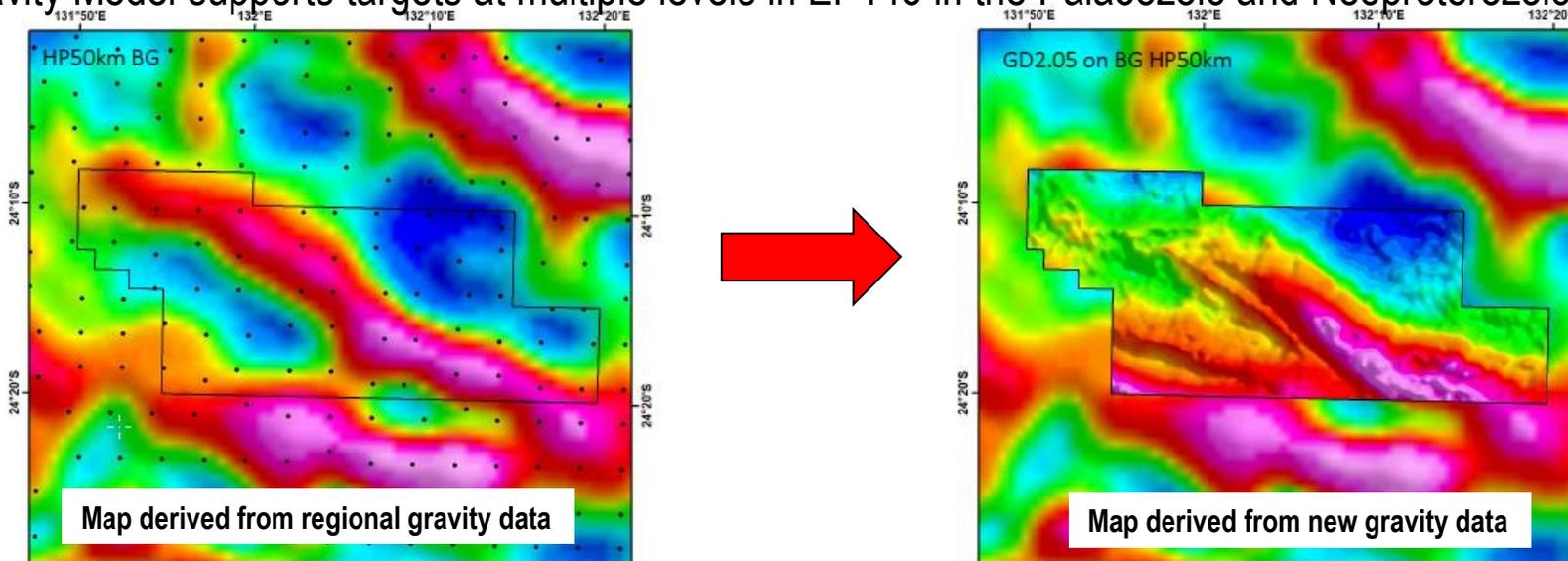


# Exploration EP145

## Recent Activity

### Gravity Data acquisition & Modelling

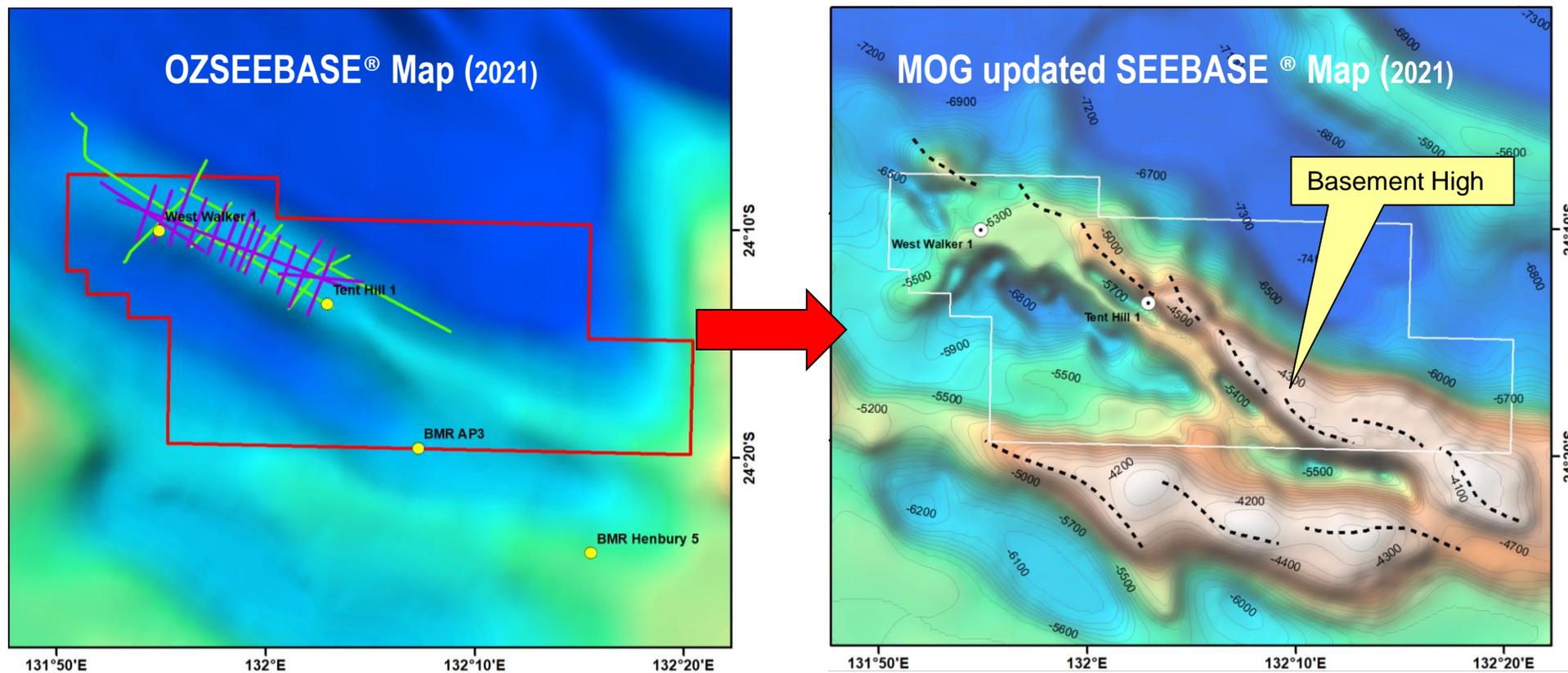
- Airborne Falcon® Gravity & Gradiometry survey acquired by Mosman over the entire permit (2021)
- New gravity model constructed over the permit based on new and regional data sets has improved structural and stratigraphic modelling
- Gravity Model supports targets at multiple levels in EP145 in the Palaeozoic and Neoproterozoic





## High Resolution Basement Modelling

- project incorporates gravity, magnetic and seismic data from regional and permit specific data sets to upgrade the geological model (September 2021)
- New data revealed a NW-SE basement high analogous to gas and helium prospects identified in other areas of the Amadeus Basin
- Reactivated basement faults provide migration pathway for helium from a basement source



EP145 SEEBASE Update (Geonostics 2021)

# Amadeus Basin

## Helium & Hydrogen Potential

Onshore & offshore Australian basins, including the Amadeus basin, NT contain significant untapped helium and hydrogen potential

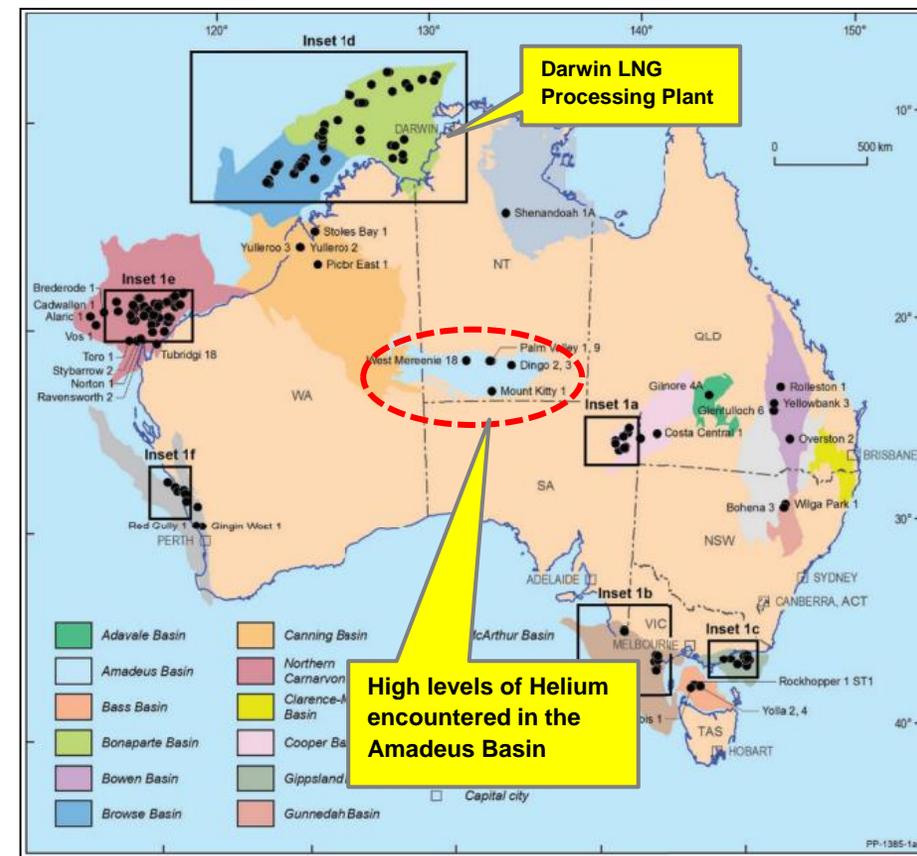
### Helium

- Used in a variety of high technology fields including defence, medicine & manufacturing
- A by-product of LNG production, commercially extracted at the Darwin LNG plant
- Current demand for Helium far exceeds supply and is expected to increase

### Hydrogen

- An alternative “green” energy source
- Hydrogen occurs naturally in the Amadeus basin, trapped within crystalline basement

*Helium sampled by Geoscience Australia*  
(Boreham et al. 2018, APPEA)

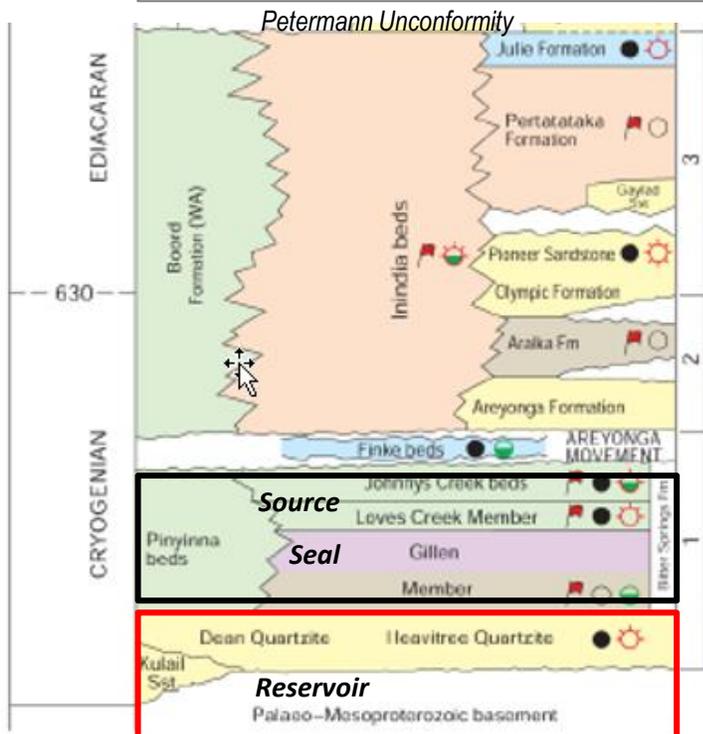




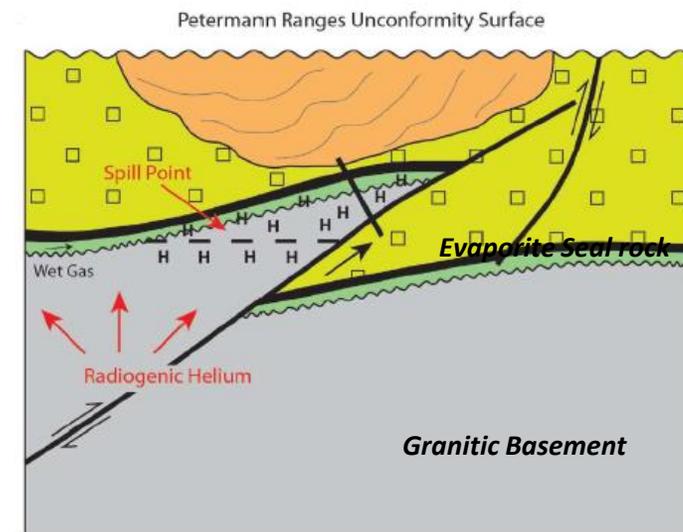
# Amadeus Basin

## Helium & Hydrogen Play

Play Element	Amadeus Basin Potential
<b>Helium &amp; Hydrogen Source</b>	Fractured granitic basement & arkosic sediments provide source of radiogenic elements,
<b>Seal</b>	Thick evaporites of the Gillen Fm deposited across the basin successfully seal He and H <sub>2</sub> at Mt Kitty-1 and Magee-1
<b>Reservoir</b>	Heavitree Fm (Magee-1) & fractured basement (Mt Kitty-1) contain high % of He & H <sub>2</sub> (upto 9% & 11% respectively)
<b>Trap</b>	Reactivated basement involved structures
<b>Charge</b>	Very old basin with low geothermal gradient, ideal for He conversion to gas



**Schematic Model illustrating Subsalt Helium Play**



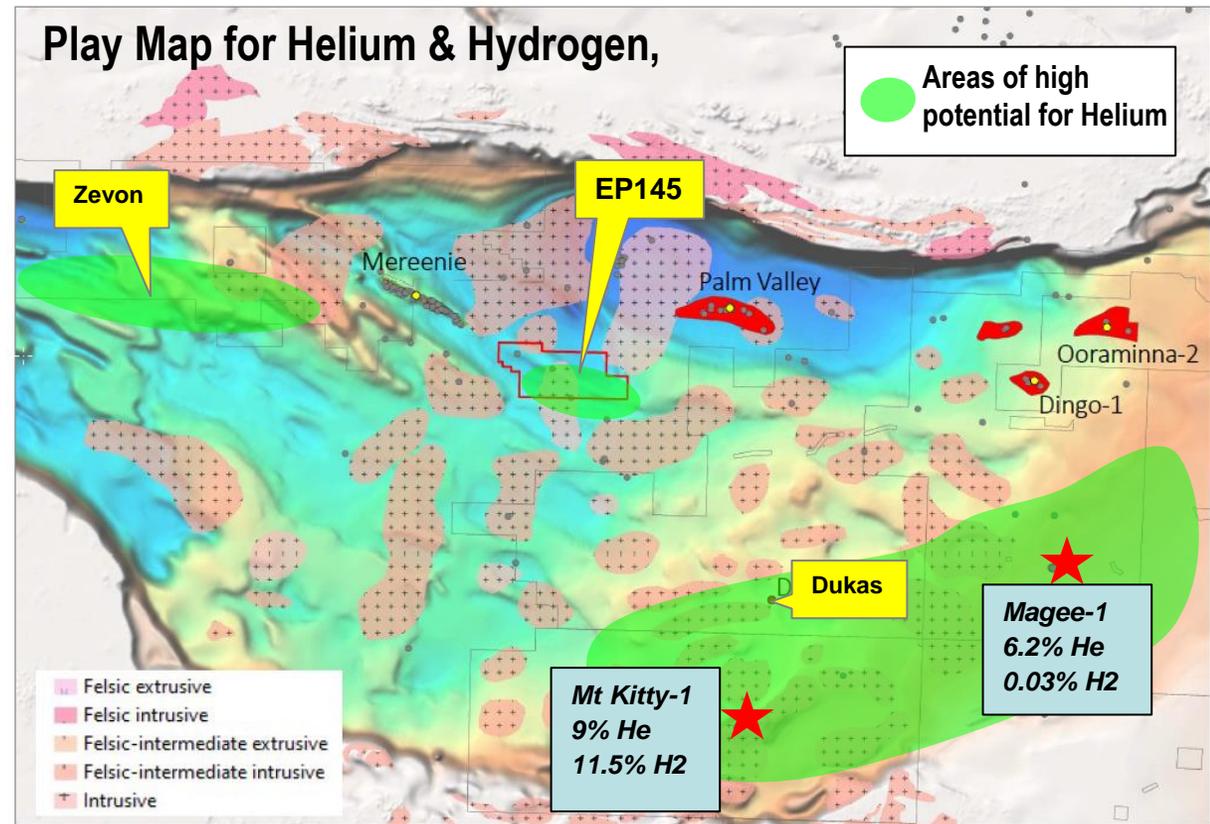
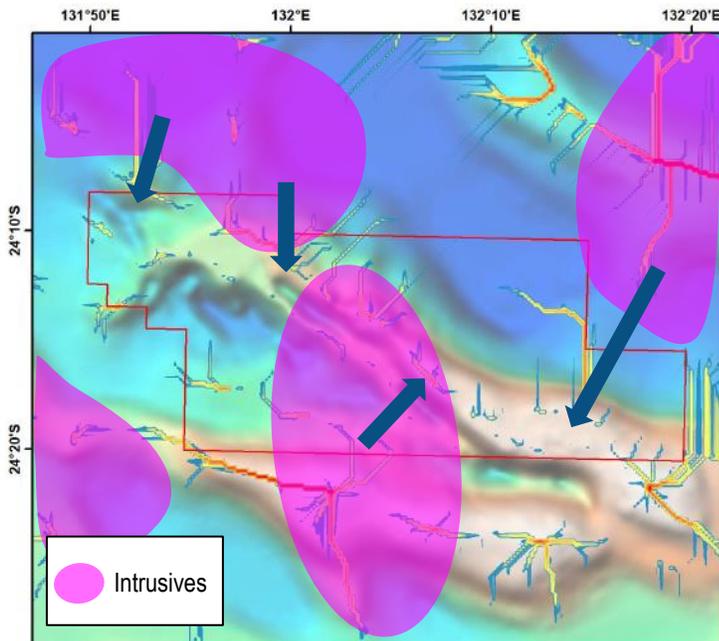
Few wells in the Amadeus Basin have penetrated the subsalt interval, most are located the Southern Amadeus

# Amadeus Basin

## Helium & Hydrogen Play

- Naturally occurring trapped Hydrogen and Helium discovered in the Southern Amadeus basin, wells contain some of the highest percentages worldwide
- Large intrusive bodies which source Hydrogen and Helium are distributed throughout the basin and present within and adjacent to EP145
- TCF sized hydrocarbon prospects with additional Helium & Hydrogen potential mapped within the basin (Zevon, & Dukas) which are targeted for drilling in 2023 (CTP, 2021)

EP145: Basement Composition & potential Helium hydrogen migration (Geognostics 2021)

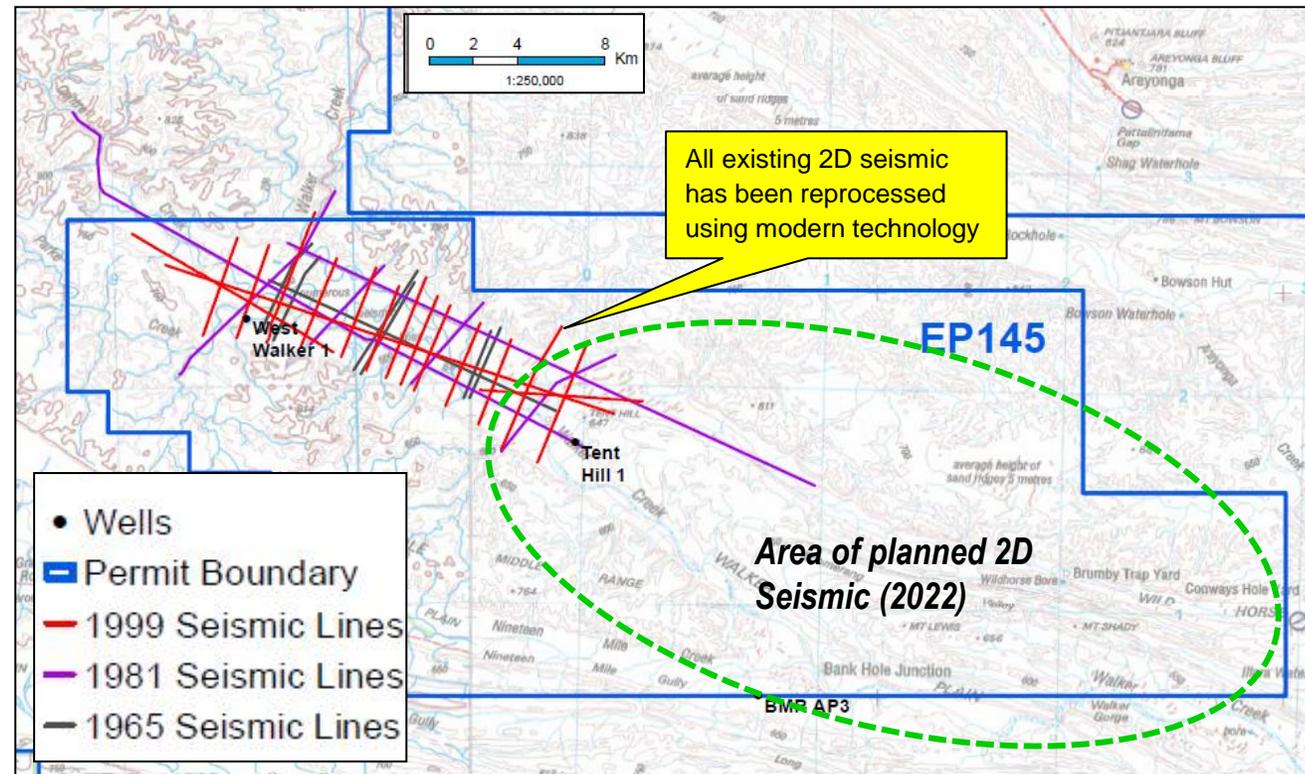


Exploration is focused on improving our geological understanding of the permit through acquisition of new data and re evaluation of existing datasets inlight of new research

- **Play Risk Analysis:** to re-evaluate distribution of source, reservoir and seal facies at multiple play levels over the entire permit including reinterpretation of existing seismic data
- Sacred Site Clearance Survey to be conducted by Central Land Council (Nov 2021) – required for seismic project
- **2D seismic acquisition** planned for 2022
- MOG has raised capital to fund seismic and is open to farmout to fund future drilling

## EP145

# Planned Activity

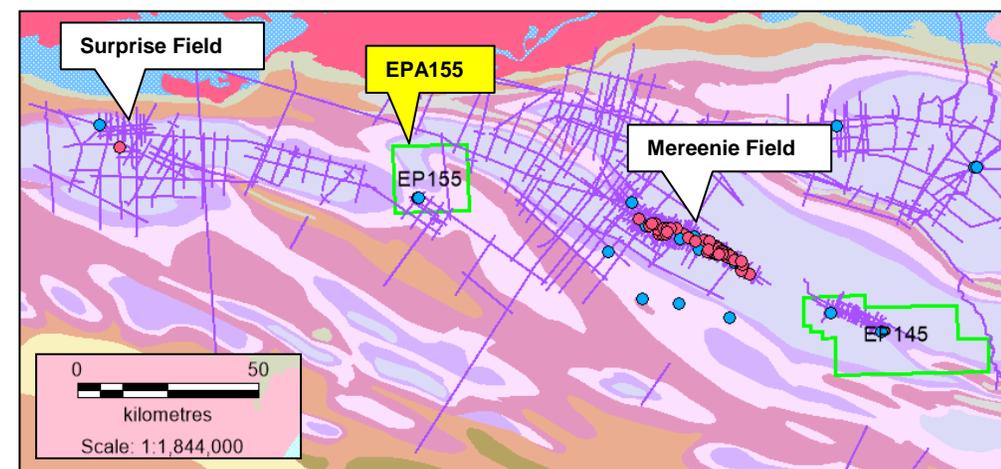
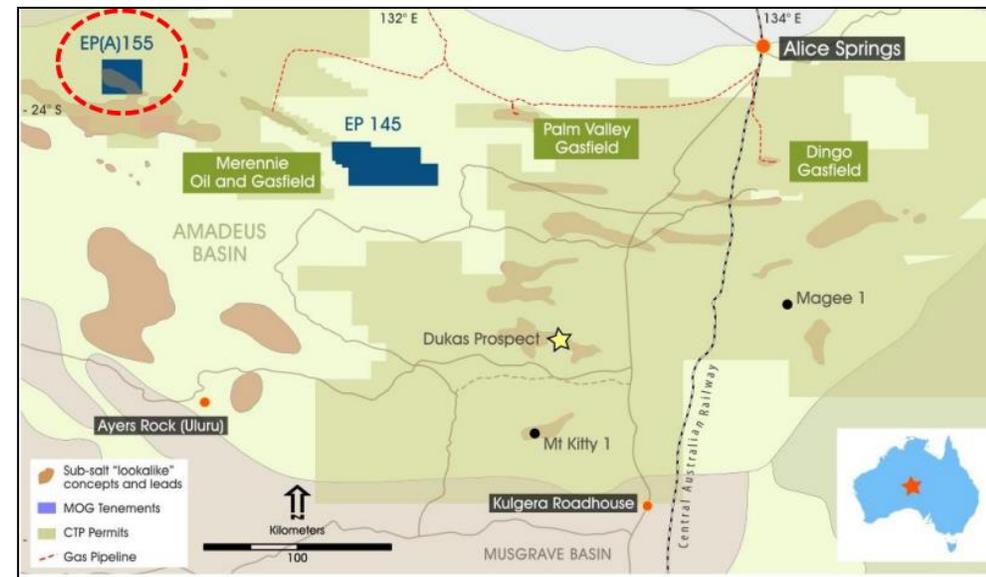


### EPA 155 Highlights

- EPA155 located between producing Mereenie and Surprise Oil and Gas fields
- 2 wells drilled, MT Winters-1 & 2 (2A), on sparse seismic grid. Both wells encountered oil in suboptimal locations.
- Stacked pay opportunities identified, including helium potential in identified large basement structure
- Mosman has 100% WI that will reduce to 30% when farmin work completed.

### Planned Activity 2021/22

- Permit award pending field trip by Central Land Council - delayed by Covid-19. New dates set for early 2022
- Seismic reprocessing and reinterpretation proposed following permit award





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## Conclusion

- Mosman continues to deliver increasing production in USA through drilling & acquisition of new projects
- High exploration potential including Helium and Hydrogen exploration opportunities in the Amadeus basin, Australia



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