



**EMPEROR ENERGY**  
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# **Emperor Energy (ASX: EMP)**

## **Energy Mines and Money Presentation**

**June 2018**



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## Disclaimer

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Information on the Reserves and Resources on the Company's operated assets in this release are based on an independent evaluations conducted by 3D-Geo Pty Ltd (3D-Geo). 3D-Geo is a independent geoscience consultancy specialising in petroleum. The technical work was undertaken by a team of geoscientists and petrophysicists and is based on open-file seismic and well data and data supplied by EMP. The technical assessment was performed primarily by, or under the supervision of Keven Asquith, Director 3D-Geo.

The technical information quoted has been complied and / or assessed by Mr. Geoff Geary who is a professional geologist (Bachelor Science – Geology) with over 35 years standing and who is a Member of Petroleum Exploration Society of Australia. Mr. Geary has consented to the inclusion in this announcement of the matters based on the information in the form and context in which they originally appear – investors should at all times refer to appropriate ASX Releases.

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## Key Points

- Electricity shortfall occurring on East Coast of Australia, following closure of coal fire power stations. Increased reliance on gas for electricity.
- An East Coast domestic gas shortfall is occurring due to unsatisfied demand by new Queensland LNG plants.
- “Oil giant ExxonMobil is considering a Victorian LNG import plant to replace rapidly declining Bass Strait gas fields”. *Matt Chambers, The Australian 18 June 18*
- Gas prices are high, having “risen to \$8-\$10 GJ, with predictions of more price rises as international LNG markets tighten”. *Matt Chambers, The Australian 18 June 18*
- EMP holds 100% ownership of a strategic Oil and Gas Exploration Permit in Bass Strait **Vic/P47** (Judith and Judith North Structures).
- 3D seismic reprocessing, interpretation, mapping and petrophysics review study have returned highly encouraging results.
- **P50 unrisked Gas-in-Place** at Judith / Judith North Structure estimated at **1.8 Tcf**.
- **P50 unrisked Gas Recoverable** is estimated at **1.17 Tcf**.
- Permit renewed for 5 years in February 2018.



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## Key Points Continued

- Thorough well log evaluation of the Judith-1 well and gas discovery completed in March 2018.
- Results compared and contrasted with open file data now available from wells drilled on the Longtom Gas Field 22km to the west.
- Seismic interpretation of four (4) Gas Pay Reservoirs across the Judith structure has now been refined.
- Reservoir Engineering underway to fully review the Judith Structure.
  - Static Model to be completed June/July.
  - Dynamic model to predict recovery rates and well flow rates to be completed late July.
- RISC engaged as Independent Certifiers for Resource Statement to be released in August 2018.
- Resource Valuation to be completed following RISC certification.
- Conditional Contract / Partnership negotiations in Q4, 2018 for Financing, Delivery and Off-Take of gas.



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## Company overview

- ASX Listed Energy Company (ASX: EMP), Options (ASX: EMPOC)
- Strategic asset in the Gippsland Basin adjacent to the BHP/Exxon Mobil Kipper Gas Field
- Strong management team with extensive exploration and financial experience
- Strong shareholder alignment with management holding 20% ownership and top 20 holding 65% ownership

### Financials

<b>Auditors</b>	Deloitte, Melbourne
<b>Lawyers</b>	Hopgood Gamin, Perth
<b>Share registry</b>	Automic, Sydney
<b>Office:</b>	Level 32, 1 Market St, Sydney NSW Australia 2000
<b>Ph:</b>	+61 2 9275 8878

Number of shares	907M
Number of options	518M
Market capitalisation	\$3.5M

# The Team



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**Carl Dumbrell**  
**Director & Secretary**

- Appointed July 15
- Non Executive Director Herencia Resources Plc (AIM: HER)
- Chartered Accountant, Australia, England & Wales

**Justyn Peters**  
**Director**

- Appointed August 16
- Executive Chairman Leigh Creek Energy Ltd (ASX: LCK)
- Linc Energy Executive General Manager (6 years)
- Graduate law and politics degrees

**Vaz Hovanessian**  
**Director**

- Appointed August 16
- Over 25 years experience with junior O&G companies
- Executive chairman Mandalong Resources and Broad Investments
- CPA, Australia

**Phil McNamara**

- Over 30 years in the resource industry
- Former CEO and Managing Director, Amour Energy
- Former Managing Director Waratah Coal
- Qualified Mining Engineer

**Geoff Geary**

- Over 35 years experience as a geologist in the Petroleum industry
- Member of the Petroleum Exploration Society of Australia.
- Extensive experience in the Bass Strait with Shell



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## Schedule of Tenements

Permit	Type	Location	Ownership
Vic/P47	Exploration Permit	Offshore Gippsland Basin	100%
Backreef	Exploration Area	Onshore Canning Basin	100%
R1/R3	Retention Lease	Offshore Carnarvon Basin	100%

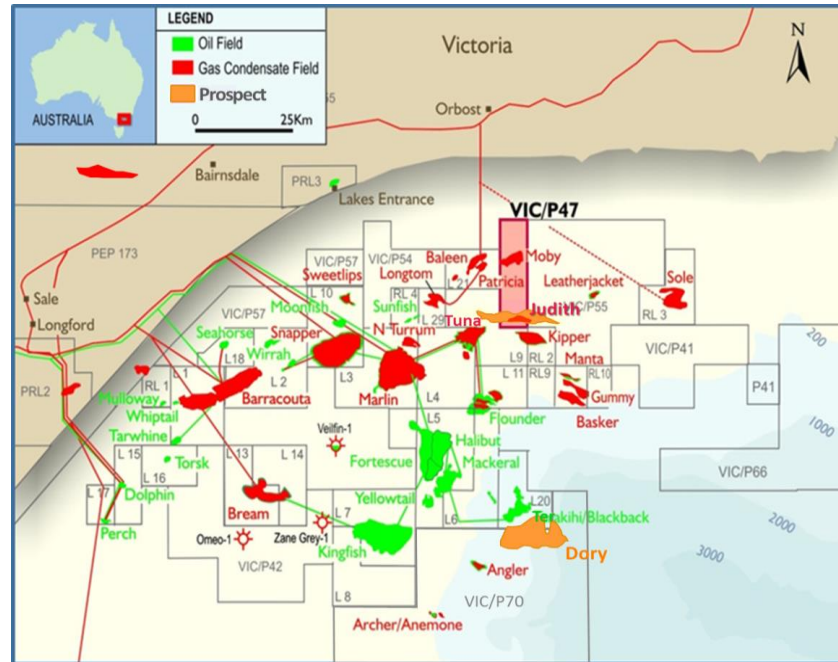


# Gippsland Basin

- Australia's premier hydrocarbon province
- Located 200 km east of Melbourne
- Exploration commenced in 1924
- Over 400 exploration wells
- Some 90,000 line km of 2D seismic
- More than forty 3D seismic surveys
- Petroleum infrastructure well developed with a network of pipelines to onshore petroleum processing facilities at Longford and Orbost.
- Gas delivered across southeastern Australia to Sydney, Adelaide, Tasmania and Queensland
- Operators include Esso/BHPP, Seven Group, 3D-Oil and Cooper Energy
- Esso/BHP have developed the Kipper gas field adjacent to Vic/P47 investing over \$5.5 billion in the basin as part of its Kipper – Tuna – Turrum gas project
- 2018 sees new development of Sole Gas Field by Cooper and two exploration wells at Dory by Esso



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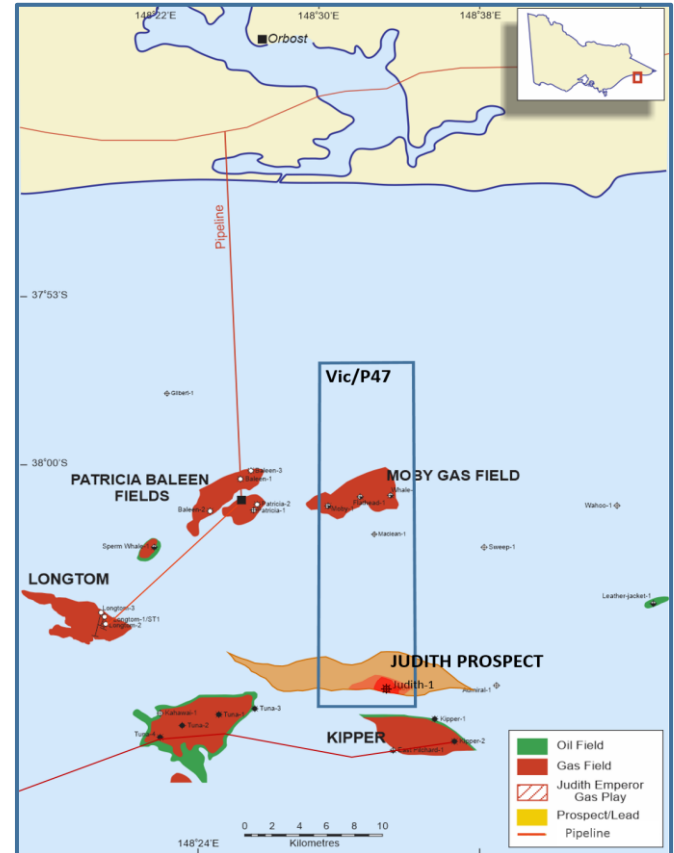


# Vic/P47 - Bass Strait Victoria



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- EMP holds 100% of 202 km<sup>2</sup> Vic/P47 Permit
- EMP is Operator of the Permit
- Shallow water depths: 20 – 85 m
- Two-gas discovery wells drilled within the permit:
  - Judith-1 drilled by Shell in 1989
  - Moby-1 drilled by Bass Strait Oil in 2004
- 3D seismic reprocessing, mapping and interpretation completed in August 2017
- **1.8 Tcf Gas-in-Place Estimate at Judith Prospect**
- Longtom gas field 22 km to west of Vic/P47 provides a good analogy for successful appraisal, potential development and production from Emperor Sub Group Reservoirs at Judith
- Judith is located 2 km north of the Kipper Gas Field brought recently into production by Esso / BHP Petroleum
- **Permit renewed for 5 years in February 2018**



# Vic/P47 Volumetrics Summary



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## Summary of Gross Contingent Resources for the Judith Discovery

*(Gaffney Cline & Associates, 2013)*

	Gas-in-Place Bcf			Gas Recoverable Bcf Gross Contingent Resources		
Block	P90	P50	P10	C90	C50	C10
Judith	67	155	368	37	101	276
<b>Total</b>	<b>67</b>	<b>155</b>	<b>368</b>	<b>37</b>	<b>101</b>	<b>276</b>

## Summary of Gas-in-Place for the Judith and Judith North Blocks –

Unrisked, probabilistic conservative case

*(3D-GEO evaluation, 2017)*

Unrisked Probabilistic	Gas-in-Place Bcf <sup>1</sup>			Gas Recoverable Bcf <sup>2,3</sup>		
Block	P90	P50	P10	P90	P50	P10
Judith	300	420	550	165	273	413
North	1200	1380	1550	600	897	1163
<b>Total</b>	<b>1500</b>	<b>1800</b>	<b>2100</b>	<b>825</b>	<b>1170</b>	<b>1575</b>

1. Includes area assessed by Gaffney Cline & Associates (2013)
2. Gas recovery factors from Gaffney Cline & Associates (2008 & 2013)
3. Preliminary, indicative recoverable gas volumes only

# Depth Mapping: Top Emperor Gas Sands

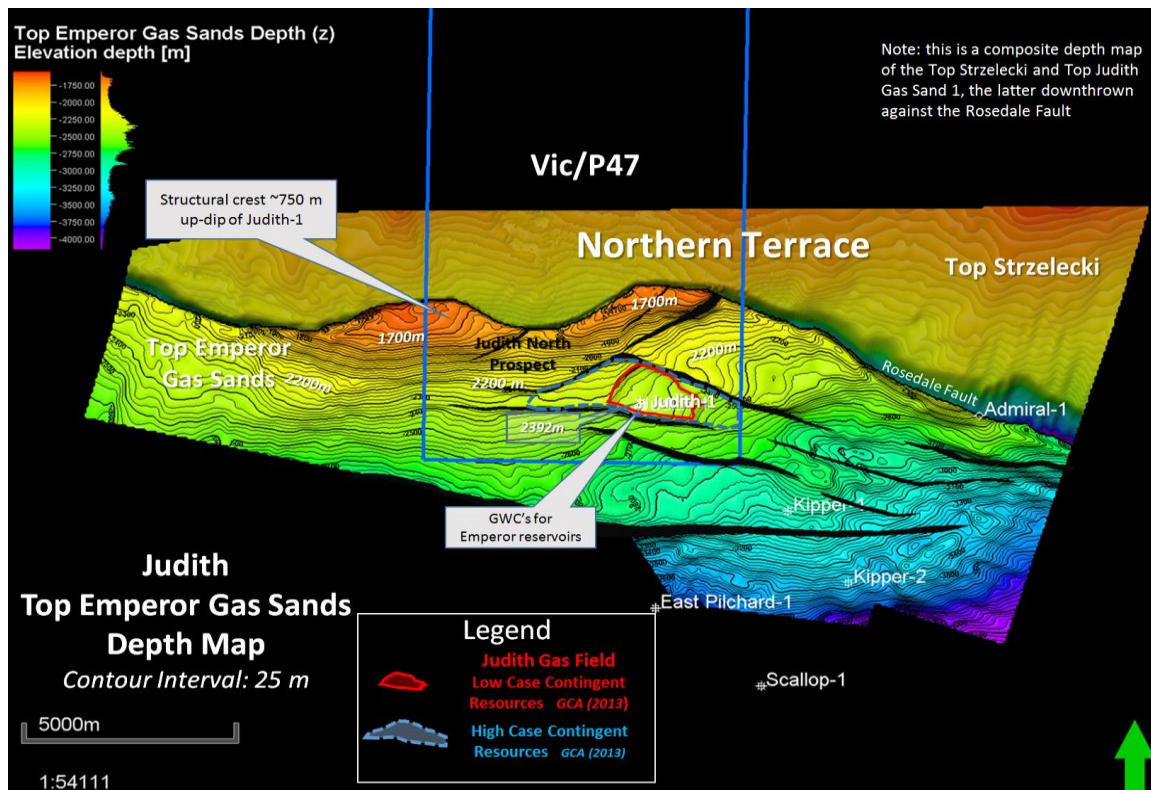


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Top of Emperor Gas Sands from reprocessed 3D seismic data.

Shows location of Judith 1 drilled structurally down-dip close to or at gas – water contacts.

The Judith North Block structural crest is shown 750m up-dip of Judith 1.



# Petro-physics Study Completed



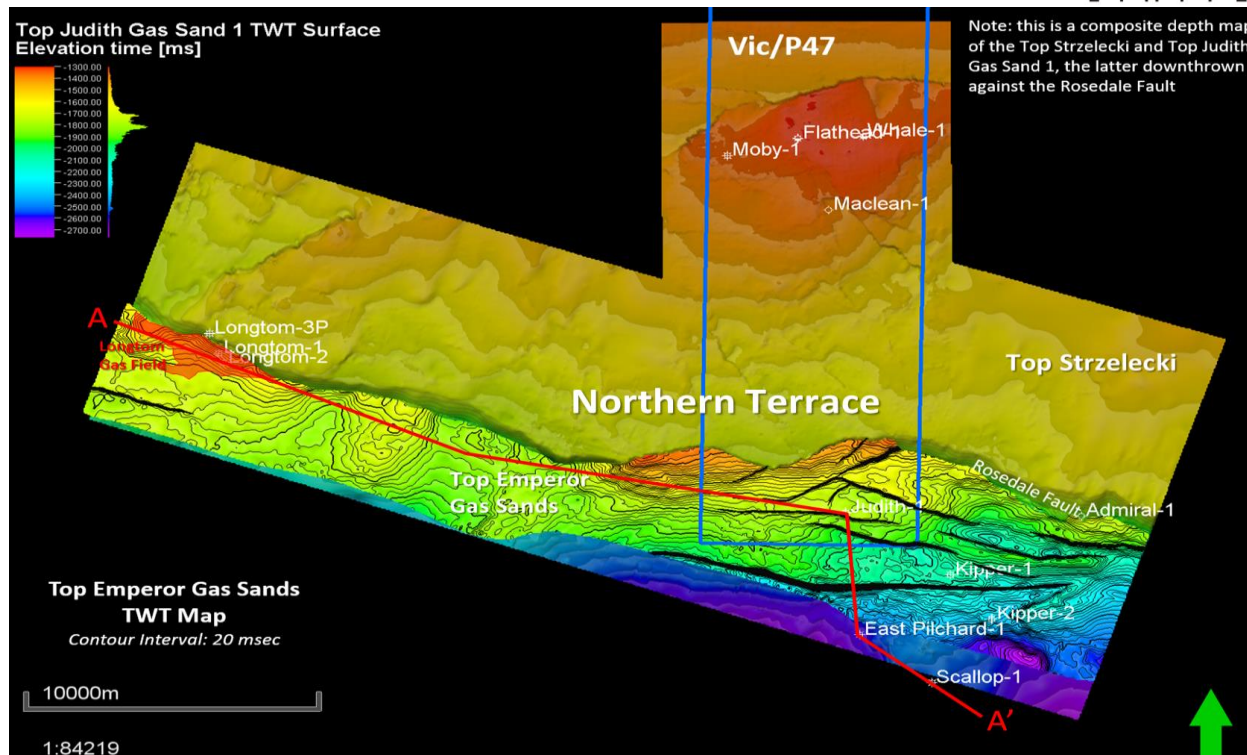
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- **Four (4) reservoirs**
- **Net Reservoir Thickness** of 234m
- **Net gas pay** (in gas sands) of 162m
- **Average Porosity** in gas pay reservoirs of 13 - 14.9%
- **Average Permeabilities** in gas pay reservoirs of 0.7 - 1.9 millidarcies (md)
- **Average Gas Saturations** for gas sands vary from 39.9 - 45.4%
- **Lowest-Known-Gas (LKG)** picked in four reservoirs
  - suggests that Gas-Water-Contacts are nearby down-dip from Judith-1
- **Judith-1 drilled through a major fault** 50 m above the upper gas sand
- **Fluid flow from the fault zone** has likely caused local reduction in porosity and permeability
- **Evaluation suggests that Depth-of-Burial** is the major factor controlling reservoir degradation
- **Improved gas reservoir characteristics** *as good as, if not better than* the Longtom wells are expected to be developed up-dip of Judith
- **Longtom Analogue suggests that Judith-1 gas reservoirs are likely to be sufficiently developed over the Judith structure to be commercially productive particularly where horizontal drilling is employed in development wells as at the Longtom Gas Field**

# Analogue with Longtom Production Field



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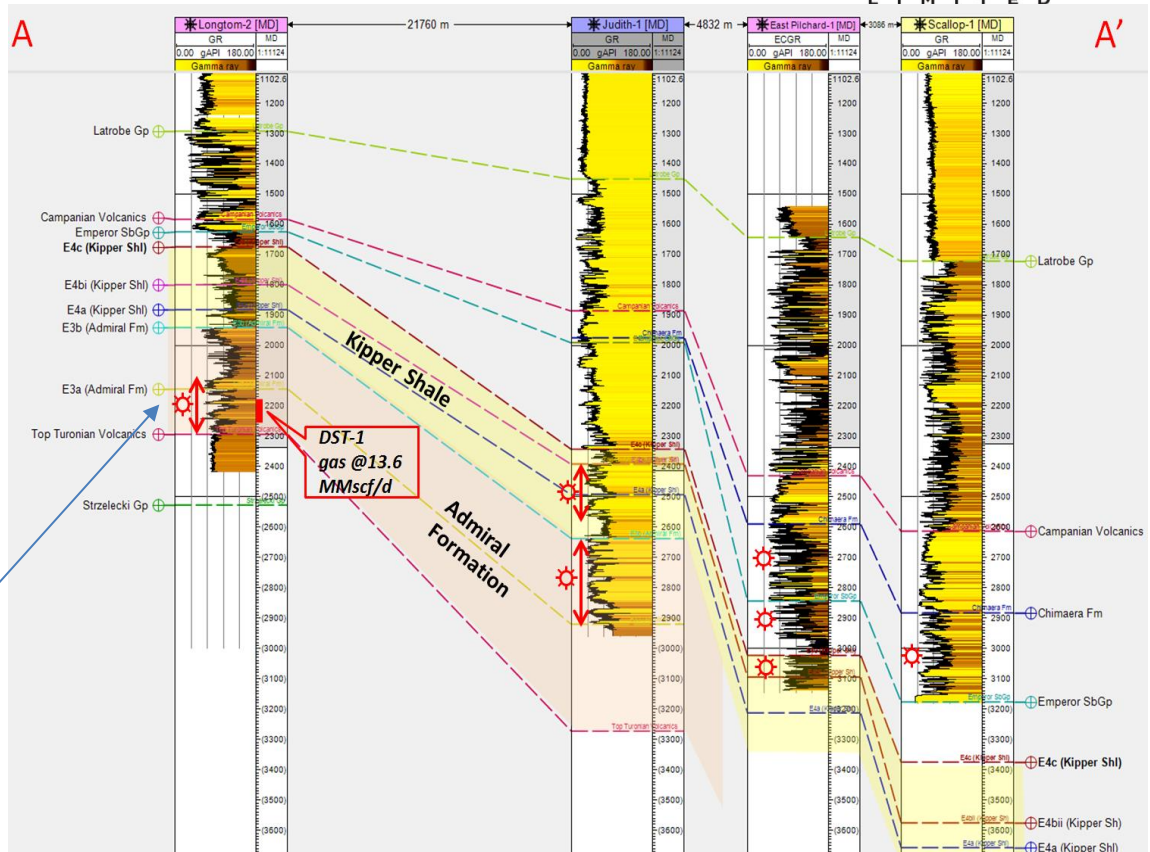


**Judith Structure in Vic/P47 is located 15km along strike  
to the East of Longtom Production Field**

# Longtom Analogue



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# 2018 Business Schedule for Vic/P47



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## **Reservoir Engineering Commenced**

- Consultants 3D-Geo engaged to progress Reservoir Engineering studies
  - Refine seismic interpretation and depth mapping
  - Four (4) Gas Pay Reservoirs
  - Detailed Static Model / recalculation of Gas Volumetrics
  - Dynamic Model simulating Recovery Factors / Production Scenarios

## **Independent Resource Statement – RISC Engaged**

- Contingent and Prospective Resources
- Technical Review and Certification due August 2018

## **Resource Valuation**

- Independent Resource valuation to be completed in Q4 2018

## **Partnership Development**

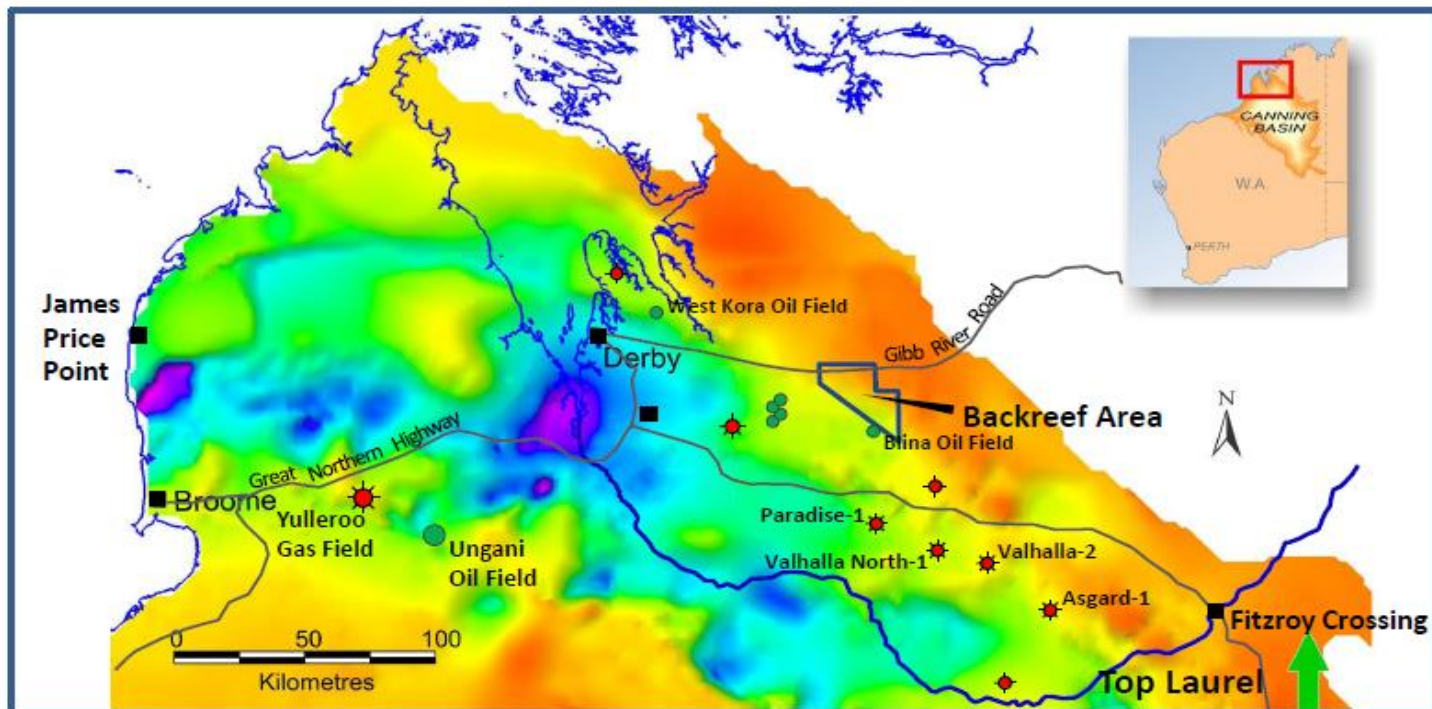
- Progress with scoping study costings
  - Field Development / Gas Production / Gas Delivery
- Establishing Conditional Contracts / Partnerships during Q4 2018
  - Financing, Delivery and Off-Take of gas.

# Canning Basin, Western Australia

## Backreef Block



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# Canning Basin, Western Australia

## Backreef Block



- EMP owns 100% of the Backreef Block and is Operator
- Backreef-1 was drilled in October 2010 to a depth of 1800m
- Oil was discovered in porous and permeable Laurel dolomites
- Production tests confirmed the discovery as non-commercial
- The well is currently cased and suspended at 1155 m
- Environmental plan lodged in September 2017
- Environmental work to be completed in Q3, 2018
- Following the improvement in global oil prices, the company is monitor exploration activity in the basin with the intention of undertaking further work at Backreef

# Backreef Unconventional Oil Potential



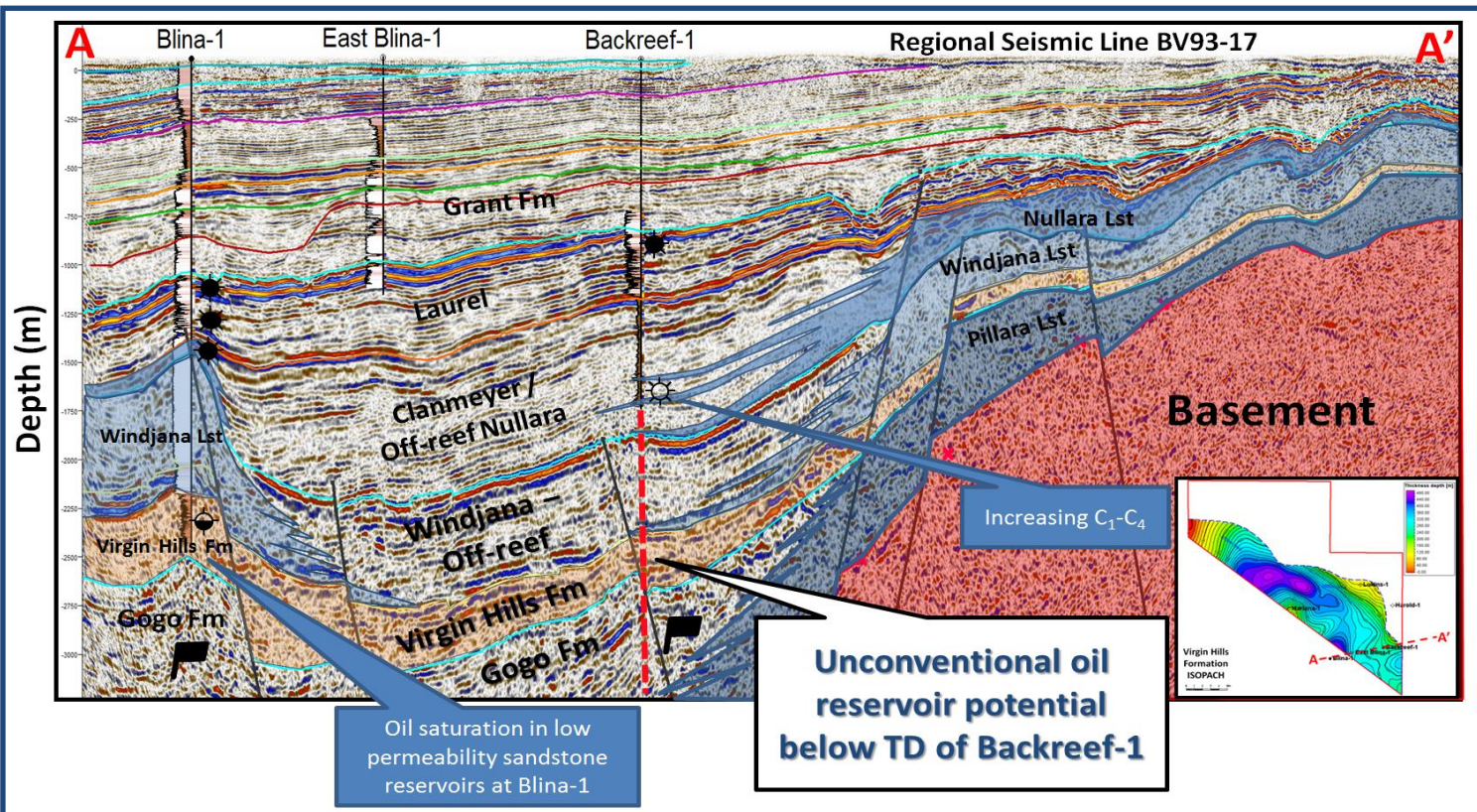
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- The presence of oil saturation in low permeability sandstones together with oil recoveries from SWC samples from a thick section of the Virgin Hills Formation drilled at the base of Blina-1 suggests the occurrence of unconventional oil potential
- Geochemical analysis supports the presence of oil in the sequence at Blina-1
- The unconventional oil potential of the Virgin Hills Formation was assessed in a study by Consultants 3D-GEO in 2013 which derived a potential unrisks mean Prospective Recoverable Resource of 510 MM bbl
- The possibility of re-entering and deepening the Backreef-1 well to assess this potential has begun
- Progress is dependant upon the lifting of the moratorium on fracking in Western Australia
- Additional potential is also seen in the Windjana Off-reef facies and the underlying Gogo Formation

# Backreef Unconventional Oil Potential



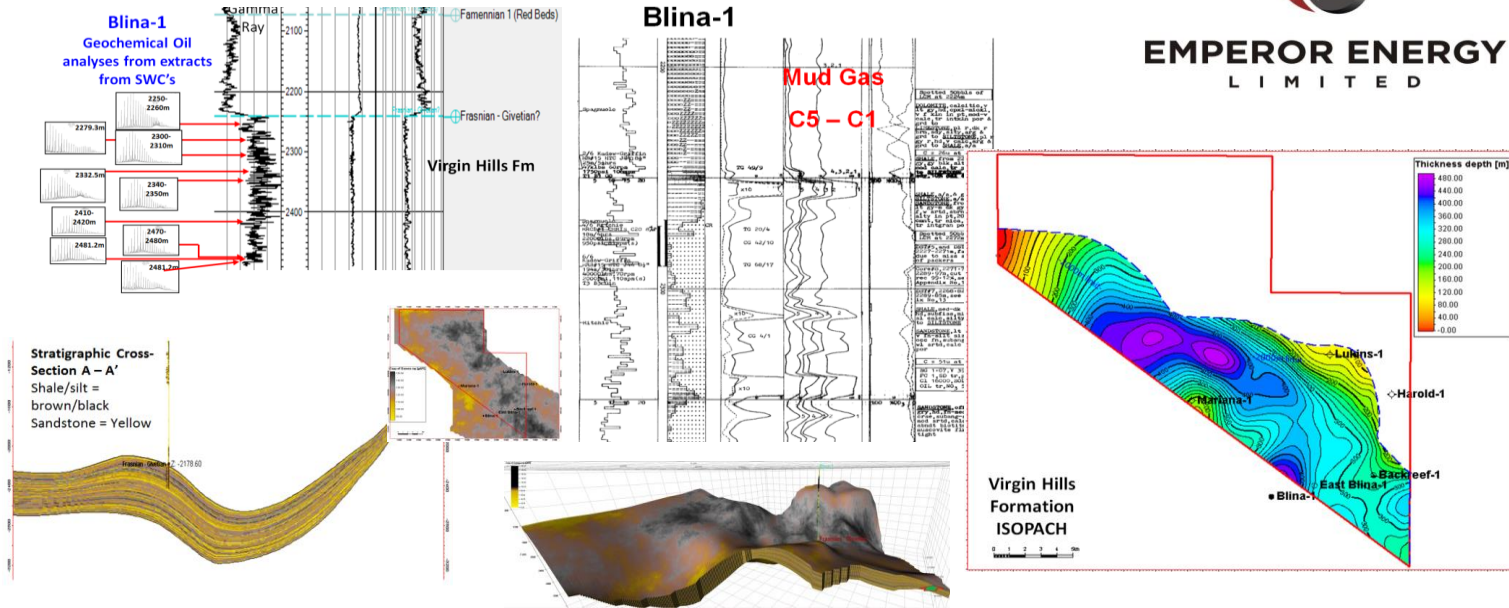
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# Backreef Unconventional Oil Potential – 3D-GEO Study



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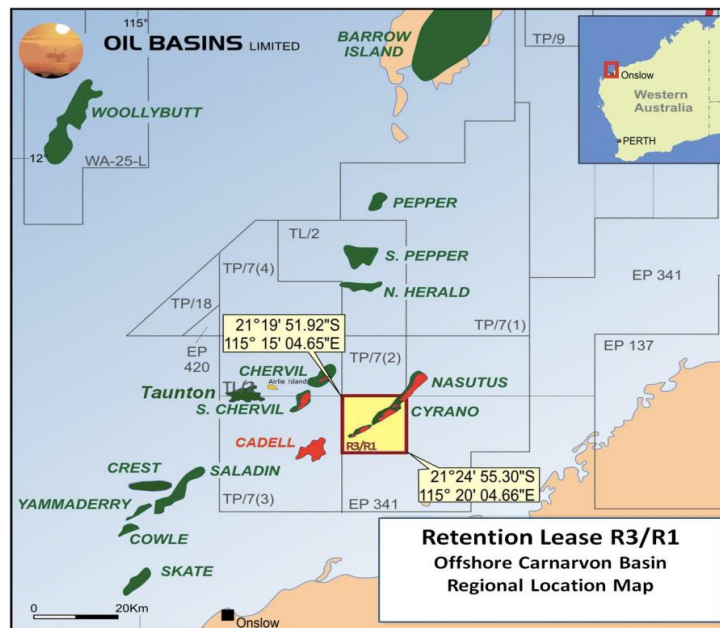
Backreef Area    Deep Oil	PRMS Prospective Resources			
Product	P90	P50	P10	Mean
Oil-in-Place MM bbl	3,063	6,645	12,333	7,302
Recoverable Oil MM bbl	139	391	1,008	510
Recoverable Solution Gas Bcf	119	370	1,073	517

# Carnarvon Basin, Western Australia

## Retention Lease R3 / R1 (Cyrano)



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- Cyrano has Contingent Resource (2C) of 3.01 MMbbl of oil
- Additional Prospective Resources (P50) estimated at 0.928 MMbbl





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## Carnarvon Basin, Western Australia Retention Lease R3 / R1 (Cyrano)

- EMP is Operator and holds 100% of R3/R1
- Permit Area – 81 km<sup>2</sup>
- The Cyrano Oil Field was discovered in 2003
- The field is defined by 4 vintage wells and 3D seismic
- The field is located in 17 m of water.
- Productive reservoirs commence at 600 m depth.
- Permit renewed for 5 years in early 2017
- EMP is looking to **farm out** R1/R3 in 2018



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