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ASX Announcement

11 October 2016

COMPANY PRESENTATION – MCARTHUR BASIN

Attached is a presentation given today at the Petroleum Exploration Society of Australia by Dr John Warburton a Director of Imperial Oil & Gas Pty Ltd. The presentation discusses the tectonic and depositional environment, shale quality, analogues, exploration approach and petroleum resource potential in the McArthur Basin.

ABOUT EMPIRE ENERGY GROUP LIMITED

Empire Energy is a conventional oil and natural gas producer with operations in Appalachia (New York and Pennsylvania) and the MidCon (Kansas and Oklahoma). The Company has ~14.6 million acres in the McArthur & Beetaloo Basins, Northern Territory, both of which are considered highly prospective for large shale oil and gas resources. Work undertaken by the Company over the past 5 years demonstrates that the Central Trough of the McArthur Basin, (of which the Company holds around 80%), is a major Proterozoic depo-centre that forms one segment of a series of extensive prolific hydrocarbon basins similar to those extending through Oman, Siberia and Southern China and which contain resources of billions of barrels of oil equivalent.

1.64 billion year Petroleum System

John Warburton
Tuesday 11th October 2016

Disclaimer

The purpose of this presentation is to provide general information about Empire Energy Group Limited ("Empire Energy") and its 100% owned subsidiary Imperial Oil & Gas Pty Ltd. The presentation contains certain statements which may constitute "forward-looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward-looking statements.

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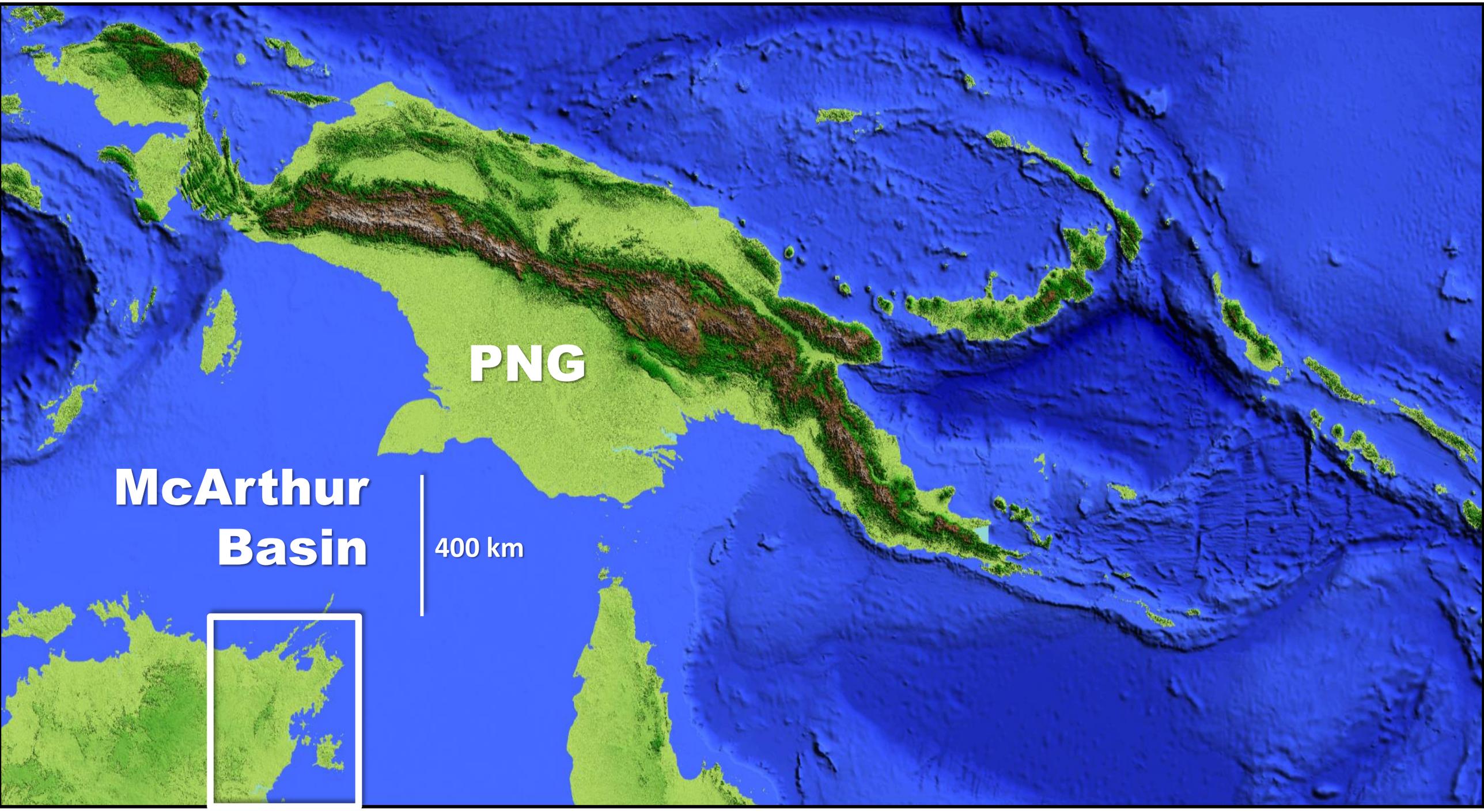
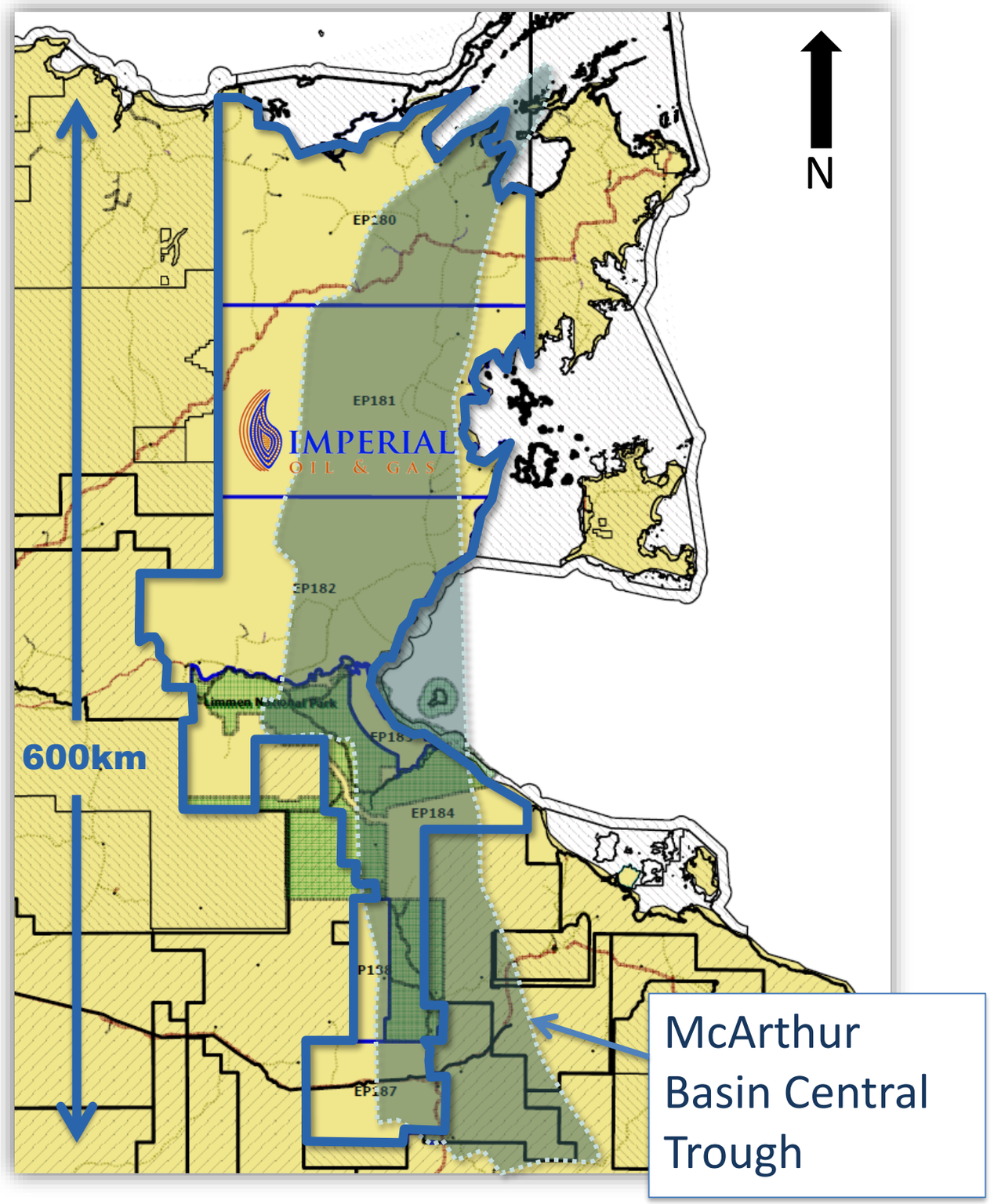
Location

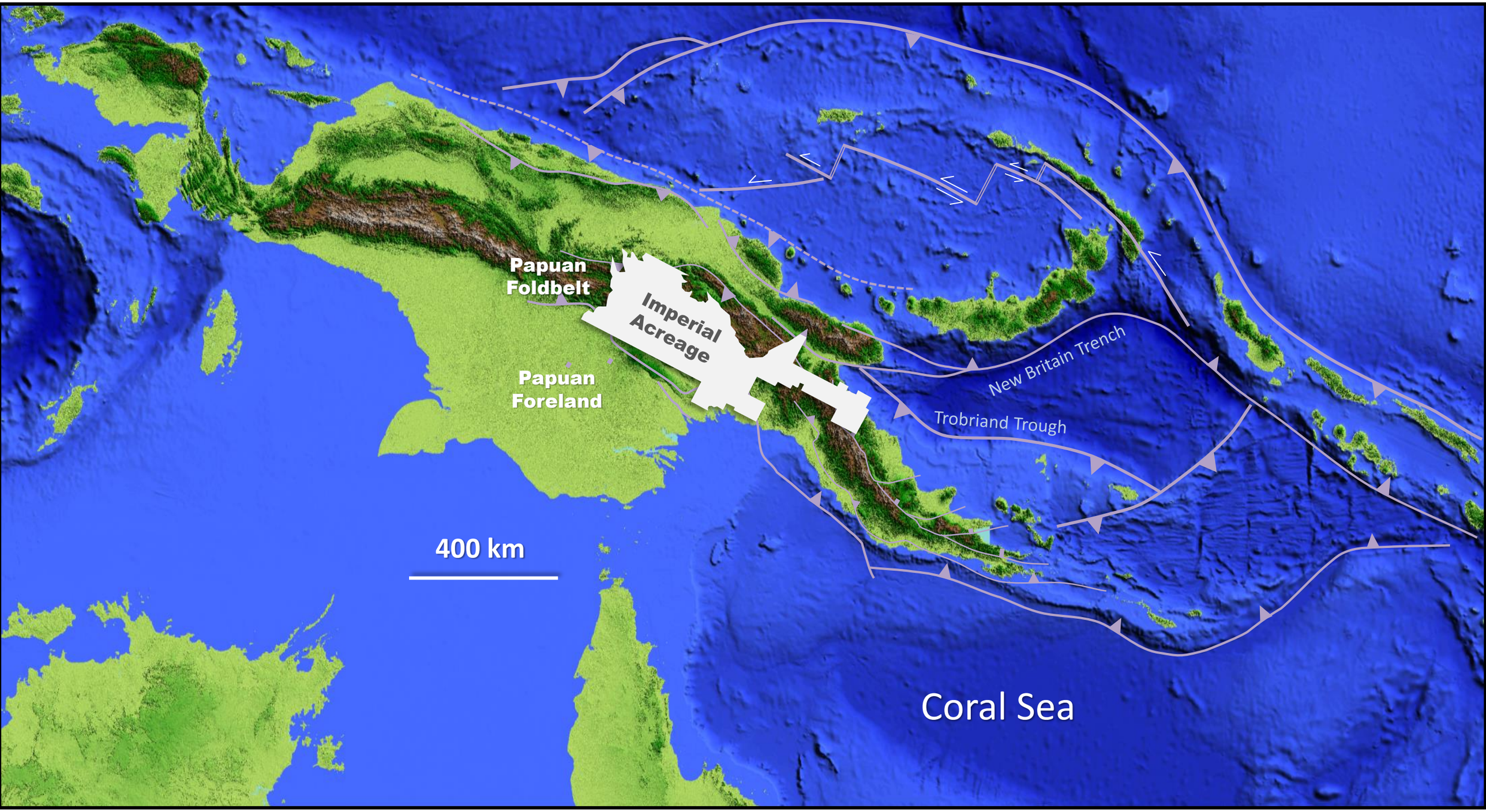


McArthur Basin

- **Imperial Oil & Gas** set up in 2011 as subsidiary (of ASX:EEG) to host NT Assets
- 59,000 km^2 acreage
- **Palaeo-Proterozoic**
- Proven petroleum system
  - C1 to C5 (no CO_2)
  - Strong liquids potential
  - Wells flow gas without fracking
- Mostly Aboriginal Owned Land



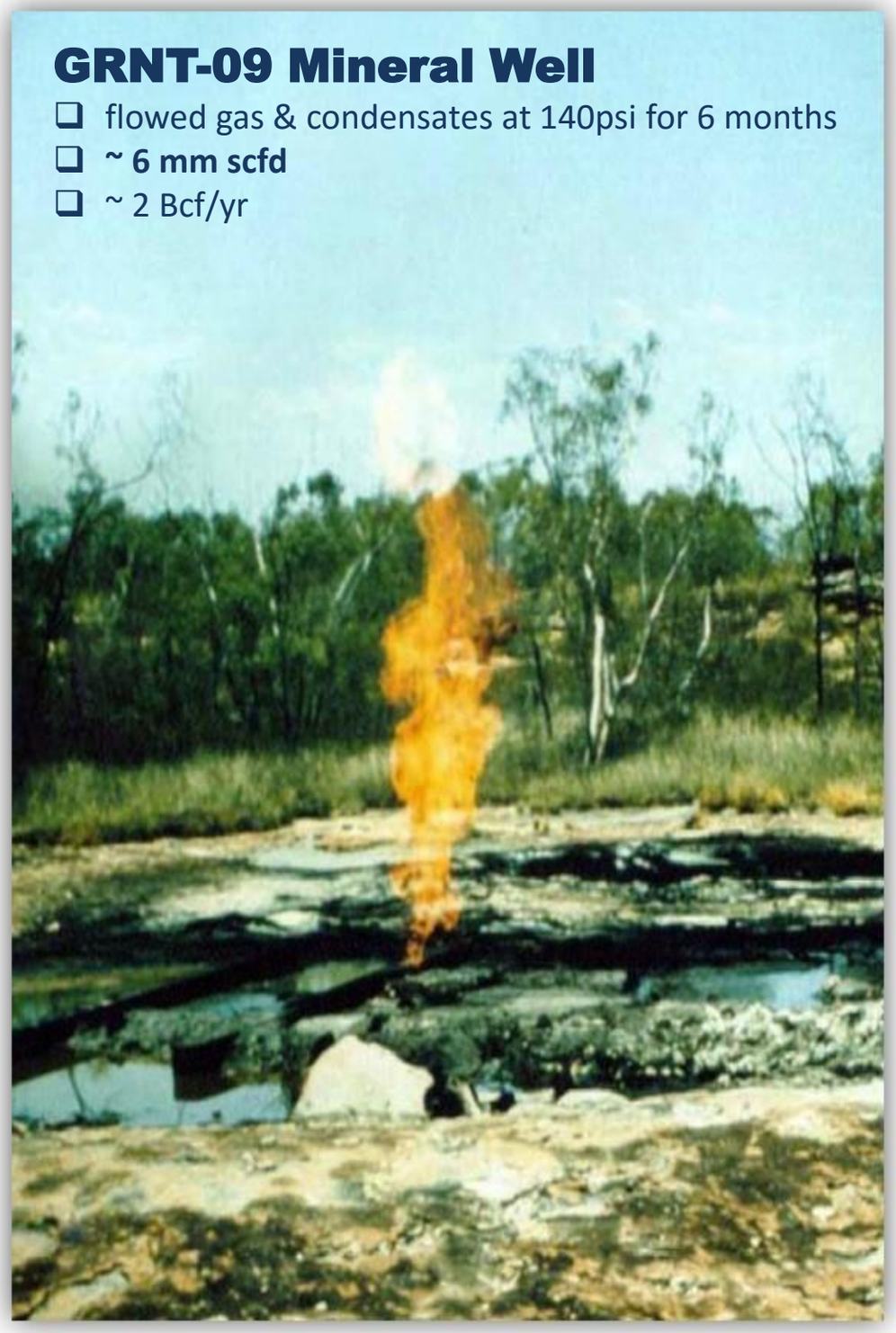
Scale


Papuan
Foldbelt
Imperial
Acreage
Papuan
Foreland
New Britain Trench
Trobriand Trough
400 km
Coral Sea

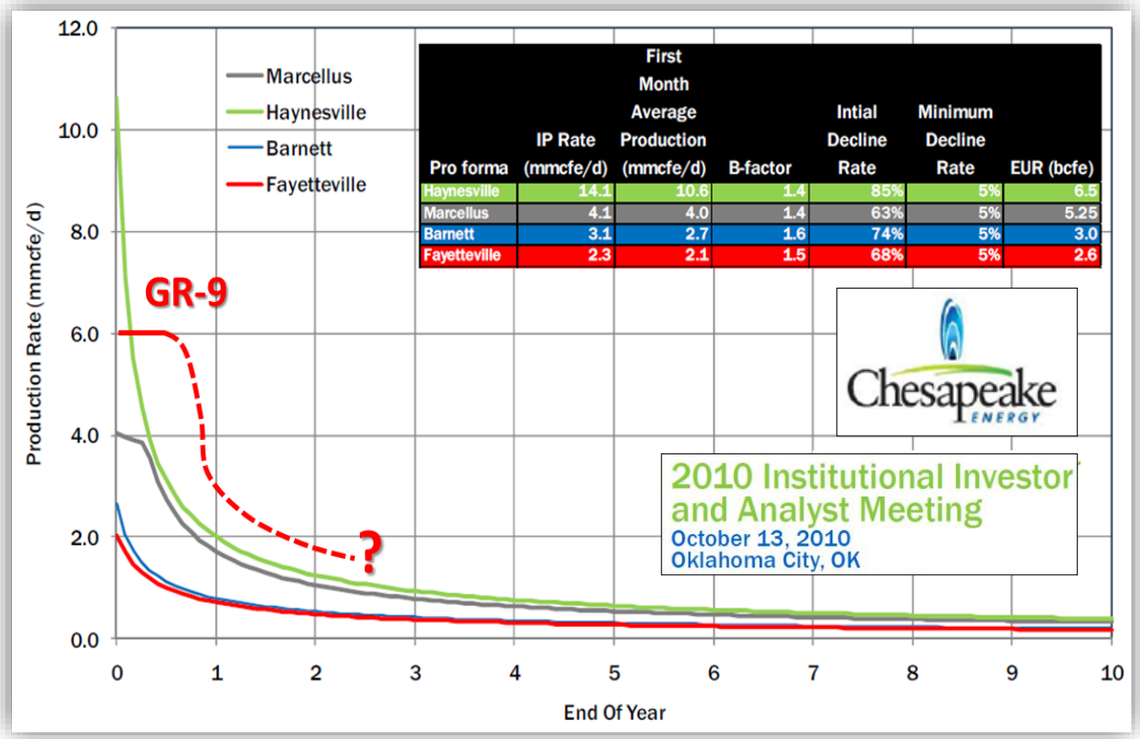
Where the story starts

GRNT-09 Mineral Well

- ❑ flowed gas & condensates at 140psi for 6 months
- ❑ **~ 6 mm scfd**
- ❑ ~ 2 Bcf/yr

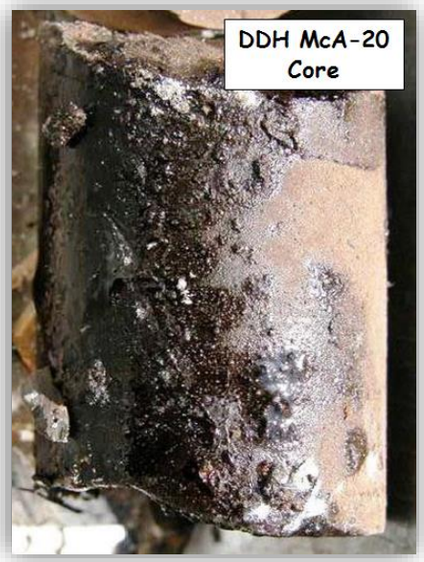


Armour Energy ASX announcement 11th October 2010



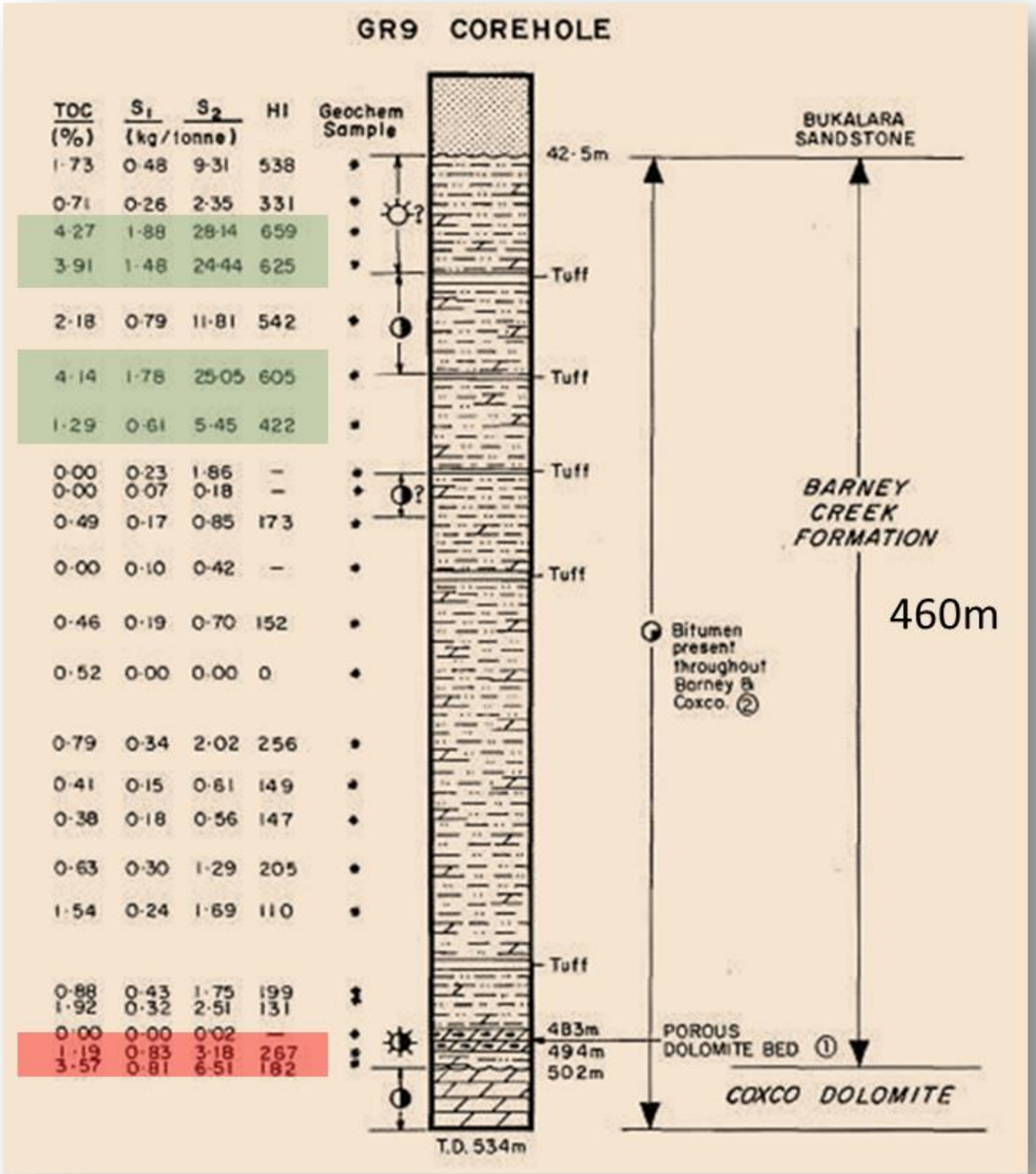
Pro forma	IP Rate (mmcfe/d)	First Month Average Production (mmcfe/d)	B-factor	Intial Decline Rate	Minimum Decline Rate	EUR (bcfe)
Haynesville	14.1	10.6	1.4	85%	5%	6.5
Marcellus	4.1	4.0	1.4	63%	5%	5.25
Barnett	3.1	2.7	1.6	74%	5%	3.0
Fayetteville	2.3	2.1	1.5	68%	5%	2.6

Mineral exploration hole *drilled at the Glyde River prospect by* ***Amoco*** *in* ***1979***



IMPERIAL OIL & GAS

Where the story starts



The most spectacular indication of live hydrocarbons encountered to date in the McArthur Group was in the Kennecott-Amoco mineral exploration corehole GR 9, drilled in the Glyde area. A summary log of this drillhole is shown as Figure 5, and the location is shown in Figure 2. Upon unintentional swabbing at the end of drilling (in December 1979), the corehole experienced a gas blow-out which yielded a 5-6m (15-20 ft) long flame. Condensate flow accompanying the gas, was indicated by the bright orange-yellow colour of the flame, and by an accompanying sooty tail. The hole flowed gas for an indeterminate period during the immediately following "Wet" season. By the end of the "Wet" the hole was filled with water and the gas flow had degenerated to a series of gas bubbles percolating through hydrostatic head. A sample of the gas taken at this stage yielded the following analysis:-

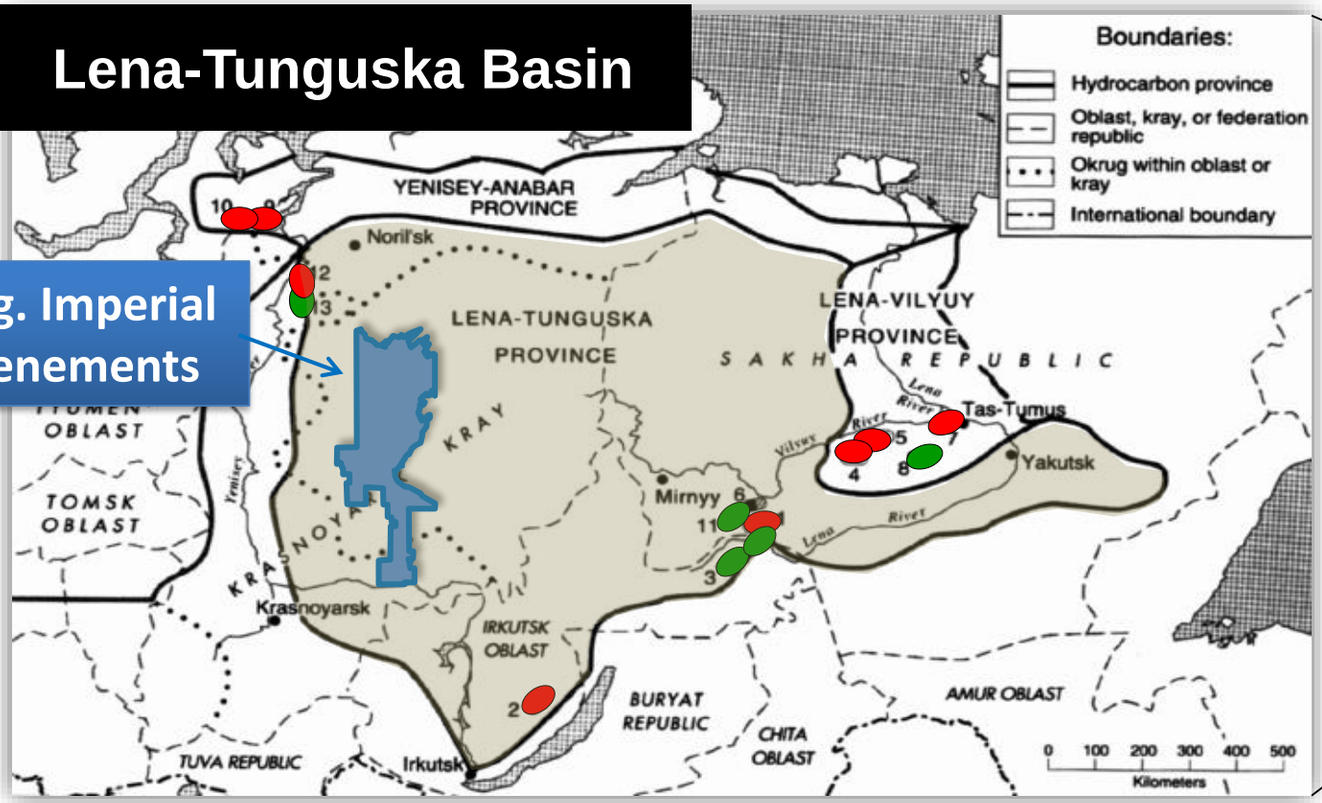
Methane	74.25%
Ethane	10.25%
Propane	3.25%
Iso-Butane	0.175%
N-Butane	0.60%
N-Pentane	0.105%
Hexane	0.165%
Heptane	0.08%
Nitrogen	10.75%
Carbon Dioxide	0.20%.

The hole was plugged with cement in April 1980.

Analogues

Lena-Tunguska Basin

e.g. Imperial Tenements



Siberia, Russia

- Conventional dolomite reservoirs
- 25 HC discoveries
- Largest field 260 million bbl & 11 Tcf
- Proven 80 billion boe & 477 Tcf
- **Oil & Gas Shales**
  - **Black, bituminous, limy, silty carbonaceous**
  - **Average TOC = 0.2%, locally 5-10%**

Proterozoic source rock major petroleum sytems

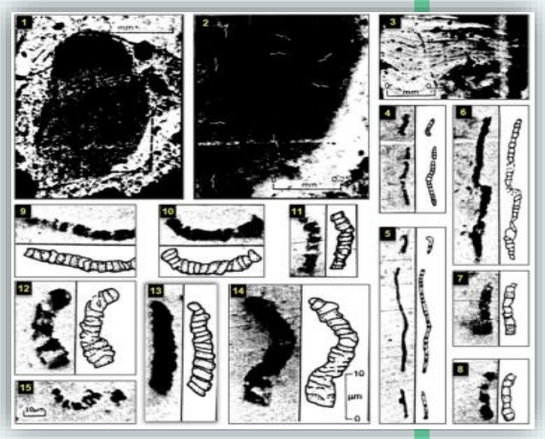
China – Sichuan & Tarim Basins
Proven 18 BBoe & 9 Tcf

Oman Basin
Proven 5.5 BBoe & 30 Tcf

Organic Carbon

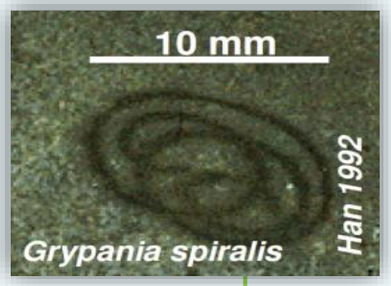
Organic Carbon

Prokaryotic Cyanobacteria
(Blue-green 'Algae')



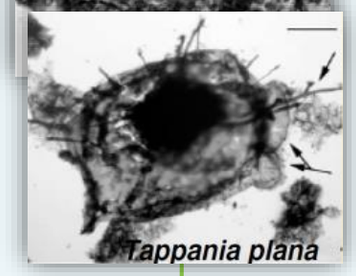
3.47 Bn yr

1st Eukaryote?
LIFE!



1.87 Bn yr

'Great Oxygenation Event'



1.49 Bn yr

Red algae

1.2 Bn yr

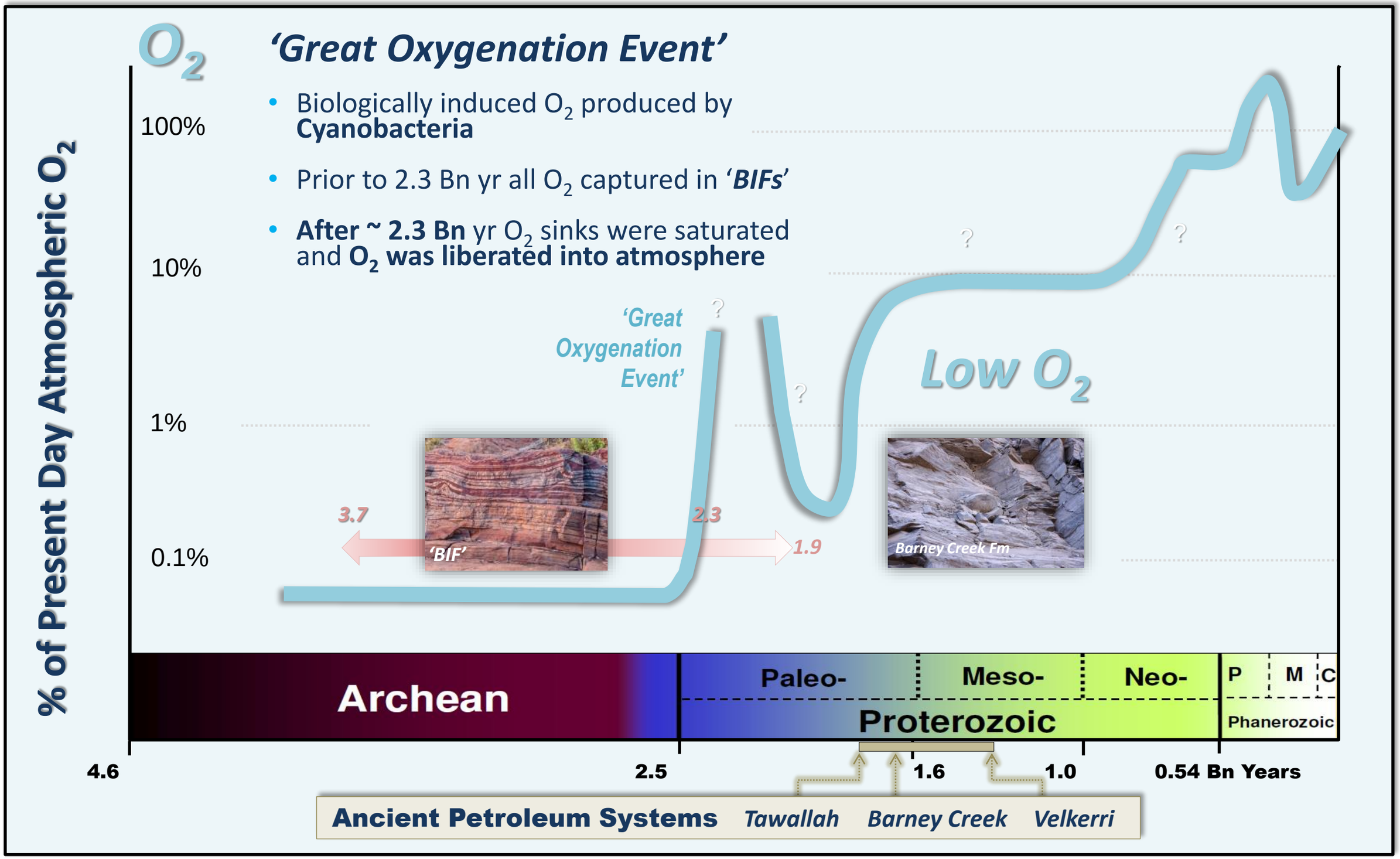
Archean | Paleo- | Meso- | Neo- | Proterozoic | P | M | C | Phanerozoic

4.6 | 2.5 | 1.6 | 1.0 | 0.54 Bn Years

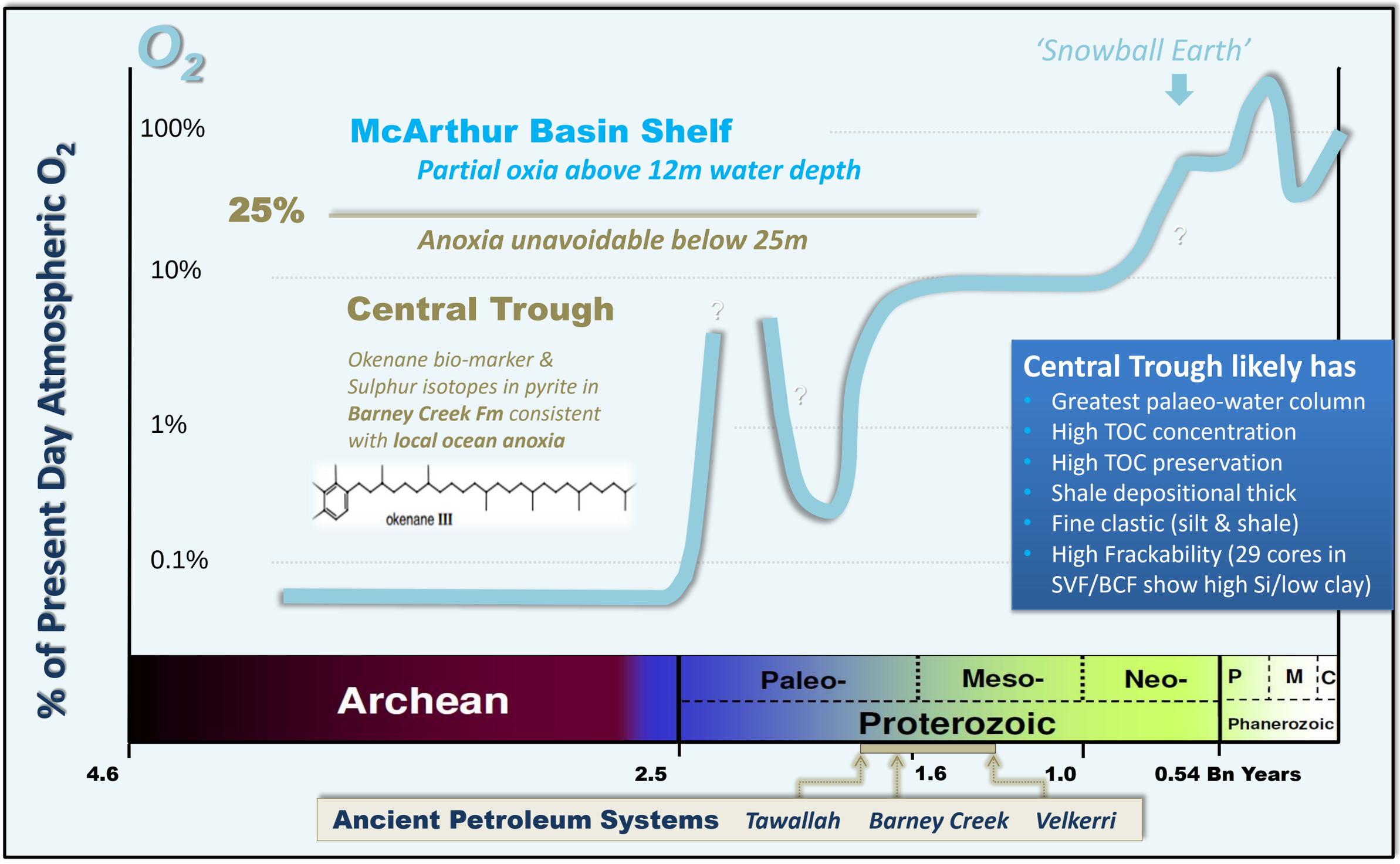
Age of the Earth — *Today*

Ancient Petroleum Systems *Tawallah* *Barney Creek* *Velkerri*

Biosphere Evolution



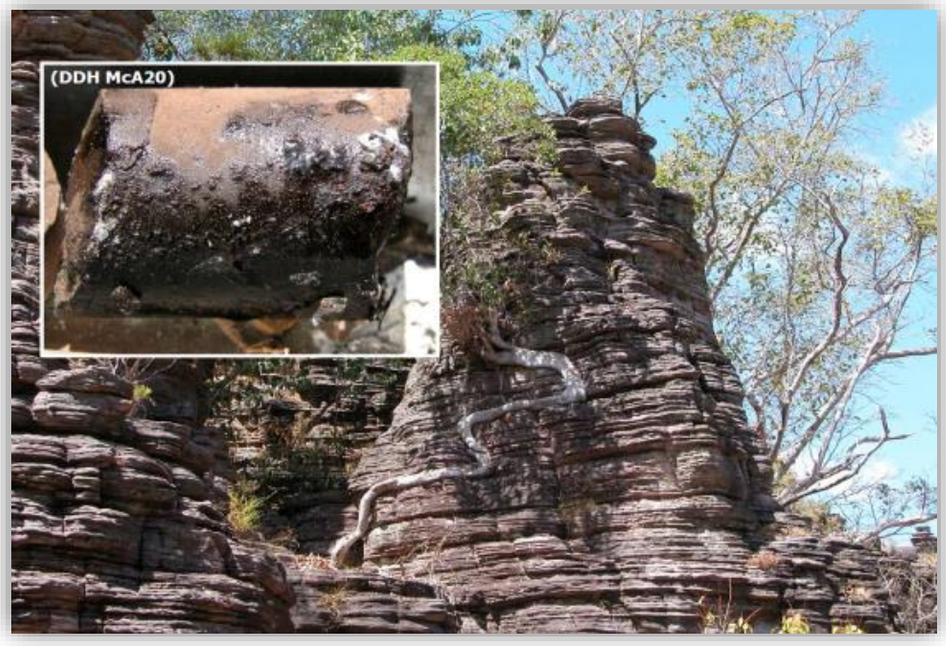
Organic Carbon Preservation



Ancient Petroleum Systems

Central Trough Multiple Stacked Targets

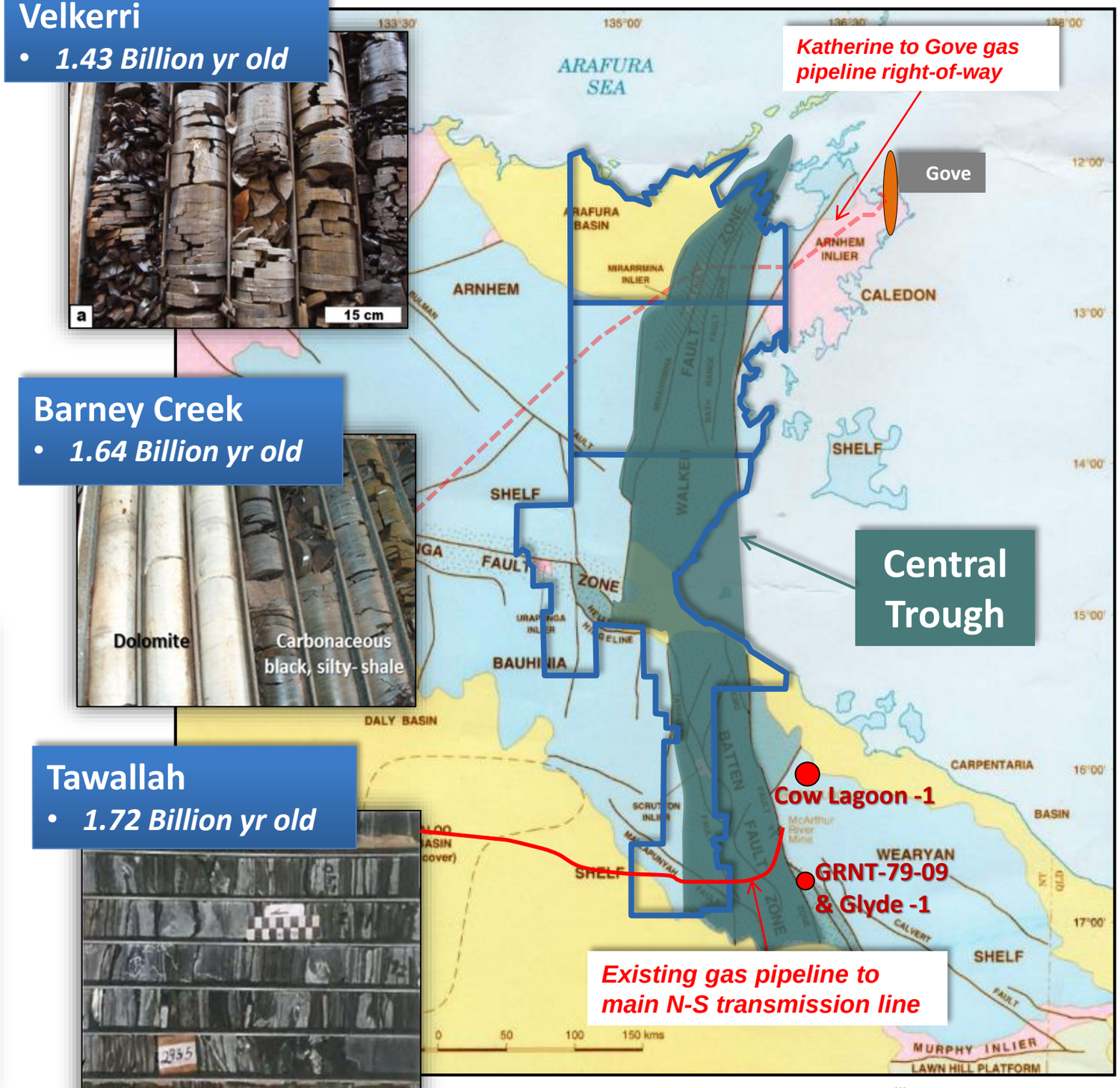
Proterozoic laminated black organic sulphurous carbonaceous silt & mudstone petroleum source rocks



Velkerri
- *1.43 Billion yr old*

Barney Creek
- *1.64 Billion yr old*

Tawallah
- *1.72 Billion yr old*



IMPERIAL OIL & GAS

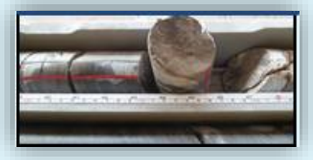
Proterozoic Petroleum System

McManus 1
Pacific Oil & Gas Pty Ltd
November 1989

Kalala S-1
Origin Sasol Falcon JV
September 2015

Amungee NW-1
Origin Sasol Falcon JV
October 2015

BCF SC 04
Imperial Oil & Gas
July 2014

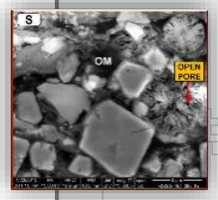


Wyworrie #1
Pangaea Pty Ltd
August 2015

Tarlee S3
Pangaea Pty Ltd
September 2014

Birdum Creek #1
Pangaea Pty Ltd
July 2015

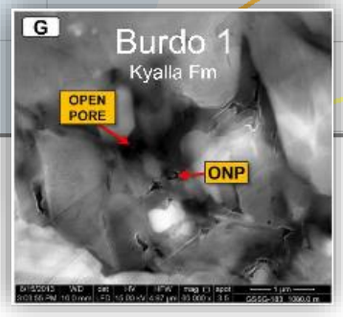
Altree 2
Pacific Oil & Gas Pty Ltd
December 1988



Shenandoah 1
Falcon Oil & Gas Australia
October 2011
Excellent lower Kyalla gas shows. Up to 1000unit or 11% gas

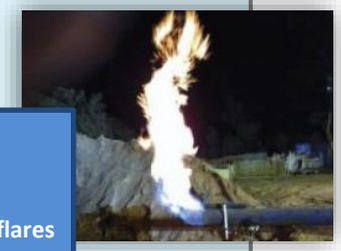
Jamison 1
Pacific Oil & Gas Pty Ltd
November 1990

Burdo 1
Pacific Oil & Gas Pty Ltd
September 1993



Tanumbirini 1
Santos Ltd
October 2014

Cow Lagoon 1
Armour Energy Ltd
June 2012
Significant gas shows & flares from Lynott, Reward & Coxco dolomites



Glyde 1 ST1
Armour Energy Ltd
August 2012
Offset from GRNT 79-09
Natural fractures, Free flowed @ 3.3 MMscf/d

Legend

- Prospective Area
- McArthur Basin
- Beetaloo Sub-Basin
- Glyde Sub-Basin
- North McArthur Sub-Basin
- Carpentaria Sub-Basin
- South Nicholson Sub-Basin

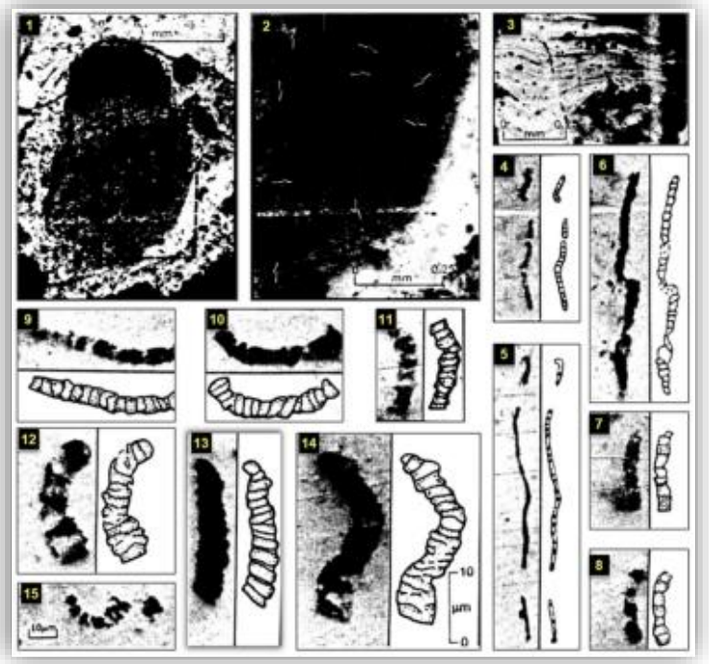
0 100 Miles

IMPERIAL OIL & GAS

Ingredients ….

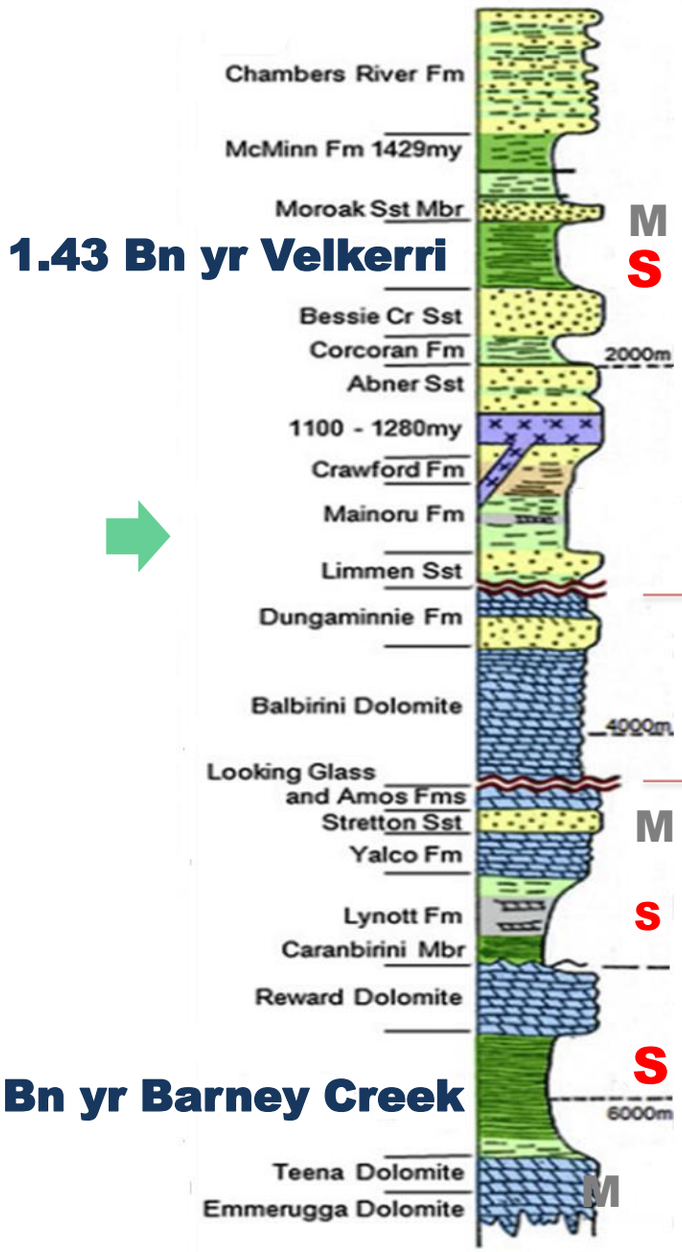
✓ Organic Carbon Presence

3.465 Bn Yr onwards



okenane III

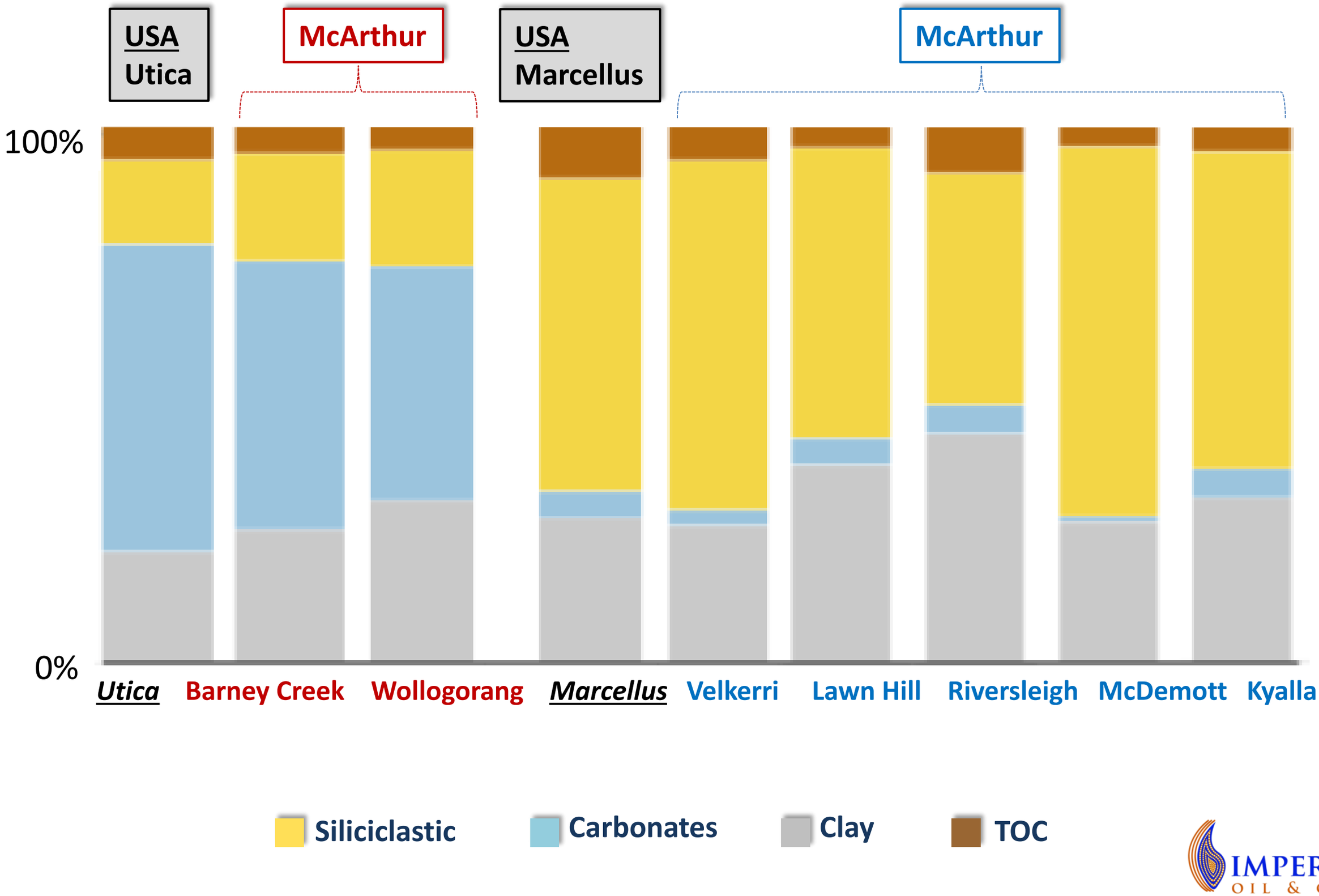
✓ Anoxic Basin depositional environment



Modified after Craig et al. 2013

✓ Mature Source Rocks & HCs

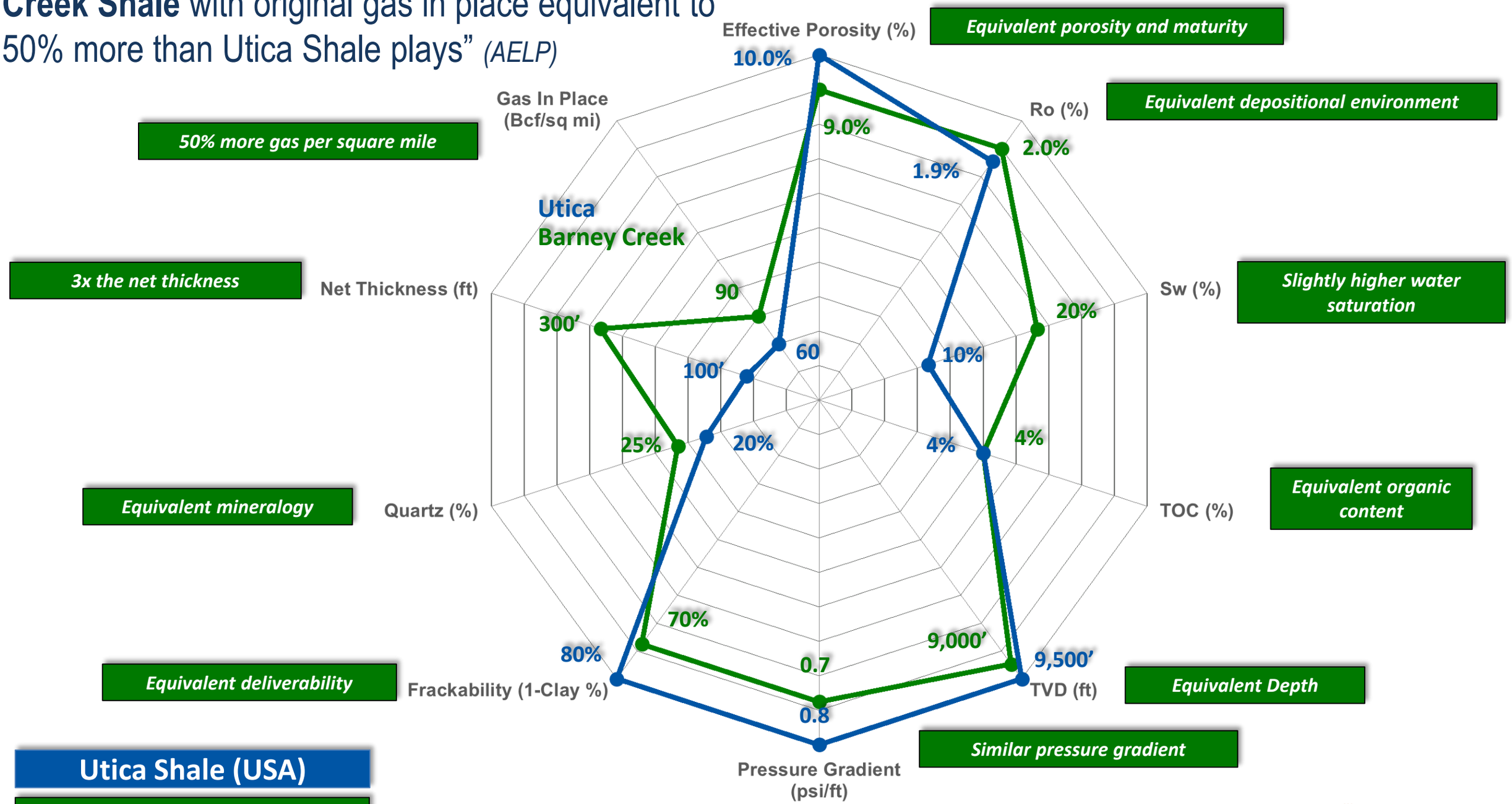
Shale Composition



Shale Quality

Utica Equivalent Found in Australia

"A major unconventional opportunity with the **Barney Creek Shale** with original gas in place equivalent to 50% more than Utica Shale plays" *(AELP)*



50% more gas per square mile

Equivalent porosity and maturity

Equivalent depositional environment

3x the net thickness

Slightly higher water saturation

Equivalent mineralogy

Equivalent organic content

Equivalent deliverability

Equivalent Depth

Similar pressure gradient

Utica Shale (USA)

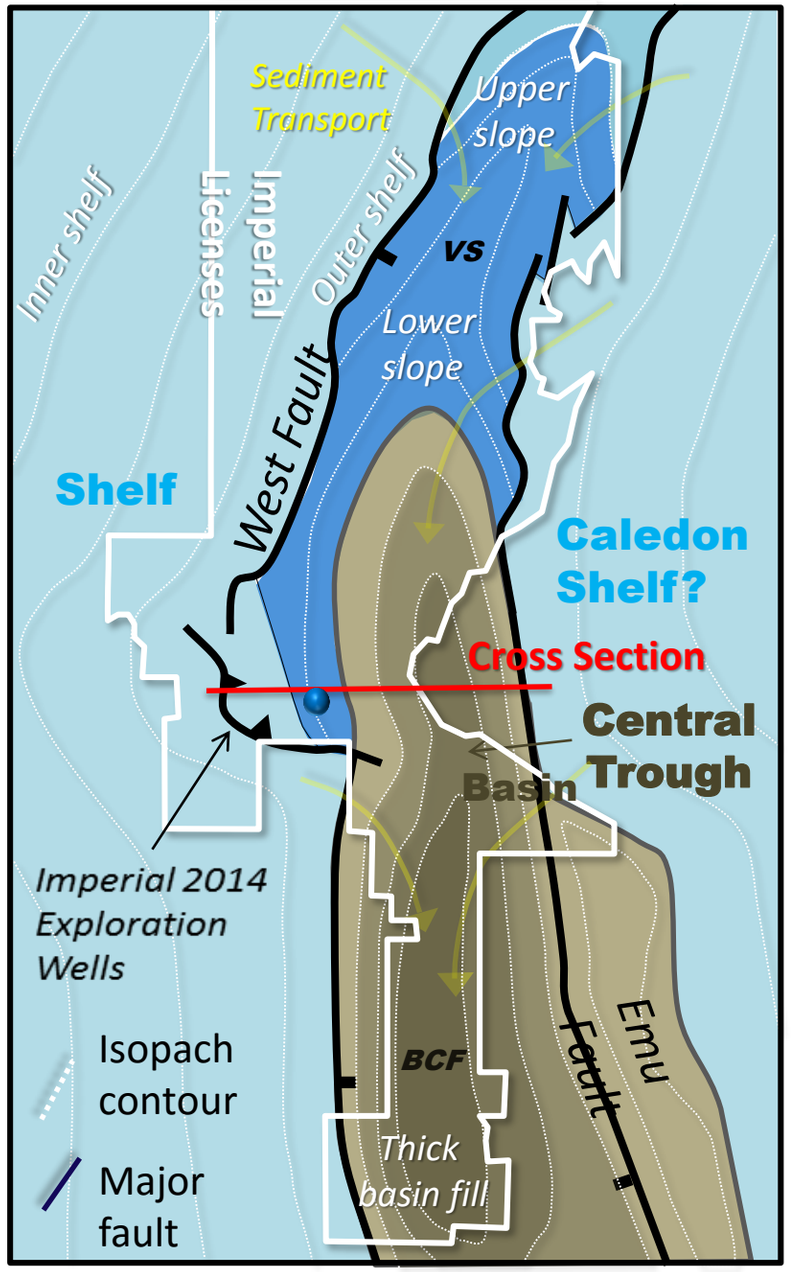
Barney Creek Formation (NT)

Note: Subsurface parameters are based on high graded pay intervals - AELP

GDE at 1.64 Bn yr

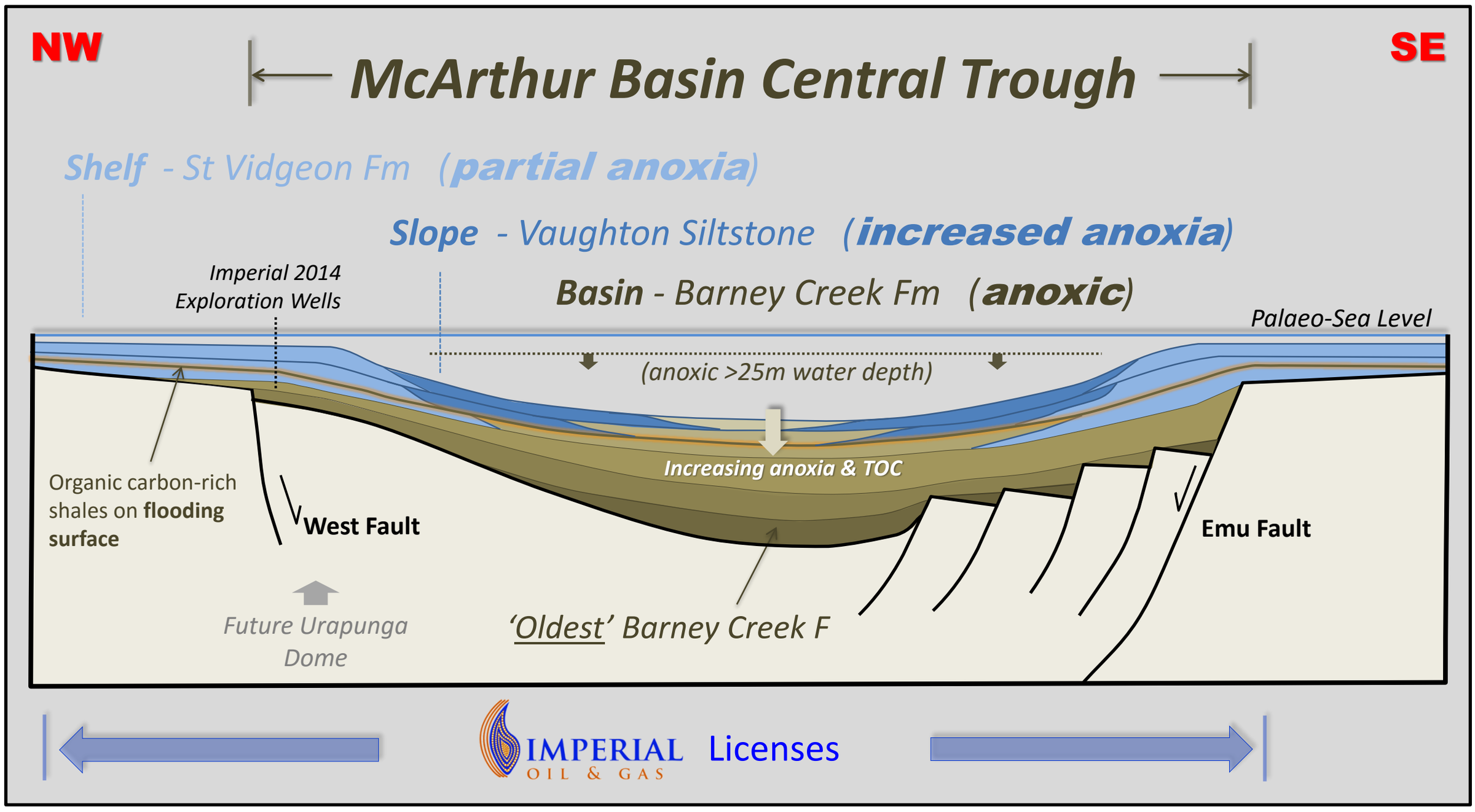
✓ Organic Carbon *Preservation* in restricted anoxic trough

- Narrow restricted fault-bounded depo-centre
- Contemporaneous shelf, slope & basin
- Genetically linked facies associations (dated)
  - **Shelf** *St Vidgeon Fm*
  - **Slope** *Vaughton Siltstone Fm*
  - **Basin** *Barney Creek Fm*
- Greatest organic carbon preservation & thickness predicted in restricted Basin
- TOC present in shales along MFSs in shelf *St Vidgeon Fm (Imperial 2014 Well)*



Anoxia Profile

Imperial acreage has the depo-centre with the greatest predicted TOC preservation & shale thickness



Petroleum Generation

W

Increasing TOC

E

Basin - Barney Creek F (**Average TOC 4.6%**)

BCF-SC-04

Oil

Gas

Emu Fault

Imperial Oil & Gas 2014
Well BCF-SC-04

'Ro'

GL

Sandstone & Siltstones

1% TOC avg.

Shale & Carb mudstone

4.5% TOC avg.

> 100m interval

MFS

Dolomites & dolomitic silt and sandstones

Siltstone & sandstone Interbeds

Predicted Thermal Maturity Profile

BCF-SC-04

Shelf

Gross Depositional Environments

MFS

Slope

Basin (anoxic)

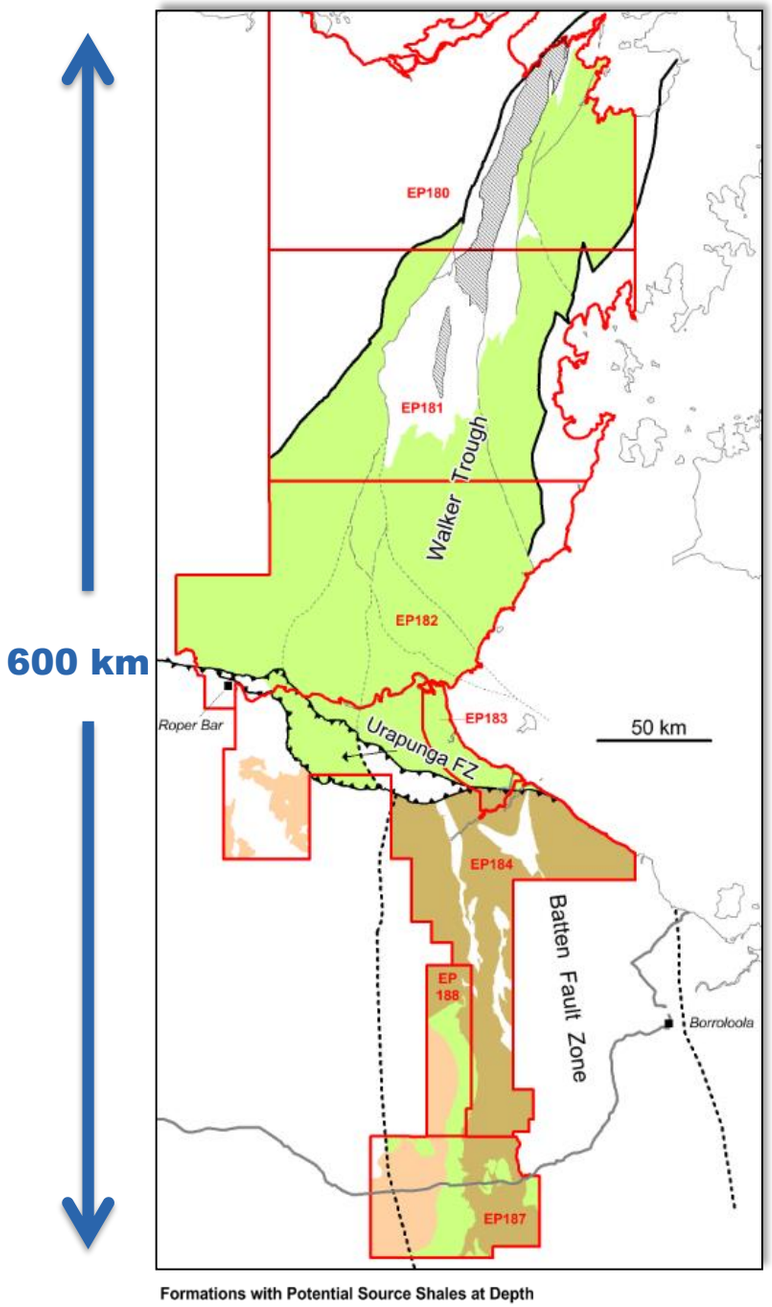
West Fault

Emu Fault

IMPERIAL OIL & GAS

Prospect Evaluation Methodology

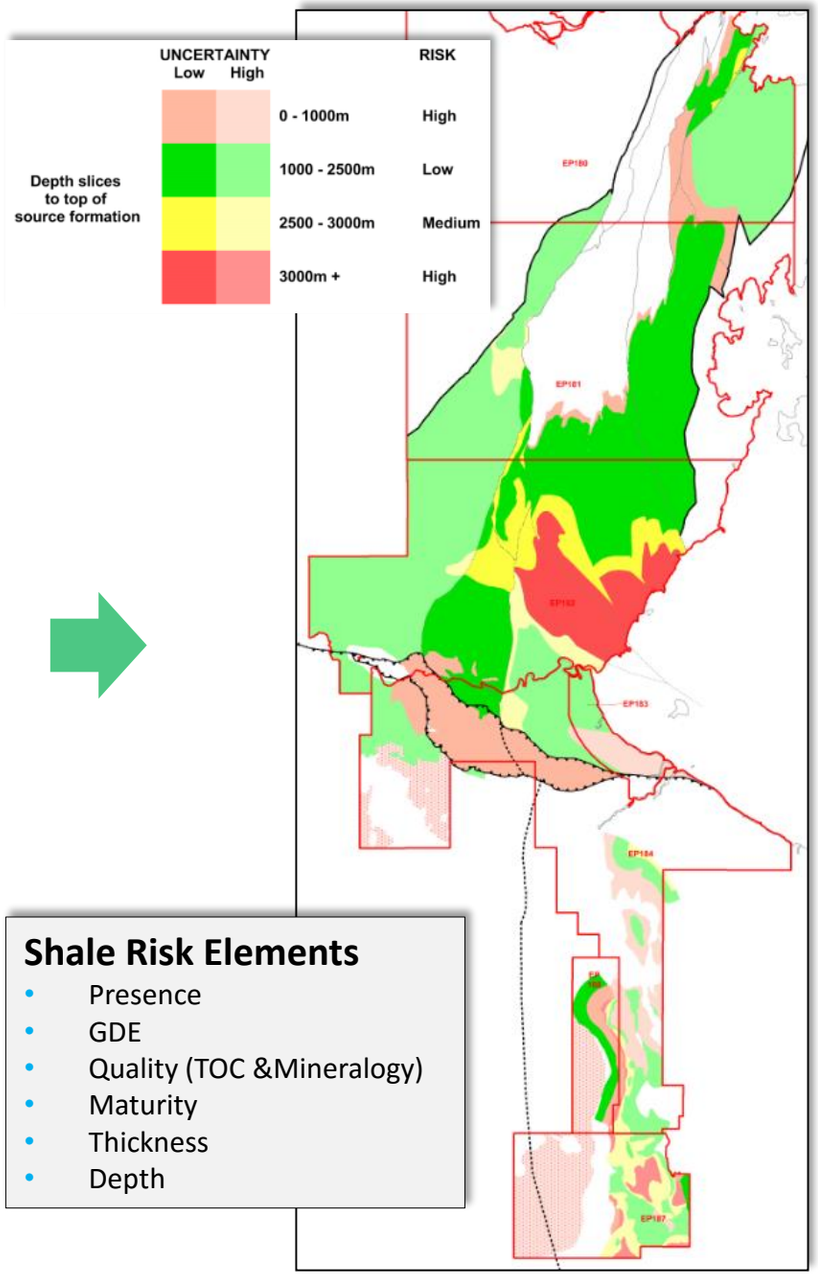
1. Play Fairway Definition



Formations with Potential Source Shales at Depth

Velkerri Formation	- ROPER GROUP
Barney Creek Formation or Equivalent	- MCARTHUR GROUP OR EQUIVALENT
Wollogorang and/or McDermott Formations	- TAWALLAH GROUP

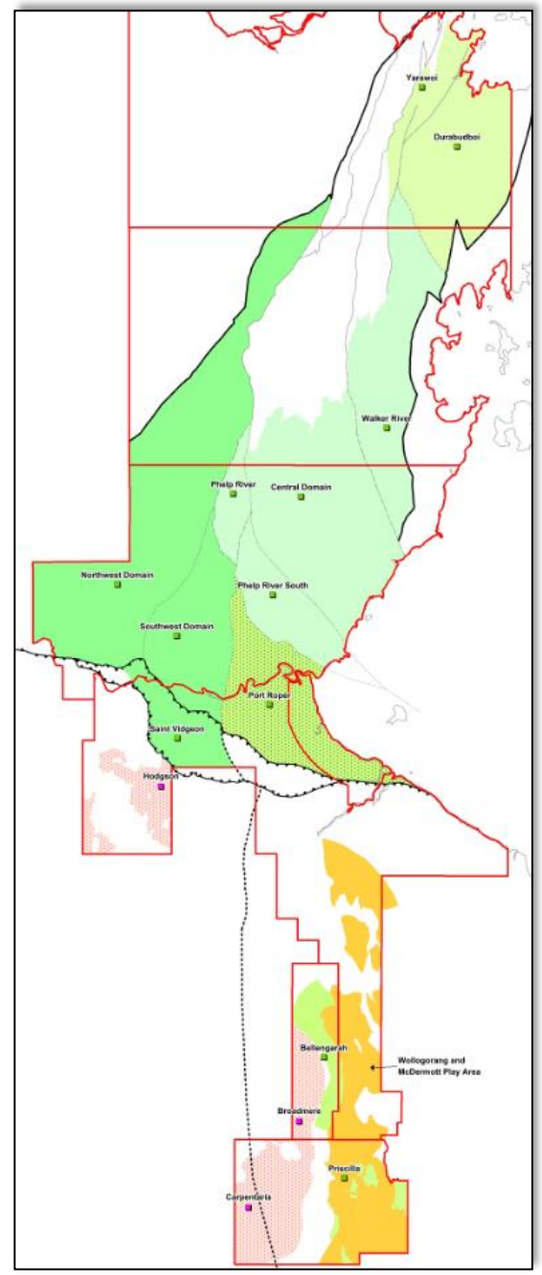
2. Common Risk Segments



Shale Risk Elements

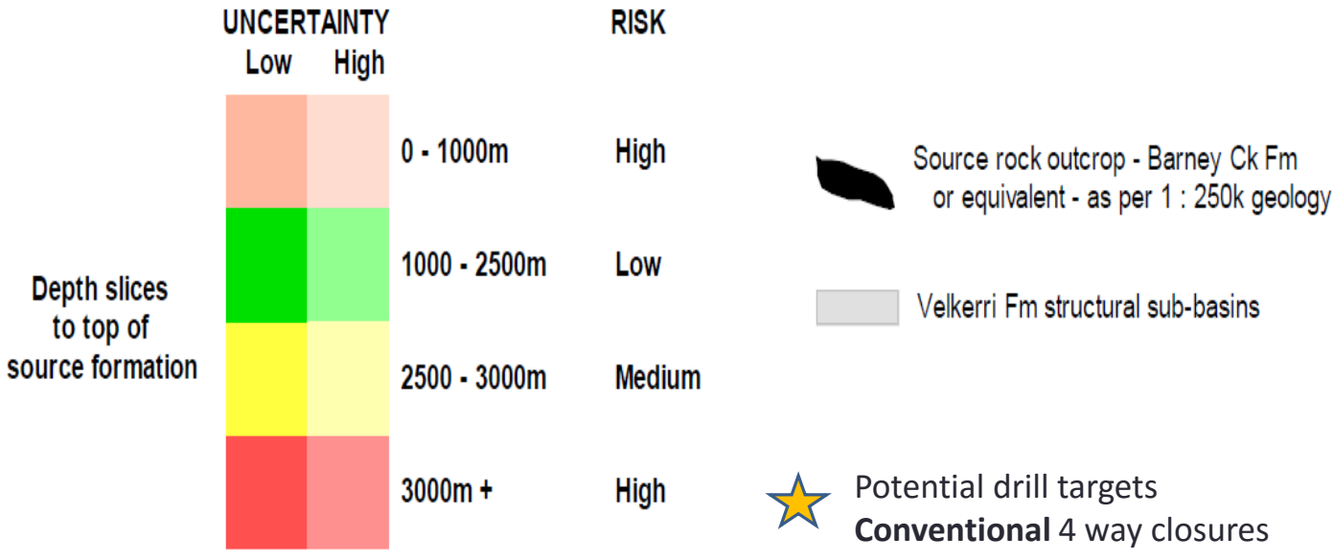
- Presence
- GDE
- Quality (TOC &Mineralogy)
- Maturity
- Thickness
- Depth

3. Prospect Definition

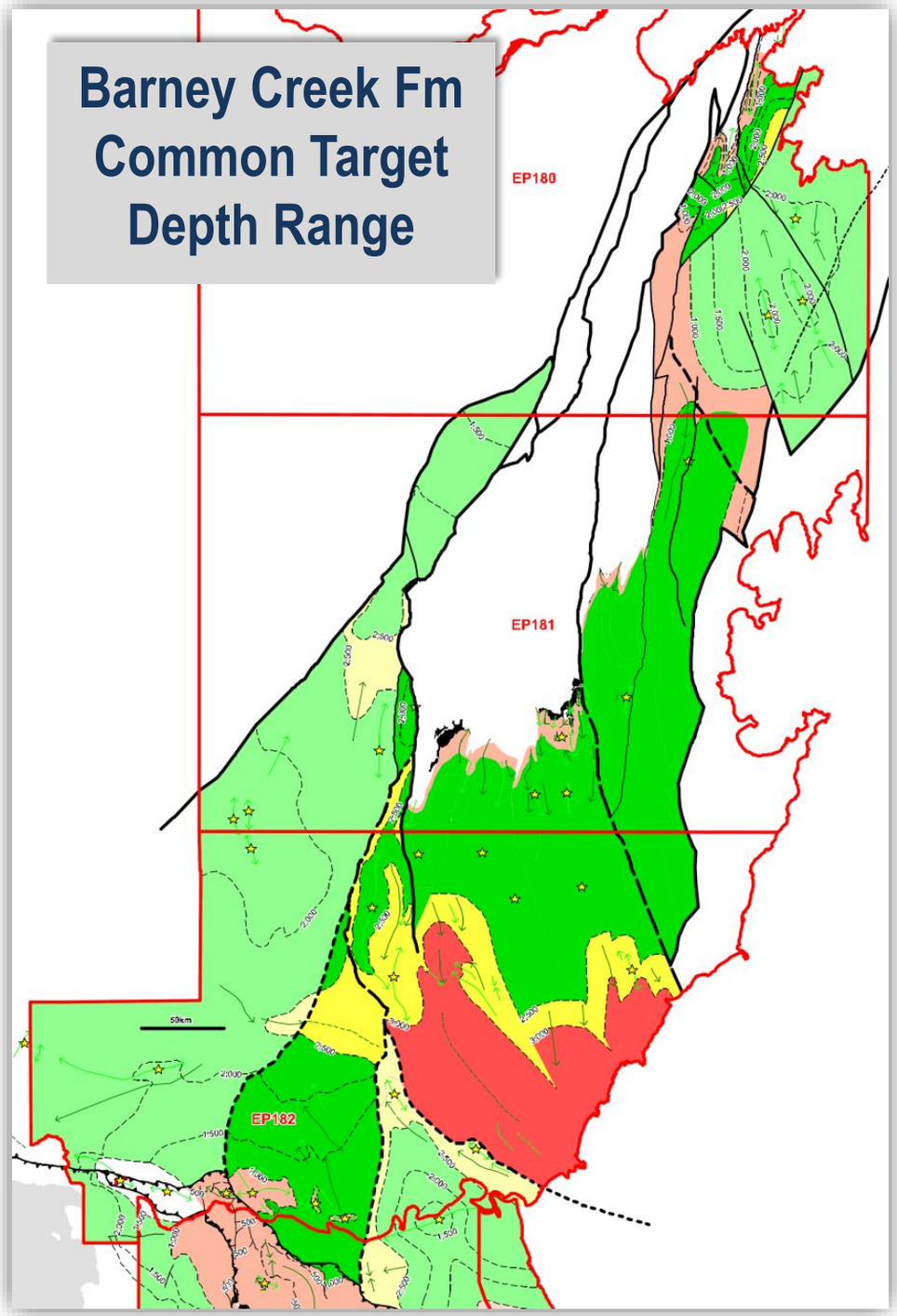


Common Risk Segment Approach

Northern License Target Depth



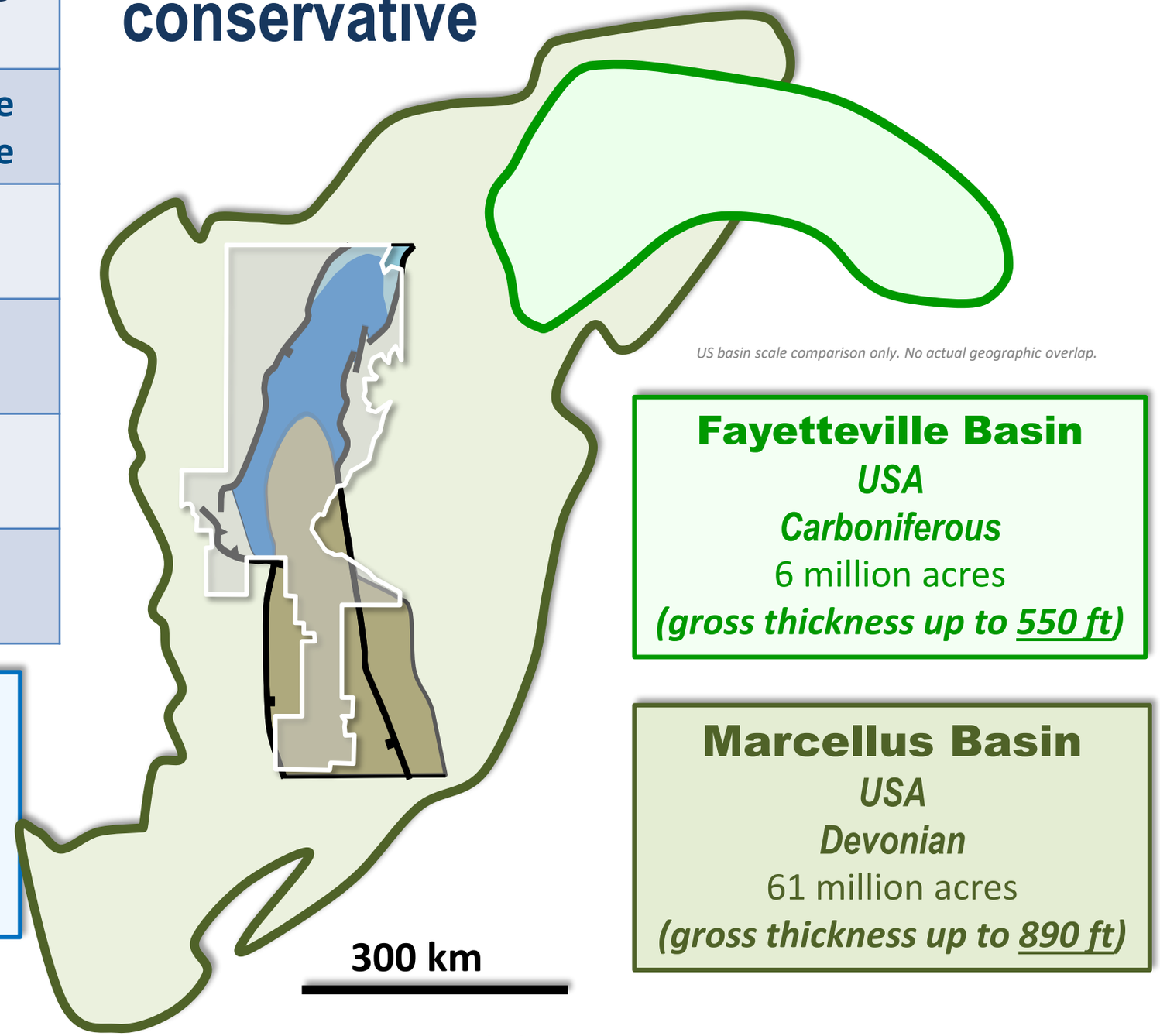
- Extensive prospective target formation in optimum depth range ~1,000-1,500 m
- Incremental prospective formation present below 2,500 m
- Up to 600m thick pay
- TOC up to 10.4%
- Porosity up to 6.86%
- Maturity oil, oil/gas, gas zones
- Porous dolomite reservoir (Coxco) directly beneath shale formation



USA Scale Analogue

Basin	Prospective Area km² *(million acres)*	Un-risked Prospective Resources
Imperial Licenses	**22,258** *(5.5 mm)*	**P10 29 Tcfe** **P50 12 Tcfe**
Marcellus	**246,000** *(61 mm)*	**262 Tcfe**
Fayetteville	**23,309** *(6 mm)*	**42 Tcf**
Haynesville	23,310 *(6 mm)*	251 Tcf
Barnett	12,950 *(3.2 mm)*	44 Tcf

Imperial's resource estimates are conservative



US basin scale comparison only. No actual geographic overlap.

McArthur Basin
Imperial Acreage
Palaeo-Proterozoic
5.5 million acres
(gross thickness up to 3,000 ft)

Fayetteville Basin
USA
Carboniferous
6 million acres
(gross thickness up to 550 ft)

Marcellus Basin
USA
Devonian
61 million acres
(gross thickness up to 890 ft)

"Prospective Resource"– is the estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Resources

- Imperial WI = 100% Royalties = ~12%
- **Resource estimates are conservative**
  - Thickness of Velkerri & Barney Creek Shale assumed ~350ft despite some sections up to 1,500ft
  - Discounted 50 - 75% to account for variation in rock quality and lack of data
  - No conventional petroleum
- **Barney Creek only McArthur Basin shale to flow potentially commercial quantities of gas in wells**

Estimated Prospective Resources (Unrisked)					
Shale Target	**Acres***	**Gas/*Cond***	**P90**	**P50**	**P10**
Barney Creek	4,844,000	Bcf	3,304	8,699	20,172
		MM bbl	*66*	*174*	*403*
Velkerri	628,000	Bcf	383	1,192	3,086
		MM bbl	*8*	*24*	*62*
Tawallah (ASX:10Aug16)	1,384,000	Bcf	524	1,185	2,371
		MM bbl	*10*	*24*	*47*
TOTAL		**MM BOE****	**786** *(5 Tcfe)*	**2,068** *(12 Tcfe)*	**4,784** *(29 Tcfe)*

** Based on P10 calculations*

*** Conversion Factor 6 :1 for Bcf to MMBOE*

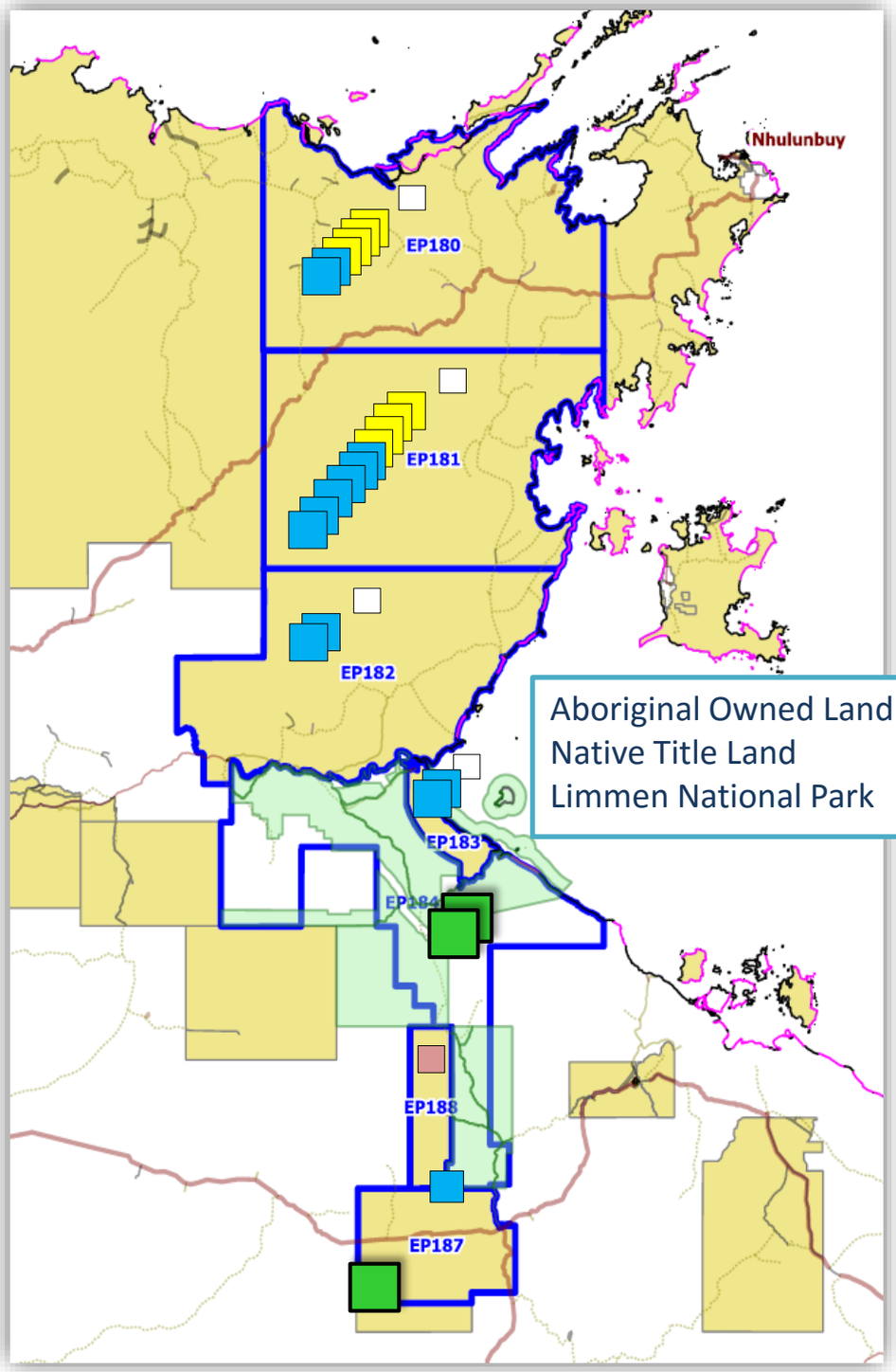
The Prospective Resource (total hydrocarbon resource) - estimated by Muir and Associates Pty Ltd (MAA) & Fluid Energy Consultants (FEC)
"Prospective Resource"– This estimate of prospective petroleum resources must be read in conjunction with the cautionary statement on page 22.

On-Country

ALRA Land

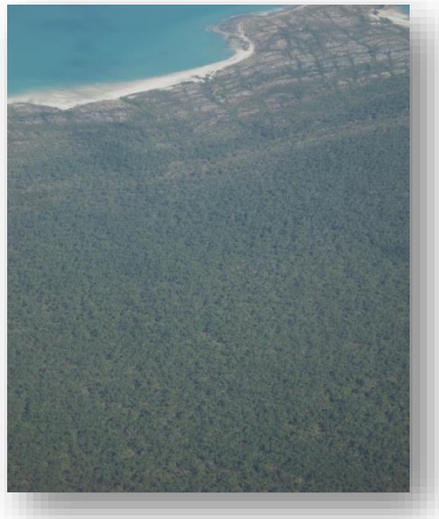
25 On-country meetings with Traditional Owners 2010-2013

3	***Final Agreements***	
13	***Approved*** *to negotiate agreement*	
8	*Requested further discussion*	
1	*Non-consented*	
	4 final meetings if required	



Travel

Journey management
Big country
No ancient forest

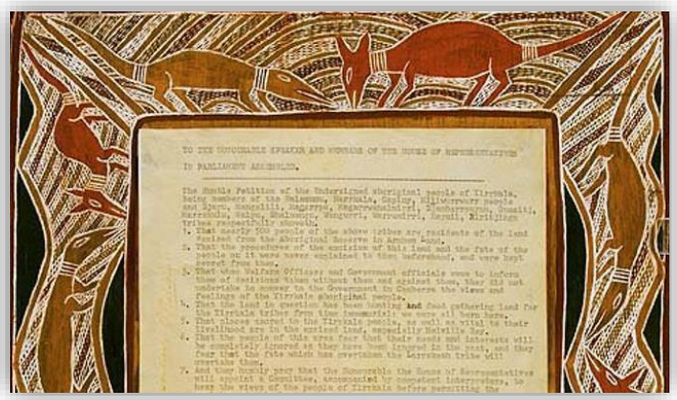


IMPERIAL
OIL & GAS

Meetings

Employment
Education
Culture & Heritage can co-exist with progress

Gawirrin Gumana *AO*



TO THE HONOURABLE SPEAKER AND MEMBERS OF THE HOUSE OF REPRESENTATIVES

IN PARLIAMENT ASSEMBLED.

The Humble Petition of the Undersigned Aboriginal people of Yirrkala, being members of the Dalwangu, Marrakula, Gupapuy, Miliditpuru people and Djapu, Buralidili, Waramirri, Ngaymil, Ngaymarrwanga, Dhalwangu, Dhaiti, Marrakula, Galpulu, Dhalwangu, Wangurri, Warramiri, Dhapiti, Birrkitpu tribes respectfully showeth:

1. That nearly 500 people of the above tribes are residents of the land zoned from the Aboriginal Reserve in Arnhem Land.
2. That the ancestors of the above tribes lived and the fate of the people or it were never explained to them beforehand, and were kept ignorant from them.
3. That when Welfare Officers and Government officials came to inform them of decisions taken without them and against them, they did not subscribe the to the decisions to express the views and Feelings of the Yirrkala aboriginal people.
4. That the land in question has been hunting and food gathering land for the Yirrkala tribes from time immemorial, and were all born here.
5. That places sacred to the Yirrkala people, as well as vital to their livelihood are in the areas and land, especially Melville Bay.
6. That the people of this area fear that their needs and interests will be completely ignored, as they have been in the past, and they fear that the fate which has overtaken the Larrakeah tribe will
7. And your humble pray that the Honourable the House of Representatives will appoint a Committee, accompanied by competent interpreters, to hear the views of the people of Yirrkala before permitting the

IMPERIAL OIL & GAS

Bark Treaty

Wali Wunungmurra

- ❑ Signatory to Bark Treaty
- ❑ Former Chairman of NLC
- ❑ State Funeral 4th Sep 2015

The original **Yirrkala Bark Petitions** were tabled in the House of Representatives Canberra 14th August 1963 and were presented in the form of two bark paintings (one with in Yolngu Matha the other in English)

The Custodians

"Traditional Owners are embracing a proactive future where they are involved in resource projects on their land that can have substantial socio-economic benefits without eroding their deep cultural heritage."

Presentation to COAG ALRA review Dec 2014

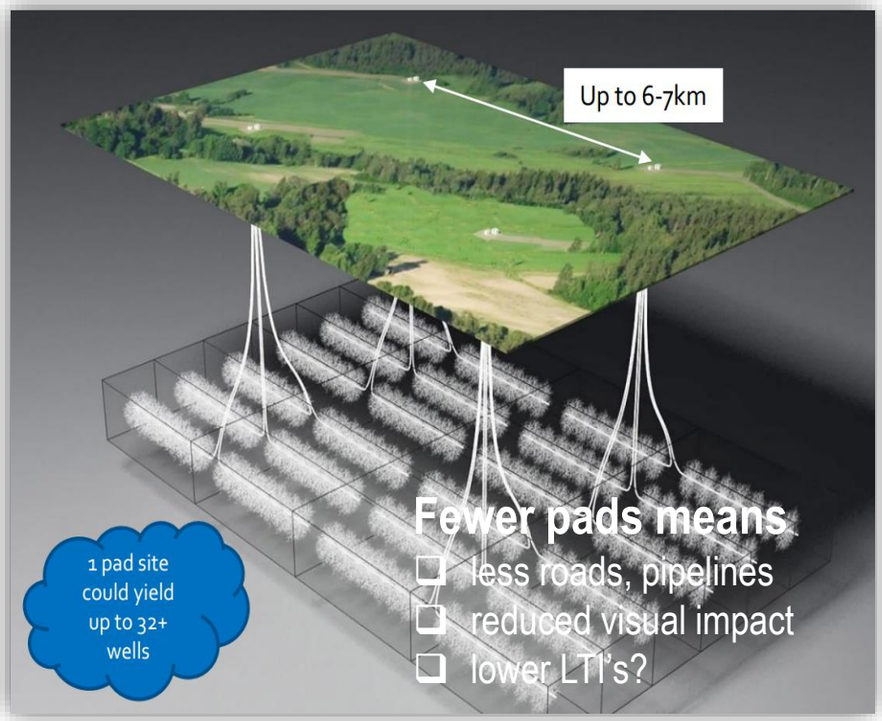
Imperial's Vision is safely to develop the petroleum resources while **preserving cultural heritage, customs** & natural environment

Minimising footprint

Before

…. 6 months later

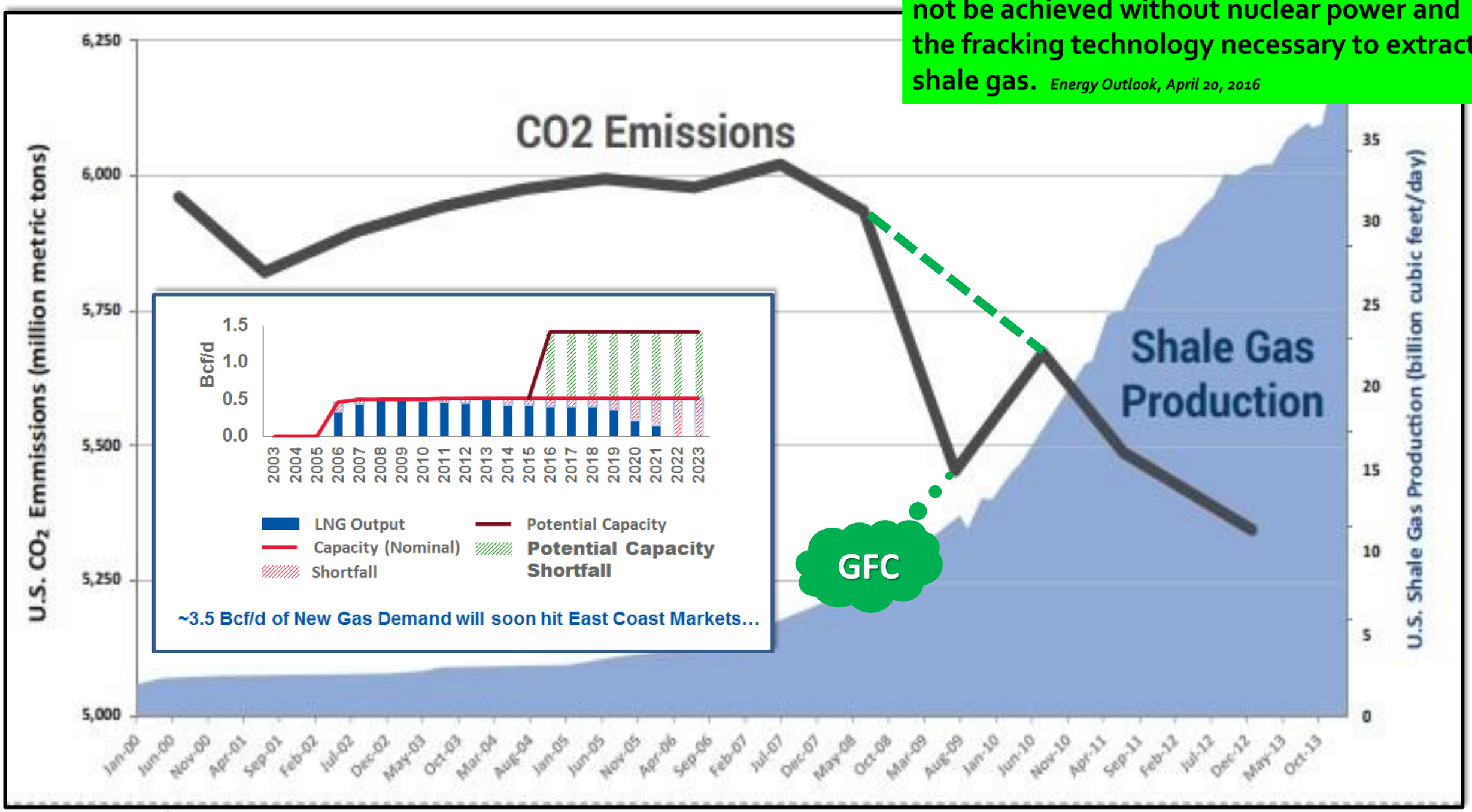
…. Complete regrowth after 10 years



Imperial's Vision is safely to develop the petroleum resources while **preserving** cultural heritage, customs & **natural environment**

Carbon

US emissions reduction goals for 2025 could not be achieved without nuclear power and the fracking technology necessary to extract shale gas. *Energy Outlook, April 20, 2016*



Energy in Depth Oct, 27 2015

Sep 2016 NT Fracking Moratorium

NT Chief Minister Michael Gunner

"I announce that the Government will as of today implement this election commitment to introduce a **moratorium of hydraulic fracturing** of the Territory's unconventional gas resources"

(South East Asia Australia Offshore & Onshore Conference)

A **panel of experts** would investigate fracking in the NT and they would decide how long the moratorium would last and if it would result in a permanent ban.

"This body of work can be done in less than a term [four years]"

According to the terms of reference, the panel undertaking the inquiry would **assess the scientific evidence to determine its potential effects** on groundwater, surface water, geology, ecosystems, human health, current and future land uses, emissions and ecotoxicology.

Panel to also try to ensure the industry meets best practice in relation to fracking.

How many more investigations - Hydraulic Fracking in Australia

- **AUSTRALIAN GOVERNMENT**
  - Senate Committee on Rural and Regional Affairs and Transport Inquiry
    - Title: The impact of mining coal seam gas on the management of the Murray Darling Basin.
    - Status: Report finalised 30 November 2011.
  - NICNAS, CSIRO, Department of Environment and Geoscience Australia
    - Title: National Assessment of Chemicals Associated with Coal Seam Gas Extraction in Australia
    - Status: Initiated July 2012. Current.
  - Select Committee on Unconventional Gas Mining
    - Title: Unconventional gas mining
    - Status: Initiated 12 November 2015. Report to be provided on or before 30 June 2016.
- **NEW SOUTH WALES**
  - Legislative Council Inquiry – General Purpose Standing Committee No. 5
    - Title: Inquiry into coal seam gas: Report no. 35
    - Status: Report finalised 1 May 2012.
  - Chief Scientist and Engineer
    - Title: Final report of the independent review of coal seam gas activities in NSW. September 2014.
    - Status: Report finalised 30 September 2014.
- **NORTHERN TERRITORY**
  - Allan Hawke AC. Commissioner
    - Title: Independent inquiry into hydraulic fracturing in the Northern Territory
    - Status: Final report completed 28 November 2014.
- **SOUTH AUSTRALIA**
  - Parliamentary Committee - Natural Resources Committee
    - Title: Inquiry into unconventional gas (fracking)
    - Status: Initiated November 2014. Interim report released 17 November 2015.
- **TASMANIA**
  - Department of Primary Industries, Parks, Water and Environment
    - **Title:** Review of hydraulic fracturing in Tasmania
    - **Status:** Final report completed 25 February 2015.
- **VICTORIA**
  - Gas Market Taskforce
    - **Title:** Gas Market Taskforce: Final report and recommendations
    - **Status:** Report finalised 1 November 2013.
  - Auditor General
    - **Title:** Unconventional gas: Managing risks and impacts
    - **Status:** Report tabled August 2015.
  - Legislative Council – Environment and Planning Committee
    - **Title:** Inquiry into onshore unconventional gas in Victoria
    - **Status:** Final report tabled 8 December 2015.
- **WESTERN AUSTRALIA**
  - Legislative Council – Standing Committee on the Environment and Planning
    - **Title:** Inquiry into the implications for Western Australia of hydraulic fracturing for unconventional gas
    - **Status:** Final report released on 17 November 2015.

Mr Gunner ….. **did not give land owners an assurance** that the moratorium would stop mining companies from accessing their land to explore for gas.

"The moratorium includes exploration - you **cannot hydraulically frack unconventional gas reserves** for exploration - but **general exploration activities which a lot of people do**, not just onshore gas companies for unconventional gas reserves, **that's all fine**, you can explore the Northern Territory."

Source:
Fracking moratorium takes effect in NT, Chief Minister Michael Gunner says
By Avani Dias
14 Sep 2016

Imperial Oil & Gas

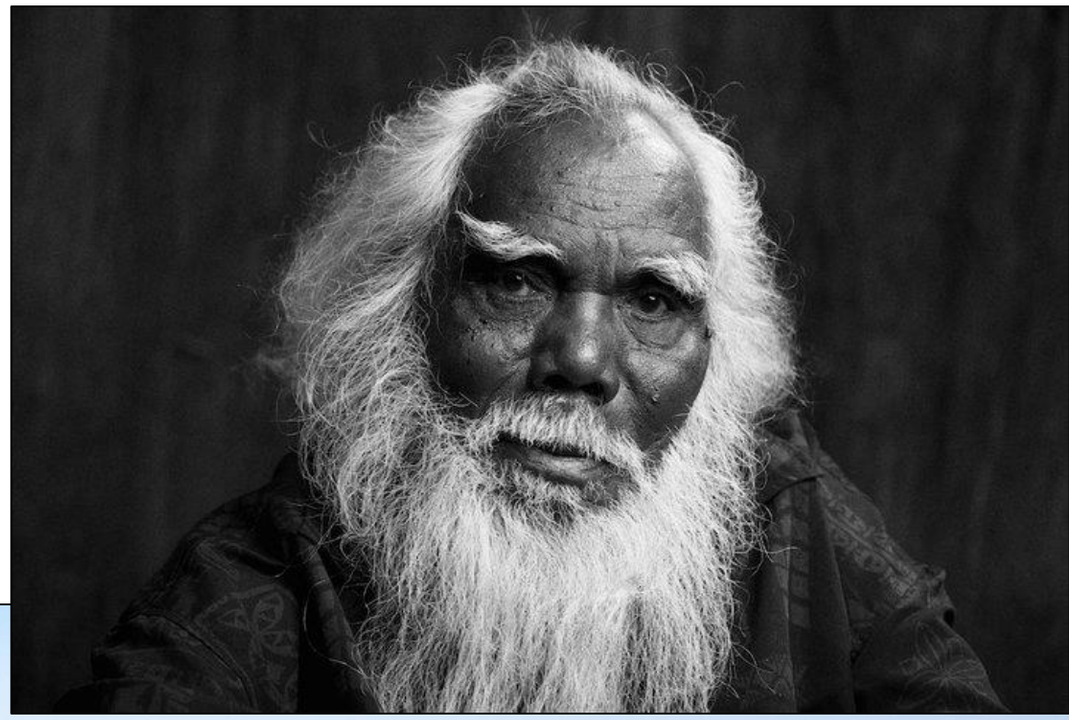
7/151 Macquarie St

Sydney, NSW 2000, Australia

Phone: +61 2 9251 1846

Attention: Bruce McLeod

bm@empiregp.net



Imperial's Vision is safely to develop the petroleum resources while preserving cultural heritage, customs & natural environment

www.empireenergygroup.net

Reserves Information

Notes to Reserves

- The scope of the Reserve Studies reviewed basic information to prepare estimates of the reserves and contingent resources.
- The quantities presented are estimated reserves and resources of oil and natural gas that geologic and engineering data demonstrate are “In-Place”, and can be recovered from known reservoirs.
- Oil prices are based on NYMEX West Texas Intermediate (WTI).
- Gas prices are based on NYMEX Henry Hub (HH).
- Prices were adjusted for any pricing differential from field prices due to adjustments for location, quality and gravity, against the NYMEX price. This pricing differential was held constant to the economic limit of the properties.
- All costs are held constant throughout the lives of the properties.
- The probabilistic method was used to calculate P50 reserves.
- The deterministic method was used to calculate 1P, 2P & 3P reserves.
- The reference point used for the purpose of measuring and assessing the estimated petroleum reserves is the wellhead.
- “PV0” Net revenue is calculated net of royalties, production taxes, lease operating expenses, and capital expenditures but before Federal Income Taxes.
- “PV10” is defined as the discounted Net Revenues of the company’s reserves using a 10% discount factor.
- “1P Reserves” or “Proved Reserves” are defined as Reserves which have a 90% probability that the actual quantities recovered will equal or exceed the estimate.
- “Probable Reserves” are defined as Reserves that should have at least a 50% probability that the actual quantities recovered will equal or exceed the estimate.
- “Possible Reserves” are defined as Reserves that should have at least a 10% probability that the actual quantities recovered will equal or exceed the estimate.
- “Bbl” is defined as a barrel of oil.
- “Boe” is defined as a barrel of oil equivalent, using the ratio of 6 Mcf of Natural Gas to 1 Bbl of Crude Oil. This is based on energy conversion and does not reflect the current economic difference between the value of 1 Mcf of Natural Gas and 1 Bbl of Crude Oil.
- “M” is defined as a thousand.
- “MM” is defined as a million.
- “MMBoe” is defined as a million barrels of oil equivalent.
- “Mcf” is defined as a thousand cubic feet of gas.
- All volumes presented are net volumes and have had subtracted associated royalty burdens.
- Utica shale gas potential resources have only been calculated for the region where drill data is available. Very few wells have been drilled into the Utica in Western NY and NW Pennsylvania. Estimates for GIP have been made were the few existing wells have been drilled. Empire holds additional acreage outside the current potential resource region. It is expected that as with shale characteristics, the shale formations will continue within the remaining acreage. The potential GIP should increase if more data was available.

Qualified petroleum reserves & resources evaluators

The information in this report which relates to the Company’s reserves is based on, and fairly represents, information and supporting documentation prepared by or under the supervision of the following qualified petroleum reserves and resources evaluators, all of whom are licensed professional petroleum engineer’s, geologists or other geoscientists with over five years’ experience and are qualified in accordance with the requirements of Listing Rule 5.42:

Name	Organisation	Qualifications	Professional Organisation
Wal Muir	Muir and Associate P/L	BSc,MBA	PESA

**PESA: Petroleum Exploration Society of Australia*