

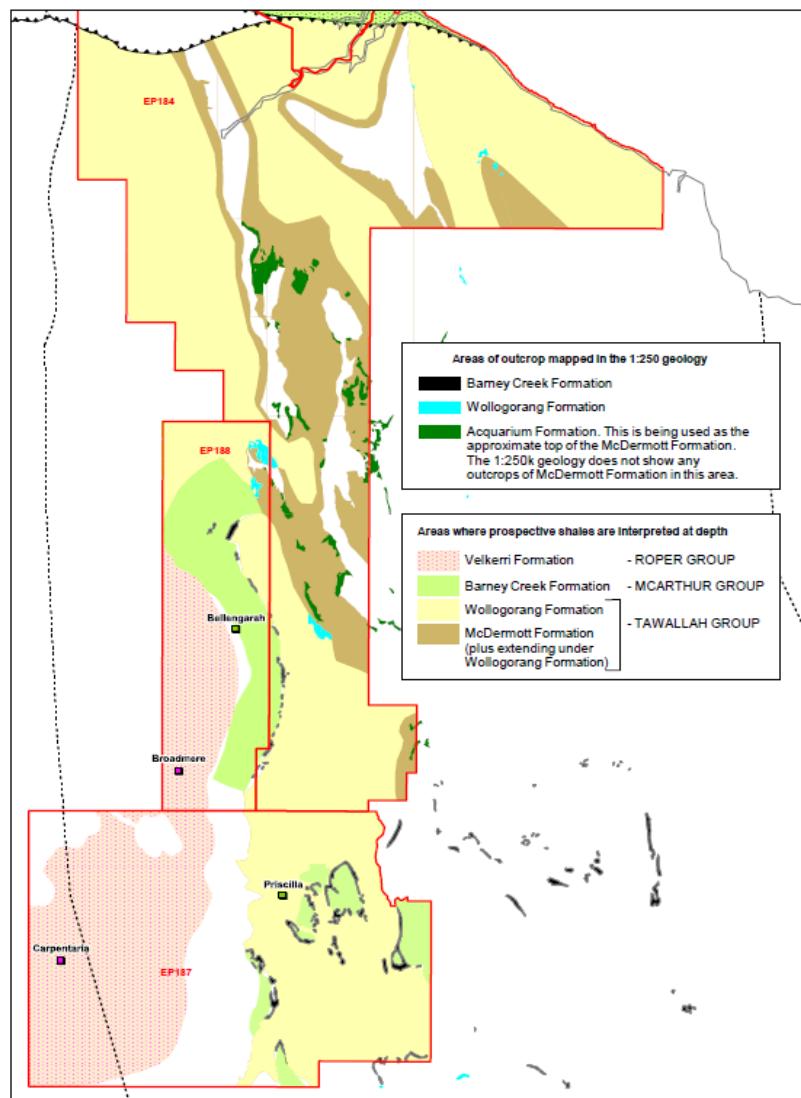
## ASX Announcement

10 August 2016

### **MCARTHUR BASIN - EMERGING TAWALLAH GROUP PLAY INCREASES PROSPECTIVE P50 RESOURCE TO MORE THAN 2 BILLION BARRELS OF OIL EQUIVALENT**

The Directors of Empire Energy Limited (ASX: EEG; Empire) are pleased to provide an update following a recent review of the emerging Tawallah Group source rock play in the McArthur Basin of the Northern Territory.

The Tawallah Group source rocks are a relatively new identified resource of oil and gas potential which underlie the highly prospective Barney Creek Shale (McArthur Group), the major focus of the development program, previously announced by Empire.



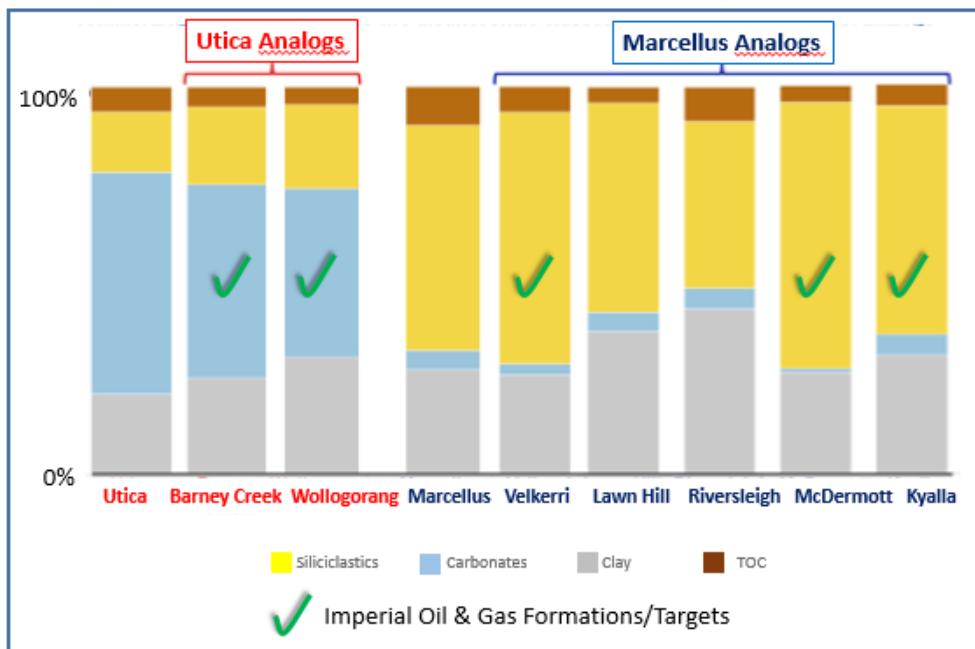
Recent studies have confirmed oil and gas generative potential in two Tawallah Group shale horizons, namely the Wollogorang and McDermott Formations. These are shown in the map above, with each formation covering around 1.7 million acres in EP184 & 187.

Core from a number of mineral wells (historical and recent) have been sampled and analyzed showing that these formations contain good source rock in the oil to wet gas generative window, based on total organic carbon (TOC) measurements of up to around 7.0% along with organic geochemical markers.

Further, recent analysis demonstrates how the Tawallah Group shale characteristics compare favorably to other McArthur Basin organic shales, and to the formation characteristics of both the Marcellus and Utica shales. Formation characteristics are summarized below.

## McArthur Basin – The Seven Shale Mineralogy

A mineralogical analysis reveals two distinct shale classics with clearly identified US analogs



Source: AEP

Continued work programs will be directed to further enhance the understanding of these prospective horizons. Work completed to date has enabled Empire to confirm that the Wollogorang Formation provides an additional 1.4 million acres of potential petroleum targets. The prospective area was discounted by 90% (Geological Factor) due to uncertainty of information including thermal maturity and thickness of the organic facies throughout the region.

Based on the discounted volumetrics, calculations of an additional potential resource (unrisked) for the Wollogorang increases total Prospective Resource P50 by an estimated 240MMBoe, shown in the table below. Further work will be undertaken in relation to the McDermott Formation which lies beneath the Wollogorang, as shown on the map above which would add an estimated additional 1.7 million acres of potential petroleum shale targets to the Company's prospective resources.

INDEPENDENTLY CERTIFIED ESTIMATED PROSPECTIVE RESOURCE (Unrisked)						
IDENTIFIED		Geological Factor Discount	AREA M acres	P90	P50	P10
Barney Creek Formation	Bcf	50-90%	3,559	3,304	8,699	20,172
	MMBO	50-90%		66	174	403
Velkerri Formation	Bcf	50%	315	383	1,192	3,086
	MMBO	50%		8	24	62
Wollogorang Formation	Bcf	90%	1,384	524	1,185	2,371
	MMBO	90%		10	24	47
TOTAL	MMBO			786	2,068	4,784

"Prospective Resources" 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.

#### **Notes to Resources**

- The scope of the Resource Study reviewed basic information to prepare estimates of the prospective resources.
- The quantities presented are estimated prospective resources of oil and natural gas that geologic and engineering data demonstrate are "In-Place", and can be recovered from known reservoirs.
- The probabilistic method was used to calculate reserves.
- "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.
- "MMBoe" is defined as a million barrels of oil equivalent.
- "Bcf" is defined as a billion cubic feet of gas.
- All volumes presented are gross volumes and not have had subtracted associated royalty burdens.

#### **COMPONENT PERSONS STATEMENT**

*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	Fluid Energy Consultants	BSc,MBA	PESA

\*PESA: Petroleum Exploration Society of Australia

None of the above evaluators or their employers have any interest in Empire Energy Group Limited or the properties reported herein. The evaluators mentioned above consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.