

Significant Gas Resource Identified in PEL 182 (Bass Oil 100%)

Bass Oil Limited (ASX:BAS) is an Australian-listed oil producer that holds a majority interest in eight permits in the Cooper Basin (Australia) including the 100% owned Worrior and Padulla oil fields as well as a 55% interest in an Indonesian oil producing KSO

Highlights

- A significant prospective new gas resource has been identified, following an independent geological assessment by Fluid Energy Consultants (Fluid)
- The play exists in PEL 182 (Bass 100% and operator), where Fluid has identified a potential gas in place of 21 TCF along with 845 Billion Barrels in place of condensate/oil
- The Moolion East prospect containing 3.8 TCF of gas in place, identified as the ideal area to test the play, has an assessed prospective resource of 568 bcf plus associated liquids
- Cooper Basin operator Santos is currently trialing horizontal drilling and fracking to commercialise this significant resource at Beanbush, adjacent PEL 182
- Bass to conduct further studies to identifying the best commercialisation strategies
- Gas from stand alone development of deep coal represents a potential new play in the Cooper Basin and a possible major source of new gas supply to the domestic market
- Bass (100%) as operator of PEL 182 will consider appropriate mechanisms to progress this opportunity including self funding, farmout, and third party investment.

Summary

Bass Oil Limited (ASX:BAS) is pleased to confirm that, following the engagement of independent geological experts, Fluid Energy Consultants (Fluid), it has identified a significant prospective resource that has the potential to materially grow the Company's Australian operations in the Cooper Basin in South Australia.

The Deep Coal Gas Prospective Resource Report quantified the gas potential contained in PEL 182 (Bass 100%) in the Cooper Basin, South Australia (Figure 1) at a "best estimate" of 21 TCF of gas in place along with accompanying 845 billion barrels of condensate/oil in place (Table 1).

Gas from deep coals, lying below 2500 metres, represent a new significant gas play in the Cooper Basin and potential new material source of gas for the domestic market.

Gas is known to exist in the Permian aged coals of the Toolachee, Epsilon and Patchawarra formations and has flowed at potentially commercial rates after fracture stimulation and when comingled with conventional gas produced from sandstones.

Santos and the Cooper Basin Joint Venture has been working on commercialising these coals. More recently, Santos has drilled and plans to frac the Beanbush 3 horizontal well adjacent to PEL 182, in the same geological setting and on trend in the Patchawarra Trough (Figure 2).

Bass Oil Managing Director Mr Tino Guglielmo said today;

"This is a very exciting development for Bass and its shareholders. At a time when the domestic gas market continues to face huge challenges meeting demand, this new potential gas resource represents a credible material contributor of gas to the domestic market."

“A new gas resource of this kind is able to be commercialised efficiently due to the mature infrastructure of the Cooper Basin. Whilst we will progress this opportunity with vigour, we are also conscious of maximising the benefit to our shareholders.” Mr Guglielmo added

Table 1: Total OHIP and Associated Liquids in the Ground in PEL 182

Deep Coal	Top Depth (m)	Area (Km ²)	Net Coal (m)	Hydrocarbon Density (BCF/KM ²)	OHIP (BCF)	Condensate Ratio (Bbl/MMscf)	Liquids in Place (MMBbl)
Toolachee	2,930	627	13.5	13.6	8,527	40	341.1
Epsilon	2,970	590	4.3	4.3	2,524	40	101.0
Patchawarra	3,030	600	16.7	16.8	10,071	40	402.8
Total			34.5	34.7	21,122		844.9

Bass and Fluid have defined a prospective area, named the Moolion East Deep Coal Prospect, within the permit where a pilot horizontal well or wells would be best placed to test the deep coal play. Santos previously drilled the Moolion East 1 well searching for conventional hydrocarbons but was unsuccessful. However, the well intersected a significant thickness of deep coal in the Permian section which is the target of this play and study (Figures 2, 3, 4 and 5).

The potential Prospective Resource volume of the Moolion East deep coal prospect is 568 BCF of gas and 22.7 million barrels of condensate (oil) (Table 2).

Table 2: Moolion East Deep Coal Gas and Oil Best Estimate (2U) Prospective Resources as Assessed by Fluid

Deep Coal	Top Depth (m)	Area (Km ²)	Net Coal (m)	Hydrocarbon Density (BCF/KM ²)	OHIP (BCF)	Prospective Gas Resource (BCF)	Prospective Liquids Resource (MMBbl)
Toolachee-Epsilon	2,930	60	32.0	30.1	1,821	273	10.9
Patchawarra	3,030	60	32.4	32.5	1,966	295	11.8
Total			62.4	62.6	3,788	568	22.7

The method for developing this significant resource is expected to be similar to the successful shale gas plays in North America by horizontal drilling and fracture stimulation.

Bass will commence studies aimed at maturing the Moolion East prospect to drillable status. Bass (100%) as operator of PEL 182 has the flexibility and optionality to conduct drilling for its own account, or to attract farm in partners to carry the company's expenditure.

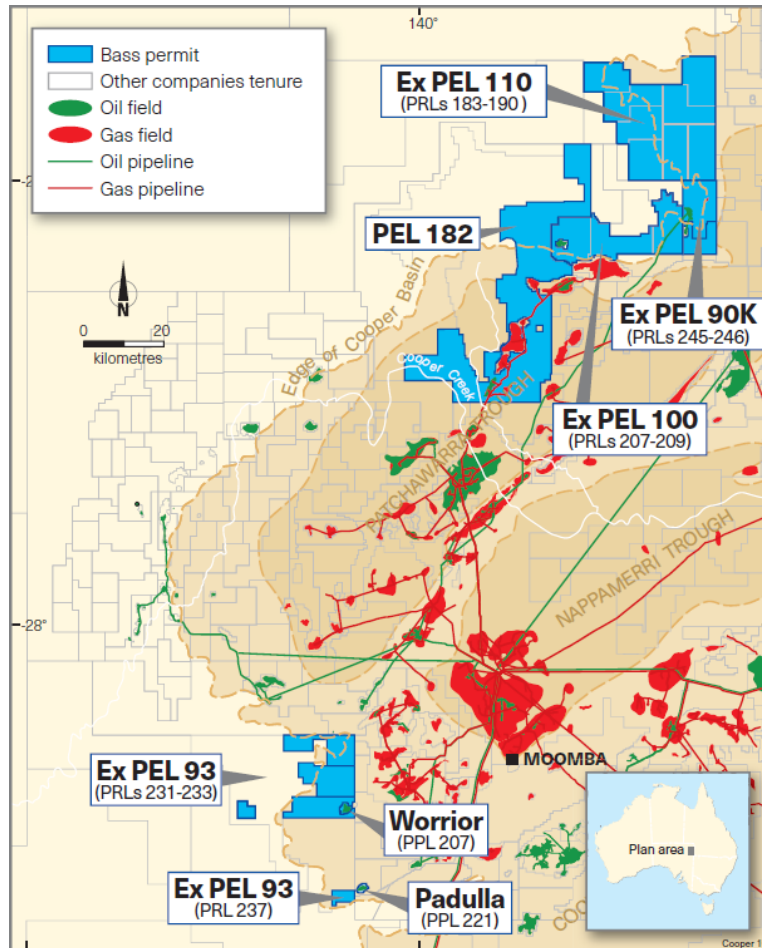


Figure 1: Location Map PEL 182

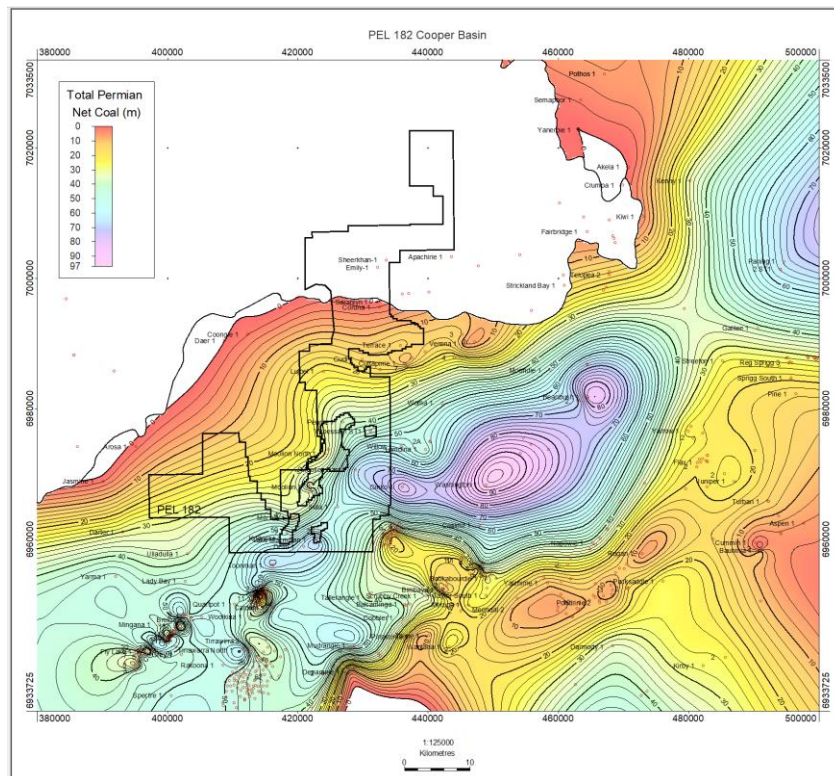


Figure 2: Total net Permian coal thickness in the Patchawarra Trough

Coal Thickness Distribution

The average net coal within the Toolachee-Epsilon Unit in PEL 182 is approximately 18 metres. Net coal ranges from absent in the north of the permit to 35 metres towards the depocentre of the Patchawarra Trough. The coals occur as mainly continuous seams, with those near the top Toolachee often being more than 10 metres thick (Figure 4 and 5).

In addition, the average net coal within the Patchawarra Formation in PEL 182 is approximately 17 metres. Net coal ranges from being absent in the north of the permit to 40 metres in the southeast. The coals occur as continuous seams within the upper Patchawarra, some of which can be 10 to 20 metres thick.

The coal thicknesses and distribution are illustrated in the following cross sections.

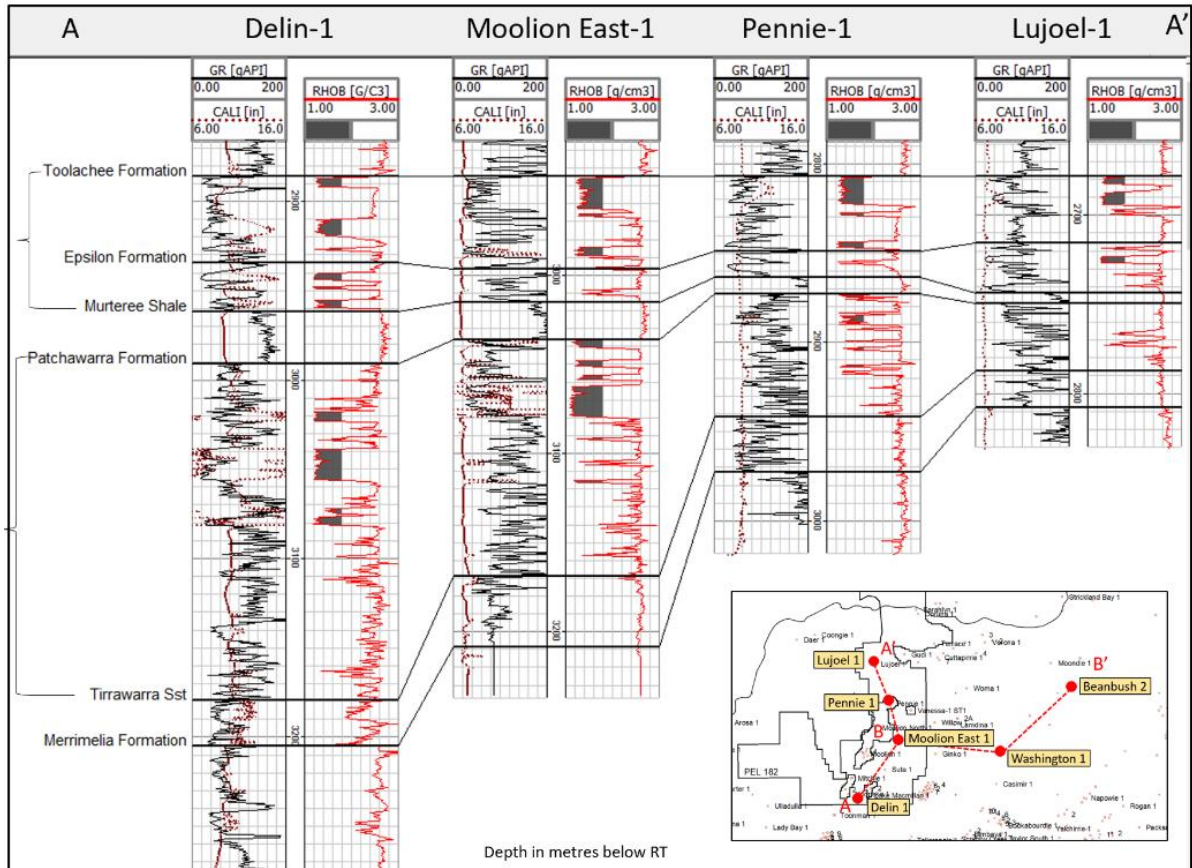


Figure 3: Wells within PEL 182 Boundary from South to North (Coals in dark grey)

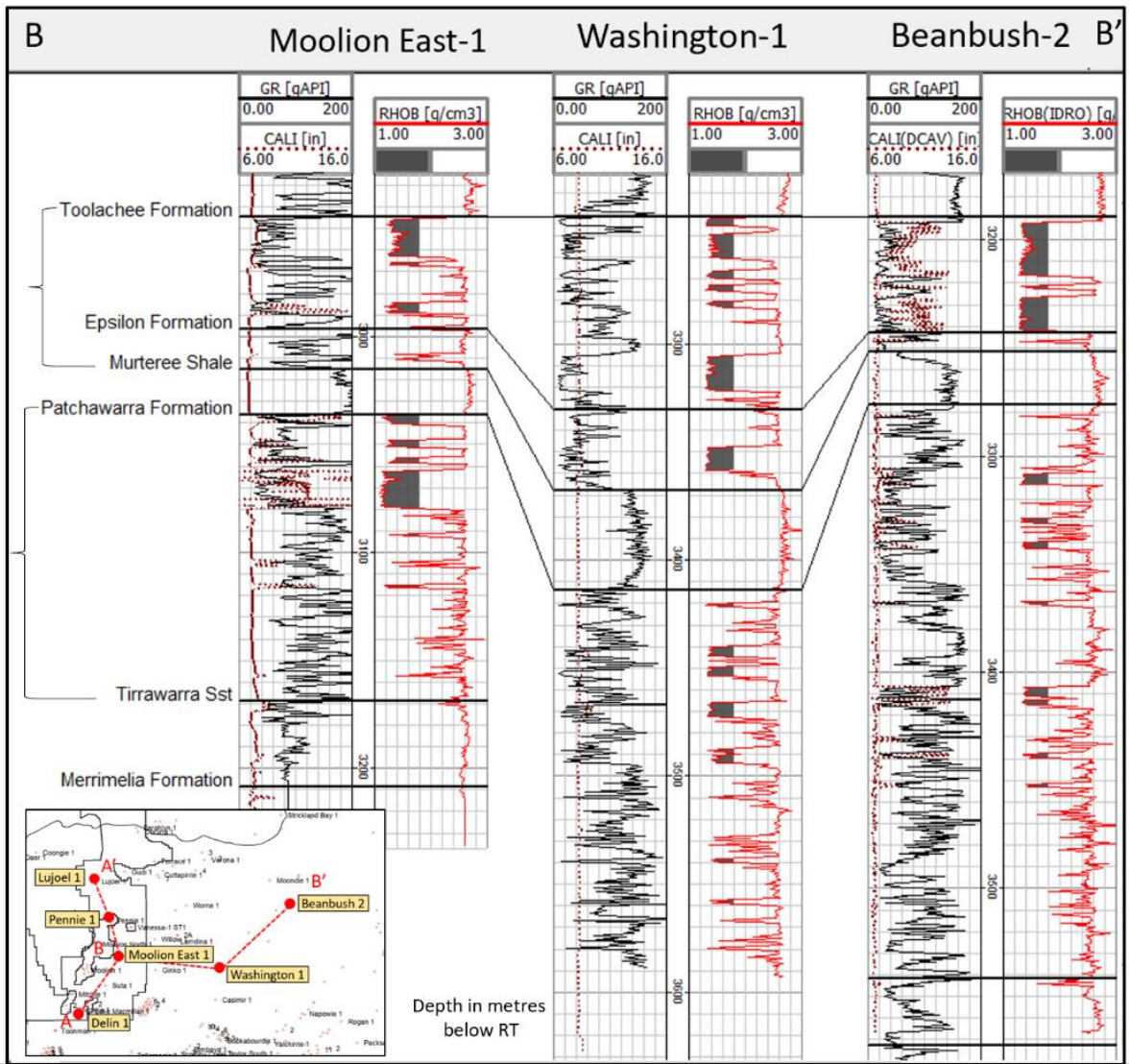


Figure 4: PEL 182 and Extending Eastward into depocentre of the Patchawarra Trough (Coals in dark grey)

Potential Flow Rates

The first deep coal frac in the Cooper Basin was conducted in 2007 by Santos. The result demonstrated that potentially, economic flow rates could be achieved. In the period from 2007 to 2013 a number of follow up fracs were undertaken with mixed success. In 2013, a change in fracking techniques saw a breakthrough in flow rates that achieved over 0.1 mmcf/d per frac stage. Over the next two years, a further 21 fracs were placed as single stages. The average flow rate was over 0.3 mmcf/d with rates up to 0.8 mmcf/d per stage. One well in the program is assessed to have produced over 0.5 BCF with a possible recovery of over 1.5 BCF (Camac, et al, 2018).

The future plans of Cooper Basin operators are to perform multi-stage stimulations of vertical wells and trial horizontal drilling [and multi-stage fracs along the horizontal wellbore] in order to increase flow rates and recoveries. The first horizontal well, Beanbush 3, has recently been drilled and will be fracked. The results are as yet unpublished.

Moolion East Deep Coal Prospect

Bass and Fluid have defined a prospective area, named the Moolion East Deep Coal Prospect, within the permit where a pilot-well or wells could test the Deep Coal play. There were no conventional hydrocarbons found in sandstone reservoirs at Moolion East-1, a well drilled by Santos, so the new prospect is solely a Deep Coal gas target (Figure 5).

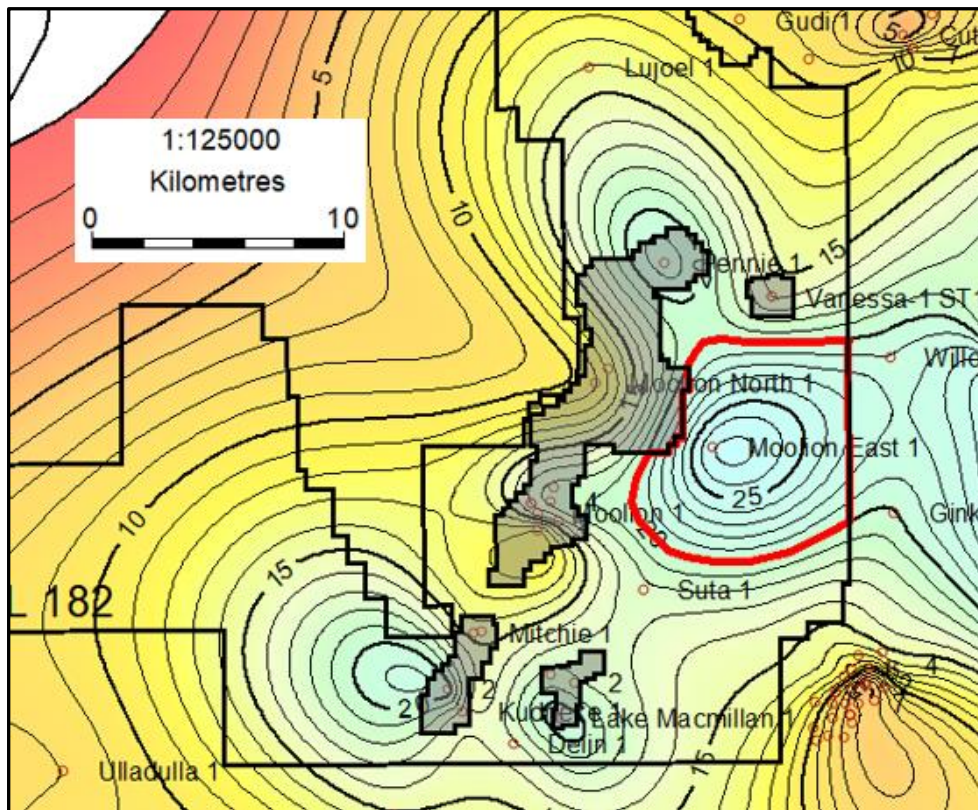


Figure 5: Moolion East Deep Coal Gas Prospect Area Toolachee OHIP (BCF/Km²)

The potentially recoverable Prospective Resource volume of hydrocarbons in the Moolion East Deep Coal prospect is 568 BCF of gas and 22.7 million barrels of condensate (oil) (Table 1). The recovery potential of this resource is subject to significant uncertainty. Fluid has looked to the success of global shale gas plays in order to assist in determine the potential recovery factors possible.

There are similarities between the Shale Gas and Deep Coal Gas plays. Coals have a very high proportion of organic matter and so have a large, adsorbed gas fraction. Shales tend to have higher porosity. A very good Shale Gas play is brittle and “fracture-able” while coal is more ductile.

The US Energy Information Agency (EIA/ARI (2013)) applied an average 20% recovery efficiency factor of the gas in-place for shale gas basins and formations that have a medium clay content, moderate geologic complexity and average reservoir pressure and properties.

Fluid has applied a factor of 15% to the calculation of Prospective Resources (Table 2). The potentially recoverable volume of hydrocarbons is 568 BCF of gas and 22.7 million barrels of condensate (oil).

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References

Barrenger, D., Mills-Knight, K., Deep Coal Gas and Oil Resource Report for Bass Oil Limited – PEL182, Cooper Basin; Fluid Energy Consultants 2022, unpublished

Camac, B. A., Benson, J., Chan, V., Goedecke, A., 2018: Cooper Basin Deep Coal - the New Unconventional Paradigm: Deepest Producing Coals in Australia, ASEG 2018: Sydney, Australia

Notes on reserves and resources

The reserves and resources information in this release is based on, and fairly represents, information and supporting documentation reviewed by Mr Tino Guglielmo. Mr Guglielmo is an employee of Bass Oil Limited and has a Bachelor of Engineering (Mech). He is a member of the Society of Petroleum Engineers (SPE) and a Fellow of the Institution of Engineers of Australia (FIEAust). He has in excess of 40 years of experience. The reserves and resources information in this release has been issued with the prior consent of Mr Guglielmo as to the form and context in which it appears.

The reserves and resources information in this release is based on, and fairly represents, information and supporting documentation prepared and reviewed by Mr Doug Barrenger. Mr Barrenger has a BSc degree (geology) and a Graduate Diploma in computing Science. He has more than 35 years of experience in the petroleum industry and has undertaken all facets of geological work. He has worked on all Australian petroleum basins, including coal seam gas (CSG, CBM) and Shale Gas, and has overseas experience in SE Asia and Europe. He has written numerous Independent Expert Reports, Resource Reports and Acreage and Resource Valuations, for IPO on several stock exchanges. Doug is a founding partner of Fluid Energy Consultants (2013). He is a member of the Society of Petroleum Engineers (SPE). The reserves and resources information in this release has been issued with the prior consent of Mr Barrenger as to the form and context in which it appears.