

# Q3

**CARNARVON**  
PETROLEUM LTD

**Quarterly Report**  
**31 March 2015**  
**Carnarvon Petroleum Limited**





## Quarter Highlights:

- Recoverable oil in Phoenix 3D area assessed by independent expert at between 48 and 232 million barrels (gross)\*, with a best (mid case) of 104 million barrels (gross)\*.
- Roc-1 exploration well scheduled to commence in the fourth quarter of calendar 2015.
- New prospect identification in greater Phoenix area commenced with important new seismic acquisition program that is on schedule for third quarter completion.
- Funding strengthened with completion of US\$52 million divestment of the remaining 20% interest in Thailand asset.
- Carnarvon in strong position with cash of A\$102.2 million, up to US\$32 million future cash flow from oil receipts, important Roc-1 well funded to US\$70 million (gross) by Apache and JX Nippon; and zero debt.

## Managing Director's Comments

This has been an incredibly busy quarter in which the sale of our remaining interests in Thailand was concluded in very difficult industry conditions while simultaneously progressing work on our Phoenix and other North West Shelf projects.

The Carnarvon team is encouraged by the Phoenix South-1 results so far because this oil discovery is in an area where there is a good number of surrounding, look-alike prospects. Being in reasonably shallow water depths means the volumes don't need to be enormous to support a development. As an example, Apache developed the Balnaves oil field containing around 18 million barrels in similar water depths. In comparison, the independent expert has a best estimate on Phoenix South of 19 million barrels\*. So Phoenix South is an encouraging start, but there may be significantly larger oil resources close by and so the near term focus is on understanding the broader opportunity, especially in terms of identifying the best location for future development.

The next major phase in the Phoenix area is to drill the Roc-1 exploration well. Like all major oil and gas companies at the moment, Apache USA sought to reduce its capital expenditures to accommodate the lower oil price and consequently the drilling rig contract for the Roc-1 well was deferred around half a year under their watch.

The divestment of the Apache WA business is not expected to impact the drilling of the well and the obligation to drill the Roc-1 well arises under the farm in agreement and the Joint Venture's commitment to the Australian Government.

As I outlined in my CEO Newsletter last week (copy available on Carnarvon's web site) the new owners of Apache's Western Australian assets have indicated that it is business as usual and have said the Roc-1 well is an important well for them this year.

Success in the Roc-1 well is likely to result in an active drilling campaign in 2016 within the Phoenix 3D area that contains the oil discoveries. Success at Roc-1 will also likely result in the Joint Venture considering drilling programs outside the Phoenix 3D area. The Joint Venture is preinvesting in new seismic data now so it provides us with a significantly broader range of options for drilling in 2017 and beyond. The new 3D seismic data is necessary to quantify a number of opportunities that exist in the area where the data is being acquired. We were encouraged to make this investment because we believe there are a number of sizable targets to be pursued based on existing vintage 2D data, coupled with the Phoenix and Phoenix South oil discoveries.



In relation to Carnarvon's other North West Shelf exploration permits (Cerberus), the team has completed the bulk of their technical work and progress is being made on preparing for environmental approvals for future exploration activities. Given current industry conditions, we need to be patient with regard to finding partners to pursue these opportunities but we have sufficient time with the blocks so this does not cause us undue concern.

In regard to industry conditions, we are seeing evidence of slowing activity levels and consequently some softening in industry costs and greater rig and seismic vessel availability. At Carnarvon we are seeing a multitude of opportunities being presented to us, both within our area of focus and beyond. As we have demonstrated previously, we intend to be diligent in any consideration of new opportunities, particularly whilst our core focus is on maximising value from the Phoenix area.

Carnarvon is in a unique position in that we are well-funded to pursue our objectives in the North West Shelf. In addition to our strong cash balance of approximately \$102 million, we retained an important cash flow when we sold the first half of our Thailand production asset that ensures a substantial contribution toward our operating costs into the future. With this in mind, we configured the consideration to include a future cash flow that is based on the level of production from the Thailand field and the oil price. These payments will continue until Carnarvon receives US\$32 million, or we reach the 20th anniversary of the deal.

In terms of how the payment arrangements work, each year the purchaser (Loyz) owes Carnarvon a payment determined as 12% of their share of revenue from the Thailand field in that year. As an example, if production averages 5,000 barrels of oil per day (gross) and the average oil price is US\$50/barrel then the purchaser's 20% interest in revenue in that year is US\$18 million. From this amount they would owe Carnarvon 12% or US\$2 million. If the oil price is US\$100 / barrel then they would owe Carnarvon US\$4 million. The first payment to Carnarvon is due in November 2015 which will be based on revenue from the June 2015 quarter. Changes in production and oil price affect the timing of the receipts to Carnarvon, not the final amount received. It's worth noting that Carnarvon does not have any obligations with regard to ongoing operating or capital expenditures applicable to these Thailand field operations.

A number of shareholders have asked me about the Company's share price performance recently, particularly in light of the positive volume estimates for Phoenix. The primary factors affecting the share price recently are the subdued nature of the oil sector, driven by oil price uncertainty, and in our specific case two institutional investors selling large volumes into this weak share market. That selling activity now looks to be complete.

I remain very optimistic about where the company is headed when you consider we have over \$100 million in cash, the above mentioned receivable of up to US\$32m generating future cash flow, the free carried Roc-1 well due for drilling this year, the discovered resources at Phoenix and Phoenix South and the broader potential in the Phoenix acreage that we intend to uncover with new seismic data being acquired.

In my view there are very few companies in our space right now that can match our financial and technical capabilities and who have strong well-funded growth opportunities.

**Adrian Cook**  
Managing Director

## Greater Phoenix Area

### Discovered Oil – Phoenix 3D Area

(Carnarvon 20%, Finder Exploration 20%, JX Nippon 20%, Apache 40% and Operator)

The Phoenix South-1 well drilled in 2014 was the first well to be drilled in the Bedout Sub Basin for almost 30 years and was only the eighth well in the basin. The well was drilled to a total depth (“TD”) of around 4,595m and was an oil discovery with an overall sand rich package between 4,160m and TD. Six samples of high quality 46 to 48 degree API oil were recovered from the well.

This well is significant because it opened up the prospectivity of an entirely new hydrocarbon province in Australia and more importantly it demonstrates that there is a new play concept in the North West Shelf. This was the first time in the North West Shelf an oil discovery has been made in the Lower Keraudren reservoir interval which sits in the Lower Triassic aged sediments.

The Phoenix South-1 discovery has provided a significant amount of important data to update exploration models, volume estimates and assumptions in the basin. Whilst a lot more technical work has to be undertaken, we are already strongly encouraged that further exploration could lead to more discoveries in the area.

DeGolyer and MacNaughton were engaged by Carnarvon to provide an independent assessment of prospectivity and volumes in the area. They assessed the best estimate of recoverable oil at Phoenix South to be 19 million barrels\*.

Importantly the report by DeGolyer and MacNaughton also assessed that Phoenix-1 drilled in 1980 by BP was an oil discovery that contains a best estimate of recoverable oil of 9 million barrels\*. This independently validates two proven discoveries with a total contingent resource of 31 million barrels (best case, aggregated 2C resource estimate)\*.

### Exploration – Phoenix 3D Area

Within the Phoenix 3D area there are a number of prospects to follow up the Phoenix and Phoenix South oil discoveries.

The Roc prospect is interpreted to contain a greater volume of recoverable oil that is reservoired at shallower depths than Phoenix South with a best case estimate of 42 million barrels\*. With a probability of geological success of 42%, which in combination with the contingent resource estimates make this prospect one of the most attractive exploration prospects in the North West Shelf at this point in time.

The schedule is to commence drilling the Roc-1 well in the fourth quarter of calendar 2015.

The Roc-1 well will be funded to US\$70 million (gross cost of well) by Apache and JX Nippon. The Roc-1 well is in shallower water and has a shallower reservoir target compared with the Phoenix South-1 well and is scheduled to be drilled by a jack-up rig. As a result we have a significantly lower cost estimate for the well compared with the recent Phoenix South-1 well.

In addition to the Roc prospect, the Bewdy, Bottler and Phoenix 2 Up-dip structures, which also all lie within the Phoenix 3D provide early follow up opportunity in the case of success in the Roc-1 well. These four prospects have a total best estimate of 73 million barrels of recoverable oil (aggregated 2C resource estimate) \*.

### Resources – Phoenix 3D Area

A summary of the attached DeGolyer and MacNaughton reports released to the ASX on 7 April 2015.

**Table 1: Gross Contingent Resource estimate for Phoenix and Phoenix South**

Field	Reservoir Interval	Contingent Resources (MM bbls)		
		1C	2C	3C
Phoenix South	Lower Keraudren	6	19	56
Phoenix	Lower Keraudren	3	9	28
<b>Total Contingent (i)</b>		<b>13</b>	<b>31</b>	<b>78</b>

(i) Statistical aggregate of contingent resources

**Table 2: Gross Prospective Resource estimates only within the Phoenix 3D area (unrisked)**

Field	Reservoir Interval	Prospective Resources (MM bbls)			Probability of Geological Success
		Low	Best	High	
Roc	Lower Keraudren	12	42	133	42%
Bewdy	Lower Keraudren	3	9	26	42%
Bottler	Lower Keraudren	2	7	20	42%
Phoenix 2 Updip	Lower Keraudren	1	4	14	27%
Phoenix West	Lower Keraudren	Not yet determined			
<b>Total Phoenix 3D Prospects (ii)</b>		<b>35</b>	<b>73</b>	<b>154</b>	

(ii) Statistical aggregate of prospective resources

**Table 3: Aggregated Contingent and Prospective estimates**

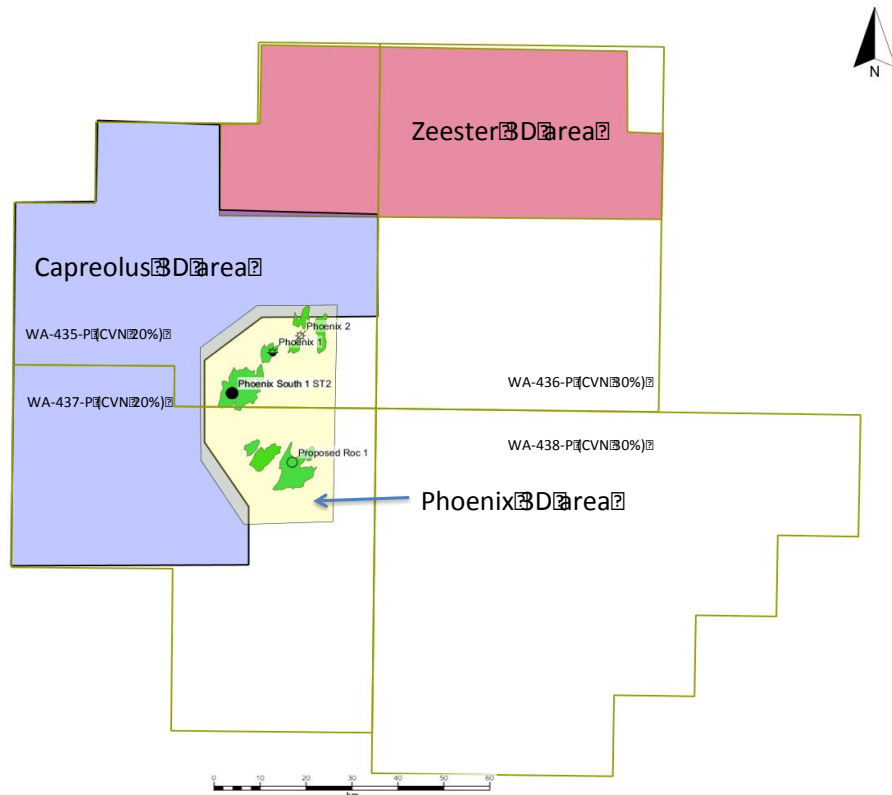
Classification	Reference	Resources (MM bbls)		
		Low	Best	High
Contingent	Table 1	13	31	78
Prospective	Table 2	35	73	154
<b>Total (arithmetic Sum)</b>		<b>48</b>	<b>104</b>	<b>232</b>

**Exploration – Greater Phoenix Area**

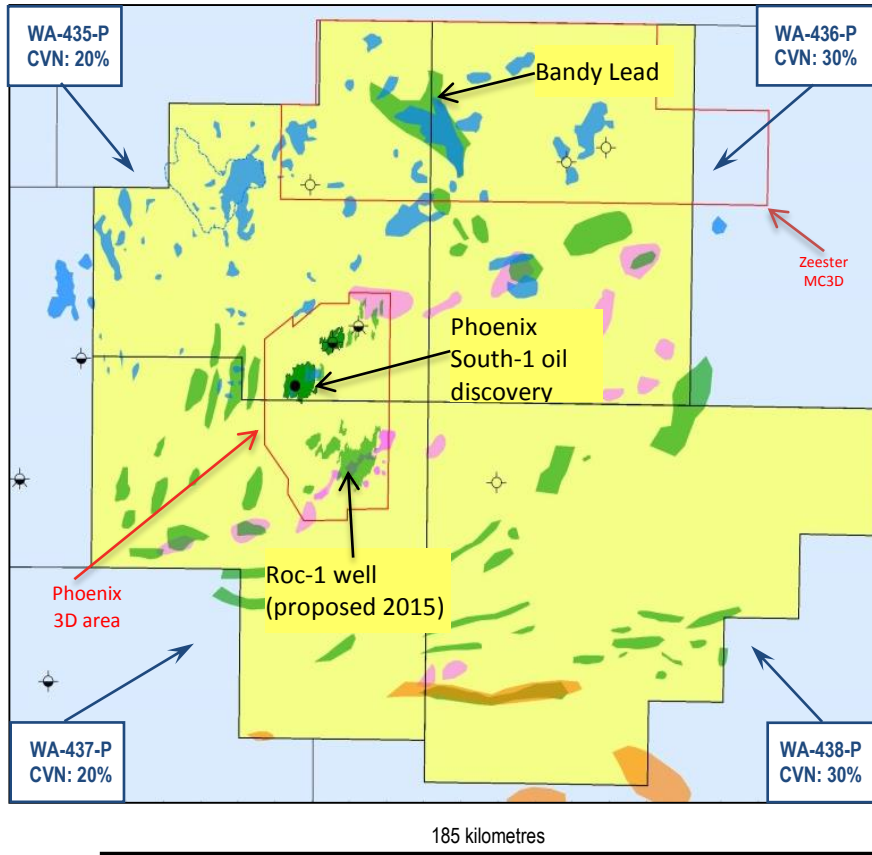
The Phoenix 3D area only covers an area of approximately 1,100 km<sup>2</sup> or around 5% of a total permit holding of approximately 22,000 km<sup>2</sup>. The result at Phoenix South-1 has proved there is a working petroleum system in this region that has given the Joint Venture confidence to commence further seismic activities to identify additional leads and prospects in the Greater Phoenix Area.

Following success at Phoenix South, the Joint Venture has licenced the Zeester 3D seismic survey that covers the Northern parts of WA-436-P and WA-435-P. The Zeester survey covers an area of 3,854 km<sup>2</sup> and incorporates the very large Bandy lead amongst others. The interpretation of this seismic survey is underway and is expected to add to Carnarvon’s lead and prospect inventory.

The Joint Venture has also committed to the Capreolus 3D seismic acquisition and licensing. This survey will result in an additional 5,100 km<sup>2</sup> of 3D seismic coverage in the basin and is expected to reveal a number of new prospects and enable greater delineation of numerous leads that lie to the west of Phoenix South as identified on existing 2D data. This acquisition is on schedule and is currently around 50% complete.



**Map showing the 3D seismic acquisitions being undertaken by Carnarvon and its joint venture partners**



Revised map of potential prospects and leads following the Phoenix South discovery



**Cerberus Blocks**

**EP-490, EP-491, TP/27 and EP-475**

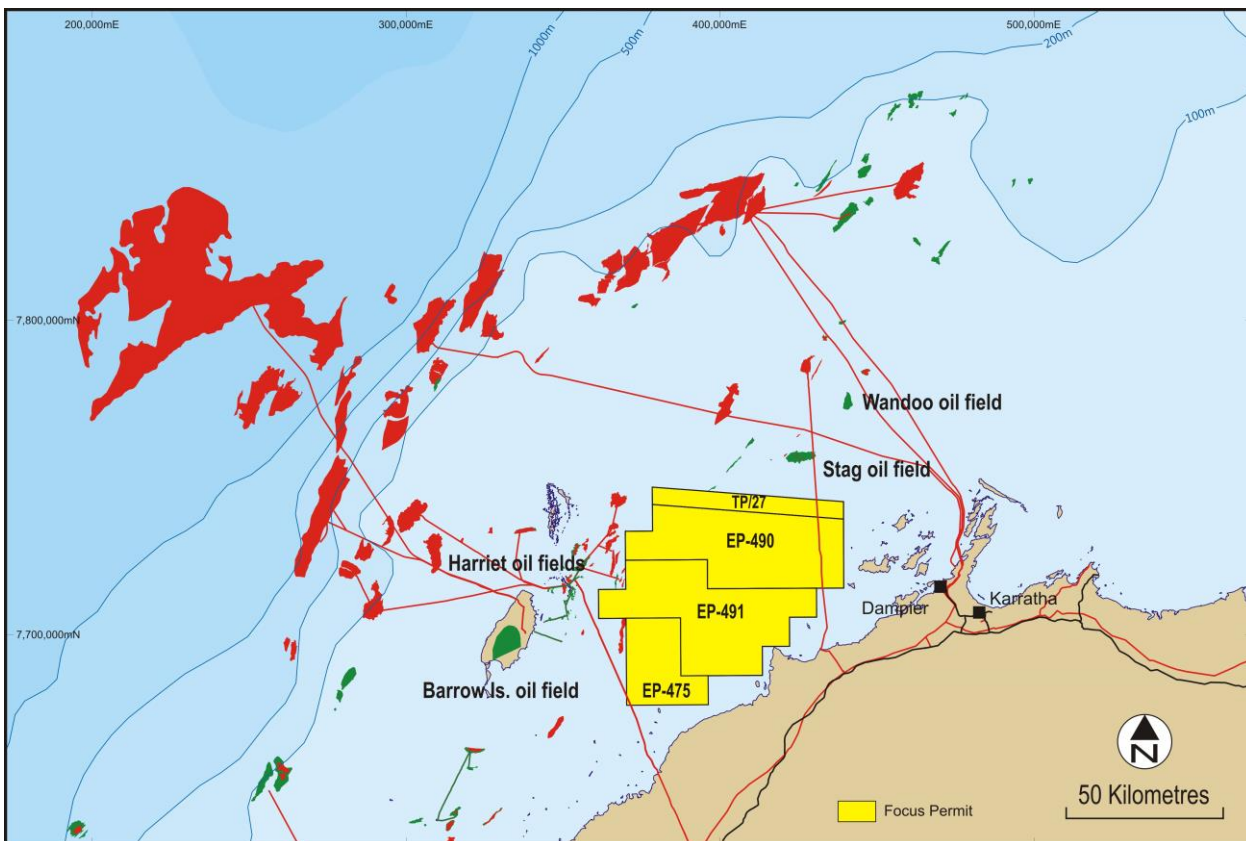
(Carnarvon 100%)

‘Cerberus Blocks’ is the collective term used internally by Carnarvon to describe these four permits. These permits are situated on the eastern flank of one of Australia’s most prolific oil producing basins, the Barrow Sub basin and they cover a total area of around 3,700 km<sup>2</sup>.

As part of the work program across these permits, Carnarvon has re-interpreted modern reprocessed 3D seismic data and has identified a number of new material oil prospects. These prospects are associated with Lower Triassic source rocks that have been identified in nearby wells through recently completed geochemistry and biostratigraphy studies. The Triassic source rocks are analogous to proven oil-prone source rocks at Phoenix and the Perth Basin. These Triassic sourced targets are in addition to the more traditional oil plays across the area, which are primarily sourced from the Jurassic and Cretaceous aged sediments like the Stag, Wandoo and Harriet oil fields in this area.

The investment case in this area is particularly attractive because of the combination of very sizable targets and low exploration costs. The shallow water depths (approximately 50m) and shallow oil target depths (1,000m - 2,000m) means drilling and development costs are expected to be low relative to normal expectations in the North West Shelf. Multiple development options are available due to shallow depths, proximity to shore and existing production infrastructure.

The Company is looking to progress its exploration plans with a partner with the intention of drilling one or more prospects while retaining a significant equity interest in the project.



Location map of the 100% owned Permits in the Carnarvon Basin



## Corporate / Financial

The Company's cash holdings at the end of the quarter were \$102.2 million, compared to \$52.4<sup>1</sup> million at the end of the previous quarter.

During the quarter, the Company successfully divested its remaining 20% share of its Thailand oil production Concessions for a net cash inflow of A\$66.5 million after completion adjustments and costs leaving Carnarvon well-funded to pursue its objectives in the North West Shelf.

Separate from the above, \$9.2 million was spent on exploration activities in the North West Shelf during the quarter, with \$8.4m of this relating to Zeester 3D seismic licencing and the Capreolus 3D seismic acquisition and licensing. \$1.1 million was spent on technical work, new ventures and corporate costs.

Key Statistics	Units	Current Quarter	Previous Quarter
<b>Capital</b>			
Share price (ASX code: CVN)	¢/share	13.0	13.5
Listed option price (ASX code: CVNO)	¢/share	7	7
Shares on Issue	m shares	988	988
Market capitalisation	A\$m	128	133
Cash	A\$m	102.2	52.4 <sup>1</sup>
Debt	A\$m	None	None
<b>Cash flows</b>			
Thailand Divestment	A\$m	66.5	-
Technical, new ventures and corporate costs	A\$m	(1.1)	(1.6)
Exploration costs	A\$m	(9.2)	(0.7)
Foreign currency translation gain / (loss)	A\$m	2.8	2.9
<b>Net cash flow</b>	A\$m	59.0	0.6

<sup>1</sup> Cash reported in the previous quarterly was \$52.4m that included \$9.2m held in the Thailand Joint Venture that was sold during the quarter.

## Abbreviations

<b>Bopd</b>	Barrels of oil per day
<b>Bwpd</b>	Barrels of water per day
<b>Bbls</b>	Barrels of oil
<b>OWC</b>	Oil water contact
<b>CVN</b>	Carnarvon Petroleum Limited
<b>JV</b>	Joint Venture
<b>Km</b>	Kilometres
<b>Km2</b>	Square kilometres
<b>m</b>	Millions
<b>Qtr</b>	Quarter
<b>Q/Q</b>	Quarter on Quarter
<b>Tcf</b>	Trillion cubic feet (gas)
<b>2D</b>	Two dimension seismic data
<b>MC2D</b>	Multi-client 2D – seismic data acquired for multiple parties that require licensing
<b>3D</b>	Three dimensional seismic data
<b>MC3D</b>	Multi-client 3D – seismic data acquired for multiple parties that require licensing
<b>US\$</b>	United States of America dollar

### About Carnarvon Petroleum

Carnarvon Petroleum Limited (Carnarvon) is a Perth based company listed on the Australian Securities Exchange (ASX: CVN). The Company's principal activity is oil and gas exploration.

Carnarvon's objective is to create material returns on its shareholder's investments, through delivering profitable and sustainable growth from the development, exploitation and commercialisation of oil and gas assets.

Carnarvon is focused on oil & gas exploration in the world-class province of the North West Shelf area off the coast of Western Australia.

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**Cautionary Statement**

There are numerous uncertainties inherent in estimating reserves and resources, and in projecting future production, development expenditures, operating expenses and cash flows. Oil and gas reserve engineering and resource assessment must be recognised as a subjective process of estimating subsurface accumulations of oil and gas that cannot be measured in an exact way. These prospective resource estimates have an associated risk of discovery and risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

**\*Resources**

All continent and prospective resources presented in this report are prepared as at 7 April 2015 per the DeGolyer and MacNaughton reports released to the ASX on 7 April 2015. The estimates of contingent and prospective resources included in this announcement have been prepared in accordance with the definitions and guidelines set forth in the SPE-PRMS.

**Competent Person Statement Information**

DeGolyer and MacNaughton is an independent international energy advisory group whose expertise is in petroleum reservoir evaluation and economic analysis. The continent and prospective resources presented in this report are based on information compiled by professional staff members who are full time employees of DeGolyer and MacNaughton.

The Resource estimates outlined in this report were reviewed by the Company's Chief Operating Officer, Mr Philip Huizenga, who is a full-time employee of the Company. Mr Huizenga has over 20 years' experience in petroleum exploration and engineering. Mr Huizenga holds a Bachelor Degree in Engineering and a Masters Degree in Petroleum Engineering. Mr Huizenga is qualified in accordance with ASX Listing Rules and has consented to the form and context in which this statement appears.

**Forward Looking Statements**

This document may contain forward-looking information. Forward-looking information is generally identifiable by the terminology used, such as "expect", "believe", "estimate", "should", "anticipate" and "potential" or other similar wording. Forward-looking information in this document includes, but is not limited to, references to: well drilling programs and drilling plans, estimates of reserves and potentially recoverable resources, and information on future production and project start-ups. By their very nature, the forward-looking statements contained in this news release require Carnarvon and its management to make assumptions that may not materialize or that may not be accurate. The forward-looking information contained in this news release is subject to known and unknown risks and uncertainties and other factors, which could cause actual results, expectations, achievements or performance to differ materially, including without limitation: imprecision of reserve estimates and estimates of recoverable quantities of oil, changes in project schedules, operating and reservoir performance, the effects of weather and climate change, the results of exploration and development drilling and related activities, demand for oil and gas, commercial negotiations, other technical and economic factors or revisions and other factors, many of which are beyond the control of Carnarvon. Although Carnarvon believes that the expectations reflected in its forward-looking statements are reasonable, it can give no assurances that the expectations of any forward-looking statements will prove to be correct.