## L44 and L33 Operations Update

### 10 February 2011



#### **Onshore Thailand Concessions – Carnarvon 40%**

#### Summary

Carnarvon Petroleum ("Carnarvon") advises that the L33/43 and L44/43 Concession joint venture in which it holds a 40% interest has proposed a firm capital budget of \$26 million net in 2011, incorporating up to 34 development, appraisal and exploration wells onshore Thailand.

Carnarvon is targeting annual production from its L33/43 and L44/43 Concession assets of 1.0 to 1.5 million barrels of oil annually to Carnarvon, enabling self funding of the above expenditure spend and ongoing funding of an exciting exploration program in Thailand, Australia and Indonesia.

The onshore Thailand drilling program of 34 wells, intending to grow both reserves and production, will be focused over several areas:

- Around 50% of the wells will be appraisal and development wells targeting existing volcanic production areas including WBExt, L33, NSE and Bo Rang;
- Around 25% of the wells will be development wells within the WBExt area primarily for enhancement of the extensive conventional sandstone discoveries; and
- Around 25% of the wells will be exploration in nature, concentrating on both sandstone and volcanic targets in the areas adjacent to the NSE, Si Thep and L33 oil discoveries as well as exploring new play concepts

Carnarvon fully supports the operator, Pan Orient Energy ("POE"), with the ongoing commitment to our core acreage in L33/43 and L44/43 Concessions, enabling positive cash flow and incremental value adds from this long life asset.

Further details on recent well activity can be found in the attached Thailand Operations Update.

# 34 Well program for 2011

Firm capital budget of \$26 million net to Carnarvon fully funded

Well program covers:

- Exploration
- Appraisal, &
- Development
  - Volcanic &
    - Sandstone

Carnarvon targeting annual production of 1.0 to 1.5 million barrels of oil

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#### THAILAND OPERATIONS UPDATE

#### **Thailand Production**

Thailand oil sales averaged 1,300 BOPD (net to Carnarvon) in January 2011, and there is approximately 1,200 BOPD (net to Carnarvon) of additional production capability currently shut in at the WBEXT-1A, WBEXT-1, and WBEXT-1B wells until the award of a new production license by the Thailand Department of Mineral Fuels ("DMF") which is anticipated within the next 20 days. The decrease in production from the last production update on January 7, 2011 is almost entirely attributed to an increase in the water cut at the WBEXT-1C well, which has now stabilized at 83%.

Near term production increases will be realised from the results of the well at NSE-E4, about to test, and a second well at WBEXT-1D which will be perforated over two additional sandstone intervals. Two drilling rigs are currently operating for Carnarvon in Thailand with one at Concession L44/43 and another one at Concession L20/50. The base capital program for 2011 of 34 wells and associated production guidance is based on one drilling rig operating in Concessions L44/43 and L33/43 throughout the year. The second drilling rig will complete the firm two well program at Concession L20/50 during the first quarter and depending on results, it will be released. Depending on circumstances, including corporate production levels and the level of exploration and development success, a second rig may be utilized throughout all, or a large portion, of 2011.

#### **Thailand Drilling**

#### Concession L44/43 – Carnarvon 40%

#### WBEXT-4 Appraisal Well (Wichian Buri Extension Field)

The WBEXT-4 well was drilled from a surface pad approximately one kilometre north of the WBEXT-1 surface pad and 300 meters south of the Concession L33/43 / Concession L44/43 boundary. At approximately 414 meters true vertical depth ("TVD") the well encountered very good oil and gas shows within a sandstone zone approximately 14 meters thick and located within what is designated fault compartment II. The decision was made to stop drilling and test the zone which resulted in an initial rate of 40 BOPD (gross) of 22 degree API oil and a water cut of approximately 12%, mainly consisting of load fluid. Subsequently, the fluid rate dropped and the well was shut-in for observation to allow the fluid level to rise. It is suspected that the low degree API, waxy crude at this shallow depth (low temperature) is highly viscous under reservoir conditions resulting in the low fluid influx. The well is currently producing at approximately 30 BOPD (gross) with a water cut of 0.6%.

Fault compartment II was located due west of fault compartment I which had been proven oil bearing in the sandstone zone by the WBEXT-1B well. With fault compartment II, now shown to be oil bearing by the WBEXT-4 well, future wells will target this sand at a deeper depth where the oil is anticipated to be less viscous, and a horizontal well is being considered to possibly improve rates from this very good quality sandstone reservoir containing viscous 22 degree API oil.

#### WBEXT-1D Appraisal Well (Wichian Buri Extension Field)

The WBEXT-1D well was drilled due east of the WBEXT-1 well pad with the primary objective of testing the multiple oil bearing sandstones encountered in the WBEXT-1B well at a subsurface location approximately 400 meters to the south. Drilling was terminated at a depth of 700 meters TVD after encountering good to excellent oil shows over 12 separate sandstone intervals between 421 and 700 meters. Drilling fluid losses of 250 barrels in one sandstone interval indicate high permeability. Wire line log data was only achieved over the interval of 583 to 596 meters due to unstable wellbore conditions in this highly deviated well.



Testing has now been completed in two sandstone reservoirs with the lower most zone from 925 to 960 meters TVD testing gas at a maximum rate of approximately 0.7 million cubic feet per day (gross). A second shallower zone perforated from 760-790 meters TVD is currently producing 35 degree API oil at approximately 37 BOPD (gross) with a water cut of 0.05%. Two additional sandstone intervals between 620-650 and 560-590 meters TVD will be perforated within the next five days and commingled with the zone currently on production.

#### NSE-E4 Exploration Well

The NSE-E4 exploration well was drilled from the NSE-E well pad across a large bounding fault to the east targeting a potential volcanic reservoir underlying the main NSE Central volcanic reservoir. A 30 meter thick volcanic was encountered at a depth of 1088 meters TVD exhibiting good oil shows and high mud gas readings over the top 10 meters of this interval. High penetration rates were observed over this interval of oil shows and high mud gas readings suggesting the presence of fractures despite no indication of drilling fluid losses. Testing is anticipated to commence within the next 5 days.

#### L44-F Exploration Well

The L44-F exploration well will commence drilling within the next four days and is targeting both conventional sandstone and unconventional volcanic reservoirs within a large, approximately 11 square kilometre maximum structural closure at the sandstone reservoir level and approximately 13 square kilometre structural closure at the volcanic target reservoir level. The well is vertical and located approximately 4.2 kilometres southwest of the Wichian Buri oilfield and 1.8 kilometres due west and 100 meters up structure from the POE-7 well drilled by JV in 2006 that encountered over 50 meters of high quality sand at the L44-F sandstone target level, with oil shows interspersed throughout.

The L44-F prospect is located on a broad north-south trending ridge that is believed to be the focal point for hydrocarbon migration within the entire western portion of the L44/43 Concession. At the sandstone reservoir level the ridge is segmented into three possibly independent fault bound structural closures totalling 22 square kilometres in maximum areal extent, the southern most closure at 11 square kilometres, being L44-F.

#### Concession L33/43 – Carnarvon 40%

#### L33-2ST1 Appraisal Well (Wichian Buri Extension Field)

The L33-2ST1 appraisal well was targeting the WBV1 volcanic reservoir at a subsurface location that is 682 meters north east and up structure from the WBV1 volcanic at L33-2 (which was shut in after starting to produce significant quantities of water). The target was in a region that is currently defined as prospective resources in Gaffney Cline and Associates' recent third party resource report that was part of the L33/43 production license application.

The primary volcanic reservoir was encountered at a depth of 677 meters TVD, 28 meters high to the L33-2 discovery well, and exhibited high mud gas reading and oil shows over the upper 5 meters of a 37 meter thick volcanic section. Due to the lack of drilling fluid losses, the well was sidetracked approximately 60 meters east, a location interpreted to be closer to the main bounding fault and more highly fractured. Unfortunately, the wellbore intersected to main bounding fault prior to encountering the top of the volcanic target as a result of poor fault resolution on the 2D seismic data that this well was drilled on. The well is currently suspended and will be sidetracked to a location up-dip and in close proximity to the original L33-2 well. The target location for this well (L33-2st1) will be drilled from one of four recently approved locations that will be under construction shortly.