

31 August 2009

Company Announcements Office  
ASX Limited

Via ASX Online

Dear Sirs,

## THAILAND OPERATIONS UPDATE

### L44/43 & L33/43 (40-per-cent working interest and non-operator)

- **Bo Rang-2 Exploration/Appraisal Well:** Initially tested up to 1,200 bopd over a short period before well was required to be sidetracked (Bo Rang-2ST1) due to operational issues
- **Bo Rang-2ST1 Exploration/Appraisal Well:** Currently on test, initial results flowing some oil and cleaning up. Requires further testing and potentially recompletion.
- **L44-VD2 Exploration/Appraisal Well:** Sub-commercial oil flows from the lower volcanic section. Sidetrack candidate into upper volcanic
- **Bo Rang-1RDST1 Exploration/Appraisal Well:** Well spudded around 425 metres northwest of the original Bo Rang-1 RD which had good shows and loss circulation. To be completed and tested.
- **L44-W2 Exploration/Appraisal Well:** Testing indicated that the main zone is tight. Potential from shallower volcanics.
- **L44-W3 Exploration/Appraisal Well:** Losses encountered while drilling. Testing initiated.
- **L44-W4 Exploration/Appraisal Well:** Well spudded.
- **NSE-J1 Appraisal Well:** Fractured volcanic encountered below field oil-water contact. Subsequent testing of an upper sandstone reservoir resulted in initial test rates of up to 200 bopd. There are no reserves currently attributed to this reservoir.
- **NSE-J2 Appraisal Well:** Initially tested at 500 bopd. Subsequently produced 100% water as a result of a failed isolation job. Well will be re-perforated in sandstone horizon for re-testing.

## **OPERATIONS OVERVIEW**

The recent drilling programme of the Thailand joint venture has been focussed on the exploration potential in the L44-W and Bo Rang area. This decision was made on the basis of success at L44-W in the June quarter of 2009. The focus for the past few months has been the appraisal of this new highly prospective region to provide the technical data for the completion of production license applications for submission to the Thailand Department of Mineral Fuels (DMF).

## **BO RANG EXPLORATION/APPRaisal DRILLING**

### **Bo Rang-2 Exploration/Appraisal well**

Bo Rang-2 was drilled to a subsurface target location 590 metres south west of the Bo Rang-1RD drill pad. The upper main volcanic target was encountered at 666 metres true vertical depth (TVD), 34 metres structurally lower than the upper volcanic at the original BR-1RD well, and was 7 metres thick. Drilling fluid losses of 280 bbls/hr were observed while drilling through this zone indicating excellent permeability. The lower main volcanic reservoir was encountered at a depth of 702 metres TVD with drilling fluid losses of 60 bbl/hr observed and only the upper 7 metres of the zone penetrated.

After running the completion while moving the drilling rig off location, the shut-in well pressures increased from zero to approximately 850 psi. After installation of the testing equipment, the gas was blown down on the well and oil flowed to the test production facilities. Initial fluid flow rates up to 1,348 bfpd with an initial 10% basic sediments and water (BS&W) were observed on free flow and a total of 450 bbls of crude oil was produced prior to shut-in and a decision made to switch the well over to an electrical submersible pump (ESP) completion.

During the ESP installation operations, attempts to shut-in the well proved difficult and 11.0 ppg mud was pumped into the well bore to ensure no additional well control problems during the removal of the original completion, and subsequent installation of the ESP completion. After the ESP was installed, water was used to displace the well, which is normal practice. However, the presence of heavy mud (11.0ppg, weighted with barite), and the lack of a spacer, appears to have resulted in the fall-out of suspended barite inside the casing and around the pump and completion tubulars. Numerous attempts to flow the well using the newly installed ESP proved unsuccessful, and ultimately the decision was made to pull the ESP which became stuck requiring fishing operations. After 10 days of unsuccessful fishing operations, the decision was made to sidetrack the well.

The resulting sidetrack, BR-2ST1 encountered the same volcanic reservoirs as the original well. It did not experience drilling fluid losses in the upper 1m metre thick volcanic but did experience losses in the lower volcanic.

Testing of BR-2ST1 has now been ongoing for approximately 6 days with a 100% water cut for the initial 5 days that has decreased to between 72-85% over the past 24 hours as the well appears to clean up at fluid flow rates of approximately 250 barrels per day. It is possible that all the oil observed in the BR-2 flow test originated from the upper 7 metre thick volcanic that was tight in the subsequent BR-2ST1 sidetrack well. This will be determined conclusively over the next 10-14 days of testing.

An approximately 18m thick shallow volcanic was encountered at 473m. This volcanic exhibited oil shows and elevated mud gas readings. Subsequent to drilling this shallow volcanic zone and the running of casing prior to drilling into the main target zone, 50% mud gas and free oil flowing over the shale shakers was observed at surface, believed to have originated from this zone at 473m that corresponds the Bo Rang "B" structural closure that is mapped on 3D seismic as a much larger structural closure than that of the deeper volcanic Bo Rang "A" structural closure. In the event that commercial oil flow rates are not achieved in the deeper zone, testing will immediately commence in the shallow zone.

### **L44V-D2 Bo Rang Exploration/Appraisal well**

L44V-D2 was drilled to a subsurface location 533 metres north of the L44-V drill pad and 470 metres south of the Bo Rang-2 top main reservoir penetration. The main lower volcanic reservoir objective (the upper volcanic objective was absent) was penetrated at a depth of 710 metres TVD and a total thickness of approximately 59 metres. No fluid losses were observed while drilling, however oil shows and elevated mud gas readings were observed throughout the entire interval. Subsequent testing has resulted in rates of approximately 32 barrels of fluid a day with a 64% water cut (11.7 bopd). L44V-D2 will likely be sidetracked into the upper Bo Rang "B" volcanic upon rig availability.

### **Bo Rang-1RDST1 Exploration/Appraisal well**

The Bo Rang-1 re-drill sidetrack is targeting the main volcanic objective at a subsurface location approximately 425 metres north west of the original Bo Rang-1 RD vertical well. The well is currently being plugged back in the original pilot hole at 693m TVD in preparation to drilling a 200 metre horizontal section within the main volcanic objective. Drilling fluid losses of 20 bbls/hr were encountered while drilling the pilot hole, along with oil shows. Drilling is anticipated to be completed within the next 7 days with testing to commence shortly thereafter.

### **L44W EXPLORATION/APPRAISAL DRILLING**

#### **L44-W2 Exploration/Appraisal well**

L44-W2 was drilled to a subsurface location approximately 400 metres north of the original L44-W discovery encountering the main reservoir target at 681 metres, 3 metres structurally higher than the discovery well and 33 metres thick. No losses were encountered while drilling and subsequent testing indicated the main zone was tight.

At a depth of 265 metres a first volcanic zone approximately 20 metres thick was encountered with 6,000 barrels of drilling fluid lost to this zone indicating exceptional permeability. A severe gas kick was also observed while drilling through this shallower zone and resulted in a delay of 12 days while dealing with the combined drilling fluid losses and gas. At a depth of 360 metres a second volcanic interval approximately 20 metres thick was encountered with high mud gas readings and oil shows.

Testing of the two shallow volcanic zones detailed above will be initiated in approximately 7 days once the rig has been moved off the L44-W3 location.

#### **L44-W3 Exploration/Appraisal well**

L44-W3 was drilled to a subsurface target location 843 metres north west of the L44-W2 subsurface target location. The well encountered the main volcanic objective at 724 metres TVD and was approximately 11 metres thick. A four metre oil stained and fractured core was cut in the middle of the main volcanic objective.

Two additional volcanics were encountered at 266 metres and 375 metres, 15 and 25 metres thick respectively. Losses were encountered in the 266 metre volcanic and shortly after drilling through the 375m volcanic.

Testing has just been initiated at L44-W3 and results will be reported upon completion.

#### **L44-W4 Exploration/Appraisal well**

L44-W4 is targeting the main volcanic objective vertically below the L44-W drill pad. The well is currently drilling ahead at a depth of 296 meters after encountering a 23 meter thick volcanic at 264 meters with losses of 22 bbls/hr and free oil observed over the shale shakers at surface. Drilling is anticipated to be completed within the next 12 days.

## **NSE CENTRAL APPRAISAL DRILLING**

### **NSE-J1 NSE Central Appraisal well**

The NSE-J1 well, drilled in the extreme southern portion of the NSE south fault compartment, encountered a highly fractured main volcanic reservoir below the original field oil water contact. Subsequent testing of an approximately 5m thick sandstone reservoir above the main volcanic reservoir, resulted in initial production of approximately 200 bopd that has stabilized over the past three week at approximately 120 bopd. There has previously been no reserves attributed to this zone and work is currently underway to define the extent of this new zone and determine if it is in communication with the recent discovery made around 2 kms to the north at NSE-H3.

### **NSE-J2 NSE Central Appraisal well**

The NSE-J2 well, drilled from the same pad as NSE-J1, penetrated the main volcanic reservoir with significant mud losses at 835 metres and was drilled down to 854 metres where further losses were encountered. Initial flow rates of approximately 500 bopd with no water were achieved prior to the well producing 100% water after a 2 day period. An attempt to isolate the lower interpreted water bearing portion of the well from the upper interpreted oil bearing zone with a cement plug was unsuccessful. The well will be perforated in the zone corresponding to oil production at NSE-J1 at some point over the coming 3 weeks.

## **EXTENSION OF CONCESSION L44/43 AND CONCESSION L33/43**

In July, the Operator Pan Orient received formal approval for the three year extension of Concessions L44/43 and L33/43 to July 16, 2012. The extension of Concession L44/43 has new commitments for the three year extension period of three exploration wells with a combined expenditure obligation to Carnarvon of US\$0.6 million. The extension of Concession L33/43 has new commitments for the three year extension period of two exploration wells plus geological studies with a combined expenditure obligation to Carnarvon of US\$0.4 million.

## **PRODUCTION**

Production capacity is currently approximately 6,700 bbls per day gross (2,680 bopd net to CVN). Approximately 700 bopd is shut-in as the 90 day production test period for L44-W has expired. This production will not be renewed until the production license application has been submitted and approved. This process is expected to be completed in approximately 3 months.

Production has decreased since year end 2008 as Carnarvon has focussed on exploration/appraisal drilling and as a result production additions from new wells did not replace the production declines from existing wells. The lower production is a result of wells coming off flush production, temporary water handling constraints, natural production declines and reduced production from one key well.

For the remainder of calendar year 2009, Carnarvon will continue to aggressively target the L44-W and Bo Rang areas where testing of a number of wells is currently underway or about to commence upon the completion of drilling. Drilling results to date have been encouraging with both excellent reservoir and oil encountered, but not consistently together. Further encouraging signs have been observed in the numerous shallow volcanic reservoirs (at least three) that have been penetrated in the L44-W and Bo Rang structural closures, but no tests have been conducted in these intervals yet.

Base case estimates of production for the September Quarter 2009 range between an average of 5,500 to 6,200 bopd gross (2,200 to 2,500 bopd net to CVN). The range of uncertainty is a function of the complexity of the reservoirs encountered at L44-W and Bo Rang. Modest success from the current drilling and testing program would move estimates to the upper end of this range and set the foundation for production growth in the December Quarter 2009 with additional drilling in the current focus area. December Quarter 2009 production is forecast to peak at between 8,000 to 10,000 bopd gross (3,200 to 4,000 bopd net to CVN) and will be impacted by the timing of the approval of a new production license application by the DMF in addition to the factors outlined for September Quarter 2009.

## CEO COMMENT

Ted Jacobson, Carnarvon CEO, commented:

“Following the new commercial discovery of oil at L-44W in the June 2009 Quarter, the joint venture has been focused on exploring and appraising the significant potential of the Bo Rang to L44-W trend. It is essential this is done as a priority so that an application for a production licence can be submitted as soon as possible for as large an area to cover the discovery trend. However, progress has been severely curtailed due to various drilling operation difficulties, including numerous mechanical and well-bore issues that have prevented definitive testing operations in several wells.

While drilling and testing results in the L44-W structure have been varied, testing has confirmed the significant oil potential of the main volcanic and logging and shows have shown the potential of the shallower volcanics. Drilling has been completed on three wells and has commenced on a fourth well. Testing has been initiated in two of these wells.. Three fractured volcanic reservoir units with excellent oil and gas shows have been defined. The main volcanic reservoir of up to 85 metres thickness at approximately 680 – 760 metres has been tested successfully at up to 1,200 bopd with a second test failing due to no apparent permeability at that location. Two shallower volcanics with a range of thickness of 15-25 metres occurring at depths of 260 metres and 375 metres have shown excellent oil and gas shows and lost circulation (a reasonable indicator of permeability) but have yet to be tested.

Within the Bo Rang structure, initial excellent testing results have been marred by subsequent operational issues. Drilling has been completed on five separate intersections into the structure, with a sixth wellbore currently drilling ahead. Four wells have had tests, with commercial oil rates being achieved before mechanical well bore issues required a redrill. Three significant fractured volcanic units have been defined with recent drilling while a further three had been identified with the initial exploration well drilled in 1990. The upper main volcanic which tested gas at Bo Rang-1, at around 25 metres thickness at 630-680 metres, was present in four out of five wells. This was cased at Bo Rang-1RD and tested successfully at up to 1,200 bopd at Bo Rang-2, before a stuck ESP required a redrill / sidetrack. The lower main volcanic, with a thickness of 50 metres and occurring deeper at 680 – 710metres, was tested in two wells. It was tight in one and is interpreted to be producing water at another location. The shallower volcanic at around 475 metres, with a thickness of approximately 20 metres, is yet to be tested.

Due to this focus on appraisal of the Bo Rang to L-44W trend, and drilling operation difficulties, production rates have been lower than previously planned due to a reduction in the number of development wells drilled. This will continue while drilling is focused on exploring and appraising the additional potential of the L44/43 licence. The joint venture is currently reviewing a number of options to address the recent drilling difficulties experienced, with the aim in future of achieving testing results more efficiently, reducing drilling costs and minimising drilling problems.

The Phetchabun Basin is an oily area with a multitude of prospects at various stratigraphic levels requiring extensive drilling. Carnarvon believes that there is considerably more oil potential throughout this licence in excess of the 16.6 mmbbls of net oil already booked to Carnarvon. This is demonstrated on the attached map where the yellow outlines are mapped prospects which require drilling.

Exploration and appraisal drilling of the multitude of fractured volcanic reservoirs and sandstone reservoirs which likely hold additional oil volumes is essential to unlocking this potential. This will include the appraisal of the Bo Rang to L44-W trend, appraisal of the Si Thep volcanic and sandstone reservoirs, appraisal of the contingent resource of Na Sanun East, exploration of Na Sanun West prospects, exploration of the Wichian Buri Deep volcanic, appraisal of the Wichian Buri oil field sandstone reservoir extension and so on. This will be undertaken in conjunction with development drilling in a staged manner whereby exploration and appraisal drilling operations will be fully funded from production cashflow.”

Yours faithfully,  
Carnarvon Petroleum Limited



Ted Jacobson  
Chief Executive Officer

**Permit Holders L44/43**

Pan Orient Energy (Operator)	60%
<b>Carnarvon Petroleum</b>	<b>40%</b>

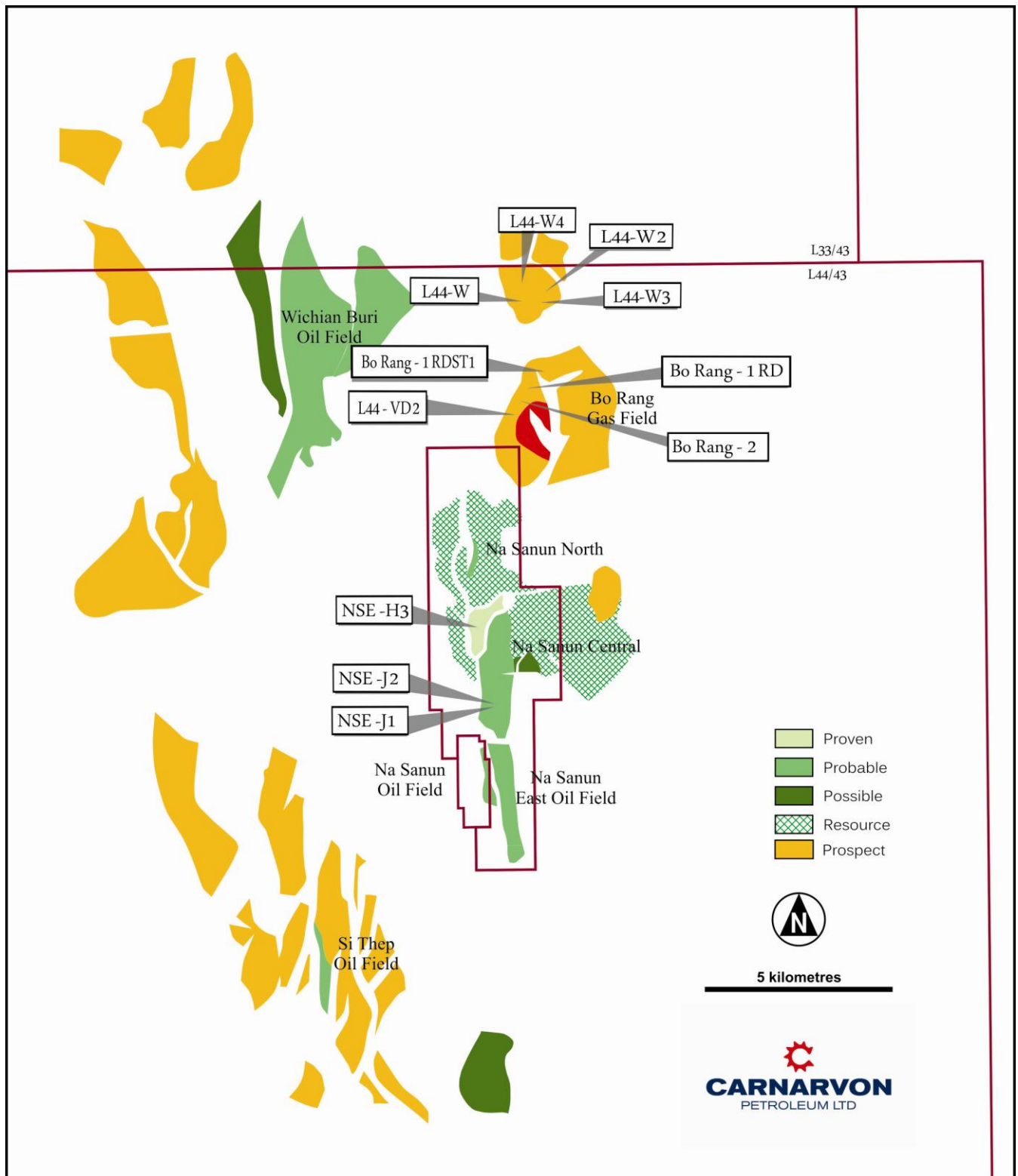


Figure 1: Approximate location of wells onshore Thailand L44/43 concession.