

# Thailand Operations Update

29 July 2010



## Concession L33 (CVN 40% Working Interest and Non-Operator)

### L33-1 Exploration Well & L33-2 Appraisal Well

The L33-1 exploration well free flowed 35 degree API oil at an average rate of approximately 1,100 barrels of oil per day gross (660 BOPD net POE) with a water cut of 7.72% (with 80,000 ppm chlorides indicating load and drilling fluids) in the last 36 hours of a 108 hour test. The well was shut-in at the end of the 108 hour period to leave sufficient storage capacity for the testing of the WBEXT-1 exploration well detailed below.

The L33-1 exploration well was drilled vertically from a surface location in Concession L33 approximately 4.5 kilometres north of the Concession L44 / Concession L33 boundary targeting a structural closure with an estimated maximum areal extent of approximately 9.7 square kilometres at the volcanic objective level. Prior to the drilling of this well, production had yet to be established from Concession L33.

The top of the volcanic objective was encountered at a depth of 741 meters and a further 28 meters of section was drilled before drilling fluid losses totalling 780 barrels (indicating excellent permeability) resulted in the decision to complete the well for production at that depth.

The L33-2 appraisal well is currently drilling from a surface location approximately 1.8 kilometres south of L33-1 and is targeting the same L33-1 volcanic reservoir within the 9.8 square kilometres estimated maximum areal extent structural closure.

The intent is to appraise the L33-1 discovery with the L33-2 well and immediately prepare and submit a production license (PL) application to the Thailand Department of Mineral Fuels (DMF) upon the completion of the testing of the L33-2 well. Until a production license is approved by the DMF, historically 90 days from the date of the application submission, no production may be sold since this discovery represents the first oil production in Concession L33 and a point of sale PL does not exist within the concession. Additional appraisal wells will be required to determine the extent of the L33-1 accumulation.

Exploration Wells  
L33-1 & WBEXT-1  
test at 3600 bopd  
combined

WBEXT-1 tests at  
2,500 bopd

L33-1 tests at  
1,100 bopd

First commercial  
discovery in L33  
Concession

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## **Concession L44 (CVN 40% Working Interest and Non-Operator)**

### **WBEXT-1 (Wichian Buri Extension-1) Exploration Well**

The WBEXT-1 exploration well is currently free flowing 35 degree API oil through tubing at a rate of over 2,500 barrels per day gross (1,500 BOPD net POE) with a water cut of less than 0.05 percent from a volcanic reservoir. Testing will continue over the next few days until the surface storage tanks are full. At that time the well will be temporarily shut-in pending approval by the DMF of a 90 day production test, which is anticipated in approximately 7 days time and at which point the oil may be trucked to the refinery and sold. While the 90 day production test is underway, additional appraisal wells are planned and will form the basis of a PL application that will likely be submitted to the DMF within the next month. Historically, these PL application approvals have taken approximately 90 days from submission to approval. Additional appraisal wells will be required to determine the extent of the WBEXT-1 accumulation at the volcanic reservoir level.

The WBEXT-1 well was drilled from a surface pad located 2.5 kilometres northeast of the nearest Wichian Buri field producing well at POE-1, and 6.7 kilometres south of the L33-1 oil discovery well. The targets of this exploration well were the proven oil bearing zones of the Wichian Buri F and G sandstone reservoirs, and an underlying volcanic target.

While drilling through the F and G sandstone reservoirs at 534 and 656 meters true vertical depth (TVD) respectively, live oil was observed at surface along with elevated mud gas readings and oil shows over intervals of 50 and 30 meters true vertical thickness ("TVT"), corresponding to the F and G sands respectively. Electric logs were unable to pass an obstruction in the borehole at 450m despite repeated attempts due to the deteriorating condition of the highly deviated wellbore and casing was set at 762 meters TVD, just above the deeper volcanic reservoir objective.

The top of the volcanic target was encountered at 784m TVD with oil observed at surface and losses of drilling fluid at 125 barrels per hour (totalling over 3,000 barrels) experienced, indicating extensive fracturing and excellent permeability. After penetrating a TVT of 7.5 meters of the volcanic reservoir the well was completed for production for safety considerations.

#### **Participants in L33/43 Concession are:**

<b>Carnarvon Petroleum Limited</b>	<b>40.0%</b>
Pan Orient Energy (Operator)	60.0%

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