



## **Exploration Permit**

# **VIC/P42**

## **Quarterly Report**

**14 November 2003 – 13 February 2004**

**Bass Strait Oil Company Ltd**

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## VIC/P42

### QUARTERLY REPORT FOR THE PERIOD

**14 November 2003 – 13 February 2004**

#### 1. PARTICIPATING INTERESTS

|                             |                                       |
|-----------------------------|---------------------------------------|
| Bass Strait Oil Company Ltd | 50% (Operator, Joint Venture Partner) |
| Inpex Alpha Ltd             | 50% (Joint Venture Partner)           |

#### 2. TITLE AND GOVERNMENT RELATED MATTERS

On 3<sup>rd</sup> December 2003 BSOC submitted a letter to the DPI reporting on rig availability and on the joint venture's progress towards securing a rig to drill the Year 3 commitment well. This was the fourth of the regular monthly reports as required under the terms of the suspension and extension granted on 22<sup>nd</sup> July 2003.

On 17<sup>th</sup> December 2003 BSOC submitted a further letter to the DPI reporting on developments regarding rig availability to drill the Year 3 commitment well. In summary, the outlook was for the Ocean Bounty to be available ex New Zealand by possibly August 2004 and for the Ensco 102 to possibly be available late 2004 depending on Esso's scheduling at that time.

A letter requesting a 12 month suspension of Vic/P42 Year 3 and extension of the permit was also submitted to the DPI on 17<sup>th</sup> December. This was requested on the basis that there were no drilling rigs in the area, or planned to be in the area, and that there was no potential to complete the Year 3 well before the 13<sup>th</sup> February 2004 anniversary.

On 15<sup>th</sup> January 2004 the DPI accepted BSOC's offer of a meeting and presentation to provide background to the request for suspension and extension. The DPI also sought clarification on various points and a response was provided on 28<sup>th</sup> January 2004 and copied to the JV.

A meeting was then held with representatives of the Victorian DPI on 4<sup>th</sup> February to present technical data supporting the request for suspension and extension that had been submitted on 17<sup>th</sup> December 2003. BSOC discussed the Vic/P42 prospects and proposed drilling target, and gave an update on drilling rig availability and contracts. It was also an opportunity to meet Phil Roberts, new Director - Minerals and Petroleum Regulation, who attended.

At quarter's end, BSOC was yet to hear from the Joint Authority regarding the request for suspension and extension.

### 3. EXPLORATION ACTIVITIES

#### 3.1 Seismic Interpretation and Evaluation

The Leading Edge Geophysics PL report on image ray depth conversion was completed.

The image-ray depth conversion produced grids in depth for the Top Latrobe Group and Nannygai 'pay-zone' levels, using two different methods. In order to depth convert other intra-Latrobe Group seismic events the deeper horizons were 'hung' on the Top Latrobe Group seismic event in depth (produced in the image-ray depth conversion from seismic only method). The deeper horizons were depth converted in a layer-cake method using a constant velocity of 3634.36m/s. These depth converted layers were then used for volumetric determinations of the different horizons for further prospect evaluation and ranking.

Two issues remained in order to finalise a prospect ranking of drilling targets in Vic/P42:

1. Fault seal risk - the issue of lateral or cross fault seal risk was addressed during November/December for ZaneGrey North and South, Edina Deep and Hemingway. For the deeper reservoirs (below 2680m in Nannygai-1) the cross fault seal and clay smear potential (CSP) appears to suggest a low risk for the fault seal in downthrown fault blocks (and hence support the occurrence of the 6m pay zone in Nannygai-1). A fault seal triangle diagram for Nannygai-1 shows the CSP versus fault throw (see Enclosure 1). This confirms the earlier work done by Esso Australia in 1994 on Nannygai-1 which also concluded that fault gauge ratios of 40-60% shale occur at the Nannygai pay zone level and potential sealing gouges developed from 2650m RT in the well (they use a Gippsland cut-off of 45% shale for clay smear fault seal to develop in the Gippsland Basin). This augurs well for fault seal (both along the minor fault separating Nannygai-1 from ZaneGrey North and separating ZaneGrey North from the Gurnard-1 block and ZaneGrey South). The downthrown block appears more attractive than the upthrown block in ZaneGrey due to the greater potential for CSP in this lower nett-to-gross sequence.
2. Risk / reward assessments for the main prospects: Now that we have a more accurate 'base case' depth conversion and a better understanding of fault seal risk BSOC will finalise risk/reward and volumetrics for the main prospects. It is believed that the ZaneGrey North prospect will remain as the preferred drilling target. The target depth remains the deeper Kingfish and Volador formations. The final reserves assessment and risk factors will be finalized in January.

Although seismic interpretation suggests that the Kate Shale and Roundhead Member play remains untested beneath TD in Nannygai-1, Dr Alan Partridge was asked to assess the risk that the sequence was already penetrated in the well. He did the initial palynology on Nannygai-1 in 1972. In his original report he did not find anything older than the Lower *L. balmei* Zone. Although this zone actually extends into the Kate Shale in the east, towards the western extent of the unit it usually only contains the older Upper *F. longus* and *M. druggii* MP Zones. The well data was revisited in the late 1980s when reviewing the Gurnard-1 well, but at that time he found nothing to convince him that the Kate Shale was penetrated in Nannygai-1. Looking at the samples the *E. crassitabulata* MP Zone is noted at 9430ft (2874m) and Lower *L. balmei* Zone from that sample and the two deeper samples at 9688ft (2953m) and 9857ft (3004m). Looking at the e-logs we have a high gamma ray from 2920 to 2985m, but this is not the Kate Shale as the unit contains thin coals. Above this the even more consistent presence of coals precludes assignment of any part to the Kate Shale. It is therefore concluded that the seismic and well correlation is correct and the Kate Shale and Roundhead Member play remains untested beneath the TD of Nannygai-1 and in ZaneGrey North.

The five prospects identified from mapping the BSOC 3D survey have been appraised (with the exception of the Edina Barrier Pinchout Prospect) through stochastic modelling of the various

geological variables used to determine the potential hydrocarbon volumes. For the prospects ZaneGrey North, ZaneGrey South, Hemingway and Edina Deep, estimates have been made of in-place and recoverable reserves of oil and gas and the relevant probability of success (POS) determined for each prospect. These are summarised in Table 1 below, ranked by expectation (the product of POS and mean success volume). Note that these volumes are the potential reserves within Vic/P42 only, as some of the prospects extend into permits to the east. The Edina Barrier Pinchout Prospect is considered too problematic to assess volumetrically at this time due to the significant uncertainties regarding the pinch-out edge of the barrier identified in Edina-1. The significant seat seal risk indicates it is not a preferred drilling candidate at this time.

| PROSPECT*             | UNRISKED RESERVES (RECOVERABLE) |         |     | RISKED RESERVES (RECOVERABLE) |         |         |         |         |             |
|-----------------------|---------------------------------|---------|-----|-------------------------------|---------|---------|---------|---------|-------------|
|                       | OIL MMb                         | GAS Bcf | POS | MSV                           |         | P90     | P50     | P10     | Expectation |
|                       |                                 |         |     | OIL MMb                       | GAS Bcf | OIL MMb | OIL MMb | OIL MMb | OIL MMb     |
| <b>ZaneGrey North</b> | 134                             | 0.0     | 34% | 87.7                          | 9.0     | 52.3    | 86.7    | 124.5   | 29.8        |
| <b>Hemingway</b>      | 131.4                           | 6.2     | 21% | 54.6                          | 4.5     | 3.2     | 53.0    | 104.8   | 11.5        |
| <b>Edina Deep</b>     | 81.7                            | 6.4     | 24% | 40.2                          | 6.7     | 14.6    | 40.3    | 66.7    | 9.6         |
| <b>ZaneGrey South</b> | 155.9                           | 142.0   | 16% | 57.1                          | 47.7    | 12.1    | 53.3    | 106.7   | 9.1         |

\* Ranked by expectation

Table 1 – Main prospect inventory

To handle uncertainty in the geological variables in the hydrocarbon reserves assessment, stochastic modelling was used. Monte Carlo simulation was used to replace point estimates of geological parameters with “fuzzy” values, reflecting their uncertainty. Dependencies between variables are carried through the assessment. The different ‘fuzzy’ variables are entered as probability distributions.

For the BRV determinations the seismic interpretation of the various events are used. For the ZaneGrey area, the depth conversion is based on the most recent image-ray depth conversion. For Edina Deep and Hemingway depth conversion was a combination of this and earlier ‘layer-cake’ Method 5, as these prospects fell mostly outside the area of interest for the image-ray depth conversion study and the area of the “high density velocity analysis”. Spill points for the identified structural closures were entered for a range of points to account for the depth uncertainty and potential spill / leak points due to depth conversion, faulting etc. The likelihood of fault seal at different depth points was also determined from the clay smear potential (CSP) analysis to determine risk of leak points for each reservoir unit. Seal risk is addressed on a case-by-case basis for each reservoir / seal pair.

Potential reservoir seal pairs have been determined (where penetrated) from well correlation of penetrated sequences determined from the wells Nannygai-1, Gurnard-1, Melville-1 and Bream-5. Gas and oil cases are modelled by subjectively estimating the percentage column likely to be gas or oil filled and ranging these as probability distributions for each reservoir unit.

Recovery factors and hydrocarbon saturations for the oil and gas legs of each reservoir unit are based on earlier publications from Esso Australia in their 1994 assessment of prospects over the Kingfish 3D survey area (Phillips, 1994), Rahmanian et al. (1990) and regional knowledge. They have been ranged stochastically and individual cut-offs assigned for each reservoir. The cut-offs used were 1 MMb and 5Bcf i.e. where gross recoverable reserves for an individual modelled unit was less than

these cut-offs the reserves did not contribute to the final net figure. Gas and oil expansion factors have been estimated and ranged for the depths to each of the potential reservoirs.

### 3.2 Well Planning

The exact coordinates of the Bream-Kingfish oil pipeline have been more accurately determined using the airborne magnetic data acquired by Geoscience Australia in 1998 to 1999. The metal associated with the pipeline, platforms and wellheads from exploration and development wells is clearly identified on the data. The preliminary surface location of ZaneGrey-A is estimated to be 1650m from the pipeline.

In November 2003 Labrador Petro-Management submitted an invoice for work done on drilling planning, preparation and documentation. This includes work for the Vic/P42 Year 3 well. A set of draft documents was received in November by BSOC, including the basis for design for a notional ZaneGrey-1 well and all necessary documents for submission to the DPI in relation to granting of drilling approval. A preliminary AFE for the ZaneGrey-1 well had been developed on the basis of drilling with the Ocean Epoch. However, until a final rig agreement is made and a MODU contracted no further preparations are planned and submissions to the DPI with respect to drilling approvals will be deferred.

Significant costs, both internal and external, were incurred by BSOC in preparing for the potential of drilling ZaneGrey-1 with the Ocean Epoch. Work performed by Labrador Petro-Management and its associates on drilling planning, preparation and documentation has been apportioned between Vic/P42 and Vic/P47 (for the Moby-1 well) pro-rata with the planned number of days drilling according to preliminary AFEs.

BSOC continued to maintain close contact with operators and rig contractors regarding the developing outlook for rig availability in the Bass Strait area. This outlook was reported monthly to the DPI.

At end November, the Ocean Epoch was employed in the drilling of the Megamouth-1 well for BHP Billiton in Vic/P45. At end December, the Ocean Epoch was en route to Fremantle after drilling the Hill-1 well for Santos in the Otway Basin, and has since commenced duty on Santos' Mutineer project.

On 10<sup>th</sup> February 2004, BSOC received a proposal from Diamond Offshore for the use of the Ocean Bounty for two wells in the Gippsland Basin, in the third or fourth quarter 2004.

However, on 6<sup>th</sup> February OMV had contracted with Diamond Offshore for two wells in the Timor Sea plus one option, with the rig to be accepted in Darwin. Diamond's New Zealand contract requires the rig to be demobilised from New Zealand back to Darwin (planned route is via the Australian east coast and Torres Strait) at the cost of the New Zealand operators. Therefore, Diamond's proposal for BSOC to utilise the rig during its demobilisation from New Zealand to Darwin was conditional upon acceptance by OMV of the additional time that it would take to divert to the Gippsland and drill.

On 11<sup>th</sup> February 2004 OMV indicated that it would require Diamond to make the rig available in Darwin at the earliest opportunity. This meant that it was highly unlikely that the Ocean Bounty would be available in the Gippsland this year. BSOC informed the DPI so that it would have full knowledge of the situation for its consideration of the Vic/P42 suspension and extension request.

BSOC queried the situation with Diamond, but had not received a reply at quarter's end and the proposal expired on 20<sup>th</sup> February 2004.

### 3.3 Further Studies

Apart from drilling ZaneGrey North, evaluation of the NW area of Vic/P42 and the Omeo discovery is being initiated. A project, including the purchasing of Fugro reprocessed data, scanning of ASB seismic lines, and out-sourcing of petrophysics and re-evaluation of stratigraphy is to be undertaken.

The objective would be to determine whether further work, e.g. 3D seismic, would be justified in the area.

#### 4. REPORTS SUBMITTED

On 3<sup>rd</sup> December 2003 BSOC submitted a letter to the DPI reporting on rig availability and on the joint venture's progress towards securing a rig to drill the Year 3 commitment well. This was the fourth of the regular monthly reports as required under the terms of the suspension and extension granted on 22<sup>nd</sup> July 2003. The fifth of these reports was submitted on the 17<sup>th</sup> December 2003.

At the presentation of 4<sup>th</sup> February, the technical evaluation work undertaken by BSOC on Vic/P42, including montages and reports, was presented to the DPI on CD ROM.

The Vic/P42 Annual Report for the amended period 14<sup>th</sup> February 2002 to 13<sup>th</sup> August 2003, was submitted to the DPI on 21<sup>st</sup> November 2003.

#### 5. HEALTH, SAFETY AND ENVIRONMENT

##### 5.1 Incidents

There were no health, safety or environmental incidents recorded during the report period.

#### 6. ESTIMATED EXPENDITURE FOR THE QUARTER

Estimated expenditure for the reporting period is detailed below:

| <b>Activity</b>          | <b>Estimated Expenditure (\$000's)</b> |
|--------------------------|--|
| Geological & Geophysical | 450                                    |
| Permit Administration    | 35                                     |
| Year 3 Well Interim      | 188                                    |
| <b>Total</b>             | <b>673</b>                             |