



## **Exploration Permit**

# **VIC/P42**

## **Quarterly Report**

**14 May 2001 – 13 August 2001**

**Bass Strait Oil Company Ltd**

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## VIC/P42

### QUARTERLY REPORT FOR THE PERIOD

**14 MAY 2001 to 13 AUGUST 2001**

#### 1. PARTICIPATING INTERESTS

Bass Strait Oil Company Ltd                      100% (Operator)

#### 2. GOVERNMENT RELATED MATTERS

There are no government related matters to report for this period.

#### 3. EXPLORATION ACTIVITIES

##### 3.1 Vic/P42 Evaluation

Reserves estimates were finalised for the Melville Prospect.

Details of Melville reserves estimation

To handle uncertainty in geological variables in hydrocarbon reserves assessment, stochastic modelling has been used in the prospect appraisal. Monte Carlo simulation was used to replace point estimates of geological parameters with "fuzzy" values, reflecting their uncertainty. Dependencies between variables is carried through the assessment. The different 'fuzzy' values are entered as probability distributions.

The gross rock volume is defined by the two seismic events "Intra-Golden Beach A & B". The upper event suggests that the north and south components of the structure may be combined through a saddle at 2975m. Individual closures for the north and south Melville at the "A" level are 4.1 and 4.4km<sup>2</sup> respectively. The combined faulted anticlinal closure is approximately 20km<sup>2</sup>, where the structure spills to the northeast. No potential for downthrown fault closure has been included in the GRV as the prospect is being appraised as a low risk dip closure. For the "B" level, individual closures are 5.5km<sup>2</sup> for Melville north and 0.7km<sup>2</sup> for Melville south. A potential combined closure of 8.6km<sup>2</sup> exists at this lower seismic event. The GRV has been determined for both north and south accumulations, even though separate accumulations may occur. The chart on the spreadsheet shows the area depth curve, both for Melville north and south separately, and also the combined closure. The spill points are risked at various levels along the area depth curve. For the Golden Beach A level, the spill points are risked at 2930 (10%), 2975 (60%), 3005 (20%) and 3030 (10%) due to the occurrence of significant faults and saddle points at these levels that may form spill points. For the Golden Beach B level, the spill points are risked at 3040 (10%), 3070 (40%) and 3130 (50%) due to the occurrence of significant faults at these levels that may form spill points.

Reservoir parameters are entered by comparison to the Archer-1 and Anemone-1 results to the southeast (with adjustments for depth and compaction trends). The number of reservoir seal pairs for the upper zone (the Golden Beach 'A' level) are entered as a probability distribution from 2 to 4, with 1 to 3 for the lower zone (the Golden Beach 'B' level). Therefore

there are between 3 and 7 reservoir seal pairs modelled in the target Golden Beach zone. This more conservative approach with fewer, thicker reservoirs effectively ignores all thin separate reservoir units. It is considered conservative by a comparison to Archer/Anemone as the greater number of thinner reservoirs there (with an equivalent net pay) would have a greater total reserve potential. Each individual upper zone reservoir is modelled as being a 100% nett sandstone with mean of 22m thick (triangular distribution from 15 - 30m) with mean porosity 14% (triangular distribution from 10 - 22%) and FVF 1.7 (normal +/-10%) and Soil 65%. The recovery factor for this upper zone is modelled as a normal distribution with mean 45%. Each individual lower zone reservoir is modelled as being a 100% nett sandstone with mean of 22m thick (triangular distribution from 15 - 30m) with mean porosity 14% (triangular distribution from 10 - 22%) and FVF 1.7 (normal +/-10%) and Soil 65%. The recovery factor for this lower zone is modelled as a normal distribution with mean 45%.

Only an oil case is considered, as the kitchen area is coincident with that of the Kingfish oil field and at depths unlikely to be gas mature. Results indicate significant reserves potential for the combined Melville north and south with P90, P50 and P10 of 72, 140 and 251MMb respectively. Mean reserves in a success case are 152MMb. In the upside case, that of the aggregate combined closure, STOIP could exceed a billion barrels.

### 3.2 Exploration Well Melville-1

Preparations for the drilling of Melville-1 began in early June with RBT Associates in Perth.

In Early August there was still no news on the availability of the Ocean Bounty. Woodside delayed their decision regarding which rig they will use for Laminaria development, although it is looking increasingly likely it will be a Sedco rig. Assuming the Bounty does not leave the region it will be available for BSOC around the end of September / early October.

Provisional tops were established for Melville-A and are shown below:

#### Provisional tops for Melville as at 16<sup>th</sup> August, 2001

The accuracy of the estimate is shown as a percentage.

Top	Depth (m ss)	Accuracy (%)
Seabed	70	5%
(Gippsland Lst)		
Lakes Entrance Fm	1500	10%
Latrobe Siliciclastics	2100	5%
Golden Beach subgrp	2760	10%
TD in Volcanics	3345	10%

As mentioned the TD will officially be 3345 within the volcanics unit, with an option to increase into the Emperor Subgroup to obtain stratigraphic and reservoir data on the nature of the unit prognosed as Emperor Subgroup.

The initial casing design has been proposed for Melville-1 based upon offset well data. Unfortunately there is little information on pressure regimes in the area so RBT have based this upon the casing type and depth used in the offset wells.

In summary the design is as follows;

30" conductor 50m below mud line.

13 3/8" @ ~1500m into top of Lakes Entrance Fm.

9 5/8" @ ~2500m top of lower Latrobe (secondary objective)

TD 3345m

A preliminary sampling programme was defined for the Melville-1 well and is shown below:

General Stratigraphy	Palynology	Micro-palaeo	Nanno	Analysis	Cutting sample spacing for dating	reservoir	sidewall samples	Wellsite cuttings sample density	Cuttings samples sets
Tertiary		Forams	Calc. nanno.	Semi-quant.	30m	No	No	10m	BSOC: 1 small bag (~250g) wet / unwashed for quick despatch to BSOC as 'hot set' + 1 large (1kg) wet / unwashed + 2 small bags (~50gr) washed and dried. Vic NRE Check regulations - 1 large bag (1kg) wet / unwashed + 1 small bag (~50g) washed and dried Partner(s) - to be agreed before start of operations
Tertiary		Forams	Calc. nanno.	Semi-quant.	30m	No	No	10m	
Tertiary	spore/pollen and dinoflag.			Quantitative palyno (200counts)	20m + fill in for boundaries	Yes	Optional if HC shows	5m	
Late Cretaceous	spore/pollen and dinoflag			Quantitative palyno (200counts)	20m + fill in for boundaries	Yes	Yes	3m	
Late Cretaceous	spore/pollen and dinoflag.			Quantitative palyno (200counts)	20m + fill in for boundaries	?	Optional	3m	

#### Biostratigraphic dating / analysis

General Stratigraphy		Cores	FMI	Specific petrophysical requirements
Tertiary	Gippsland Limestone			MWD GR / RES / directional. In case of sonic (/ density) requirements: LWD a/o wireline logging (depending on availability of reliable LWD sonic measurements In case of HC shows: consider GR / neutron / density / resistivity/ RFT
Tertiary	Lakes Entrance			
Tertiary	Latrobe Siliciclastics	Spot coring/ continuous coring to be agreed	If reservoir, fill in uncored intervals with FMI logs. Use core for calibration of the FMI logs.	MWD GR / RES / directional. Wireline logging over reservoir sections: NGT / neutron / density / DLL / MSFL / sonic RFT or MDT SHDT or FMS / FMI Testing is to be optimised / minimised by using the MDT. Due to the anticipated stacked pay zones, several sampling runs can be envisaged. The MDT programme will be decided by BSOC after consultation with partners
Late Cretaceous	Golden Beach	Spot coring/ continuous coring to be agreed		
Late Cretaceous	Volc./Emperor	Spot coring/ continuous coring to be agreed		

#### Sedimentological / petrophysical / reservoir engineering requirements / analysis

General Stratigraphy		Wellsite cutting sample density	Sample requirements / SWS tests	GC analysis program	Cuttings / SWS sample and core despatch responsibilities / actions
Tertiary	Gippsland Limestone	30m	SWS SWS required if org. rich horizons are penetrated and / or shows and it is recommended to shoot double (close sample) SWS	<u>Sample preparation</u> washing lith. description picking of samples	Cuttings -collected as per drilling programme. -‘hot sample’ to be dispatched to BSOC with first helicopter flights. Well site notifies BSOC on dispatch and flight details. -remaining sample sets sent separately by boat
Tertiary	Lakes Entrance	30m		<u>Screening analysis</u> TOC Rock-eval	
Tertiary	Latrobe Siliciclastics	20m		<u>Follow up analysis</u> Impregnations extracts stable carbon isotope analysis Liquid chroma. separation Sep. of asphaltenes solvent extraction pyrolysis GC GC sat. / aromat.	Cores -taken as per drilling programme (includes minimum recovery expected and No of sealed/waxed sample) -core handling procedures agreed between BSOC and contractor
Late Cretaceous	Golden Beach	20m	Fluids / gas samples -RFT and MDT chambers - 2 samples per HC zone -fluid / gas sampling to be taken according to testing prog.	Optical analysis VR trend	SWS -according to drilling programme -depths/no of samples with minimum recovery to be advised by BSOC
Late Cretaceous	Volc./Emperor	20m		<u>Fluid / gas analysis</u> <u>Reservoir geochemistry</u>	-samples described on rigsite and tested for HC indications by wellsite geologist -SWS to be dispatched by first helicopter.

#### Geochemical analysis and sample despatch

**4. REPORTS SUBMITTED**

Other than the previous Quarterly Report, no reports were submitted during this report period.

**5. HEALTH, SAFETY AND ENVIRONMENT****5.1 Incidents**

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

**5.2 Environmental Approvals**

There were no environmental issues submitted for approval this quarter.

**6. ESTIMATED EXPENDITURE FOR THE QUARTER**

Estimated expenditure for the reporting period is detailed below:

<b>Activity</b>	<b>Estimated Expenditure (\$000's)</b>
Drilling (Melville-1)	30
Permit Administration	30
Seismic (Reprocessing)	NIL
Geological & Geophysical	30
Seismic (Acquisition)	NIL
<b>Total</b>	<b>90</b>