

**FIRST QUARTERLY REPORT**

**YEAR 6**

**T/14P**

**AMOCO AUSTRALIA PETROLEUM COMPANY**

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OR-0146

TPR  
OR-146

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**Amoco Australia Petroleum Company**  
(Inc. in Delaware, U.S.A., with Limited Liability - Registered as a Foreign Company in Tasmania)

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May 8, 1985

The Director of Mines,  
Tasmanian Department of Mines,  
G.P.O. Box 56,  
HOBART. TAS. 7018

Dear Sir,

First Quarterly Report, Year 6, T/14P  
MISC-AUP-170-L-980.2-CWW

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This report relates to exploratory work carried out by Amoco Australia Petroleum Company as operator for the consortium holding title to permit T/14P, during the period January 9, 1985 to April 8, 1985. The principal focus of exploration during this period has been to determine the optimum drilling location for the first well to be drilled by the title holders of permit T/14P.

Geological Work

Amoco has concentrated on the following geological work during the first quarter, year 6:

A. Laboratory Analyses of Geological Samples

Amoco selected samples of cores and cuttings for analysis from the five wells in the permit during the fourth quarter, year 5 to resolve specific problems in the following areas:

1. Palynology - the results of palynological analyses conducted on 73 selected samples by Roger Morgan, a consultant palynologist in Adelaide contracted through Analabs, are enclosed (Enclosure No.1). His most significant interpretation in the permit T/14P area is that Dondu 1 found 200 feet (60 meters) or more of the T. longus zone. Amoco now considers the T. longus zone to be of probable Late Cretaceous age, whereas the zone was earlier thought to be probable Paleocene age; they recently reported that Tertiary dinoflagellates previously found in some cuttings samples from this zone must have been derived from cavings ~~because core samples analyzed from that zone must have been derived from cavings because core samples analyzed from that zone contain no Tertiary-aged dinoflagellates.~~

2. Maturation Levels - the results of vitrinite reflectance analyses conducted on samples selected from Nangkero 1, Dondu 1, Bass 1 and Yurongi 1 by Amdel are enclosed (Enclosure No. 2). Appendix IV of Roger Morgan's report contains his interpretation of thermal alteration levels of other samples selected from Nangkero 1 and Dondu 1, based on spore colouration.

Vitrinite reflectance values suggest that in Bass 1 the lower Eocene at 7714 feet is undermature, in Dondu 1 the Paleocene is undermature from 7680 feet to 7686 feet and mature at 9414 feet, in Nangkero 1 the lower Eocene is undermature at 7415 feet, and in Yurongi 1 the Paleocene is undermature from 7705 to 7803 feet. The spore colouration data suggest that in Dondu 1 the Maastrichtian is mature at 9518 feet and that in Nangkero the lower Eocene is undermature at 7405 feet.

3. Reservoir Properties - the results of several types of analyses which include porosity, permeability to air, grain density, mineralogical analysis by X-ray diffraction and thin-section petrography have been compiled and are enclosed (Enclosure No.3). Permeability was observed to vary considerably at similar porosities in most cases, and the mineralogical and petrological work have provided an aid to our understanding of this phenomenon. Evidently, permeability is directly proportional to the average grain size and sorting index while being inversely proportional to clay content and the degree of pressure solution of quartz framework grains. Kaolinite is interpreted to be an alteration product of detrital feldspar in most cases.

B. Yolla-1 Well Prognosis

This display panel, which we transmitted to you on April 24, 1985, summarises the hydrocarbon potential at Amoco's proposed Yolla-1 well location. Included are a Stratigraphic Section, a strike seismic line near the location, a dip seismic line through the location showing anticipated lithology and reservoir objectives, and a drilling time chart as geological support. Two time-structure maps are also included, which indicate mapped dip closure as well as fault-associated closure within the lower Paleocene and the lower Eocene at the proposed location.

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Amoco views the entire Eastern View Group of Late Cretaceous to Eocene age as prospective. The Otway Group is not considered a reservoir objective at this time based on limited well control.

Geophysical Work

Seismic data acquired in permit T/14P during November and December of 1984 have now been processed and copies will be forwarded as they become available. Detailed analysis has allowed removal of long period multiples generated from coals within the Eastern View Group and has permitted confident mapping of horizons beneath those previously considered reliable in the area. Copies of these maps will be furnished as they become finalized.

Reprocessing of seismic data previously acquired in permit T/14P is now complete. The objectives of the reprocessing, namely to enhance deeper data, were generally achieved, although improvement in data quality varied substantially from line to line.

Yours faithfully,

C. W. Waring  
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C. W. Waring.

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ENCLOSURES:

1. Palynology Review of Previous Oil Drilling, Bass Basin, Australia by Roger Morgan.
2. Vitrinite Reflectance Data on Sixteen Wells from the Bass Basin by AMDEL.
3. Bass Basin, Australia. Minerology, Petrography and Reservoir Quality of Sandstone Cores by Core Laboratories and Minerology Inc.

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