

PART 1 : HYDROCARBON SOURCE ROCK EVALUATION

## 1. INTRODUCTION

Canned cuttings (131 samples), sidewall cores (34 samples), a condensate and a gilsonite mud additive from Pelican-5 were submitted for organic geochemical analysis.

The aims of the study were threefold:

- 1) to assess the hydrocarbon source potential of the Eastern View Coal Measures below 1776 metres depth in Pelican-5,
- 2) to determine the type, source affinity, maturity and degree of post-pooling alteration (water washing, biodegradation) of condensate recovered from an Eocene reservoir during RFT 3 (2788 metres); and
- 3) to evaluate the significance of live oil and/or bitumen noted during organic petrological examination of cuttings from 2169-2178, 2790-2799 and 2961-2970 metres depth (Watson, 1986).

A previous study of Pelican-5 (Watson, 1986) provided vitrinite reflectance data and descriptions of the dispersed organic matter (DOM) in selected samples from the interval 1851-4247 metres depth.

## 2. ANALYTICAL PROCEDURE

Details of the analytical methods are given in Appendix 1.

## 3. RESULTS

Analytical data are summarized and presented herein as follows:

|                                 | <u>Table</u> | <u>Figure</u> | <u>Appendix</u> |
|---------------------------------|--------------|---------------|-----------------|
| <u>Source Rock Analysis</u>     |              |               |                 |
| Headspace gas                   | 1,2          | 1-4           | -               |
| Total organic carbon            | 3-5          | -             | -               |
| Rock-Eval pyrolysis             | 4,5          | 5-7           | -               |
| Vitrinite reflectance           | -            | -             | 2               |
| <u>Condensate Analysis</u>      |              |               |                 |
| Gasoline-range (C5-C7) analyses | 6,7          | 8,9           | 3               |
| C12+ bulk composition           | 8            | 10            | -               |
| C12+ saturates (alkanes)        | 8            | 11            | -               |
| GC-MS of naphthenes             | 10,11        | 14-16,20-21   | 4               |
| GC-MS of aromatics              | 12           | 22            | -               |