POST-DRILL GEOCHEMICAL EVALUATION OF THE CONAN PROSPECT VIC/P31 OFFSHORE OTWAY BASIN

BHP Petroleum

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EVALUATION

OF THE

CONAN PROSPECT

VIC/P31

OFFSHORE OTWAY BASIN

AUSTRALIA

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APPLIED GEOCHEMIST

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1. INTRODUCTION

Before Conan-1 was drilled in July, 1995, the probability of discovering gas in the Conan structure was relatively high (risking of the prospect suggested a 22% chance). This probability was based mainly on the observation that the prospect was central to a demonstrated gas province in which the top-Minerva Formation play-type had been drilled with a 100% success rate (in Minerva-1 and -2/-2A, La Bella-1 and Pecten-1A). The Eumeralla CMS/Minerva Fm. petroleum system would, it was assumed, be as effective for the Conan Prospect as it obviously had been for the known occurrences of gas, so that source/migration was not considered as great a risk to gas accumulation as other factors (such as cross-fault seal).

In the context of these high expectations for the Conan Prospect, the absence of gas in the structure was especially disappointing. In the search for reasons for the absence of gas, factors which had previously been regarded as providing the greatest risk appeared to be mitigated. For example, no sands had been intersected in Conan-1 in the lowermost part of the Sherbrook Group claystone unit, suggesting that the probability of effective top-seal and cross-fault seal was greater than had been previously thought. Conversely, however, one factor previously considered to have carried the least risk was called into question, the suggestion being that the absence of gas in the Conan structure was a direct result of ineffective source/migration. Consequently, in considering the absence of gas in Conan-1, the issue became less the inability of the structure to retain hydrocarbons than the inability of the Eumeralla Formation source-rocks to provide them.

This report outlines the work which was undertaken to test this possibility, describes how earlier assumptions relating to source/migration were challenged and re-assessed, and summarises the conclusions which were drawn.

2. SOURCE-ROCK CHARACTER

Earlier regional assessments of the source potential of the Late Cretaceous and Tertiary sections of the offshore Eastern Otway Basin suggest that these sediments are generally organically lean or barren, and thermally immature. The only stratigraphic interval considered to contain effective source-rocks is the Early Cretaceous Otway Group, in particular two coal-bearing units within the Eumeralla Formation, known in onshore wells such as Ross Creek-1 and Fergusons Hill-1 as the Middle and Lower Eumeralla Coal Measures (MECMs and LECMs) . However, these units have not been intersected in any offshore well drilled to date, and their source-character must be inferred from the onshore wells.

The TOC and Rock-Eval pyrolysis data from Fergusons Hill-1 (Figure 1) show that those intervals of the Early Cretaceous Eumeralla Formation which are not coal-bearing are largely barren of organic matter, so that any assessment of source potential must be confined to the coal-bearing units. While data are available from these units in Fergusons Hill-1, they are less well stratigraphically assigned in the BHPP Geochemistry Database compared with Ross Creek-1, from which well-assigned, lithologically-picked samples of coal, coal-rich claystone and claystone were independently analysed. TOC/Rock-Eval pyrolysis data from Ross Creek-1 are summarised in Figures 2-9.

As Figure 2 shows, TOCs within the MECMs range from 1-4% in the claystones, through 4-15% in the coal-rich and carbonaceous claystones, to 45-60% in the coals. TOCs in the LECMs claystones appear to be lower (1-3%). The HI and S1+S2 values of the coals are clearly higher than those of the claystones, and values from each of the lithologies in the LECMS are lower than those from the equivalent MECMs lithologies (Figures 3, 4, 5 and 6). This can be attributed simply to the more advanced thermal maturity of the LECMs compared with the MECMs, as indicated by values of Tmax from the two units (Figure 7).

This difference in maturity is further reflected in Figure 8, in which values of PI are distinguished both by unit and by lithology (namely, coal versus claystone). Note that, while the PI values of the more mature LECMs claystones are greater than those of the MECMs, the PI values of the LECMs and MECMs coals are similar (less than 0.10) and, within each unit, lower than those of the adjacent claystones. This may represent a relative-expulsion effect (see Figure 9). The claystones within the MECMs unit appear to have typical values of PI a little over 0.10 consistent with their early maturity (see also Figure 10), suggesting that there has been little or no loss of S1 hydrocarbons from these samples by expulsion. However, it appears that the coals, being organically very rich, have generated enough hydrocarbons to have induced a little expulsion and therefore a slight depletion of S1 hydrocarbons in the samples, resulting in slightly lower values of PI. The effect is more conspicuous in the wet-gas-mature LECMs. While a degree of S1-depletion is evident in the claystones (PI values, instead of exceeding 0.40, range from about 0.23 down to 0.15), it appears to have been much more significant in the coals, in which PI values have been reduced to "background" levels of less than 0.10, similar to those of the marginally mature MECMs coals. Similar effects can be interpreted from the Fergusons Hill-1 TOC/Rock-Eval data.

These observations confirm the coals, and, to a lesser degree, the associated carbonaceous claystones, as the effective source-rocks in the Eumeralla Formation of the Eastern Otway Basin, in that they appear to have generated and expelled hydrocarbons in amounts sufficient for accumulation in commercial quantities.

3. SOURCE-ROCK DISTRIBUTION

Onshore wells such as Ross Creek-1 and Fergusons Hill-1 provide data relating not only to the source-character of the LECMs and MECMs coals, but also to their vertical distribution within the Early Cretaceous Eumeralla Formation section. The coals, carbonaceous claystones and claystones of the MECMs and LECMs form units 300m and (at least) 100m thick respectively in Ross Creek-1, separated by about 700m of essentially barren Eumeralla Formation sediments. Though the stratigraphic assignment of samples is less well defined in Fergusons Hill-1, a similar distribution is evident in this well.

Our knowledge of the Early Cretaceous section beneath the VIC/P30-31 area of the offshore Eastern Otway Basin is very poor. While several wells, including Conan-1, have tagged this section, none has intersected any coals; nor are they revealed on seismic data, so that we have no direct confirmation that the coals are present beneath the VIC/P30-31 permit areas. Before drilling Conan-1, it was tacitly assumed that the coal-bearing units were developed throughout the Eastern Otway Basin, forming two limitless and uninterrupted blankets of source-rock, providing a ubiquitous source of gas for all competent top-Minerva Formation traps. However, the absence of gas in the Conan-1 well challenged all previous assumptions regarding the ability of the Eumeralla Formation/Minerva Formation petroleum system to deliver commercial amounts of hydrocarbons. Not the least among these assumptions were those relating to source-potential.

The issue that was perhaps most critical to the assessment of source-rock potential in the Conan area was whether or not the LECMs and MECMs observed in the onshore wells persisted laterally (southwards) into the offshore area to provide a limitless source of gas there. To answer this question, we should be mindful that the development of the coal-bearing units was linked to the depositional scheme of the Eumeralla Formation, the thickness-distribution of which was itself linked to the Early Cretaceous rift-axis running NW-SE through the onshore Port Campbell Embayment. At that time, the Antarctic land-mass lay to the south-east of the present offshore areas and would have represented an Early Cretaceous depositional limit towards which an overall thinning of the Eumeralla Formation was likely. If the development of the Eumeralla coals was linked closely to this pattern, then it is possible that they are less well developed in the Conan area compared with the Port Campbell Embayment. In addition, it is possible that the development of coals was locally precluded by variations in depositional environment. These considerations leave us with an impression of the Eumeralla coals as anything but ubiquitous, and, in the search for a reason for the absence of gas in the Conan structure, we perhaps need to invoke nothing more than the absence of Eumeralla coals in the Conan drainage area.

If, however, despite the lack of direct evidence, we assume that the Eumeralla coals are present beneath VIC/P30-31, then other reasons must be sought for the absence of gas in Conan-1. These might well relate to the degree and timing of thermal maturation of the coals, as discussed below.

4. SOURCE-ROCK THERMAL MATURITY

Assuming that the Eumeralla coals are present beneath the VIC/P30-31 permits, we need to understand whether they were effective or ineffective as source-rocks. If they were effective, and were able to provide gas-charge to the structure, then the absence of gas in the Conan structure would have been due to geological factors unrelated to source, such as invalid closure or poor integrity of trap. If, however, the coals were ineffective as source-rocks, and failed to provide gas-charge to the structure, then we need to understand the possible reasons for this.

A major determinant of the effectiveness or otherwise of a source-rock is its thermal maturation. The degree of thermal maturation required to induce the expulsion of hydrocarbons from a source rock will depend on the organic-richness and lithology of that source-rock. The timing of thermal maturation relative to that of trap formation will determine whether the expelled hydrocarbons may accumulate or not. As we shall see, these factors could be critical to the effectiveness of the Eumeralla coals as source-rocks in the offshore Eastern Otway Basin.

4.1 Thermal Modelling

Estimations of the degree and, more particularly, of the timing of thermal maturation of source-rocks can be best achieved by thermal modelling,. This consists of imposing a thermal history on a burial history, each constrained as far as possible by geological and geochemical data, to examine the responses of the source-rocks; if their modelled, present-day maturities resemble those measured from well samples, then the thermal/burial history pair can be considered to be a useful approximation of the geological reality. (Note, however, that such an outcome does not represent a unique solution, and that other thermal/burial combinations may give the same modelled response.)

It was assumed that the most likely means of charging the Conan structure was by vertical migration up the several faults with which the Conan closure was associated. Therefore, the source-rocks which were most likely to charge the Conan structure were the Eumeralla coals somewhere vertically beneath it. Under normal circumstances, it would be necessary to build, at the Conan location, a maturation model by which to calculate the thermal maturity of the source-rocks at variously specified depths until their effectiveness was demonstrated. However, in the case of the Conan Prospect, in which gas is absent, this was not the point: we were seeking an explanation for the absence of gas, not a confirmation of the source of an accumulation. To have predicted, by thermal modelling, that the Eumeralla coals beneath the Conan structure were source-effective would only have diverted the search for a reason for the absence of gas to a consideration of geological rather than geochemical factors. It therefore seemed more useful, assuming the source-rocks were present within the drainage area to the structure, to model the section negatively, with a view to determining whether there was a thermal/burial combination which might predict an ineffectiveness, on the part of the source-rocks, to charge the Conan structure.

4.1.1 Burial History

Following the drilling of Conan-1, its stratigraphy was used to construct, and to constrain, a burial history at the Conan location.

Conan-1 penetrated the top of the Early Cretaceous Eumeralla Formation at 1869 mRT. This was unexpected, since the Top-Eumeralla Unconformity was estimated (from pre-drill seismic interpretation) to lie at about 2400mSS, beyond the proposed T.D. of the well (2300 mSS). This meant that, at the Conan location, the Top-Eumeralla Unconformity lies about 500m higher than the pre-drill depth-estimate. Palynological analysis of the Conan-1 intersection of the Eumeralla Formation yielded a *C. paradoxa* age, the overlying *P. pannosus* zone being absent, presumably by erosion. These observations suggest that, at the Conan location, the Early Cretaceous stratigraphy is older (relative to depth) than was previously thought.

Conan-1 terminated at 1985 mRT without intersecting any coals, so that we still lack direct confirmation of their distribution, or even of their presence, within the Eumeralla Formation in this area. If they are present, and they have a vertical distribution similar to that observed in Ross Creek-1 (bearing in mind the earlier discussion on the depositional scheme of the Eumeralla Formation), then we can assume that two coal-measure intervals, a 300m MECMs unit and a >100m LECMs unit, separated by about 700-800m of lean to barren sediment, lie beneath the Conan structure. However, having fixed their depth-span, we still do not know their absolute depths. Our estimate of these is critical to the outcome of the modelling exercise, as we shall see.

Earlier, poorly constrained seismic interpretation of the Early Cretaceous section along Line 1056 (through Minerva, Conan and La Bella: see Enclosure 1) estimated that the MECMs and LECMs lay at depths of about 4200m and 5700m respectively, with a depth-separation of about 1500m. These depths are now thought to have been significantly over-estimated, particularly in view of the results of Conan-1 which suggest that the Eumeralla Formation at this location is older relative to depth (see above), and, therefore, that the coals may lie at shallower rather than at deeper levels. This is reflected in the revised interpretation of this seismic line (Enclosure 1) in which the MECMs and LECMs lie at indicative depths of less than 3500m, with a depth-separation of less than 1000m, such figures being more consistent with those observed in the onshore wells (Ross Creek-1 and Fergusons Hill-1).

Earlier modelling work in the offshore Otway Basin correctly incorporated several periods of uplift and erosion into the burial histories, the more significant of these being represented by the top-Eumeralla and top-Sherbrook Unconformity surfaces. The tectonic activity associated with the latter event substantially modified the earlier Conan trap-site, formed by the sealing of a post-Napier high by the deposition of the Sherbrook Group claystones, so that the timing of final modification of the trap-site is regarded as 60-65 Ma. These episodes of uplift had the further effect of punctuating the generative and expulsive histories of the Eumeralla source-rocks at depth, this effect being more pronounced at the La Bella location than at Minerva, where the sequence is more complete and where the interruptions to burial were fewer.

4.1.2 Thermal History

Earlier modelling of the offshore section of the Eastern Otway Basin used a thermal model in which heat-flow was assumed to be higher in the Early Cretaceous, pre- and syn-rift phases of basin development (up to 96 Ma), and to decay progressively through the Late Cretaceous post-rift and Tertiary passive-margin phases. However, it is likely that the contrast between levels of heat-flow before and after 96 Ma is greater than was formerly supposed; geothermal gradients before 96 Ma may have been as high as 60-70^{o}C/km, based on apatite fission-track analysis palaeo-temperature data (I. Duddy, Geotrack, pers. comm.). Such a temperature history requires that the decay of heat-flow with time was much more rapid than had been assumed in the earlier modelling work.

Note, in this connection, that the VR-depth profiles from wells in the area indicate that the entrance to the oil-generative window (VR = 0.5%) lies at an average depth of 1600-1800m below surface/sea-floor (see Figures 10-15). This could not have been achieved under prevailing (present-day) thermal conditions, according to which the top of the oil-window would lie about 500m deeper (see Figures 14 and 15). The significance of this observation is discussed below.

4.1.3 Results of Thermal Modelling

Mindful of the considerations, and applying the constraints, outlined above, the Conan model was run, modified and iterated in GENEX to determine which (if any) burial/thermal pair(s) might predict that both the MECMs and LECMs intervals were ineffective in charging the Conan structure. Results of this work are shown in Figures 16-24.

The burial and thermal histories at the Conan location are shown in Figures 16 and 17. Figure 16 additionally shows the isotherms through which the Createceous and Tertiary sequences were buried. It can be seen that, although the deepest point of burial of the MECMs and LECMs is the present-day, maximum temperatures were imposed prior to the uplift event at 60 Ma. After that time, Tertiary burial failed to keep pace with the decay in palaeoheat-flow, the section remained cooler, and no further thermal maturation of the MECMs and LECMs took place (Figures 18 and 19). Hence, the VR-profiles measured in the wells were established at about 60 Ma at a time of maximum temperatures, explaining why measured values of VR are higher than expected for present-day geothermal gradients. Note, then, that the calculated-VR curve shown in Figure 20 is fitted to a profile of measured VR established not at the present-day but at 60 Ma.

Figures 21 and 22 illustrate the likely behaviour of a notional 10m-coal ("MECM 2") at the top of the 300m MECMs unit, and one at the base of the unit ("MECM 1"). Figures 23 and 24 provide the same illustrations for notional 10m-coals at the top and base of the LECMs unit ("LECM 2" and "LECM 1" respectively). The vertical, red, dashed line on each figure marks the timing of final structural modification of the Conan trap-site at 60 Ma. Note that, according to this burial/thermal model, the MECM 2 coal is not predicted to have expelled any hydrocarbons. While the MECM 1 coal is predicted to have expelled minor quantities since 60 Ma, it is unlikely that such quantities, allowing for migration losses, would have provided charge to the Conan structure. By contrast, the LECM 1 and 2 coals, by virtue of their more advanced maturities, are predicted to have expelled significant amounts of hydrocarbons before 60 Ma, but only minor amounts after this time.

4.1.4 Discussion

The implications of the above work are clear. According to our model, both the MECMs and LECMs coals were rendered ineffective as source-rocks. The MECMs were ineffective because, by 60 Ma, they had failed to reach the level of maturity required to induce significant expulsion of hydrocarbons. The LECMs were ineffective because their generative potential was exhausted prior to 60 Ma; while the hydrocarbons expelled between 80-60 Ma were capable of charging the proto-trap at Conan, it is doubtful that they could have survived the tectonic upheaval which accompanied the modification of the trap at 60 Ma. In short, by the time of the formation of an effective trap, the source-rocks had become ineffective, the small amounts of re-migrating gas being insufficient for the accumulation of commercial quantities.

It might be argued that such a model, deliberately constructed to identify a burial/thermal pair which renders the source-rocks ineffective, is a special case rather than a unique solution, and that to insist on it as a geological reality amounts only to special pleading. In defence of the model, it firstly has to be said that the relative maturities of the MECMs and LECMs coals in our model are broadly similar to those observed at Ross Creek-1, where the MECMs coals appear to have expelled very few hydrocarbons, and the LECMs coals seem to have expelled significant amounts. Secondly, the tendency for values of measured VR to significantly exceed those which might be expected for present-day geothermal gradients appears to be a regional phenomenon rather than an isolated one, and represents unequivocal evidence that the source-rocks were cooled at some point before the present-day.

The chances of accumulating commercial quantities of gas will perhaps improve in areas in which this cooling post-dates trap-formation. This is possible in cases where trap-sites have undergone little structural modification at 60 Ma, so that gas reservoired between 80-60 Ma might remain undisturbed. Perhaps this explains the occurrences of gas at Minerva and La Bella, and its absence at Conan. However, this reasoning pre-supposes that these occurrences resulted from the same petroleum system, and that the presence or absence of gas relies on geological factors such as trap-failure. If the reason for the absence of gas at Conan is wholly geochemical, then it seems likely that the occurrences of gas at Minerva and La Bella are due to discrete petroleum systems, each related to adjacent structural deeps. More work is required to determine what distinguishes the burial and thermal histories of these deeps from the those of the Mussel Terrace to which the Conan structure belongs. Finally, for all of the reasonings outlined above, it may simply be that, while the Eumeralla sections in the structural deeps adjacent to Minerva and La Bella contain coals, the Eumeralla section beneath the Mussel Terrace does not.

5. CONCLUSIONS

In the search for reasons for the absence of gas in Conan-1, one factor previously considered to have carried the least risk was called into question, namely, source/migration. Consequently, the issue became less the inability of the structure to retain hydrocarbons than the inability of the Eumeralla Formation source-rocks to provide them.

The only demonstrably effective source-rocks in the Eastern Otway Basin are the Early Cretaceous Middle and Lower Eumeralla Coal Measures (MECMs and LECMs). However, these units have not been intersected in any offshore well drilled to date, and their source-character is inferred from the onshore wells, such as Ross Creek-1. Relative-expulsion effects, interpreted from TOC/Rock-Eval data in Ross Creek-1, confirm the coals as the effective source-rock lithologies in onshore areas.

Our knowledge of the Early Cretaceous section beneath the offshore Eastern Otway Basin is very poor, and there is no direct confirmation that the coals are present beneath the VIC/P30-31 permit areas. It is possible that the development of coals was locally precluded by variations in depositional environment, so that, in the search for a reason for the absence of gas in the Conan structure, we perhaps need to look no further than the absence of Eumeralla coals in the Conan drainage area.

However, assuming that the Eumeralla coals are present beneath the VIC/P30-31 permits, we need to understand whether or not they were effective as source-rocks. Major determinants of the effectiveness (or otherwise) of a source-rock are the degree and timing of its thermal maturation, which can be estimated, in the absence of direct data, by thermal modelling.

Following the drilling of Conan-1, its stratigraphy was used to construct, and to constrain, a burial history at the Conan location. The results from Conan-1 suggested that the coals lie at shallower rather than at deeper levels. Their vertical distribution in the Conan model was made to be consistent with that in Ross Creek-1. It seems likely that the decay of heat-flow from 96 Ma was much more rapid than had been previously assumed, so that, although the point of deepest burial of the MECMs and LECMs is the present-day, maximum temperatures were imposed at some earlier time. This is predicted by the model to have been at 60 Ma, immediately preceding the uplift event which structurally modified the Conan trap-site. After that time, Tertiary burial failed to keep pace with the decay in palaeoheat-flow, the section remained cooler, and no further thermal maturation of the MECMs and LECMs took place. This is supported by VR-depth profiles from wells in the area, which could not have been established under present-day thermal conditions.

According to this burial/thermal model, therefore, both the MECMs and LECMs coals were rendered ineffective as source-rocks at about 60 Ma. By this time, the MECMs had failed to reach the level of maturity required to induce significant expulsion of hydrocarbons, and the generative potential of the LECMs was exhausted. Whether any gas reservoired before 60 Ma could have survived the tectonic upheaval which accompanied the modification of the trap is a matter for speculation. The chances of accumulating commercial quantities of gas may improve in areas in which cooling can be shown to post-date trap-formation. It is possible that gas reservoired between 80-60 Ma might remain undisturbed in Top-Minerva trap-sites which underwent little structural modification at 60 Ma.

However, if the reason for the absence of gas at Conan is wholly geochemical, then earlier assumptions, by which Eumeralla source-rocks are effective throughout the Eastern Otway Basin, must now be challenged. It now seems likely that the occurrences of gas at Minerva and La Bella are the products of discrete petroleum systems, each related to adjacent structural deeps. More work is required to determine what distinguishes the petroleum systems of these deeps from the that of the Mussel Terrace.

TABLE 1

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
1545.00	1545.00	L.CRET	-	SHERGP	-	-	-	-	-	-	KKW	-	-
1568.00	1568.00	L.CRET	-	SHERGP	-	-	-	-	-	-	KKW	-	-
1572.00	1572.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	EAL	NO	-
1776.00	1776.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	EAL	NO	-
1876.00	1876.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	UNW	NO	-
2024.00	2024.00	L.CRET	-	SHERGP	-	-	-	-	COR	GD	BAR	NO	-
2159.00	2159.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	UNW	NO	-
2321.00	2321.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	UNW	NO	-
2437.00	2437.00	L.CRET	-	SHERGP	-	-	-	-	COR	GD	BAR	NO	-
2438.00	2438.00	L.CRET	-	SHERGP	-	-	-	-	-	-	KKW	-	-
2439.00	2439.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	EAL	NO	-
2440.00	2440.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	GTS	NO	-
2440.00	2440.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	GTS	NO	-
2445.00	2447.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	GTS	NO	-
2445.00	2447.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	GTS	NO	-
2449.00	2449.00	L.CRET	-	SHERGP	-	-	-	-	-	-	BAR	NO	-
2449.00	2449.00	L.CRET	-	SHERGP	-	-	-	-	CUT	GD	UNW	NO	-
2743.00	2743.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
2745.00	2745.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
2803.00	2803.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
3110.00	3110.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
3419.00	3419.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	EAL	NO	-
3585.00	3585.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
3750.00	3750.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
4094.00	4094.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
4094.10	4094.10	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
4094.20	4094.20	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
4515.00	4515.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
5078.00	5078.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
5079.00	5079.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	EAL	NO	-
5079.00	5079.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
5555.00	5555.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
5580.00	5590.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
5780.00	5790.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
5935.00	5935.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
5942.00	5942.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
5942.00	5942.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	EAL	NO	-
5970.00	5980.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
6155.00	6155.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-

N.B. Code definitions at end of table
- = No data

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WELL NAME = FERGUSONS HILL 1
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DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
6180.00	6190.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
6290.00	6300.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	NO	-
6290.00	6300.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	NO	-
6408.00	6408.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
6450.00	6460.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
6555.00	6555.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
6558.00	6558.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
6570.00	6580.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-
6580.00	6590.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	BAR	NO	-
6920.00	6930.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	BAR	NO	-
7040.00	7040.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
7080.00	7080.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7220.00	7225.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7224.00	7224.00	E.CRET	-	MECMS	-	-	-	-	COR	GD	BAR	NO	-
7237.00	7237.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
7320.00	7330.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7335.00	7335.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
7339.00	7339.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	KKW	-	-
7410.00	7420.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	NO	-
7410.00	7420.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	NO	-
7420.00	7430.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7520.00	7530.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7615.00	7615.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7620.00	7630.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7720.00	7730.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7818.00	7818.00	E.CRET	-	MECMS	-	-	-	-	COR	GD	BAR	NO	-
7820.00	7820.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	EAL	NO	-
7825.00	7830.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
7920.00	7930.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	BAR	NO	-
7920.00	7930.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	NO	-
7920.00	7930.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	NO	-
8020.00	8030.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8035.00	8035.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8220.00	8130.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8260.00	8260.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
8261.00	8261.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
8320.00	8330.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8420.00	8430.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8520.00	8530.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-

N.B. Code definitions at end of table
- = No data

TABLE 1

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
8620.00	8630.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8720.00	8730.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8768.00	8768.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
8780.00	8790.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8830.00	8840.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8890.00	8900.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
8950.00	8960.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9020.00	9030.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9080.00	9090.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9140.00	9150.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9195.00	9195.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	EAL	NO	-
9196.00	9196.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
9196.00	9196.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
9200.00	9210.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9270.00	9280.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9330.00	9340.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9400.00	9410.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9460.00	9470.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9530.00	9540.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9610.00	9620.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9626.00	9626.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
9680.00	9690.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9740.00	9750.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9810.00	9820.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9870.00	9880.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
9940.00	9950.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10010.00	10020.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10060.00	10070.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10090.00	10097.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
10090.00	10097.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
10092.00	10092.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	EAL	NO	-
10096.00	10096.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
10120.00	10130.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10180.00	10190.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10240.00	10250.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-
10250.00	10260.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10310.00	10320.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10370.00	10380.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10430.00	10440.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-

N.B. Code definitions at end of table
- = No data

TABLE 1

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
10500.00	10510.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10510.00	10520.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
10510.00	10520.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
10560.00	10570.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10575.00	10580.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-
10630.00	10640.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10659.00	10659.00	E.CRET	-	EUMEGP	-	-	-	-	-	-	XXX	-	-
10680.00	10690.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10740.00	10750.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10810.00	10820.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
10870.00	10880.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
10920.00	10930.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
10970.00	10980.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
11030.00	11040.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
11090.00	11094.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
11110.00	11120.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-
11140.00	11150.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
11170.00	11180.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11170.00	11180.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
11180.00	11180.00	E.CRET	-	EUMEGP	-	-	-	-	COR	GD	BAR	NO	-
11200.00	11210.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11200.00	11210.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
11210.00	11220.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
11260.00	11270.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
11310.00	11320.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11310.00	11320.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-
11320.00	11330.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
11370.00	11380.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
11400.00	11410.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11400.00	11410.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
11419.00	11419.00	E.CRET	-	LECMS	-	-	-	-	COR	GD	BAR	NO	-
11419.00	11425.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11419.00	11425.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
11430.00	11430.00	E.CRET	-	LECMS	-	-	-	-	-	-	KKW	-	-
11430.00	11440.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	BAR	NO	-
11460.00	11470.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	NO	-
11460.00	11470.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	NO	-
11490.00	11500.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	BAR	NO	-
11570.00	11580.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-

N.B. Code definitions at end of table
- = No data

TABLE 1

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
11570.00	11580.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	NO	-

N.B. Code definitions at end of table
- = No data

CODE DEFINITIONS FOR TABLE 1

GEOLOGICAL PERIOD CODES

E.CRET = Early Cretaceous
L.CRET = Late Cretaceous

GEOLOGICAL AGE CODES

FORMATION CODES

EUMEGP = Eumeralla Group
LECMC = L.EUMERALLA COALS
LECMS = L.EUMERALLA SHALE
MECMC = M.EUMERALLA COALS
MECMS = M.EUMERALLA SHALE
SHERGP = Sherbrook Group

PRIMARY/SECONDARY LITHOLOGY CODES

SAMPLE TYPE CODES

COR = Conventional Core
CUT = Cuttings

SAMPLE QUALITY CODES

GD = Good

CONTRACTOR CODES

BAR = BROWN AND RUTH
EAL = Esso Aust. Ltd
GTS = Geotechnical Servics
KKW = Keir. Kon./Uni. Wol.
UNW = UNIVERSITY WOOLONG
XXX = Unknown

TABLE 2

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-JAN-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
1572.00	1572.00	2.87	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
1776.00	1776.00	.26	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
1876.00	1876.00	1.42	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO
2024.00	2024.00	1.29	423	-	.10	.28	1.72	.38	.16	.26	.03	22	133	RE2	COR	BAR	NO
2159.00	2159.00	.83	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO
2321.00	2321.00	2.86	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO
2437.00	2437.00	.78	436	-	.10	.18	.60	.28	.30	.36	.02	23	77	RE2	COR	BAR	NO
2439.00	2439.00	22.23	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
2440.00	2440.00	45.20	410	-	1.95	17.59	36.67	19.54	.48	.10	1.62	39	81	RE2	CUT	GTS	NO
2440.00	2440.00	8.60	406	-	.74	6.87	6.16	7.61	1.12	.10	.63	80	72	RE2	CUT	GTS	NO
2445.00	2447.00	41.50	424	-	4.57	84.83	20.76	89.40	4.09	.05	7.42	204	50	RE2	CUT	GTS	NO
2445.00	2447.00	24.00	425	-	2.84	59.50	10.68	62.34	5.57	.05	5.17	248	45	RE2	CUT	GTS	NO
2449.00	2449.00	10.77	421	-	1.69	23.70	6.01	25.39	3.94	.07	2.11	220	56	RE2	-	BAR	NO
2449.00	2449.00	1.39	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO
2745.00	2745.00	12.04	445	-	.18	4.98	9.68	5.16	.51	.03	.43	41	80	RE2	COR	BAR	NO
3110.00	3110.00	1.89	433	-	.10	.52	.94	.62	.55	.16	.05	28	50	RE2	COR	BAR	NO
3419.00	3419.00	.94	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
4094.00	4094.00	3.00	434	-	.10	1.63	.47	1.73	3.47	.06	.14	54	16	RE2	COR	BAR	NO
4094.10	4094.10	21.85	430	-	1.51	46.81	3.93	48.32	11.91	.03	4.01	214	18	RE2	COR	BAR	NO
4094.20	4094.20	21.82	428	-	2.59	69.81	5.17	72.40	13.50	.04	6.01	320	24	RE2	COR	BAR	NO
4515.00	4515.00	1.01	436	-	.10	.40	.27	.50	1.48	.20	.04	40	27	RE2	COR	BAR	NO
5078.00	5078.00	1.54	-	-	.10	.23	.30	.33	.77	.30	.03	15	19	RE2	COR	BAR	NO
5079.00	5079.00	.56	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
5555.00	5555.00	.67	436	-	.10	.68	.66	.78	1.03	.13	.06	101	99	RE2	COR	BAR	NO
5580.00	5590.00	.78	439	-	.10	.45	1.34	.55	.34	.18	.05	58	172	RE2	CUT	BAR	NO
5780.00	5790.00	.53	448	-	.10	.35	1.06	.45	.33	.22	.04	66	200	RE2	CUT	BAR	NO
5942.00	5942.00	.56	430	-	.10	.37	.16	.47	2.31	.21	.04	66	29	RE2	COR	BAR	NO
5942.00	5942.00	1.71	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
5970.00	5980.00	.52	482	-	.10	.23	1.08	.33	.21	.30	.03	44	208	RE2	CUT	BAR	NO
6180.00	6190.00	.57	489	-	.10	.20	1.79	.30	.11	.33	.02	35	314	RE2	CUT	BAR	NO
6290.00	6300.00	28.50	433	-	2.27	59.40	6.33	61.67	9.38	.04	5.12	208	22	RE2	CUT	GTS	NO
6290.00	6300.00	3.13	432	-	.41	3.66	1.06	4.07	3.45	.10	.34	117	34	RE2	CUT	GTS	NO
6408.00	6408.00	.66	467	-	.10	.32	2.84	.42	.11	.24	.03	48	430	RE2	COR	BAR	NO
6450.00	6460.00	.45	-	-	.10	.16	.80	.26	.20	.38	.02	36	178	RE2	CUT	BAR	NO
6555.00	6555.00	.68	451	-	.10	.32	.22	.42	1.45	.24	.03	47	32	RE2	COR	BAR	NO
6570.00	6580.00	7.55	430	-	.73	12.02	2.23	12.75	5.39	.06	1.06	159	30	RE2	CUT	GTS	NO
6580.00	6590.00	1.16	438	-	.19	1.52	.67	1.71	2.27	.11	.14	131	58	RE2	CUT	BAR	NO
6920.00	6930.00	1.70	438	-	.17	2.13	1.00	2.30	2.13	.07	.19	125	59	RE2	CUT	BAR	NO

TOC = Total organic carbon; TMAX = Max. temperature S2; S0 = Volatile gaseous HC's; S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential; S3 = Organic carbon dioxide; PI = Production index; PC = Pyrolysable carbon
HI = Hydrogen index; OI = Oxygen index; - = no data; N.B. Code defn's at end of table.

TABLE 2

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-JAN-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
7040.00	7040.00	.55	445	-	.10	.28	.12	.38	2.33	.26	.03	51	22	RE2	COR	BAR	NO
7220.00	7225.00	.91	427	-	.10	.36	1.78	.46	.20	.22	.04	40	196	RE2	CUT	BAR	NO
7224.00	7224.00	1.00	445	-	.13	.78	.14	.91	5.57	.14	.08	78	14	RE2	COR	BAR	NO
7320.00	7330.00	.69	435	-	.10	.51	1.38	.61	.37	.16	.05	74	200	RE2	CUT	BAR	NO
7335.00	7335.00	.92	443	-	.16	.69	.25	.85	2.76	.19	.07	75	27	RE2	COR	BAR	NO
7410.00	7420.00	23.00	438	-	4.21	64.90	2.94	69.11	22.07	.06	5.74	282	13	RE2	CUT	GTS	NO
7410.00	7420.00	1.47	439	-	.34	2.75	.29	3.09	9.48	.11	.26	187	20	RE2	CUT	GTS	NO
7420.00	7430.00	.73	439	-	.10	.53	1.53	.63	.35	.16	.05	73	210	RE2	CUT	BAR	NO
7520.00	7530.00	.74	444	-	.10	.38	1.71	.48	.22	.21	.04	51	231	RE2	CUT	BAR	NO
7620.00	7630.00	7.92	435	-	.30	11.54	2.47	11.84	4.67	.03	.98	146	31	RE2	CUT	BAR	NO
7720.00	7730.00	.93	439	-	.10	.61	1.38	.71	.44	.14	.06	66	148	RE2	CUT	BAR	NO
7818.00	7818.00	1.11	442	-	.12	.83	.32	.95	2.59	.13	.08	75	29	RE2	COR	BAR	NO
7820.00	7820.00	1.28	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
7825.00	7830.00	.66	443	-	.10	.25	1.07	.35	.23	.29	.03	38	162	RE2	CUT	BAR	NO
7920.00	7930.00	1.37	441	-	.10	.80	1.92	.90	.42	.11	.07	58	140	RE2	CUT	BAR	NO
7920.00	7930.00	48.90	439	-	3.40	81.50	7.30	84.90	11.16	.04	7.05	167	15	RE2	CUT	GTS	NO
7920.00	7930.00	4.35	436	-	.31	5.64	1.08	5.95	5.22	.05	.49	130	25	RE2	CUT	GTS	NO
8020.00	8030.00	.78	438	-	.12	.74	2.17	.86	.34	.14	.07	95	278	RE2	CUT	BAR	NO
8220.00	8130.00	.65	442	-	.10	.35	1.10	.45	.32	.22	.04	54	169	RE2	CUT	BAR	NO
8260.00	8260.00	.37	455	-	.10	.20	.23	.30	.87	.33	.02	54	62	RE2	COR	BAR	NO
8320.00	8330.00	.81	442	-	.10	.65	1.21	.75	.54	.13	.06	80	149	RE2	CUT	BAR	NO
8420.00	8430.00	1.00	445	-	.10	.49	1.38	.59	.36	.17	.05	49	138	RE2	CUT	BAR	NO
8520.00	8530.00	1.29	447	-	.10	.72	1.34	.82	.54	.12	.07	56	104	RE2	CUT	BAR	NO
8620.00	8630.00	1.01	440	-	.10	.81	1.08	.91	.75	.11	.08	80	107	RE2	CUT	BAR	NO
8720.00	8730.00	.84	442	-	.10	.68	1.11	.78	.61	.13	.06	81	132	RE2	CUT	BAR	NO
8768.00	8768.00	.81	451	-	.10	.41	.10	.51	4.10	.20	.04	51	12	RE2	COR	BAR	NO
8780.00	8790.00	.97	445	-	.10	.65	.83	.75	.78	.13	.06	67	86	RE2	CUT	BAR	NO
8830.00	8840.00	1.04	447	-	.10	.52	1.03	.62	.50	.16	.05	50	99	RE2	CUT	BAR	NO
8890.00	8900.00	.86	446	-	.10	.56	.76	.66	.74	.15	.05	65	88	RE2	CUT	BAR	NO
8950.00	8960.00	.74	445	-	.10	.59	.76	.69	.78	.14	.06	80	103	RE2	CUT	BAR	NO
9020.00	9030.00	.84	441	-	.10	.53	1.20	.63	.44	.16	.05	63	143	RE2	CUT	BAR	NO
9080.00	9090.00	1.05	444	-	.10	.78	.90	.88	.87	.11	.07	74	86	RE2	CUT	BAR	NO
9140.00	9150.00	.79	445	-	.10	.37	1.00	.47	.37	.21	.04	47	127	RE2	CUT	BAR	NO
9195.00	9195.00	.94	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
9196.00	9196.00	.70	458	-	.11	.34	.23	.45	1.48	.24	.04	49	33	RE2	COR	BAR	NO
9200.00	9210.00	.97	442	-	.10	.81	.78	.91	1.04	.11	.08	84	80	RE2	CUT	BAR	NO
9270.00	9280.00	.69	449	-	.10	.48	.77	.58	.62	.17	.05	70	112	RE2	CUT	BAR	NO
9330.00	9340.00	1.10	446	-	.13	.72	.98	.85	.73	.15	.07	65	89	RE2	CUT	BAR	NO

TOC = Total organic carbon; TMAX = Max. temperature S2; S0 = Volatile gaseous HC's; S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential; S3 = Organic carbon dioxide; PI = Production index; PC = Pyrolysable carbon
HI = Hydrogen index; OI = Oxygen index; - = no data; N.B. Code defn's at end of table.

TABLE 2

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-JAN-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
9400.00	9410.00	.82	450	-	.10	.59	.71	.69	.83	.14	.06	72	87	RE2	CUT	BAR	NO
9460.00	9470.00	1.09	449	-	.16	.86	.61	1.02	1.41	.16	.08	79	56	RE2	CUT	BAR	NO
9530.00	9540.00	.98	456	-	.10	.37	.70	.47	.53	.21	.04	38	71	RE2	CUT	BAR	NO
9610.00	9620.00	.98	448	-	.10	.66	.58	.76	1.14	.13	.06	67	59	RE2	CUT	BAR	NO
9626.00	9626.00	.98	464	-	.16	.58	.10	.74	5.80	.22	.06	59	10	RE2	COR	BAR	NO
9680.00	9690.00	1.03	449	-	.10	.55	.59	.65	.93	.15	.05	53	57	RE2	CUT	BAR	NO
9740.00	9750.00	1.33	455	-	.10	.67	.75	.77	.89	.13	.06	50	56	RE2	CUT	BAR	NO
9810.00	9820.00	.89	458	-	.10	.16	1.17	.26	.14	.38	.02	18	131	RE2	CUT	BAR	NO
9870.00	9880.00	.79	447	-	.10	.56	.67	.66	.84	.15	.05	71	85	RE2	CUT	BAR	NO
9940.00	9950.00	.80	454	-	.10	.42	.62	.52	.68	.19	.04	53	78	RE2	CUT	BAR	NO
10010.00	10020.00	.72	452	-	.10	.32	.38	.42	.84	.24	.03	44	53	RE2	CUT	BAR	NO
10060.00	10070.00	.82	452	-	.11	.56	.53	.67	1.06	.16	.06	68	65	RE2	CUT	BAR	NO
10090.00	10097.00	54.30	458	-	7.32	96.13	2.87	103.45	33.49	.07	8.59	177	5	RE2	CUT	GTS	NO
10090.00	10097.00	1.00	447	-	.26	.91	.19	1.17	4.79	.22	.10	91	19	RE2	CUT	GTS	NO
10092.00	10092.00	.66	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	EAL	NO
10096.00	10096.00	1.00	471	-	.13	.33	.10	.46	3.30	.28	.04	33	10	RE2	COR	BAR	NO
10120.00	10130.00	.85	458	-	.10	.36	.20	.46	1.80	.22	.04	42	24	RE2	CUT	BAR	NO
10180.00	10190.00	.77	457	-	.11	.41	.35	.52	1.17	.21	.04	53	45	RE2	CUT	BAR	NO
10240.00	10250.00	1.49	443	-	.23	1.50	.25	1.73	6.00	.13	.14	101	17	RE2	CUT	GTS	NO
10250.00	10260.00	.67	483	-	.10	.26	.35	.36	.74	.28	.03	39	52	RE2	CUT	BAR	NO
10310.00	10320.00	.89	460	-	.10	.38	.23	.48	1.65	.21	.04	43	26	RE2	CUT	BAR	NO
10370.00	10380.00	.76	-	-	.10	.22	.48	.32	.46	.31	.03	29	63	RE2	CUT	BAR	NO
10430.00	10440.00	.82	-	-	.10	.10	.64	.20	.16	.50	.02	12	78	RE2	CUT	BAR	NO
10500.00	10510.00	.98	464	-	.15	.59	.58	.74	1.02	.20	.06	60	59	RE2	CUT	BAR	NO
10510.00	10520.00	22.80	459	-	4.91	33.41	1.18	38.32	28.31	.13	3.18	147	5	RE2	CUT	GTS	NO
10510.00	10520.00	1.22	452	-	.15	.92	.33	1.07	2.79	.14	.09	75	27	RE2	CUT	GTS	NO
10560.00	10570.00	.95	455	-	.10	.22	.70	.32	.31	.31	.03	23	74	RE2	CUT	BAR	NO
10575.00	10580.00	2.47	442	-	.21	2.15	.51	2.36	4.22	.09	.20	87	21	RE2	CUT	GTS	NO
10630.00	10640.00	.91	455	-	.12	.63	.46	.75	1.37	.16	.06	69	51	RE2	CUT	BAR	NO
10680.00	10690.00	.61	-	-	.10	.10	.58	.20	.17	.50	.02	16	95	RE2	CUT	BAR	NO
10740.00	10750.00	.61	473	-	.10	.33	.45	.43	.73	.23	.04	54	74	RE2	CUT	BAR	NO
10810.00	10820.00	1.08	469	-	.10	.19	.60	.29	.32	.34	.02	18	56	RE2	CUT	BAR	NO
10870.00	10880.00	.89	464	-	.13	.50	.49	.63	1.02	.21	.05	56	55	RE2	CUT	BAR	NO
10920.00	10930.00	1.16	463	-	.10	.43	.37	.53	1.16	.19	.04	37	32	RE2	CUT	BAR	NO
10970.00	10980.00	.93	446	-	.10	.63	.44	.73	1.43	.14	.06	68	47	RE2	CUT	BAR	NO
11030.00	11040.00	1.08	457	-	.10	.30	.76	.40	.39	.25	.03	28	70	RE2	CUT	BAR	NO
11090.00	11094.00	.93	453	-	.14	.59	.53	.73	1.11	.19	.06	63	57	RE2	CUT	BAR	NO
11110.00	11120.00	1.76	472	-	.26	.91	.39	1.17	2.33	.22	.10	52	22	RE2	CUT	GTS	NO

TOC = Total organic carbon TMAX = Max. temperature S2 S0 = Volatile gaseous HC's S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential S3 = Organic carbon dioxide PI = Production index PC = Pyrolysable carbon
HI = Hydrogen index OI = Oxygen index - = no data N.B. Code defn's at end of table.

TABLE 2

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = FERGUSONS HILL 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-JAN-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
11140.00	11150.00	.93	460	-	.10	.31	.43	.41	.72	.24	.03	33	46	RE2	CUT	BAR	NO
11170.00	11180.00	13.90	456	-	1.47	11.98	1.02	13.45	11.75	.11	1.12	86	7	RE2	CUT	GTS	NO
11170.00	11180.00	1.02	475	-	.08	.41	.34	.49	1.21	.16	.04	40	33	RE2	CUT	GTS	NO
11180.00	11180.00	.69	-	-	.10	.26	.31	.36	.84	.28	.03	38	45	RE2	COR	BAR	NO
11200.00	11210.00	11.90	455	-	1.39	13.35	.70	14.74	19.07	.09	1.22	112	6	RE2	CUT	GTS	NO
11200.00	11210.00	1.13	455	-	.09	.50	.31	.59	1.61	.15	.05	44	27	RE2	CUT	GTS	NO
11210.00	11220.00	1.11	452	-	.10	.42	.35	.52	1.20	.19	.04	38	32	RE2	CUT	BAR	NO
11260.00	11270.00	1.31	474	-	.10	.66	.58	.76	1.14	.13	.06	50	44	RE2	CUT	BAR	NO
11310.00	11320.00	6.15	471	-	.66	4.80	.29	5.46	16.55	.12	.45	78	5	RE2	CUT	GTS	NO
11310.00	11320.00	.97	453	-	.12	.58	.23	.70	2.52	.17	.06	60	24	RE2	CUT	GTS	NO
11320.00	11330.00	1.28	471	-	.10	.66	.56	.76	1.18	.13	.06	52	44	RE2	CUT	BAR	NO
11370.00	11380.00	.94	466	-	.11	.46	.50	.57	.92	.19	.05	49	53	RE2	CUT	BAR	NO
11400.00	11410.00	12.00	470	-	1.58	14.67	.43	16.25	34.12	.10	1.35	122	4	RE2	CUT	GTS	NO
11400.00	11410.00	2.20	472	-	.32	1.32	.35	1.64	3.77	.20	.14	60	16	RE2	CUT	GTS	NO
11419.00	11419.00	1.42	490	-	.10	.40	.27	.50	1.48	.20	.04	28	19	RE2	COR	BAR	NO
11419.00	11425.00	21.00	468	-	2.93	30.87	.79	33.80	39.08	.09	2.81	147	4	RE2	CUT	GTS	NO
11419.00	11425.00	3.96	444	-	.50	4.30	.36	4.80	11.94	.10	.40	109	9	RE2	CUT	GTS	NO
11430.00	11440.00	2.42	444	-	.19	1.12	.58	1.31	1.93	.15	.11	46	24	RE2	CUT	BAR	NO
11460.00	11470.00	12.30	447	-	1.54	15.12	.83	16.66	18.22	.09	1.38	123	7	RE2	CUT	GTS	NO
11460.00	11470.00	1.32	469	-	.18	.73	.29	.91	2.52	.20	.08	55	22	RE2	CUT	GTS	NO
11490.00	11500.00	2.46	464	-	.26	1.41	.49	1.67	2.88	.16	.14	57	20	RE2	CUT	BAR	NO
11570.00	11580.00	7.71	473	-	.70	4.89	.62	5.59	7.89	.13	.46	63	8	RE2	CUT	GTS	NO
11570.00	11580.00	1.29	461	-	.10	.55	.45	.65	1.22	.15	.05	43	35	RE2	CUT	GTS	NO

TOC = Total organic carbon TMAX = Max. temperature S2 S0 = Volatile gaseous HC's S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential S3 = Organic carbon dioxide PI = Production index PC = Pyrolysable carbon
HI = Hydrogen index OI = Oxygen index - = no data N.B. Code defn's at end of table.

TABLE 3

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = ROSS CREEK 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
7330.00	7340.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7330.00	7340.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7370.00	7380.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7370.00	7380.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7540.00	7550.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7620.00	7630.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7740.00	7750.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7740.00	7750.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
7820.00	7830.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	YES	-
7820.00	7830.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	YES	-
7850.00	7860.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	YES	-
7850.00	7860.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	YES	-
7860.00	7870.00	E.CRET	-	MECMC	-	-	-	-	CUT	GD	GTS	YES	-
7860.00	7870.00	E.CRET	-	MECMS	-	-	-	-	CUT	GD	GTS	YES	-
8250.00	8260.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8260.00	8270.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8260.00	8270.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8290.00	8300.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8290.00	8300.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8350.00	8360.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
8350.00	8360.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
10680.00	10690.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
10690.00	10700.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10690.00	10700.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10760.00	10770.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10760.00	10770.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10770.00	10780.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10770.00	10780.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10780.00	10790.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10780.00	10790.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10800.00	10810.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10800.00	10810.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10810.00	10820.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10810.00	10820.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10820.00	10830.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10820.00	10830.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10830.00	10840.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10830.00	10840.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10840.00	10850.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-

N.B. Code definitions at end of table
- = No data

TABLE 3

GEOLOGIC & GENERAL DATA - SEDIMENTS

WELL NAME = ROSS CREEK 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB =

DEPTH 1	DEPTH 2	GEOLOGIC PERIOD/EPOCH	GEOLOGIC AGE	FORMATION	PRIMARY LITHOLOGY	PERCENT PRIMARY	SECONDARY LITHOLOGY	PERCENT SECONDARY	SAMPLE TYPE	SAMPLE QUALITY	CONTRACTOR	SAMPLE PICKED	TEMPERATURE (deg. C)
10840.00	10850.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10850.00	10860.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10850.00	10860.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10860.00	10870.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10860.00	10870.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10870.00	10880.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10870.00	10880.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10890.00	10900.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10890.00	10900.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10900.00	10910.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10900.00	10910.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
10960.00	10970.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
10960.00	10970.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
11000.00	11010.00	E.CRET	-	LECMC	-	-	-	-	CUT	GD	GTS	YES	-
11000.00	11010.00	E.CRET	-	LECMS	-	-	-	-	CUT	GD	GTS	YES	-
11385.00	11385.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	UNW	NO	-
11660.00	11670.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	GTS	YES	-
11735.00	11735.00	E.CRET	-	EUMEGP	-	-	-	-	CUT	GD	UNW	NO	-

N.B. Code definitions at end of table
- = No data

CODE DEFINITIONS FOR TABLE 3

GEOLOGICAL PERIOD CODES	GEOLOGICAL AGE CODES	FORMATION CODES	PRIMARY/SECONDARY LITHOLOGY CODES
E.CRET = Early Cretaceous		EUMEGP = Eumeralla Group	
		LECMC = L.EUMERALLA COALS	
		LECMS = L.EUMERALLA SHALE	
		MECMC = M.EUMERALLA COALS	
		MECMS = M.EUMERALLA SHALE	

SAMPLE TYPE CODES	SAMPLE QUALITY CODES	CONTRACTOR CODES
CUT = Cuttings	GD = Good	GTS = Geotechnical Servics
		UNW = UNIVERSITY WOOLONG

TABLE 4

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = ROSS CREEK 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-MAR-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
7330.00	7340.00	8.14	436	-	.71	5.63	1.90	6.34	2.96	.11	.53	69	23	RE2	CUT	GTS	YES
7330.00	7340.00	.45	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	GTS	YES
7370.00	7380.00	15.00	432	-	1.44	14.19	4.67	15.63	3.04	.09	1.30	95	31	RE2	CUT	GTS	YES
7370.00	7380.00	.56	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	GTS	YES
7540.00	7550.00	1.26	436	-	.10	.81	.34	.91	2.38	.11	.08	64	27	RE2	CUT	GTS	YES
7620.00	7630.00	3.97	436	-	.30	10.84	.61	11.14	17.77	.03	.92	273	15	RE2	CUT	GTS	YES
7740.00	7750.00	48.50	431	-	8.40	143.00	4.90	151.40	29.18	.06	12.57	295	10	RE2	CUT	GTS	YES
7740.00	7750.00	1.42	435	-	.20	2.54	.31	2.74	8.19	.07	.23	179	22	RE2	CUT	GTS	YES
7820.00	7830.00	60.60	436	-	10.10	180.53	4.36	190.63	41.41	.05	15.82	298	7	RE2	CUT	GTS	YES
7820.00	7830.00	5.65	437	-	.71	12.91	.61	13.62	21.16	.05	1.13	228	11	RE2	CUT	GTS	YES
7850.00	7860.00	59.20	435	-	6.19	114.76	9.42	120.95	12.18	.05	10.04	194	16	RE2	CUT	GTS	YES
7850.00	7860.00	3.71	431	-	.44	6.09	1.12	6.53	5.44	.07	.54	164	30	RE2	CUT	GTS	YES
7860.00	7870.00	56.50	434	-	5.05	119.24	9.56	124.29	12.47	.04	10.32	211	17	RE2	CUT	GTS	YES
7860.00	7870.00	2.76	434	-	.30	2.37	.88	2.67	2.69	.11	.22	86	32	RE2	CUT	GTS	YES
8250.00	8260.00	8.25	435	-	1.80	22.19	.80	23.99	27.74	.08	1.99	269	10	RE2	CUT	GTS	YES
8260.00	8270.00	57.50	438	-	13.43	153.23	3.73	166.66	41.08	.08	13.83	266	6	RE2	CUT	GTS	YES
8260.00	8270.00	10.50	440	-	2.27	31.11	1.07	33.38	29.07	.07	2.77	296	10	RE2	CUT	GTS	YES
8290.00	8300.00	56.80	438	-	13.16	144.83	3.41	157.99	42.47	.08	13.11	255	6	RE2	CUT	GTS	YES
8290.00	8300.00	7.10	438	-	1.29	18.16	.71	19.45	25.58	.07	1.61	256	10	RE2	CUT	GTS	YES
8350.00	8360.00	47.10	439	-	13.42	150.64	3.79	164.06	39.75	.08	13.62	320	8	RE2	CUT	GTS	YES
8350.00	8360.00	2.37	432	-	.40	5.10	.38	5.50	13.42	.07	.46	215	16	RE2	CUT	GTS	YES
10680.00	10690.00	2.48	459	-	.27	1.56	.43	1.83	3.63	.15	.15	63	17	RE2	CUT	GTS	YES
10690.00	10700.00	56.50	431	-	10.32	101.61	3.33	111.93	30.51	.09	9.29	180	6	RE2	CUT	GTS	YES
10690.00	10700.00	2.65	456	-	.70	2.74	.30	3.44	9.13	.20	.29	103	11	RE2	CUT	GTS	YES
10760.00	10770.00	47.80	466	-	8.11	81.22	2.45	89.33	33.15	.09	7.41	170	5	RE2	CUT	GTS	YES
10760.00	10770.00	1.84	455	-	.56	1.97	.24	2.53	8.21	.22	.21	107	13	RE2	CUT	GTS	YES
10770.00	10780.00	67.65	463	-	11.08	119.23	2.71	130.31	44.00	.09	10.82	176	4	RE2	CUT	GTS	YES
10770.00	10780.00	2.38	460	-	.57	2.37	.24	2.94	9.88	.19	.24	100	10	RE2	CUT	GTS	YES
10780.00	10790.00	66.80	464	-	11.50	124.10	2.70	135.60	45.96	.08	11.25	186	4	RE2	CUT	GTS	YES
10780.00	10790.00	2.26	450	-	.78	2.93	.25	3.71	11.72	.21	.31	130	11	RE2	CUT	GTS	YES
10800.00	10810.00	60.60	463	-	6.44	81.77	5.79	88.21	14.12	.07	7.32	135	10	RE2	CUT	GTS	YES
10800.00	10810.00	2.52	461	-	.23	1.35	.58	1.58	2.33	.15	.13	54	23	RE2	CUT	GTS	YES
10810.00	10820.00	59.00	465	-	7.54	95.37	4.05	102.91	23.55	.07	8.54	162	7	RE2	CUT	GTS	YES
10810.00	10820.00	1.43	460	-	.44	1.46	.54	1.90	2.70	.23	.16	102	38	RE2	CUT	GTS	YES
10820.00	10830.00	66.50	467	-	8.13	113.08	4.01	121.21	28.20	.07	10.06	170	6	RE2	CUT	GTS	YES
10820.00	10830.00	1.52	462	-	.24	1.11	.34	1.35	3.26	.18	.11	73	22	RE2	CUT	GTS	YES
10830.00	10840.00	61.80	467	-	10.38	118.94	2.98	129.32	39.91	.08	10.73	192	5	RE2	CUT	GTS	YES
10830.00	10840.00	1.95	460	-	.48	2.07	.25	2.55	8.28	.19	.21	106	13	RE2	CUT	GTS	YES

TOC = Total organic carbon
TMAX = Max. temperature S2
S0 = Volatile gaseous HC's
S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
HI = Hydrogen index
OI = Oxygen index
\- = no data
N.B. Code defn's at end of table.

TABLE 4

TOC AND ROCK-EVAL PYROLYSIS DATA - SEDIMENTS

WELL NAME = ROSS CREEK 1
COUNTRY = Australia
BASIN = Otway

DEPTH UNIT = Feet
DATE OF JOB = 01-MAR-92

DEPTH 1	DEPTH 2	TOC	TMAX	S0	S1	S2	S3	S1+S2	S2/S3	PI	PC	HI	OI	INSTRUMENT	SAMPLE TYPE	CONTRACTOR	PICKED
10840.00	10850.00	63.00	467	-	10.51	113.91	3.19	124.42	35.71	.08	10.33	181	5	RE2	CUT	GTS	YES
10840.00	10850.00	3.45	462	-	.75	3.89	.38	4.64	10.24	.16	.39	113	11	RE2	CUT	GTS	YES
10850.00	10860.00	62.40	466	-	10.10	113.50	3.19	123.60	35.58	.08	10.26	182	5	RE2	CUT	GTS	YES
10850.00	10860.00	3.23	461	-	.67	3.30	.46	3.97	7.17	.17	.33	102	14	RE2	CUT	GTS	YES
10860.00	10870.00	55.00	466	-	9.07	104.22	2.98	113.29	34.97	.08	9.40	189	5	RE2	CUT	GTS	YES
10860.00	10870.00	2.13	461	-	.41	2.05	.38	2.46	5.39	.17	.20	96	18	RE2	CUT	GTS	YES
10870.00	10880.00	59.00	467	-	8.41	102.14	3.83	110.55	26.67	.08	9.18	173	6	RE2	CUT	GTS	YES
10870.00	10880.00	1.26	458	-	.38	1.35	.38	1.73	3.55	.22	.14	107	30	RE2	CUT	GTS	YES
10890.00	10900.00	56.30	467	-	8.21	95.74	4.15	103.95	23.07	.08	8.63	170	7	RE2	CUT	GTS	YES
10890.00	10900.00	1.18	455	-	.24	1.05	.34	1.29	3.09	.19	.11	89	29	RE2	CUT	GTS	YES
10900.00	10910.00	43.40	466	-	8.76	82.47	2.12	91.23	38.90	.10	7.57	190	5	RE2	CUT	GTS	YES
10900.00	10910.00	1.50	462	-	.34	1.52	.36	1.86	4.22	.18	.15	101	24	RE2	CUT	GTS	YES
10960.00	10970.00	54.50	469	-	7.21	84.32	2.88	91.53	29.28	.08	7.60	155	5	RE2	CUT	GTS	YES
10960.00	10970.00	1.28	463	-	.43	1.47	.29	1.90	5.07	.23	.16	115	23	RE2	CUT	GTS	YES
11000.00	11010.00	22.00	470	-	4.02	36.48	1.10	40.50	33.16	.10	3.36	166	5	RE2	CUT	GTS	YES
11000.00	11010.00	1.30	469	-	.24	.85	.22	1.09	3.86	.22	.09	65	17	RE2	CUT	GTS	YES
11385.00	11385.00	1.58	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO
11660.00	11670.00	2.06	454	-	.42	2.53	.26	2.95	9.73	.14	.24	123	13	RE2	CUT	GTS	YES
11735.00	11735.00	.59	-	-	-	-	-	-	-	-	-	-	-	RE2	CUT	UNW	NO

TOC = Total organic carbon
TMAX = Max. temperature S2
S0 = Volatile gaseous HC's
S1 = Volatile hydrocarbons (HC's)
S2 = HC generating potential
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
HI = Hydrogen index
OI = Oxygen index
\- = no data
N.B. Code defn's at end of table.

FERGUSONS HILL-1
TOC versus Depth

BHP

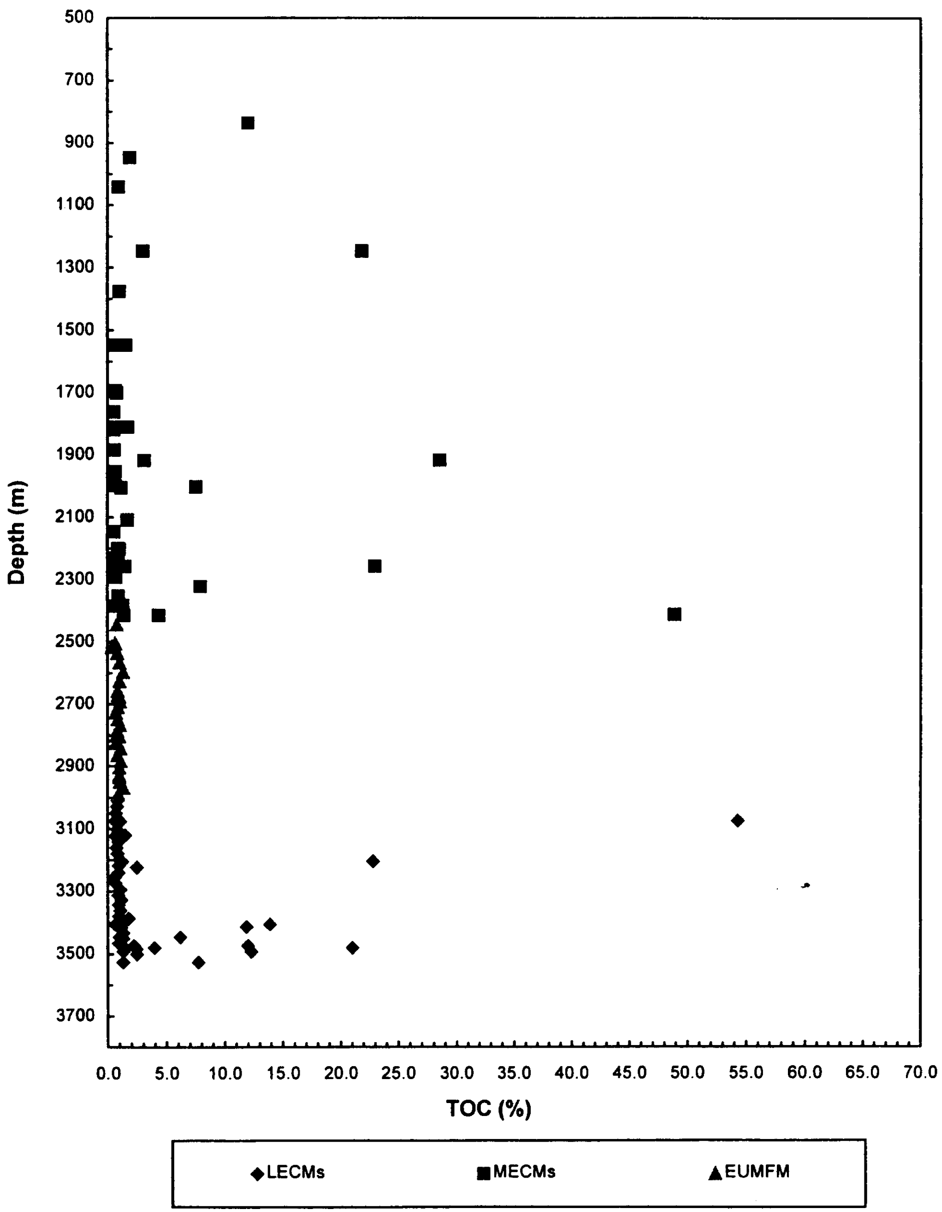


Figure 1

ROSS CREEK-1
TOC versus Depth

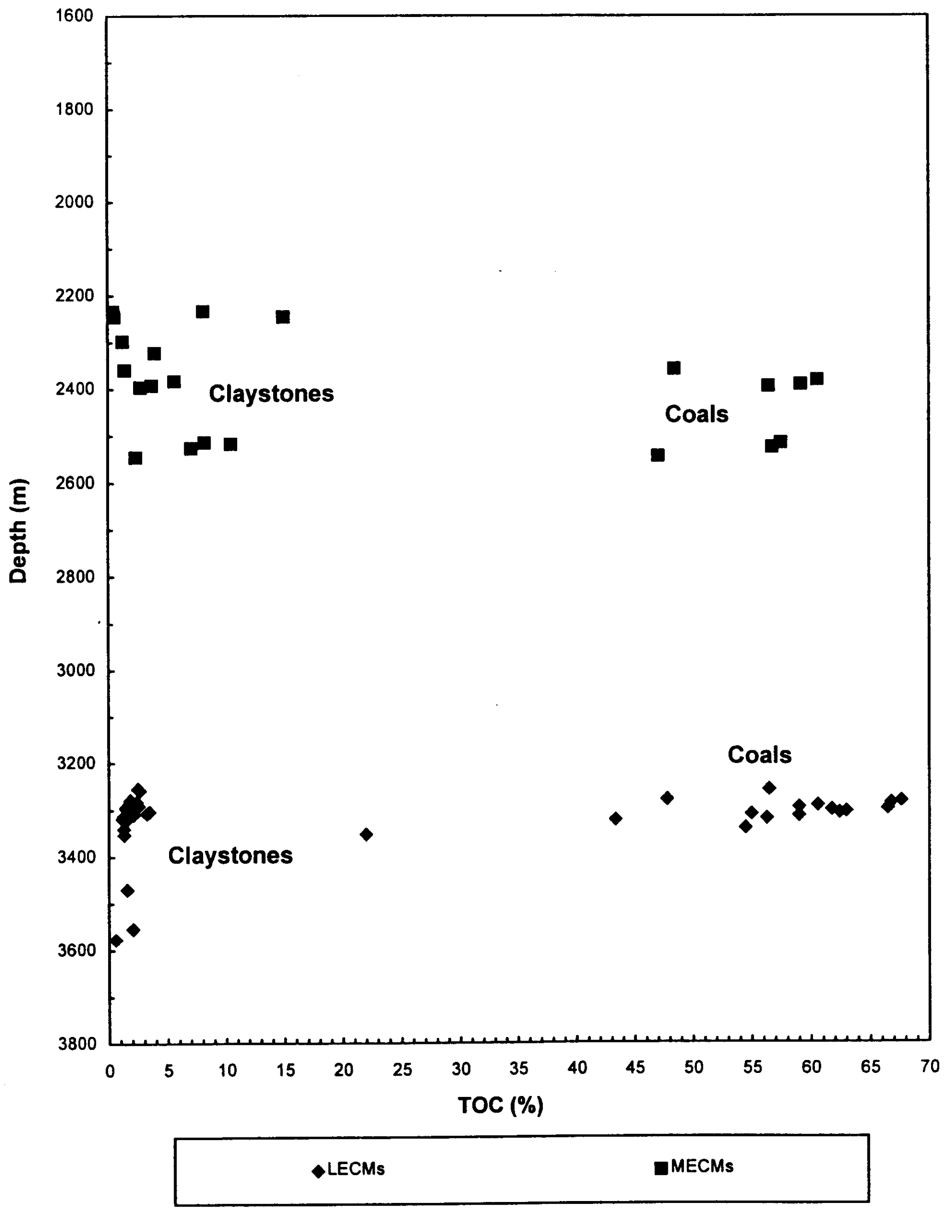


Figure 2

Australia Division
BHP Petroleum

ROSS CREEK-1
TOC versus Hydrogen Index

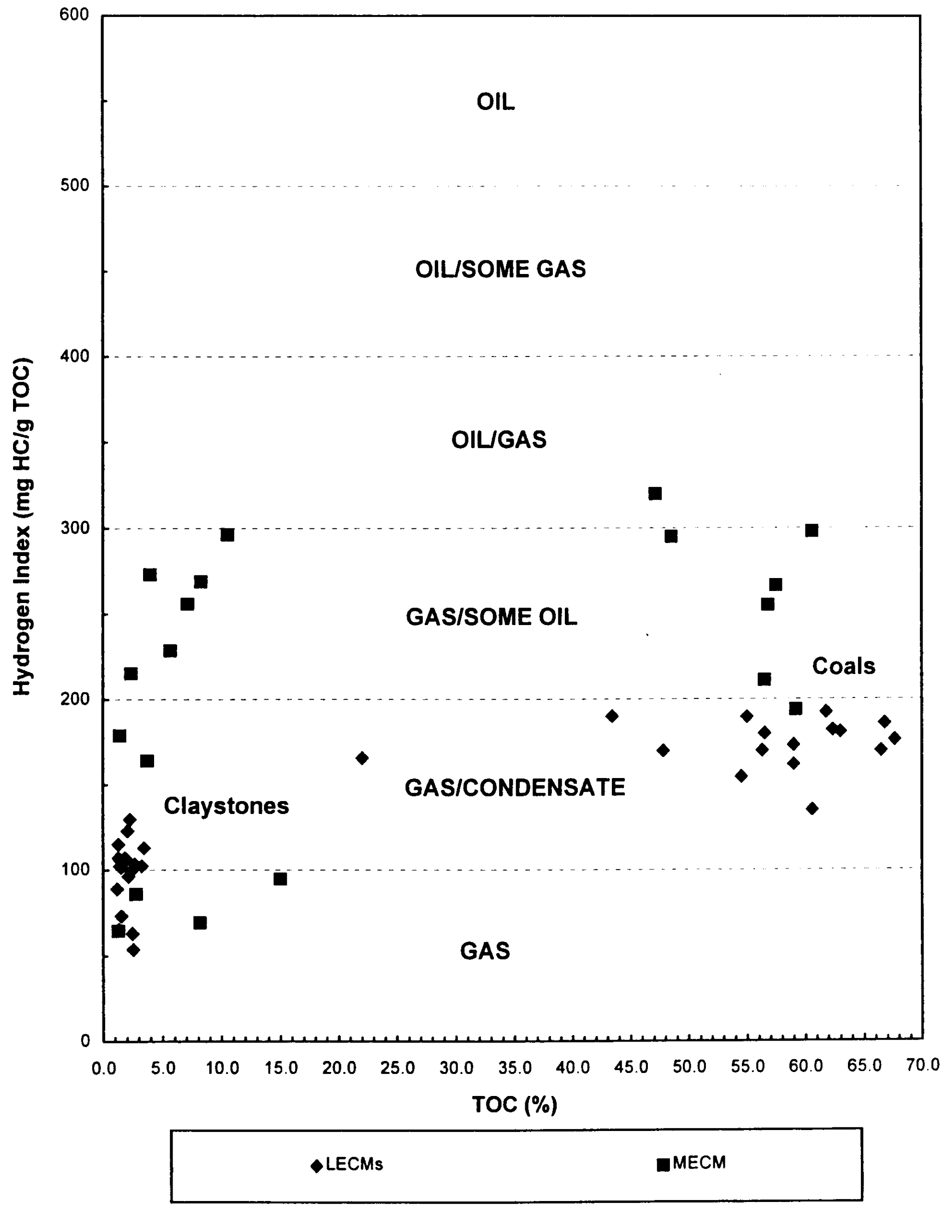


Figure 3

Australia Division
BHP Petroleum

ROSS CREEK-1
TOC versus S1+S2

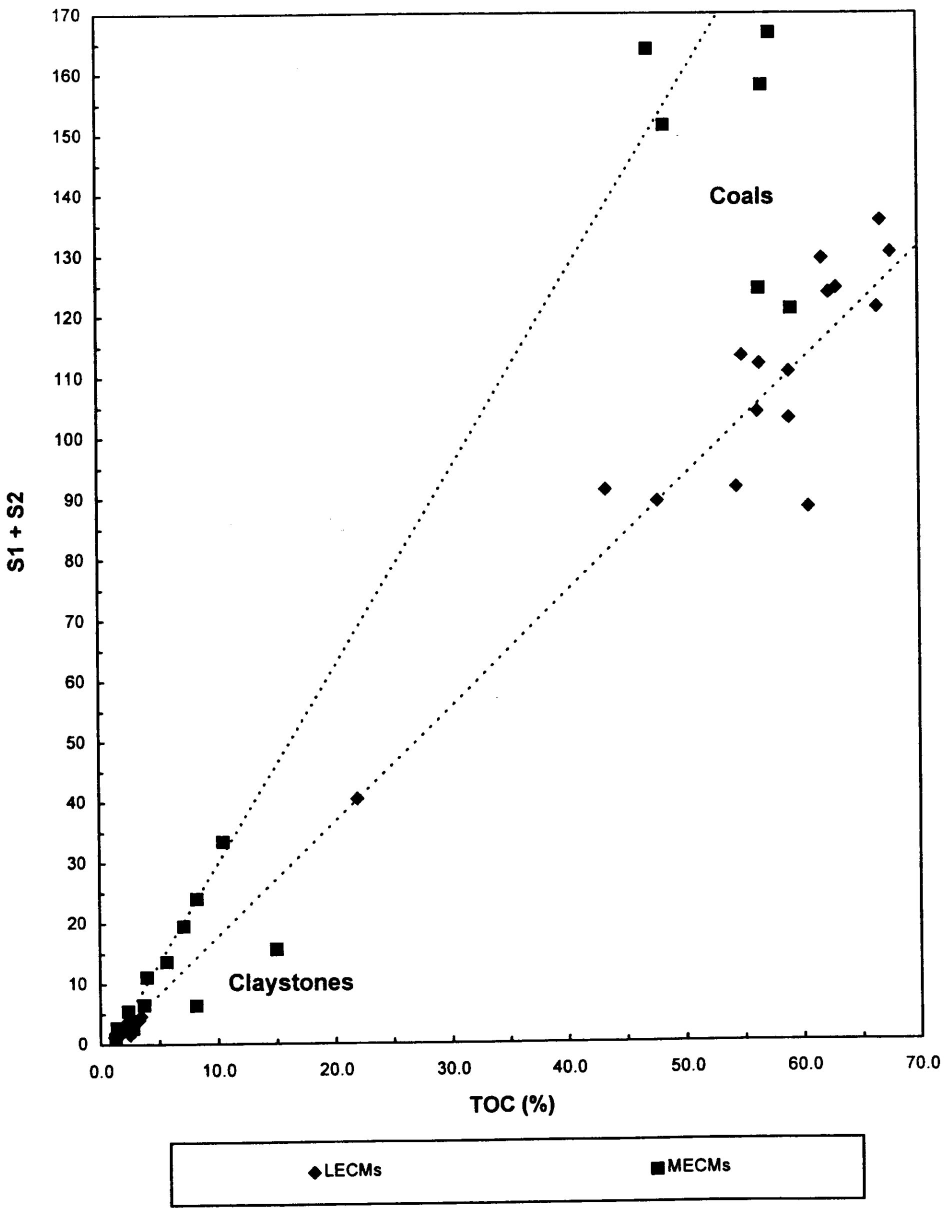


Figure 4

ROSS CREEK-1
Hydrogen Index versus Oxygen Index

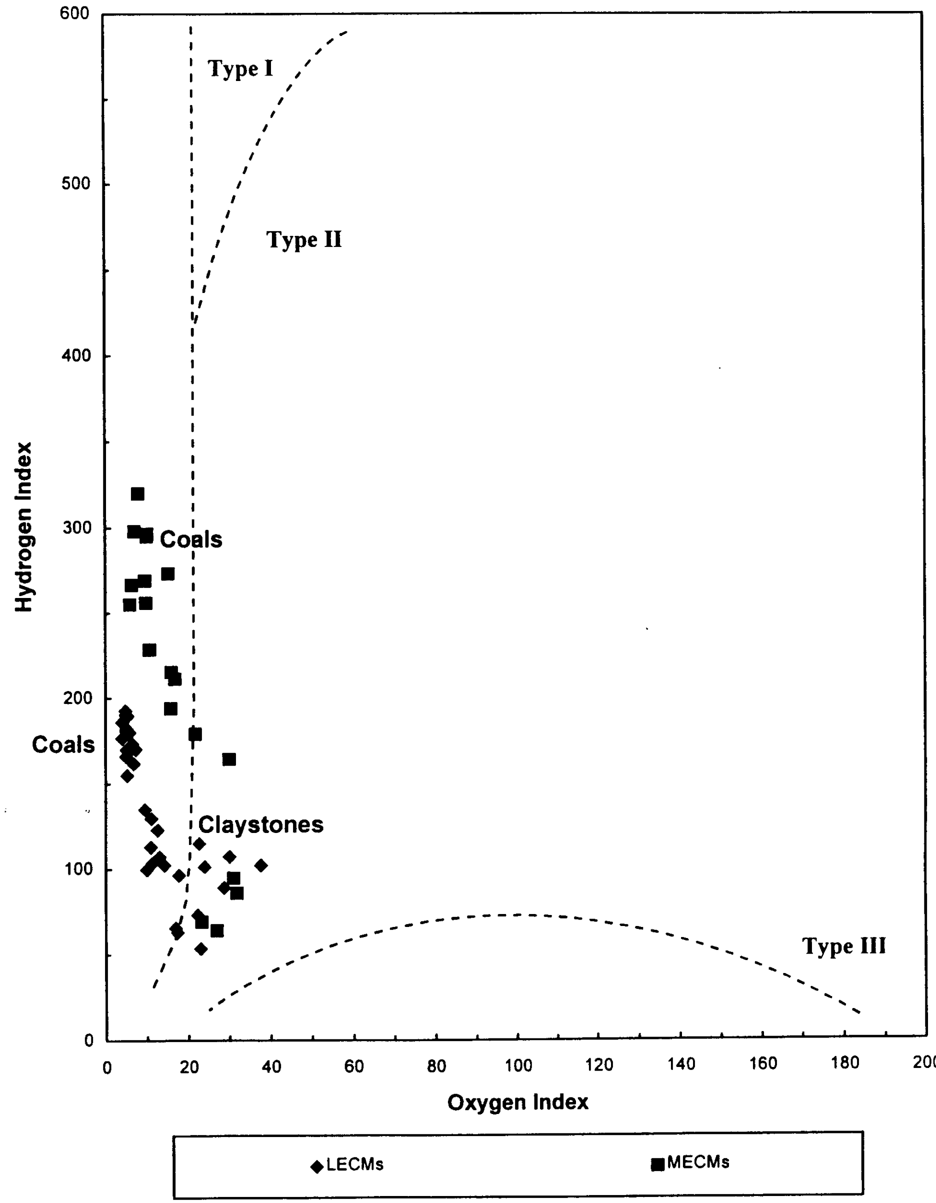


Figure 5

ROSS CREEK-1
Hydrogen Index versus Tmax

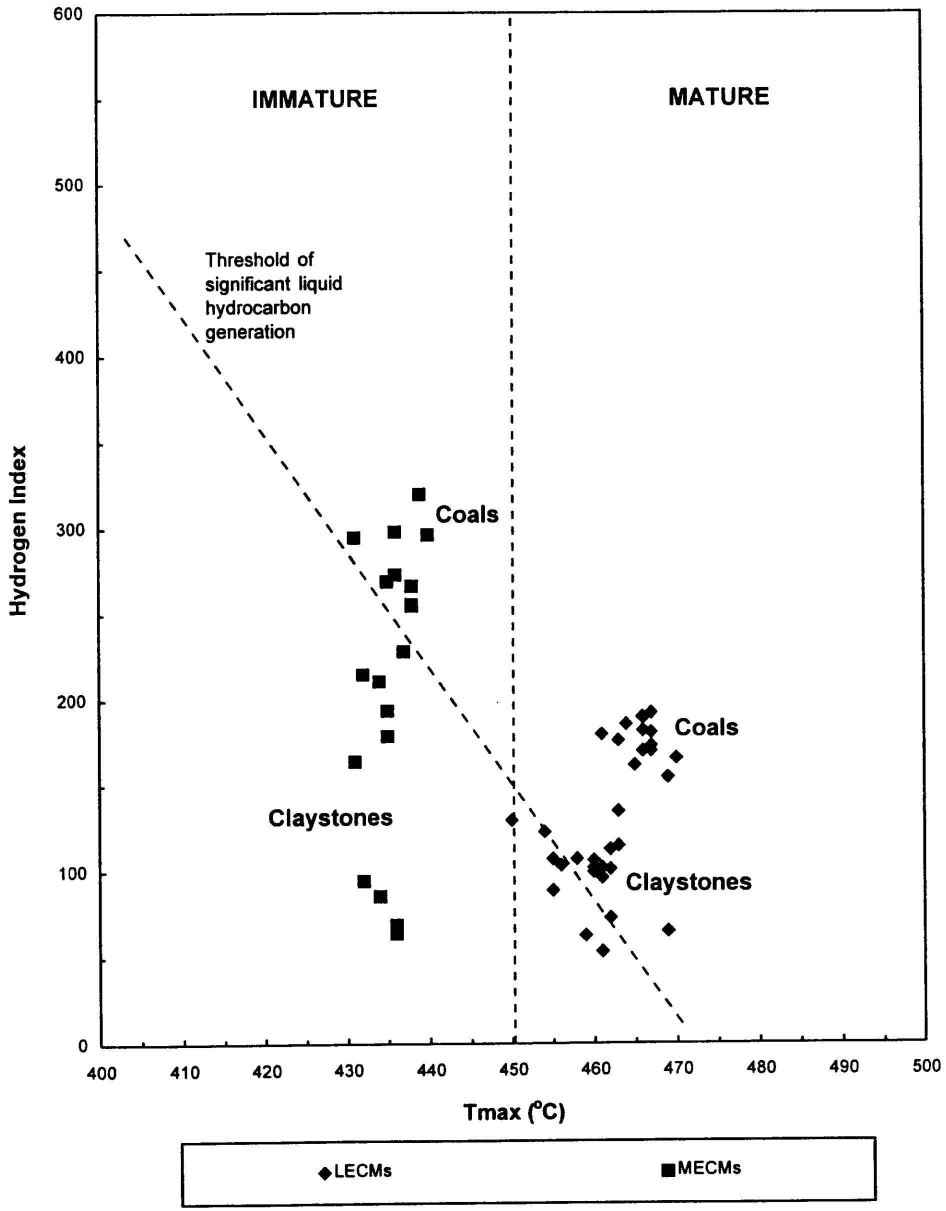


Figure 6

Australia Division
BHP Petroleum

ROSS CREEK-1
Tmax versus Depth

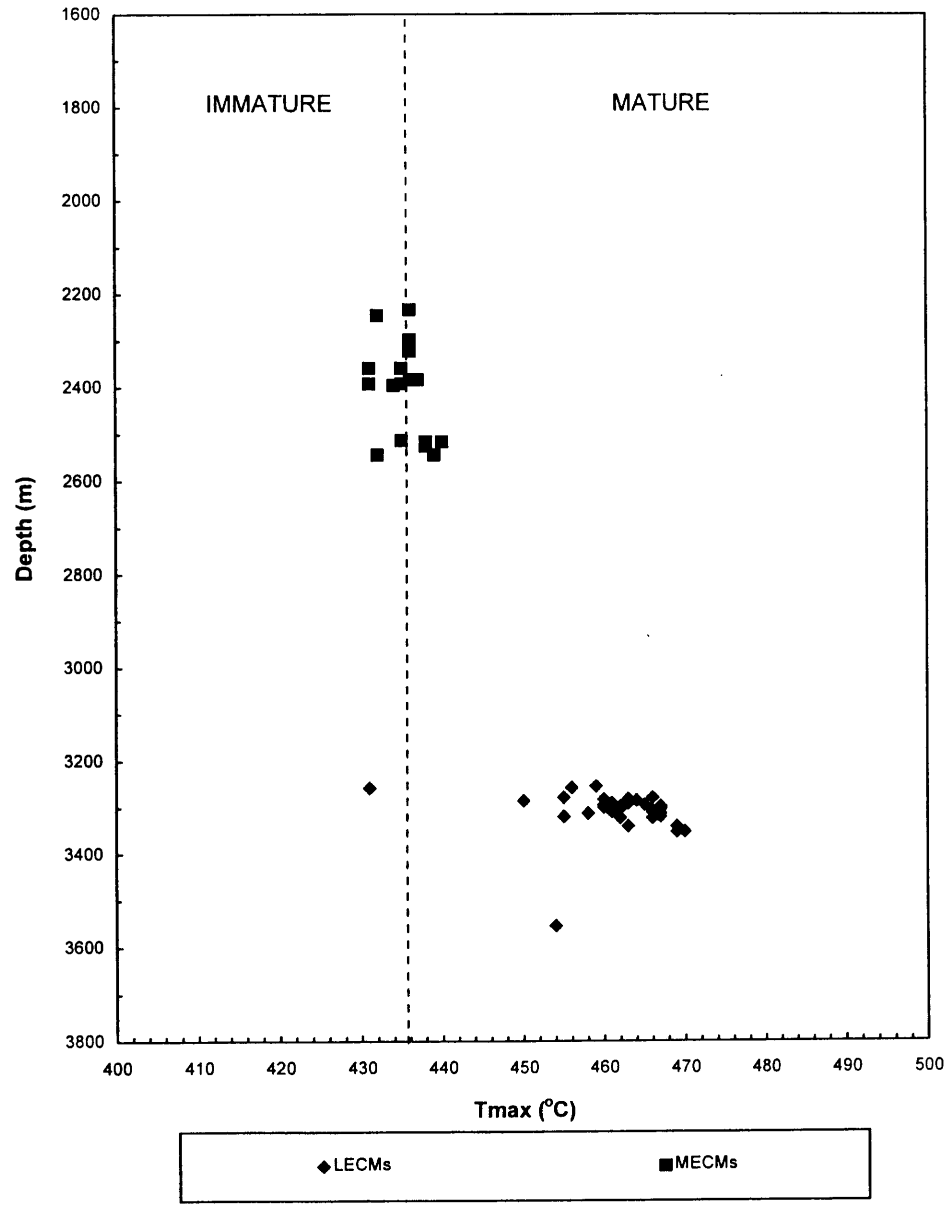


Figure 7

Australia Division
BHP Petroleum

ROSS CREEK-1
Production Index versus Depth

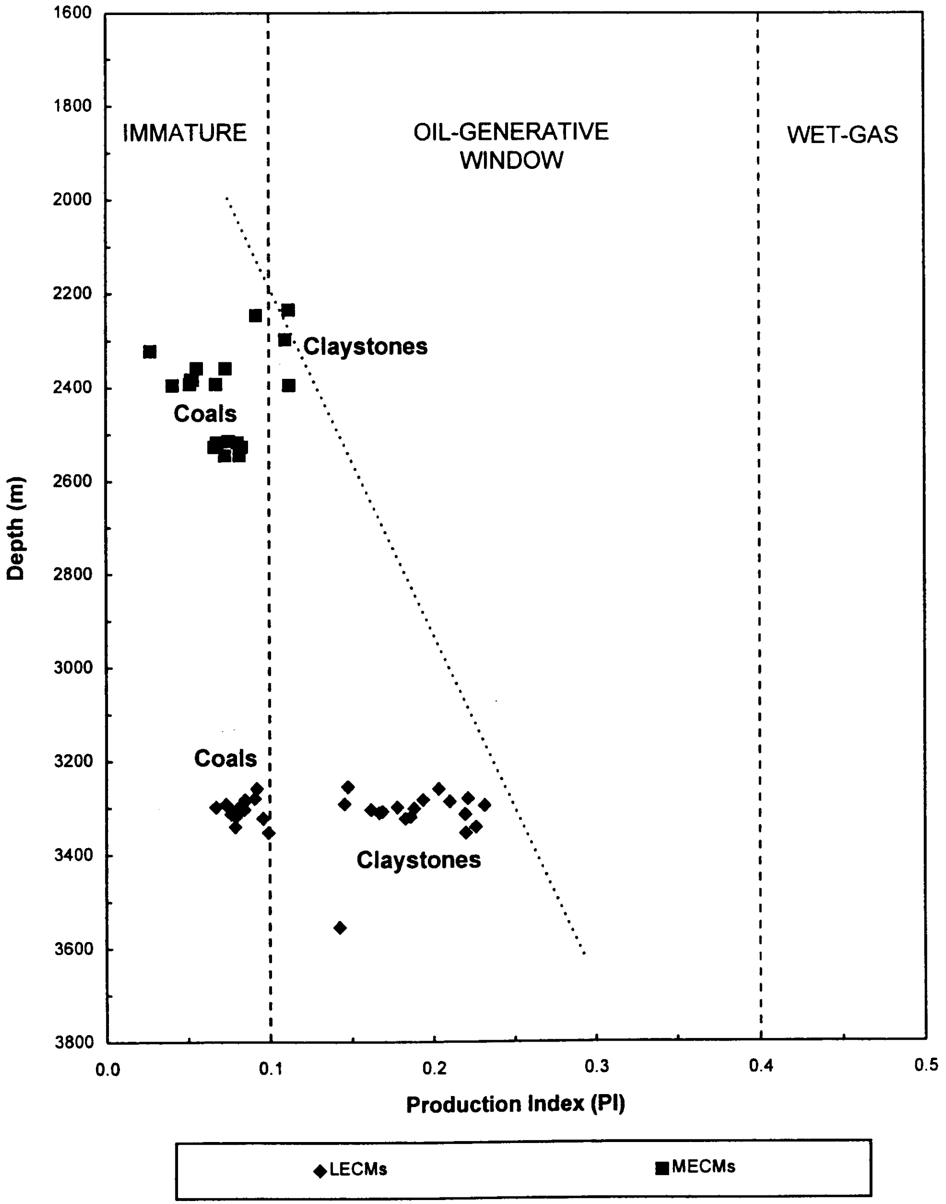


Figure 8

Australia Division
BHP Petroleum

ROSS CREEK-1
Tmax versus Production Index

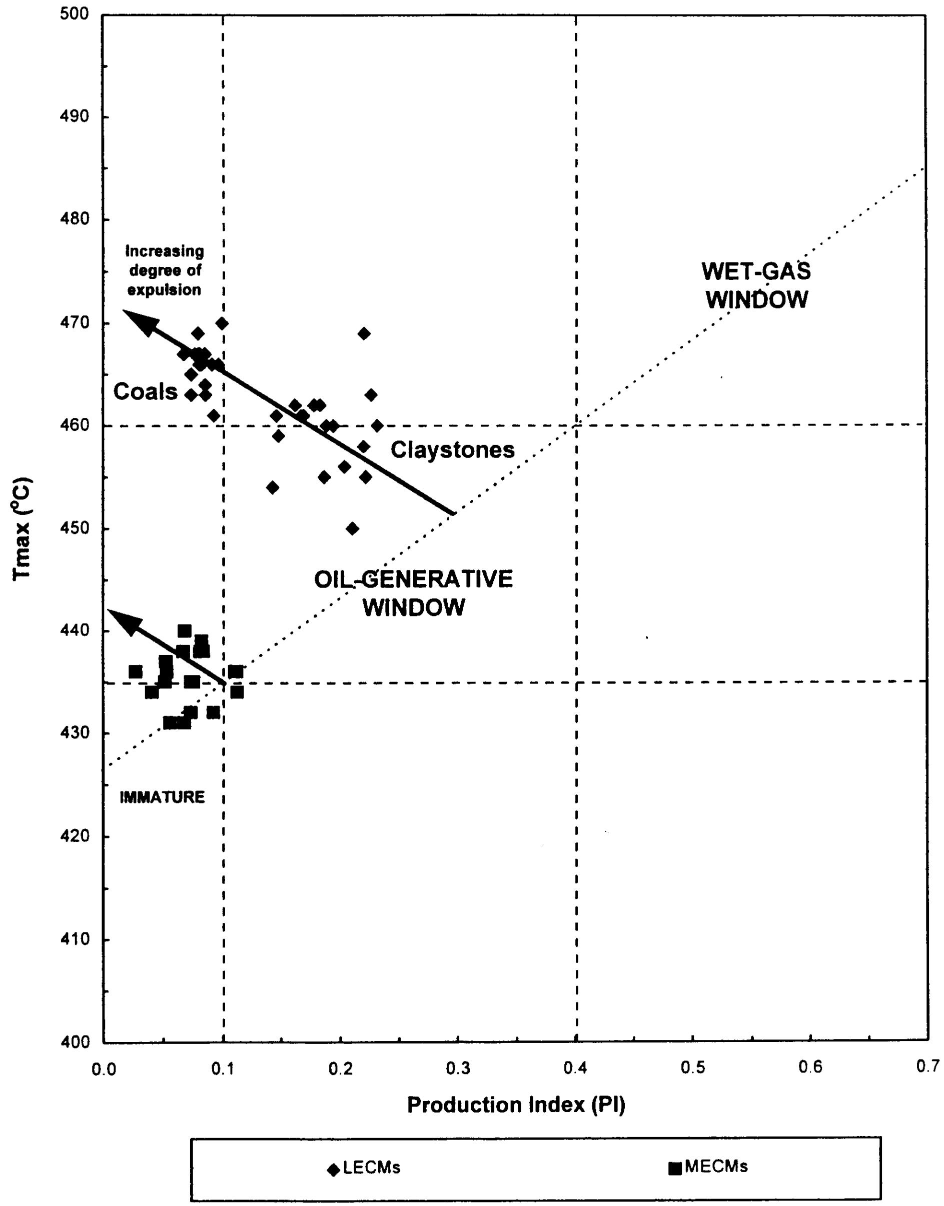
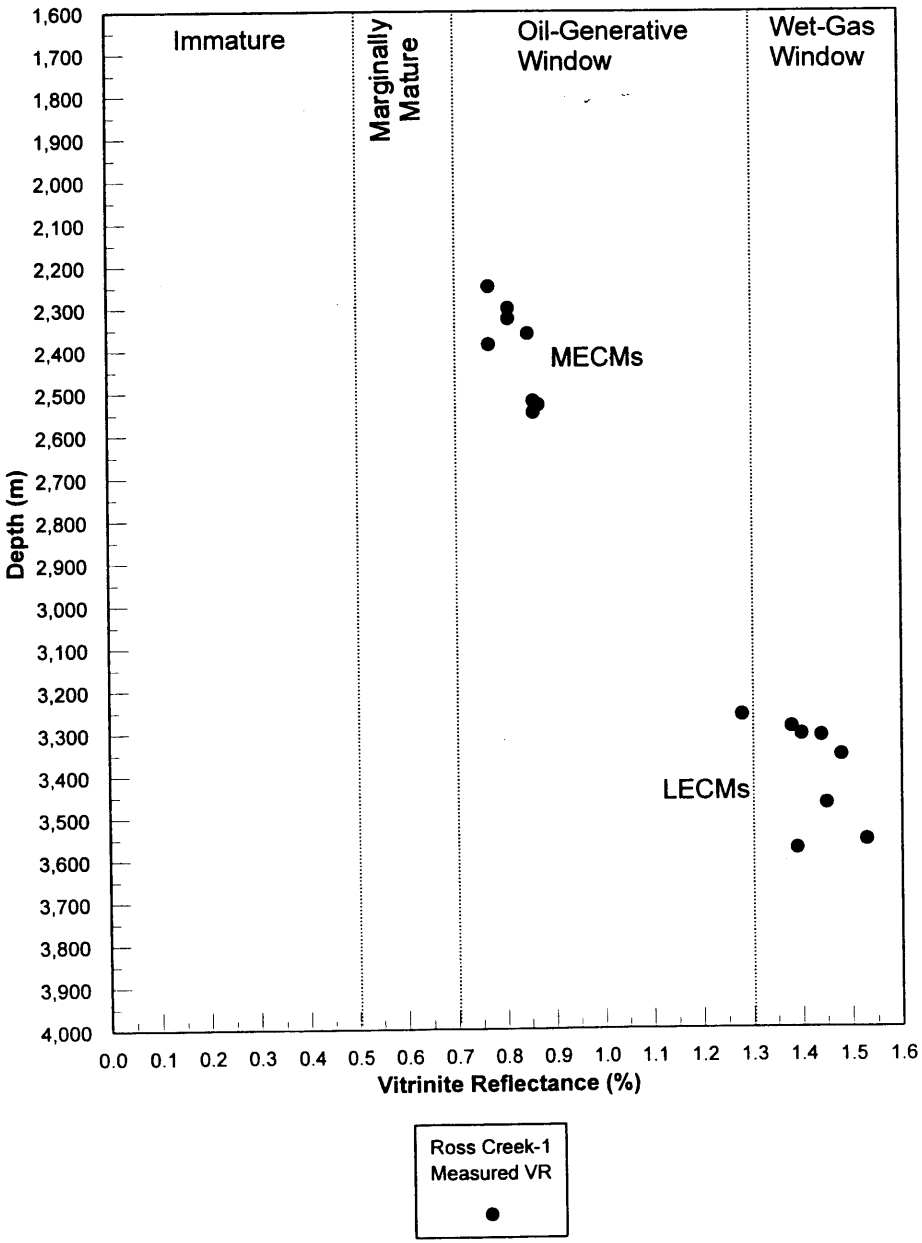


Figure 9

Australia Division
BHP Petroleum

ROSS CR EK-1
Vitrinite Reflectance vs Depth

BHP



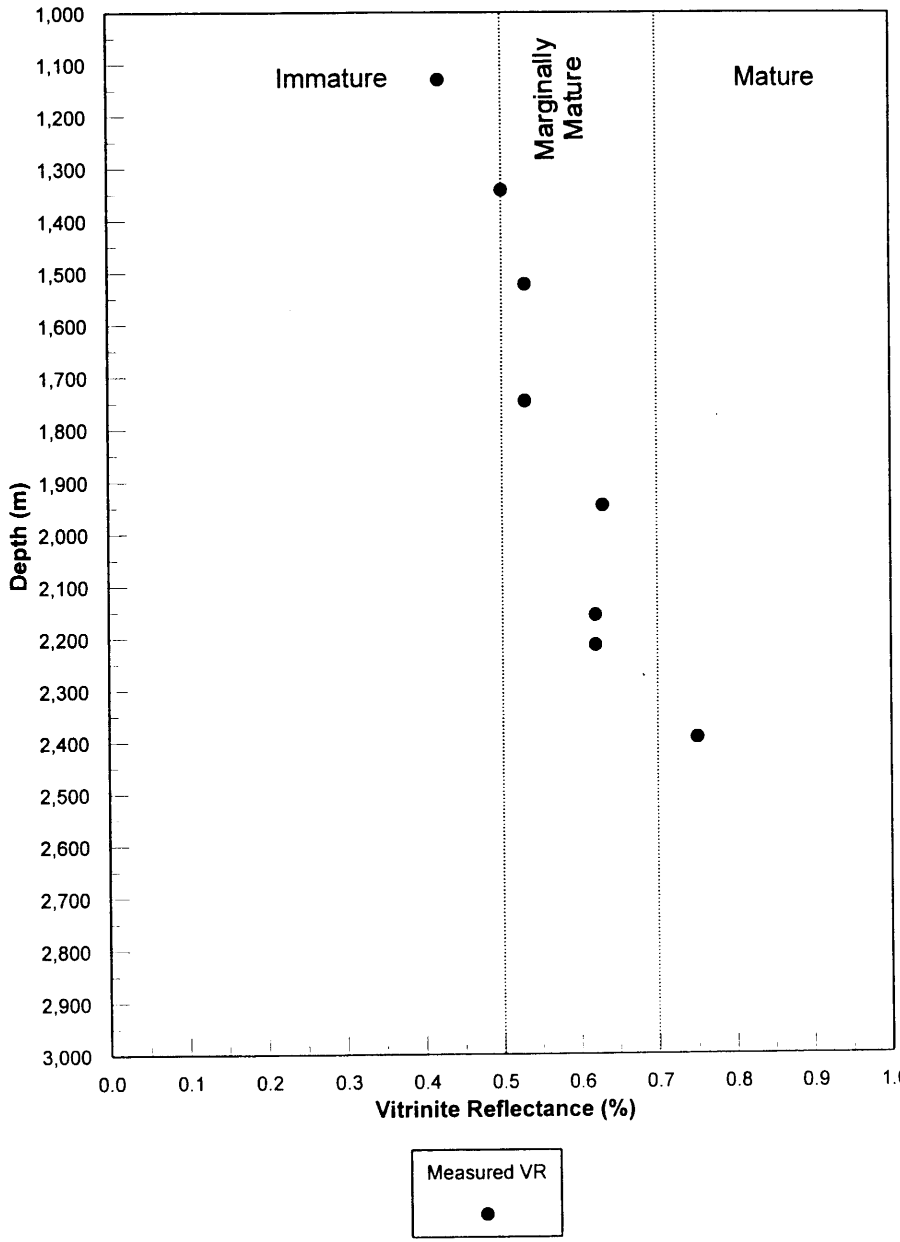
C:\GEOCHEM\OTWAY\ROSSCK-1\ROSSCKVR.PRE

Figure 10

Australia Division
BHP Petroleum

MINERVA-1
Vitrinite Reflectance vs Depth

BHP



C:\GEOCHEM\OTWAY\MINERVA1\MINER-VR.PRE

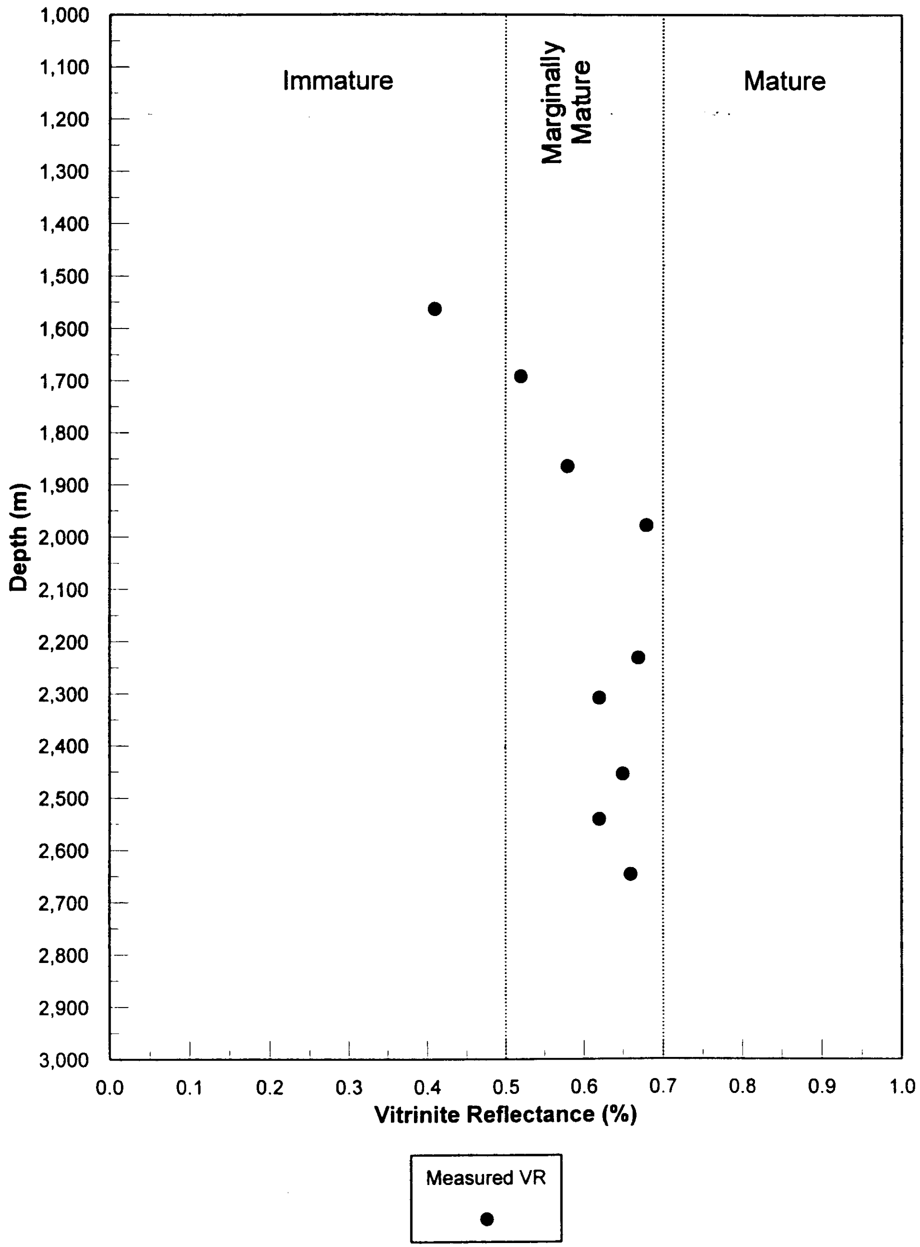
Figure 11

Australia Division
BHP Petroleum

LA BELL 1
Vitrinite Reflectance vs Depth

PE800262

BHP



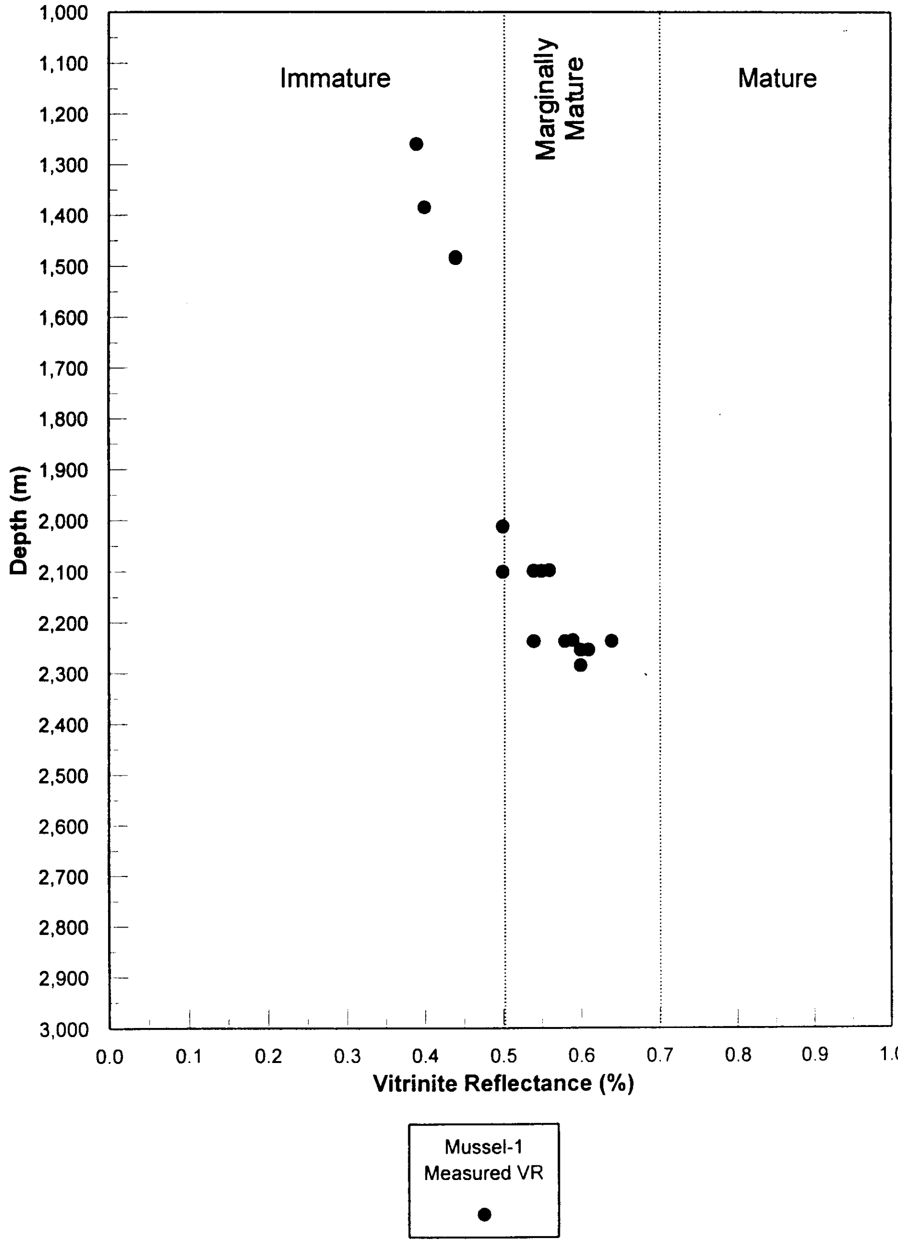
C:\GEOCHEM\OTWAY\LABELLA1\LABELLVR.PRE

Figure 12

Australia Division
BHP Petroleum

MUSSEL-1
Vitrinite Reflectance vs Depth

BHP



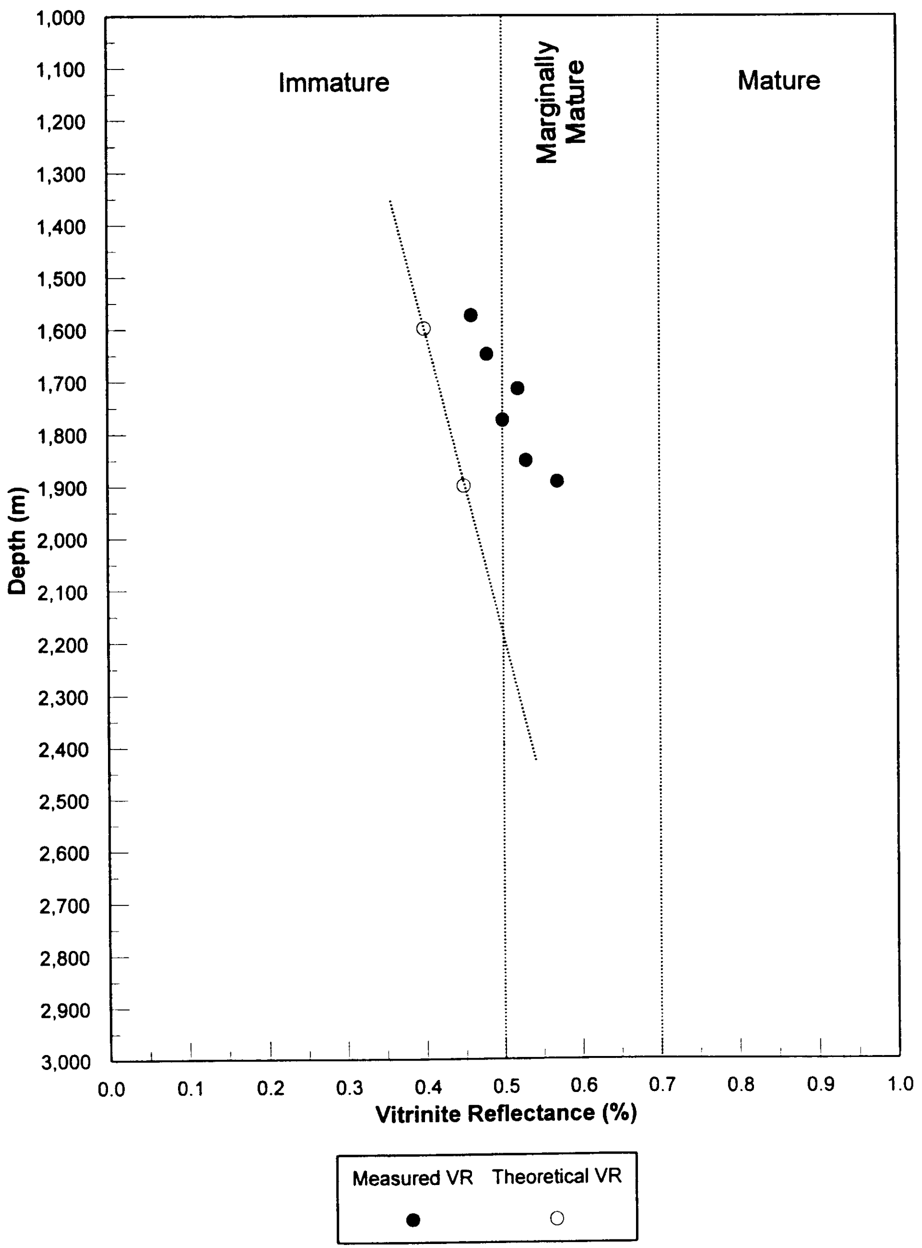
C:\GEOCHEM\OTWAY\MUSSEL-1\MUSSELVR.PRE

Figure 13

Australia Division
BHP Petroleum

CONAN-1
Vitrinite Reflectance vs Depth

BHP



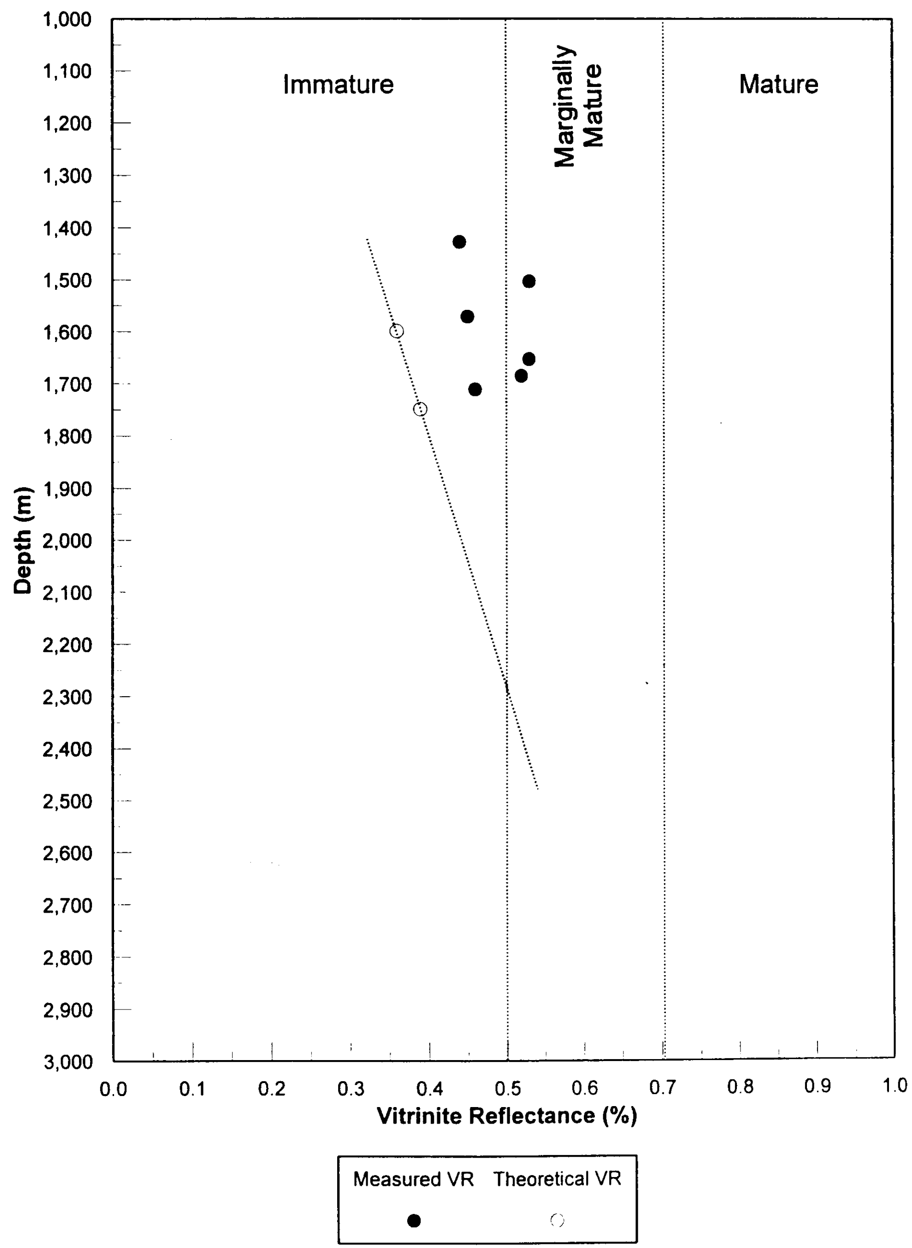
C:\GEOCHEM\WELLS\CONAN-1\CONAN-VR.PRE

Figure 14

Australia Division
BHP Petroleum

CHAMPION
Vitrinite Reflectance vs Depth

BHP



C:\GEOCHEM\OTWAY\CHAMPION\CHAMP-VR.PRE

Figure 15

Australia Division
BHP Petroleum

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

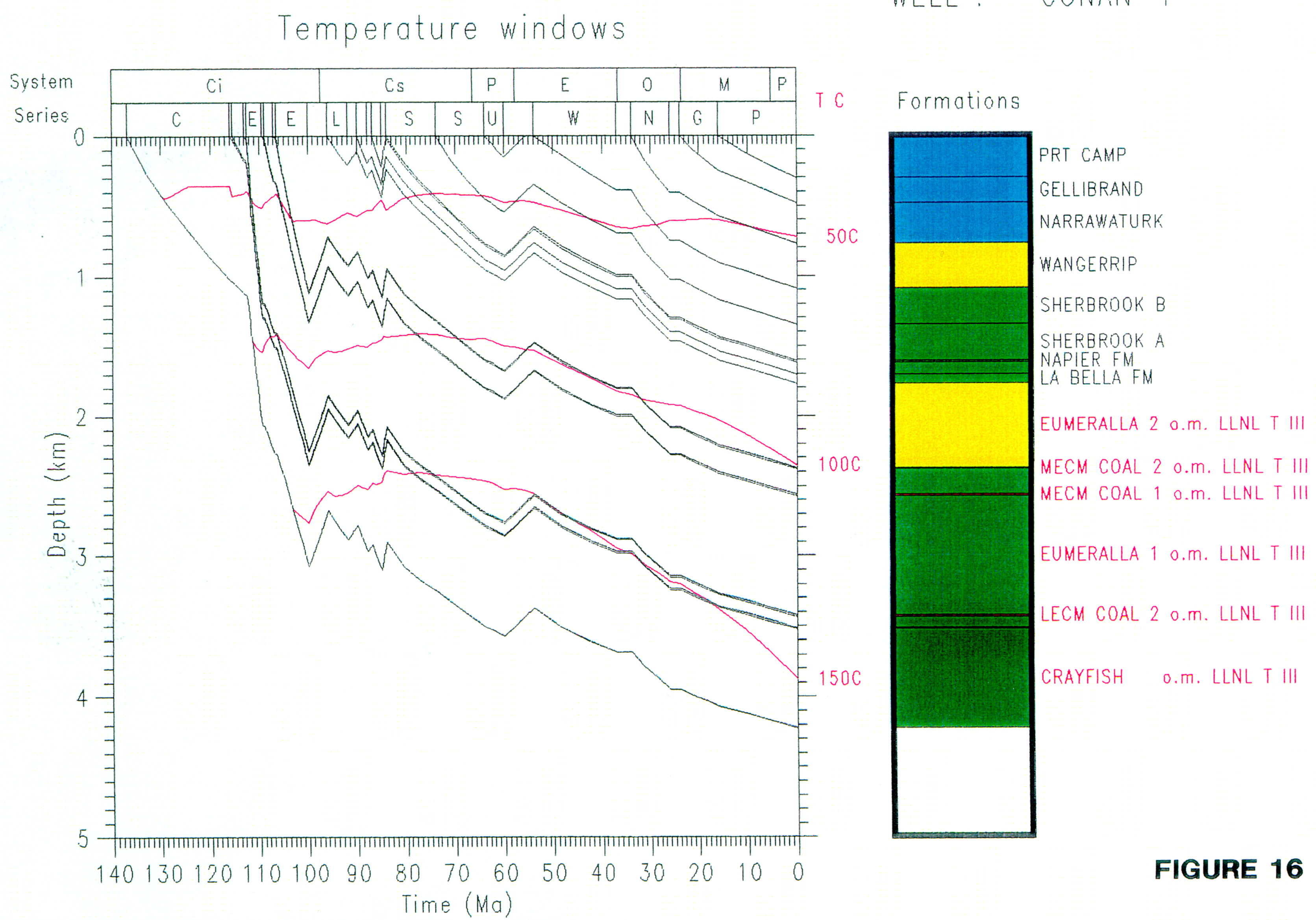


FIGURE 16

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

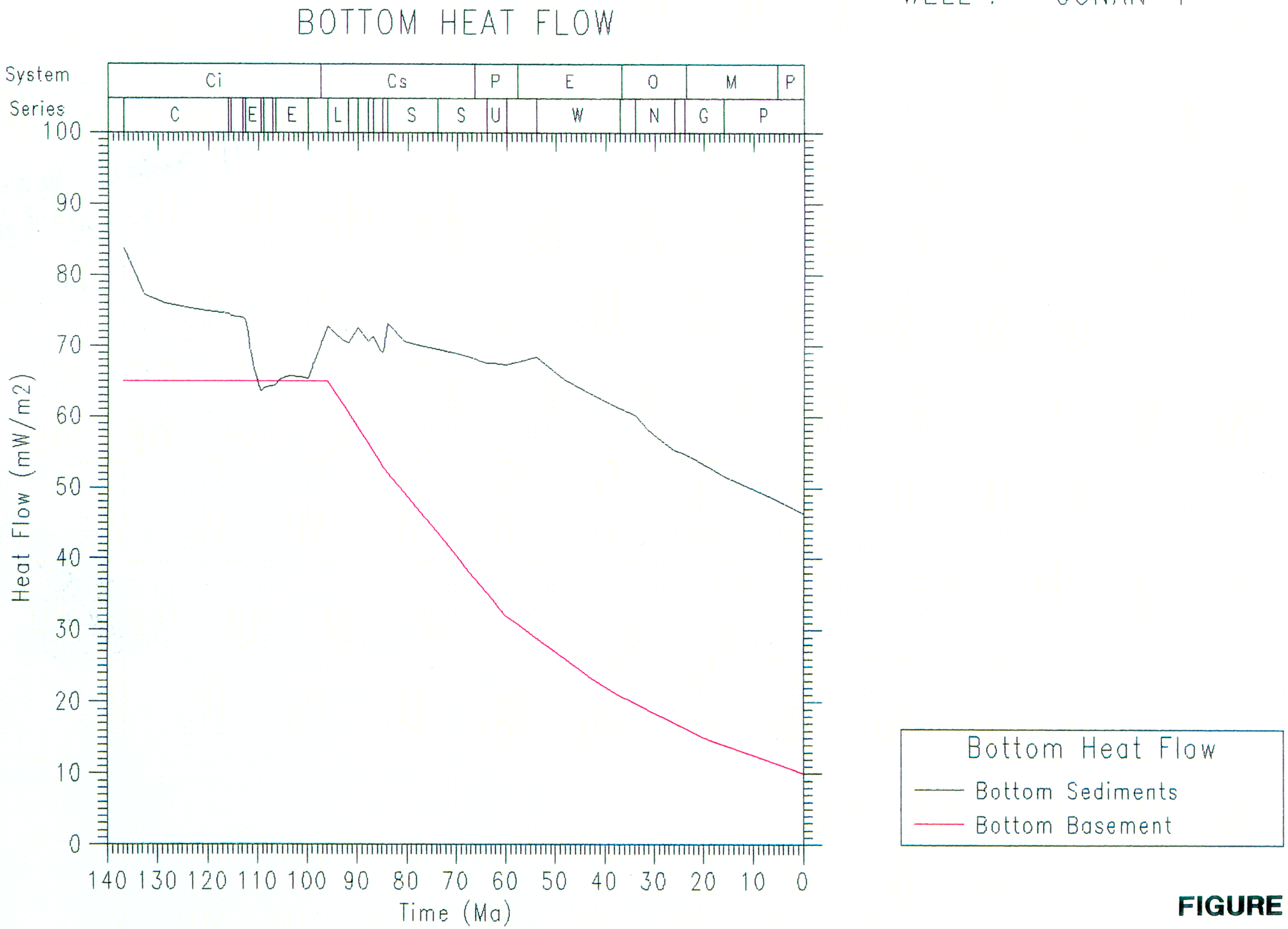


FIGURE 17

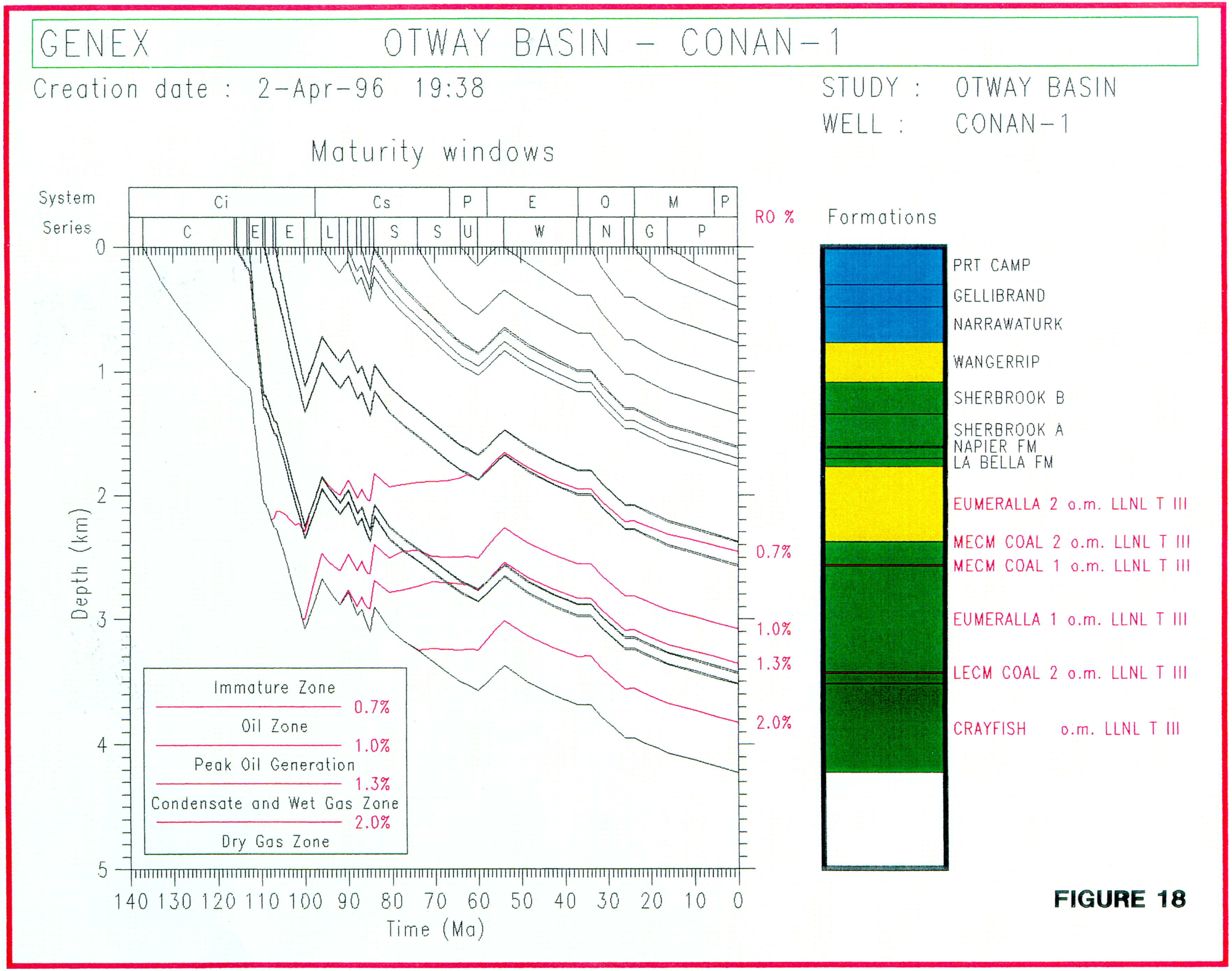

GENEX
OTWAY BASIN - CONAN-1
Creation date : 2-Apr-96 19:38
STUDY : OTWAY BASIN
WELL : CONAN-1
Maturity windows
System
Series
Ci
Cs
P
E
O
M
P
C
E
E
L
S
S
U
W
N
G
P
RO %
0.7%
1.0%
1.3%
2.0%
Depth (km)
Time (Ma)
Immature Zone
Oil Zone
Peak Oil Generation
Condensate and Wet Gas Zone
Dry Gas Zone
Formations
PRT CAMP
GELLIBRAND
NARRAWATURK
WANGERRIP
SHERBROOK B
SHERBROOK A
NAPIER FM
LA BELLA FM
EUMERALLA 2 o.m. LLNL T III
MECM COAL 2 o.m. LLNL T III
MECM COAL 1 o.m. LLNL T III
EUMERALLA 1 o.m. LLNL T III
LECM COAL 2 o.m. LLNL T III
CRAYFISH o.m. LLNL T III

FIGURE 18

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

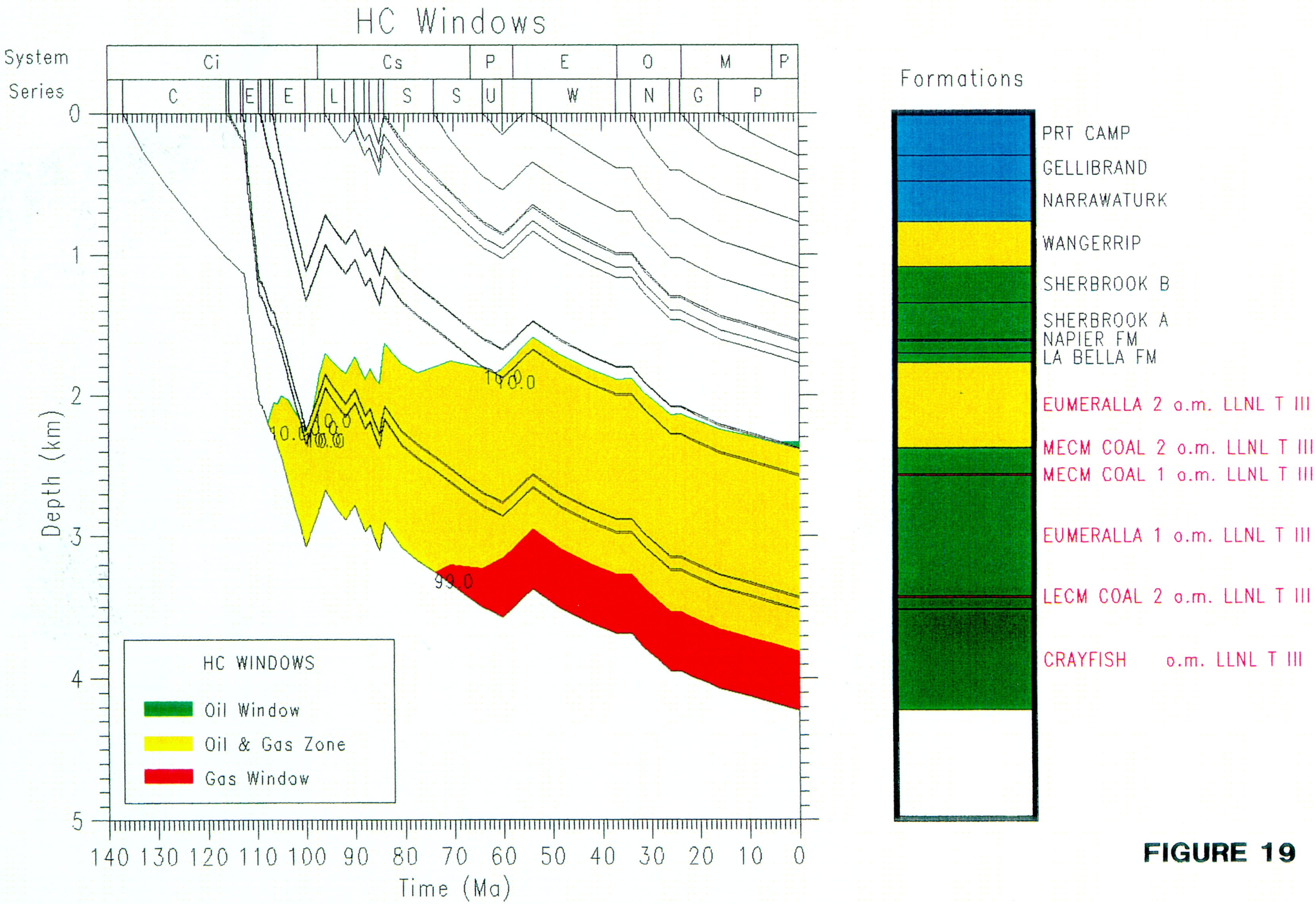


FIGURE 19

GENEX OTWAY BASIN – CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

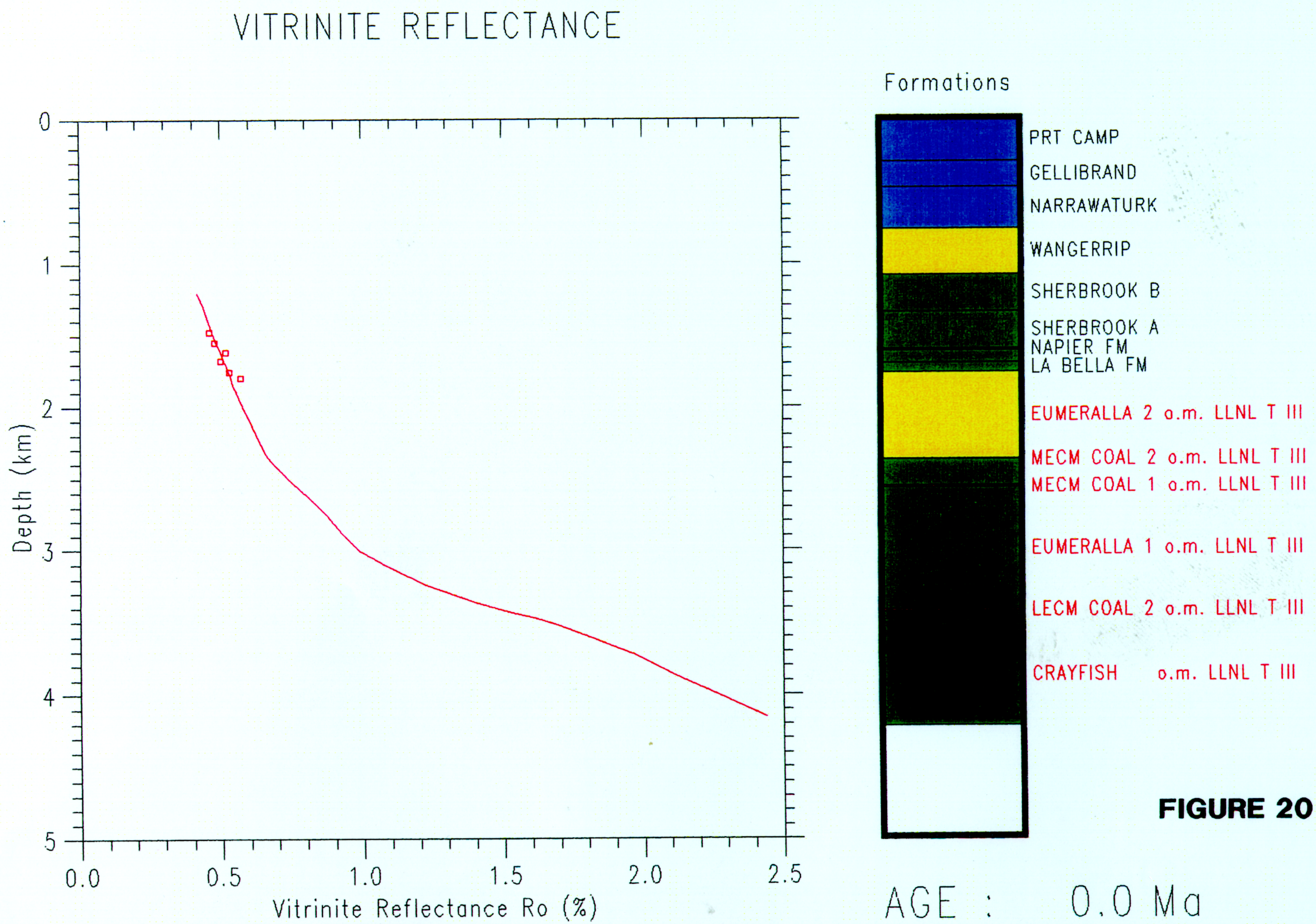


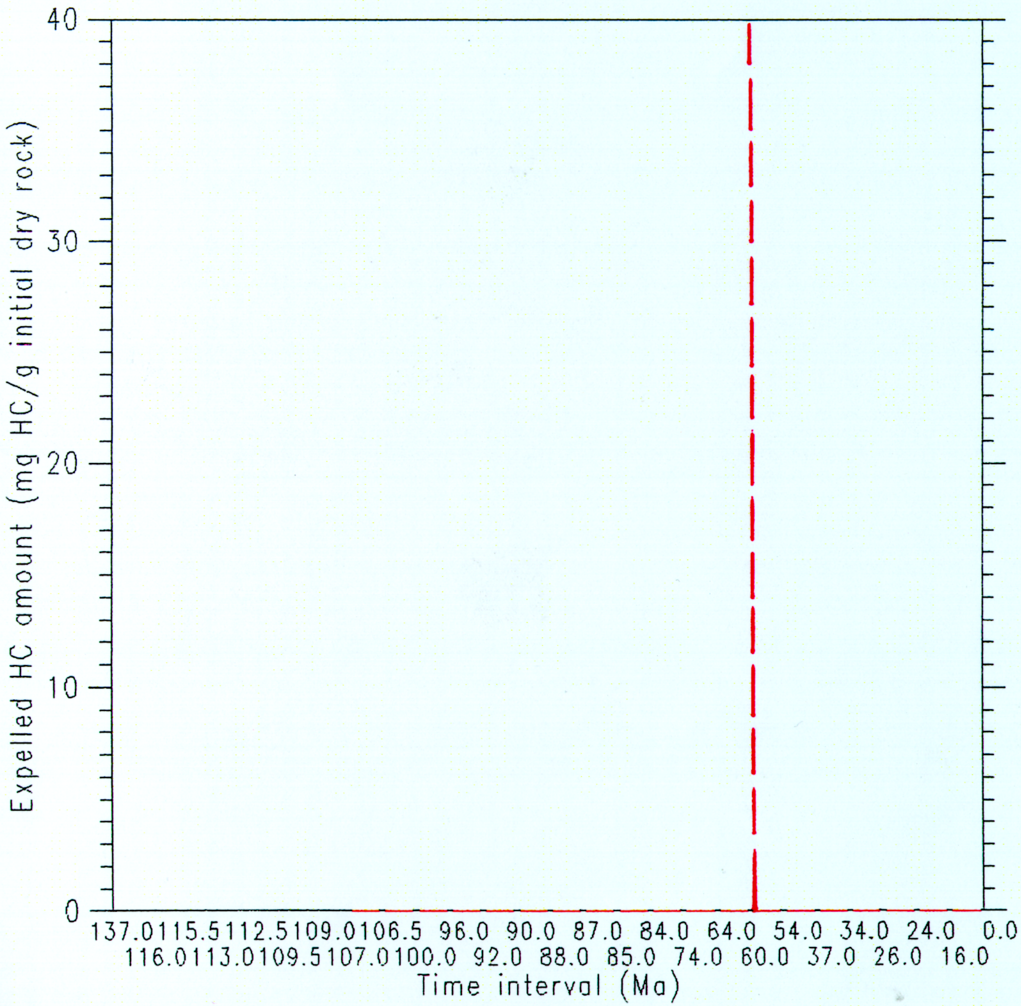
FIGURE 20

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

EXPELLED HC PER TIME INTERVAL



Source Rock MECM COAL 2

o.m. LLNL T III

HC FRACTIONS
Gas
Oil

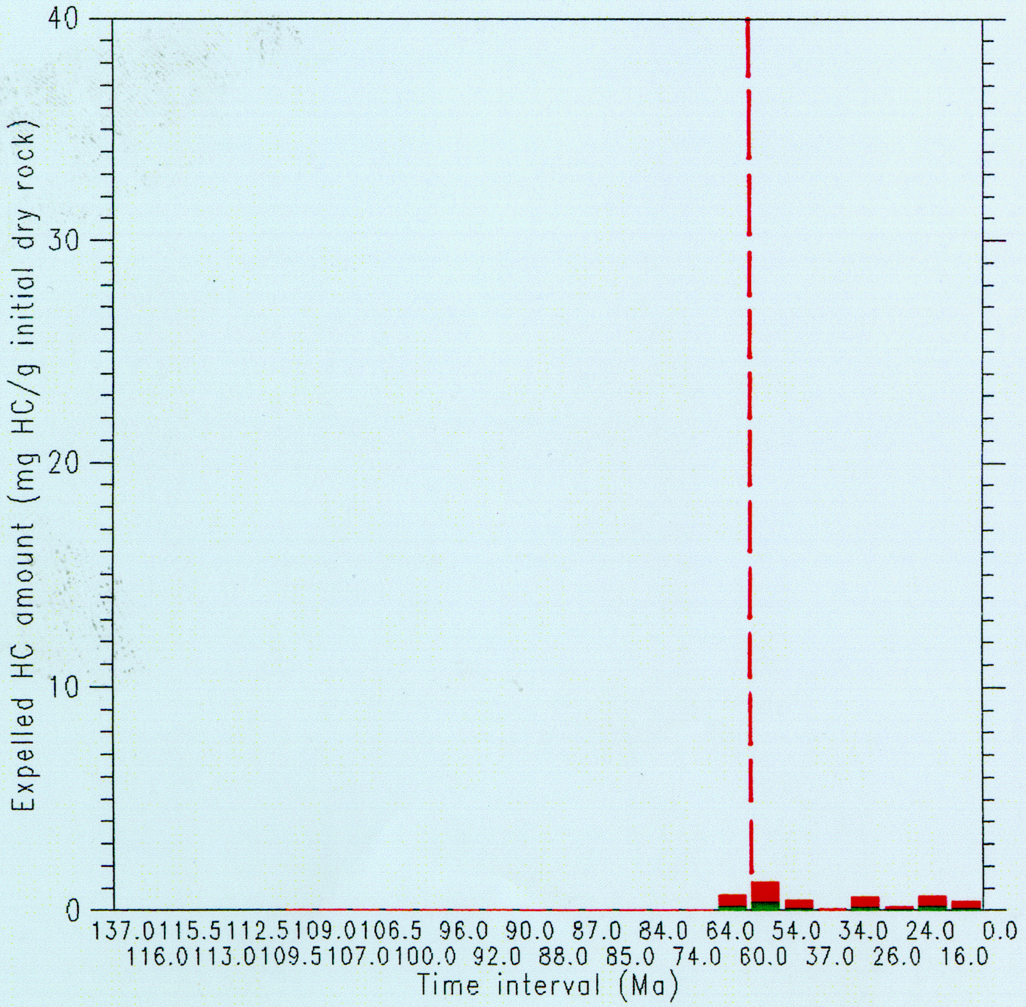
FIGURE 21

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

EXPELLED HC PER TIME INTERVAL



Source Rock MECM COAL 1

o.m. LLNL T III

HC FRACTIONS
Gas
Oil

FIGURE 22

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

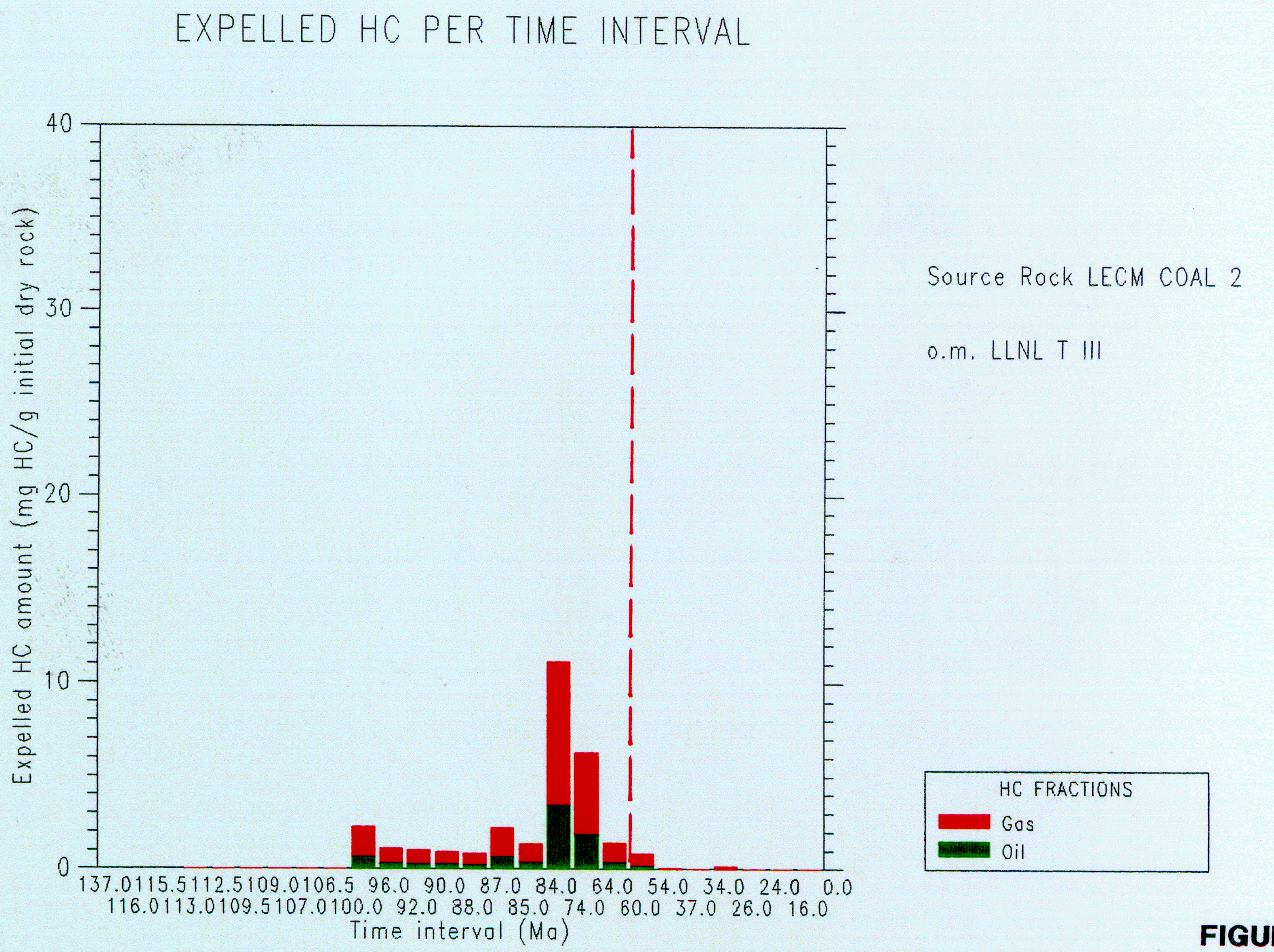


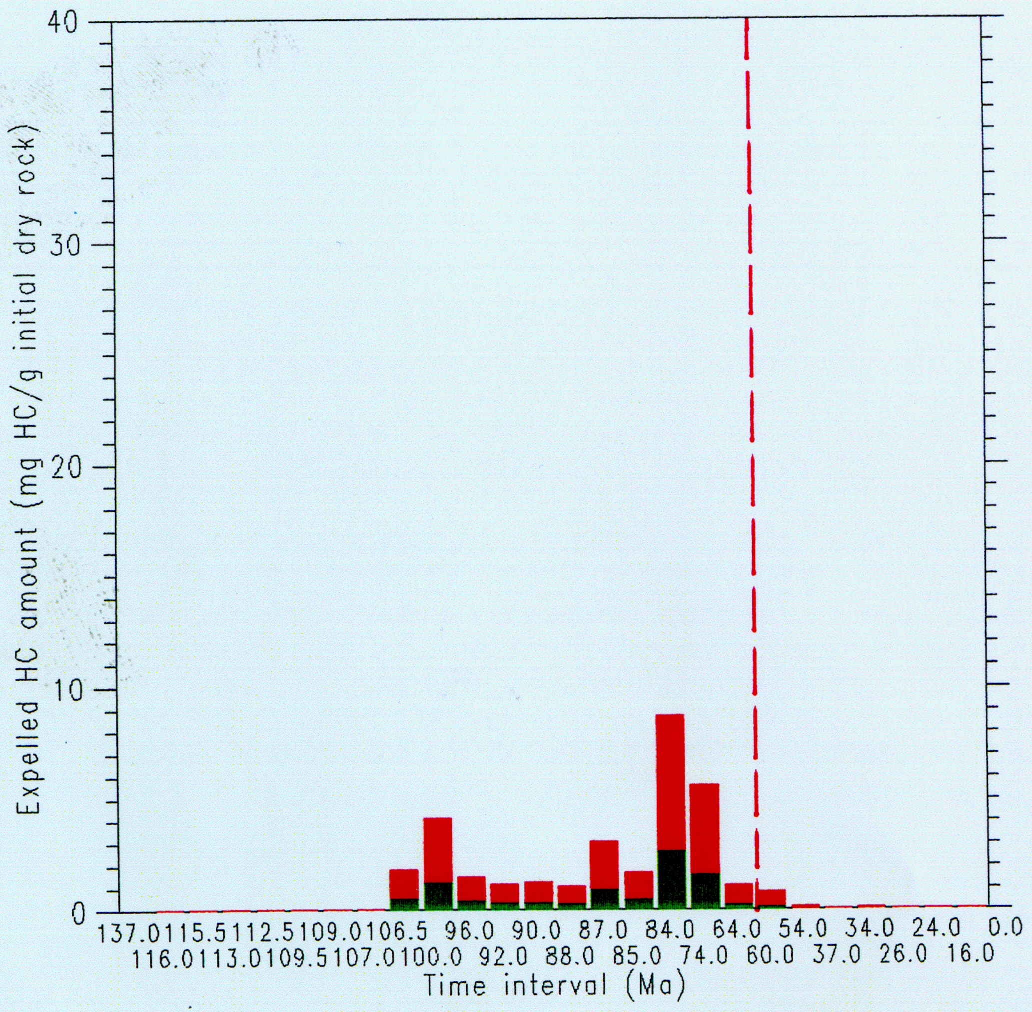
FIGURE 23

GENEX OTWAY BASIN - CONAN-1

Creation date : 2-Apr-96 19:38

STUDY : OTWAY BASIN
WELL : CONAN-1

EXPELLED HC PER TIME INTERVAL



Source Rock LECM COAL 1

o.m. LLNL T III

HC FRACTIONS
Gas
Oil

FIGURE 24