WCR VOL 2

TRUMPETER-1

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

WELL COMPLETION REPORT

TRUMPETER-1

VOLUME 2

INTERPRETED DATA

VIC/L5

ESSO AUSTRALIA RESOURCES LIMITED

COMPILED BY: D. L. E. MORETON

JUNE 1990

0690RP7:6

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GEOLOGICAL AND GEOPHYSICAL ANALYSIS

1. SUMMARY OF WELL RESULTS

EL = 21M.

Formation/Horizon	Pre-drill Depth (mSS)	Post Drill Depth (mSS)	RKB.
Gippsland Limestone (seafloor)	-88	-85	
Top of Latrobe Group	-2388	-2425	2446
Top T 1.1 Sand	-3010	-2991	3012
67 Ma Sequence Boundary*	-3035	-3018	3039
Intra T.Longus Seismic Marker	-3290	-3275	3296
TD	-3479	-3445	3466.8

* Formerly named 68 Ma Seismic Marker

2. INTRODUCTION

The Trumpeter-1 well was drilled to test an Intra-Latrobe fault dependent, highside closure against a northwest trending normal fault downthrown to the northeast. The location of the well is close to the edge of Halibut Field. (Figure 1). The well was spudded on 8/9/89.

Fault closure was expected to exist from approximately -2530mSS to TD. The principle targets were the T-1 and T-8 sands where hydrocarbons occur in the nearby Flounder Field. Secondary targets existed through the T. longus aged coastal plain section.

Trumpeter-1 reached a total depth of -3445mSS without encountering significant hydrocarbons apart from minor gas in a thin, shaley sand just above the T-8 sand.

Mapping post drill suggests that the bounding fault may relay. The non-continuous nature of the bounding fault suggests that no valid structural closure existed in the Trumpeter prospect.

The Trumpeter-1 well was plugged and abandoned as an unsuccessful exploration test in Licence area VIC/L5 and the rig released 12/10/89.

3. STRATIGRAPHY

The stratigraphy of Trumpeter-1 was essentially as predicted. The top of Latrobe Group was penetrated at -2425mSS, 37m deep to prediction, as discussed below. Two metres of shales rich in glauconite and pyrite of the Turrum Formation overlie the "Coarse Clastics".

The top of the "Coarse Clastics" is at -2427mSS, the upper portion of which consists of marginal marine sandstones, siltstones and shales of Upper L. balmei to Lower L. balmei age. This section approximately 200m thick consists of sediments from the 54.5, 55 and 58.5 million year sequences. It has a high net-to-gross of 85%. Porosities average 19%.

The section from the 58.5 million Year Sequence Boundary, (MYSB), to the 63 MYSB at -2874mSS also consists primarily of marginal marine sandstones and siltstones though some coals are also preserved. The net-to-gross of this section is also high at 72%. Porosities average 18%. This section Lower L. balmei in age. Below the 63 MYSB the section becomes more shaley with 120m of shale developed with minor sandstones of less than 5m thickness. This shale is the seal on the T-1 sandstone, the top of which is at -2991mSS, 19m high to prediction.

The T-1 sand is 70m thick, the base of which is marked by the 68 MYSB. The net-to-gross is 78% and porosities average 16%. Facies in this unit are estuaries/marginal marine. Below the 68 MYSB, 214m of very low net-to-gross shales, coals and siltstones occur. The section was prognosed to seal the T-8 sandstone. The top of the T-8 sandstone is at -3275mSS and is 85m thick. The net-to-gross is 80% with porosities averaging 14%. The facies are marginal marine or estuarine though a minor coal occurs within the section. The 71 MYSB marks the base of the T-8 sand.

The well reached total depth in coastal plain shales and coals of the 74 MY sequence.

4. STRUCTURE

Pre-drill, the Trumpeter structure was recognised as a highside closure formed against a northwesterly trending extensional fault in a style similar to the nearby Flounder A27 and Flounder A22 discoveries. Fault movement ceased in the late Paleocene or early Eocene and throw was interpreted to increase with depth from 70m at the 61 MYSB to 130m at the 71 MYSB. The folding was interpreted to occur in the late Eocene to Mid Miocene.

Post drill re-interpretation of the seismic shows the Trumpeter fault to relay to the north reducing closure to a minimum and implying that the well was drilled outside closure. Correlation across the faults suggest a maximum of 50m of throw at the level of the T.1 sand. This is not enough to breach the overlying shale seal.

5. HYDROCARBONS

A single hydrocarbon bearing sand was intersected by Trumpeter-1 just above the T-8 sand. The interval 3279.4mRKB to 3285.4mRKB contains 2.7m of net sand, (porosity greater than 10%). The sand is very shaley and water saturations of 45% are calculated.

An R.F.T. recovered a very small amount of gas with mud filtrate and formation water. Pressure data suggests the sand is supercharged. The T-8 sand, 9m below is completely waterbearing and this along with the high water saturation suggests that no significant column is present.

6. GEOPHYSICAL DISCUSSION

The Trumpeter structure was controlled by data from the G80A and G81A seismic surveys. These surveys combined to give a 1.0 x 0.5km grid over the southern portion of the structure and a 1.0 x 1.0km grid over the northern part. Data quality was generally good though the G80A data suffers from a low frequency content. In addition the line orientation is oblique to the fault trend leading to poor definition of fault cuts and fault throws.

Pre-drill, 3 structure maps were prepared, the Top of Latrobe Group, the 68Ma unconformity and the intra T. longus Seismic Marker. The latter two showing the Trumpeter structure closed against a continuous fault. The top of Latrobe Group occurred 37m low to prediction. This error was due to the seismic pick for the top of Latrobe being 28 milliseconds or about one cycle high. The intra Latrobe horizons were slightly high to prediction, the error in depth prediction being approximately 0.5% and was essentially due to velocities slightly slower than expected.

Post drill the major change in the interpretation is the recognition that the Trumpeter fault sidesteps or relays to the south. This is particularly evident on the unmigrated stack sections.

7. DISCUSSION

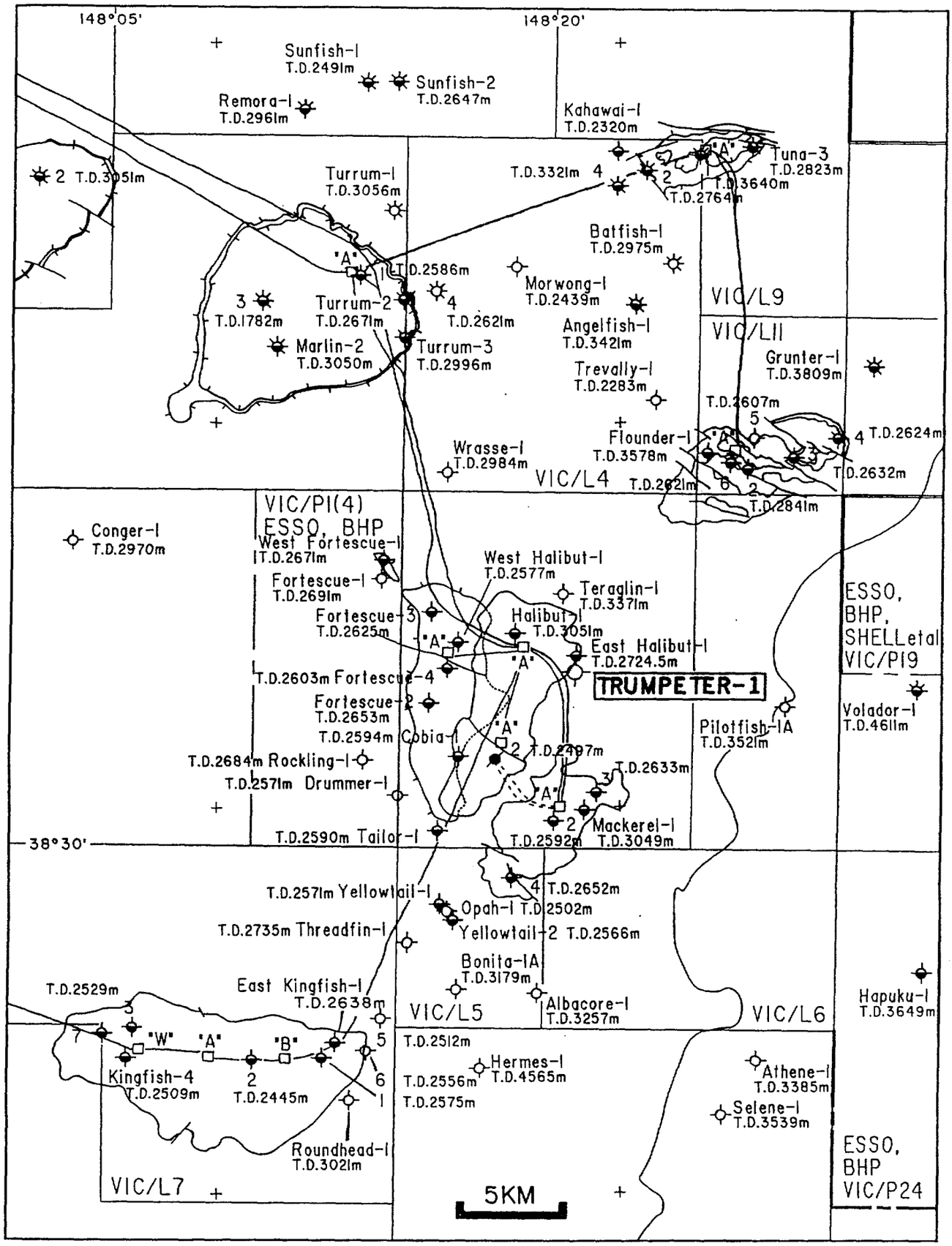
The failure of the Trumpeter-1 well to encounter hydrocarbons is most likely due to the lack of a valid structural trap. The relay in the bounding fault reduces closure to a minimum.

It is unlikely that fault leak occurs. Throw on the fault at the level of the T-1 reservoir is apparently less than 50m. The marine shales above the T-1 are almost 140m thick so it is unlikely that the fault breaches the seal.

In summary, Trumpeter-1 was not a valid test of the play type and future tests of this play will need extensive work to ensure the correct structural interpretation.

FIGURES

TRUMPETER-1
LOCATION MAP



DFT.GIPPS.TRUMP.LOC 11-89

Dwg. 2451/OP/1

APPENDIX 1

APPENDIX-1

PALYNOLOGICAL ANALYSIS OF TRUMPETER-1 GIPPSLAND BASIN.

by

A.D. PARTRIDGE
ESSO AUSTRALIA LTD.

Esso Australia Ltd.
Palaeontology Report 1990/9

March, 1990

INTERPRETED DATA

INTRODUCTION

Thirty-seven sidewall core samples were processed from Trumpeter-1 and examined for spores, pollen and microplankton. Although oxidized organic residue yields were mostly moderate, palynomorph concentrations were mostly low to very low and palynomorph preservation in the majority of samples was poor to very poor. Average recorded diversity was a disappointing 11 palynomorph species per sample.

The low diversity is directly related to the poor preservation due mostly to pyrite pitting of the sporopollinen walls of the palynomorphs. Abundant finely disseminated pyrite throughout the kerogen also caused processing difficulties, particularly in separating and concentrating the kerogen and palynomorphs at the zinc bromide density separation step.

Lithological units and palynological zones from base of Lakes Entrance Formation to T.D. are given in the following summary. Interpretative data with indentification of zones and confidence ratings are recorded in Table-1 and basic data on residue yields, preservation and diversity are recorded in Table-2. All species which can be identified with binomial names are tabulated on the accompanying range chart.

PALYNOLOGICAL SUMMARY OF TRUMPETER-1

AGE	UNIT/FACIES	SPORE-POLLEN ZONES (Dinoflagellate Zones)	DEPTH RANGE (mKB)
Oligocene	Lakes Entrance Formation	*P. tuberculatus*	2444.0
	2448.0m		
Paleocene	Latrobe Group (coarse clastic facies)	Upper *L. balmei*	2480.0
Paleocene		Lower *L. balmei*	2826.5-2954.0
Maastrichtian		Upper *T. longus* (*M. druggii*)	3006.5-3432.5 (3006.5)
	T.D. 3465.8m		

GEOLOGICAL COMMENTS

1. The consistently poor preservation of palynomorphs in almost all samples in the Latrobe Group in Trumpeter-1 is unusual for both the depth range of the samples and general geographic position of the well the basin. It is suggested there may be more induration or diagenetic alteration of the sediments in this well related to the location of the well close to a major fault.

2 Because of the poor preservation microplankton are under-represented in the sequence, and may not truly reflect the extent of marine influence on the section drilled. In particular it is noted that the key Early Paleocene dinoflagellate zones characterized by *Trithyrodinium evittii* and *Eisenackia crassitabulata* could not be identified even though there was relatively good sampling density and these zones are present in nearby wells.

3. Supporting the thesis that these zones should be present is the occurrence of the dinoflagellate *Palaeoperidinium pyrophorum* at 2914.5m. It's presence suggests a possible correlation to the acme of *P. pyrophorum* which occurs near the base of the Lower *L. balmei* Zone in Roundhead-1 (at 2793.3m) and Teraglin-1 (at 2788.5m).

BIOSTRATIGRAPHY

Zone and age-determinations have been made using criteria proposed by Stover & Partridge (1973), Helby *et al.* (1987) and unpublished observations made on Gippsland Basin wells drilled by Esso Australia Ltd.

Author citations for most spore-pollen species can be sourced from Stover & Partridge (1973, 1982), Helby *et al.* (1987) and Dettmann & Jarzen (1988) or other references cited herein. Species names followed by "ms" are unpublished manuscript names. Zone names have not been altered to conform with recent nomenclatural changes to nominate species such as *Forcipites* (al.*Tricolpites*) *longus* (Stover & Evans) Dettmann & Jarzen 1988. Author citations for dinoflagellates can be found in Lentin & Williams (1985, 1989).

Upper *Tricolpites longus* Zone: 3006.8-3432.5 metres Maastrichtian.

The deepest sidewall core with reasonable recovery in the well is at 3432.5m, and is no older than the Upper *T. longus* Zone on the presence of a significant abundance of *Gambierina rudata*, even though the the calculated abundance of 22% is based on a low count of 46 specimens. A more confident and traditional pick of the base of the zone is at 3367.5m based on the FAD (First Appearance Datum) for *Stereisporites (Tripunctisporis)* spp.

The top of the zone is picked at 3006.8m principally on the presence of the dinoflagellate *Manumiella seelandica*, which is indicative of the *M. druggii* Zone. The only key spore-pollen species present are *Proteacidites clinei* and *Tricolpites confessus* whose LADs (Last Appearance Datums) are generally considered to indicate the top of the Upper *T. longus* Zone. It should be noted that *P. clinei* ms in association with *Beaupreaidites orbiculatus* (formerly *Proteacidites gemmatus* ms) are also recorded at 2994.0m. However, as these species are only represented by single specimens in a poor assemblage, it is considered prudent to leave this sample as indeterminate.

Other Upper *T. longus* Zone indicator species are *Forcipites longus* at 3191m, *Proteacidites otwayensis* ms at 3244m, and *P. reticuloconcavus* ms and *Tricolporites lilliei* in both sidewall cores at 3367.5m. In general the Upper *T. longus* Zone is best characterized by the abundance of *Gambierina* spp. in the samples between 3076.5m to 3432.5m (see Table-1).

Lower *Lygistepollenites balmei* Zone: 2826.5-2954.0 metres Paleocene.

Four samples are assigned to this zone, with variable confidence, and each on different criteria. The lowest sample at 2954m is dominated by gymnosperm pollen particularly *Podocarpidites* spp. (32%) and *Phyllocladidites mawsonii* (21%). An increase of the abundance of these pollen was clearly shown to correlate to the Lower *L. balmei* Zone in Roundhead-1 (Partridge, 1989). The sample at 2938.5m contains the only confident identification of *Proteacidites angulatus*, while the sample at 2914.5m contains rare specimens of the important dinoflagellate *Palaeoperidinium pyrophorum*. The shallowest sample at 2826.5m is assigned to the zone on the LAD for *Tetracolporites verrucosus* based on single poorly preserved specimen. All other samples over the interval contain assemblages which are too limited to be confidently assign to the zone.

Upper *Lygistepollenites balmei* Zone: 2480.0 metres **Paleocene.**

Only a single sample could be confidently assigned to the Upper *L. balmei* Zone. The sample contained the FADs for the key species *Cupanieidites orthoteichus* and *Malvacipollis subtilis* and is no younger than this zone based on the LADs for *Lygistepollenites balmei* and *Gambierina rudata*. The four samples separating this sample from the underlying Lower subzone contained assemblages which were too limited to confidently assign to either subzone.

***Proteacidites tuberculatus* Zone: 2446.0 metres** **Oligocene.**

This sample is confidently assigned to the *P. tuberculatus* Zone based on the occurrence of the spore *Cyatheacidites annulatus*. The sample also contains a dinoflagellate assemblage characteristic of the Lakes Entrance Formation. Dominant in the assemblage are the undescribed species *Pyxidinopsis mammilatus* ms and *P. simplex* ms. Other characteristic species include *Hystrichokolpoma rigaudiae*, *Operculodinium centrocarpum* and *Polysphaeridium pseudocolligerum*.

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TABLE 1: INTERPRETATIVE PALYNOLOGICAL DATA TRUMPETER-1, GIPPSLAND BASIN

Sheet 1 of 2

SAMPLE TYPE	DEPTH (M)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE (OR ASSOCIATION)	CONFIDENCE RATING	COMMENT
SWC 60	2444	Indeterminate			
SWC 59	2446	*P. tuberculatus*		0	*Cyatheacidites annulatus* present.
SWC 58	2447.5	Indeterminate			Barren of fossils.
SWC 56	2480	Upper *L. balmei*		1	FAD *Cupanieidites orthoteichus*.
SWC 55	2488	Indeterminate			
SWC 52	2552	Indeterminate			*Glaphrocysta retiintexta* present.
SWC 47	2711	*L. balmei*		1	
SWC 46	2721	*L. balmei*		2	*Lygistepollenites balmei* frequent.
SWC 40	2826.5	Lower *L. balmei*		4	
SWC 38	2914.5	Lower *L. balmei*	(*P. pyrophorum*)	1	
SWC 37	2925	*L. balmei*		2	
SWC 82	2938.5	Lower *L. balmei*		1	*Proteacidites angulatus* present.
SWC 35	2954	Lower *L. balmei*		2	*Phyllocladidites mawsonii* 21%.
SWC 81	2968	Indeterminate			
SWC 80	2982	Indeterminate			*Deflandrea speciosus* present.
SWC 79	2994	Indeterminate			*Breaupreaidites orbiculatus* present.
SWC 31	3001	Indeterminate			
SWC 78	3006.8	Upper *T. longus*	*M. druggii*	0	*Manumiella seelandica* present.
SWC 77	3011.5	Indeterminate			
SWC 28	3018	Indeterminate			
SWC 27	3028	Indeterminate			
SWC 76	3059.2	Indeterminate			
SWC 75	3076.5	Upper *T. longus*		2	*Gambierina* spp. abundant.
SWC 73	3114	Indeterminate			
SWC 72	3140	Indeterminate			
SWC 71	3166.5	*T. longus*		2	
SWC 69	3191	Upper *T. longus*		2	*Forcipites longus* present.
SWC 68	3224	Indeterminate			
SWC 15	3244	Upper *T. longus*		2	*Gambierina* spp. abundance 13%.

TABLE 1: INTERPRETATIVE PALYNOLOGICAL DATA TRUMPETER-1, GIPPSLAND BASIN (cont)

SAMPLE TYPE	DEPTH (M)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE (OR ASSOCIATION)	CONFIDENCE RATING	COMMENT
SWC 13	3277.5	Upper *T. longus*		1	*Gambierina* spp. abundance 12%.
SWC 10	3291	Indeterminate			
SWC 67	3344	Indeterminate			
SWC 7	3367.5	Upper *T. longus*		1	*Gambierina* spp. abundance 18%.
SWC 66	3367.5	Upper *T. longus*		1	*Gambierina* spp. abundance 20%.
SWC 65	3385	Indeterminate			
SWC 5	3470.2	Indeterminate			
SWC 64	3432.5	Upper *T. longus*		2	*Gambierina* spp. abundance 22%.

LAD = Last appearance datum.
FAD = First appearance datum.

PALYNOLOGY DATA SHEET

BASIN: *GIPPSLAND* ELEVATION: KB: *+21.0m* GL: *-88.0m*

WELL NAME: *TRUMPETER-1* TOTAL DEPTH: *3465.8m*

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
PALEOGENE	*P. tuberculatus*						*2446*	*0*			
	Upper *N. asperus*										
	Mid *N. asperus*										
	Lower *N. asperus*										
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower ***M. diversus***										
	Upper *L. balmei*	*2480*	*1*				*2480*	*1*			
	Lower *L. balmei*	*2826.5*	*4*	*2914.5*	*1*		*2954*	*2*	*2952*	*1*	
LATE CRETACEOUS	Upper *T. longus*	*3006.8*	*1*				*3432.5*	*2*	*3367.5*	*1*	
	Lower *T. longus*										
	T. lilliei										
	N. senectus										
	T. apoxyexinus										
	P. mawsonii										
	A. distocarinatus										
EARLY CRET.	*P. pannosus*										
	C. paradoxa										
	C. striatus										
	C. hughesi										
	F. wonthaggiensis										
	C. australiensis										

COMMENTS: *All depths in metres.*

Manumiella druggii Dinoflagellate Zone 3006.8m (Rating 1)

Palaeoperidinium pyrophorum Dinoflagellate Acme 2914.5m

CONFIDENCE RATING:

0: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.

1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.

2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.

4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: *A.D. Partridge* DATE: *7th March, 1990.*

DATA REVISED BY: _____ DATE: _____

BASIC DATA

TABLE-2: BASIC DATA

RANGE CHART

TABLE 2: BASIC PALYNOLOGICAL DATA TRUMPETER-1, GIPPSLAND BASIN

Sheet 1 of 2

SAMPLE TYPE	DEPTH (M)	LAB NO.	LITHOLOGY	RESIDUE YIELD	PALYNOMORPH CONCENTRATION	PRESERVATION	NUMBERS S-P SPECIES*	MICROPLANKTON ABUNDANCE	MICROPLANKTON NO. SPECIES*
SWC 60	2444	78272 H	Calcareous Claystone	Low	Very Low	Fair	2		2
SWC 59	2446	78272 G	Glauconitic Claystone	Low	Very Low	Fair	9+	High	11+
SWC 58	2447.5	78272 F	Glauconitic Claystone	Very Low	Barren				
SWC 56	2480	78272 D	Siltstone	Low	Low	Poor	22+	Very Low	1+
SWC 55	2488	78272 C	Argillaceous Sandstone	Low	Very Low	Poor	3+		
SWC 52	2552	78271 Z	Argillaceous Sandstone	Low	Very Low	Poor	1+	Very Low	3
SWC 47	2711	78271 U	Carbonaceous/Coally Siltstone	Low	Low	Poor	6+		
SWC 46	2721	78271 T	Interbedded Sst./Sltst.	High	Moderate	Poor	11+		
SWC 40	2826.5	78271 N	Carbonaceous Sandstone	Moderate	Low	Very Poor	12+		
SWC 38	2914.5	78271 L	Argillaceous Very Fine Sst.	Low	Very Low	Poor	7+	Low	3+
SWC 37	2925	78271 K	Argillaceous Sandstone	Moderate	Moderate	Very Poor	15+		
SWC 82	2938.5	78273 D	Sandstone	Moderate	Low	Very Poor	12+		
SWC 35	2954	78271 I	Argillaceous Sandstone	High	Low	Poor	18+		
SWC 81	2968	78273 C	Mottled Very Fine Sandstone	Moderate	Very Low	Poor	5+		
SWC 80	2982	78273 B	Mottled Very Fine Sandstone	Moderate	Very Low	Poor	14+	Low	2+
SWC 79	2994	78273 A	Siltstone	Moderate	Very Low	Poor	16+		
SWC 31	3001	78271 E	Siltstone	Moderate	Low	Poor	10+		
SWC 78	3006.8	78272 Z	Argillaceous Very Fine Sst.	Moderate	Low	Poor	18+	Low	3
SWC 77	3011.5	78272 Y	Carbonaceous Silty Sandstone	Moderate	Low	Poor	9+		
SWC 28	3018	78271 B	Pyritic Siltstone/Claystone	Moderate	Very Low	Very Poor	5+		
SWC 27	3028	78271 A	Argillaceous Very Fine Sst.	Moderate	Low	Poor	8+	Very Low	1
SWC 76	3059.2	78272 X	Siltstone	Moderate	Very Low	Very Poor	7+		
SWC 75	3076.5	78272 W	Siltstone	Moderate	Low	Poor	13+		
SWC 73	3114	78272 U	Carbonaceous Very Fine Sst.	High	Low	Poor	5+		
SWC 72	3140	78272 T	Carbonaceous Siltstone	Moderate	Very Low	Poor	6+		
SWC 71	3166.5	78272 S	Carbonaceous Siltstone	Moderate	Low	Poor-Fair	13+	(Very Low)	(1)
SWC 69	3191	78272 Q	Carbonaceous Siltstone	Moderate	Low	Poor	8+		
SWC 68	3224	78272 P	Carbonaceous Sandstone	High	Very Low	Very Poor	1		
SWC 15	3244	78270 O	Carbonaceous Siltstone	Moderate	Moderate	Poor	16+		

TABLE 2: BASIC PALYNOLOGICAL DATA TRUMPETER-1, GIPPSLAND BASIN (cont.)

Sheet 2 of 2

SAMPLE TYPE	DEPTH (M)	LAB NO.	LITHOLOGY	RESIDUE YIELD	PALYNOMORPH CONCENTRATION	PRESERVATION	NUMBERS S-P SPECIES*	MICROPLANKTON ABUNDANCE	MICROPLANKTON NO. SPECIES*
SWC 13	3277.5	78270 M	Siltstone	Moderate	Moderate	Poor	13+		
SWC 10	3291	78270 J	Carbonaceous Siltstone	Moderate	Low	Poor	11+		
SWC 67	3344	78272 O	Carbonaceous Siltstone	Low	Barren				
SWC 7	3367.5	78270 G	Argillaceous Siltstone	High	Moderate	Poor-Fair	23+	(Very Low)	(1)
SWC 66	3367.5	78272 N	Argillaceous Sandstone	Moderate	Moderate	Fair	19+	(Very Low)	(1)
SWC 65	3385	78272 M	Carbonaceous Siltstone	Moderate	Very Low	Poor	4+		
SWC 5	3470.2	78270 E	Carbonaceous Siltstone	High	Very Low	Poor	5+		
SWC 64	3432.5	78272 L	Siltstone	Low	Low	Poor	10+		

Microplankton in (brackets) = probable contaminants.

* Diversity:
- Very Low = 1- 5 species
- Low = 6-10 species
- Moderate = 11-25 species
- High = 26-74 species
- Very High = 75+ species

PE900494

This is an enclosure indicator page.
The enclosure PE900494 is enclosed within the container PE902133 at this location in this document.

The enclosure PE900494 has the following characteristics:

ITEM_BARCODE	= PE900494
CONTAINER_BARCODE	= PE902133
NAME	= Palynological Range Chart
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Palynological Range Chart for Trumpeter-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W1008
WELL_NAME	= TRUMPETER-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 2

APPENDIX 2

TRUMPETER 1

QUANTITATIVE LOG ANALYSIS

Interval: 2446-3450m MDKB
Analyst : M.J. MOORE.
Date : March, 1990.

TRUMPETER 1

QUANTITATIVE LOG ANALYSIS

CONTENTS

TRUMPETER 1
QUANTITATIVE LOG ANALYSIS

Wireline log data from the Trumpeter 1 well have been quantitatively analysed over the interval 2446-3450m MDKB for effective porosity and effective water saturation. Results are presented in the form of the accompanying tabular listings and depth plots and are summarised and discussed below. Trumpeter 1 failed to intersect any significant hydrocarbon bearing reservoirs.

Trumpeter-1 intersected only one relatively tight gas column in the T.longus section over the interval 3279.4-3285.4m MDKB.

LOGS USED

CALI (caliper)
GR (gamma ray - cased hole)
LLD (deep laterolog)
LLS (shallow laterolog)
MSFL (Micro-Spherically Focused Log)
RHOB (bulk density)
NPHI (neutron porosity)
DRHO (density correction)

Log quality was generally good. Minor density corrections in intervals of bad hole were the only log quality problems encountered

DISCUSSION

The primary objective of the Trumpeter-1 well was the T-1 sand (based upon the Flounder T-1 reservior) with a secondary objective of the T-8 sand (also found in Flounder). Both sands were fault seal dependent and of T.longus age. These sands had an average ϕe of 15.8% and 15.0% and Swe's of 99.3% and 100%, respectively in Trumpeter 1.

Only one sand (3279.4-3285.4m MDKB) was intersected that contained any hydrocarbons (gas). This lay directly above the T-8 sand and contained 6.0m of Gross, with a Net to Gross of 43% (ϕe = 11.6% and Swe = 44.7%). This sand package warranted the running of RFT pretests and one sample run. The RFT sample run recovered 0.07 cu.ft of gas and 10 litres of a formation water/mud filtrate mix. The lengthy build up period (incomplete after 87 minutes) suggesting that the formation was tight.

All other sands encountered in Trumpeter 1 proved to be water wet.

TRUMPETER-1
QUANTITATIVE LOG ANALYSIS

ANALYSIS METHODOLOGY

Apparent total porosity and shale volume was calculated using density-neutron crossplot algorithms.

Water saturations were determined from the dual water relationship. Effective porosities and water saturations were derived from the apparent total porosity and water saturation, calculated shale volume and apparent shale porosity.

ANALYSIS PARAMETERS

Esso Australia Logic Model	: K12 (option 1)		
Tortuosity "a"	: 1.00		
Cementation factor "m"	: 2.00		
Saturation exponent "n"	: 2.00		
Fluid density (rhof)	: 1.00		
	2446m KB	3450m KB	
Gamma Ray value in clean formation (grmin)	: 40	60	gapi
Gamma Ray value in shale (grmax)	: 180	160	gapi
Shale Resistivity (Rsh)	: 30	30	ohmm
Apparent bulk density of shale (RHOBSH)	: 2.65	2.55	g/cc
Apparent neutron porosity of shale (PHINSH)	: 0.33	0.27	frac
Salinity	: see table 2.		
Hydrocarbon density (RHOH)	: 0.25 (gas)		
Lower limit of grain density	: 2.645 g/cc		
Upper limit of grain density	: 2.675 g/cc		
Measured Rmf	: 0.143 ohmm		
Temperature at which Rmf measured	: 18.3°C		
SXO from RXO?	: No		
z	: 0.3		
AMS used?	: No		
Total Depth	: 3468 m MDKB		
BHT	: 95°C		
Sea bed/Surface temperature	: 10°C		
Water depth/GL	: 85 m		
KB height	: 21 m		
Irreducible water saturation	: 0.025		
Vsh upper limit for effective porosity	: 0.65		
Phie minimum for hydrocarbons	: 0.03		

TRUMPETER_1

ANALYSIS SUMMARY.

Net porosity cut-off.....: 0.100 volume per volume
Net water saturation cut-off..: 0.500 volume per volume

Net Porous Interval based on Porosity cut-off only.
Both Porosity and Sw cut-offs invoked when generating Hydrocarbon-Metres.

	GROSS INTERVAL (metres) (top) -(base)	Gross Metres	NET POROUS INTERVAL Net Metres	Net to Gross	Mean Vsh	(Std.) (Dev.)	Mean Porosity	(Std.) (Dev.)	Mean Sw	(Std.) (Dev.)	HYDROCARBON METRES
MDKB	2446.4-2487.2	40.8	34.4	84 %	0.081	(0.098)	0.182	(0.034)	1.000	(0.418)	0.000
MDKB	2487.8-2669.8	182.0	170.6	94 %	0.042	(0.067)	0.192	(0.036)	1.000	(0.404)	0.000
MDKB	2670.8-2679.8	9.0	7.0	78 %	0.015	(0.046)	0.163	(0.024)	0.990	(0.023)	0.000
MDKB	2681.2-2707.8	26.6	25.2	95 %	0.032	(0.059)	0.177	(0.024)	1.000	(0.221)	0.000
MDKB	2710.0-2737.6	27.6	18.0	65 %	0.066	(0.085)	0.148	(0.026)	0.998	(0.037)	0.000
MDKB	2739.0-2780.4	41.4	38.6	93 %	0.018	(0.059)	0.192	(0.025)	0.974	(0.046)	0.000
MDKB	2785.6-2799.2	13.6	12.8	94 %	0.038	(0.079)	0.158	(0.026)	0.996	(0.012)	0.000
MDKB	2805.2-2820.8	15.6	13.4	86 %	0.101	(0.087)	0.156	(0.021)	1.000	(0.000)	0.000
MDKB	2826.4-2989.4	163.0	82.6	51 %	0.051	(0.081)	0.160	(0.034)	1.000	(0.160)	0.000
MDKB	3002.4-3073.2	70.8	55.0	78 %	0.044	(0.065)	0.158	(0.025)	0.993	(0.039)	0.000
MDKB	3077.4-3082.8	5.4	4.6	85 %	0.044	(0.069)	0.177	(0.030)	1.000	(0.000)	0.000
MDKB	3084.2-3126.6	42.4	13.8	33 %	0.185	(0.085)	0.132	(0.020)	1.000	(0.275)	0.000
MDKB	3127.6-3129.2	1.6	0.4	25 %	0.377	(0.007)	0.102	(0.001)	1.000	(0.000)	0.000
MDKB	3132.4-3134.8	2.4	1.4	58 %	0.136	(0.125)	0.159	(0.016)	1.000	(0.000)	0.000
MDKB	3135.4-3137.4	2.0	1.4	70 %	0.330	(0.033)	0.112	(0.004)	1.000	(0.000)	0.000
MDKB	3147.8-3153.8	6.0	3.6	60 %	0.133	(0.046)	0.135	(0.015)	1.000	(0.000)	0.000
MDKB	3170.2-3177.2	7.0	4.8	69 %	0.135	(0.059)	0.136	(0.019)	1.000	(0.000)	0.000
MDKB	3180.6-3189.4	8.8	2.4	27 %	0.161	(0.040)	0.111	(0.006)	1.000	(0.031)	0.000
MDKB	3191.2-3203.4	12.2	5.2	43 %	0.067	(0.053)	0.140	(0.011)	1.000	(0.069)	0.000
MDKB	3213.2-3215.6	2.4	1.0	42 %	0.188	(0.049)	0.109	(0.004)	1.000	(0.000)	0.000
MDKB	3226.6-3234.2	7.6	2.8	37 %	0.074	(0.063)	0.139	(0.031)	1.000	(0.000)	0.000
MDKB	3245.0-3246.6	1.6	0.6	37 %	0.203	(0.044)	0.109	(0.006)	1.000	(0.000)	0.000
MDKB	3279.4-3285.4	6.0	2.6	43 %	0.269	(0.039)	0.116	(0.007)	0.447	(0.025)	0.166
MDKB	3290.0-3292.6	2.6	1.2	46 %	0.067	(0.139)	0.122	(0.013)	1.000	(0.000)	0.000
MDKB	3293.6-3382.0	88.4	82.4	93 %	0.021	(0.054)	0.150	(0.019)	1.000	(0.413)	0.000
MDKB	3386.8-3405.2	18.4	9.0	49 %	0.098	(0.090)	0.125	(0.014)	1.000	(0.000)	0.000
MDKB	3409.6-3419.0	9.4	0.6	6 %	0.111	(0.056)	0.117	(0.011)	1.000	(0.000)	0.000
MDKB	3420.4-3428.0	7.6	2.0	26 %	0.085	(0.077)	0.137	(0.026)	1.000	(0.000)	0.000
MDKB	3429.4-3440.2	10.8	2.6	24 %	0.130	(0.061)	0.125	(0.011)	1.000	(0.000)	0.000
MDKB	3443.4-3450.0	6.6	1.8	27 %	0.083	(0.042)	0.113	(0.007)	1.000	(0.000)	0.000

TABLE 2 : SALINITY VALUES USED IN ANALYSIS

DEPTH INTERVAL (m MDKB)	SALINITY (ppm)
2446 - 3100	50,000
3100 - 3450	20,000

(03900231)

APPENDIX 1

ALGORITHMS & LOGIC USED IN THE QUANTITATIVE ANALYSIS

Initial Total Porosity and Shale Volume was calculated from the bulk density and neutron porosity log responses as follows:

```
vsh = ((nphi+0.04) - ((2.65-rhob)/(2.65-rhof)))/
      ((phinsh+0.04) - ((2.65-rhobsh)/(2.65-rhof)))
vsh = min(1,(max(0,vsh)))


h = (2.71-rhob) + (nphi*(rhof-2.71))
  if (h>=0)
    rhoma=2.71-(0.5*h)
  else
    rhoma=2.71-(0.64*h)
phit = max(0.001,(min(1,((rhoma-rhob)/(rhoma-rhof)))))
```

The Apparent Salinity profile was derived from aRw back-calculated in clean sands from Archie's equation, assuming 100% Sw.

Swt (total Water Saturation) was calculated using the dual water relationship

```
1/rt = (swt**n)*(phit**m)/(a*rw)+swt**(n-1)*(swb*(phit**m)/a)*((1/rwb)-(1/rw))
```

This is solved for Sw by Newtons solution:

```
exsw=0
sw  =0.9
aa  =((phit**m)/(a*rw))
bb  =((swb*(phit**m)/a)*((1/rwb)-(1/rw)))
    repeat
      fx1=(aa*(sw**n))+(bb*(sw**(n-1)))-(1/rt)
      fx2=(n*aa*(sw**(n-1)))+((n-1)*bb*(sw**(n-2)))
         if((abs(fx2)) < 0.0001)
          fx2=0.0001
      swp=sw
      sw =swp-(fx1/fx2)
      exsw=exsw+1
    until (exsw > 4 or (abs(sw-swp)) <= 0.01)
swt=sw
```

Effective Porosity and Water Saturation were derived as follows:

```
if (vsh > vshco){
 swt  = 1
 swe  = 1
 phie = 0
}
else {
  phie= max(0.0,(phit-(vsh*phish)))
  swe = max(swirr,( 1 - ((phit/phie)*(1-swt))))
  if (vsh > (vshco-0.2)){
     phie= phie*((vshco-vsh)/0.2)
     swe = 1-((1-swe)*((vshco-vsh)/0.2))
  }
}
```

where vshco = 0.65

PE600984

This is an enclosure indicator page.
The enclosure PE600984 is enclosed within the container PE902133 at this location in this document.

The enclosure PE600984 has the following characteristics:

ITEM_BARCODE	= PE600984
CONTAINER_BARCODE	= PE902133
NAME	= CPI Quantitative log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= CPI Quantitative log of Trumpeter-1
REMARKS	=
DATE_CREATED	= 6/04/90
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= SOLAR
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 3

APPENDIX 3

GEOCHEMICAL REPORT

ON

TRUMPETER 1 WELL

GIPPSLAND BASIN

BY

B.J.BURNS

MARCH 1990

LIST OF TABLES AND FIGURES

INTRODUCTION

Trumpeter 1 was drilled just east of the Halibut field and penetrated Latrobe Group sands and carbonaceous shales and siltstones of Paleocene and Upper Cretaceous age. Based on data from the nearby Halibut field the maturity of this section was expected to be relatively low. Potential source rock intervals were identified from their electric log characteristics and thirteen SWCs from the Upper Cretaceous section, and one from the Paleocene, below a depth of 2700m were selected for routine TOC and Rockeval measurements.

Due to the poor preservation of the kerogen, most of the available SWC material was used for the preparation of suitable palynological slides. In some cases no material was available for kerogen and fluorescence analysis which was carried out by Dr. M.J. Hannah of Esso on nine of the fourteen samples.

RESULTS

The TOC and Rockeval results are presented in Tables 1 and 2 and summarised in Figure 1. All of the Upper Cretaceous samples are from the Upper T. longus zone and are medium- to dark-brown or grey-brown carbonaceous siltstones. The Total Organic Carbon (TOC) content is uniformly "good" to "excellent" with all samples except 2711m and 3140m having TOC's above 2.0% and ranging up to 5.47%

The corresponding Rockeval results (Table 2) are very dissapointing with only three samples having a "good" source richness rating (based on S2 yields in excess of 6mg/g). The richest samples are from the Upper T. longus Zone at 3018, 3291 and 3407.2m. However only the sample from 3407.2m would be the interpreted as oil generative (at peak maturity) with a Hydrogen Index of over 200 (Table 2, Fig 2), while the remaining samples would be expected to yield mainly gas.

The low Tmax values for all samples (<434) indicate that the majority of the section penetrated in the well is immature although the Thermal Alteration Index (TAI) and Kerogen Fluorescence data suggest that the section below approx. 3100m is early mature (see below).

Kerogen organic matter descriptions and fluorescence characteristics are set out in Tables 3 & 4 and Figures 3 & 4. The kerogen types are relatively consistant with only minor variations in some components. The "oil-prone" material (as measured by the Amorphous, Spore/Pollen and Biodegraded Terrestrial categories) is likewise consistant at 35 - 55% which indicates a 'gas plus liquids' source. Only one sample at 3291m has 60% oil-prone material. Below 3140m the predominant fluorescence colour has increased from bright yellow to gold indicating the early mature stage of the samples. The sample at 3291m is unusual in its fluorescence behaviour in that it contains predominantly 'bright yellow' (ie. immature) cellular material along with some that is 'bright orange' (ie. mature). Other data, such as TAI and Tmax, indicate that this sample is still early mature.

DEPOSITIONAL ENVIRONMENT

Environments of deposition could not be reliably determined for the first three samples but all the remainder represent deposition in a Lower Coastal Plain environment as determined by A.D.Partridge 1990 (see Table 2). On the basis of TOC data this Lower Coastal Plain environment is a rich hydrocarbon source but the Rockeval Hydrogen Index and kerogen data suggest that the main product would be gas with some oil.

SUMMARY

1. The Lower Coastal Plain facies of the Upper T. longus Zone contains high TOC source rocks at the early mature stage but the expected product at maturity would be mainly gas with some oil.

REFERENCES

PARTRIDGE, A.D., Palynological analysis of Trumpeter 1, Gippsland Basin. Esso Australia Ltd. Palaeo. Rept. 1990/9 1-13.

(BJB135)

TABLE 1 TOTAL ORGANIC CARBON

WELL: TRUMPETER 1

SAMPLE No	DEPTH (m)	TYPE	AGE	ZONE	TOC % %	CO3 % %	DESCRIPTION
78271 U	2711.0	CRSW	Paleocene	L. balmei	1.26	2.76	SLTST PL GY-M GY
78271 E	3001.0	CRSW	U. Cretaceous	U T. longus	2.38	7.52	SLTST DK BRN,V CARB FLKS
78271 B	3018.0	CRSW	U. Cretaceous	U T. longus	5.39	5.60	SLTST/CLYST DK BRN
78272 X	3059.2	CRSW	U. Cretaceous	U T. longus	3.54	5.63	SLTST DK-M BRN
78272 W	3076.5	CRSW	U. Cretaceous	U T. longus	2.86	11.70	SLTST DK-M BRN
78272 T	3140.0	CRSW	U. Cretaceous	U T. longus	1.14	5.12	SLTST DK-M BRN
78272 S	3166.5	CRSW	U. Cretaceous	U T. longus	2.01	3.66	SLTST M-DK BRN
78272 Q	3191.0	CRSW	U. Cretaceous	U T. longus	2.73	6.82	SLTST M-DK BRN
78270 O	3244.0	CRSW	U. Cretaceous	U T. longus	1.99	8.21	SLTST M GY-DK BRN
78270 J	3291.0	CRSW	U. Cretaceous	U T. longus	4.41	2.12	SLTST V DK BRN-BLK
78272 O	3344.0	CRSW	U. Cretaceous	U T. longus	3.33	5.47	SLTST M-DK BRN
78272 M	3385.0	CRSW	U. Cretaceous	U T. longus	3.98	5.89	SLTST M-DK BRN
78270 E	3407.2	CRSW	U. Cretaceous	U T. longus	5.47	3.49	SLTST M-DK BRN
78272 L	3432.5	CRSW	U. Cretaceous	U T. longus	2.56	7.24	SLTST M-DK BRN

TABLE 2 ROCKEVAL REPORT

WELL: TRUMPETER 1

SAMPLE NO.	DEPTH (m)	TYPE	TOC %	Tmax	S1 mg/g	S2 mg/g	S3 mg/g	HI	OI	HI/OI	DEPOSITIONAL ENVIRONMENT
78271 U	2711.0	CRSW	1.26	422	0.22	2.00	0.24	159	19	8	
78271 E	3001.0	CRSW	2.38	423	0.13	1.29	0.25	54	10	5	
78271 B	3018.0	CRSW	5.39	425	0.97	9.74	0.45	181	8	21	
78272 X	3059.2	CRSW	3.54	426	0.28	2.26	0.26	64	7	9	L. Coastal Plain
78272 W	3076.5	CRSW	2.86	429	0.24	2.31	0.38	81	13	6	L. Coastal Plain
78272 T	3140.0	CRSW	1.14	428	0.12	0.80	0.02	70	2	42	L. Coastal Plain
78272 S	3166.5	CRSW	2.01	431	0.20	1.46	0.29	73	14	5	L. Coastal Plain
78272 Q	3191.0	CRSW	2.73	432	0.35	3.26	0.07	119	3	44	L. Coastal Plain
78270 O	3244.0	CRSW	1.99	431	0.26	2.19	0.31	110	16	7	L. Coastal Plain
78270 J	3291.0	CRSW	4.41	422	1.73	8.14	0.33	185	8	24	L. Coastal Plain
78272 O	3344.0	CRSW	3.33	429	0.24	1.25	0.11	37	3	11	L. Coastal Plain
78272 M	3385.0	CRSW	3.98	427	0.35	3.19	0.23	80	6	14	L. Coastal Plain
78270 E	3407.2	CRSW	5.47	434	1.12	12.54	0.27	229	5	46	L. Coastal Plain
78272 L	3432.5	CRSW	2.56	429	0.38	2.06	0.13	80	5	16	L. Coastal Plain

TABLE 3 KEROGEN P.O.M.T.

WELL: TRUMPETER 1

SAMPLE No.	DEPTH (m)	1.1	1.2	2.1	2.2	3.0	4.0	5.1	5.2	5.3	6.1	6.2	7.0	TAI	% OIL PRONE	% FLUOR
78271 U	2711.0	30				20	5		15	15	5		10		55	85
78272 W	3076.5	20				25	5		25	10	5		10	2.2	50	60
78272 T	3140.0	20				15	5		20	30	5		5	2.2	40	30
78272 S	3166.5	20				15	5		30	15	5		10	2.2	40	30
78272 Q	3191.0	10				15	10		35	15	5		10	2.3	35	60
78270 O	3244.0	15				20	10		25	25			5	2.2	45	60
78270 J	3291.0	35				20	5		25	10			5	2.3	60	40
78272 M	3385.0	15				30	5		20	25			5	2.3	50	20
78270 E	3407.2	15				35	5		25	15			5	2.3	55	30

LEGEND

1 = AMORPHOUS 1.1 – UNDIFFERENTIATED 1.2 – GREY

2 = STRUCTURED AQUEOUS 2.1 – ALGAE 2.2 – DINOFLAGELLATES/ACRITARCHS

3 = BIODEGRADED TERRESTRIAL

4 = SPORES/POLLEN

5 = STRUCTURED TERRESTRIAL 5.1 – LAMINAR 5.2 – CELLULAR 5.3 – SEMI–OPAQUE

6 = INERT 6.1 – OPAQUE 6.2 – META–OPAQUE

7 = INDETERMINATE FINES

TAI = THERMAL ALTERATION INDEX

OIL PRONE = SUM OF 1.1 THRU 4.0

FLUOR = PERCENT FLUORECSCENT MATERIAL

TABLE 4 KEROGEN FLUORESCENCE

WELL: TRUMPETER 1

SAMPLE NO	DEPTH (M)	TYPE	COLOUR	%	DESCRIPTOR	COMMENTS
78271 U	2711.0	CRSW	BRIGHT YELLOW	25	CELLULAR	IMMATURE. AMORPHOUS MATERIAL
			GOLD	60	ALL TYPES	FLUORESCES DULLY. SEMI-OPAQUE
			TOTAL	85		MATERIAL CONSISTS OF CLUMPS OF
						KEROGEN WHICH FLUORESCES BRIGHTLY.
78272 W	3076.5	CRSW	BRIGHT YELLOW	20	CELLULAR	IMMATURE.
			GOLD	40	CELLULAR-BIODEGRADED TERRESTRIAL	
			TOTAL	60		
78272 T	3140.0	CRSW	GOLD	30	CELLULAR	EARLY MATURE.
			TOTAL	30		
78272 S	3166.5	CRSW	BRIGHT YELLOW	5	CELLULAR. ALGAL	EARLY MATURE.
			GOLD	25	CELLULAR	
			TOTAL	30		
78272Q	3191.0	CRSW	GOLD	60	CELLULAR, SPORE/POLLEN, SEMI-OPAQUE	IMMATURE. SEMI-OPAQUE MATERIAL
			TOTAL	60		CONSISTS OF CLUMPS OF KEROGEN
						WHICH FLUORESCE.
78270 O	3244.0	CRSW	GOLD	60	CELLULAR, SPORE/POLLEN, SEMI-OPAQUE	EARLY MATURE.
			TOTAL	60		
78270 J	3291.0	CRSW	BRIGHT YELLOW	25	CELLULAR FRAGS	?MATURE. THE LARGE PROPORTION OF
			GOLD	10	CELLULAR	BRIGHT YELLOW FLUORESCENCE MAKES
			MOD. BRI ORANG	10	CELLULAR, GROUNDMASS	THIS DETERMINATION UNCERTAIN.
			TOTAL	45		
78272 M	3385.0	CRSW	GOLD	20	CELLULAR	EARLY MATURE. ONLY LIGHT COLOURED
			TOTAL	20		CELLULAR MATERIAL FLUORECSES.
78270 E	3407.2	CRSW	GOLD	30	CELLULAR	EARLY MATURE.
			TOTAL	30		

Figure 1

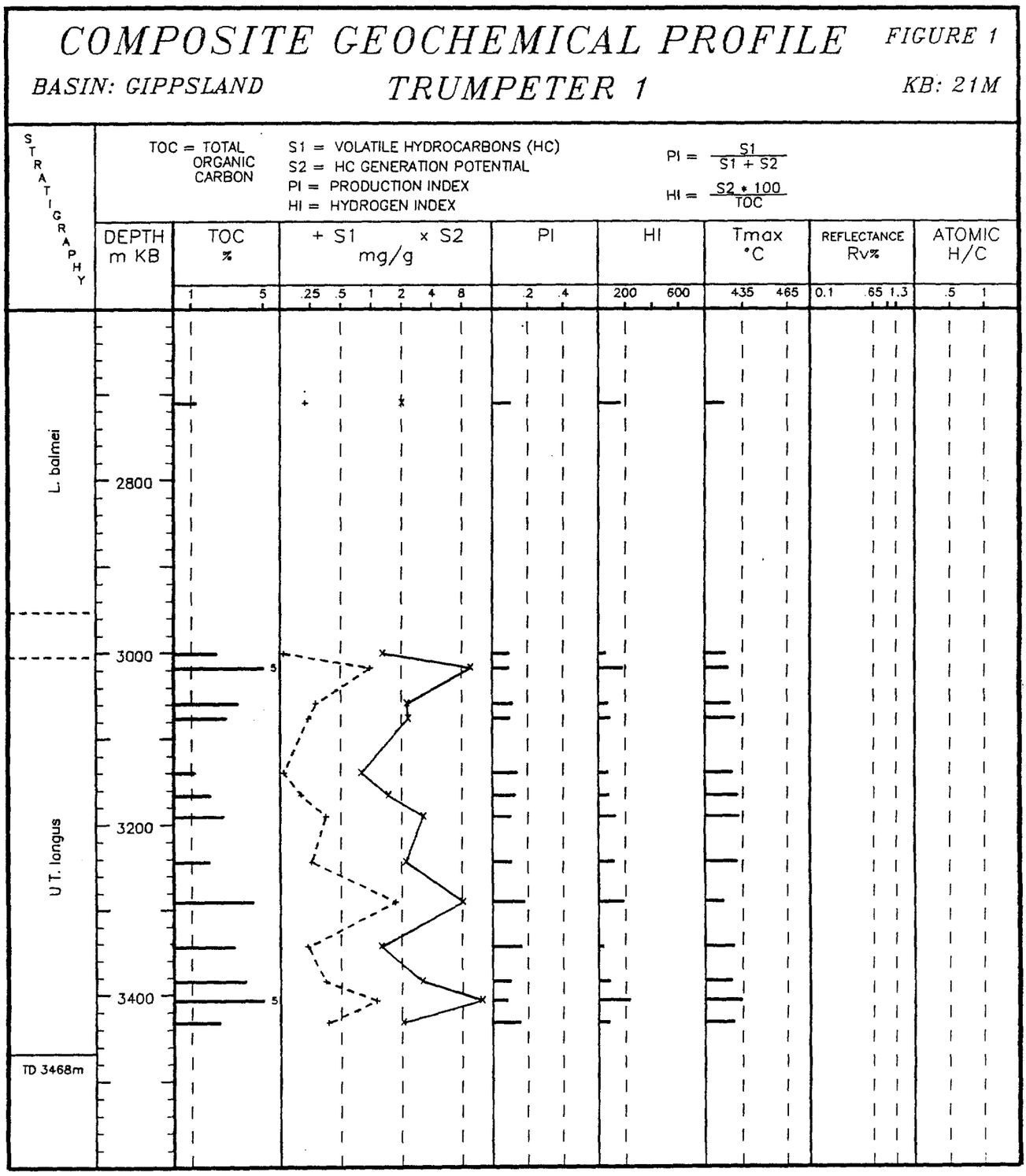

COMPOSITE GEOCHEMICAL PROFILE
FIGURE 1
BASIN: GIPPSLAND
TRUMPETER 1
KB: 21M
TOC = TOTAL ORGANIC CARBON
S1 = VOLATILE HYDROCARBONS (HC)
S2 = HC GENERATION POTENTIAL
PI = PRODUCTION INDEX
HI = HYDROGEN INDEX
PI = S1 / (S1 + S2)
HI = S2 * 100 / TOC
STRATIGRAPHY
DEPTH m KB
TOC %
+ S1 x S2 mg/g
PI
HI
Tmax °C
REFLECTANCE Rv%
ATOMIC H/C
1 5
.25 .5 1 2 4 8
.2 .4
200 600
435 465
0.1 .65 1.3
.5 1
L. balmei
U T. longus
2800
3000
3200
3400
TD 3468m

Figure 2

ROCKEVAL MATURATION PLOT

TRUMPETER 1

GIPPSLAND BASIN

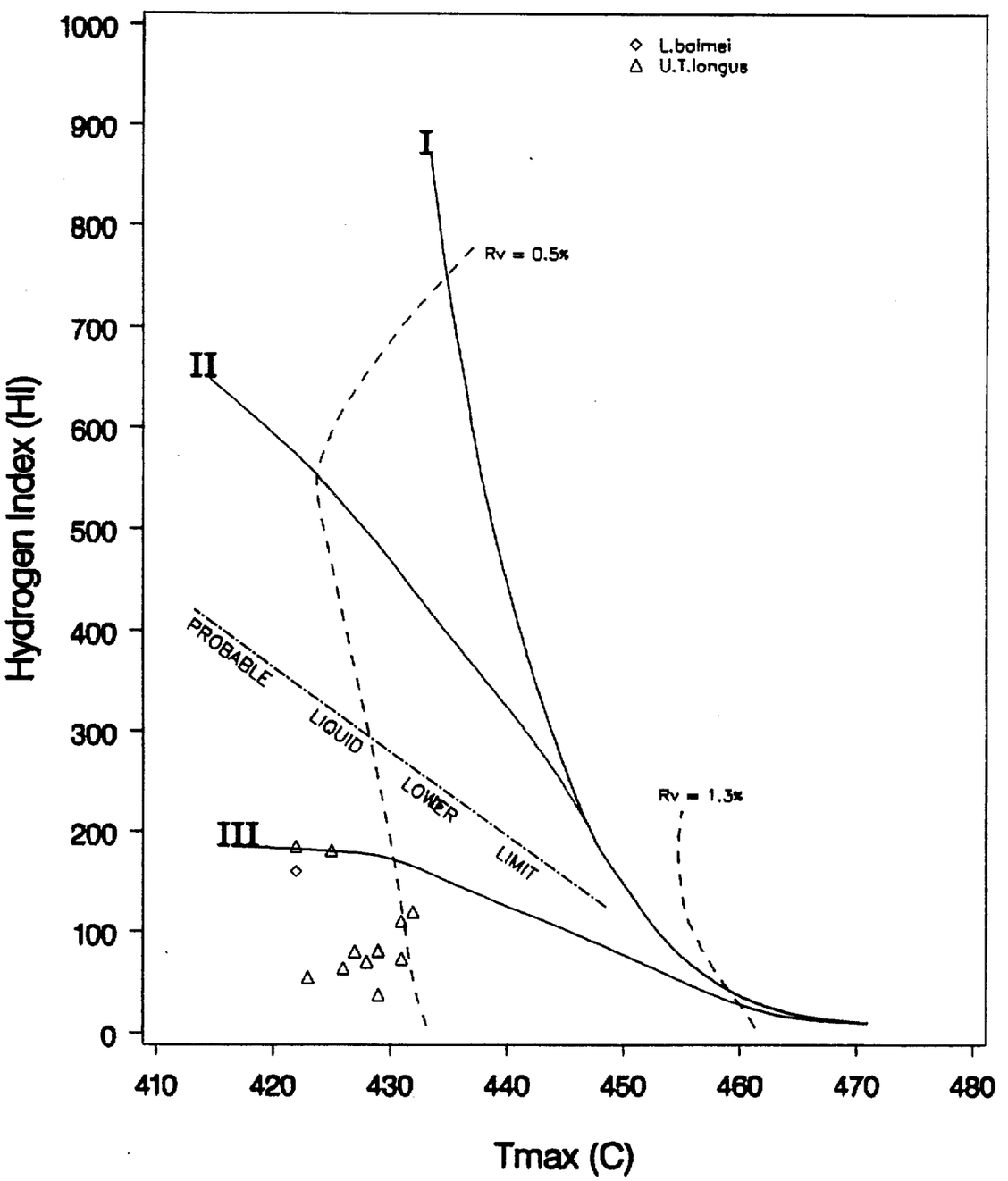


Figure 3

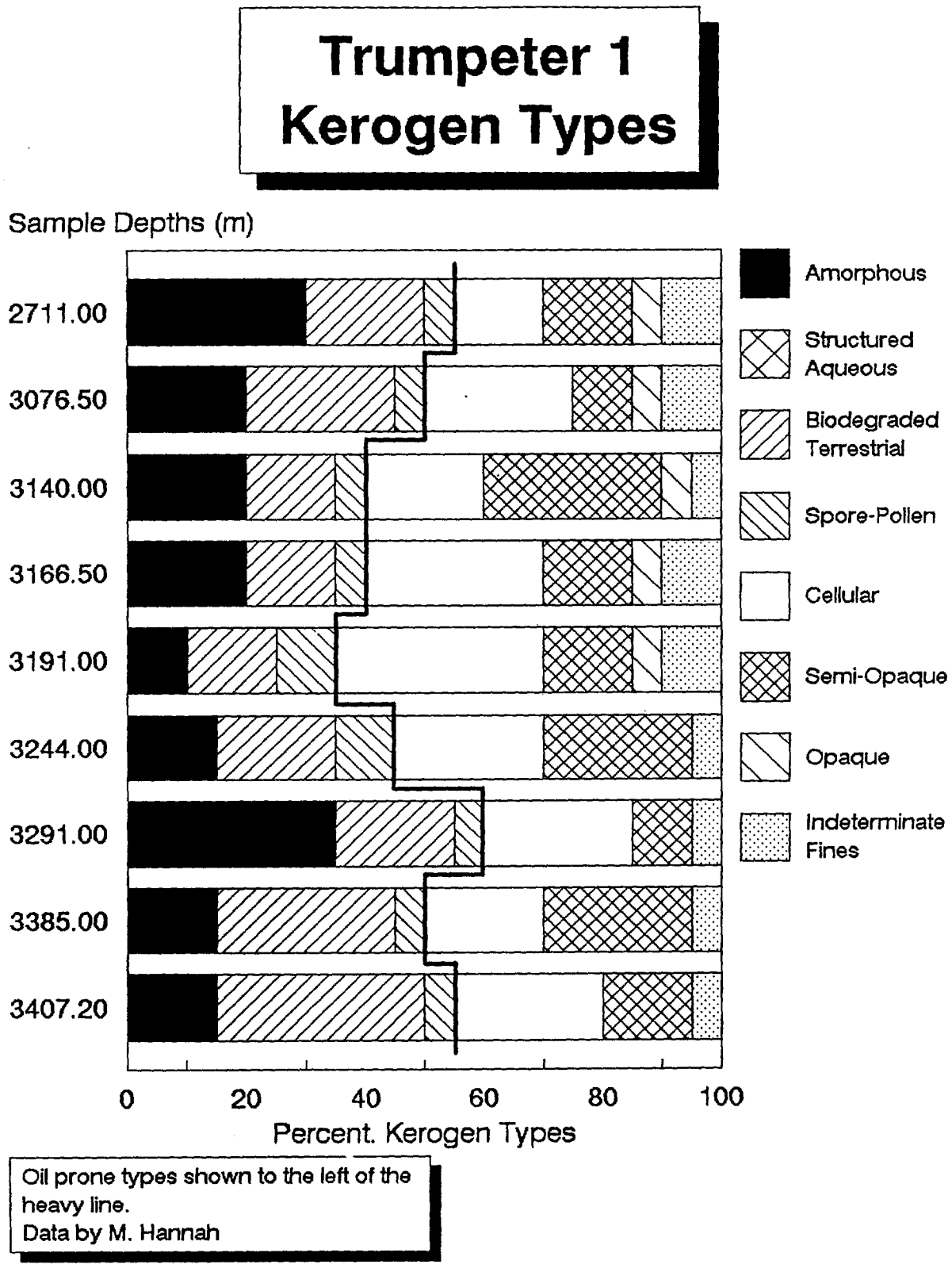
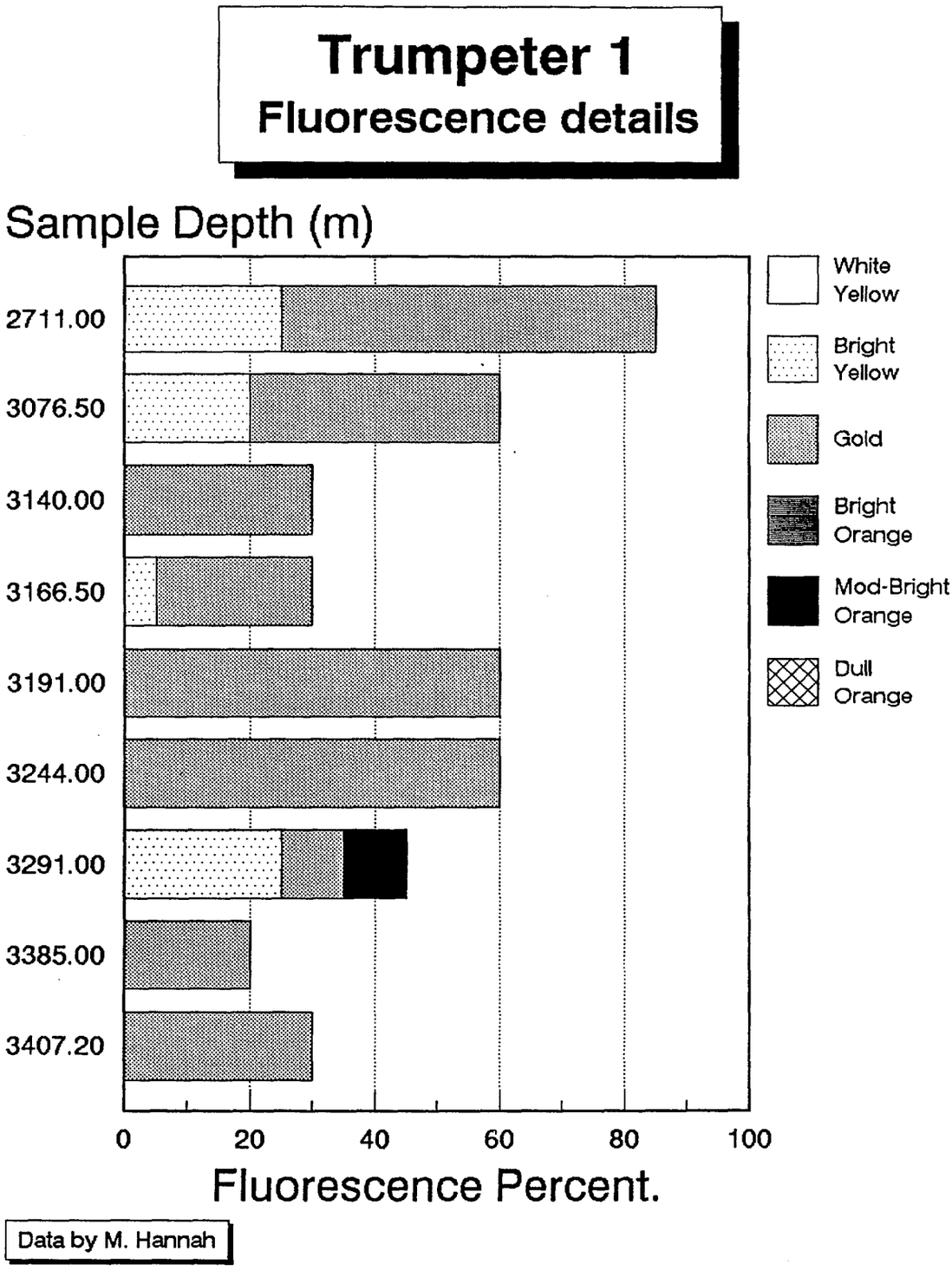

Trumpeter 1
Kerogen Types
Sample Depths (m)
2711.00
3076.50
3140.00
3166.50
3191.00
3244.00
3291.00
3385.00
3407.20
0
20
40
60
80
100
Percent. Kerogen Types
Amorphous
Structured Aqueous
Biodegraded Terrestrial
Spore-Pollen
Cellular
Semi-Opaque
Opaque
Indeterminate Fines
Oil prone types shown to the left of the heavy line.
Data by M. Hannah

Figure 4


Trumpeter 1
Fluorescence details
Sample Depth (m)
2711.00
3076.50
3140.00
3166.50
3191.00
3244.00
3291.00
3385.00
3407.20
0
20
40
60
80
100
Fluorescence Percent.
White Yellow
Bright Yellow
Gold
Bright Orange
Mod-Bright Orange
Dull Orange
Data by M. Hannah

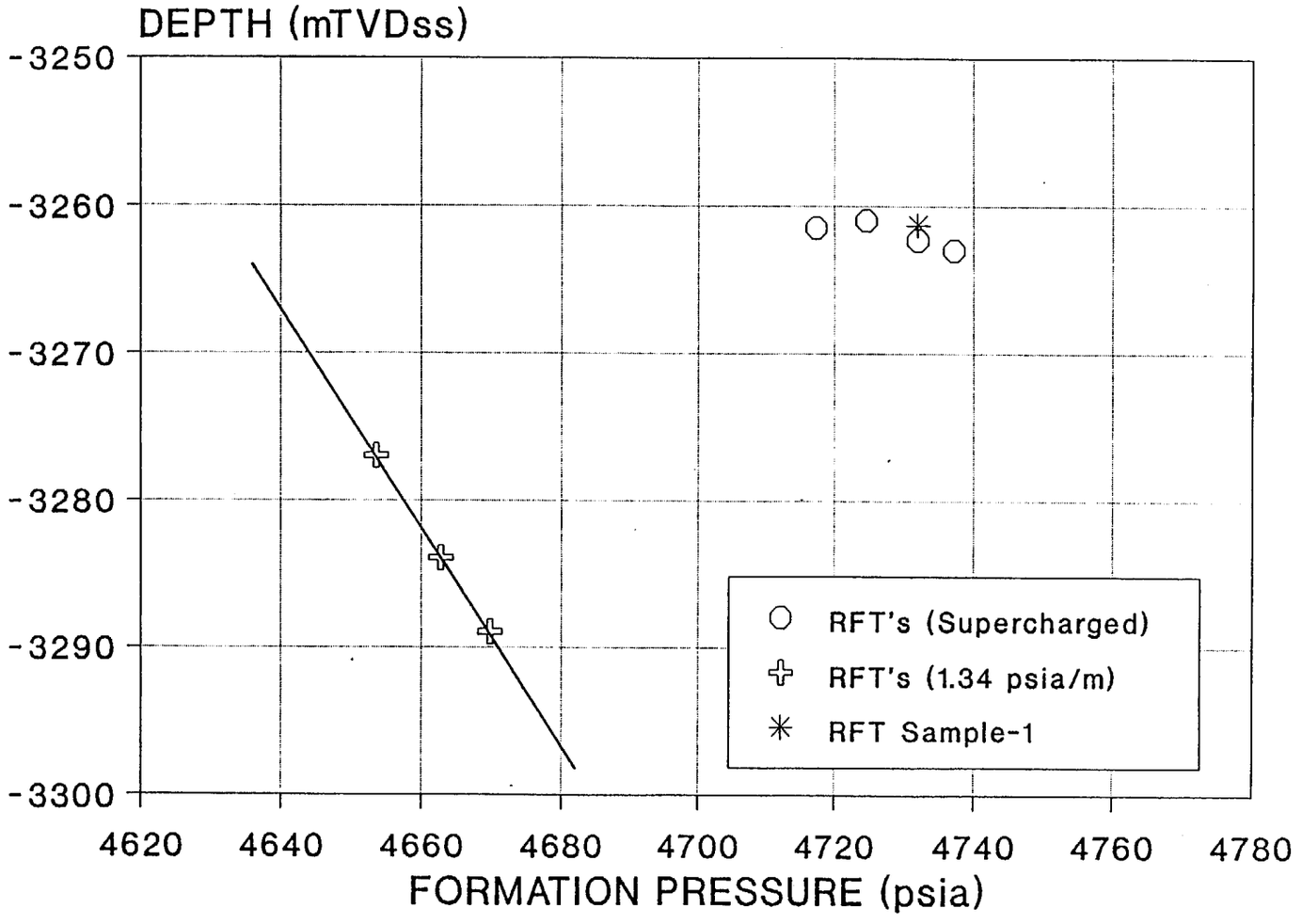
APPENDIX 4

APPENDIX 4

RFT REPORT

TRUMPETER-1

TRUMPETER-1 RFT



DAW 29-1-90

RFT PRESSURE DATA

WELL: TRUMPETER-1

DATE: 6/10/89

GEOLOGIST-ENGINEER: A. CLARE / A. HERNANDINATO

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB = 21	INITIAL HYDROSTATIC HP/RFT GAUGE psia	psig	ppg	TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia	psig	ppg	TEMP °C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia	psig	ppg	COMMENTS (INCLUDE PROBE TYPES)
1-11 PT	3282.2	3261.2	5407.2	5388.1	9.74	15:41	–	–	–	–	–	15:43	5407.3	5388.3	9.74	TIGHT
1-12 PT	3282.5	3261.5	5407.2	5388.2	9.74	16:01	3062	4717.2	4699.0	8.44	–	16:05	5408.2	5388.2	9.74	O.K. – MODERATELY GOOD BUT ANOMALOUS? (POSSIBLE TELEME PROB
1-13 PT	3283.0	3262.0	–	–	–	–	–	–	–	–	–	–	–	–	–	TELEMETRY PROBLEM.
1-14 PT	3282.5	3261.5	5406.5	5388.4	9.73	17:19	6.0	–	–	–	101.2	17:21	5409.5	5387.3	9.73	TIGHT
1-15 PT	3283.0	3262.0	5407.2	5388.4	9.73	–	–	–	–	–	101.3	–	–	–	9.73	TELEMETRY PROBLEM
1-16 PT	3283.0	3262.0	5407.2	5388.8	9.73	17:28	–	–	–	–	101.6	17:30	5410.8	5484.5	9.73	PLUGGED
2-17 SPT	3282.3	3262.3	5405.5	5386.6	9.73	17:35		4731.9	4713.9	8.5	101.8	19:55	5405.8	5386.7	9.73	OK – MOD TIGHT

PT = PRETEST
SPT = SAMPLE

L = LONG NOSE PROBE
M = MARTINEAU PROBE

RFT PRESSURE DATA

WELL: TRUMPETER-1

DATE: 6/10/89

GEOLOGIST-ENGINEER: A. CLARE / A. HERNANDIANTO

RFT NO. RUN-SEAT (RFT TYPE)	DEPTH m MDKB	DEPTH m TVD ss KB=	INITIAL HYDROSTATIC HP/RFT GAUGE psia	psig	PPg	TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia	psig	MD/CP PPg	TEMP °C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia	psig	PPg	COMMENTS (INCLUDE PROBE TYPES)
1-1 PT	3285	3264	5412·1	5394·9		13:47	–	–	–		–	–	–	–		PROBLEM SETTING COULDN'T CONTINUE.
1-2 PT	3285	3264	5412·2	5394·3	9.74	13:58	7.57	–	–		–	14:00	5414·6	5394·3		TIGHT
1-3 PT	3282	3261	5407·1	5388·2	9.74	14:06	0	4724·6	4706·6	1.18 / 8.5		14:14	5407·2	5388·2	9.74	MODERATELY GOOD - ALTHOUGH TIGHT
1-4 PT	3284·5	3263·5	5411·0	5392·5	9.74	14:21	0	–	–	–	100 98	14:23	5413·7	5392·0	9.74	TIGHT
1-5 PT	3298·0	3277·0	5433·3	5414·3	9.74	14:30	4652·7	4653·5	4636·4	8·34	100·8	14:36	5434·2	5414·2	9.74	GOOD
1-6 PT	3305·0	3284·0	5444·3	5425·3	9.73	14:44	4593·5	4662·7	4645·8	8·33	101·6	14:48	5444·5	5425·1	9.73	GOOD
1-7 PT	3310·0	3289·0	5452·1	5433·8	9.73	14:56	4635·2	4669·6	4652·9	8·34	101·8	15:02	5452·3	5433·5	9.73	GOOD
1-8 PT	3284	3263·0	5409·6	5391·3	9.74	15:10	7·0	4737·1	4721·1	85	102·0	15:20	–	–	–	TIGHT & HADN'T FINISHED BUILDING TO HYDRO LINED TEL PR
1-9 PT	3284	3263·0	5409·9	5390·9	9.74	15:26	8·4	–	–	–	–	15:32	–	–	–	TELEMETRY FAULT
1-10 PT	3282	3261·0	5407·1	5387·7	9.74	15:35	7·0	–	–	–	–	15:40	5412·5	5387·2	9.74	TIGHT

PT=PRETEST
SPT=SAMPLE

L=LONG NOSE PROB.
M=MARTINEAU PROBE

RFT SAMPLE TEST REPORT

Well : TRUMPETER-1

OBSERVER : A.CLARE DATE : 6/10/89 RUN NO. : 1

	CHAMBER 1 (22.7 lit.)	CHAMBER 2 (10.4 lit.)
SEAT NO.	2-17	2-17
DEPTH	3282.3 m KB	3282.3 m
A. RECORDING TIMES		
Tool Set	17:35 hrs	17:35 hrs
Chamber Open	17:43 hrs	19:42 hrs
~~Chamber Full~~	CLOSE CHAMBER 19:10 hrs	CLOSE CHAMBER 19:44 hrs
Fill Time	(INCOMPLETE) 87 mins	(INCOMPLETE) 4 mins
Finish Build Up	(") 19:40 hrs	(") 19:54 hrs
Build Up Time	(") 30 mins	(") 10 mins
Tool Retract	19:55 hrs	19:55 hrs
Total Time	140 mins	140 mins
B. SAMPLE PRESSURE		
Initial Hydrostatic	5405.5 psia	5405.5 psia
Initial Form'n Press.	4731.9 psia	4731.9 psia
Initial Flowing Press.	45.2 psia	46.03 psia
Final Flowing Press.	259.68 psia	61.89 psia
Final Formation Press.	(INCOMPLETE) 4697.88 psia	(INCOMPLETE) 4624.8 psia
Final Hydrostatic	5405.8 psia	5405.8 psia
C. TEMPERATURE		
Max. Tool Depth	3310 m	3310 m
Max. Rec. Temp	101.8 deg C	101.8 deg C
Length of Circ.	2 hrs 5 mins	2 hrs 6 mins
Time/Date Circ. Stopped	1930 hrs 5/10/89	1930 hrs 5/10/89
Time since Circ.	24 hrs 25 mins	24 hrs 25 mins
D. SAMPLE RECOVERY		
Surface Pressure	0 psia	1.5 psia
Amt Gas	.07 cu ft	.03 cu ft
Amt Oil	— lit	— lit
Amt Water (Total)	10 lit	0.5 lit
Amt Others	— lit	— lit
E. SAMPLE PROPERTIES		
Gas Composition		
C1	— ppm	83% .0551 ppm
C2	— ppm	8% .00504 ppm
C3	— ppm	6% .00375 ppm
C4	— ppm	3% .00207 ppm
C5	— ppm	TR TR ppm
C6+	— ppm	— ppm
CO2/H2S	—/— %/ppm	—/— %/ppm
Oil Properties	— deg API @ — deg C	— deg API @ — deg C
Colour	—	—
Fluorescence	—	—
GOR	—	—
Pour Point	—	—
Water Properties		
Resistivity	0.171 ohm-m @ 22 deg C	0.161 ohm-m @ 16 deg C
NaCl Equivalent	44500 ppm	44500 ppm
Cl-titrated	27000 ppm	27000 ppm
Tritium	— DPM	— DPM
pH	7.0	7.0
Est. Water Type	FILTRATE / FMT WATER MIX	FILTRATE / FMT WATER MIX.
F. MUD FILTRATE PROPERTIES		
Resistivity	0.143 ohm-m @ 18.3 deg C	0.143 ohm-m @ 18.3 deg C
NaCl Equivalent	49 500 ppm	49 500 ppm
Cl-titrated	30 000 ppm	30 000 ppm
pH	10.0	10.0
Tritium (in Mud)	— DPM	— DPM
G. GENERAL CALIBRATION		
Mud Weight	9.5 ppg	9.5 ppg
Calc. Hydrostatic	5310.3 psi	5310.3 psi
Serial No. (Preserved)	—	—
Choke Size/Probe Type	.02 / MARTINEAU	.02 / MARTINEAU
REMARKS	TIGHT	TIGHT

ENCLOSURES

PE902134

This is an enclosure indicator page.
The enclosure PE902134 is enclosed within the container PE902133 at this location in this document.

The enclosure PE902134 has the following characteristics:

ITEM_BARCODE	PE902134
CONTAINER_BARCODE	PE902133
NAME	Structural Cross Section Mackarel 1 - Teraglin 1
BASIN	GIPPSLAND
PERMIT	
TYPE	WELL
SUBTYPE	cross section
DESCRIPTION	Structural Cross Section Mackarel 1 - Teraglin 1
REMARKS	
DATE_CREATED	1/06/90
DATE_RECEIVED	4/07/90
W_NO	W1008
WELL_NAME	Trumpeter-1
CONTRACTOR	ESSO
CLIENT_OP_CO	ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902135

This is an enclosure indicator page.
The enclosure PE902135 is enclosed within the container PE902133 at this location in this document.

The enclosure PE902135 has the following characteristics:

ITEM_BARCODE	= PE902135
CONTAINER_BARCODE	= PE902133
NAME	= Structure map - top of Latrobe group
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure map - top of Latrobe group
REMARKS	=
DATE_CREATED	= 1/03/90
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902136

This is an enclosure indicator page.
The enclosure PE902136 is enclosed within the container PE902133 at this location in this document.

The enclosure PE902136 has the following characteristics:

ITEM_BARCODE	= PE902136
CONTAINER_BARCODE	= PE902133
NAME	= Structure map - Top T-1 sand
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure map - Top T-1 sand
REMARKS	=
DATE_CREATED	= 1/03/90
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902137

This is an enclosure indicator page.
The enclosure PE902137 is enclosed within the container PE902133 at this location in this document.

The enclosure PE902137 has the following characteristics:

ITEM_BARCODE	= PE902137
CONTAINER_BARCODE	= PE902133
NAME	= Structure map 71 M.Y Sequence Boundary
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure map 71 M.Y Sequence Boundary
REMARKS	=
DATE_CREATED	= 1/03/90
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE600986

This is an enclosure indicator page.
The enclosure PE600986 is enclosed within the container PE902133 at this location in this document.

The enclosure PE600986 has the following characteristics:

ITEM_BARCODE	= PE600986
CONTAINER_BARCODE	= PE902133
NAME	= Formation Evaluation Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Formation Evaluation Log
REMARKS	=
DATE_CREATED	= 8/09/89
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= EXLOG
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE600985

This is an enclosure indicator page.
The enclosure PE600985 is enclosed within the container PE902133 at this location in this document.

The enclosure PE600985 has the following characteristics:

ITEM_BARCODE	= PE600985
CONTAINER_BARCODE	= PE902133
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Well Completion Log
REMARKS	=
DATE_CREATED	= 8/09/89
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902138

This is an enclosure indicator page.
The enclosure PE902138 is enclosed within the container PE902133 at this location in this document.

The enclosure PE902138 has the following characteristics:

ITEM_BARCODE	= PE902138
CONTAINER_BARCODE	= PE902133
NAME	= Synthetic Seismogram
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= SYNTH_SEISMOGRAM
DESCRIPTION	= Synthetic Seismogram (enclosure from WCR) for Trumpeter-1
REMARKS	=
DATE_CREATED	= 14/06/90
DATE_RECEIVED	= 4/07/90
W_NO	= W1008
WELL_NAME	= Trumpeter-1
CONTRACTOR	= SIERRA GEOPHYSICS
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)