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OR-349B

HEMATITE PETROLEUM PTY. LTD.

PIPIPA - 1

WELL COMPLETION REPORT

T/5P BASS BASIN

TASMANIA

CONFIDENTIAL DATA
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SEPTEMBER 1982

OR_349B

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INTRODUCTION

The Pipipa-1 exploration well was drilled during May, 1982 by Hematite Petroleum Pty. Ltd., in permit T/5P, in the Bass Basin, Tasmania (Fig 1). The well is located 66 km north of Wynyard in 73 m of water.

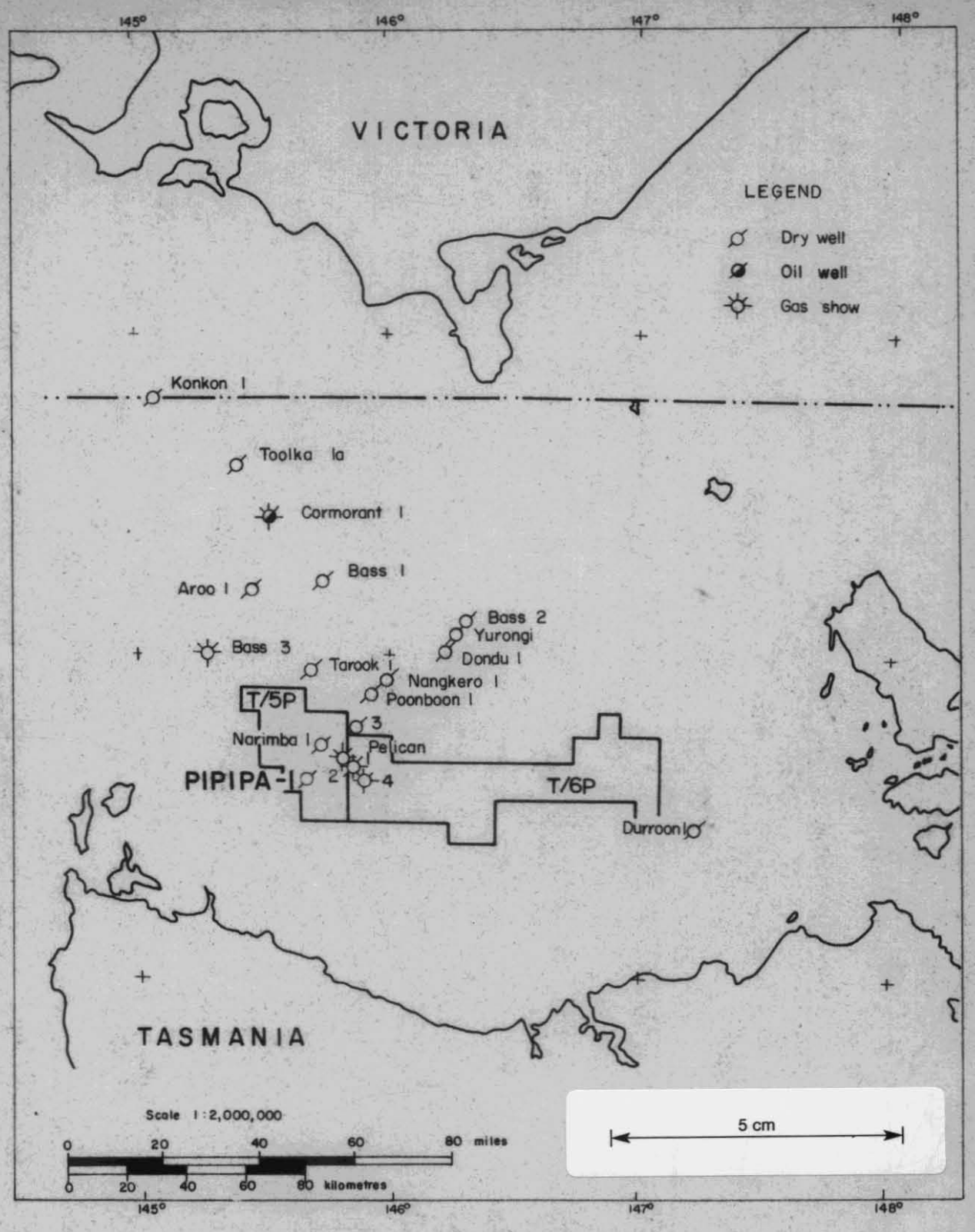
The well location is approximately 15 km southwest and updip of the Pelican structural complex which contains gas. The well was sited primarily to test the upper levels of the Eastern View Coal Measures in a fault controlled anticline. A secondary intra Eastern View Coal Measures target zone was also investigated. This was below the 'O' shale (Hematite, 1979) level and within the Upper M. diversus palynological zone.

The Pipipa-1 well was drilled to a total depth of 2115 m in the Eastern View Coal Measures. No significant hydrocarbon indications were encountered and the well was plugged and abandoned.

The Pipipa-1 well completion report has been compiled by R.G.Tolliday, M.A.Smith and N.Newell, of the Exploration Department, BHP Oil and Gas Division.

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OIL AND GAS DIVISION

(HEMATITE PETROLEUM PROPRIETARY LIMITED)

BASS BASIN

T/5P

PIPIPA-1 WELL LOCATION MAP

FIGURE 1

Author M. Smith

Date June 1982

Drawn by J. Csabai

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WELL DATA SHEET

WELL NAME:	Pipipa-1	
OPERATOR:	Hematite Petroleum Pty. Ltd.	
PERMIT HOLDER:	Hematite Petroleum Pty. Ltd.	
CLASSIFICATION:	Wildcat	
LOCATION:		
Basin:	Bass, Offshore Tasmania, Australia	
Permit:	T/5P	
Shotpoint:	HB80A-434, SP400	
Co-ordinates:	AMG Zone 55	
	x = 389304 m E	Latitude: 40° 23' 14" S
	y = 5528428 m N	Longitude: 145° 41' 45" E
NEAREST WELLS:	Narimba-1	13.2 Km NNE
	Pelican-1	13.8 Km ENE
	Pelican-2	13.7 Km NE
	Pelican-4	15.3 Km E
ELEVATIONS:	Kelly Bushing:	21 m above mean sea level
	Water depth:	73 m
TOTAL DEPTH:	2115 m.	
SPUDDED:	4th May, 1982.	
REACHED TOTAL DEPTH:	17th May, 1982.	
WELL ABANDONED:	23rd May, 1982.	
STATUS:	Plugged and abandoned.	
CONTRACTOR:	South Seas Drilling Company.	
RIG:	"Southern Cross" semi-submersible.	

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REGIONAL GEOLOGY

The basin contains sediments ranging in age from Early Cretaceous to Late Tertiary (Brown, 1976). The Early Cretaceous Otway Group and the Late Cretaceous to Late Eocene Eastern View Coal Measures were deposited in a generally non-marine fluvio-deltaic environment (Nicholas et al, 1981). The Late Eocene to Oligocene Demons Bluff Formation was deposited during a marine transgression. Open marine conditions prevailed in Later Tertiary during the deposition of the Torquay Group.

EXPLORATION HISTORY

Previous to Pipipa-1, twenty wells had been drilled in the Bass Basin including two wells in the Torquay Embayment. Hematite Petroleum Pty. Ltd. has been exploring the Bass Basin since 1960. All wells until 1974 had been drilled by Esso Australia under a farm out agreement with Hematite. Since 1974 wells were drilled by Hematite at its sole risk. To date more than 18,000 km of seismic survey has been carried out over the basin.

Hydrocarbons have been recovered from four of the prospects drilled to date. The most significant being the Pelican structure where three of the four wells drilled recovered gas and condensate from thin sands in the Lower Eocene section of the Eastern View Coal Measures. The only oil show in the basin was recorded in Cormorant-1 from a thin sand in the Eocene. In Bass-3 a wireline test produced 29 cu ft of gas and 80 cc of condensate and in Aroo-1 wireline tests produced minor gas (1.9 cu ft) with formation water.

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STRATIGRAPHY

The Pipipa-1 stratigraphic sequence comprises sediments of the Early Cretaceous to Late Tertiary Bass Basin which overly a metamorphic/volcanic basement. (Brown, 1976).

The stratigraphic and lithological column for the well is presented in the interpretative log (Enclosure-1) and detailed lithological descriptions are included in Appendix-1 (Sample Descriptions) and Appendix-2 (Sidewall Core Description and Analyses).

The major stratigraphic units intersected in the well are summarized below and in Table 1. The depths are primarily based on the Dual Laterolog.

TORQUAY GROUP 94.0 m - 1409.9 m.

The upper section of the group from 94 to 995 m, consists predominantly of skeletal limestone interbedded with minor calcareous siltstone and marl. The lower section is dominated by siltstone interbedded with minor shale and rare dolomite.

The limestone is white to grey, predominantly calcarenite, occasionally grading to calcilutite and consists mainly of bryozoan and foraminiferal fragments with occasional echinoid, shell fragments and quartz sand in part. The calcisiltite is grey green, glauconitic and occasionally sandy in part. The marl is grey, very silty in part and friable. The siltstone is dark grey to brown, argillaceous and occasionally carbonaceous. The shale is dark grey, subfissile and silty. The dolomite is light brown, hard and limey.

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STRATIGRAPHIC TABLE

PIPIPA-1

Formation	Depth KB (m)	Depth Subsea (m)	Thickness (m)
Torquay Group	94	73	1315.9
Demons Bluff Formation	1409.9	1388.9	112.4
Eastern View Coal Measures	1522.3	1501.3	592.7
Eastern View Coal Measures 'O' Shale	1908	1887	
Total Depth	2115	2094	

TABLE 1.

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DEMONS BLUFF FORMATION: 1409.9 - 1522.3 m

The formation consists of argillaceous siltstone and shale. The siltstone and shale are dark brown, soft, pyritic, slightly carbonaceous and occasionally calcareous.

EASTERN VIEW COAL MEASURES: 1522.3-2115 m TD

The formation consists of interbedded sandstone, siltstone, shale and coal. The sandstone consists of 2 types:

1. Off white to light brown, very fine to occasional medium grained, silty, well sorted, pyritic, with a variable white argillaceous matrix, becoming dolomitic below 2050 m.
2. White, medium grained to very coarse, unconsolidated and poorly sorted. Type 2 is generally more common towards the top of the formation.

The siltstone is brown to dark grey, carbonaceous, argillaceous and occasionally sandy. The shale is dark grey to brown, fissile, micaceous, carbonaceous and slightly silty. The coal is black, earthy to vitreous, occasionally argillaceous and occurs in beds up to 5 m thick.

STRUCTURE

The Pipipa structure was mapped using data from the HB 80A seismic survey, shot in May 1980 using a grid spacing of 2 km. Time and depth maps were generated for seven horizons, four within the Torquay Group, Top Demons Bluff Formation and two within the Eastern View Coal Measures. All except horizon 22 (Intra Torquay Group) were tied with the nearby Narimba and Pelican wells.

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Pipipa is a fault controlled anticlinal structure approximately 15 km SW of the Pelican structure. A normal fault steeply dipping to the SW extending up from the Cretaceous to the Early Miocene creates a reversal of dip on the upthrown basinward side of the fault. This fault has an average throw of 30 m at the top Eastern View Coal Measures level increasing to 60m below the 'O' shale in the Upper M. diversus zone. At the top of the Eastern View Coal Measures the structure has an areal closure of 15 km^2 and 55 m of relief.
The crest of the structure results from a fault throwing down to the west which is visible only on line HB80A-434. The strike of this fault is perpendicular to the main fault trend. Below the 'O' shale level in the Upper M. diversus zone the area of closure is significantly reduced, though relief is thought to be greater at this level.

RESERVOIR CHARACTERISTICS

The porosities and permiabilities of the Eastern View Coal Measures have been evaluated by Sidewall Core Description and Analyses (Appendix 2) and wireline logging (Appendix 3).

The two Sidewall cores, No.8 from 1949.8 m and No.9 from 1946.2 m were found on analysis to have porosities of 34% and 37.4% respectively. The value obtained for core No.8 is significantly greater than that calculated from the wireline logs, where a value of 19% was derived at 1950 m.

Permiability determinations on cores No.8 and No.9 produced values of 53 md and 630 md respectively.

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HYDROCARBON OCCURENCES

Reference to the hydrocarbons and other fluids encountered in the Pipipa-1 well are contained in the attachments on Sample Descriptions (Appendix 1), Sidewall Core Descriptions and Analyses (Appendix 2), and Wireline Logging (Appendix 3).

No significant hydrocarbon indications were encountered during the drilling of Pipipa-1. At the primary objective at the top of the Eastern View Coal Measures only a small gas peak of 20 units was recorded. Some fluorescence was detected in the sands between 1940 m and 2050 m, within the Eastern View Coal Measures.

The fluorescence occurred immediately below a major coal/shale sequence correlatable with the 'O' shale level of the nearby Pelican wells. The amount of fluorescence in the cuttings ranged from 0-40% over the interval 1940-2050 m and averaged between 5% and 10%, except for sand from 1945-1952 m where values of up to 40% were observed. The fluorescence was milky yellow green with a moderate to fast milky cut. Over the interval, 1945 - 1952 m, hotwire gas readings ranged from 3 to 44 units, with gas peaks associated with coals. The chromatograph recorded the presence of methane to pentane from 1920 m and also hexane from 1985 m to 2050 m.

From the top of the Eastern View Coal Measures to 1940 m no fluorescence was observed in the cuttings. Gas readings ranged from 1 to 36 units. All peaks, with the exception of the top Eastern View gas peak, were associated with coals.

Water saturation values derived from log analyses indicate the sands are generally water saturated with some possible minor residual hydrocarbons. The lowest calculated values occured at two points 1950 m and 1992.5 m with water saturations of 76% and 62% respectively. Porosity ranged between 19% and 30%.

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Oil saturation values obtained from sidewall core anaysis (Appendix 2) differ significantly where correlatable with points determined from wireline log analysis (Appendix 3). On analysis core No.8 (1949.8 m) had an oil saturation of 2% as opposed to a log calculated value (1950 m) of 24%. Core No.9 (1946.2 m) had an oil saturation of 22% (Appendix 2). Due to the nature of sidewall coring technique, porosity, permiability and oil saturation data should be viewed with some scepticism.

CONCLUSIONS

The Pipipa-1 well penetrated the Eastern View Coal Measures 42 m higher than anticipated and found no oil or gas producible reservoirs.

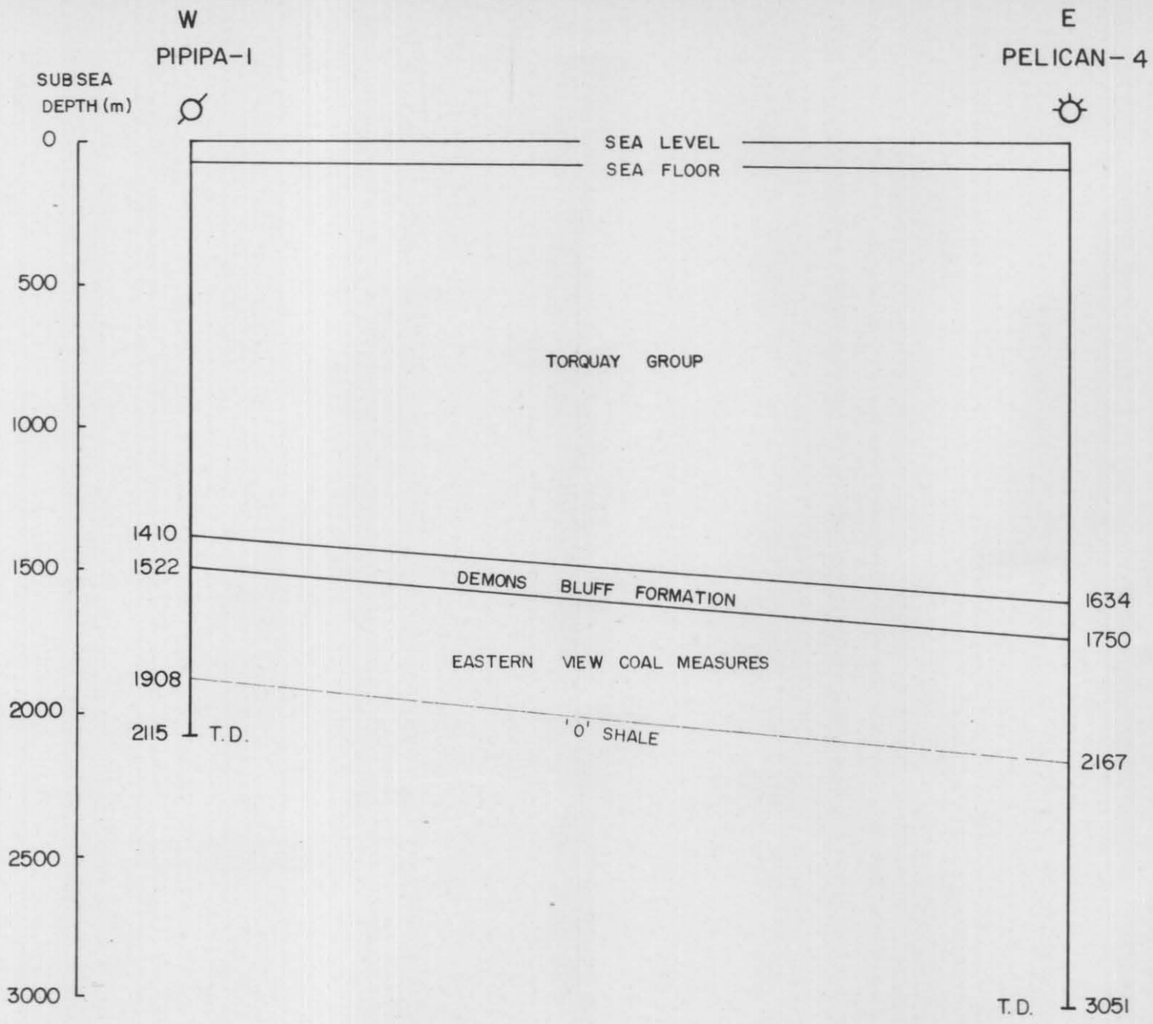
Reservoir quality was good, as determined by sample description (Appendix 1), sidewall core description and analysis (Appendix 2) and wireline logging (Appendix 3). Within the reservoir, porosities in the range 19% to 31% and permiabilities between 53 md and 630 md were measured.

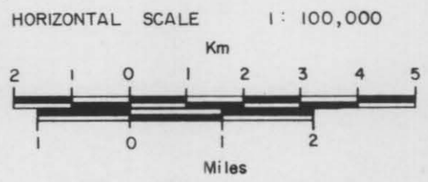
Oil saturations from sidewall core analysis in the most prospective zones were measured, with a maximum value at 1946.8 m of 22%. Considering the destructive effects the sidewall coring technique can have on cores, data from the analysis of these has been viewed with some caution.

The high water saturations of the sands throughout the potential reservoir zones resulted in the decision to plug and abandon the well as a dry hole.

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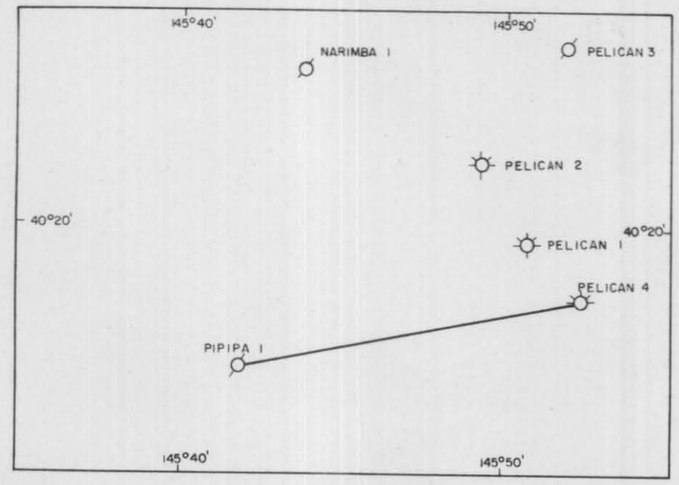




FORMATION TOPS ARE RELATIVE TO A K.B. DATUM

LOCATION MAP

SCALE 1 250,000



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BASS BASIN

T/5P

PIPIPA — 1
WELL CORRELATION

FIGURE 2

Author : M. Smith

Date : June 1982

5 cm

Drawn by : J. Csabai

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APPENDIX 1

Sample Descriptions

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PIPIPA #1.

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DEPTH (m)	M/HR ROP	%	DESCRIPTION	FLUOR/GAS
230	300	100 %	Limestone, skeletal, wh- lt gy, pred coral frags, ab forams shell frags. (cement cont)	
240	320	100%	A/A	
250	90	100	A/A	
260	70	100	A/A	
270	80	100	A/A minor cement contamination	
280	65	100	A/A	
290	60	100	A/A	
300	75	100	A/A	
310	70	30	Limestone, skeletal, gen A/A bcm grey-m grey	
		70	Sandstone, lt gy - orng brn, fri - sft, m- vc slr rnd, pred qtz, com fos frags, calc cmt.	
320	50	60	Limestone, A/A.	
		40	Sandstone, A/A bcm f-m gr.	
330	55	90	Limestone, A/A	
		10	Sandstone, A/A.	
340	120	100	Limestone, A/A	
350	120	100	Limestone, A/A	
360	70	100	A/A	
370	50	100	A/A	

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(m) DEPTH	ROP m/HR	%		FLUOR/GAS.
380	40	100	A/A	Trace qtz sand. A/A.
390	40	100	A/A	
400	185	100	A/A	
410	110	100	A/A	
420	100	100	A/A	
430	80	100	A/A	
440	55	100	A/A	
450	100	100	A/A	
460	105	100	Limestone, A/A.	
470	100	100	A/A	
480	95	100	A/A	
490	155	100	A/A	
500	110	100	A/A	
510	90	100	A/A	
520	48	100	A/A	
530	100	100	A/A	
540	160	100	A/A	
550	165	100	A/A	

FLUR/CAS

DEPTH (m)	ROP	%	
560	145	60	Limestone, gen A/A, bcm, grey green in pt, v.f. – silty calc, com skel frags. glauconite.
		40	Limestone, skeletal, gy – wh, com bry, forams etc.
570	150	60/40	A/A
580	120	80	Limestone, gy grn, silty, glauc.
		20	Limestone, skeletal.
590	140	90	Limestone, gy grn. silty glauc.
		10	Limestone, skeletal.
600	105	80	Lst, glauc. silty.
		20	Lst, skeletal.
610	135	80/20	A/A.
620	185	80/20	A/A
630	62	60	Lst, glauc, silty
		40	Lst skeletal.
640	45	60/40	A/A
650	55	70	Lst, skeletal
		30	Lst, glauc, silty.
660	90	100	Limestone, gy wh – wh, skeletal, trace glauconite, bry and foram sands
670	95	100	A/A
680	80	80	Limestone, A/A
		20	Limestone, grey grn, fine – v f, silty, arg in pt

FL/CAS.

(m) DEPTH	ROP	%	
690	110	50	Limestone, skeletal. A/A
		50	Limestone, gy grn, f-vf, silty, arg, grades to Marl. glauconitic.
700	85	80	Lst, skeletal glauc, sandy (calc)
		20	Marl,
710	95	40	Lst. skel, com ech spines.
		60	Marl gry grn, sft; com calcareinitic mat. glauc,
720	90	80	Lst, skel, A/A
		20	Marl. A/A.
730	85	80/20	A/A
740	70	70	Lst A/A
		30	Marl A/A
750	90	100	Lst A/A
760	110/45	70	Lst A/A pred bryoz
		30	Marl. gen A/A very silty.
770	71	70/30	A/A
780	84	70/30	A/A
790	84	90	Lst, skeletal, bcm cemented, rare loose fors.
		10	Marl,
800	71	90/10	A/A.
810	95	70	Lst, skel,
		20	Marl
		10	Lst, calcarenite grdg from Marl.

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DEPTH	ROP	%	
820	120	70/20/10	A/A
830	102	70/20/10	A/A
840	104	80	Lst, skeletal,
		10	Marl.
		10	Lst, calcarenite.
850	145	80/10/10	A/A
860	71	80/10/10	A/A
870	57	80	Lst, skeletal, bcm well cmtd.
		20	Marl A/A
880	165	80	Lst A/A
		20	Marl A/A
890	107	40	Skel Limestone; wh-m gy, cons, glauc, grds in pt to m gr calcarenite,
		60	Marl; m gy, sft, sl slty,
895	84	10	Skel Lst; A/A
		40	Calcarenite Lst; F-m gr, firm - mod hard, occ rhomb fracs, com glauc.
		50	Marl A/A
900	87	10/40/50	A/A
905	85	60	Calc Lst; com skel frags
		40	Marl; A/A
910	89	60/40	A/A
915	64	40	Calcil Lst; A/A
		60	Marl.
920	40	40/60	A/A, Marl occ gy brn, flecked,

FL/GAS.

DEPTH	ROP	%	
925	88	40/60	A/A
930	62	40/60	gen A/A. Lst, bcm silty in part.
935	35	40/60	gen A/A
940	73	50	Lst; calcilutite, com skel frags
		50	Marl,
945	73	50/50	A/A.
950	33	50/50	A/A
955	46	50	Lst; calcarenite grading to calcilutite in pts fine - med occ glauc. occ. shell fragments
		50	Marl A/A
960	40	50/50	A/A
965	82	50/50	AA Trace py in calcarenite
970	50	60	Marl Gy - gy bn occ white calcarious mudstone silty in part
		40	Calcarenite fine-med-coarse calc arenite.
		Tr	Glauconite / Tr py.
975	68	60/40	AA
980	65	70	Marl. AA silty in pt.
		30	Calcilutite, occ skelletal lst. frags V.F - med glauc occ py grades to calcarenite in pt.
985	54	70/30	AA
990	45	70/30	Marl grades in part to silty claystone.
995	90	60	Marl, decreasing calc.
		20	Siltstone, lt - m gy, soft - firm, slight - mod calc v argillacious, tr py.
		20	Lst, calcilutite.

(m) DEPTH	Roi'	%	
1000	91	60	Marl AA
		30	Sltstn
		10	Calcilutite, tr py.
1005			
1010	68	60	Marl
		30	Sltstn
		10	Calcilutite
1015	68		
1020	95	50	Marl AA
		50	Siltstn. AA
1030	128	50	Marl
		40	Sltstn.
		10	Shale / clystn med gy, sub fissile silty in part
1035	92	50	Marl
		40	Sltstn.
		10	Shale / clystn.
1040	45	30	Marl
		60	Sltstn
		10	Shale
		Tr	Dolomite org brn, hard, xlyn,
1050	90	30	Marl
		60	Sltstn
		10	Cly stone, sub fissile
1060	125	20	Marl
		70	~~Ze~~ sltstn, v fine silt + muddy calcilutite
		10	Clystone
1070	270	10	Marl
		70	Siltstone, lt-m gy sft-firm occ sub fissile.
		20	Shale m-dk gy firm, fis-sub fis occ concoidal fract, occ pyritic veins
1075	90		

(m) DEPTH	ROP	%	
1080	260	10	Marl
		80	Siltstn Gy green - brn coloured
		10	Shale
1085	135		
1090	90	10	Marl
		80	Siltstn
		10	Shale
1095	97		
1100	84	10/80/10	AA TR com pg
1105	130		
1110	96	10/80/10	AA
1115	35		
1120	89	80	Siltstone, gy - gy bn, Fm - sft. occ v.f. - slt qtz Rare med - coarse qtz, sub rounded.
		20	Shale
1125	138		
1130	79	80	Siltstn. moderately calcarious
		20	Shale slightly calc.
1135	82		
1140	89	80/20	AA. Tr coal
1145	90		
1150	126	80/20	AA. shale becoming gy grn in part
1155	135		
1160	86	80/20	AA
1170	96	80/20	AA TR. v fine silty sst, Gy - wh calc cement com glauc.

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(m) DEPTH	ROP	%		
1180	68	70	Siltstone	ag-gy bn firm-soft occ v fine-silty qtz rare med-coarse sub rounded qtz
		30	Shale	med-dk gy firm fissile-sub fissile occ. conc. fract + occ. py veins.
		Tr	Coal	rare med sand sized conc fractured coal.
1185	130			
1190	126	70	Siltstone	AA
		30	Shale	AA becoming carbonaceous.
		Tr	Coarse sandy	bryozoan and broken shell material (cavings?)
1195	65			
1200	89	70	Siltstone	AA
		30	~~Shale~~	~~AA~~ carbonacious siltstone.
		~5%	Sand ~~stn~~	cream fine-med well rounded quartz arenite
1205	65			
1210	60	75	Siltstone	AA
		25	~~Shale AA~~	Carb. siltstone
1215	66			
1220	61	60	Siltstone	AA
		40	Carb. siltst. ~~Shale~~	Med-dk gy firm slightly calcarious slightly carbonaceous argillite
		Tr	Pyrite	
1225	56	~~60%~~		
1230	54	60	Shaly siltstone	lt gy-gn firm calcarious argilaceow siltst
		40	Carb zst. ~~Shale~~	AA
1235	52		Carb. zst	
1240	30	60	~~Shale~~	AA
		40	Shaly siltst.	AA. conspicuous py
1245	43		carb. zst	
1250	68	60	~~Shale~~	AA
		30	Shaly siltst.	AA
		10	Silty	v fine sand.
1255	39			
1260	45	60	~~Shale~~	~~AA~~ Carbonacious siltstone
		40	Shaly Siltst.	AA.
1265	60			
1270	45	75	~~Shale~~	~~AA~~ Carb. zst AA
		25	Shaly siltst.	AA Trace Py

380026

(m) DEPTH	ROP	%	
1275	63		Carb zst.
1280	42	75	~~Shale~~ Med - dk gy firm slightly calc. sl. carb. argillite
		25	Shaly siltstone lt gy-gn firm calc arg. siltst.
1285	65		Carb siltst.
1290	52	80	~~Shale~~ AA
		20	Shaly siltst. AA.
1295	45		Carb. siltst
1300	65	75	~~Shale~~ AA.
		25	shaly siltst.
		Tr	Coal.
1305	54		carbonaceous siltstone
1310	50	70	~~Shale~~ Dk gy bn fissile occ. highly carb. argillite
		30	Shaly siltstone gy gn fissile arg. calc. siltst.
		Tr	bryozoan & shell fragments.
1315	26		Carbonacious siltstone
1320	64	70	~~Shale~~ AA.
		30	Silty slale AA
		Tr	Py AA.
1325	61		No Returns.
1330			

Depth	R.O.P.	%	
			occ banded.
1335	32	70	Siltstone. m gy brn - dk brn, firm, mod argill, tr pyr.
		30	Shale; silty, lt gy - gy grn, sft, subfis in part. occ mottled, slightly calcareous.
		Tr	Sand, clr, qtz, m gr, subrnd, no cmt.
1340	28	~~15%~~	~~Siltstone a/a v. clayey. lt. green Shale~~
		15%	Calc. siltst. lt gn - gy gn silty and v fine sandy calcarious siltstone
		80%	Carb. siltst. med brn fissile ~~v~~ slightly calc. carbonacious siltstone.
		TR.	coal fragments TR. fossil material.
		TT	N.O. significant clay with sample.
1345	27	20%	Calc. ~~siltst~~ shale lt gr. - gy gn, clayey, & occ. v. sandy
		80%	Carb. siltst, dk brn to gy brn, fissile, slightly calc. clayey.
		Tr	Pyrite.
1350	27	20%	Calc. shale. a/a.
		80%	Carb siltst. a/a. Rare sand grains.
1355	23	90%	Carb. siltst. a/a with trace coal., soft.
		10%	Shale, lt. gn to gy gn, silty, very slightly calc., ~~firm~~ firm, Tr fossil mat.
1360	24	70	Carb. silt. a/a.
		30	Shale, lt gn, off wh. occ., calc., mottled., firm.
1365	27	70	Siltstone, dk brn, slightly carb., firm, slightly calc., clayey, blocky.
		30	Shale, lt. gn - gy, sub fissile, partly silty, ~~very~~ calcareous
1370	27	80	Siltstone a/a
		20	Shale generally a/a wht. occ.
1375	27	80	Siltstone generally a/a. occ. dk grey. slight ↑ carb., clayey
		20	Shale, a/a. Tr L.S.?

Depth	R.O.P.	%	
1380	30	75	Siltst. a/a
		~~10~~	Coal, blocky, firm
		10	Shale a/a.
			Tr. pyrite. Tr fossil frag. ? Bryozoans Tr. L.S.
			Rare c. gn. sand, ang
1385	26	70	Siltstone dk brn - gy brn, firm, sub fissile, ~~sl~~ clayey
		10%	Coal.
		20	Shale, gy gn - gy, calcareous, firm, sub fissile.
1390	40	80	Siltst. a/a.
		20	Shale a/a.
			Tr. coal., Tr fossil frag. - Bryozoans.
			N.B. Drilling break from 1394 to 1397 m. ~~goto~~ ROP 19 to 80.
1395	60	70	Siltstone, med - dk brn, mod sft - occ firm, argillaceous, sl, calcareous., carbonaceous in pts.
		20	shale/claystone gy grn, sft - mod firm, calcareous.
		10	coal, black, firm, vitreous, blocky., tr Pyrite.
		tr	dolomite, lt brn, hard,
1400	61	75	siltstone. A/A
		20	shale, gy - grey green (grading to Marl), mod sft, calcareous. gy is fnly micaceous.
		5	coal A/A. cavings?
1405	112	70	siltstone A/A, tr Py
		30	shale, grading to marl in pts, A/A.
		tr	coal A/A.
1410	164	70	Siltstone A/A
		30	Shale A/A
		tr	Coal A/A.
1415	43	65	siltstone, med - dk brn, soft bcmg firmer, argillaceous.
		30	shale, gy grn - gy, grading to marl (fossiliferous, soft in pts), fnly micaceous
		5	in gy shale dolomite, lt brn, hd, sucrosic texture

164 - 1410

Pipipa - 1

R. Tolliday 13/5/82

380029

Depth	ROP	%	Description.
1415-20	51	80	dolomite, lt brn, hard, calcareous
		10	Siltstone, a/a
		10	shale, gy - gy grn
20-1425	67	70	limy dolomite, a/a
Dol		20	shale, grn gy - gy, rarely grady to marl, grn, fossiliferous.
		10	siltstone, med - dk brn, carbonaceous.
		tr	coal, black, friable, vitreous - occ. earthy & soft.
25-1430	35	55	siltstone, med → predom dk brn, carbonaceous, argillaceous
		35	limy dolomite, a/a
		10	shale, gy - gy grn, occ brn.
1430-1435 40	36	65	claystone, dk brn, very soft, sticky, silty, mod calcareous. [redacted].
lystone/clay		15	shale, gy - gy grn,
		15	siltstone - med - dk brn, carbonaceous, argillaceous
		5	dolomite a/a.
1445	48	80	claystone/clay, dk brn, very soft, sticky, silty & micaceous in pts.
		20	siltstone, very argillaceous, carbonac in pts, micac in pts.
1445-55	43	60	Argillaceous siltstone, med - dk brn.
		40	shale, brn, gy, grn.
1460	45	70	Argil siltstone, med - dk brn, med - dk gy brn, mod soft.
		30	shale, gy, brn.
1465	45	60	Argillaceous siltstone, med - dk brn, soft, micac in pts, py.
		40	claystone/shale, brn,
1470		80	Siltstone, argillaceous, med - dk chocolate brown, soft - mod firm py
		20	claystone, gy, brn.

65 - 45
70 - 50

Dropping WOB to reduce

changed WOB from 30 → 15K R. Tallidy 13/5/82

380030

Depth	ROP	%	
	WOB 30		
1475 - 1485	47	100	Claystone/clay grading to very argillaceous siltstone - dark brown, v. sticky, soft.
	WOB 25		
1485 - 1490	30	70	Claystone/clay, dark brn a/a
		30	Siltstone, argillaceous - med - dk brn, fnly micac. slightly calcareous. rarely carbonaceous
1495	52	100	Argillaceous siltstone, med - dk brn, micac inpts grading to claystone, v. soft, sticky
	WOB 20K		
1500	44		A/A.
	controlling R.O.P.		
	WOB 15K		
1505	28	50	Argillaceous siltstone, dk brn, being firmer, fnly micac inpts.
		50	Claystone, brown, soft, sticky, "hydrated" py.
	25		
1510	~~26~~	80	Siltstone, dk brn, gy brn., argillaceous, micaceous.
		20	Claystone, brn, soft, sticky.
1515	17	80	Siltstone, dk brn, occ med brn, soft - firm, argillaceous py, generally blocky, grades to claystone/shale inpts
		20	Shale - gy - gy grn, fissile, soft.
1520	26		A/A.
1520 - 1524	70		
BU No gas		70	Siltstone a/a
		20	Claystone a/a
		10	marl, green gy, soft - firm, (possibly altered volcanics. Circ B.U, no gas, no flour, no sandstone.
1524 - 1530	46	70	Siltstone, dk brn, carbonaceous, micac inpts, grades to claystone inpts.
		30	Shale, med brn, gy brn, clayey inpts (sticky).
			ad lt calcareous sandstone, light green. v. fine, firm, qtzose.
			do loose qtz fn - med., clr - ltgy.

1510 - 25
1515 - 17

1524 - 120/70 Circ. B.U at 1524 m. gas 1u.
no C_2.

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R. Tolliday 13/5/82

380031

Rpth	Rop	%	
1535	43	50	Siltstone a/a pyritic
		30	Claystone a/a
(1536 100m/hr 20u. Top E.U.C.M.?)		20	Sandstone, clr-lt grg, occ lt grn, predom loose, occ clusters, F-med, prly srtd., no flour, no cut, sl. calcareous.
	45		
1540	~~38~~	60	Sandstone, clear, milky, med. gr to gran., angular to sub angular, poor sorting, pred. loose, dolomitic., no flour, no gas (BG, 4u)
		30	Siltstone a/a w. pyrite.
		10	Claystone a/a.
1545	35.	60	Sandstone a/a
		35	Siltstone a/a.
		5	Claystone.
1550	40	90	Sandstone, milky-clear, med. gr - very coarse gr., sub-angular, occ. gran., poor sorting, pred loose, dol.? ~~occ. flour~~ occ. glauc ?, ~~slight~~ ~~occ~~ occ. golden flour. ? mineral flour. no cut., sand pred. loose.
		10	Siltstone a/a.
1555.	34.	90	Sandstone - a/a. No flour.
		10	Siltstone a/a.
1560	27	80	Sandstone, creamy-clr, ~~brown~~ med - v. crse loose grains, generally submatrix vf-f grained, brown aggregates, poorly srtd, tr py,
		20	vf sandy siltstone., brn, firm to soft.
1565	36	80	Sandstone a/a.
		20	Siltstone a/a.
		Tr	V.f. sandstone,
1570	40	60	Siltstone, lt brn to dk., calc., blocky., hard, calcareous, Tr. pyritic. grading v.f. s.s.
		35	Sandstone, clear, to milky, med - coarse gr., sub - angular, sub rnd, loose grs, poorly sorted, no flour.
		5	Claystone a/a.
1575	38	80	Siltstone a/a. generally. Becoming occ. very calc.
		20	Sandstone a/a. Occ. pink grs.
			Tr Claystone.

45 - 35

50 - 42

55 - 3k

R Tolhurst / N. Nevell
13/5/82.

280032

Depth	R.O.P.	%	
~~1580~~	24	60	Siltstone grading to v.f. s.s., dk brn to gy., carb, hard, tr pyrite.) blocky.
		40	Sandstone m/a., m-vcrse, dom loose,
~~1585~~			
1585	18	90	Sandstone, clr-lt gy, predom loose, m-vc qtz grains, with some brown, firm vf grained aggregates
		10	Siltstone, gy brown, vf sandy.
1590	22	90	Sandstone, a/a tr py
		10	siltstone, a/a
1595 (24 u gas)	37	80	S.S, a/a, tr grains have rapid, white ~~stone~~ cut fluor.
		10	coal, black, earthy - vitreous, silty inpts.
		10	Siltstone a/a.
1600	16	60	Sandstone, a/a, m-vc loose grains, minor v. fn aggregates, no fluor, no cut
		40	Coal, Black, vitreous - earthy, sub conchoidal - blocky fracture.
1605 (19.5u gas.)	24	60	Coal a/a ~ assoc gas pk 19.5u.
		30	S.S a/a, no fluor, no cut.
		10	siltstone, gy brn, vf sandy
1608	17	30	Coal, black vit, occ. conchoidal. more often blocky
		40	Sandstone, mostly white to milky, fine gn to very coarse gn., sub-angular - sub rounded, poorly sorted., loose gns, occ. conchoidal frac., clusters of v.f. sand. No. flow.
~~1610~~		30	Siltstone m/a occ. becoming very carb.
1610	12	20	Coal m/a.
		40	Sandstone m/a. No flow.
		40	Siltstone generally m/a v. carb.

1603 - grab sample, no fluor, 30% coal 1606 - circed B.U.

1595 - qtz milky ~~white~~ rapid

Depth	R.O.P.	%	
1612	10	30	Sandstone %a mostly coarse gn. no ~~brown~~ flour.
		60	Siltstone, lt bn to dk bn, firm, blocky, vit. lust., arg. occ. slightly calc., Tr. pyritic, very carb. occ.
		10	Coal. %a.
1614	25	80	Coal, black, vit, frac. mostly concod., blocky, firm. 14 units gas.
		10	Sandstone %a. No flour.
		10	Siltstone %.
1616	6	60	Coal %a
		15	Sandstone %a no flour.
		~~25~~ 35	Siltstone %a.
1618	13	30	Sandstone %a. No flour.
		70	Siltstone %a.
			Tr. coal.
1620	21	50	Sandstone, milky to clear, med. gn to v. coarse, sub ang., poor sorting, no flour.
		50	Siltstone grading to v.f. sandstone, lt gy to dk bn., vit.) firm to hard, slightly calc., Tr. pyrite.
1622	34	40	Sandstone %a no flour.
		55	Siltstone generally %a occ. becoming v. carb.
		5	Coal.
1624	29	50	Sandstone %a becoming better sorted- no flour.
		20	Sandstone, off white - gy, v.f. grained, v. silty, sub rounded, well sorted, slightly calc. matrix, hard, ~~dirty~~ matrix
		30	Siltstone %a.
1626	24	40	Sandstone %
		~~30~~ 25	Sandstone v.f. %a. no flour.
		30	Siltstone %a
		5	Coal.
1628	28	60	Sandstone %a no flour.
		10	Sandstone, gy - dirty wh., v.f. gn. to f. gn., hard, silty.
		30	Siltstone %a
1630	20	60	Sandstone %a. no flour.
		10	V.f. sandstone %a.
		30	Siltstone. %a.

380034

Depth	R.O.P.	%	
1632	25	50	Sandstone a/a generally coarse gr.
		20	U.f. sandstone a/a.
		30	Siltstone a/a
			Tr coal & claystone.
1634	23	70	Sandstone, wh. - clear., coarse gr., occ. grain. + med, mostly loose, sub angular, fair sorting, no flour.
		10	U.f. sandstone, to fine, silty, off white a/a.
		20	Siltstone, a/a occ. arenaceous.
1636	25	60	Sandstone a/a. no flour.
		10	U.f. d.s a/a.
		30	Siltstone a/a.
~~1637~~			Tr coal.
1638	26	60	Sandstone a/a occ. ~~a~~ rounded gran.
		10	U.f. sandstone a/a
		30	Siltstone.
			Tr. claystone.
1640	24	60	Sandstone a/a no flour.
		30	U.f. sandstone a/a.
		10	Siltstone
1642	20	60	Sandstone, mostly milky, med gr- gran, loose coarse grains, cluster of med. gr., sub - rounded to sub angular, fair sorting, Low ~~%~~ ● in med. clusters.,
		~~10~~	~~Sh.~~
		10	U.f. sandstone a/a.
		20	Siltstone bn to dk bn, occ. very carb., sub fissile, silky, occ. pyritic.
		10	Coal: a/a.
1644	13	40	Sandstone a/a. no flour.
		20	U.f. sandstone a/a.
		40	Siltstone a/a
1646	5	80	Coal. black, firm, blocky to sub-fissile, vitreous 12 gas units
		10	Sandstone a/a
		10	Siltstone.

Depth	R.O.P.	%	
1648	5	60	Coal a/a
		10	~~Sandstone~~ a/a. no flour.
		30	Siltstone a/a.
1650	7	10	Sandstone, clear to white, med – v. coarse gn., cluster of med. gn., sub-angular, mode. sorting, visible ϕ poor no flour.
		~~90~~	~~Siltstone~~
		10	U.f. sandstone a/a.
		80	Siltstone, bn to dk gy, firm to ~~soft~~ loose, carb., argillaceous, silky, ~~friable~~ sub fis to blocky, Tr pyrite.
1652	26	20	Sandstone, med gn, occ. coarse a/a. poor visible ϕ, no flour
		30	Sandstone, v.f., dirty white to bn, firm, ~~mod~~ sub rounded, mod. sorting, dirty argillaceous matrix, no visible ϕ
		50	Siltstone a/a
1654	18	80	Sandstone, whit, occ. clear, pred. fine to med gn, occ. coarse gn., dirty, rare loose gns., sub rounded, mod. sorting, (kaol. matrix?) occ. dirty argil. matrix, litho frags incl., no visible ϕ, no flour.
		20	Siltstone, sandy a/a.
1656	29	90	Sandstone & gradually a/a, wh. matrix. no flour
		10	Siltstone, a/a. ~~or~~ slightly calc. Tr. v.f. ~~sandstone~~, silty.
1658	19.	90	Sandstone a/a occ. v.coarse gn.
		10	Siltstone
1660	17	90	Sandstone a/a becoming well sorted.
		10	Siltstone a/a
			Tr coal.
1662.	8	80	Sandstone a/a
		10	~~Siltstone~~ a/a
		10	Coal. black, blocky, vitreous
1664	5	40	Sandstone a/a. no flour.
		60	Siltstone, dkg. gy – dk bn, sandy, carb., soft – firm, incl. pyritea, blocky, argillaceous., sl. calc. matrix

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† W.O.B. from 18 to 25.

Depth	R.O.P.	%	
1666	17	40	Sandstone a/a no flour.
		60	Siltstone a/a.
1668	24	30	Sandstone generally a/a low visible porosity in consolidated bits
		70.	Siltstone a/a
1670	25	40	Sandstone, white - dirty clear, hard, pred. ~~med. grain~~ fine - med gn. occ. v. coarse + gran., mod. sorting mostly sub. ang., occ. dirty matrix, low visible no flour.
		60	Siltstone a/a, generally. Sandy + arg. Tr coal.
1672	27	50	Sandstone a/a no flour.
		50	Siltstone generally a/a. occ. v. pyritic.
1674	37	50	Sandstone a/a No flour.
		50	Siltstone a/a.
1676	35	30	Sandstone. a/a. No flour.
		70	Siltstone, becoming ~~argill~~ dayey. a/a
1678	26	50	Sandstone a/a v. coarse gn. becoming vse.
		50	Siltstone a/a
1680	29	30	Sandstone a/a No flour.
		70	Siltstone dk bn, ~~soft~~, only slightly calc., very argillaceous, blocky to fissile., ~~sandy~~.
1682	26	30	Sandstone a/a. No flour.
		70	Siltstone a/a
1684	36	30	Sandstone a/a No flour.
		70	Siltstone a/a.
1686	29	~~40~~	Sandstone a/a v. coarse gn very vse. Becoming well sorted.
		50	Siltstone ~~brn~~ bn to dk gy, fissile occ., blocky, very carb., firm., argillaceous
		10	Coal.
1688	26	40	Sandstone a/a
		60	Siltstone. a/a
1690	49	40	Sandstone a/a No flour.
		60	Siltstone generally a/a becoming v. pyritic.

Depth	R.O.P.	%	
1692	46	70	Sandstone, white to dirty brown, fine to coarse, silty, firm, sub rounded, mod - well sorted, low visible ϕ, no flour.
		30	Siltstone a/a.
			Tr. claystone.
1694.	54	70	Sandstone generally a/a becoming dirtier. No flour.
		20	Siltstone a/a
		10	Pyrite.
1696	64	80	Sandstone a/a no flour.
		20	Siltstone a/a occ. quite sandy.
			Tr Pyrite.
1698.	45	90	Sandstone, a/a well sorted. no flour.
		10	Siltstone a/a.
			W.O.B. ↓ from 25K to 20K.
1700	14	80	Sandstone, dirty white, fine to med. gr., firm, sub-rounded, well sorted, occ. dirty matrix, No visible ϕ, no flour.
		20	Siltstone. a/a
1702.	17	70	Sandstone a/a No flour.
		30	Siltstone, v. argillaceous, pyritic a/a.
1704	28	50%	Sandstone a/a no flour.
		50%	Siltstone gy-brn, soft, friable, calc., sandy, arg., occ. Pyrite
1706	23	70	Sandstone becoming v. dirty a/a.
		30	Siltstone a/a
1708	25	80	Sandstone, white to dirty grey, fine to med. gr., sub-rounded, mod sorted, occ poor, non calc. cement, dirty silty matrix, tight, no flour.
		20	Siltstone. a/a.
1710	21	50	Sandstone a/a
		50	Siltstone a/a.
1712	13	90	Coal, black, dull - vitreous, fissile to blocky, ~6 units gas
		10	Sandstone a/a

R. Tolliday / M Newell
14.5.82

380038

Depth	R.O.P.	%	
1714	17	70%	Coal a/a ~~subbituminous~~ grades to v. carb shale
		20%	Sandstone a/a
		10%	Shale a/a.
1716	6	100	Coal, shaley + silty, dk gy blk. dull + earthy ~~to subbituminous~~ carb., Sub ~~vitreous~~ fissile - blocky, occ. platey, grades to shale
		tr	Sandstone, lt brn, ~~sft~~ firm, vf-fn qtz aggregate poor-mod ϕ.
1718	6	60	Shale, carbonaceous, earthy, fissile.
		40	coal, silty, dull - subvitreous, rare subconchoidal fracture.
		tr	Sandstone a/a.
1720	3	70	Shale, med-dk gybrn, subfis - firs, sft
		20	Siltstone, med gy, sft to firm - pts.
increased WOB to 30K		10	coal, black, vitreous, subconch frac.
1722	19	70	Shale a/a tr py.
		20	Siltstone a/a
		10	Sandstone, lt brn, vfn-fn qtz, carbonaceous.
		tr	coal a/a
1724	29	60	Shale, med-dk gy, firs - subfirs. carbonaceous.
~~1724~~		20	Siltstone, vfn sandy, calcareous., pyritic, carbonac.
		20	Sandstone, lt brn, vfn-fn aggs, clr-lt gy med, loose grains. calcareous,
1726	36	40	Shale, a/a
		40	Sandstone, gy, brn, vf-f qtz. aggs, "dirty", silty, carbonac in pt, occ m-c loose qtz grains.
		20	Siltstone, vf sandy, pyritic
1728	35	60	Shale a/a
		20	Siltstone a/a
		20	sandstone a/a.
1730	17	90	Sandstone, lt-med gy, firm-hard, vf-f, dom f, qtz well srtd, calcareous, pyritic, sli carbonaceous., tightly cmtd with silica and some calcite, poor ϕ. no fluor.
		10	shale a/a.

From 1721.0m ↑ WOB to 30K.

380039

Depth	ROP	%	Description.
1732		70	Sandstone, hard, lt brn, gy, vf-fn qtz aggregates, rare mc silty matrix, firmly cemented, calcareous, pyritic pr vis ϕ
		30	shale, gy, gy Grn, silty, finly micaceous.
1734		80	St St a/a v. pyritic
		20	shale a/a.
1736		50	shale, a/a.
		30	sandstone a/a
		20	coal, blck, vitreous, conchoidal - subconchoidal frac.
1738		100	coal, a/a sh silty. firm.
1740		100	coal, a/a
1742		90	coal a/a.
		10	Sandstone, vcrs qtz & vfn-fn qtz aggregates, calcareous
			14/5/82. ~1800 hrs.
1744	18	90	Coal a/a.
		10	Sandstone a/a.
1746	22	100	Coal. a/a. Upto 18u. gas
1748	10	50	Coal a/a
		50	Siltstone a/a.
1750	4	40	Sandstone: dkg wh., v.f. to med. gn., mod. sd., hd., well sorted., silty matrix., no ϕ, no flow.
		50	Siltstone, brn., soft, v.arg., carb, clayey., Pyrite
		10	Coal a/a.
1752	5	40	Sandstone a/a no flow.
		60	Siltstone a/a.
1754	8	10	Sandstone a/a
		80	Siltstone, sandy, brn - dk brn, arg., v. soft predom., to firm, frgy
		10	Coal a/a
1756	11	90	Siltstone a/a.
		10	Shale, dk gy, fis., v. carb., firm, occ. grading to coal.
1758	22	60	Coal, black, blocky, to sub fissile, dull to sub vit., occ. conchoidal frac.
		40	Siltstone, a/a.

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35K-62

30K-65

380040

Depth	R.O.P.	%	
1760	13.	10%	Coal %a
~~1765~~		20	~~Sandstone, med to co~~ clear, med to coarse gn.
		70	Siltstone %a
1765	43	30	Sandstone: white to clear, ~~ff~~ fine to coarse, pred. med., loose coarse gns.
		60	Siltstone %a
		10	Coal. %a
			Tr. Shale.
1770	75	30	Sandstone, white to dky wh.; pred. med to coarse grain, hard, ~~well so~~ sub- ang., well sorted, pred. silica mtx, occ ang. mtx.; visible ϕ — med.? no flow. 7-5 units gas.
		20	Siltstone. %a. v. pyritic
		10	Coal. %a.
~~1775~~			Tr shale
1775	31	50	Sandstone %a no flow.
		40	Siltstone %a
		10	Coal %
			Tr Shale.
1780	19	50	Sandstone %a generally. Becoming dirtier with litho frags. soft.
		30	Siltstone %a
		20	Shale, dk bn – dk gy, fissile, v. carb., hard
1785	34	50	Sandstone %
		30	Siltstone %a
		20	Shale %a.
1790	36	50	Sandstone generally %a visible ϕ, occ. pyritic. no flow.
		30	Siltstone, bn to gy, soft to firm, sandy, blocky, v. pyritic, arg.
		20	Shale %a.
1795	32	70	Sandstone, wh. – dky wh., pred. med. gn., ~~co~~ fn – coarse gn., sub-angular, well sorted, silica mtx, occ. dky arg. mtx., low visible ϕ. no flow.
		30	Siltstone %a. lots of pyrite.
			Tr. shale.

W.OB. 1782 + 35.

Depth	R.O.P.	%	
1800	51	70	Sandstone. % no flow
		20.	Siltstone. generally % ~~becomes~~.
		10	Shale., dk gy, v. calc, fissile.
1805	47	70	Sandstone % no flour.
		20	Siltstone %
		10	Shale %
1810	33	80	Sandstone, ~~off white~~ - lt gy, med gy in firm - hard, fn - medium, subrnded, mod - good sorting, calcareous & some siliceous cmt, occ white Kaolin? matrix., silty matrix giving gy color to 10% of sandstone., pyritic., poor ø, no fluor, no cut.
		10	Siltstone, med gy, ~ vf qtz, firm.
		10	shale, med gy, gy brn, fairly micaceous.
1815	15	60	Sandstone, a/a, f - med, occ crse
		30	siltstone a/a
		10	shale a/a.
1820	33	70	Sandstone, a/a
		20	siltstone a/a, calcareous in pt.
		10	shale a/a, gy brn, fissile.
			~~Tr green-lt green reduced, altered volcanics, soft~~ marl cavings..
1825	18	70	Sandstone, a/a, f - crse, poorer srtng than before no fluor,
		30	siltstone, grades to shale in parts.
		tr	~~Shale~~
1830	24	50	Siltstone, med gy, dk brn, subfis in pts, grading to shale in pts, v. argillaceous in pts, tending to sticky., occ fn qtz grains, pyritic, tr Coal.
		40	Sandstone, a/a fn - med, silty, calcareous, poor ø, no fluor.
		10	shale, dk gy, fissile, occ fairly micaceous.
1835	36	60	Sandstone, a/a f - med, very pyritic (5%)., calcareous.
		40	Siltstone, med - dk gy ~~dkgy~~, 10% grades to fissile shale., lt gy.
1840	25	50	Sandstone, off white - lt gy, lt brn, a/a pr ø, heavily pyritized.
		40	Siltstone, med - dk gy brn, shaley in pts, micaceous.
		10	shale, lt gy - lt grn gy, micaceous., fissile.
		tr.	tr coal, BLK, hard, vitreous, conch frac.

R. Tolliday
15.5.82

380042

Depth	ROP	%	
1840-1845	23	40	Sandstone, off white - lt brn, vfn - med, dom fn, firm - hd, poor ϕ, only sli calcareous, no fluor, some white clay matrix.
		30	Siltstone, med - dk gy, med - dk brn,
		20	Shale, med gy, fissile, fnly micaceous.
		10	Coal, blk, hd, conch frac, vit lustre.
1850	20	70	Coal, a/a, some blocky fracture.
		20	siltstone, a/a, carbonaceous, micaceous.
		10	~~sss~~ Sandstone, a/a
1855	23	60	Siltstone, med gy, soft, occ firm., argillaceous.
		30	Sandstone, a/a
		10	Coal, a/a
1860	30	50	sandstone, vfn cream - brown, vfn - fn, occ m - c, gen v. silty, poor ϕ, pyrite. + Coal.
		50	siltstone, lt gy - dk brn, micaceous, carbonaceous in pt.
1865	10	60	siltstone, a/a, v. argillaceous in pt. Tr Coal.
		40	Sandstone. a/a 5% pyrite
1870	23	70	Siltstone, a/a soft, micaceous., v.fn sand +r coal.
		30	Sandstone, a/a vcrs pyrite., brown,
1875	28	80	Siltstone, a/a, ē v.fn sand.
		20	Sandstone. a/a.
1880	16	70	Coal, ~~Bld~~ Blk, hd - firm, silty inpts, platy to subconch fracture.
		10	Sandstone a/a
		20	Siltstone, med - dk brn, carbonaceous.
1885	23	40	Siltstone, lt - med gy, lt brn, carbonaceous, occ vfn sand.
		30	Shale med - dk gy, fissile, fnly micaceous
		20	Sandstone, a/a
		10	Coal a/a.
1890	29	50	Sandstone, clr - lt brn, vfn - med aggregates, med - crse loose.
		20	Shale, lt - dk gy a/a
		20	Siltstone a/a.
		10	Coal a/a
1895	30	70	Sandstone, off white - lt gy,
		20	Shale, med - dk gy brn, fissile
		5	siltstone, dk gy brn, 5% Coal

Spot Sample 1878 - 70% coal, 30% siltstone, tr 5.5.
1879 - 20u gas.

380043

Depth	ROP	%	
1895–1900		60	Sandstone, v.f-med, subang-subrnded, pyritic, no flu.
		30	Shale, gy, brn, fissile, soft-firm.
		10	Siltstone, lt-med gy, lt-med brn.
1905		80	Sandstone, a/a
		10	Shale, a/a
		10	Siltstone a/a
		tr	coal, blk, hd, vitreous.
1908 (grab)		100	coal, blk, firm, dull to occ vitreous lustre, sli silty.
		tr	~~ss~~ sandstone a/a
1910 (circed B.U.)		100	coal, blk, firm, dull - occ vitreous, sli silty, ~~[illegible]~~
1912		70	s.s, -
		30	Siltstone.
1912 (Drillers T.D before POOH for Bit chng)		40	Siltstone, lt gy - dk brn, carbonac, micaceous
		30	sandstone, white - lt gy, vf - med, hard, pyritic in pts, well cemented (siliceous + pyrite), poor ϕ
		20	Shale, lt gy, lt brn
		10	Coal a/a.
			1914. W.O.B. 40.
			1918 W.O.B. 30
1915	9.2	10	Sandstone a/a. no flour.
		60	Siltstone a/a
		10	Shale a/a.
		20	Claystone. — Cuvinga ?
1920	5.7	60	Siltstone dty wh. - dk brn, soft, sandy, blocky, slightly arg., pyritic.
		30	Shale, gy, firm, carb., dub brit, fissile.
		10	Coal.
1925	9	90	Coal, black, brit., blocky 23 units gas
		10	Siltstone a/a.
1930	9.7	60	Siltstone a/a
		40	Coal a/a.

Depth	R.O.P.	%	
1935	13	70	Coal a/a occ. conchoidal fractures
		30	Siltstone a/a.
1940	12	50	Shale a/a occ. grading to coal.
		40	Siltstone a/a
		10	Coal a/a
1942	~~12~~		Grab sample. 12 units gas *
		80	Siltstone, very sandy a/a. ~~1~~ minor white flour., cut.
1945	23	20 shale. 70	Sandstone, dkg wh., v.f - med gr. extremely silty & shaly, poorly cemented. dkg, mod sorted, dk silty mtx, no ~~v~~. visible ϕ, minor wh. flour. with fast cut.
		10	Siltstone, sandy, grading to v.f. d.s.
		20	Shale a/a.
1950	28	90	Sandstone, ~~dkg wh~~. a/a. 40% flour. white - golden. ~~mod. cut~~
		10	Shale. a/a.

Sandstone, 40% fluor dull yellow green - milky green, fluor, ~~no visible cut~~, moderate - fast, strong - weak milky white cut fluor.

1955	17	90	Sandstone, ~~m~~ dk white - brn, f. to med. gr, pred. med gr, sub angular, well sorted, ~~f~~ firm, silty dkg mtx, ~~poor~~ visible porosity. 30% ~~white to~~ golden flour,
		10	Shale. a/a
1960	15	70%	Coal, black, ribbons, blocky.
		30	Siltstone a/a. < 5% flour, golden ~~g~~ lt gr.
~~1965~~ 1963.4	12	100%	Coal a/a.

Circ B.U. 1963.4 —.

380045

SHOW DESCRIPTION 1942 - 1951

Drilling Break

Depth	R.O.P.
1941	12
42	23
43	20
44	18.5
45	39
46	13.

47 - 32
48 - 32
49 - 31
50 - 32
51 - 29
52 - 10
5.3 6.7

Description & Lithology

1942 - 80% Siltstone, sandy v.f., dty wh. to gy., soft, friable, arg., no ϕ 5% flour.
20% Shale.

1945 - 70% Sandstone, dty. wh., v.f. - med. gn, pred f - mod. gn., v. silty, arg., mod. sorted, pred. silty mtx., poorly cemented, no visible ϕ. Possible trace oil staining, 50% flour.
10% Siltstone %a
20% Shale.

1950 - 90% Sandstone %a 40% flour., v. sl. oil odour
10% Shale.

1955 - 90% s.s. %a 20% flour
10% shale.

1960 - 30% Siltstone %a <5% flour.
70% Coal.

1965 - 100% Coal.

Description of show

S.S has dull, occ bright+pinpoint yellow green - milky green fluorescence, no natural visible cut, moderate - occ fast, strong - weak milky white cut fluor, moderate, (.

assessment: light - medium oil show min. 9m, poor gas show, not increase above background but chromatograph showed increase in C_3 & C_4., poor to rarely moderate porosity.

DB indicates there not to scale ϕ.

380046

Depth	R.O.P.	%	
1965	12.	60	Coal a/a.
		40	Sandstone, clr dkg. wh., pred. med. gn., hd, sub-ang., well sorted, ppr. silica mtx., occ silty., no visible ϕ, pass. oil staining, occ, 5% yellow-gold. flour., fair streaming fast white cut.
1968			Grab sample.
		90%	Coal. a/a.
		10%	Sandstone a/a. <5% flour. yellowy gold.
1970	21	90	Coal. a/a
		10%	Sandstone. a/a <3% flour. gold.-gold. oil staining, streaming fast cut, golden residue.
1975	12	90	Sandstone, white - lt gry, friable to occ friable, vf-med, dom. f. pipinto sdd, good. non calcic, abundant white kaolin mtx, 5% yell grn flour, fast white cut.
		5	Coal a/a
		5	siltstone, dk gry brn,
1980	10	80	Coal a/a
		20	Sandstone. 1. v. argillaceous white, yell grn flour, fast cut. 2 types? or → rock flour?
			2. well cmtd, f grained, sli non calcareous, dolomite cmt, yell gold flour, v. slow cut.
1985		40	Sandstone, lt gry, hd, tight, carbonaceous. yell grn flour. none vis ϕ, v. poor v. slow milky - tight cut
		40	shale, dk gy brn - blk, fissile, hd, carbonaceous.
		10	siltstone, med - dk gry, vfn sand.
		10	Coal ~~ss~~., blk, vitreous, sub conch frac
1987		50	shale, 1. med - dk gry hd carbonac. 2. grades to silty claystone/dgy, sticky, "hydrated"
		30	Sandstone a/a 10% of above sample has yellow, minor yell grn flour, v. slow milky green cut.
		20	siltstone, med gry, hd.

R. Tollhurst 16.5.92.

380047

Depth	Top	%	Description
1990	9	50	Silty claystone grading to shale, fissile. med - dk gy brn, soft - firm, micac in pt, sticky "hydrated" in pt.
C6's appearing.		30	Sandstone, lt gy, vf - f, occ med, hd, sli calcareous + possible dolomitic, siliceous cmt, ground to "rock flour" by bit in pt resembly kaolin mtx., 5% yellow fluor, v. slow poor cut, silky
		20	Siltstone, lt - med gy, blocky micaceous, v. fn sandy in pts.
		tr	Coal, blk, hd, vitreous, conch frac.
~~1995~~ 2000	8	40	Siltstone a/a
		30	Sandstone a/a 5% yell fluor, poor v. slow cut
		30	Shale a/a med gy, fissile.
		10	Coal a/a
1995 ~~2000~~	18	50	Shale, med gy - dk gy, fissile, micaceous, v. silty in pts.
		30	Siltstone a/a.
		20	Sandstone. 5% of sample has yell fluor.
2003		60	Shale lt - med gy, med gy brn, fissile - sub fis. v. carbonaceous in pt., silty.
		20	Sandstone., vf - f, mud is ground to rock flour, only tr fluor.
		10	Siltstone, lt gy, occ med gy,
		10	coal a/a.
2005	7	70	Shale a/a hard, fsly micaceous. sub fis - fis pyritic
		20	Siltstone. a/a.
		10	coal, blk a/a.
2007.5		100	Shale, med - dk gy brn, carbonaceous
		tr	siltstone, S.S, coal.
2010.0	10	90	Shale a/a, v. soft in pts + clayey.
		10	Siltstone
2014.0		90	Shale, grading to claystone in pts which is soft & clayey.
		10	siltstone
circ end of bit 2015.0	13	40	Shale a/a, dk gy brn, firm to hard.
		40	claystone/clay, dk brn, soft, "hydrated" sticky
		20	siltstone, light - med gy, vf sand in pts.

R. Tollman W. Rig
16/5/82

380048

Depth	ROP	%	Description
2020		60	Shale, dk gy, blk, md micaceous, fissile, v. carbonaceous.
		40	Coal, blk, hd, vitreous, conchoidal to platy fracture.
2023		80	Shale, a/a with "hydrated" clay, s.s, blocky.
		10	Coal a/a
		10	Siltstone lt-md gy, blocky.
2025		70	Shale a/a
		20	Sandstone, vf-f, friable to occ firm, tr Flor.
		10	Siltstone a/a.
2030		90	Shale, blk, firm, fissile v. carbonaceous, micaceous.
		10	Coal, a/a dk
2034		90	Shale, a/a brn, blk.
		10	Coal
		tr	Sandstone, firm a/a.
2040		30	Shale = hydrated clay, vf sd
		20	Coal, a/a
		10	Sandstone, a/a subrounded vf-fn qtz.
2043		50	Shale
		50	Sandstone off white, soft & hydrated with white kaolin mtx, a/a vf-f qtz occ firm chalky, vf-f med grained.
2045	25	60	Sandstone, clty wh., med. gn. - occ coarse gn., sub-ang., well sorted., firm, to unconsolidated, silty, no visible ϕ 40% flour. golden to orange., oil staining,
		20	Shale a/a.
		20	Coal a/a.
			Golden flour. cuts fast streaming, wh. gn. Orange flour. cuts slowly if at all.
2048		40	Sandstone. a/a 40% flour a/a.
		30	Siltstone a/a
		20	Shale a/a
		10	Coal. a/a.

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380649

Depth	R.O.P.	%	
2050	2	50	Sandstone, a/a. occ. v. coarse gn. 30% faint orange + occ. goldy gn. flour. a/a. Orange cleanit upon to cut.
		10	Siltstone a/a
		30	Shale, occ silty, ~~sdy~~ to very carb., pred. sub-fissile.,
		10	Coal. a/a
2052		30	S.S. a/a. Minor flour. orange.
		40	Siltstone a/a
		20	Shale.
		10	Coal.
2055	22	40	Sandstone, dkg wht, pred. ~~fine~~ v.f. gn, occ. to coarse gn., v. silty. generally a/a. v. minor flour.
		20	Siltstone
		40	Shale.
2060	19	60	Sandstone., wh. to dkg gy., occ. pulverized to wh. soft goo. v. ~~dkg~~
		~~20~~	~~Siltstone., sandy~~ 2% flour, gold + orange, ~~frag.~~ frag. of shale.
		10	Siltstone, sandy, soft, arg.
		20	Shale. a/a
		10	Coal. a/a.
2063		20	Sandstone a/a. < 2% flour gold gn., oil stained., no cut.
		20	Siltstone a/a
		60	Shale., dark, dull., carb, fissile, grading occ. to coal, Tr coal.
2065	8	10	Sandstone a/a rare flour.
		30	Siltstone, gybn - dk gy, occ. sandy, arg., slightly carb.,
		50	Shale a/a
		10	Coal a/a.
2067		10	Sandstone. a/a no flour.
		40	Siltstone a/a
		50	Shale a/a.
2070	6.6	20	Sandstone a/a. v. rare flour. orange - lt gn.
		40	Siltstone, dk, grading to shale, v.f. sand., ~~sdy~~ v. arg., v. carb, slofo.
		40	Shale, grading to siltstone, dk grey, v. carb. fissile.
2073		10	Sandstone a/a. 1 gn. flour. orange.
		90	Siltstone a/a.

380050

Depth	R.O.P.	%	
2075	5	90	Siltstone, dk brn - dk gy, sandy, arg, v. soft.
		10	Shale a/a.
2080	11	20	Sandstone, wh., f - med gr., firm to occ rounded ups, few loose grs, well sorted, no visible ϕ, no fluor.
		70	Siltstone a/a
		10	Shale.
2085	15	70	Sandstone, wh. to dky brn, a/a. 30% orange mineral fluor. No cut dolomitic mineral?
		10	Siltstone a/a.
		20	Shale a/a
2090	23	70	Sandstone, pred. wh., occ gy brn, f - med gr., sub angular, silty. well sorted, white mtx, occ silty., occ low visible ϕ, 20% orange mineral fluor. a/a. no cut., dolomitic mineral fluor
		10	Siltstone a/a
		20	Shale. a/a.
2095	12	40	Sandstone a/a 5% orange fluor.
		60	Siltstone, wh. to grey, v soft, friable, occ hard, sandy
2100	11	70	Coal, black, blocky, vitreous Max 28 units gas.
		20	Siltstone a/a
		10	Sandstone a/a. extremely rare orange fluor.
2105	12.	70	Sandstone wh. to dk gy gy. a/a. generally 25% orange fluor.
		10	Siltstone a/a
		20	Shale a/a
			Tr Coal.
~~2110~~			
2108		100	Coal. a/a 32 units of gas.
2110	11	80	Coal a/a
		20	Siltstone a/a.

380051

Depth	R.O.P.	%	
215	12	60	Sandstone, dkg wh., v. soft, silty, med gr ped., ang grns., well sorting, no visible ϕ. No fluor.
		20	Siltstone., dkg. wh. + gy, sandy, soft firm, clayey
		10	Shale, carb., fissile - sub-fissile, firm.
		10	Coal.

T.D. 215m.

380052

APPENDIX 2

Sidewall Core Descriptions and Analyses

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PIPIPA-1 SIDE WALL CORE DESCRIPTIONS

SHOT 30 Geologist : R.G.Tolliday
RECOVERED 29

	DEPTH m	RECOVERY cm	LITHOLOGY/HYDROCARBON INDICATIONS
1.	2105.0	3	Sandy Siltstone, med gy brn, firm to hard, v. fn qtz, v. argill, non laminated, non calcareous, v. finely micaceous, no fluor, no cut.
2.	2066.4	3	Carbonaceous Shale, dk brn, firm, v. finely micac and very thinly interlam Siltstone, lt - med gy, firm, occ vf qtz, fnly micac, non calc, no fluor, v. slow, v. faint milky white cut.
3.	2045.2	4	Sandstone, lt gy - lt brn, friable, fn-med, dom med, subang - subrnd, well srtd, minor wh argill mtx, non calc, mod porosity, v. rare spotty dull grn fluor, v. weak white to no cut.
4.	2027.2	3.5	Carbonaceous Shale, as above with minor v. thinly interlaminated Siltstone, lt gy, as above.
5.	1999.0	3	Carbonaceous Shale, dk gy - blk, firm, subfissile with an 8 mm lamination of coal, blk, dull - subvitreous, hd, blocky - subconch frac.
6.	1980.7	3.5	Sandstone, off white - lt gy, firm, v. fn, well srtd, silty mtx, poor vis porosity, rare dull yell grn fluor, moderate white cut with v. thinly interlaminated (1 mm) Siltstone, dk gy, hard, micac.
7.	1957.2	3	Sandstone, lt gy, friable, v. fn - fn, well srtd, minor. White clay mtx, poor to mod vis porosity, rare fn mica, minor silty mtx, no fluor, no cut, with v. thinly interlaminated Shale, hard, occ. cross laminated, dk brn - blk, carbonaceous v. fn mica.
8.	1949.8	4	Sandstone, lt brn, friable, fn-med qutz, dom fn, well srtd, subang - subrnded, minor white clay mtx, non calc, rare silt, mod - good vis porosity, 5% yell grn streaky and patchy, v. rare pinpoint fluor, fast milky white cut with two v. thin carbonaceous shale laminations.
9.	1946.2	5	Sandstone, as above, no clay mtx, no laminations, mod - good vis porosity, v. good 40% dull, occ. pinpoint, occ. streaky, yell grn fluor, good, rapid streaming milky white cut fluor, milky grn residual fluor.

PIPIPA-1 SIDE WALL CORE DESCRIPTIONS (cont)

SHOT 30 Geologist : R.G.Tolliday
RECOVERED 29

	DEPTH m	RECOVERY cm	LITHOLOGY/HYDROCARBON INDICATIONS
10.	1943.9	3	Coal, blk, vitreous, subconch frac, firm to hd, with interlaminated carbonaceous Shale, blk, dull, argillaceous, firm.
11.	1913.2	5	Sandstone, lt gy, mod friable, v. fn - fn, dom fn, minor clay & silty mtx, non-calc, mod vis. porosity, no fluor,no cut with minor v. thin laminations of carbonaceous Shale, as above.
12.	1875.8	3.3	Sandstone, lt gy and lt brn wavy laminations, soft, v. fn, clay and silt mt, no fluor, no cut with wavy laminations (1 mm) of carbonaceous Shale, as above.
13.	1850.0	3.5	Silty Sandstone, lt gy, firm, v. fn, poor vis porosity, no fluor with abundant very thin (1 mm) laminations of carbonaceous Shale, blk, soft.
14.	1826.8	4	Carbonaceous Shale, blk, soft, earthy, with interlaminated silty Sandstone, as above.
15.	1794.0	4.5	Carbonaceous Shale, grading to coal, blk, dull to subvitreous, hard to sft, with thinly interlaminated (up to 3 mm thick) Sandstone, lt gy - lt brn, firm, v. fn - fn, mod srtd, silty mtx, poor vis porosity, no fluor, no cut.
16.	1774.0	4	Silty Sandstone, lt brn, soft, v. fn, fnly micac, poor vis. porosity, no fluor, no cut, with thinly laminated (1-4 mm thick) Carbonaceous Shale, dk brn - blk, dull, soft and earthy.
17.	1752.2	3.5	Claystone, dk gy brn, soft and pliable, grades to clay, carbonaceous.

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18.	1735.0	4.5	Silty Sandstone, gy brn, firm to friable, v. fn - fn, pred v. fn, well srtd, "dirty", carbonaceous material, poor vis porosity, tr fn mica, no fluor, no cut.
19.	1703.1	4.7	Silty Sandstone, med gy - dk gy, firm - friable, v. fn - fn, dom fn, "dirty", minor carb. material, dk gy argillaceous material, poor vis porosity, no fluor, no cut.
20.	1668.0	4.5	Shale, dk gy, firm, silty, tr. micac material, subfissile, carbonaceous.
21.	1640.6		1/2 bullet recovered, only mud cake, not accepted.
22.	1603.8	4	Shale, as above with v. thinly interlaminated silty sandstone, med - dk gy, v. fn, carbonaceous, no fluor, no cut.
23.	1570.8	4	Silty Sandstone, lt - med gy brn, soft, friable, v. fn, "dirty", minor lt gy - med gy, silty lams, poor vis porosity, no fluor, no cut.
24.	1540.2	5	Argillaceous Sandstone, med - dk gy, firm, v. fn - fn, rare med-crse grns, poor - mod srtd, silty, poor vis porosity, no fluor, no cut, with claystone laminations, dk gy, dk brn, soft.
25.	1526.7	5	Sandstone, lt - med brn, friable, v. fn - fn, dom fn, well srtd, dom subrnded, silty and argill mts, "dirty", poor vis. porosity, no fluor, no cut.
26.	1521.2	5	Claystone, dk brn, soft to pliable, grading to clay, silty, minor v. fn mica, sl calc, swells when hydrated.
27.	1488.8	5.5	Claystone, as above, calc, irregular shaped pyrite.
28.	1457.3	5	Claystone, dk brn, soft, silty, rare v. fn mica, minor pyrite, rare med qtz grains, v. sli calc, sli swelling when hydrated.
29.	1414.2	5	Argillaceous Siltstone, lt brn, firm, siliceous, subfissile, very calcareous, swells when hydrated.
30.	1383.0	5	Claystone, dk brn, soft, tending to pliable, silty, minor pyrite, calcareous swells when hydrated.

380056

DATA
NO.

SIDEWALL CORE ANALYSES

Each sample was opened and an attempt was made to remove muddy material quickly before the fluid saturations were determined. The analyses were carried out by routine methods and gave the following results:

Sample	Porosity %	Permeability md	Apparent gn den	Dry Bulk den	Fluid Saturation % H_2O	Oil	Water %NaCl
*8	34.0	53	2.92	1.93	91	2	0.38
*9	37.4	630	2.87	1.80	63	22	0.40

The density results possibly indicate that some drilling mud is present in the samples; this has probably not affected the porosity and permeability results. The high fluid saturations might reflect the presence of mud. The toluene used in determining the fluid saturation of Sample 9 did acquire a pale yellow colour by the end determination and this suggests the presence of some oil in the sample.

*Core No 8 1949.8 m KB

*Core No 9 1946.2 m KB

The above data were supplied by Australian Mineral development Laboratories, Adelaide

TABLE-1: SUMMARY OF PALYNOLOGICAL ANALYSIS OF PIPIPA-1 BASS BASIN

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	ZONE	AGE	CONFIDENCE RATING	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY	COMMENTS
SWC 30	1383.0	4537.5	Upper *N. asperus*	Basal Oligocene	0	Good	High	Moderate	*P. comatum*
SWC 29	1414.2	4640.0	Middle *N. asperus*	Late Eocene	0	Good	High	Moderate	
SWC 28	1457.3	4781.0	Middle *N. asperus*	Late Eocene	0	Good	High	Moderate	
SWC 27	1488.8	4884.5	Middle *N. asperus*	Late Eocene	0	Good	High	Moderate	
SWC 26	1521.2	4991.0	Middle *N. asperus*	Late Eocene	0	Good	High	Moderate	
SWC 25	1526.7	5009.0	Middle *N. asperus*	Late Eocene	1	Fair	Moderate	Low	
SWC 24	1540.2	5053.0	Lower *N. asperus*	Middle Eocene	0	Poor	Moderate	Low	
SWC 23	1570.8	5153.5	Non diagnostic	?	4	Barren	-	-	
SWC 22	1603.8	5262.0	Non diagnostic	?	4	Barren	-	-	
SWC 21	1640.6	5382.5	Lower *N. asperus*	Middle Eocene	0	Fair	Moderate	Moderate	
SWC 20	1668.0	5472.5	Indeterminate	?	4	Poor	Low	None	
SWC 19	1703.1	5587.5	Indeterminate	?	4	Barren	-	-	
SWC 18	1735.0	5692.0	Indeterminate	?	4	Barren	-	-	
SWC 17	1752.2	5748.5	Indeterminate	?	4	Poor	Low	Low	
SWC 16	1774.0	5820.0	Indeterminate	?	4	Poor	Low	Low	
SWC 15	1794.0	5886.0	Indeterminate	?	4	Poor	Low	Low	
SWC 14	1826.8	5993.5	Indeterminate	?	4	Poor	Low	Low	
SWC 13	1850.0	6069.5	Indeterminate	?	4	Barren	-	-	
SWC 12	1875.8	6154.0	Indeterminate	?	4	Barren	-	-	
SWC 11	1913.2	6277.0	Indeterminate	?	4	Barren	-	-	
SWC 10	1943.0	6374.5	Indeterminate	?	4	Barren	-	-	
SWC 7	1957.2	6421.0	Indeterminate	?	4	Barren	-	-	
SWC 6	1980.7	6498.0	Indeterminate	?	4	Barren	-	-	
SWC 5	1999.0	6558.0	Indeterminate	?	3	Fair	Low	None	Probably no older than *M. diversus*
SWC 4	2027.2	6651.0	Indeterminate	?	4	Barren	-	-	
SWC 3	2045.2	6710.0	Indeterminate	?	4	Poor	Low	None	
SWC 2	2066.4	6779.5	Indeterminate	?	4	Barren	-	-	
SWC 1	2105.0	6906.0	Indeterminate	?	4	Poor	Low	None	

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380058

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PALYNOLOGY DATA SHEET

BASIN: BASS ELEVATION: KB: _____ GL: 73m

WELL NAME: PIPIPA-1 TOTAL DEPTH: 2115m

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										
	P. tuberculatus										
PALEOGENE	Upper *N. asperus*	1383.0	0				1383.0	0			
	Mid *N. asperus*	1414.2	0				1526.7	1			
	Lower *N. asperus*	1540.2	0				1640.6	0			
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*										
	Lower *L. balmei*										
LATE CRETACEOUS	*T. longus*										
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
PRE-CRETACEOUS											

COMMENTS: Fossil recovery very poor below 1640.6m

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: HOWARD E. STACY DATE: AUGUST 25, 1982

DATA REVISED BY: _____ DATE: _____

Well Name PIPIPA-1 Basin BASS Sheet No 1 of 3

380059

SAMPLE TYPE * / DEPTHS / PALYNOMORPHS	1383	1419.2	1457.3	1488.8	1521.2	1526.7	1540.2	1570.8	1603.8	1640.6	1668	1703	1735	1752.2	1774	1794	1826.8	1850	1875.8	1913.2	1943.9	1957.2	1980.7	1999	2027.2	2045.2	2066.4	2105
Araucariacites australis																												
Clavifera triplex																												
Cyathidites gigantis																												
Haloragacidites harrisii																												
Ischyosporites irregularis																												
Malvacipollis subtilis																												
Matonisp. ornamentalis																												
Milfordia homepunctatus																												
Myrtaceidites parvus																												
Nothofagus asperus																												
Noth. brachyspinulosus																												
Nothofagus deminutus																												
Nothofagus emarcidus																												
Nothofagus flemingii																												
Peromonolites vellosus																												
Phyllocladidites mawsonii																												
Podocarpus sp.																												
Proteacidites annularis																												
Proteacidites leightonii																												
Prot. rectomarginis																												
Riccia boxatus																												
Rugulatisp. mallatus																												
Stereisp. antiquisporites																												
Stereisp. punctatus																												
Verrucosisp. cristatus																												
Verrucosisp. kopukuensis																												
Dilwynites granulatus																												
Ericipites crassiexinus																												
Nothofagus falcatus																												
Polycolpites esobalteus																												
Proteacidites stipplatus																												
Simplicepollis meridianus																												
Anacolosidites luteoides																												
Banksieacidites arcuatus																												
Cupanieidites orthoteichus																												
Herkosporites elliottii																												
Ilexpollenites anguloclavatus																												
Ischyosporites gremius																												
Lygistepoll. florinii																												
Malvacipollis diversus																												
Periporopoll. vesicus																												
Proteacidites adenanthoides																												
Proteacidites clarus																												
Proteacidites crassus																												
Proteacidites grandis																												
Proteacidites incurvatus																												
Proteacidites pachypolus																												
Proteacidites rugulatus																												
Santalumid. cainozoicus																												
Stereisporites regium																												
Beaupreaid. eleganisformis																												
Beaupreaid. verrucosus																												
Nothofagus endurus																												
Triorites magnificus																												
Beaupreaidites adelosus																												
Beaupreaidites trigonalis																												
Ericipites scabratus																												
Foveotriletes balteus																												
Periporopollen. demarcatus																												
Proteacidites cumulus																												
Proteacidites areolatus																												
Proteacidites asperopolus																												
Proteacidites laxus																												
Proteacidites pseudomoides																												
Proteacidites recavus																												
Proteacidites symphyonemoides																												
Spinizonocol. prominatus																												
Triorites sp. (psilate)																												
Camerozonosp. heskermensis																												
Gleicheniid. circinidites																												

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* C=core: S=sidewall core: T=cutting

Well Name PIPIPA-1 Basin BASS Sheet No 2 of 3

380660

SAMPLE TYPE *																										
DEPTHS / PALYNOMORPHS	1383	1414.2	1457.3	1488.8	1521.2	1526.7	1540.2	1570.8	1603.8	1640.6	1668	1703	1735	1752.2	1774	1799	1826.8	1850	1875.8	1913.2	1943.9	1957.2	1980.7	1999	2027.2	2045.2	2066.4	2105.
Labrobosporites crassus							/																				
Nothofagus vansteenisii							/																				
Verrucatosporites alienus							/																				
Proteacidites biornatus										/																	
Proteacid. tenuiexinus															/					/							
Liliacidites sp.																/				/							
Proteacidites sp.																				/							
Elphedripites notensis																							/				
Tricolpites phillipsii																							/				

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* C=core: S=sidewall core: T=cutting

MISC.PALY.DIST.CHART DWG.1107/OP/227

Well Name PIPIPA-1 Basin BASS Sheet No 3 of 3

38061

| SAMPLE TYPE * | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | | |

APPENDIX 3

Wireline Logging

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380063

PIPIPA 1
SUMMARY OF LOGGING OPERATIONS

Date	Run No.	Survey Type	Scale	DEPTHS Top	Bottom	Logger	Driller	Hole Size	Mud Wt.	Rm BHT	Remarks
8.5.82		DIL-BHL	1:240	94	873	875	880	17 1/2	9.1	0.218	
	1	CAL-GR	1:600							39.4°C	
17.5.82	1	DIL-BHC-MSFL-GR	1:240 1:600	866	2114	2115	2115	12 1/4	10.0	0.112 86.1°C	Log.scale Liner scale
	2	LDL-CNL-GR	1:240 1:600	866	2113	2115	2115	-	-	-	Liner scale
	3	H.D.T.	1:240	1400	2110	2115	2115	-	-	-	
	4	Velocity									
	5	C.S.T.		1383	2105	-	-	-	-		S Lot 30, Recovered 29 cors.

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WIRELINE LOG INTERPRETATION

1. Introduction

Two log runs were conducted on the Pipipa-1 well during May, 1982. The logs run for wellsite analysis were:

Run 1

1. DIL-BHCS-GR-SP-CAL 875 - 94 m (sea floor)

Run 2

1. DIL-BHCS-MSFL-GR-SP-CAL 2115 m (TD) - 866 m (casing shoe)
2. LDL-CNL-GR 2115 m (TD) - 866 m (casing shoe)

The logs were presented on 1:600 and 1:240 scales and were digitally recorded on magnetic tape.

Sands in the Eastern View Coal Measures were evaluated using the Indonesia shaly sand equation. The results are summarised in section 3.

The wireline log analysis was compiled and interpreted by R.G.Tolliday, N.A.Newell and S.C.Eriyagama of the Exploration Department, BHP Oil and Gas Division.

2. Calculations

Shallow and deep resistivity values were first corrected for borehole and skin effects. R_w was then determined by using the most suitable value derived from several methods, for example the resistivity ratio, Archie and Indonesia.

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Porosity was determined from the Formation Density and Compensated Neutron Log. The shale (clay) content was determined using the Gamma Ray log as the clay indicator. The value for shale content (V_{sh}) was then used to determine corrected effective porosity (Øe).

Finally, water saturations were determined using the Indonesia shaly sand equation.

3. Results

A summary of results is presented below:

No	Depth (m)	Formation	Vsh	Øe	Rw	S_w Indonesia
1	1527	EASTERN	0.17	0.24	0.05	0.89
2	1547.5	VIEW	0.20	0.19	"	0.80
3	1584	COAL	0.03	0.25	"	1.01
4	1625	MEASURES	0.01	0.27	"	0.99
5	1691		0.06	0.30	"	1.08
6	1835		0.14	0.26	"	1.02
7	1950		0.27	0.19	"	0.76
8	1992.5		0.14	0.19	"	0.62
9	2045.3		0.03	0.27	"	0.96

4. Interpretation

Eastern View Coal Measures - corrected porosities for the sands of the Eastern View Coal measures range from 19 to 30% and average 24%. The porosities appear to be slightly higher than the visually estimated porosities (Appendix 1 - Sample Descriptions).

Water saturations derived for the Eastern View Coal measures range from 62 to 100%. The lower S_w's indicate there may be residual hydrocarbons, especially at 1992.5 m and 1950 m (38% and 24% respectively) but no significant hydrocarbons are present.

5. Conclusions

Analysis of the logs indicate the sands in the Eastern View Coal Measures are generally water saturated although some minor residual hydrocarbons may be present.

Problems associated with the log analysis that may have led to anomolously low S_w values include:

(1) the effects of field conditions such as clay effects, borehole effects and bed thickness
(2) imperfections in the analytical methods
(3) the selection and uncertainties of parameters such as V_{sh} and R_w

Minor residual hydrocarbons may be present in Pipipa-1 but no moveable hydrocarbons are indicated.

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380067

APPENDIX 4

Velocity Survey

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PIPIPA-1 VELOCITY SURVEY

The Pipipa-1 velocity survey was carried out by Velocity Data Pty Ltd on the night of May 17th/18th 1982. A total of 37 shots were recorded at 15 different levels. Six levels were recorded running into the hole and the remainder recorded as the tool was on its way out. At least two records were made at each level. An extra shot was taken at those levels shot running into the hole as the tool was removed as an additional check. In the accompanying table the shot ID refers to the order in which the records were made.

The instruments used for this were a SIE RS49W Well Shoot system. The records were recorded on 1/2 inch 9 track tape. The energy source was an oxygen-propane gas gun.

One major problem occured during the survey. At 1142 m the proposed level to be recorded the tool would not lock properly and began to slip. The tool was raised to 1140 m and was able to grip the hole at this level. Further difficulties were experienced with the following levels until at the 750 m the arm of the wall lock geophone failed to lock at all. The tool was pulled from the well and the arm replaced. One hour and forty minutes was lost while the tool was repaired.

In the light of this tool failure it is likely that a great deal of the noise experienced on the records may have been due to poor coupling to the side of the hole.

During the survey the first break times were compared with the sonic times over the same interval. With the exception of the shallowest interval from 213, to 400 m the maximum difference was 4 m/sec. For the interval 213 m to 400 m the discrepancy was 42 m/sec the time from the velocity survey being much shorter than expected. This anomalous time was casued by energy transmitted through the casing,

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a "casing break", at the 213 m level. Consequently the observed times for this level have been disregarded. A travel time for this data point has been inferred from the sonic log tied to the vertical time for the 400 m level. Another data point has been derived for water bottom using the known water depth and a water velocity of 1490 m/sec.

The results of the survey are shown in the attached table and graph.

J.R.Guy
Exploration Department
BHP Oil and Gas Division

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380070

Deep Data (metres)

Well Name PIPIPA-1

K.B. Elev	21.0 M	Datum Elev	.0 M
Std Weath Vel	1490 M/Sec	Calc Depth Weath	.0 M
Calc Weath Vel	1490 M/Sec	Datum velocity	1490 M/Sec
Adjustment factor	.000 Sec		

Shot ID	Horz Dist M	Shot Depth KB M	Geophone Depth KB M	Observed Time Sec	Vertical Time Sec	Av Time Below Datum Sec	Average Vel. M/Sec	Interval Velocity M/Sec
								1490
101	.0	21.0	94.0	.049	.049	.049	1490	
								1921
1	.0	34.0	213.0	.102	.102	.111	1731	
								2086
36	40.0	34.0	400.0	.193	.192	.201	1889	
37	40.0	34.0		.193	.192			
								2458
34	40.0	34.0	620.0	.282	.281	.290	2065	
35	40.0	34.0		.282	.281			
								2402
32	40.0	34.0	750.0	.336	.335	.344	2118	
33	40.0	34.0		.336	.335			
								2413
4	40.0	34.0	866.0	.385	.385	.392	2154	
5	40.0	34.0		.384	.384			
31	40.0	34.0		.383	.383			
								2482
29	40.0	34.0	953.0	.419	.419	.427	2181	
30	40.0	34.0		.419	.419			
								2364
27	40.0	34.0	1050.0	.460	.460	.468	2197	
28	40.0	34.0		.460	.460			
								2141
25	40.0	34.0	1140.0	.502	.502	.510	2192	
26	40.0	34.0		.502	.502			
								2423
23	40.0	34.0	1300.0	.568	.568	.576	2219	
24	40.0	34.0		.568	.568			
								2681
21	40.0	34.0	1410.0	.609	.609	.617	2250	
22	40.0	34.0		.609	.609			
								2365
6	40.0	34.0	1522.0	.657	.657	.665	2258	
19	40.0	34.0		.656	.656			
20	40.0	34.0		.656	.656			
								3041
17	40.0	34.0	1737.0	.727	.727	.736	2333	
18	40.0	34.0		.727	.727			
								2932
15	40.0	34.0	1825.0	.757	.757	.766	2357	
16	40.0	34.0		.757	.757			
								3225
7	40.0	34.0	1925.0	.788	.788	.797	2390	
8	40.0	34.0		.788	.788			
14	40.0	34.0		.788	.788			
								3064
11	40.0	34.0	2115.0	.850	.850	.859	2439	
12	40.0	34.0		.850	.850			

OR.3498

380071

TWO WAY TIME BELOW DATUM - SECONDS

0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

ONE WAY TIME BELOW DATUM - SECONDS

0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00

DEPTH BELOW KELLY BUSHING - METRES

DEPTH BELOW DATUM - METRES

0 250 500 750 1000 1250 1500 1750 2000 2250 2500

1490M/SEC.73M 0.049SEC.73M

1731M/SEC.192M 0.111SEC.192M

1889M/SEC.379M 0.201SEC.379M

2065M/SEC.599M 0.290SEC.599M

2118M/SEC.729M 0.344SEC.729M

2154M/SEC.845M 0.393SEC.845M

2181M/SEC.932M 0.427SEC.932M

2197M/SEC.1029M 0.468SEC.1029M

2192M/SEC.1119M 0.510SEC.1119M

2219M/SEC.1279M 0.576SEC.1279M

2250M/SEC.1389M 0.617SEC.1389M

2258M/SEC.1501M 0.665SEC.1501M

2333M/SEC.1716M 0.736SEC.1716M

2357M/SEC.1804M 0.766SEC.1804M

2390M/SEC.1904M 0.797SEC.1904M

2439M/SEC.2094M 0.859SEC.2094M

1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600

AVERAGE AND INTERVAL VELOCITY - METRES PER SECOND

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THE BROKEN HILL PROPRIETARY CO. LTD.

OIL AND GAS DIVISION

(HEMATITE PETROLEUM PROPRIETARY LIMITED)

APPENDIX 4

BASS BASIN

PIPIPA – I

TIME – DEPTH CURVE

Datum : Mean Sea Level

Kelly Bushing : 21m above M.S.L.

Water Depth : 73 m

Total Depth : 2115 m K.B.

Casing Depth : 866 m K.B.

Location

Latitude : 40°23'14"S

Longitude : 145°41'45" E

Date of Survey : 17. May 1982

Energy Source : Gas Gun

5 cm

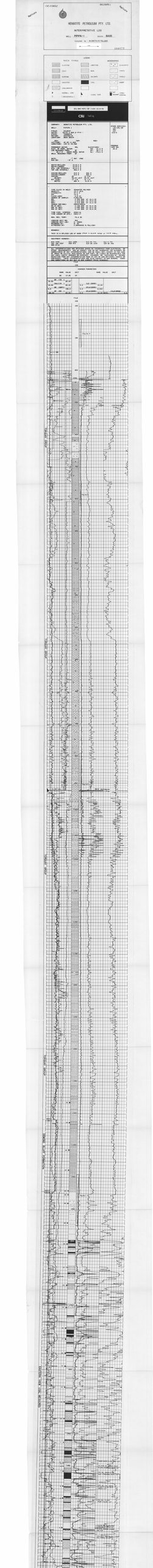
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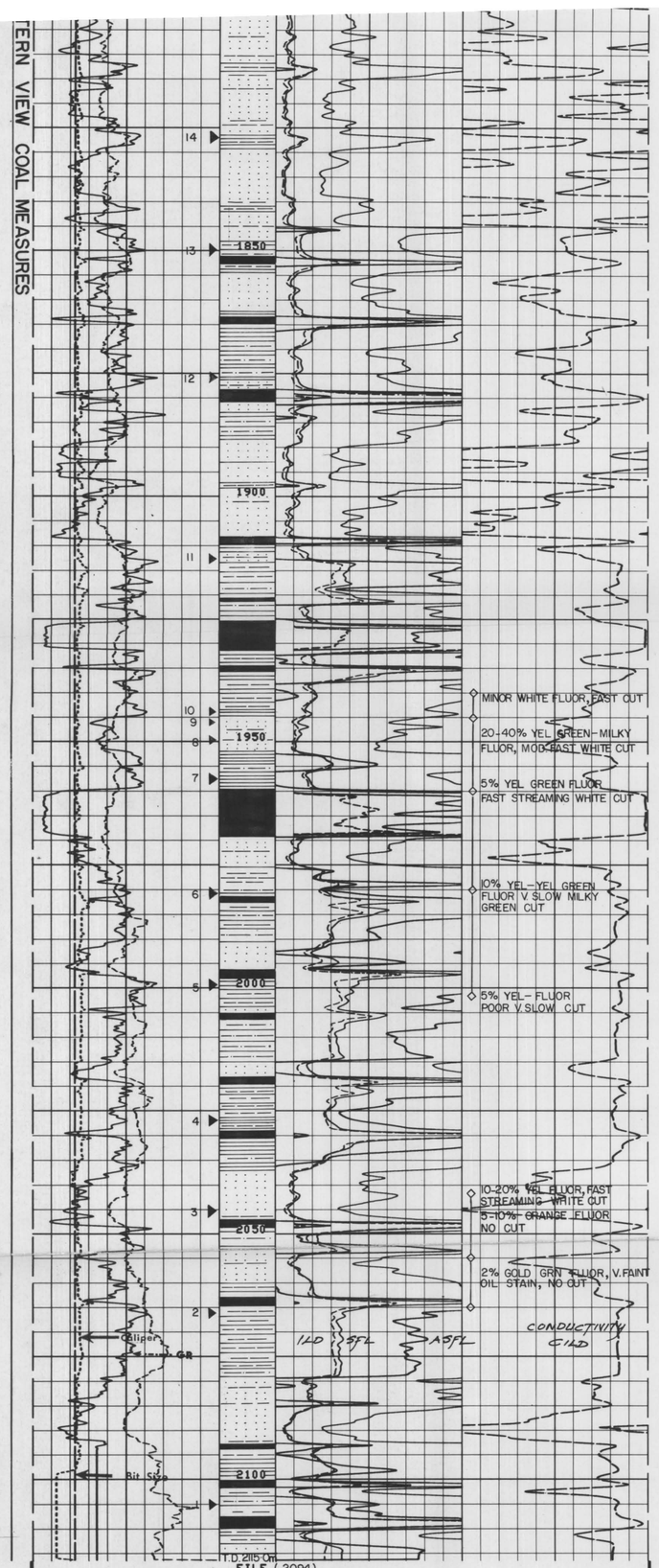
Author J. Guy Drawn S 250

Date June 1982

VSPLOT : PIPIPA-1 15/ 6/1982

OG – 7095


HEMATITE PETROLEUM PTY. LTD.
INTERPRETATIVE LOG
WELL: PIPPA-1
BASIN: BASS
LEGEND
ROCK TYPES
ACCESSORIES
CBU Rating
COMPANY: HEMATITE PETROLEUM PTY. LTD.
WELL: PIPPA-1
FIELD: ACCUMULATION 4 KM ↓
BASIN: BASS BASIN
LOCATION: BASS BASIN
LATITUDE: 38 41' 10.00"S
LONGITUDE: 145 31' 10.00"E
PERMANENT DATUM: MSL
LOG MEASURED FROM: RKB
ALL DEPTHS MEASURED FROM: RKB
DATE: 4th MAY 1988
RUN No.: ONE
DEPTH DRILLER: 2110.0 M
DEPTH LOGGER: 2110.0 M
TOP LOG INTERVAL: 2110.0 M
CASING DRILLER: 339.0 M
CASING LOGGER: 339.0 M
BIT SIZE: 311.1mm (12 1/4")
TYPE FLUID IN HOLE: SEAWATER/GEL/MUD
DENSITY: 10.2 ppg
VISCOSITY: 40 sec
PH: 9.0
FLUID LOSS: 6.0 cc
SOURCE OF SAMPLE: FLOWLINE
RM @ MEAS. TEMP: 0.160 @ 23.0 DEG
RMF @ MEAS. TEMP: 0.120 @ 23.0 DEG
RMC @ MEAS. TEMP: 0.180 @ 23.0 DEG
RM @ BHT: 0.100 @ 85.0 DEG
TIME CIRC. BEFORE LOG: 12.0 HRS
TIME LOGGER ON BTM.: 0600 HRS
MAX. REC. TEMP.: 85.0 DEG
EQUIP. LOCATION: BASS
RECORDED BY: M. TRAN
WITNESSED BY: MR. CHRISTIANSEN / MR. FALLSHAW
TOOLS IN ATTACHED LOG AT BASE (TOOL 1 NEAREST SHOE AT TOP OF HOLE)
BOW SPRING: 6 1/2" GAMMA RAY
MAX. TEMP. RECORDED: 85.0 DEG C
MAX. PRESS. RECORDED: 20.0 MPa
MAX. SPEED: 10.0 M/MIN
CASING PROGRAMME
NAME VALUE UNIT
SIZE 13 3/8 IN
SHOE 339.0 M
DRILLER 339.00
LOGGER 339.00
TOP LOG INTERVAL 2110.00
BOTTOM LOG INTERVAL 2110.00
CASING TYPE K55
CASING WEIGHT 54.5 LB/FT
CASING GRADE
BIT SIZE 311.1 mm
TYPE FLUID IN HOLE SEAWATER/GEL/MUD
DENSITY 10.2 ppg
VISCOSITY 40 sec
PH 9.0
FLUID LOSS 6.0 cc
SOURCE OF SAMPLE FLOWLINE
RM @ MEAS. TEMP 0.160 @ 23.0 DEG
RMF @ MEAS. TEMP 0.120 @ 23.0 DEG
RMC @ MEAS. TEMP 0.180 @ 23.0 DEG
RM @ BHT 0.100 @ 85.0 DEG
TIME CIRC. BEFORE LOG 12.0 HRS
TIME LOGGER ON BTM. 0600 HRS
MAX. REC. TEMP. 85.0 DEG
EQUIP. LOCATION BASS
RECORDED BY M. TRAN
WITNESSED BY MR. CHRISTIANSEN / MR. FALLSHAW
RUN NO. ONE
DEPTH DRILLER 2110.0 M
DEPTH LOGGER 2110.0 M
BTM LOG INTERVAL 2110.0 M
TOP LOG INTERVAL 339.0 M
CASING DRILLER 339.0 M
CASING LOGGER 339.0 M
BIT SIZE 311.1mm (12 1/4")
DATE 4th MAY 1988
TOOLS IN ATTACHED LOG AT BASE (TOOL 1 NEAREST SHOE AT TOP OF HOLE)
BOW SPRING 6 1/2" GAMMA RAY
MAX. TEMP. RECORDED 85.0 DEG C
MAX. PRESS. RECORDED 20.0 MPa
MAX. SPEED 10.0 M/MIN
DISCLAIMER
ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.
CBU
FILE
RUN
TIME
DEPTH
GAMMA RAY
CALIPER
SONIC
RESISTIVITY
DENSITY
NEUTRON
PIPPA-1
BASS BASIN
HEMATITE PETROLEUM PTY. LTD.
INTERPRETATIVE LOG
CBU Rating
Gamma Ray
Caliper
Sonic
Resistivity
Density
Neutron
Lithology
Porosity
Permeability
Saturation
Hydrocarbons
Water
Gas
Oil
Coal
Sand
Shale
Limestone
Dolomite
Anhydrite
Salt
Basement
Top Seal
Reservoir
Source
Migration
Trap
Structure
Stratigraphy
Depositional Environment
Fluvial
Deltaic
Marine
Lacustrine
Aeolian
Glacial
Reef
Turbidite
Channel
Overbank
Crevasse Splay
Point Bar
Levee
Floodplain
Swamp
Lagoon
Barrier Island
Shoreface
Offshore
Slope
Abyssal
Basin Floor
Submarine Fan
Canyon
Delta Front
Prodelta
Distributary Channel
Interdistributary Bay
Beach
Dune
Tidal Flat
Estuary
Mangrove
Coral Reef
Algal Mound
Carbonate Platform
Evaporite
Red Bed
Coal Seam
Volcanic
Igneous
Metamorphic
Sedimentary
Clastic
Chemical
Biogenic
Organic
Inorganic
Fossiliferous
Non-fossiliferous
Bioturbated
Laminated
Massive
Cross-bedded
Graded
Slumped
Faulted
Folded
Unconformity
Disconformity
Paraconformity
Angular Unconformity
Nonconformity
Hiatus
Condensed Section
Maximum Flooding Surface
Transgressive Surface
Regressive Surface
Sequence Boundary
Parasequence
Parasequence Set
Systems Tract
Lowstand Systems Tract
Transgressive Systems Tract
Highstand Systems Tract
Falling Stage Systems Tract
Forced Regressive Systems Tract
Shelf Margin Wedge
Slope Fan
Basin Floor Fan
Channel-Levee Complex
Mass Transport Complex
Debris Flow
Turbidity Current
Hemipelagic Drape
Contourite
Bottom Current
Deep Water
Shallow Water
Abyssal Plain
Continental Slope
Continental Rise
Continental Shelf
Oceanic Crust
Mid-Ocean Ridge
Subduction Zone
Trench
Island Arc
Back-Arc Basin
Forearc Basin
Accretionary Wedge
Ophiolite
Serpentinite
Greenschist
Amphibolite
Granulite
Eclogite
Blueschist
Migmatite
Gneiss
Schist
Phyllite
Slate
Quartzite
Marble
Hornfels
Skarn
Metasomatism
Hydrothermal Alteration
Silicification
Dolomitization
Calcitization
Kaolinization
Chloritization
Sericitization
Albitization
Epidotization
Pyritization
Hematization
Limonitization
Bleaching
Reduction
Oxidation
Diagenesis
Compaction
Cementation
Recrystallization
Dissolution
Porosity
Permeability
Saturation
Hydrocarbons
Water
Gas
Oil
Coal
Sand
Shale
Limestone
Dolomite
Anhydrite
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Basement
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Accretionary Wedge
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Blueschist
Migmatite
Gneiss
Schist
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Quartzite
Marble
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Calcitization
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Chloritization
Sericitization
Albitization
Epidotization
Pyritization
Hematization
Limonitization
Bleaching
Reduction
Oxidation
Diagenesis
Compaction
Cementation
Recrystallization
Dissolution



BS (IN)			
10.00	20.00		
CALI(IN)		ILD (OHMM)	
10.00	20.00	0.0	10.00
GR (GAPI)		SFLA(OHMM)	
0.0	150.0	0.0	2.000
SP (MV)		SFLA(OHMM)	CILD(MMHO)
-80.00	20.00	0.0 10.00	2000. 0.0

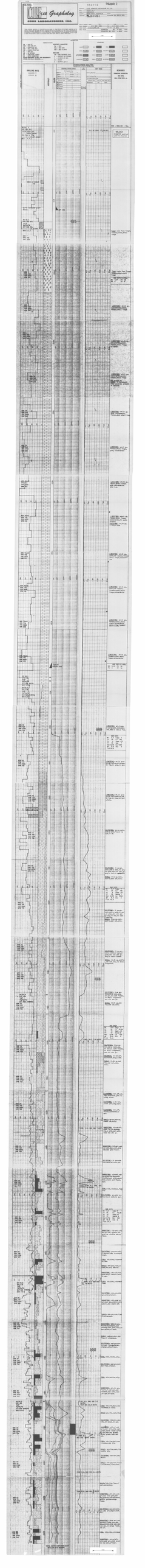
SENSOR MEASURE POINT TO TENSION REFERENCE POINT

AMPL	10.5	METER	DT	9.8	METER
SRAT	9.8	METER	CBL	10.5	METER
GR	22.5	METER	TT	10.5	METER
ILD	2.1	METER	CALI	16.6	METER
ILM	1.0	METER	SFL	1.2	METER
SPAR	.0	METER	SP	.0	METER
CMSF	16.5	METER	TENS	.0	METER
NOIS	8.0	METER	II	16.6	METER

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
CDTS	100.0		BS	12.25	IN
DTF	189.0	US/F	DTM	56.00	US/F
SBR	1.000	OHMM	DSEC	6.200	MMHO
SPT	STAN		MSEC	7.800	MMHO
DD	0.0		BHS	OPEN	

5 cm



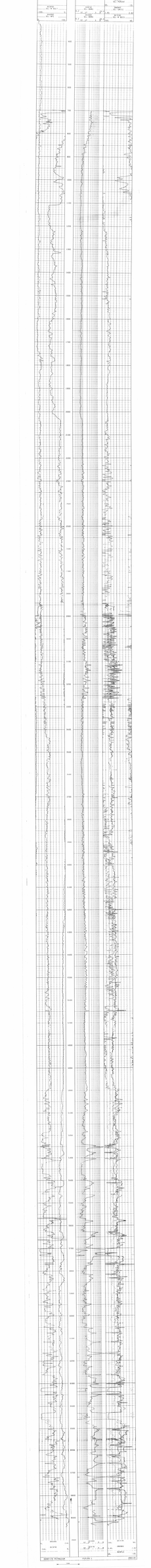
AR1919

ENCLOSURE No 2

SHELL PRODUCTION (DEPTH)

WELL No. 1

COMPOSITE LOG



OR.3498

380075 ENCLOSURE 4

CORE LAB

TEMPERATURE PLOT

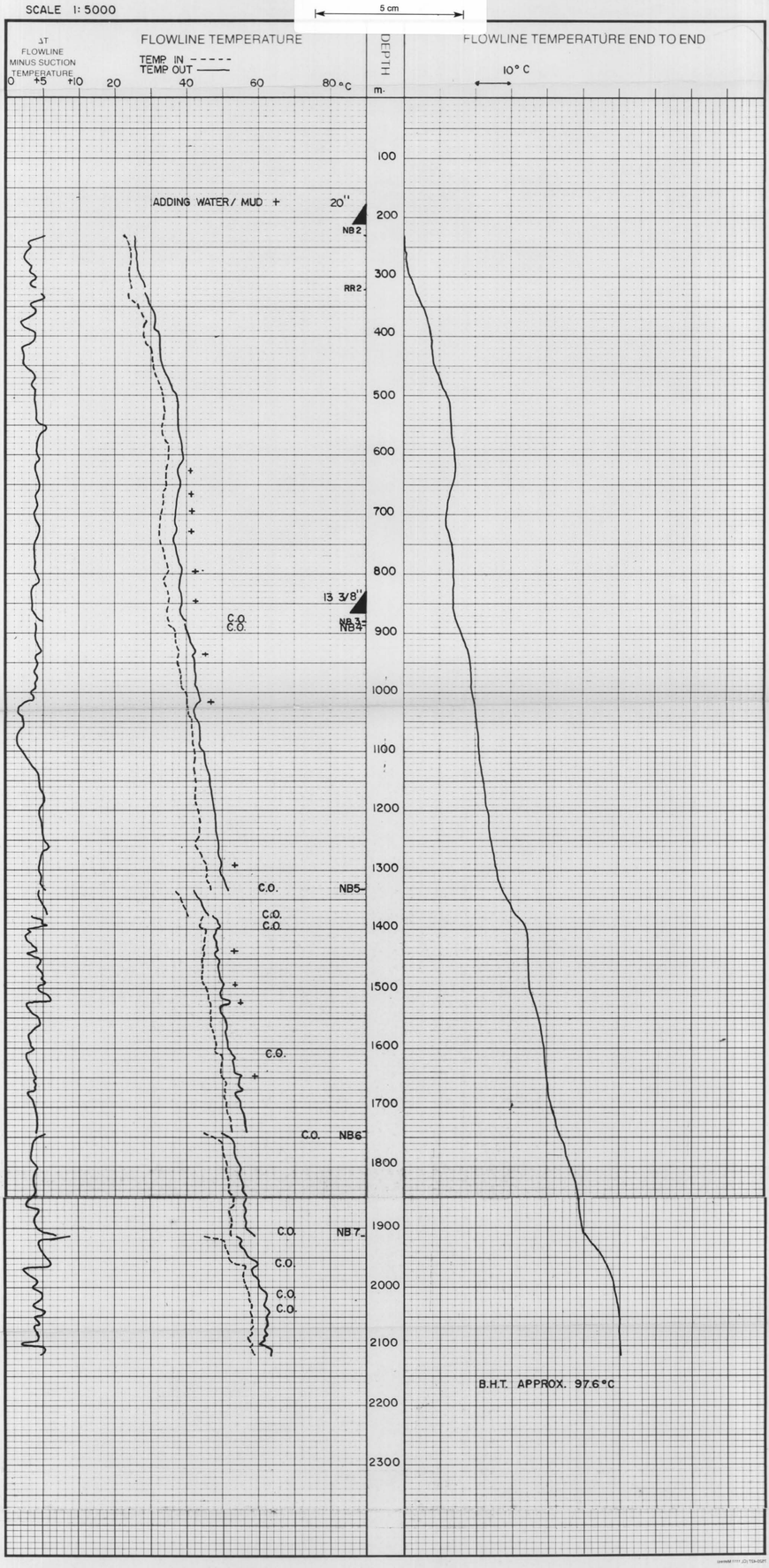
EXTENDED SERVICE PACKAGE - ESP

COMPANY	HEMATITE PETROLEUM PTY. LTD.		
WELL	PIPIPA No. 1		
FIELD OR AREA	BASS BASIN		
COUNTY	BASS STRAIT	STATE	
COUNTRY	AUSTRALIA	RKB ELEVATION	21 m
LAT (X)	40° 23' 11.26" S	GROUND ELEVATION	
LONG (Y)	145° 41' 44.96" E	WATER DEPTH	73 m

DEPTHS LOGGED	94 m to 2115 m		
DATES LOGGED	4 MAY 1982 to 16 MAY 1982		
CREW	DODSON, CHARLES		FL 802
DRILLING FLUID	SEAWATER	94	TO 229 m
	SEAWATER-GEL	229	TO 2115 m
			TO

SCALE 1: 5000

5 cm



OR_349B

380076 ENCLOSURE 5

CORE LAB

PRESSURE PLOT

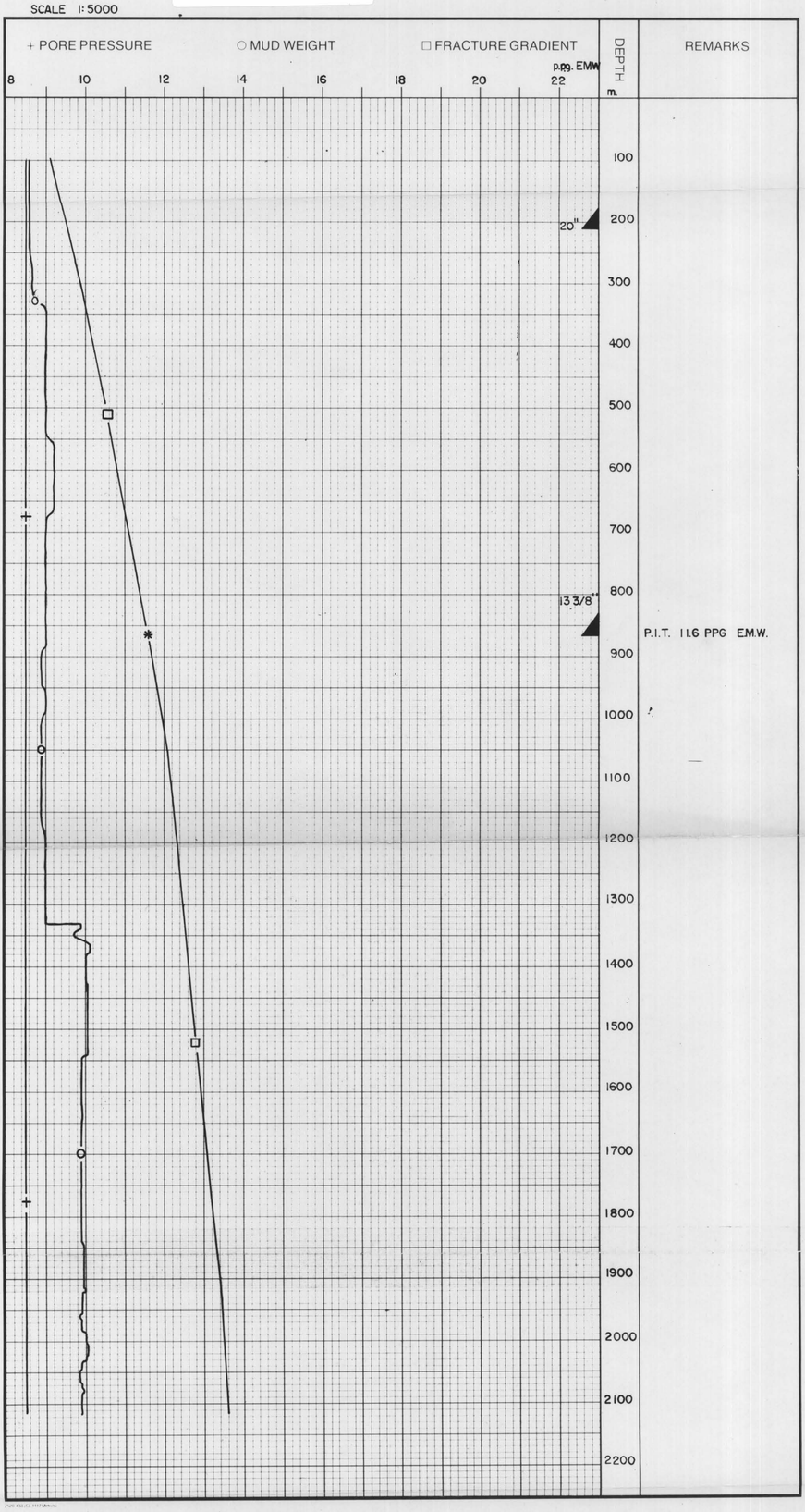
EXTENDED SERVICE PACKAGE - ESP

COMPANY	HEMATITE PETROLEUM PTY. LTD.		
WELL	PIPIPA NO.1		
FIELD OR AREA	BASS BASIN		
COUNTY	BASS STRAIT	STATE	
COUNTRY	AUSTRALIA	RKB ELEVATION	21m
LAT(X)	40°23'11.26"S	GROUND ELEVATION	
LONG(Y)	145°41'44.96"E	WATER DEPTH	73m

DEPTHS LOGGED	94m to 2115m		
DATES LOGGED	4 MAY 1982 to 16 MAY 1982		
CREW	DODSON, CHARLES	FL	802
DRILLING FLUID	SEAWATER	94m TO	229m
	SEAWATER - GEL	229m TO	2115m
		TO	

5 cm

SCALE 1:5000



OR-349B

380077 ENCLOSURE 6

CORE LAB

DRILL DATA PLOT

EXTENDED SERVICE PACKAGE - ESP

COMPANY	B.H.P. HEMATITE PETROLEUM PTY. LTD.
WELL	PIPIPA No. 1
FIELD OR AREA	BASS BASIN
COUNTY	BASS STRAIT
STATE	
COUNTRY	AUSTRALIA
RKB ELEVATION	21m
LAT(X)	40° 23' 11.26" S
GROUND ELEVATION	
LONG(Y)	145° 41' 44.96" E
WATER DEPTH	73m

DEPTHS LOGGED 94 m to 2115m
DATES LOGGED 4 MAY 1982 to 16 MAY 1982
CREW DODSON, CHARLES 802
SEAWATER 94 229 m
SEAWATER-GEL 229 2115 m

5 cm

SCALE 1:5000

RATE OF PENETRATION metres/hour: 100 | 10 | 1

MUD GAS: TG | CONNECTION GAS | TRIP GAS: 2 5 10 20 50 100 200 u

BIT NUMBER

DEPTH m

LITHOLOGY

CORRECTED d EXPONENT: 6 7 8 9 10 15 20 25 30

SHALE DENSITY: MUD 9.0 9.5 ppg

·1 1 5 10%

MSL

SB 100

RR 1

NO RISER

20" 200

NB 2

CONTROLLED ROP DUE TO GUMBO

300 400 500 600 700 800

13 3/8"

NB3 NB4 900 1000 1100 1200 1300

T.G. 472u

NB5

1400 1500 1600 1700

T.G. 46u

NB6

1800 1900

T.G. 20u

NB7

2000 2100

W.T.G. 62u

DRILLER'S T.D. 2115m
REACHED 16 MAY 1982

2200

PPG 9.0 9.5 10.0 10.5

7520-425 (CL 1109 Metres)

OR.349B

380078 ENCLOSURE 7

CORE LAB GEO-PLOT

EXTENDED SERVICE PACKAGE - ESP

COMPANY HEMATITE PETROLEUM PTY. LTD.
WELL PIPIPA No. 1
FIELD OR AREA BASS BASIN
COUNTY BASS STRAIT STATE
COUNTRY AUSTRALIA RKB ELEVATION 21 m
LAT(X) 40°23'11.26"S GROUND ELEVATION
LONG(Y) 145°41'44.96"E WATER DEPTH 73m

DEPTHS LOGGED 94 m to 2115 m
DATES LOGGED 4 MAY 1982 to 16 MAY 1982
CREW DODSON, CHARLES FL 802
DRILLING FLUID SEAWATER 94 TO 229 m
SEAWATER-GEL 229 TO 2115 m
TO

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted), but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

7520-422 (CL 1106)

5 cm

SCALE 1:5000

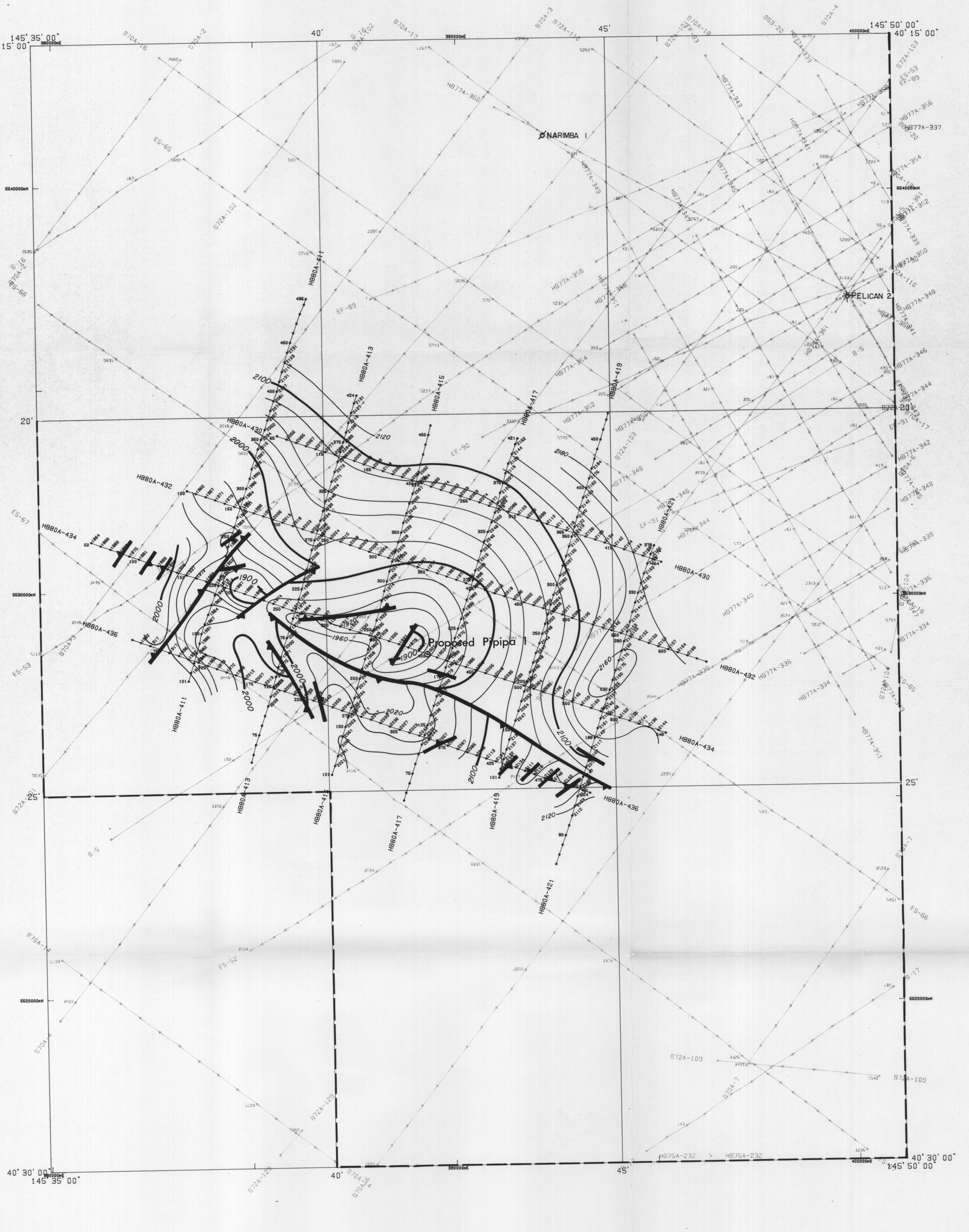
RATE OF PENETRATION	CORRECTED 'd' EXPONENT	INCREMENTAL COST/m + A$ / CUMULATIVE COST/m — A$	DEPTH	PORE PRESSURE P ppg / MUD WEIGHT D ppg / FRACTURE GRADIENT F ppg
m/hr. 1000 100 10 1	0.5 1.0 1.5 2.0 2.5 3	0 1000	m	10 12 14 16 18

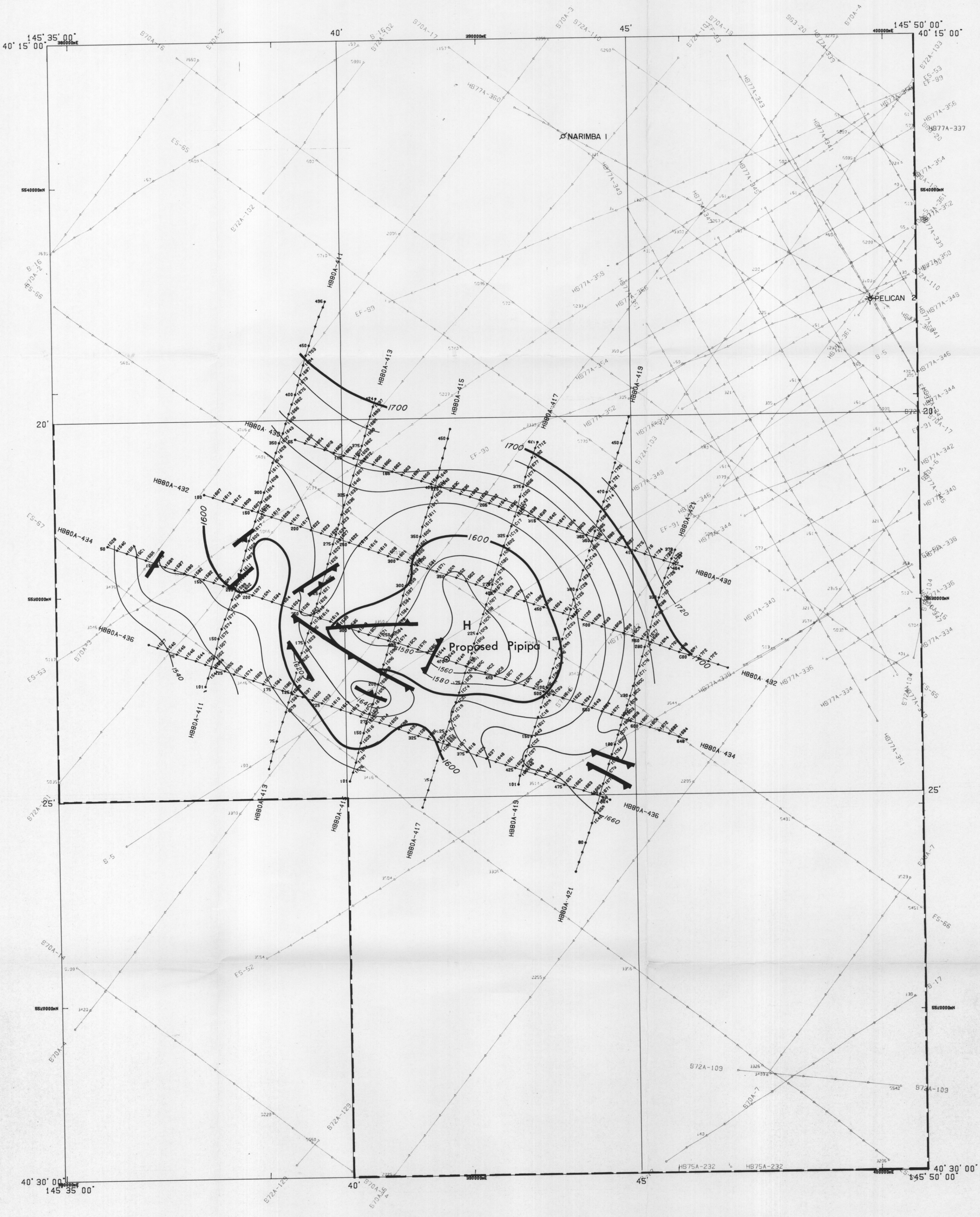
7520-423 (CL 1107)

RR 1
NB 2
RR 2
NB 3
NB 4
NB 5
NB 6
NB 7

250 500 750 1000 1250 1500 1750 2000 2250

CL 1102 (METRES)


NARIMBA 1
PELICAN 2
Proposed Pipipa 1
HB80A-411
HB80A-413
HB80A-415
HB80A-417
HB80A-419
HB80A-421
HB80A-430
HB80A-432
HB80A-434
HB80A-436
HB77A-360
HB77A-349
HB77A-358
HB77A-356
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SCALE 1:50.000

MILES

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KILOMETRES

THE BROKEN HILL PROPRIETARY CO. LTD

OIL AND GAS DIVISION

(HEMATITE PETROLEUM PROPRIETARY LIMITED)

PIPIPA PROSPECT

HORIZON 6

(TOP EASTERN VIEW COAL MEASURES)

DEPTH

5 cm

CONTOUR INTERVAL : 20 m.

DATUM : MSL.

AUTHOR : J. Guy

DRAWN BY : J.Cookson

DATE : October 1981

CHECKED BY :

380080

ENCLOSURE 9

OG—6715

OR 3498

OR 3498

Schlumberger

CST 2105 1383 (80 SHOTS)

5 cm

CSU Field Log

ENCLOSURE 10

COMPANY: HEMATITE PETROLEUM PTY. LTD.

WELL: PIPIPA 1 380081

FIELD: WILDCAT
SUITE : SUITE 2 RUN 1
STATE: TASMANIA
NATION: AUSTRALA
LOCATION: BASS BASIN

SEC: TWP: RGE:
LATITUDE: 40 23 11.26S
LONGITUDE: 145 41 44.96E

PERMANENT DATUM: MSL ELEVATIONS-
ELEV. OF PERM. DATUM: KB: 21.0 M
LOG MEASURED FROM: DF DF: 20.7 M
20.7 M ABOVE PERM. DATUM GL: -73.0 M
DRLG. MEASURED FROM: DF

DATE: 18 MAY 1982
RUN NO: 2

DEPTH-DRILLER: 2115.0 M
DEPTH-LOGGER: 2115.0 M
BTM. LOG INTERVAL: 2105.0 M
TOP LOG INTERVAL: 1383.0 M

CASING-DRILLER: 213 M 866 M
CASING-LOGGER: 213 M 866 M
CASING: 20 13 3/8
WEIGHT: 94.00 LB/F 45.00 LB/F
BIT SIZE: 17 1/2 12 1/4
DEPTH: 880 M 2115 M

OTHER SERVICES-
LDT-CNL-GR
WBT
DIL-MSFL-BHC
CIS-S

PROGRAM
TAPE NO:
20.1A

TYPE FLUID IN HOLE: SEAWATER POLYMER
DENSITY: 10.0 LB/G
VISCOSITY: 47.0 S
PH: 10.6
FLUID LOSS: 6.8 C3
SOURCE OF SAMPLE: FLOWLINE
RM: 0.302 OHM AT 18.3 DC
RMF: 0.212 OHM AT 15.5 DC
RMC: 0.412 OHM AT 16.6 DC
SOURCE RMF/RMC: PRESS /PRESS
RM AT BHT: 0.112 OHM AT 86.1 DC
RMF AT BHT: 0.073 OHM AT 86.1 DC
RMC AT BHT: 0.146 OHM AT 86.1 DC

TIME CIRC. STOPPED: 2330/16
TIME LOGGER ON BTM.: 0800/17

MAX. REC. TEMP: 86.1 DC

LOGGING UNIT NO: 500
LOGGING UNIT LOC: S. CROSS
RECORDED BY: M. AW
WITNESSED BY: C.BALMAVES R.TOLLIDAY M.ME

REMARKS:

EQUIPMENT NUMBERS-

CSTC GFAA

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FILE

101

SHOT SUMMARY LISTING PERFORMED 82/05/18

SHOT	STATUS	DEPTH	TENSION	
1	FIRED	2105.0	1708.	
2	FIRED	2066.4	1707.	
3	FIRED	2045.2	706.5	
4	FIRED	2027.2	170.7	
5	FIRED	1999.0	775.5	
6	FIRED	1980.7	1341.	
7	FIRED	1957.2	1008.	
8	FIRED	1949.8	811.0	
9	FIRED	1946.2	637.5	
10	FIRED	1943.9	1117.	
11	FIRED	1913.2	98.00	
12	FIRED	1875.8	805.0	
13	FIRED	1850.0	198.8	
14	FIRED	1826.8	1106.	
15	FIRED	1794.0	569.0	
16	FIRED	1774.0	1249.	
17	FIRED	1752.2	647.5	
18	FIRED	1735.0	1219.	
19	FIRED	1703.1	550.0	
20	FIRED	1668.0	1445.	
21	FIRED	1640.6	118.9	SPLIT BULLET
22	FIRED	1603.8	1113.	
23	FIRED	1570.8	349.5	
24	FIRED	1540.2	1346.	
25	FIRED	1526.7	878.0	
26	FIRED	1521.2	1321.	
27	FIRED	1488.8	1895.	
28	FIRED	1457.3	2150.	
29	FIRED	1414.2	881.5	
30	FIRED	1383.0	1244.	

DEPTH UNITS : METE BIT SIZE (INCHES) : 12.25

RING TYPE : SMAL BULLET TYPE : COMB

POWDER LOAD (GRAMS) : 12.00 POWDER TYPE : WB

108

FILE

INPU SUMM :

INPU	STAT	UNIT	MPDI	CNUM	ZREF	PREF	GAIN	OFFS	DCON
TENS	ALLO	LB	0	20					
GR	ALLO	GAPI	25	0		165.0	1.000		4

108

FILE

SHOT SUMM :

SHOT	STAT	TOOL	MPDI	WIRE	DEPT	TENS	INTE	NUMP	
1	FIRE	CSTC	5	W1+	2105.0	1708.	0	1	
2	FIRE	CSTC	8	W2+	2066.4	1707.	0	1	
3	FIRE	CSTC	10	W3+	2045.2	706.5	0	1	
4	FIRE	CSTC	13	W1+	2027.2	170.7	0	1	
5	FIRE	CSTC	15	W2+	1999.0	775.5	0	1	
6	FIRE	CSTC	18	W3+	1980.7	1341.	0	1	
7	FIRE	CSTC	20	W1+	1957.2	1008.	0	1	
8	FIRE	CSTC	23	W2+	1949.8	811.0	0	1	
9	FIRE	CSTC	25	W3+	1946.2	637.5	0	1	
10	FIRE	CSTC	28	W1+	1943.9	1117.	0	1	
11	FIRE	CSTC	30	W2+	1913.2	98.00	0	1	
12	FIRE	CSTC	33	W3+	1875.8	805.0	0	1	
13	FIRE	CSTC	35	W1+	1850.0	198.8	0	1	
14	FIRE	CSTC	38	W2+	1826.8	1106.	0	1	
15	FIRE	CSTC	40	W3+	1794.0	569.0	0	1	
16	FIRE	CSTC	43	W1+	1774.0	1249.	0	1	
17	FIRE	CSTC	45	W2+	1752.2	647.5	0	1	
18	FIRE	CSTC	48	W3+	1735.0	1219.	0	1	
19	FIRE	CSTC	50	W1+	1703.1	550.0	0	1	
20	FIRE	CSTC	53	W2+	1668.0	1445.	0	1	
21	FIRE	CSTC	55	W3+	1640.6	118.9	0	1	SPLIT BULLET
22	FIRE	CSTC	58	W1+	1603.8	1113.	0	1	
23	FIRE	CSTC	60	W2+	1570.8	349.5	0	1	
24	FIRE	CSTC	63	W3+	1540.2	1346.	0	1	
25	FIRE	CSTC	65	W1+	1526.7	878.0	0	1	
26	FIRE	CSTC	68	W2+	1521.2	1321.	0	1	
27	FIRE	CSTC	70	W3+	1488.8	1895.	0	1	
28	FIRE	CSTC	73	W1+	1457.3	2150.	0	1	
29	FIRE	CSTC	75	W2+	1414.2	881.5	0	1	
30	FIRE	CSTC	78	W3+	1383.0	1244.	0	1	

DLL/MSFL/GR/SP

CSU

COMPANY: SCHLUMBERGER WELL SERVICES
A DIVISION OF SCHLUMBERGER OVERSEAS, S.A.

COMPANY: ARCHITEX PETROLEUM LTD.
WELL: PITCHER
FIELD: WILD BLUE
COUNTY: BIG HORN
STATE: WYOMING
LOCATION: SECTION 1
TOWNSHIP: 56 N
RANGE: 91 W
OTHER SERVICES: CSU
PERMANENT DATUM: MSL
LOG MEASURED FROM: KB 20.5 ft
DRILLING MEASURED FROM: KB
ELEVATIONS: KB 20.5 ft
DF 19.5 ft
GL MSL
DATE: 6 MAY 1988
RUN NO.: ONE
DEPTH-DRILLER: 9000.0 ft
DEPTH-LOGGER: 9002.0 ft
BTM LOG INTERVAL: 9000.0 ft
TOP LOG INTERVAL: 8100.0 ft
CASING-DRILLER: 8100.0 ft @ 9.625 in
CASING-LOGGER: 8100.0 ft
BIT SIZE: 8.5 in
TYPE FLUID IN HOLE: SEAWATER GEL
DENSITY: 8.8 lb/gal
VISCOSITY: 40.0 s
PH: 9.0
FLUID LOSS: 4.0 cc
SOURCE OF SAMPLE: CIRCULATION
RM @ MEAS TEMP: 0.150 @ 68 deg F
RMF @ MEAS TEMP: 0.120 @ 68 deg F
RMC @ MEAS TEMP: 0.190 @ 68 deg F
RM @ BHT: 0.080 @ 201 deg F
TIME CIRC ENDED: 0300 6 MAY 1988
TIME LOGGER ON BOTTOM: 0700 6 MAY 1988
MAX REC TEMP: 201 deg F
EQUIPMENT NUMBER: 5-1
LOCATION: 5 MILES
RECORDED BY: R. SMITH
WITNESSED BY: MR. DAVID W. MEARES

REMARKS:
RUN WITH STANDOFF SUBS ON DIRECTION OF MR. DAVID MEARES ARCO

EQUIPMENT NUMBERS:
DLL-MSFL-GR: 5-1
SP: 5-1
CSU: 5-1

THE INTERPRETATIONS WE ARE FURNISHING ARE AN EXPRESSION OF OPINION BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT, GUARANTEE THEIR ACCURACY OR CORRECTNESS. WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

AFTER SURVEY TOOL CHECK SUMMARY

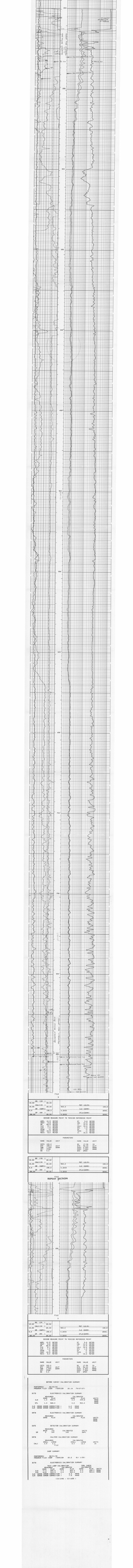
PERFORMANCE CHECKED
PROGRAM FILE: CHECK2DN 05.14 79/07/07

TOOL CHECK

BITS	MEASURE	REPEAT	ACCEPT	UNITS
ILD	71.3	71.3	70.0	OHMM
ILM	6.4	6.4	6.4	OHMM
SFLU	7.1	7.1	7.0	OHMM
SP	0.0	0.0	0.0	MV
GR	0.0	0.0	0.0	GAPI

FILE

DEPTH	8900.0	MAXIMUM	9002.0
DEPTH	8900.0	MINIMUM	8100.0
DEPTH	8900.0	MEAN	8501.


REPEAT SECTION
REPEAT SECTION
BEFORE SURVEY CALIBRATION SUMMARY
ELECTRONICS CALIBRATION SUMMARY
ELECTRONICS CALIBRATION SUMMARY
ELECTRONICS CALIBRATION SUMMARY
ELECTRONICS CALIBRATION SUMMARY
DEPTH CALIBRATION SUMMARY
AFTER SURVEY CALIBRATION SUMMARY

Schlumberger

DIL-BHC-CAL-GR 1f600 873-94M

CSU Field Log

ENCLOSURE 1b

COMPANY= HEMATITE PETROLEUM PTY. LTD.

WELL= PIPPA 1

FIELD= WILDCAT
SUITE= SUITE 1 RUN 1
STATE= TASMANIA
COUNTY= OFFSHORE
LOCATION= 3663 3481N

SEC= TWP= RGE=
LATITUDE= 40 23 11.265
LONGITUDE= 145 41 44.96

PERMANENT DATUM= MSL ELEVATIONS= KB= 21.0 M
ELEV. OF PERM. DATUM= DF= 20.0 M
LOG MEASURED FROM= KB= 21.0 M ABOVE PERM. DATUM GL= -73.0 M
DRLG. MEASURED FROM= DF

DATE= 8 MAY 1982
RUN NO= 1

DEPTH-DRILLER= 880.0 M
DEPTH-LOGGER= 875.0 M
BTM LOG INTERVAL= 873.0 M
TOP LOG INTERVAL= 94.0 M

CASING-DRILLER= 213 M
CASING-LOGGER= 213 M
CASING= 9⅝
BIT WEIGHT= 25-50 LB/F
BIT SIZE= 12 1/4
DEPTH= 880 M

TYPE FLUID IN HOLE= SEAWATER GEL
DENSITY= 10.1 LB/G
VISCOSITY= 39.0 S
PH= 9.0
FLUID LOSS= 7.0 cm³/30 MIN
SOURCE OF SAMPLE= FLOWLINE
RM= 0.370 OHM AT 19.4 DC
RMF= 0.300 OHM AT 19.4 DC
RMC= 0.540 OHM AT 10.2 DC
SOURCE RMF/RMC= PRESS/PRESS
RM @ BHT= 0.180 OHM AT 39.4 DC
RMF AT BHT= 0.105 OHM AT 39.4 DC
RMC AT BHT= 0.300 OHM AT 39.4 DC

TIME CIRC. STOPPED= 0300/8
TIME LOGGER ON BTM.= 0930/8

MAX. REC. TEMP= 39.4 DC

LOGGING UNIT NO= 504
LOGGING UNIT LOC= S. CROSS
RECORDED BY= M. SMITH
WITNESSED BY= M.SMITH M.MEEKES

REMARKS=

1.9 INCH STANDOFF USED ON INDUCTION
SP NOISY-UNKNOWN CAUSE

EQUIPMENT NUMBERS-

DIS 1050 DIC 1655 ILS RC 741 SLC K 741
DIS 1051/1057 MSR 973 ILM 973 SLM 973
IEM RC 946

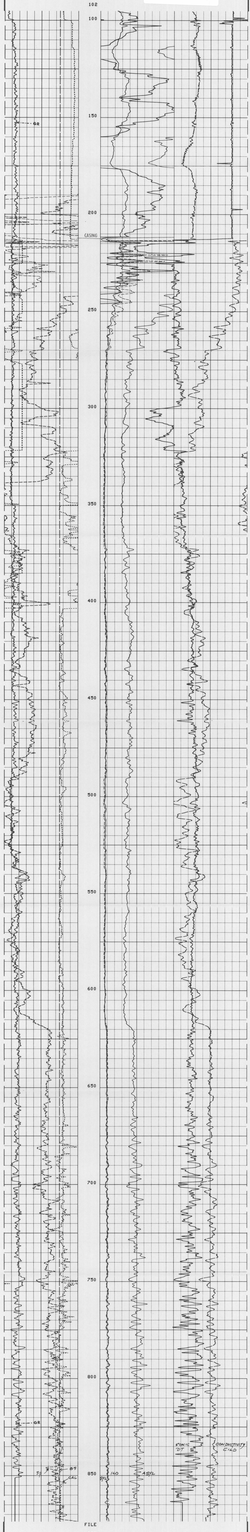
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FILE 101

BS (IN)		ILD (OHMS)	
19.60	20.60	0.2	10.2
CALI (IN)		ILM (OHMS)	
19.60	20.60	0.2	2.000
GR (GAPI)		SFLA (OHMS)	
0.0	150.0	0.2	10.00 2000.
SP (MV)			
-80.00	20.00		

CILD (MMHO) 0.0
DT (US/F) 203.0

FILE 102


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CASING
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Fm 2115
Fm 2116
Fm 2117
Fm 2118
Fm 2119
Fm 2120
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Fm 2170
Fm 2171
Fm 2172
Fm 2173
Fm 2174
Fm 2175
Fm

CSU

WELL SUMMARY

COMPANY: SENATUS PETROLEUM NTU, LTD.
WELL: STATION 1
FIELD: WILDCAT
COUNTY: ALLEGHENY
STATE: PENNSYLVANIA
LOCATION: 1000 FSL & 1000 FWL
SEC. 1 TWP. 1 RGE. 1
PERMANENT DATUM: MSL
LOG MEASURED FROM: KB 10.0 ft
DRILL MEASURED FROM: KB 10.0 ft

DATE:
RUN NO.:
DEPTH DRILLER: 2110.0 ft
DEPTH LOGGER: 2110.0 ft
BTM LOG INTERVAL: 2110.0 ft
CASING DRILLER: 500.0 @
CASING LOGGER: 500.0 @
BIT SIZE: 12.25 in 8.75 in
TYPE FLUID IN HOLE: SPUD MUD
DENSITY: 9.2 ppg
VISCOSITY: 45 s/qt
PH: 9.5
FLUID LOSS: 6.0 cc
SOURCE OF SAMPLE: MIXED
RM @ MEAS TEMP: 0.250 @ 60.0 °F
RMF @ MEAS TEMP: 0.200 @ 60.0 °F
RMC @ MEAS TEMP: 0.300 @ 60.0 °F
RM @ BHT: 0.150 @ 120.0 °F
TIME CIRC: 12.0 hr
TIME LOGGER ON BTM: 0900 CST
MAX REC TEMP: 70.0 °F
EQUIP. LOCATION: 1 MILE NORTH
RECORDED BY: T. SMITH
WITNESSED BY: T. HALLIWAND & TILLIDAY

REMARKS:

EQUIPMENT SUMMARY:
RUN NO. BIT SIZE TO @ TD DEPTH DRILLER
RUN NO. BIT SIZE TO @ TD DEPTH DRILLER

THIS INTERPRETATION IS NOT INTENDED TO BE CONSIDERED AS AN OPINION OR GUARANTEE OF EXACTNESS, BUT IS BLIEVED TO BE A REASONABLE INTERPRETATION OF THE DATA AVAILABLE TO US. WE CANNOT, HOWEVER, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION AND WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

AFTER SURVEY FOR, SHELD SURVEY

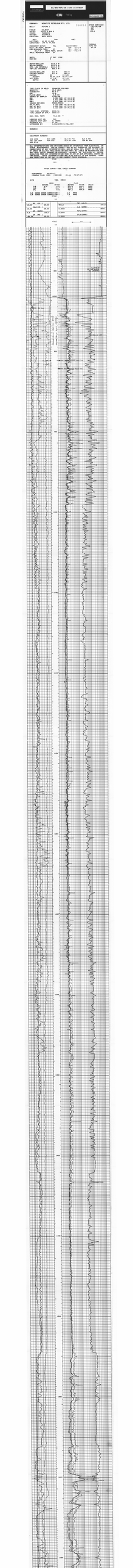
PERFORMED: 08/06/47
RECORDED: 1200 CST 7 DECEMBER 05:30 7/6/47/47

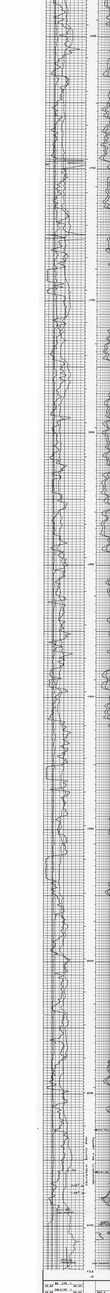
DATA TOOL INDEX

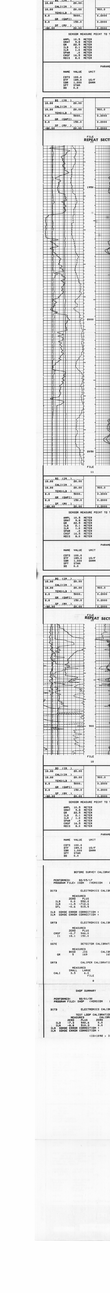
	RECORD	RUN	DEPTH	UNITS
	1	1	2110.0	DRILL
	2	1	500.0	CASG
	3	1	2110.0	WIRE

ALL BORE HOLE RECORDS ARE SHOWN ON FIELD PRINTS
DATA NOT AVAILABLE FOR THIS INTERVAL

BHC-SON	2110.0	MSFL-GR/CAL	2110.0
CAL/GR	2110.0	SLD (DENS)	2110.0
DLL-MSFL-GR/CAL	2110.0	SPEC/GAMMA	2110.0
LL-GR	2110.0	SPLIN/GAMMA	2110.0







COMPANY: ANADYR PETROLEUM PTY. LTD.
WELL: PIPIPA 1
FIELD: WILDCAT
DATE: 30/12/8 & Rev 2
SECTION: 36
RANGE: 24W
PERMANENT DATUM: MEAN SEA LEVEL
LOG MEASURED FROM: KB 25.0 m ABOVE PERM. DATUM
DRILLING MEASURED FROM: KELLY BUSHING
API SERIAL NO.: 50-133-20001

356615

OTHER SERVICES: BHC-GR-CAL

ELEVATION: KB: 25.0 m
DF: 23.5 m
GL: 21.0 m

PERSONNEL: MCCOY - MCLAUGHLIN

RUN: 1
DATE RUN: 27 MAY 1988

DEPTH-DRILLER: 2135.0 m
DEPTH-LOGGER: 2135.0 m
BTM. LOG INTERVAL: 2135.0 m
TOP LOG INTERVAL: 1500.0 m

CASING-DRILLER: 339.0 m @ 9000 m
CASING-LOGGER: 339.0 m @ 9000 m
BIT SIZE: 311.1 mm @ 339.0 m
TYPE FLUID IN HOLE: SEAWATER POLYMER
DENSITY: 10.2 kg/m³
VISCOSITY: 47.0 s
PH: 9.5
FLUID LOSS: 7.0 ml
SOURCE OF SAMPLE: CIRC
RM @ MEAS. TEMP: 0.1700 ohm @ 18.0 DC
RMF @ MEAS. TEMP: 0.1700 ohm @ 18.0 DC
RMC @ MEAS. TEMP: 0.1700 ohm @ 18.0 DC
RM @ BHT: 0.1700 ohm @ 18.0 DC
TIME SINCE CIRC.: 3 HRS
TIME LOGGER ON BTM.: 0200 HRS
MAX. REC. TEMP.: 74.0 DC
EQUIP. LOCATION: 3 TOWN
RECORDED BY: C.MCLAUGHLIN
WITNESSED BY: C.MCLAUGHLIN/D.M.TILLISKY

REMARKS:

EQUIPMENT NUMBERS:

DLL 1446	DIL 1408	SLS DC 744	SLS D 744
BHC 1447	CAL 1447	GR 1447	GR 1447

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AFTER SURVEY TOOL CHECK SUMMARY:

PERSONNEL: DIETZ/LT
PROGRAM FILE: CSU 7105C10A 05.1A 79/5/5/ATI

ATTN

TOOL CHECK

ITEM	MEASURE	AFTER	PLUS DEVIATION	UNITS
SLS	10.0	10.0	0.0	MMHO
DIL	10.0	10.0	0.0	MMHO
GR	0.0	0.0	0.0	GAPI
SLS 500KHZ ERROR CORRECTION :		0.0	MMHO	
DIL 20KHZ ERROR CORRECTION :		0.0	MMHO	

BRL-LOG	SLS(SONIC)	47.000
CALIPER	SLS(SONIC)	12.00
GR (GAMMA)	SLS(SONIC)	0.00
SP (MV)	SLS(SONIC)	0.0

SLS(SONIC)	47.000	
SLS(SONIC)	12.00	
MSFL(SONIC)	12.00	
SLS(SONIC)	0.00	CALIBRATED
REF.VALUE		

FILE

BRL-LOG	SLS(SONIC)	47.000
CALIPER	SLS(SONIC)	12.00
GR (GAMMA)	SLS(SONIC)	0.00
SP (MV)	SLS(SONIC)	0.0

SLS(SONIC)	47.000	
SLS(SONIC)	12.00	
MSFL(SONIC)	12.00	
SLS(SONIC)	0.00	CALIBRATED
REF.VALUE		

SONDE RELEASE PRIOR TO TOOLING REFERENCE PRINT

MSFL	10.0	SLS	10.0
DLL	10.0	SLS	10.0
SLS	10.0	SLS	10.0
BHC	10.0	SLS	10.0
GAMM	10.0	SLS	10.0

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
DLCP	0.0		SLS	10.0	
DLL	10.0		SLSD	10.0	
DLLD	10.0		SLSS	10.0	
GR	10.0		SLSD	10.0	

BRL-LOG	SLS(SONIC)	47.000
CALIPER	SLS(SONIC)	12.00
GR (GAMMA)	SLS(SONIC)	0.00
SP (MV)	SLS(SONIC)	0.0

REPEAT SECTION

BRL-LOG	SLS(SONIC)	47.000
CALIPER	SLS(SONIC)	12.00
GR (GAMMA)	SLS(SONIC)	0.00
SP (MV)	SLS(SONIC)	0.0

SONDE RELEASE PRIOR TO TOOLING REFERENCE PRINT

MSFL	10.0	SLS	10.0
DLL	10.0	SLS	10.0
SLS	10.0	SLS	10.0
BHC	10.0	SLS	10.0
GAMM	10.0	SLS	10.0

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
DLCP	0.0		SLS	10.0	
DLL	10.0		SLSD	10.0	
DLLD	10.0		SLSS	10.0	
GR	10.0		SLSD	10.0	

BEFORE SURVEY CALIBRATION SUMMARY:

PERSONNEL: DIETZ/LT
PROGRAM FILE: CSU 7105C10A 05.1A 79/5/5/ATI

ELECTRONICS CALIBRATION SUMMARY

ATTN

MEASURE	CALIBRATE	UNITS
SLS 10.0	10.0	MMHO
DIL 10.0	10.0	MMHO
GR 0.0	0.0	GAPI
SLS 500KHZ ERROR CORRECTION :	0.0	MMHO
DIL 20KHZ ERROR CORRECTION :	0.0	MMHO

ATTN

ELECTRONICS CALIBRATION SUMMARY

MEASURE	CALIBRATE	UNITS
SHORT 10.0	10.0	MMHO
LONG 10.0	10.0	MMHO
GR 0.0	0.0	GAPI

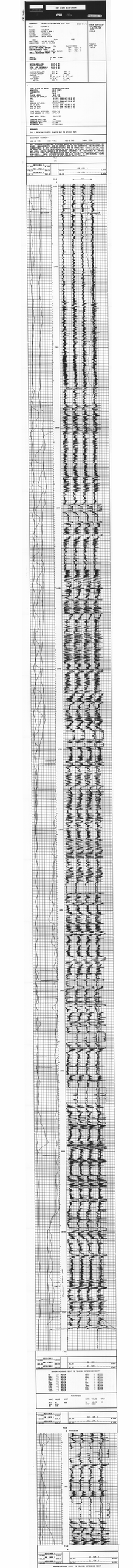
DEPTH DETECTOR CALIBRATION SUMMARY

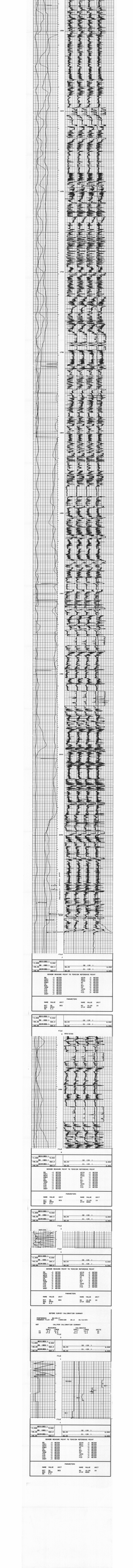
MEASURED	CALIBRATE	UNITS
GR 0.0	0.0	

ATTN

CALIPER CALIBRATION SUMMARY

MEASURED	CALIBRATE	UNITS
CALI 6.0	6.0	IN





CSU

COMPANY: SENVENTE PETROLEUM PTY. LTD.
WELL: DISCOVERY 1
FIELD: WILDCAT
COUNTY: OFFSHORE W.A.
STATE: WESTERN AUSTRALIA
LOCATION: 3237'S/N1'E
SEC. TWP. RGE.:
API #: 50-[illegible]-[illegible]
PERMANENT DATUM: MSL
LOG MEASURED FROM: KB 25' A.S.L.
DRILLING MEASURED FROM: KB

DATE: 27 MAY 1980
RUN NO.: ONE
DEPTH DRILLER: 8122.0 ft
DEPTH LOGGER: 8122.0 ft
TOP LOG INTERVAL: 8122.0 ft
BOTTOM LOG INTERVAL: 8122.0 ft
CASING DRILLER: 20" @ 1000 ft
CASING LOGGER: 20" @ 1000 ft
BIT SIZE: 12 1/4" TO 8122 ft
TYPE FLUID IN HOLE: SEAWATER/GEL
DENSITY: 10.0 ppg
VISCOSITY: 40 sec
PH: 10.5
FLUID LOSS: 4.6 cc
SOURCE OF SAMPLE: CIRC.
RM @ MEAS TEMP: 0.210 @ 68°F
RMF @ MEAS TEMP: 0.170 @ 68°F
RMC @ MEAS TEMP: 0.230 @ 68°F
RM @ BHT: 0.105 @ 200°F
TIME CIRC. STOPPED: 0300 HR
TIME LOGGER ON BOTTOM: 0700 HR
MAX. REC. TEMP.: 68.0 F
EQUIPMENT NUMBER: 1
LOCATION: 3237'S/N1'E
RECORDED BY: [illegible]
WITNESSED BY: [illegible] & TELLIOTT

RUN NO. ONE
BOREHOLE RECORD
BIT NO. 1 SIZE 12 1/4" FROM 1000 FT TO 8122 FT

CASING RECORD
SIZE 20" WEIGHT 133 LB/FT GRADE K55 FROM 0 FT TO 1000 FT

REMARKS: THIS WELL WAS LOGGED WITH THE DUAL INDUCTION LATEROLOG, BOREHOLE COMPENSATED SONIC LOG, LITHO DENSITY LOG AND DIPMETER LOG. THE DUAL INDUCTION LATEROLOG WAS RUN WITH A 5 FOOT STANDOFF. THE BOREHOLE COMPENSATED SONIC LOG WAS RUN WITH A 10 FOOT STANDOFF. THE LITHO DENSITY LOG WAS RUN WITH A 2 FOOT STANDOFF. THE DIPMETER LOG WAS RUN WITH A 4 ARM CALIPER. THE BOREHOLE WAS IN GOOD CONDITION AT TOTAL DEPTH.

AFTER SURVEY TOOL CHECK SUMMARY

RUN/SERVICE: DI/BHC/LDT/DIP
CHECKED BY: [illegible] DATE/TIME: 28 JUN 0800 01/15/81

DATA
TOOL CHECK

	BEFORE	AFTER	UNITS
SP	[illegible]	[illegible]	mV

DATA
TOOL CHECK

	BEFORE	AFTER	
RUN	ONE	ONE	
PERMEATE CHANGE (CLINK)	10.000		

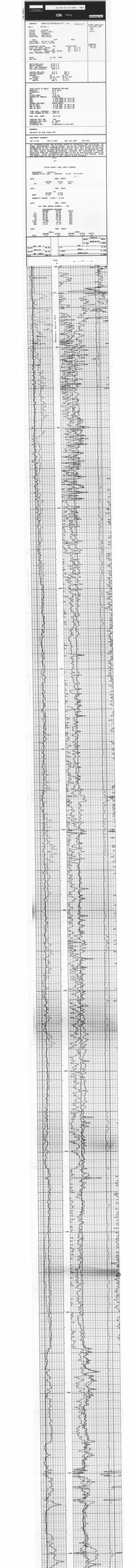
LATS
TOOL CHECK
LAT TOOL SERIAL NUMBER = 748

	BEFORE	AFTER	UNITS
10	99.00	99.00	GAPI
40	99.00	99.00	GAPI
160	99.00	99.00	GAPI
640	99.00	99.00	GAPI

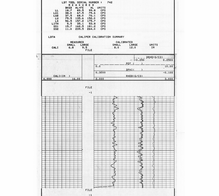
LATS
TOOL CHECK

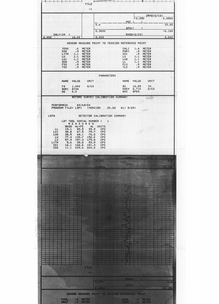
CHL1	BEFORE	AFTER	AFTER	UNITS
	A	A	B	
				CHL1/CHL2 1.000
				CHL1/CHL3 1.000
RT=.100	10.00	10.00	10.00	OHMM
CHL1/CH.	10.00	10.00	10.00	OHMM
				CHL2 10.000
CHL2/CH.	10.00	10.00	10.00	OHMM
				CHL3 10.000
RT=.100/CHL3	10.00	10.00	10.00	OHMM

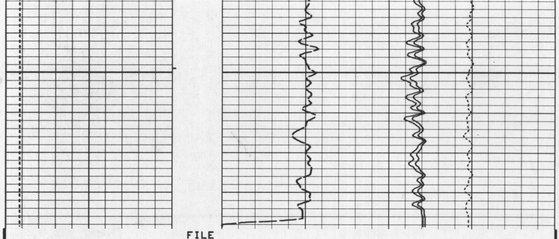
FILE






REPEAT SECTION





FILE

-1

DRHO(G/C3)

-0.250 0.2500

PEF ( )

0.0 10.00

DPHI( )

0.3000 -0.100

CALI(IN)

6.000 16.00

RHOB(G/C3)

2.000 3.000

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

TENS	.0	METER	CALI	1.4	METER
SS2	.9	METER	PARI	.9	METER
LITH	1.1	METER	SS1	.9	METER
LU	1.1	METER	LS	1.1	METER
LU1	1.1	METER	LU2	1.1	METER
SEQ	.9	METER	LL	1.1	METER
FSS	.9	METER	FLS	.9	METER
TSS	.9	METER	TLS	.9	METER

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
FD	1.000	G/C3	BS	12.25	IN
BARI	DISA		MDEN	2.710	G/C3
DD	0.0		BHS	OPEN	

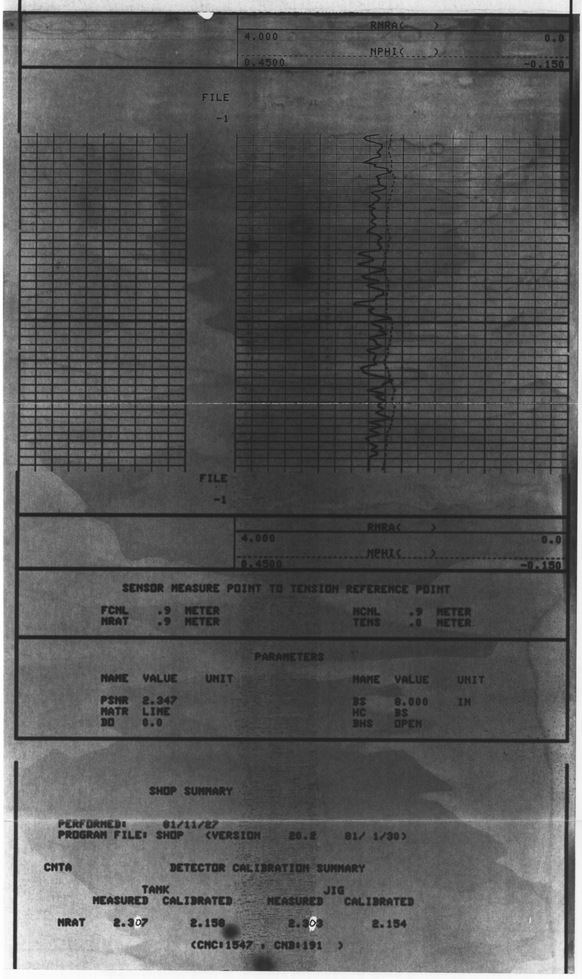
BEFORE SURVEY CALIBRATION SUMMARY

PERFORMED: 82/03/24
PROGRAM FILE: LDPI (VERSION 20.22 81/ 5/29)

LDTA DETECTOR CALIBRATION SUMMARY

LDT TOOL SERIAL NUMBER : 1

	MEASURED			
	BKGD	AL+FE	AL	UNITS
LL	19.1	89.5	99.9	CPS
LU1	38.8	67.5	75.7	CPS
LU2	38.5	68.1	76.2	CPS
LU	77.4	135.7	152.0	CPS
LS	57.9	157.3	175.8	CPS
LITH	5.6	35.2	53.9	CPS
SS1	16.1	162.6	181.3	CPS
SS2	11.1	239.6	264.2	CPS



RMRA( )

4.000 0.0

NPHI( )

0.4500 -0.150

FILE

-1

RMRA( )

4.000 0.0

NPHI( )

0.4500 -0.150

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

FCNL	.9	METER	NCNL	.9	METER
NRAT	.9	METER	TENS	.0	METER

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
PSHR	2.347		BS	8.000	IN
MATR	LIME		HC	BS	
DD	0.0		BHS	OPEN	

SHOP SUMMARY

PERFORMED: 81/11/27
PROGRAM FILE: SHOP (VERSION 26.2 81/ 1/30)

CNTA DETECTOR CALIBRATION SUMMARY

	TANK		JIG	
	MEASURED	CALIBRATED	MEASURED	CALIBRATED
NRAT	2.307	2.150	2.303	2.154

(CNC:1547 , CND:191)

5 cm

CSU 1987-01

COMPANY: HORACTIC PETROLEUM PTY. LTD. 316855
WELL: PIPIRI-2
FIELD: PIPIRI
REGION: RIFLE 4 BASE 1
STATE: VICTORIA
NATIONAL: AUSTRALIA
PERMANENT DATUM: MSL ELEVATIONS: KB: 23.0
LOG MEASURED FROM: KB 23.0 M DF: 21.2 M GL: 17.0 M
DRL MEASURED FROM: KB
API SERVICES: NONE

RUN: 1
DATE RUN: 17 MAY 1982

DEPTH-DRILLER: 2115.0 M
DEPTH-LOGGER: 2115.0 M
BTM LOG INTERVAL: 2115.0 M
TOP LOG INTERVAL: 1500.0 M
CASING-DRILLER: 323.0 M 508 M
CASING-LOGGER: 323.0 M 508 M
BIT SIZE: 311.1 MM 215.9 MM
TYPE FLUID IN HOLE: SEAWATER POLYMER
DENSITY: 10.2 LB/G
PH: 9.5
FLUID LOSS: 7.6 CC
SOURCE OF SAMPLE: CIRC
RM @ MEAS TEMP: 0.1000 OHMM AT 19.5 DEG
RMF: 0.1000 OHMM AT 19.5 DEG
RMC: 0.1000 OHMM AT 19.5 DEG
RM AT BHT: 0.0530 OHMM AT 60.0 DEG
TIME CIRC: 12 HR
TIME LOGGER AT BTM: 0200 HR
MAX. REC. TEMP: 60.0 DEG
LOGGING DIST (M): 2115
WITNESS NAME: R. MALLINAT
OPERATOR'S NO.: 1
RECORDED BY: E. MACHADO R.TOLLINAT

REMARKS:
SALINITY OF MUD 17500 PPM

EQUIPMENT NUMBERS:

LOC W 1547 SGC JAN 1937 NOR NTO

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LDL

AFTER SERVICE TOOL CHECK SUMMARY

RECORDED: 23/05/87
PROGRAM FILE: LDT: 7265010M 05.02 81/10/09?

DATA TOOL CHECK
DF RECORD 21.2 M
DATE 23/05/87
TIME 1547

DATA TOOL CHECK
BEFORE JOB AFTER
BHST 60.0M 60.0M
MRT 0.73H 0.73H
MINIMUM CHANGE +1.9M/H +4.0M/H

DATA TOOL CHECK
LAT TOOL SERIAL NUMBER # 746

RECORDED BEFORE AFTER UNITS
LSS 60.0M 60.0M DPU
LSD 60.0M 60.0M DPU
SSS 60.0M 60.0M DPU
SSD 60.0M 60.0M DPU
LSS 19.0M 19.0M DPU
LSD 19.0M 19.0M DPU
SSS 19.0M 19.0M DPU
SSD 19.0M 19.0M DPU

DATA TOOL CHECK
RECORDED BEFORE AFTER UNITS
CAL1 8.5 8.5 8.5 IN
FILE

FILE

FILE

GAMMA RAYGUN POINT TO TOOLSIN REFERENCE POINT

SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MUDW	9.80		DI	10.00	M
MUDV	1.00		DT	1.524	M
MUDF	0.00	0/0	FD	2.650	G/CC
MUDS	0.00				

FILE

SONIC SECTIONS

FILE

GAMMA RAYGUN POINT TO TOOLSIN REFERENCE POINT

SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE
SSD	4.5	METRE	SSS	4.5	METRE
LSD	4.5	METRE	LSS	4.5	METRE

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MUDW	9.80		DI	10.00	M
MUDV	1.00		DT	1.524	M
MUDF	0.00	0/0	FD	2.650	G/CC
MUDS	0.00				

BOTTOMS SURVEY CALIBRATION SUMMARY

PERFORMED: 23/05/87
PROGRAM FILE: LDT: 7265010M 05.02 81/10/09?

DATA DETECTOR CALIBRATION SUMMARY
RECORDED CALIBRATED UNITS
DF DF DPU

DATA DETECTOR CALIBRATION SUMMARY
RECORDED CALIBRATED UNITS
BHST 60.0M 60.0M DPU
MRT 0.73H 0.73H

DATA DETECTOR CALIBRATION SUMMARY
LAT TOOL SERIAL NUMBER # 746

	RECORDED		CALIBRATED		
	SSD	SSS	SSD	SSS	UNITS
LSS	60.0	60.0	60.0	60.0	DPU
LSD	60.0	60.0	60.0	60.0	DPU
SSS	60.0	60.0	60.0	60.0	DPU
SSD	60.0	60.0	60.0	60.0	DPU
LSS	19.0	19.0	19.0	19.0	DPU
LSD	19.0	19.0	19.0	19.0	DPU
SSS	19.0	19.0	19.0	19.0	DPU
SSD	19.0	19.0	19.0	19.0	DPU

DATA CALIPER CALIBRATION SUMMARY
RECORDED CALIBRATED UNITS
CAL1 8.5 8.5 IN