

# Reeves

## DUAL LATEROLOG - GR

### DENSITY - NEUTRON

### 1:200 TVD

COMPANY				ESSO AUSTRALIA PTY. LTD.			
WELL				TUNA A10a			
FIELD				GIPPSLAND BASIN			
PROVINCE/COUNTY				BASS STRAIT			
COUNTRY/STATE				AUSTRALIA			
LOCATION				AMG X 624224.99m E AMG Y 5774222.49m N LAT:38°10'16.394"S LONG:148°25'05.413"E			
LSD	SEC	TWP	RGE	Other Services COMPENSATED SONIC			
API Number							
Permit Number							
Permanent Datum MSL				, Elevation 0		metres	
Log Measured From 31.32, Metres				above Permanent Datum			
Drilling Measured From Drill Floor, RT							
Date	12-OCT-2002					Elevations: KB 31.32 metres DF metres GL -59.40 metres	
Run Number	1						
Depth Driller	1446.70			metres			
Depth Logger	1446.70			metres			
First Reading	1445.00			metres			
Last Reading	1346.00			metres			
Casing Driller	625.90			metres			
Casing Logger							
Bit Size	8.50			Inches			
Hole Fluid Type	KCL PHPA						
Density / Viscosity	10.30 lb/USg		57.00				
PH / Fluid Loss	8.90		3.40 ml/30Min				
Sample Source	FLOWLINE						
Rm @ Measured Temp	0.126 @ 25.0			ohm-m			
Rmf @ Measured Temp	0.097 @ 25.0			ohm-m			
Rmc @ Measured Temp	0.191 @ 25.0			ohm-m			
Source Rmf / Rmc	PRESS		FILTER				
Rm @ BHT	0.07 @ 63.0		ohm-m				
Time Since Circulation	0.65 HRS						
Max Recorded Temp	63.00		deg C				
Equipment Name	SHUTTLE						
Equipment / Base	1		CML				
Recorded By	MATT BARNES						
Witnessed By	BRUCE MENZEL						
Last Title							

## BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	661.20	2312.00

## CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
	9.625	0.00	661.20	40.00

## REMARKS

DRILLING RIG: NABORS (ISDL) RIG 453.

COMPACT WIRELINE TOOLS DEPLOYED BY COMPACT WELL SHUTTLE TECHNIQUE.

MESSENGER DEPLOYED WITH HALLIBURTON CEMENT PUMP, MESSENGER DEPLOYED AT 14:35 12-OCT.  
RING SHEARED AT 15:08 12-OCT.

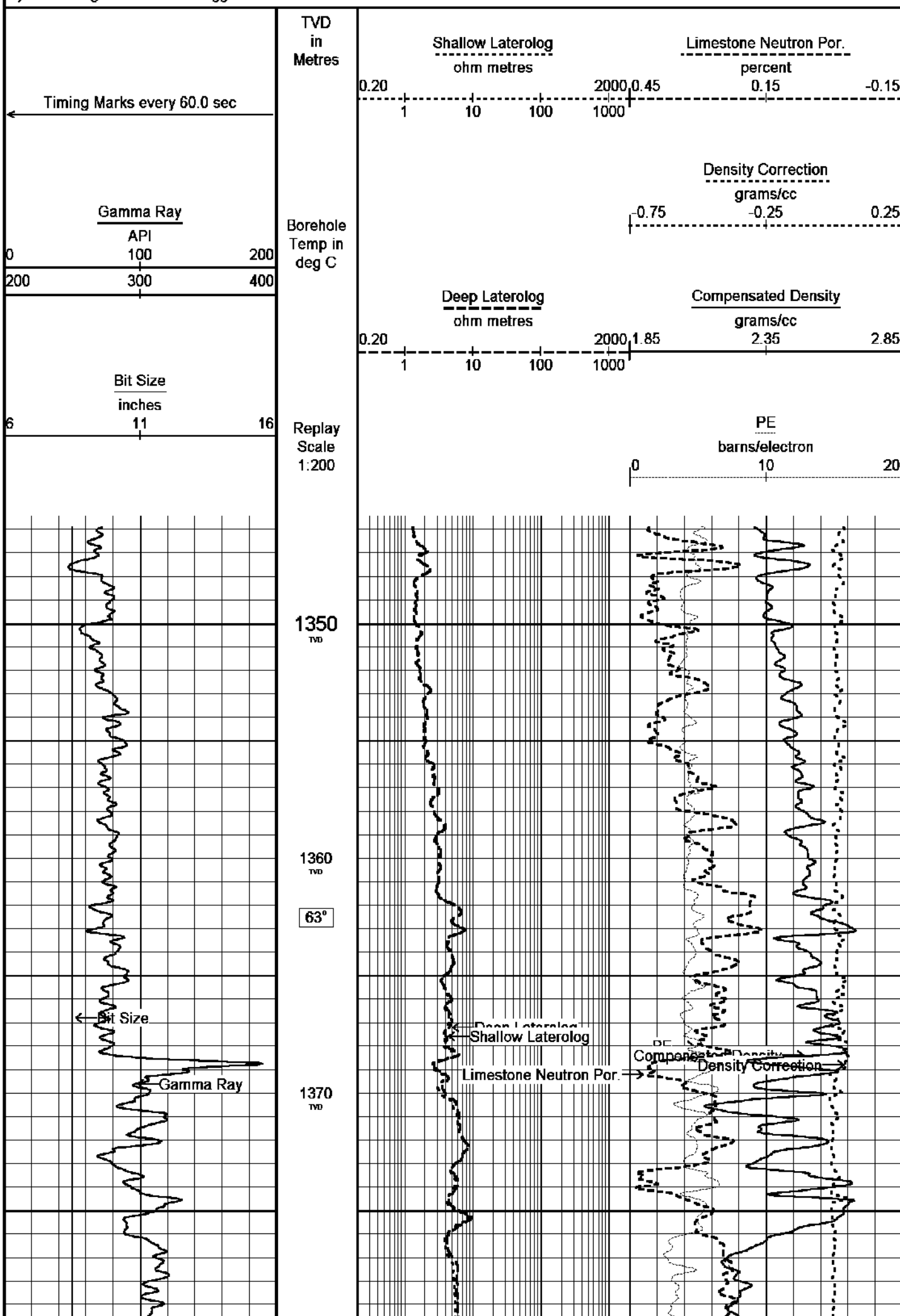
DENSITY CALIPER DID NOT OPEN, LOGS PROCESSED USING BITSIZE FOR CALIPER CORRECTIONS.

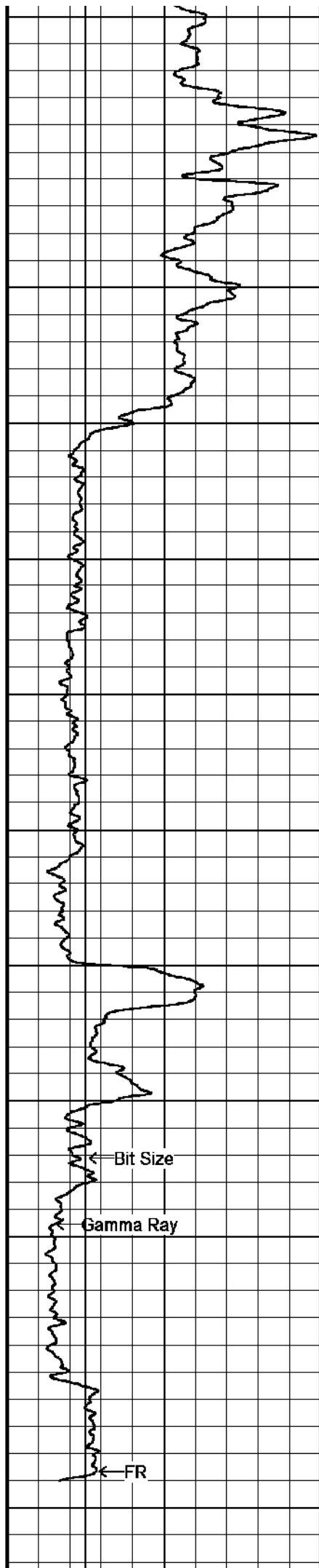
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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 in our price schedule.

MAIN LOG 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 31-OCT-2002 20:40





1380  
TVD

63°

1390  
TVD

1400  
TVD

1410  
TVD

61°

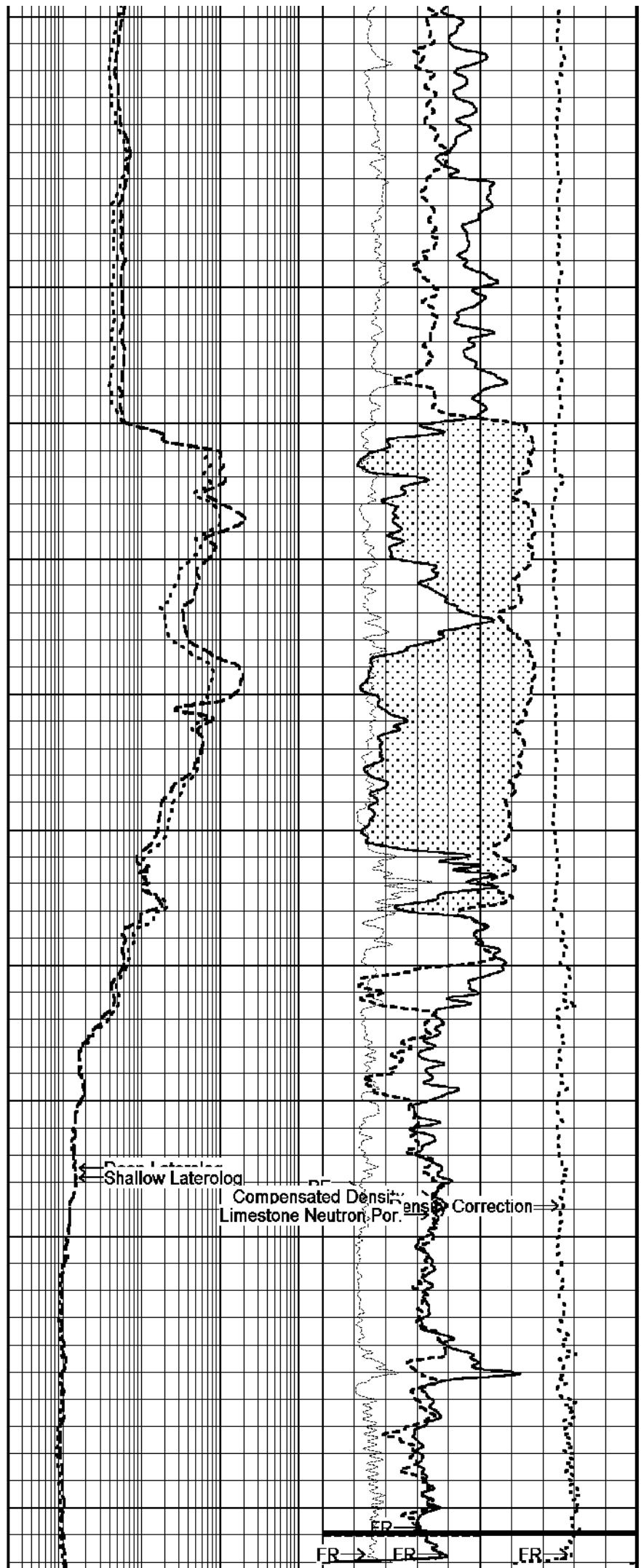
1420  
TVD

1430  
TVD

Bit Size

Gamma Ray

FR



Shallow Laterolog

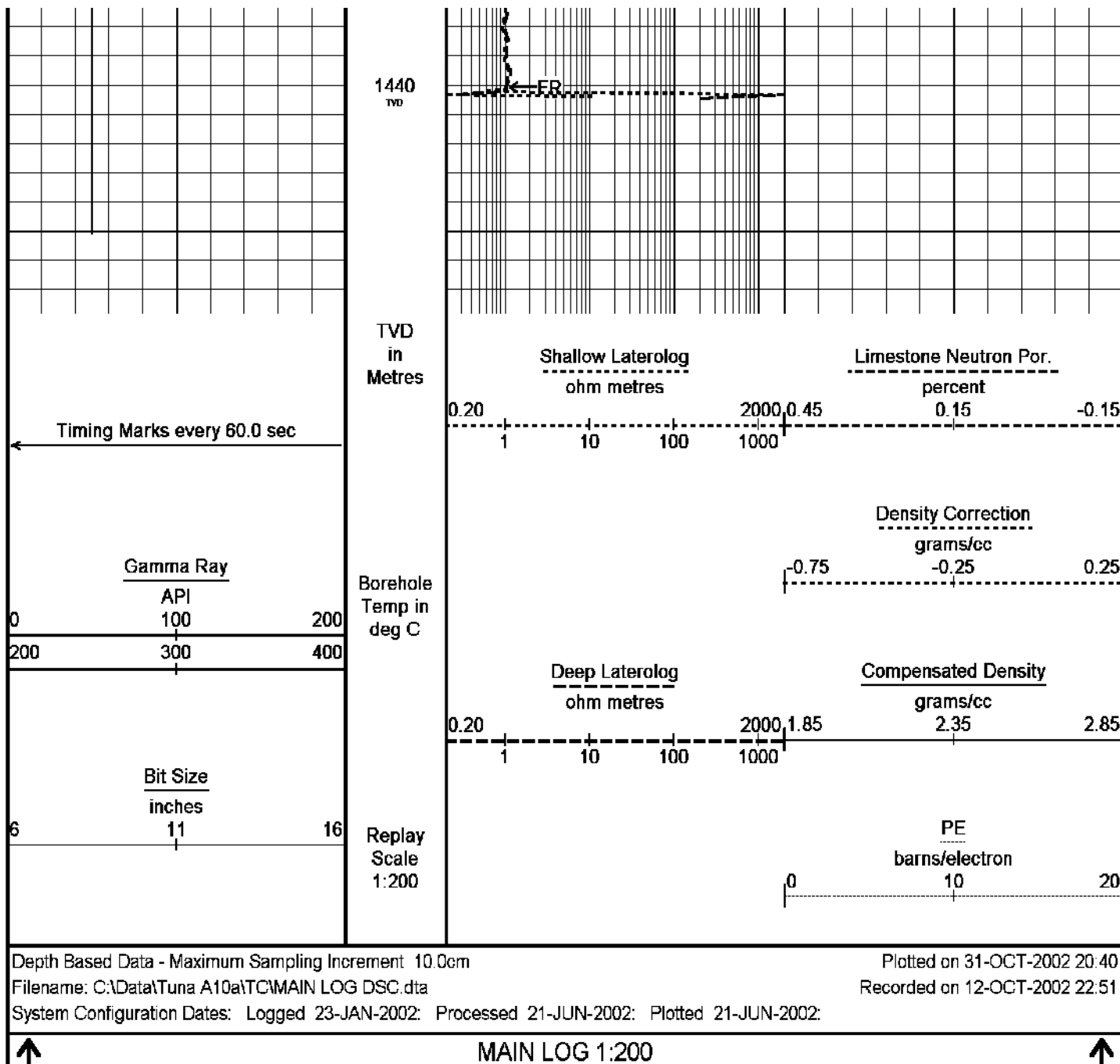
Compensated Density  
Limestone Neutron Porosity

Correction

FR

FR

FR



## BEFORE SURVEY CALIBRATION

C:\Data\Tuna A10a\TC\MAIN LOG DSC.dta

### General Constants All 000

#### General Parameters

Mud Resistivity	0.07	ohm-metres
Mud Resistivity Temperature	63.00	degrees C
Water Level	0.00	metres
Density/Neutron Processing	Wet Hole	

#### Hole/Annular Volume Parameters

HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	None	
Annular Volume Diameter	7.00	inches

#### Rwa Parameters

Porosity used	Base Density Porosity
Resistivity used	Deep Laterolog
RWA Constant A	0.61
RWA Constant M	2.15

### Gamma Calibration MCG 044

Field Calibration on 10-OCT-2002 15:55

Measured	Calibrated (API)
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Background	12	0
Calibrator (Gross)	1440	917
Calibrator (Net)	1428	909
Gamma Constants MCG 044		
Gamma Calibrator Number	060	
Mud Density	1.24	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Centred	
Concentration of KCl	0.00	kppm
High Resolution Temperature Calibration MCG 044		
	Measured	Calibrated(Deg C)
Lower	1.00	1.00
Upper	150.00	150.00
High Resolution Temperature Constants MCG 044		
Pre-filter Length	11	
Neutron Calibration MDN 068		
		Base Calibration on 4-SEP-2002,14:36 Field Check on 10-OCT-2002 15:45
Base Calibration		
	Measured	Calibrated (cps)
	Near Far	Near Far
	2771 85	3714 110
Ratio	32.600	33.764
Field Calibrator at Base		
		Calibrated (cps)
		2438 3603
Ratio		0.677
Field Check		
		Calibrated (cps)
		1904 2750
Ratio		0.693
Neutron Constants MDN 068		
Neutron Source Id	724	
Neutron Jig Number	52	
Epithermal Neutron	No	
Caliper Source for Processing	Bit Size	
Stand-off	0.00	inches
Mud Density	1.24	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	MCG External Temperature	
Temperature	N/A	degrees C
Mud Salinity	52.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	
Photo Density Calibration MPD 066		
		Base Calibration on 4-SEP-2002,14:39 Field Check on 10-OCT-2002 16:08
Density Calibration		
Base Calibration		
	Measured	Calibrated (sdu)
	Near Far	Near Far
Reference 1	54289 19473	53282 19349
Reference 2	25469 2619	25298 2555
Field Check at Base		
	997.0 1172.6	
Field Check		
	995.7 1165.6	
PE Calibration		
Base Calibration		
	Measured	Calibrated
	WH Ratio	Ratio
Background	191 873	

Reference 1	17342	54106	0.322	0.318
Reference 2	6938	25336	0.276	0.273

Field Check at Base	191.1	872.9
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Field Check	190.3	872.2
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#### Density Constants MPD 066

Density Source Id	226
Nylon Calibrator Number	517
Aluminium/Fe Calibrator Number	517
Density Shoe Profile	4 inch
Caliper Source for Processing	Bit Size
Gamma Strip Coefficient	0.00
PE Correction to Density	Not Applied
Mud Density	1.24 gm/cc
Mud Density Z/A Correction	1.11
Mud Filtrate Density	1.00 gm/cc
Dry Hole Mud Filtrate Density	1.00 gm/cc
DNCT	0.00 gm/cc
CRCT	0.00 gm/cc

Matrix Density (gm/cc)	Depth (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

#### Laterolog Calibration MLE 015

Base Calibration on 4-SEP-2002,14:40  
Field Check on 11-OCT-2002,11:33

##### Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Shallow	0.0	972.3	0.0	1327.3
Deep	0.0	972.9	0.0	852.7
Groningen	0.0	996.2	0.0	852.7

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Shallow	49.1	49.1
Deep	31.5	31.5
Groningen	246.3	246.3

#### Laterolog Constants MLE 015


Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3273	
Deep Laterolog K Factor	0.8527	
Groningen Laterolog K Factor	0.8527	
Interference Rejection	50 Hz	
SP Connection	SP Bridle Electrode	
Groningen Connection	Groningen Electrode	

#### DOWNHOLE EQUIPMENT

All measurements relative to tool zero.

Compact Battery Sub.  
MBS 99 Length: 4.34 m Weight: 44.09 lb



[illegible]


Compact Inline Standoff  
MIS 31 Length: 0.65 m Weight: 30.86 lb

Compact Knuckle Joint  
SKJ 44 Length: 0.66 m Weight: 24.25 lb

Compact Gamma  
MCG 44 Length: 2.65 m Weight: 63.93 lb

32.58 m GRGC - Gamma Ray

31.69 m CGXT - MCG External Temperature

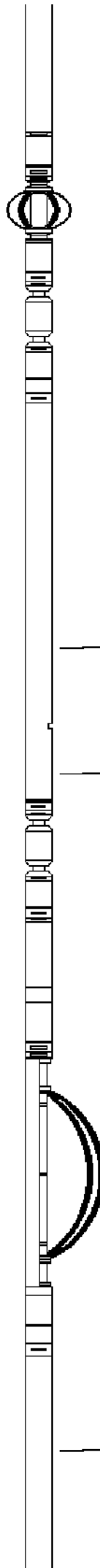
Compact Knuckle Joint  
SKJ 46 Length: 0.66 m Weight: 24.25 lb

Compact Swivel Head Adaptor  
SHA 27 Length: 0.83 m Weight: 26.46 lb

Compact Inline Bowspring  
MIS 24 Length: 1.74 m Weight: 33.07 lb

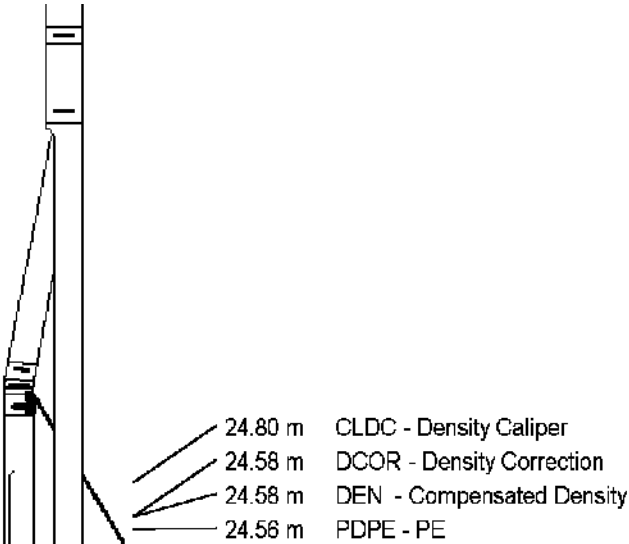
Compact Neutron  
MDN 68 Length: 1.53 m Weight: 50.71 lb

27.48 m NPRL - Limestone Neutron Por.

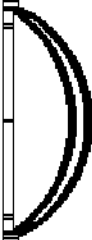




Compact Density/Caliper  
MPD 66    Length: 2.92 m    Weight: 90.39 lb



Compact Inline Bowspring  
MIS 25    Length: 1.74 m    Weight: 33.07 lb



Compact Swivel Head Adaptor  
SHA 28    Length: 0.83 m    Weight: 26.46 lb

Compact Knuckle Joint  
SKJ 45    Length: 0.66 m    Weight: 24.25 lb

Compact Inline Standoff  
MIS 53    Length: 0.65 m    Weight: 30.86 lb



Compact Upper Guard Sub.  
MUG 17    Length: 2.74 m    Weight: 68.34 lb



Compact Inline Standoff  
MIS 49    Length: 0.65 m    Weight: 30.86 lb

Compact Laterolog Electrode Sub.  
MLE 15    Length: 3.76 m    Weight: 92.59 lb

14.66 m    DSLL - Shallow Laterolog  
14.66 m    DGLL - Groningen Laterolog

Compact Inline Standoff  
MIS 76    Length: 0.65 m    Weight: 30.86 lb

Compact Lower Guard Sub.  
MLG 7    Length: 2.44 m    Weight: 55.12 lb

Compact Inline Standoff  
MIS 73    Length: 0.65 m    Weight: 30.86 lb

Compact Knuckle Joint  
SKJ 48    Length: 0.66 m    Weight: 24.25 lb

Compact Inline Standoff  
MIS 75    Length: 0.65 m    Weight: 30.86 lb

Compact Series



Compact Sonic  
MSS 45 Length: 3.82 m Weight: 72.75 lb

Compact Inline Standoff  
MIS 30 Length: 0.65 m Weight: 30.86 lb

Compact Induction  
MAI 69 Length: 3.29 m Weight: 48.50 lb

Compact Hole Finder  
HFS 99 Length: 0.61 m Weight: 2.20 lb



Total Length: 49.93 m Total Weight: 1296.32 lb

COMPANY	ESSO AUSTRALIA PTY. LTD.
WELL	TUNA A10a
FIELD	GIPPSLAND BASIN
PROVINCE/COUNTY	BASS STRAIT
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing		metres	First Reading	1445.00	metres
Elevation Drill Floor	31.32	metres	Depth Driller	1446.70	metres
Elevation Ground Level	59.40	metres	Depth Logger	1446.70	metres

Elevation Ground Level	700.40	metres	Depth Logger	1440.10	metres
<div> <div>Reeves</div> <div> DUAL LATEROLOG - GR  DENSITY - NEUTRON  1:200 TVD </div> </div>					