

# Reeves

## DUAL LATEROLOG - GR

### DENSITY - NEUTRON

### 1:500 MD

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:			
Run Number	1			KB	DF	metres	
Depth Driller	2312.00			metres		31.32	
Depth Logger	2312.00			metres		metres	
First Reading	2307.00			metres		metres	
Last Reading	2050.00			metres		metres	
Casing Driller	661.20			metres		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.

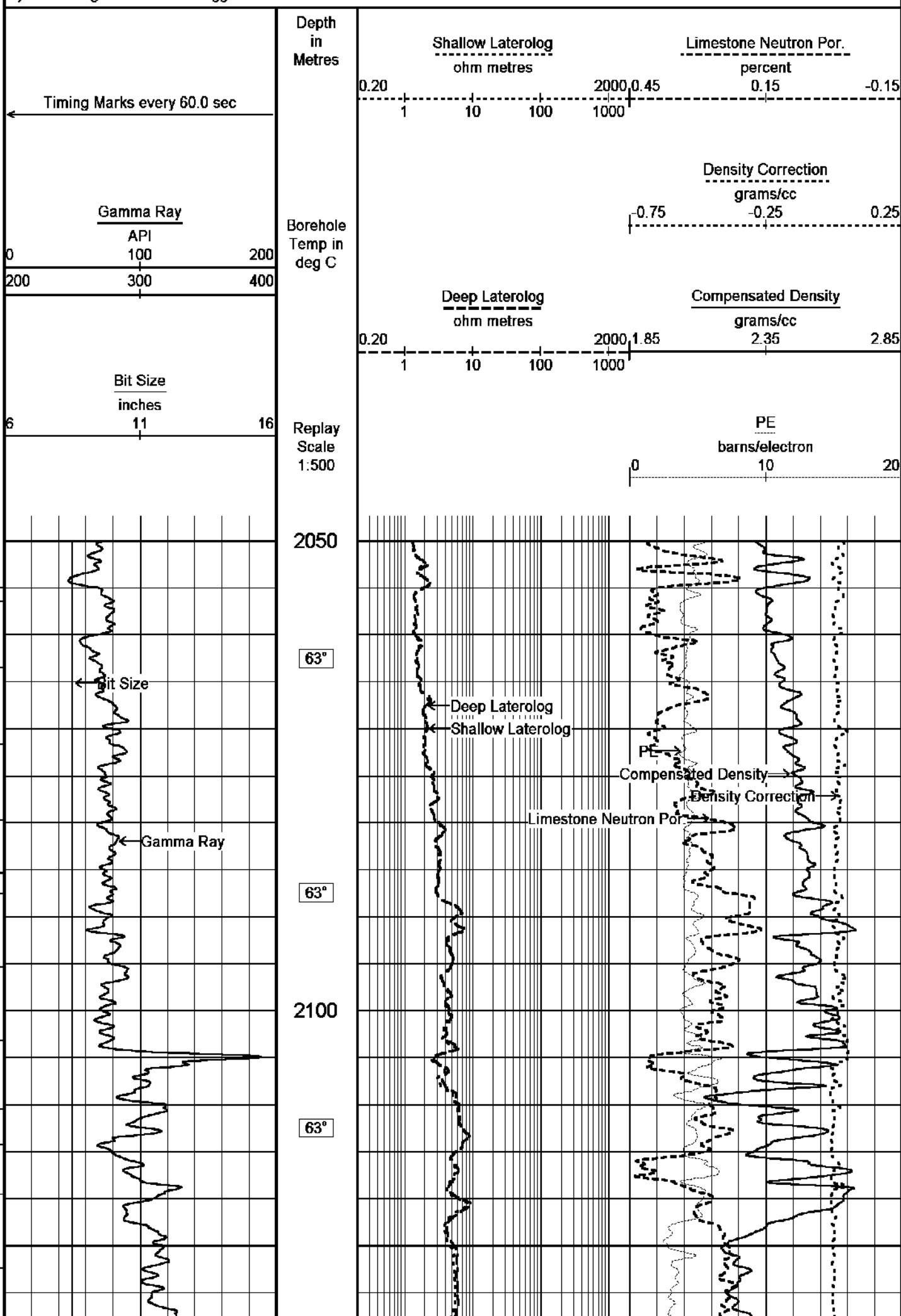
DENSITY CALIPER DID NOT OPEN, LOGS PROCESSED USING BITSIZE FOR CALIPER CORRECTIONS.

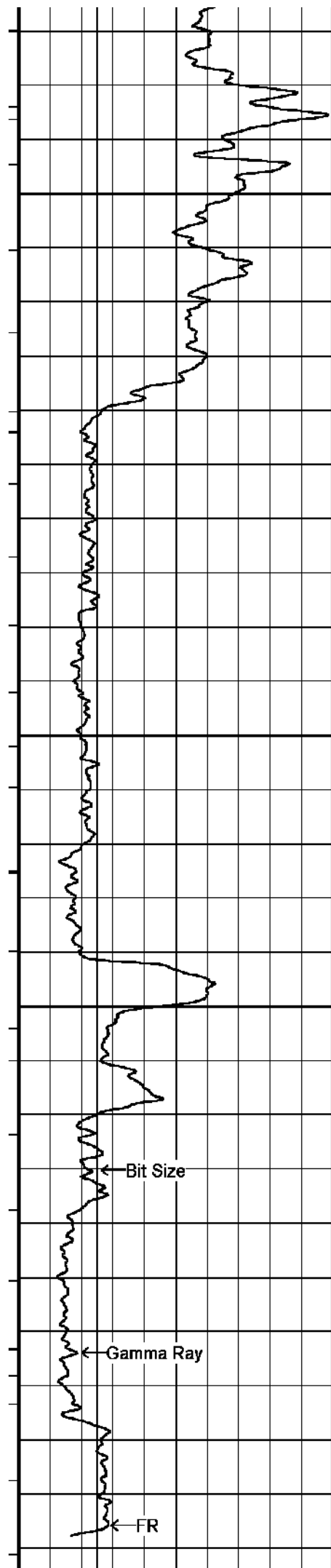
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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 1:500

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 31-OCT-2002 20:46





62°

2150

62°

62°

2200

61°

61°

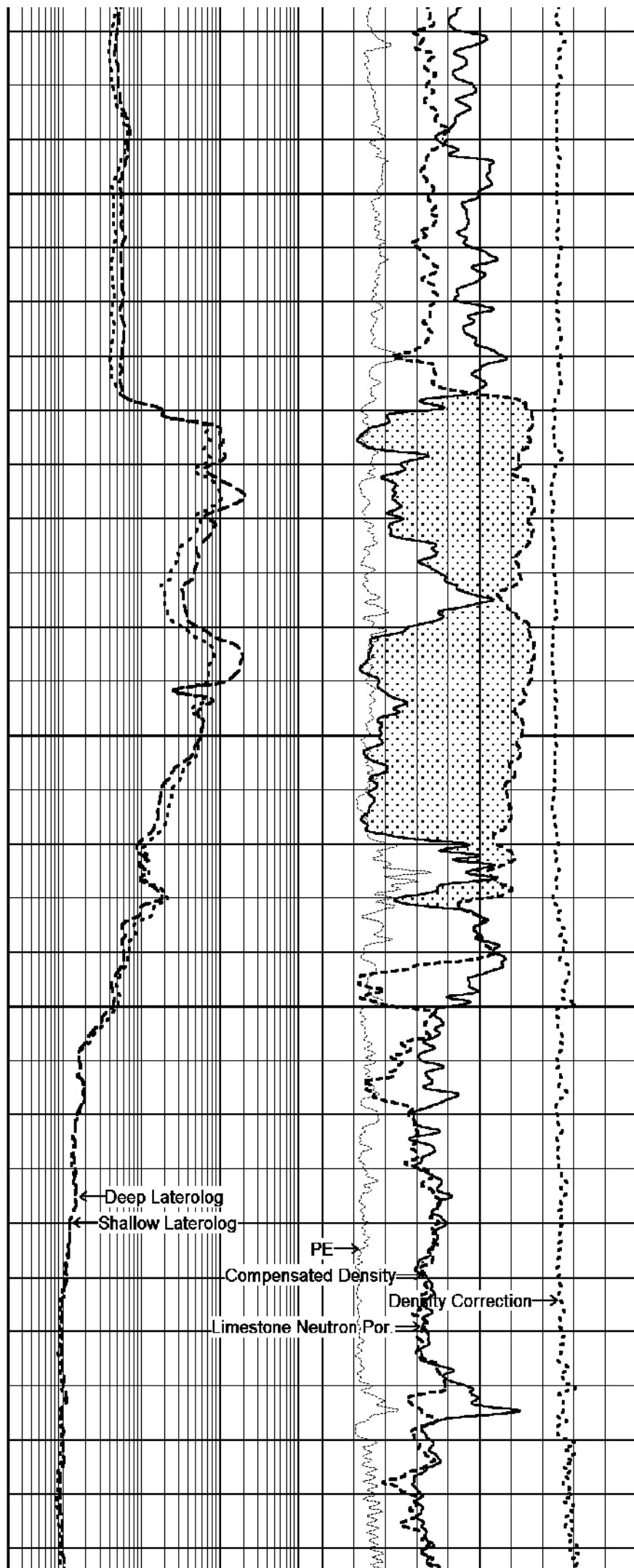
2250

60°

Bit Size

Gamma Ray

FR



Deep Laterolog

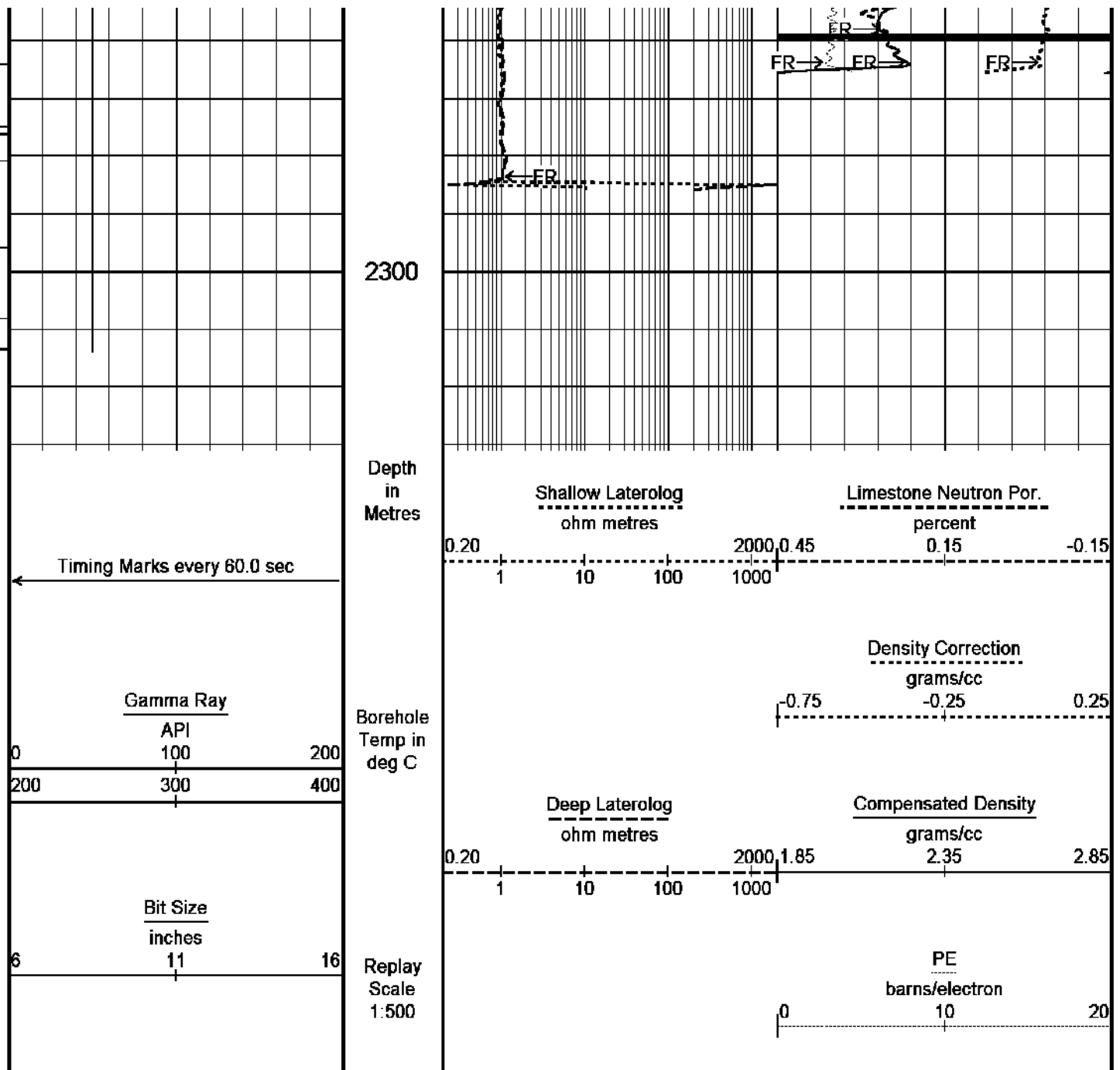
Shallow Laterolog

PE

Compensated Density

Limestone Neutron, Por.

Density Correction



Depth Based Data - Maximum Sampling Increment: 10.0cm

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

System Configuration Dates: Logged 23-JAN-2002: Processed 21-JUN-2002: Plotted 21-JUN-2002:

Plotted on 31-OCT-2002 20:46

Recorded on 12-OCT-2002 22:51

MAIN LOG 1:500

## 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)		
Background	12	8		
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		Field Calibration on 4-SEP-2002,14:58		
	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				

Field Check	995.7	1165.6		
PE Calibration				
Base Calibration		Measured		Calibrated
	WS	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		
Field Check				
	190.3	872.2		

#### 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	

#### Laterolog Calibration MLE 015

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

Base Calibration				
		Measured		Calibrated (ohm-m)
Channel	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

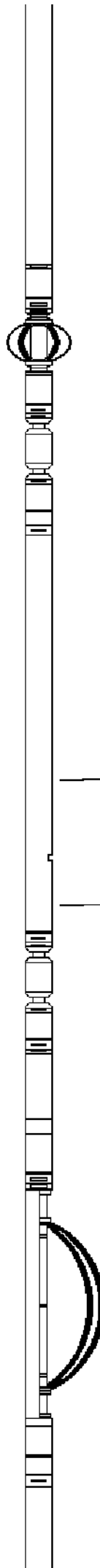
31.69 m    CGXT - MCG External Temperature

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





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

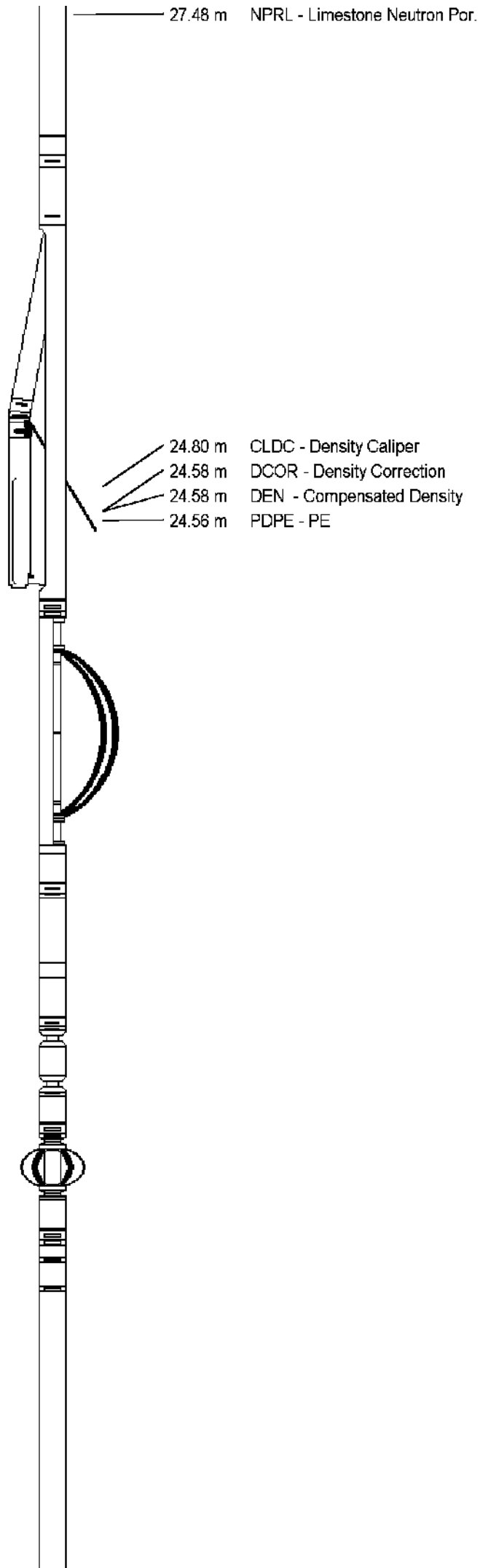
Compact Inline Bowspring  
MIS 25    Length: 1.74 m    Weight: 33.07 lb

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

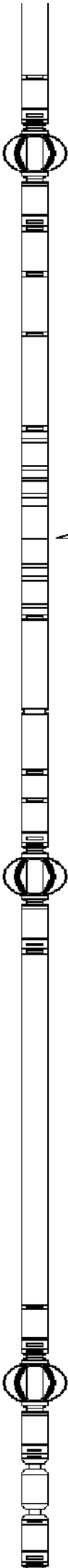
14.66 m    DSL - Shallow Laterolog  
14.66 m    DGL - Groningen Laterolog

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 Sonic  
MSS 45 Length: 3.82 m Weight: 72.75 lb

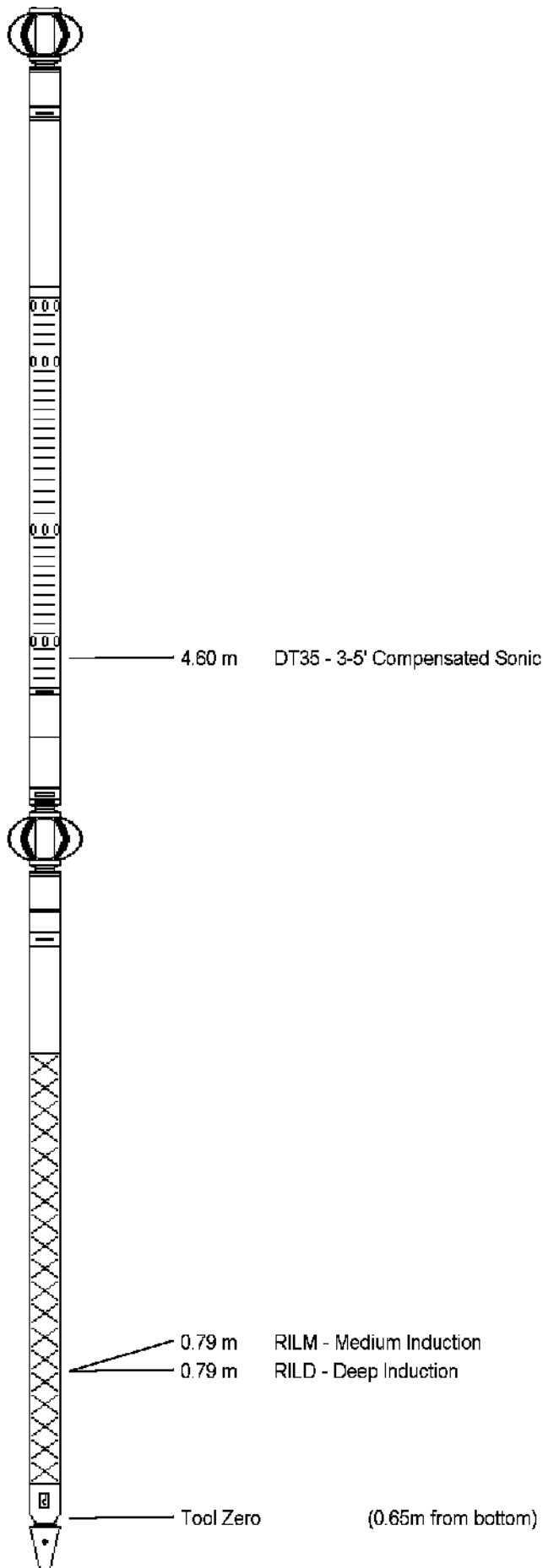
Compact Inline Standoff  
MIS 30 Length: 0.65 m Weight: 30.86 lb

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  
WELL  
FIELD

ESSO AUSTRALIA PTY. LTD.  
TUNA A10a  
GIPPSLAND BASIN

PROVINCE/COUNTY		BASS STRAIT			
COUNTRY/STATE		AUSTRALIA			
Elevation Kelly Bushing		metres	First Reading	2307.00	metres
Elevation Drill Floor	31.32	metres	Depth Driller	2312.00	metres
Elevation Ground Level	-59.40	metres	Depth Logger	2312.00	metres
<div> <div>Reeves</div> <div> DUAL LATEROLOG - GR  DENSITY - NEUTRON  1:500 MD </div> </div>					