

# Reeves

## DUAL LATEROLOG

GAMMA RAY  
1:200 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 PHOTO DENSITY			
API Number		Permit Number		COMPENSATED NEUTRON			
Permanent Datum MSL , Elevation 0 metres						Elevations: KB 31.32 metres DF 31.32 metres GL -59.40 metres	
Log Measured From 31.32, Metres above Permanent Datum							
Drilling Measured From Drill Floor, RT							
Date				12-OCT-2002			
Run Number				1			
Depth Driller				2312.00		metres	
Depth Logger				2312.00		metres	
First Reading				2307.00		metres	
Last Reading				2050.00		metres	
Casing Driller				661.20		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.

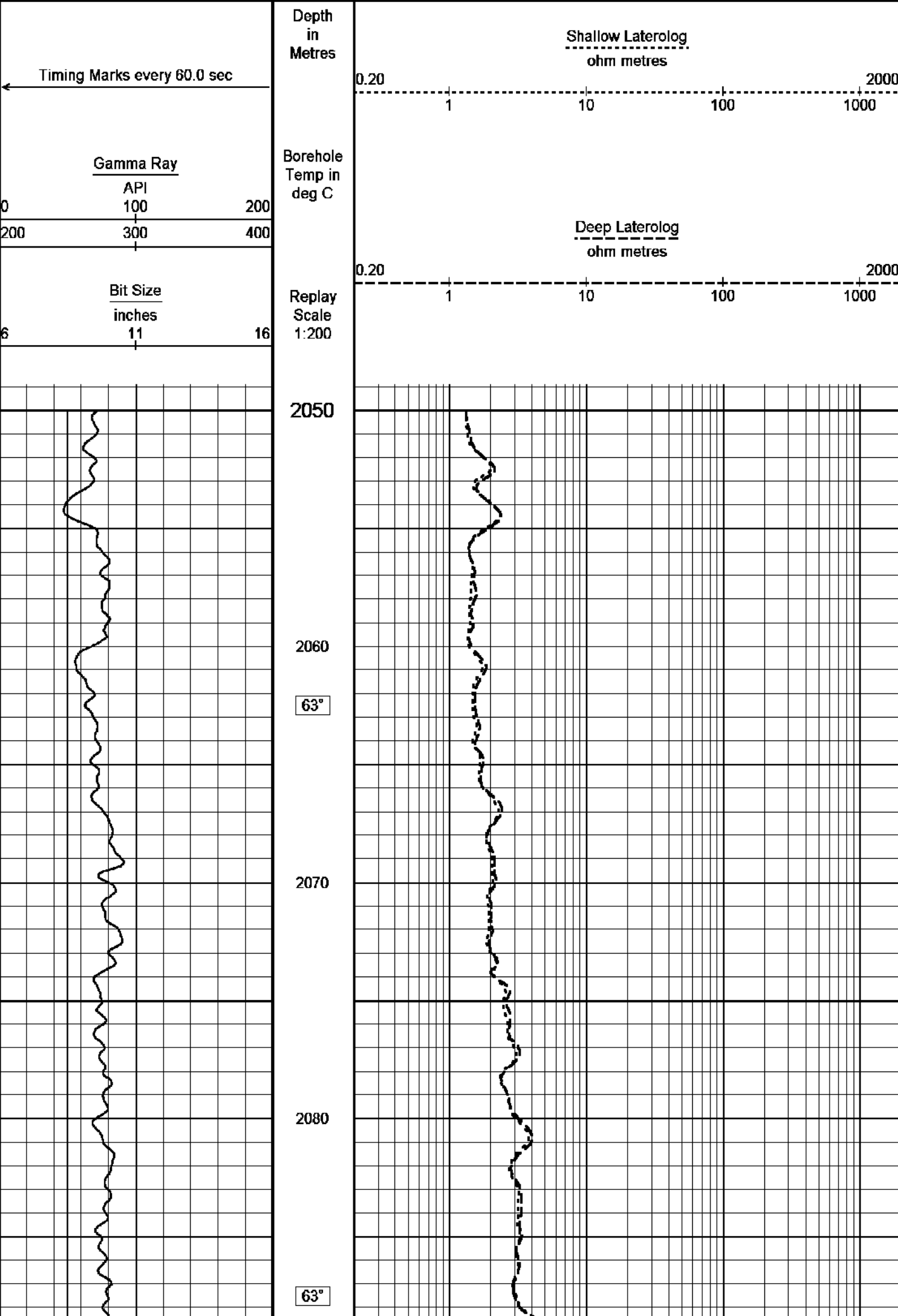
DENSITY CALIPER DID NOT OPEN, LOGS PROCESSED USING BITSIZE FOR CALIPER CORRECTIONS.

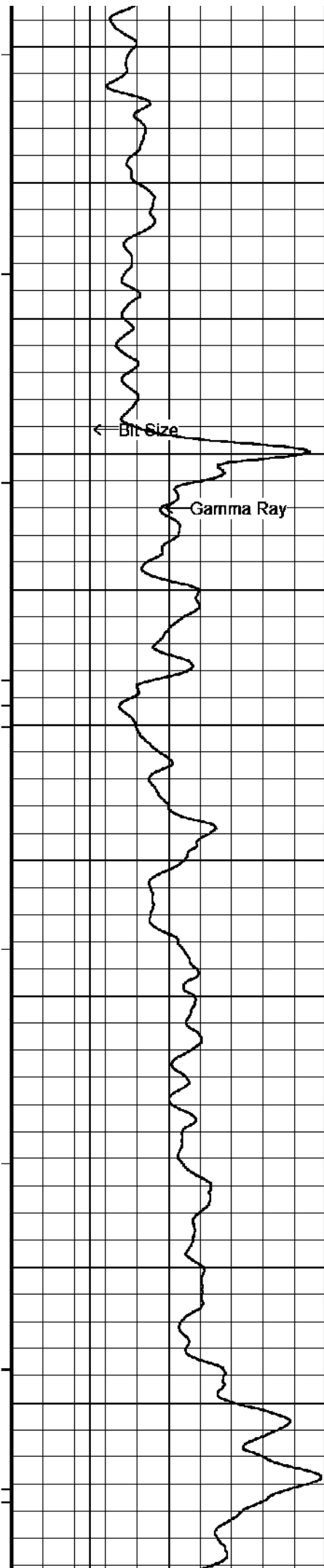
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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 20:23





2090

2100

2110

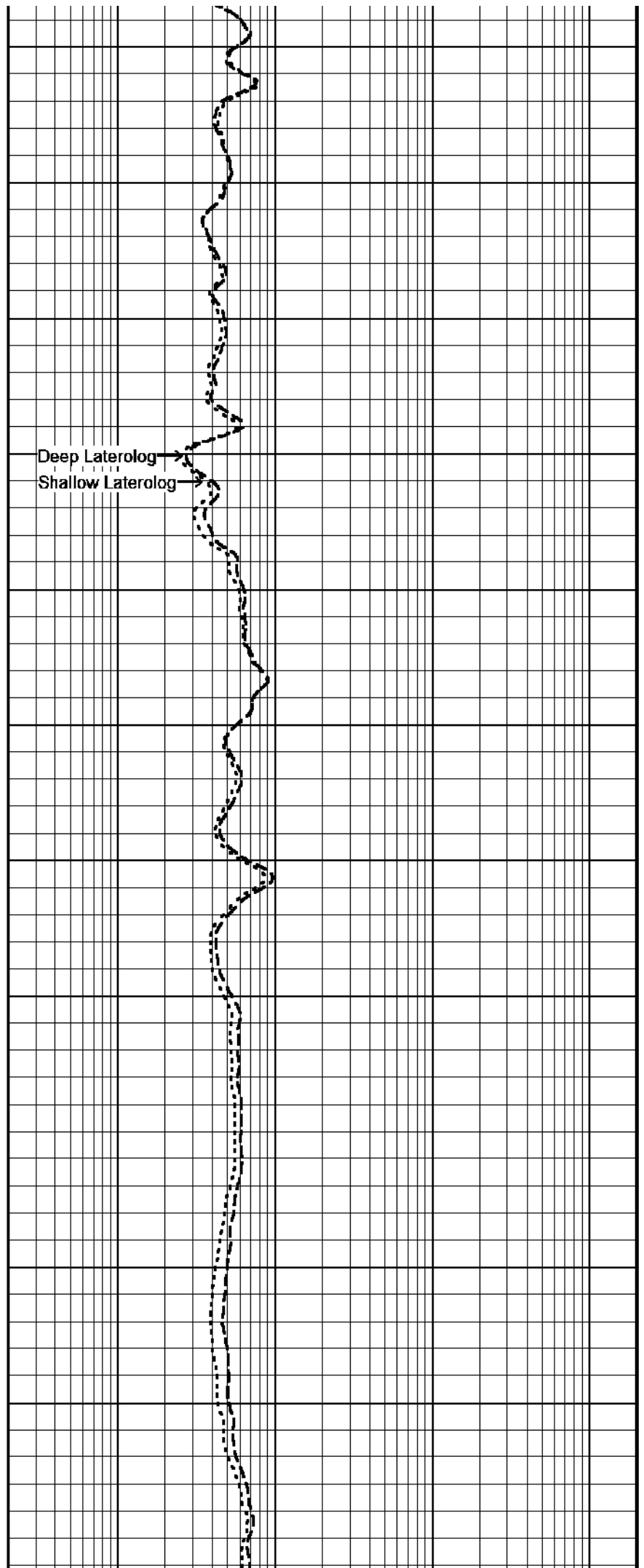
63°

2120

2130

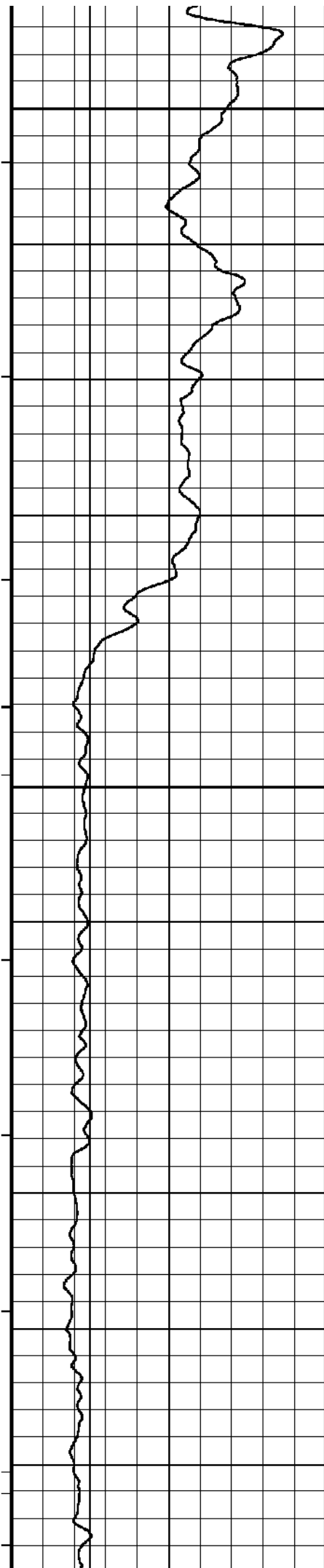
62°

2140



Deep Laterolog

Shallow Laterolog



2150

2160

62°

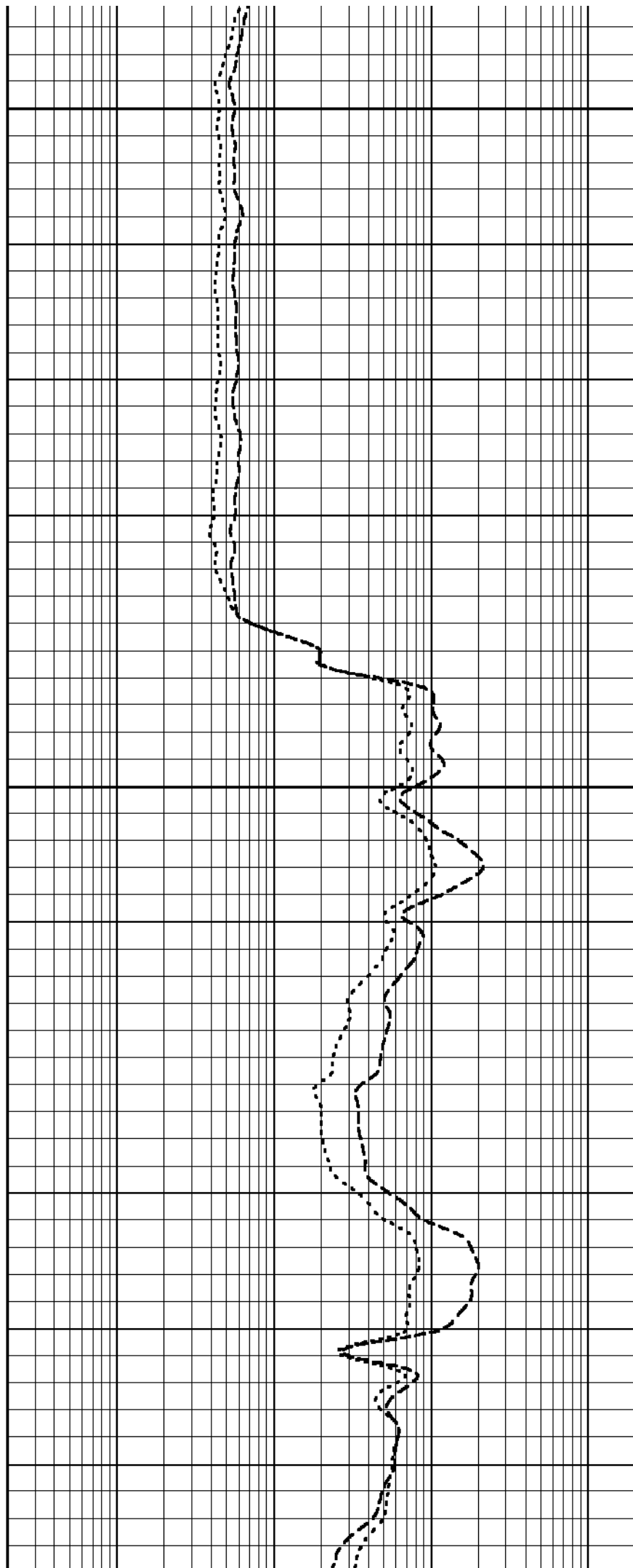
2170

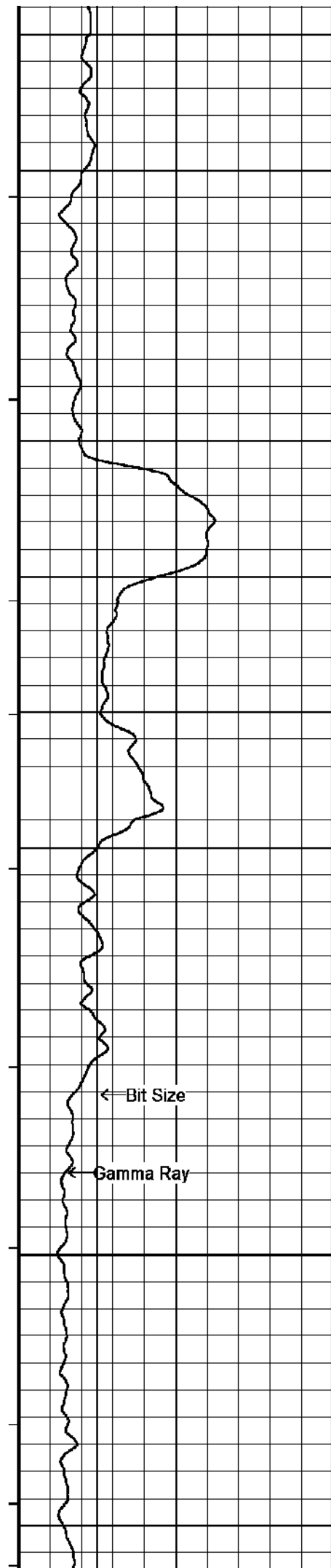
2180

62°

2190

2200





2210

61°

2220

2230

61°

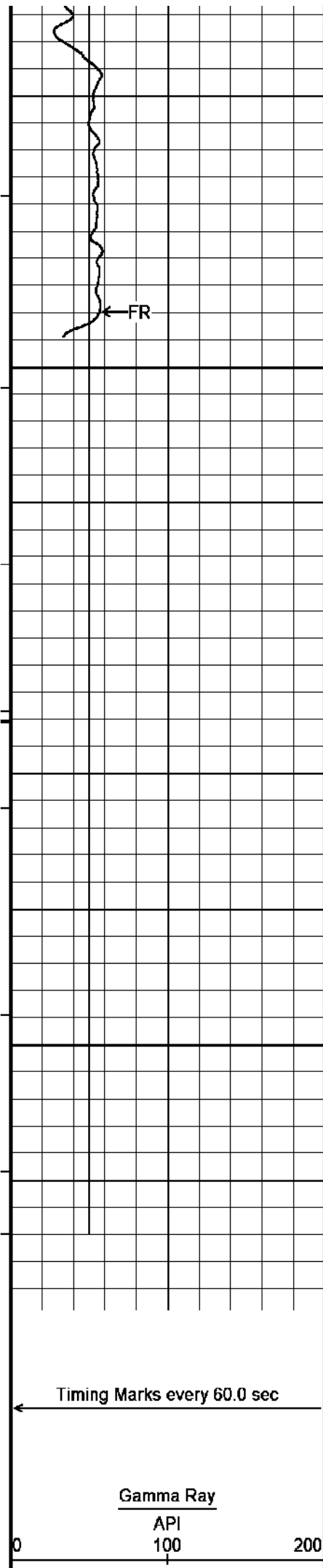
2240

Deep Laterolog →

Shallow Laterolog →

2250

2260



60°

2270

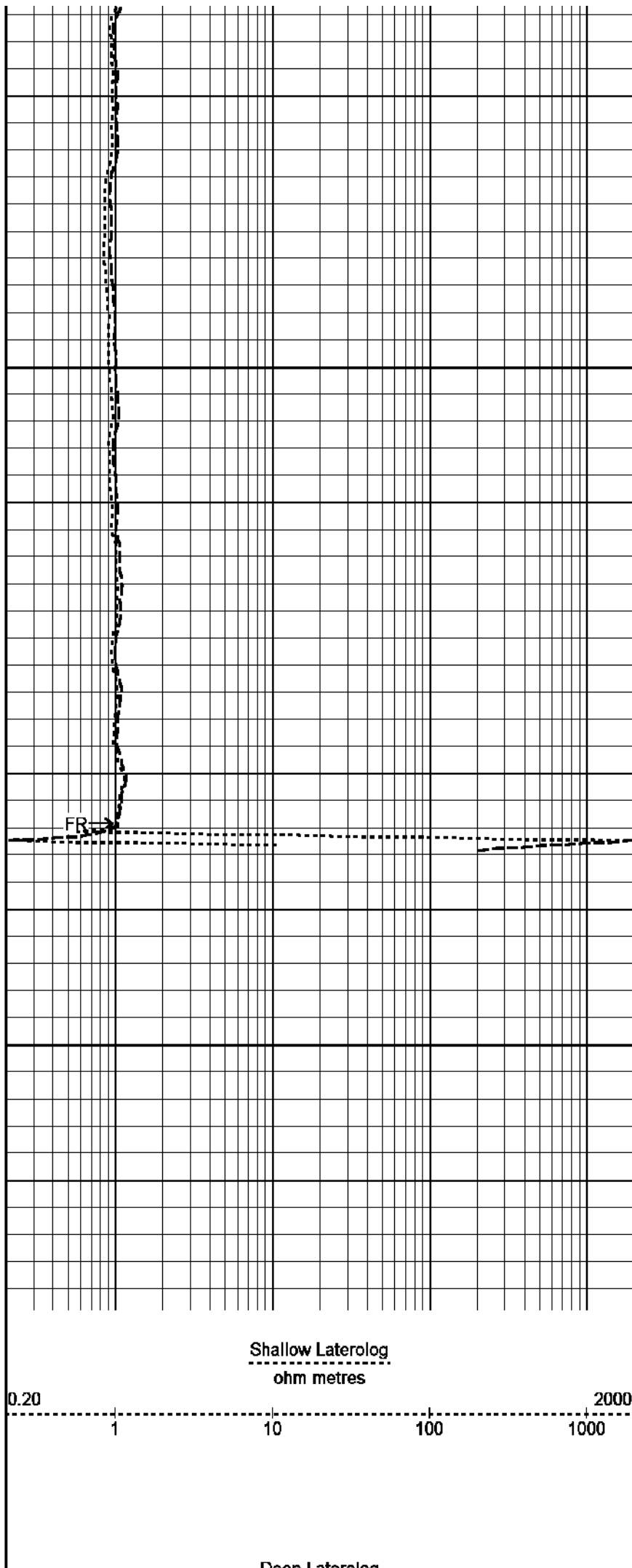
2280

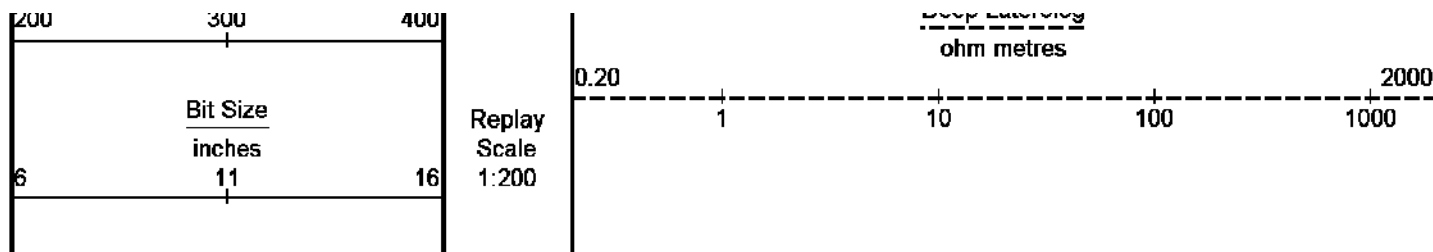
2290

2300

Depth  
in  
Metres

Borehole  
Temp in  
deg C





Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 31-OCT-2002 20:23

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

Recorded on 12-OCT-2002 22:51

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

↑
MAIN LOG 1:200
↑

### BEFORE SURVEY CALIBRATION

C:\Data\Tuna A10a\MDL\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
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#### 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

## 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

Compact Knuckle Joint

SKJ 47 Length: 0.66 m

Weight: 24.25 lb

Compact Inline Standoff

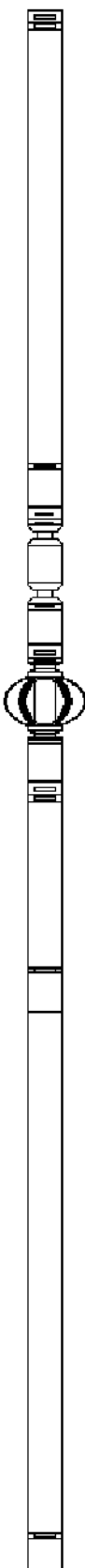
MIS 52 Length: 0.65 m

Weight: 30.86 lb

Compact Stiff Bridle Electrode Sub.

MBE 9 Length: 3.76 m

Weight: 94.80 lb





Compact Inline Standoff  
MIS 77      Length: 0.65 m      Weight: 30.86 lb

Compact Stiff Bridle Electrode Sub.  
MBE 5      Length: 3.76 m      Weight: 94.80 lb

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

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



32.58 m      GRGC - Gamma Ray

31.69 m      CGXT - MCG External Temperature

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

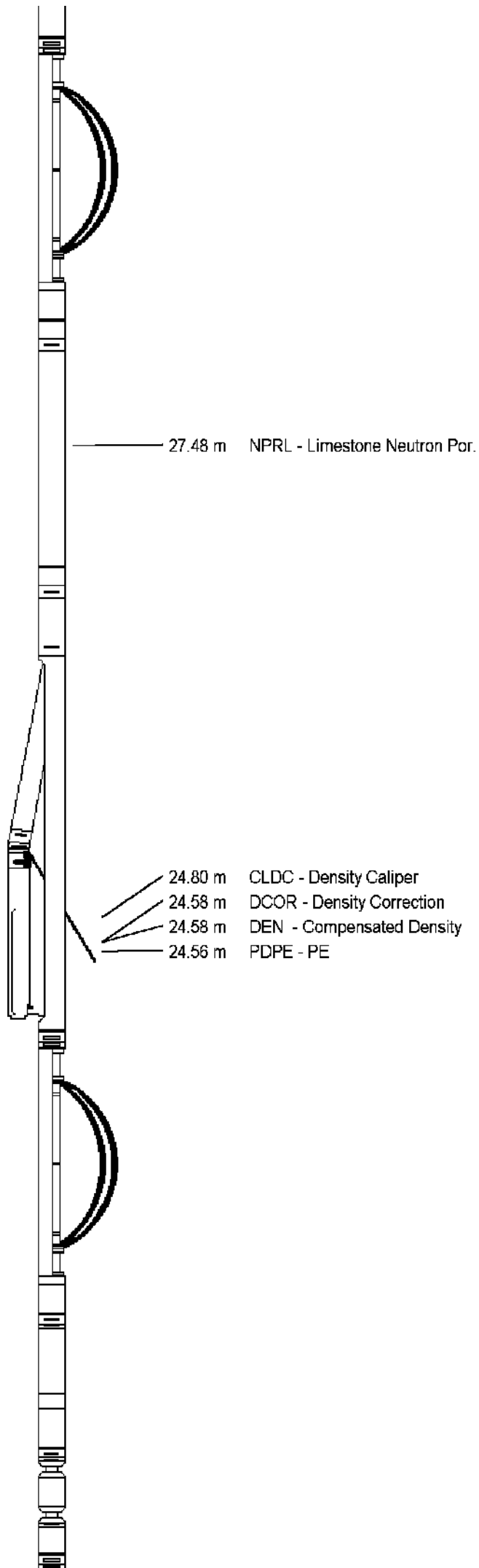
Compact Neutron  
MDN 68 Length: 1.53 m Weight: 50.71 lb

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

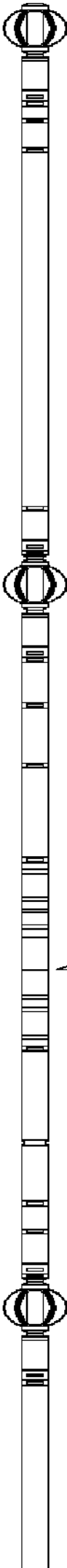
Compact Inline Standoff  
MIS 49    Length: 0.65 m    Weight: 30.86 lb

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

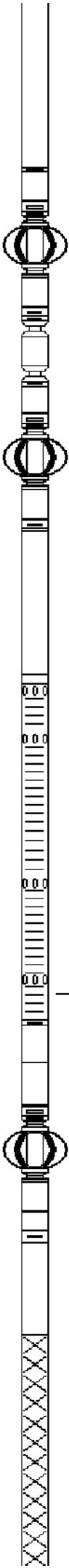
Compact Knuckle Joint  
SKJ 48      Length: 0.66 m      Weight: 24.25 lb

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



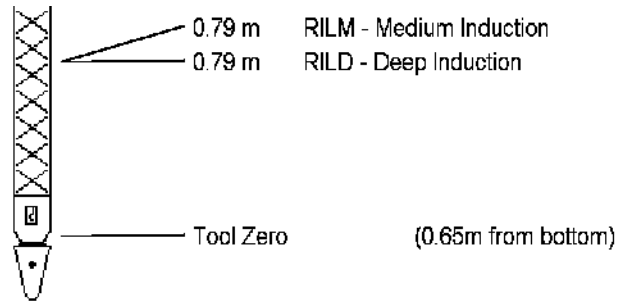
4.60 m      DT35 - 3-5' Compensated Sonic

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	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



DUAL LATEROLOG  
GAMMA RAY  
1:200 MD