

# Reeves

## DUAL LATEROLOG - GR

### DENSITY - NEUTRON

### 1:200 MD

COMPANY				ESSO AUSTRALIA PTY. LTD.			
WELL				TUNA A-05A			
FIELD				GIPPSLAND BASIN			
PROVINCE/COUNTY				BASS STRAIT			
COUNTRY/STATE				AUSTRALIA			
LOCATION				X: 624233.40 m E, Y: 5774225.83 m N 38°10'16.282" S, 148°25'05.756" E			
LSD	SEC	TWP	RGE	Other Services COMPENSATED SONIC			
API Number							
Permit Number							
Permanent Datum MSL				, Elevation 0 metres			
Log Measured From DF@ 31.32 metres above Permanent Datum							
Drilling Measured From DF							
Date	26-Dec-2002					Elevations: KB DF	metres metres metres
Run Number	1					31.32	metres
Depth Driller	3257.00						metres
Depth Logger	3257.00						metres
First Reading	3251.20						metres
Last Reading	2900.00						metres
Casing Driller	836.41						metres
Casing Logger							
Bit Size	8.50					Inches	
Hole Fluid Type	KCL/PPH/AGLY						
Density / Viscosity	10.30 lb/USg					64.00 secs/ct	
PH / Fluid Loss	9.00					3.20 ml/30Min	
Sample Source	FLOWLINE						
Rm @ Measured Temp	0.118 @ 25.0					ohm-m	
Rmf @ Measured Temp	0.085 @ 25.0					ohm-m	
Rmc @ Measured Temp	0.193 @ 25.0					ohm-m	
Source Rmf / Rmc	PRESS					FILTER	
Rm @ BHT	0.059 @ 73.0					ohm-m	
Time Since Circulation	36:15 hrs						
Max Recorded Temp	73.00					deg C	
Equipment Name	SHUTTLE						
Equipment / Base	1					CML	
Recorded By	M. BARNES, B. ARNOLD						D. MACHIN, G. MCMANUS
Witnessed By	G. SMITH						
Circ. Stopped	09:00 25-Dec						

## BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
12.250	218.00	841.00
8.500	841.00	3257.00

## CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
	9.625	0.00	836.41	47.00

## REMARKS

DRILLING RIG: NABORS (ISDL) RIG 453.

COMPACT WIRELINE TOOLS DEPLOYED BY COMPACT WELL SHUTTLE TECHNIQUE.

MESSENGER DEPLOYED WITH RIG MUD PUMPS.

RING SHEARED AT 21:10 26-DEC-02.

SHEARING PRESSURE WAS 1200 PSI.

HTHP FILTER LOSS = 10.8 ml/30min.

CASING DETAILS:

20" 133.0 lb/ft from surface to 164.60 m.

13 3/8" 54.5 lb/ft from surface to 609.65 m (window milled from 210.39 m to 218.39 m).

9 5/8" 47.0 lb/ft from surface to 836.41 m.

CALIPER READING 8.68" ON TIME LOG IN 9 5/8" 47 LB/FT CASING.

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



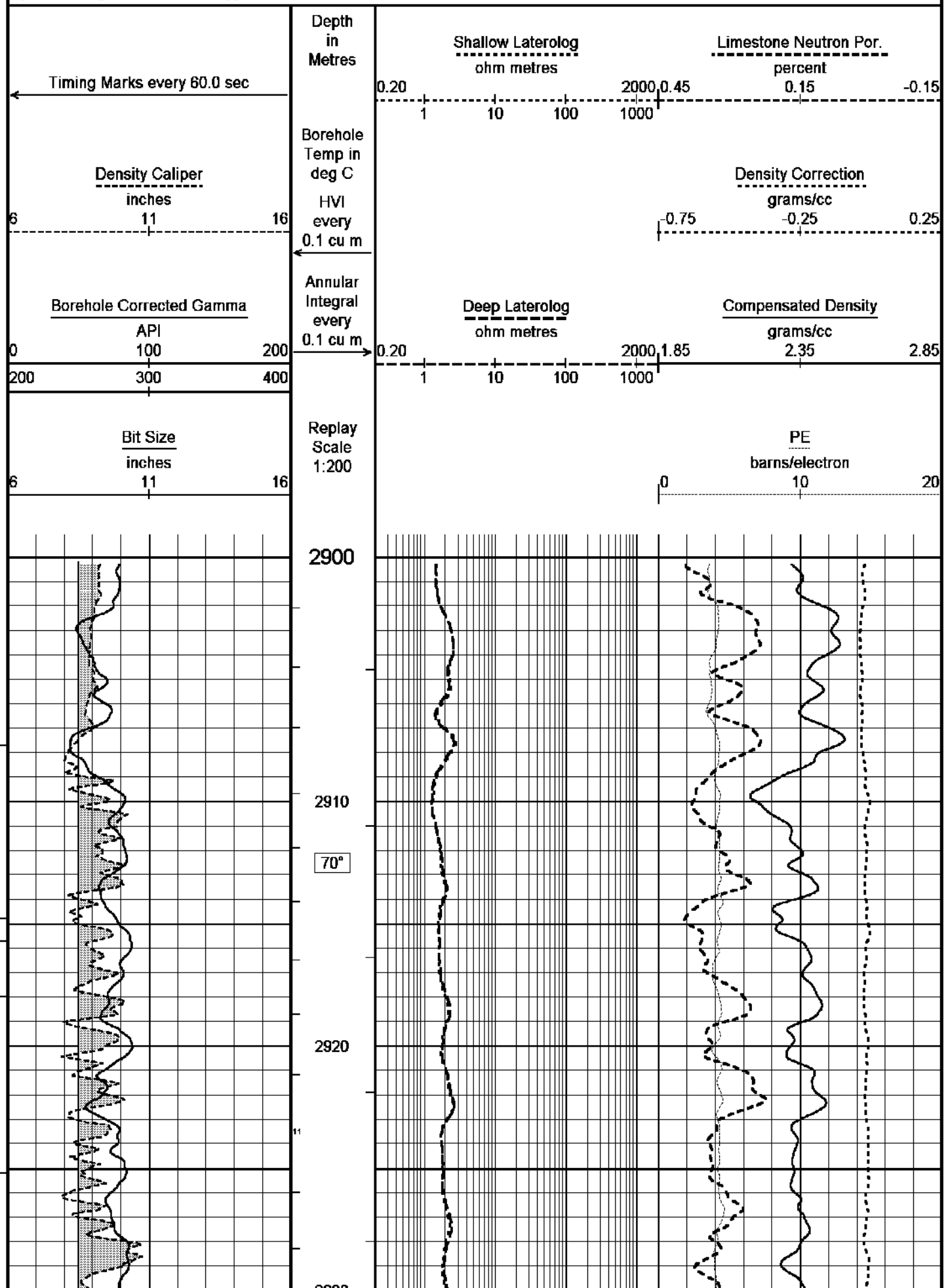
Depth Based Data - Maximum Sampling Increment 10.0cm

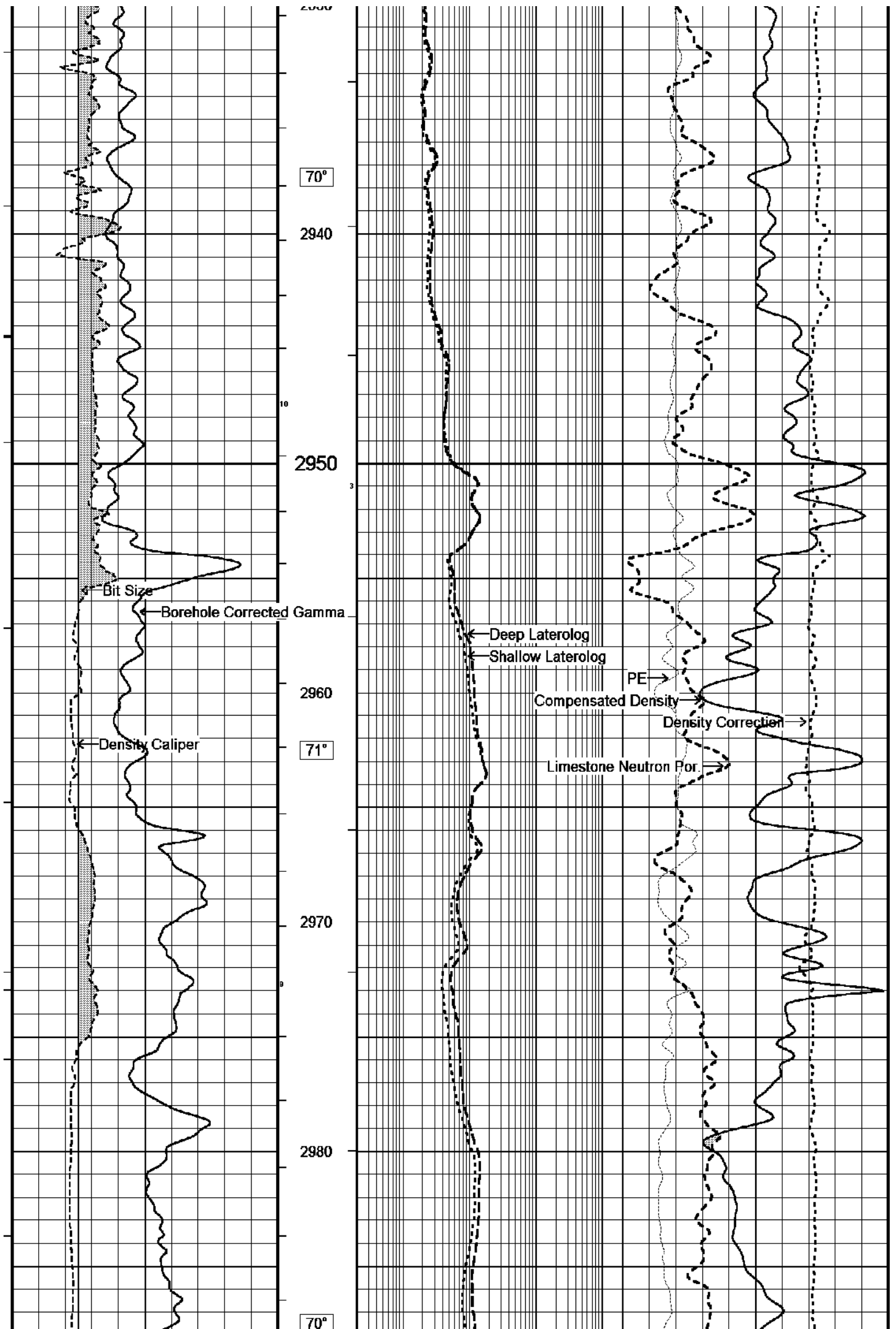
Plotted on 27-DEC-2002 11:14

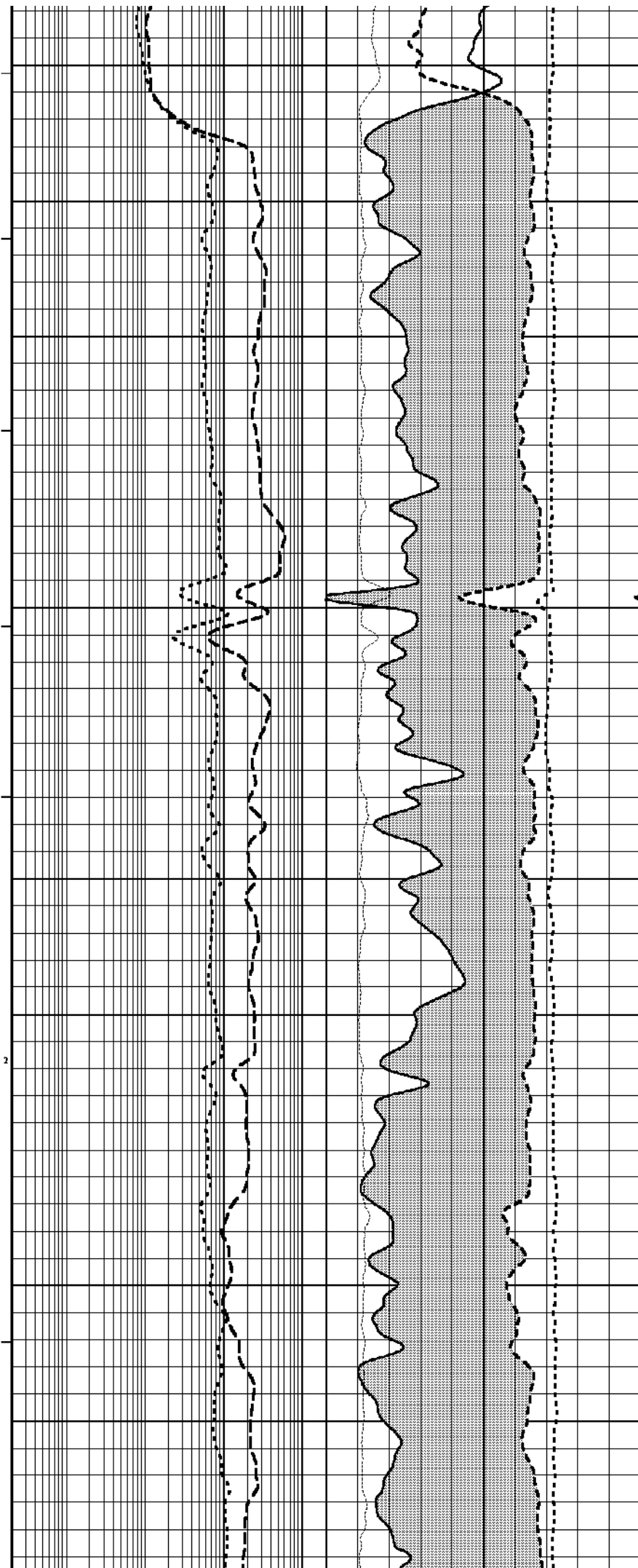
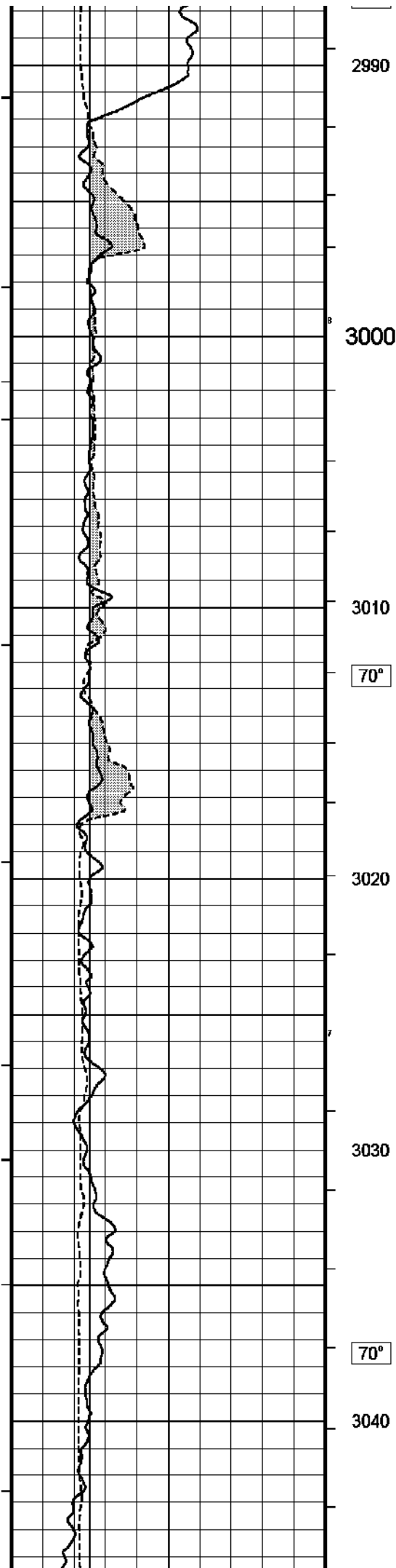
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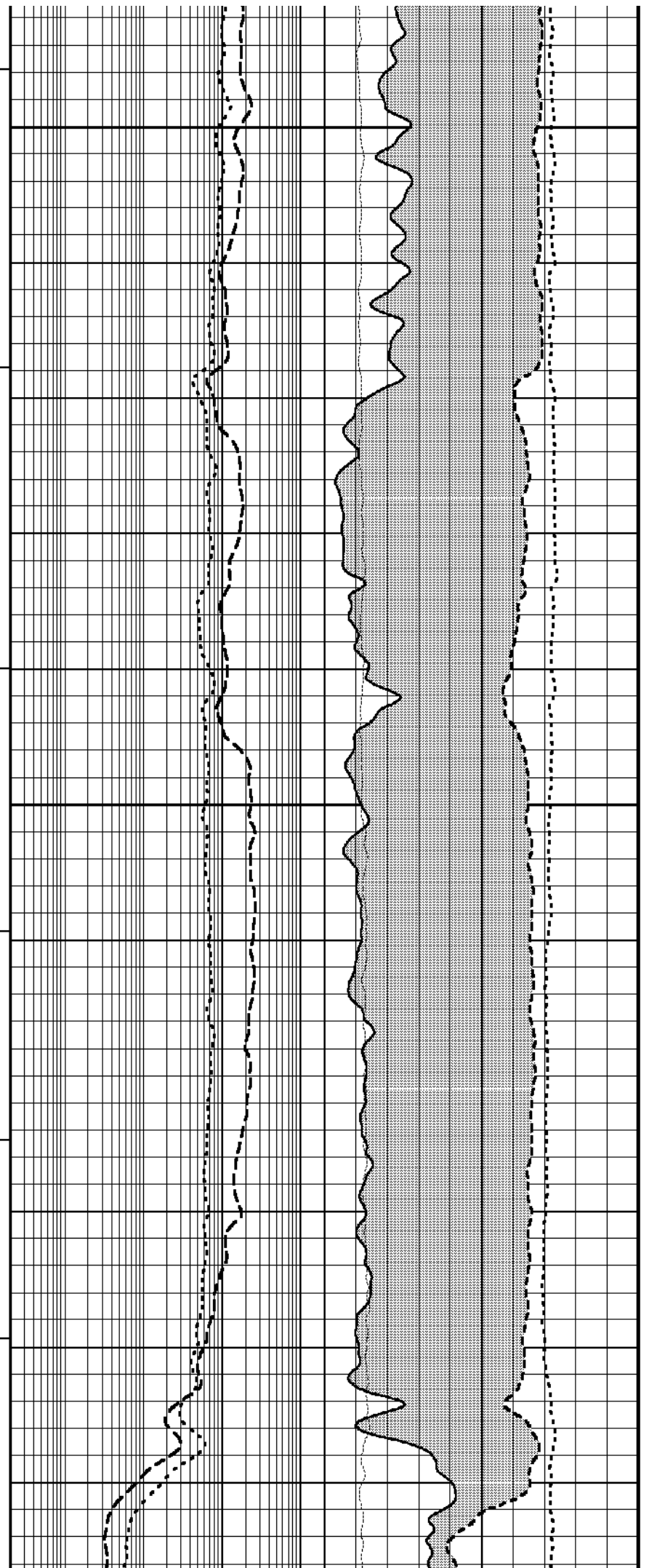
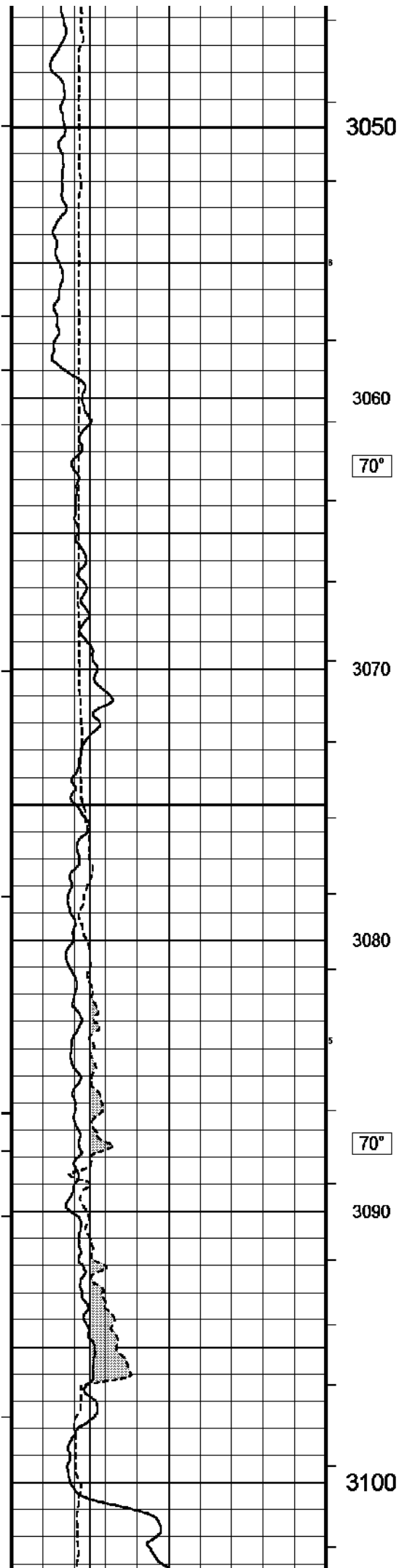
Recorded on 27-DEC-2002 06:56

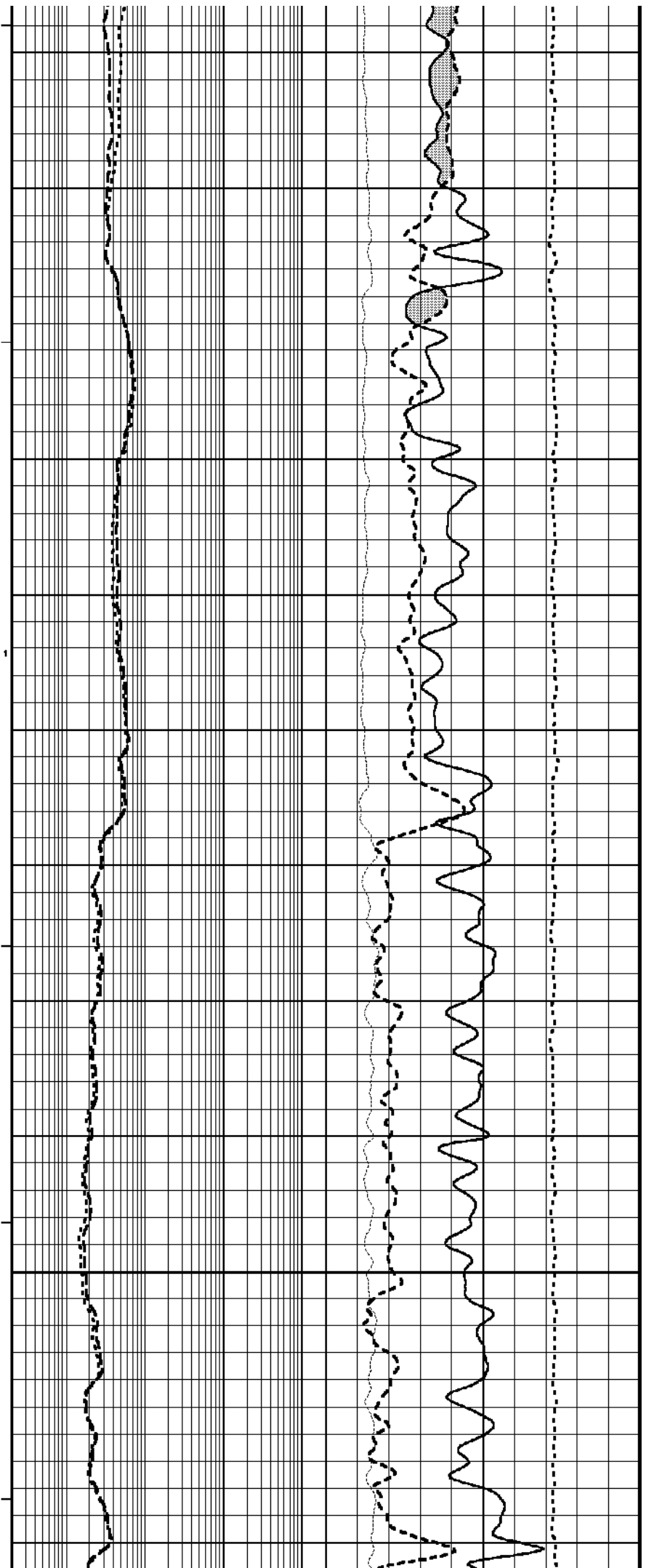
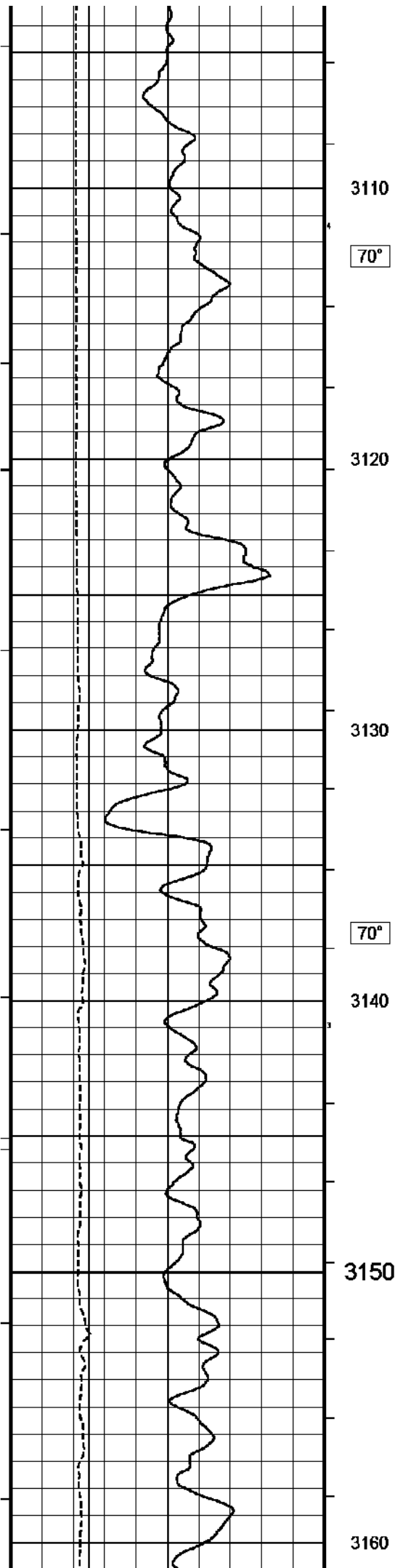
System Configuration Dates: Logged 21-JUN-2002: Processed 21-JUN-2002: Plotted 21-JUN-2002

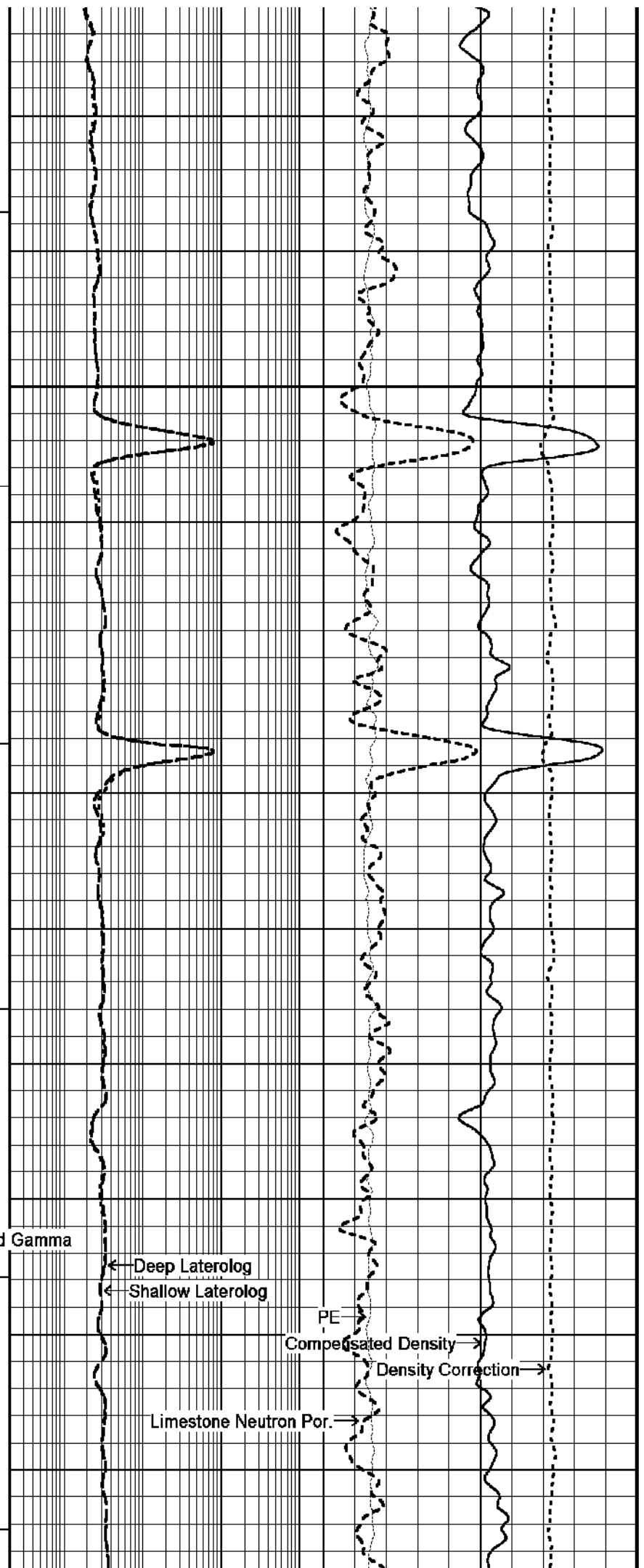
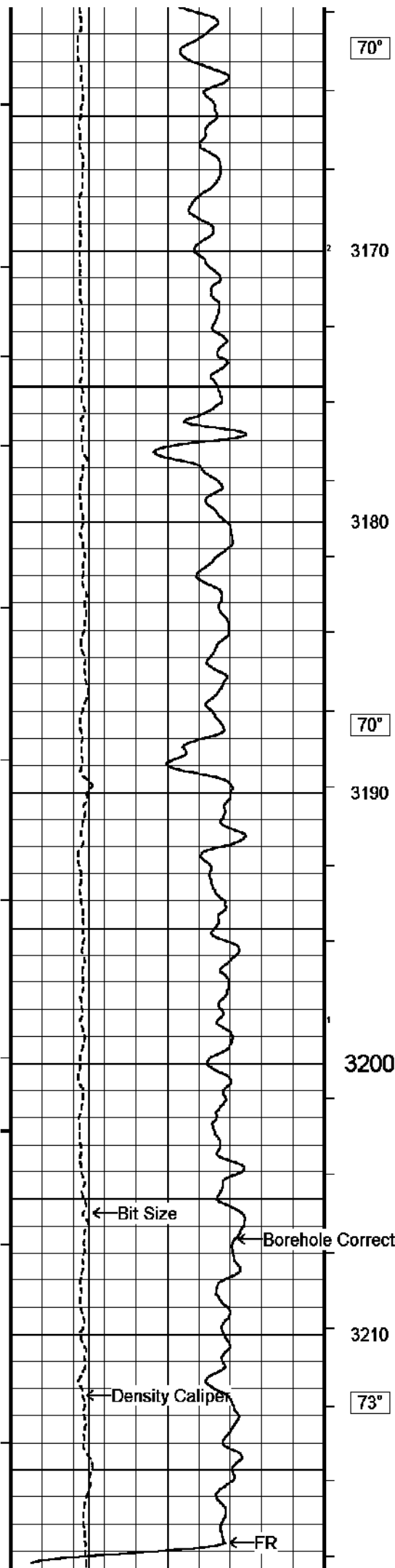


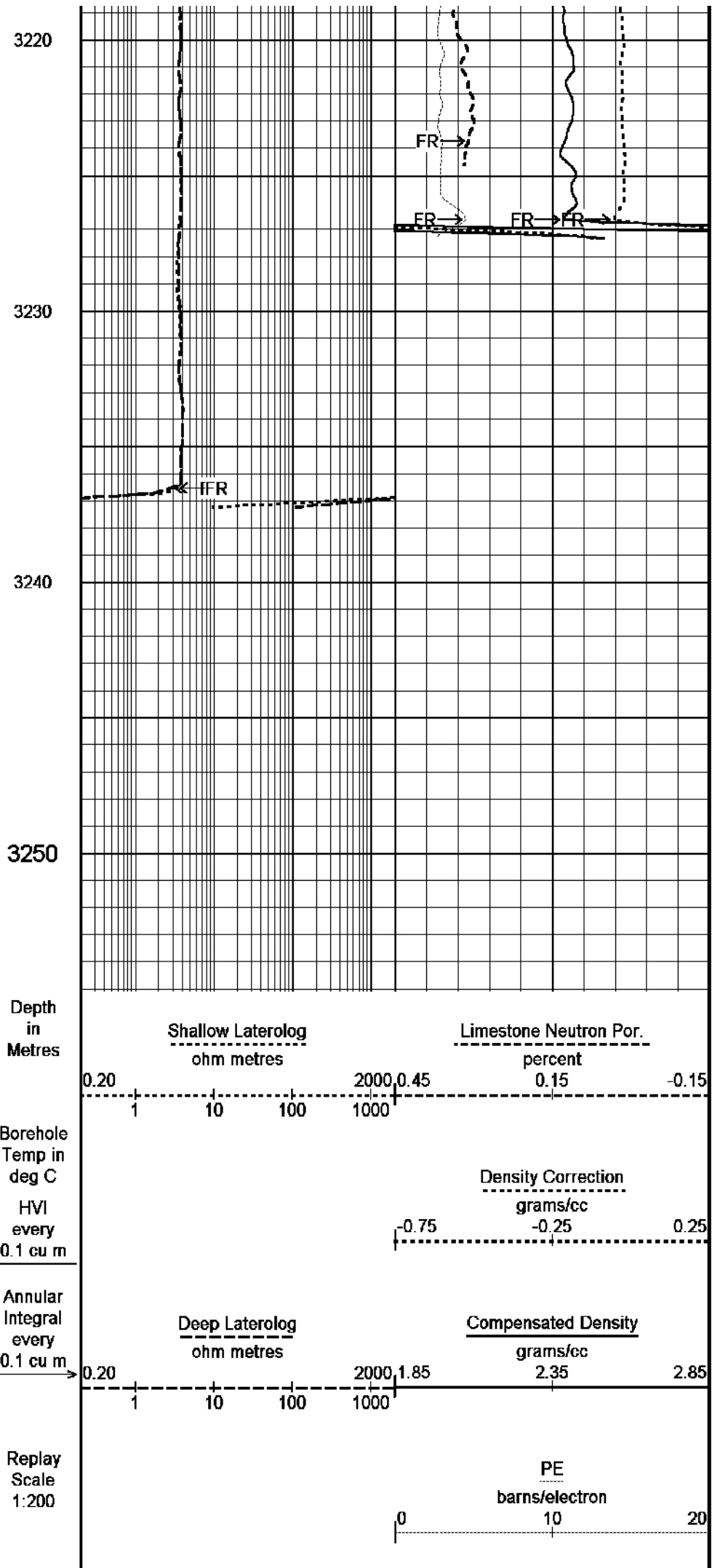
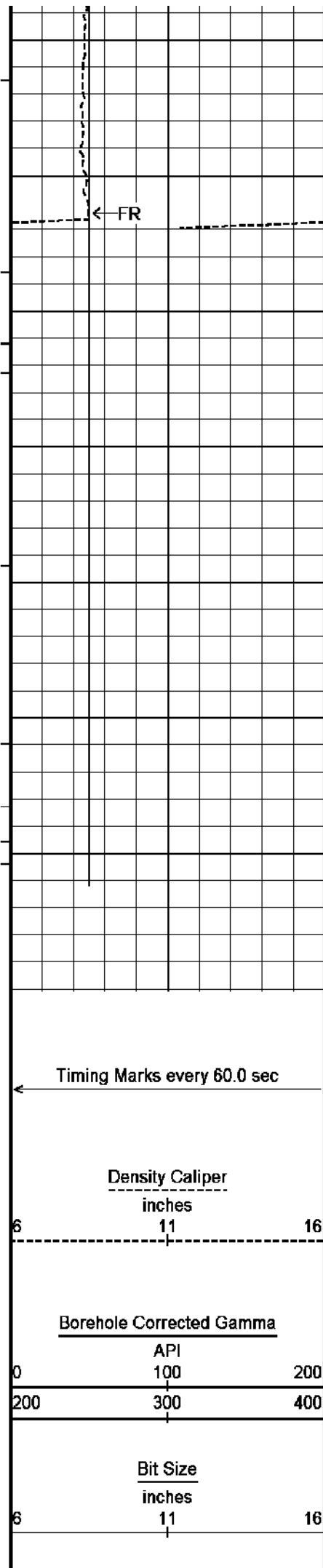














Depth Based Data - Maximum Sampling Increment: 10.0cm

Plotted on 27-DEC-2002 11:14

Filename: C:\Data\Tuna A05A\MAIN LOG DSC.dta

Recorded on 27-DEC-2002 06:56

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



## MAIN LOG 1:200



## BEFORE SURVEY CALIBRATION

C:\Data\Tuna A05A\MAIN LOG DSC.dta

## General Constants All 000

## General Parameters

Mud Resistivity	0.06	ohm-metres
Mud Resistivity Temperature	73.00	degrees C
Water Level	0.00	metres
Density/Neutron Processing	Wet Hole	

## Hole/Annular Volume Parameters

HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Density Caliper	
Annular Volume Diameter	7.00	inches

## Rwa Parameters

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

## Gamma Calibration MCG 044

Field Calibration on 24-DEC-2002 10:04

	Measured	Calibrated (API)
Background	11	7
Calibrator (Gross)	1439	916
Calibrator (Net)	1428	909

## Gamma Constants MCG 044

Gamma Calibrator Number	060	
Mud Density	1.24	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
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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## Neutron Calibration MDN 068

Base Calibration on 5-DEC-2002 18:20

Field Check on 24-DEC-2002 10:24

## Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	2886	90	3714	110
	32.026		33.764	

## Field Calibrator at Base

	Calibrated (cps)
Ratio	1833 2640
	0.694

## Field Check

	Calibrated (cps)
Ratio	1849 2675
	0.691

## Neutron Constants MDN 068

Neutron Source Id	724
Neutron Jig Number	52
Epithermal Neutron	No

Caliper Source for Processing	Density Caliper	
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	20.00	degrees C
Mud Salinity	56.00	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

#### Caliper Calibration MPD 066

Base Calibration on 27-DEC-2002,09:09

Field Calibration on

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	11999	4.31
2	20143	6.29
3	28915	8.28
4	37314	10.24
5	46672	12.31
6	N/A	N/A

Field Calibration

0	0
0.00	0.00

#### Photo Density Calibration MPD 066

Base Calibration on 4-DEC-2002 16:29

Field Check on 26-DEC-2002 05:42

Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
		Near	Far	Near	Far
Reference 1	54476	19731	53282	19349	
Reference 2	29983	2875	25298	2555	

Field Check at Base

993.0	1165.2
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Field Check

990.1	1159.3
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PE Calibration				
Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	189	869		
Reference 1	17146	54295	0.317	0.318
Reference 2	7927	29843	0.267	0.273

Field Check at Base

189.1	868.6
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Field Check

187.7	868.8
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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	Density Caliper	
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)
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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 24-DEC-2002,10:46

## 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

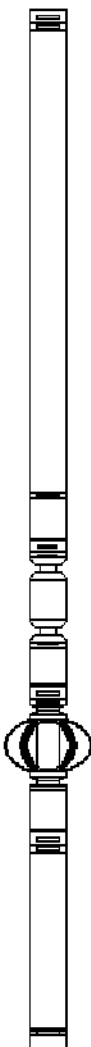
All measurements relative to tool zero.

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

Compact Knuckle Joint  
SKJ 47 Length: 0.68 m Weight: 24.25 lb

Compact Inline Standoff B  
MIS 52 Length: 0.65 m Weight: 15.43 lb

Compact Stiff Bridle Electrode Sub.  
MBE 9 Length: 3.76 m Weight: 94.80 lb



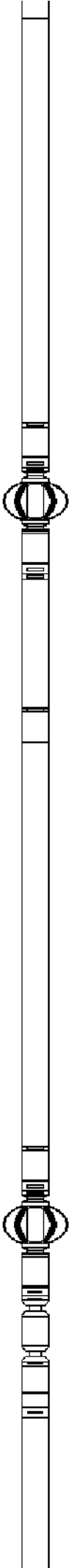
Compact Inline Standoff B  
MIS 77      Length: 0.65 m      Weight: 15.43 lb

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

Compact Inline Standoff B  
MIS 31      Length: 0.65 m      Weight: 15.43 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 Memory Sub.  
MMS 24    Length: 0.95 m    Weight: 22.05 lb

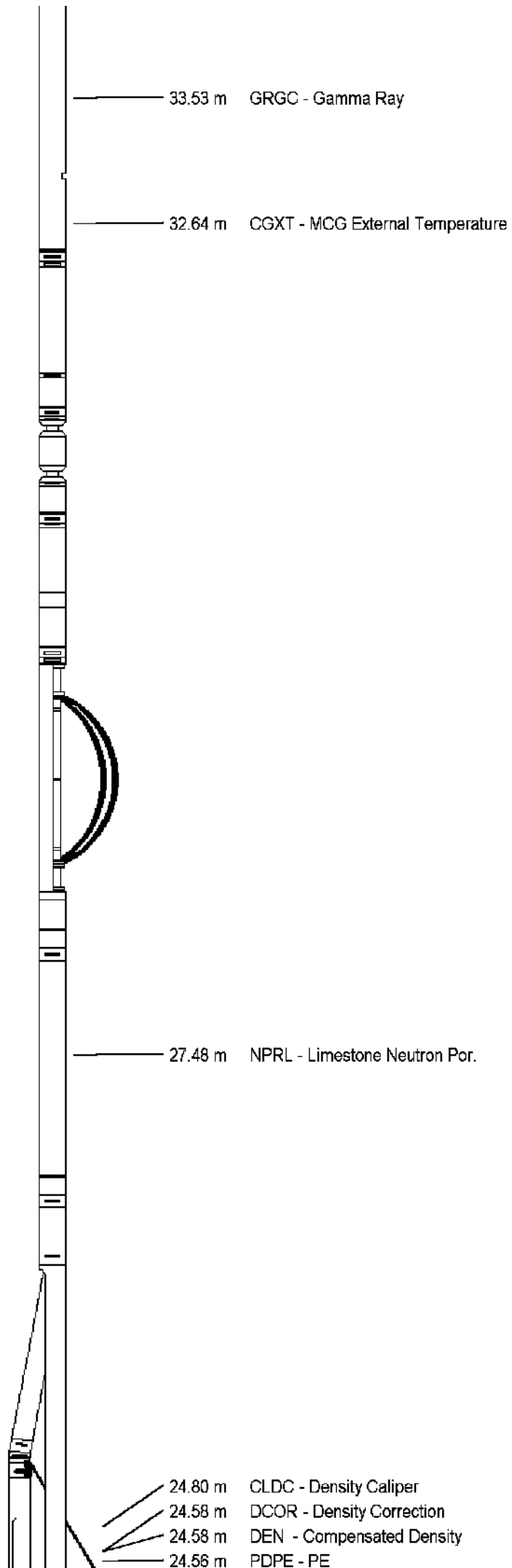
Compact Knuckle Joint  
SKJ 46    Length: 0.66 m    Weight: 24.25 lb

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

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

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

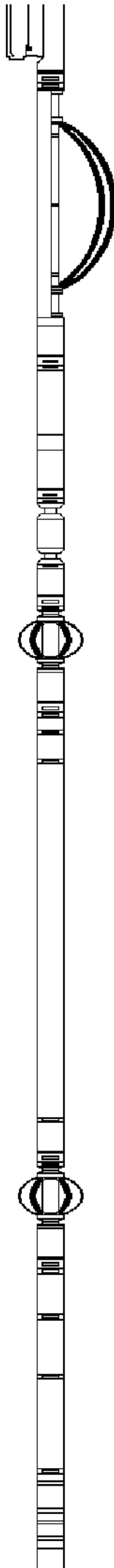
Compact Knuckle Joint  
SKJ 45    Length: 0.66 m    Weight: 24.25 lb

Compact Inline Standoff B  
MIS 53    Length: 0.65 m    Weight: 15.43 lb

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

Compact Inline Standoff B  
MIS 49    Length: 0.65 m    Weight: 15.43 lb

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



14.66 m    DSL - Shallow Laterolog

Compact Inline Standoff B  
MIS 76 Length: 0.65 m Weight: 15.43 lb

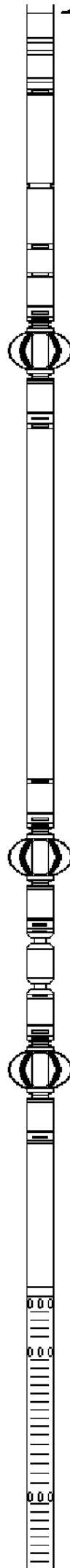
Compact Lower Guard Sub.  
MLG 7 Length: 2.44 m Weight: 55.12 lb

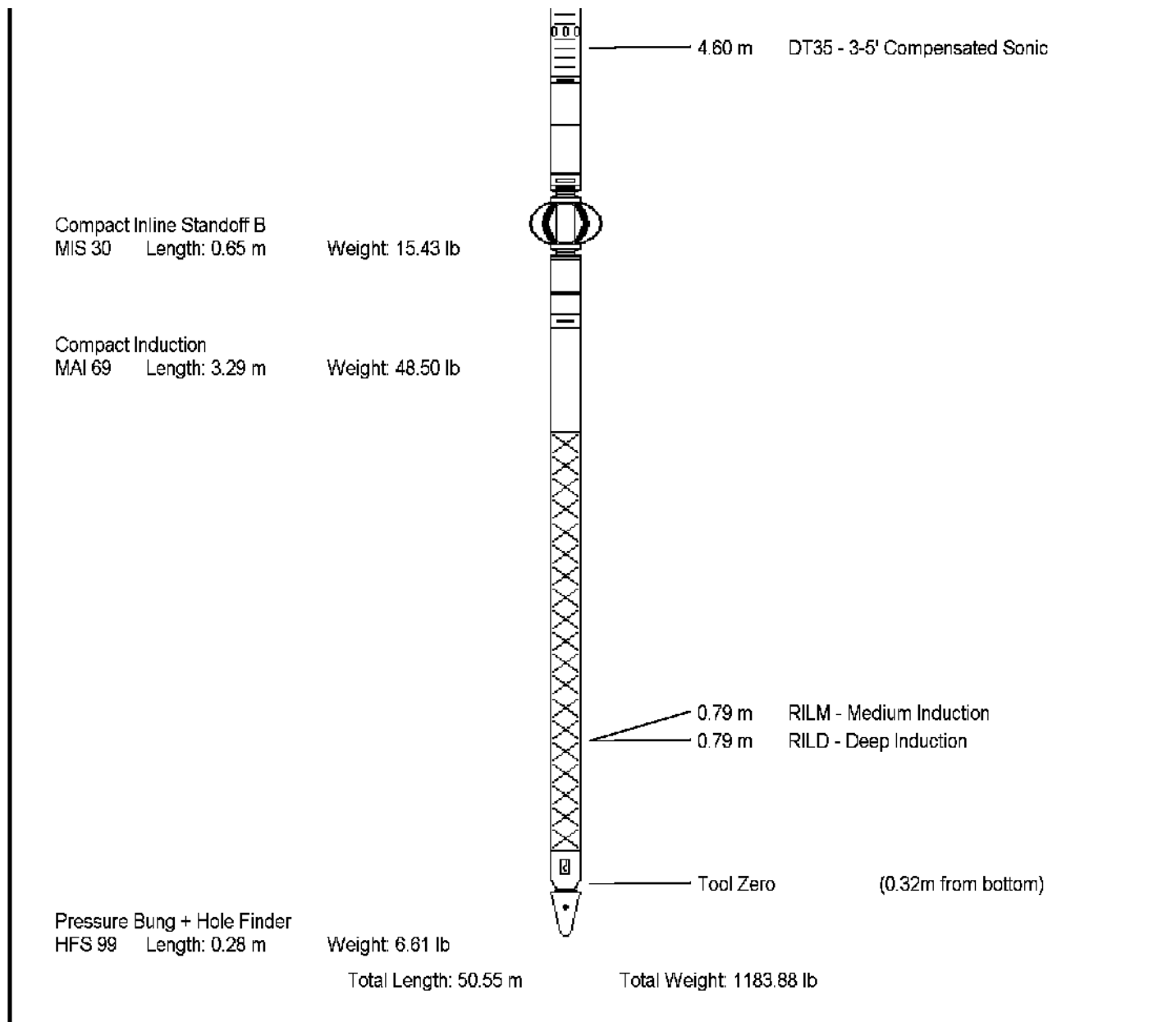
Compact Inline Standoff B  
MIS 73 Length: 0.65 m Weight: 15.43 lb

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

Compact Inline Standoff B  
MIS 75 Length: 0.65 m Weight: 15.43 lb


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





<b>COMPANY</b>	<b>ESSO AUSTRALIA PTY. LTD.</b>
<b>WELL</b>	<b>TUNA A-05A</b>
<b>FIELD</b>	<b>GIPPSLAND BASIN</b>
<b>PROVINCE/COUNTY</b>	<b>BASS STRAIT</b>
<b>COUNTRY/STATE</b>	<b>AUSTRALIA</b>

Elevation Kelly Bushing	metres	First Reading	3251.20	metres
Elevation Drill Floor	31.32 metres	Depth Driller	3257.00	metres
Elevation Ground Level	-59.40 metres	Depth Logger	3257.00	metres

	<b>DUAL LATEROLOG - GR</b>
	<b>DENSITY - NEUTRON</b>
	<b>1:200 MD</b>