PRECISION ENERGY SERVICES

Compact

DUAL LATEROLOG - MLL
COMPENSATED SONIC
1:500

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FINAL PRINT

LSD	SEC	TWP	RGE	Other Services
				COMPENSATED NEUTRON
				PHOTO DENSITY

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	1			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.70	metres		
Last Reading	30.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	19.5 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

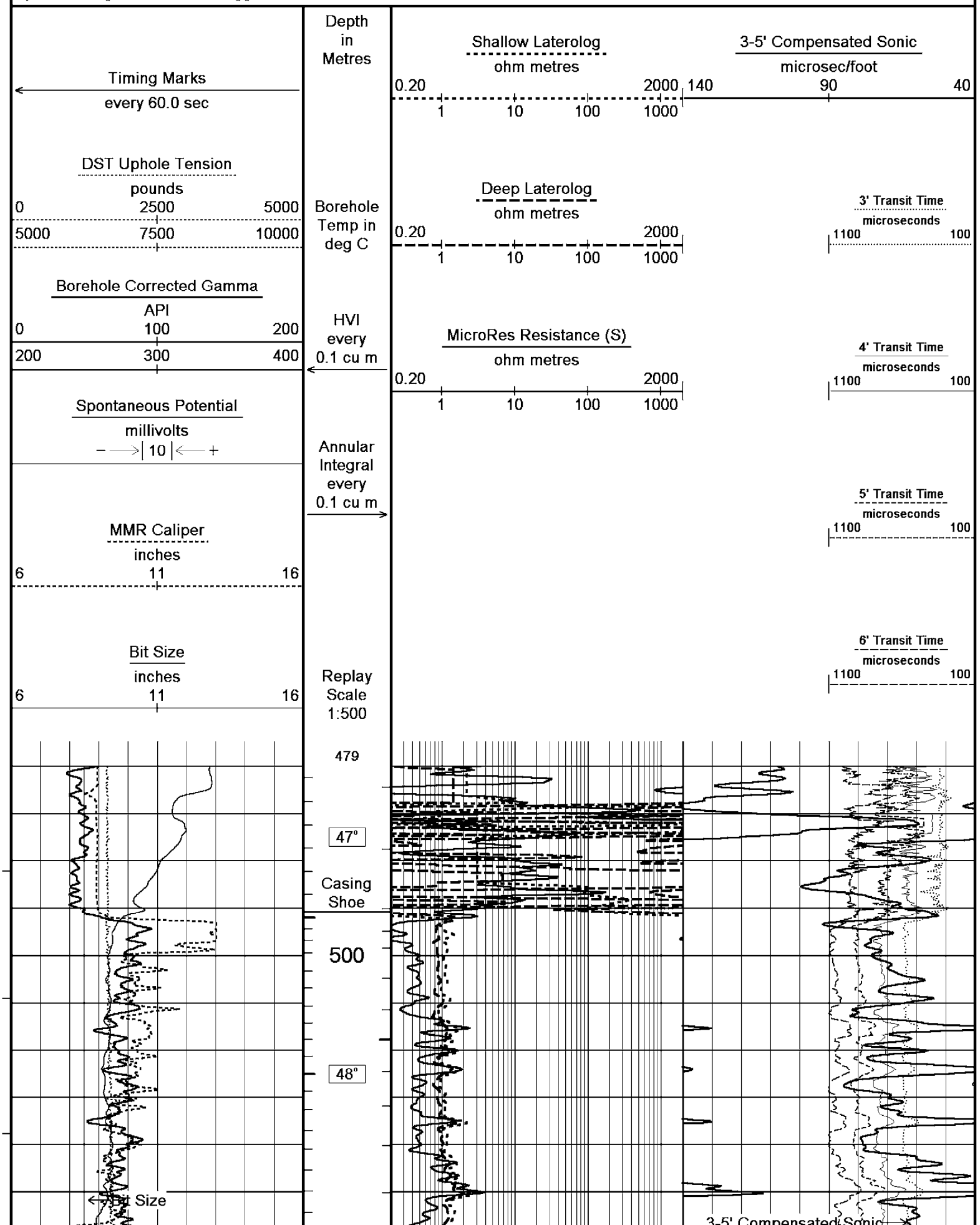
1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MMR, MLE, MUG, MSS, MCG, MBE RAN IN COMBINATION.
4) HARDWARE: MMR: ONE 25.4MM STANDOFF
MSS: TWO 25.4MM STANDOFF
MUG: ONE 25.4MM STANDOFF
MBE: ONE 25.4MM STANDOFF
5) SERVICE ORDER:2391
6) RIG:CENTURY 7
PRINTS: 1 FIELD 3 FINALS
7) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 70 CU.M.
8) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 31.5 CU.M.
9) SONIC CASING SIGNAL AT 284.6 M.
10) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
11) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
12) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.
13) SONIC DOES NOT REPEAT AT 1985. DISCRIMINATORS WERE ADJUSTED TO TRY AND CLEAN UP THE SONIC REPEATABILITY WITH NO SUCCESS.

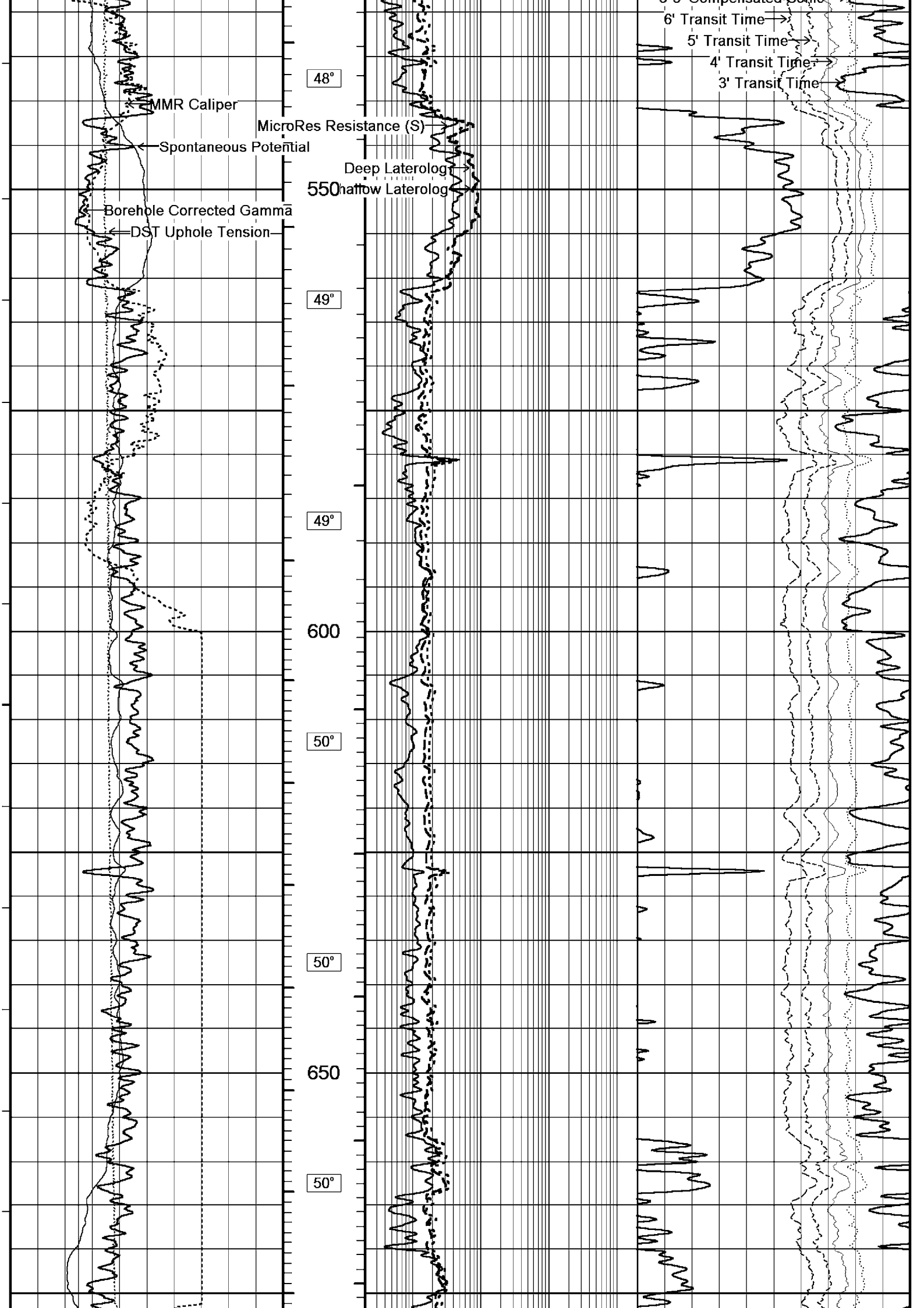
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

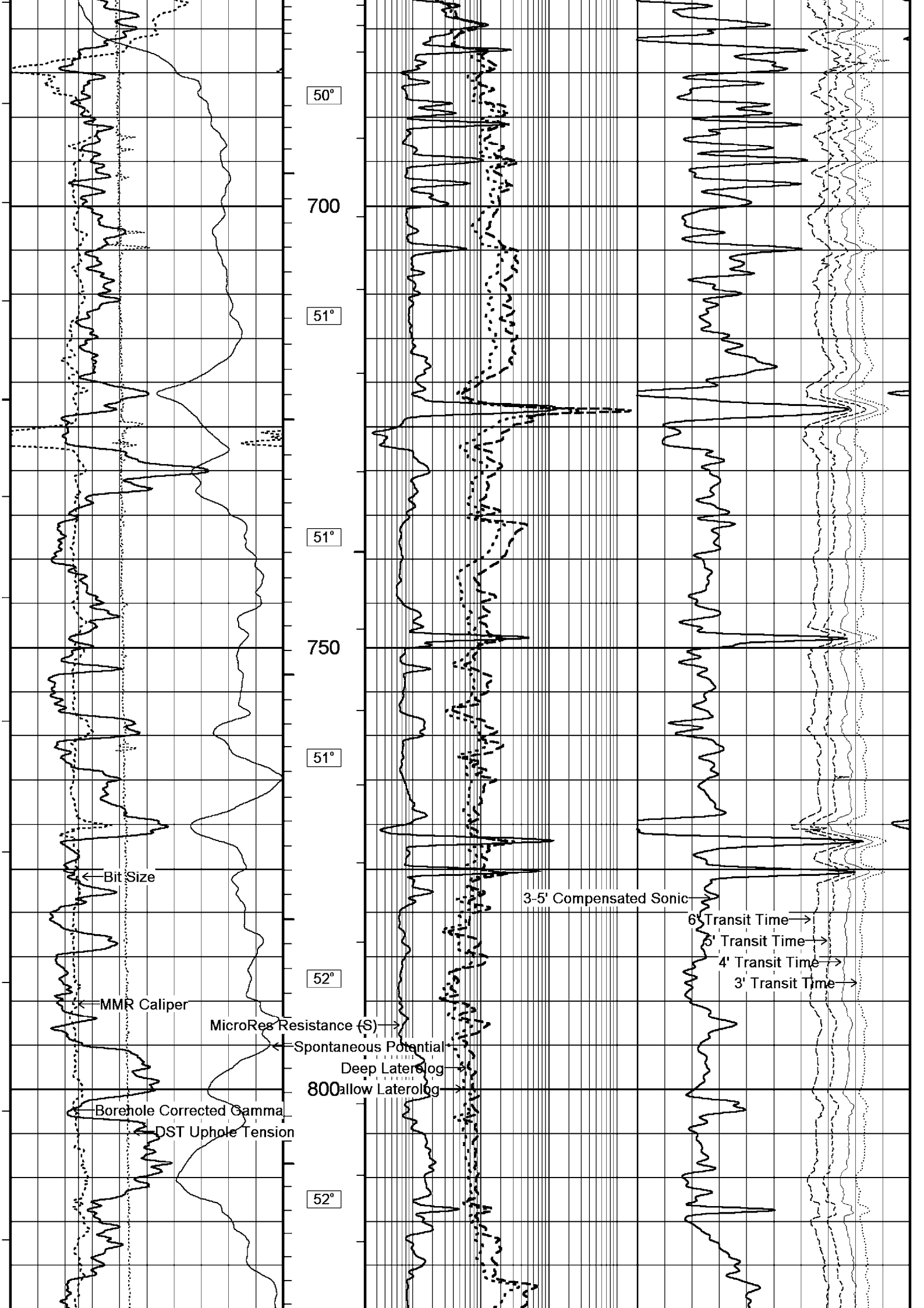
MAINLOG 1:500

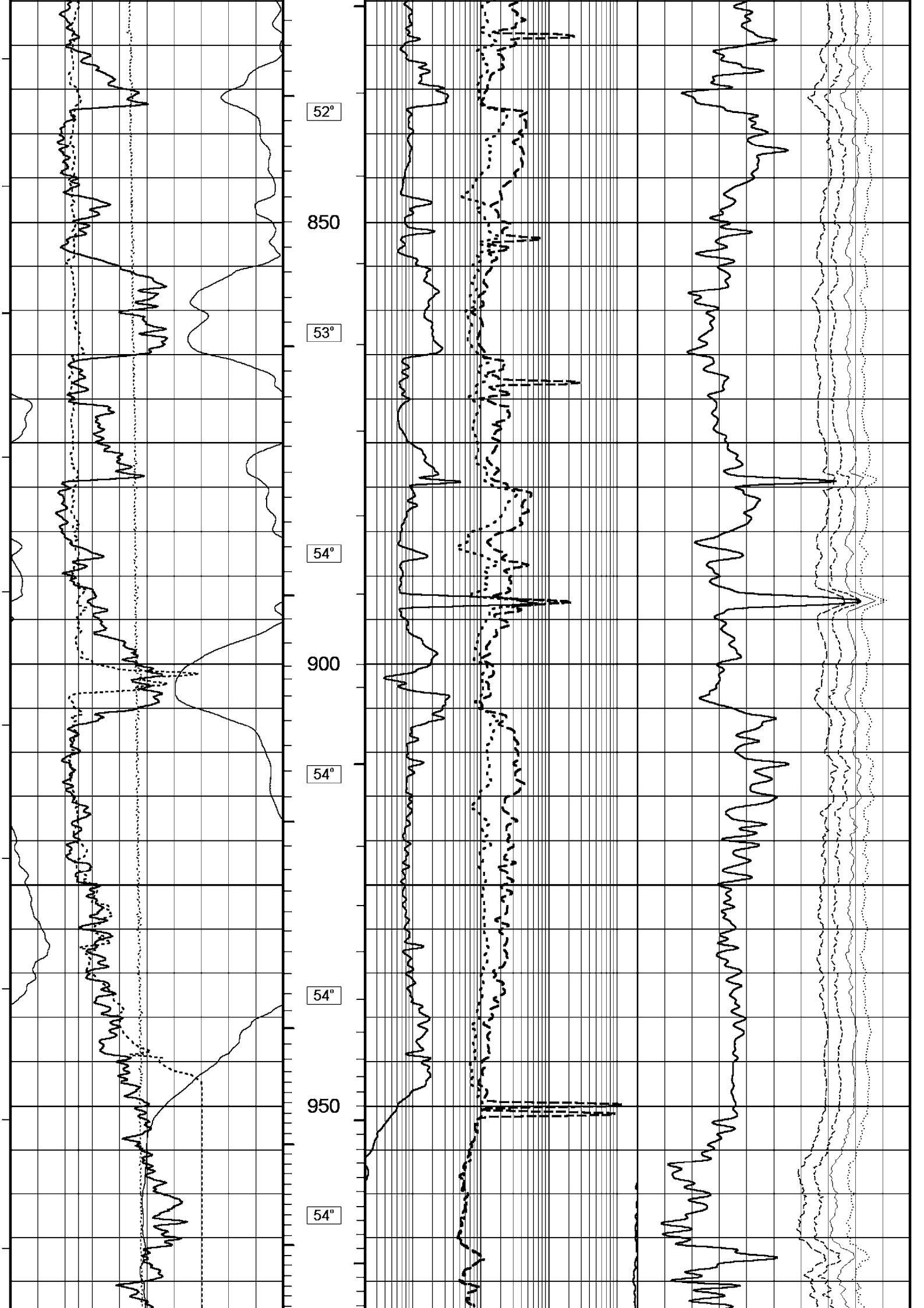
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: D:\ORIGIN\Peterborough_1\DPK\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

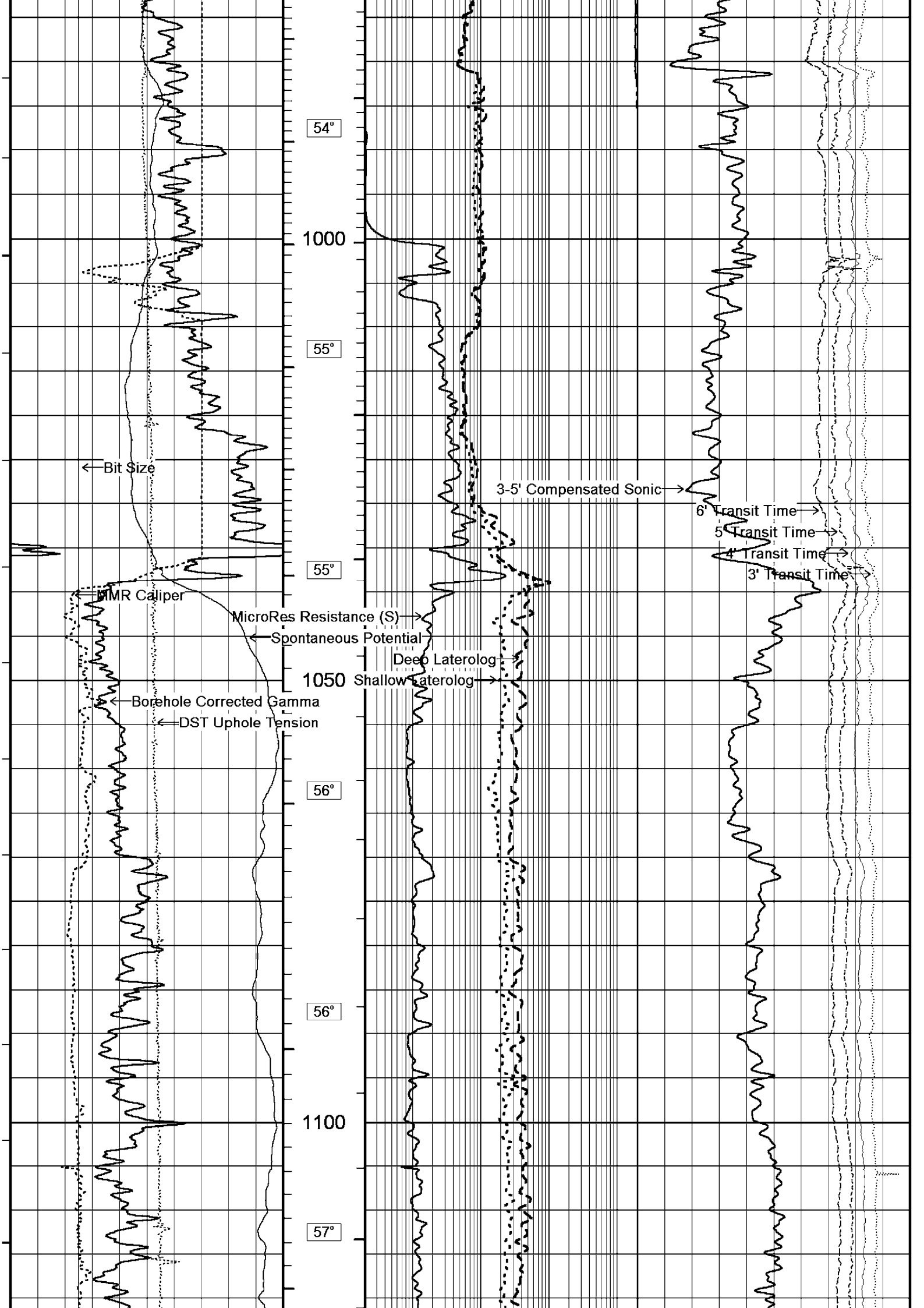
Plotted on 13-SEP-2005 10:17
Recorded on 07-SEP-2005 20:22

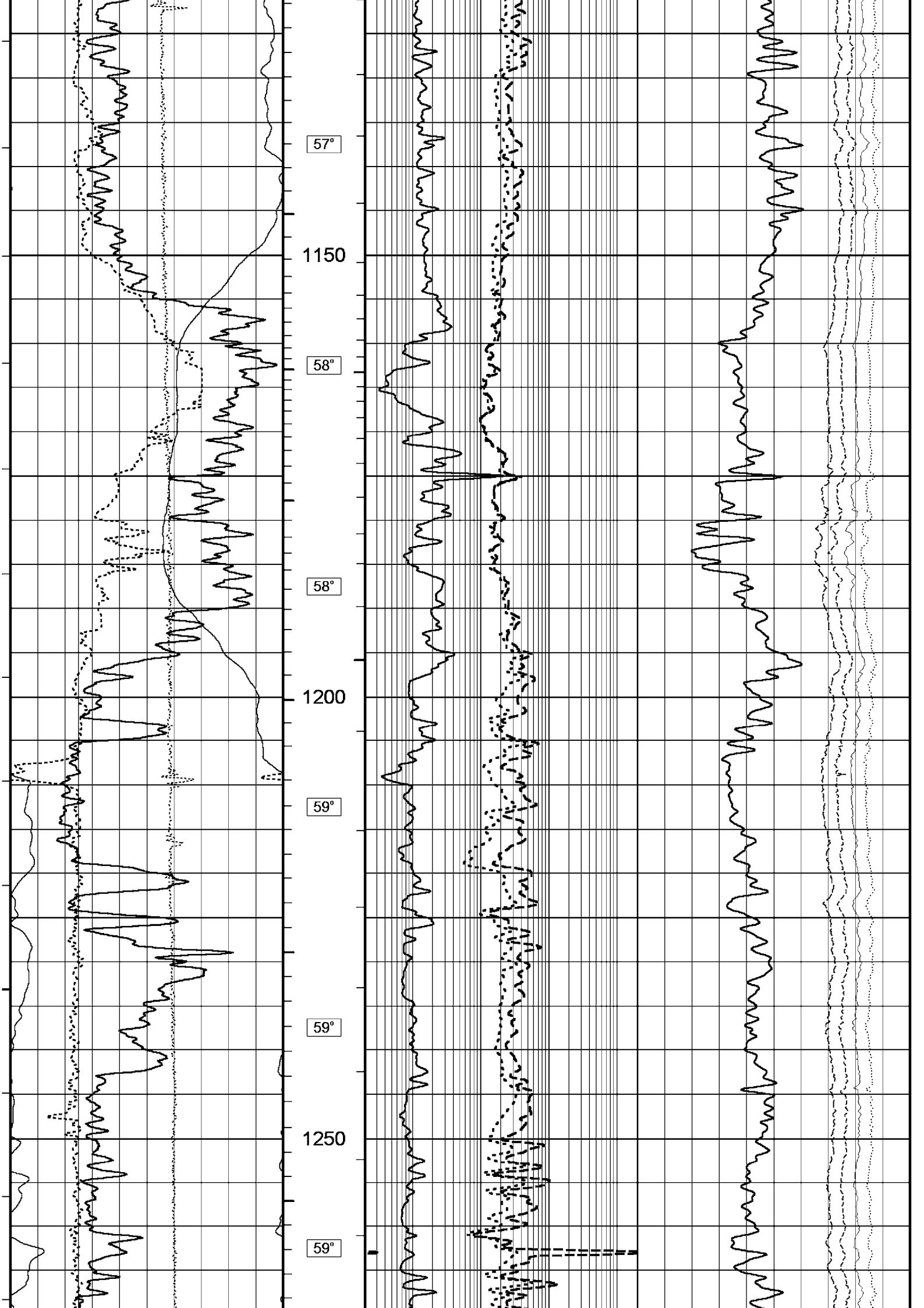


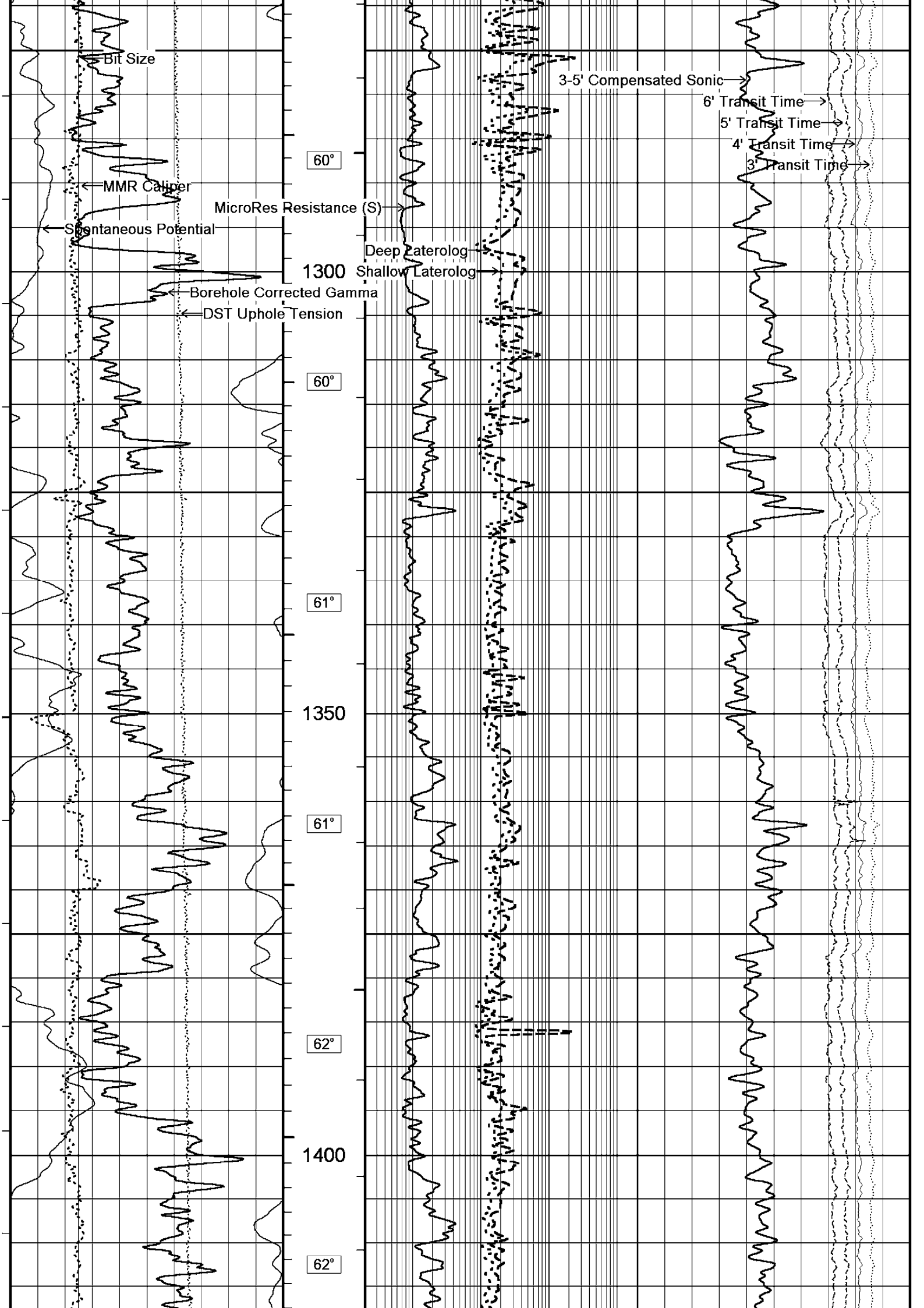

6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
48°
MMR Caliper
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
550
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
49°
49°
600
50°
50°
650
50°

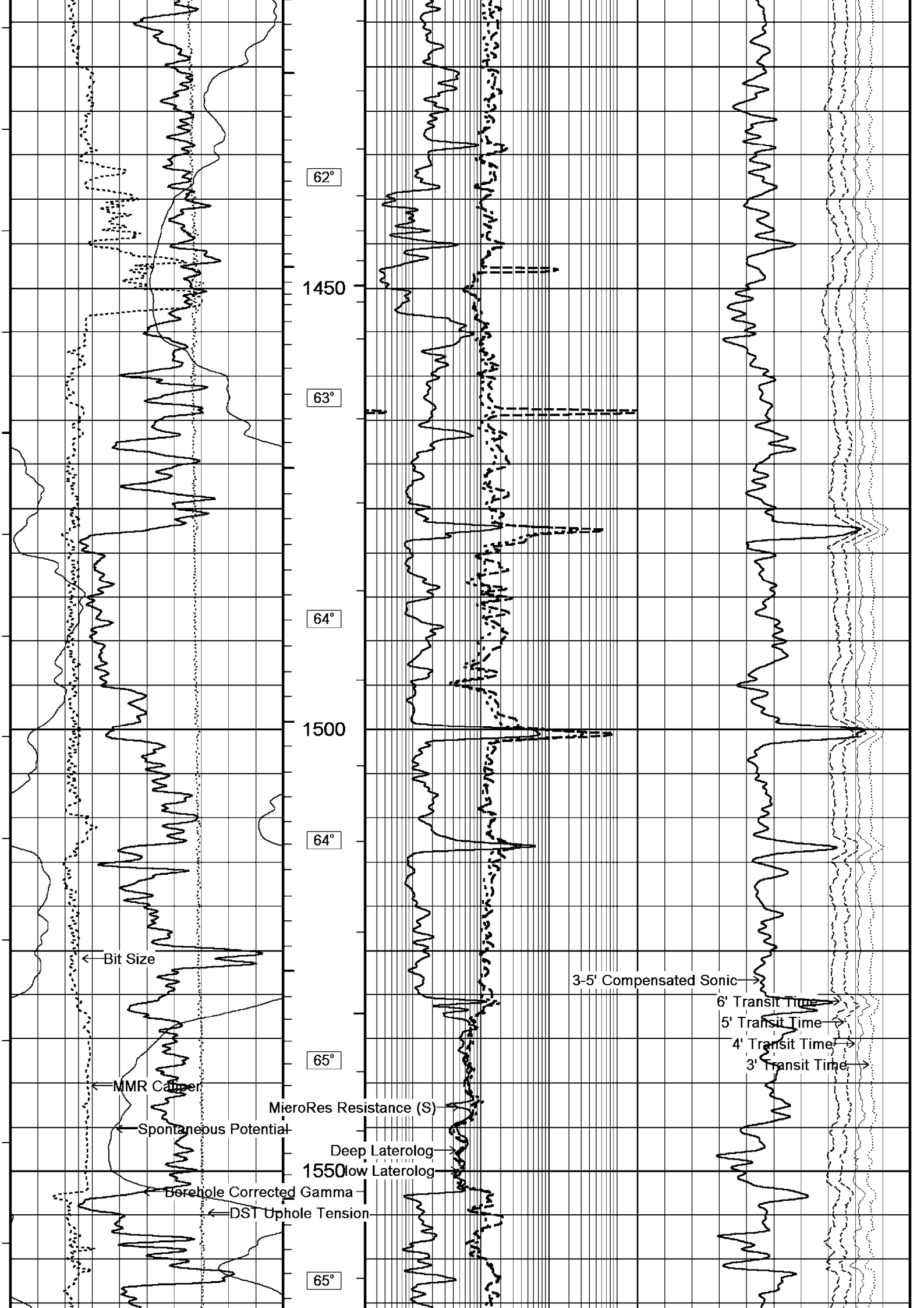

50°
700
51°
51°
750
51°
52°
800
52°
Bit Size
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

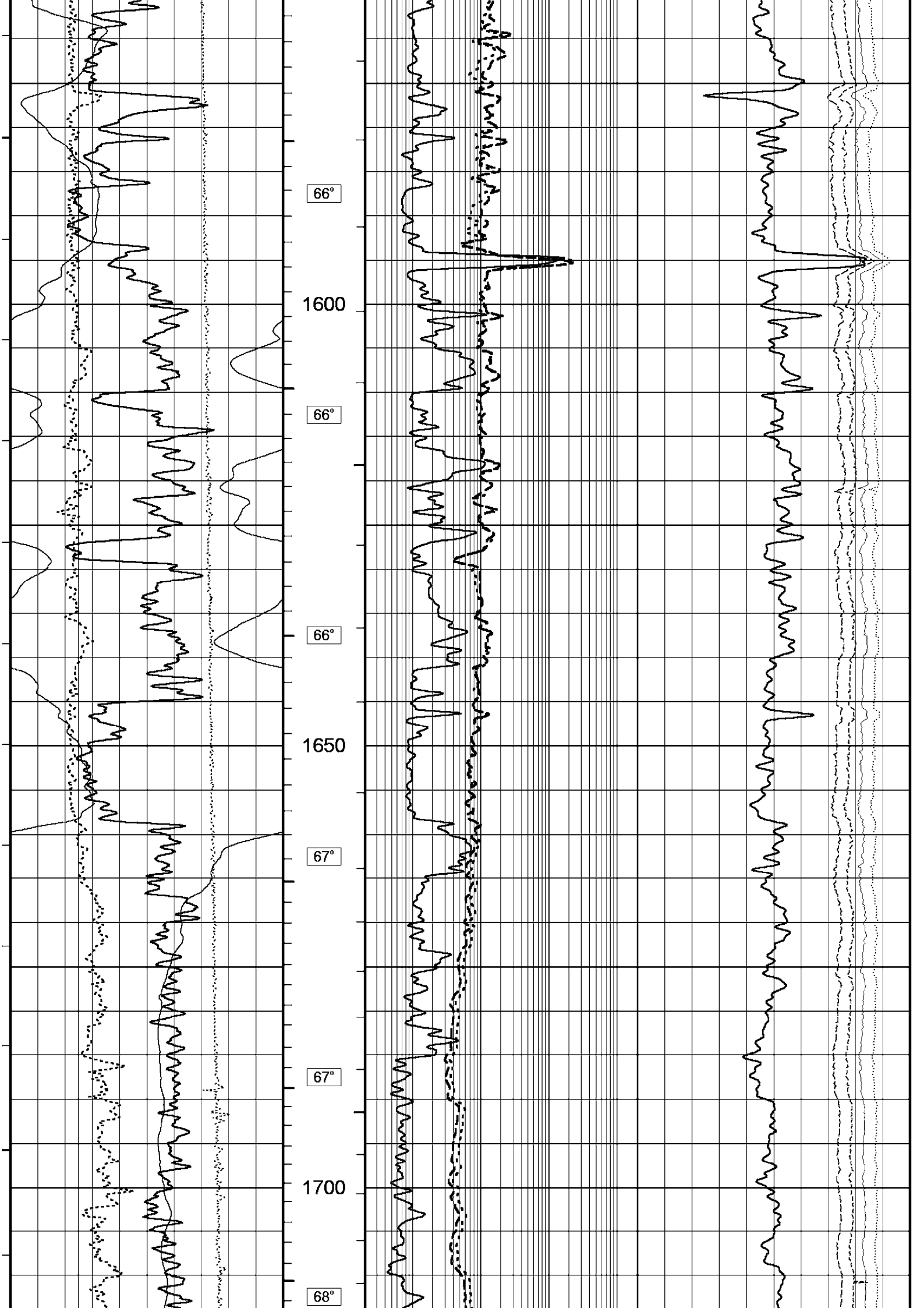

52°
850
53°
54°
900
54°
54°
950
54°

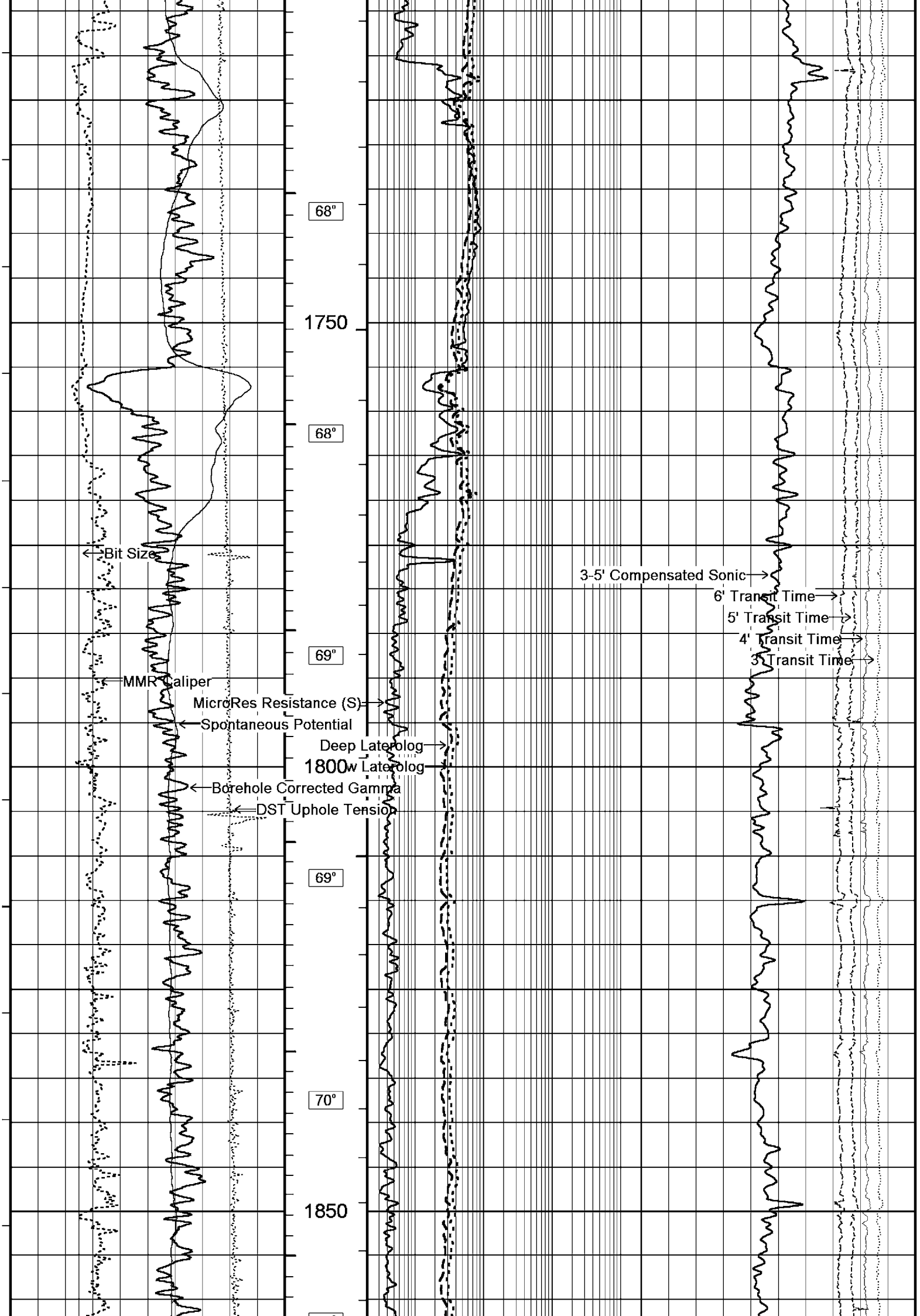

54°
1000
55°
55°
Bit Size
MMR Caliper
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
1050
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
56°
56°
1100
57°
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

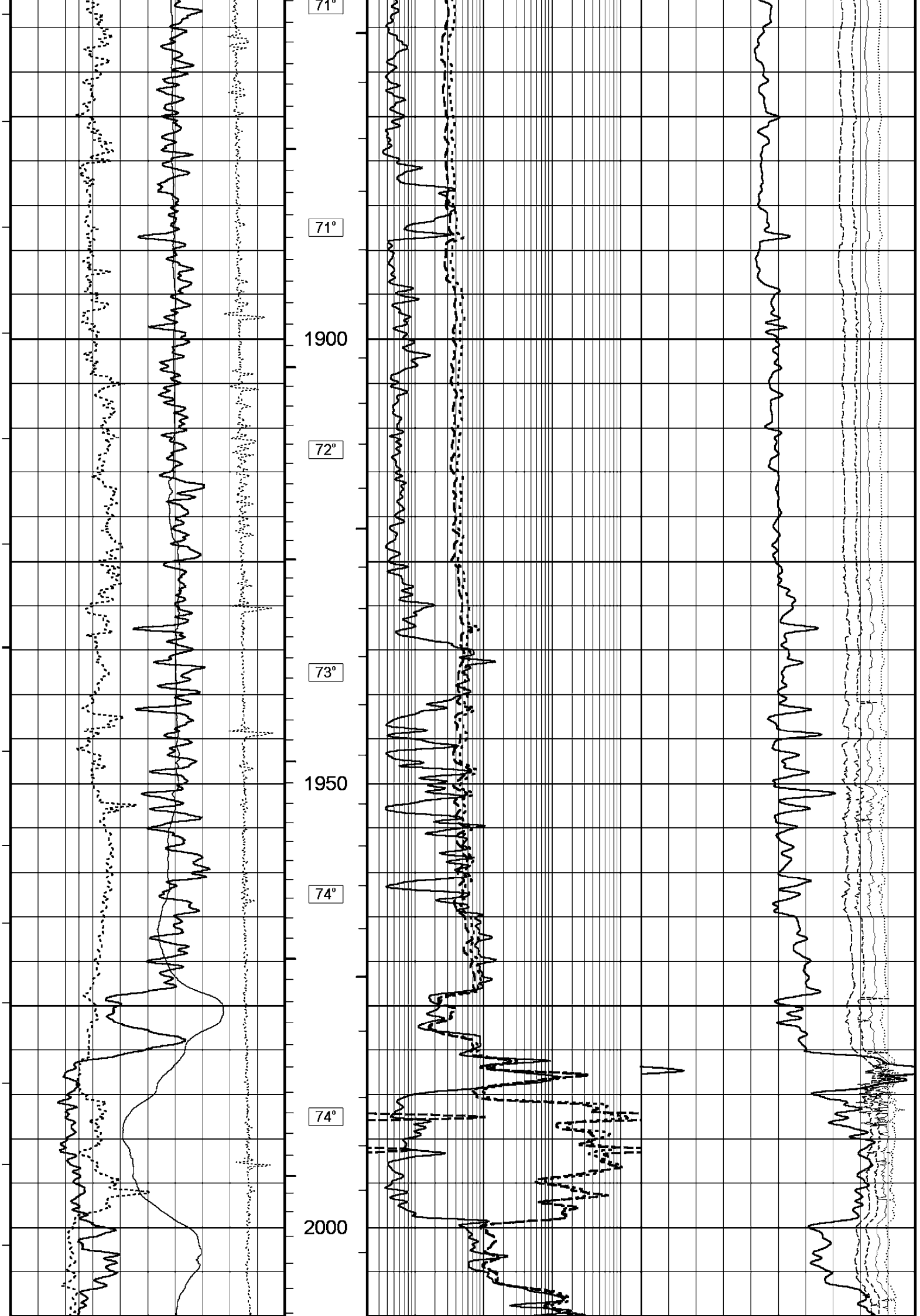

57°
1150
58°
58°
1200
59°
59°
1250
59°

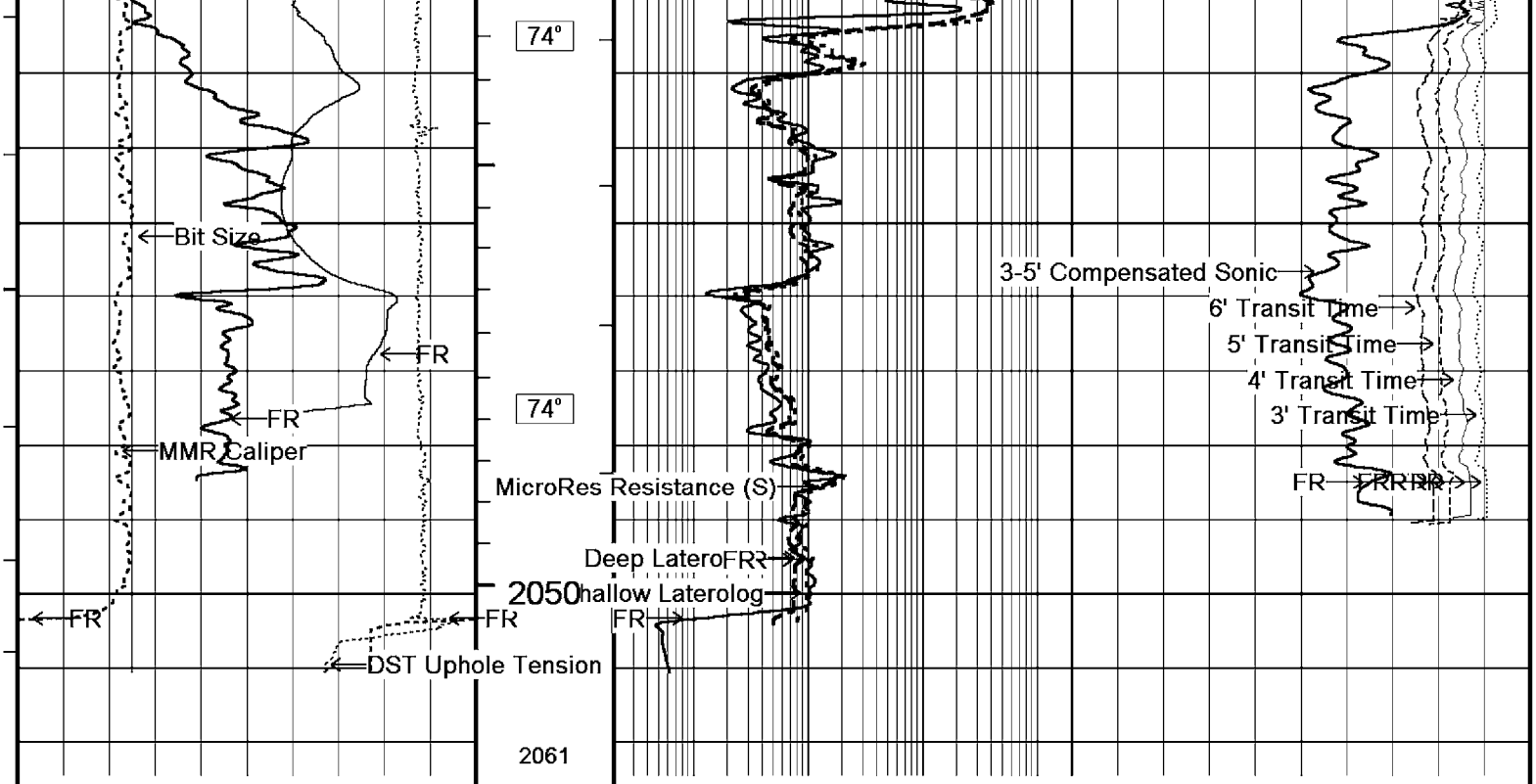

Bit Size
MMR Caliper
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
60°
60°
61°
61°
62°
62°
1300
1350
1400


62°
1450
63°
64°
1500
64°
65°
1550
65°
Bit Size
MMR Caliper
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
MieroRes Resistance (S)
Deep Laterolog
low Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


66°
1600
66°
66°
1650
67°
67°
1700
68°


68°
1750
68°
Bit Size
69°
MMR Caliper
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
1800w Laterolog
Borehole Corrected Gamma
DST Uphole Tension
69°
70°
1850
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


71°
71°
1900
72°
73°
1950
74°
74°
2000



2061

Depth in Metres

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Spontaneous Potential
millivolts
– 10 +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

HVI every 0.1 cu m

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

Annular Integral every 0.1 cu m

Borehole Temp in deg C

Replay Scale 1:500

3-5' Compensated Sonic
microsec/foot
140 90 40

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: D:\ORIGIN\Peterborough_1\DPK\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 13-SEP-2005 10:17
Recorded on 07-SEP-2005 20:22

MAINLOG 1:500

BEFORE SURVEY CALIBRATION

General Constants All 000

General Parameters		
Mud Resistivity	0.300	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Density Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	N/A	
Resistivity used	N/A	
RWA Constant A	N/A	
RWA Constant M	N/A	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Neutron Calibration MDN 043

Base Calibration on 22-AUG-2005 15:53
Field Check on 4-SEP-2005 20:27

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3021	94	3714	110
Ratio	32.071		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1674	2333
Ratio	0.717	

Field Check

	Calibrated (cps)	
	1645	2338
Ratio	0.703	

Neutron Constants MDN 043

Neutron Source Id	NSNE-747	
Neutron Jig Number	31	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.14	gm/cc
Limestone Sigma	7.10	cu

Limestone Sigma	7.18	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	20.00	degrees C
Mud Salinity	21.14	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 22-AUG-2005,12:13
Field Check on 4-SEP-2005 20:33

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	49825	17938	53111	19310
Reference 2	23308	2480	24951	2530

Field Check at Base

	918.0	1089.7

Field Check

	921.8	1085.1

PE Calibration

Base Calibration

		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	176	793		
Reference 1	15856	49650	0.321	0.320
Reference 2	6240	23176	0.271	0.273

Field Check at Base

176.0	793.2	

Field Check

175.6	798.1	

Density Constants MPD 066

Density Source Id	NSDL250	
Nylon Calibrator Number	DNC-D-536	
Aluminium/Fe Calibrator Number	DAC-D-536	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.14	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

Caliper Calibration MPD 066

Base Calibration on 22-AUG-2005 11:11
Field Calibration on 8-SEP-2005,03:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	11983	4.01
2	20446	5.99
3	29120	7.98
4	37568	9.94
5	47008	12.01
6	N/A	N/A

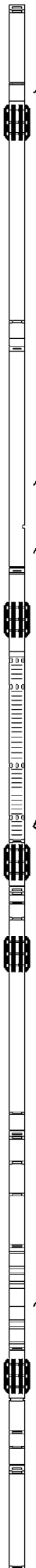
Field Calibration

	Measured Caliper (in)	Actual Caliper (in)

Measured Caliper (in)	Actual Caliper (in)
8.37	8.92

DOWNHOLE EQUIPMENT

D:\ORIGIN\Peterborough_1\DPK\MAIN_SPLICE_MDN_MPD.dta



Compact Stiff Bridle Electrode Sub.
MBE 22 Length: 3.76 m Weight: 94.8 lb

17.78 m SPDL - Spontaneous Potential

Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

13.44 m GRGC - Gamma Ray
12.55 m CGXT - MCG External Temperature

Compact Sonic
MSS 47 Length: 3.82 m Weight: 72.8 lb

9.24 m DT35 - 3-5' Compensated Sonic
9.24 m TR12 - 6' Transit Time
9.24 m TR22 - 5' Transit Time
9.24 m TR11 - 4' Transit Time

Compact Upper Guard Sub.
MUG 20 Length: 2.74 m Weight: 68.3 lb

9.24 m TR21 - 3' Transit Time

Compact Laterolog Electrode Sub.
MLE 16 Length: 3.76 m Weight: 92.6 lb

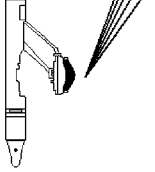
3.93 m DDLL - Deep Laterolog
3.93 m DSLL - Shallow Laterolog

Compact Micro-Resistivity
MMR 5 Length: 2.62 m Weight: 81.6 lb

0.00 m MRRS - MicroRes Resistance (S)
0.00 m MATC - MMR Caliper
0.00 m HVOL - Hole Volume
0.00 m AVOL - Annular Volume
Tool Zero (0.85m from bottom)

Pressure Bung + Hole Finder
HFS 3 Length: 0.28 m Weight: 6.6 lb

Total Length: 19.62 m Weight: 480.6 lb



All measurements relative to tool zero.

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.70	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

PRECISION ENERGY SERVICES
Compact

DUAL LATEROLOG - MLL
COMPENSATED SONIC
1:500