

**Weatherford****COMPOSITE LOG**

COMPANY	TAOS RESOURCES CO. LLC			
WELL	WMU #13			
FIELD	WEST MADDIX UNIT			
PROVINCE/COUNTY	COWLEY			
COUNTRY/STATE	U.S.A. / KANSAS			
LOCATION	4125 FSL & 165 FEL			
SEC	TWP	RGE	Other Services	
	3	33S	5E	
API Number	15-035-24523			
Permit Number				
Permanent Datum GL, Elevation 1264 feet				Elevations: feet
Log Measured From KB				KB 1273.00
Drilling Measured From KB				DF 1272.00
				GL 1264.00
Date	16-SEP-2013			
Run Number	ONE			
Service Order	3542051			
Depth Driller	3650.00			
Depth Logger	3648.00			
First Reading	3645.00			
Last Reading	223.00			
Casing Driller	224.00			
Casing Logger	223.00			
Bit Size	7.875			
Hole Fluid Type	GEL			
Density / Viscosity	9.30	lb/USg	41.00	CP
PH / Fluid Loss	10.00		10.80	ml/30Min
Sample Source	MUD PIT			
Rm @ Measured Temp	2.10 @ 73.0 ohm-m			
Rmf @ Measured Temp	1.68 @ 73.0 ohm-m			
Rmc @ Measured Temp	2.52 @ 73.0 ohm-m			
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	1.37 @114.0 ohm-m			
Time Since Circulation	6 HOURS			
Max Recorded Temp	114.00 deg F			
Equipment / Base	13145		OKC	
Recorded By	L. HEATON			
Witnessed By	M. SEELY			

BOREHOLE RECORD

Last Edited: 16-SEP-2013 08:14

Bit Size inches	Depth From feet	Depth To feet
7.875	224.00	3650.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
surface	8.625	0.00	224.00	24.00

REMARKS

WLS 13.04.8723

DEPTH CONTROL: CALIBRATED MEASURING WHEEL

TOOLS RAN: MCG, MML, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION

HARDWARE:

MAI: TWO 0.5 INCH STANDOFFS USED.

MFE: ONE 0.5 INCH STANDOFF USED.

MDN: DUAL NEUTRON BOW SPRINGS USED.

MSS: THREE 0.5 INCH STANDOFFS USED.

MPD: 8 INCH PROFILE PLATE USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

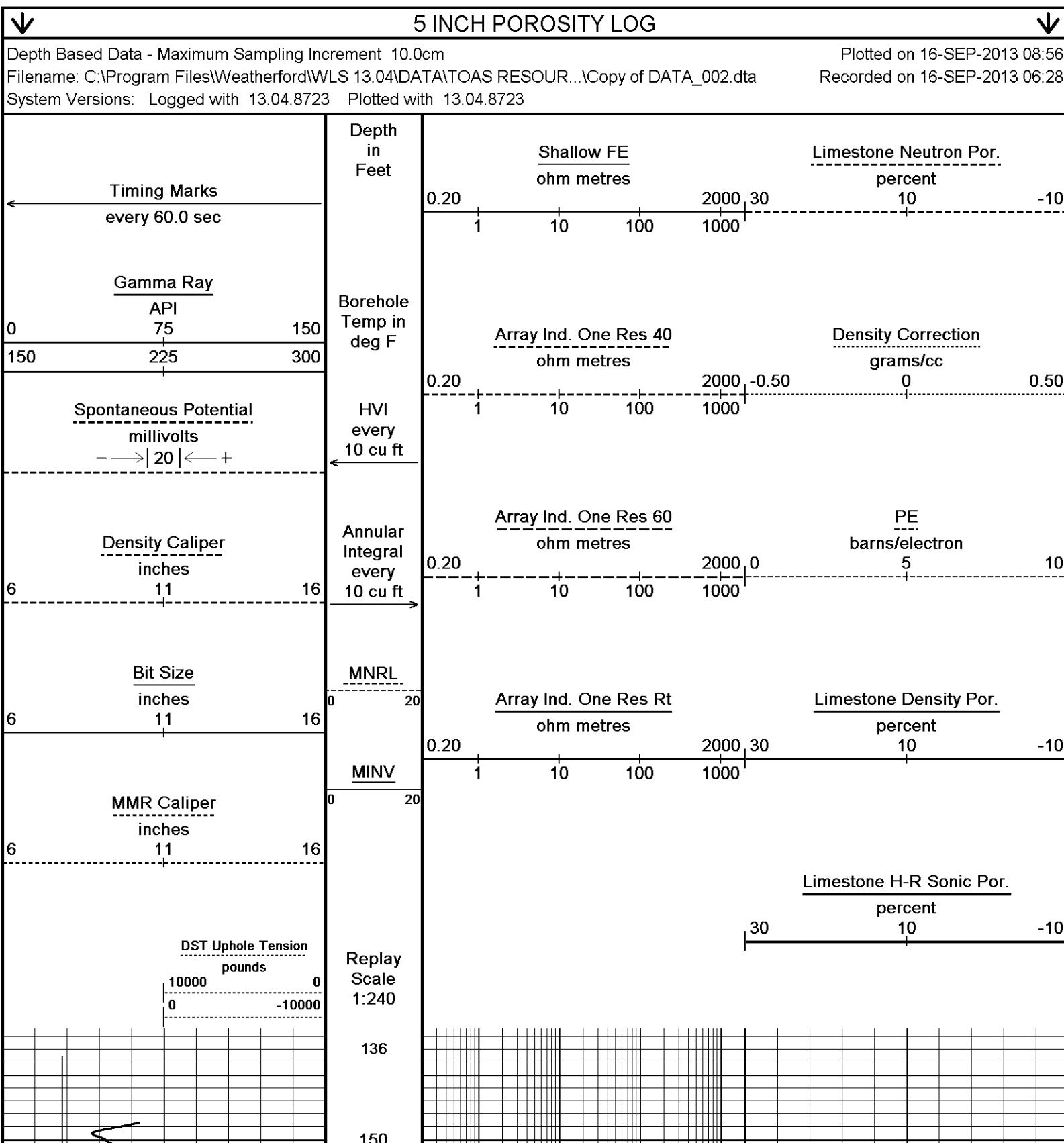
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

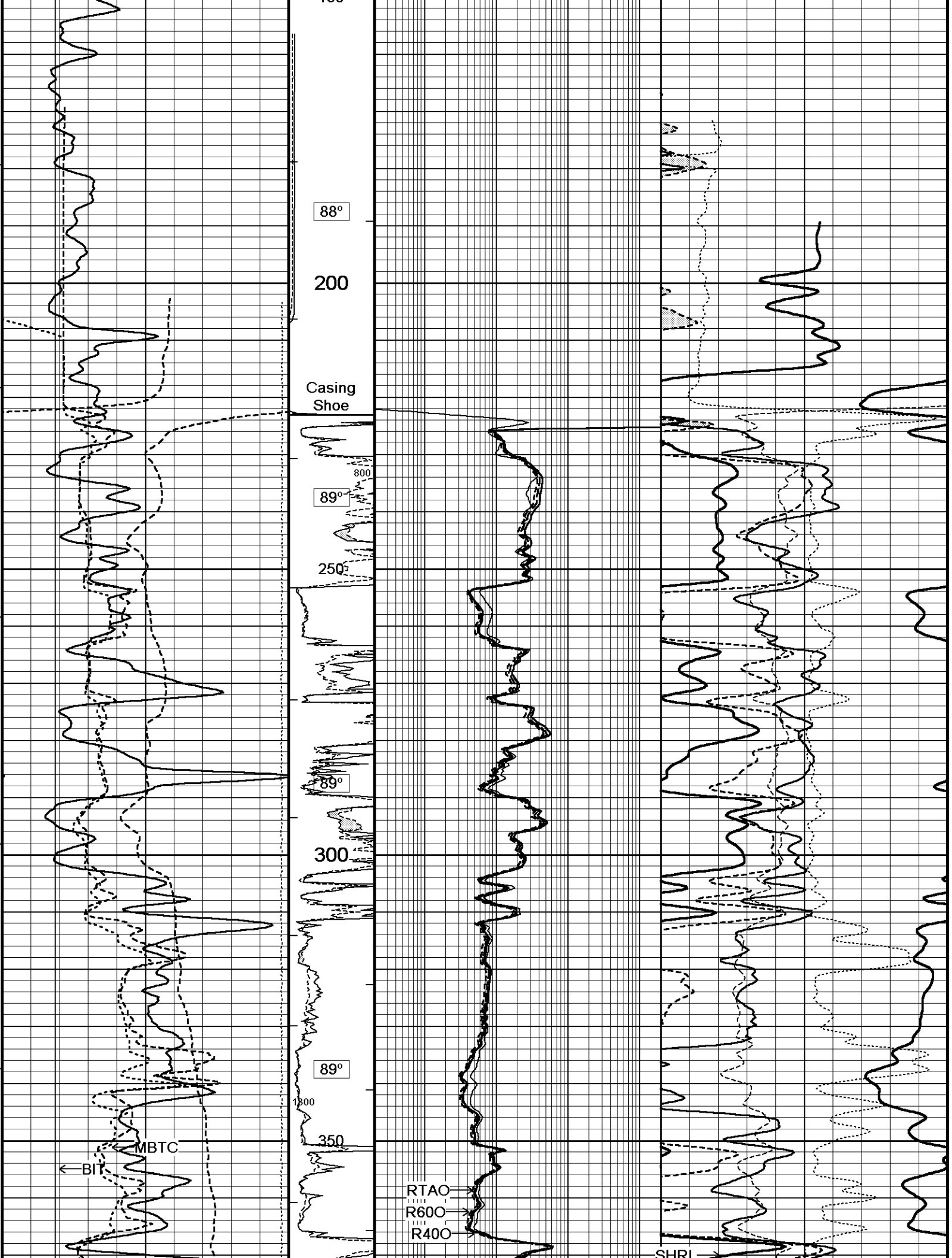
TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1370 CU.FT.
ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING =810 CU.FT.

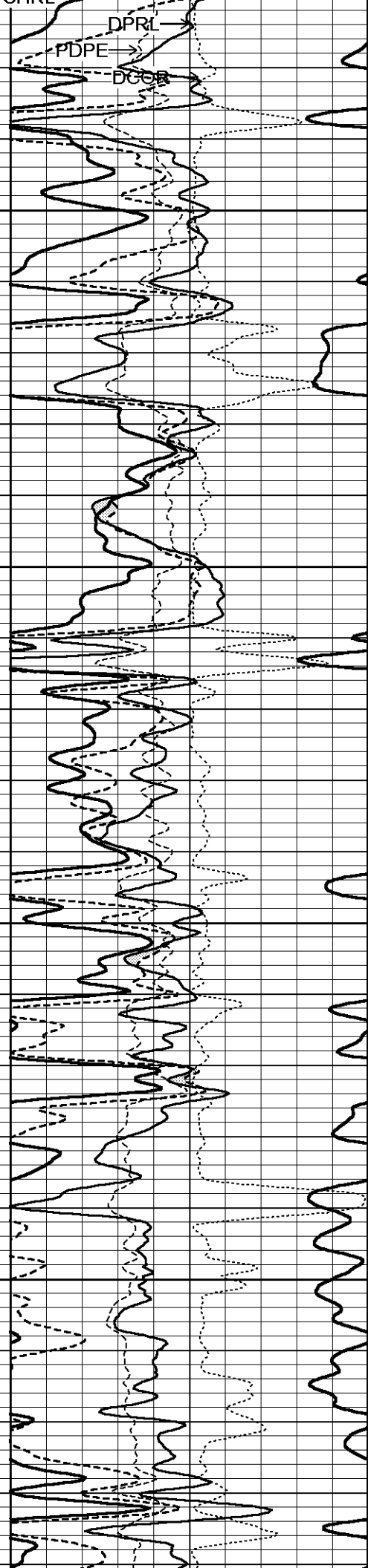
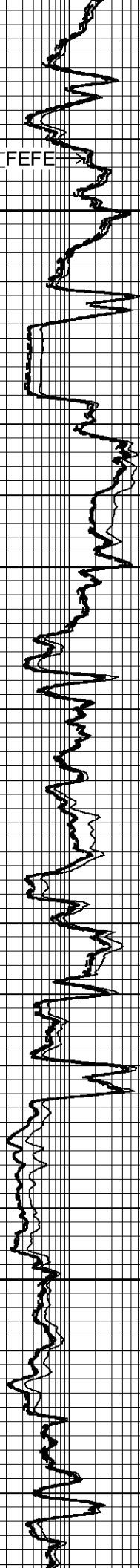
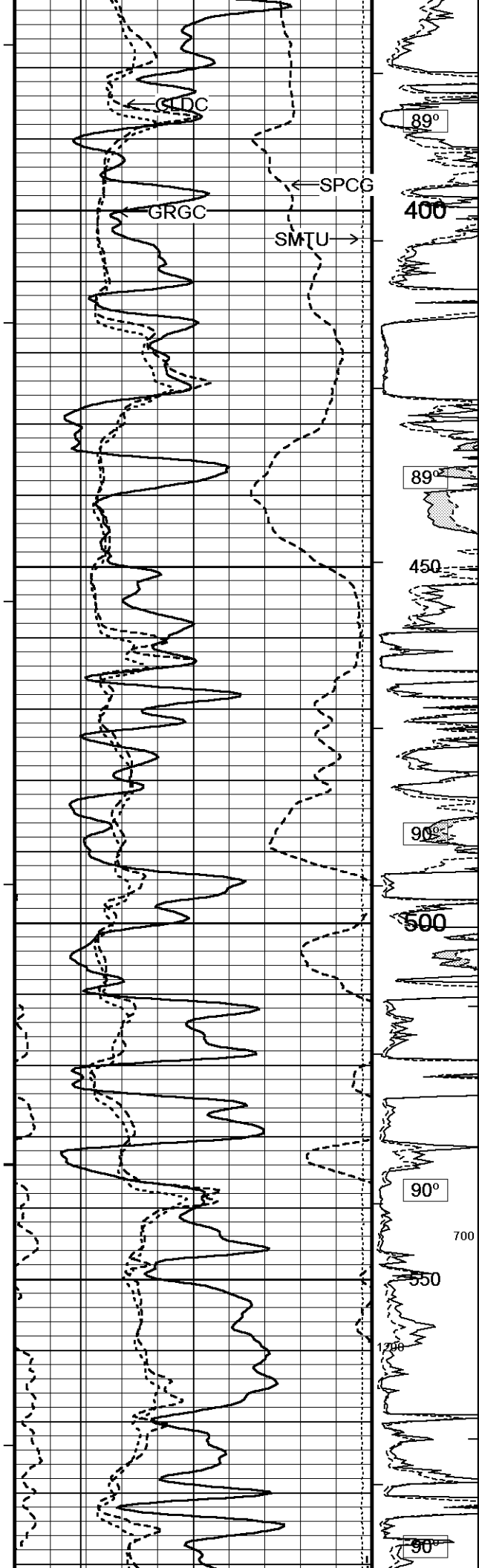
SERVICE ORDER # 3542051

RIG:FOSSIL #2

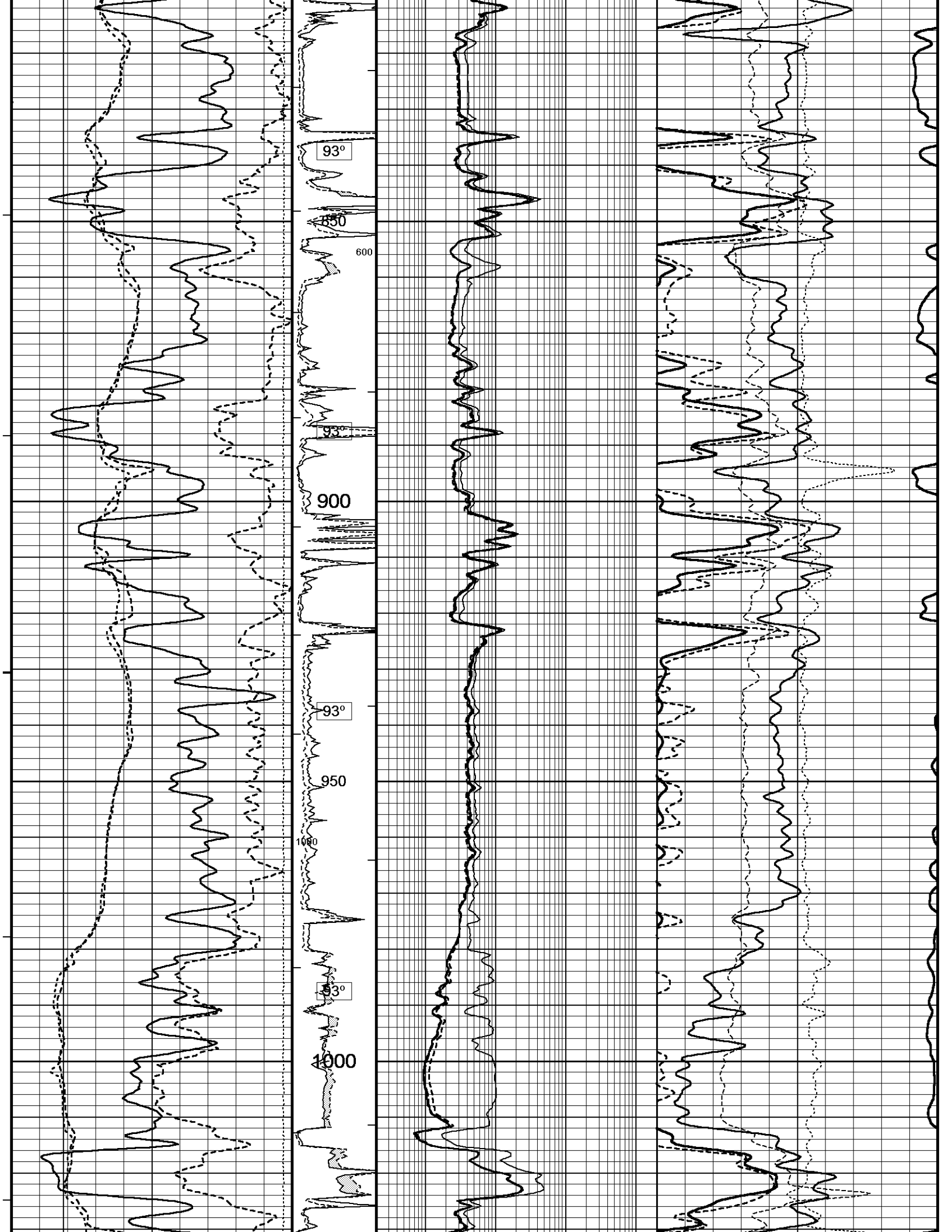
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

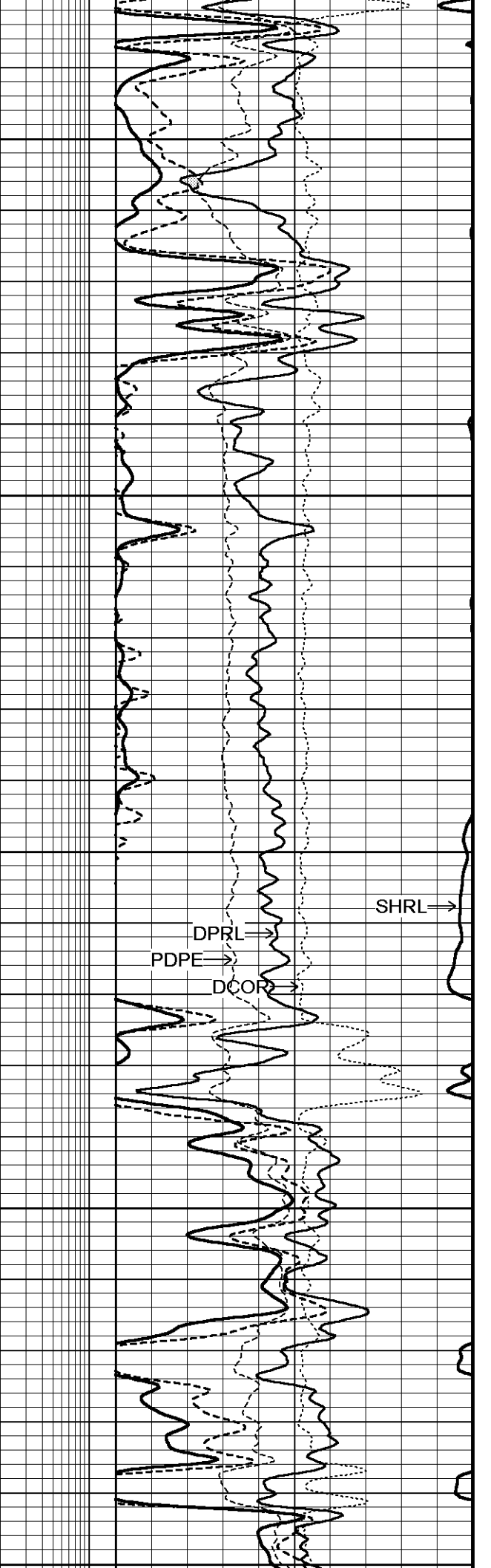
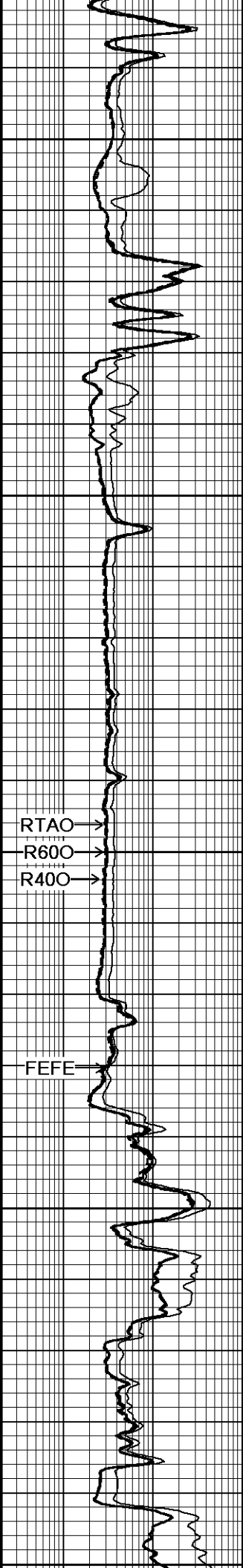
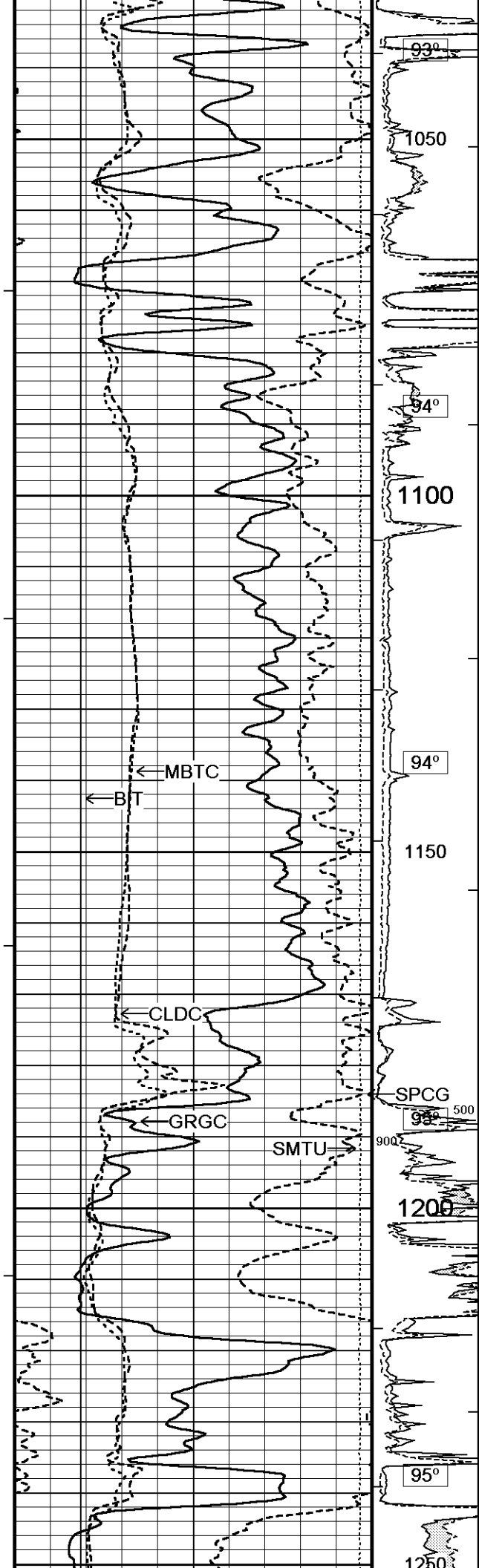


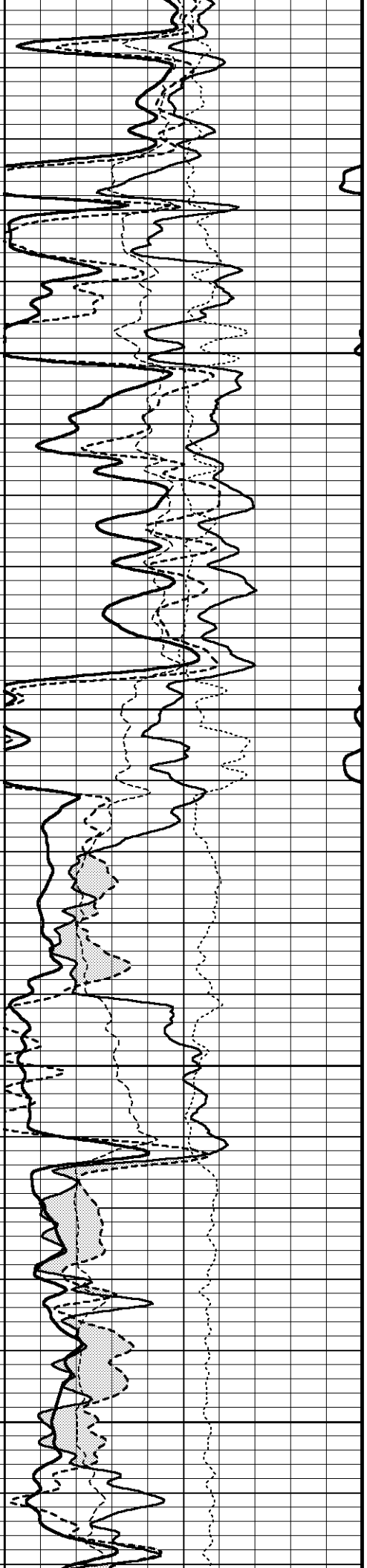
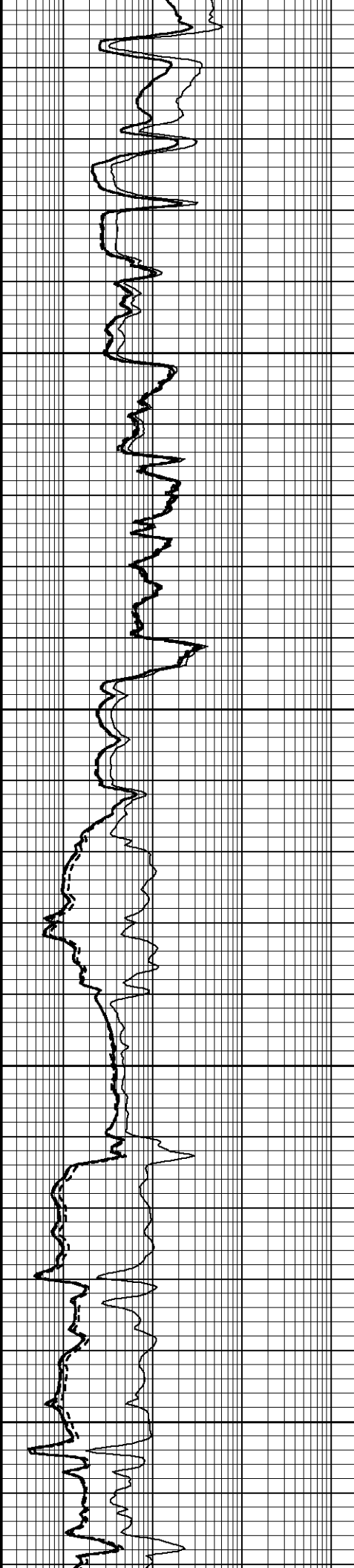
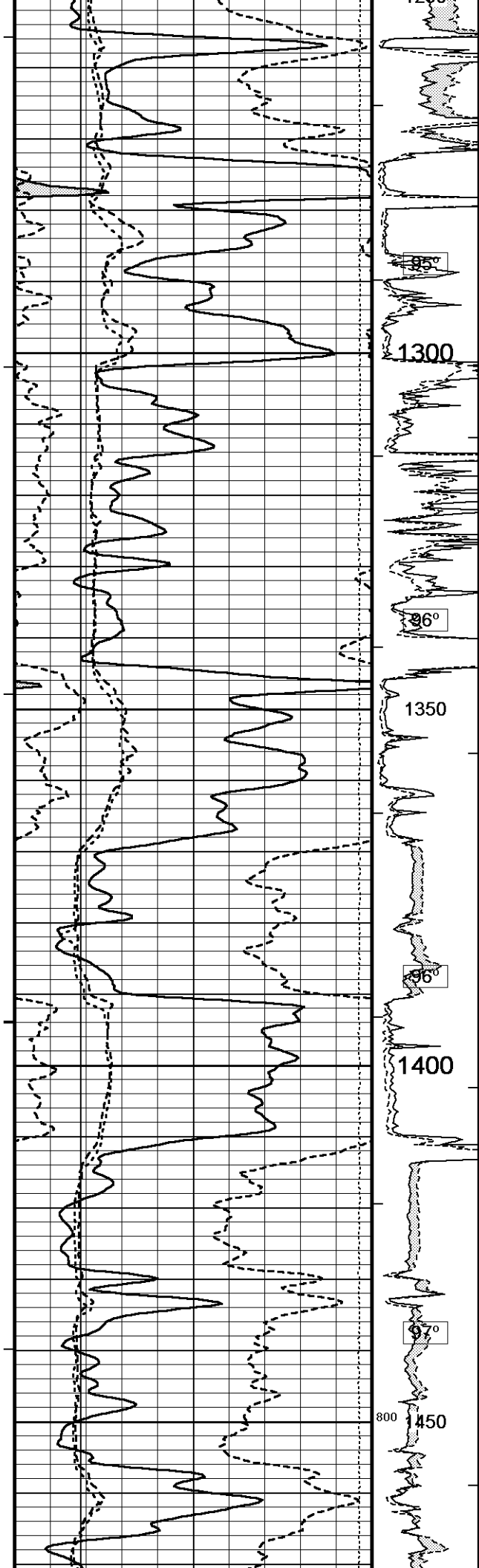


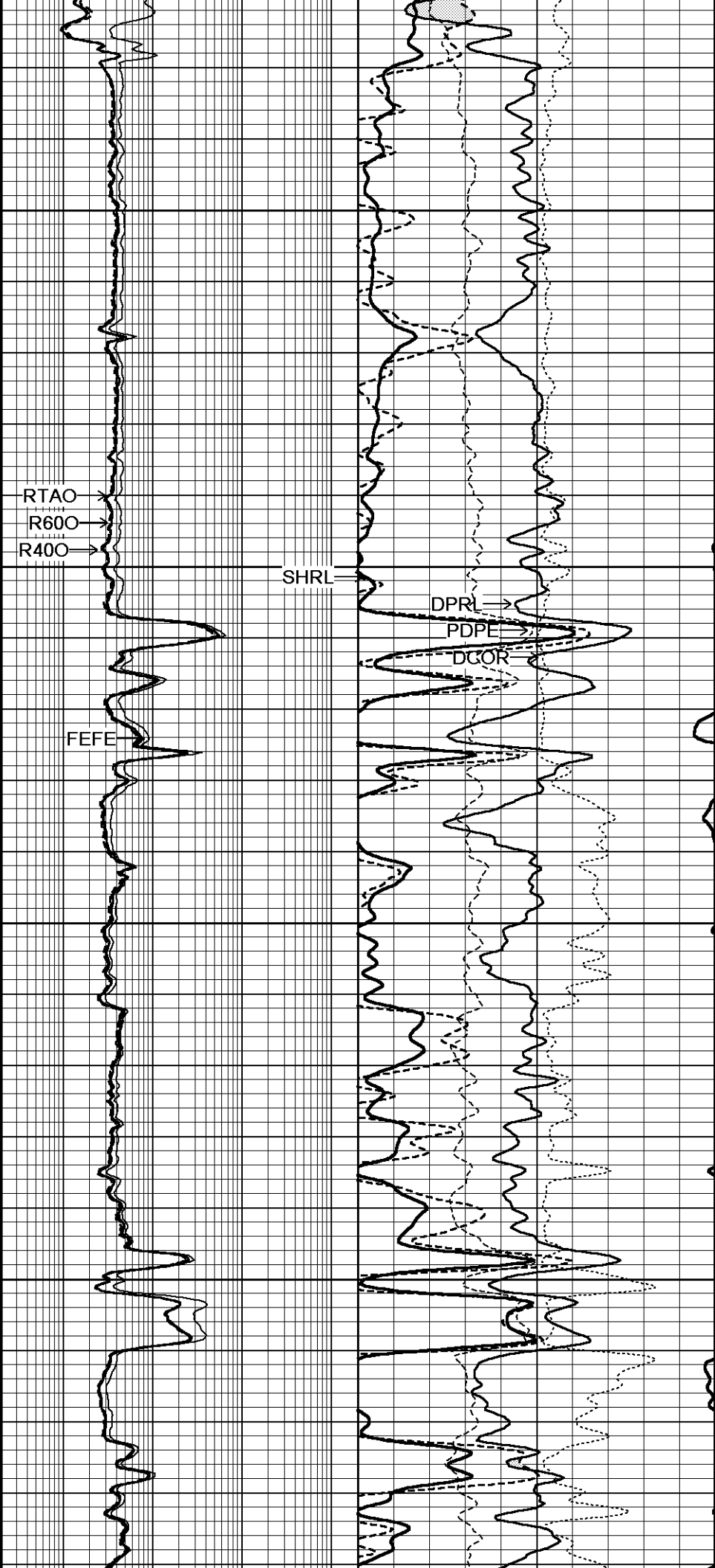
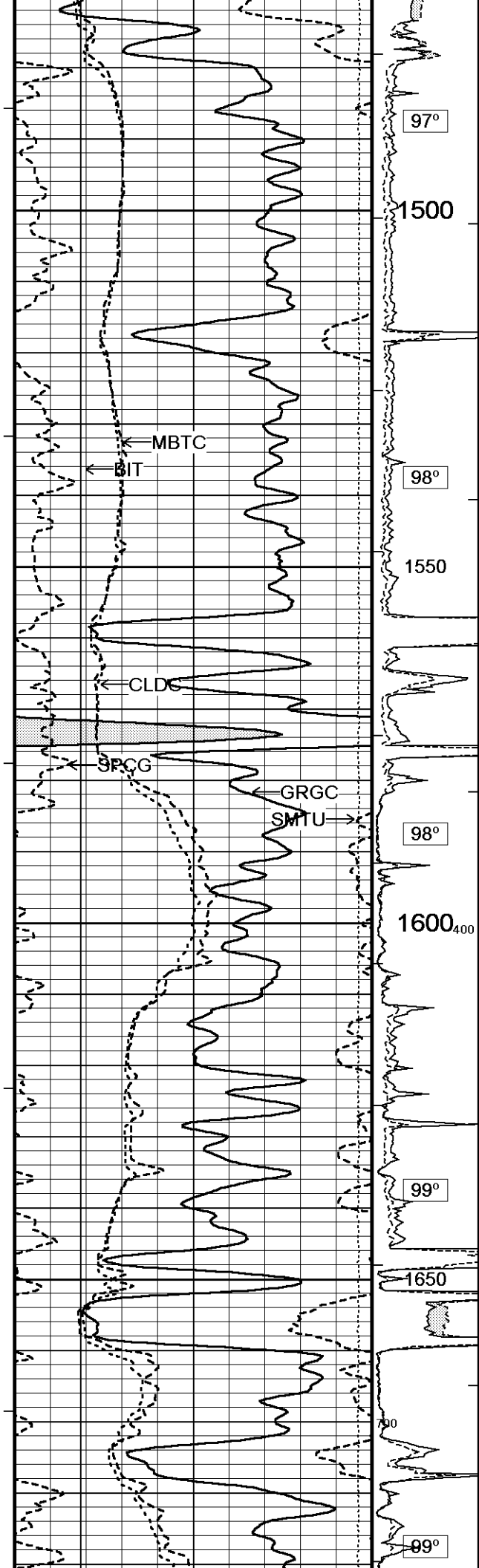


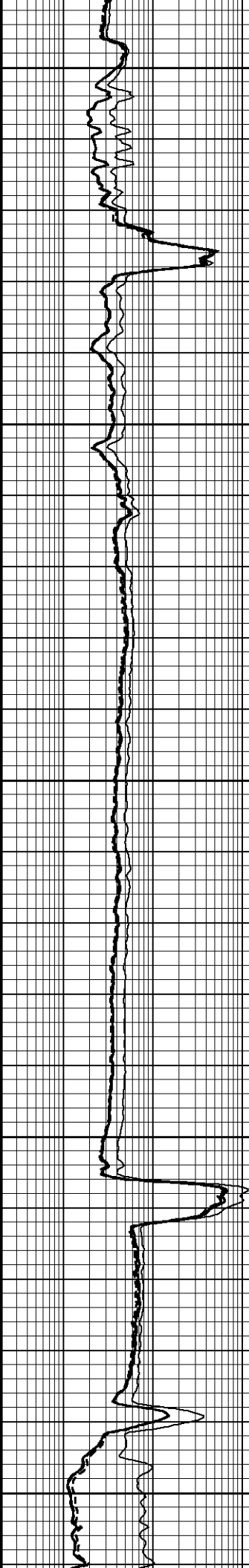
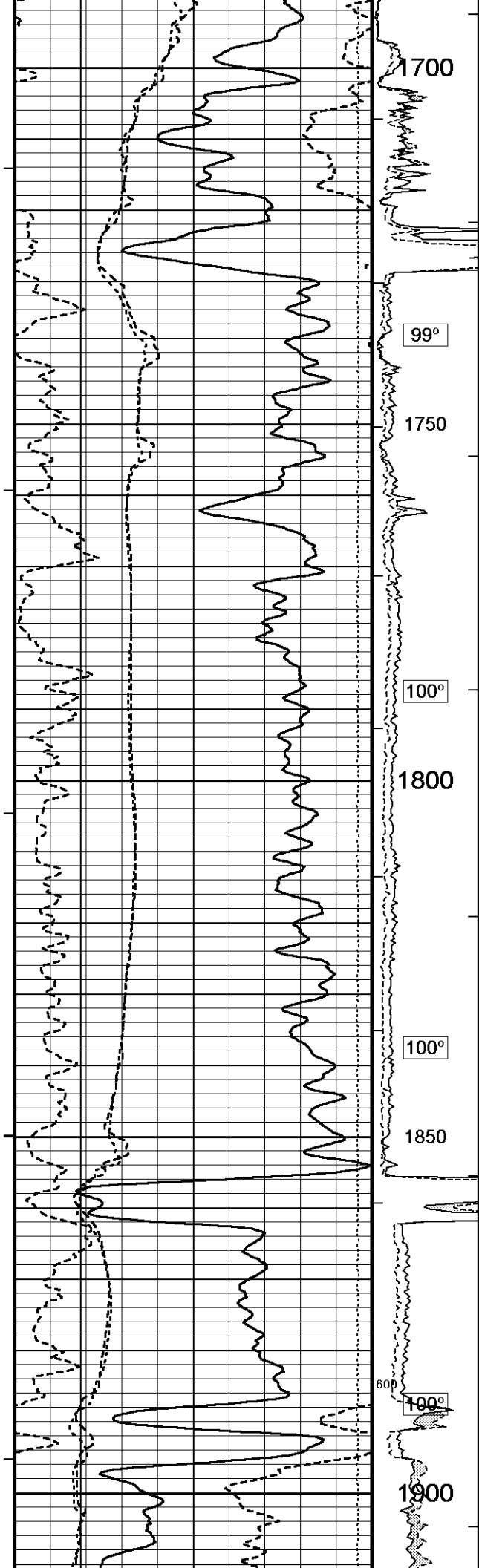


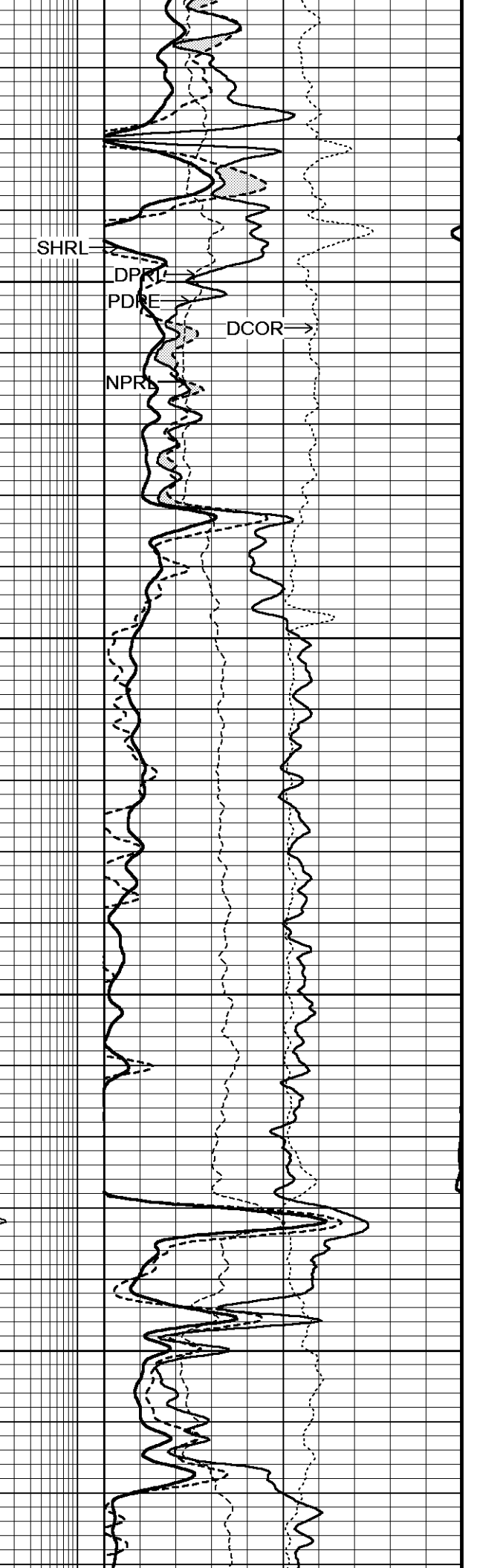
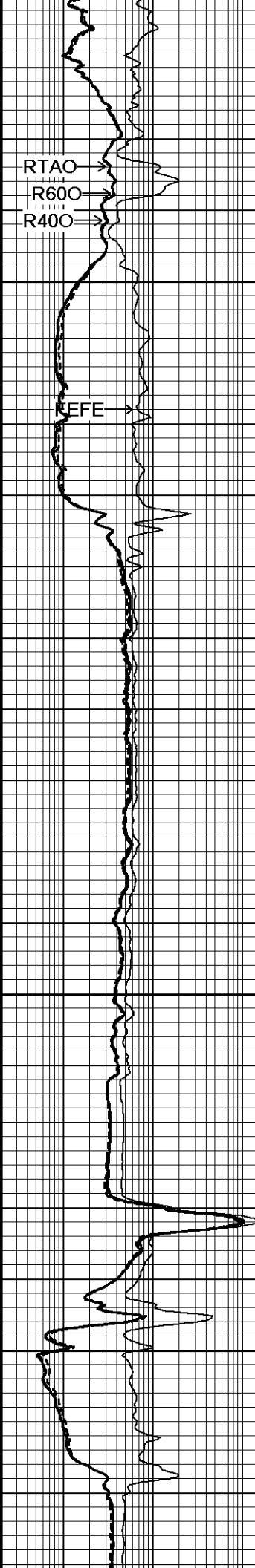
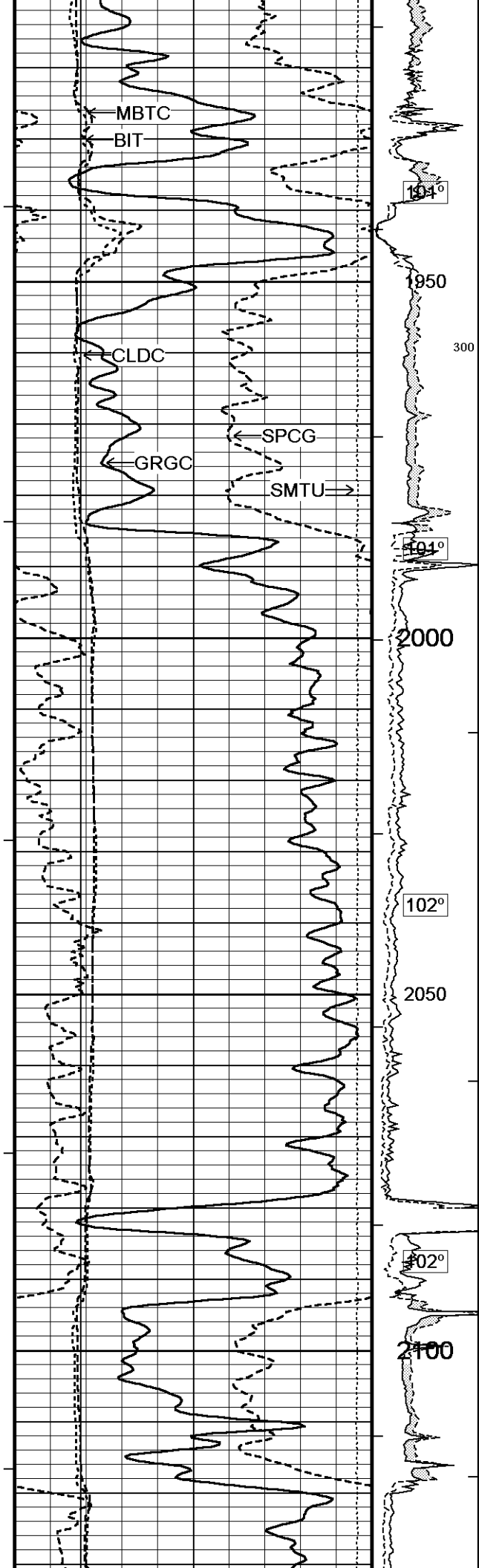


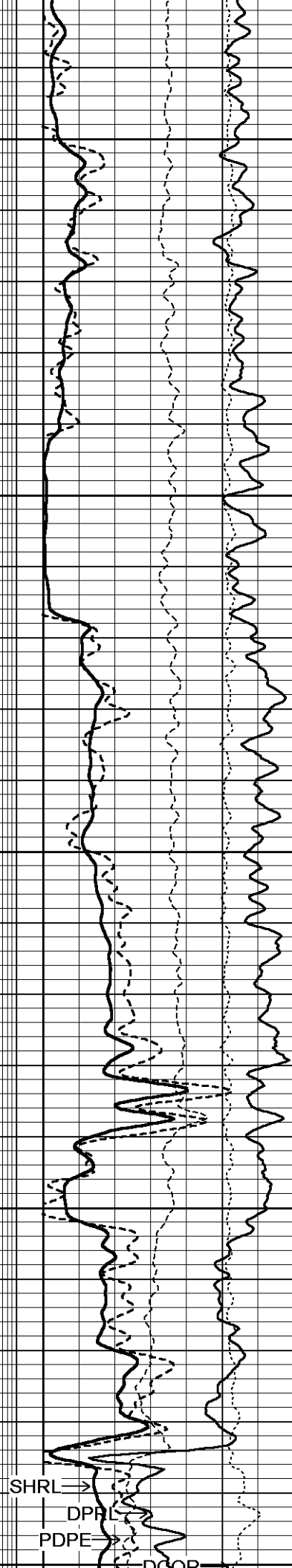
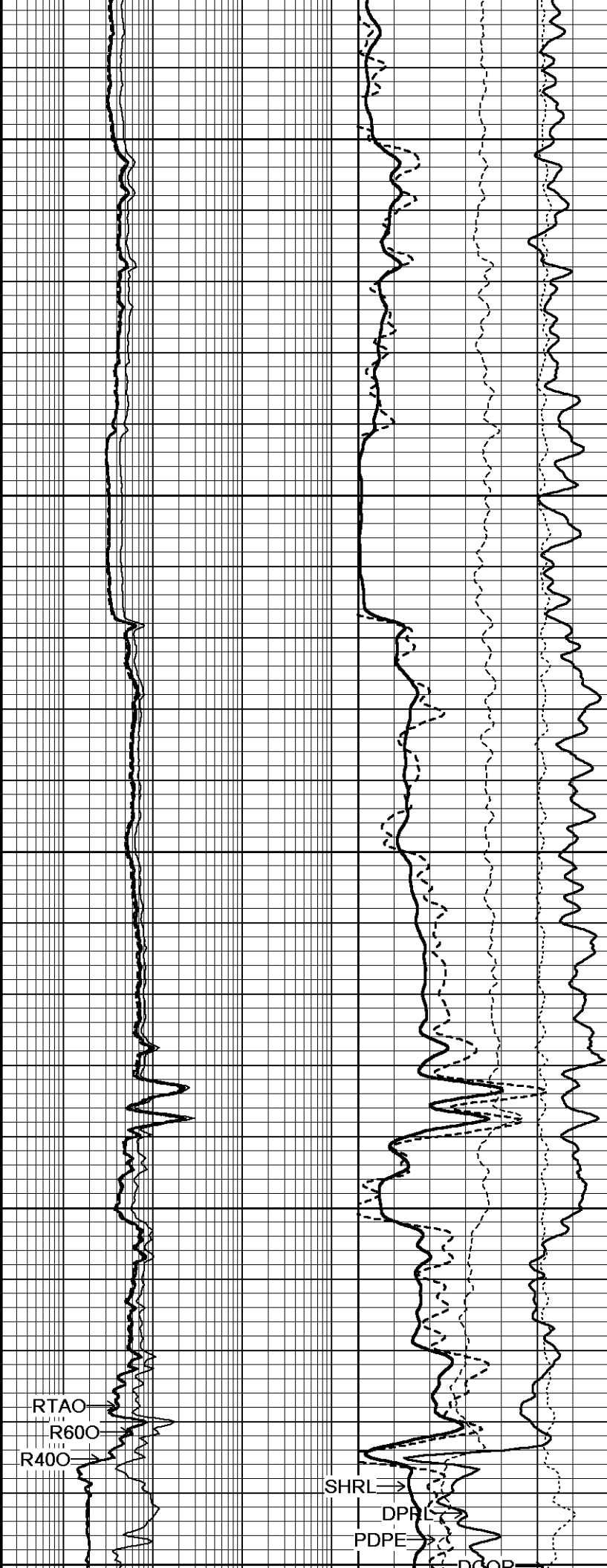
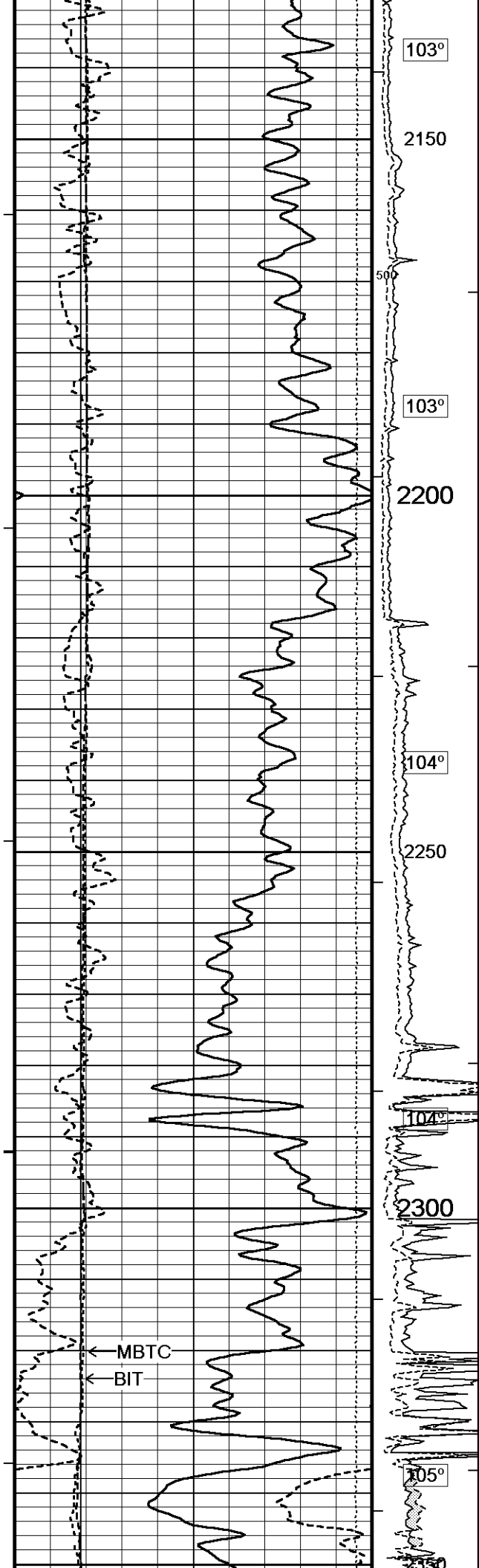


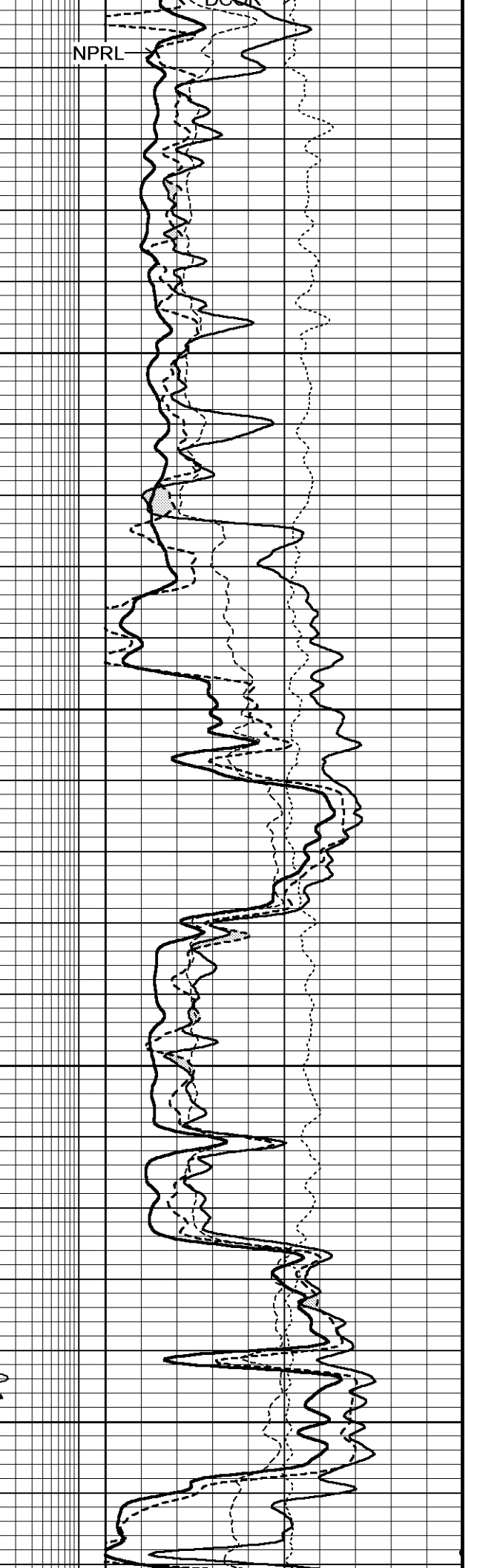
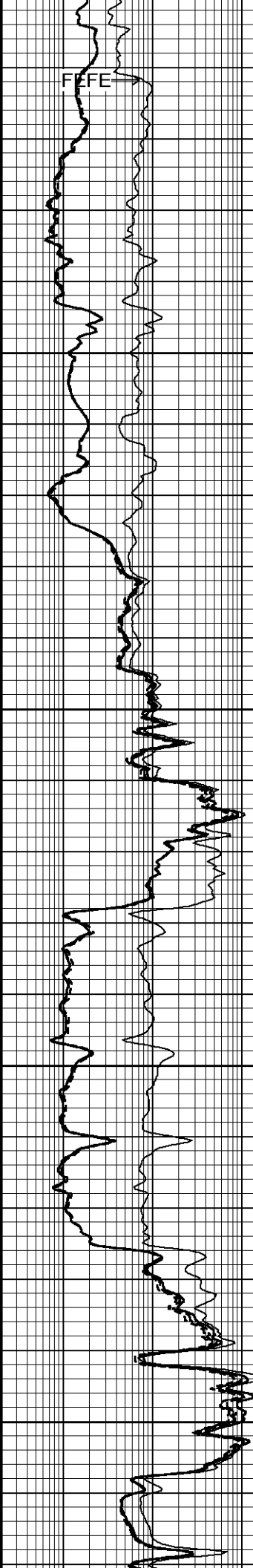
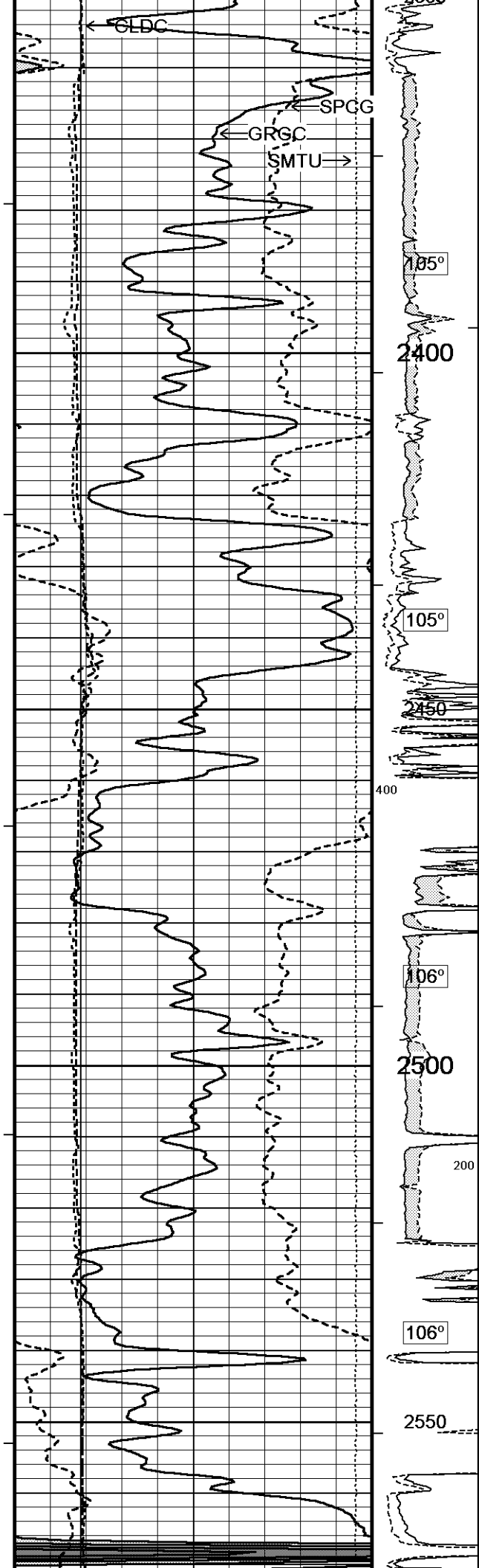


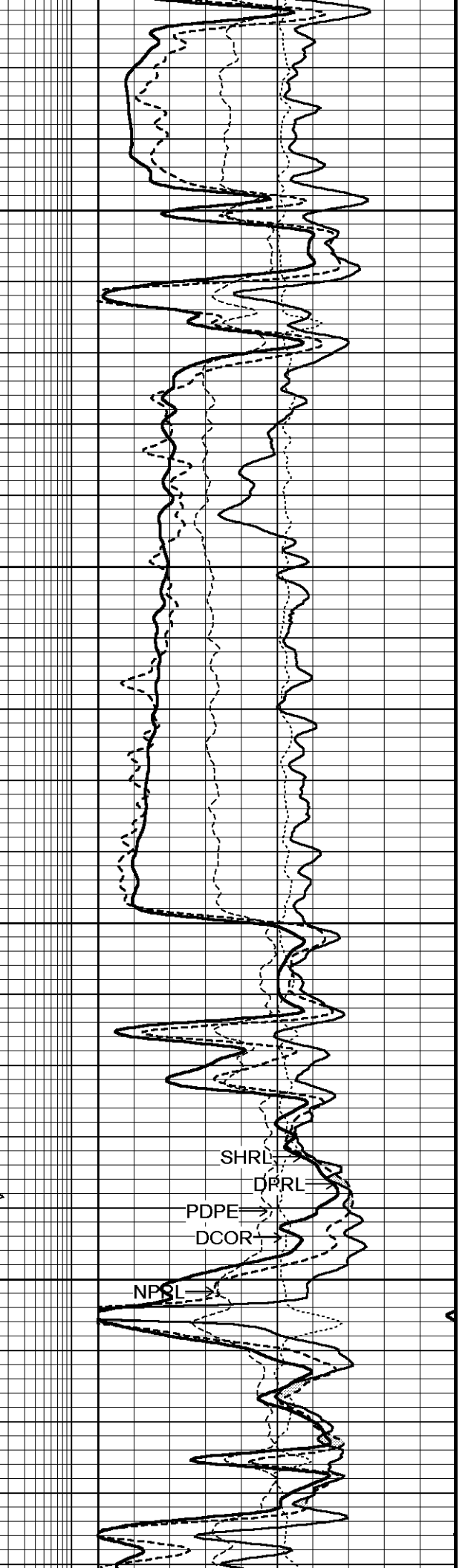
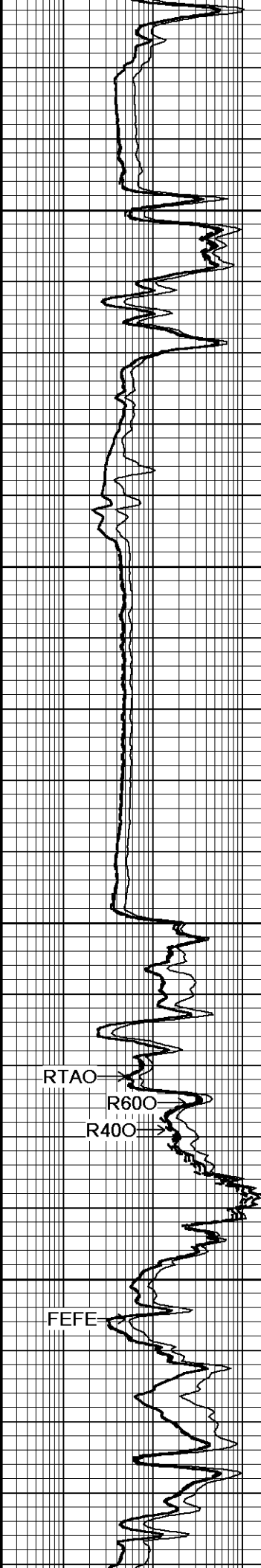
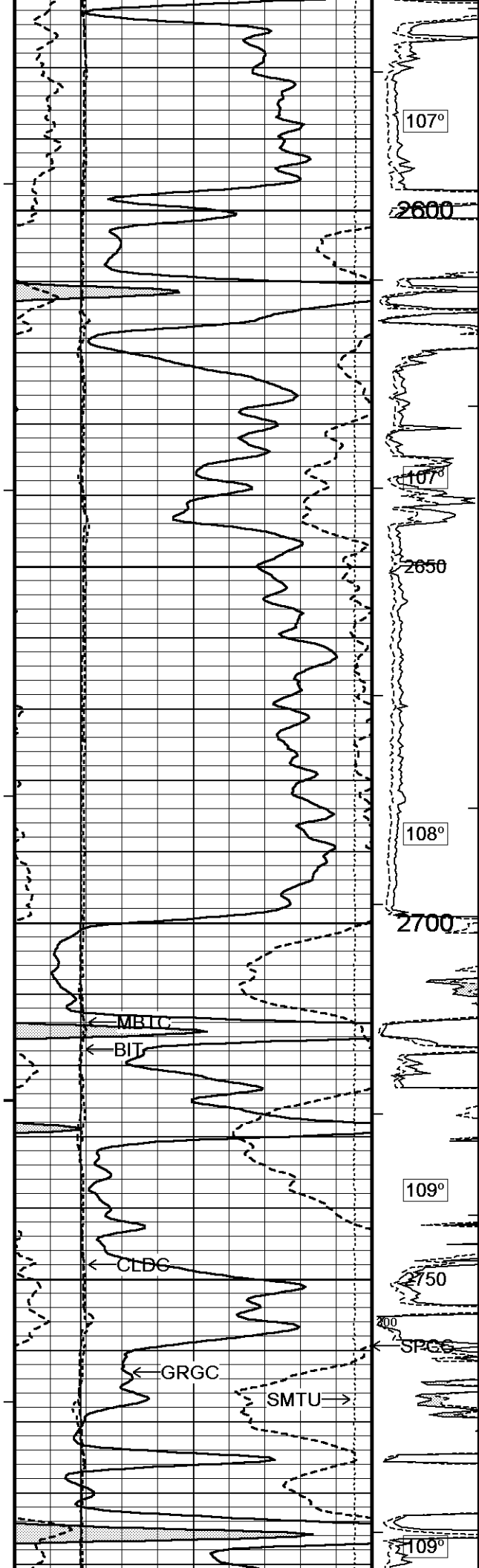


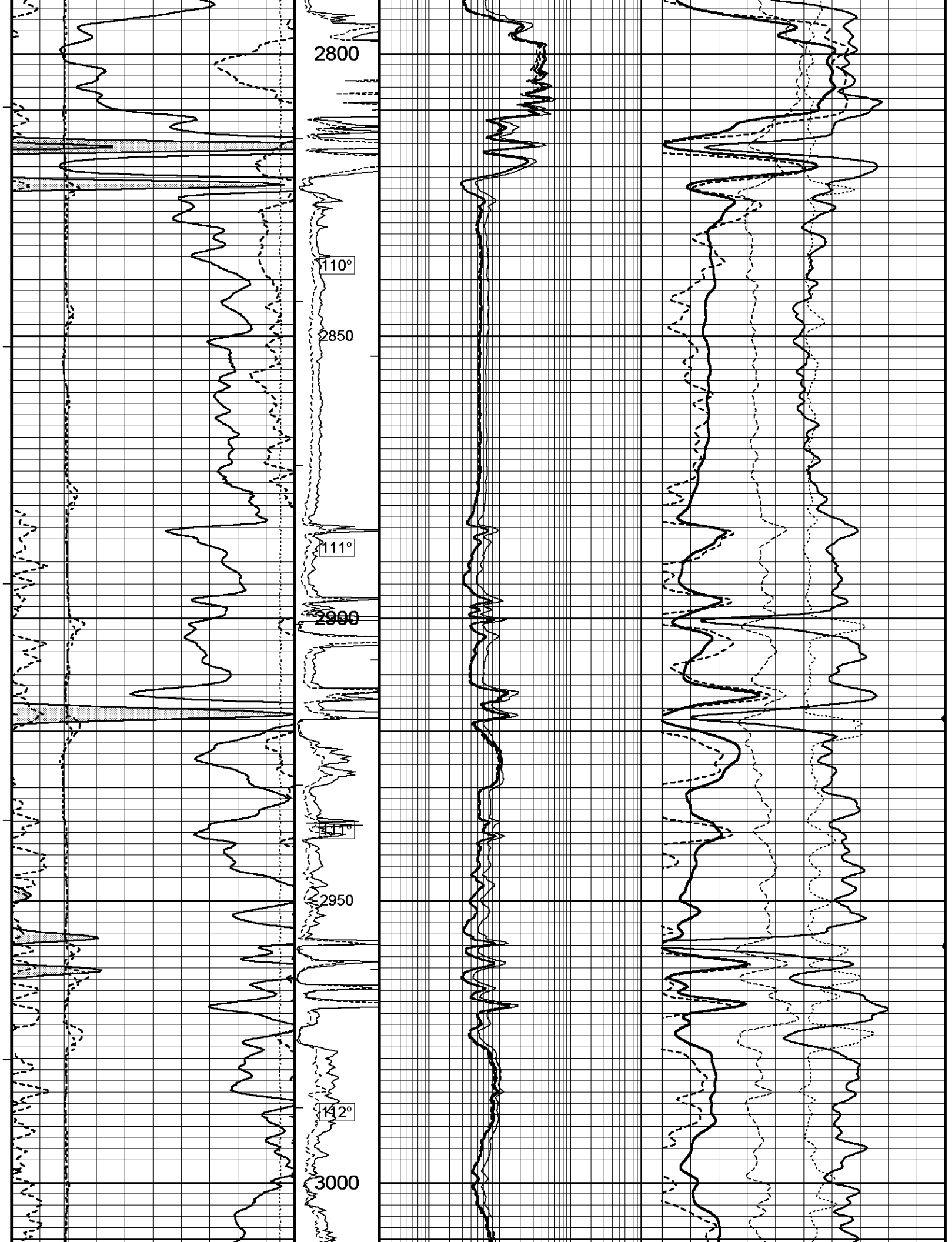


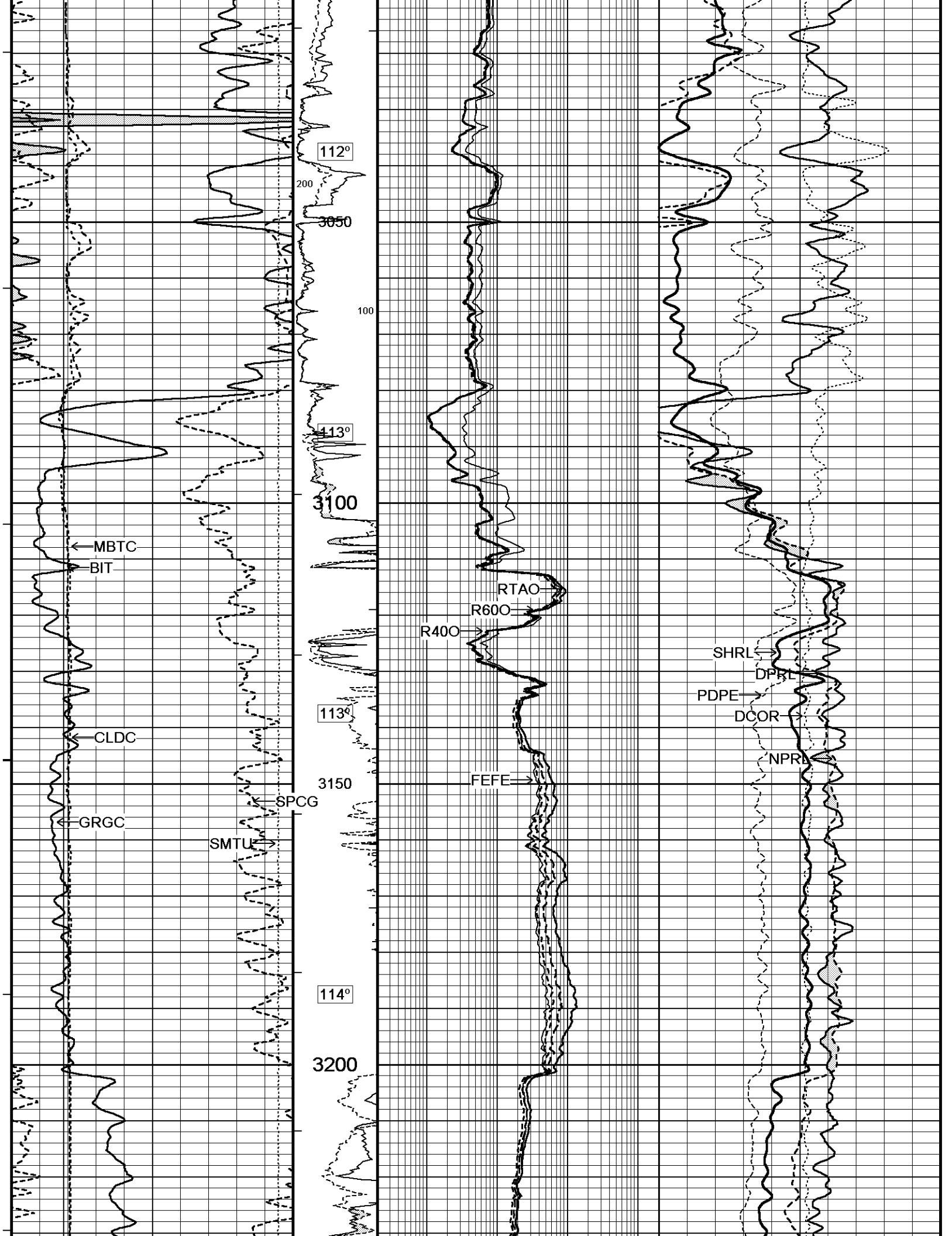


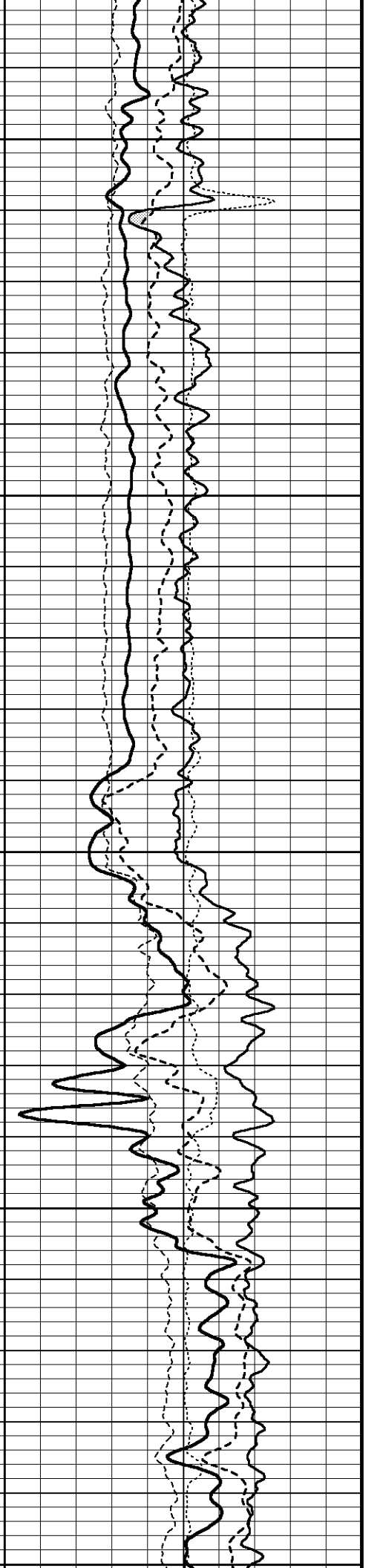
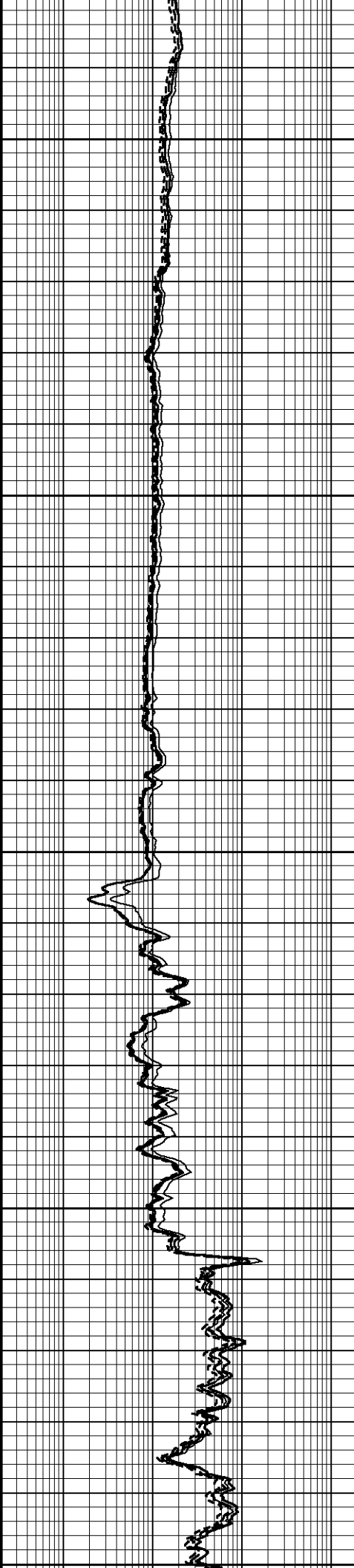
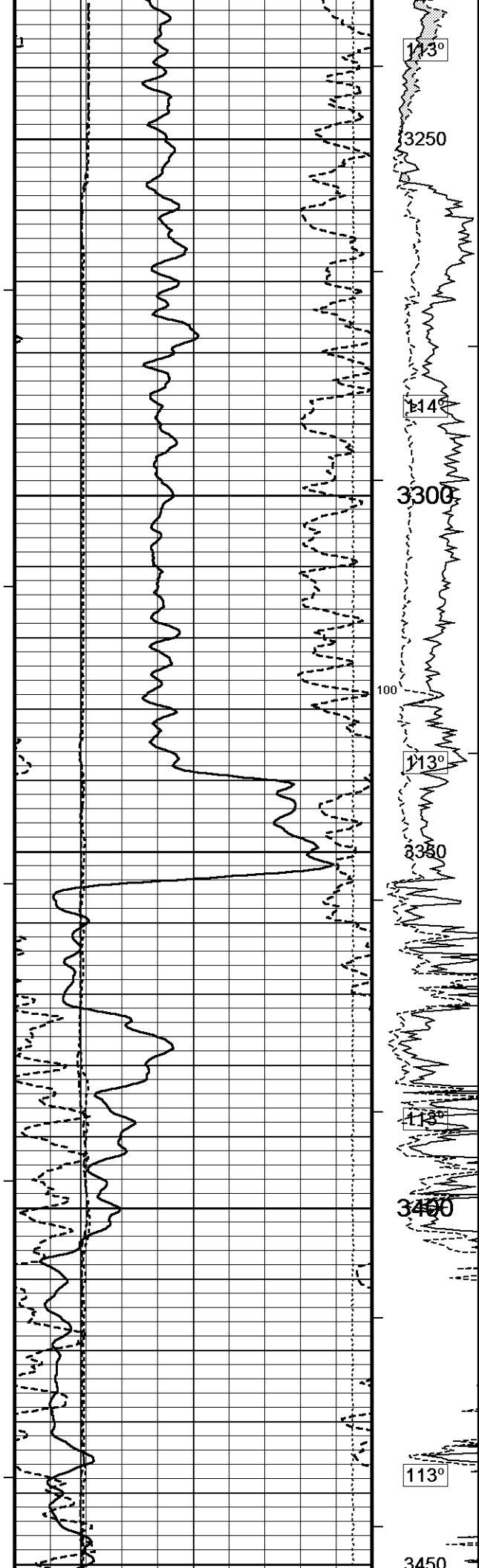


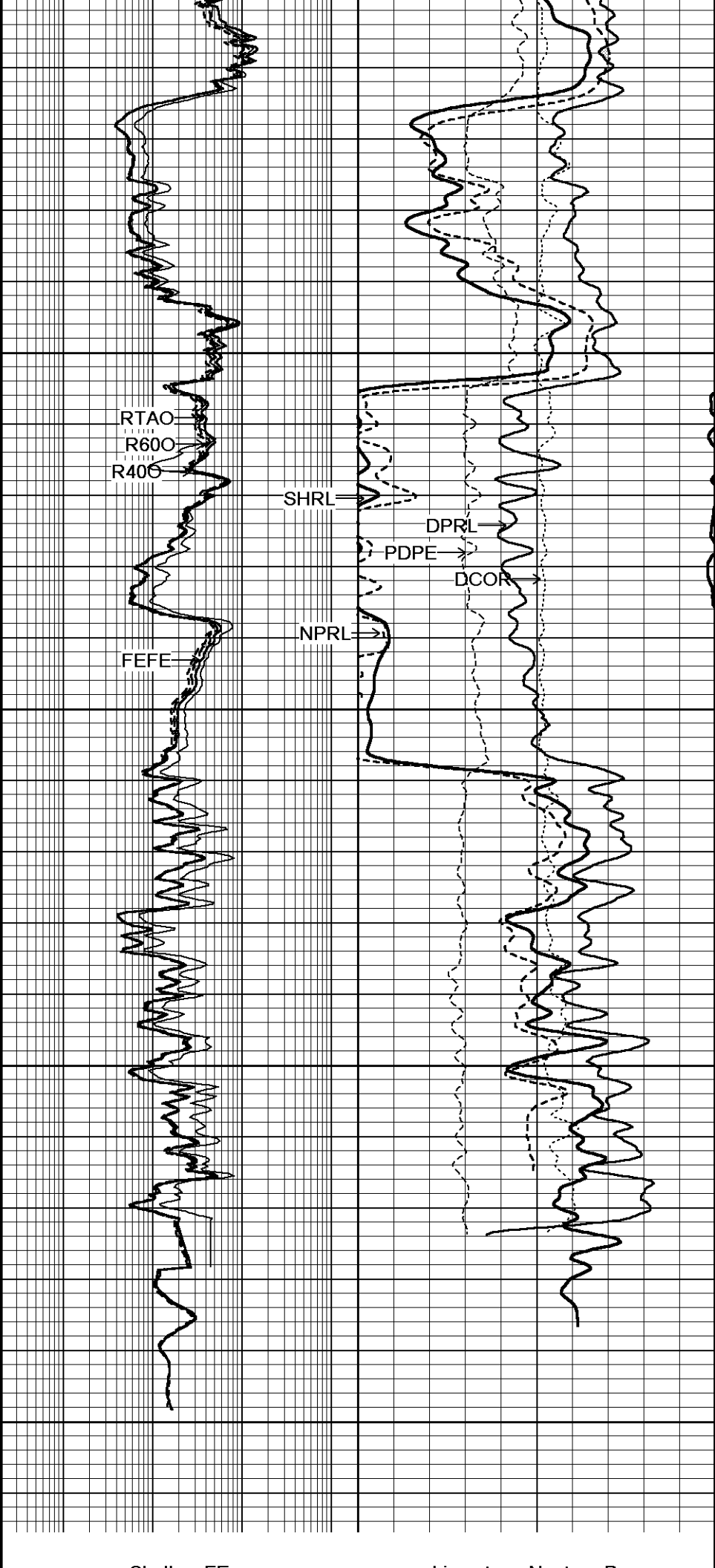
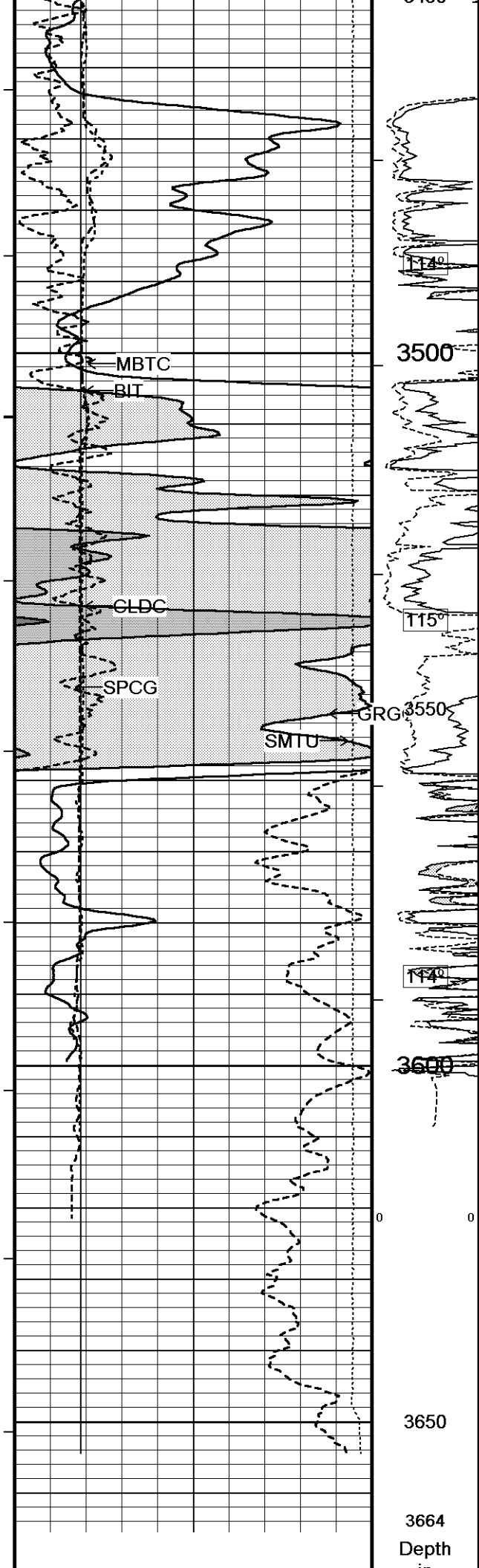


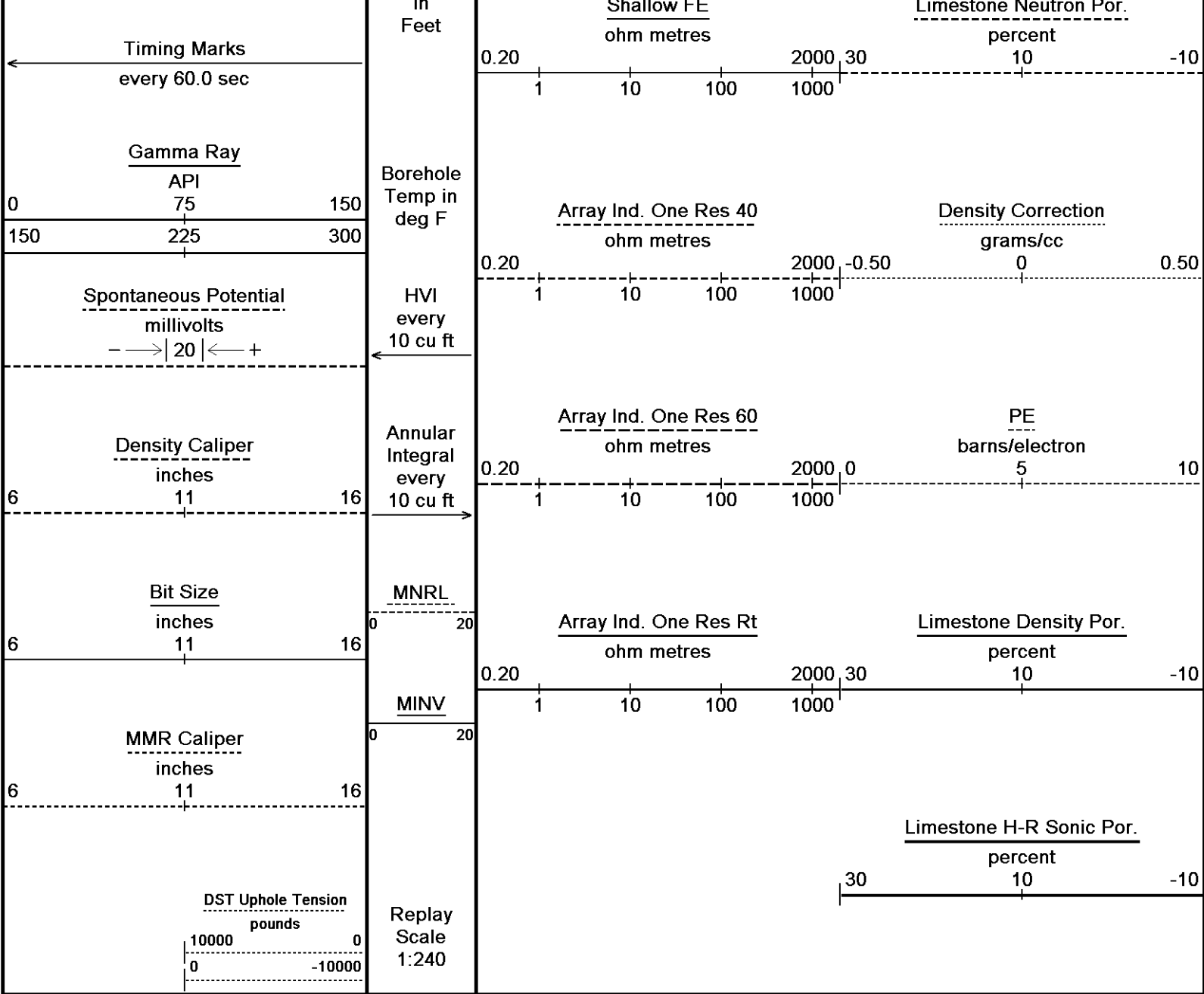












Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 16-SEP-2013 08:56

Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TOAS RESOUR...\Copy of DATA_002.dta

Recorded on 16-SEP-2013 06:28

System Versions: Logged with 13.04.8723 Plotted with 13.04.8723

5 INCH POROSITY LOG

HIGH RESOLUTION SECTION

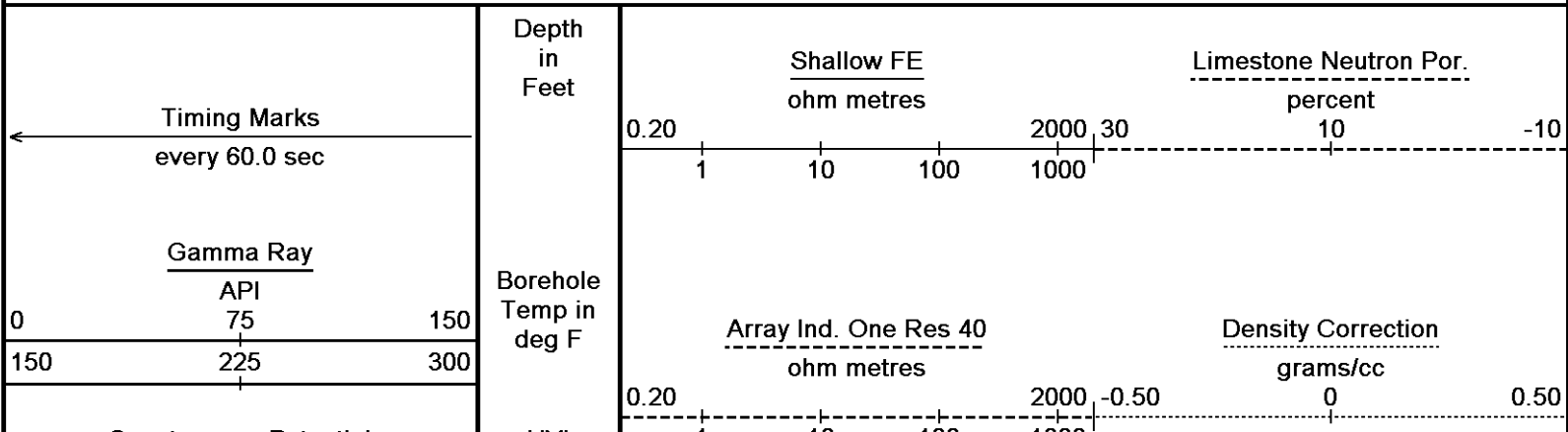
Depth Based Data - Maximum Sampling Increment 2.5cm

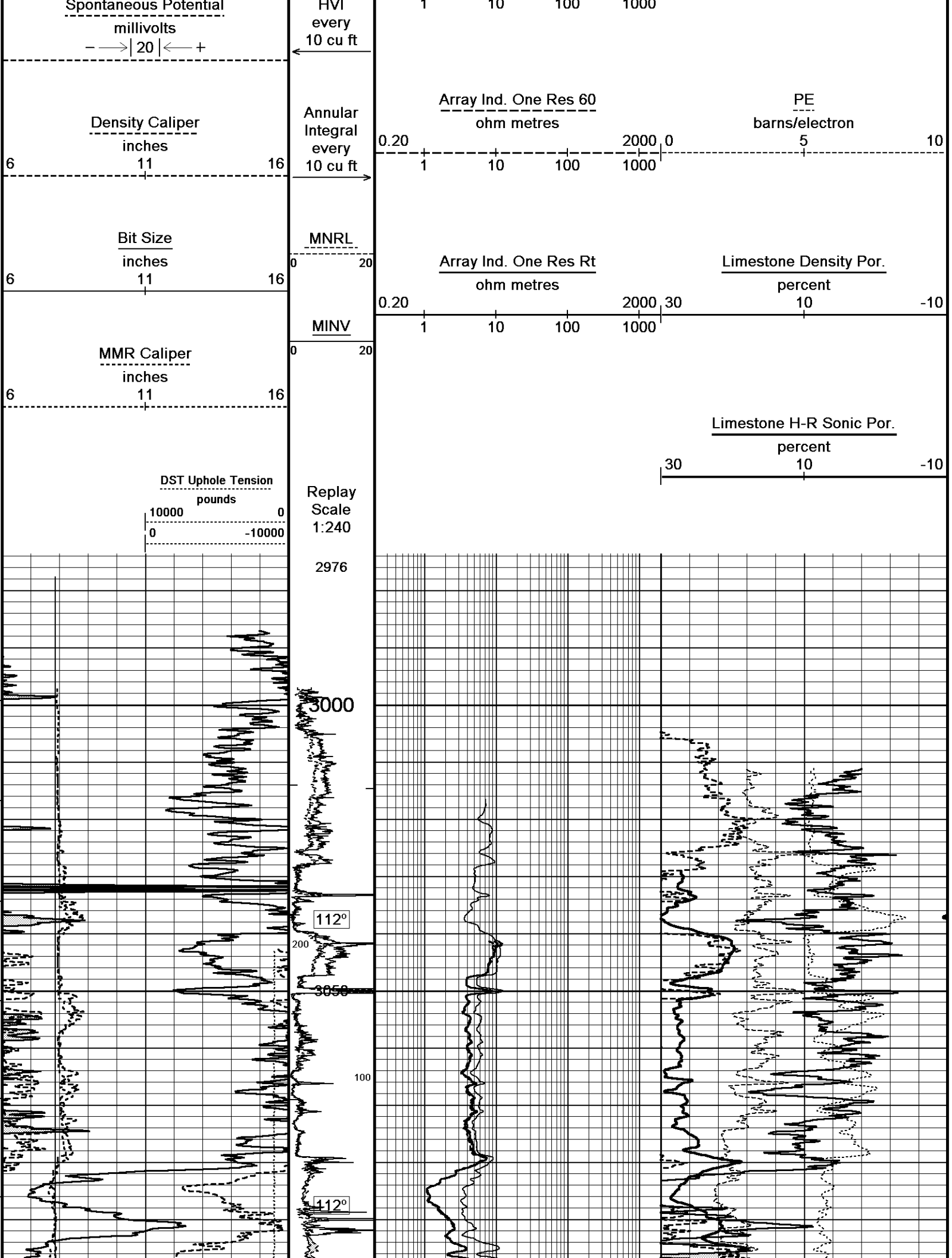
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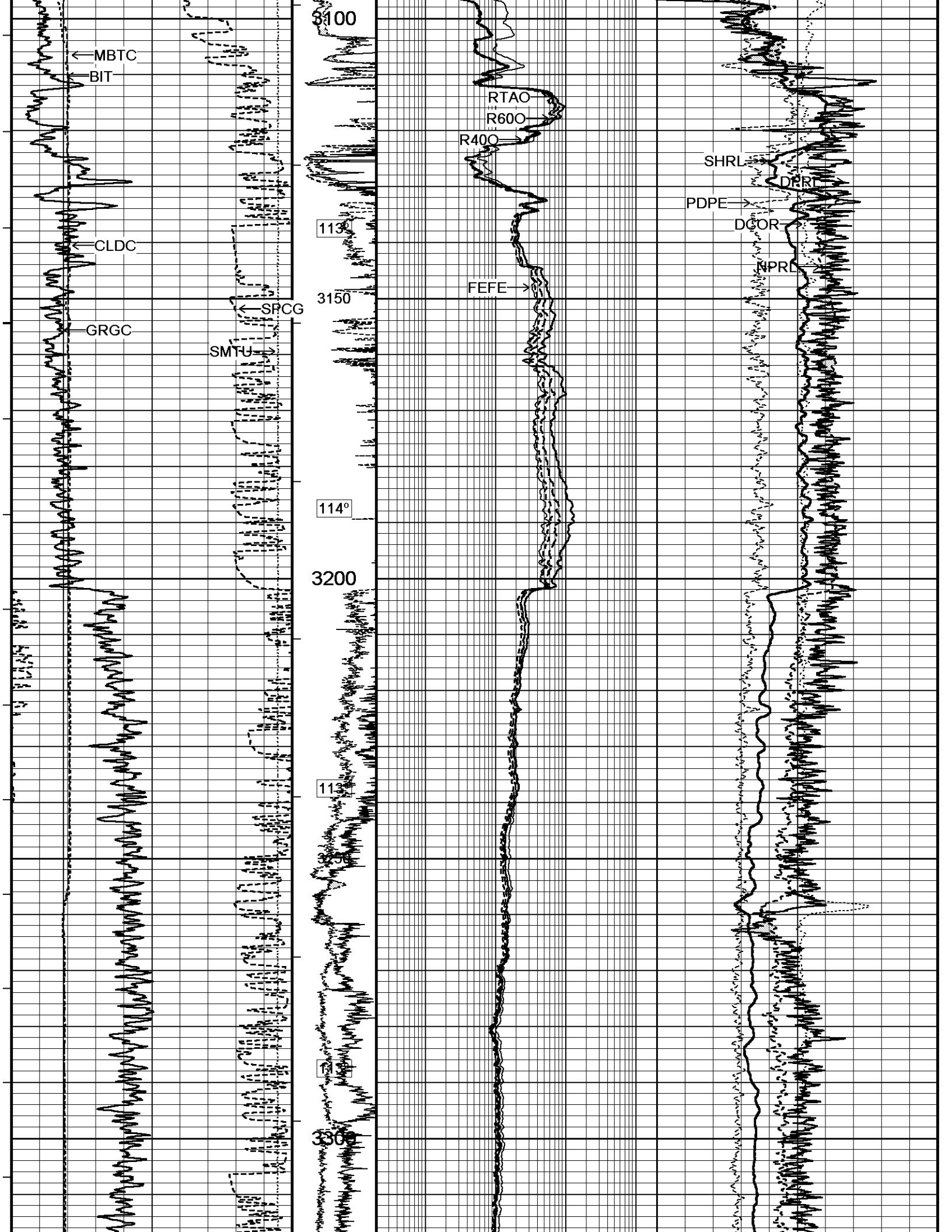
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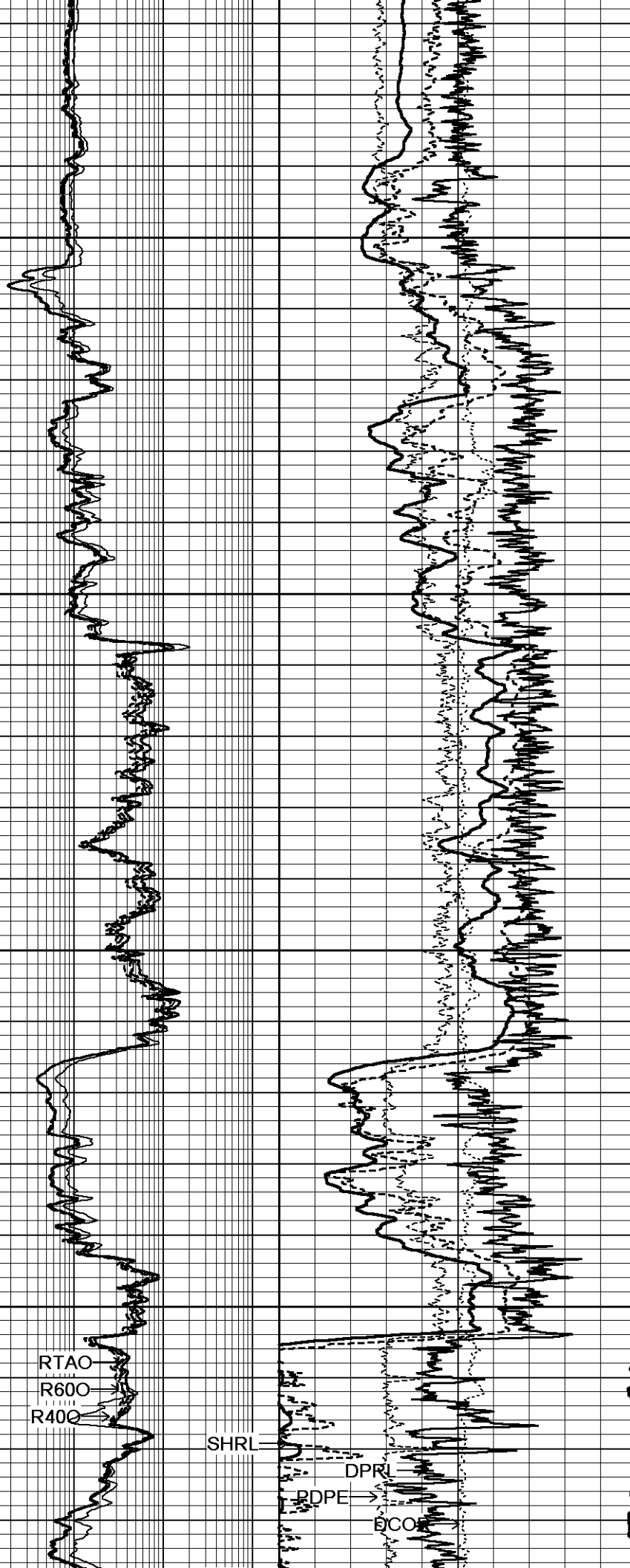
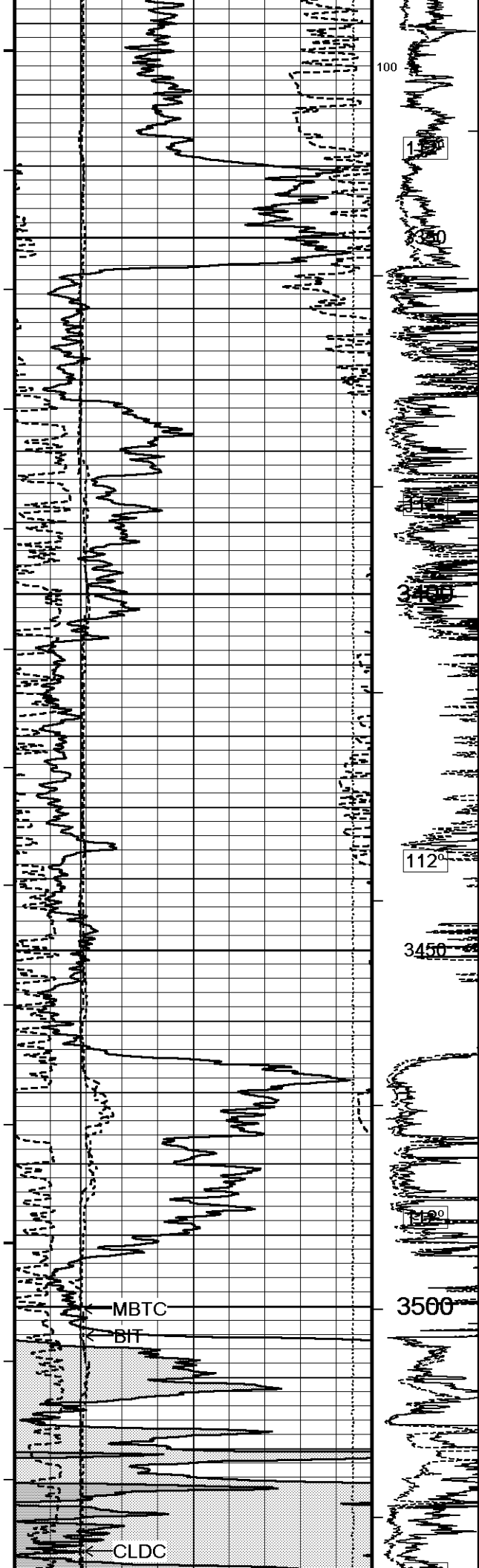
Recorded on 16-SEP-2013 05:45

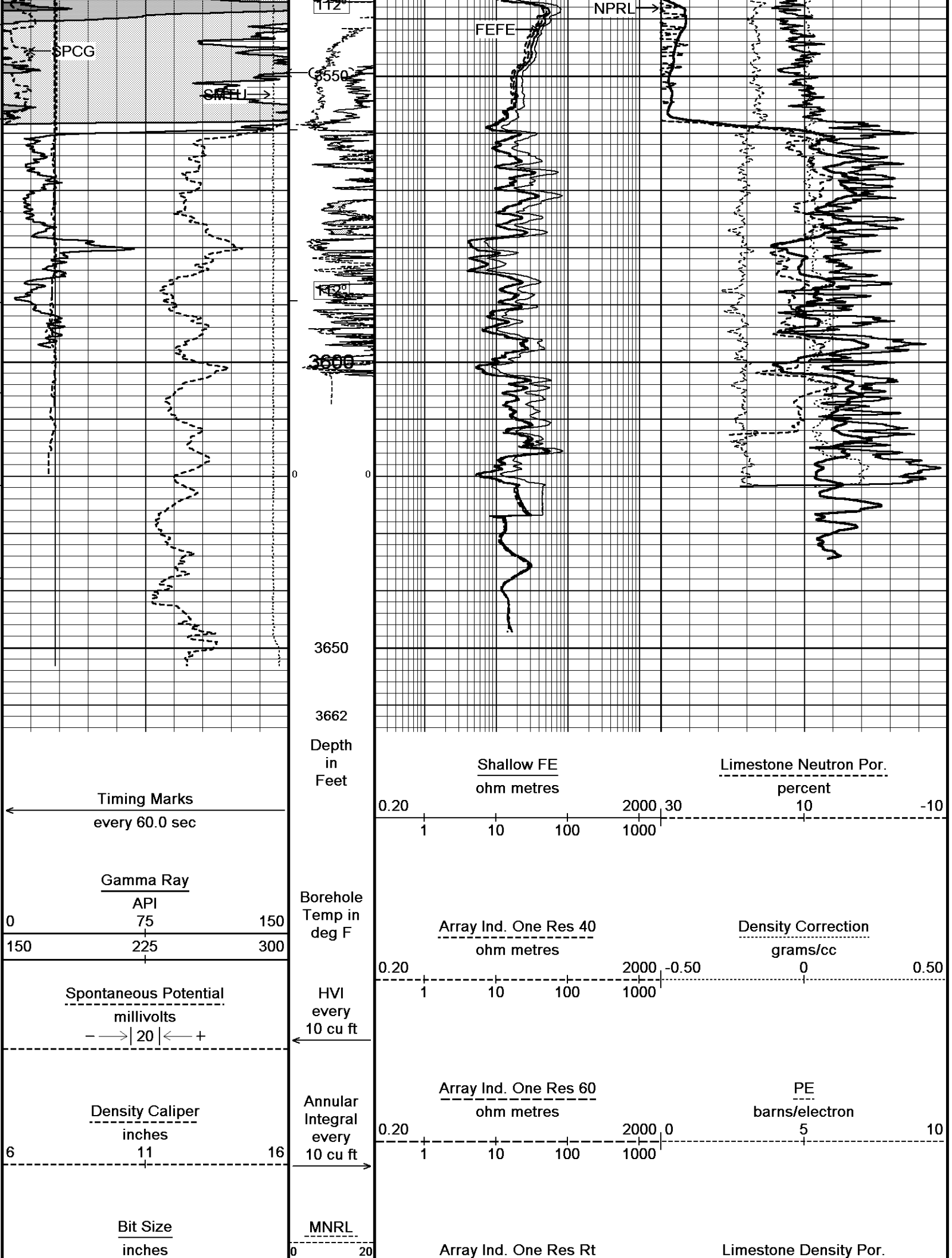
System Versions: Logged with 13.04.8723 Plotted with 13.04.8723

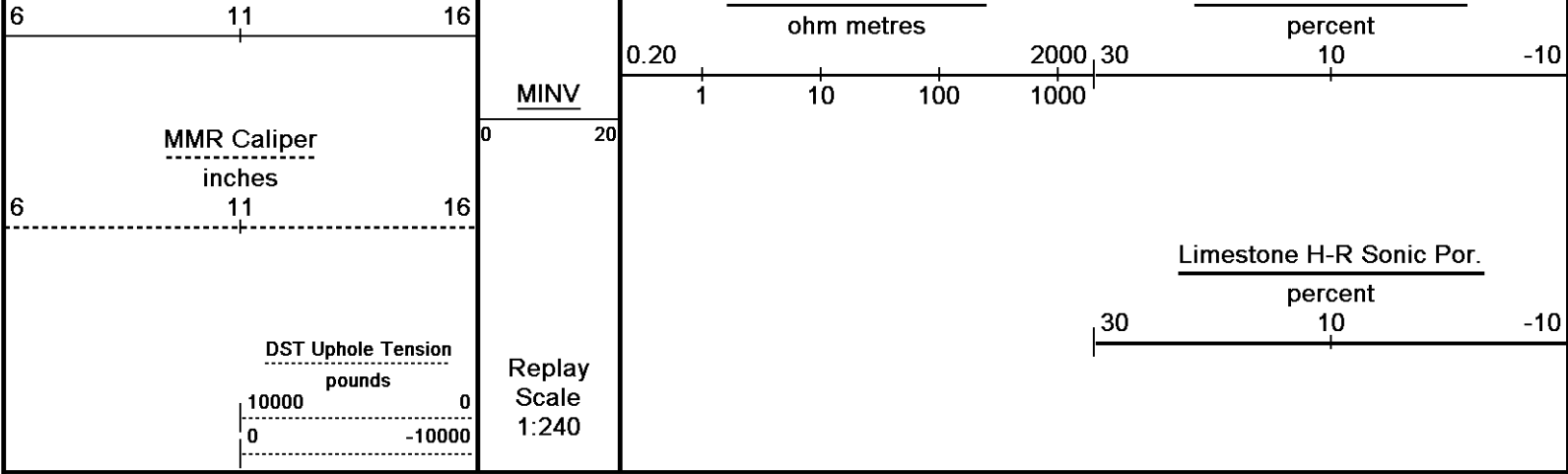












Depth Based Data - Maximum Sampling Increment 2.5cmPlotted on 16-SEP-2013 08:56

Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TOAS RESOUR...\Copy of DATA_001.dtaRecorded on 16-SEP-2013 05:45

System Versions: Logged with 13.04.8723Plotted with 13.04.8723

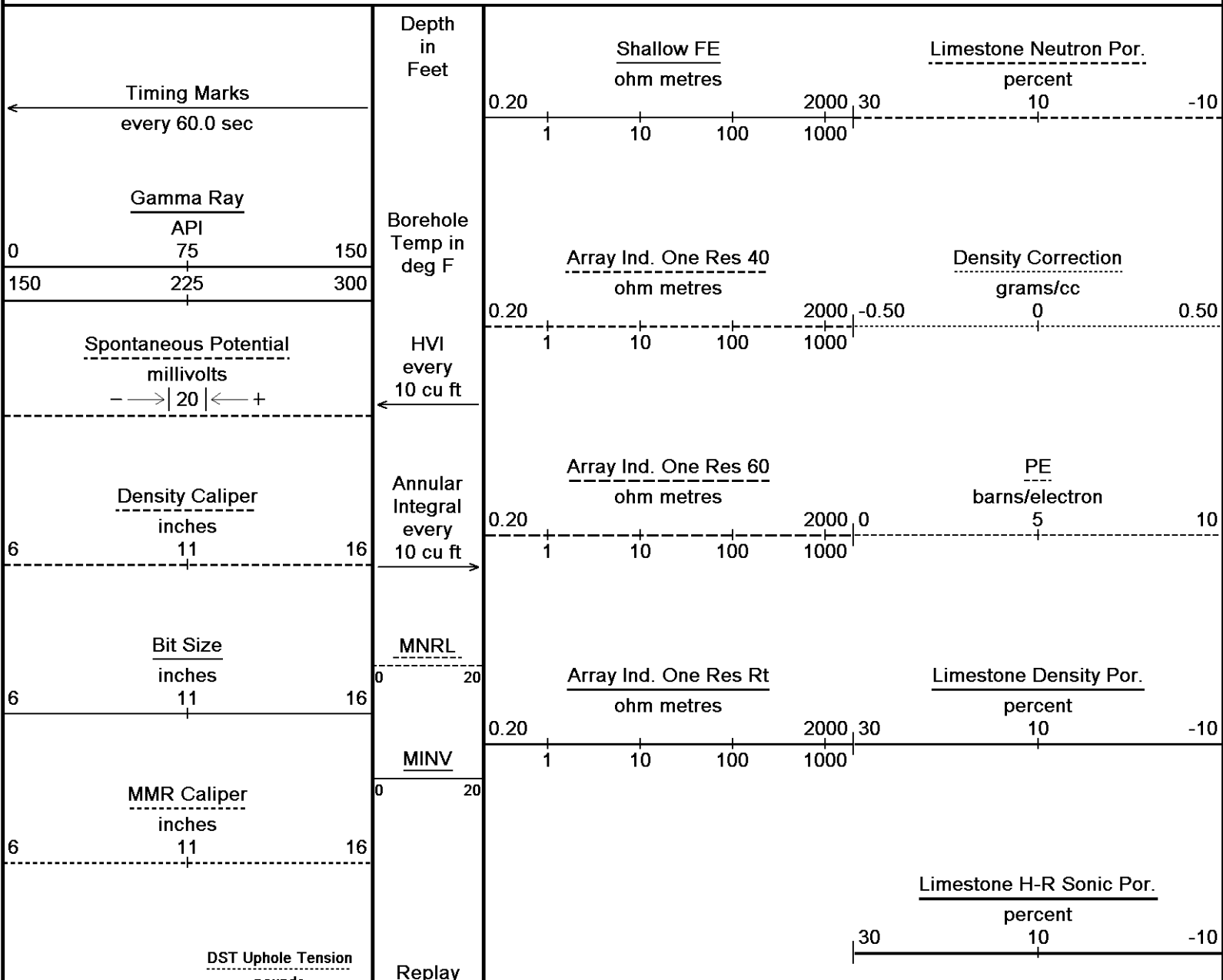
↑HIGH RESOLUTION SECTION↑

↓5 INCH REPEAT SECTION↓

Depth Based Data - Maximum Sampling Increment 10.0cmPlotted on 16-SEP-2013 08:56

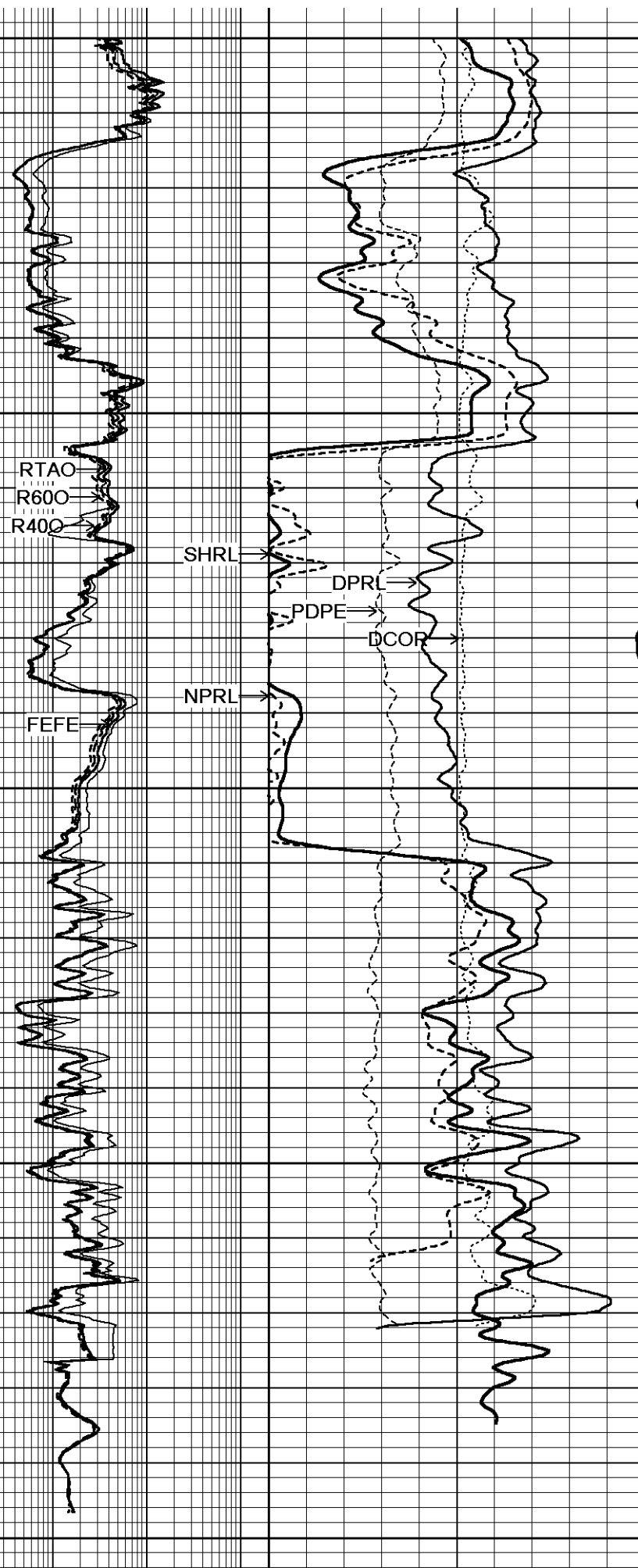
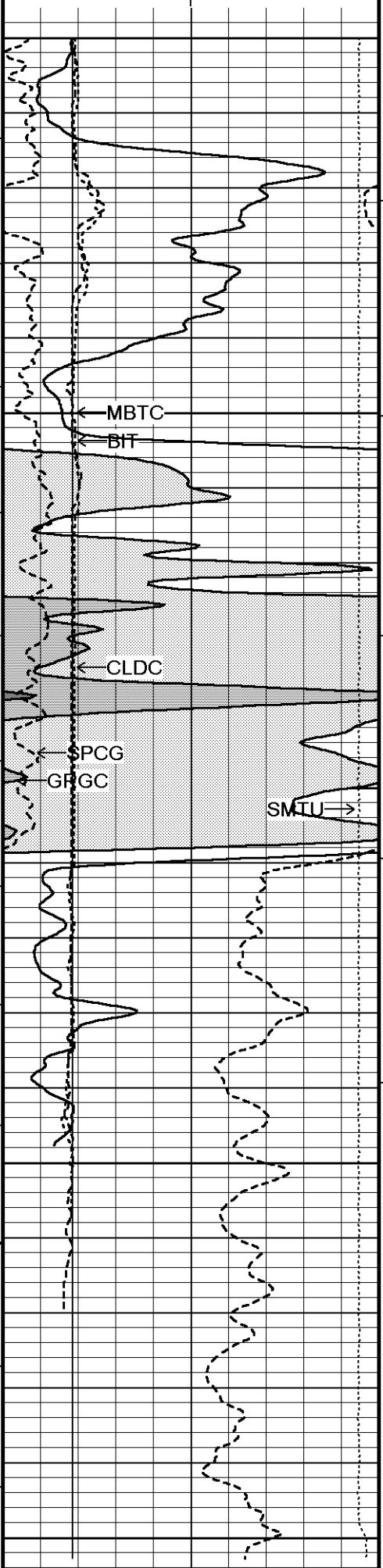
Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TOAS RESOUR...\Copy of DATA_003.dtaRecorded on 16-SEP-2013 05:45

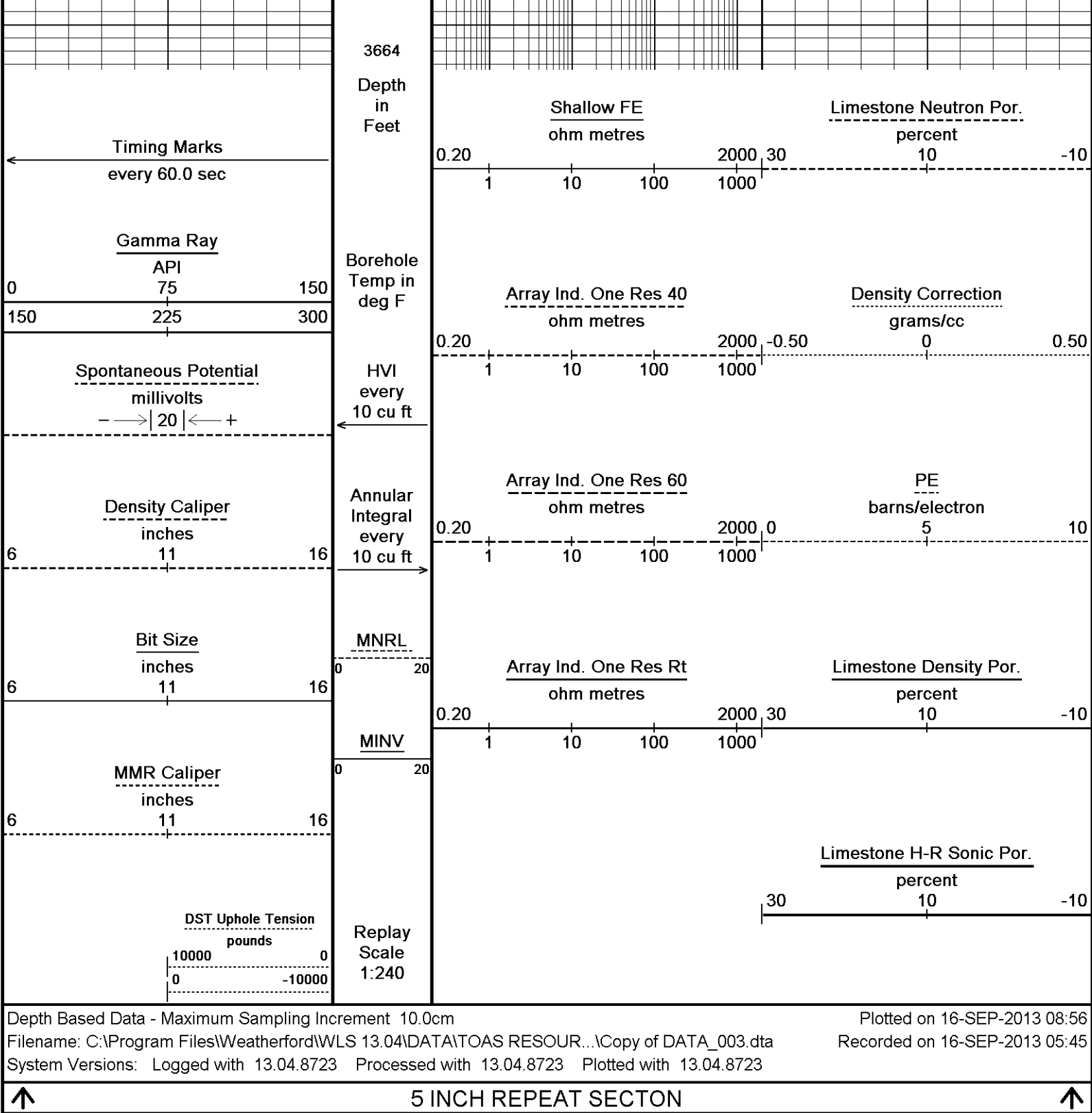
System Versions: Logged with 13.04.8723Processed with 13.04.8723Plotted with 13.04.8723



pounds
10000
0
-10000

Scale
1:240





BEFORE SURVEY CALIBRATION		
C:\Program Files\Weatherford\WLS 13.04\DATA\TOAS RESOURCES\Copy of DATA_002.dta		
General Constants All 000		Last Edited on 16-SEP-2013,05:16
General Parameters		
Mud Resistivity	2.100	ohm-metres
Mud Resistivity Temperature	73.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	

HVOL Caliper 2	N/A
Annular Volume Diameter	5.500 inches
Caliper for Differential Caliper	Density Caliper
Rwa Parameters	
Porosity used	Limestone Density Por.
Resistivity used	Array Ind. One Res Rt
RWA Constant A	0.610
RWA Constant M	2.150

Down-hole Tension Calibration SMS 0			Field Calibration on 18-AUG-2013 01:14
Reading No	Measured	Calibrated (lbs)	
1	20454.58	0.00	
2	20525.76	262.00	

High Resolution Temperature Calibration MCG-D.K 431			Field Calibration on 12-SEP-2013,09:49
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.K 431		Last Edited on 12-SEP-2013,15:37
Pre-filter Length	11	

SP Calibration MCG-D.K 431			Field Calibration on 12-SEP-2013,09:50
	Measured	Calibrated (mV)	
Reference 1	100.0	100.0	
Reference 2	-100.0	-100.0	

Gamma Calibration MCG-D.K 431			Field Calibration on 12-SEP-2013 09:55
	Measured	Calibrated (API)	
Background	45	29	
Calibrator (Gross)	1114	725	
Calibrator (Net)	1069	696	

Gamma Constants MCG-D.K 431			Last Edited on 16-SEP-2013,04:37
Gamma Calibrator Number	36		
Mud Density	1.11	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

Micro Normal and Micro Inverse Calibration MMR-B.A 68					Base Calibration on 28-AUG-2013,15:24 Field Check on 12-SEP-2013 09:46	
Base Calibration						
		Measured		Calibrated (ohm-m)		
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2		
Micro Normal	12.0	58.8	5.0	25.0		
Micro Inverse	15.6	76.0	5.0	25.0		
Channel		Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal		77.6		77.6		
Micro Inverse		60.1		60.1		

Micro Normal and Micro Inverse Constants MMR-B.A 68			Last Edited on 26-JUL-2013,09:49
Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	1.0000		
Micro Inverse K Factor	1.0000		
Standoff Offset	0.0000 inches		

Caliper Calibration MMR-B.A 68			Base Calibration on 28-AUG-2013,15:23 Field Calibration on 12-SEP-2013 09:49
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	14043	5.96	
2	17278	7.98	
3	20581	9.94	
4	24293	11.91	
5	28005	13.88	

5	0	0.00
6	N/A	N/A
Field Calibration	Measured Caliper (in) 10.00	Actual Caliper (in) 9.94
Neutron Calibration MDN-A.B 55		Base Calibration on 19-AUG-2013 10:31 Field Check on 12-SEP-2013 10:01
Base Calibration	Measured	Calibrated (cps)
	Near Far	Near Far
	3170 98	3714 110
Ratio	32.218	33.764
Field Calibrator at Base		Calibrated (cps)
		2324 3384
Ratio		0.687
Field Check		Calibrated (cps)
		2323 3396
Ratio		0.684
Neutron Constants MDN-A.B 55		Last Edited on 13-SEP-2013,15:51
Neutron Source Id	P14033B	
Neutron Jig Number	N639	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	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 F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	
FE Calibration MFE-A.A 65		Base Calibration on 26-JUL-2013 09:28 Field Check on 12-SEP-2013 09:36
Base Calibration	Measured	Calibrated (ohm-m)
Reference 1	9.7	1.3
Reference 2	956.1	126.8
Base Check		282.0
Field Check		282.1
FE Constants MFE-A.A 65		Last Edited on 13-SEP-2013,15:51
Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches
Sonic Constants MSS-C.A 147		Last Edited on 09-SEP-2012,19:07
Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated Sonic	

Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)		N/A
N/A	N/A	N/A		
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

High Resolution Temperature Calibration MAI-A.A 102

Field Calibration on 12-SEP-2013,09:21

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI-A.A 102

Last Edited on 12-SEP-2013,09:21

Pre-filter Length	11
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Induction Calibration MAI-A.A 102

Base Calibration on 12-SEP-2013,09:22

Field Check on 12-SEP-2013 09:30

Base Calibration

Test Loop Calibration		Measured	Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	18.0	481.9	9.3	966.2
2	6.6	378.8	7.6	821.4
3	4.0	256.0	5.2	566.0
4	3.8	134.5	2.6	279.2

Array Temperature	86.5	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	11.8	3808.5	
2	0.0	0.0	29.7	3603.2	
3	0.0	0.0	28.1	3130.7	
4	0.0	0.0	15.9	2100.1	
Deep	0.0	0.0	14.2	2018.4	
Medium	0.0	0.0	44.5	4176.5	
Shallow	0.0	0.0	48.0	5348.8	
Array Temperature		0.0		80.2	Deg F

Induction Constants MAI-A.A 102

Last Edited on 12-SEP-2013,10:43

Induction Model		RtAP-WBM	
Caliper for Borehole Corr.		Density Caliper	
Hole Size for Borehole Correction		N/A	inches
Tool Centred		No	
Stand-off Type		Fins	
Stand-off		0.50	inches
Number of Fins on Stand-off		6.0000	
Stand-off Fin Angle		60.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature		
Squasher Start		0.0020	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Caliper Calibration MPD-A.A 11

Base Calibration on 23-AUG-2013 14:50

Field Calibration on 12-SEP-2013 09:38

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19968	4.01
2	28144	5.96
3	36416	7.98
4	44976	9.94
5	53728	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.97	7.94

Photo Density Calibration MPD-A.A 11

Base Calibration on 23-AUG-2013 14:36

Field Check on 12-SEP-2013 09:45

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	46165	24404	59869	31110
Reference 2	19799	2432	24557	2522

Field Check at Base

	1176.8	1268.5
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Field Check

	1176.8	1266.3
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PE Calibration

Base Calibration	Measured		Calibrated
	WS	WH	Ratio
Background	212	1045	
Reference 1	16895	45995	0.371
Reference 2	5194	19664	0.268

Field Check at Base

	211.9	1044.7
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Field Check

	211.4	1047.0
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Density Constants MPD-A.A 11

Last Edited on 16-SEP-2013,04:38

Density Source Id	260	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.11	gm/cc
Mud Density Z/A Multiplier	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
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
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	

DOWNHOLE EQUIPMENT

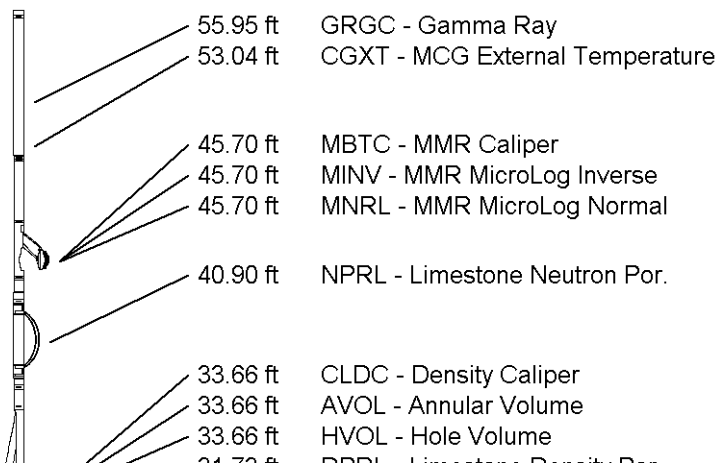
C:\Program Files\Weatherford\WLS 13.04\DATA\TOAS RESOURCES\Copy of DATA_002.dta

Compact Comms Gamma
MCG-D.K 431 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-B.A 68 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron
MDN-A.B 55 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A.A 11 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

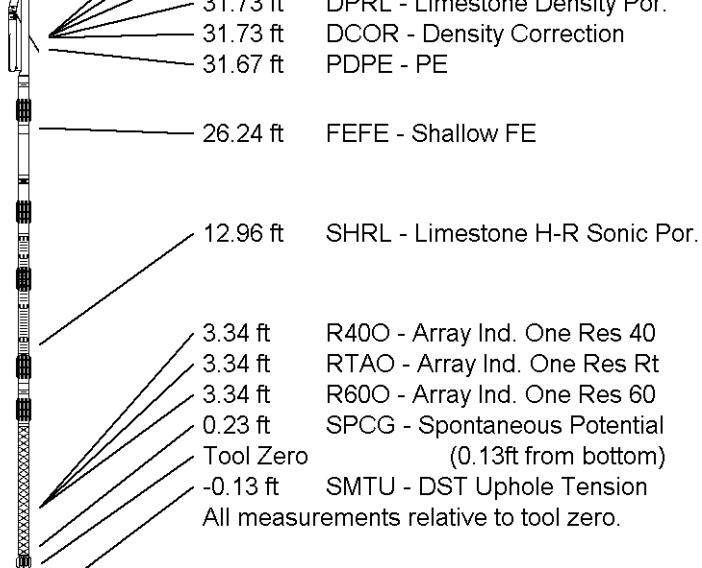


Compact Focussed Electric
MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.A 147 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 102 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.24 ft Weight: 456.4 lb



COMPANY	TAOS RESOURCES CO. LLC
WELL	WMU #13
FIELD	WEST MADDIX UNIT
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1273.00	feet	First Reading	3645.00	feet
Elevation Drill Floor	1272.00	feet	Depth Driller	3650.00	feet
Elevation Ground Level	1264.00	feet	Depth Logger	3648.00	feet



Weatherford®

COMPOSITE LOG