Weatherford®

COMPENSATED SONIC WITH INTEGRATED TRANSIT TIME

COMPANY	STELBAR OIL CORPORATION
WELL	SCHRODER #3-14
FIELD	RUDOLPH NORTHEAST
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1555' FSL & 545' FWL
PERMIT NUMBER	SE SW NW SW

SEC 14	TWP 17S	RGE 33W	Other Services
Latitude	38.573537161		MAI/MFE MPD/MDN
Longitude	100.941914166		MML
API Number	15-171-21060		

Permanent Datum GL, Elevation 2986 feet
Log Measured From KB
Drilling Measured From KB @ 11 FEET

Elevations:	feet
KB	2997.00
DF	2995.00
GL	2986.00

Date	06-JUL-2014			
Run Number	ONE			
Service Order	7036-91870946			
Depth Driller	4730.00	feet		
Depth Logger	4729.00	feet		
First Reading	4715.91	feet		
Last Reading	309.00	feet		
Casing Driller	310.00	feet		
Casing Logger	309.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	WBM			
Density / Viscosity	9.10 lb/USg		65.00 CP	
PH / Fluid Loss	10.00		7.80 ml/30Min	
Sample Source	MUDPIT			
Rm @ Measured Temp	0.65 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.52 @ 75.0	ohm-m		
Rmc @ Measured Temp	0.78 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.41 @121.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	122.00	deg F		
Equipment / Base	13096		LIB	
Recorded By	DEREK CARTER			
Witnessed By	DAVE GOLDAK			
JOB #	LB14-199			

BOREHOLE RECORD

Last Edited: 06-JUL-2014 21:54

Bit Size inches	Depth From feet	Depth To feet
7.875	310.00	4730.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	310.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 X 0.5 INCH STANDOFF
  - MSS: 2 X 0.5 INCH STANDOFF
  - MAI: 2 X 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1710 CU. FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 3700 FT.: 170 CU. FT.

- SERVICE ORDER # 7036-91870946

- RIG: STERLING #2

- ENGINEER: DEREK CARTER

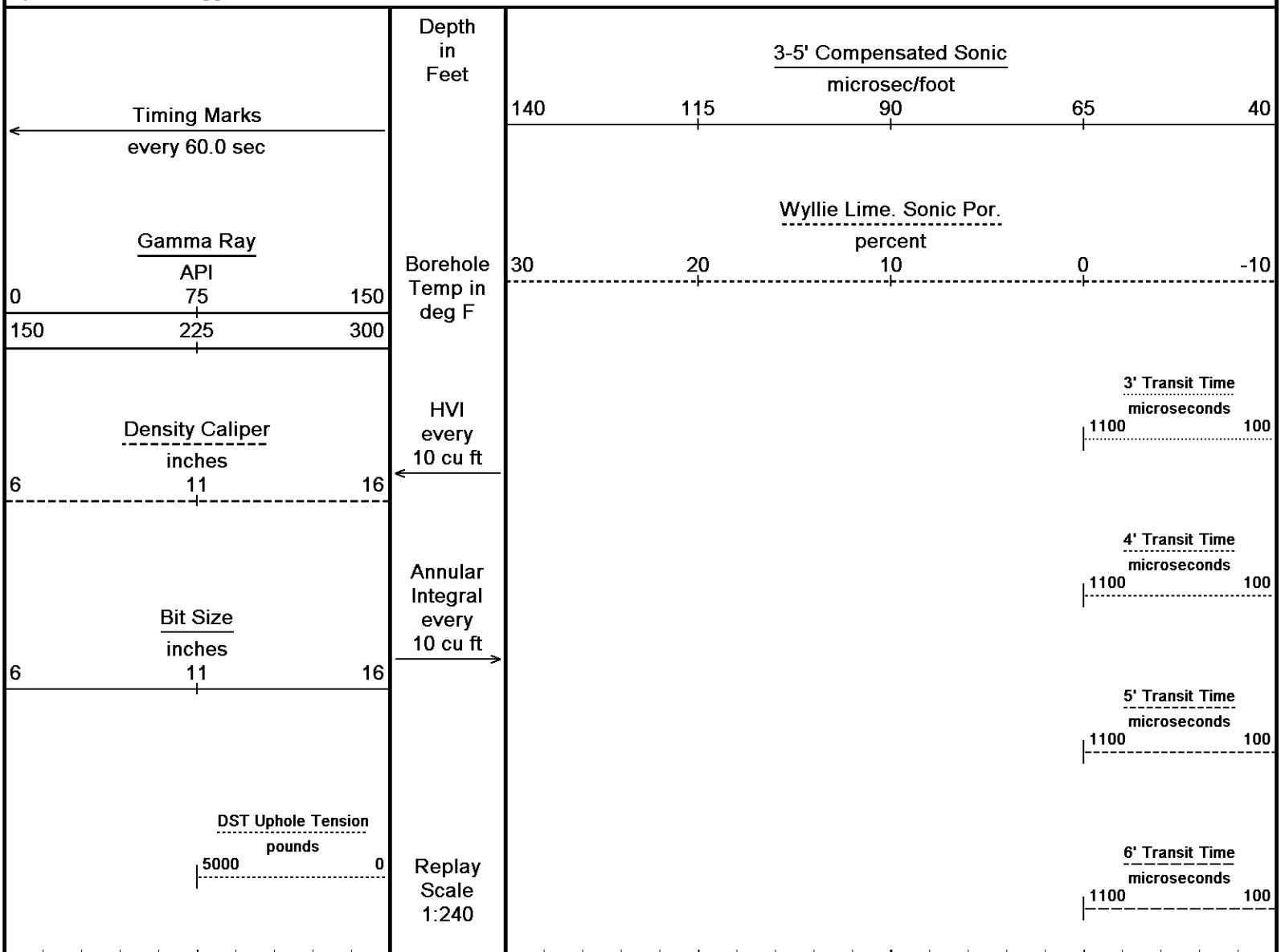
- OPERATOR: CARLOS RAMIREZ

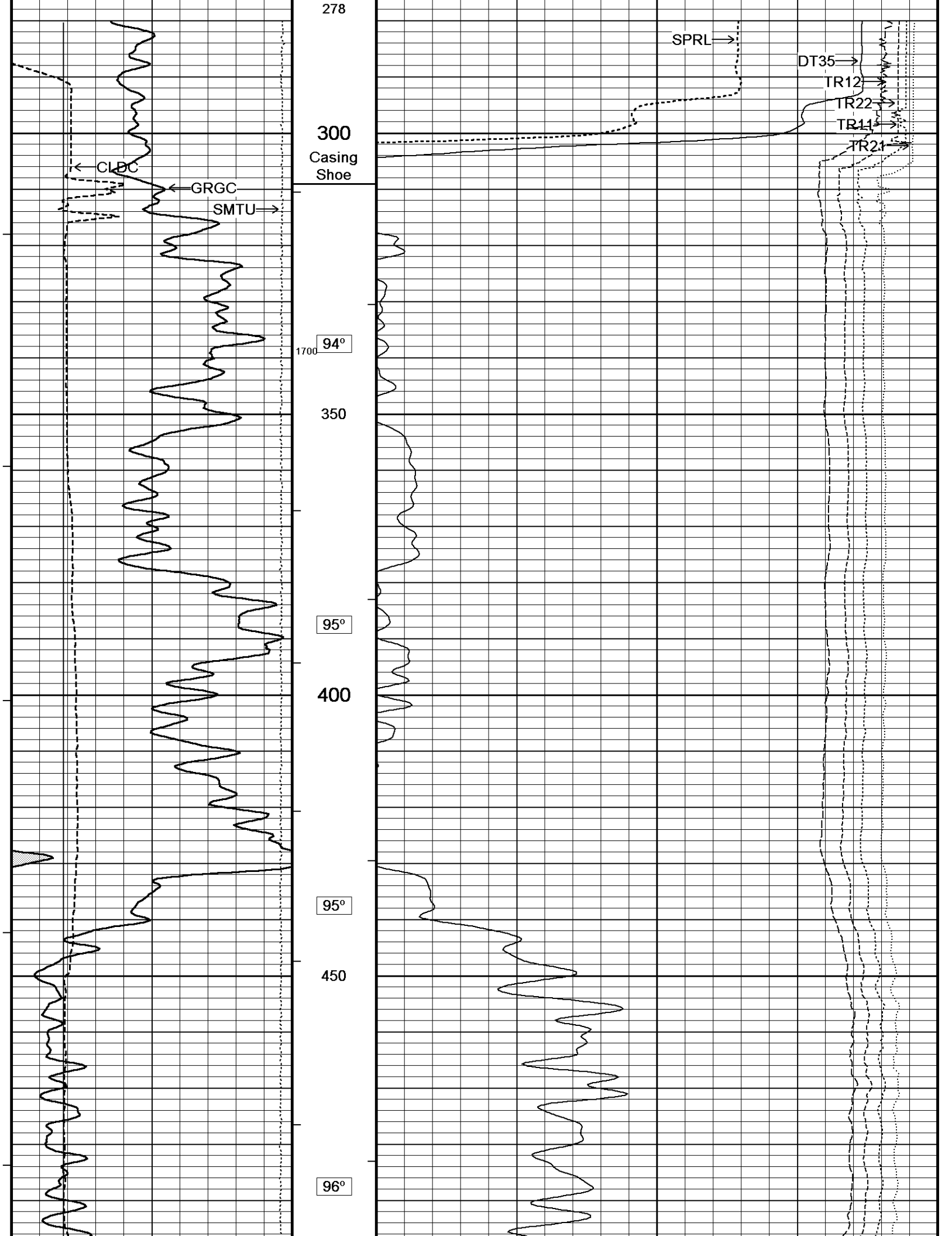
5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-JUL-2014 02:55

Filename: C:\Minimus 13.08.2113\Log Data\Stelbar Schroder #3-14\Stelbar Schroder #3-14 Main.dta — Recorded on 07-JUL-2014 00:25

System Versions: Logged with 13.08.2113 Plotted with 13.08.2113




278
300
Casing
Shoe
1700
350
400
450
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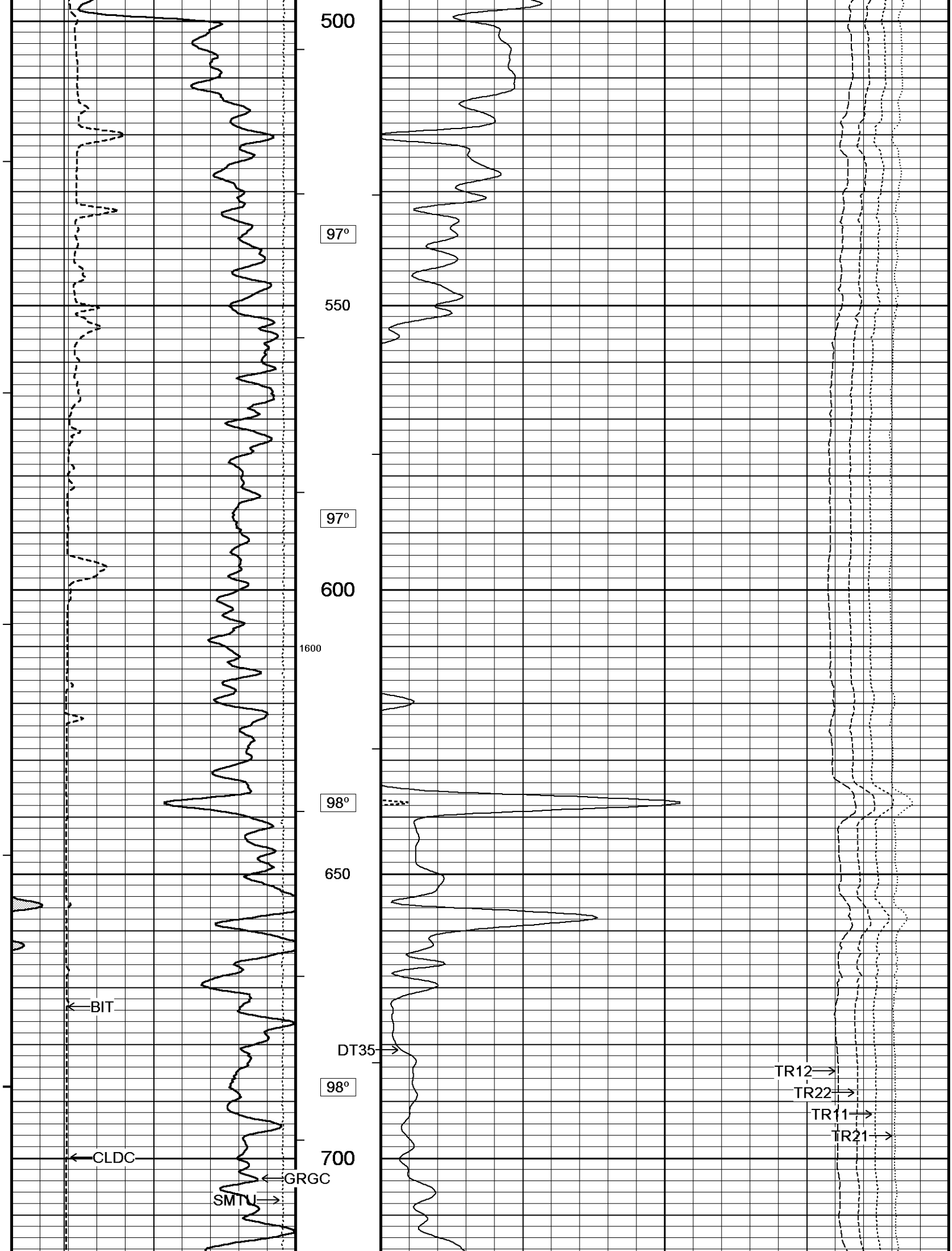
GRGC
SMTU
SPRL
DT35
TR12
TR22
TR11
TR21
94°
95°
95°
96°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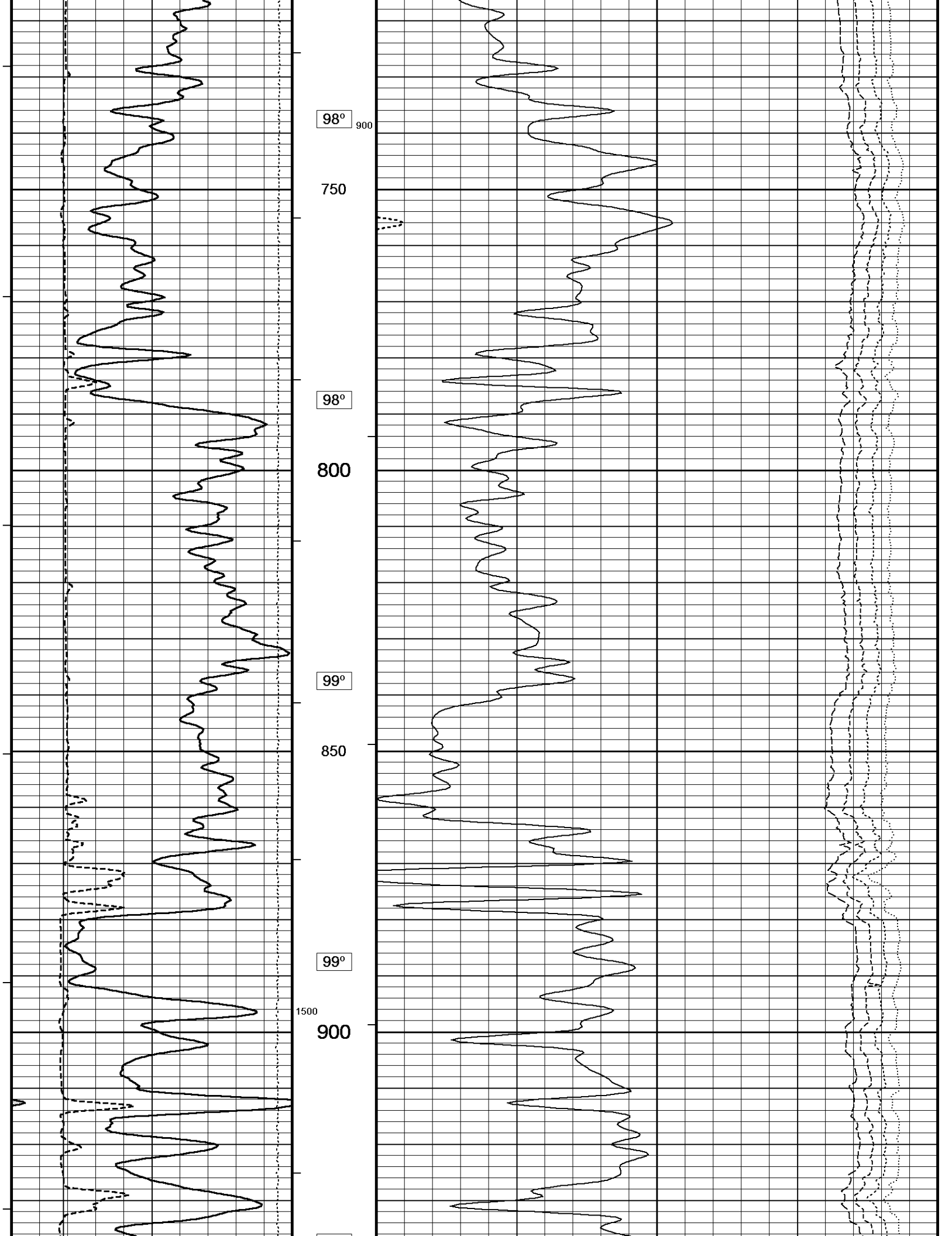
97°
550
97°
600
1600
98°
650
BIT
DT35
98°
700
CLDC
GRGC
SMTU
TR12
TR22
TR11
TR21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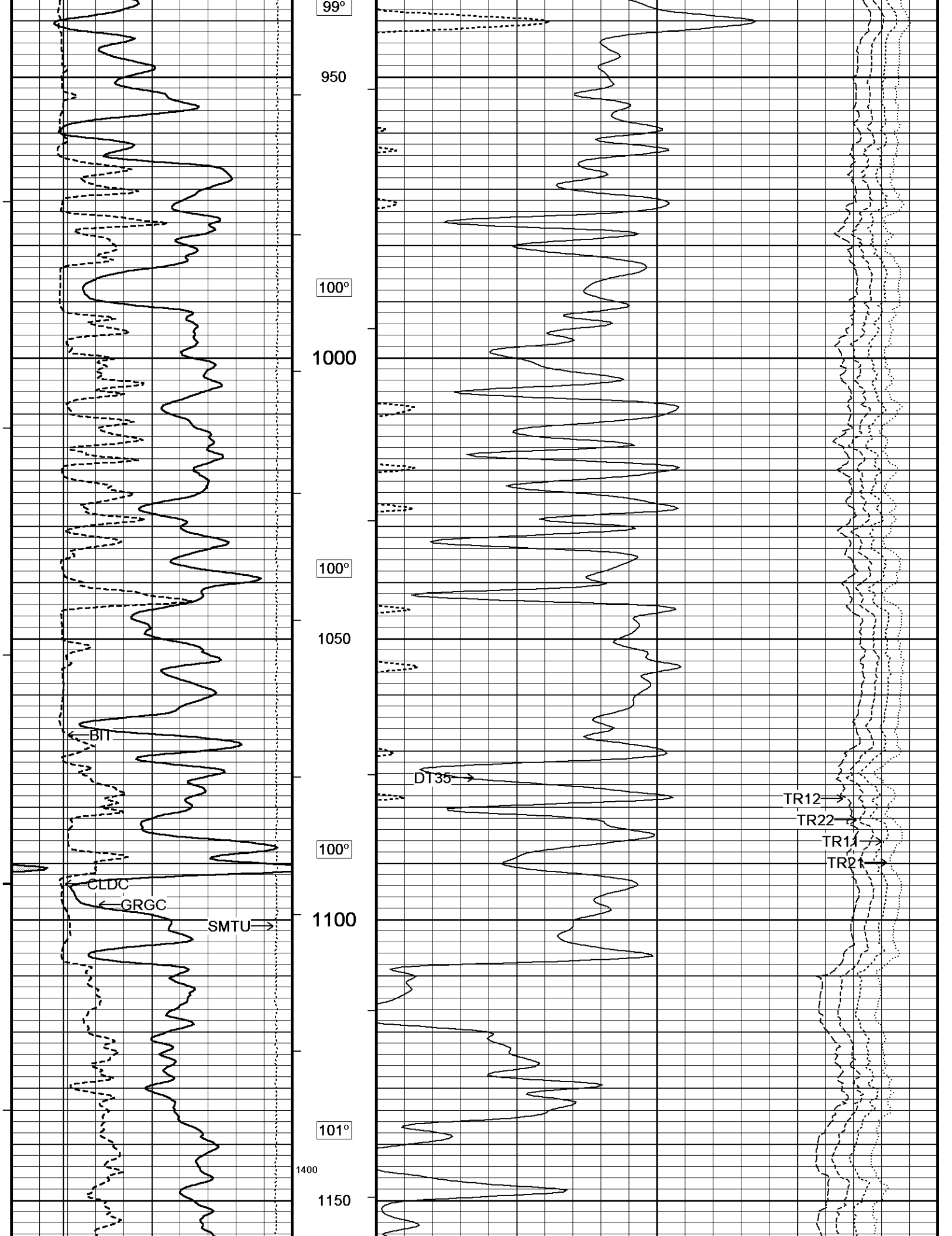
900
750
98°
800
99°
850
99°
1500
900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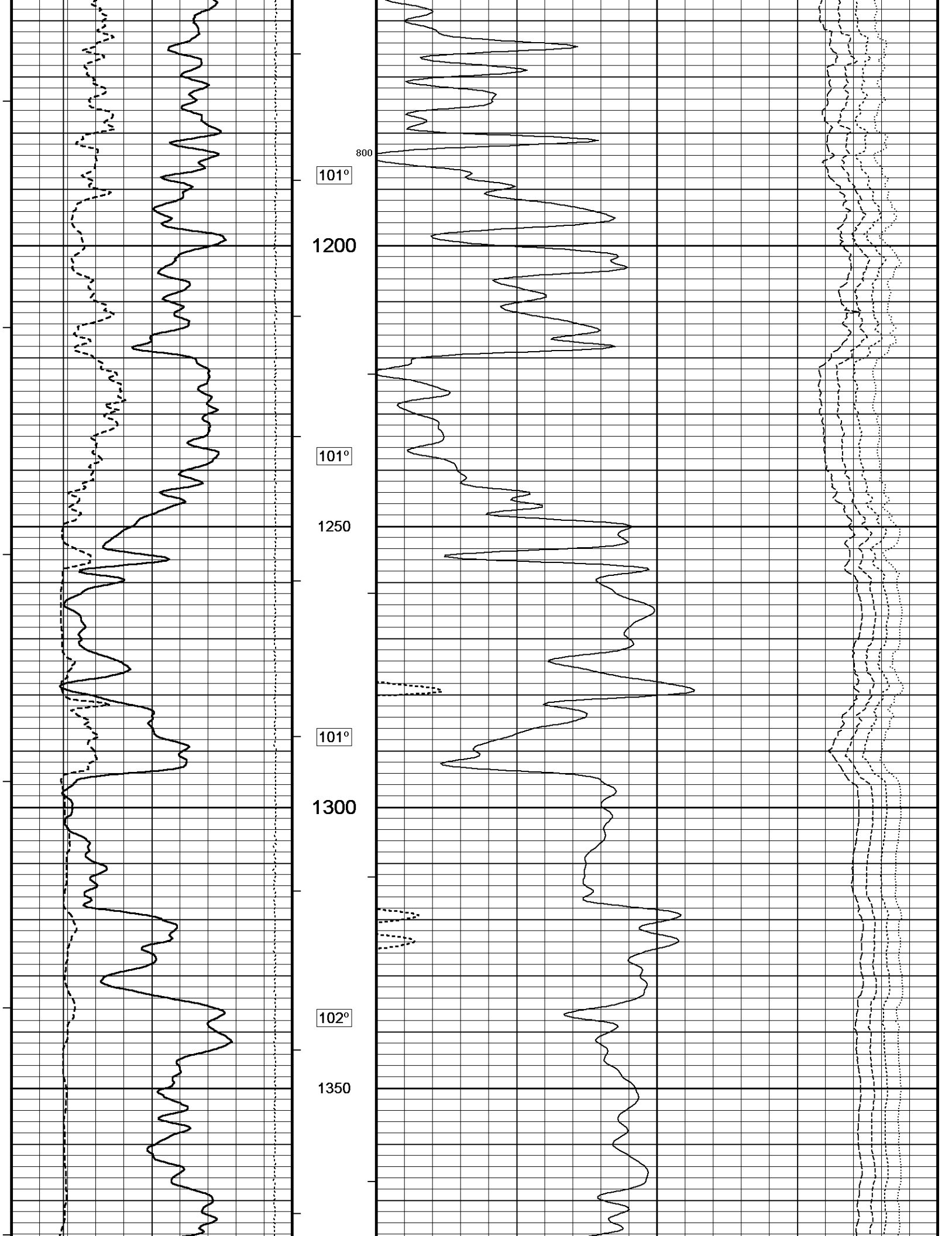
950
100°
1000
100°
1050
100°
1100
101°
1400
1150
BIT
CLDC
GRGC
SMTU
DT35
TR12
TR22
TR11
TR21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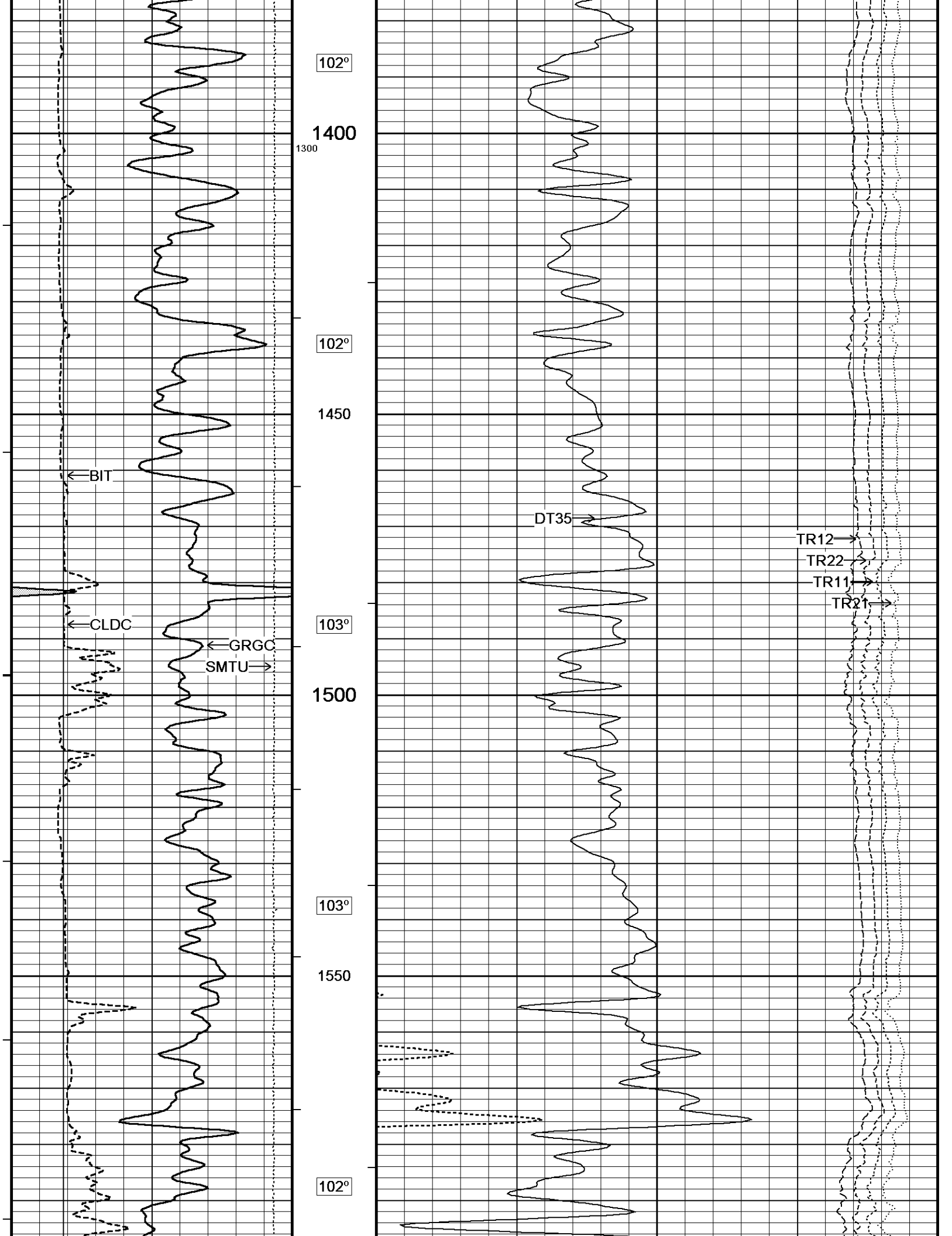
1200
101°
1250
101°
1300
102°
1350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1400
1300
102°
1450
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TR12
TR22
TR11
TR21
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GRGC
SMTU
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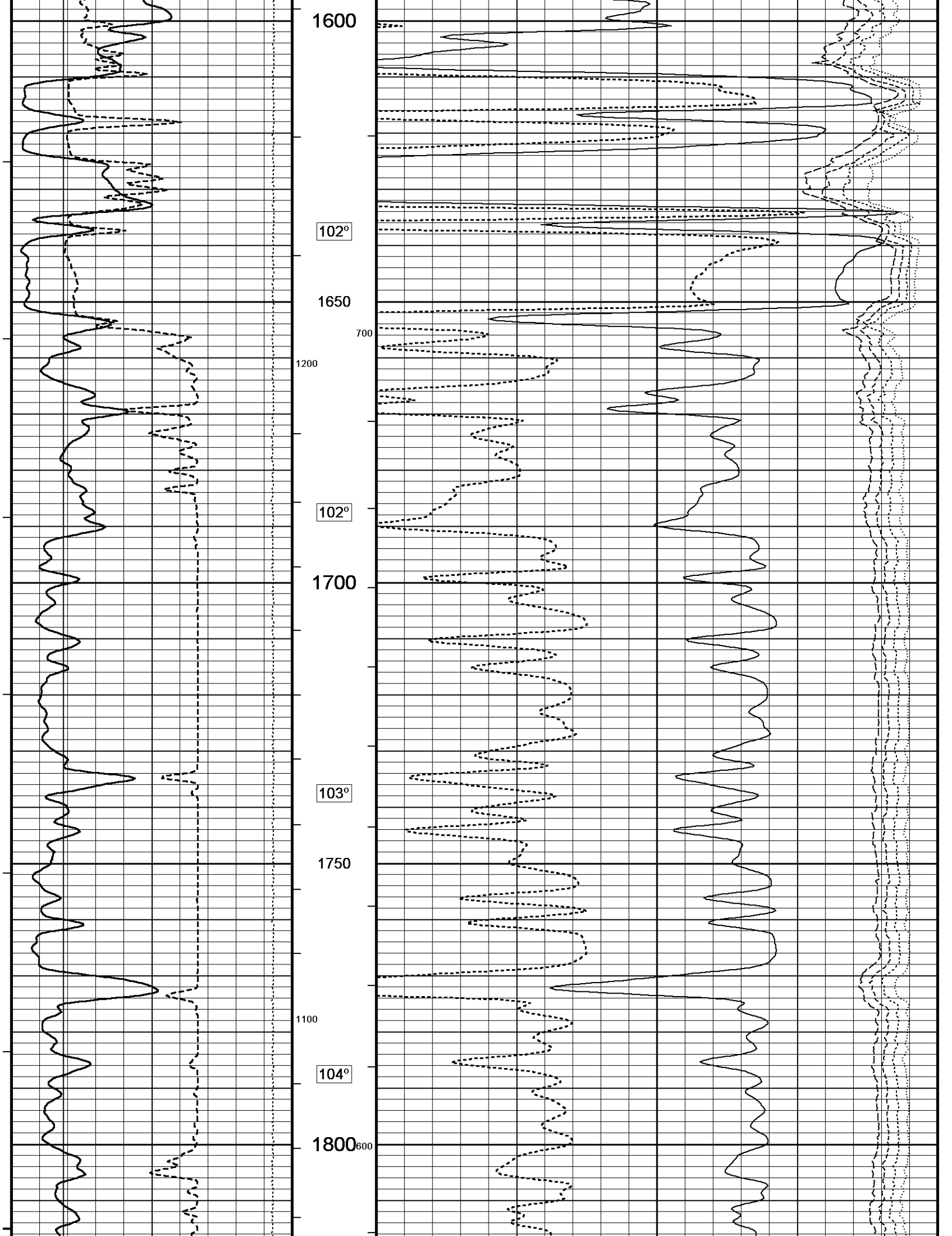
1500
103°
1550
102°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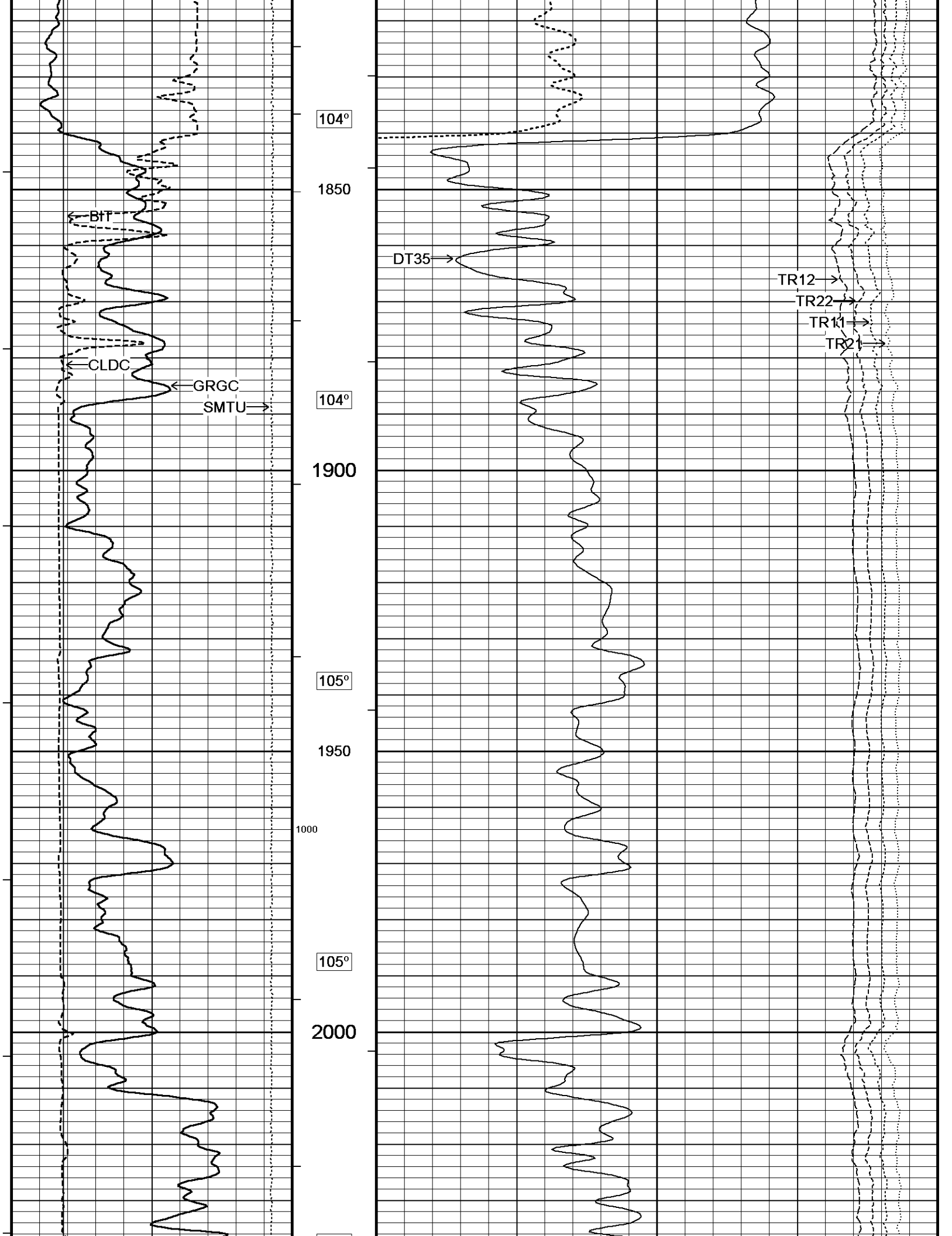
1650
700
1200
102°
1700
103°
1750
1100
104°
1800
600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1850
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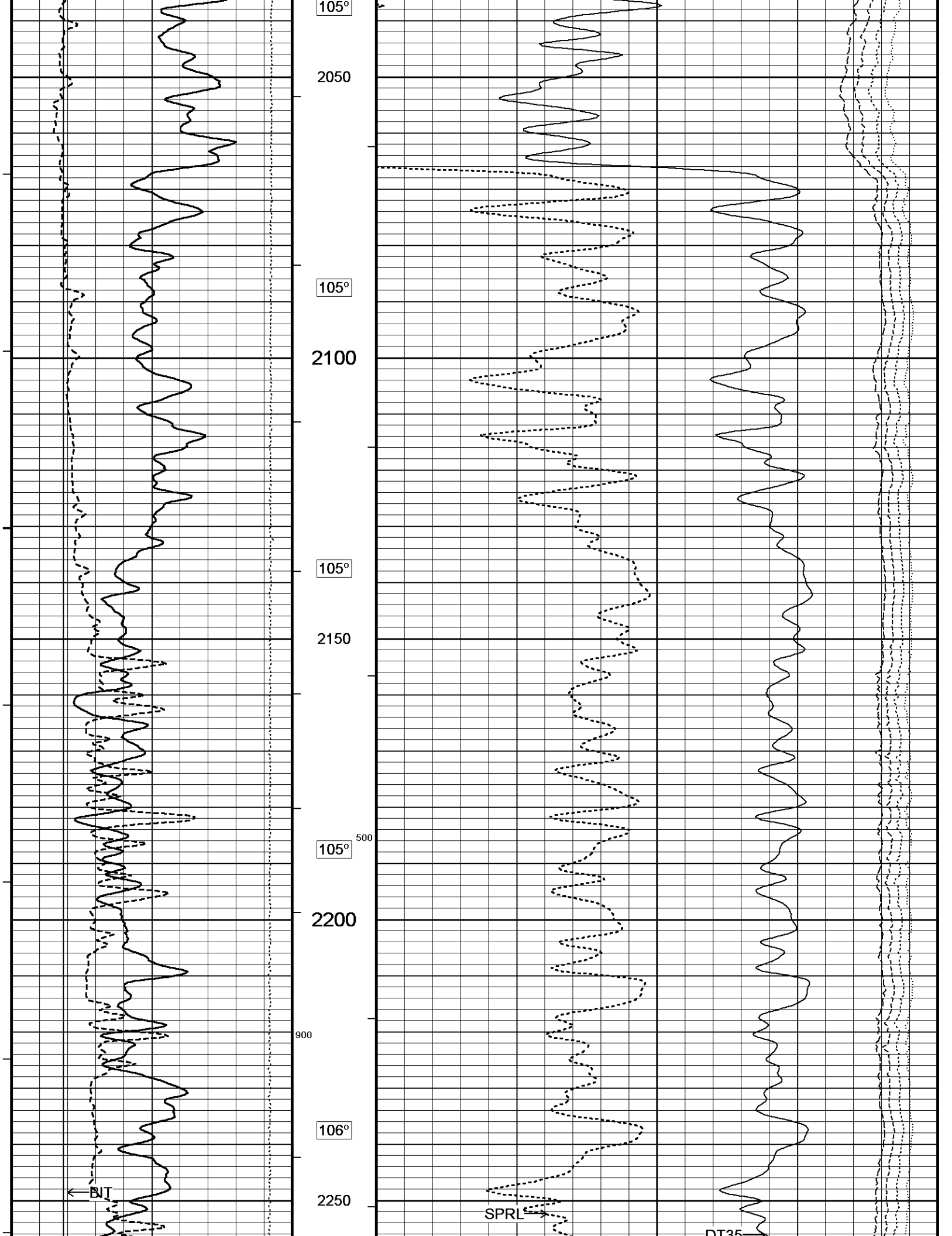
DT35
TR12
TR22
TR11
TR21
CLDC
GRGC
SMTU
104°
1900
105°
1950
1000
105°
2000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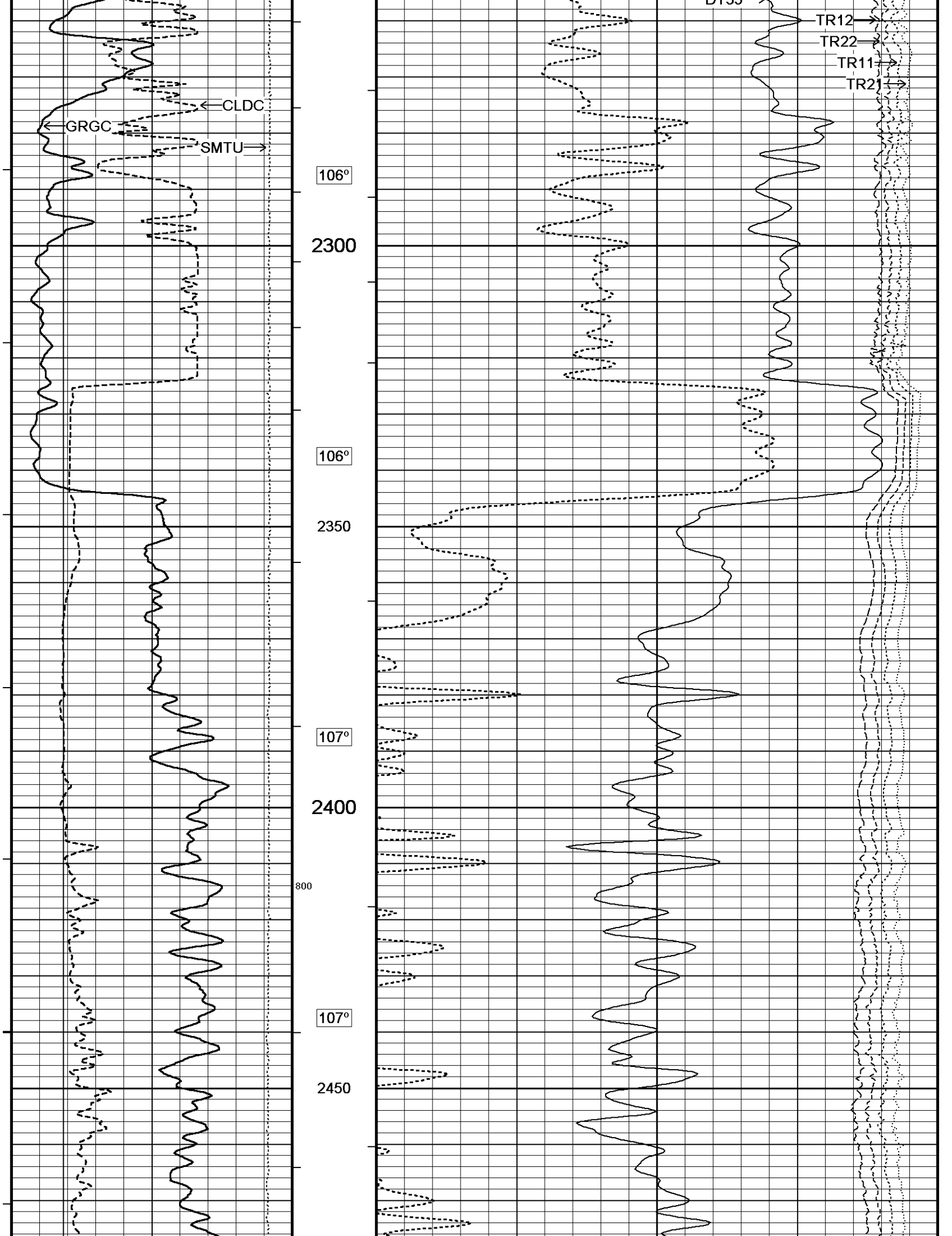
2050
105°
2100
105°
2150
105°
500
2200
900
106°
2250
BIT
SPRL
DT35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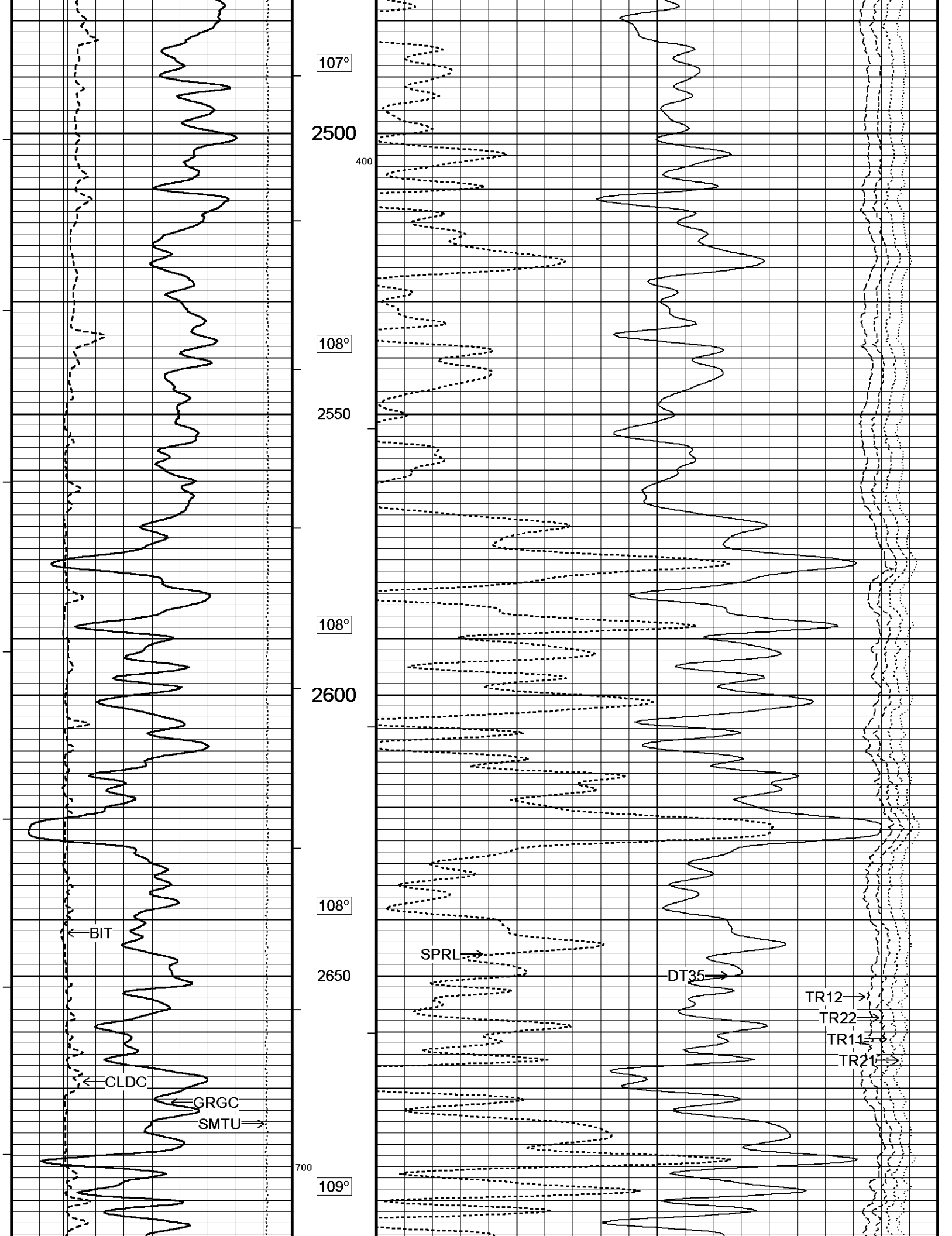
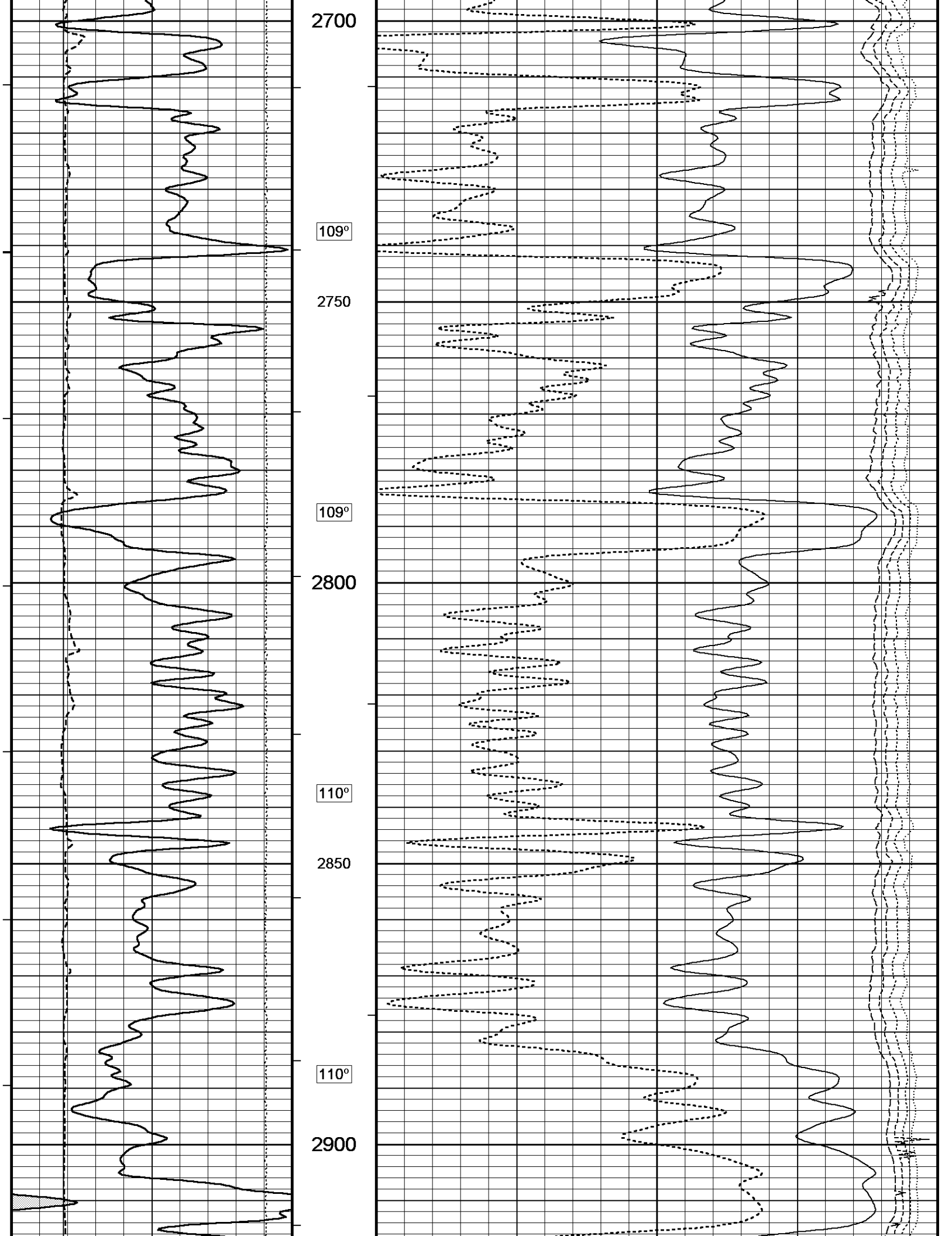
GRGC
SMTU
106°
2300
106°
2350
107°
2400
800
107°
2450
TR12
TR22
TR11
TR21


107°
2500
400
108°
2550
108°
2600
108°
BIT
SPRL
2650
DT35
TR12
TR22
TR11
TR21
CLDC
GRGC
SMTU
700
109°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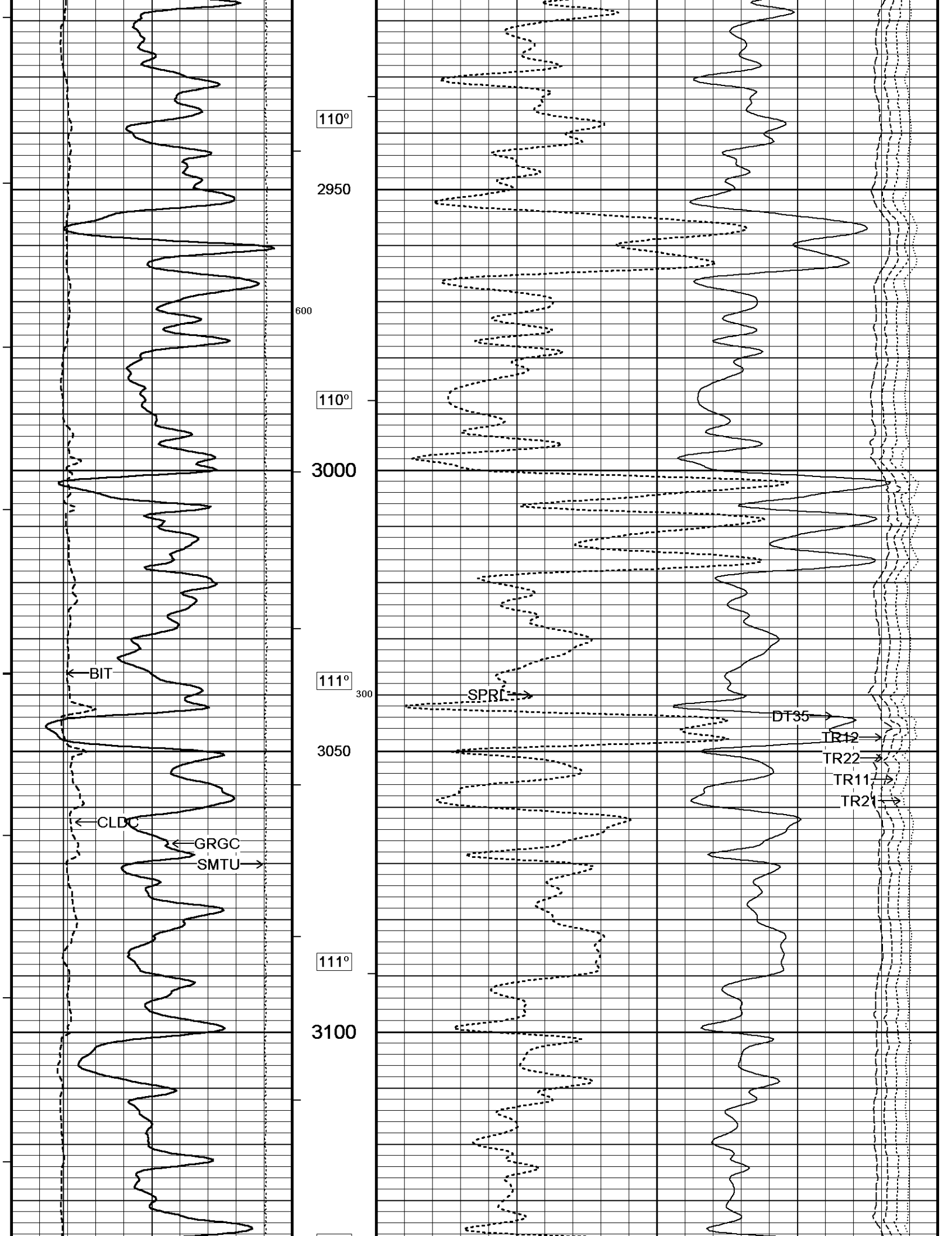
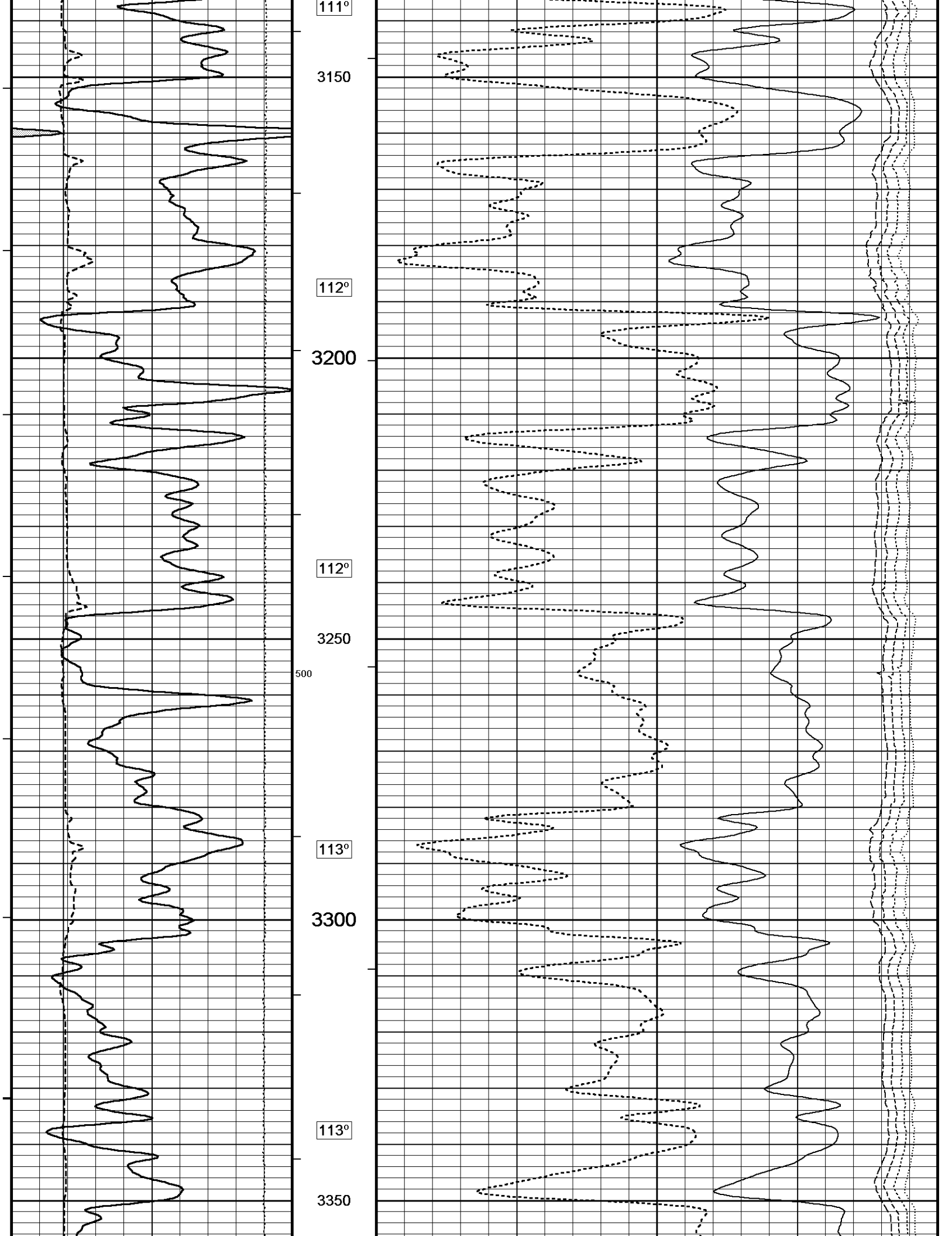
109°
2750
109°
2800
110°
2850
110°
2900


110°
2950
600
110°
3000
BIT
111°
300
SPRL
DT35
TR12
TR22
TR11
TR21
3050
CLDC
GRGC
SMTU
111°
3100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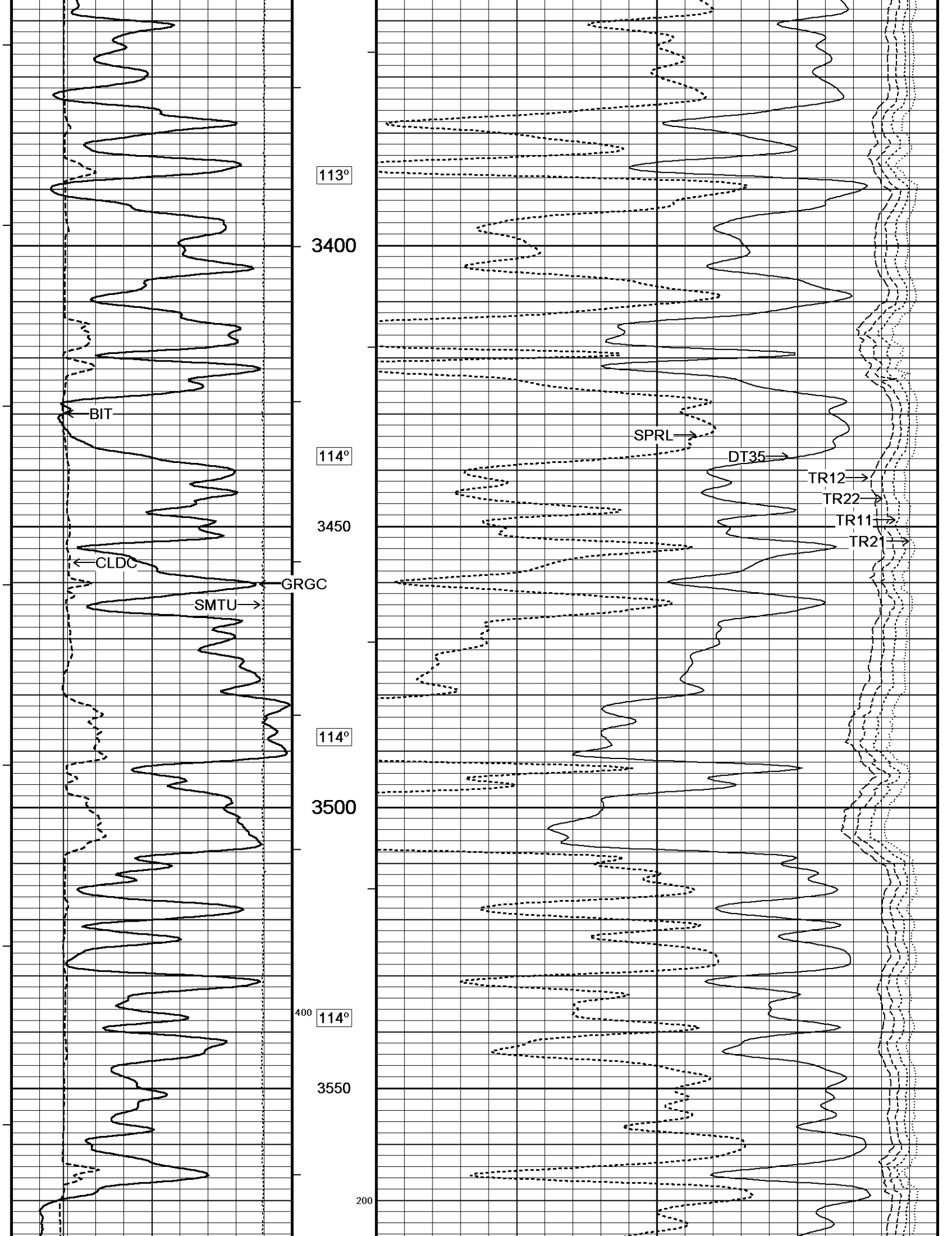
112°
3200
112°
3250
500
113°
3300
113°
3350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3400
BIT
114°
SPRL
DT35
TR12
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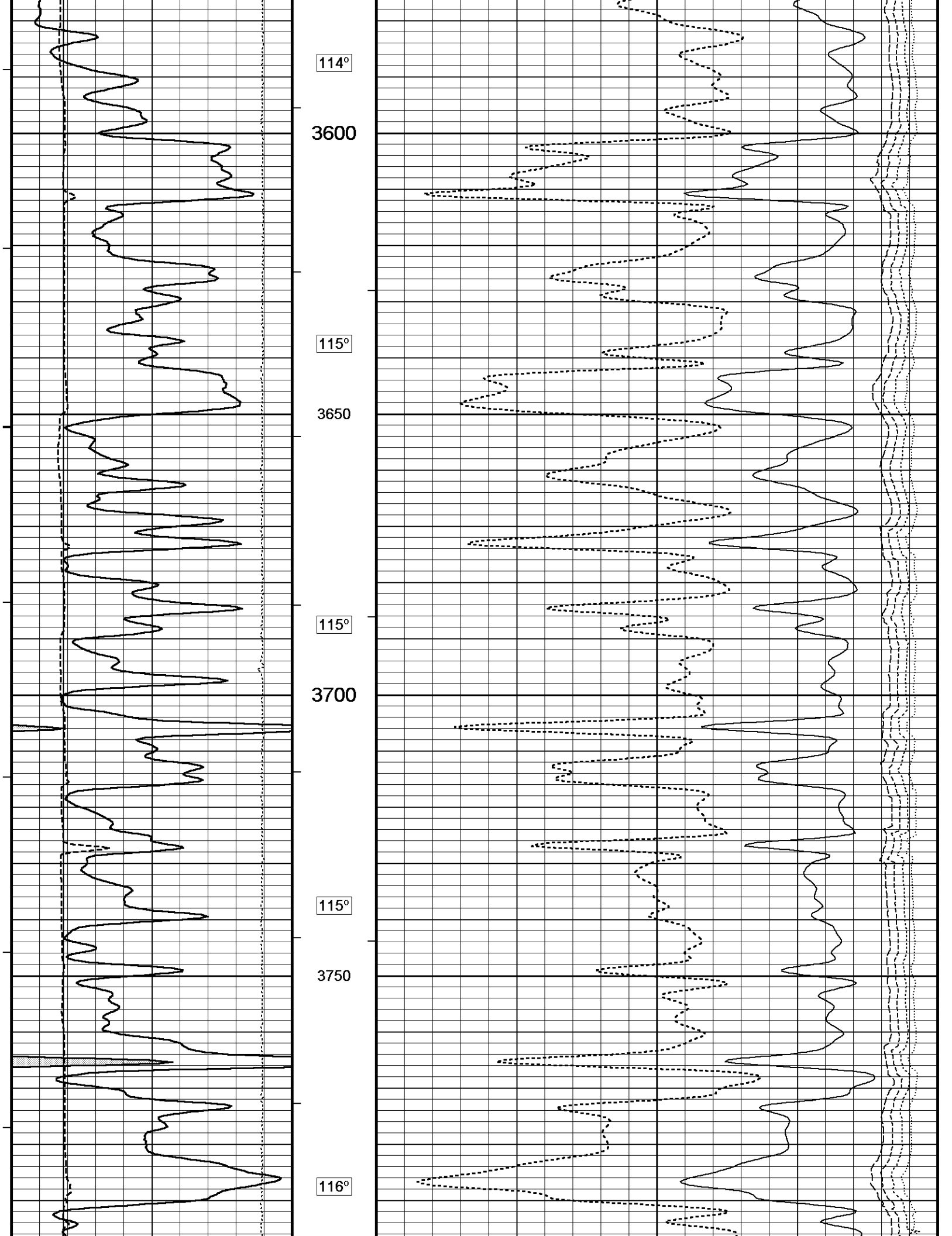
TR11
TR21
3450
CLDC
GRGC
SMTU
114°
3500
400
114°
3550
200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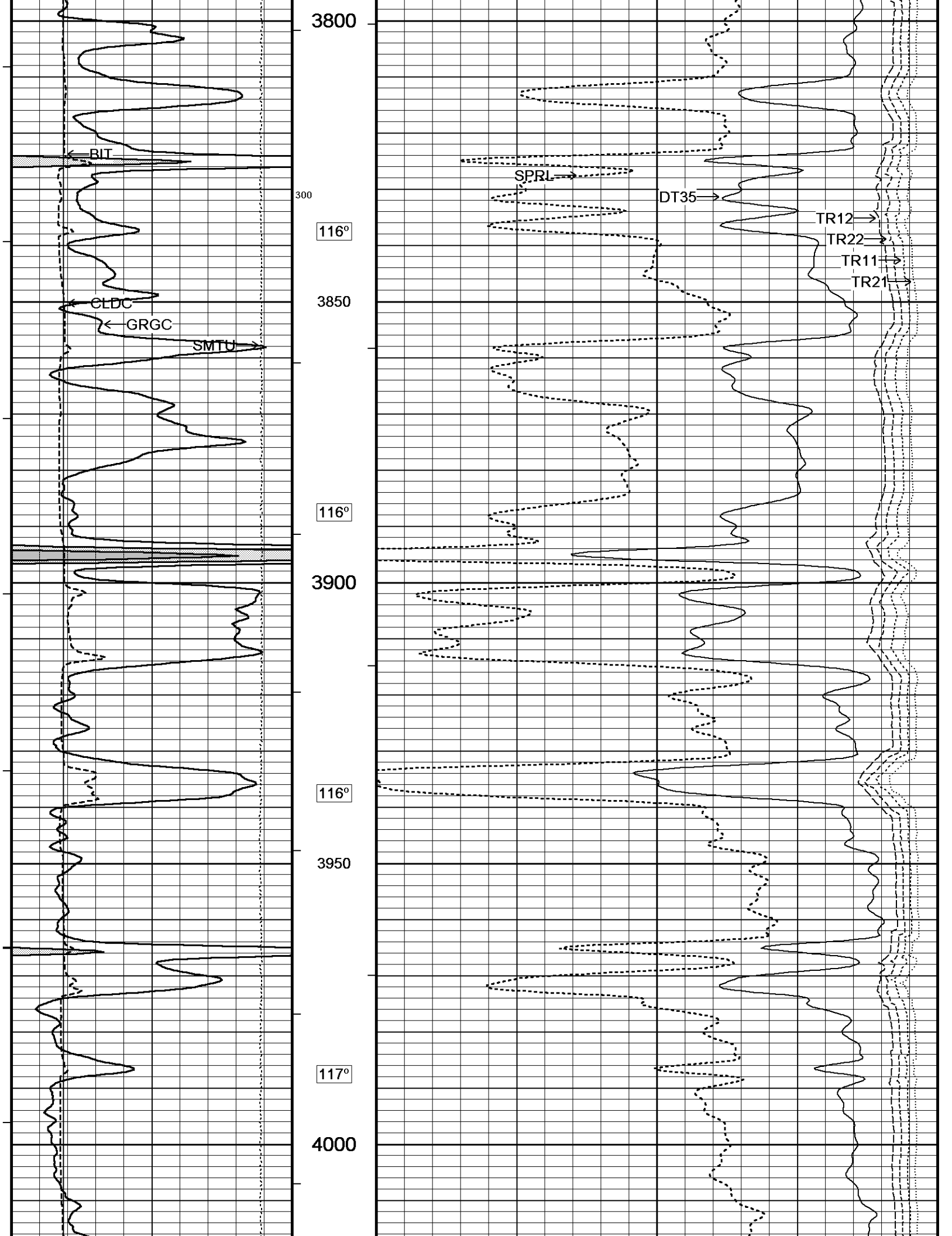
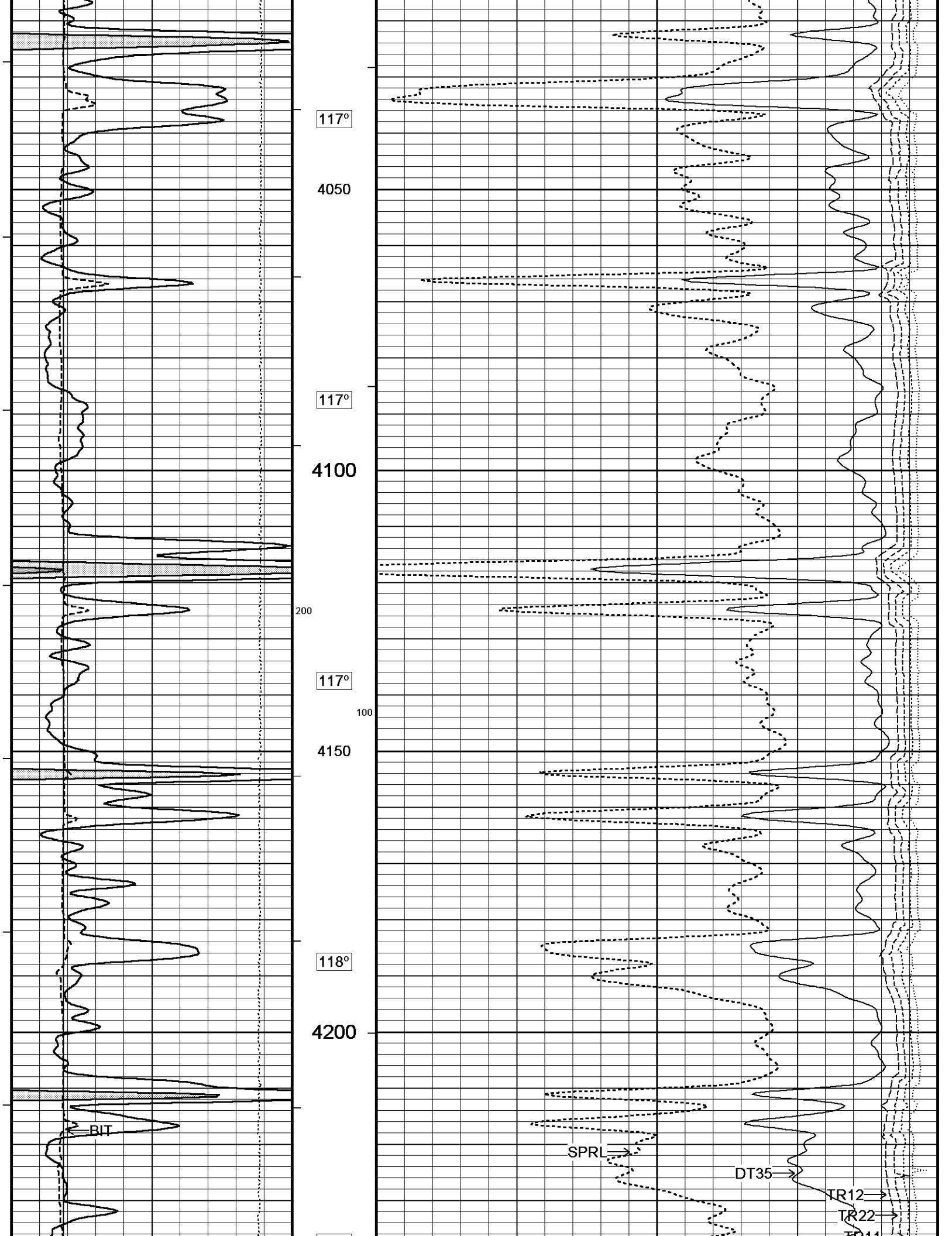
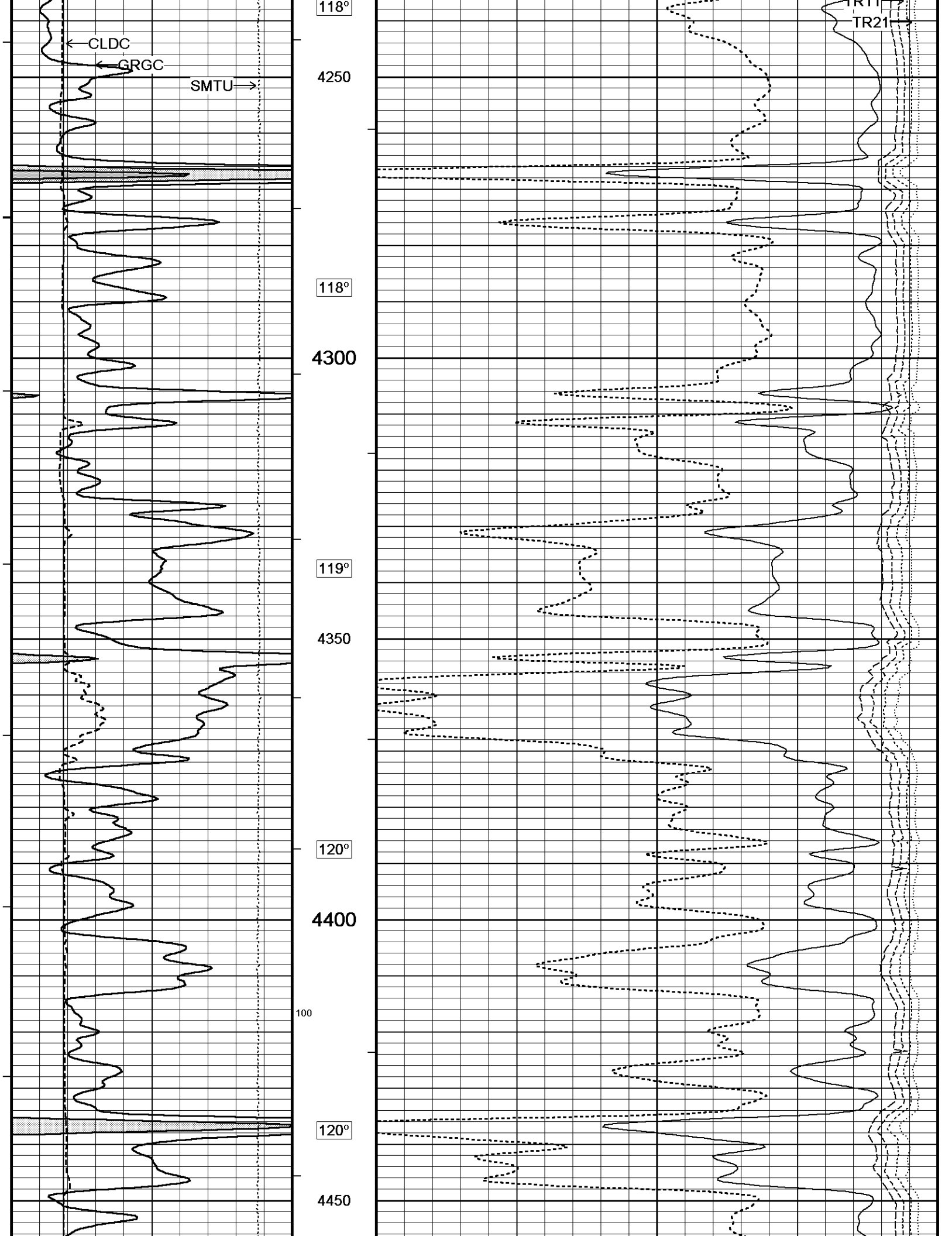
3600
115°
3650
115°
3700
115°
3750
116°


BIT
CLDC
GRGC
SMTU
SPRL
DT35
TR12
TR22
TR11
TR21
300
116°
116°
116°
117°
3800
3850
3900
3950
4000


117°
4050
117°
4100
200
117°
100
4150
118°
4200
BIT
SPRL
DT35
TR12
TR22


CLDC
GRGC
SMTU
TR11
TR21
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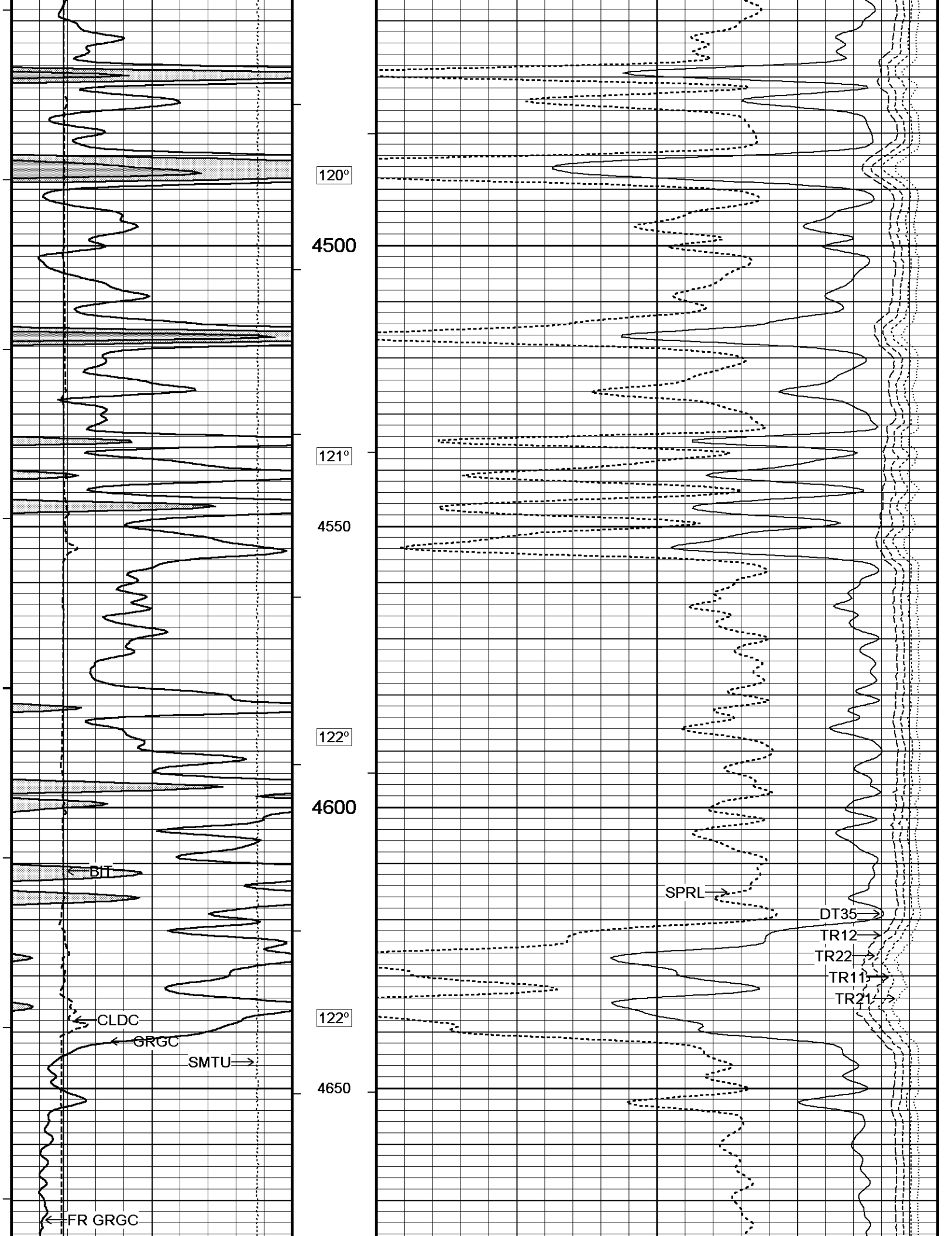
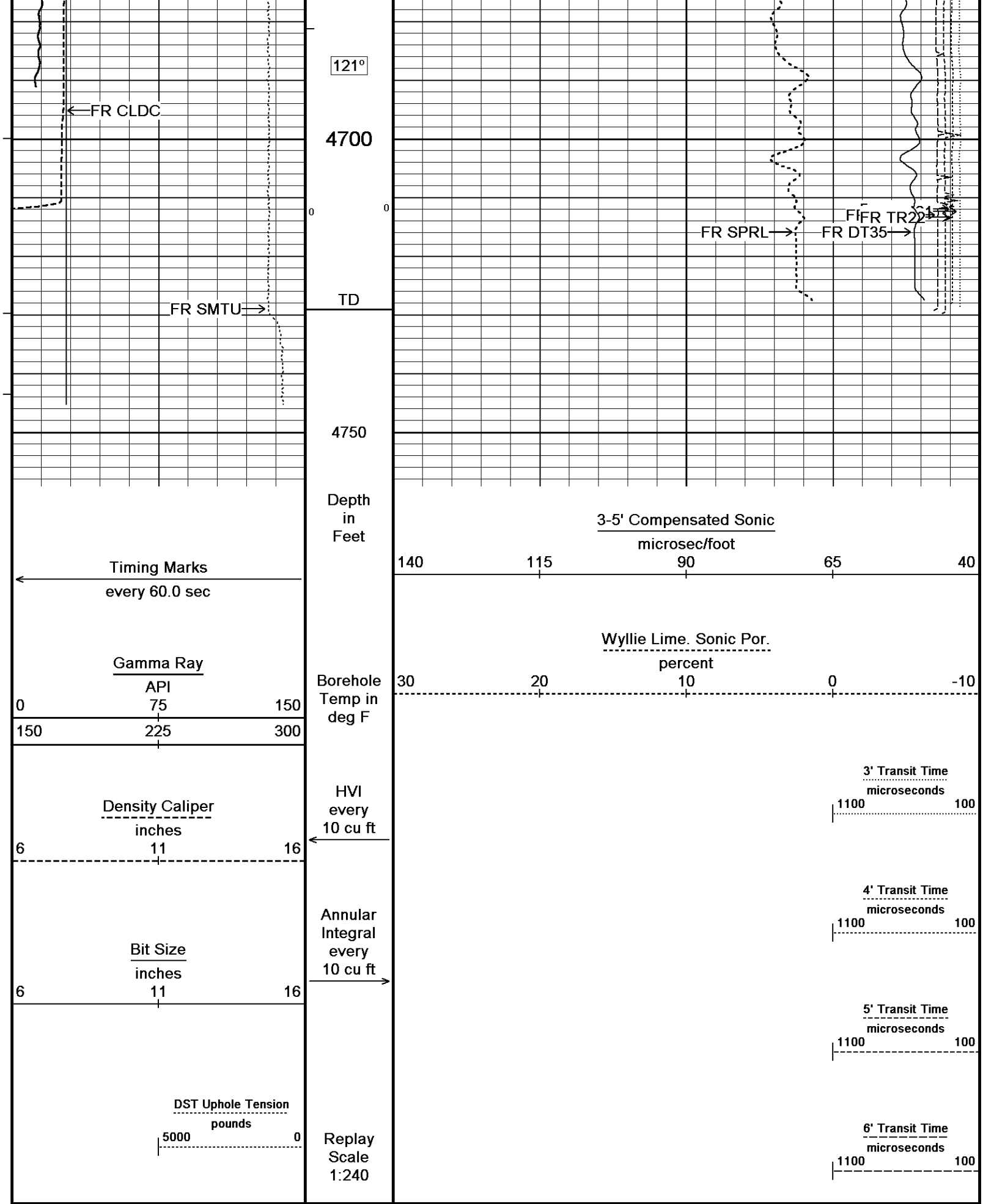
4300
119°
4350
120°
4400
100
120°
4450


120°
4500
121°
4550
122°
4600
BIT
SPRL
DT35
TR12
TR22
TR11
TR21
122°
CLDC
GRGC
SMTU
4650
FR GRGC

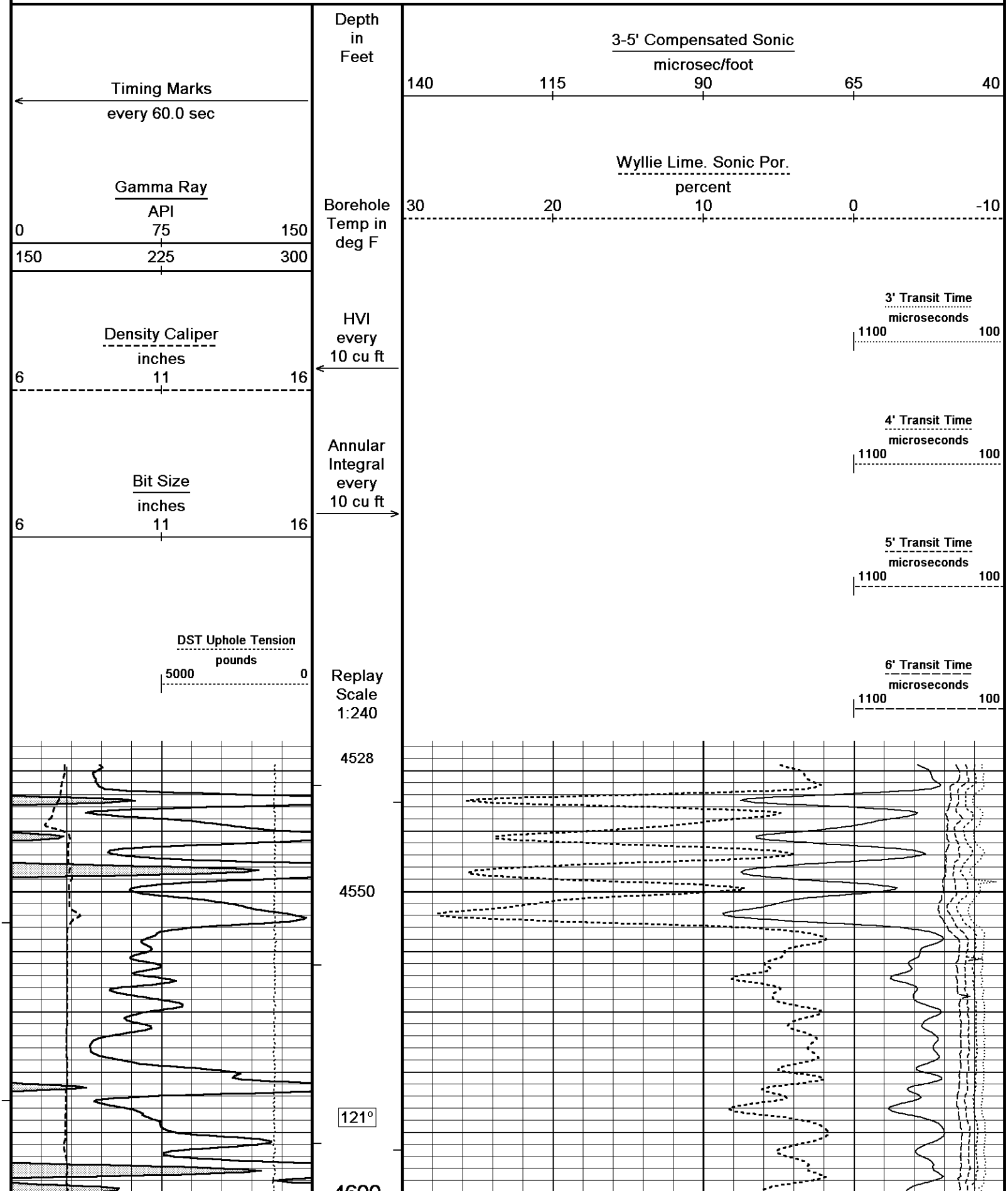


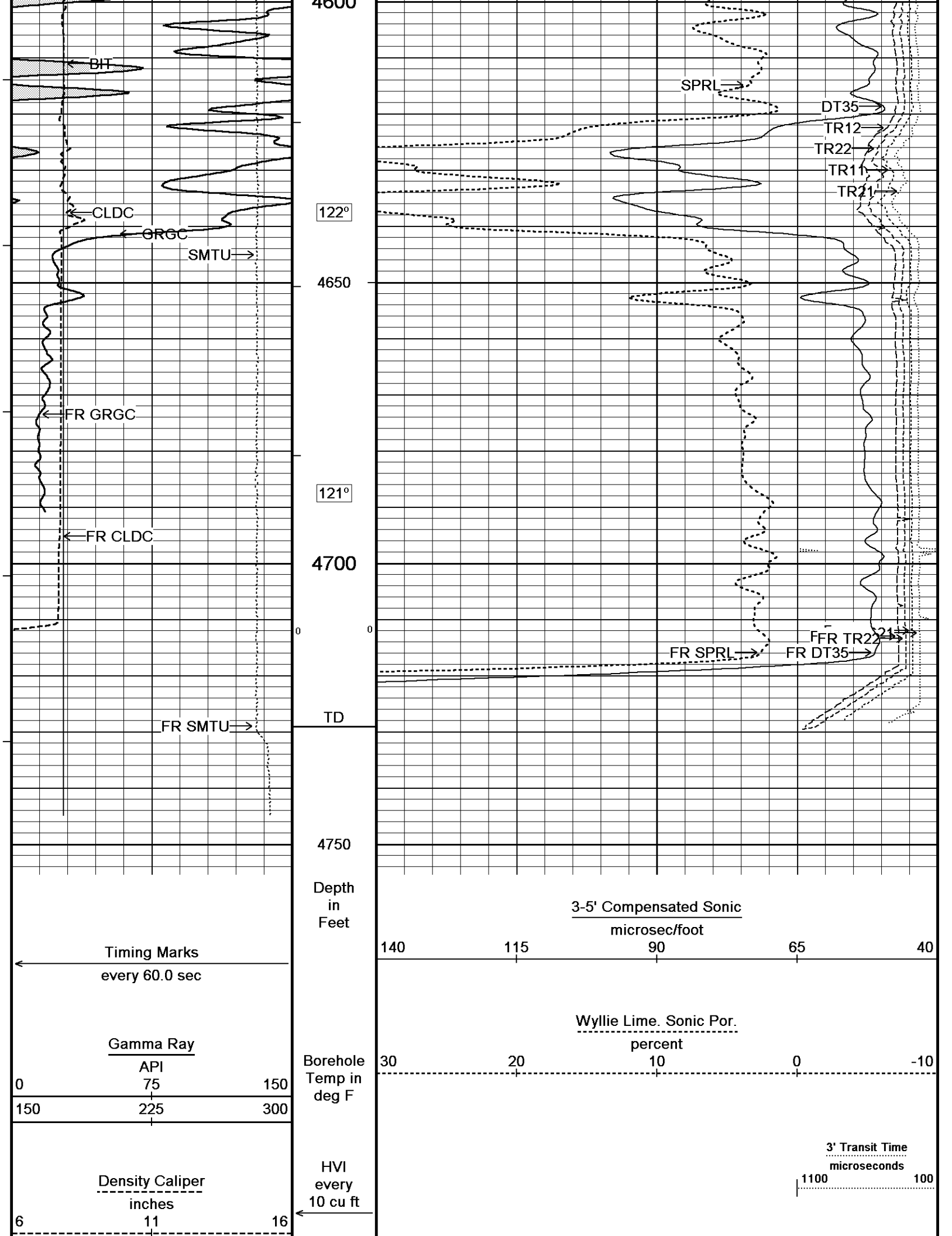
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-JUL-2014 02:55
Filename: C:\Minimus 13.08.2113\Log Data\Stelbar Schroder #3-14\Stelbar Schroder #3-14 Main.dta
Recorded on 07-JUL-2014 00:25
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

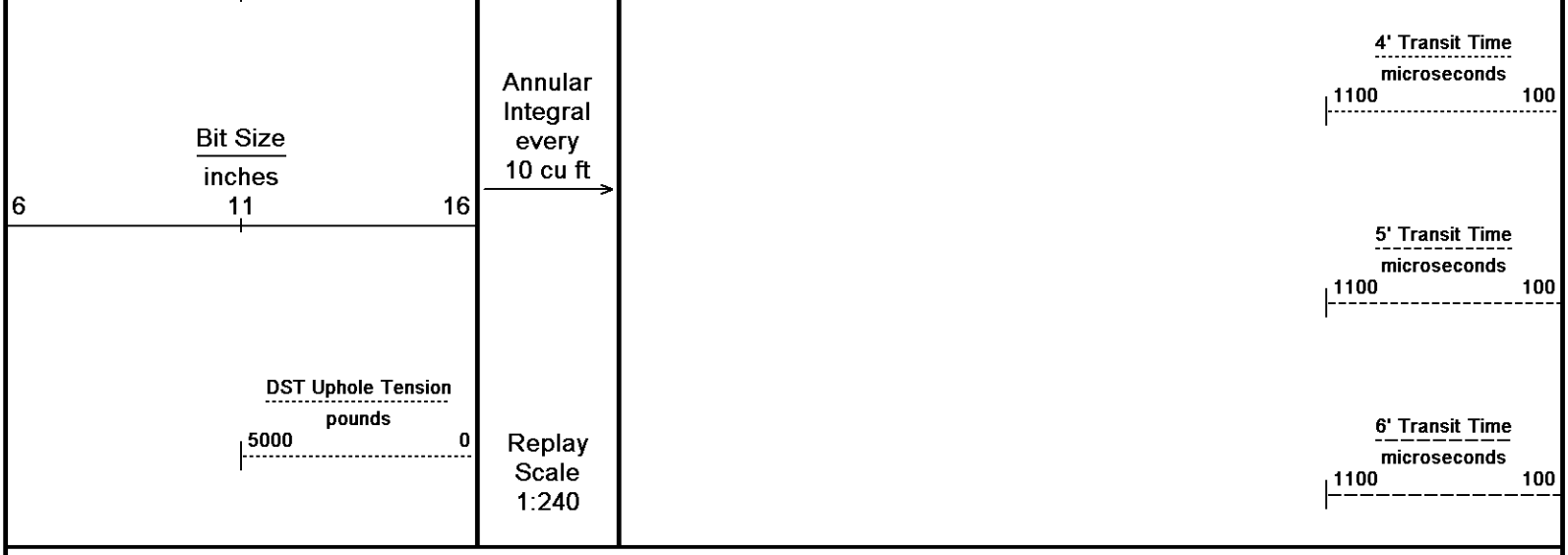
5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-JUL-2014 02:55
Filename: C:\Minimus 13.08.2113\Log Data\Stelbar Schroder #3-14\Stelbar Schroder #3-14 Repeat.dta
Recorded on 06-JUL-2014 23:05
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113




4600
BIT
SPRL
DT35
TR12
TR22
TR11
TR21
CLDC
122°
GRGC
SMTU
4650
FR GRGC
121°
FR CLDC
4700
FR TR22
FR SPRL
FR DT35
TD
FR SMTU
4750
Depth
in
Feet
3-5' Compensated Sonic
microsec/foot
140
115
90
65
40
Timing Marks
every 60.0 sec
Wyllie Lime. Sonic Por.
percent
30
20
10
0
-10
Gamma Ray
API
0
75
150
Borehole
Temp in
deg F
150
225
300
3' Transit Time
microseconds
1100
100
HVI
every
10 cu ft
Density Caliper
inches
6
11
16



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-JUL-2014 02:55
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System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Log Data\Stelbar Schroder #3-14\Stelbar Schroder #3-14 Main.dta

General Constants All 000

Last Edited on 06-JUL-2014,21:44

General Parameters		
Mud Resistivity	0.650	ohm-metres
Mud Resistivity Temperature	75.000	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	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 469

Field Calibration on 06-JUL-2014 18:16

	Measured	Calibrated (API)
Background	68	46
Calibrator (Gross)	1153	771
Calibrator (Net)	1085	725

Gamma Constants MCG-D.K 469

Last Edited on 06-JUL-2014,21:46

Gamma Calibrator Number	GRC038	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 12-MAY-2014,02:16

	Measured	Calibrated(Deg F)
Lower	10.00	10.00

Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 12-JUN-2014,06:51

Pre-filter Length	11

Sonic Constants MSS-C.K 330

Last Edited on 06-JUL-2014,17:53

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

Caliper Calibration MPD-C.A 216

Base Calibration on 02-JUL-2014 11:15
Field Calibration on 06-JUL-2014 17:56

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17551	3.99
2	27136	5.98
3	37121	7.97

3	37121	7.97
4	46912	9.86
5	58208	11.92
6	N/A	N/A

Field Calibration

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

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Log Data\Stelbar Schroder #3-14\Stelbar Schroder #3-14 Main.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.244 in

Compact Comms Gamma
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

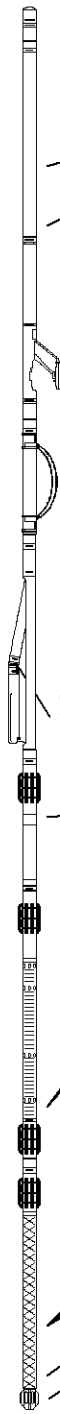
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 62.25 ft Weight: 471.8 lb



55.39 ft	GRGC - Gamma Ray
52.48 ft	CGXT - MCG External Temperature
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
46.76 ft	MLTC - MML Caliper
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	CLDC - Density Caliper
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	STELBAR OIL CORPORATION
WELL	SCHRODER #3-14
FIELD	RUDOLPH NORTHEAST
PROVINCE/COUNTY	SCOTT

COUNTRY/STATE			U.S.A. / KANSAS		
Elevation Kelly Bushing	2997.00	feet	First Reading	4715.91	feet
Elevation Drill Floor	2995.00	feet	Depth Driller	4730.00	feet
Elevation Ground Level	2986.00	feet	Depth Logger	4729.00	feet

Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME