



Weatherford

**COMPACT PHOTO-DENSITY
DUAL SPACED NEUTRON
MICRO RESISTIVITY LOG**

COMPANY	UNIT PETROLEUM COMPANY	
WELL	GEESLING 16 1HXL	
FIELD	WILDCAT	
PROVINCE/COUNTY	RENO COUNTY	
COUNTRY/STATE	USA / KANSAS	
LOCATION	SW/NW/SE/NE 1780' FNL & 1020' FEL	
SEC 16	TWP 26S	RGE 10W
Latitude	37.7874	Other Services
Longitude	-98.4106	INDUCTION
API Number	15-155-21749-01	FOCUSED ELECTRIC
SONIC		
Permanent Datum GL, Elevation	1762 feet	
Log Measured From KB, 20.00 feet above Permanent Datum		
Drilling Measured From KB		
Date	11-OCT-2017	Elevations: KB 1782.00 DF 1780.00 GL 1762.00
Run Number	ONE	
Service Order	7452-194827385	
Depth Driller	4160.00	feet
Depth Logger	4163.00	feet
First Reading	4129.10	feet
Last Reading	1513.00	feet
Casing Driller	1512.00	feet
Casing Logger	1513.00	feet
Bit Size	8.750	inches
Hole Fluid Type	WBM	
Density / Viscosity	9.20 lb/USg	42.00 s/qt
PH / Fluid Loss	9.50	7.60 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	0.60 @100.0	ohm-m
Rmf @ Measured Temp	0.48 @100.0	ohm-m
Rmc @ Measured Temp	0.72 @100.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.49 @123.0	ohm-m
Time Since Circulation	2.0 HOURS	
Max Recorded Temp	123.00	deg F
Equipment / Base	13057	OKC
Recorded By	NICHOLAS RUPERT	STACY WIGHT
Witnessed By	GLEN MONDAY	

BOREHOLE RECORD

Last Edited: 10-OCT-2017 07:37

Bit Size inches	Depth From feet	Depth To feet
12.250	0.00	1512.00
8.750	1512.00	4160.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1512.00	36.00

REMARKS

WLS SOFTWARE VERSION: 17.03.9609

TOOLSTRING: SHA, MCG, MMR, MDN (DUAL BOWSPRING ECCENTRALIZER), MPD (8" PROFILE PLATE), MFE (ONE 0.5" STANDOFF), MSS (TWO 0.5" STANDOFF), MAI (TWO 0.5" STANDOFFS)

LOG INTERVALS REQUESTED:
ALL SERVICES LOGGED TD-CSG

LIMESTONE MATRIX USED FOR POROSITY CALCULATION, 2.71 G/CC.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1190 CU FT.
ANNULAR HOLE VOLUME FROM TD TO SURFACE CASING WITH 7.0" FUTURE CASING: 390 CU FT.

MUD PROPERTIES:
CHLORIDES: 3700 PPM

CREW: N RUPERT S WIGHT D GILLISPIE J JONES

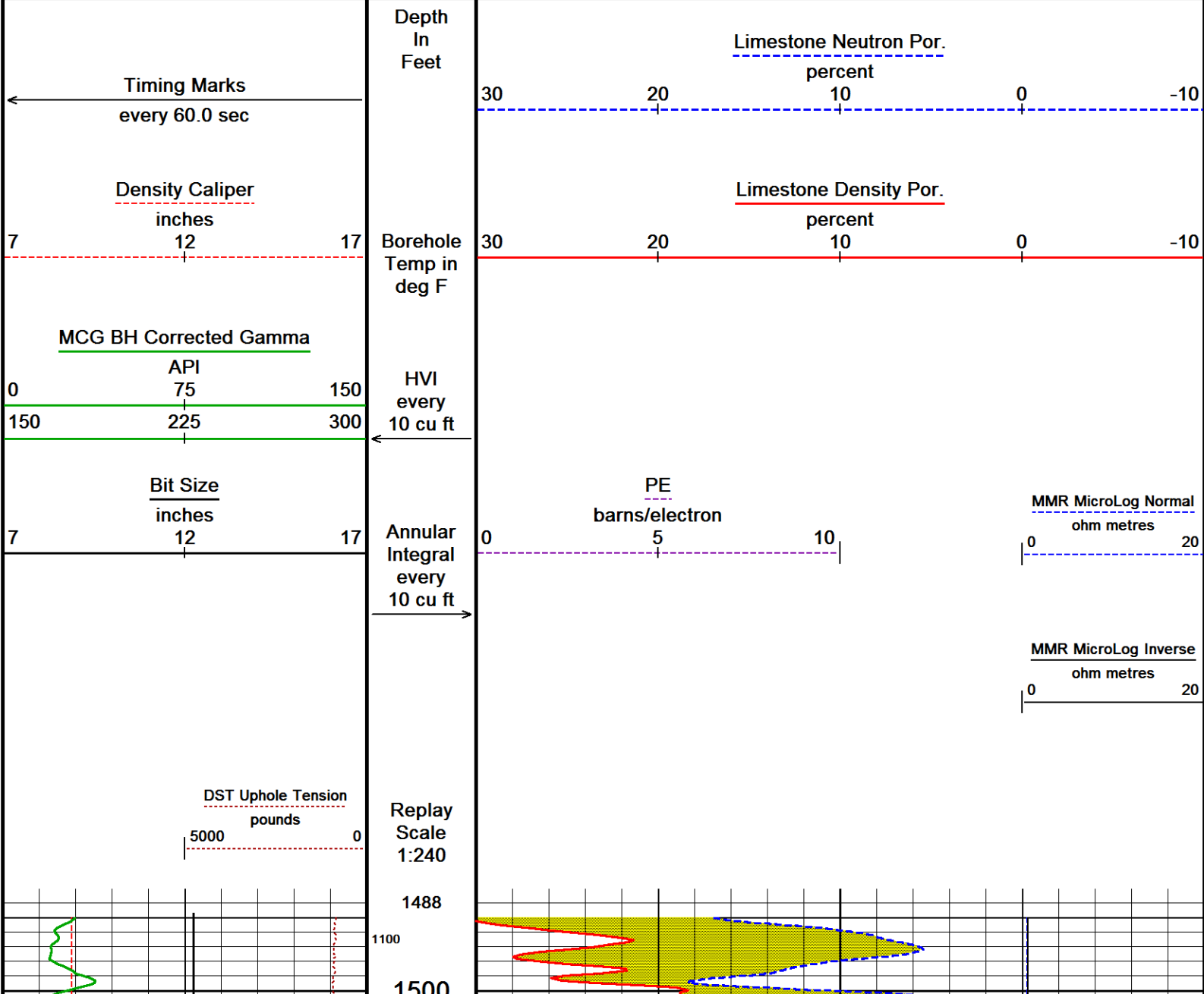
PULLED TIGHT AT 3575 FT. CALIPER LOG SHOWS HOLE UNDER-GAUGE AT THIS DEPTH.

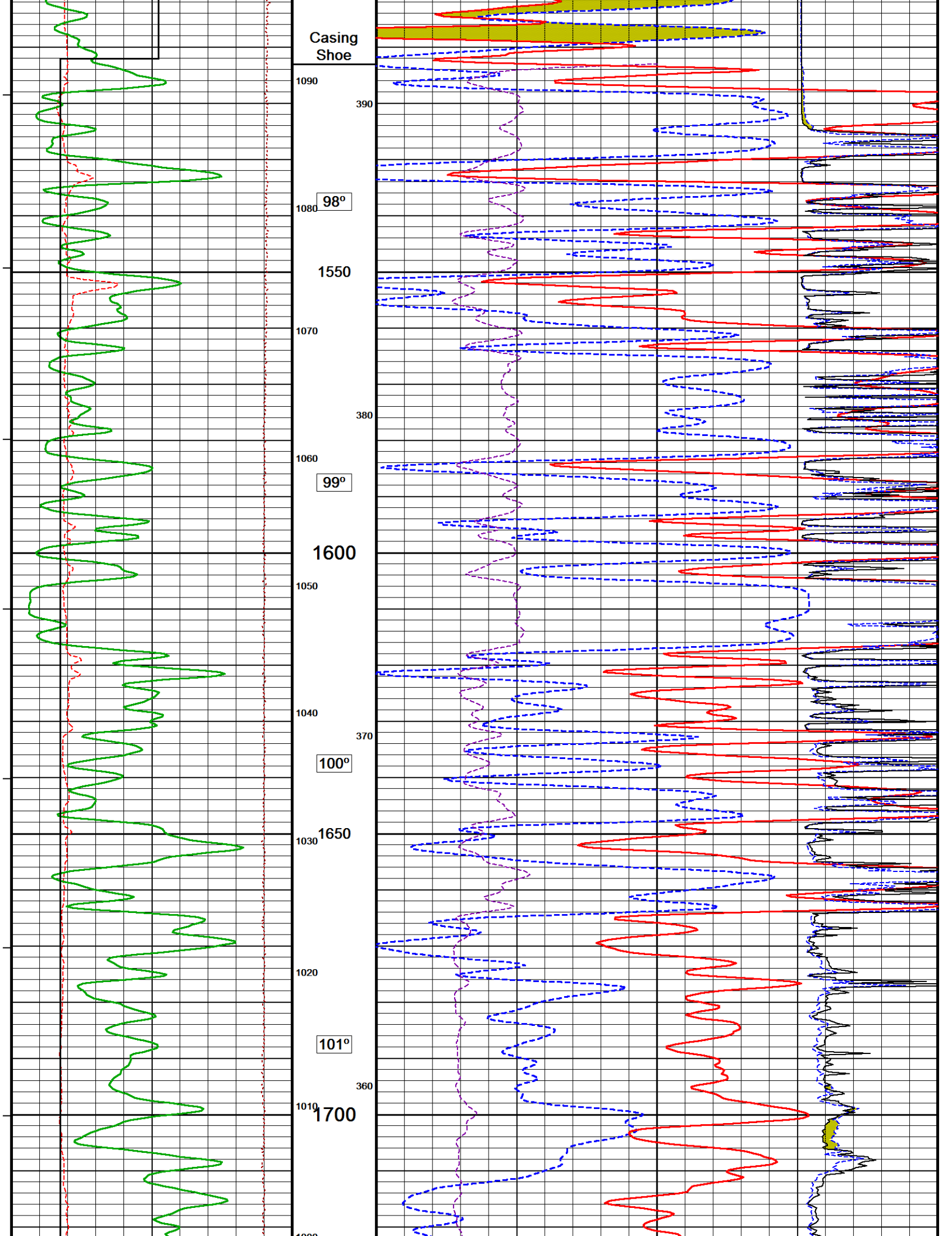
ALL LOGS SCALED AND PRESENTED PER CLIENT REQUEST.

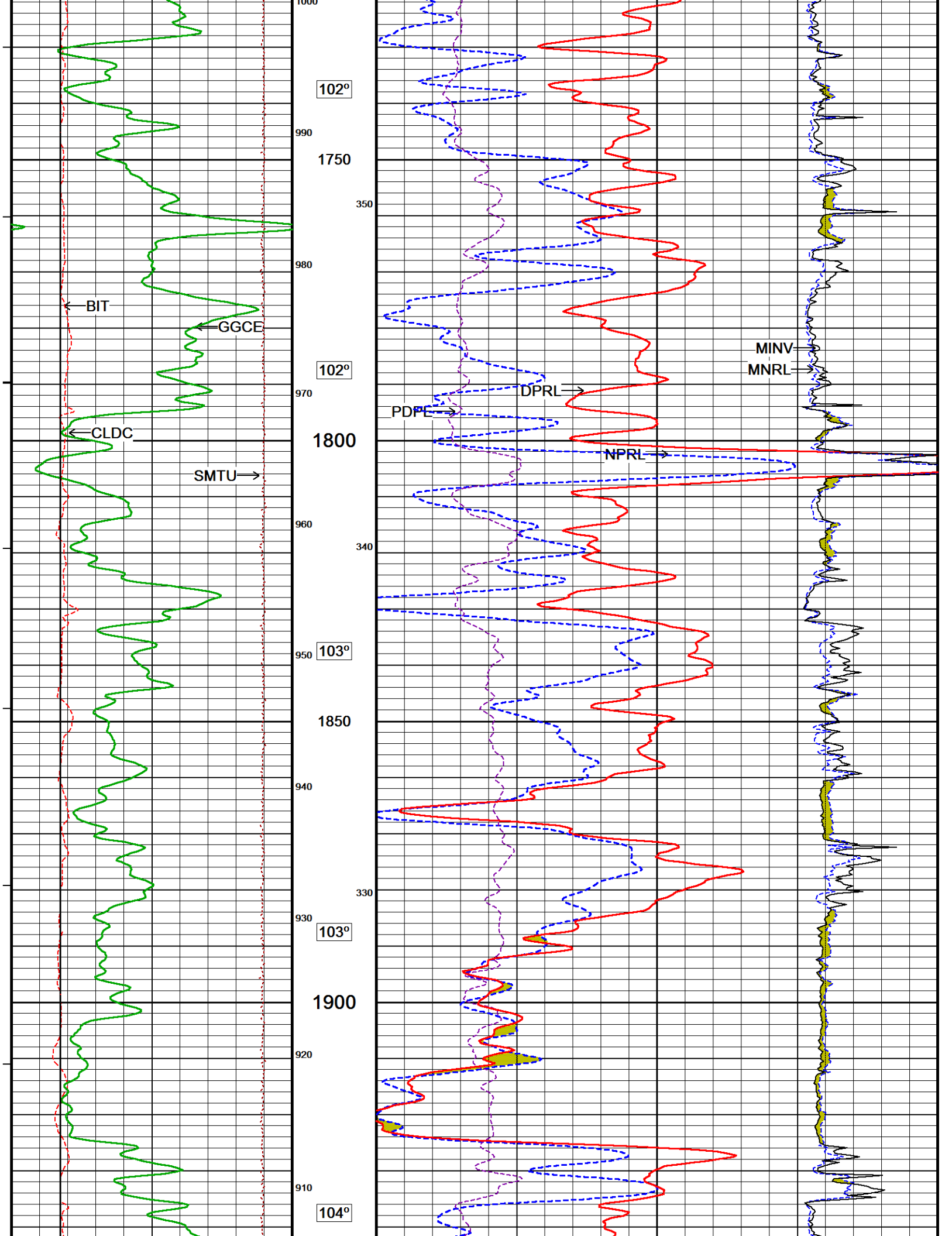
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

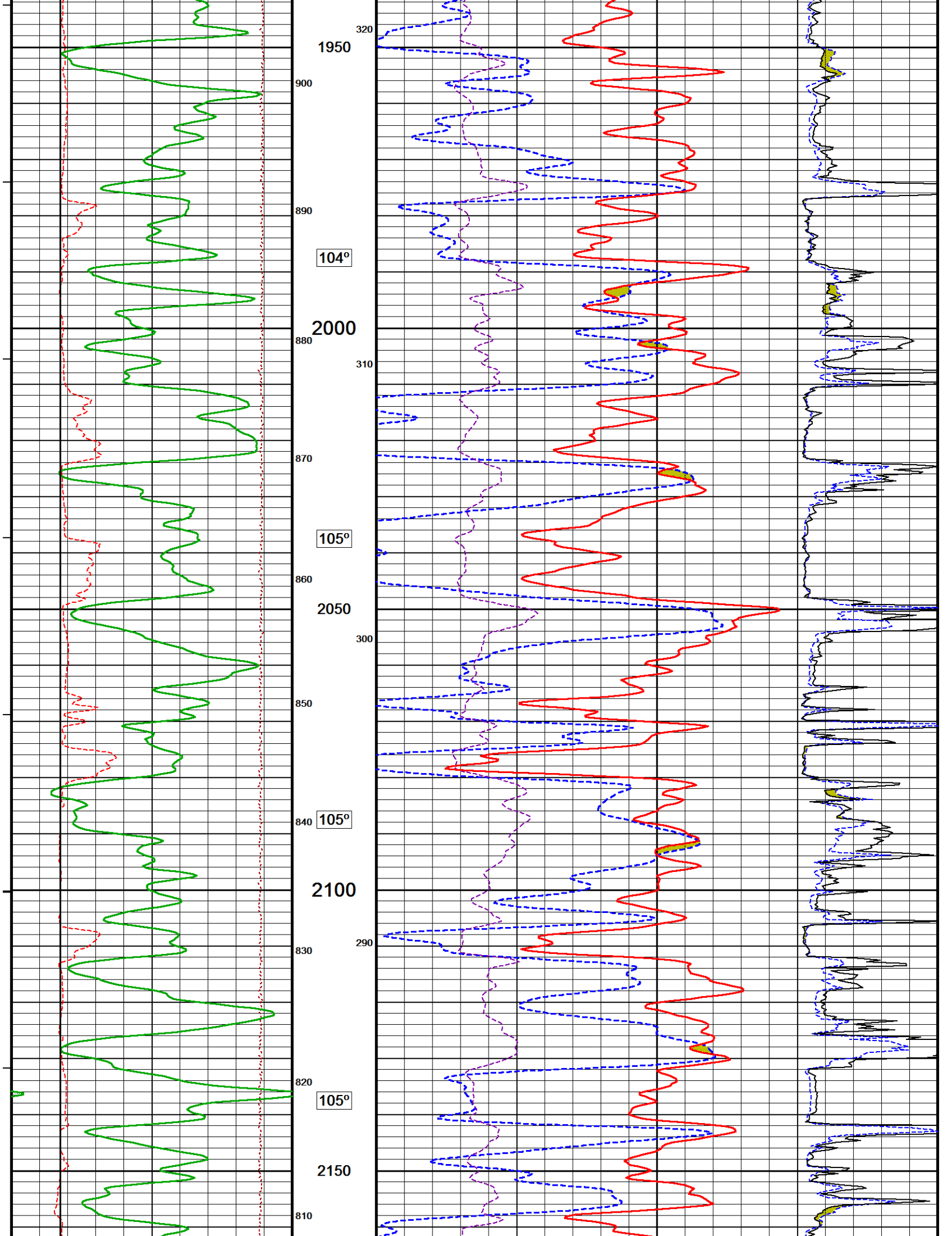
5 INCH MAIN PASS - POROSITY 1:240

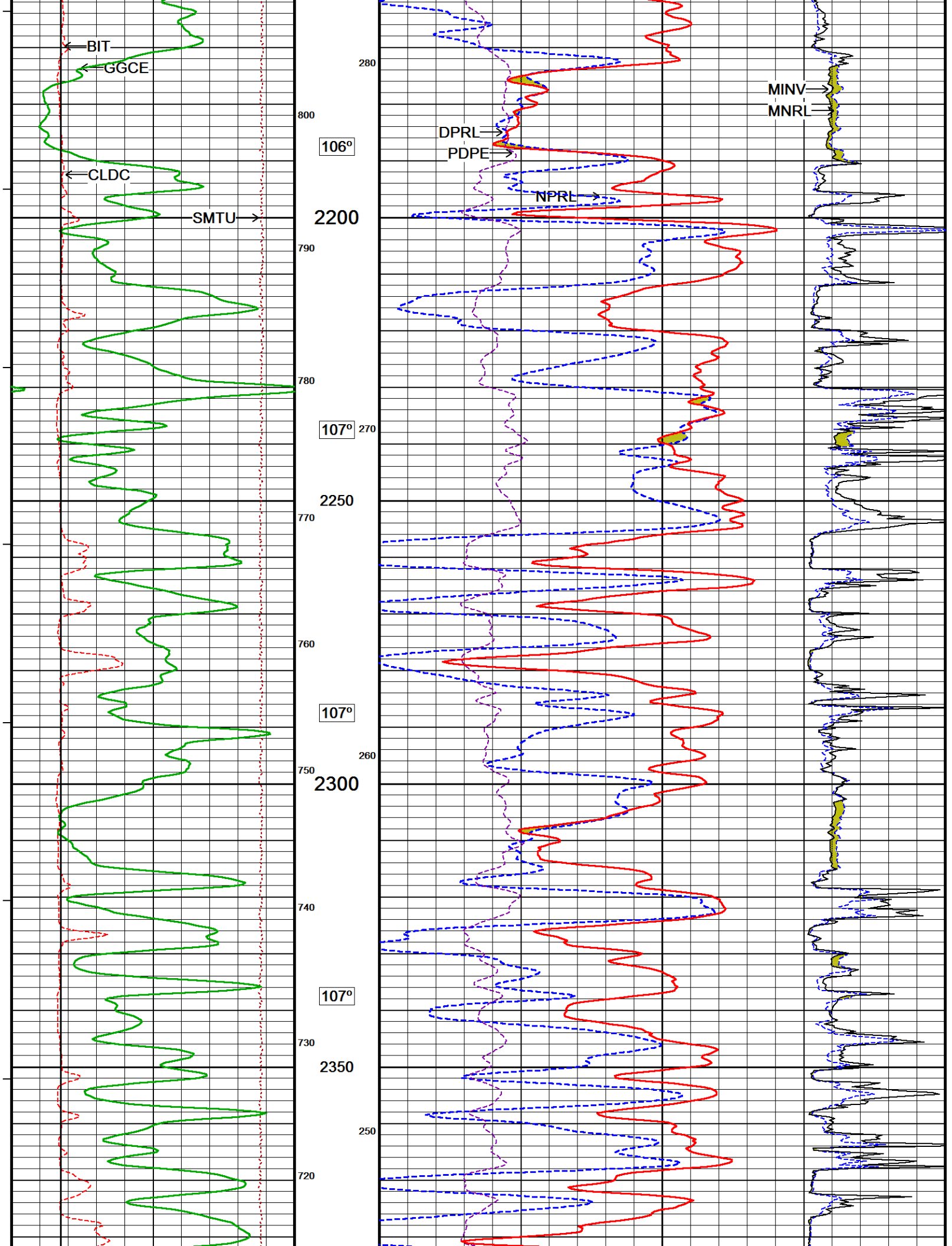
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 11-OCT-2017 05:26
 Filename: C:\Minimus 17.03.9609\DATA\UNIT PETROLEUM COMPANY_GEESLIN...MAIN PASS 1.dta Recorded on 11-OCT-2017 02:52
 System Versions: Logged with 17.03.9609 Processed with 17.03.9609 Plotted with 17.03.9609

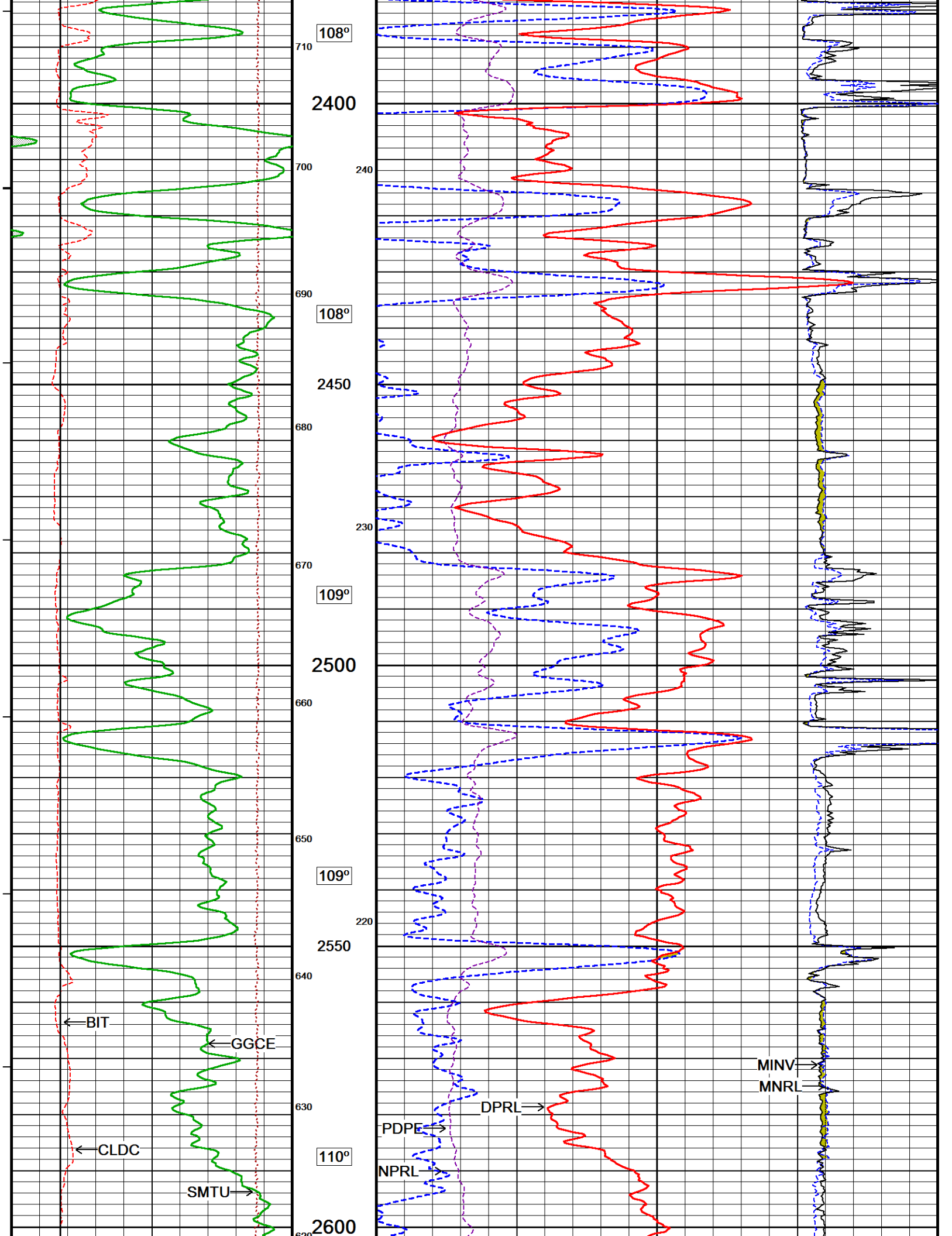


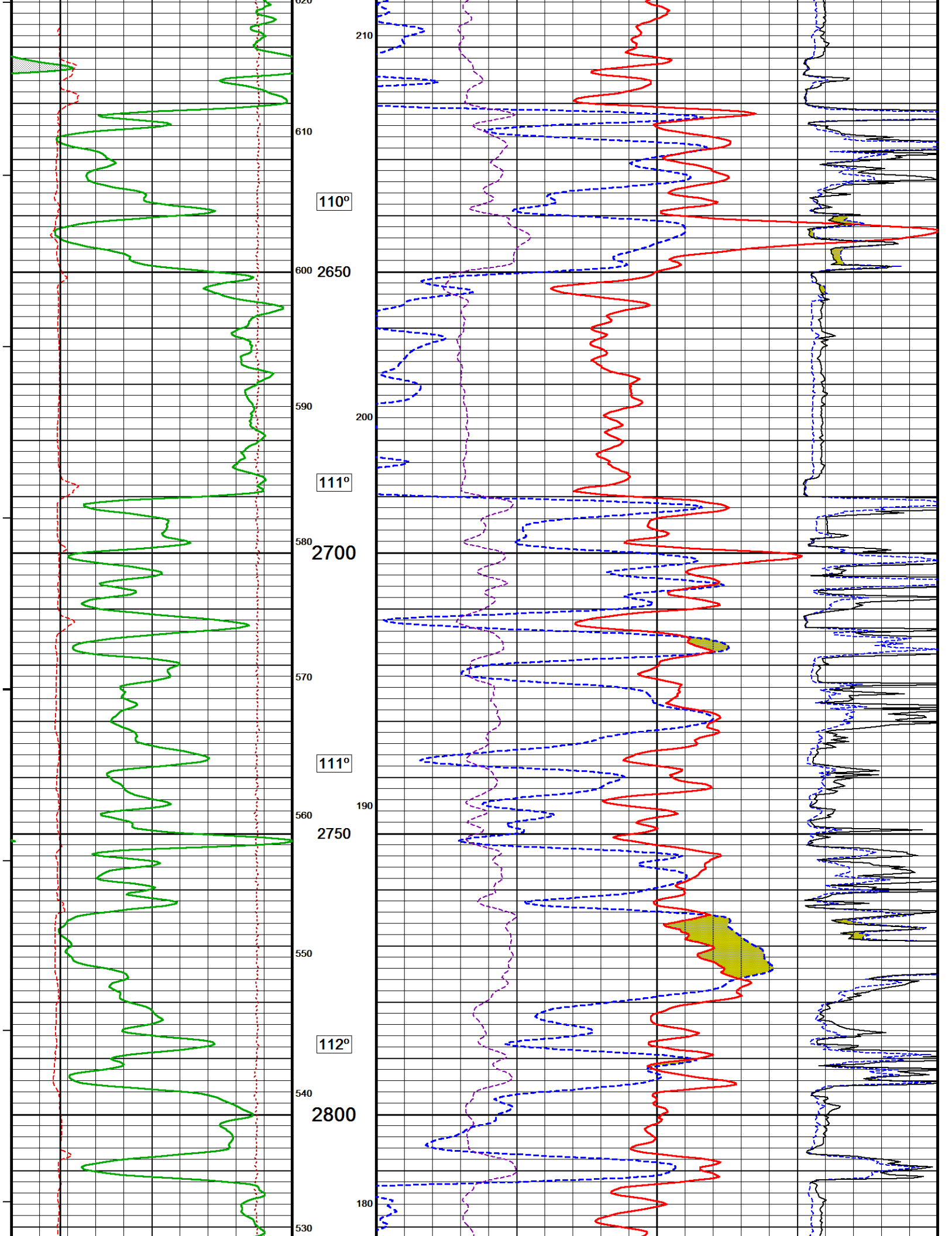


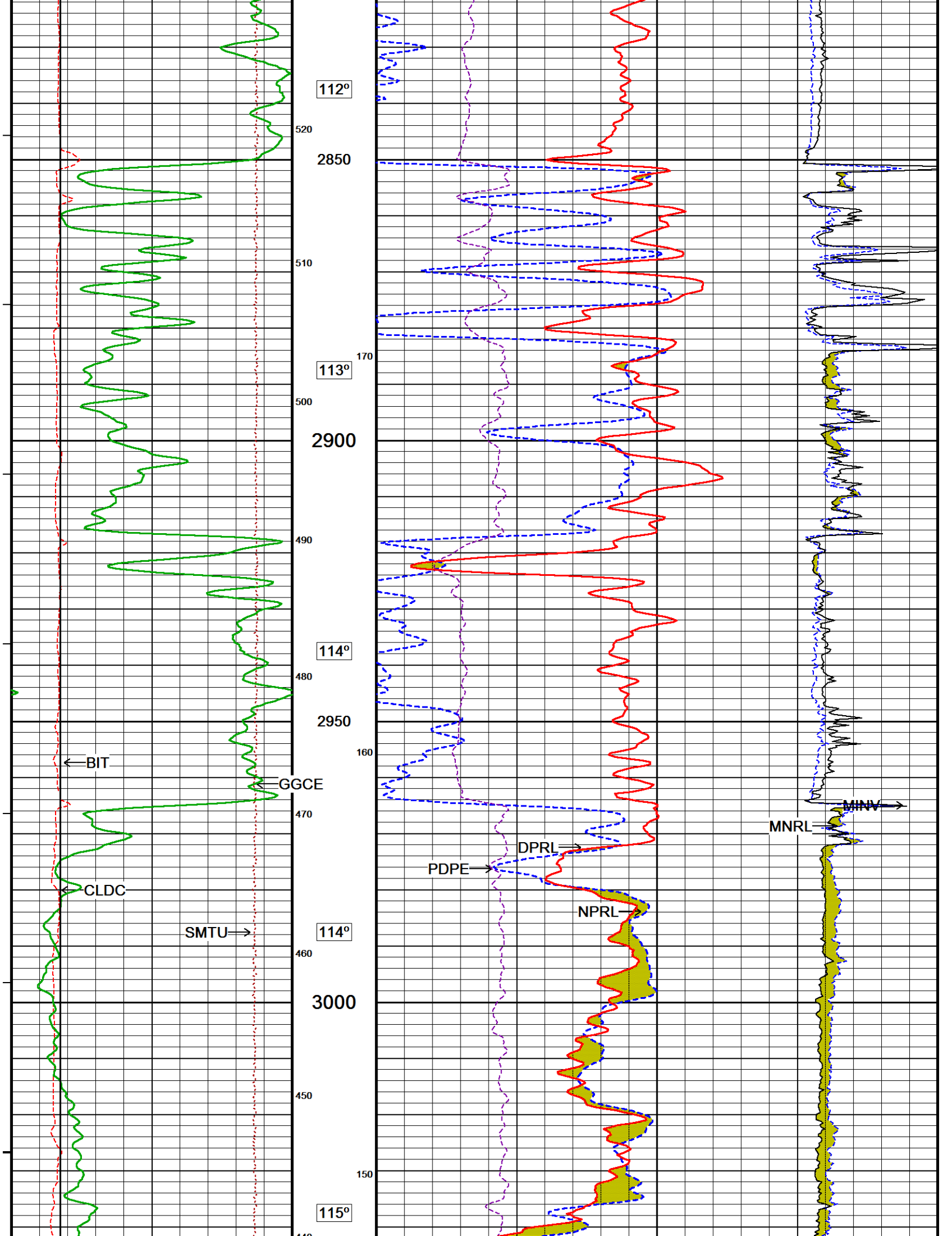


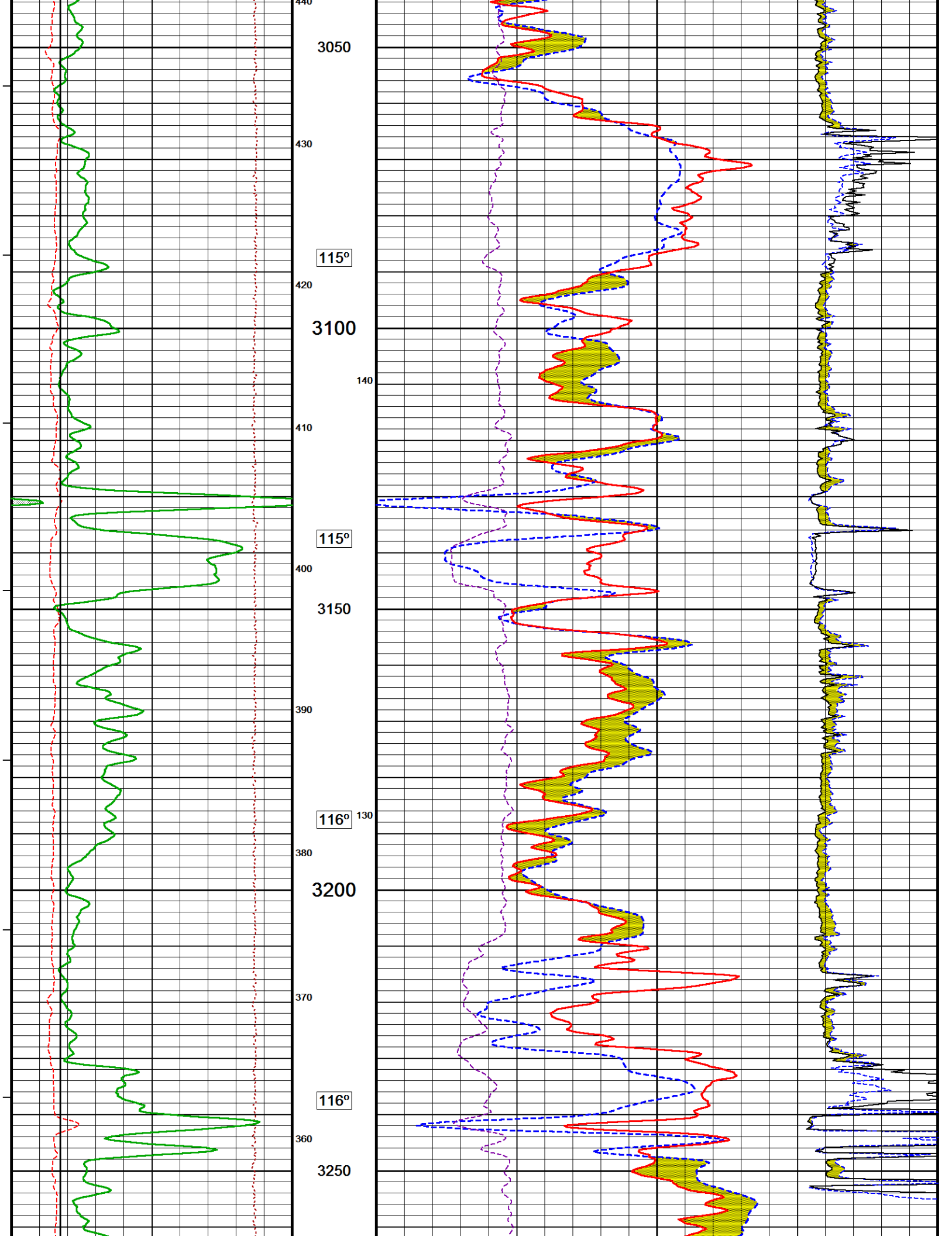


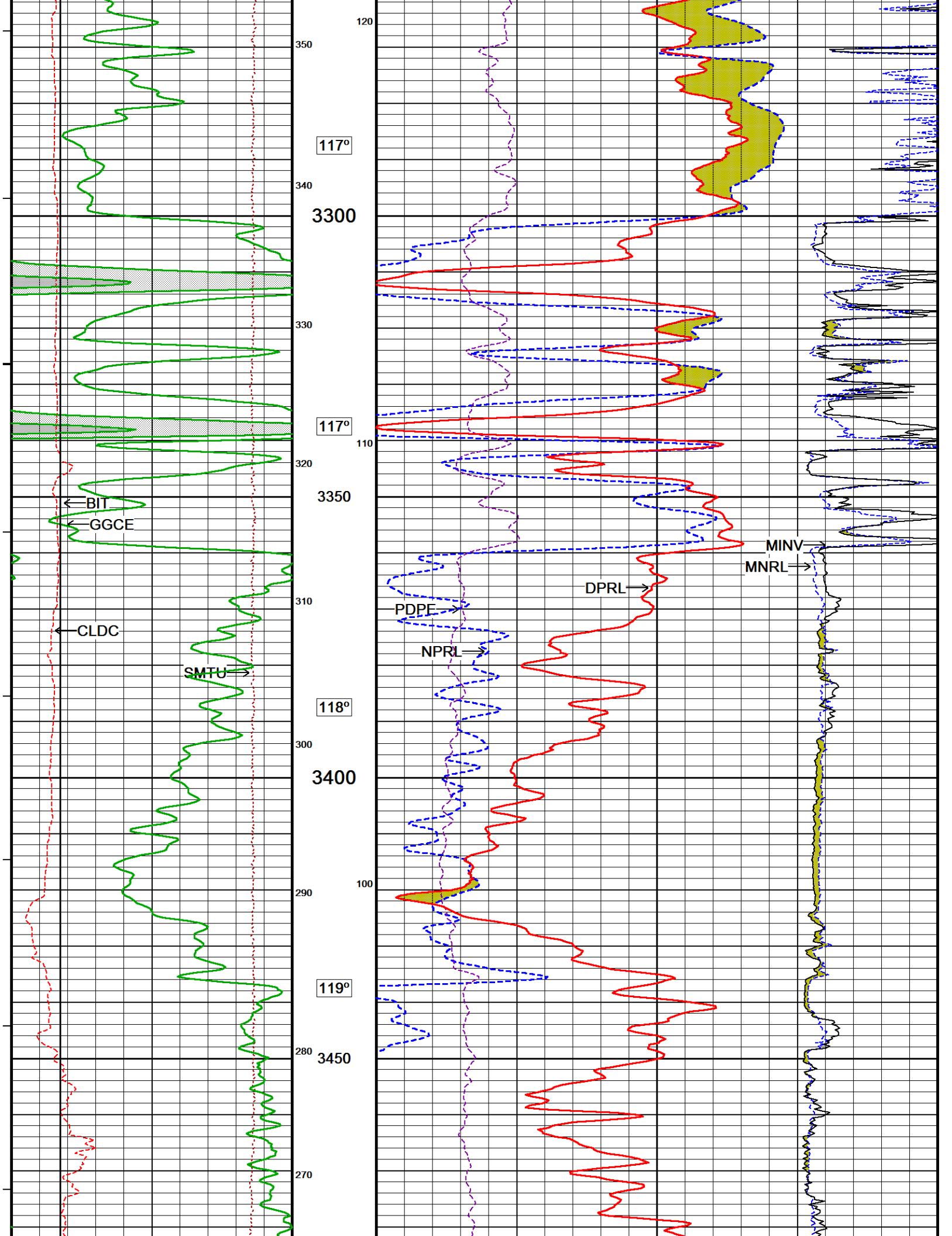


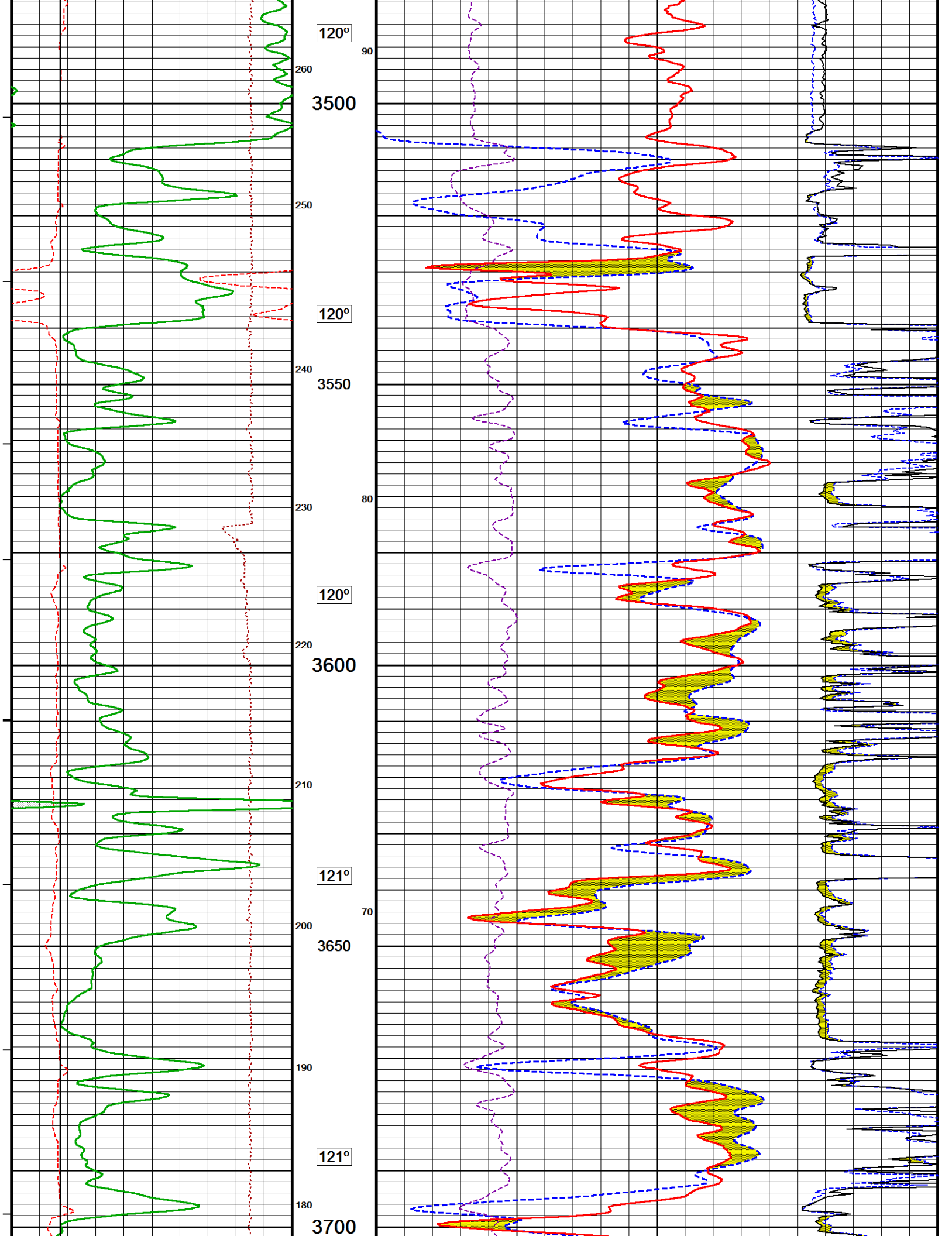


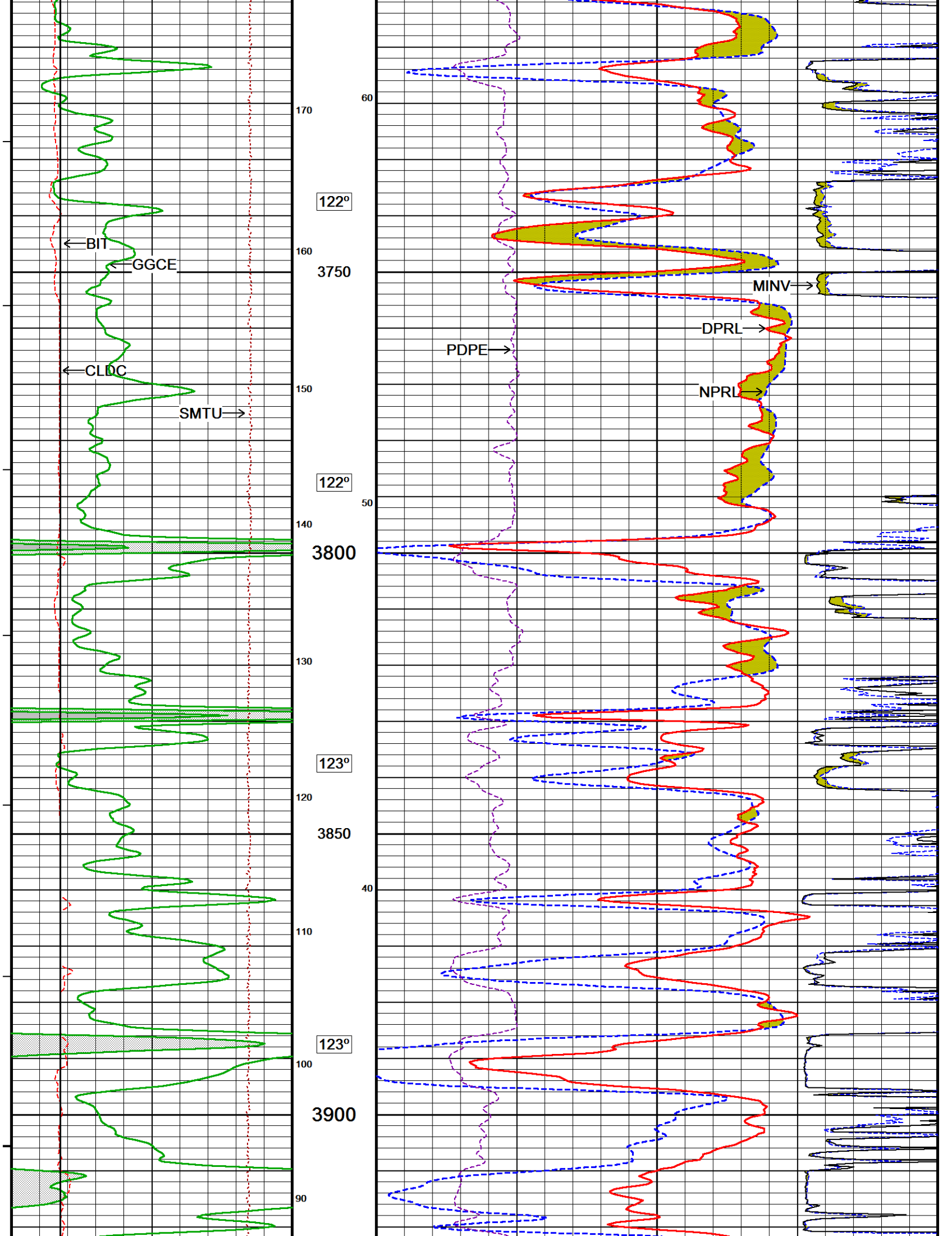


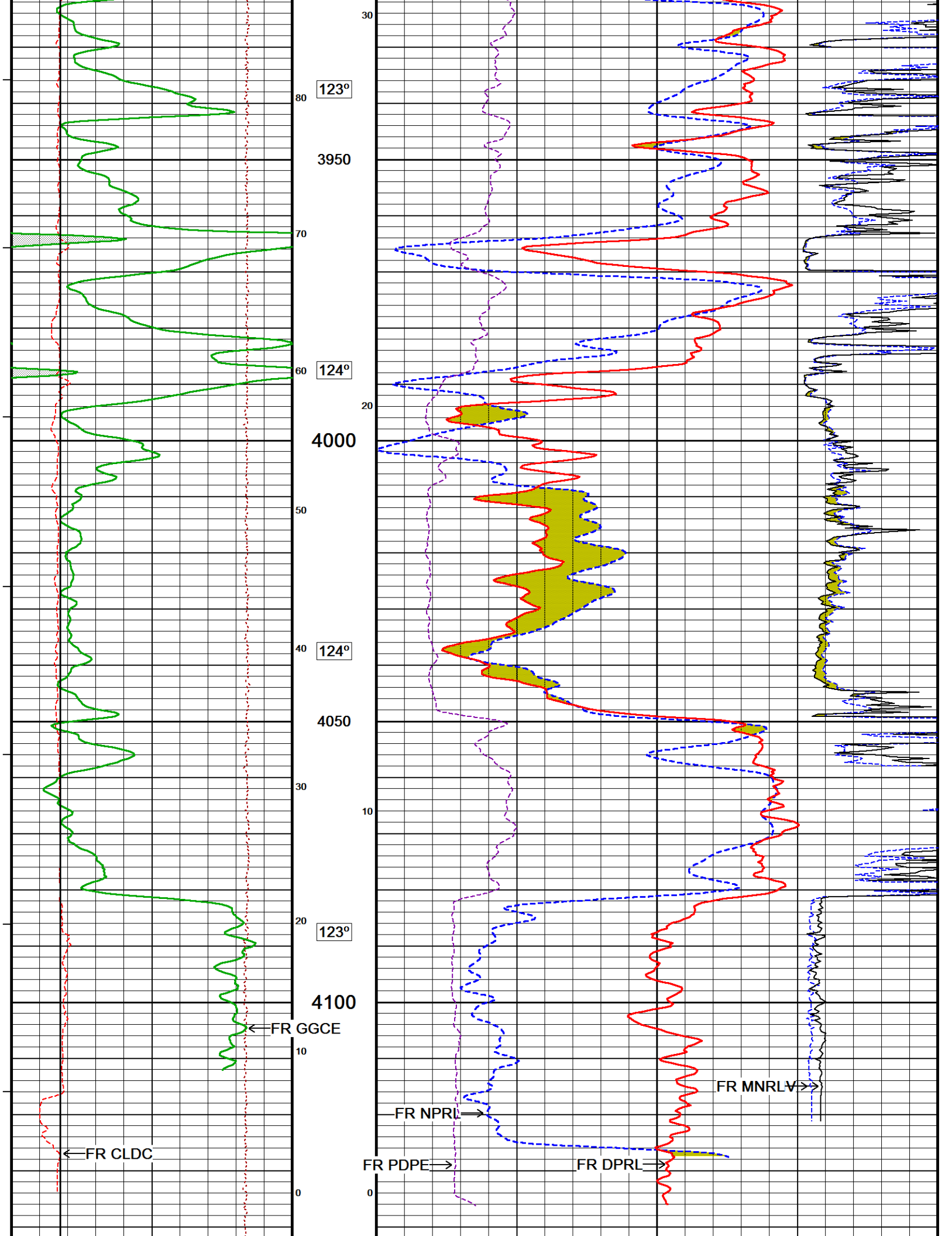


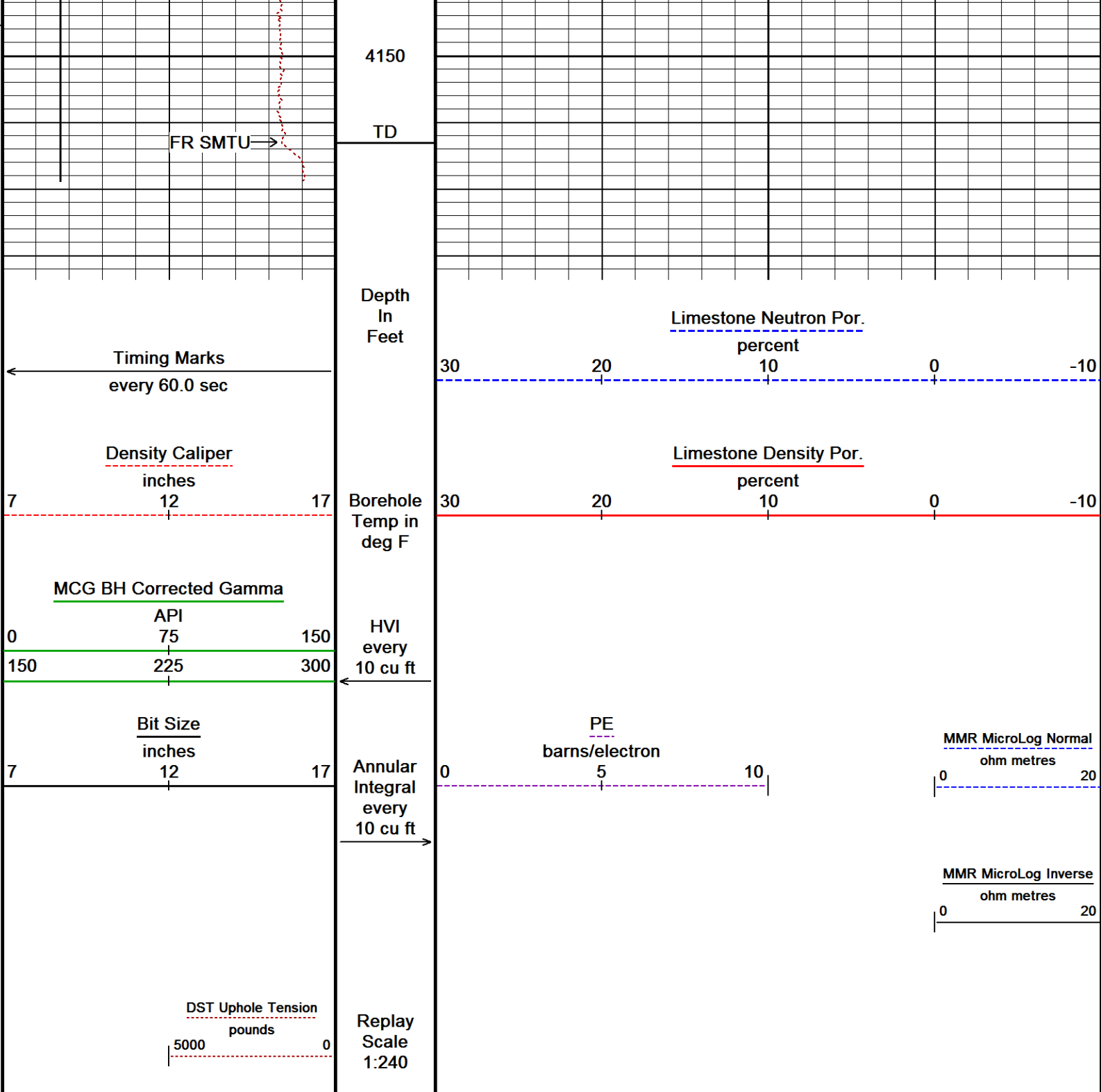




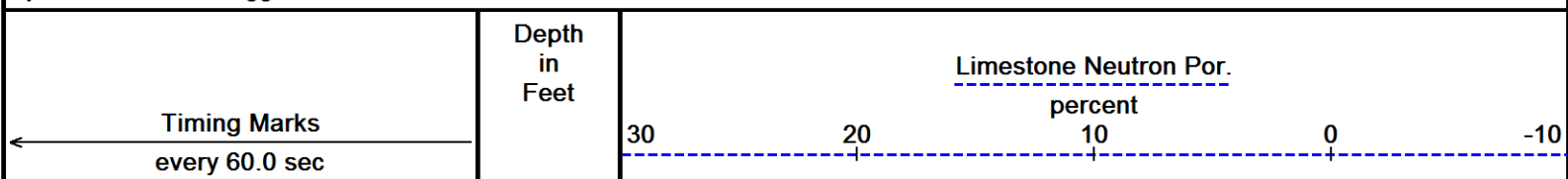
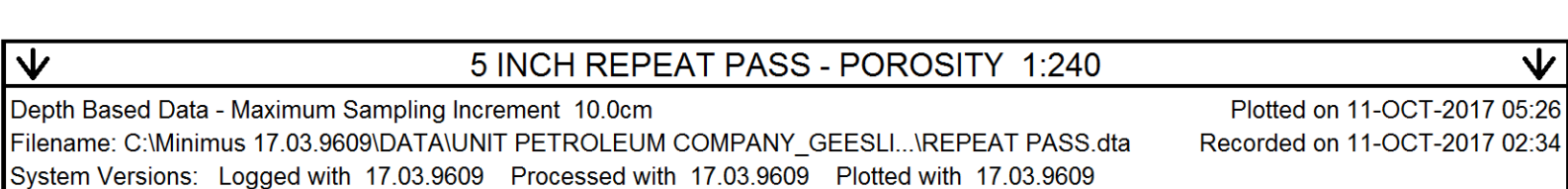


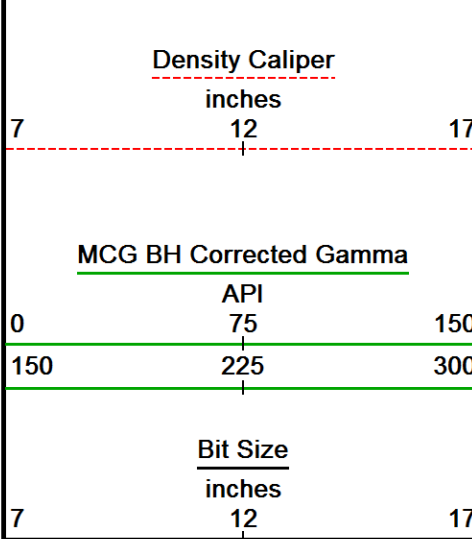






5 INCH MAIN PASS - POROSITY 1:240

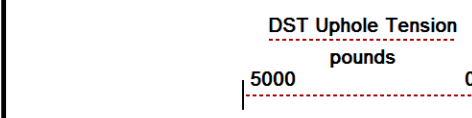
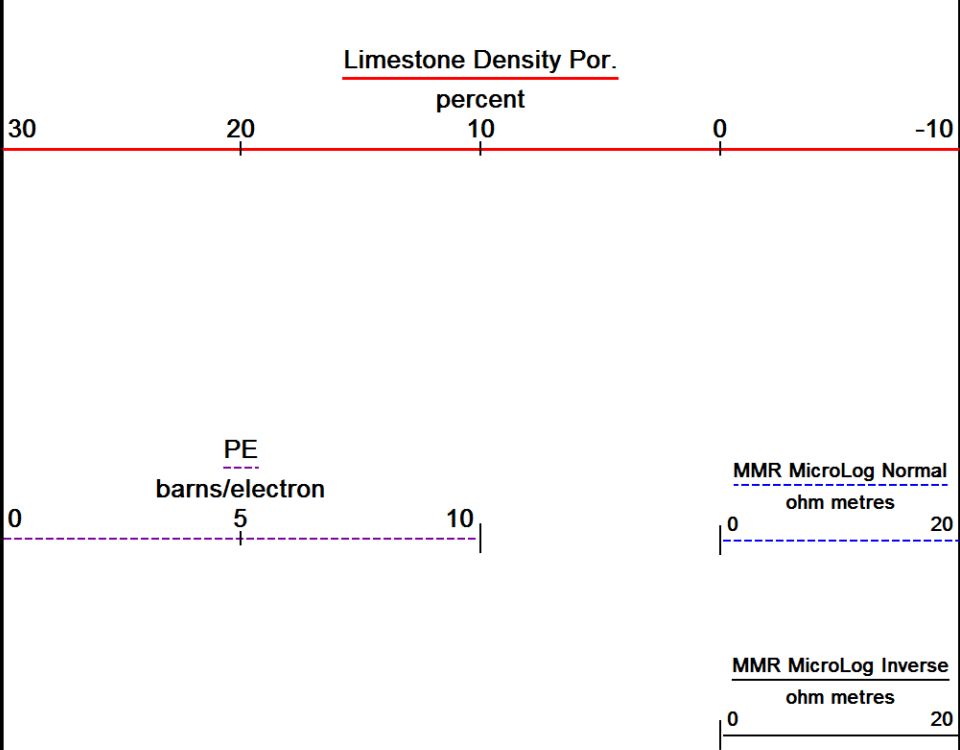




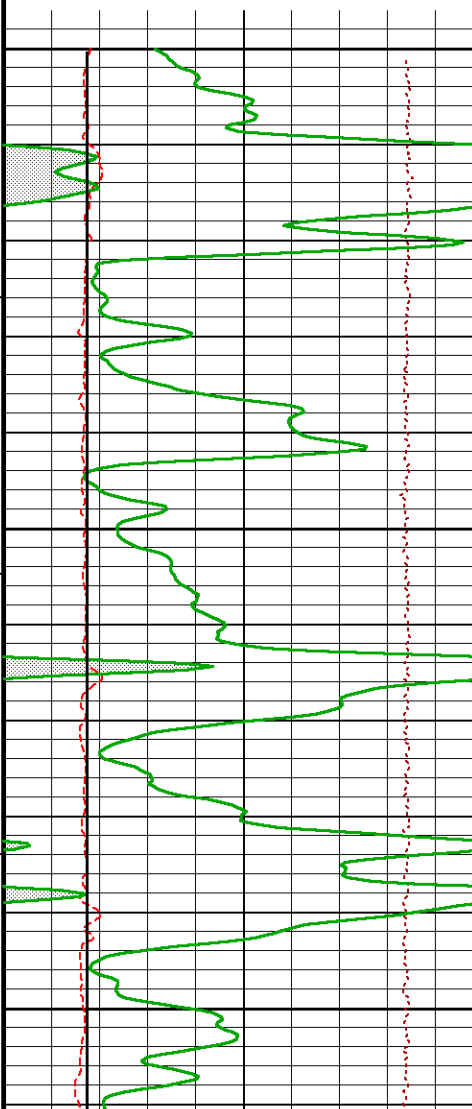
Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft



Replay Scale 1:240



3900

90

80

123°

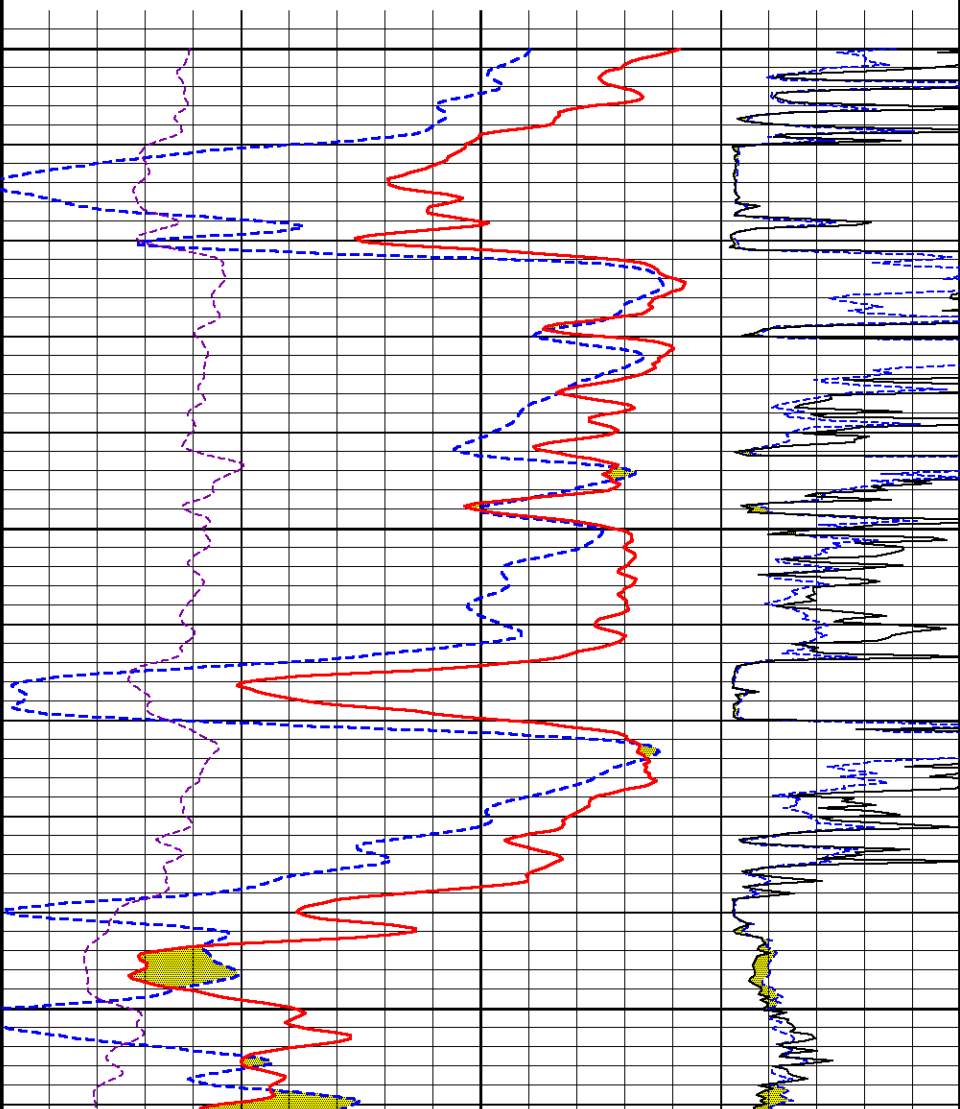
3950

70

60

123°

4000



3900

90

80

123°

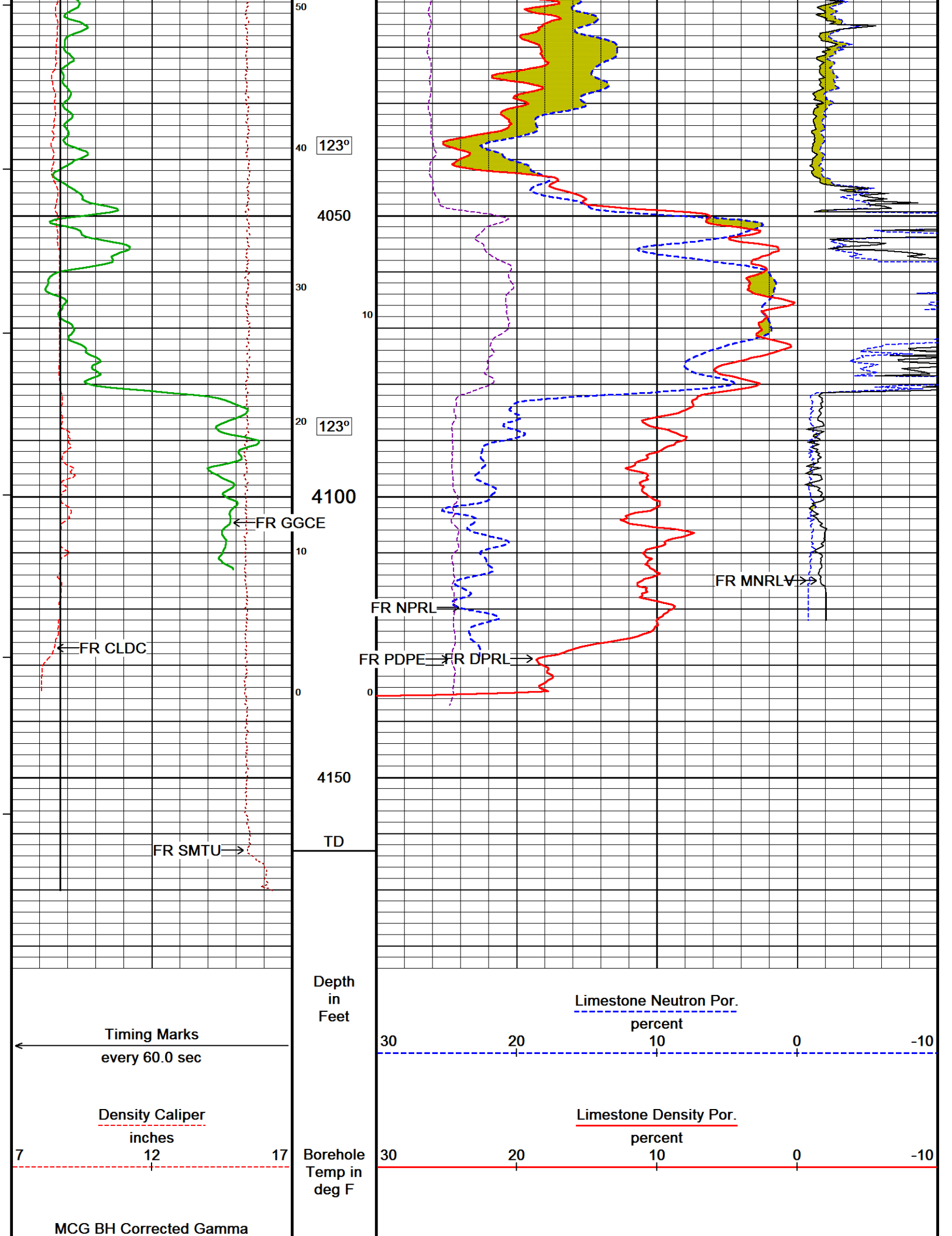
3950

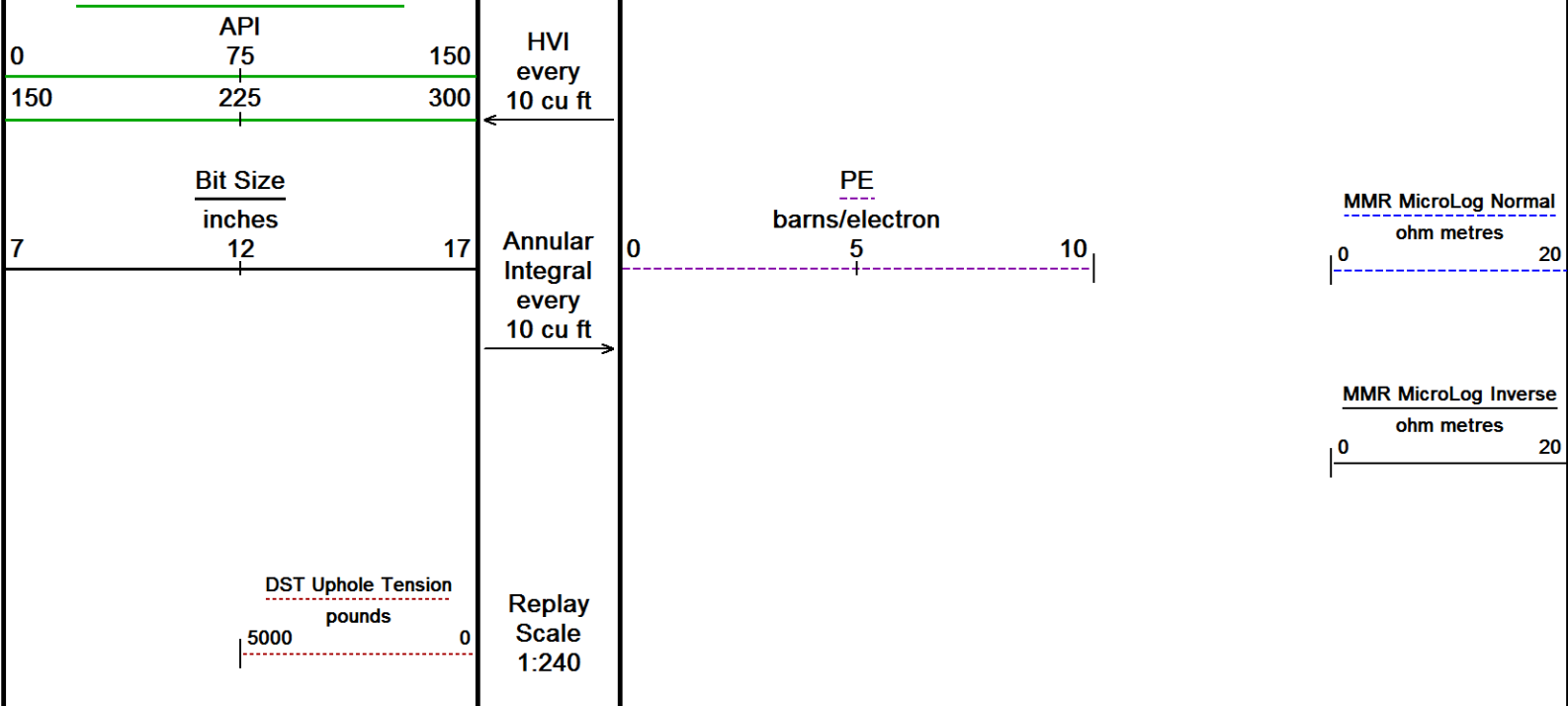
70

60

123°

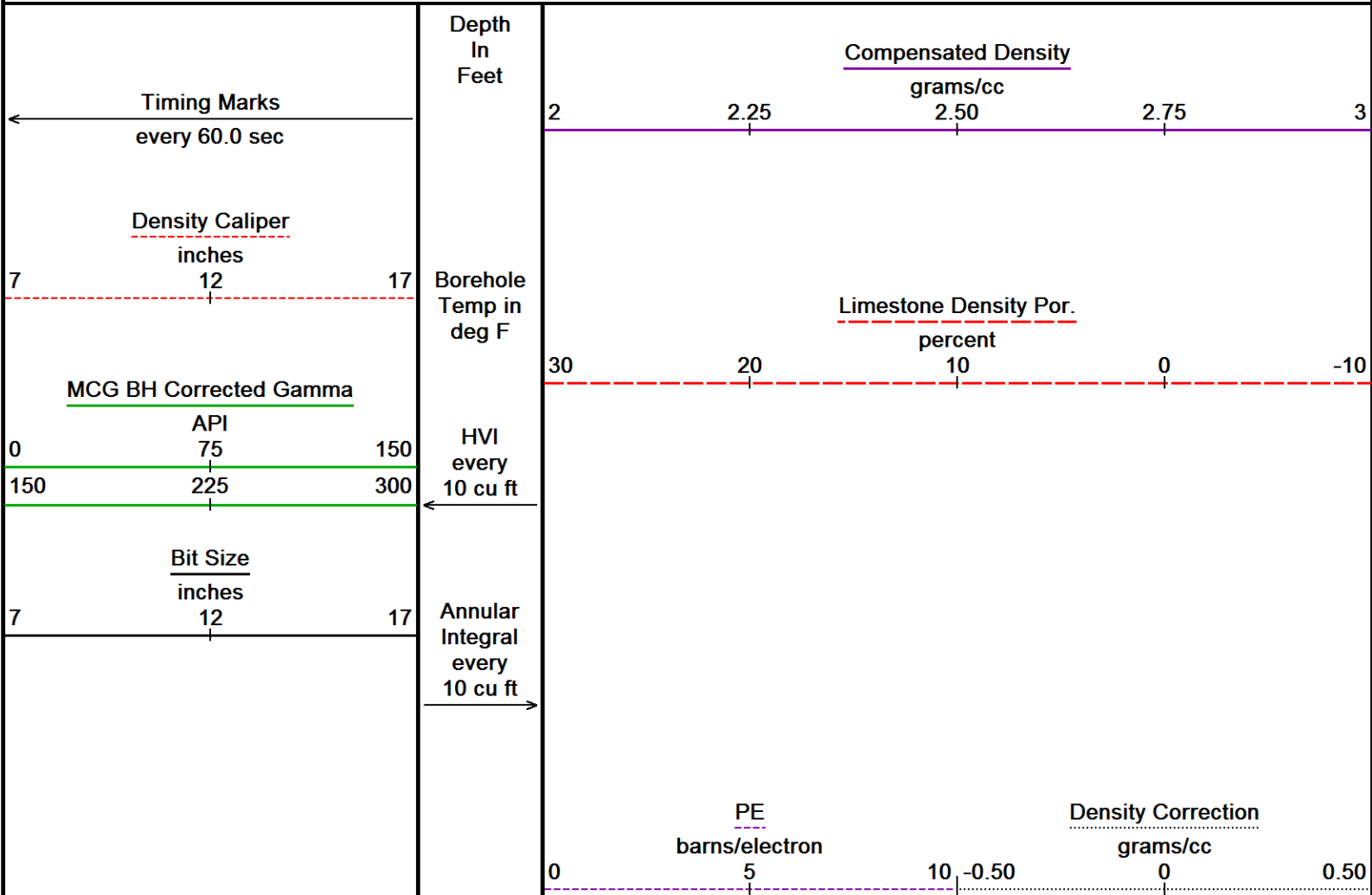
4000





5 INCH MAIN PASS - BULK DENSITY 1:240

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DST Uphole Tension
pounds

5000 0

Replay
Scale
1:240

1488
1100
1500
Casing
Shoe

1090
390

1080 98°

1550

1070

380

1060 99°

1600

1050

1040 370

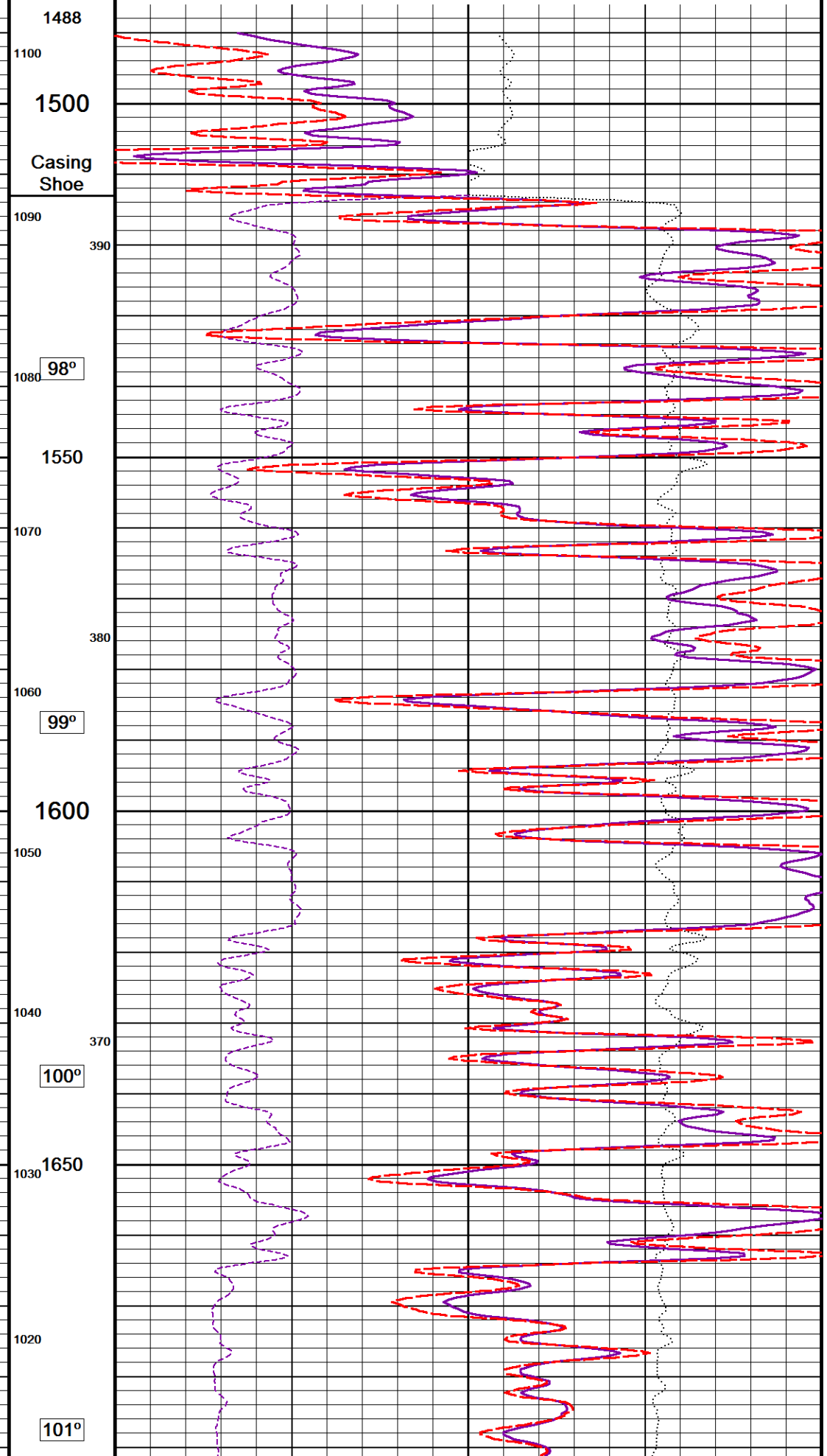
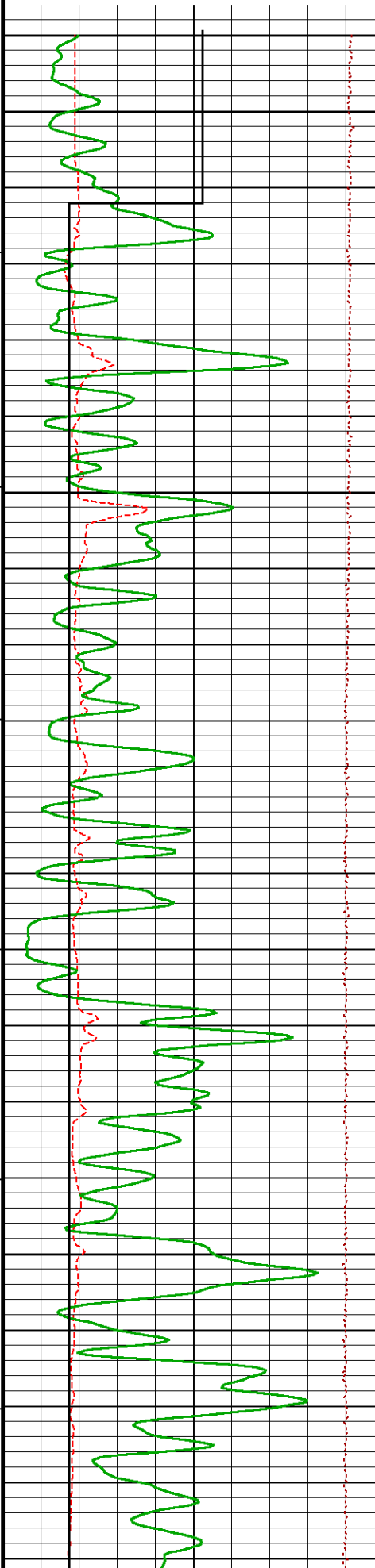
100°

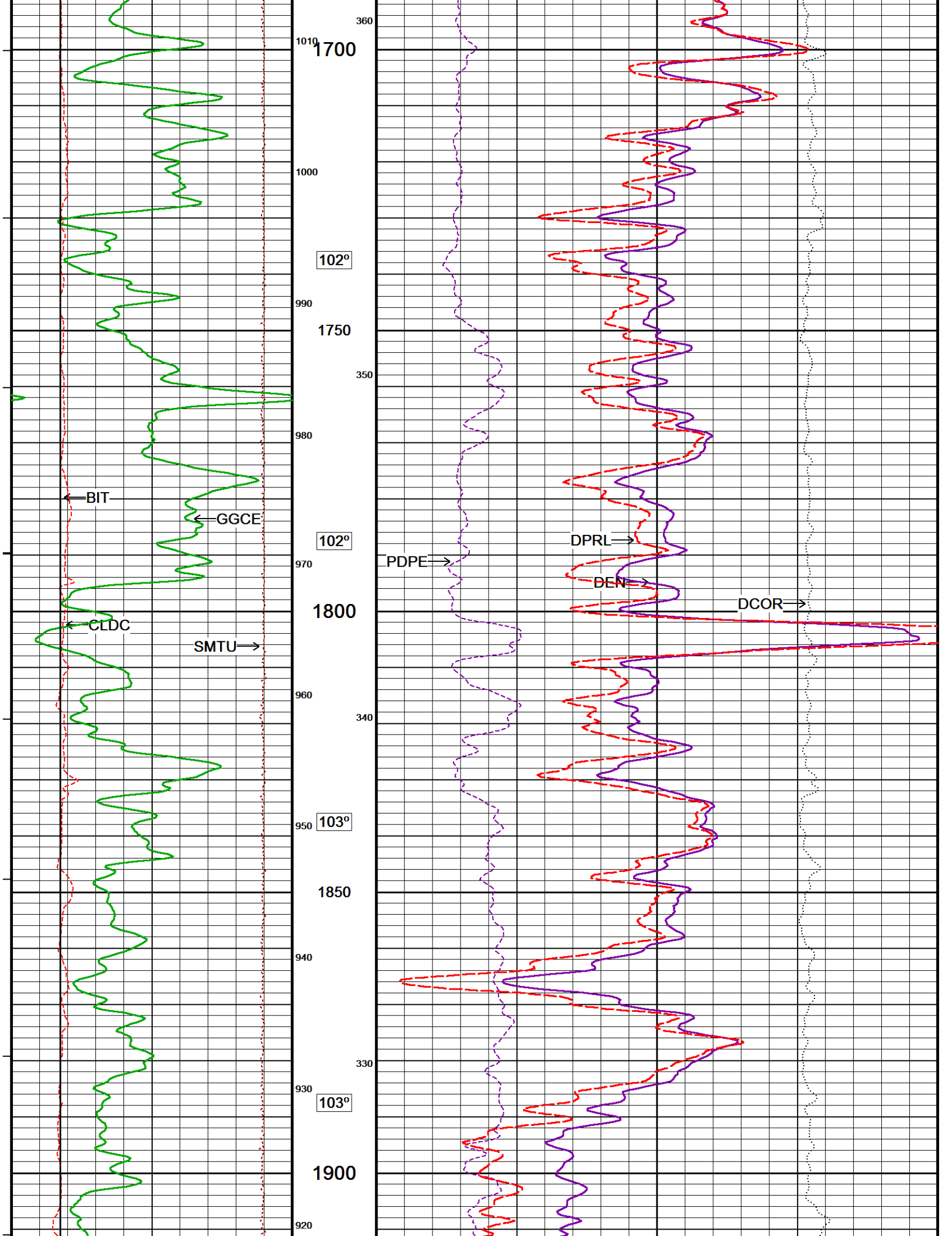
1650

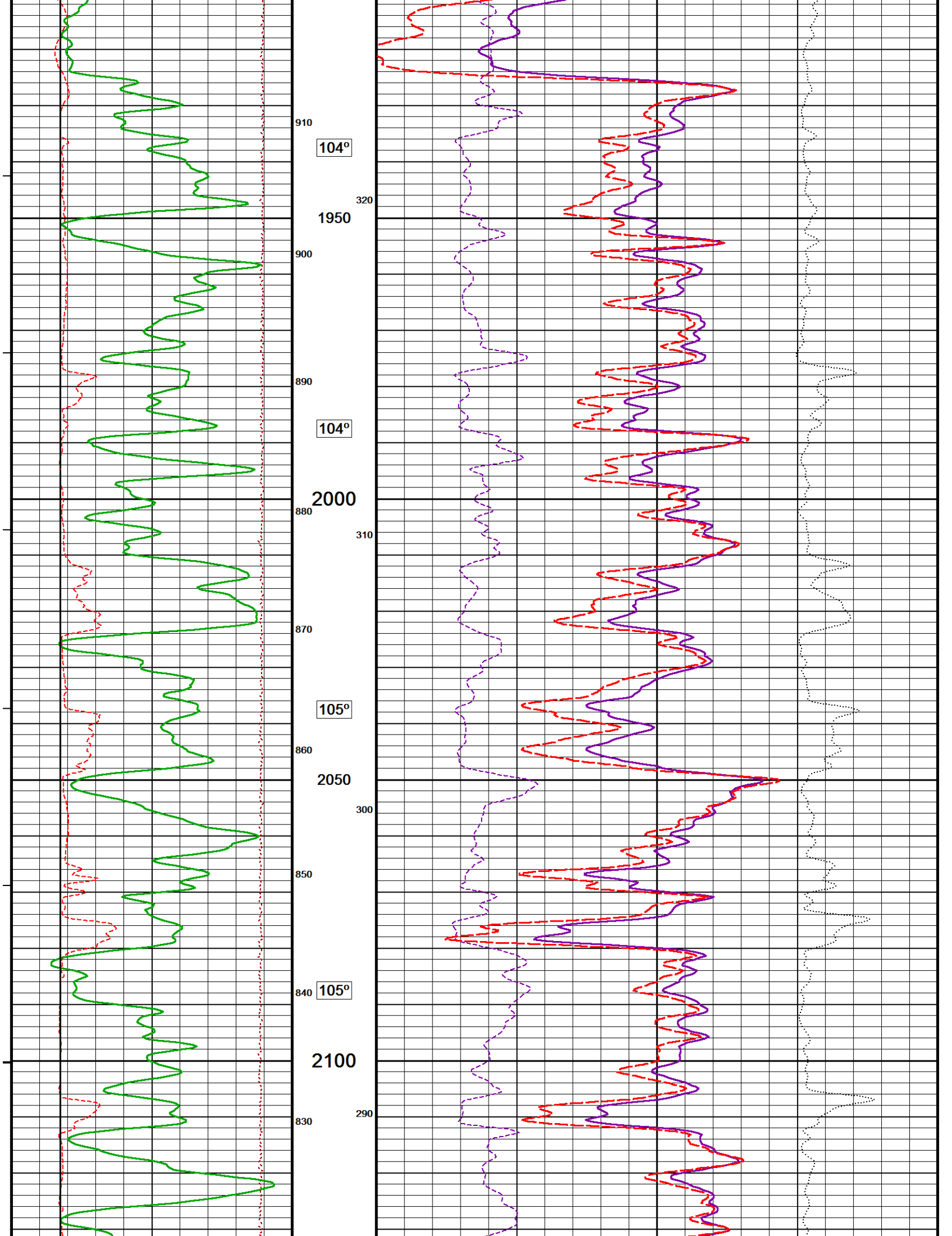
1030

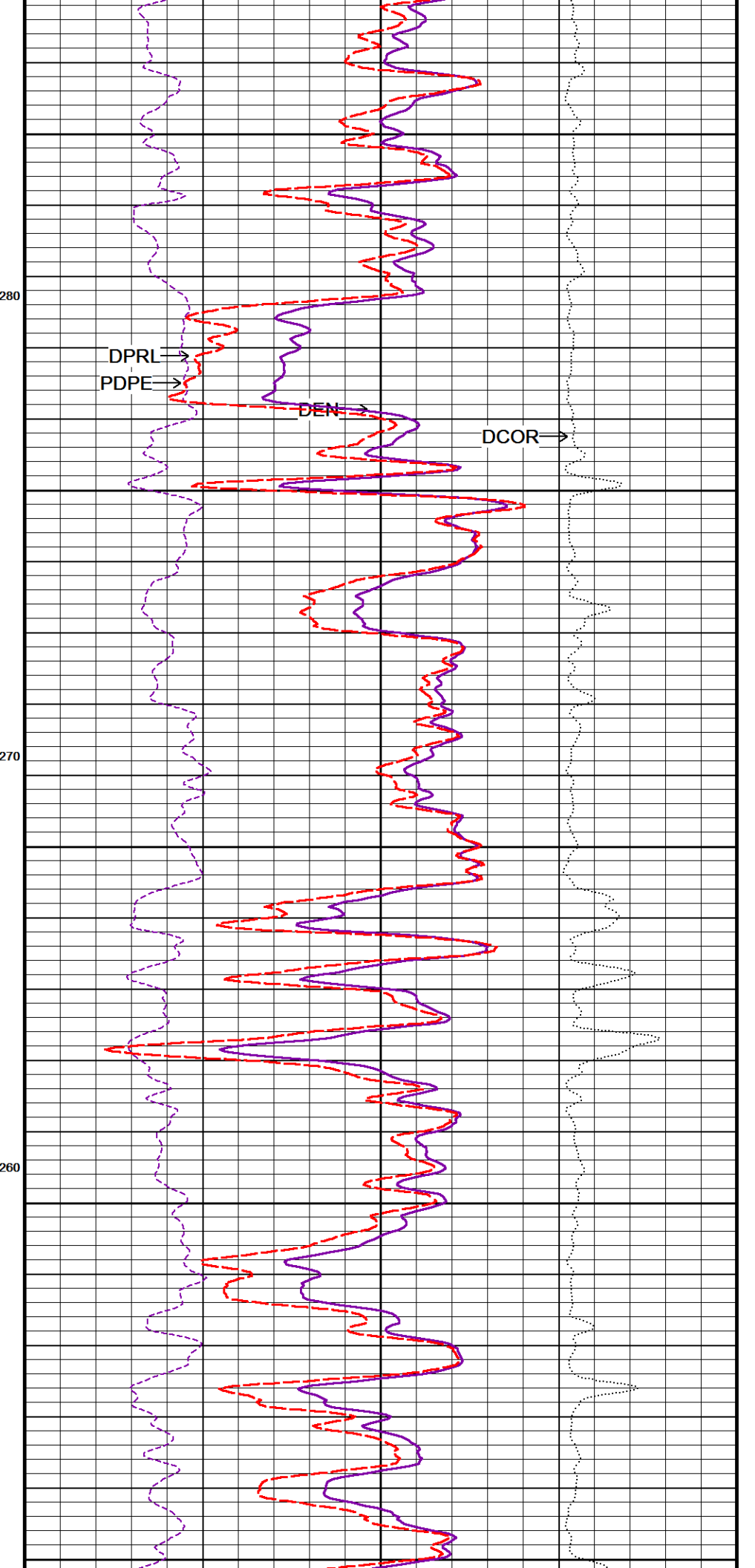
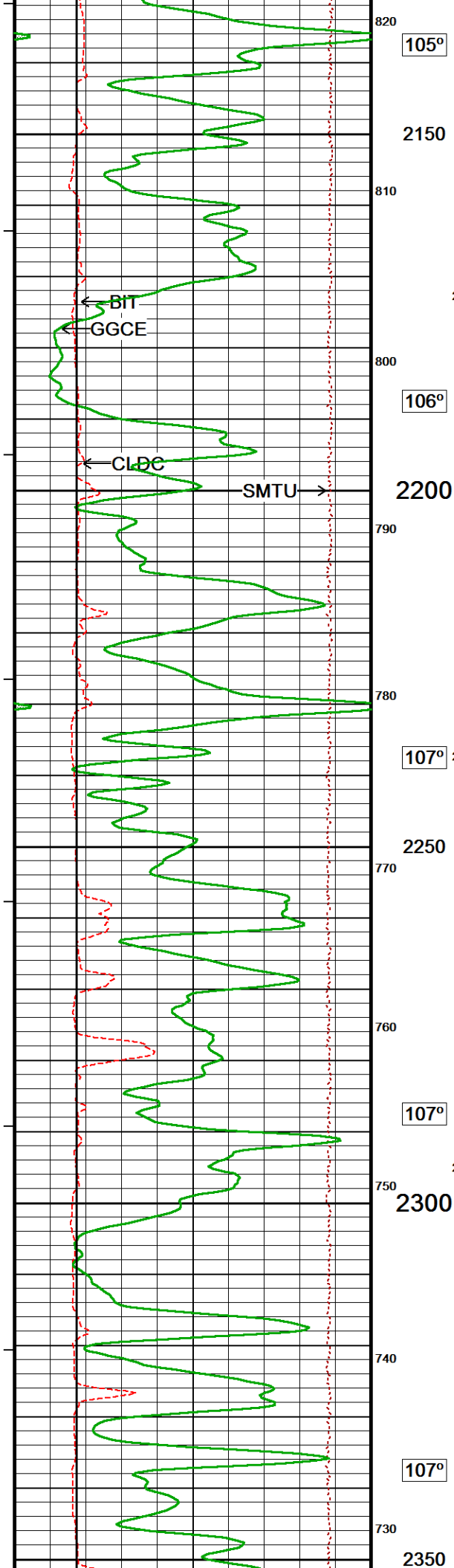
1020

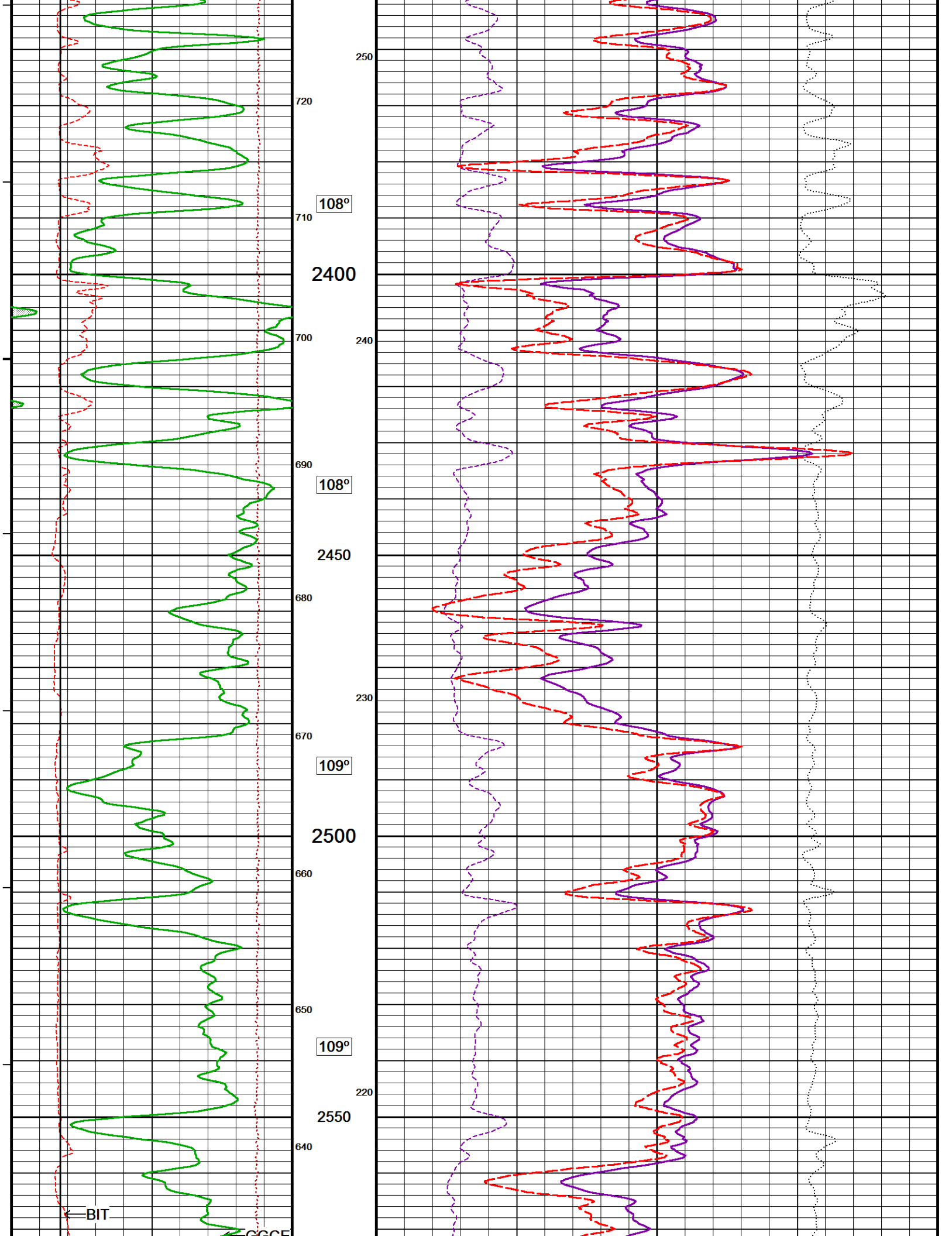
101°

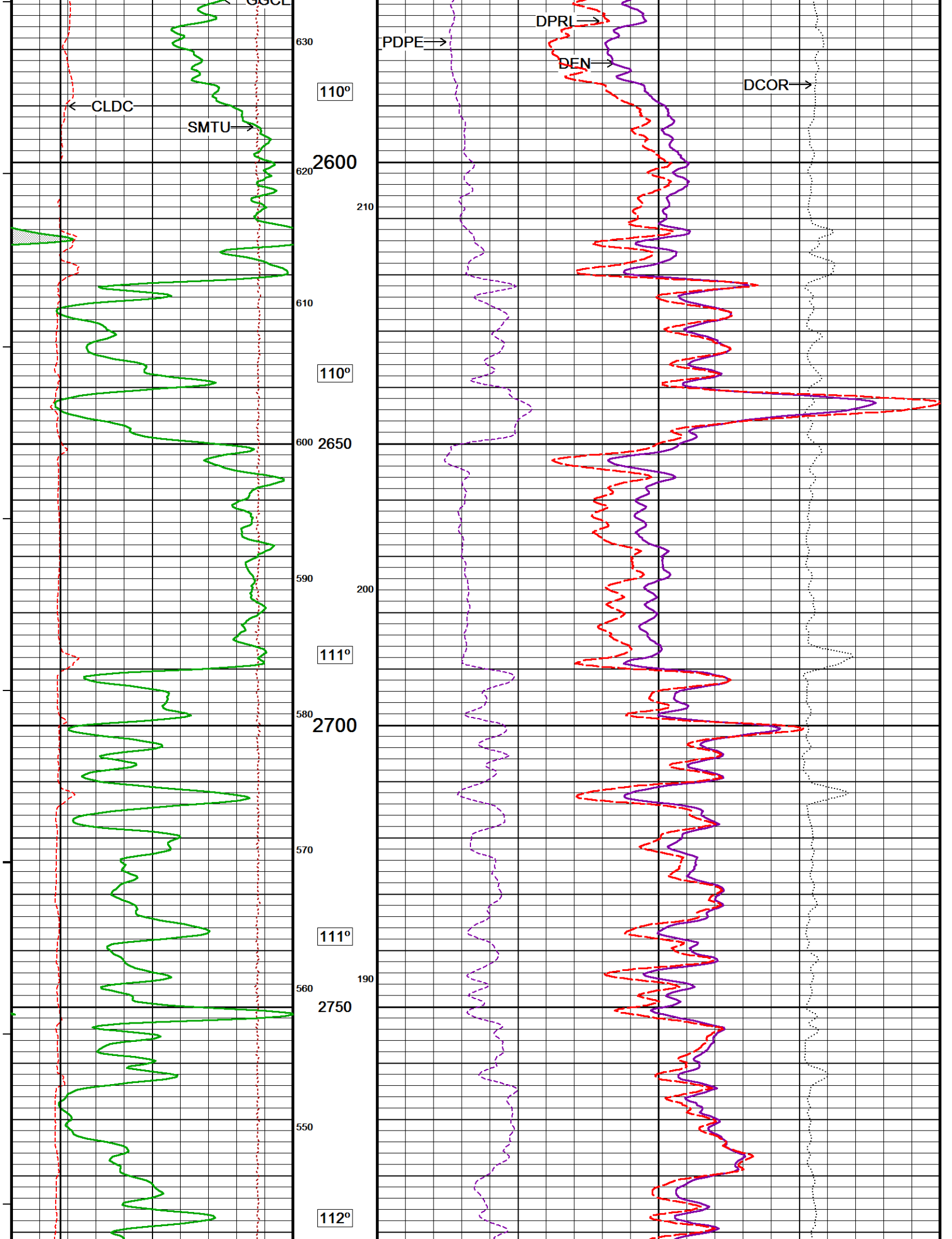


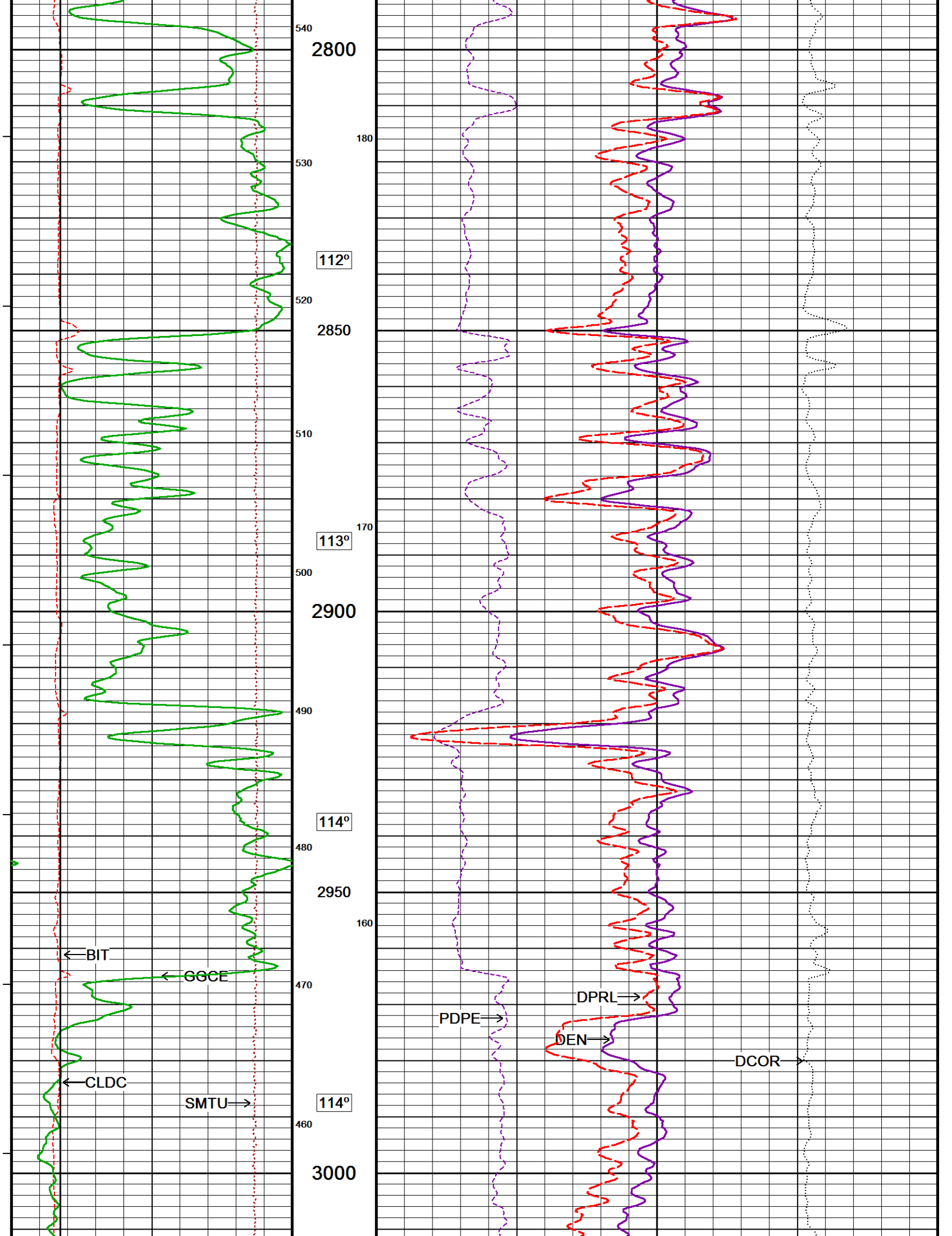


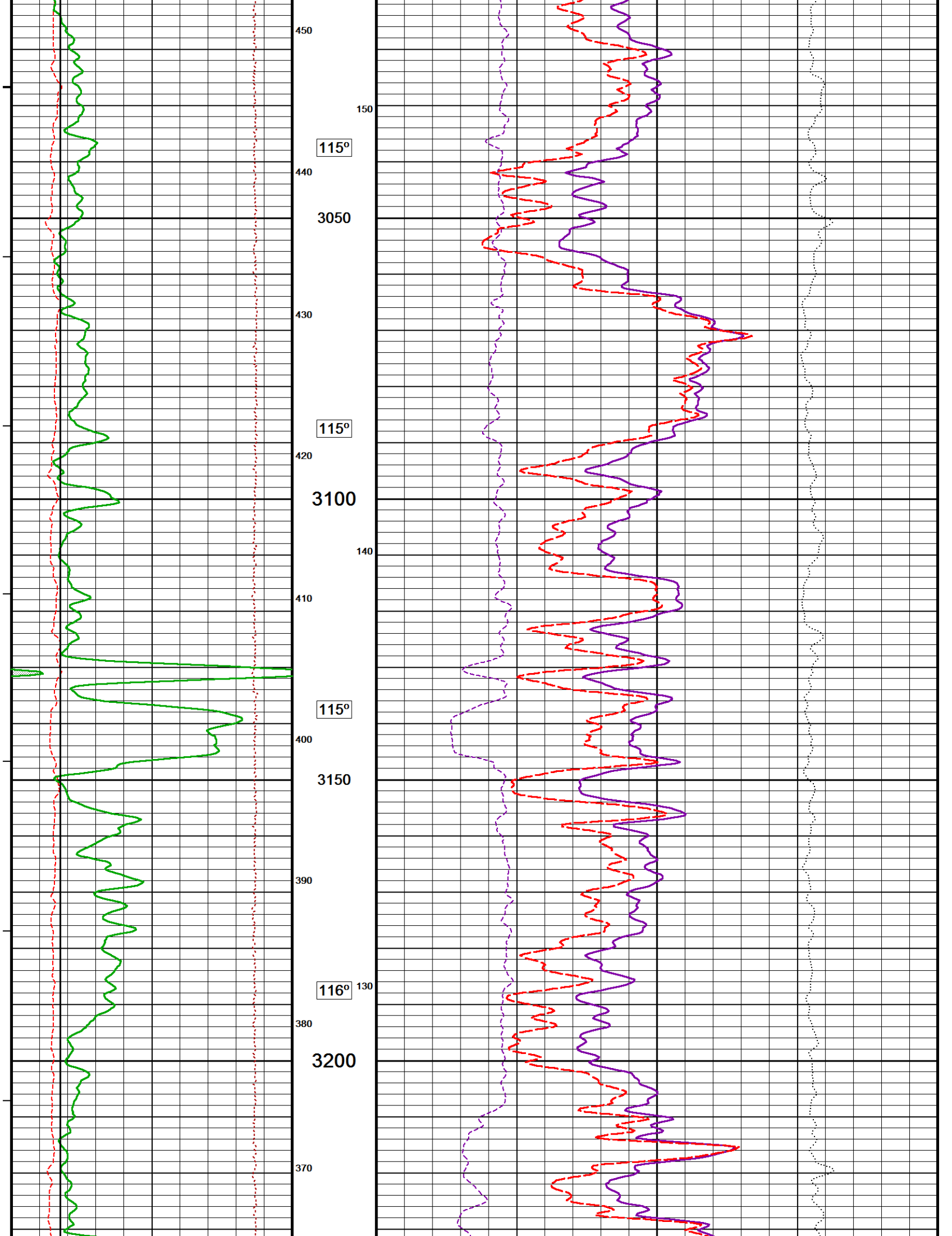


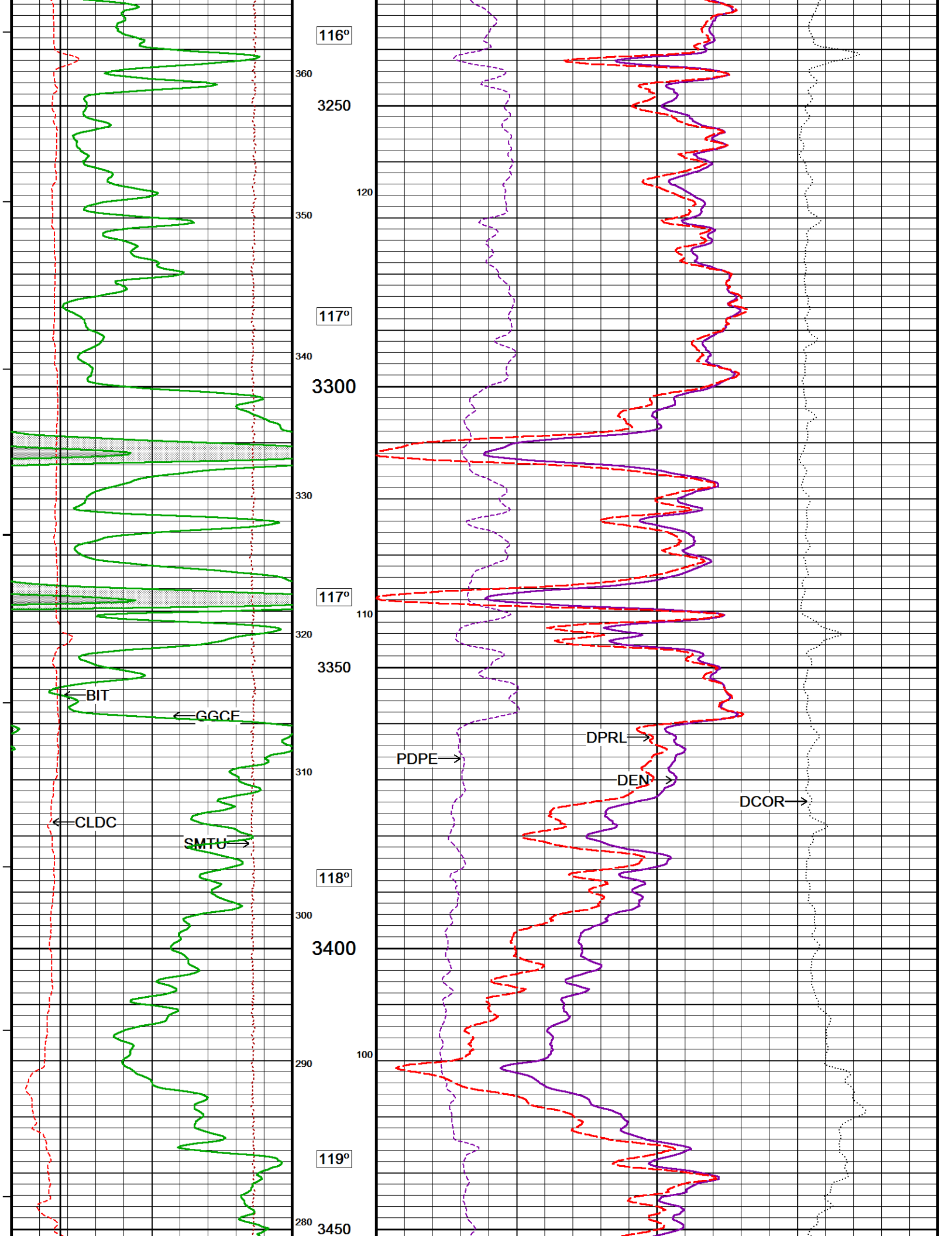


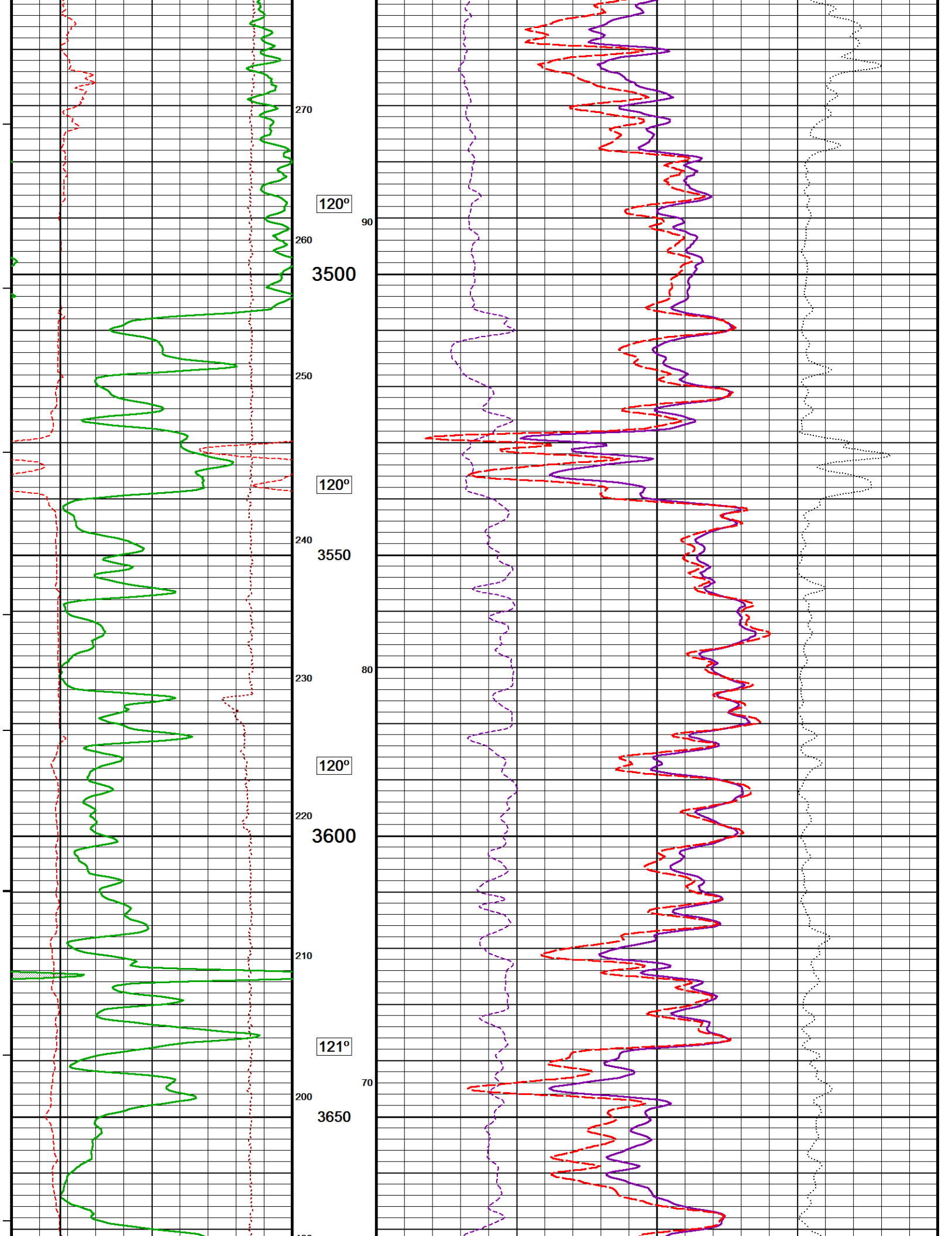


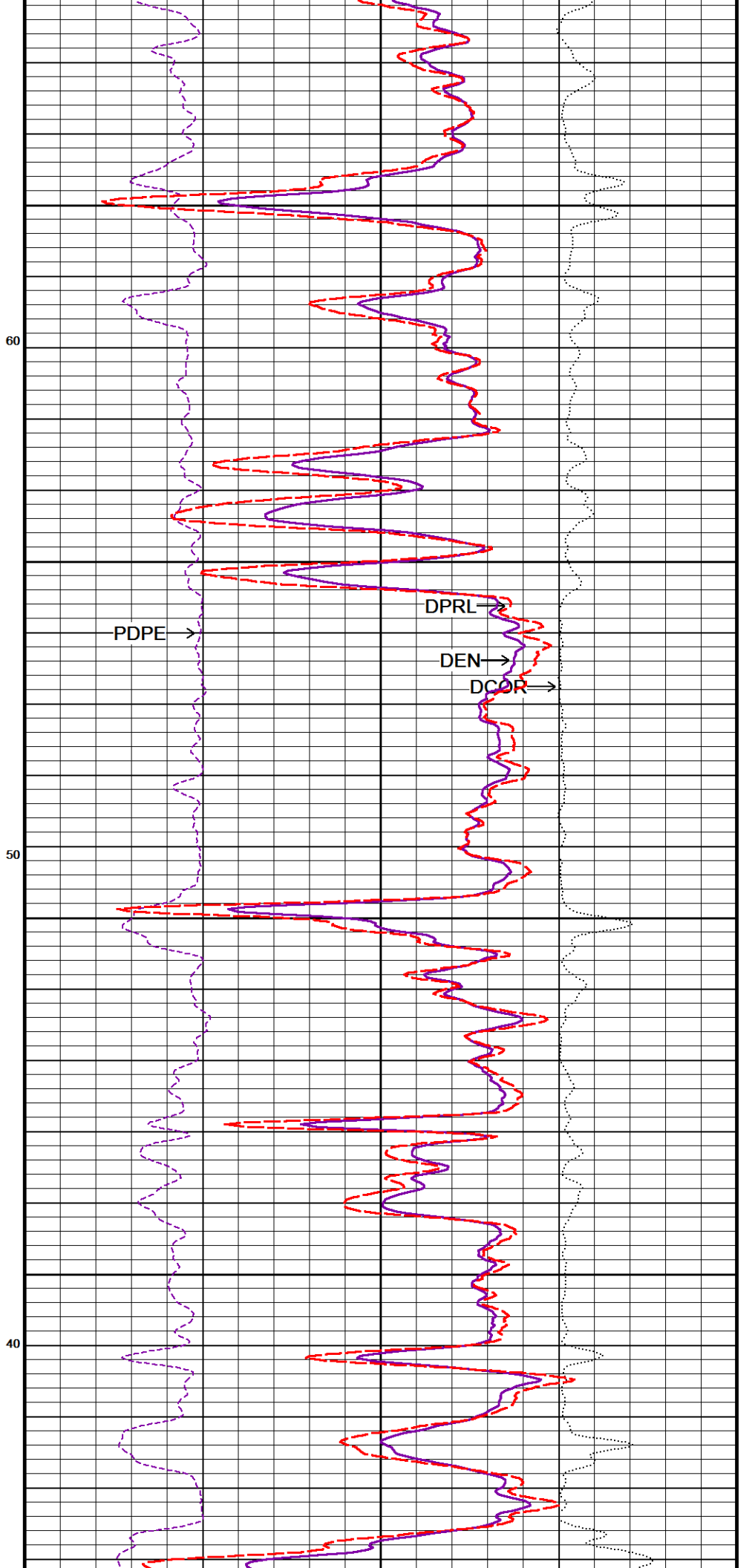
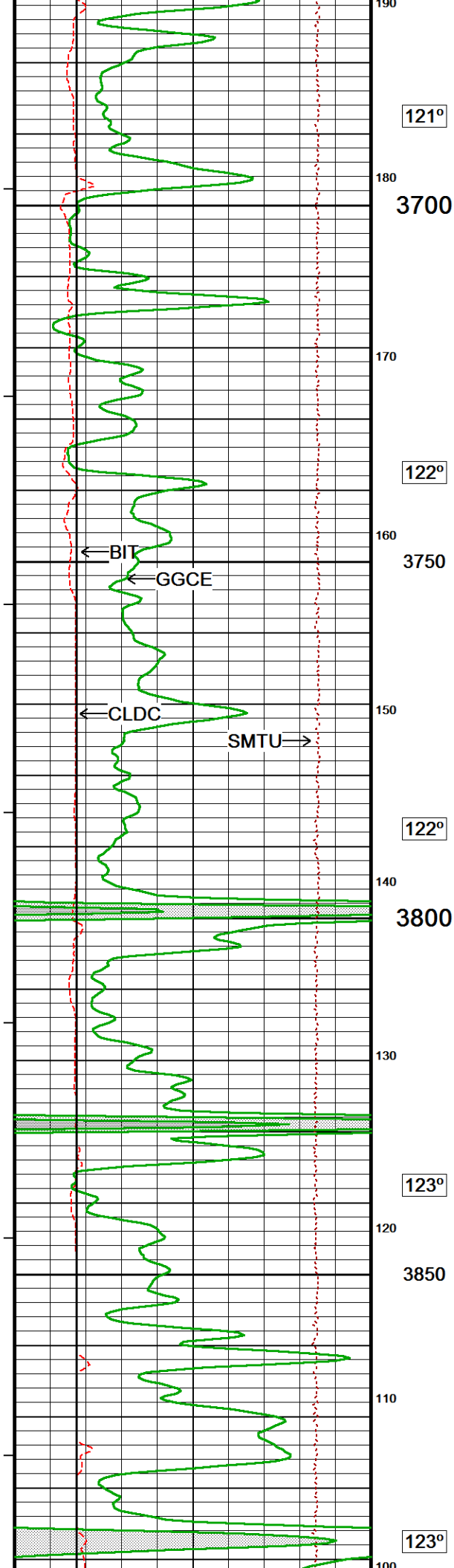


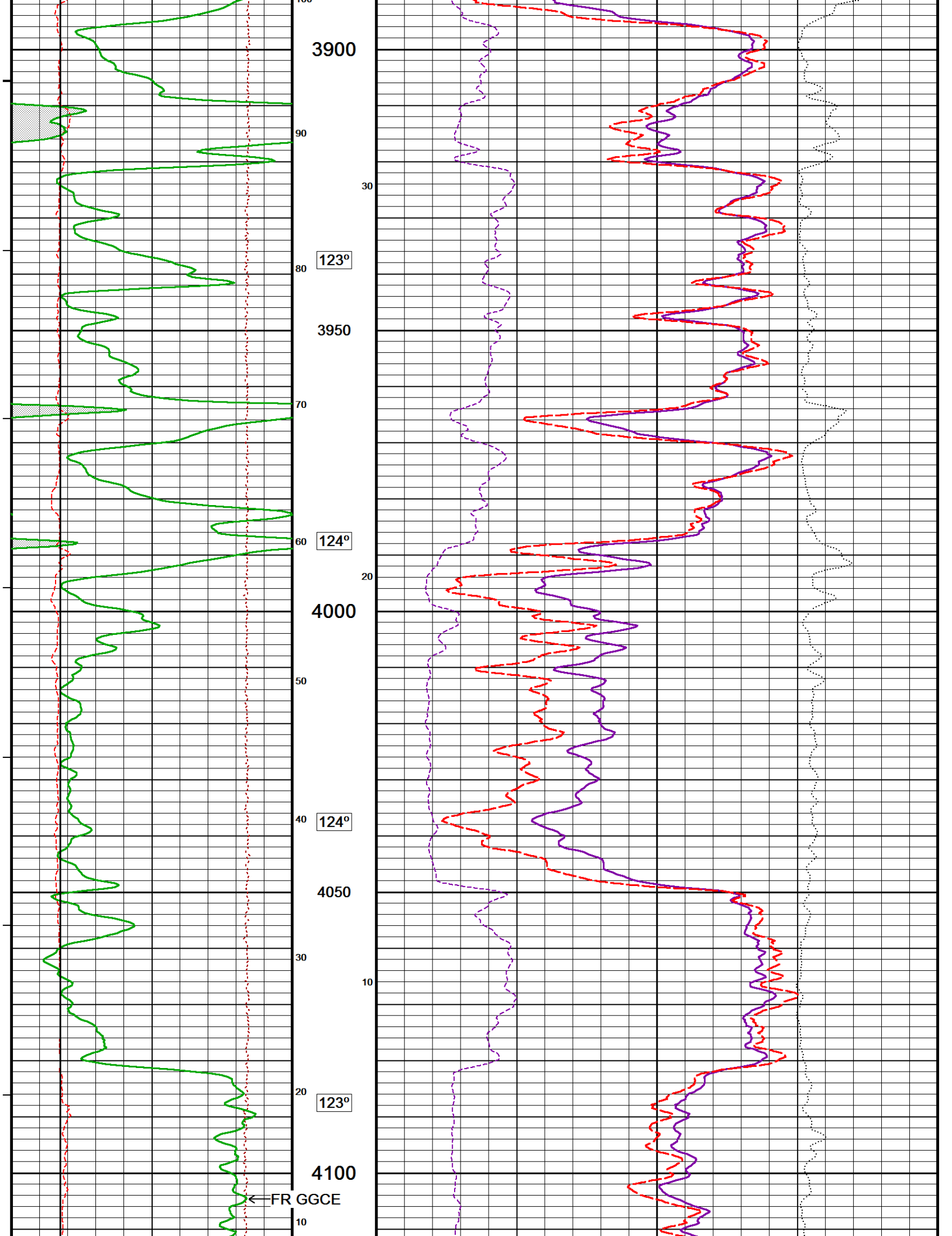


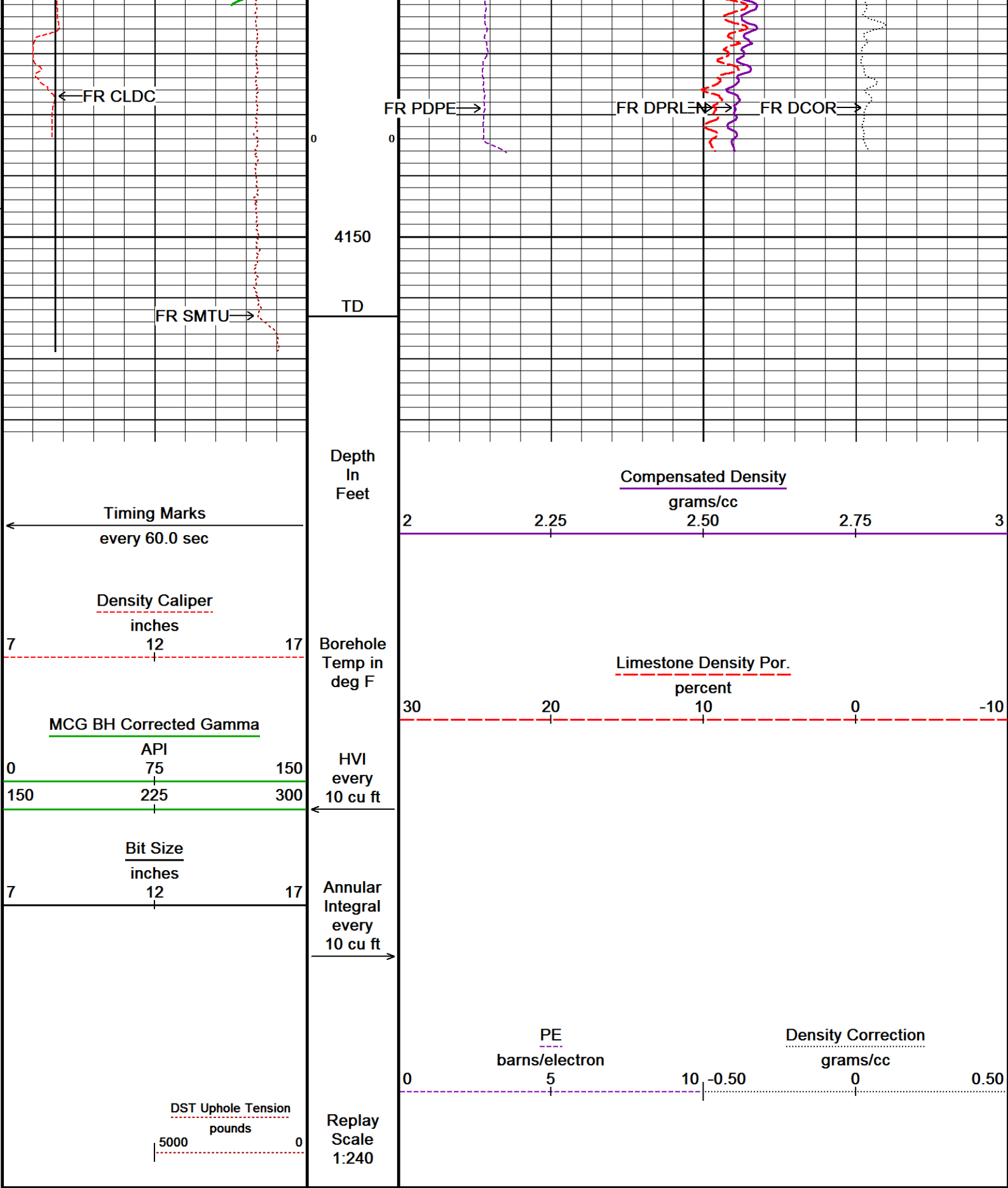








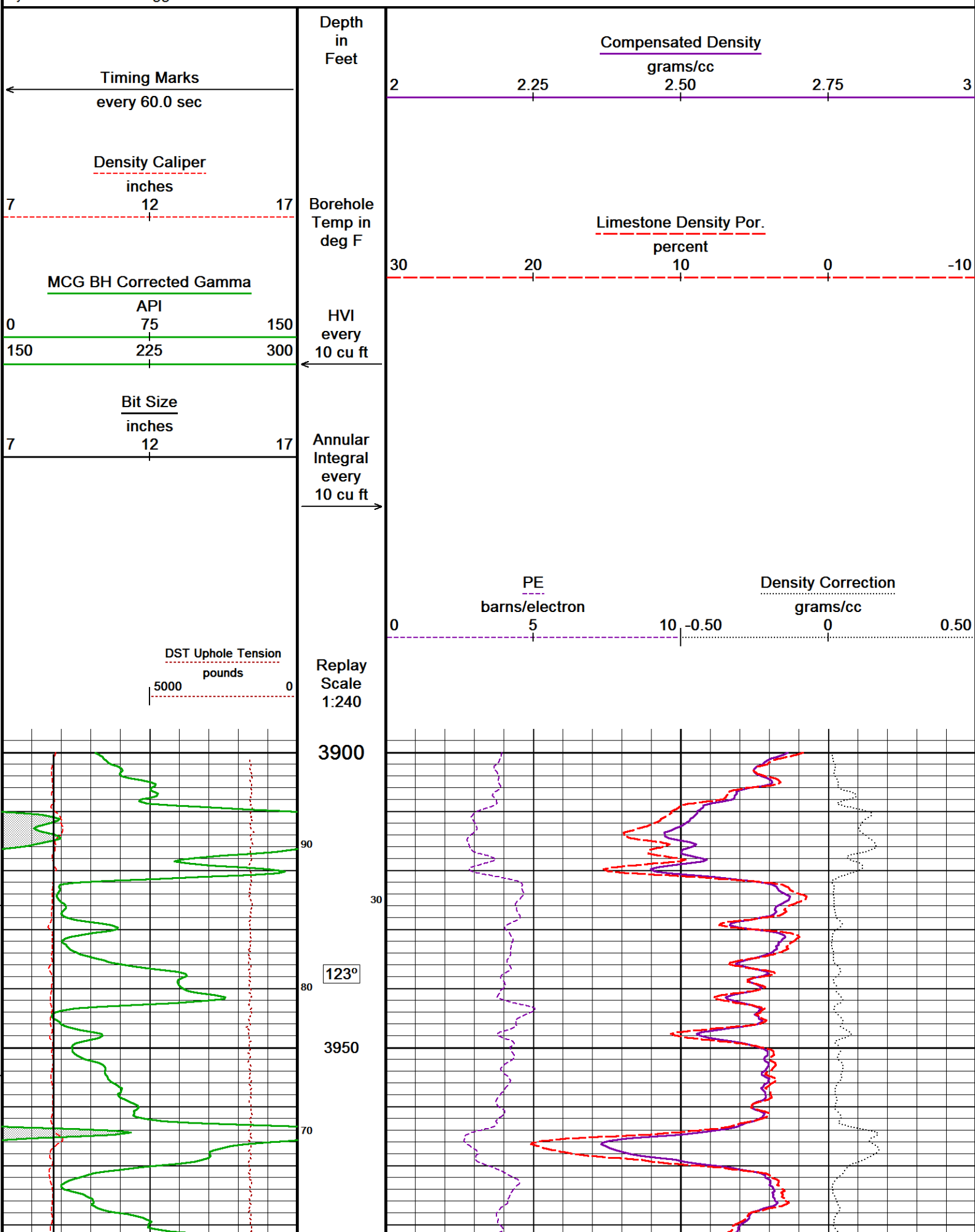


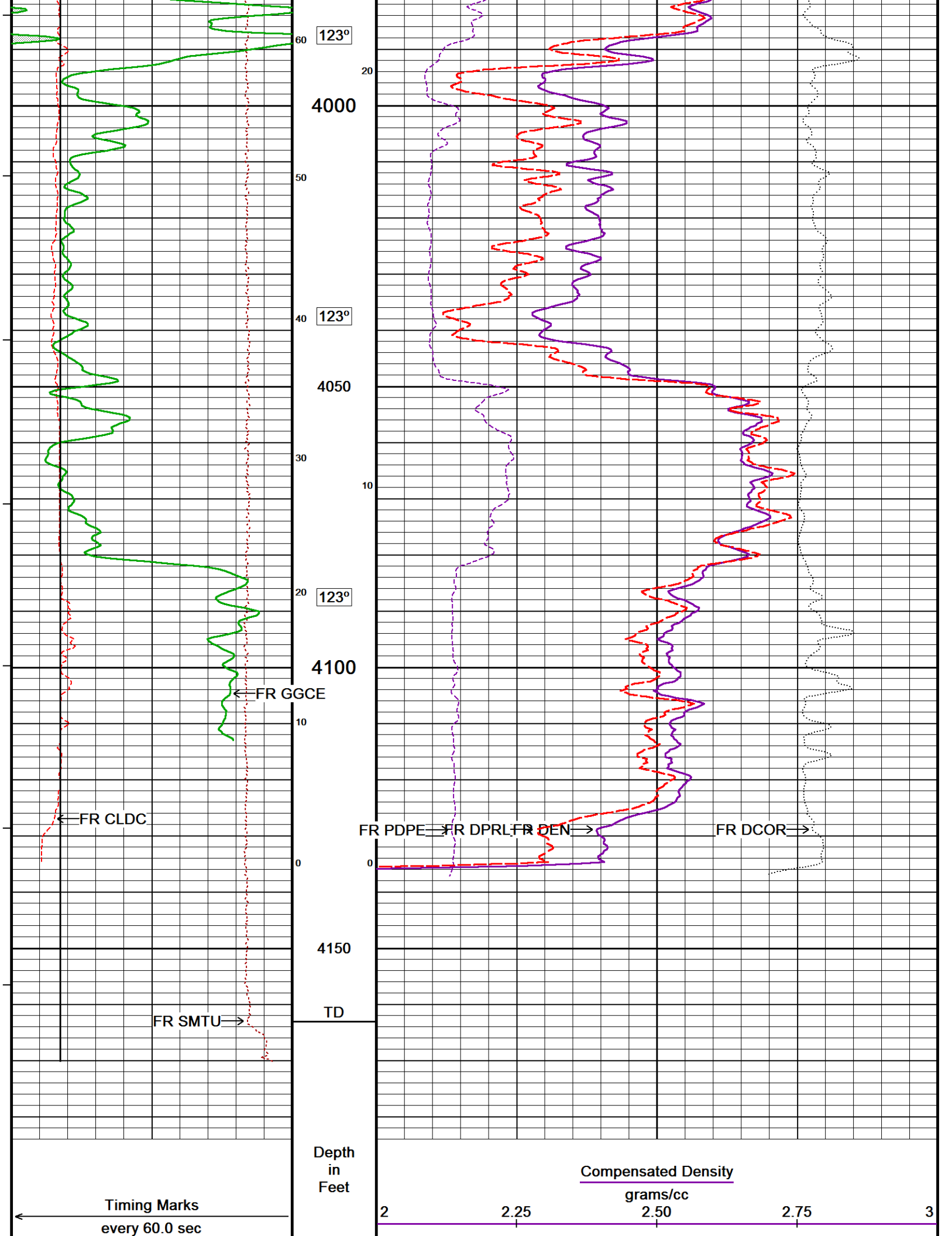


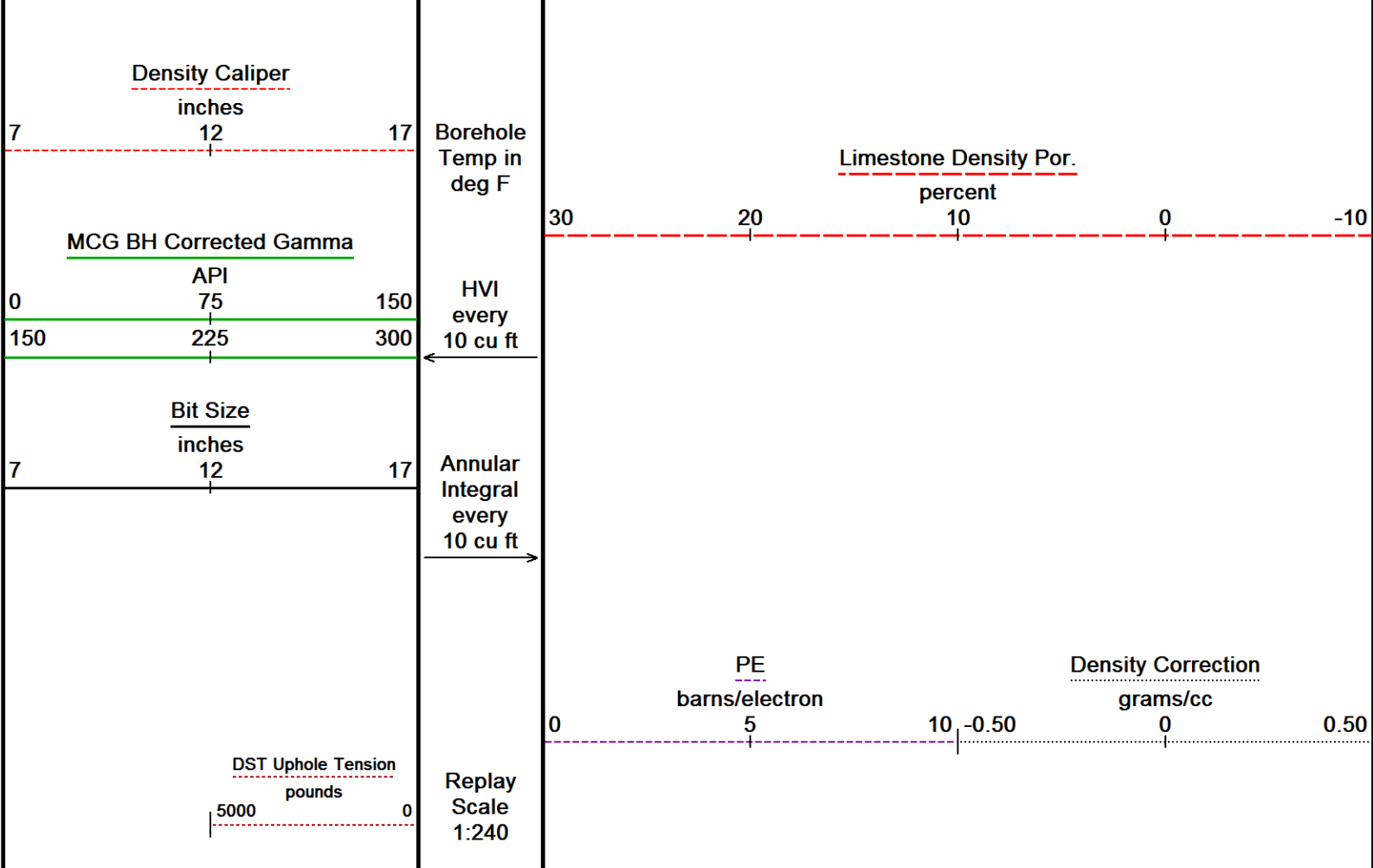
Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 11-OCT-2017 05:26
 Filename: C:\Minimus 17.03.9609\DATA\UNIT PETROLEUM COMPANY_GEESLIN...MAIN PASS 1.dta
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↑ 5 INCH MAIN PASS - BULK DENSITY 1:240 ↑

↓ 5 INCH REPEAT PASS - BULK DENSITY 1:240 ↓







Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 11-OCT-2017 05:26
 Filename: C:\Minimus 17.03.9609\DATA\UNIT PETROLEUM COMPANY_GEESLI...REPEAT PASS.dta Recorded on 11-OCT-2017 02:34
 System Versions: Logged with 17.03.9609 Processed with 17.03.9609 Plotted with 17.03.9609

↑ **5 INCH REPEAT PASS - BULK DENSITY 1:240** ↑

BEFORE SURVEY CALIBRATION		
C:\Minimus 17.03.9609\DATA\UNIT PETROLEUM COMPANY_GEESLING 16 1HXL\MAIN PASS 1.dta		
General Constants All 000		Last Edited on 11-OCT-2017,02:13
General Parameters		
Mud Resistivity	0.600	ohm-metres
Mud Resistivity Temperature	100.000	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	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. Two Res Rt	
RWA Constant A	0.620	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

High Resolution Temperature Calibration MCG-D.K 475			Field Calibration on 01-OCT-2017,10:23
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	200.00	200.00	

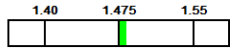
Pre-filter Length 11

Gamma Calibration MCG-D.K 475

Field Calibration on 09-OCT-2017 13:23

	Measured	Calibrated (API)
Background	42	28
Calibrator (Gross)	1912	1289
Calibrator (Net)	1870	1261

Gamma Calibration Tolerances MCG-D.K 475

Ratio 1.483  Counts/API

Gamma Constants MCG-D.K 475

Last Edited on 10-OCT-2017,08:02

Gamma Calibrator Number	GRC.C 46	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Photo Density Calibration MPD-D.A 479

Base Calibration on 12-SEP-2017 17:52
Field Check on 09-OCT-2017 10:57

Density Calibration Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1142	1372		
Reference 1	44784	21822	59494	30754
Reference 2	18326	2358	24557	2522

Field Check at Base
1141.7 1371.8

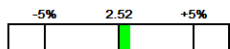
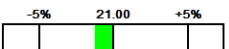
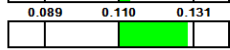
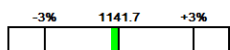
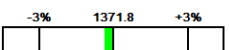
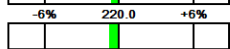
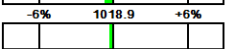
Field Check
1138.0 1366.8

PE Calibration Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	220	1019		
Reference 1	20211	44604	0.459	0.367
Reference 2	5783	18198	0.324	0.271

Field Check at Base
220.0 1018.9

Field Check
218.2 1015.3

Photo Density Calibration Tolerances MPD-D.A 479

Near Density Ratio	2.54		Far Density Ratio	20.73	
PE Calibration	0.130				
Near Den. Field Check	1138.0		Far Den. Field Check	1366.8	
PE WS Field Check	218.2		PE WH Field Check	1015.3	

Density Constants MPD-D.A 479

Last Edited on 10-OCT-2017,08:03

Density Source Id	13057
Nylon Calibrator Number	766
Aluminium Calibrator Number	633
Density Shoe Profile	8 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied

PE Correction to Density	Not Applied	
Mud Density	1.10	gm/cc
Mud Density Type		
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	
Precision Enhanced Density Processing	Not Applied	

Matrixdensity(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-D.A 479

Base Calibration on 12-SEP-2017 19:24
Field Calibration on 09-OCT-2017 13:41

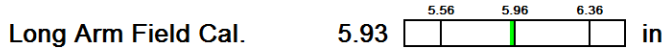
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	12026	4.00
2	18520	5.96
3	25198	7.96
4	31581	9.86
5	38421	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.93	5.96

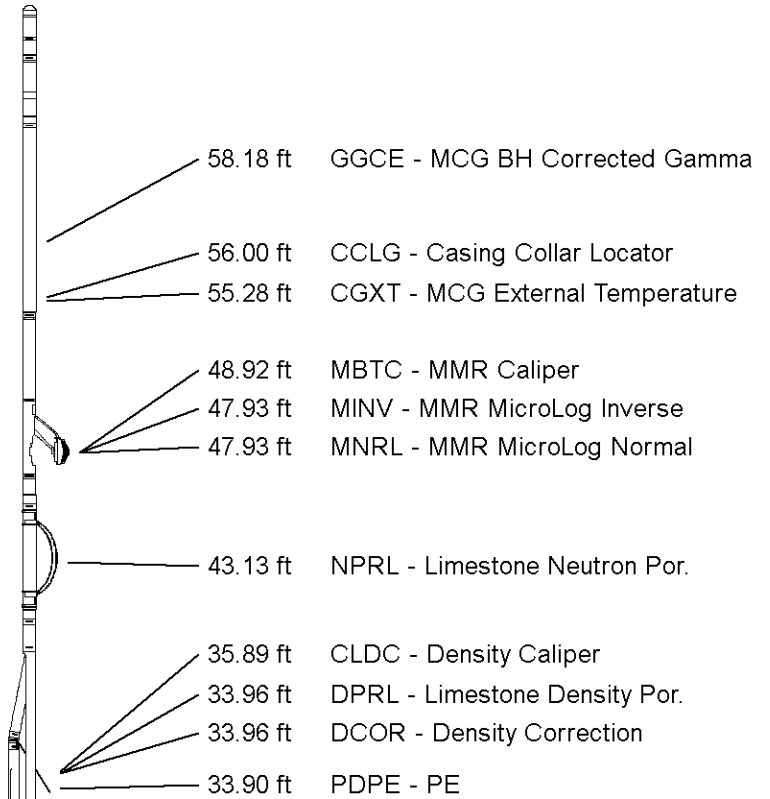
Caliper Calibration Tolerances MPD-D.A 479



DOWNHOLE EQUIPMENT

C:\Minimus 17.03.9609\DATA\UNIT PETROLEUM COMPANY_GEESLING 16 1HXL\MAIN PASS 1.dta

- 11B Tension Cablehead
MCB-A 1 LG: 2.18 ft WT: 19.8 lb OD: 2.244 in
- Compact Swivel Head Adaptor
SHA-J.B 595 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in
- Compact Comms Gamma
MCG-D.K 475 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in
- Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in
- Compact Neutron
MDN-B.J 388 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in
- Compact Density/Caliper
MPD-D.A 479 LG: 9.59 ft WT: 90.4 lb OD: 2.913 in



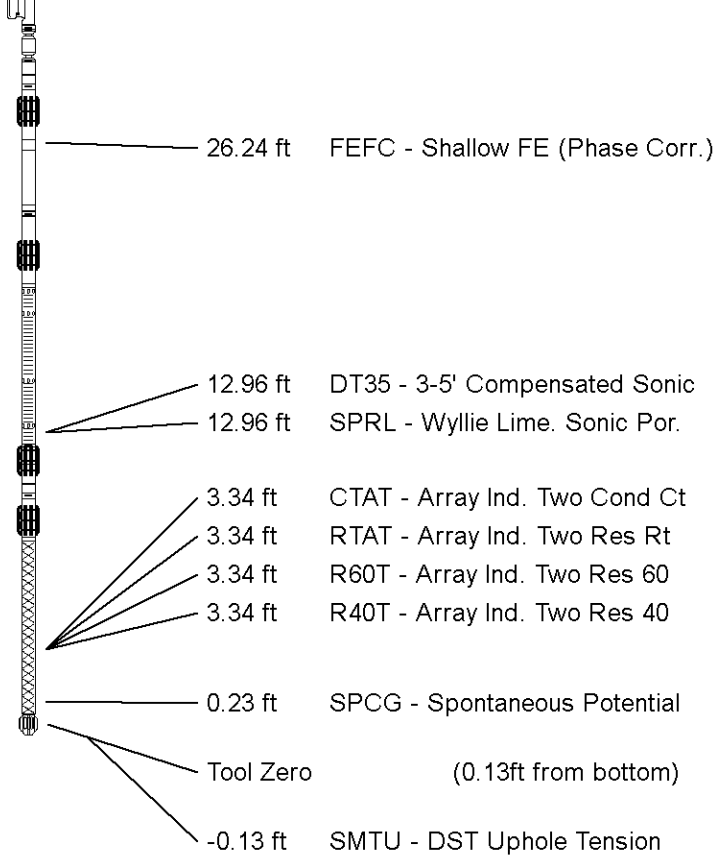
Compact Knuckle Joint
SKJ-E.B 727 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Focussed Electric
MFE-B.A 261 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-C.A 147 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-B.J 426 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in

Total Length: 67.95 ft Weight: 522.5 lb



All measurements relative to tool zero.

COMPANY	UNIT PETROLEUM COMPANY
WELL	GEESLING 16 1HXL
FIELD	WILDCAT
PROVINCE/COUNTY	RENO COUNTY
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	1782	feet	First Reading	4129.10	feet
Elevation Drill Floor	1780	feet	Depth Driller	4160.00	feet
Elevation Ground Level	1762	feet	Depth Logger	4163.00	feet



Weatherford[®]

COMPACT PHOTO-DENSITY
DUAL SPACED NEUTRON
MICRO RESISTIVITY LOG