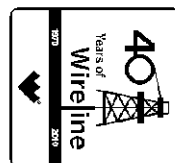




Weatherford

COMPENSATED SONIC LOG

COMPANY SANDRIDGE
WELL STEPHANIE 1-3 SWD
FIELD WOLDRON-WEST
PROVINCE/COUNTY BARBER
COUNTRY/STATE USA / KANSAS
LOCATION 2135' FSL 178' FEL



SEC	TWP	RGE	Other Services	MMI
3	355	10W	MAI/MFE MPD/MDN	
API Number	15-007-23799			
Permit Number				
Permanent Datum GL, Elevation 1317 feet				
Log Measured From KB				Elevations: KB 1328.00 DF 1326.00 GL 1317.00
Drilling Measured From KB				
Date	11-NOV-2011			
Run Number	ONE			
Depth Driller	5594.00	feet		
Depth Logger	5589.00	feet		
First Reading	5576.00	feet		
Last Reading	1005.00	feet		
Casing Driller	1008.00	feet		
Casing Logger	1005.00	feet		
Bit Size	8.750	inches		
Hole Fluid Type	WBM			
Density / Viscosity	9.10 lb/USg	55.00 CP		
PH / Fluid Loss	10.00	7.40 ml/30Min		
Sample Source	FLOW LINE			
Rm @ Measured Temp	1.50 @ 70.0	ohm-m		
Rmf @ Measured Temp	1.20 @ 70.0	ohm-m		
Rmc @ Measured Temp	1.80 @ 70.0	ohm-m		
Source Rmf / Rmc	CALC.	CALC.		
Rm @ BHT	0.85 @ 127.0	ohm-m		
Time Since Circulation	6 HOURS			
Max Recorded Temp	127.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13039	OKC		
Recorded By	T. GUTHMUELLER			
Witnessed By	T. ALCORN			
AFE#DC11577	SO#3534234			

BOREHOLE RECORD

Last Edited: 11-NOV-2011 12:14

Bit Size inches	Depth From feet	Depth To feet
12.250	0.00	1008.00
8.750	1008.00	5594.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURF	9.625	0.00	1008.00	36.00

REMARKS

TOOLS RAN: SHA-205,MCG-093,MML-007,MDN-031,MPD-021,MFE-054,MSS-040,MAI-390 RAN IN COMBINATION

HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED.

MDN: DUAL NEUTRON BOW SPRINGS USED.

MPD: 8 INCH PROFILE PLATE USED.

MSS: THREE 0.5 INCH STANDOFFS USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

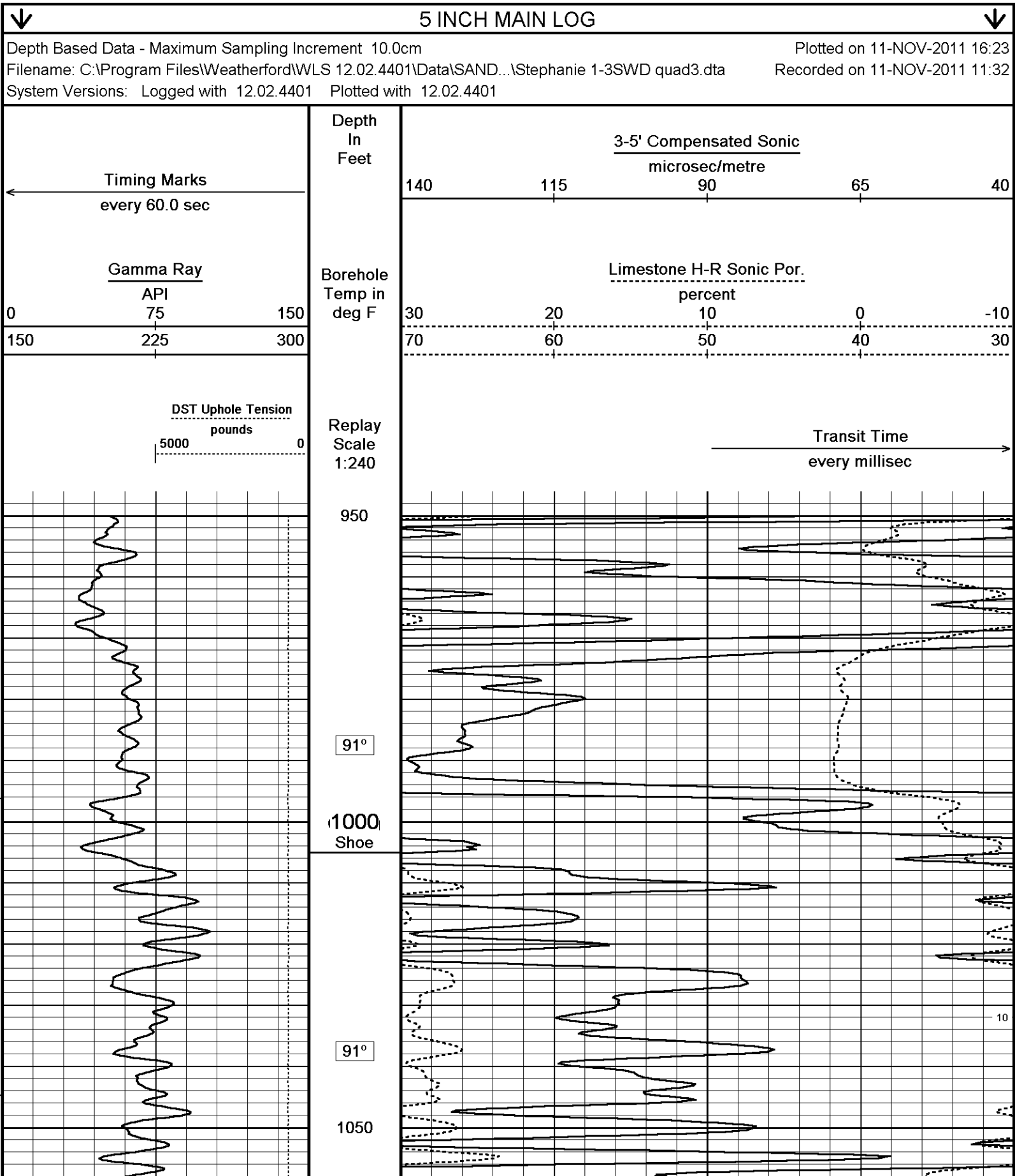
TOTAL HOLE VOLUME FROM TD TO 1600 = 1740 CU.FT.

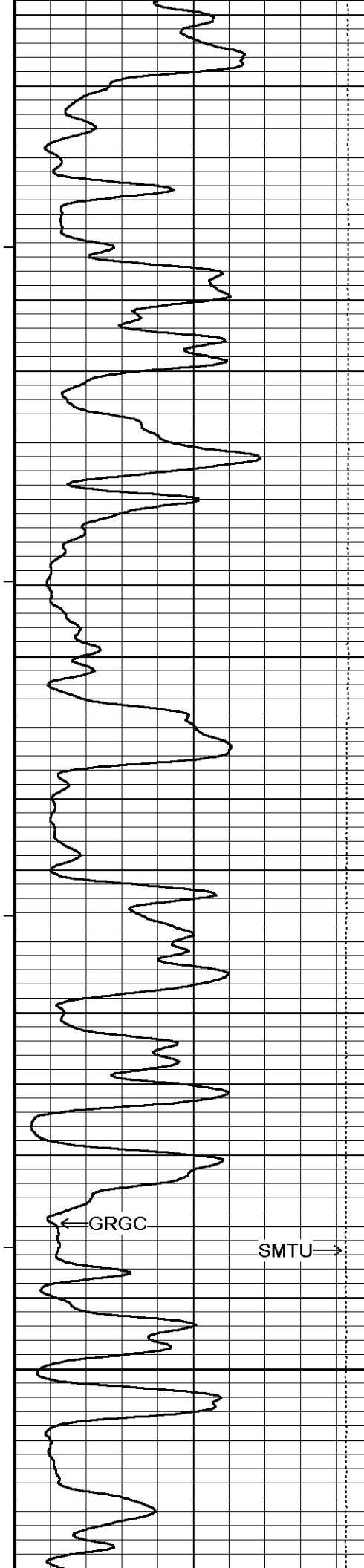
ANNULAR HOLE VOLUME WITH 7 INCH PRODUCTION CASING FROM TD TO 1600 = 680 CU.FT.

SERVICE ORDER # 3534234

RIG: TOMCAT #3

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.





91°

1100

91°

1150

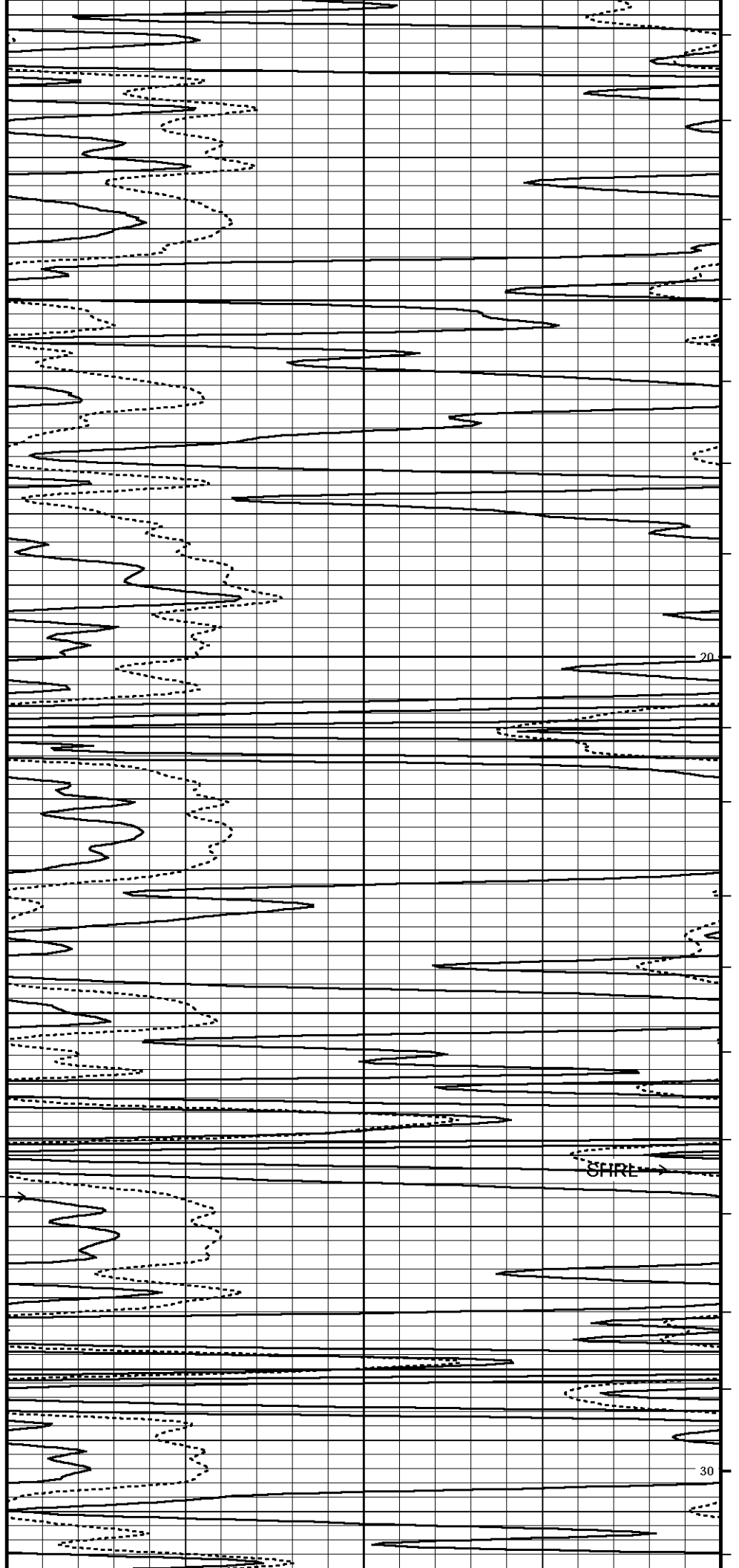
92°

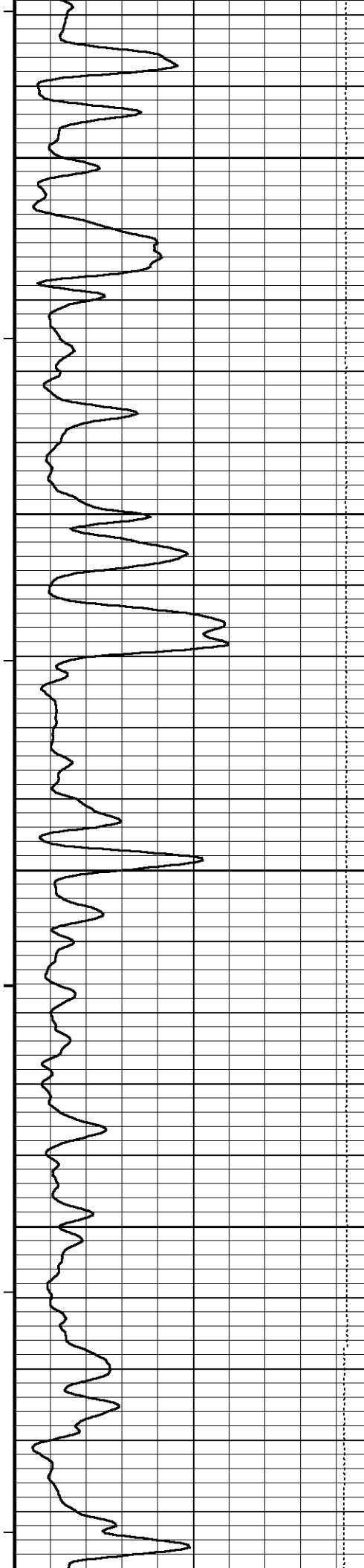
1200

DT35

92°

1250





92°

1300

92°

1350

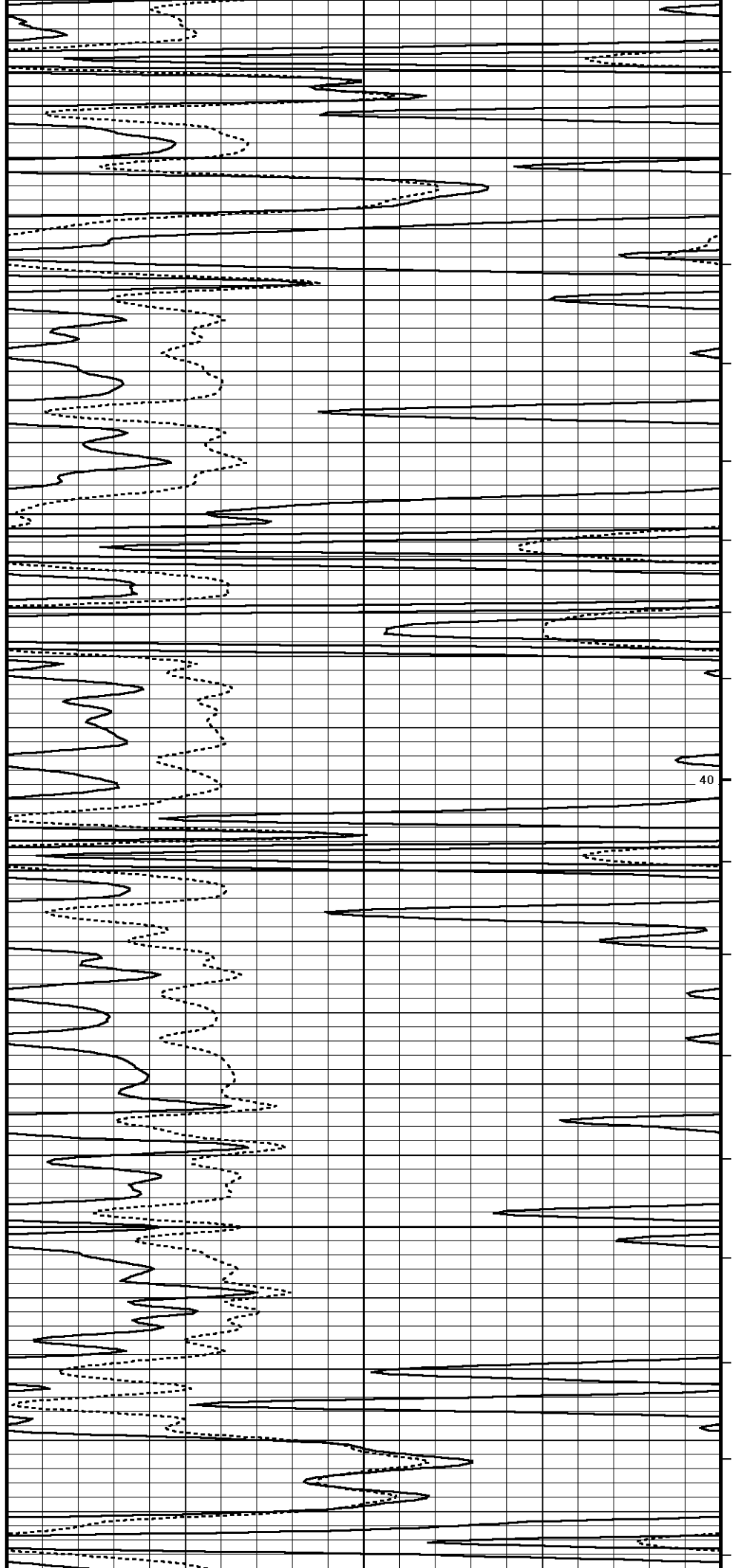
93°

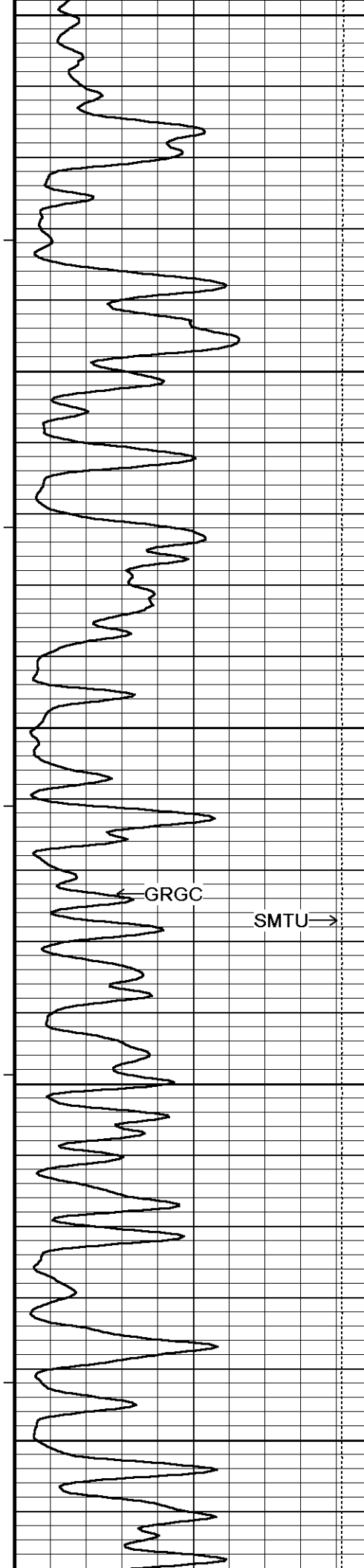
1400

93°

1450

93°





1500

93°

1550

94°

1600

SHRI →

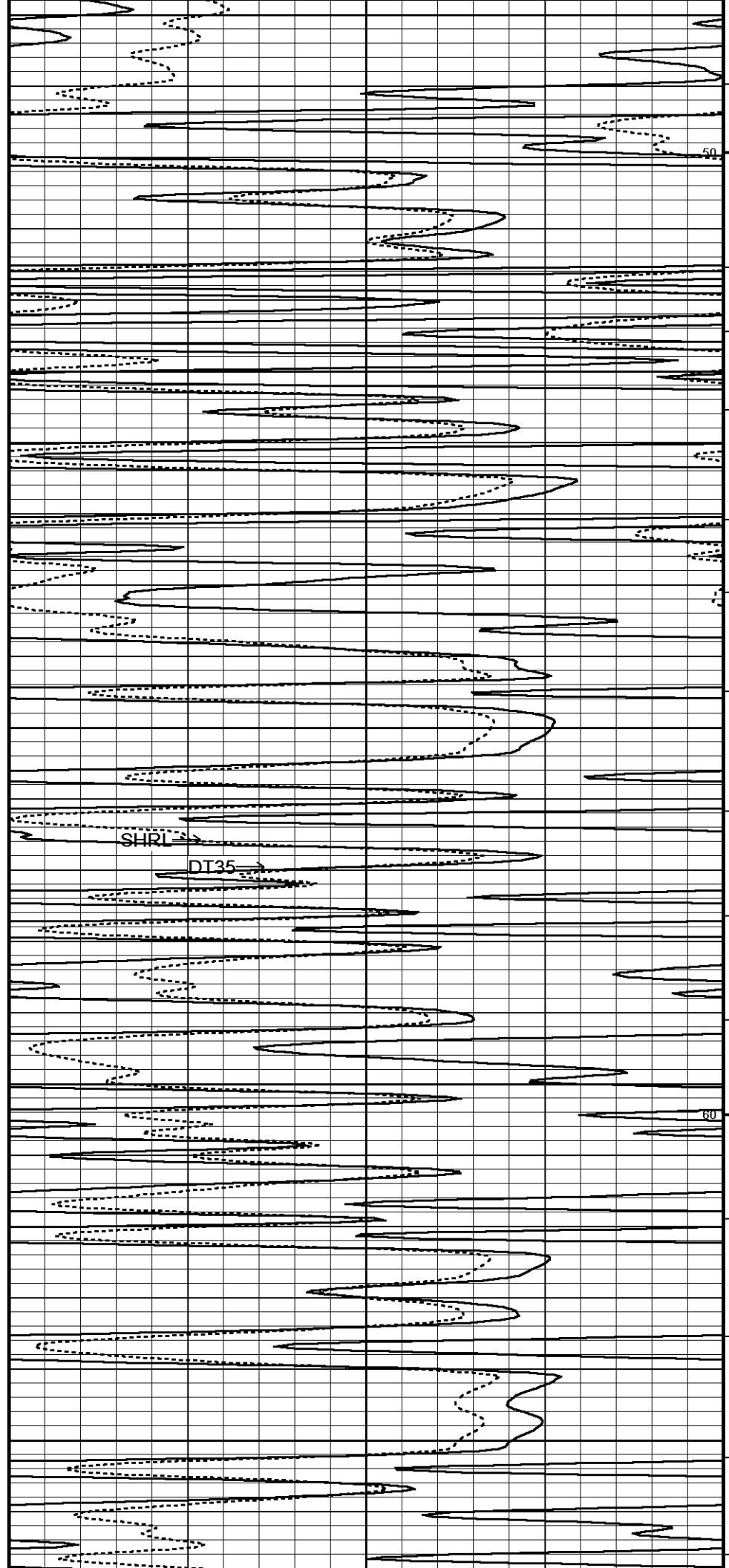
DT35 →

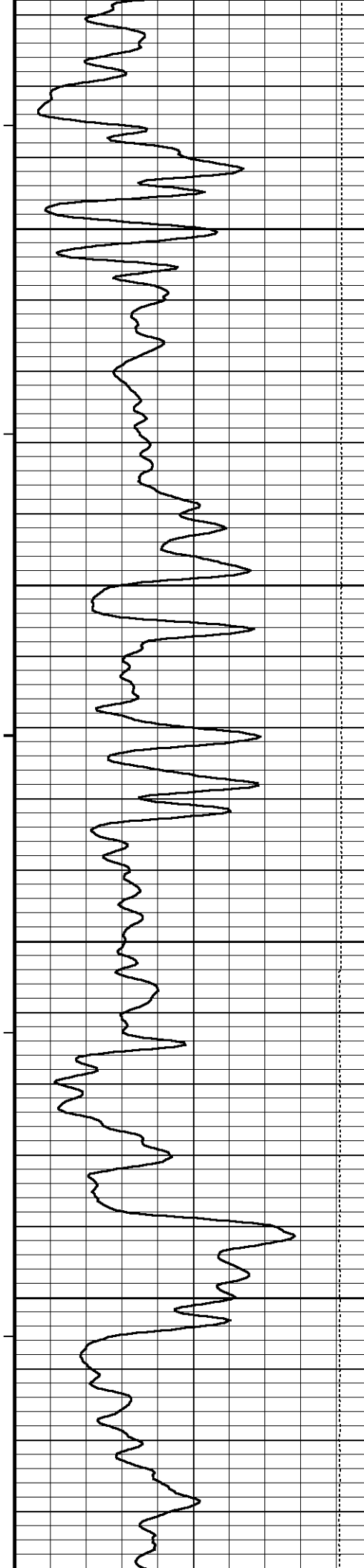
95°

1650

96°

1700





96°

1750

96°

1800

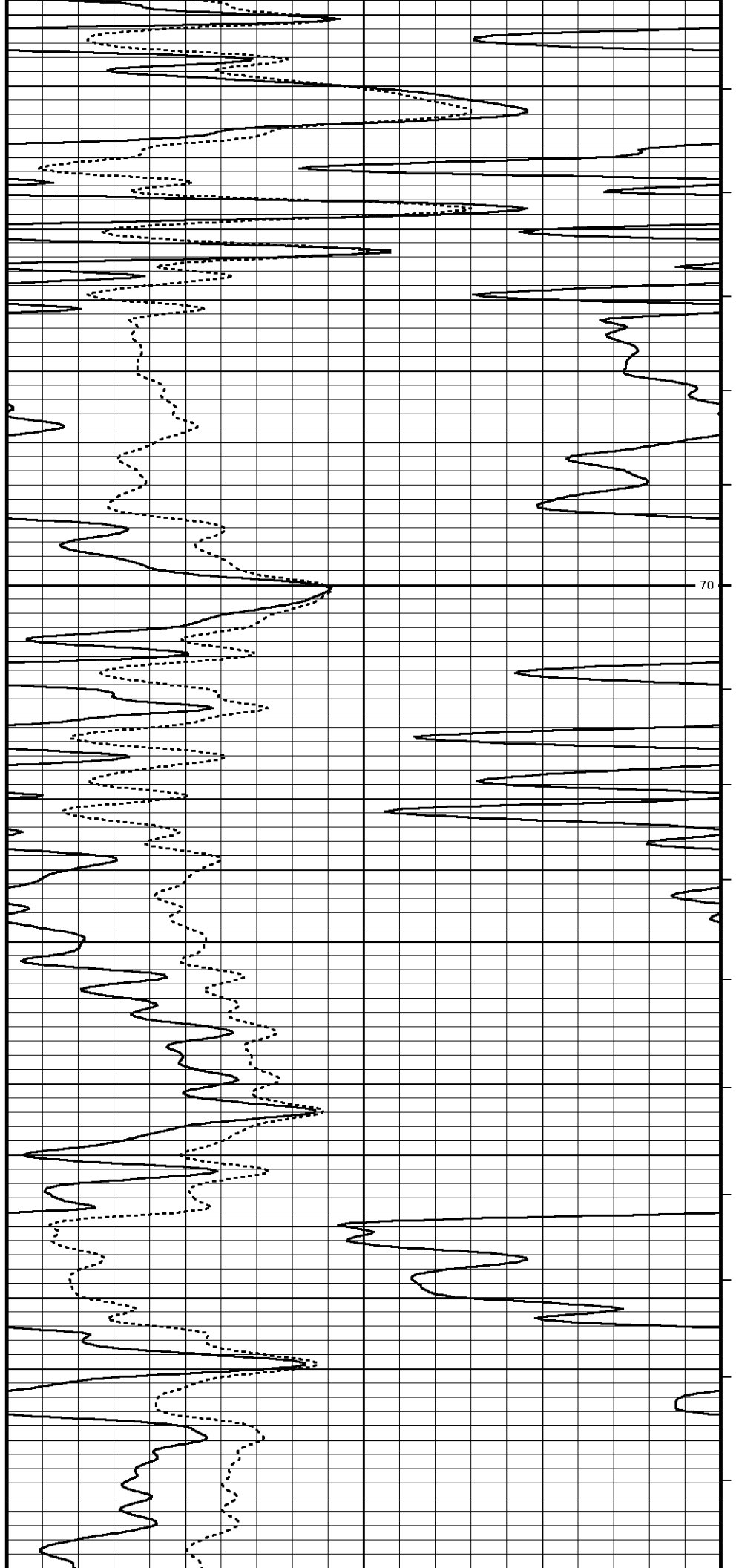
96°

1850

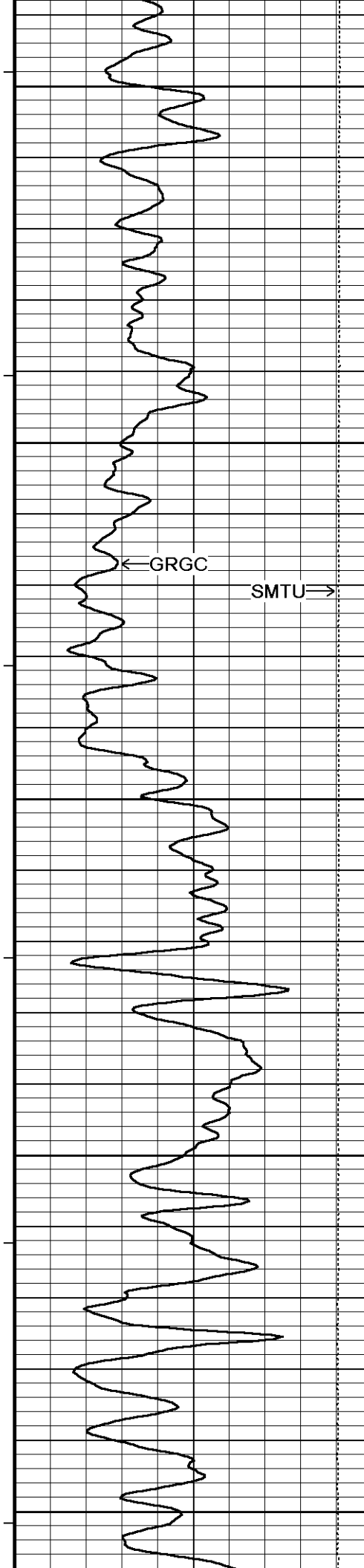
97°

1900

97°



70



1950

97°

2000

97°

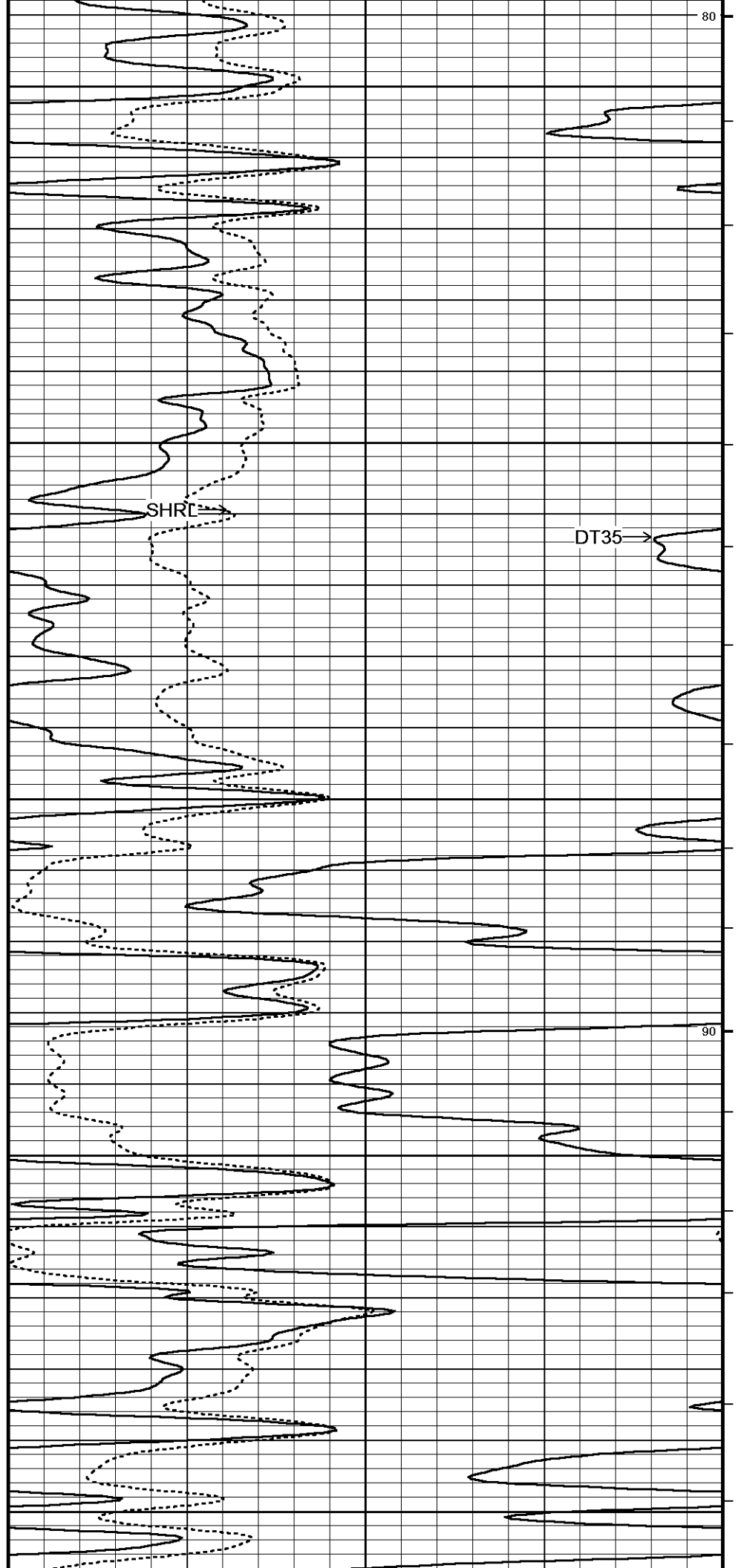
2050

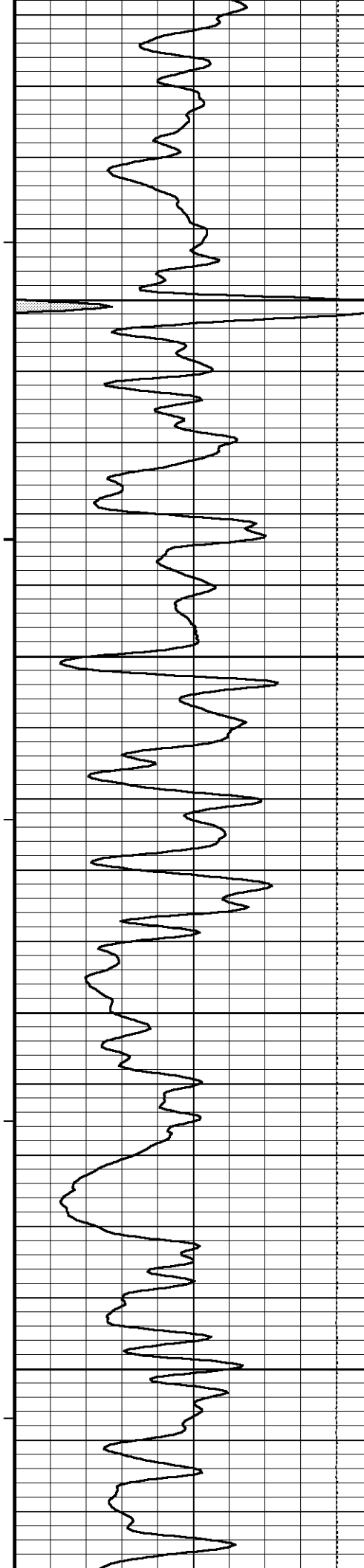
97°

2100

98°

2150





98°

2200

98°

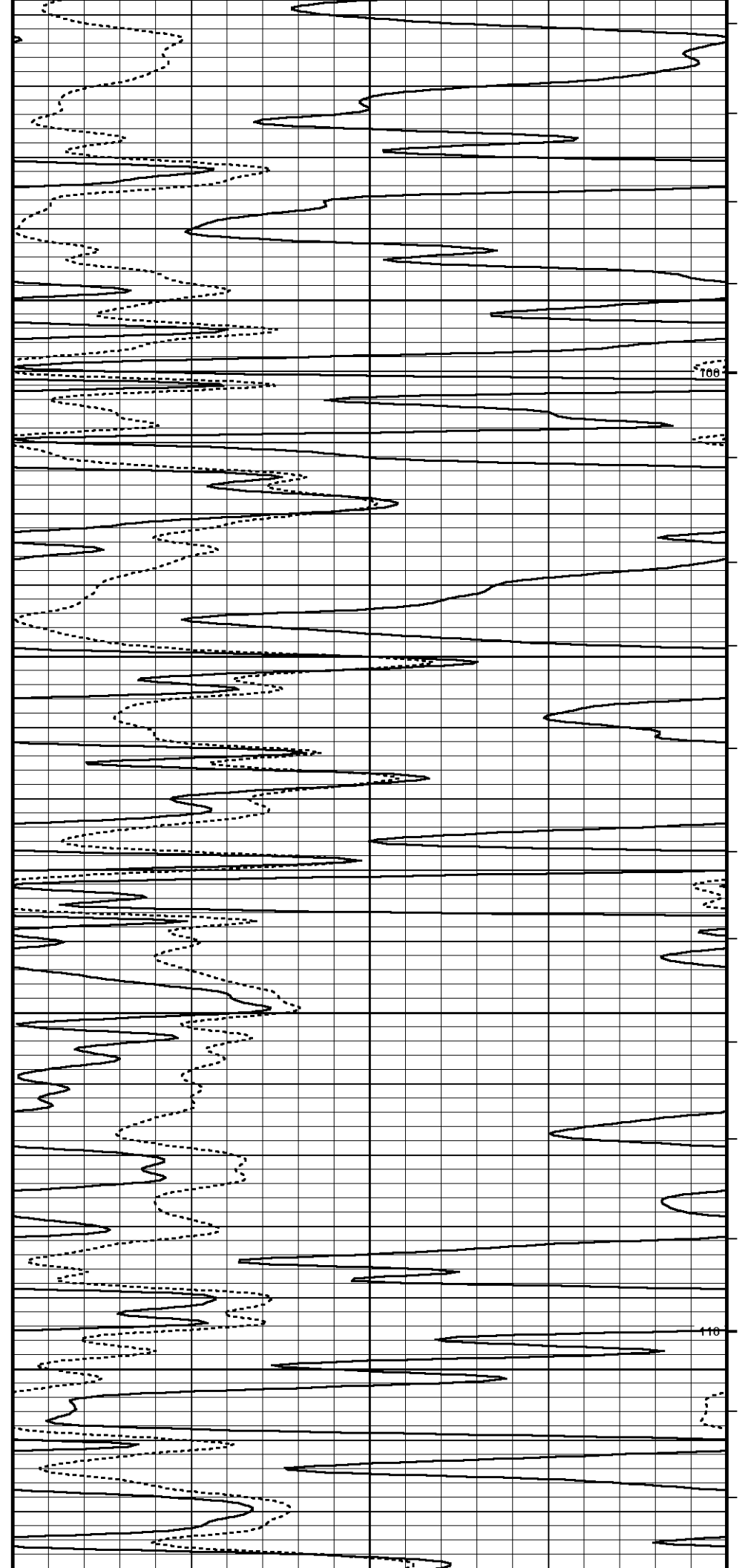
2250

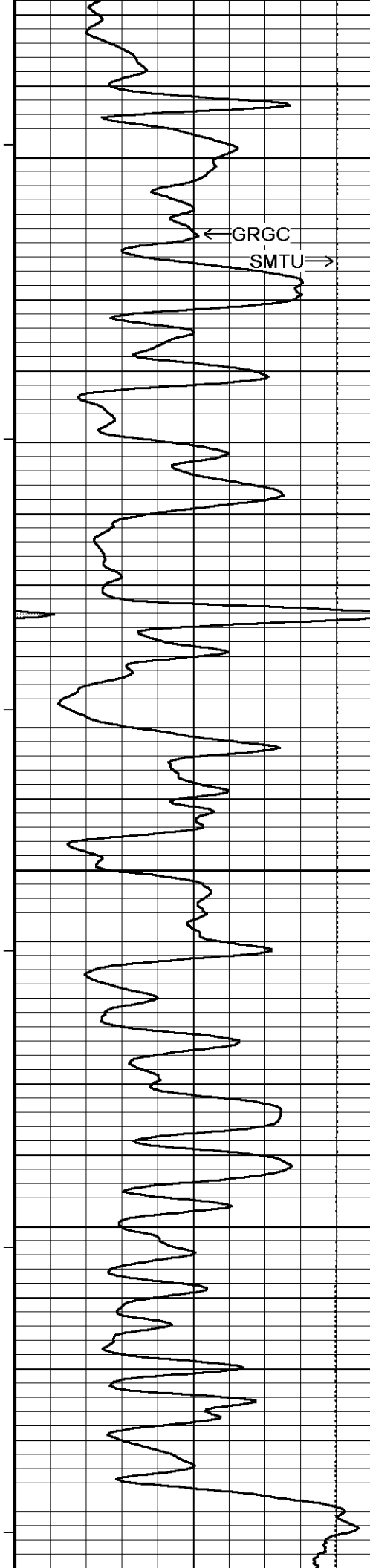
98°

2300

98°

2350





99°

2400

100°

2450

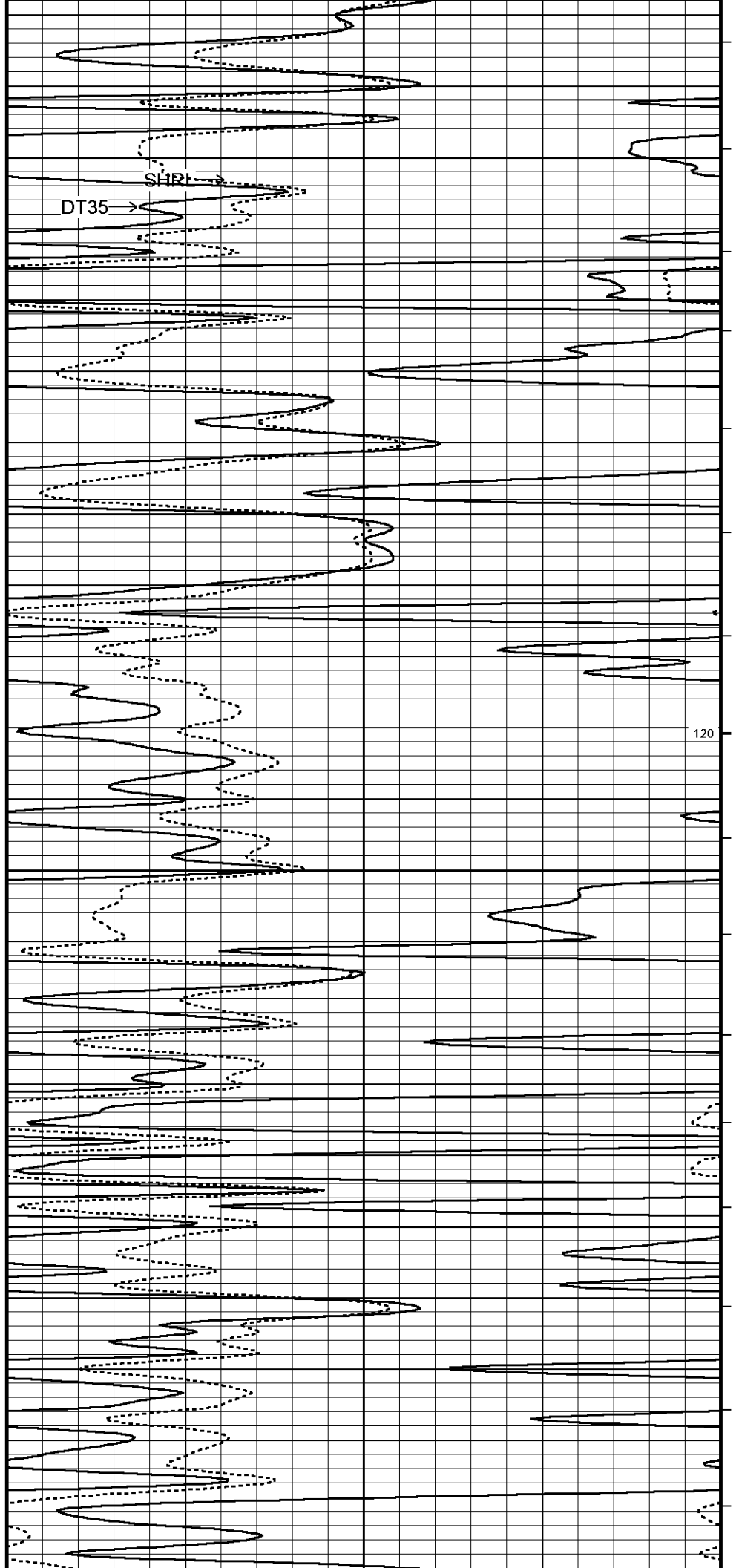
100°

2500

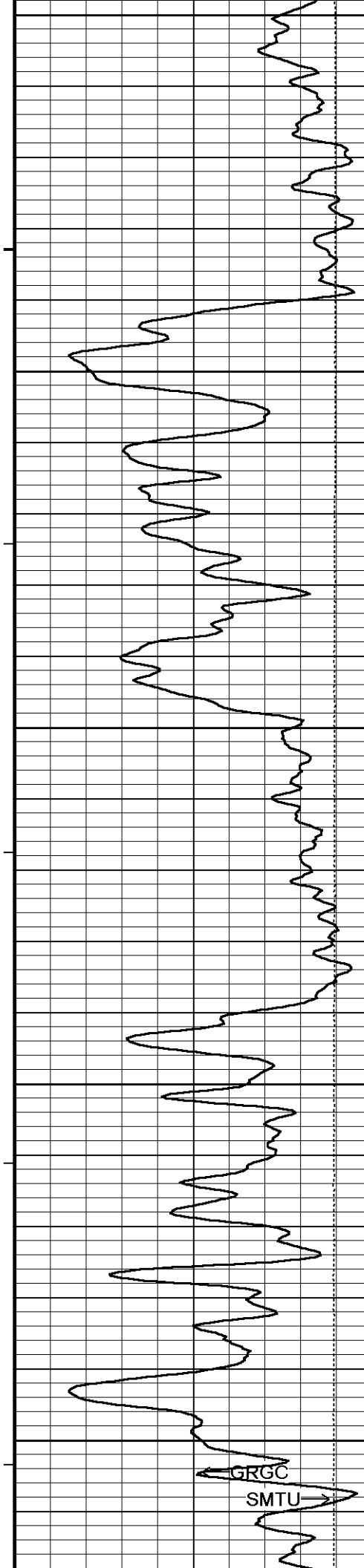
100°

2550

101°



120



2600

101°

2650

102°

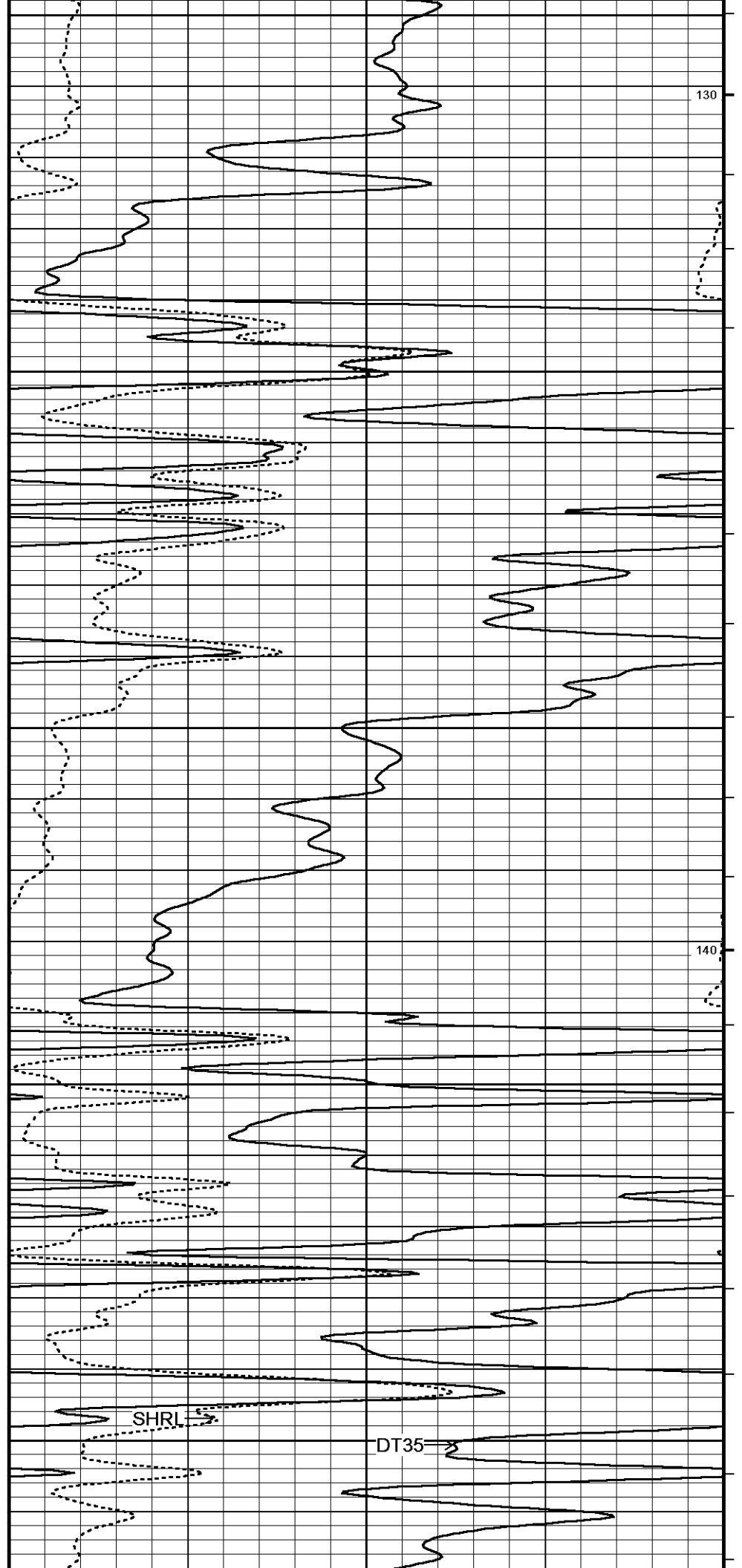
2700

102°

2750

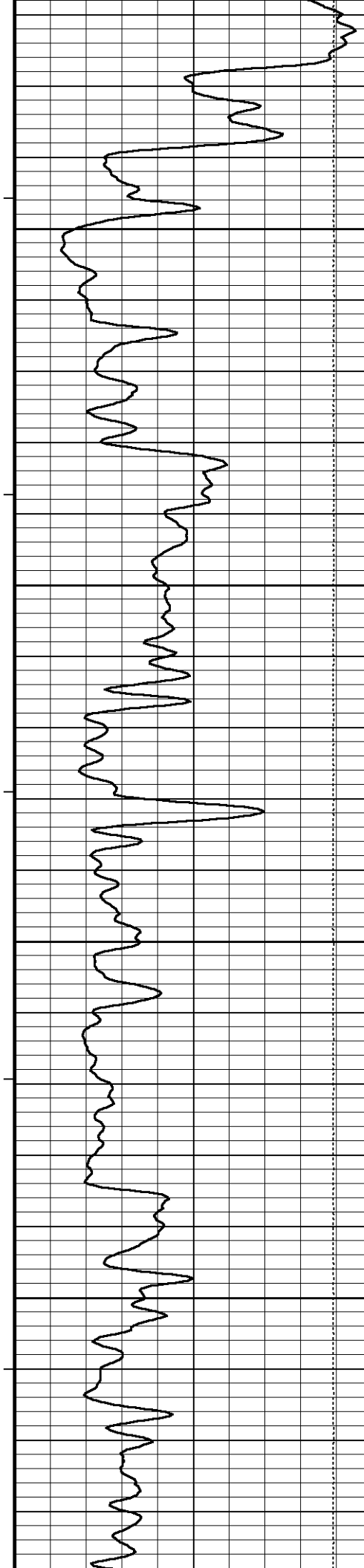
102°

2800



130

140



103°

2850

103°

2900

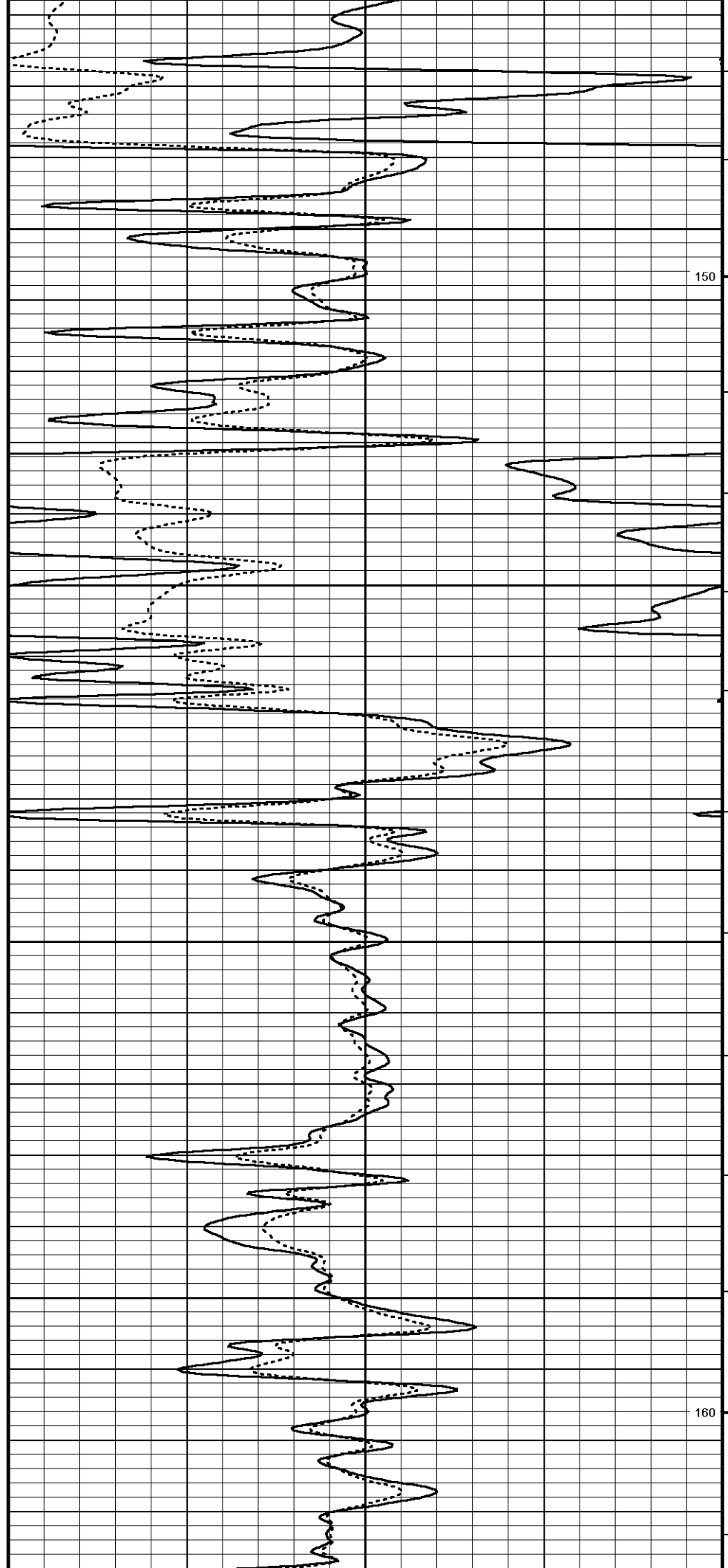
104°

2950

104°

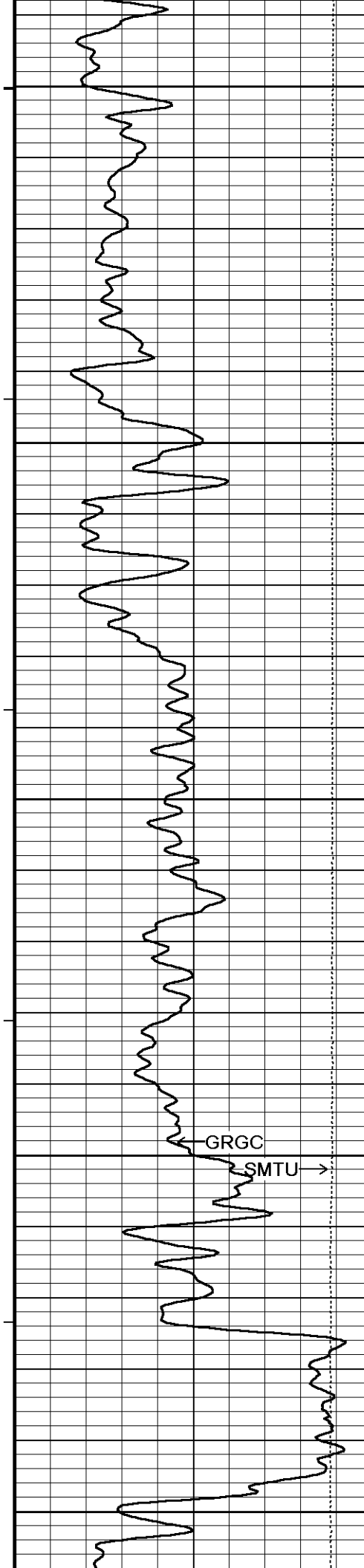
3000

104°



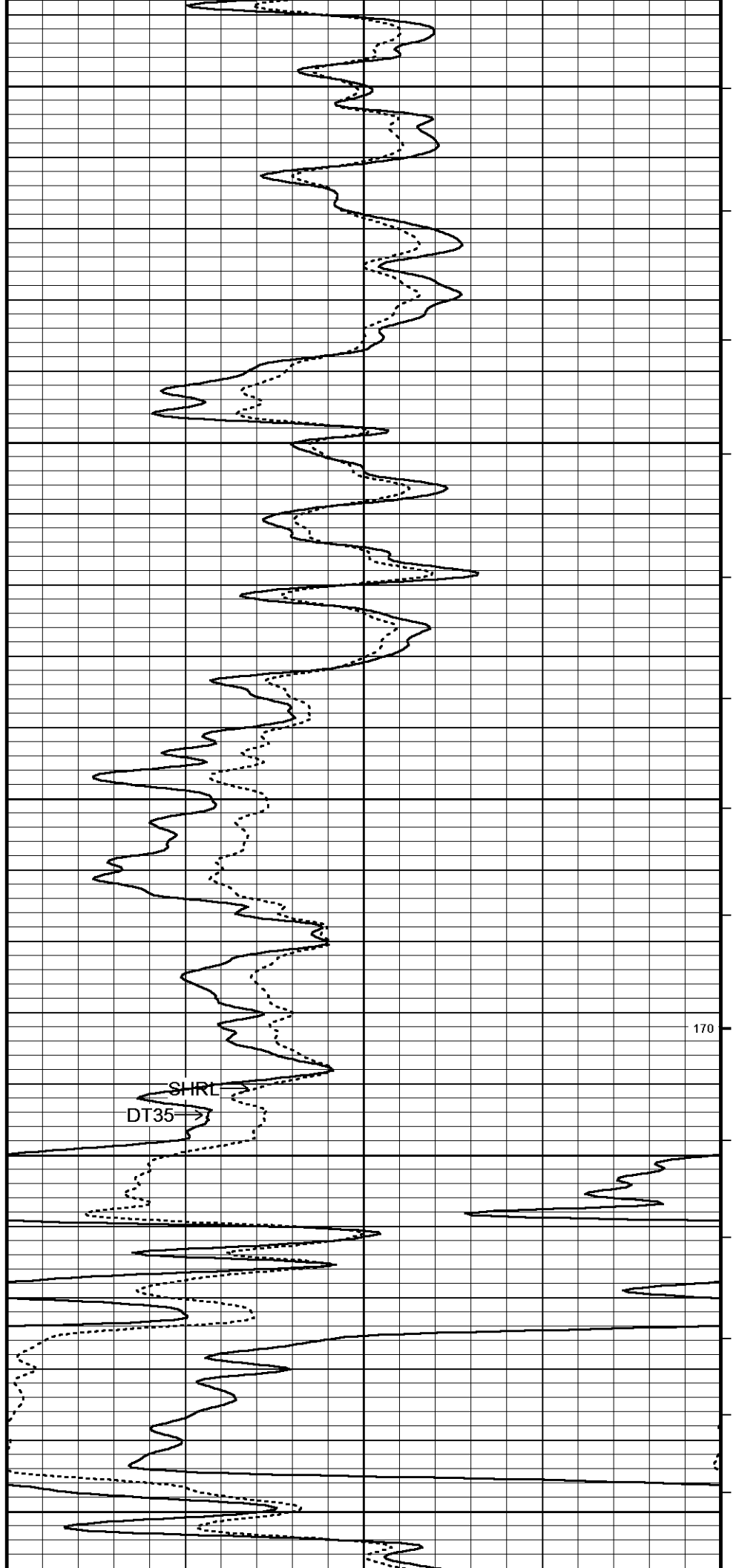
150

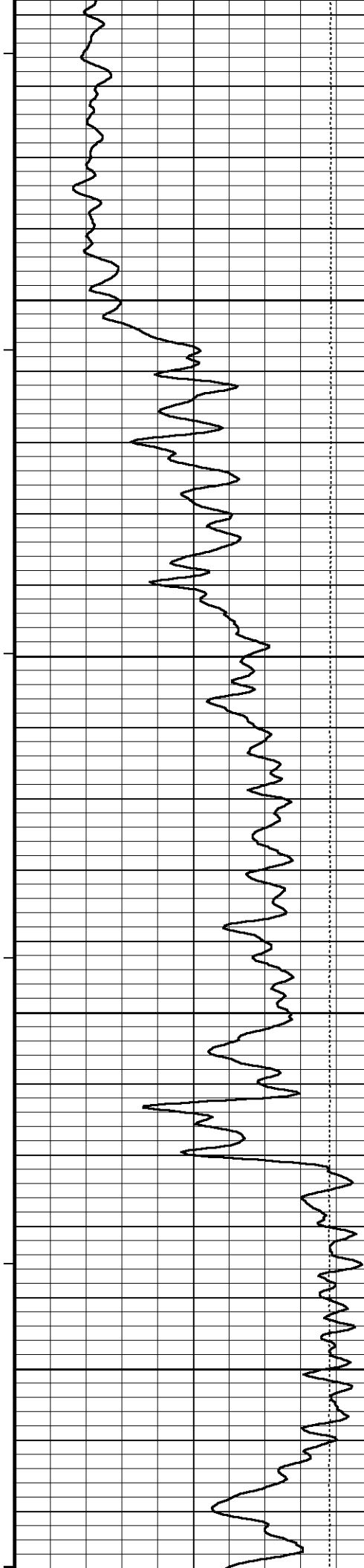
160



104°
104°
105°
106°
106°

3050
3100
3150
3200
3250





106°

3300

107°

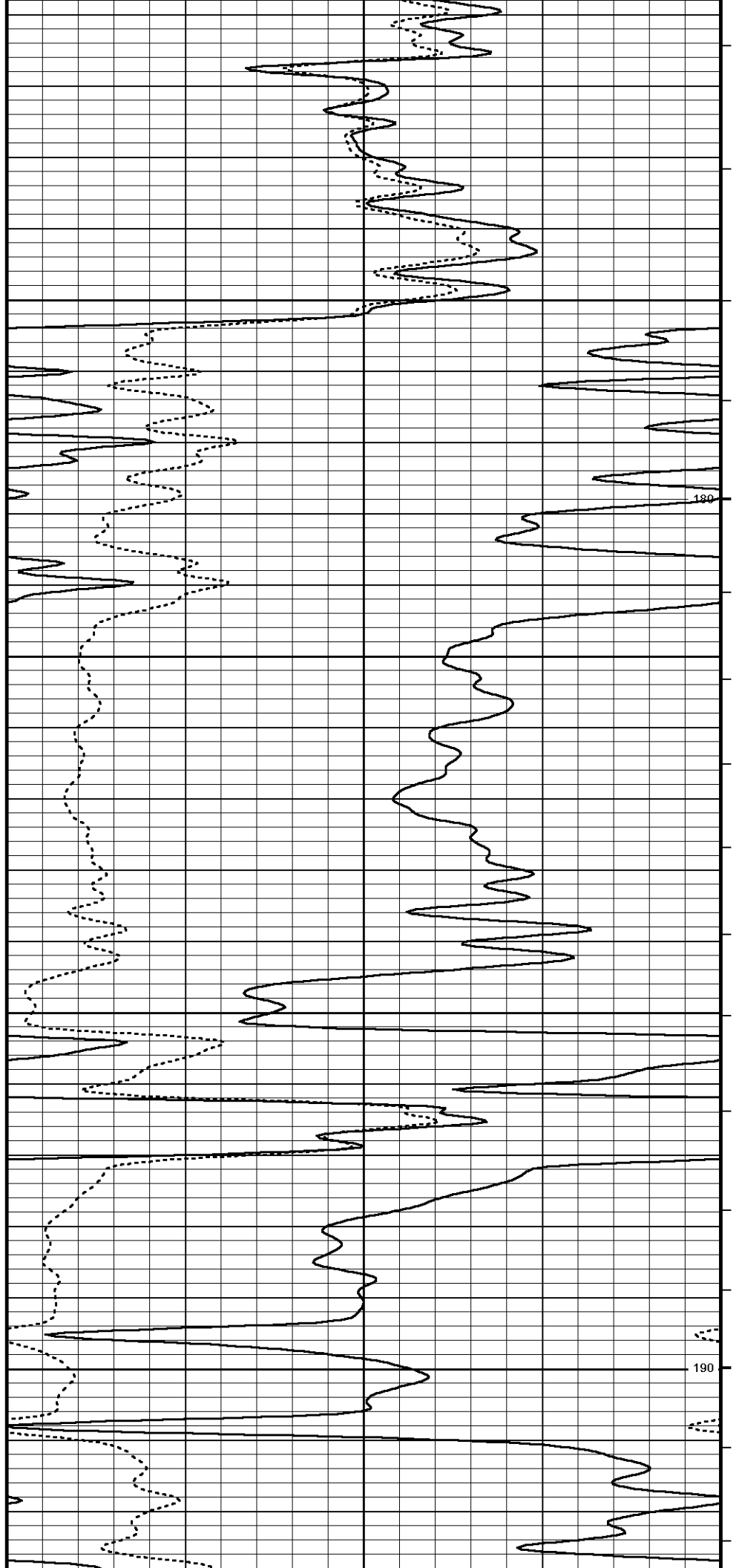
3350

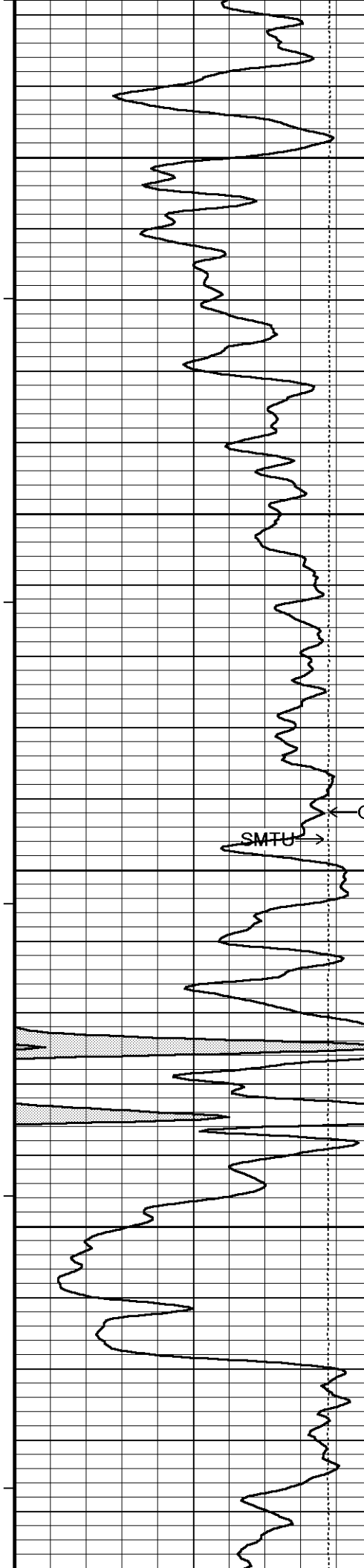
107°

3400

108°

3450





108°

3500

108°

3550

108°

3600

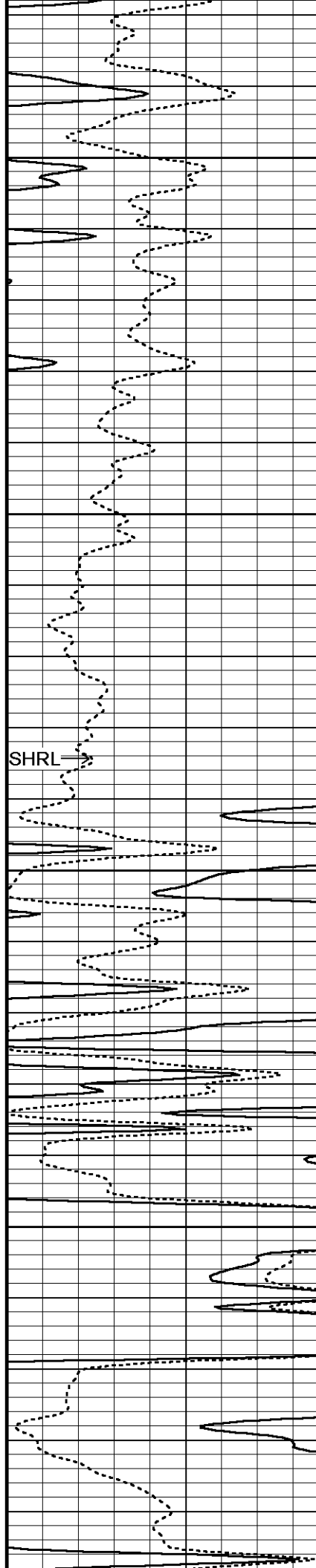
109°

3650

109°

SMTU →

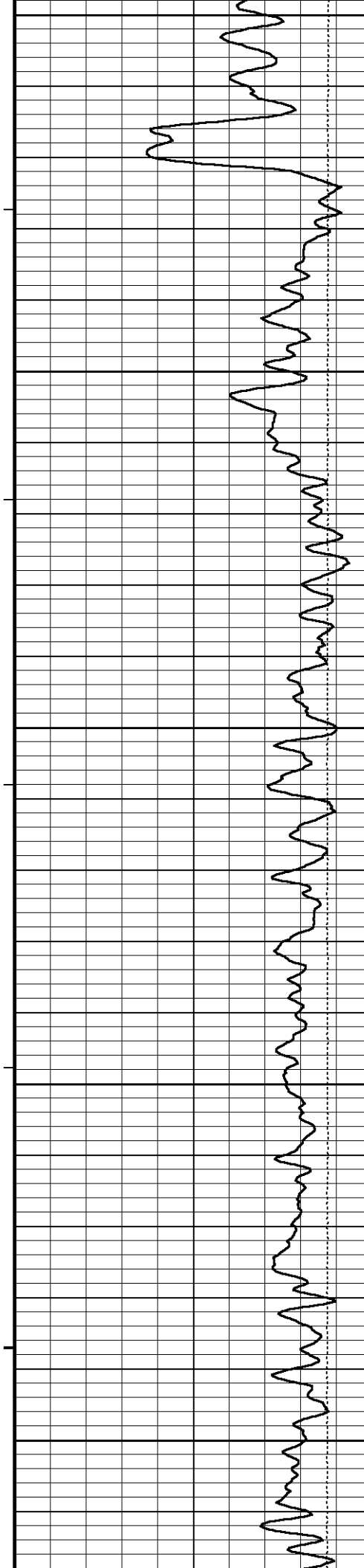
← GRGC



SHRL →

DT35 →

200



3700

109°

3750

109°

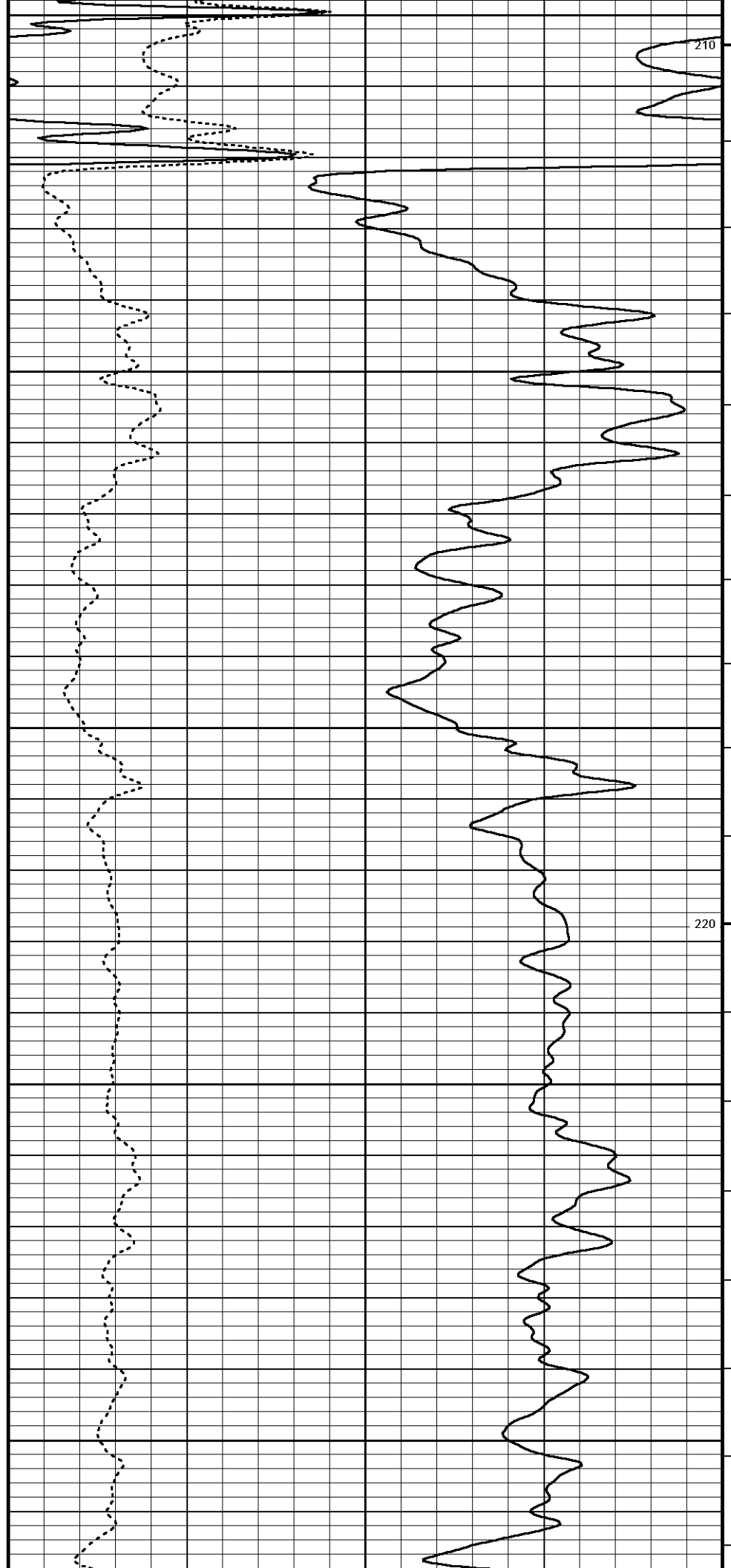
3800

109°

3850

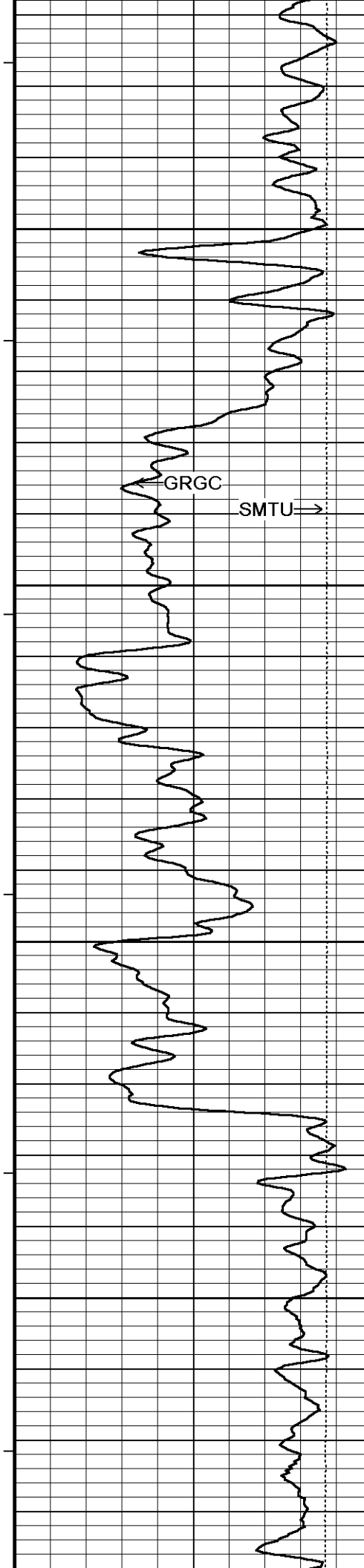
110°

3900



210°

220°



111°

3950

112°

4000

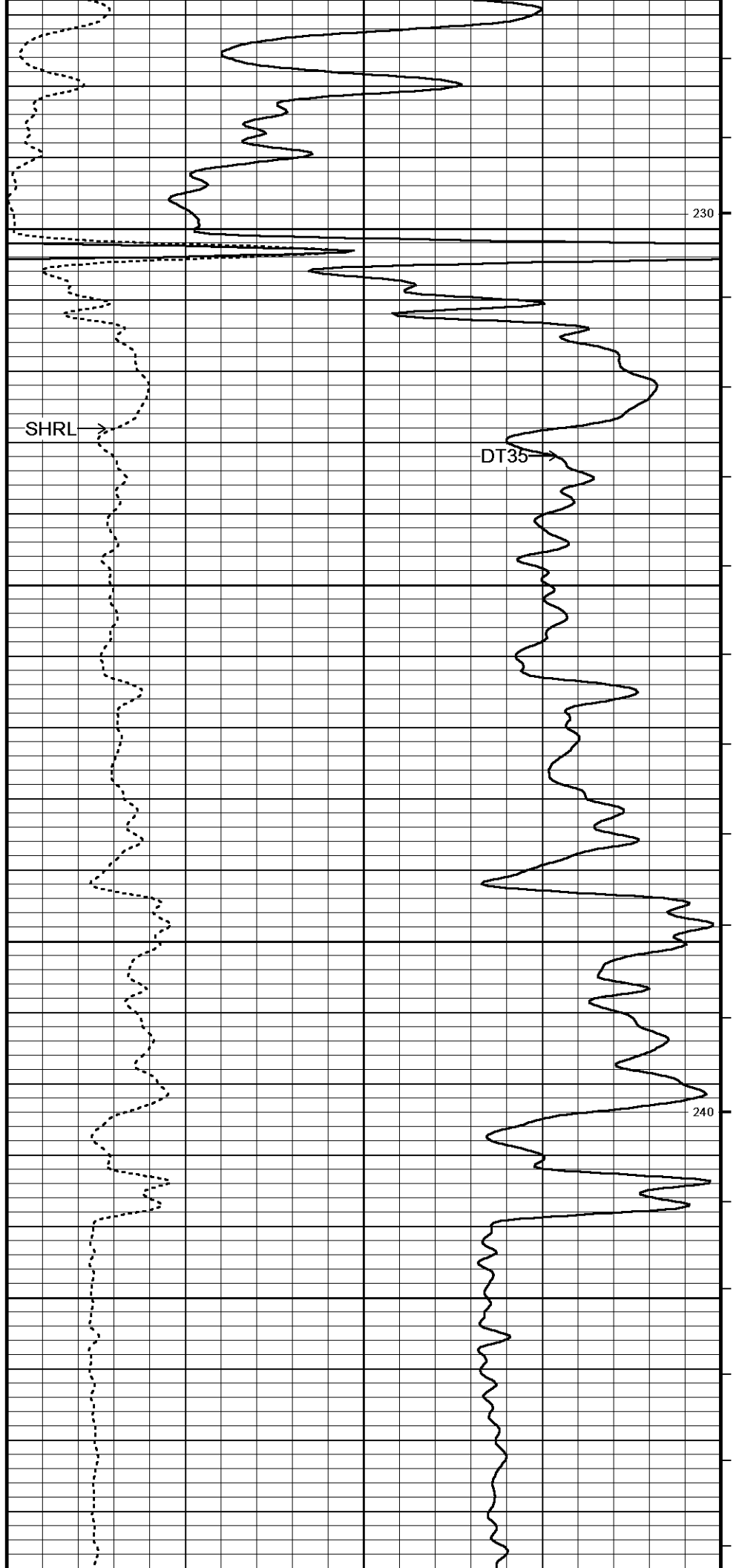
113°

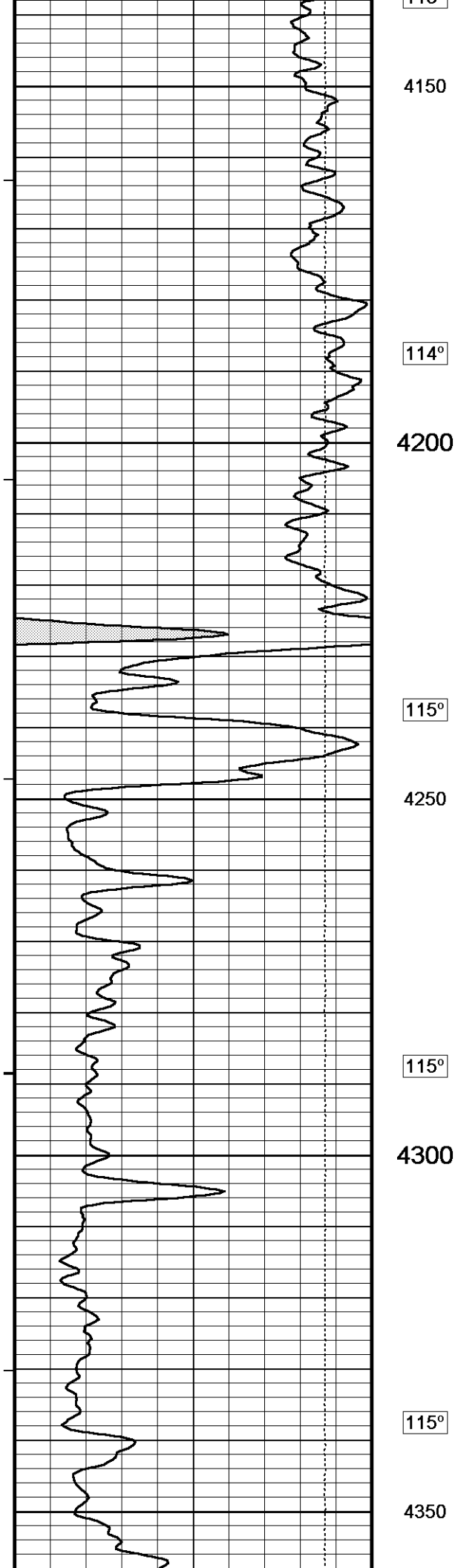
4050

113°

4100

113°





113°

4150

114°

4200

115°

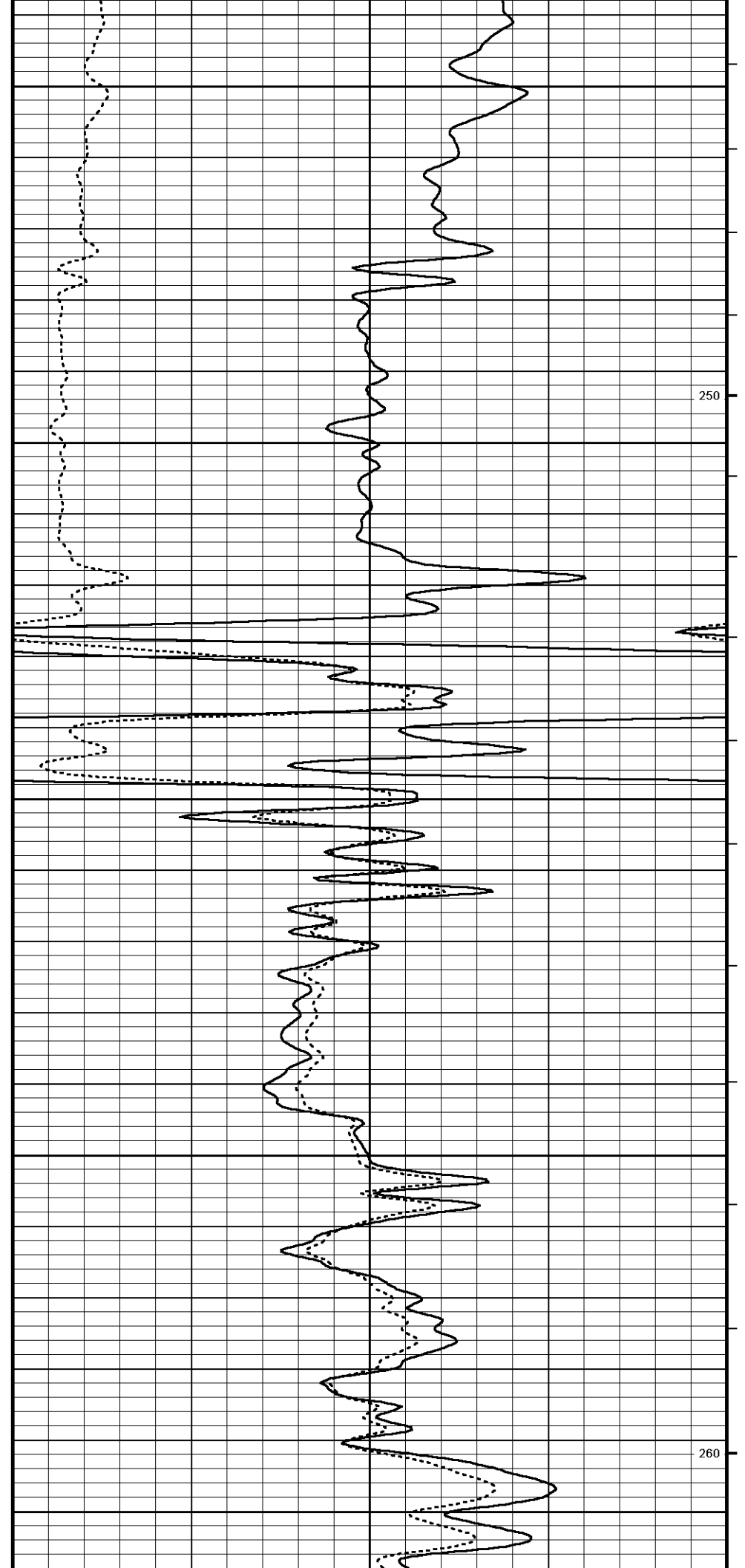
4250

115°

4300

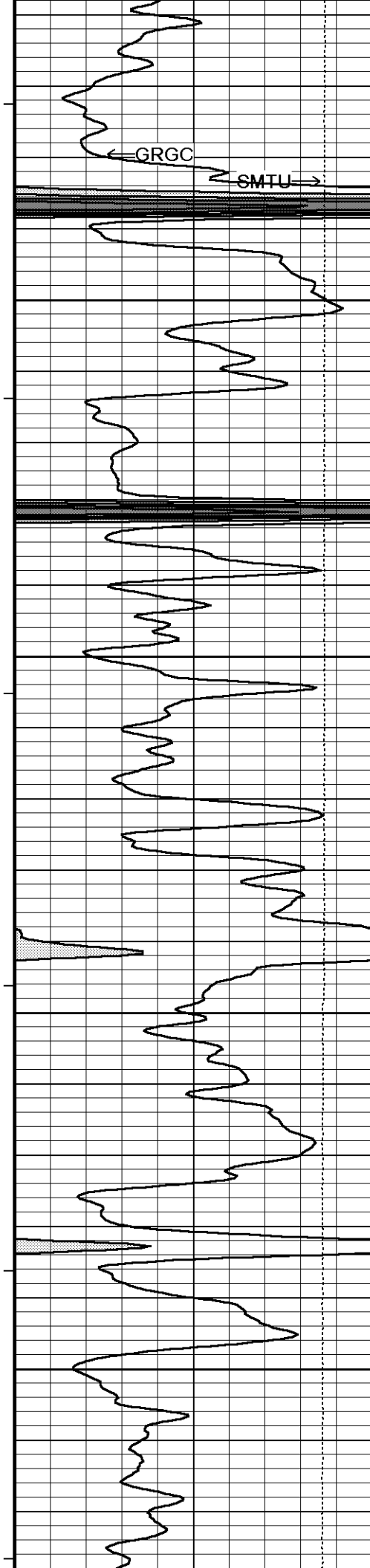
115°

4350



250

260



116°

4400

116°

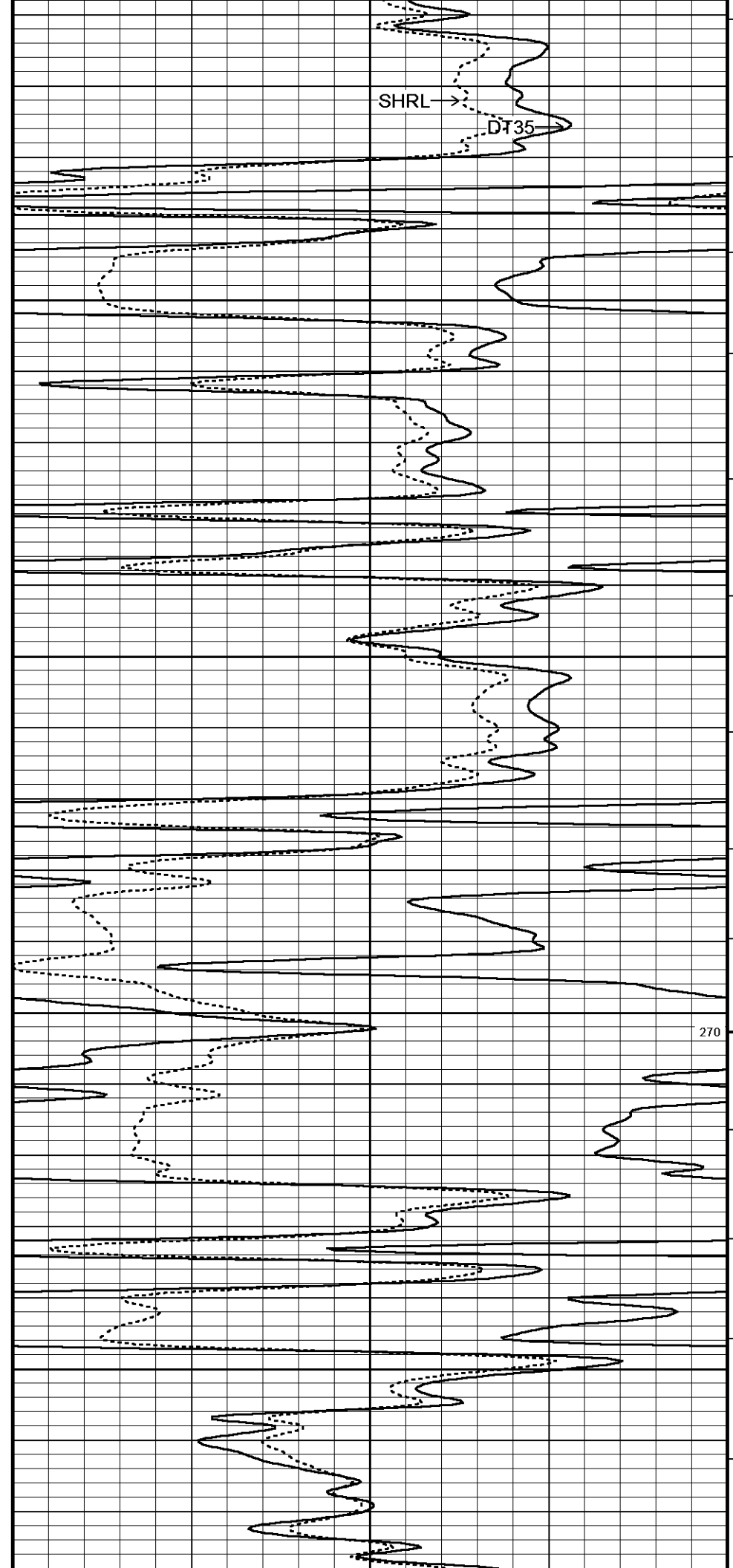
4450

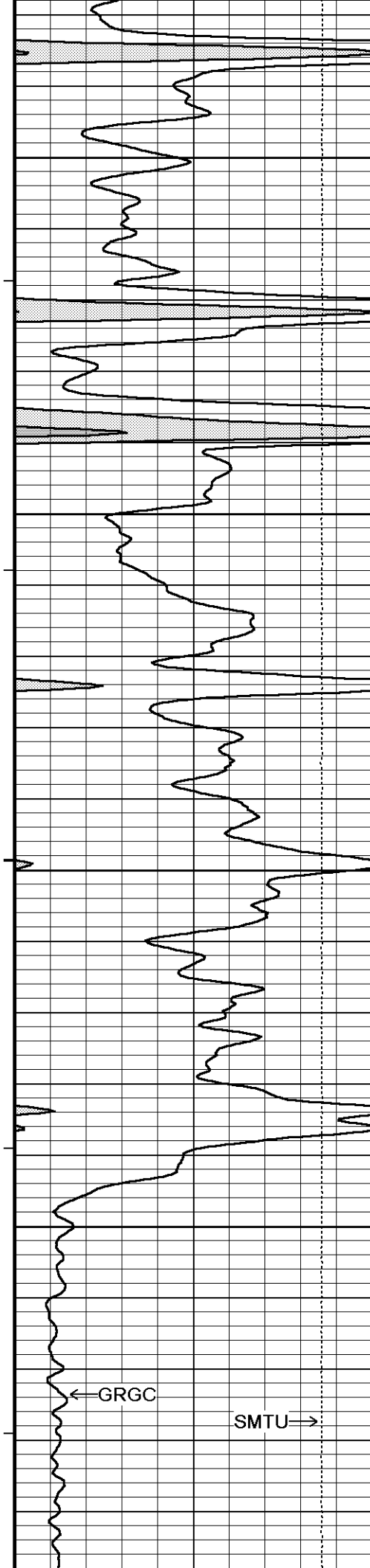
116°

4500

116°

4550





116°

4600

116°

4650

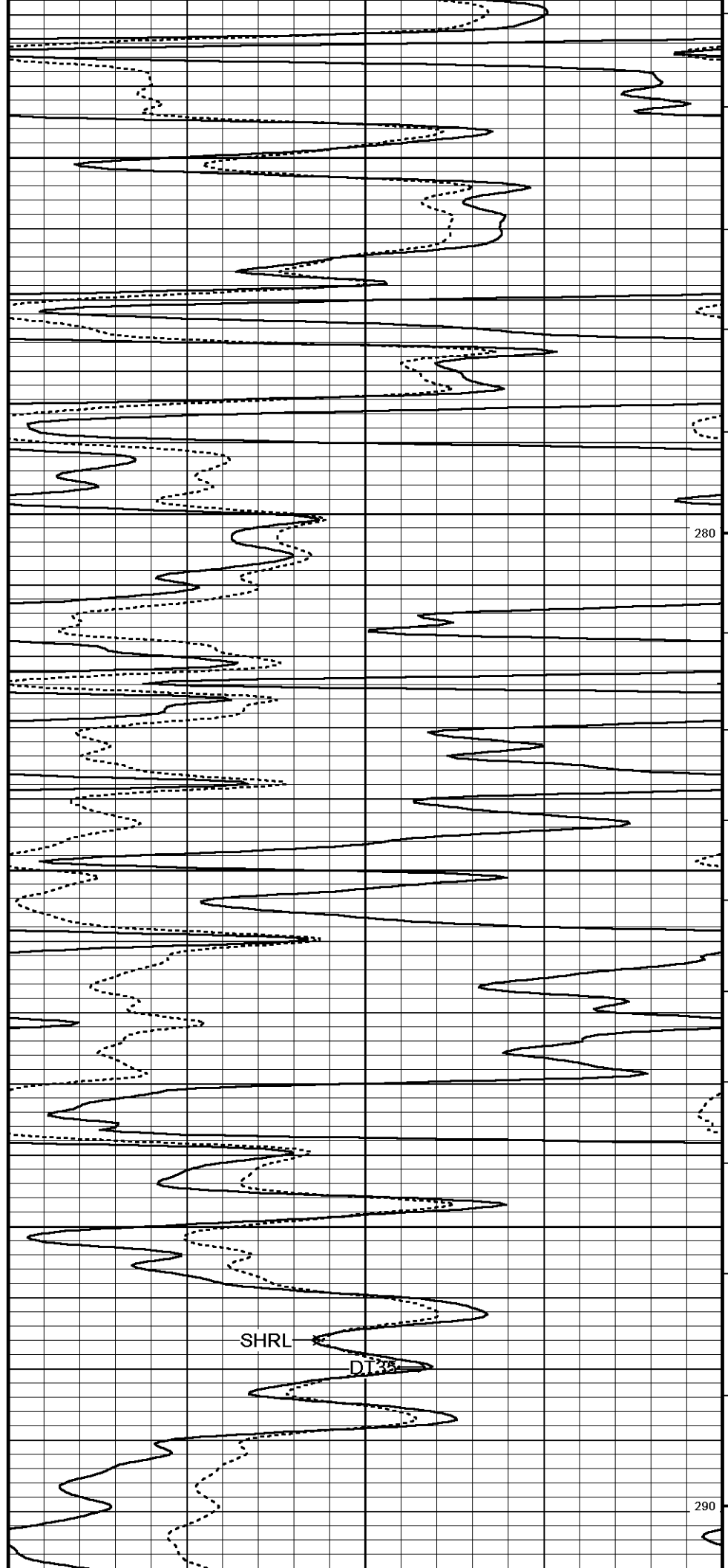
116°

4700

116°

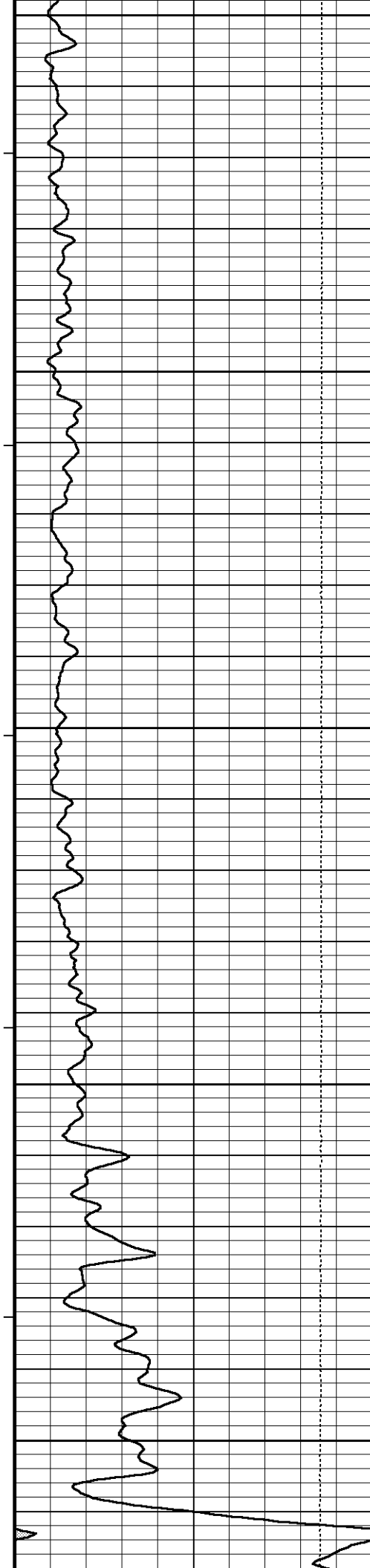
4750

116°



280

290



4800

117°

4850

118°

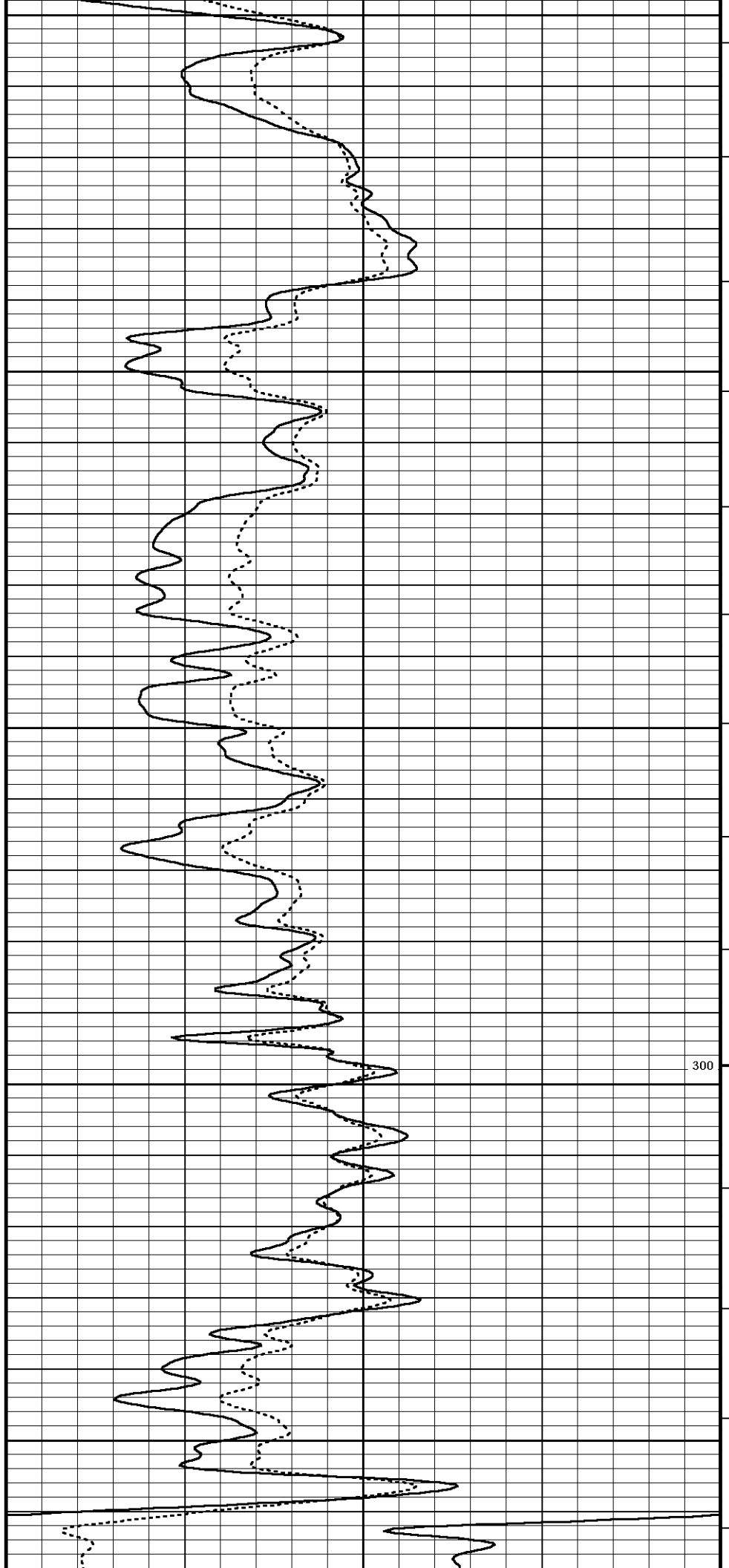
4900

119°

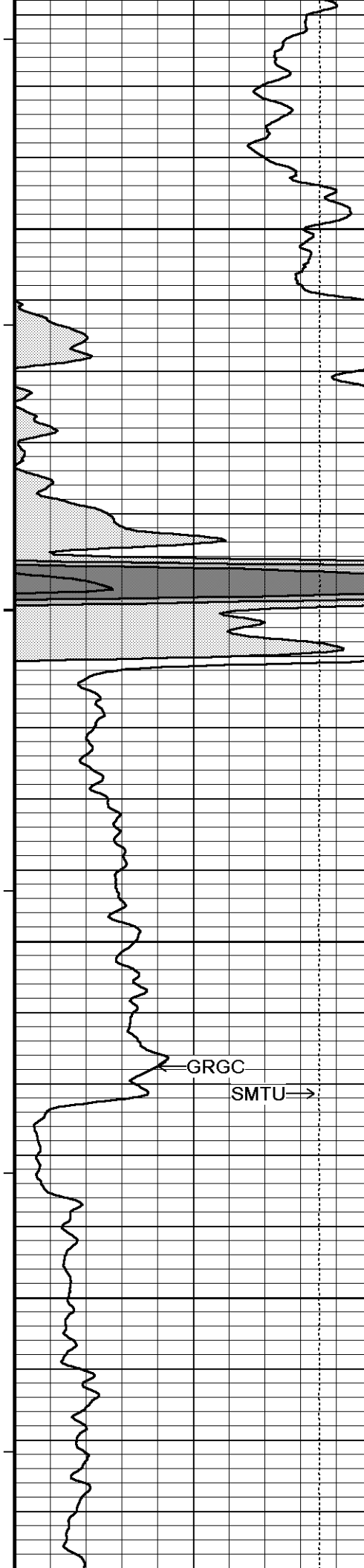
4950

121°

5000



300



123°

5050

124°

5100

124°

5150

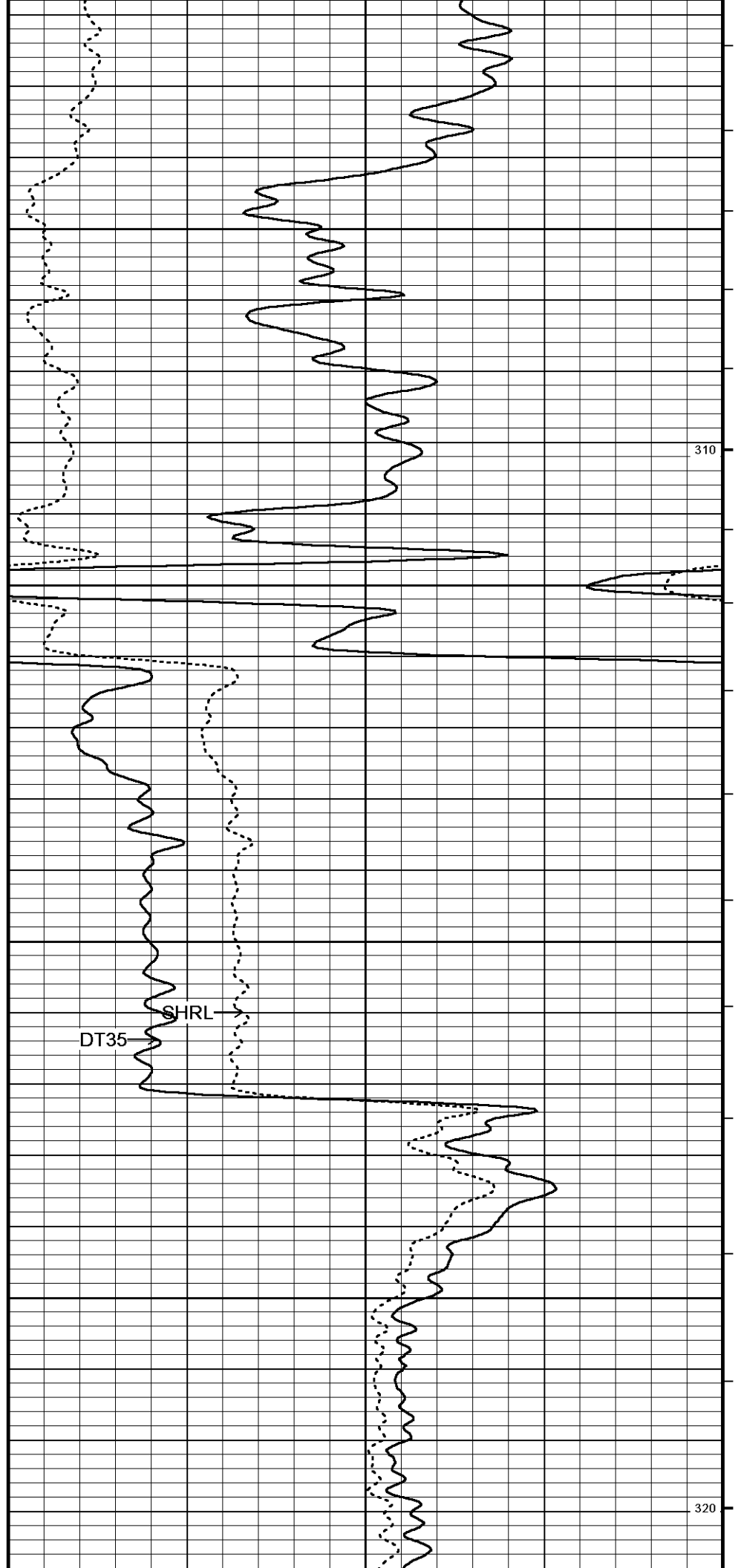
GRGC

SMTU→

124°

5200

124°

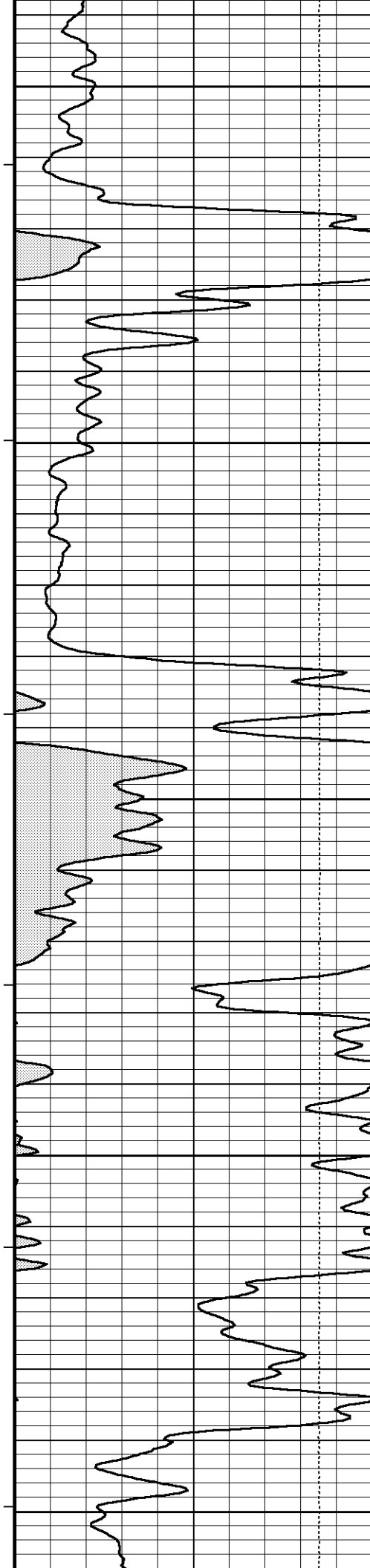


310

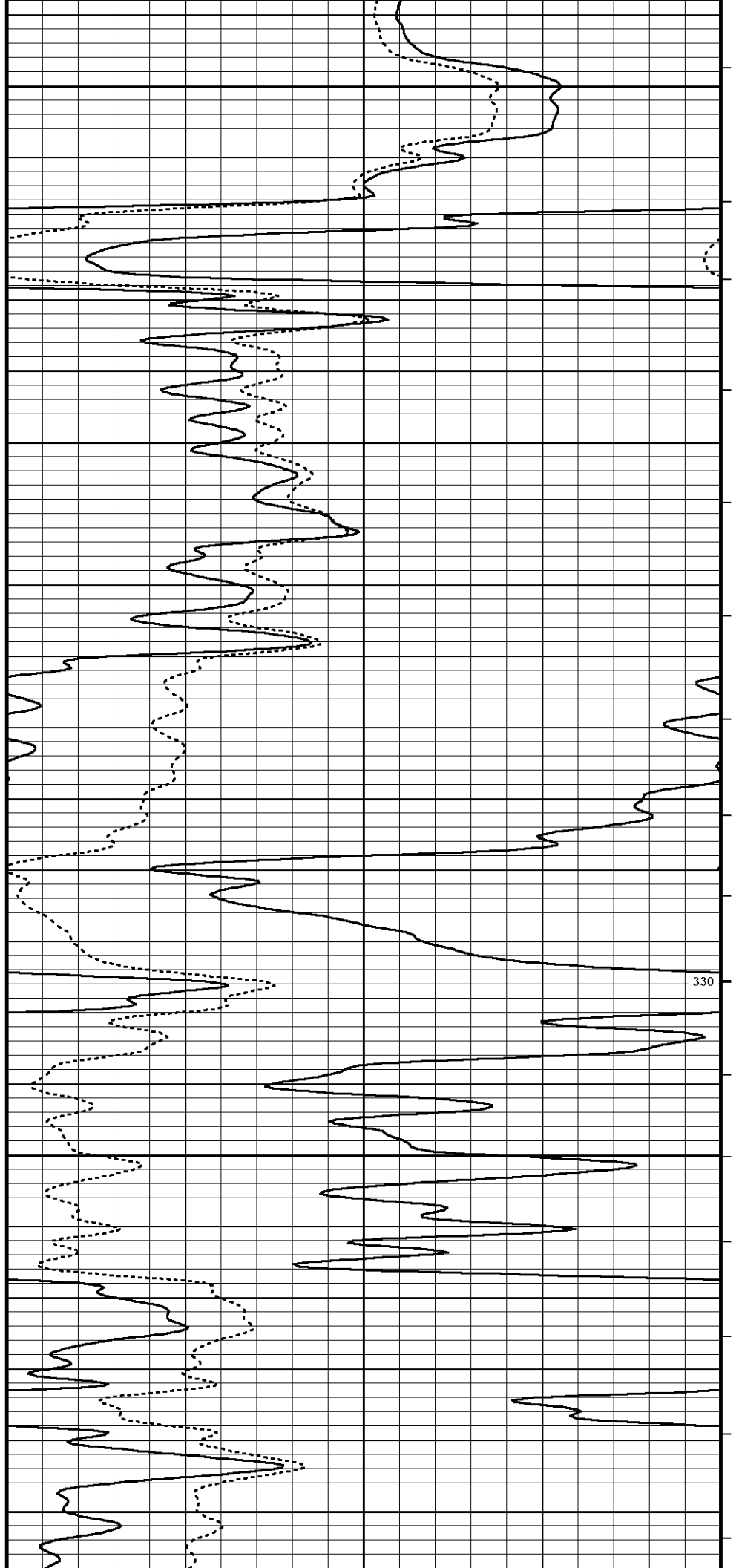
DT35

SHRL→

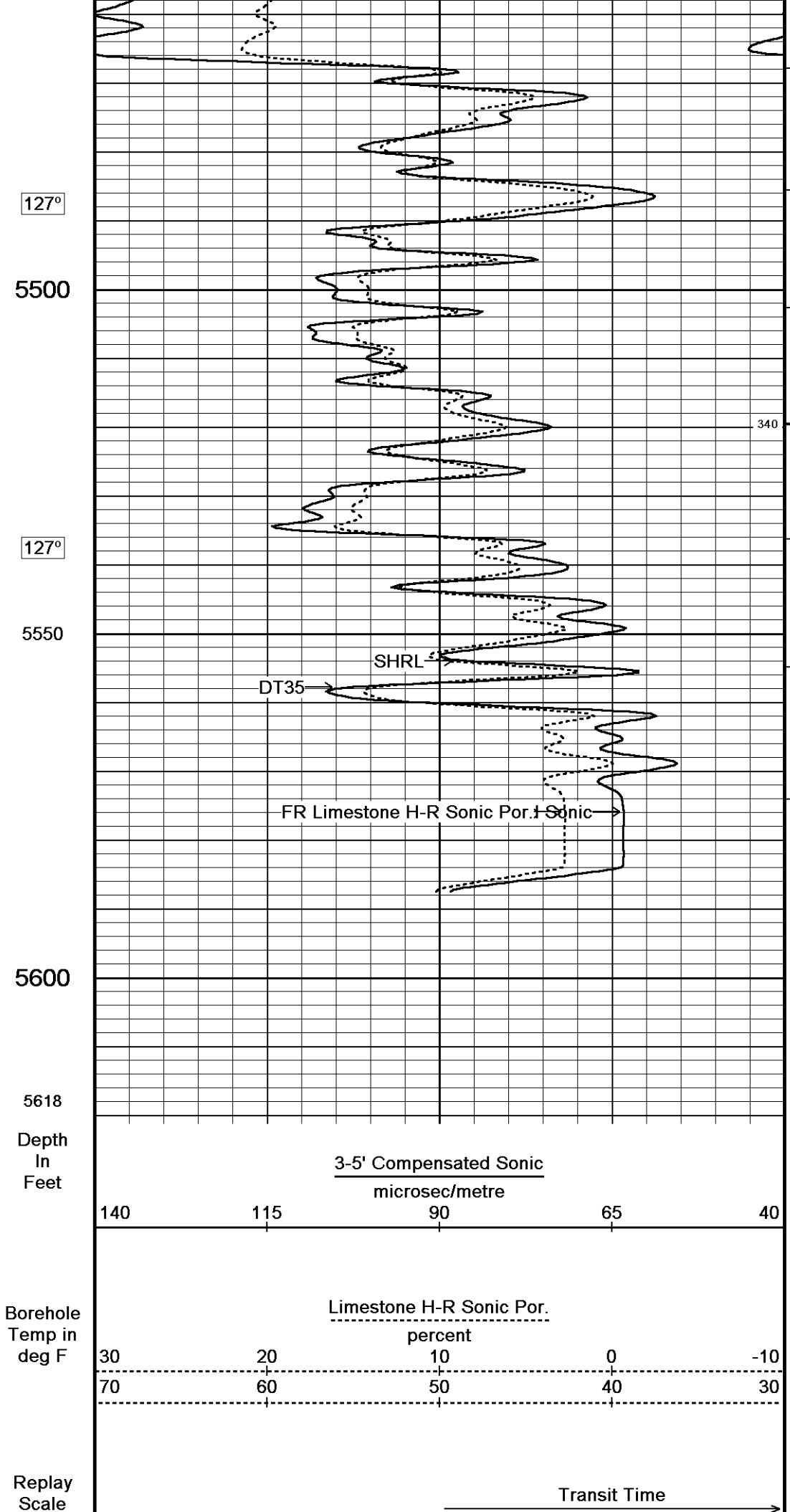
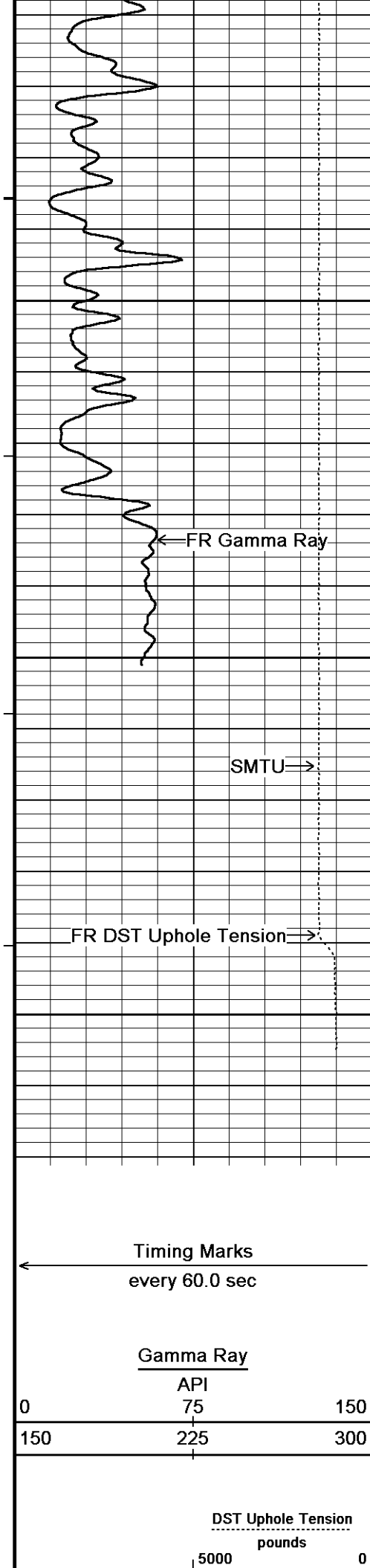
320

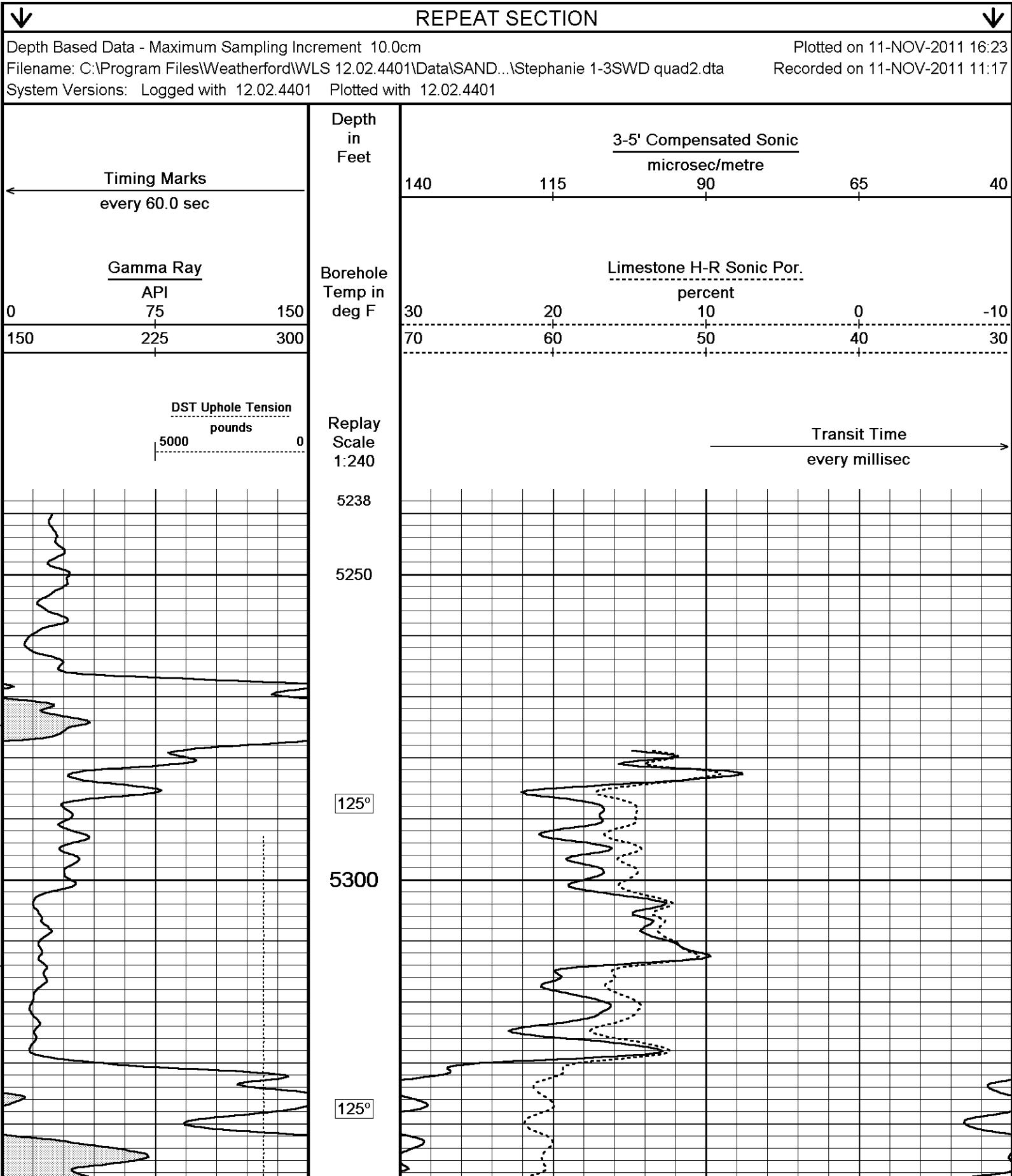


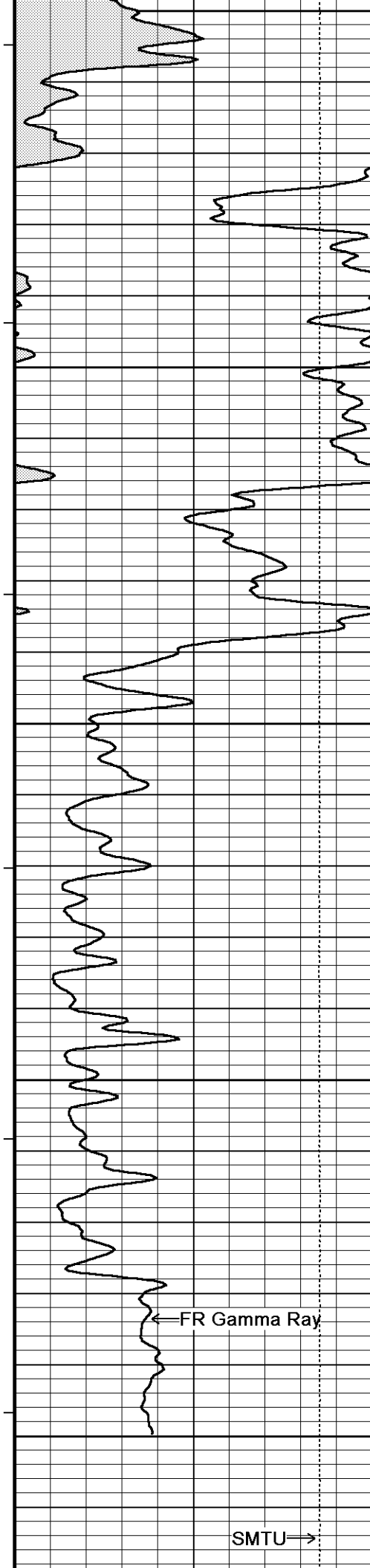
124
5250
126°
5300
126°
5350
127°
5400
127°
5450



330







5350

126°

5400

126°

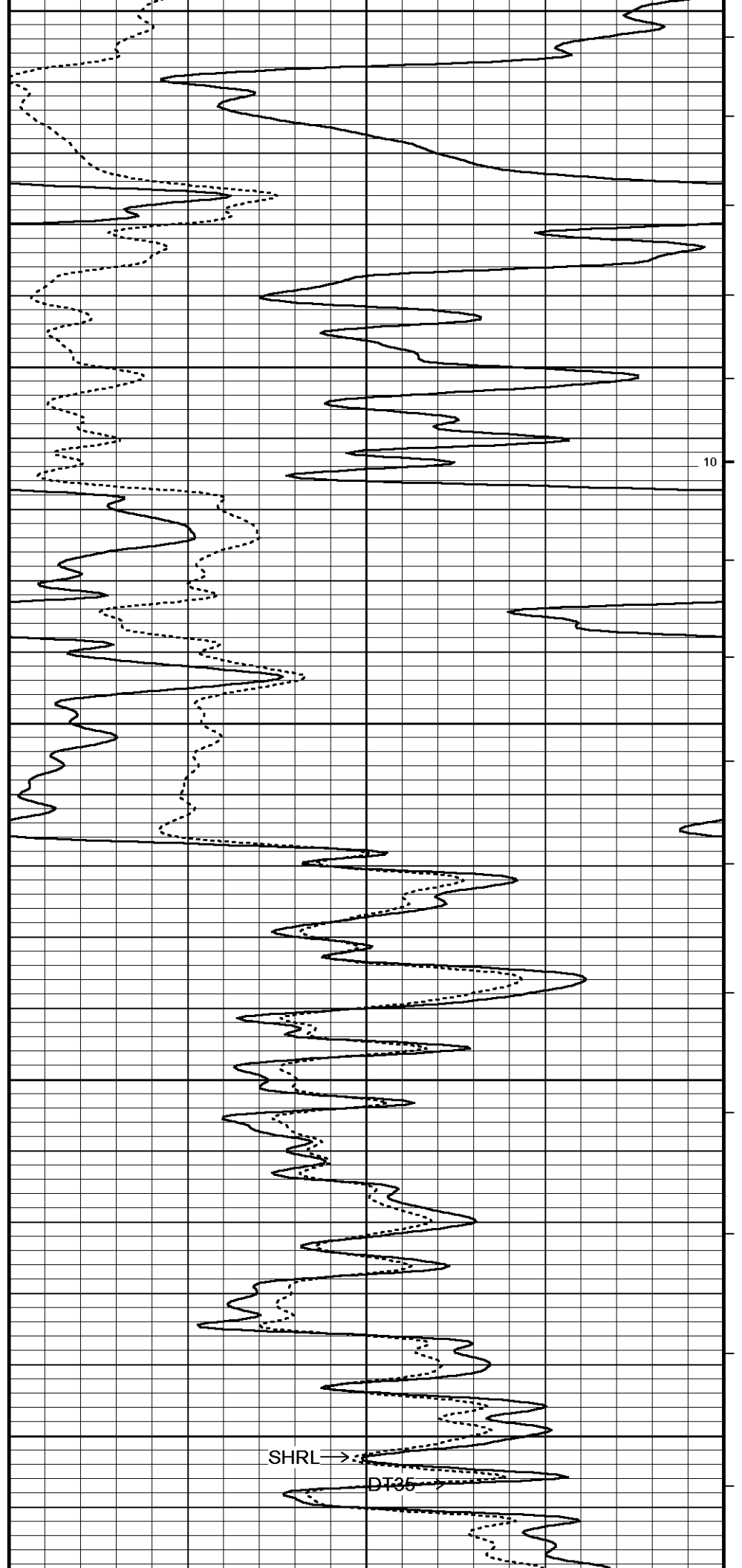
5450

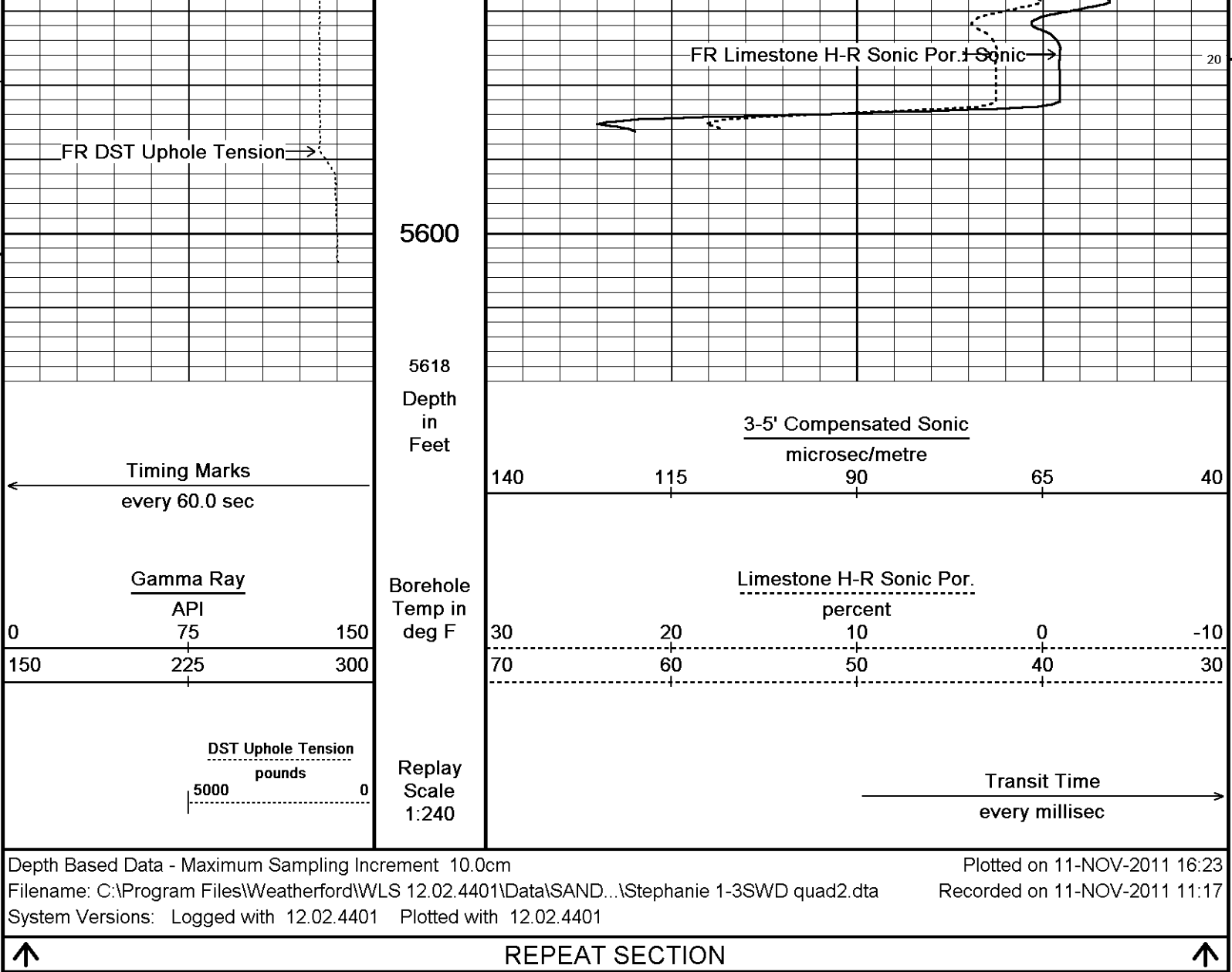
126°

5500

126°

5550





BEFORE SURVEY CALIBRATION		
C:\Program Files\Weatherford\WLS 12.02.4401\Data\SANDRIDGE (Stephanie 1-3 SWD)\Stephanie 1-3SWD quad.dta		
General Constants All 000		Last Edited on 11-NOV-2011 10:24
General Parameters		
Mud Resistivity	1.500	ohm-metres
Mud Resistivity Temperature	70.000	degrees F
Water Level	0.000	feet
Density/Neutron 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	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 03-NOV-2011 00:00
Reading No	Measured	Calibrated (lbs)

Reading No	1	Measured	14363.30	Calibrated (API)	0.00
	2		14882.20		420.00
SP Calibration MCG-C 93					
		Measured		Calibrated (mV)	Field Calibration on 10-NOV-2011 10:18
Reference 1		100.0		100.0	
Reference 2		-100.0		-100.0	
High Resolution Temperature Calibration MCG-C 93					
		Measured		Calibrated(Deg F)	Field Calibration on 10-NOV-2011 10:18
Lower		50.00		50.00	
Upper		100.00		100.00	
High Resolution Temperature Constants MCG-C 93					
Pre-filter Length			11		Last Edited on
Gamma Calibration MCG-C 93					
		Measured		Calibrated (API)	Field Calibration on 10-NOV-2011 10:29
Background		39		28	
Calibrator (Gross)		1031		724	
Calibrator (Net)		992		696	
Gamma Constants MCG-C 93					
					Last Edited on 11-NOV-2011 09:46
Gamma Calibrator Number		036			
Mud Density		1.09		gm/cc	
Caliper Source for Processing		Density Caliper			
Tool Position		Eccentred			
Concentration of KCl		0.00		kppm	
Caliper Calibration MML-A 7					
					Base Calibration on 28-OCT-2011 12:29
					Field Calibration on 11-NOV-2011 10:26
Base Calibration					
Reading No		Measured		Calibrator Size (in)	
1		15410		5.96	
2		18697		7.98	
3		22057		9.94	
4		25813		11.90	
5		0		0.00	
6		N/A		N/A	
Field Calibration					
		Measured Caliper (in)		Actual Caliper (in)	
		8.91		8.92	
Micro Normal and Micro Inverse Calibration MML-A 7					
					Base Calibration on 28-OCT-2011 12:20
					Field Check on 11-NOV-2011 10:14
Base Calibration					
		Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2	
Micro Normal	11.9	60.3	2.6	12.8	
Micro Inverse	15.6	77.9	1.7	8.4	
Channel	Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal		32.0		32.0	
Micro Inverse		16.4		16.4	
Micro Normal and Micro Inverse Constants MML-A 7					
					Last Edited on 30-SEP-2011 11:02
Pad Type	8-12 in Soft Rubber Inflatable	006-9011-159			
Micro Normal K Factor			0.5110		
Micro Inverse K Factor			0.3380		
Standoff Offset			N/A	inches	
Neutron Calibration MDN-A.B 31					
					Base Calibration on 10-NOV-2011 10:00
					Field Check on 10-NOV-2011 10:18
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far	Near	Far	
	3307	102	3714	110	

Ratio	32.458	33.764
Field Calibrator at Base	Calibrated (cps)	
	2195	3229
Ratio	0.680	
Field Check	Calibrated (cps)	
	2253	3270
Ratio	0.689	

Neutron Constants MDN-A.B 31			Last Edited on 11-NOV-2011 09:46		
Neutron Source Id	N1054				
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	Constant Value				
Formation Pressure	0.00	kpsi			
Temperature Source	MCG External Temperature				
Temperature	N/A	degrees F			
Mud Salinity	0.00	kppm			
Formation Fluid Salinity Source	Constant Value				
Formation Fluid Salinity	0.00	kppm			
Barite Mud Correction	Not Applied				
Salinity Correction	Not Applied				

FE Calibration MFE-A.A 54		Base Calibration on 28-OCT-2011 12:41 Field Check on 11-NOV-2011 10:13	
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	969.1	126.8	
Base Check		282.1	
Field Check		282.1	

FE Constants MFE-A.A 54			Last Edited on 11-NOV-2011 09:47		
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-A.A 40		Last Edited on 11-NOV-2011 10:17	
Maximum Boundary Contrast	328.08	micro-sec/m	
Fluid Transit Time	620.08	micro-sec/m	
Limestone Transit Time	155.84	micro-sec/m	
Sandstone Transit Time	182.09	micro-sec/m	
Dolomite Transit Time	142.72	micro-sec/m	
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	272.72	micro-sec/m	
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)	Depth (ft)	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	

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-B.J 390

Field Calibration on 07-NOV-2011 02:31

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

High Resolution Temperature Constants MAI-B.J 390

Last Edited on

Pre-filter Length	11
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Induction Calibration MAI-B.J 390

Base Calibration on 16-AUG-2010 14:24

Field Check on 11-NOV-2011 10:16

Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		Low	High	Low	High
1		16.8	458.6	9.3	966.2
2		6.3	377.7	7.6	821.4
3		3.8	258.6	5.2	566.0
4		1.9	132.3	2.6	279.2

Array Temperature	77.9	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	16.2	3953.7
2	0.0	0.0	32.6	3558.1
3	0.0	0.0	30.2	3056.9
4	0.0	0.0	21.2	2085.0
Deep	0.0	0.0	18.6	2003.2
Medium	0.0	0.0	43.4	4006.6
Shallow	0.0	0.0	48.7	5252.9

Array Temperature	0.0	63.7	Deg F
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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	0.0060	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 10-NOV-2011 15:41

Field Calibration on 10-NOV-2011 15:43

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15968	4.01
2	24277	5.96
3	32864	7.98
4	41441	9.94
5	50192	11.90
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.98

Photo Density Calibration MPD-A.A 11

Base Calibration on 10-NOV-2011 15:28

Field Check on 10-NOV-2011 15:37

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	59597	31577	60364	31946
Reference 2	24527	2746	25079	2547

Field Check at Base

1227.3	1318.8
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Field Check

1224.0	1329.2
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PE Calibration

Base Calibration	WS	Measured	Ratio	Calibrated
Background	223	1078		
Reference 1	22974	59374	0.390	0.399
Reference 2	6432	24363	0.267	0.273

Field Check at Base
222.6 1078.4

Field Check
219.5 1073.2

Density Constants MPD-A.A 11

Last Edited on 11-NOV-2011 09:35

Density Source Id P56135B
Nylon Calibrator Number 603
Aluminium Calibrator Number 509
Density Shoe Profile 8 inch
Caliper Source for Processing Density Caliper
PE Correction to Density Not Applied
Mud Density 1.09 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	0.00

DOWNHOLE EQUIPMENT

C:\Program Files\Weatherford\WLS 12.02.4401\Data\SANDRIDGE (Stephanie 1-3 SWD)\Stephanie 1-3SWD quad.dta

MCB-A 11B Tension Cablehead
MCB-A 1 LG: 2.18 ft WT: 19.8 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 205 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 93 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 31 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

