

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY				BEREXCO LLC			
WELL				BROWN 3-1			
FIELD/BLOCK				CUTTER			
COUNTY				STEVENS			
STATE				KANSAS			
Permanent Datum				GL			
Log measured from				KB			
Drilling measured from				KB			
Date				31-Jul-19			
Run No.				1			
Depth - Driller				5750.0 ft			
Depth - Logger				5752.0 ft			
Bottom - Logged Interval				5742			
Top - Logged Interval				1741			
Casing - Driller				8.625 in @ 1742.0 ft			
Casing - Logger				1740.0 ft			
Bit Size				7.875 in			
Type Fluid in Hole				Water Based Mud			
Density				9.30 g/cc		59.00 slqt	
PH				11.00 pH		6.4 cpm	
Source of Sample				FLOWLINE			
Rm @ Meas. Temperature				0.83 ohmm		@ 92.00 degF	
Rmf @ Meas. Temperature				0.66 ohmm		@ 90.00 degF	
Rmc @ Meas. Temperature				0.92 ohmm		@ 90.00 degF	
Source Rmf				Rmc		MEAS	
Rm @ BHT				0.55 ohmm		@ 142.0 degF	
Time Since Circulation				13:00 hr			
Time on Bottom				31-Jul-19 16:55			
Max. Rec. Temperature				142.00 degF		@ 5752.0 ft	
Equipment				12156883		EL RENO, OK	
Recorded By				WHITLOCK			
Witnessed By				ED GRIEVES			

COMPANY				BEREXCO LLC			
WELL				BROWN 3-1			
FIELD/BLOCK				CUTTER			
COUNTY				STEVENS			
STATE				KANSAS			
API No.				15-189-22860-00-00			
Location				(SHL) W/2 NE SE SW 990' FSL & 2305' FWL			
Sect. 1				Twp. 31S		Rge. 35W	
Elev. 2969.0 ft				12.0 ft above perm. Datum			
Other Services:				ACRT SDL-DSN MICROLOG SONIC			
Elev.: K.B.				2981.0 ft			
D.F.				2979.0 ft			
G.L.				2969.0 ft			

Fold here

Service Ticket No.: 905820789						API No.: 15-189-22860-00-00						PGM Version: WL INSITE R6.2.1 (Build 2)									
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE										RESISTIVITY SCALE CHANGES											
Date		Sample No.								Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																					
Type Fluid in Hole																					
Density		Viscosity																			
Ph		Fluid Loss																			
Source of Sample												RESISTIVITY EQUIPMENT DATA									
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other	
Rmf @ Meas. Temp.				@				@													
Rmc @ Meas. Temp.				@				@													
Source Rmf		Rmc																			
Rm @ BHT				@				@													
Rmf @ BHT				@				@													
Rmc @ BHT				@				@													
EQUIPMENT DATA																					
GAMMA				ACOUSTIC				DENSITY				NEUTRON									
Run No.				Run No.				Run No.				Run No.									
Serial No.				Serial No.				Serial No.				Serial No.									
Model No.				Model No.				Model No.				Model No.									
Diameter				No. of Cent.				Diameter				Diameter									
Detector Model No.				Spacing				Log Type				Log Type									
Type								Source Type				Source Type									
Length				LSA [Y/N]				Serial No.				Serial No.									
Distance to Source				FWDA [Y/N]				Strength				Strength									
LOGGING DATA																					
GENERAL				GAMMA		ACOUSTIC				DENSITY				NEUTRON							
Run		Depth		Speed		Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix					
No.		From	To	ft/min		L	R	L	R		L	R		L	R						

[illegible]**HALLIBURTON**

Plot Time: 31-Jul-19 20:42:15

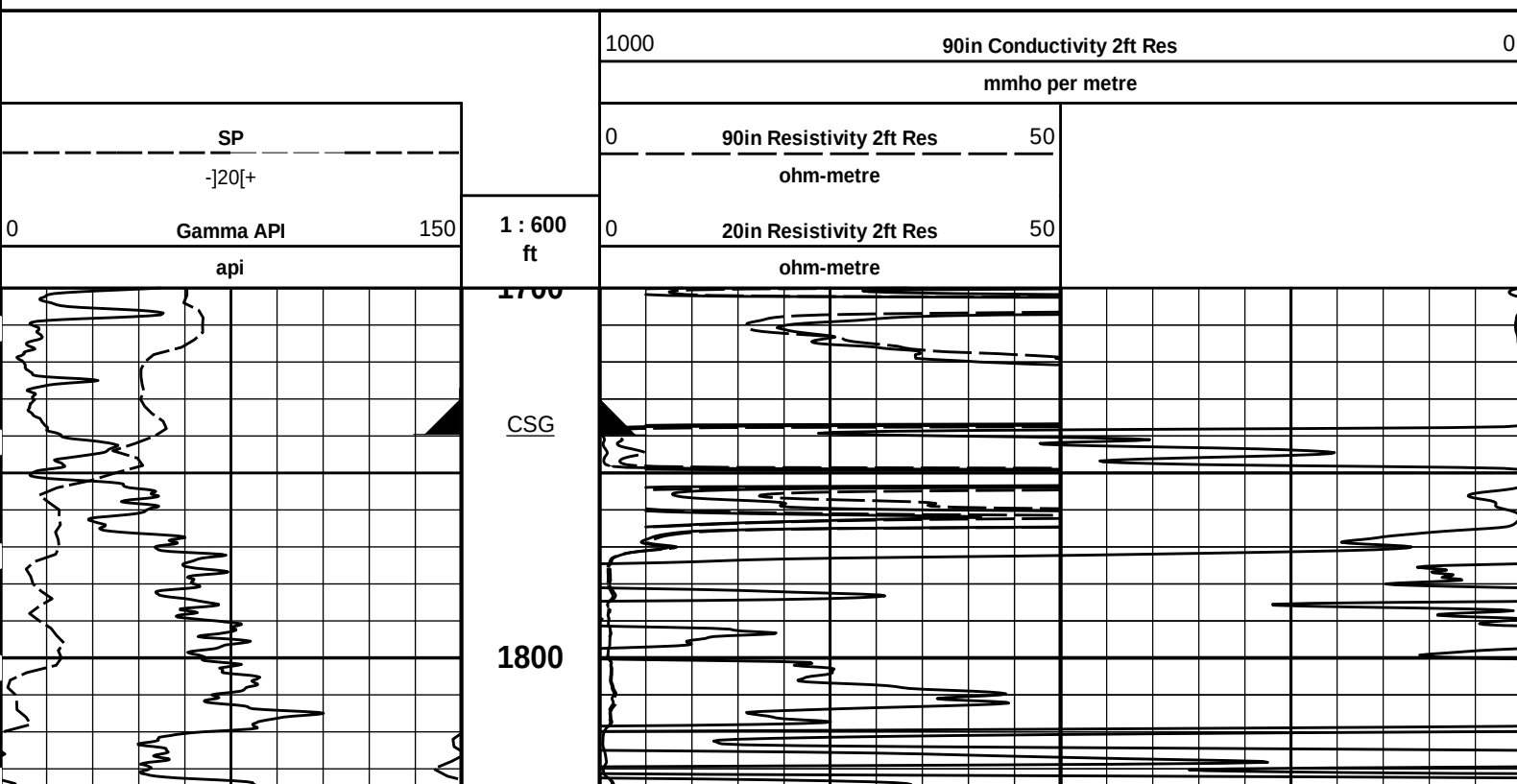
Plot Range: 1700 ft to 5758.58 ft

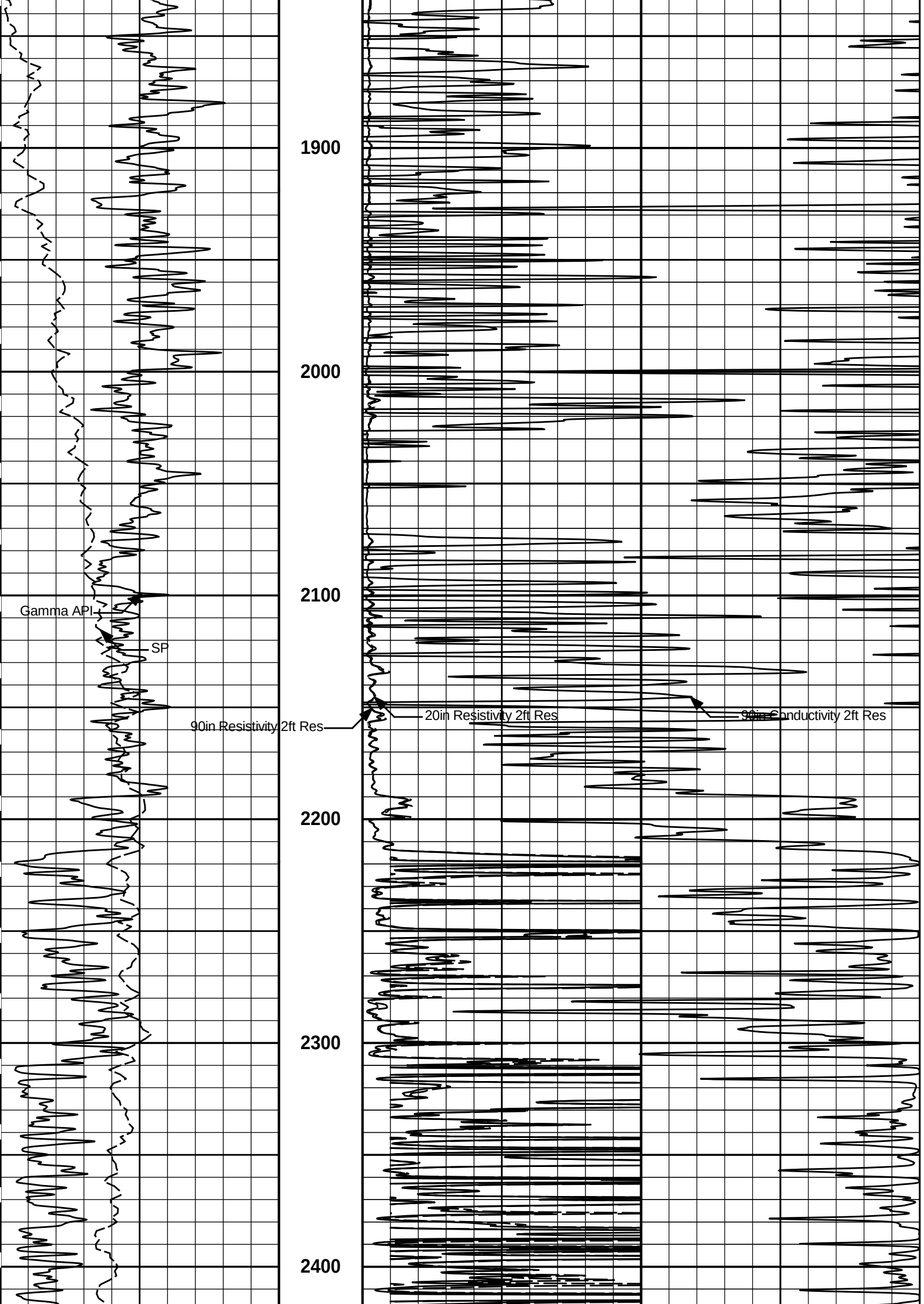
Data: BEREXCO_BROWN\Well Based\DAQ-0001-003\

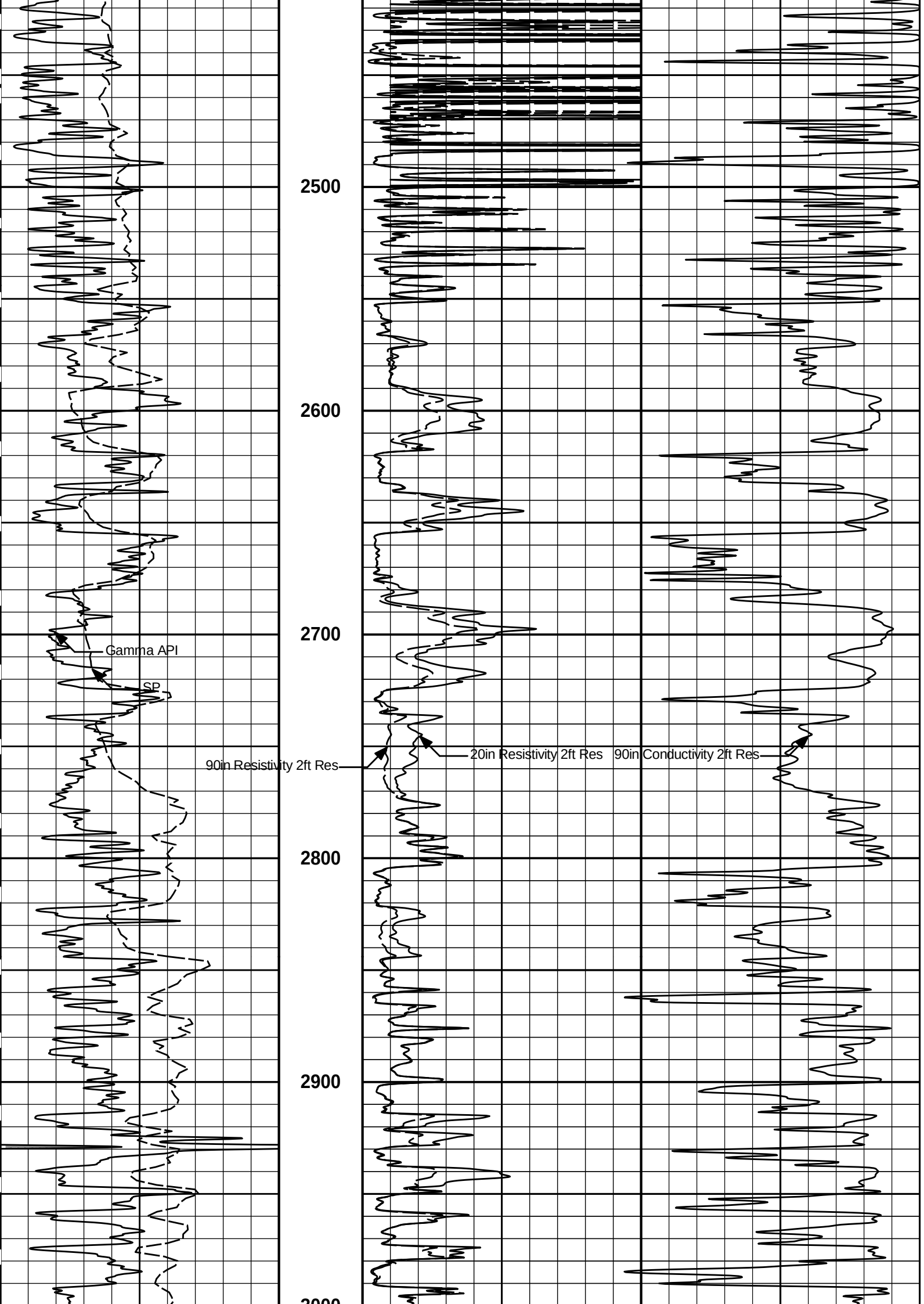
Plot File: \\-LOCAL-\\BEREXCO_BROWN\\0001 GTET-DSN-SDL-BSAT-ACRT\\ACRT\\ACRT_2_main

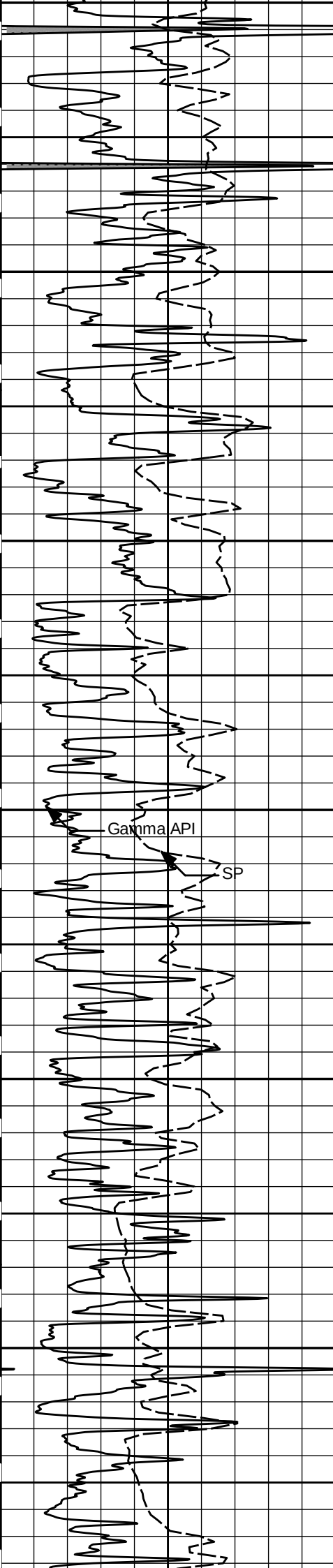
2 INCH MAIN LOG

2 INCH MAIN LOG









3000

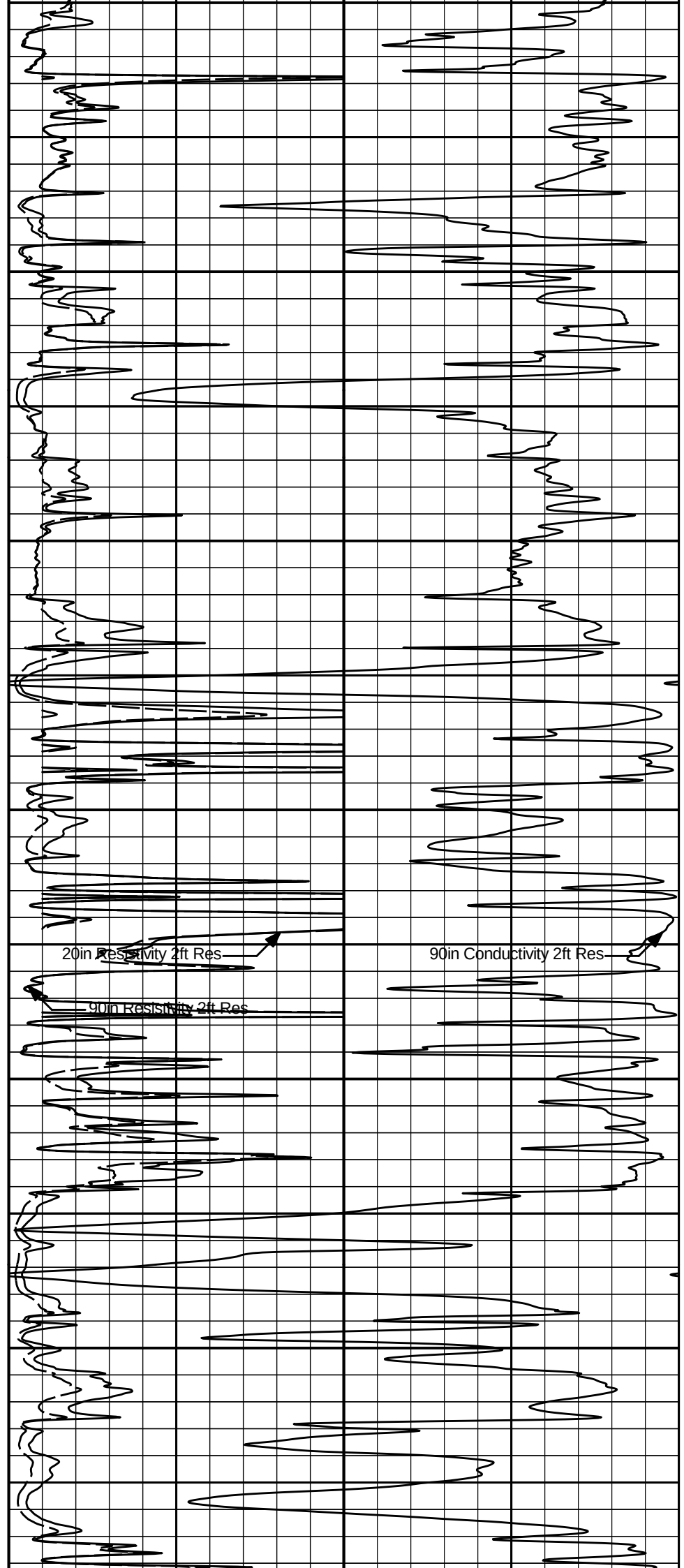
3100

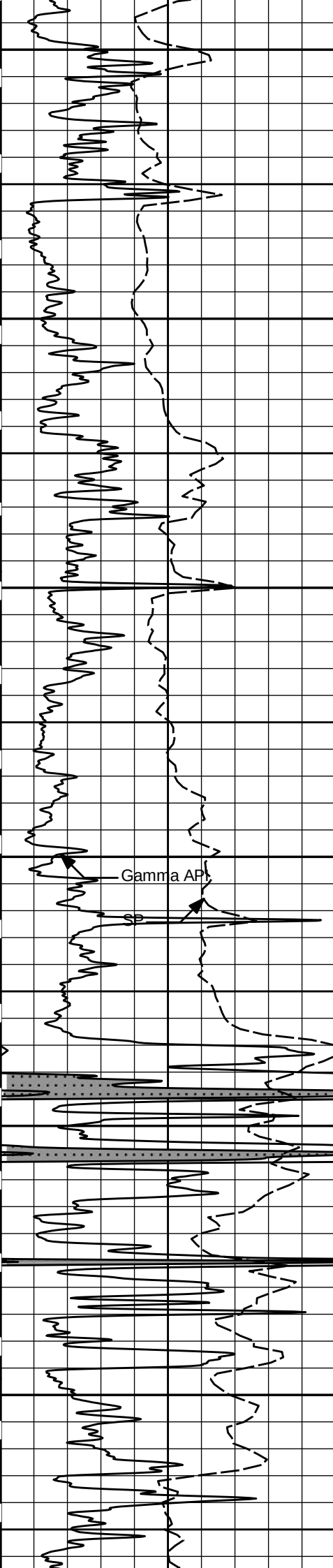
3200

3300

3400

3500





3600

3700

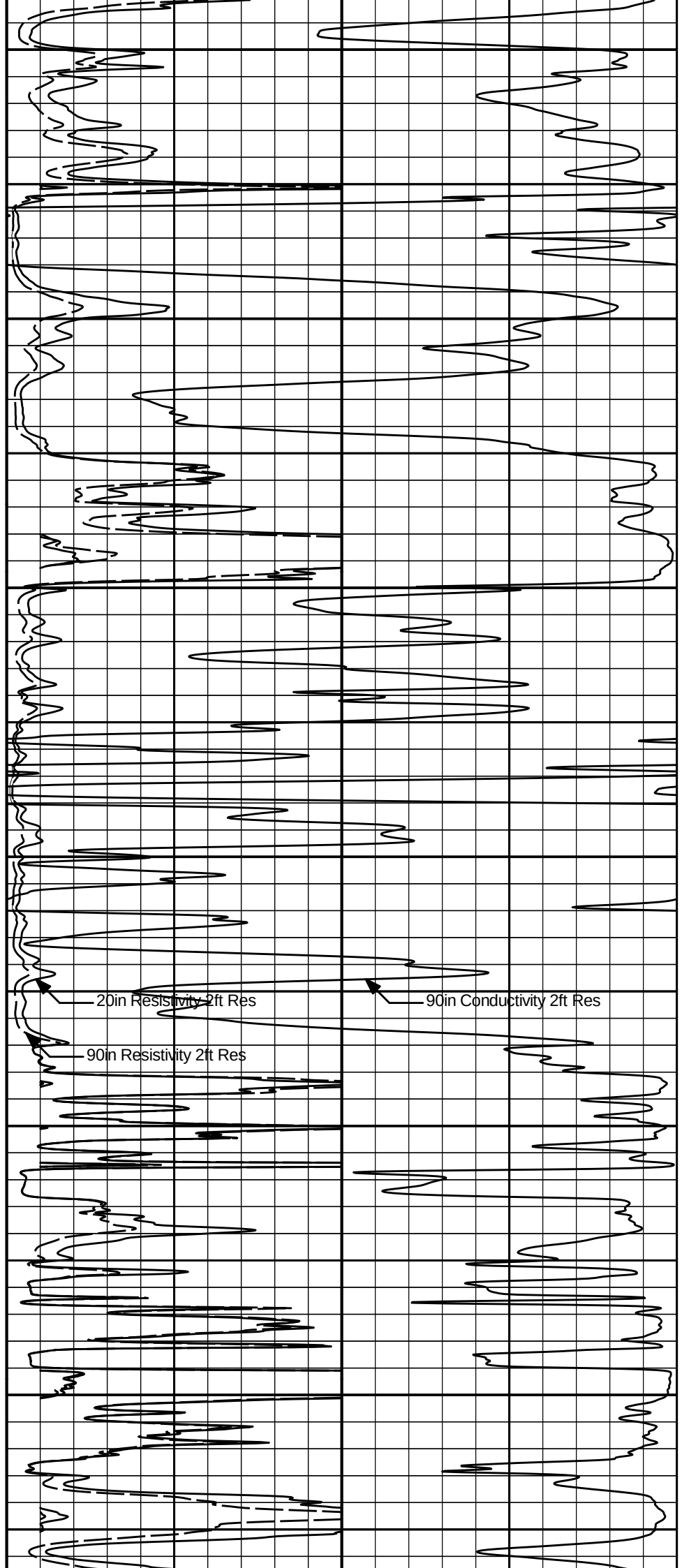
3800

3900

4000

4100

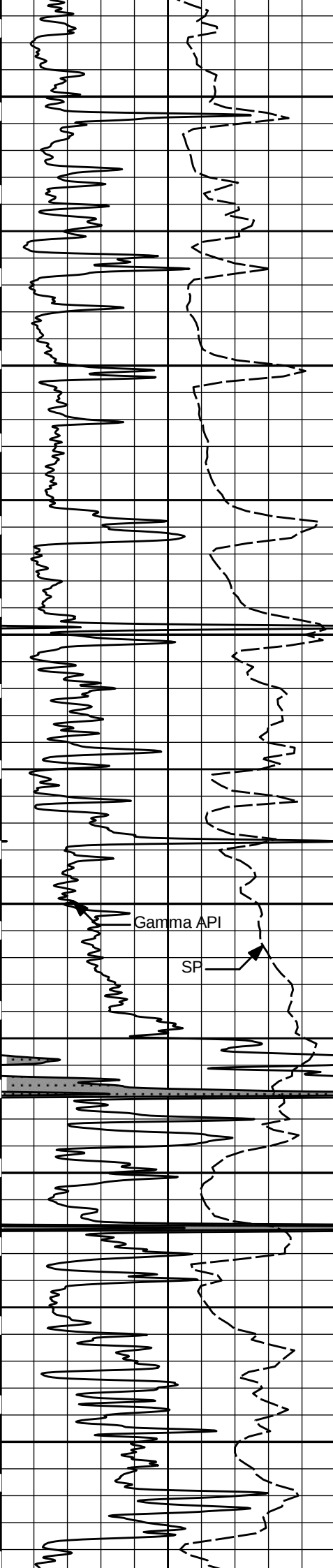
Gamma AP



20in Resistivity 2ft Res

90in Resistivity 2ft Res

90in Conductivity 2ft Res



4200

4300

4400

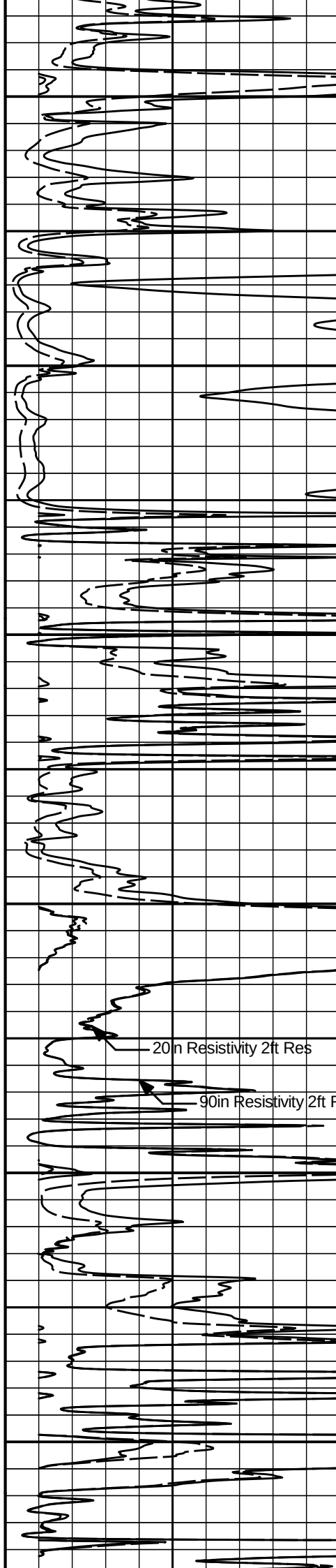
4500

4600

4700

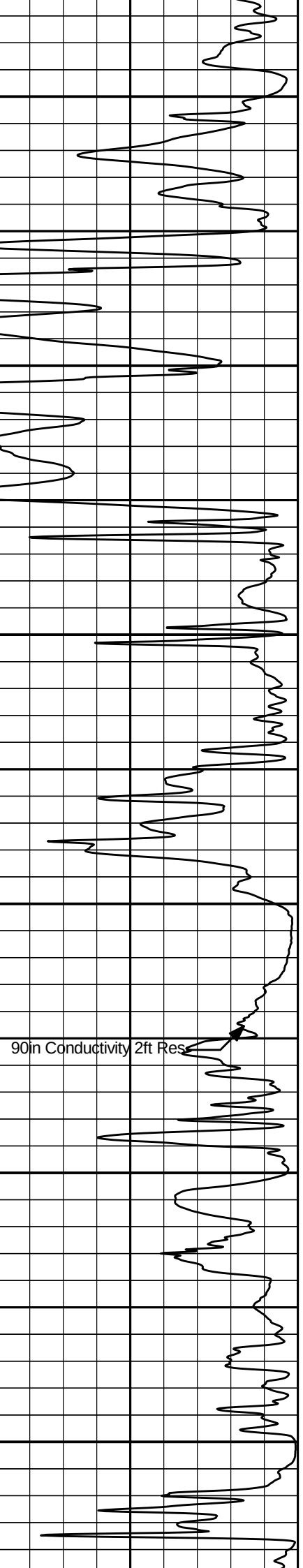
Gamma API

SP

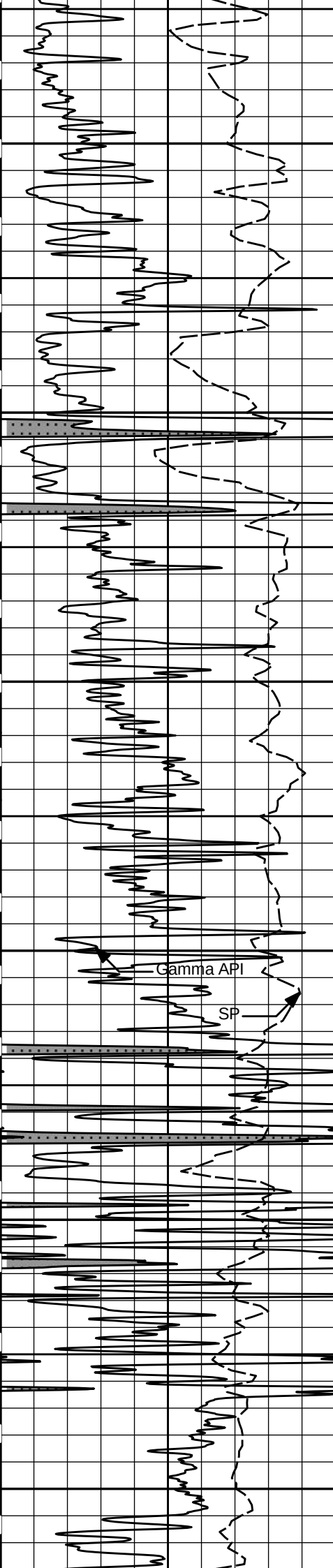


20in Resistivity 2ft Res

90in Resistivity 2ft Res



90in Conductivity 2ft Res



4800

4900

5000

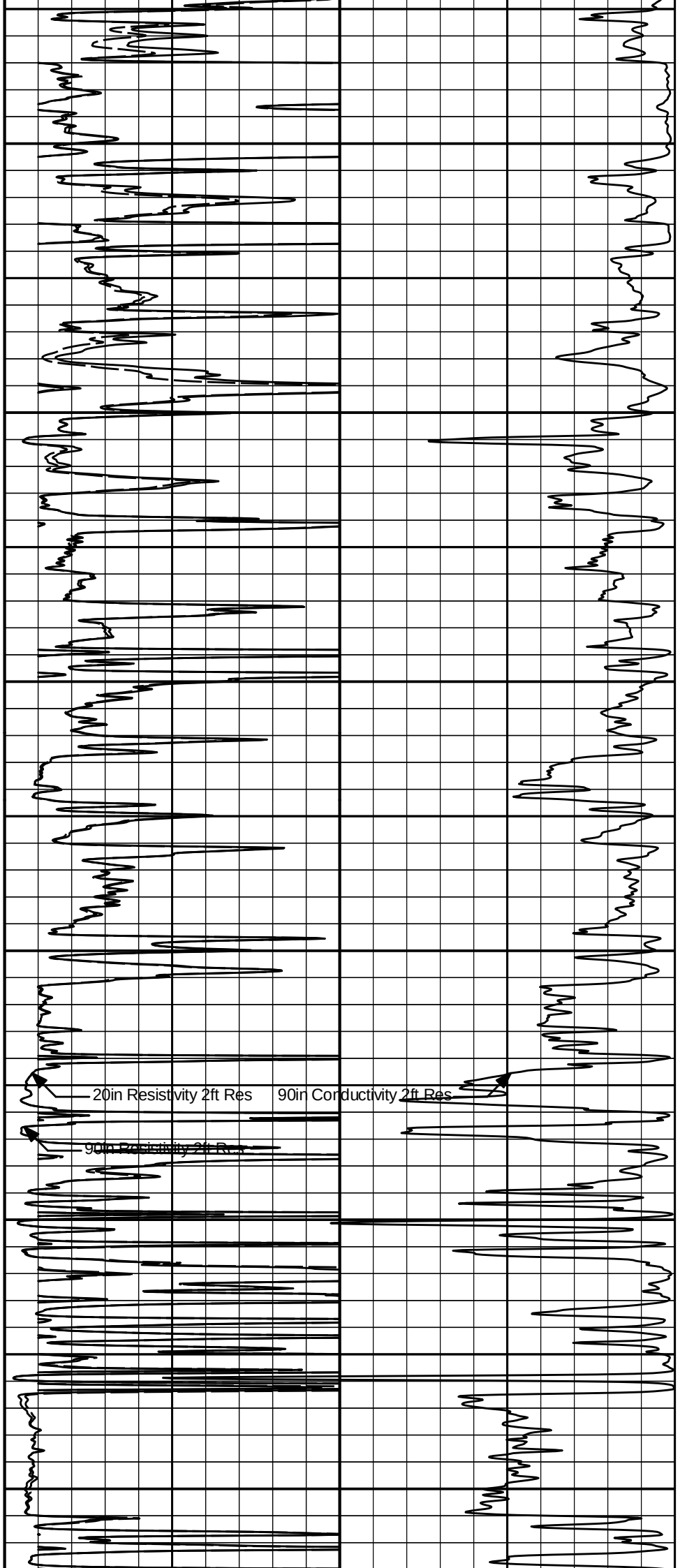
5100

5200

5300

Gamma API

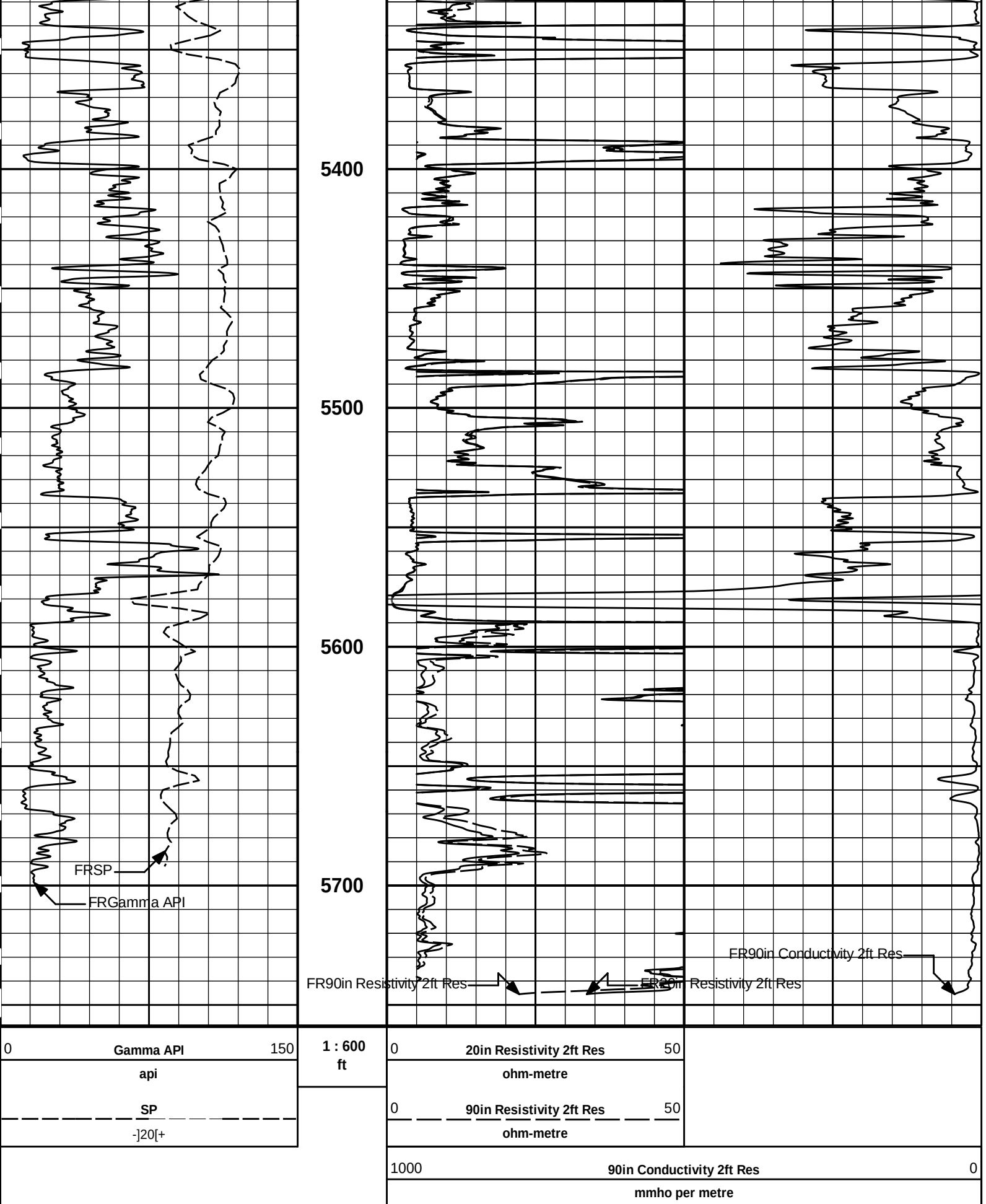
SP



20in Resistivity 2ft Res

90in Conductivity 2ft Res

90in Resistivity 2ft Res



HALLIBURTON

Plot Time: 31-Jul-19 20:42:18
Plot Range: 1700 ft to 5758.58 ft
Data: BEREXCO_BROWN\Well Based\DAQ-0001-003\
Plot File: \\LOCAL-1\BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRT\ACRT\ACRT_2_main

2 INCH MAIN LOG

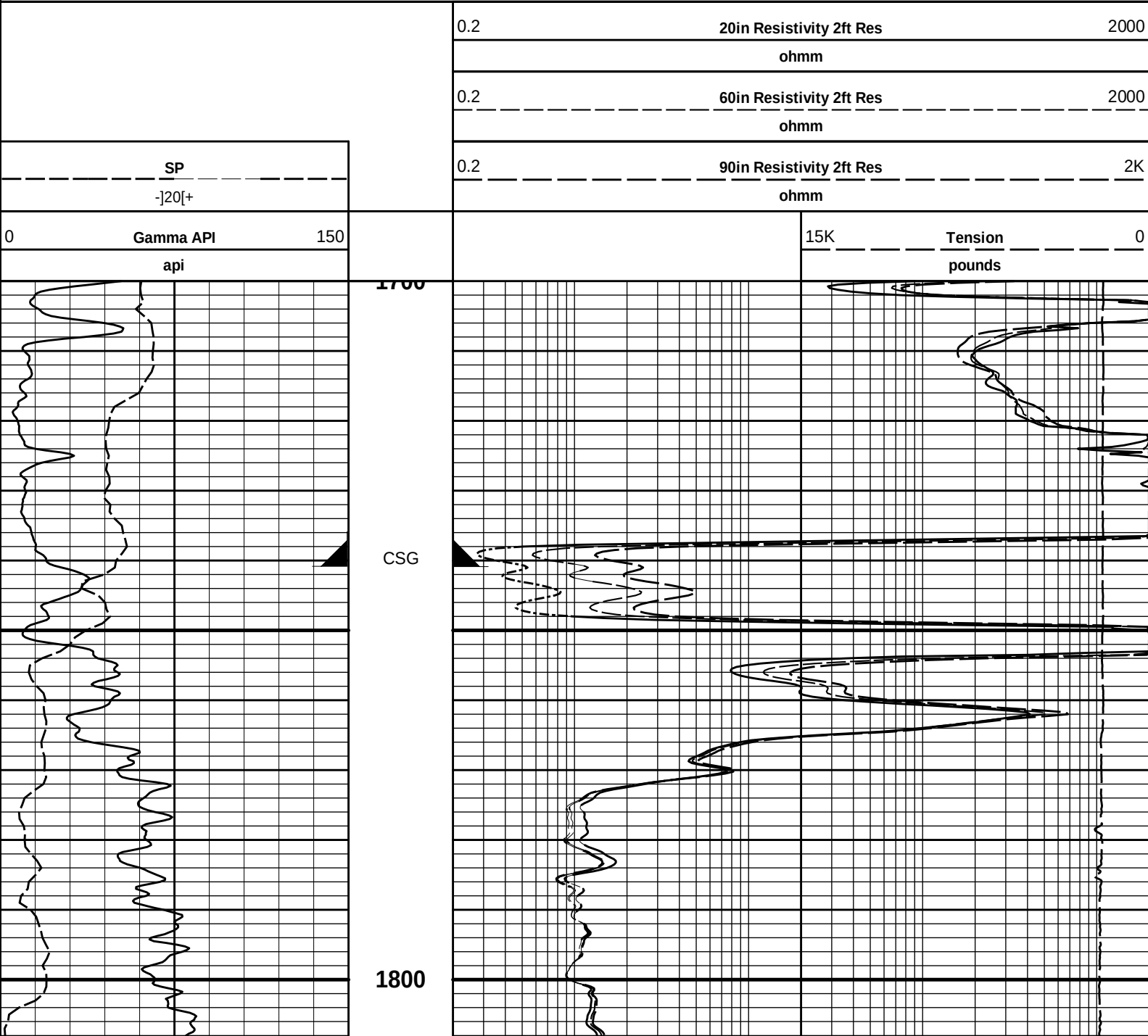
2 INCH MAIN LOG

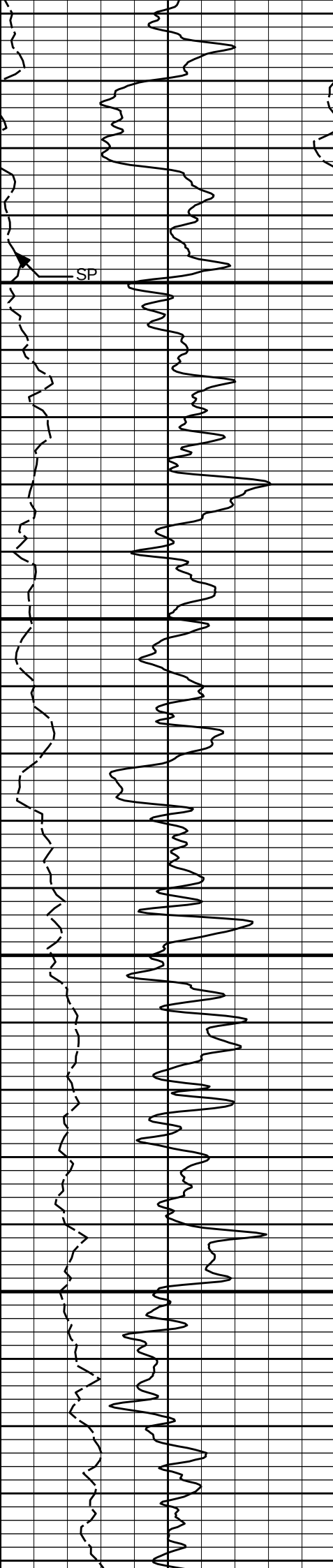
HALLIBURTON

Plot Time: 31-Jul-19 20:42:18
Plot Range: 1700 ft to 5758.58 ft
Data: BEREXCO_BROWN\Well Based\DAQ-0001-003\
Plot File: \\LOCAL-1\BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRT\ACRT\ACRT_5inch_main

5 INCH MAIN LOG

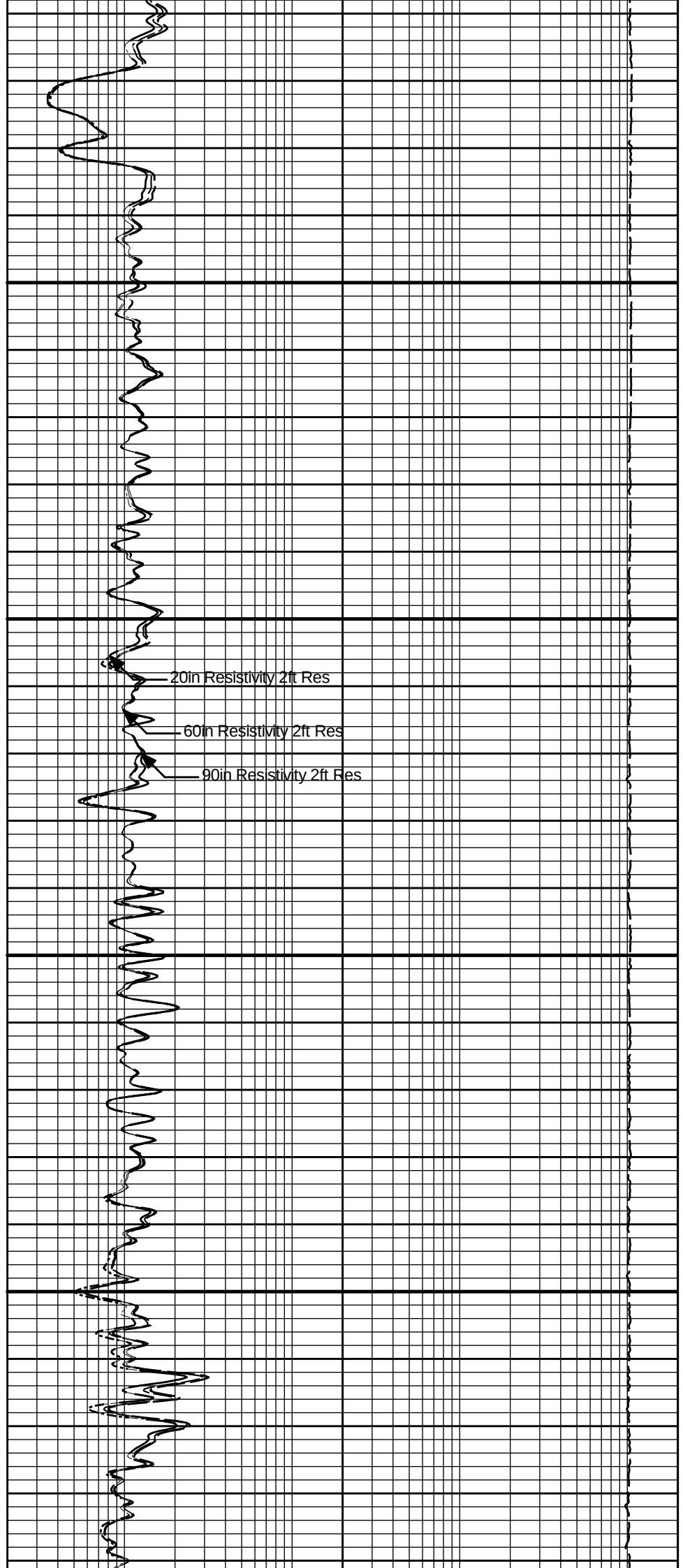
5 INCH MAIN LOG

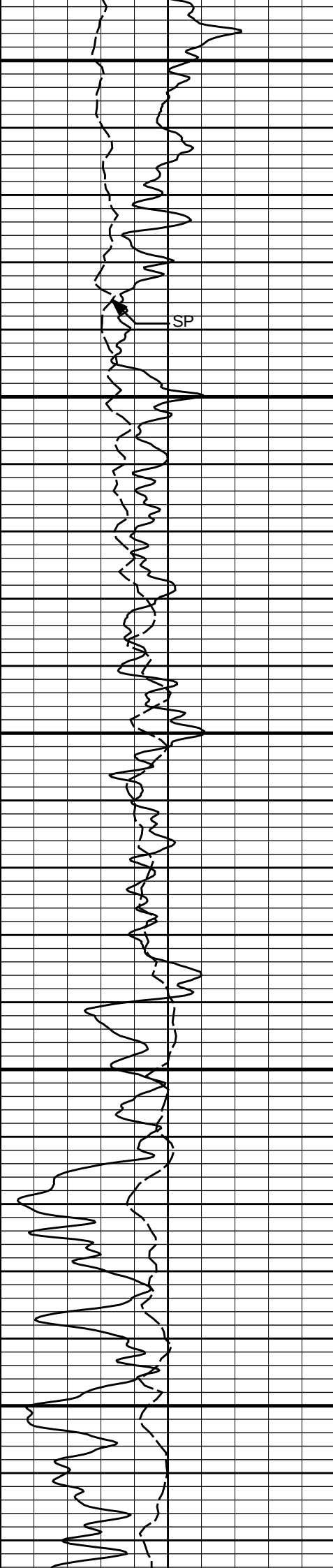




1900

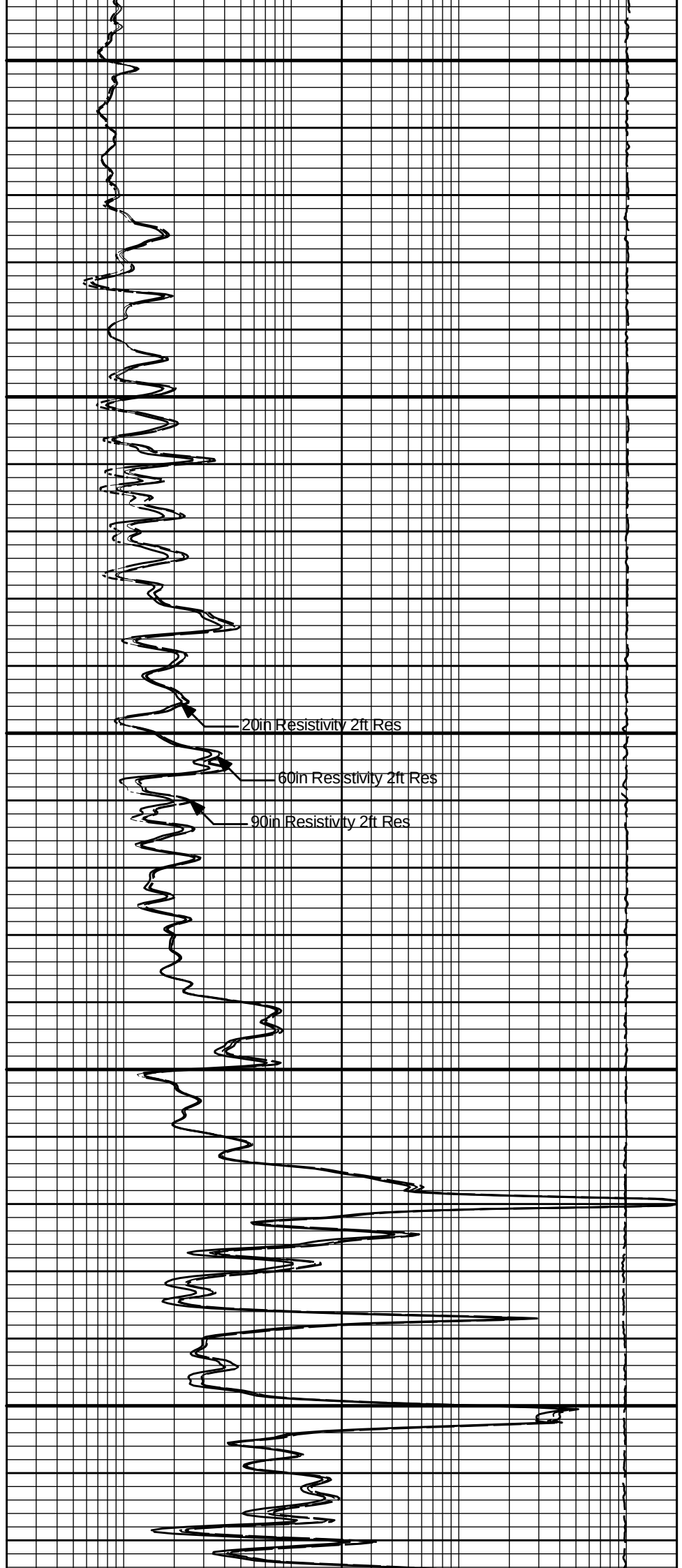
2000

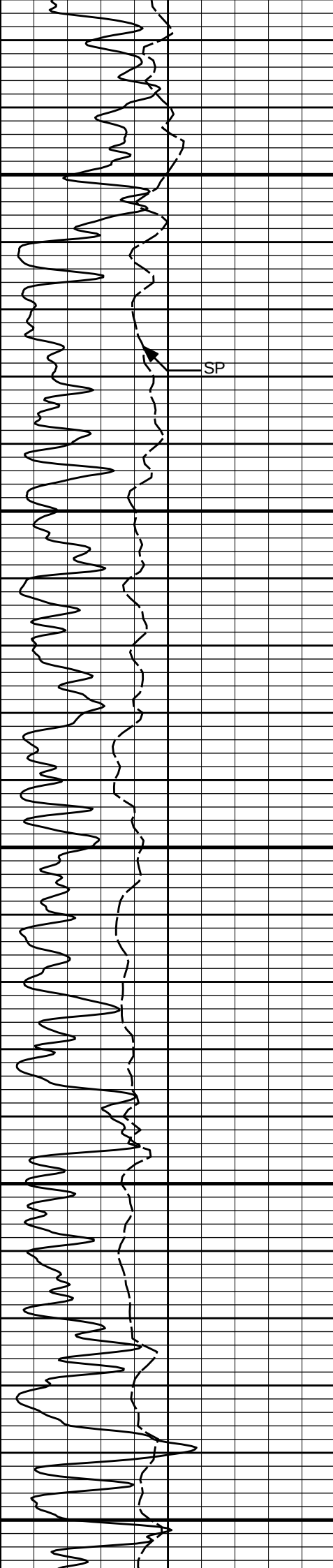




2100

2200



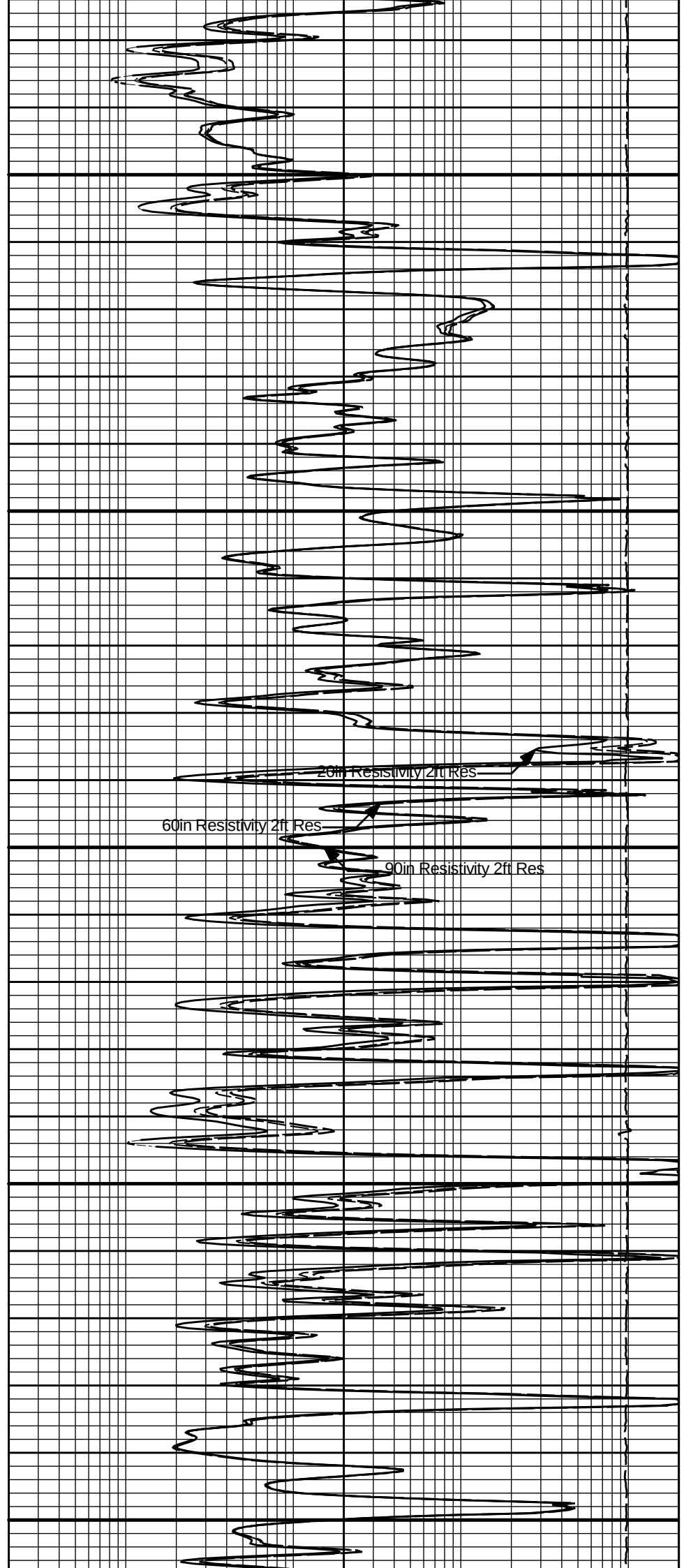


2300

SP

2400

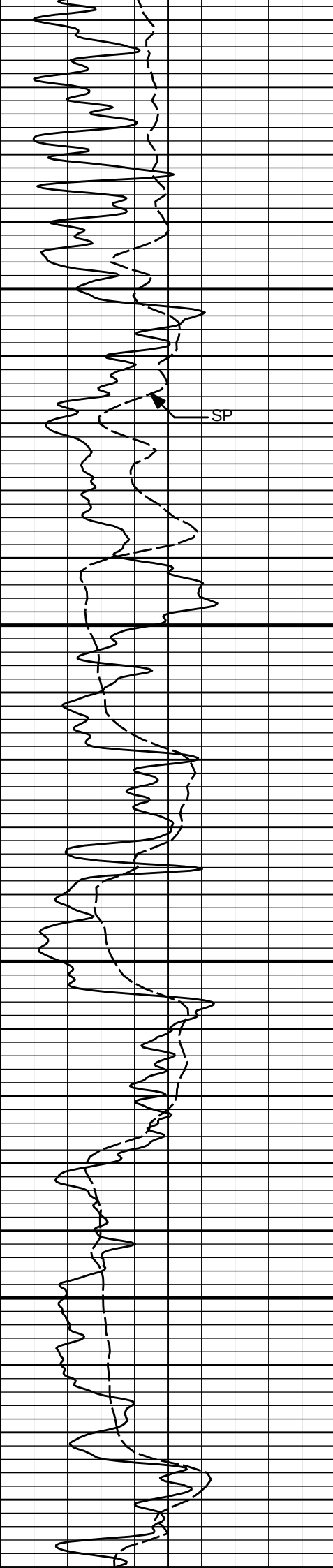
2500



20in Resistivity 2ft Res

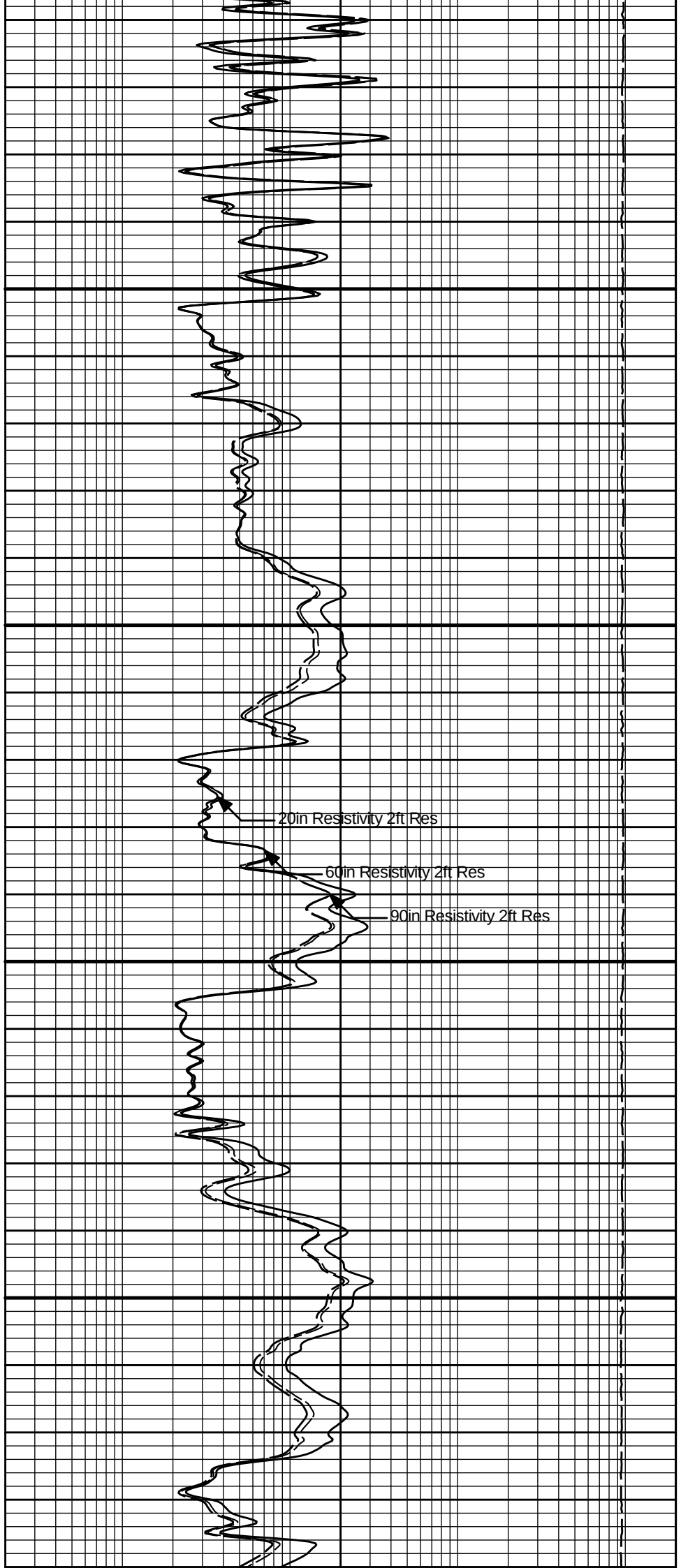
60in Resistivity 2ft Res

90in Resistivity 2ft Res



2600

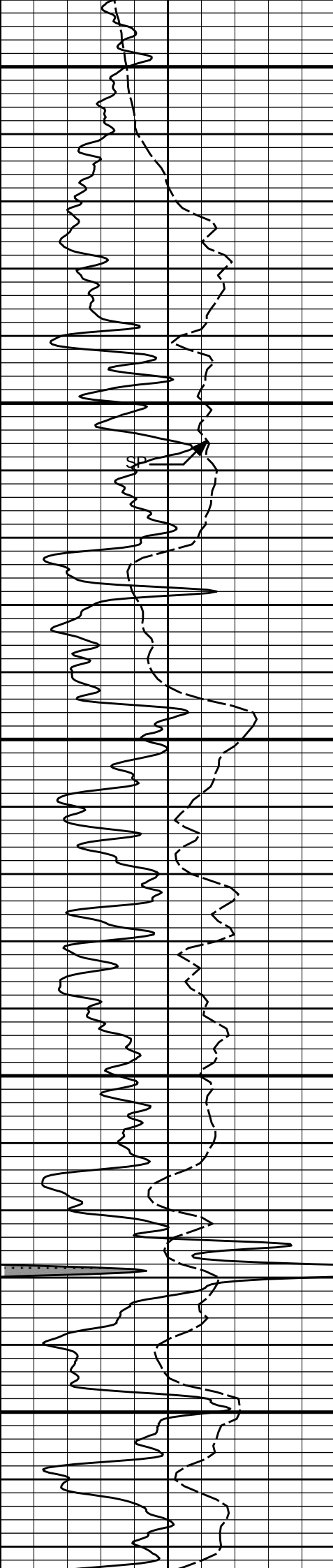
2700



20in Resistivity 2ft Res

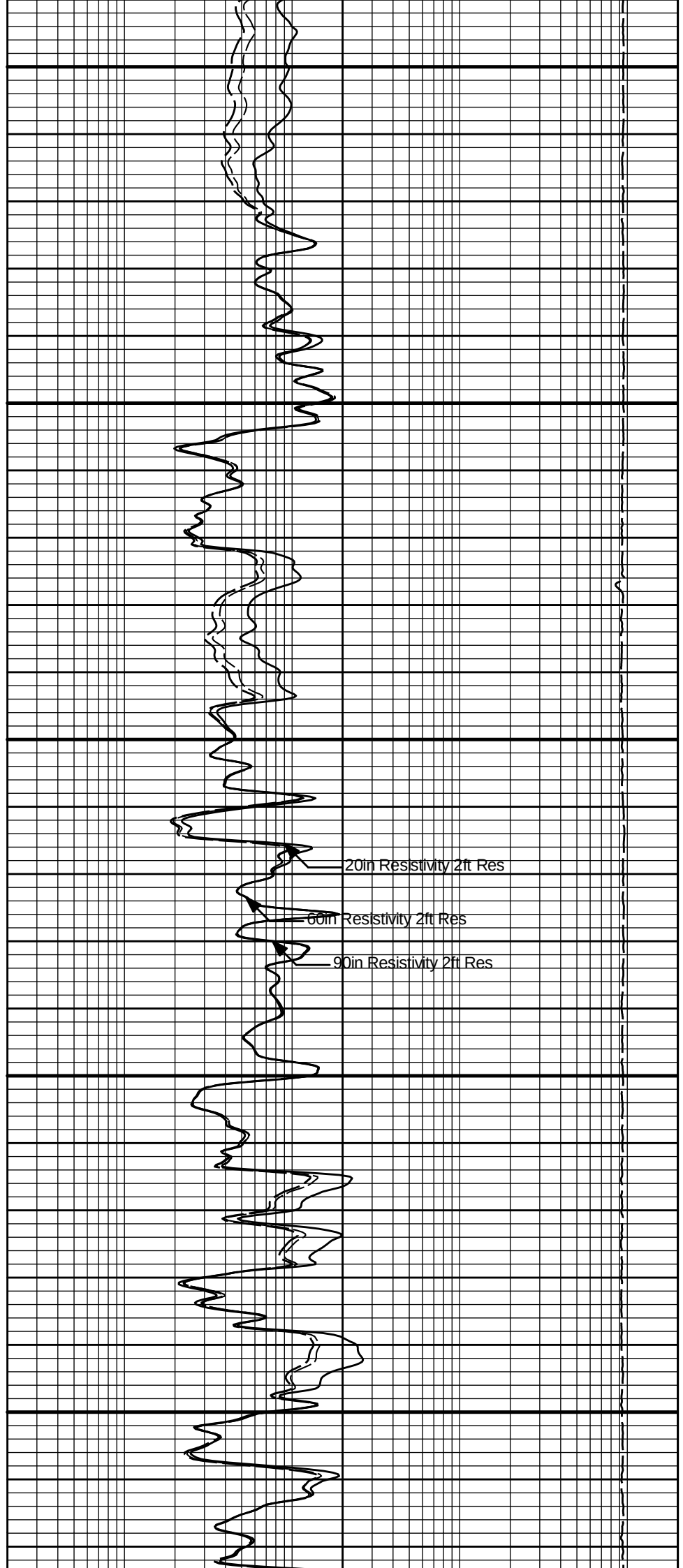
60in Resistivity 2ft Res

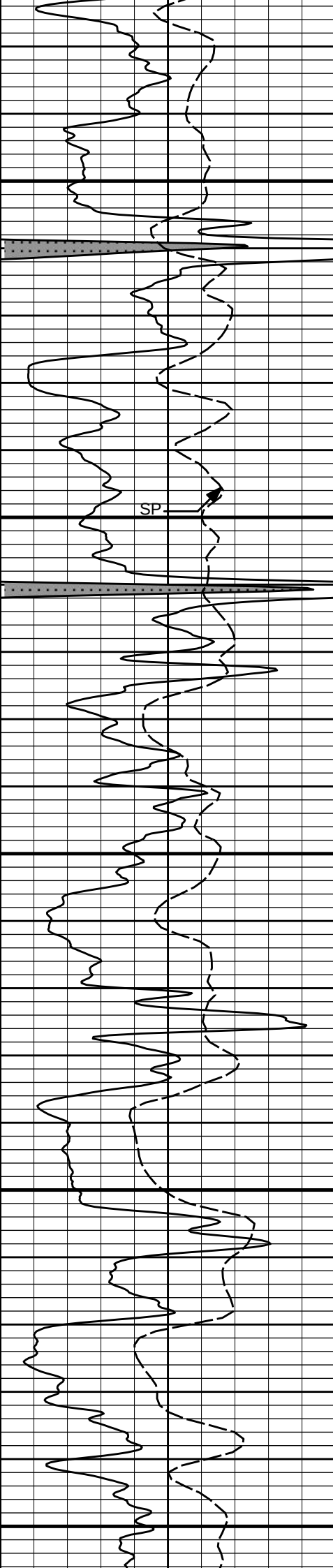
90in Resistivity 2ft Res



2800

2900



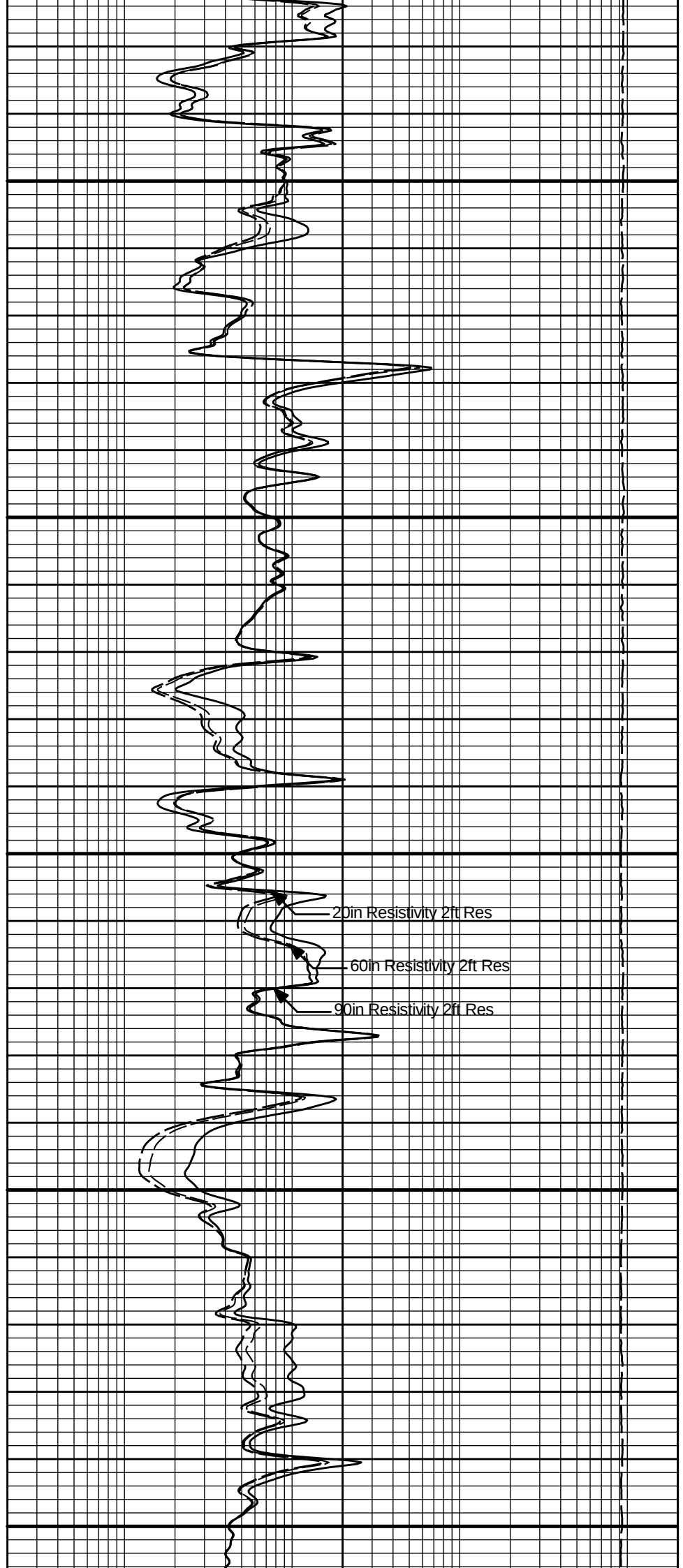


3000

SP

3100

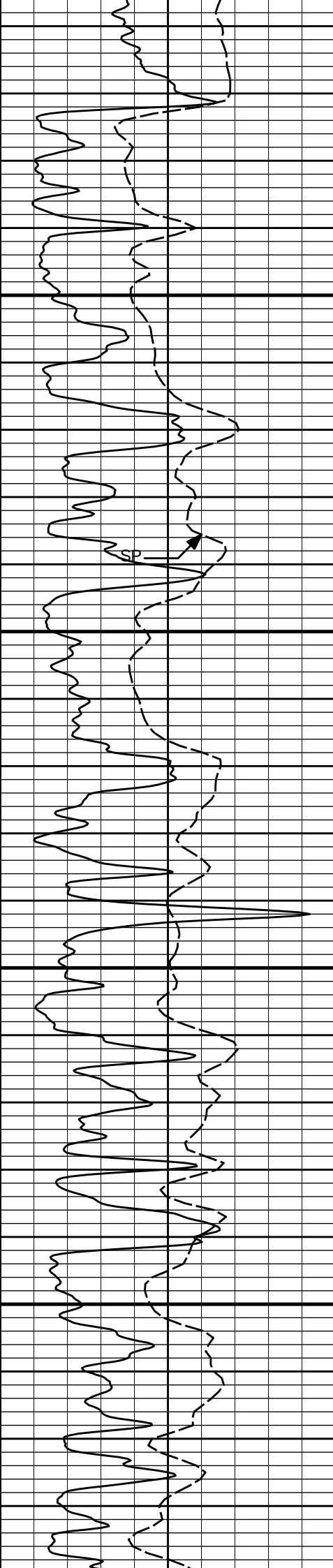
3200



20in Resistivity 2ft Res

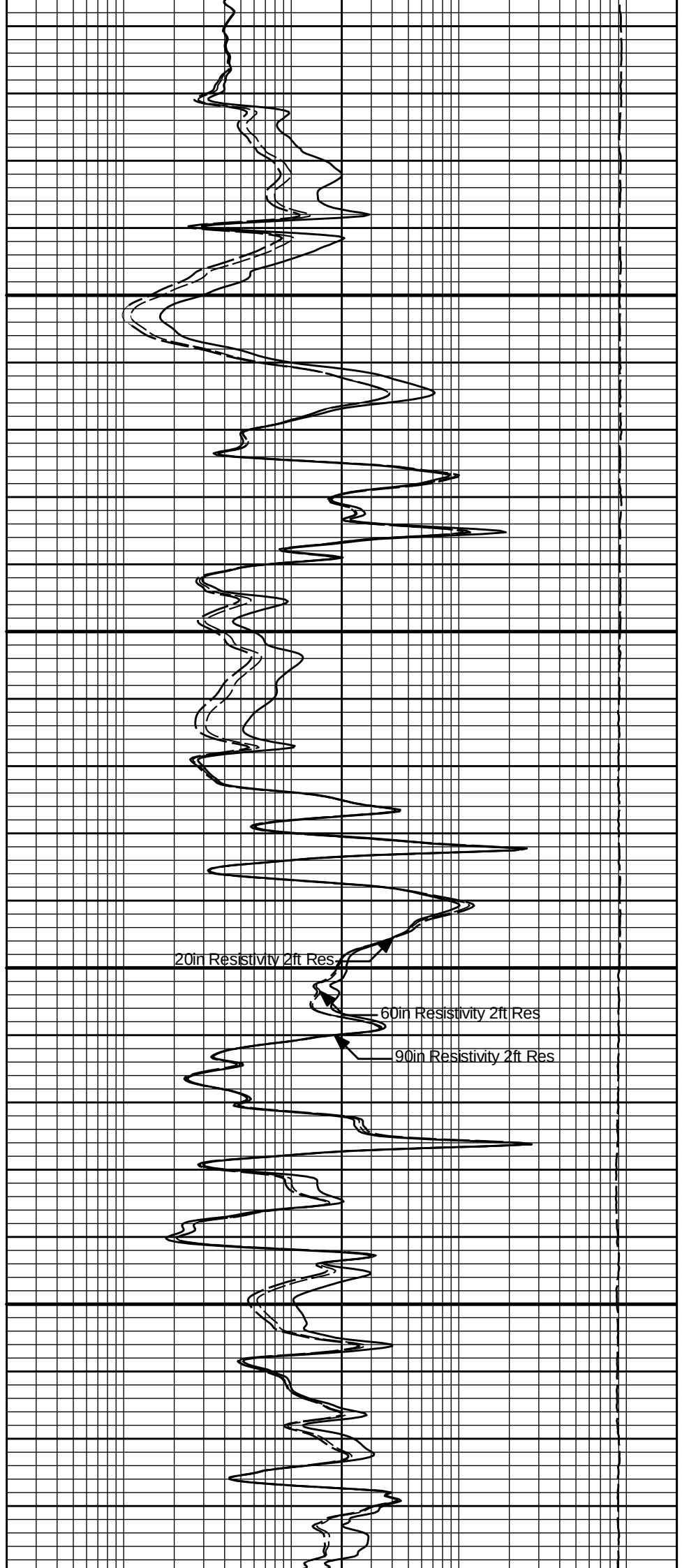
60in Resistivity 2ft Res

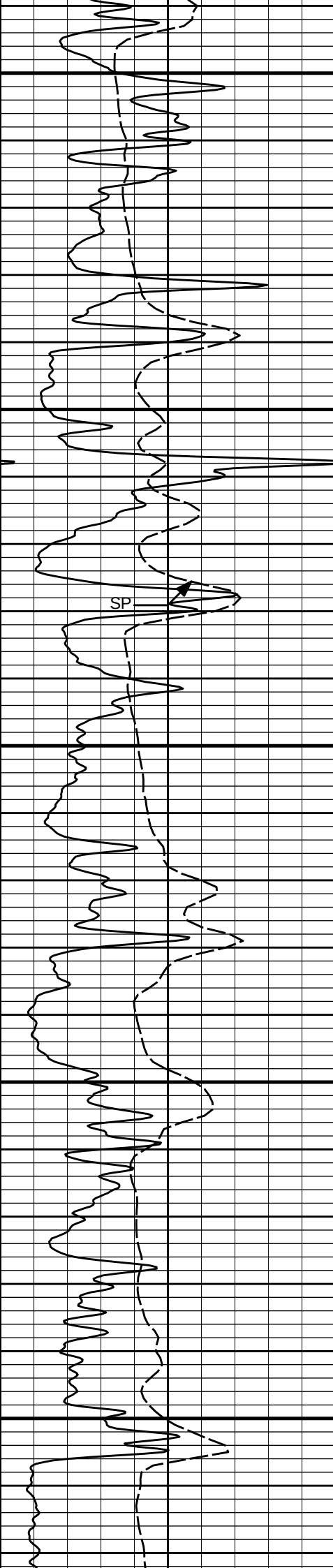
90in Resistivity 2ft Res



3300

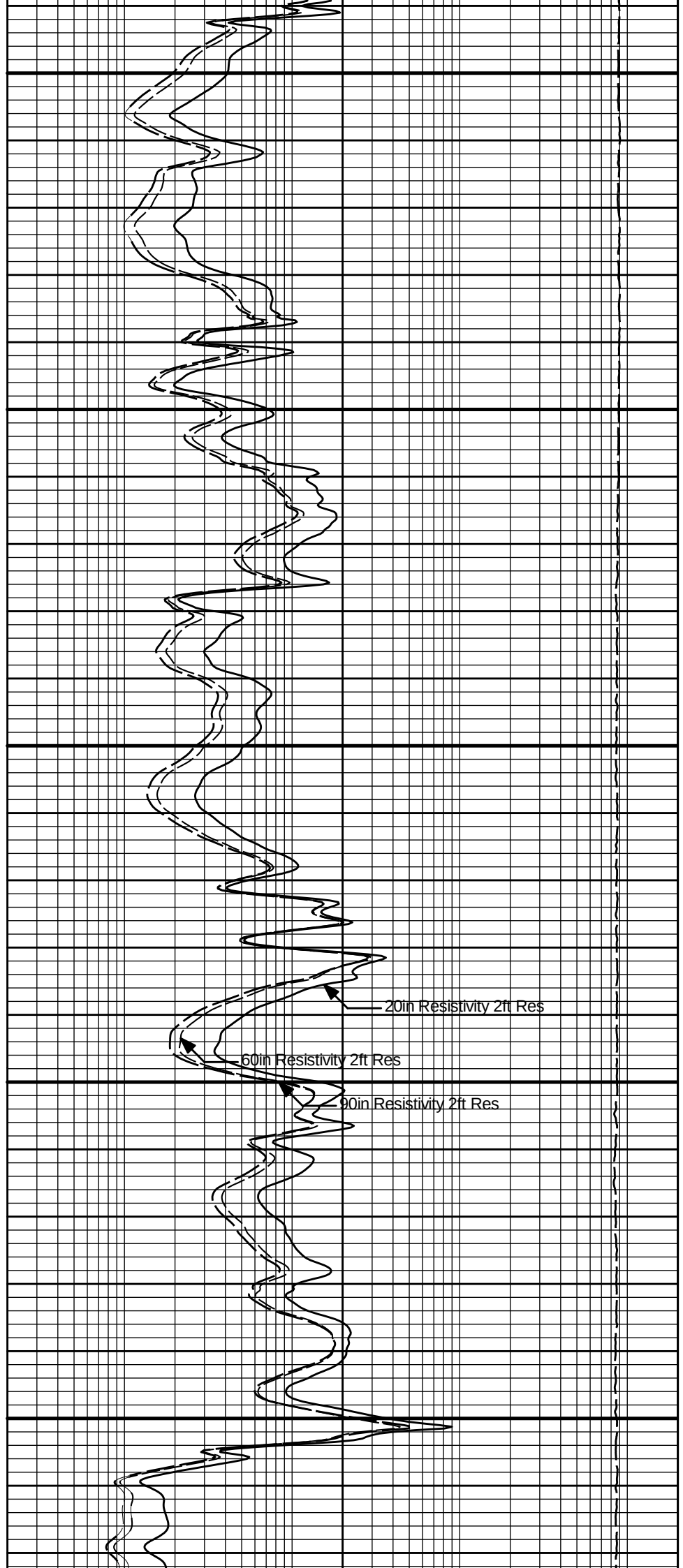
3400

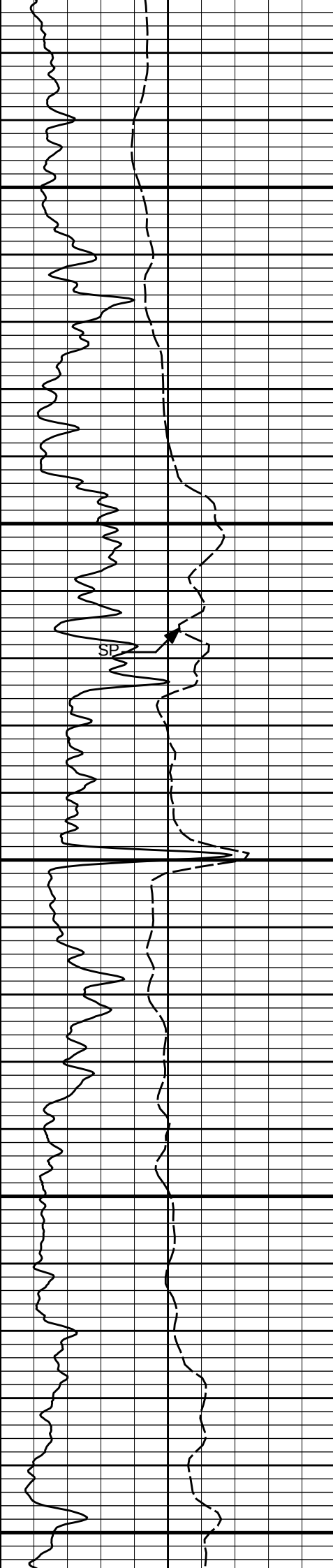




3500

3600

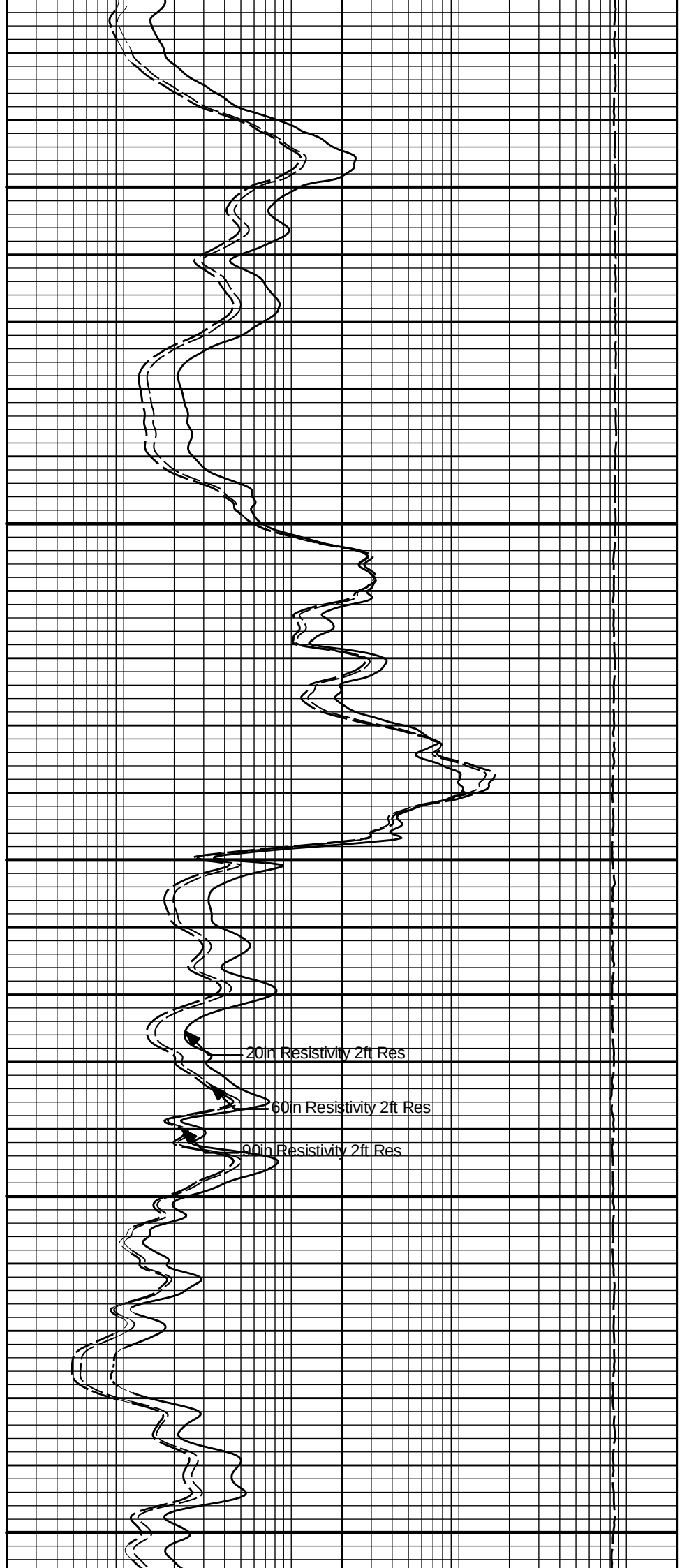


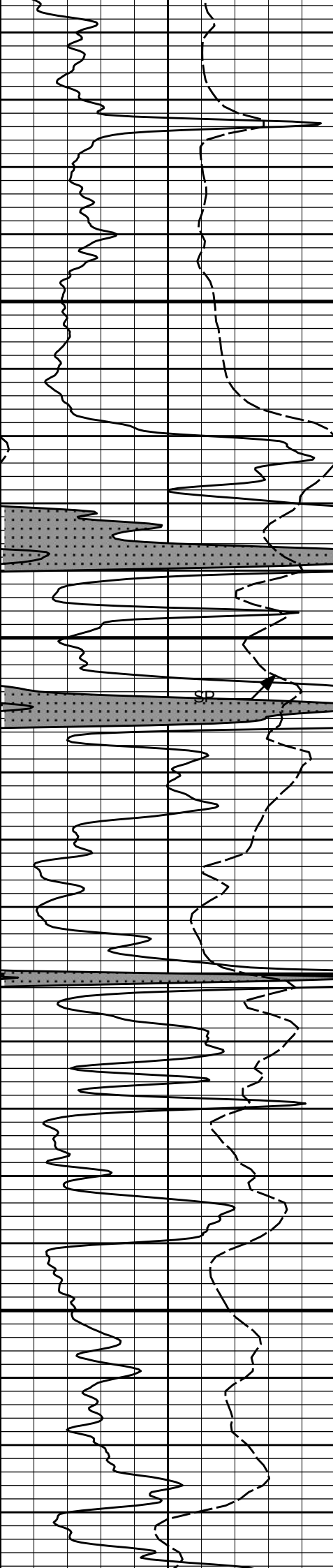


3700

3800

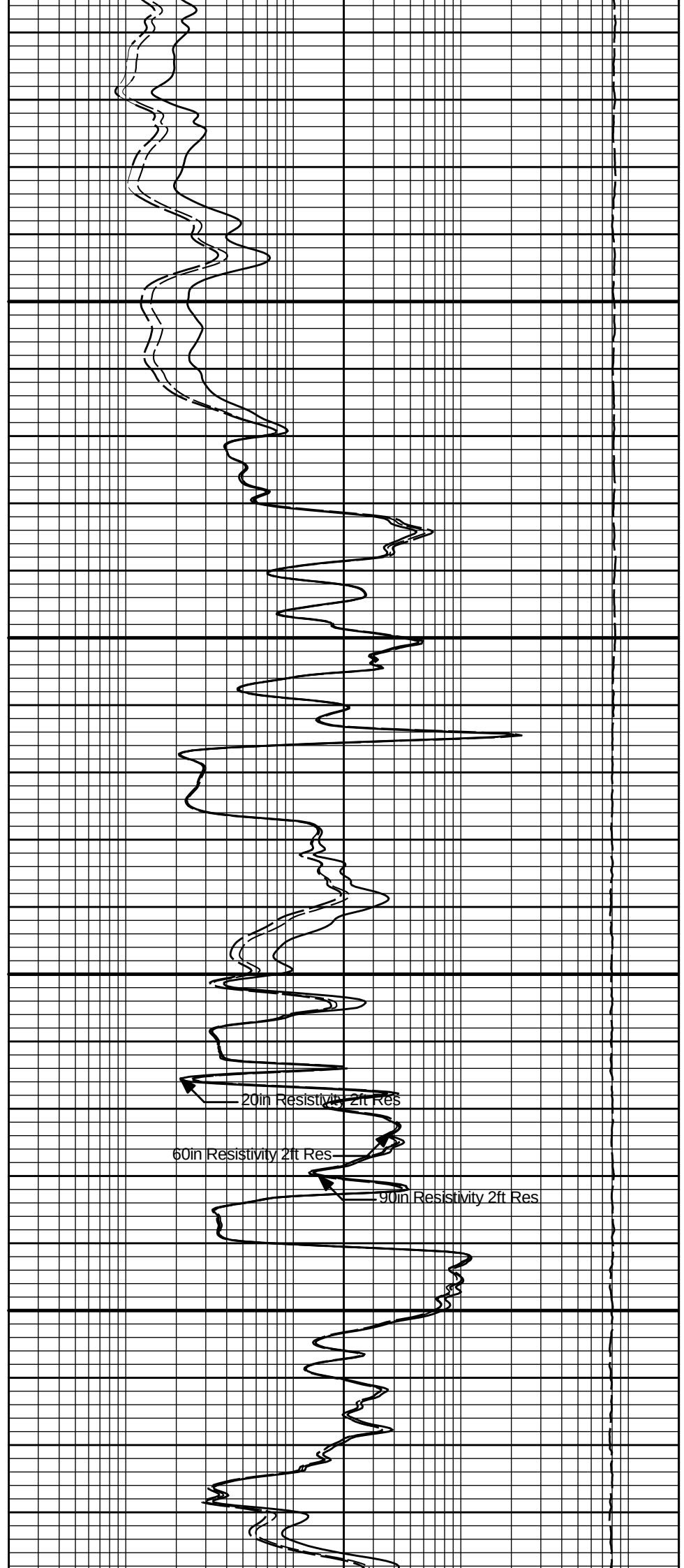
3900

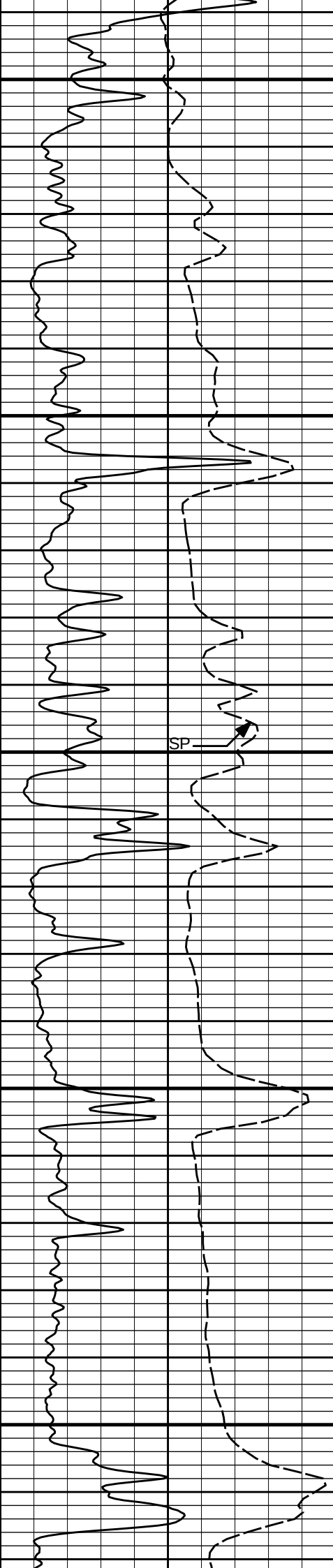




4000

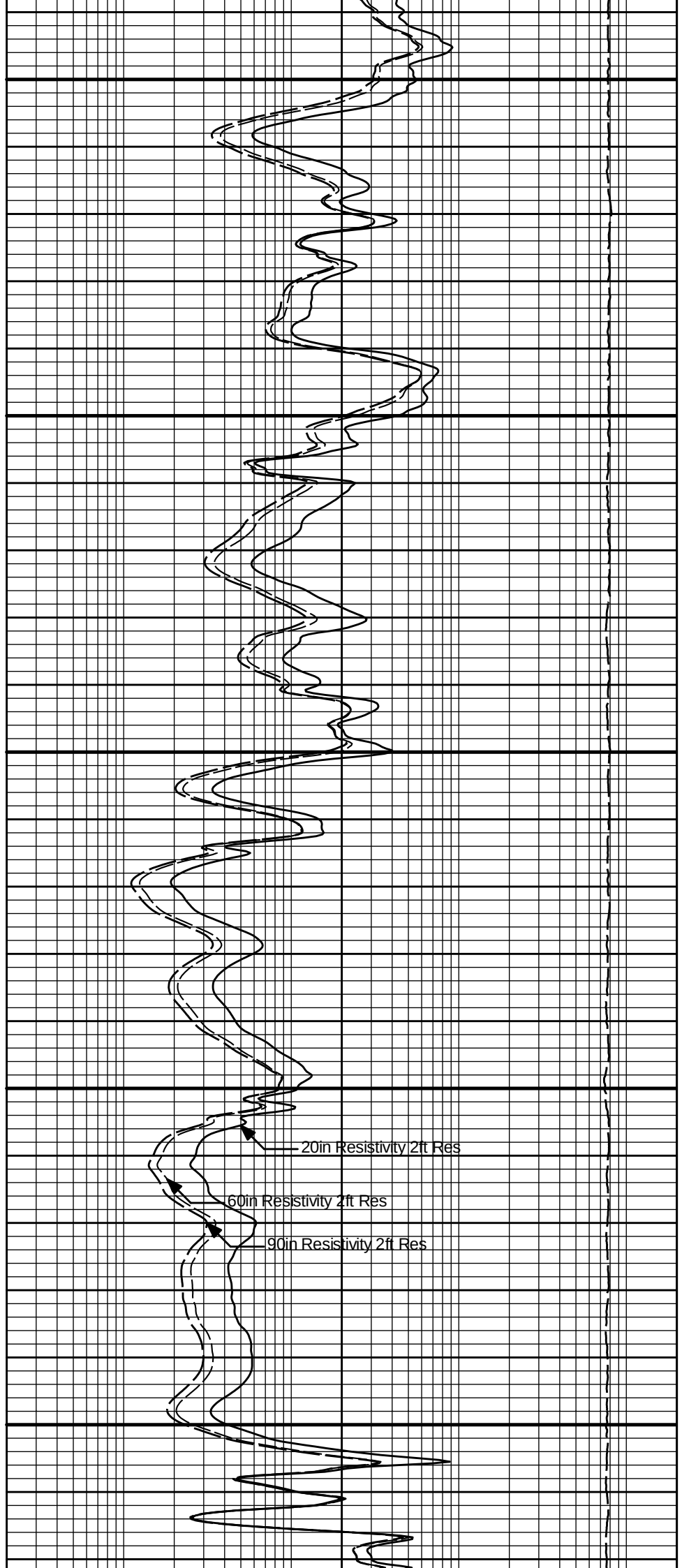
4100

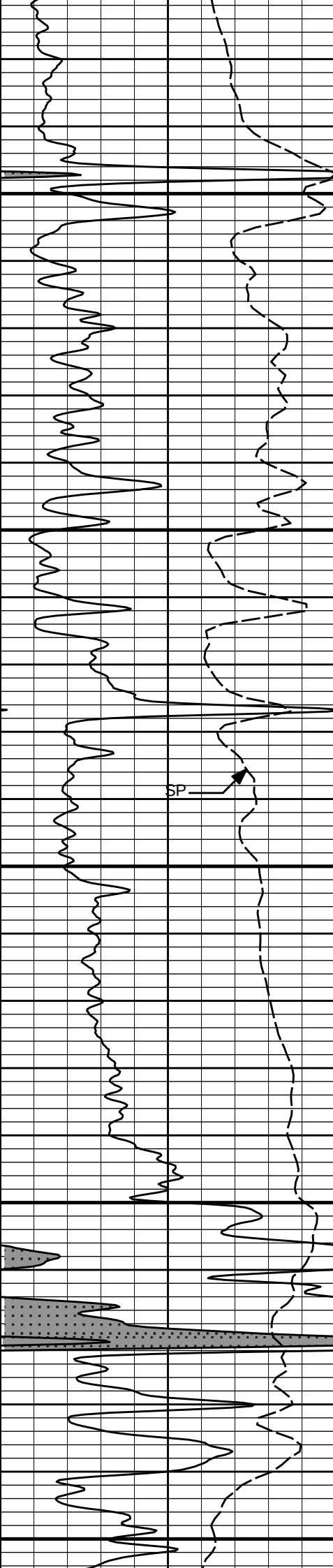




4200

4300

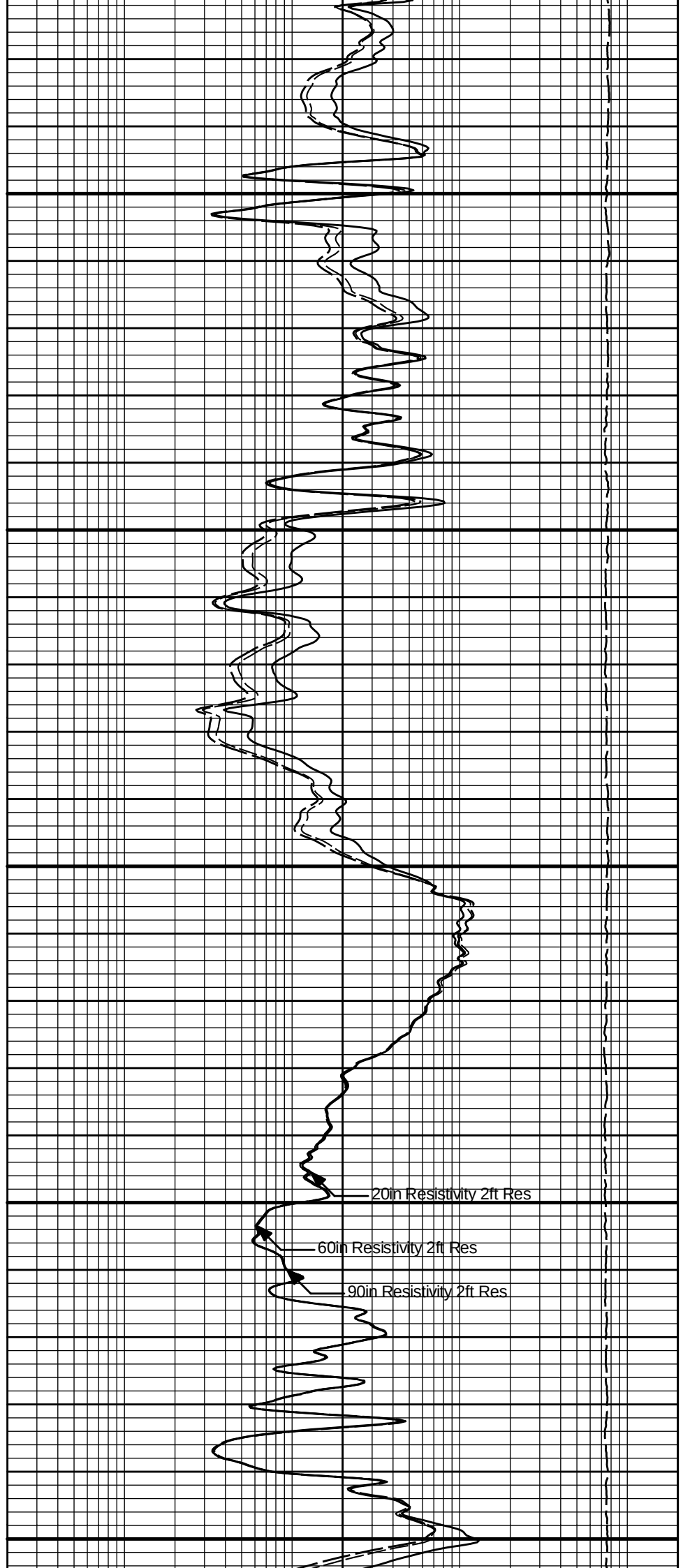




4400

4500

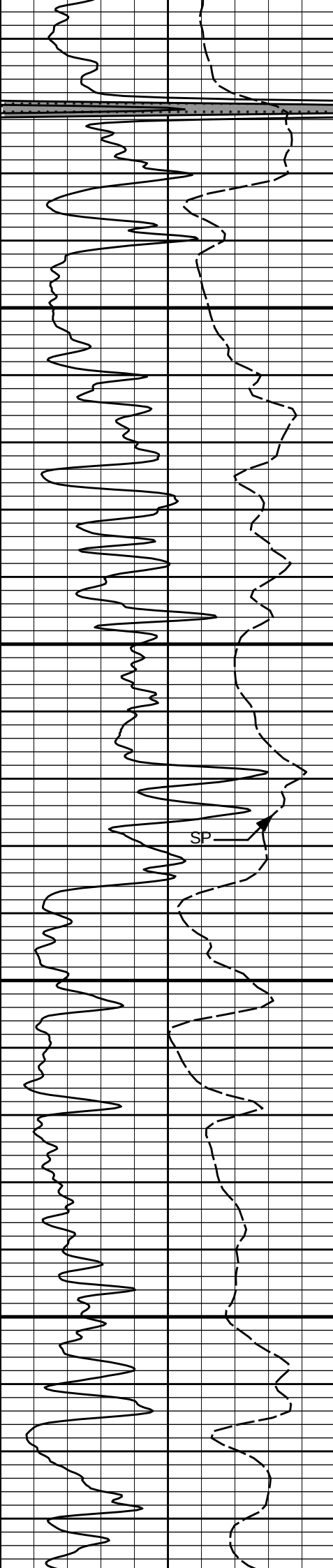
4600



20in Resistivity 2ft Res

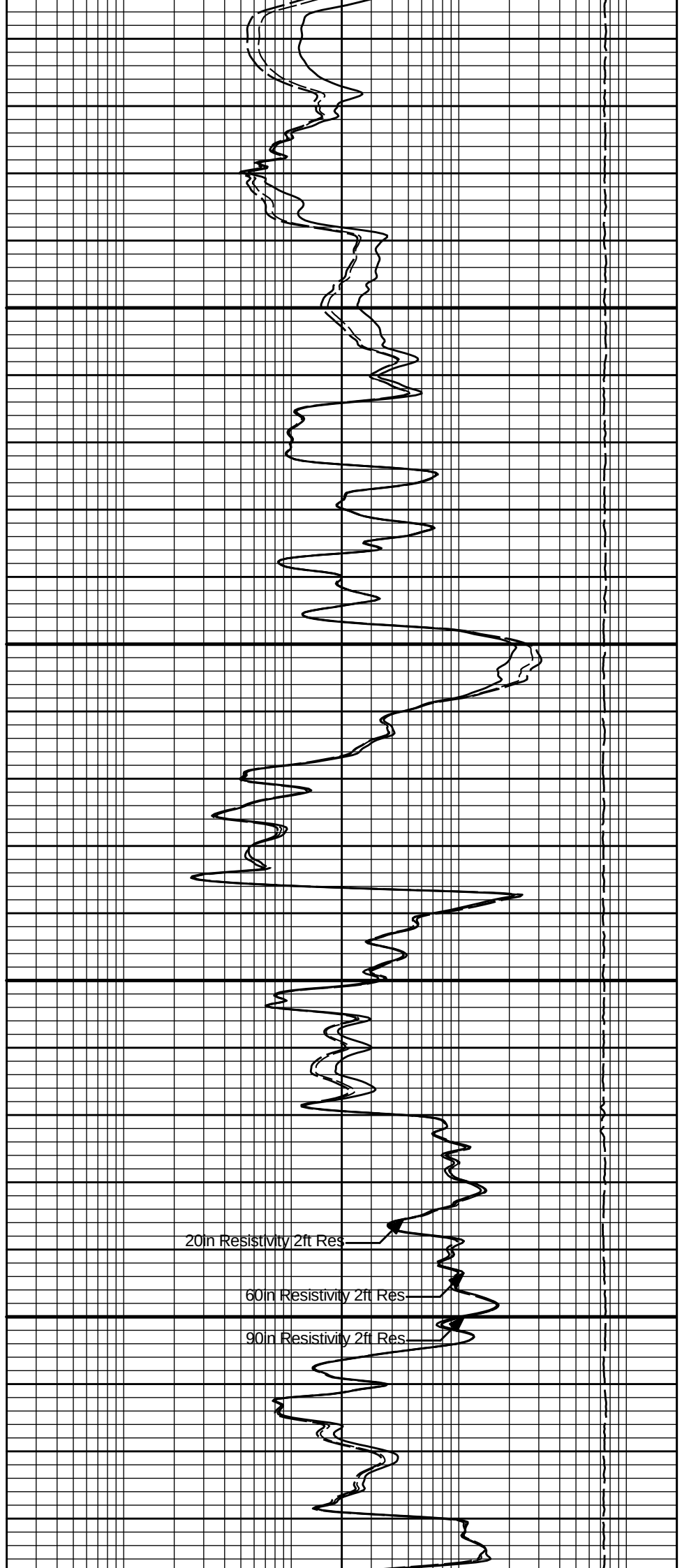
60in Resistivity 2ft Res

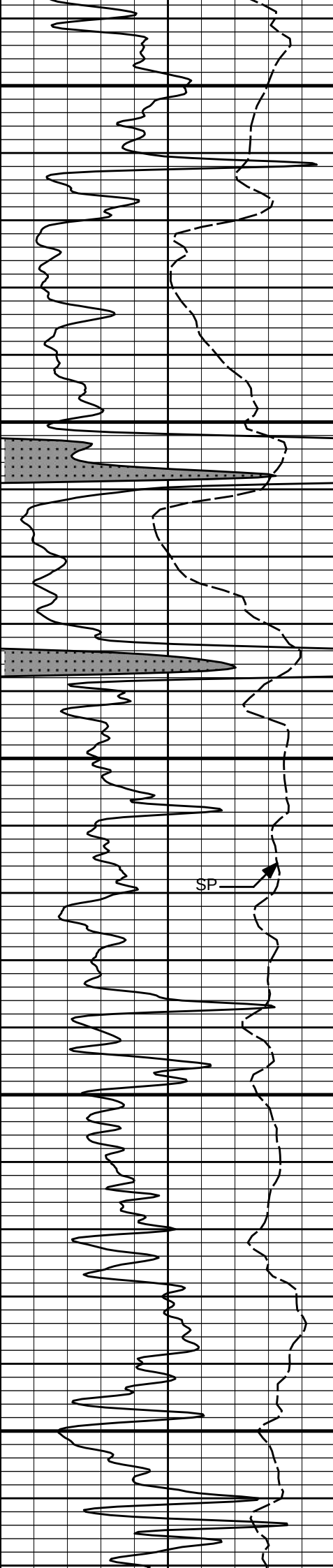
90in Resistivity 2ft Res



4700

4800

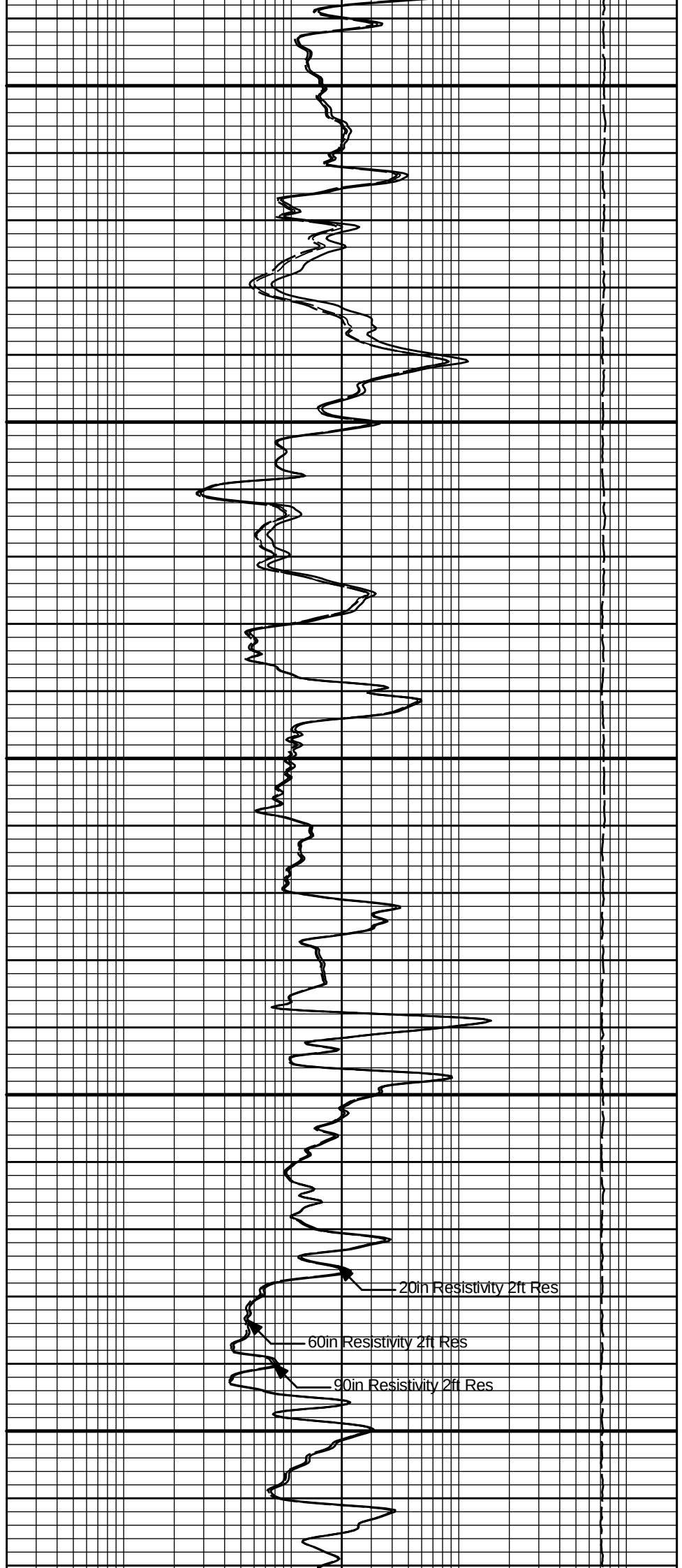




4900

5000

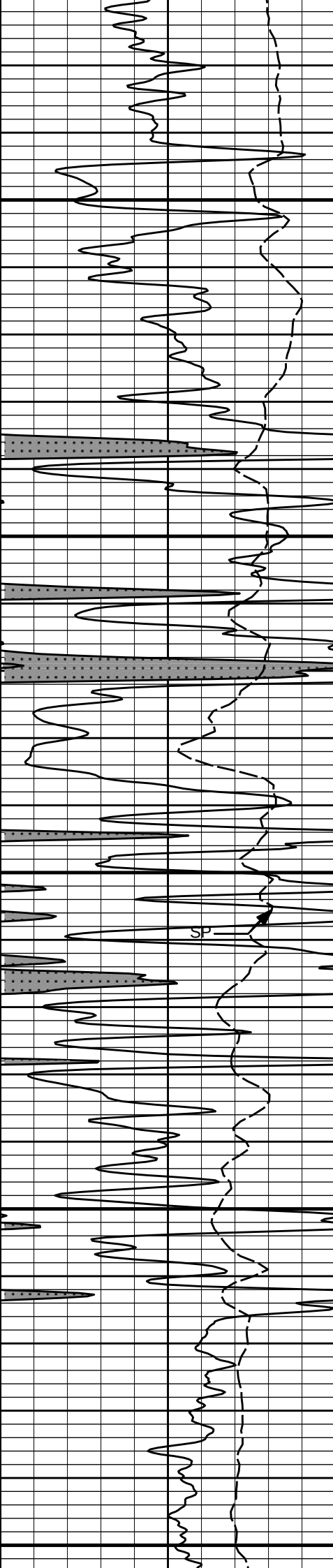
SP



20in Resistivity 2ft Res

60in Resistivity 2ft Res

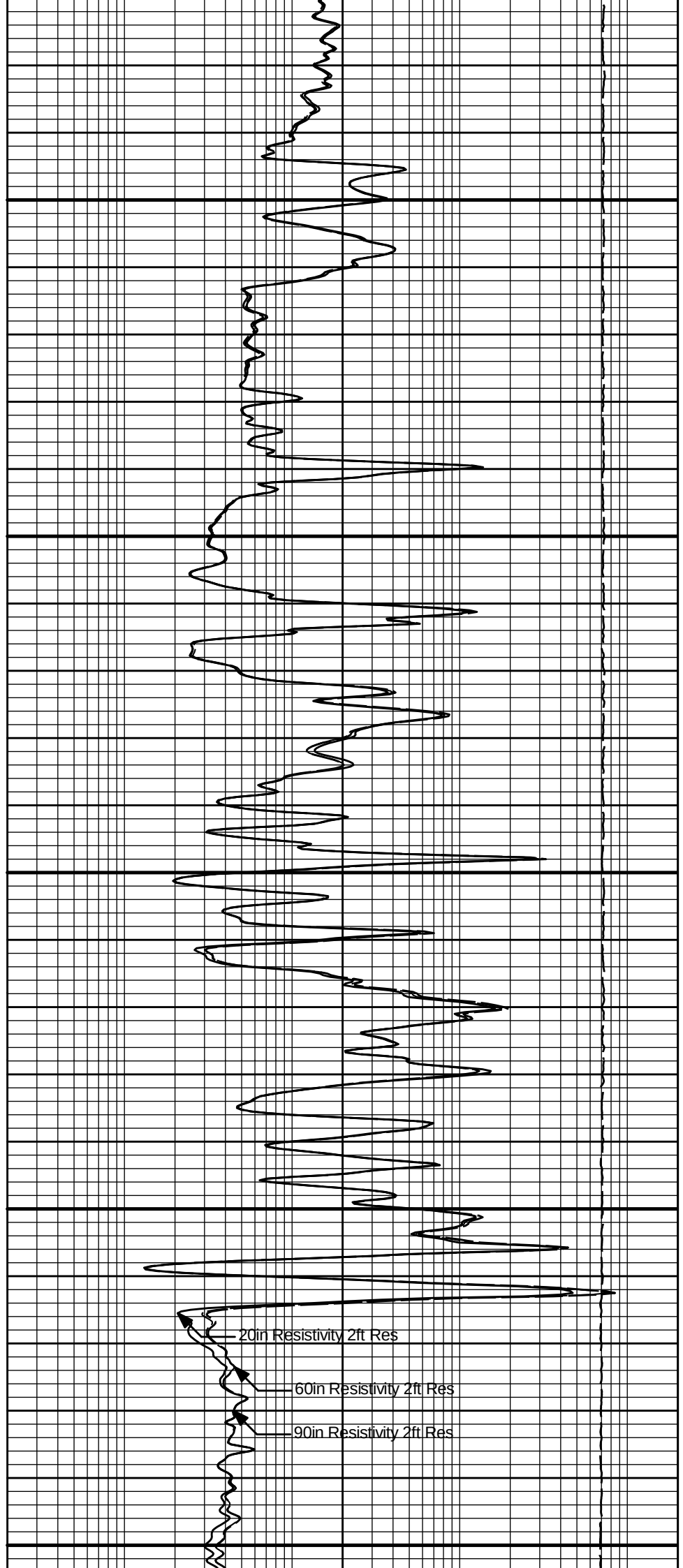
90in Resistivity 2ft Res

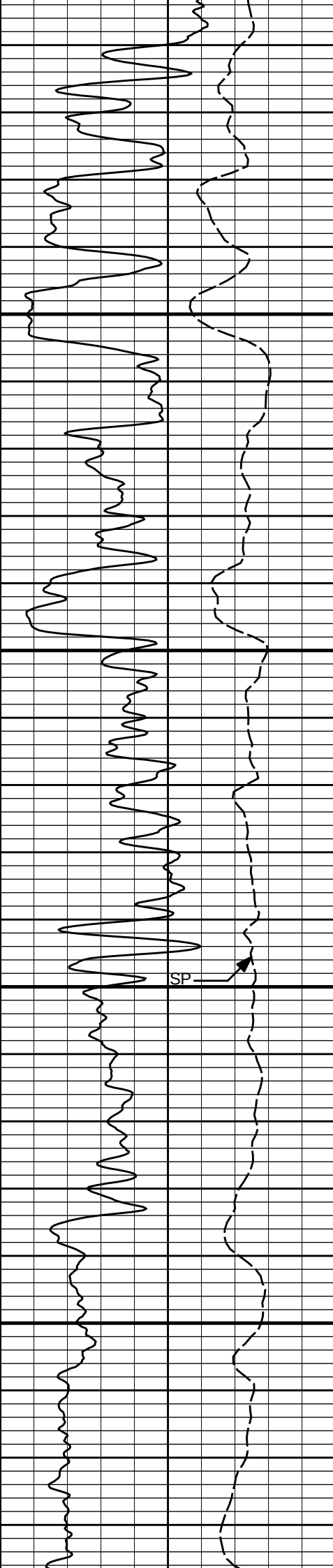


5100

5200

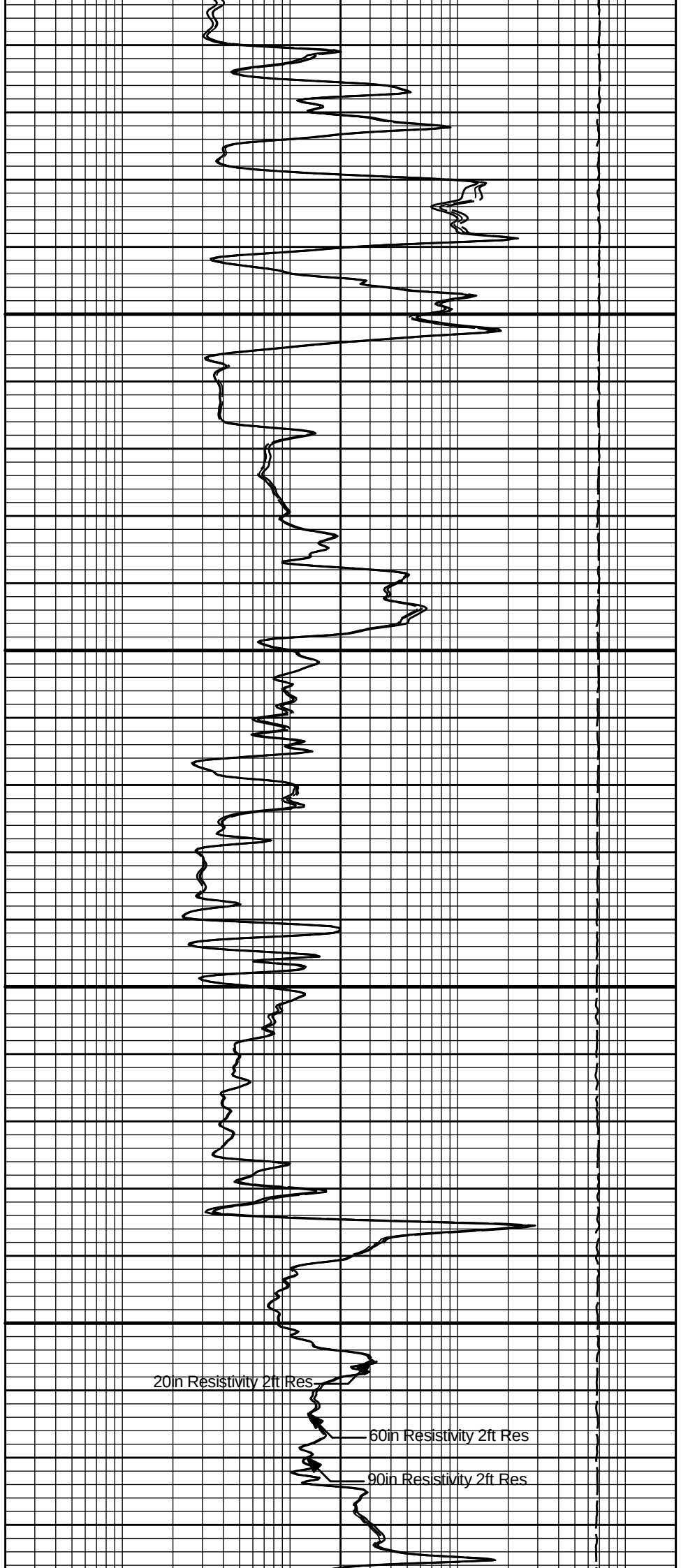
5300

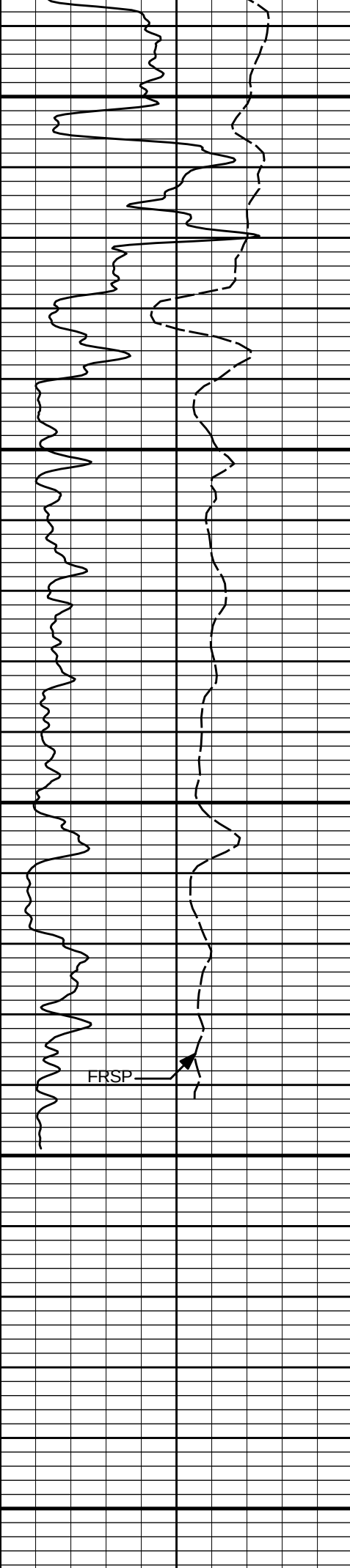




5400

5500



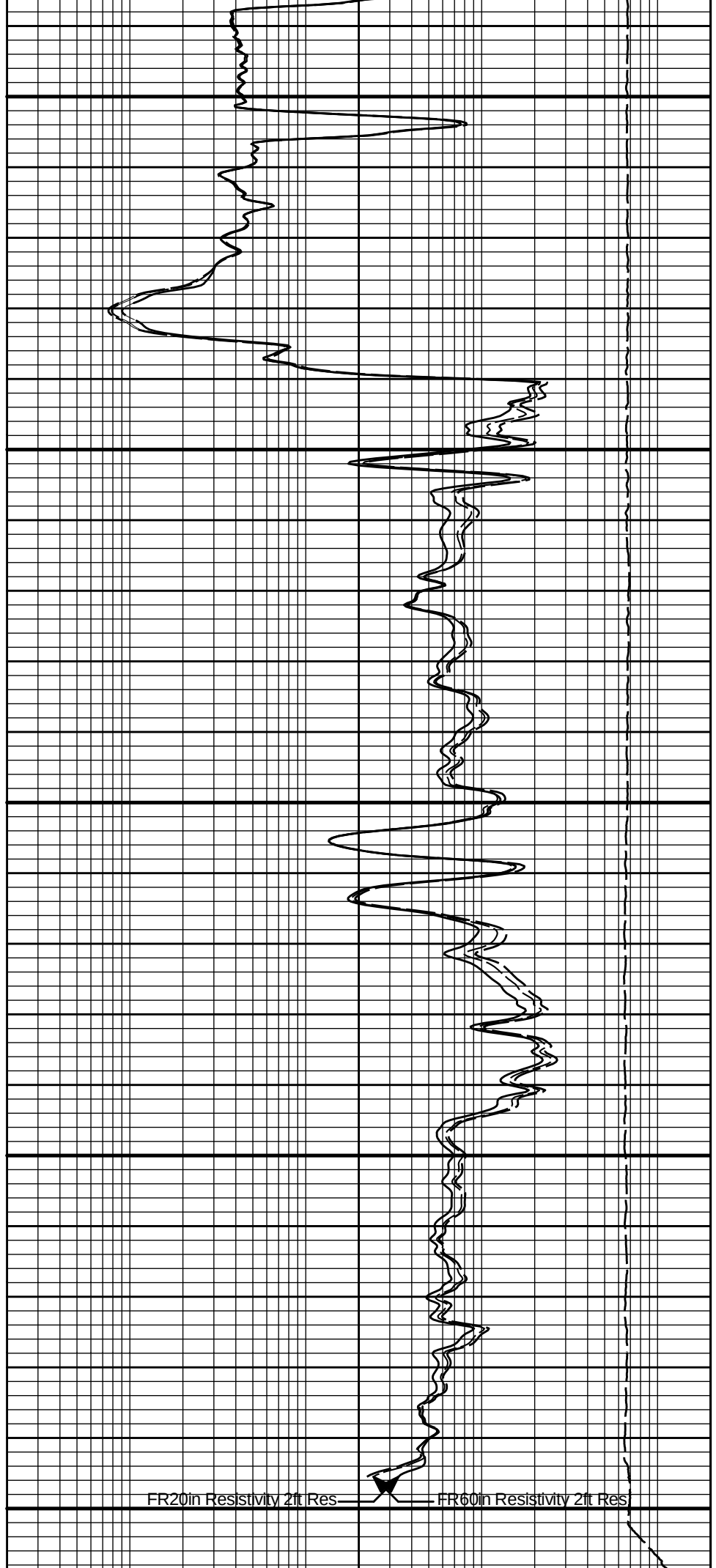


0 Gamma API 150
api

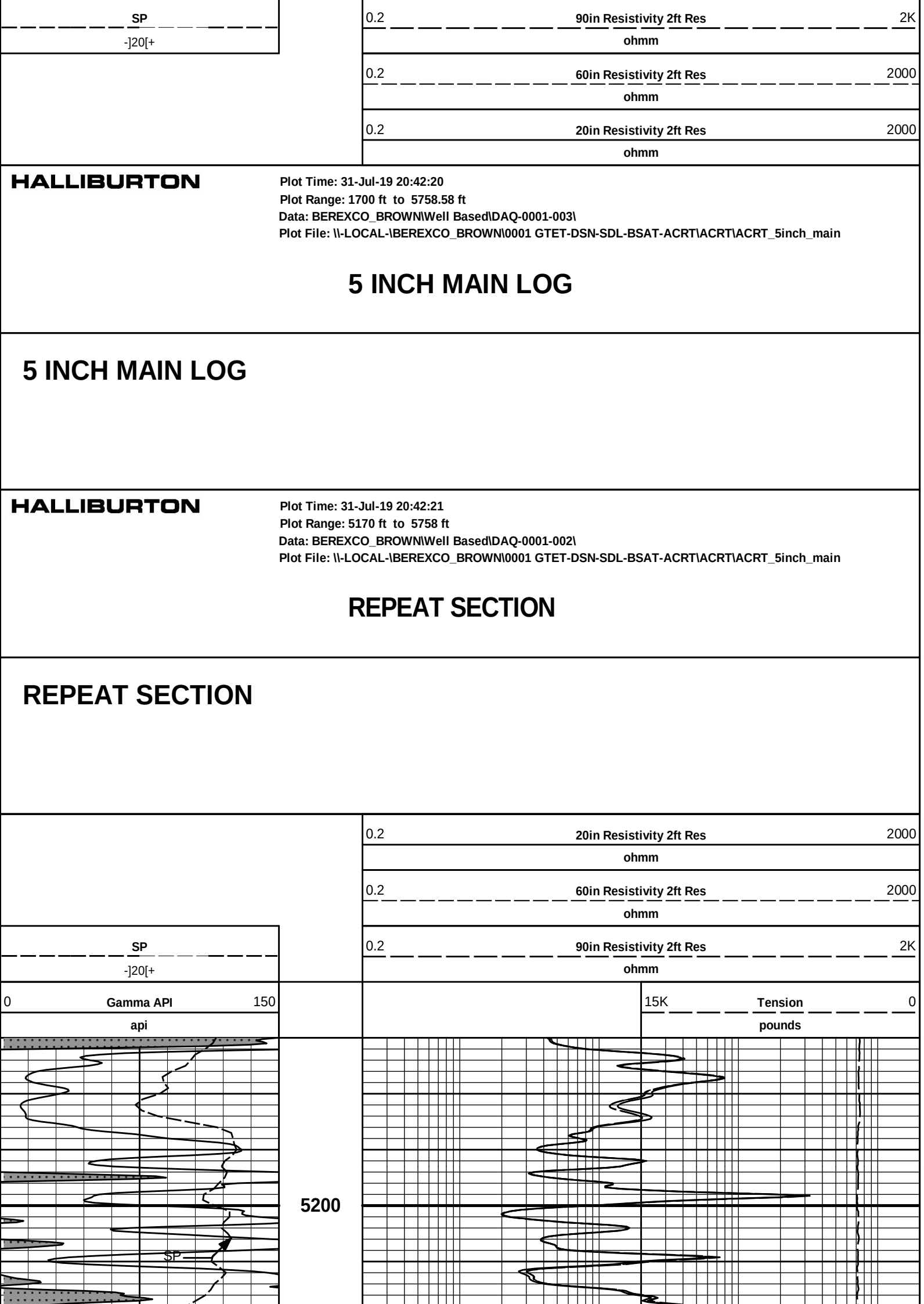
5600

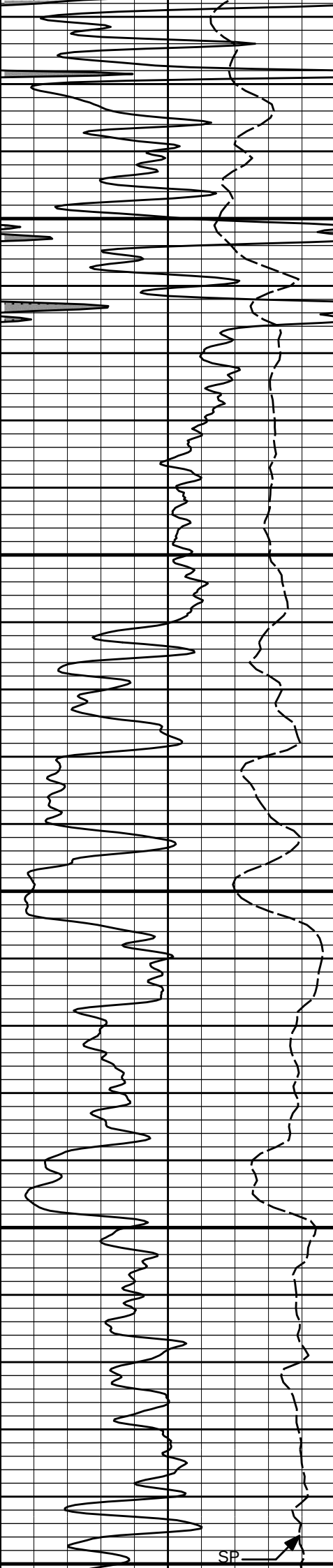
5700

TD



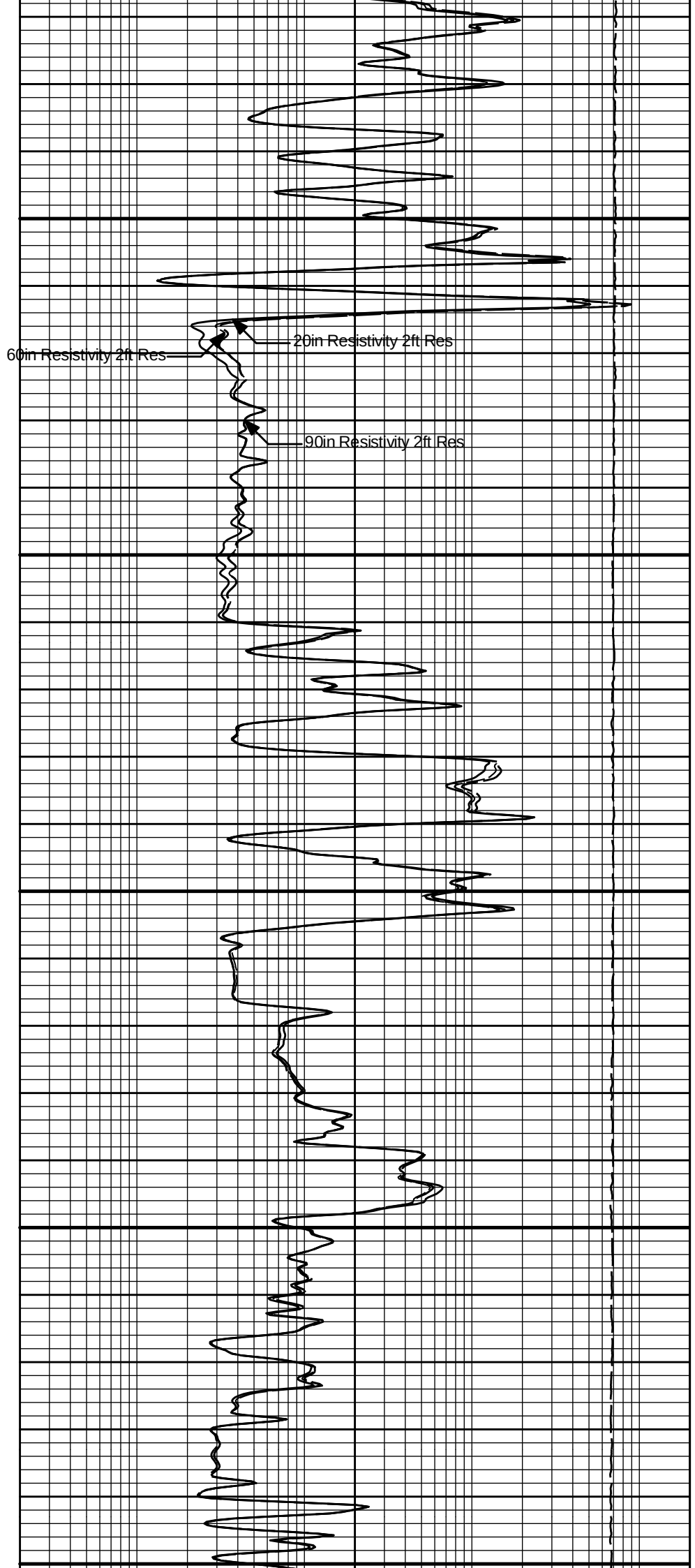
15K Tension 0
pounds

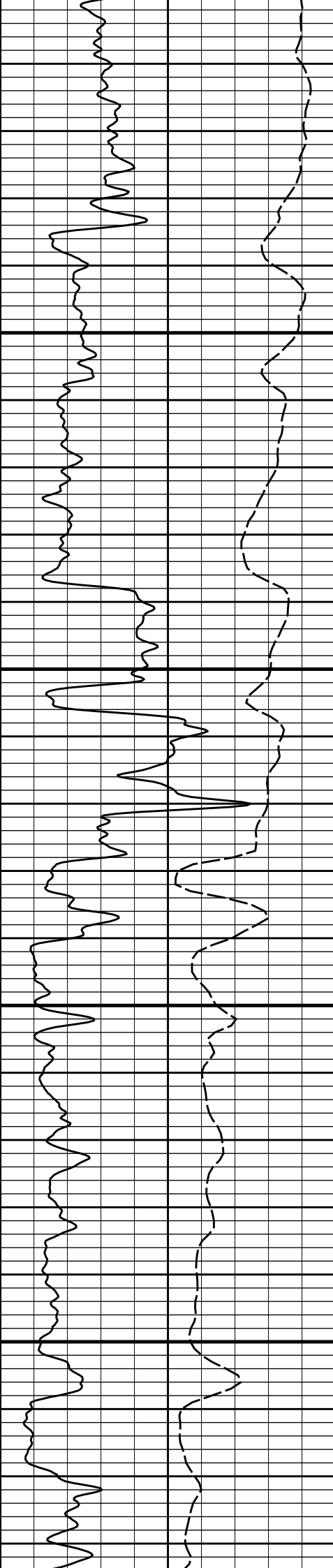




5300

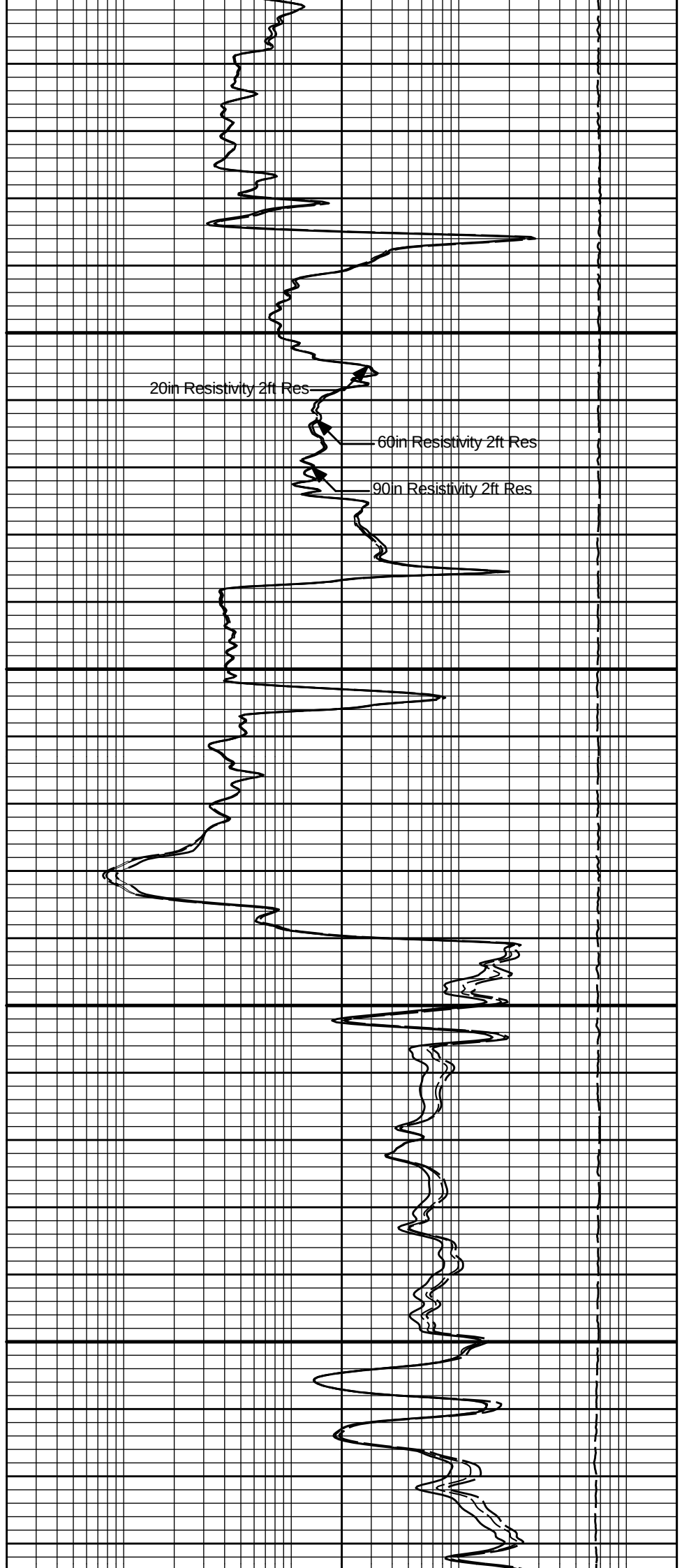
5400

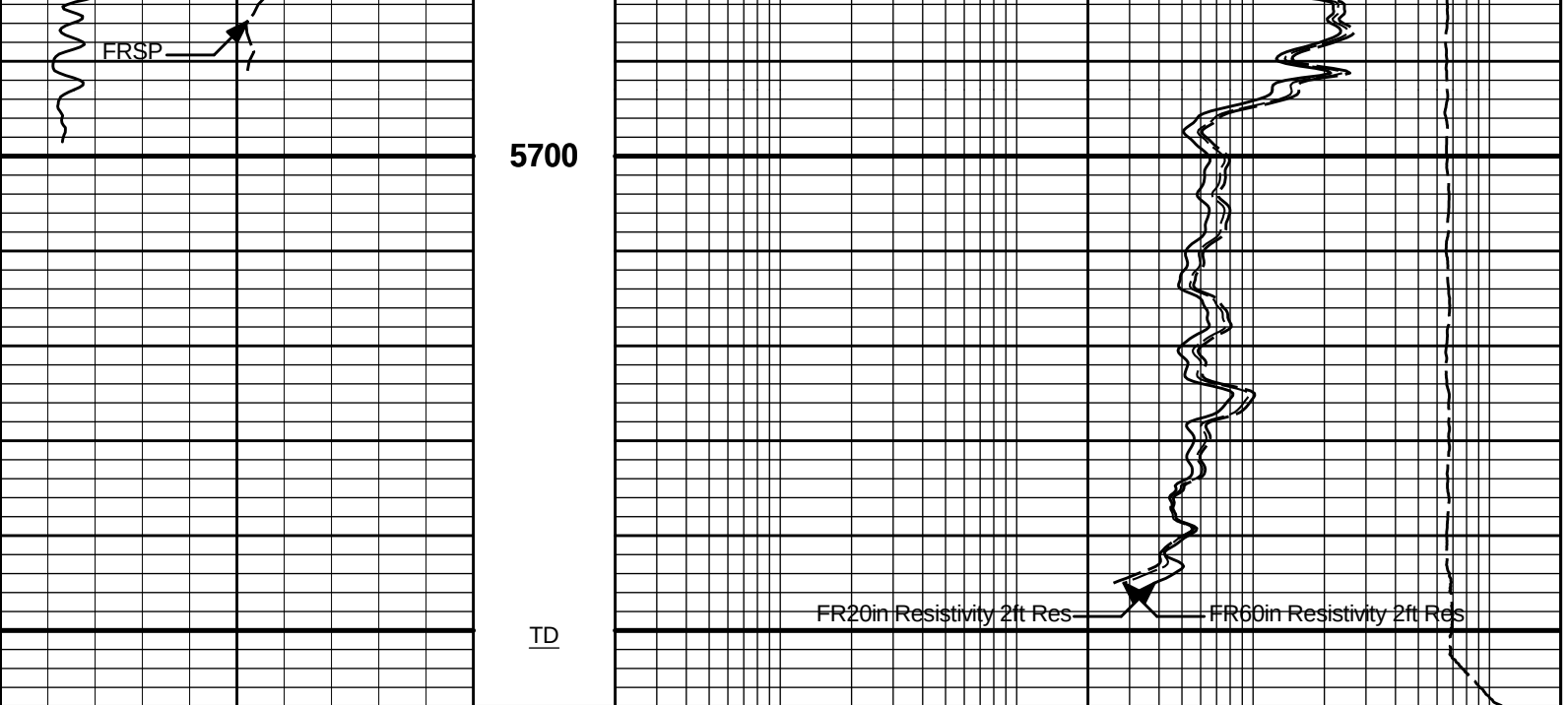




5500

5600





0	Gamma API	150		15K	Tension	0
	api				pounds	
	SP		0.2	90in Resistivity 2ft Res		2K
	-]20[+			ohmm		
			0.2	60in Resistivity 2ft Res		2000
				ohmm		
			0.2	20in Resistivity 2ft Res		2000
				ohmm		

HALLIBURTON

Plot Time: 31-Jul-19 20:42:22
Plot Range: 5170 ft to 5758 ft
Data: BEREXCO_BROWNWell Based\DAQ-0001-002\
Plot File: \\LOCAL-1\BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRT\ACRT\ACRT_5inch_main

REPEAT SECTION

REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION					
Tool Name:	Depth Panel - 00000032		Reference Calibration Date:	26-Jul-19 17:26:31	
Engineer:	WOLTEMATH		Calibration Date:	28-Jul-19 00:13:55	
Software Version:	WL INSITE R6.2.1 (Build 2)		Calibration Version:	1	
SURFACE TENSION LOAD CELL					
	Measurement	Load Cell Value	Measurement	Calibrated	Units
	Low	9998.08	-62.17	0.00	lbs
	High	17295.07	7822.09	7830.00	lbs

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name: RWCH - 11830866		Reference Calibration Date: 26-Jul-19 17:29:49	
Engineer: WOLTEMATH		Calibration Date: 28-Jul-19 00:18:29	
Software Version: WL INSITE R6.2.1 (Build 2)		Calibration Version: 1	
DOWNHOLE LOAD CELL			
Measurement	Tool Value	Measurement	Calibrated Units
Low	-689.04	3.64	0.00 lbs
High	4138.10	564.09	1319.10 lbs
NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name: GTET - 11021139		Reference Calibration Date: 14-May-19 09:57:38	
Engineer: WHITLOCK		Calibration Date: 29-Jun-19 15:22:45	
Software Version: WL INSITE R6.2.1 (Build 2)		Calibration Version: 1	
Calibrator Source S/N: TB-79			
Calibrator API Reference:222.00 api			
Equivalent Calibrator API Reference:225.9 api			
Measurement	Measured	Calibrated	Units
Background	21.7	21.5	api
Background + Calibrator	249.2	247.4	api
Calibrator	227.5	225.9	api
NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name: GTET - 11021139		Reference Calibration Date: 29-Jun-19 15:22:45	
Engineer: WHITLOCK		Calibration Date: 29-Jul-19 12:19:35	
Software Version: WL INSITE R6.2.1 (Build 2)		Calibration Version: 1	
Calibrator Source S/N: TB-79			
Calibrator API Reference:222.00 api			
Equivalent Calibrator API Reference:225.9 api			
Field Verification	Shop	Field	Units
Background	21.5	24.5	api
Background + Calibrator	247.4	248.9	api
Calibrator	225.9	224.5	api
Shop	Field	Difference	Tolerance
225.9	224.5	1.4	+/- 9.00
DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name: DSNT - 11660709		Reference Calibration Date: 14-Feb-19 11:05:14	
Engineer: WHITLOCK		Calibration Date: 14-May-19 11:28:42	
Software Version: WL INSITE R6.2.1 (Build 2)		Calibration Version: 1	
Logging Source S/N: DSN-436			
Tank Serial Number: EL RENO HWT			
Reference value assigned to Tank: 56.100			
Snow Block S/N: 12156883			
Calibration Tank Water Temperature: 74 degF			
Min. Tool Housing Outside Diameter: 3.625 in			
CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.01152	1.00941	0.900 - 1.100
WATER TANK SUMMARY (Horizontal Water Tank)			
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change Control Limit On Change
Porosity (decp):	0.2364	0.2358	0.0007 +/- 0.0020

Porosity (decp):	0.2004	0.2000	0.0007	+/- 0.0020
Calibrated Ratio:	10.5816	10.5596	0.022	+/- 0.050
VERIFIER				
Measurement	Value	Control Limit		
Snow-Block Porosity (decp):	0.0724	0.02000 - 0.09000		
PASS/FAIL SUMMARY				
Background Check:			Passed	
Gain-Range Check:			Passed	
Snow-Block Check:			Passed	

DUAL SPACED NEUTRON FIELD CALIBRATION				
Tool Name:	DSNT - 11660709	Reference Calibration Date:	14-May-19 11:28:42	
Engineer:	WHITLOCK	Calibration Date:	16-Jul-19 11:07:48	
Software Version:	WL INSITE R6.2.1 (Build 2)	Calibration Version:	1	
Logging Source S/N: DSN-436				
Snow Block S/N: 12156883				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0724	0.0631	-0.0093	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - 12153526	Reference Calibration Date:	01-Jan-70 00:00:00	
Engineer:	WOLTEMATH	Calibration Date:	08-Jul-19 10:59:56	
Software Version:	WL INSITE R6.2.1 (Build 2)	Calibration Version:	1	
Host Tool Name:	DSNT - 11660709			
CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-3224.77	-3224.77	-7000.00 - -1000.00	
Pad Gain	0.0003783	0.0003783	0.0002000 - 0.0006000	
Arm Offset	-2193.01	-2193.01	-5000.00 - 3000.00	
Arm Gain	0.0005237	0.0005237	0.000300 - 0.000700	
Arm Power	-0.000005118	-0.000005118	-0.000010000 - 0.000010000	
The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER				
Tool Diameter: 4.50 in				
CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	

Ring-Measurement Check:				Passed											
PASS/FAIL SUMMARY															
Calibration-Coefficients Range Check:				Passed											
SDLT CALIPER FIELD CALIBRATION															
Tool Name:		SDLT - 12153526			Reference Calibration Date:		08-Jul-19 10:59:56								
Engineer:		WOLTEMATH			Calibration Date:		08-Jul-19 11:01:50								
Software Version:		WL INSITE R6.2.1 (Build 2)			Calibration Version:		1								
MEASURED CALIPER VALUES															
Measurement		Shop		Field		Change		Control Limit On New Value							
Pad Extension		3.75		3.76		0.01		+/- 0.10							
Ring Diameter		8.25		8.25		0.00		+/- 0.15							
PASS/FAIL SUMMARY															
Pad Extension Check:				Passed											
Diameter Check:				Passed											
BSAT FIELD CASING CHECK															
Tool Name:		BSAT - 10939049			Calibration Date:		30-Mar-17 10:01:32								
Engineer:		HARRIS													
Software Version:		WL INSITE R5.0.5 (Build 8)			Calibration Version:		1								
Pre-Log Check		Check Depth		Shop		Field		Difference		Tolerance		Units			
Delta-T Compensated		147.01		57.00		56.56		0.4400		1.00		uspf			
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION															
Tool Name:		ACRt Sonde - 11038385			Reference Calibration Date:		30-May-19 10:30:10								
Engineer:		WHITLOCK			Calibration Date:		30-May-19 16:04:26								
Software Version:		WL INSITE R6.2.1 (Build 2)			Calibration Version:		1								
Host Tool Name:		ACRt Instrument - 11055059													
TYPICAL GAIN RANGE															
Subarray		R12KHz			R36KHz			R72KHz							
		Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper					
A1 (80")		0.95	1.0436	1.05	0.95	1.0233	1.05	0.95	1.0105	1.05					
A2 (50")		0.95	1.0425	1.05	0.95	1.0248	1.05	0.95	1.0169	1.05					
A3 (29")		0.95	1.0370	1.05	0.95	1.0178	1.05	0.95	1.0085	1.05					
A4 (17")		0.95	1.0325	1.05	0.95	1.0108	1.05	0.95	1.0026	1.05					
A5 (10")		N/A	N/A	N/A	0.95	1.0032	1.05	0.95	0.9929	1.05					
A6 (6")		N/A	N/A	N/A	0.95	0.9937	1.05	0.95	0.9859	1.05					
SONDE OFFSET															
Subarray		R12KHz			R36KHz			R72KHz							
		(mmho/m)			(mmho/m)			(mmho/m)							
A1 (80")		1.105			-4.185			-6.175							
A2 (50")		-2.031			-4.364			-5.644							
A3 (29")		-15.630			-4.663			-3.991							
A4 (17")		-113.327			-34.718			-27.228							
A5 (10")		N/A			-86.739			-42.245							
A6 (6")		N/A			334.526			172.566							
TRANSMITTER CURRENT GAIN															
Signal		Lower		R		Upper		Signal		Lower (ohm-m)		Measured (ohm-m)		Upper (ohm-m)	
12K		0.6		0.93		1.3		Mud Cell		0.95		1.00		1.05	
25K		1.0		1.22		2.0									

R7/2KHZ					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-92092456.000	-91475104.000	617352.000	4573755.200	Pass
A2 (50")	-88448376.000	-88531624.000	83248.000	4426581.200	Pass
A3 (29")	-88454672.000	-88284496.000	170176.000	4414224.800	Pass
A4 (17")	-83513648.000	-83029816.000	483832.000	4151490.800	Pass
A5 (10")	-82220840.000	-81717560.000	503280.000	4085878.000	Pass
A6 (6")	-83857920.000	-83900568.000	42648.000	4195028.400	Pass
PASS/FAIL SUMMARY					
Std Deviation Verification				Pass	
Average Verification				Pass	
Gain Tolerance Verification				Pass	

MICRO LOG SHOP CALIBRATION					
Tool Name:	Microlog Pad - 12153526			Reference Calibration Date:	11-May-19 13:30:58
Engineer:	WHITLOCK			Calibration Date:	29-Jul-19 12:21:32
Software Version:	WL INSITE R6.2.1 (Build 2)			Calibration Version:	1
Host Tool Name:	DSNT - 11660709				

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.08	-0.15	-0.01	-0.01	ohmm
Calibration Point #1	0.06	0.00	0.00	0.00	ohmm
Calibration Point #2	20.11	20.00	20.07	20.00	ohmm
Internal Reference	19.97	19.87	20.05	19.98	ohmm

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Tool Value		Tool Value		
Tool Zero	-0.04		0.22		V
Calibration Point #1	38.83		2.19		V
Calibration Point #2	5332.43		6966.93		V
Internal Reference	5297.41		6959.23		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 12153526			Reference Calibration Date:	29-Jul-19 12:21:32
Engineer:	WHITLOCK			Calibration Date:	29-Jul-19 12:22:18
Software Version:	WL INSITE R6.2.1 (Build 2)			Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.15	-0.15	-0.01	-0.01	ohmm
Internal Reference	19.87	19.88	19.98	19.99	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.87	19.88	-0.01	+/- 0.80	
Microlog Lateral	19.98	19.99	-0.01	+/- 0.80	

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - 11284007			Reference Calibration Date:	14-May-19 10:35:42
Engineer:	WHITLOCK			Calibration Date:	14-May-19 11:01:04
Software Version:	WL INSITE R6.2.1 (Build 2)			Calibration Version:	1

Logging Source S/N: 5475GW					
Aluminum Block S/N: EL RENO AL BLK			Density: 2.581g/cc		Pe: 3.170

Density Calibration Summary				
Measurement	Previous Value	New Value	Control Limit	
Near Bar Gain	1.0672	1.0696	0.90 - 1.10	
Near Dens Gain	1.0399	1.0253	0.90 - 1.10	
Near Peak Gain	1.0698	1.0607	0.90 - 1.10	
Near Lith Gain	1.0707	1.0600	0.90 - 1.10	
Far Bar Gain	1.0119	1.0132	0.90 - 1.10	
Far Dens Gain	1.0014	1.0004	0.90 - 1.10	
Far Peak Gain	0.9998	0.9988	0.90 - 1.10	
Far Lith Gain	0.9842	0.9832	0.90 - 1.10	
Near Bar Offset	-0.4646	-0.4868	NONE	
Near Dens Offset	-0.1638	-0.0376	NONE	
Near Peak Offset	-0.4118	-0.3374	NONE	
Near Lith Offset	-0.4691	-0.3841	NONE	
Far Bar Offset	-0.0627	-0.0742	NONE	
Far Dens Offset	0.0569	0.0650	NONE	
Far Peak Offset	0.0511	0.0583	NONE	
Far Lith Offset	0.1514	0.1583	NONE	
Near Bar Background	993.88	993.91	700 - 1450	
Near Dens Background	329.23	327.28	230 - 480	
Near Peak Background	147.25	146.97	100 - 210	
Near Lith Background	178.05	176.81	125 - 260	
Far Bar Background	582.67	585.21	450 - 900	
Far Dens Background	227.13	227.13	175 - 345	
Far Peak Background	91.02	90.90	70 - 140	
Far Lith Background	94.76	94.27	75 - 145	

Calibration Block Summary				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.688	1.687	-0.001	+/- 0.015
Pe	2.523	2.556	0.033	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.581	0.001	+/- 0.01500
Pe	3.116	3.129	0.013	+/- 0.150

Tool Summary				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0004	+/- 0.0110	-0.0020	+/- 0.0140
Magnesium Block	0.0005	+/- 0.0110	0.0007	+/- 0.0140
Aluminum Block	0.0003	+/- 0.0110	0.0001	+/- 0.0140
Resolution	8.86	6.00 - 11.50	9.16	6.00 - 11.50
Internal Verifier(B+D+P+L)	1645	1200 - 2700	998	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed

Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK			
Tool Name:	SDLT Pad - 11284007	Reference Calibration Date:	14-May-19 11:01:04
Engineer:	WHITLOCK	Calibration Date:	29-Jul-19 12:19:53
Software Version:	WL INSITE R6.2.1 (Build 2)	Calibration Version:	1

Pad Temperature: 89.3 degF				
DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1644.977	1647.359	2.382	16.295
Far (B+D+P+L) cps	997.505	992.725	-4.780	16.911
Near Resolution	8.86	8.85	-0.010	0.50
Far Resolution	9.16	9.12	-0.040	1.00
PASS/FAIL SUMMARY				
Bkg Quality Check:			Passed	
Bkg Resolution Check:			Passed	
Bkg Verification Check:			Passed	

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
Depth Panel-00000032						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7830.00	-----	-----	0.00	-----	lbs
RWCH-11830866						
DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1319.10	-----	-----	0.00	-----	lbs
GTET-11021139						
Gamma Ray Calibrator	225.9	224.5	-----	1.4	+/- 9.00	api
DSNT-11660709						
Snow-Block Porosity	0.0724	0.0631	-----	0.0093	+/- 0.0150	decp
SDLT-12153526						
Pad Extension	3.75	3.76	-----	-0.01	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
ACRt Sonde-11038385						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Microlog Pad-12153526						
MicroLog Normal	19.87	19.88	-----	-0.01	+/-0.80	ohmm
MicroLog Lateral	19.98	19.99	-----	-0.01	+/-0.80	ohmm
SDLT Pad-11284007						
Near(B+D+P+L)	1644.977	1647.359	-----	-2.382	+/-16.295	cps
Far(B+D+P+L)	997.505	992.725	-----	4.780	+/-16.911	cps

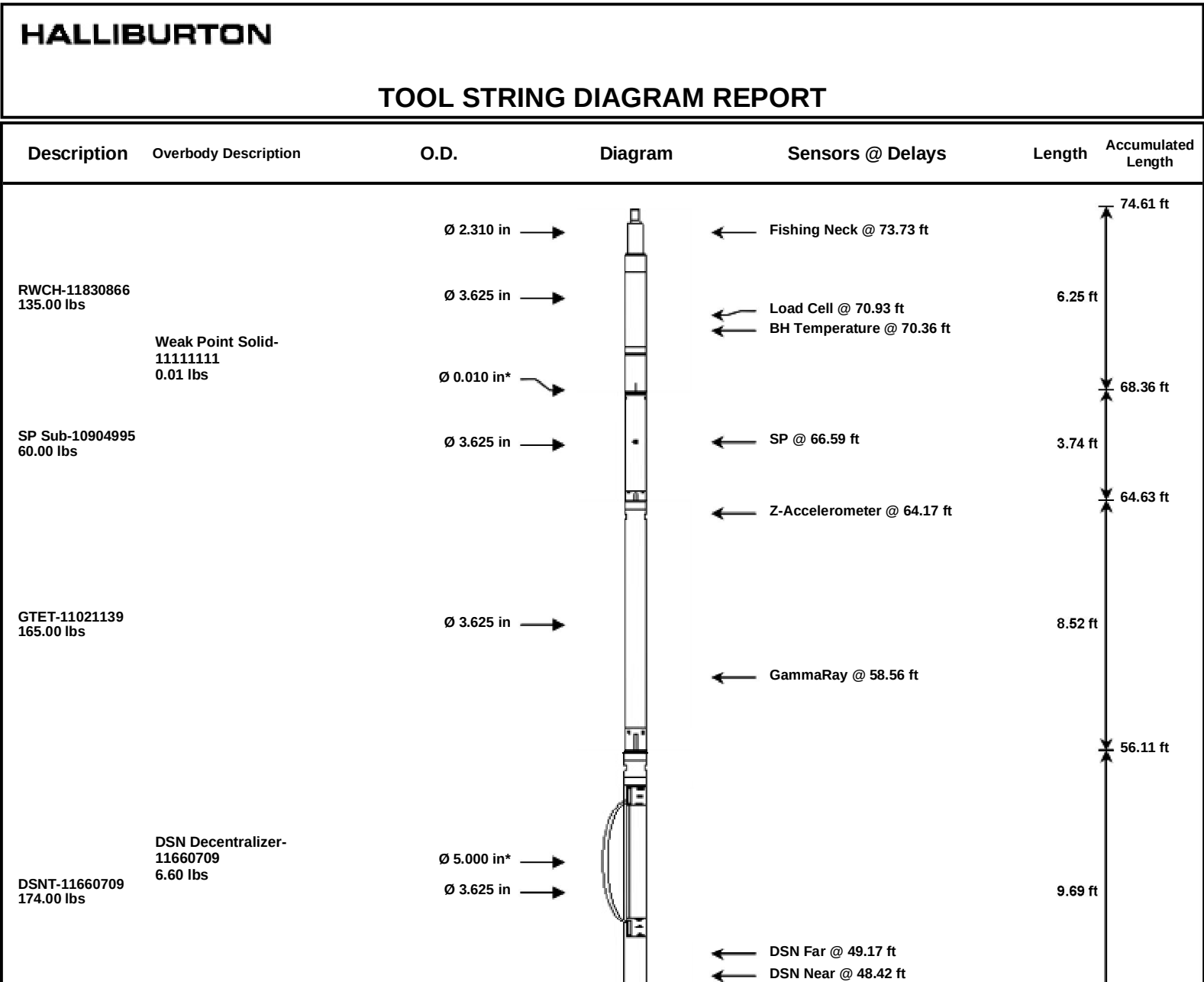
Data: BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRT\IDLE	Date: 31-Jul-19 16:09:25
--	--------------------------

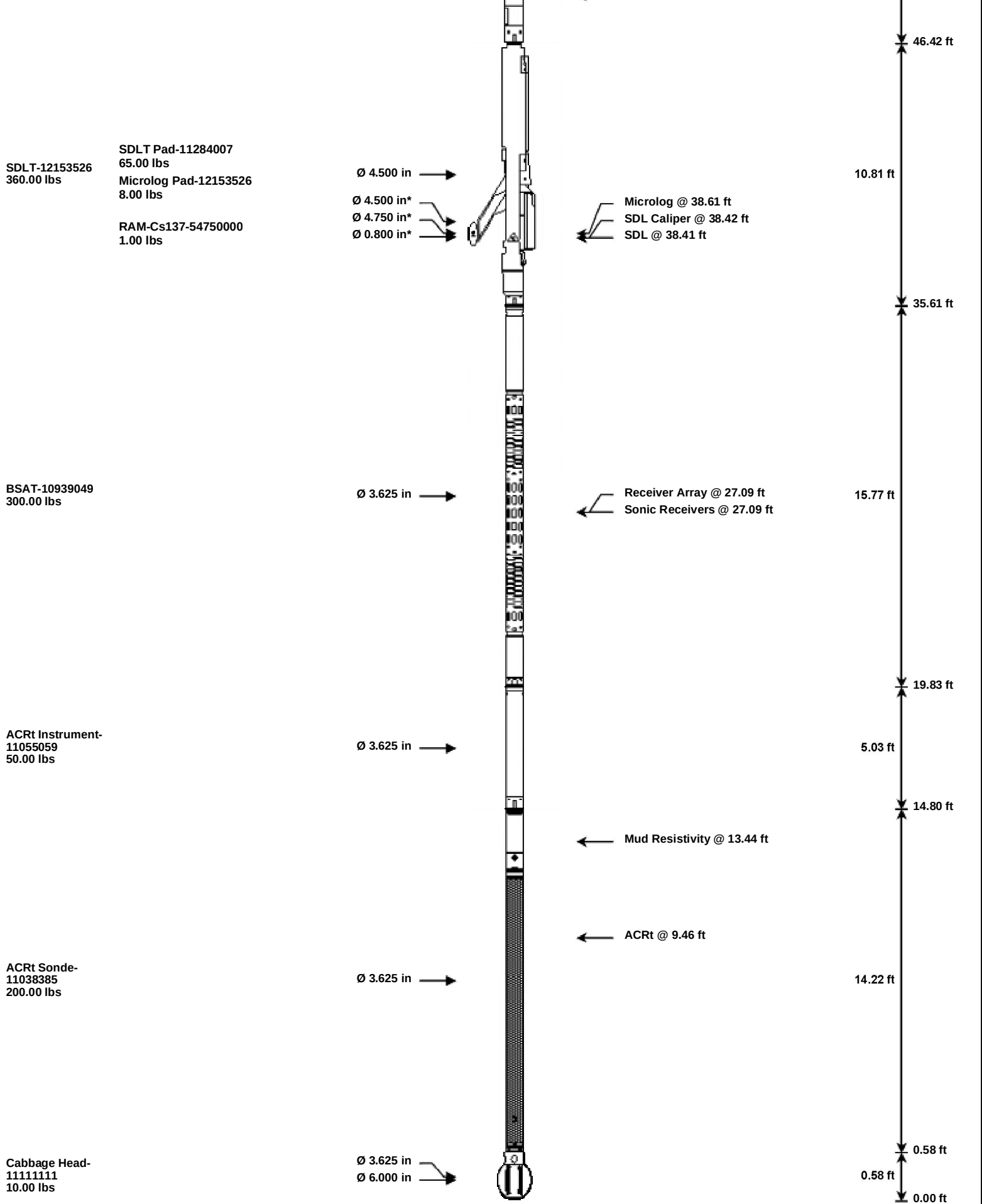
HALLIBURTON					
PARAMETERS REPORT					

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP	_____	_____	_____		

SHARED	BS	Bit Size	7.875	in
SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
SHARED	MDBS	Mud Base	Water	
SHARED	MDWT	Borehole Fluid Weight	9.300	ppg
SHARED	WAGT	Weighting Agent	Barite	
SHARED	BSAL	Borehole salinity	0.00	ppm
SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	2.000	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	CSTR	Compressive Strength	1000.00	psia
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5750.00	ft
SHARED	BHT	Bottom Hole Temperature	142.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	CBM Temperature Master Tool	GTET	
SHARED	MSAL	Water-base mud filtrate salinity	0.00	ppm
Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTT	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
DSNT	UCLA	Classic Neutron Parameter utilized?	No	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc

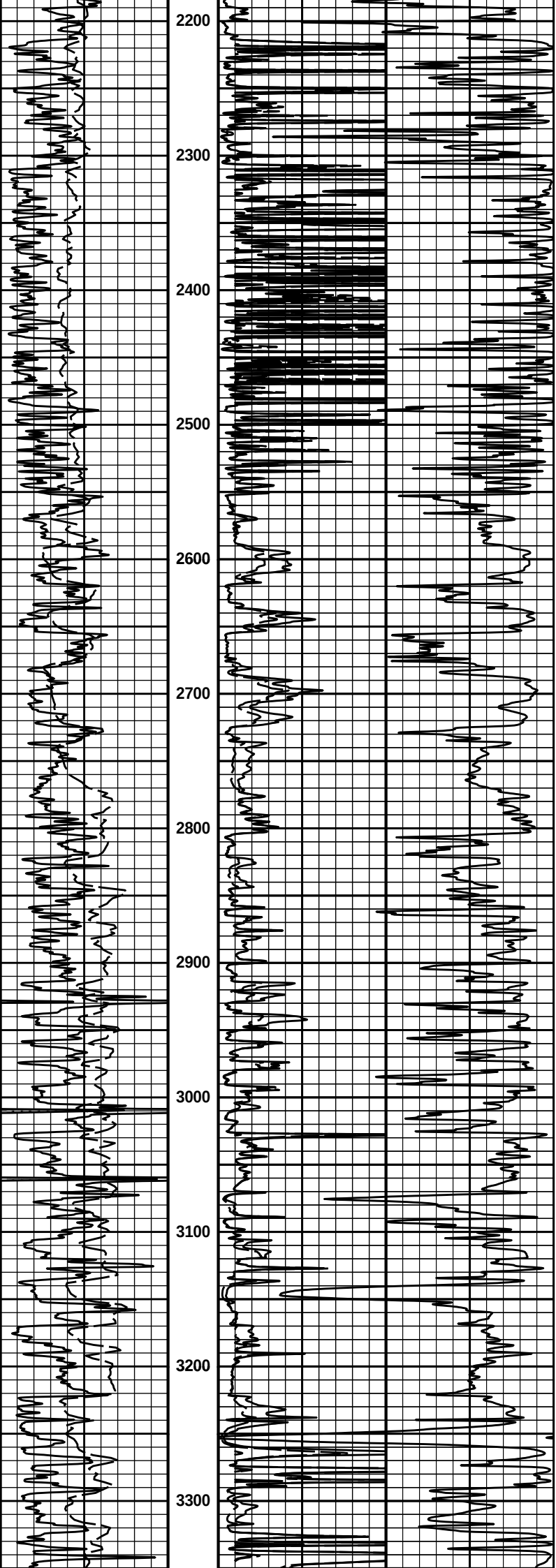
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Pore Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	Limestone 47.6	
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM_____				
Data: BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRTIDLE				Date: 31-Jul-19 16:12:16

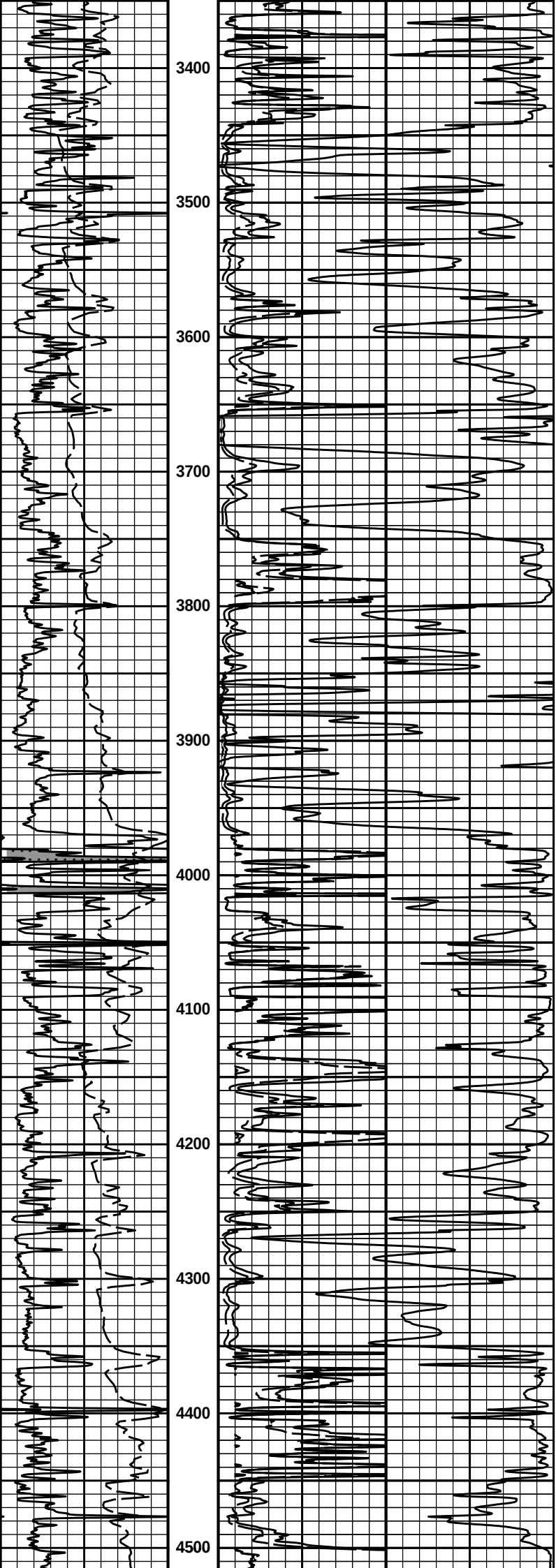


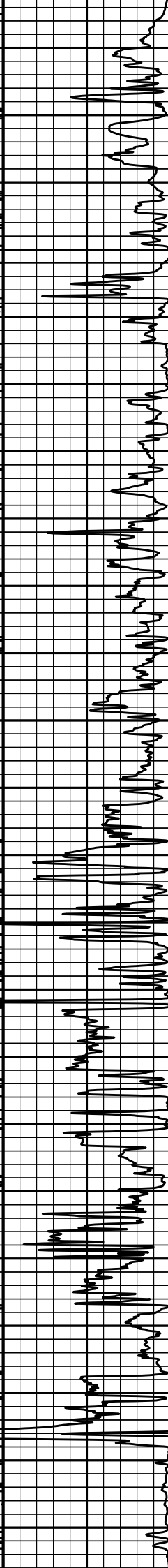
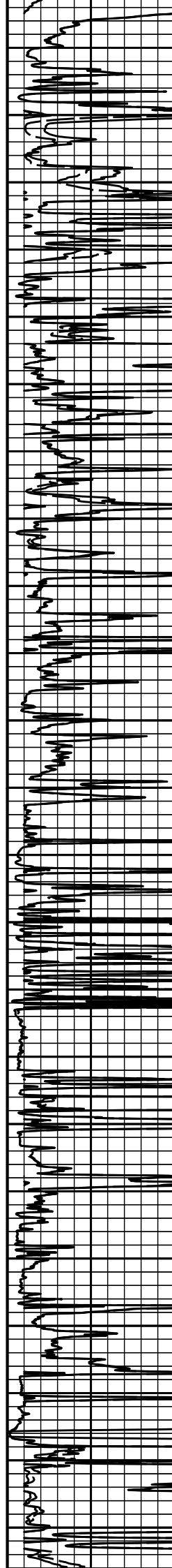
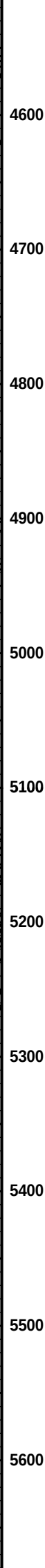
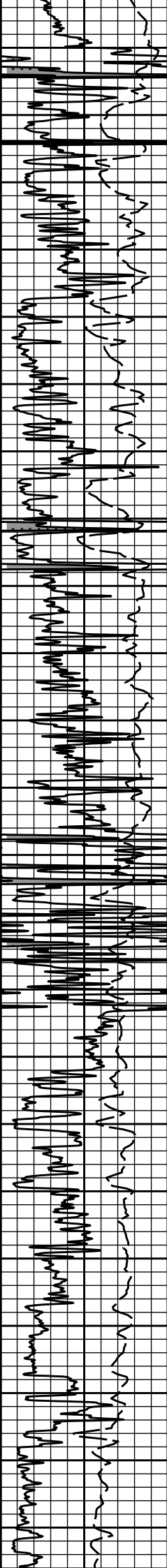


Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11830866	135.00	6.25	68.36	300.00
WPSS	Weak Point Solid	11111111	0.01	0.01	* 68.36	300.00
SP	SP Sub	10904995	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	11021139	165.00	8.52	56.11	60.00
DSNT	Dual Spaced Neutron	11660709	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer	11660709	6.60	5.13	* 49.75	300.00
SDLT	Spectral Density Tool	12153526	360.00	10.81	35.61	60.00
RAM	RAM-Cs137-54750000	11284007	65.00	8.00	27.09	60.00

SDLP	Density Insite Pad	11284007	65.00	2.55	*	37.82	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	54750000	1.00	0.80	*	38.05	300.00
MICP	Microlog Pad	12153526	8.00	1.00	*	38.11	60.00
BSAT	Borehole Sonic Array Tool	10939049	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11055059	50.00	5.03		14.80	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22		0.58	120.00
CBHD	Cabbage Head	11111111	10.00	0.58		0.00	300.00
Total			1,534.61	74.61			
* Not included in Total Length and Length Accumulation.							
Data: BEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRT\IDLE				Date: 31-Jul-19 16:11:14			







		5700			
0		Gamma API		150	
		api			
		SP			
		-20[+			
		1 : 1200			
		FT			
0		RT20		50	
		ohm-metre			
0		90in Resistivity 2ft Res		50	
		ohm-metre			
1000		90in Conductivity 2ft Res		0	
		mmho per metre			
HALLIBURTON					
Plot Time: 31-Jul-19 20:42:35					
Plot Range: 1700 ft to 5758 ft					
Data: BEREXCO_BROWN\Well Based\DAQ-0001-003\					
Plot File: \\LOCAL-IBEREXCO_BROWN\0001 GTET-DSN-SDL-BSAT-ACRTIACRTIACRT_1_main					
1 INCH MAIN LOG					
1 INCH CORRELATION LOG					