

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY		RAYDON EXPLORATION INC.	
WELL	LINDA JO 1-22		
FIELD/BLOCK	WILDCAT		
COUNTY	SEWARD		
STATE	KANSAS		
Permanent Datum	GL	Elev: 2739.0 ft	
Log measured from	KB	11.0 ft above perm. Datum	
Drilling measured from	KB		
Date	10-Aug-17		
Run No.	ONE		
Depth - Driller	5980.0 ft		
Depth - Logger	5980.0 ft		
Bottom - Logged Interval	5970.0 ft		
Top - Logged Interval	1633.0 ft		
Casing - Driller	8.625 in	@ 1635.0 ft	
Casing - Logger	1633.0 ft		
Bit Size	7.875 in	@	
Type Fluid in Hole	Water Based Mud		
Density	8.9 ppg	60.00 sl/qt	
PH	11.50 pH	6.0 cphm	
Source of Sample	FLOWLINE		
Rm @ Meas. Temperature	0.92 ohmm	@ 75.00 degF	@
Rmf @ Meas. Temperature	0.78 ohmm	@ 75.00 degF	@
Rmc @ Meas. Temperature	1.05 ohmm	@ 75.00 degF	@
Source Rmf	Rmc	MEAS	
Rm @ BHT	0.57 ohmm	@ 125.0 degF	@
Time Since Circulation	04:00 hr		
Time on Bottom	10-Aug-17 18:35		
Max. Rec. Temperature	125.00 degF	@ 5980.0 ft	@
Equipment	11230668	EL.RENO.,OK	
Recorded By	T. HYDE		
Witnessed By	E. GRIEVES		

Fold here

Service Ticket No.: 904173918				API No.: 15-175-22252-00-00				PGM Version: WL INSITE R5.0.5 (Build 8)											
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.	@	@				ONE	ACRT	N/A	CENT.	N/A									
Rmc @ Meas. Temp.	@	@					I-12109517												
Source Rmf	Rmc						S-12109515												
Rm @ BHT	@	@																	
Rmf @ BHT	@	@																	
Rmc @ BHT	@	@																	
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE						
Serial No.	10971172	Serial No.	10939050	Serial No.	12153526	Serial No.	1203046	Serial No.	1203046	Serial No.	1203046	Serial No.	1203046						
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT	Model No.	DSNT	Model No.	DSNT	Model No.	DSNT						
Diameter	3.625"	No. of Cent.	2	Diameter	5.5"	Diameter	3.625"	Diameter	3.625"	Diameter	3.625"	Diameter	3.625"						
Detector Model No.	T-102	Spacing	EVEN	Log Type	GAM-GAM	Log Type	NEU-NEU	Log Type	NEU-NEU	Log Type	NEU-NEU	Log Type	NEU-NEU						
Type	SCINT			Source Type	Cs137	Source Type	Am241Be	Source Type	Am241Be	Source Type	Am241Be	Source Type	Am241Be						
Length	8"	LSA [Y/N]		Serial No.	20791B	Serial No.	DSN-438	Serial No.	DSN-438	Serial No.	DSN-438	Serial No.	DSN-438						
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci	Strength	15 Ci	Strength	15 Ci	Strength	15 Ci						
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run	Depth	Speed	Scale	Scale	Scale	Matrix	Scale	Matrix	Scale	Matrix	Scale	Matrix	Scale	Matrix					
No.	From	To	ft/min	L	R	L	R	L	R	L	R	L	R	L					
ONE	TD	BSC	REC	0	150	30	10	17.6 usec/ft	30	10	2.71	30	10	TIME					

ONE	TD	BSC	REC	0	150	30	-10	47.0 psec/ft	30	-10	2.77	30	-10	LIML
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DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: GTET-DSNT-SDLT-BSAT-ACRT RAN IN COMBINATION
 CHLORIDES REPORTED AT 5000 mg/l
 ANNULAR HOLE VOLUME CALCULATED FOR 5 INCH CASING
 BOREHOLE WAS VERY RUGOSE

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

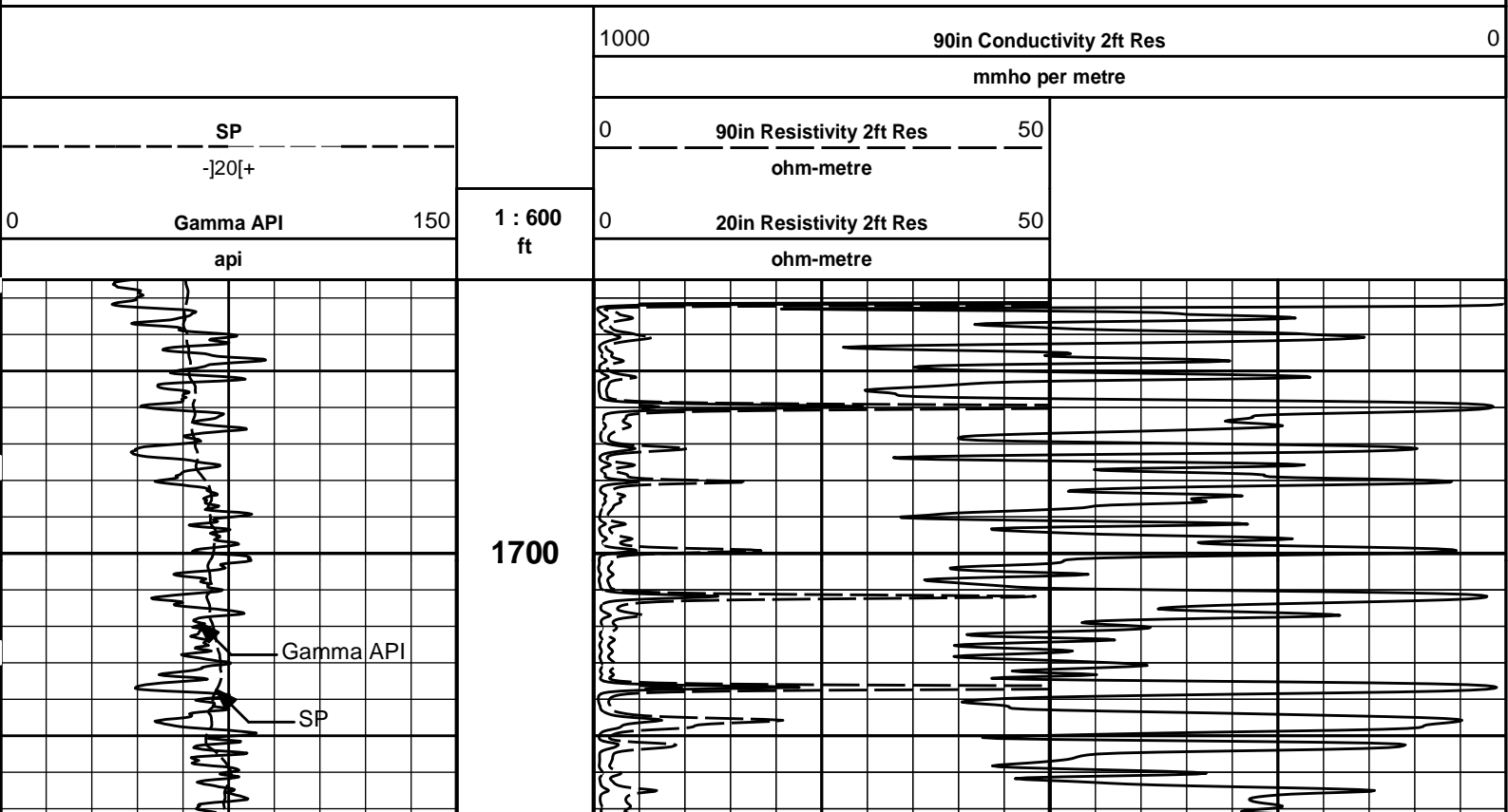
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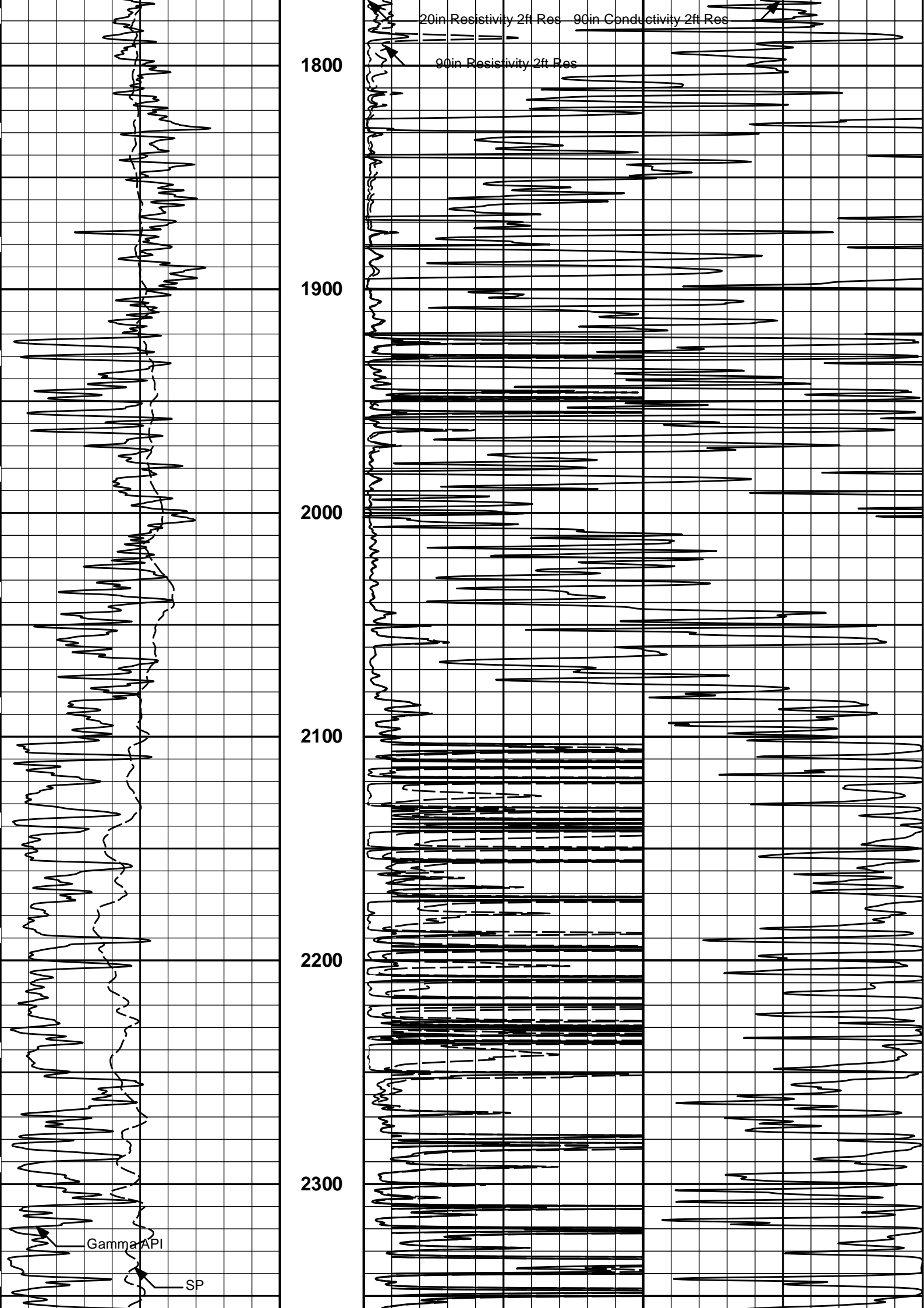
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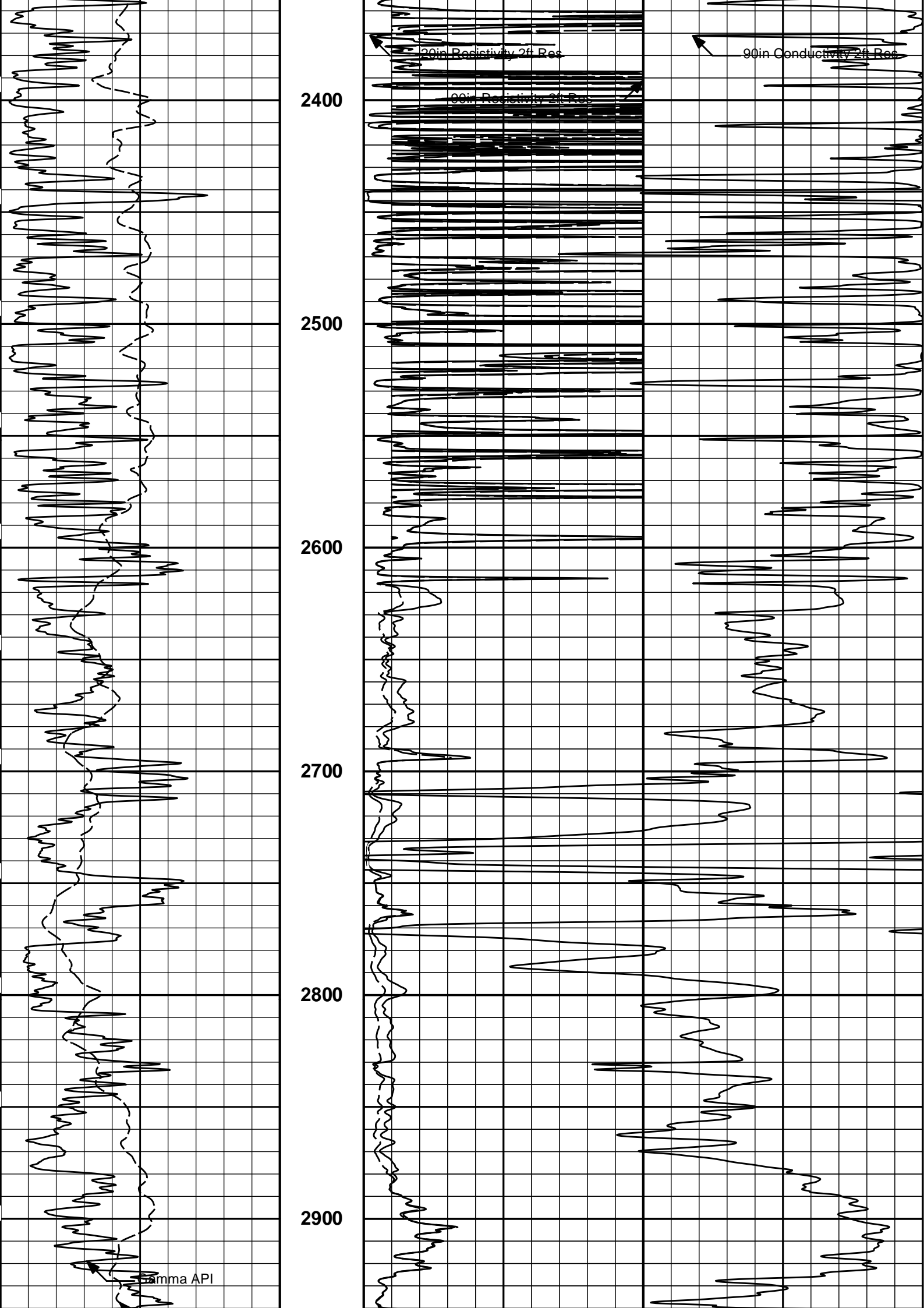
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2 INCH MAIN LOG

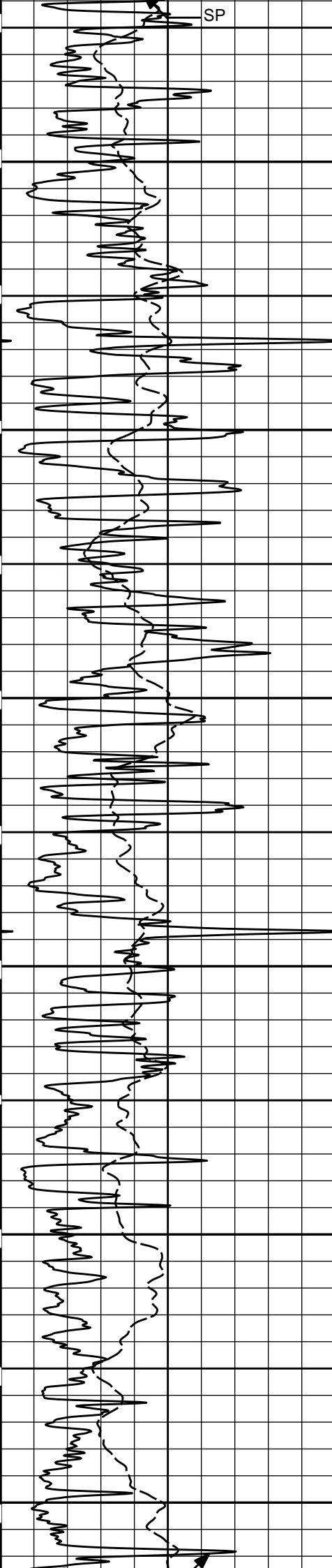
2 INCH MAIN LOG







SP



3000

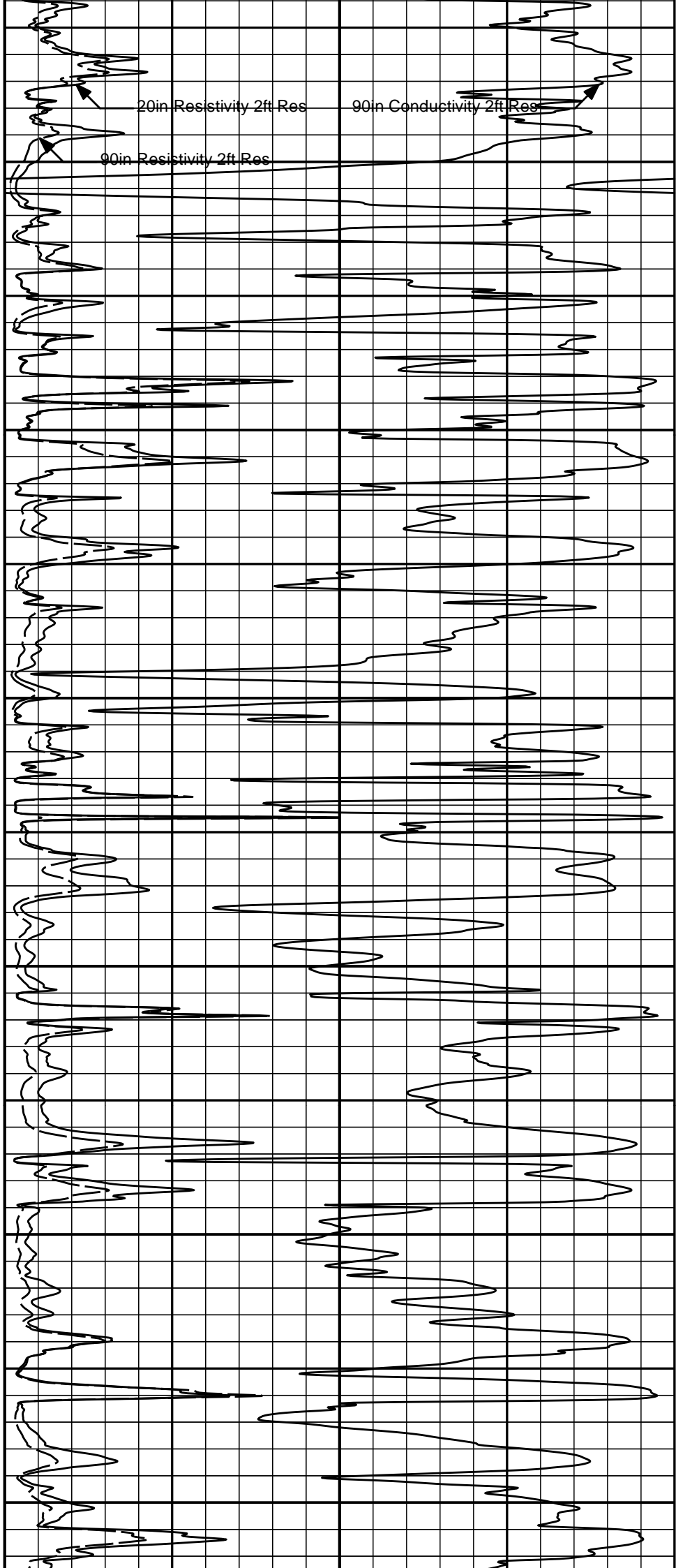
3100

3200

3300

3400

3500



20in Resistivity 2ft Res

90in Conductivity 2ft Res

90in Resistivity 2ft Res

3000

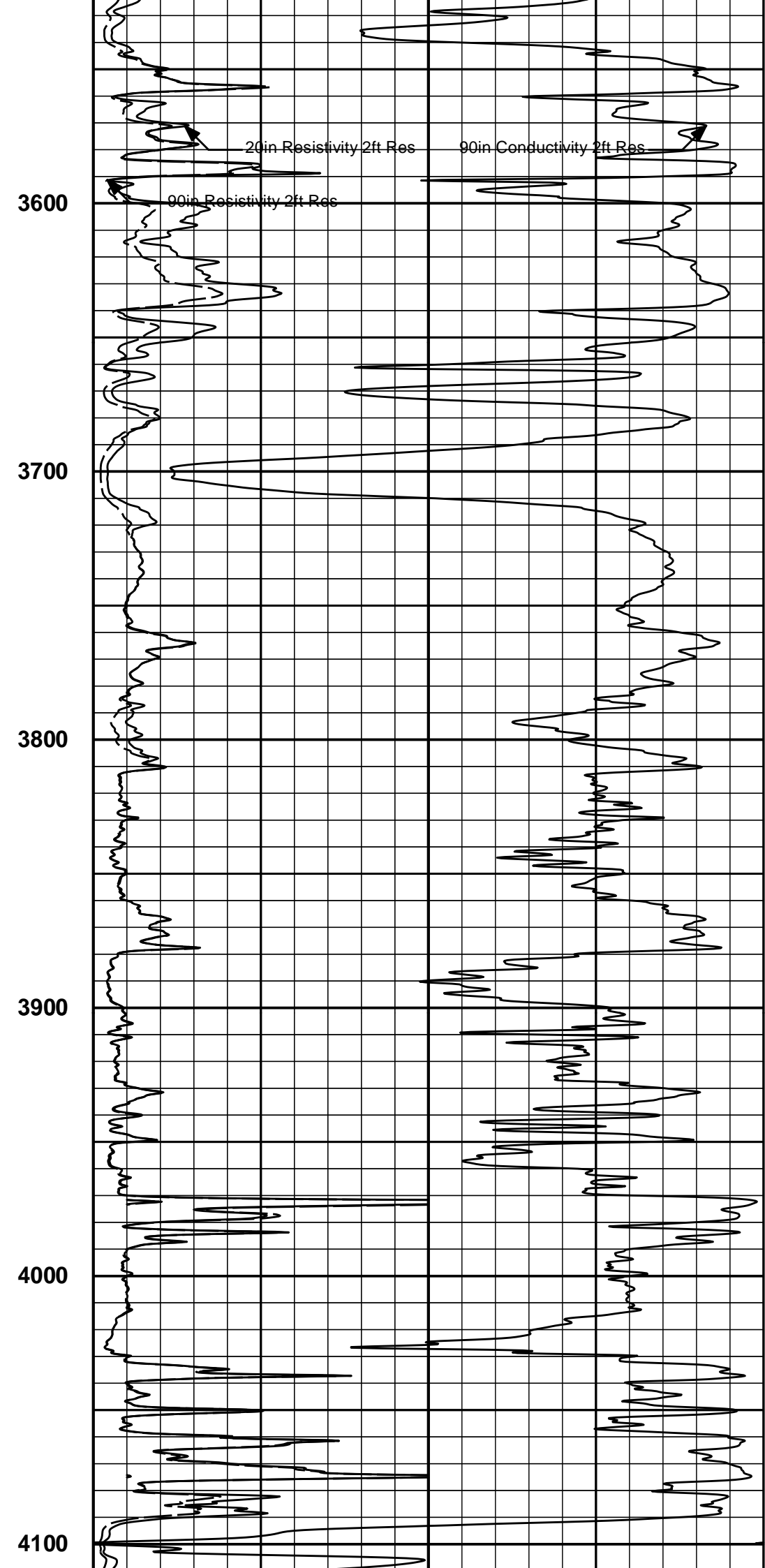
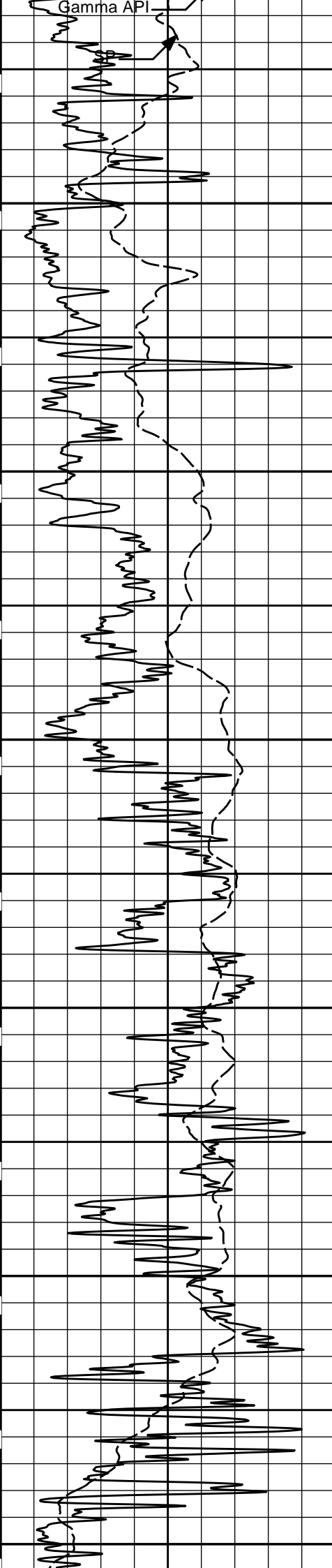
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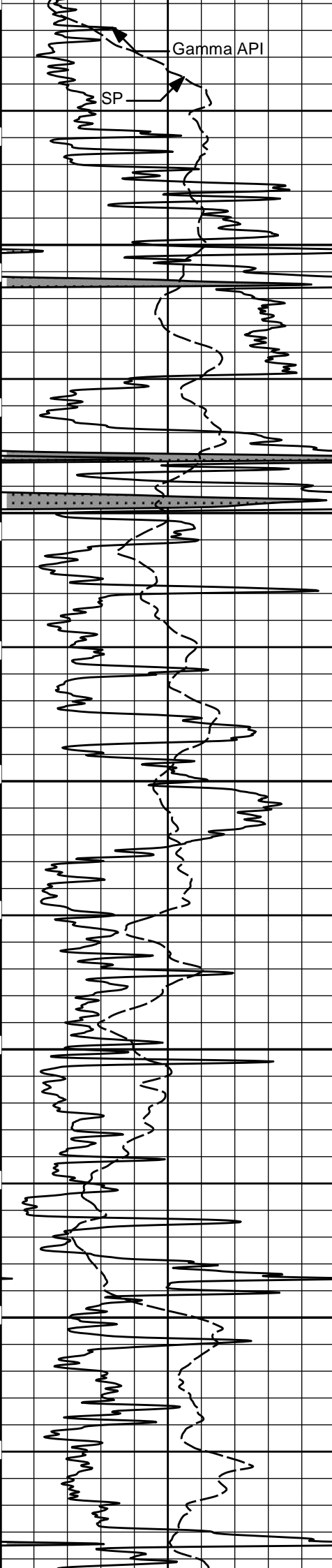
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3300

3400

3500





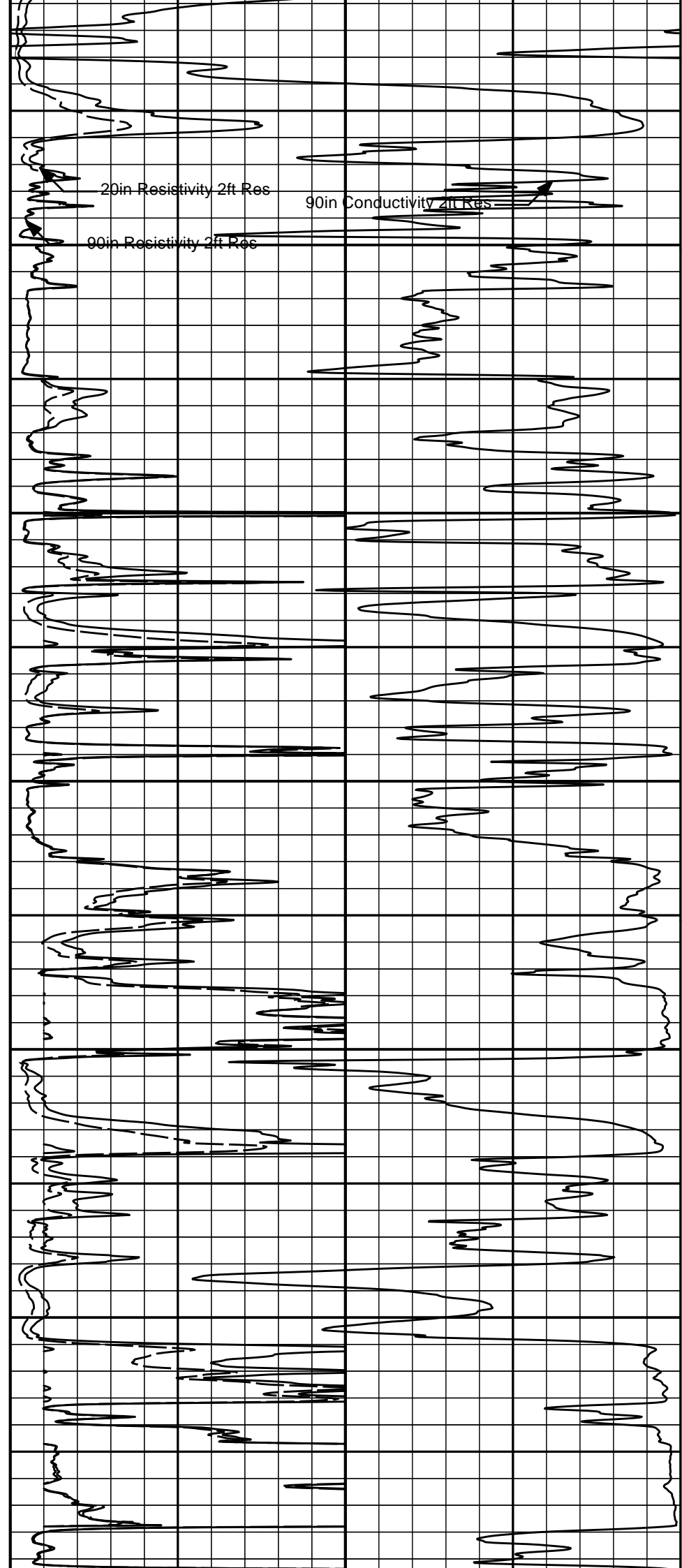
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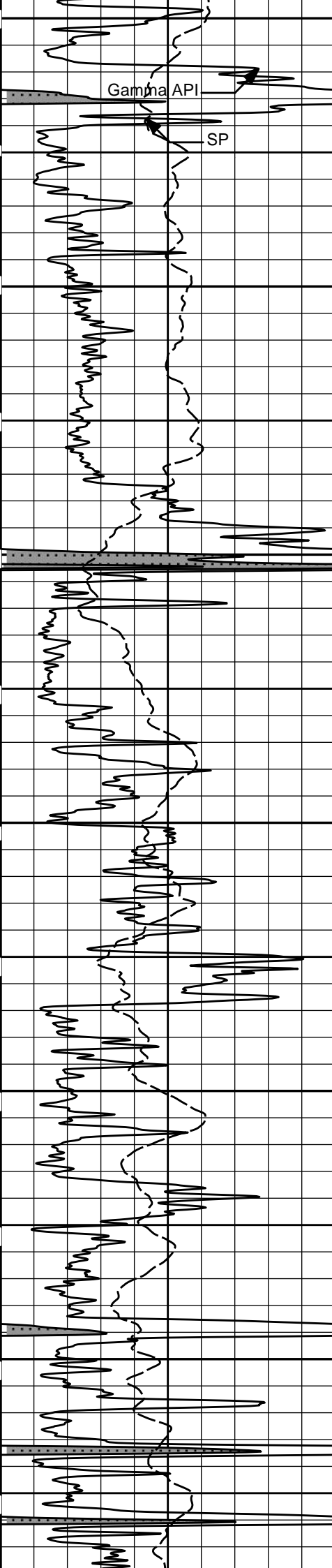
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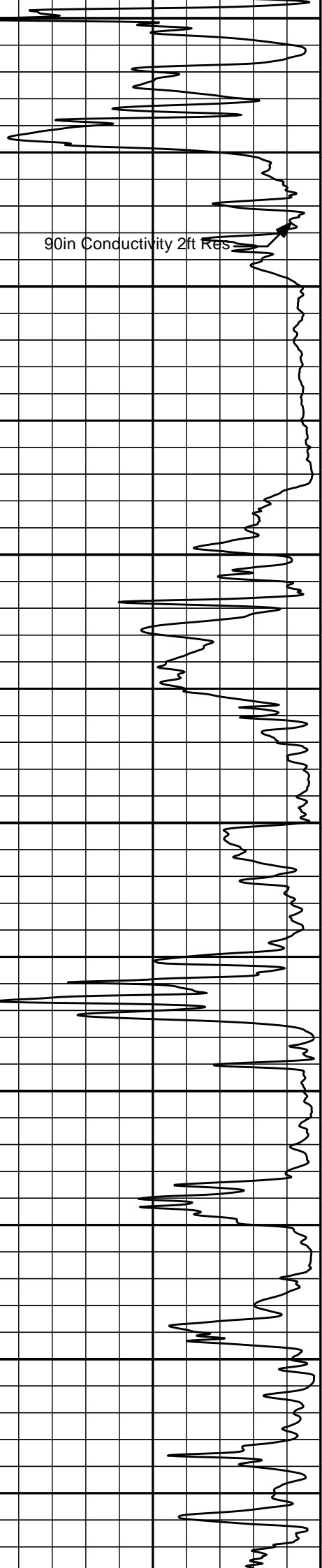
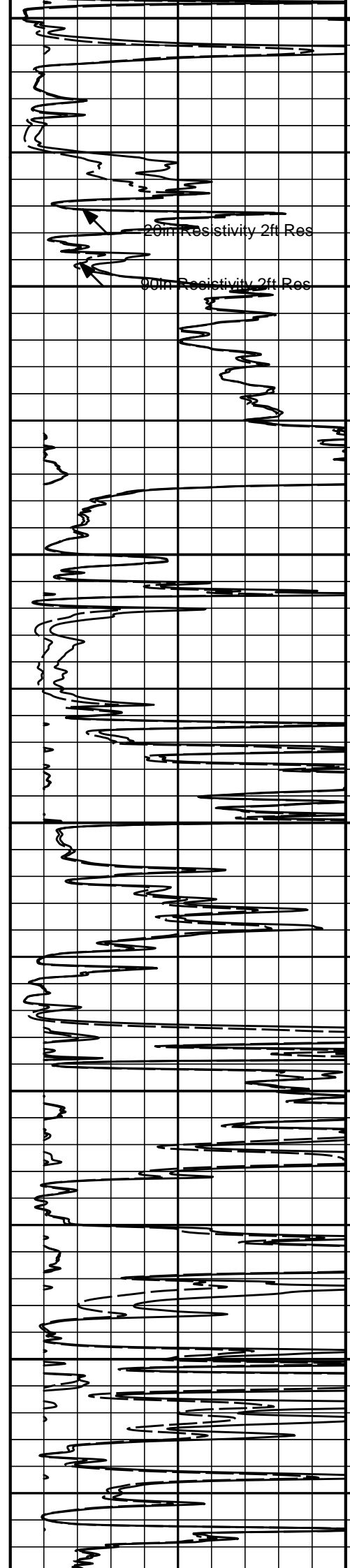
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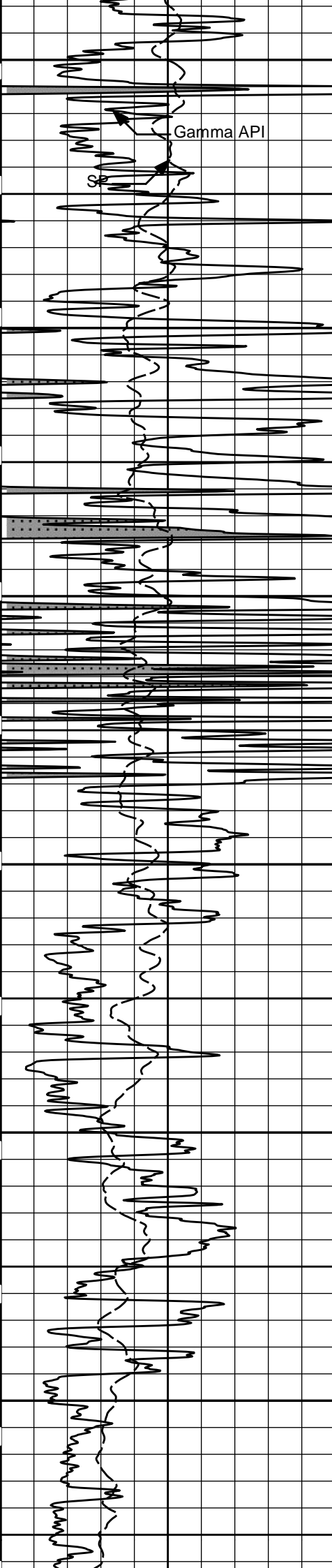
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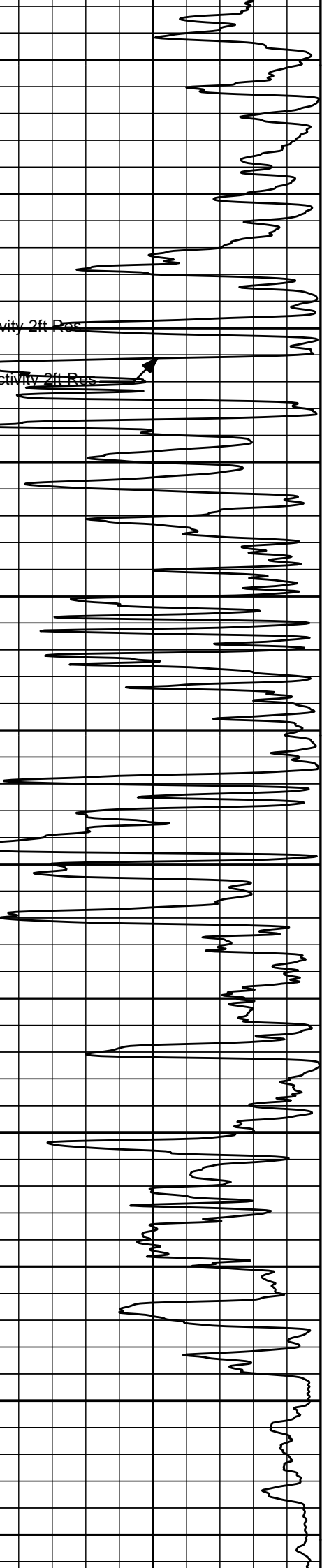
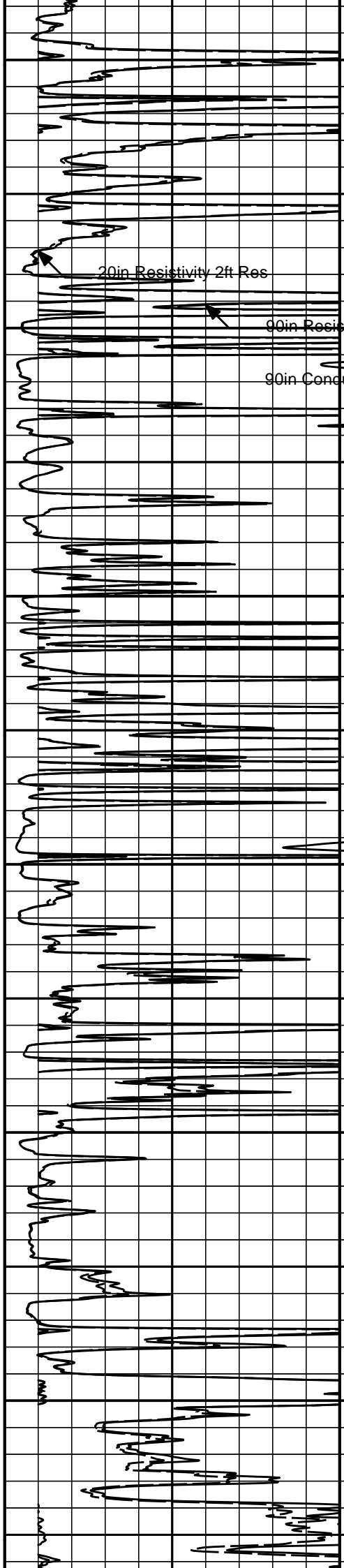


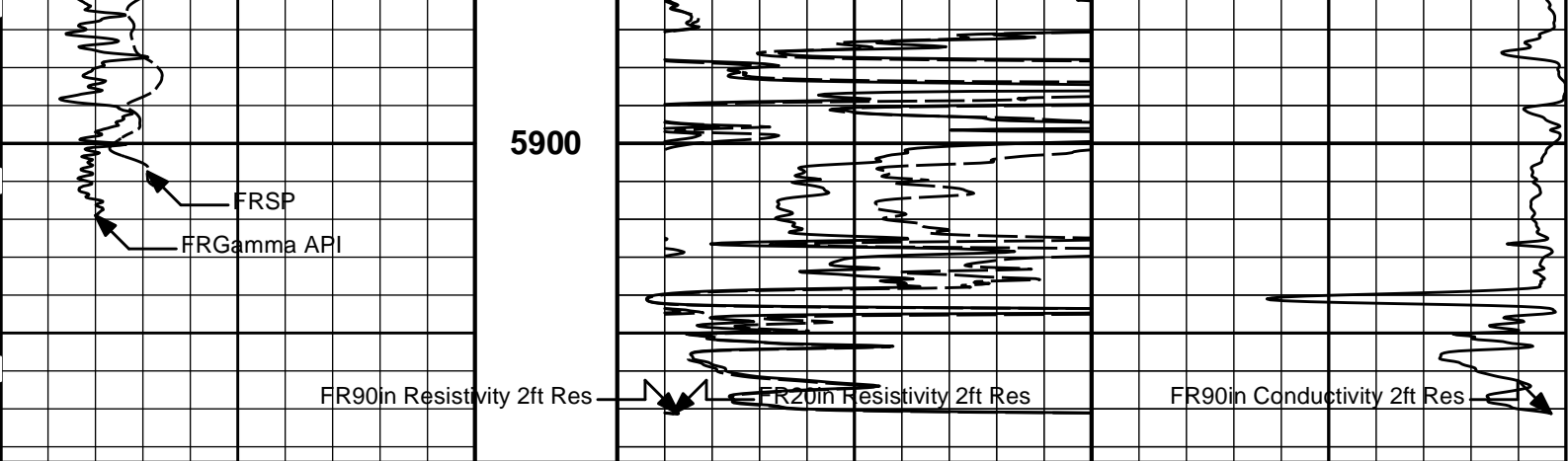
4700
4800
4900
5000
5100
5200





5300
5400
5500
5600
5700
5800





0	Gamma API	150	1 : 600 ft	0	20in Resistivity 2ft Res	50
	api			0	90in Resistivity 2ft Res	50
	SP			1000	90in Conductivity 2ft Res	0
	- 20 +				mmho per metre	

HALLIBURTON

Plot Time: 11-Aug-17 00:32:17
 Plot Range: 1625 ft to 5984.08 ft
 Data: LINDA_JO_1-22\Well Based\DAQ-0001-005\
 Plot File: \\-LOCAL-LINDA_JO_1-22\0001 GTET-DSNT-SDLT-BSAT-ACRTIACRTIACRT_2_main

2 INCH MAIN LOG

2 INCH MAIN LOG

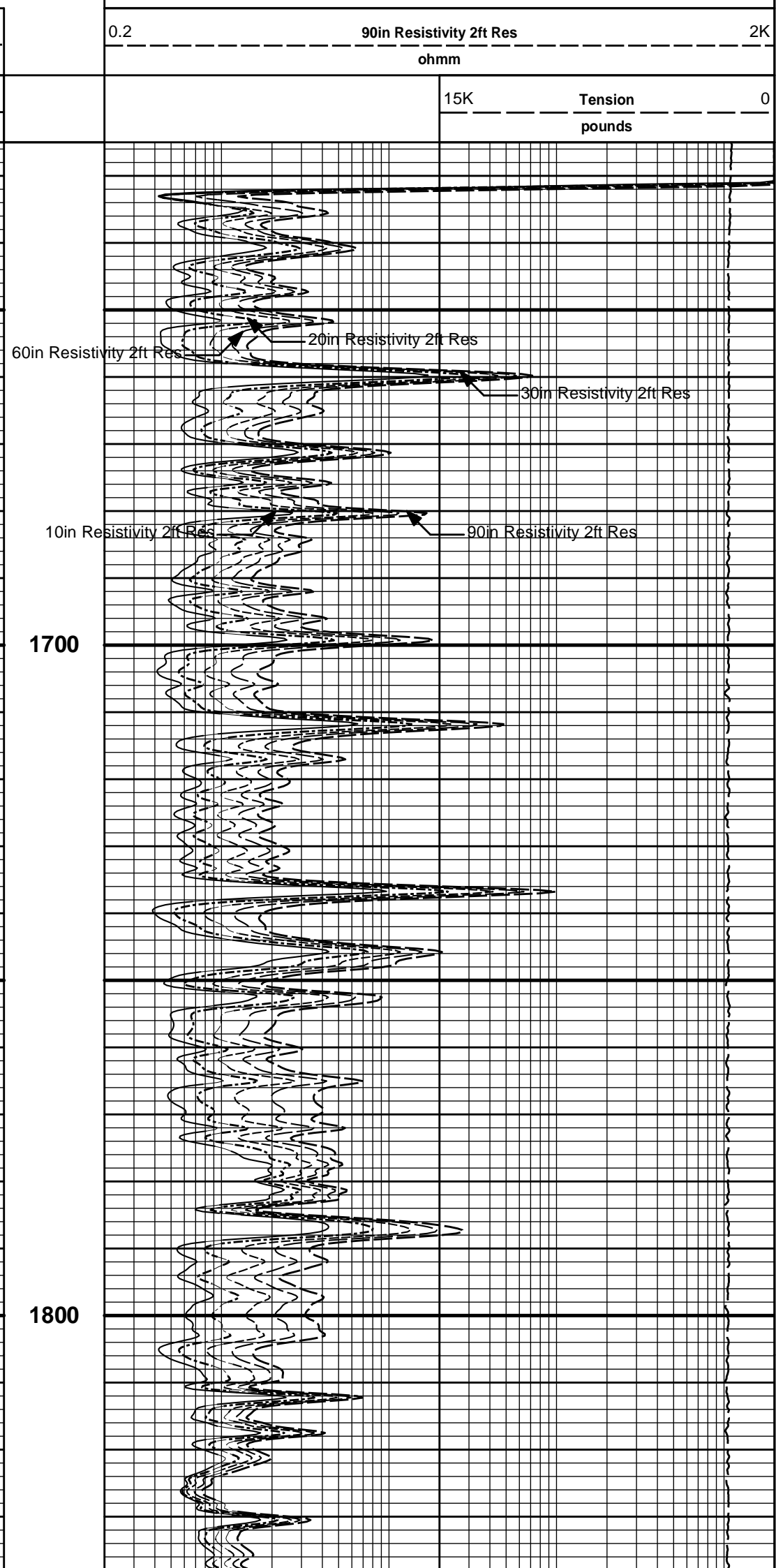
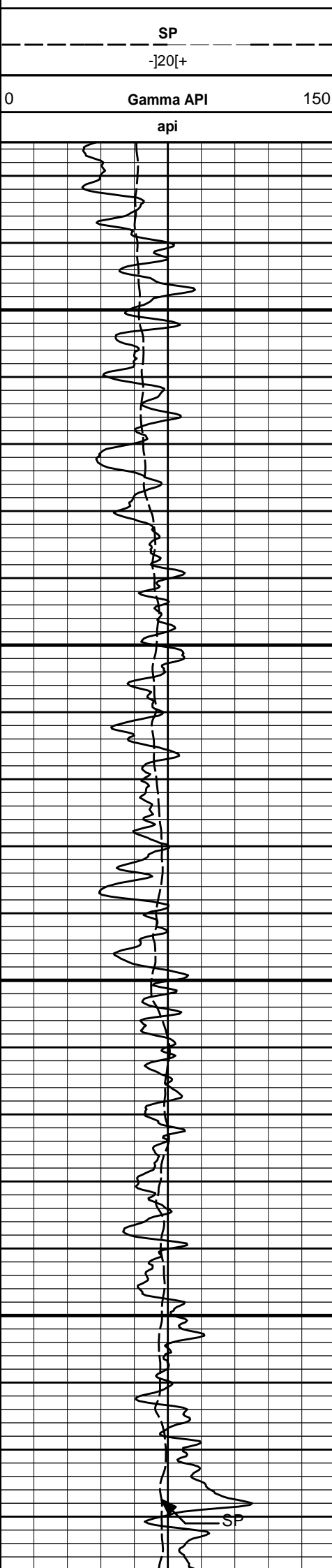
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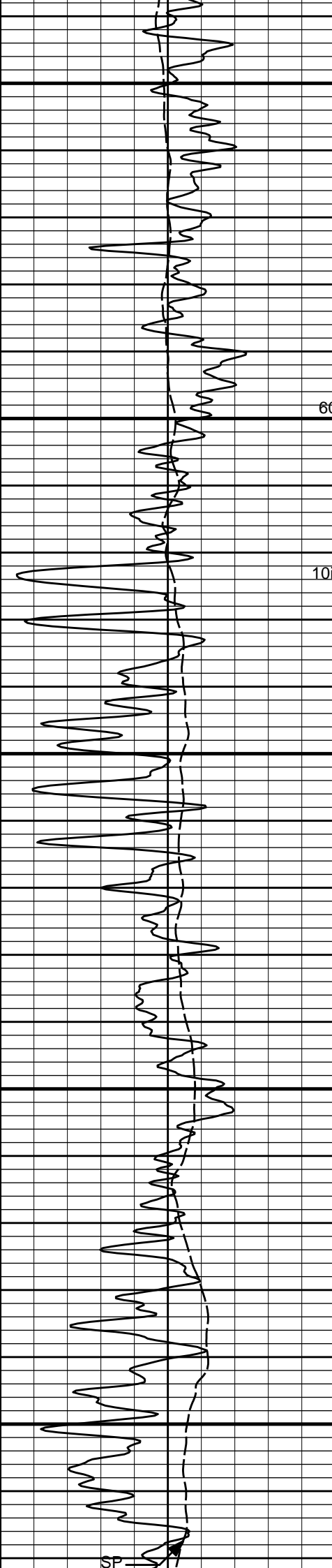
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5 INCH MAIN LOG

5 INCH MAIN LOG

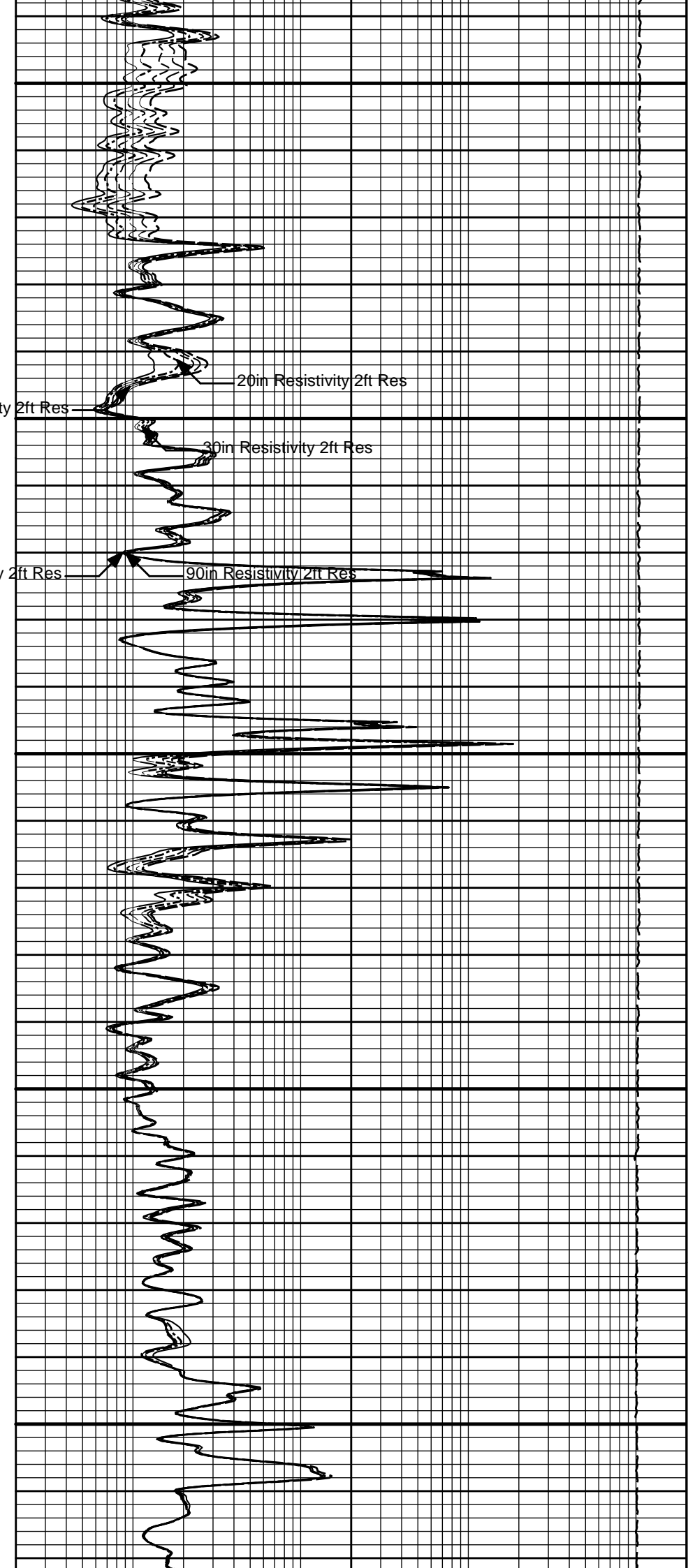
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	ohmm	
0.2	20in Resistivity 2ft Res	2000
	ohmm	
0.2	30in Resistivity 2ft Res	2000
	ohm-metre	
0.2	60in Resistivity 2ft Res	2000
	ohmm	

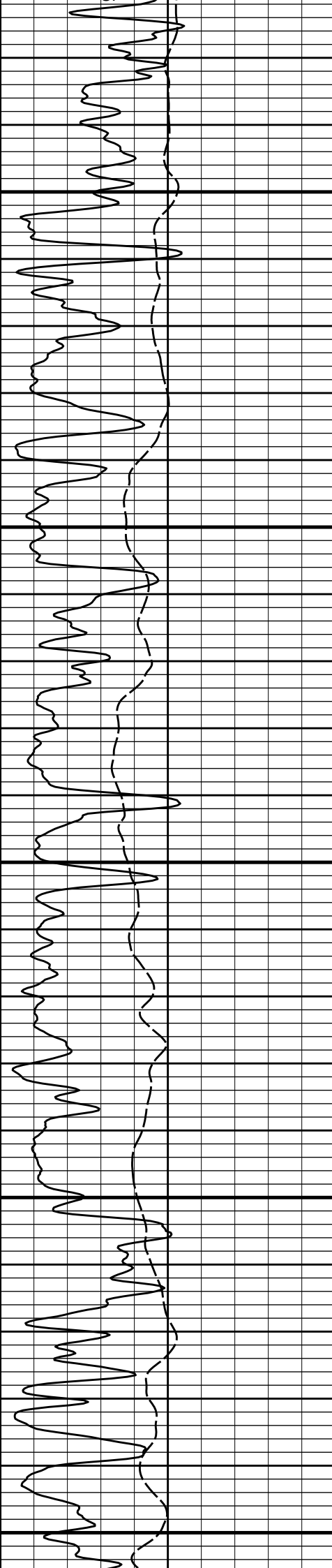




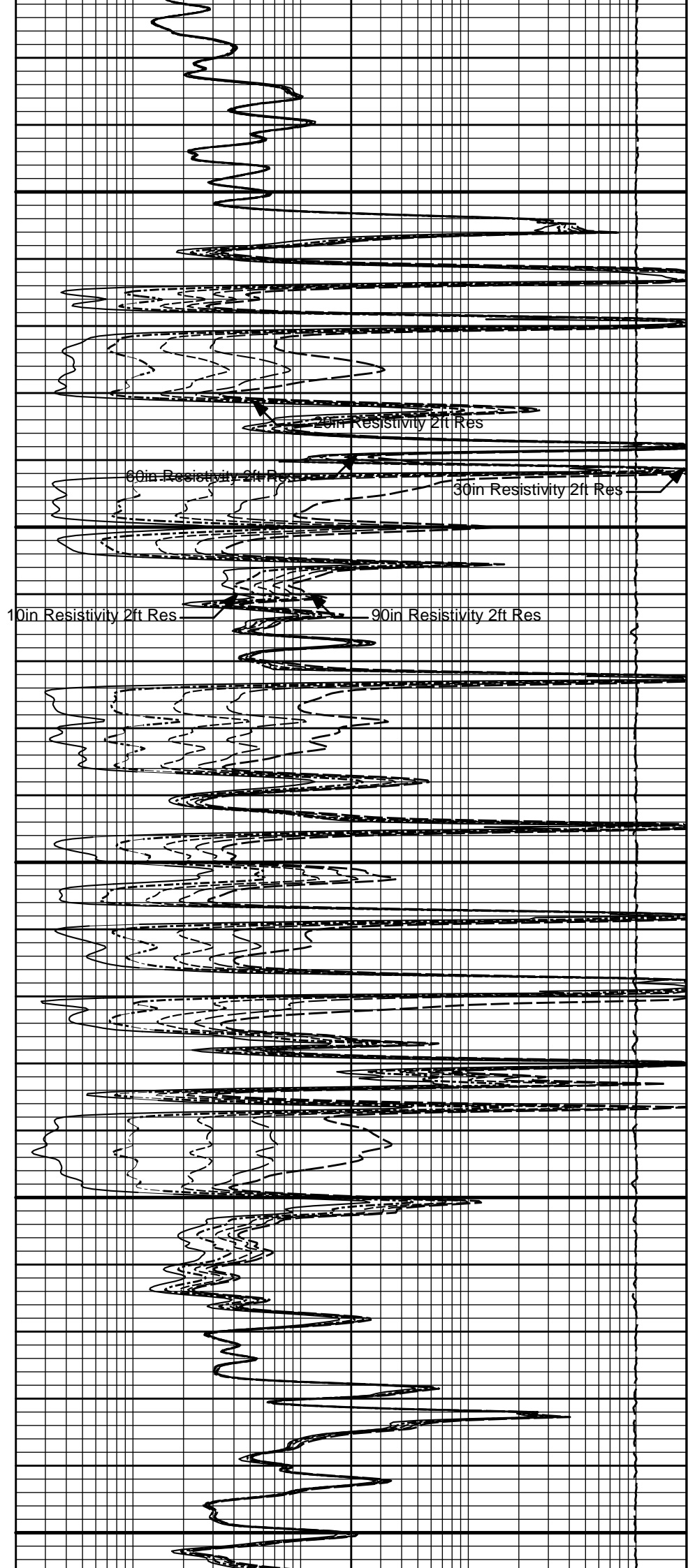
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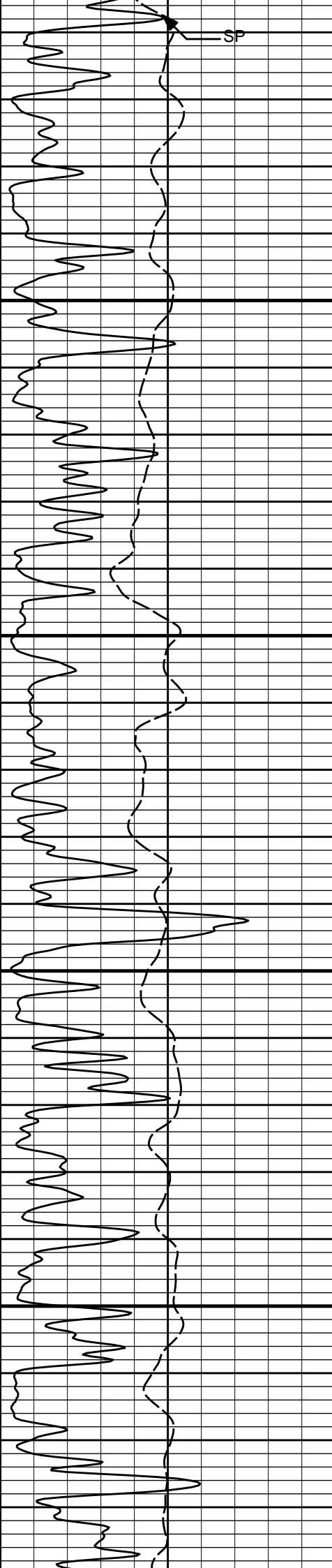


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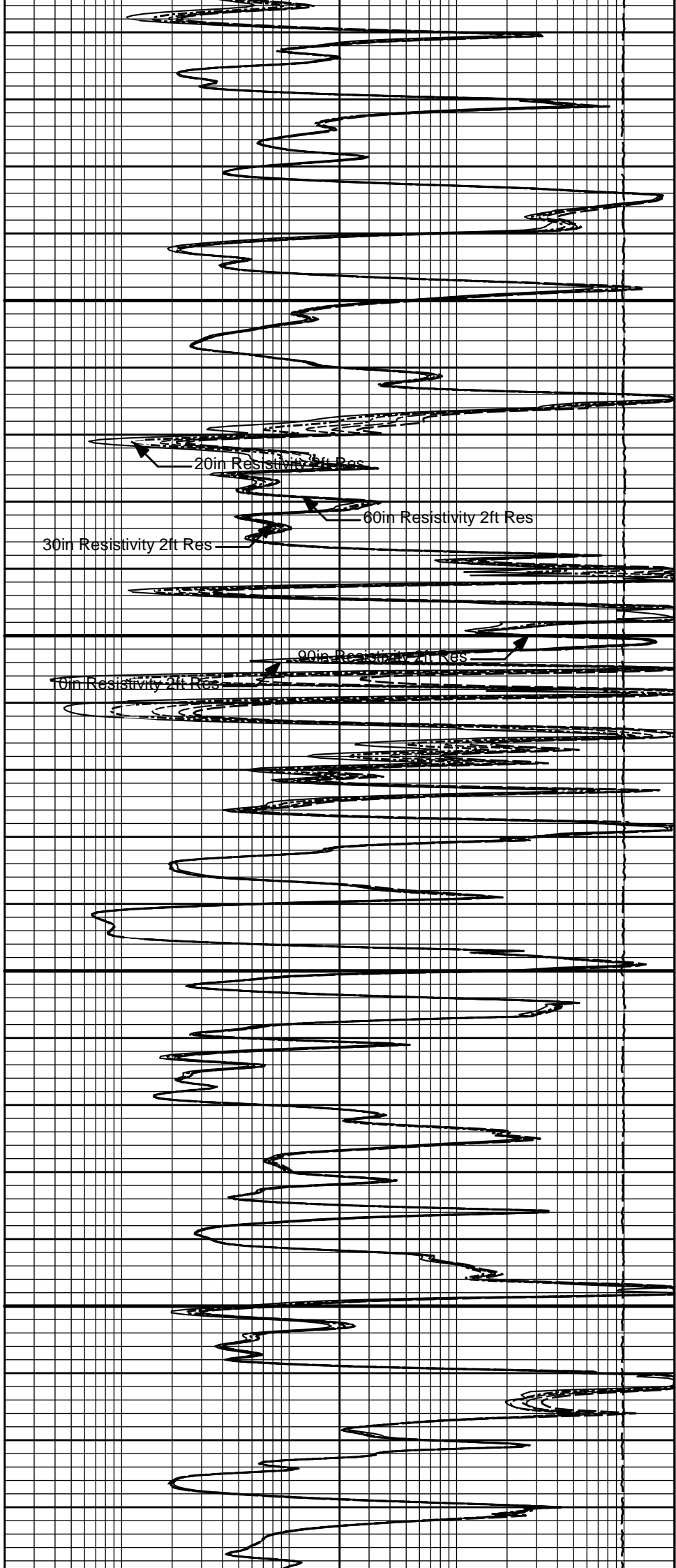
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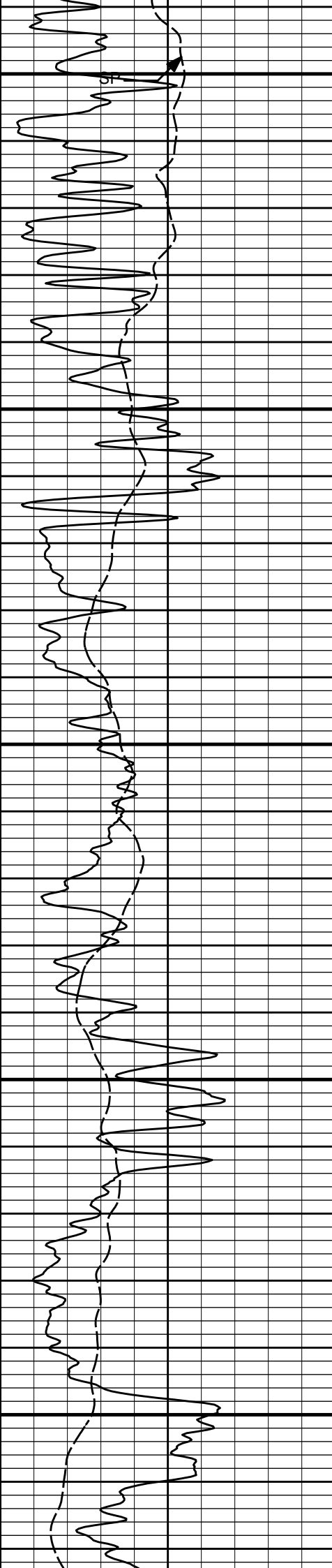
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2400

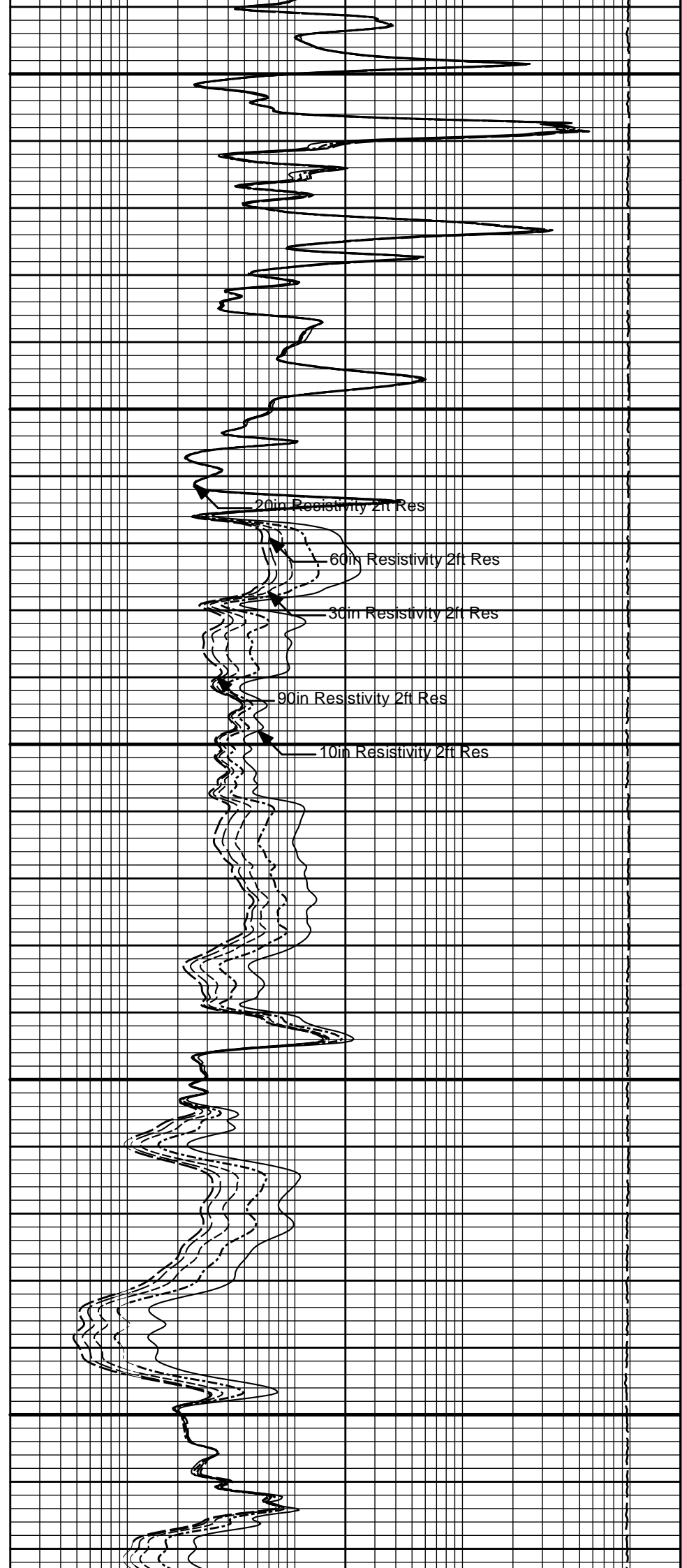
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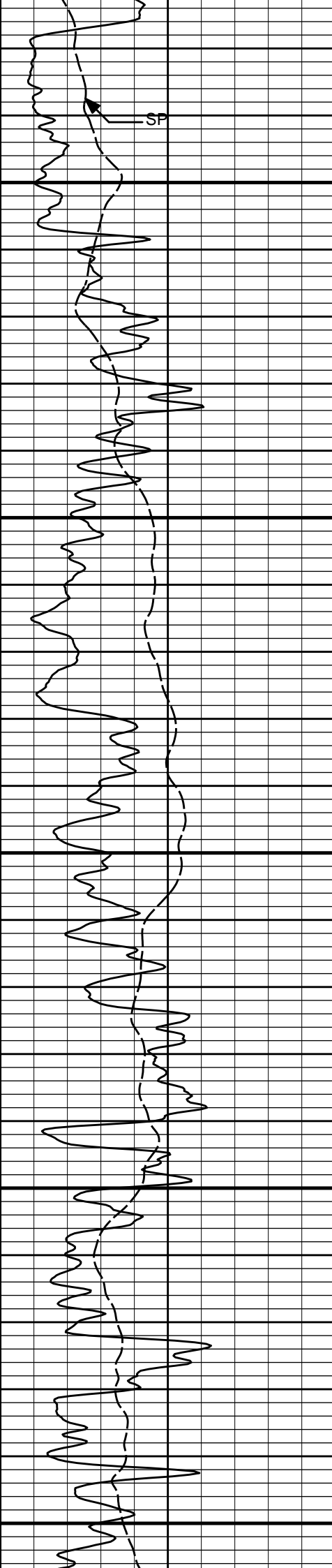




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2700

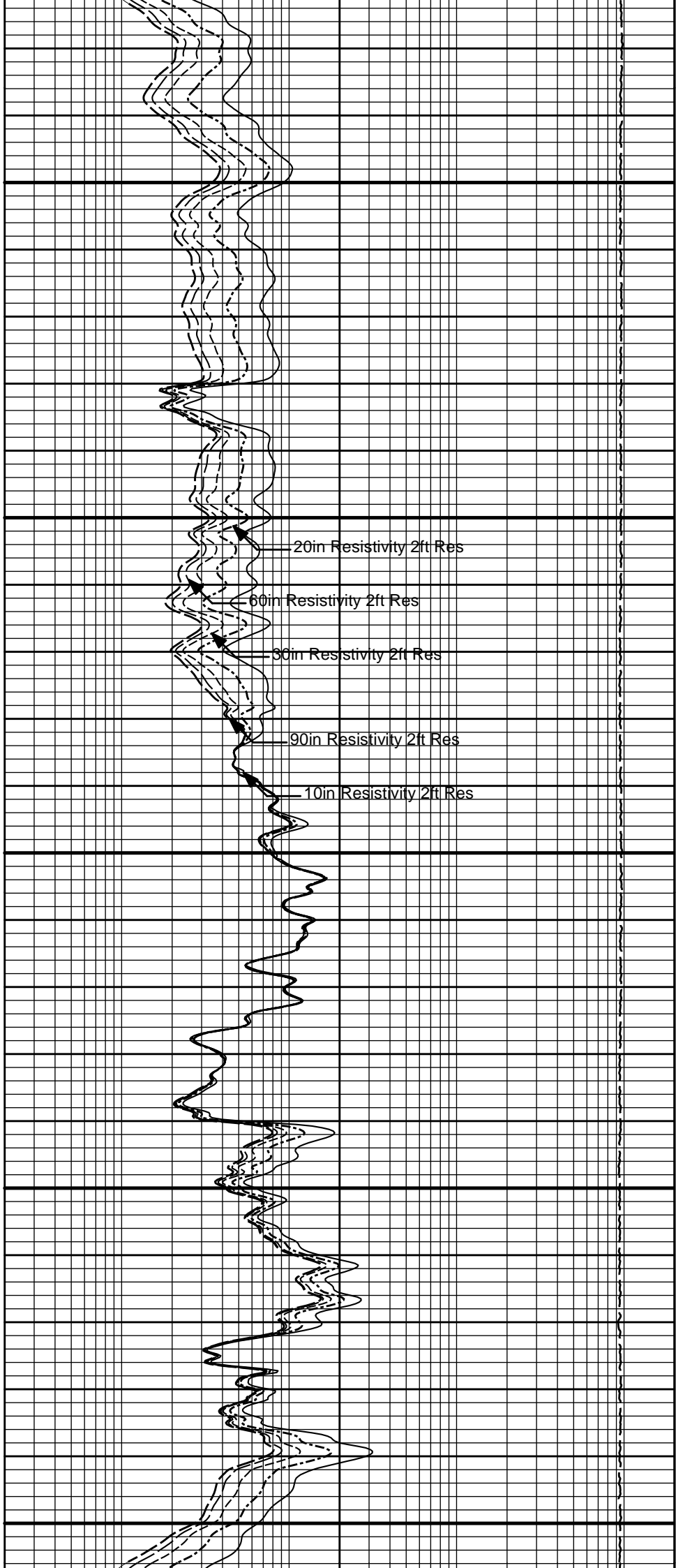


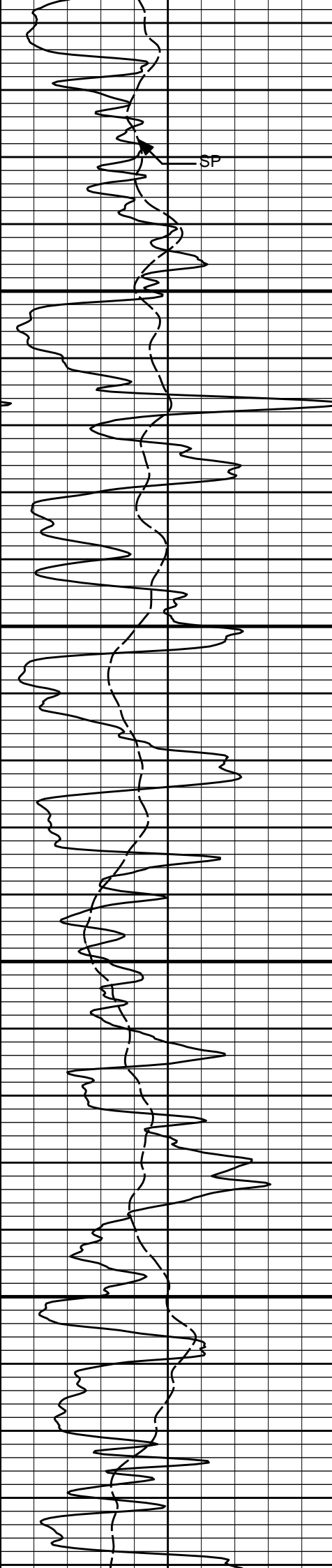


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2900

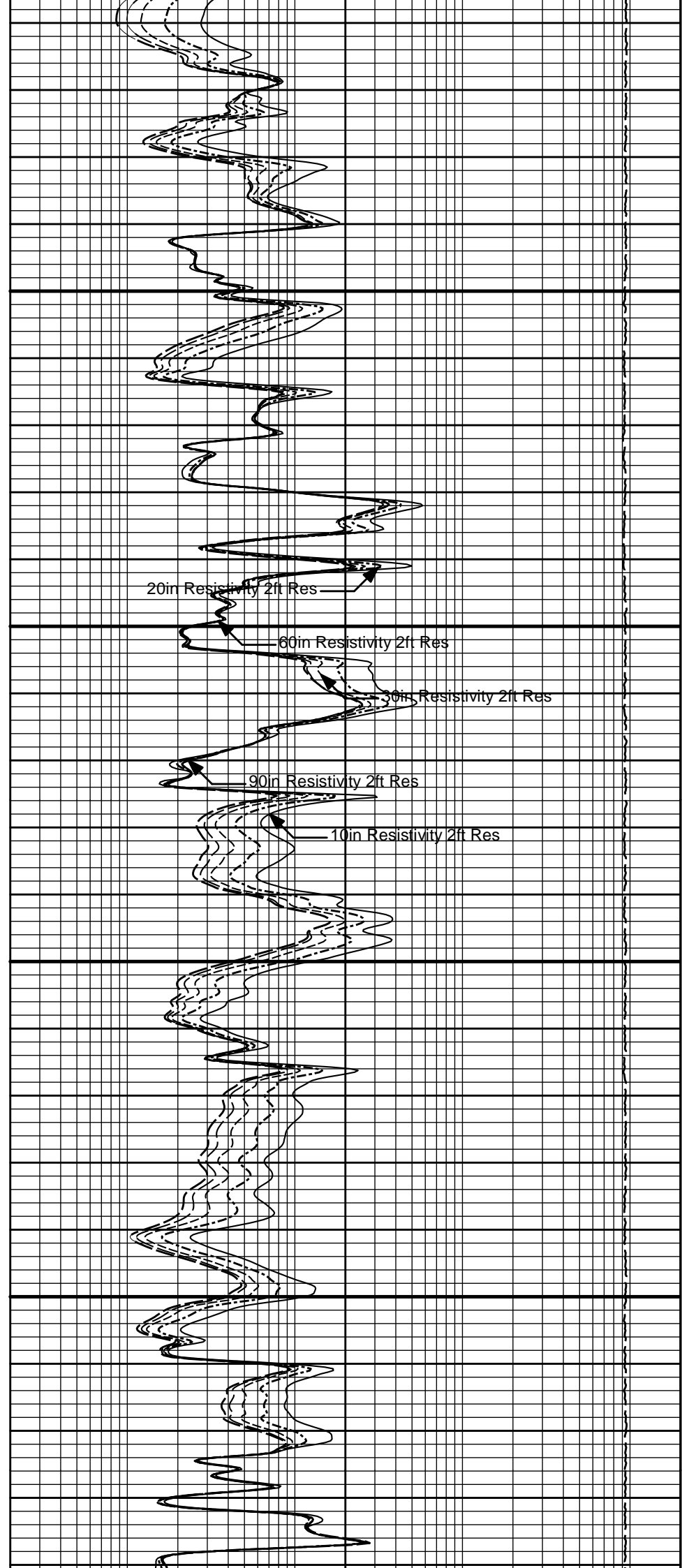
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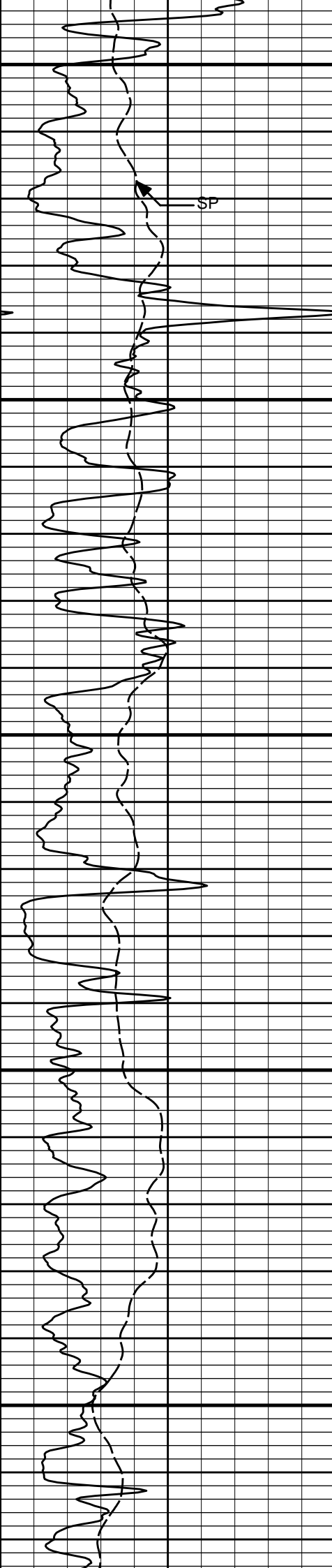




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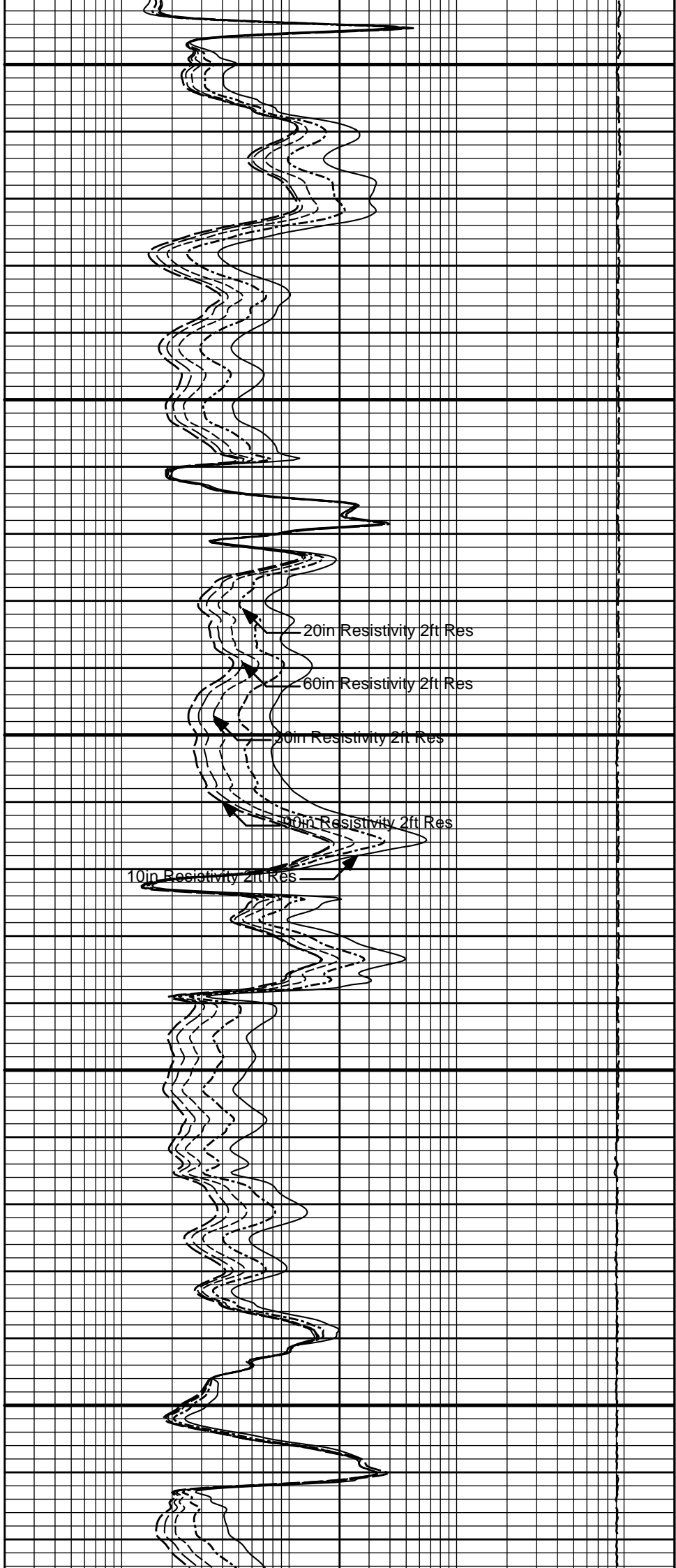
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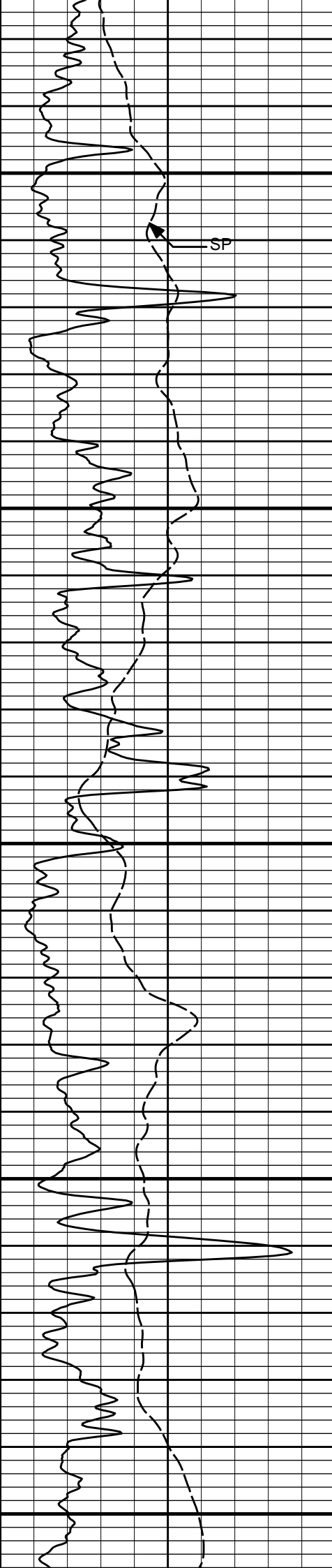




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3400



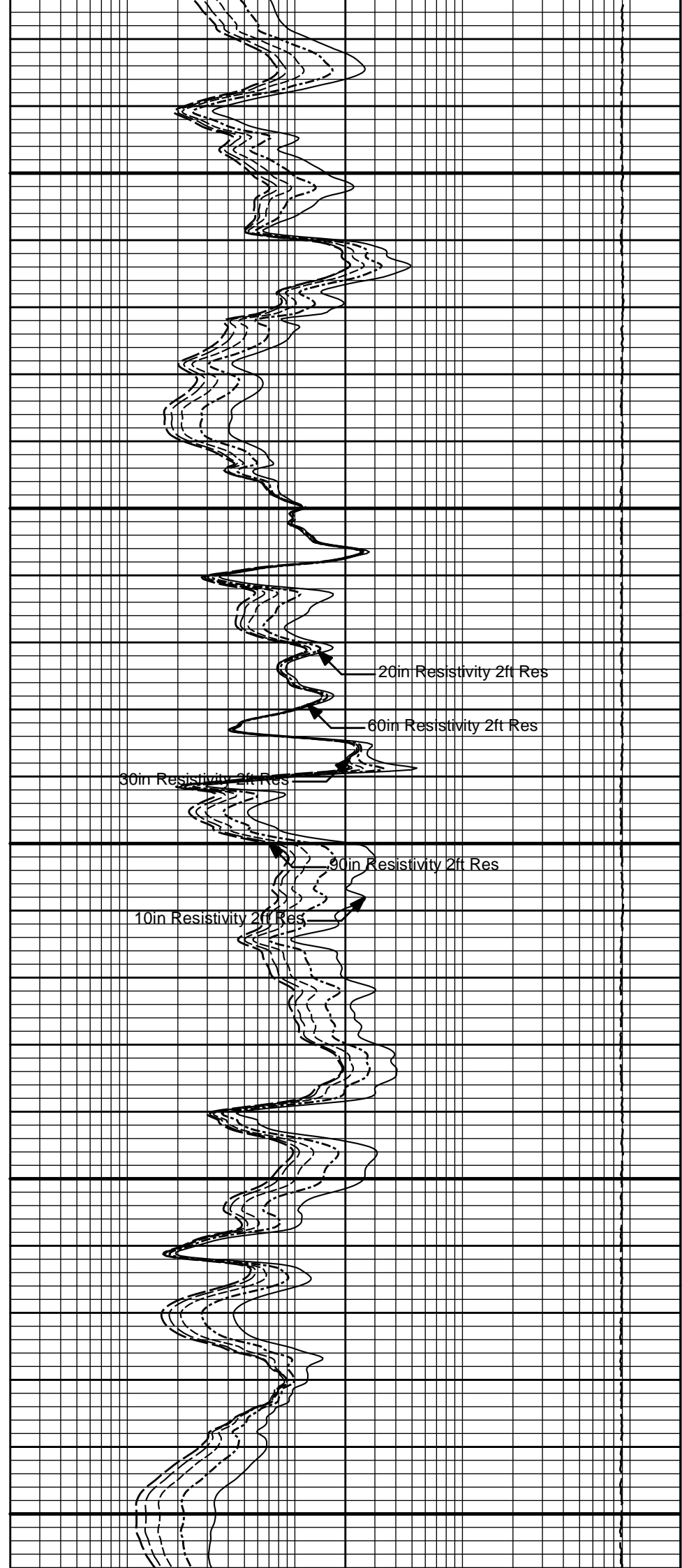


3500

SP

3600

3700



20in Resistivity 2ft Res

60in Resistivity 2ft Res

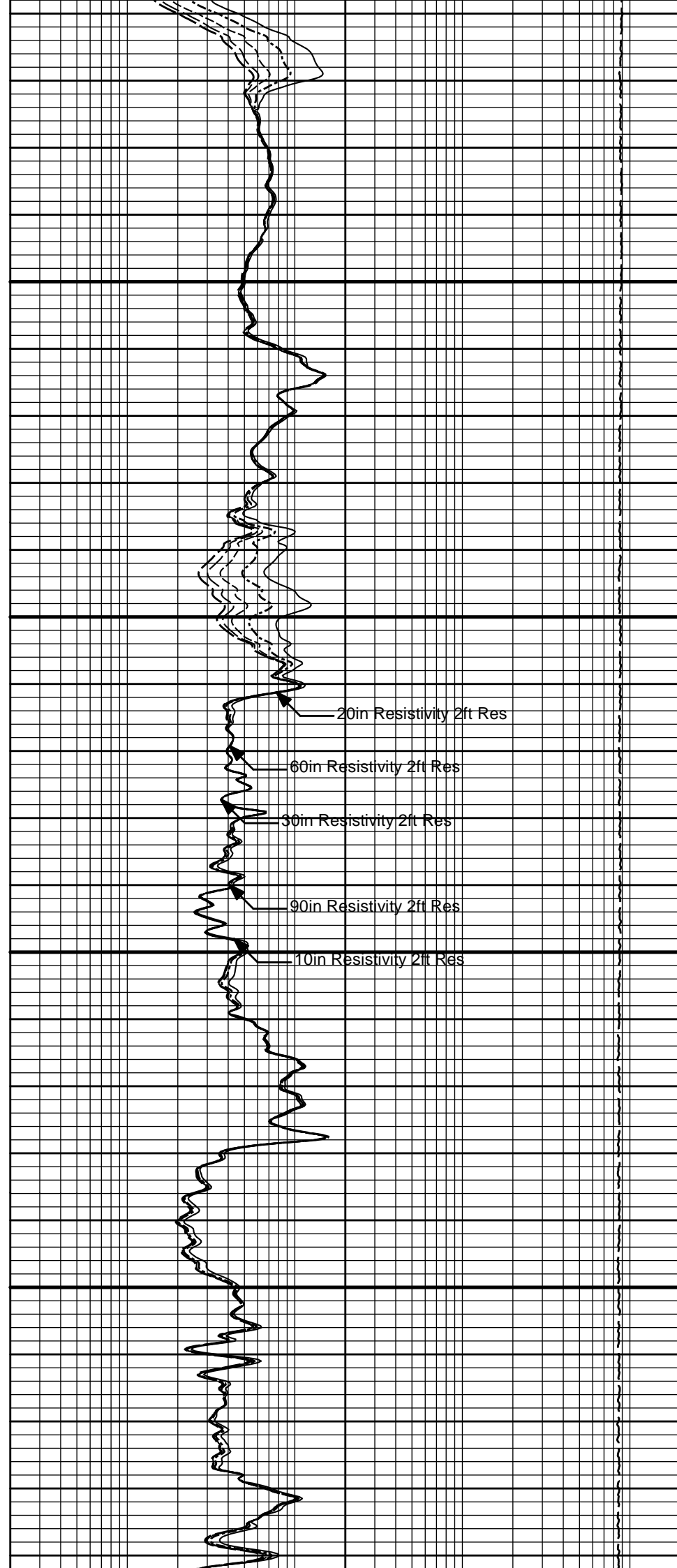
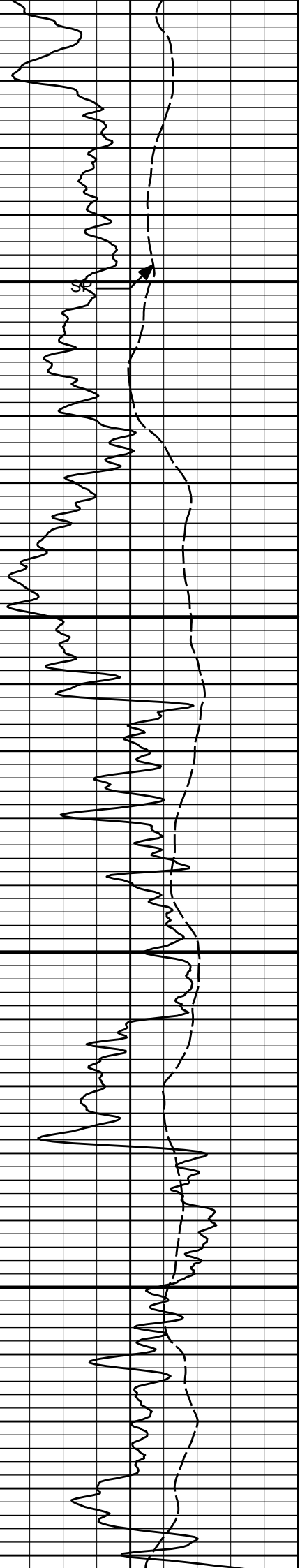
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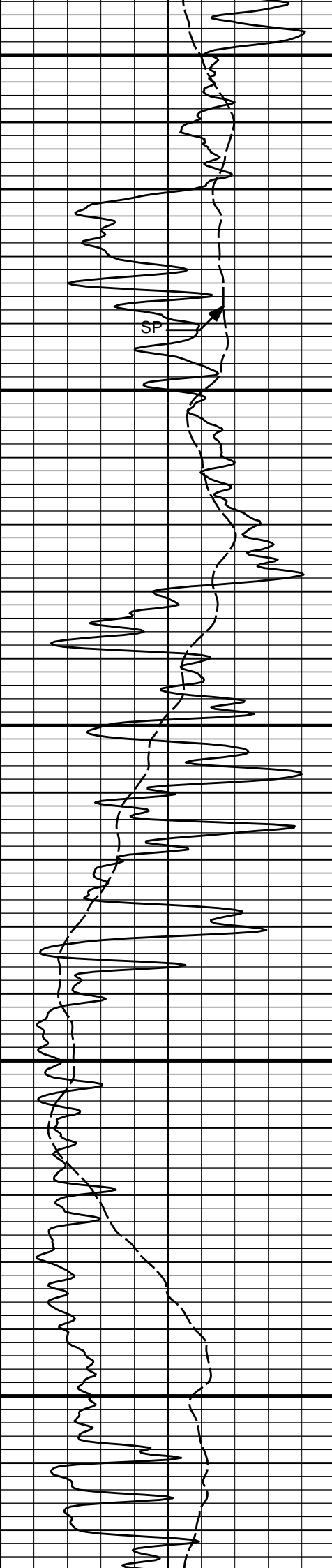
90in Resistivity 2ft Res

10in Resistivity 2ft Res

3800

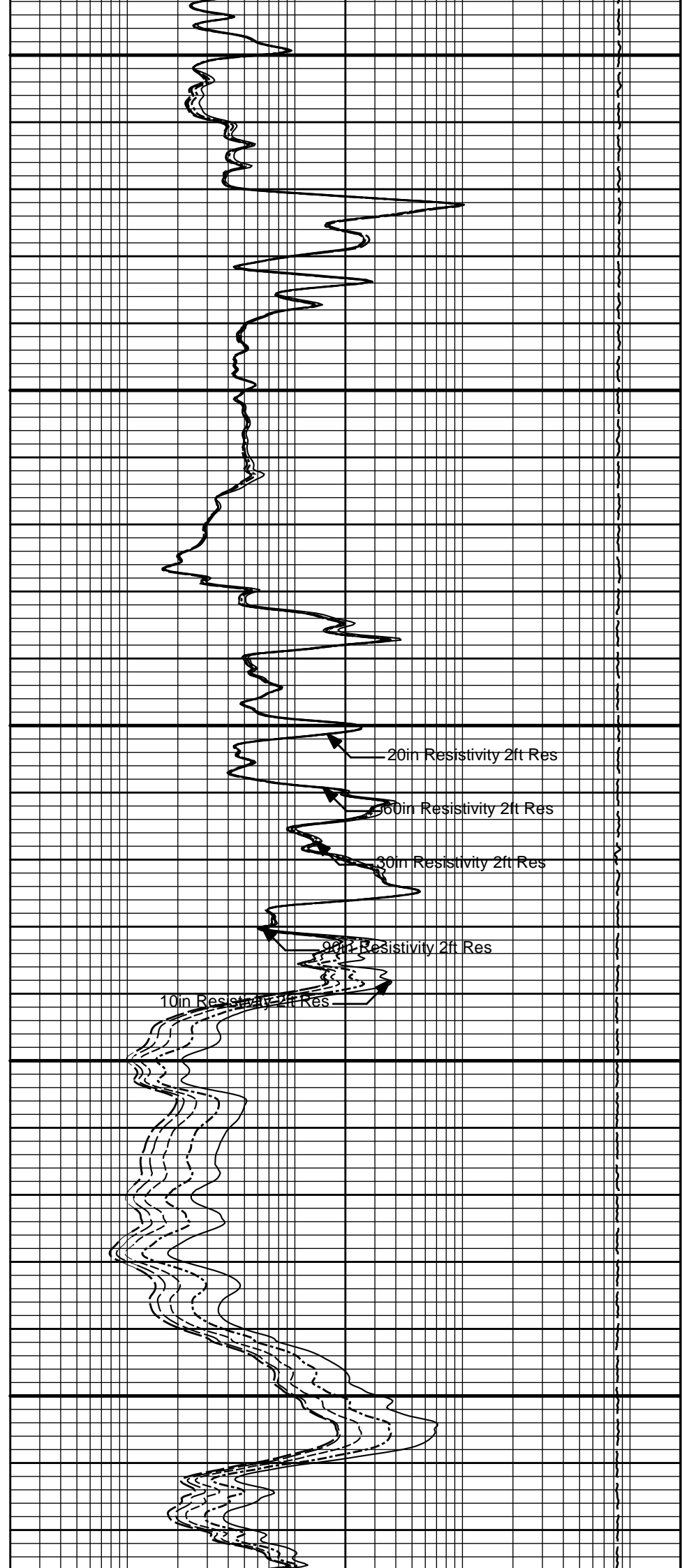
3900





4000

4100



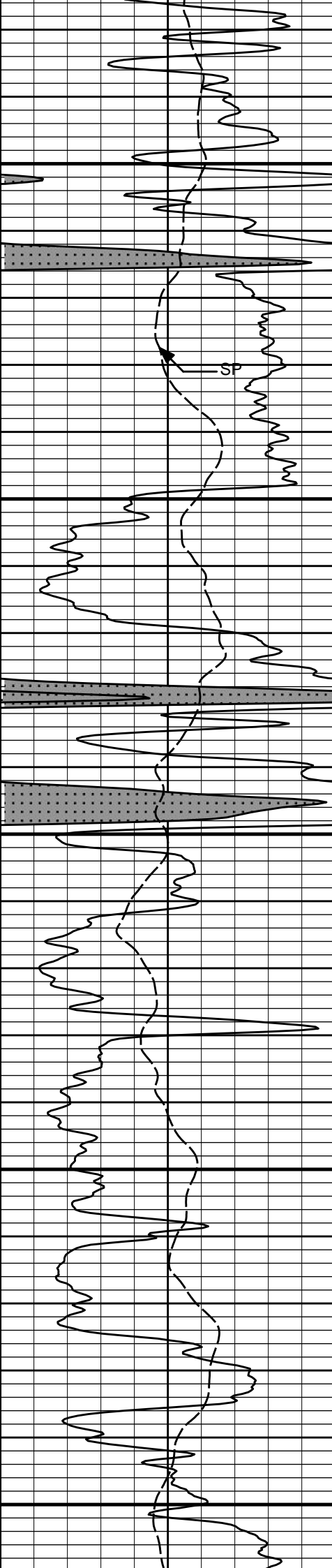
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50in Resistivity 2ft Res

30in Resistivity 2ft Res

80in Resistivity 2ft Res

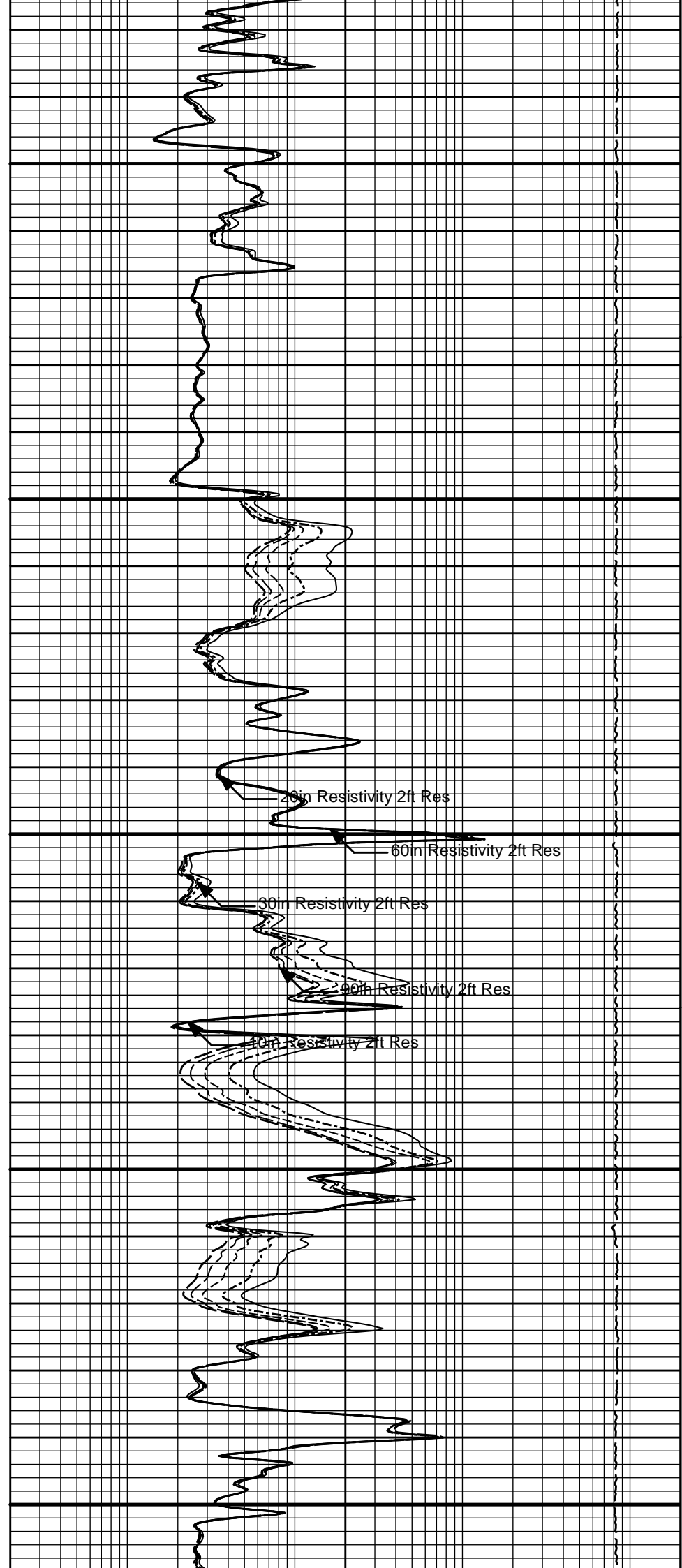
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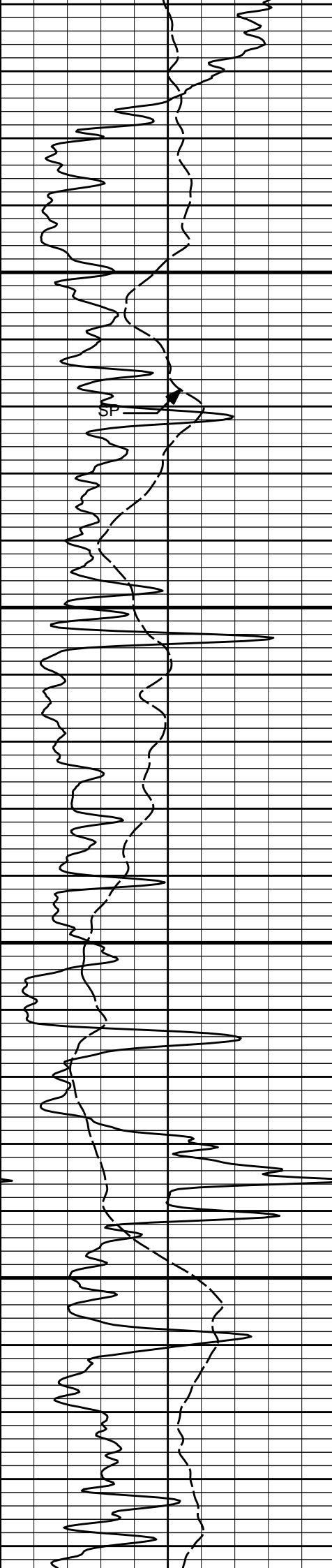


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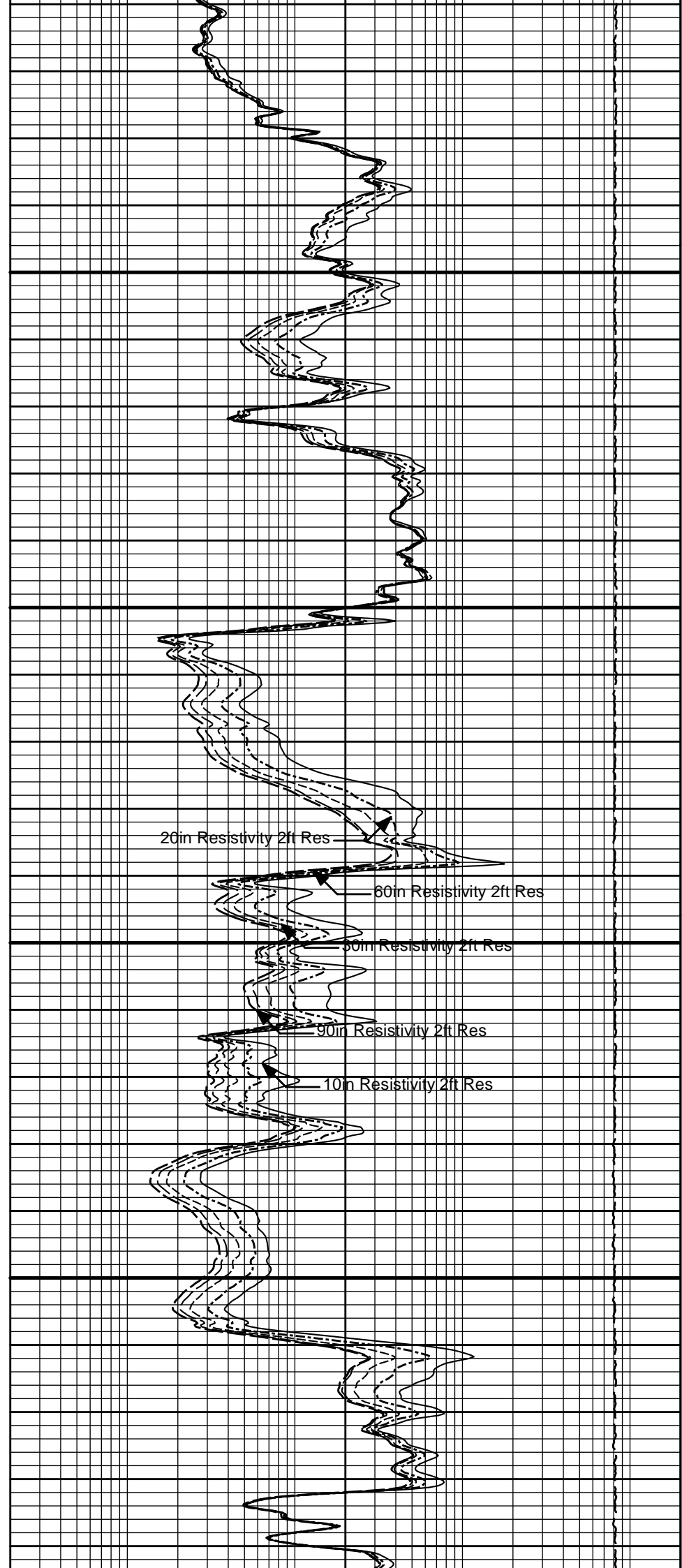
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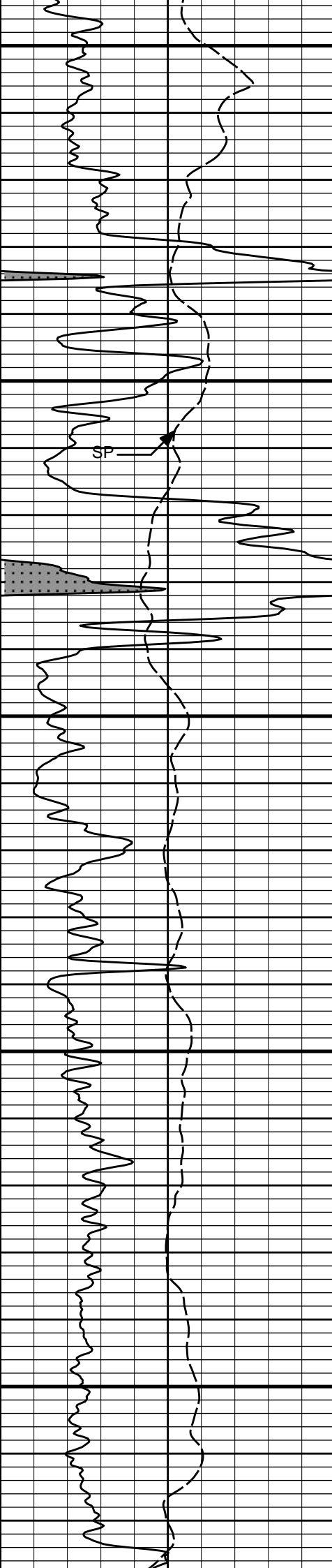




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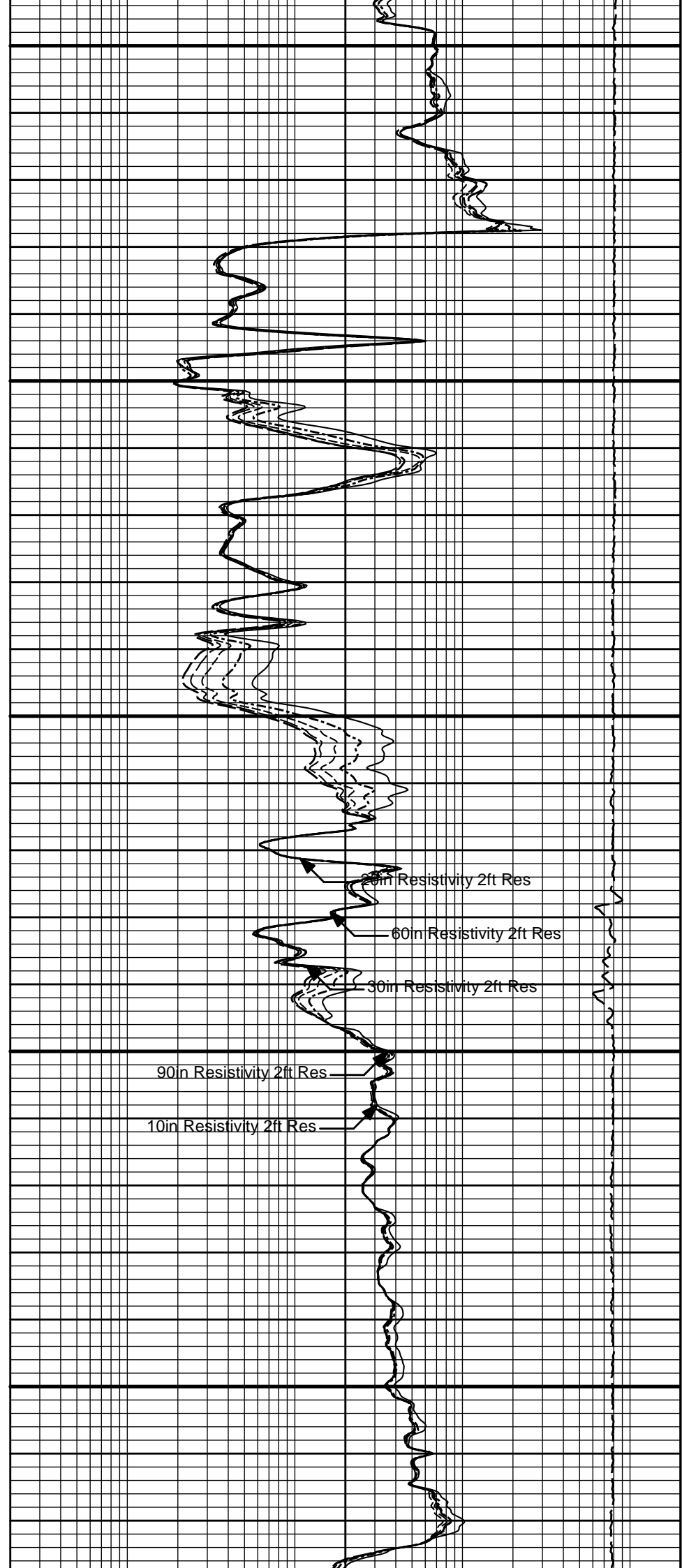
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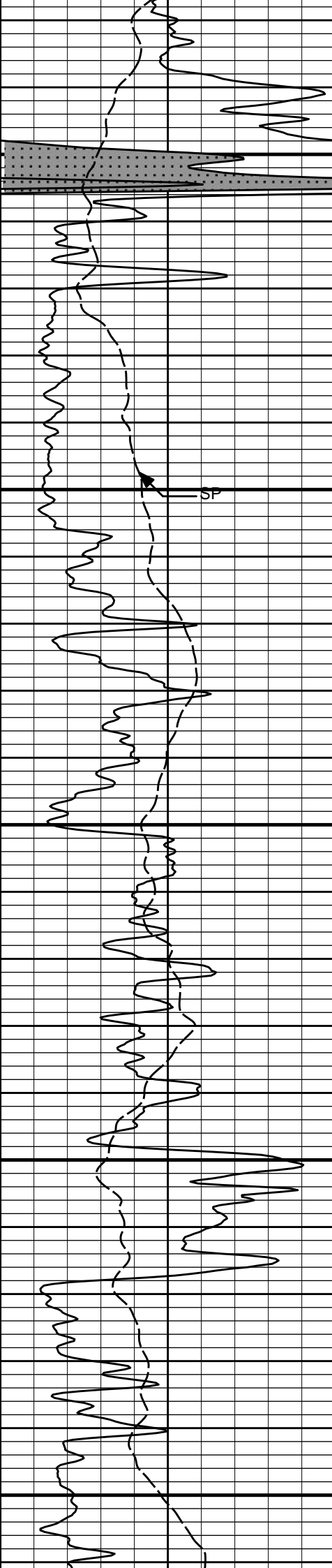




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4800

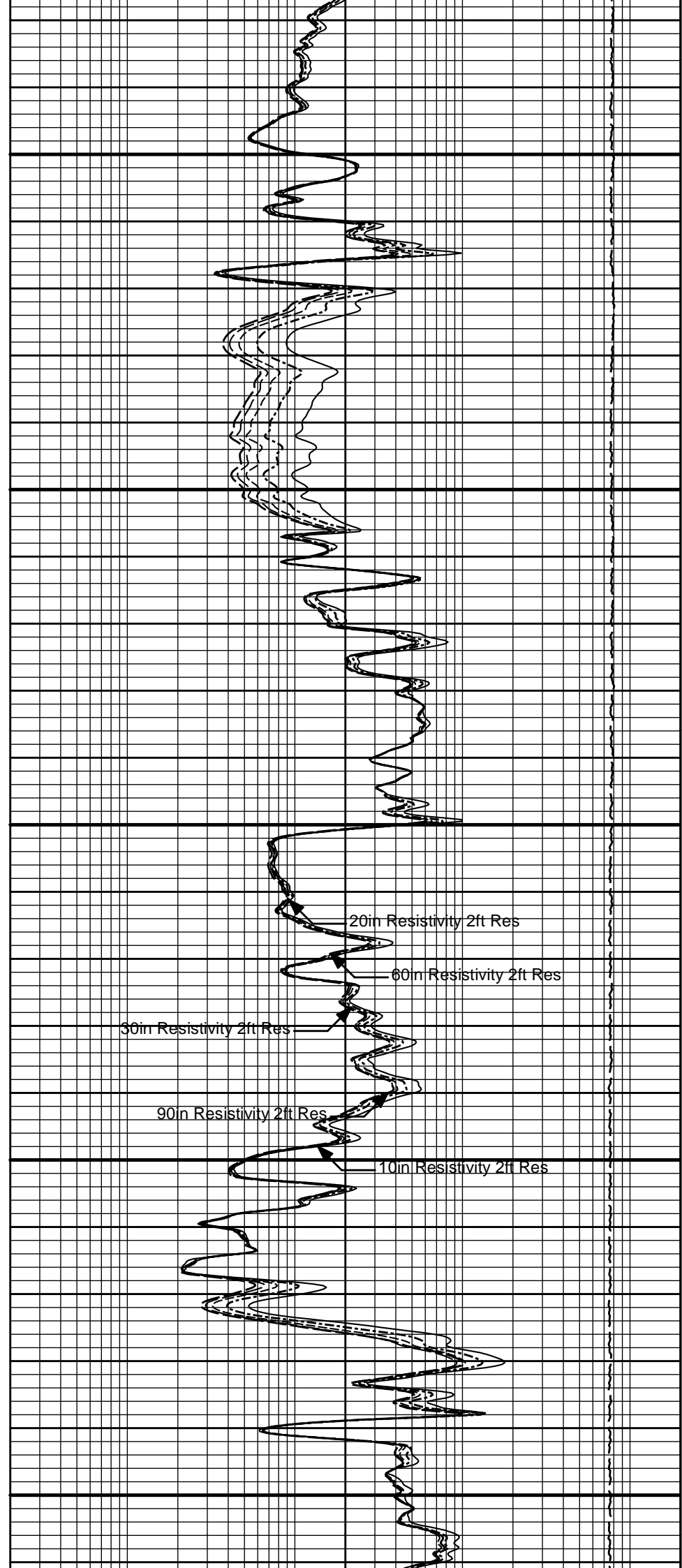




4900

5000

5100



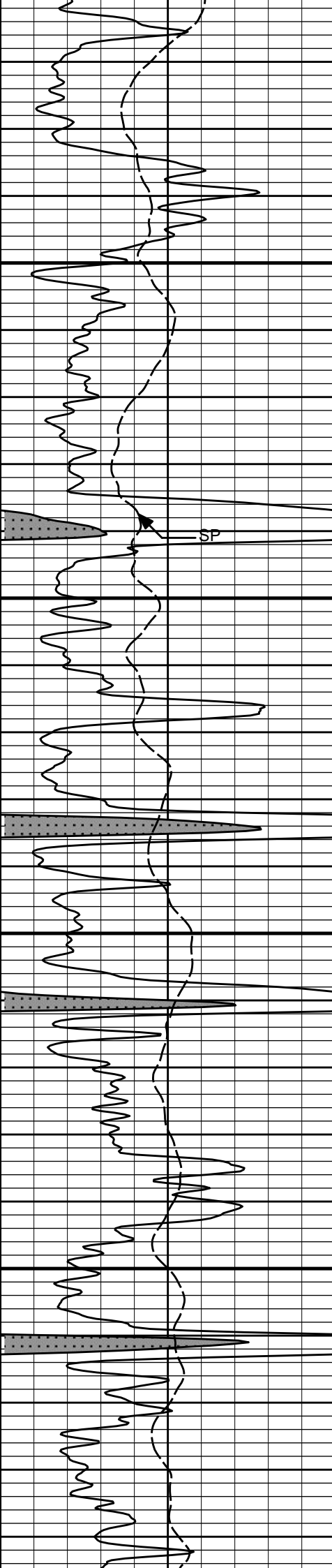
20in Resistivity 2ft Res

60in Resistivity 2ft Res

30in Resistivity 2ft Res

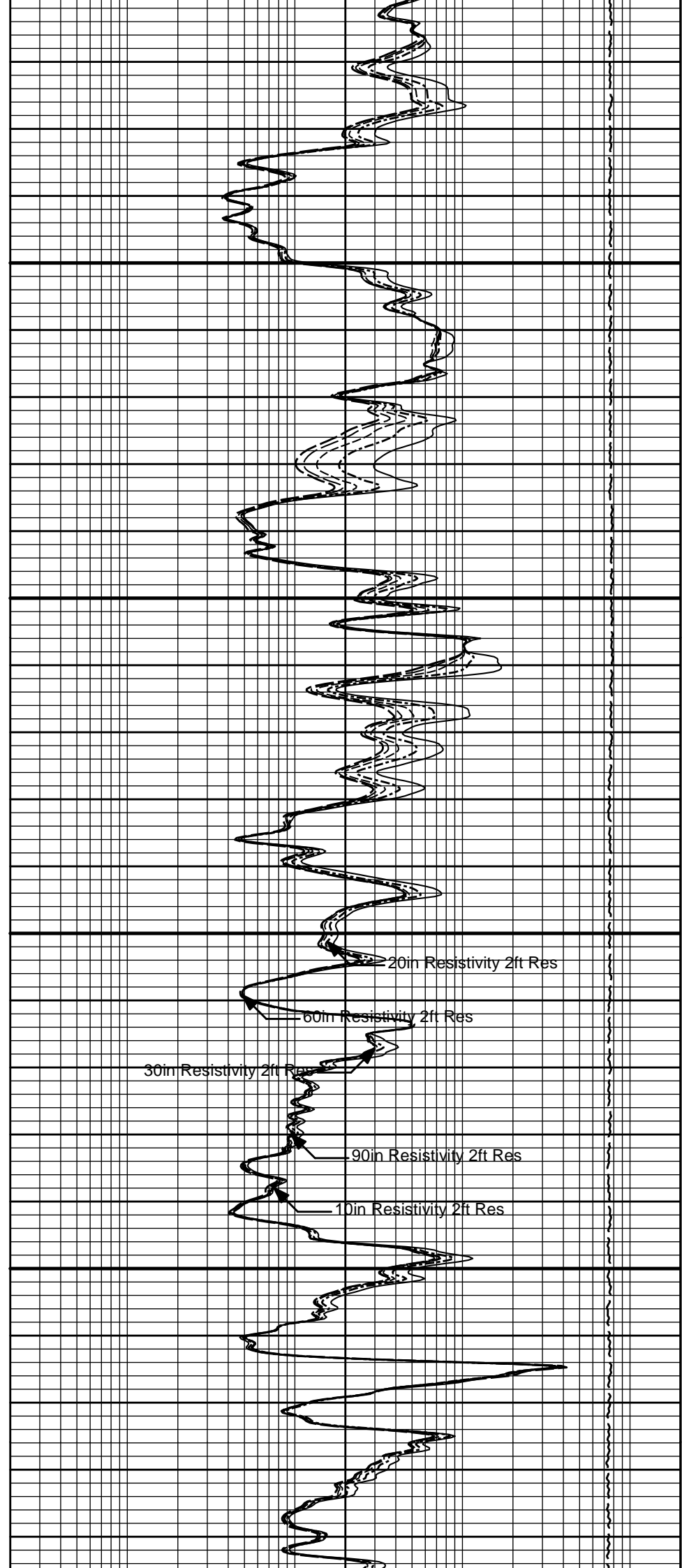
90in Resistivity 2ft Res

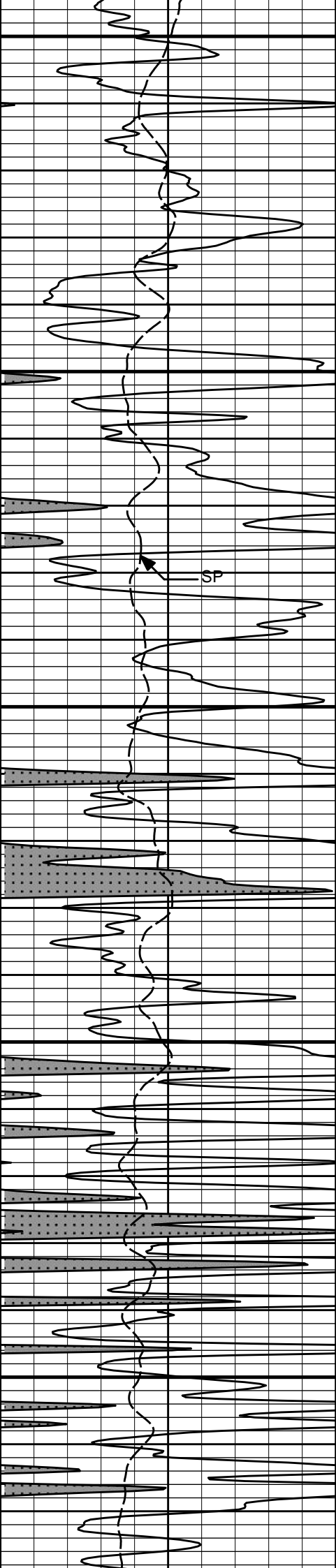
10in Resistivity 2ft Res



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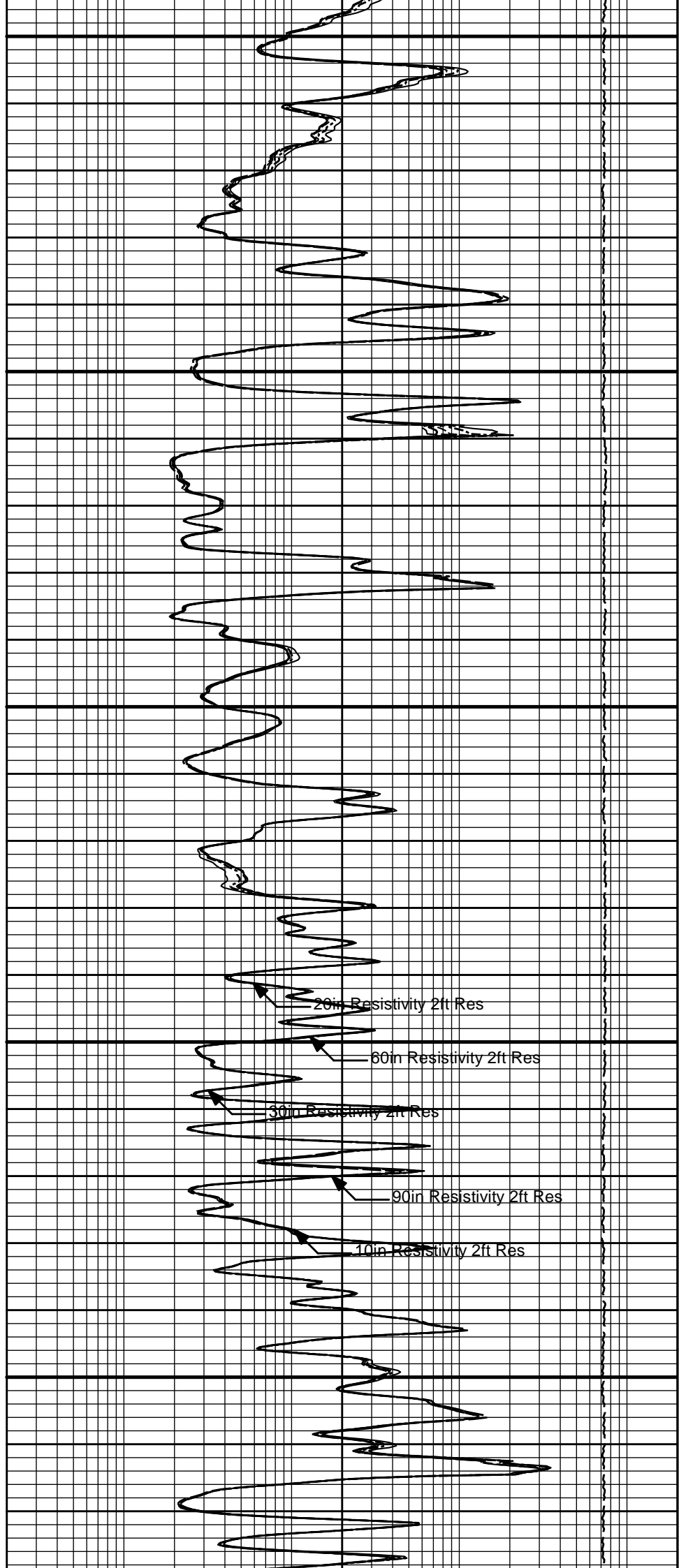
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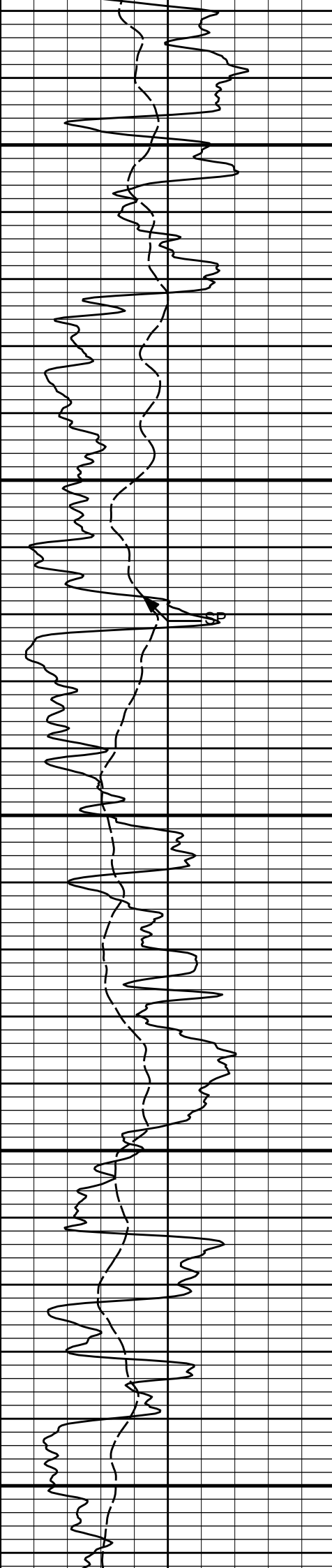




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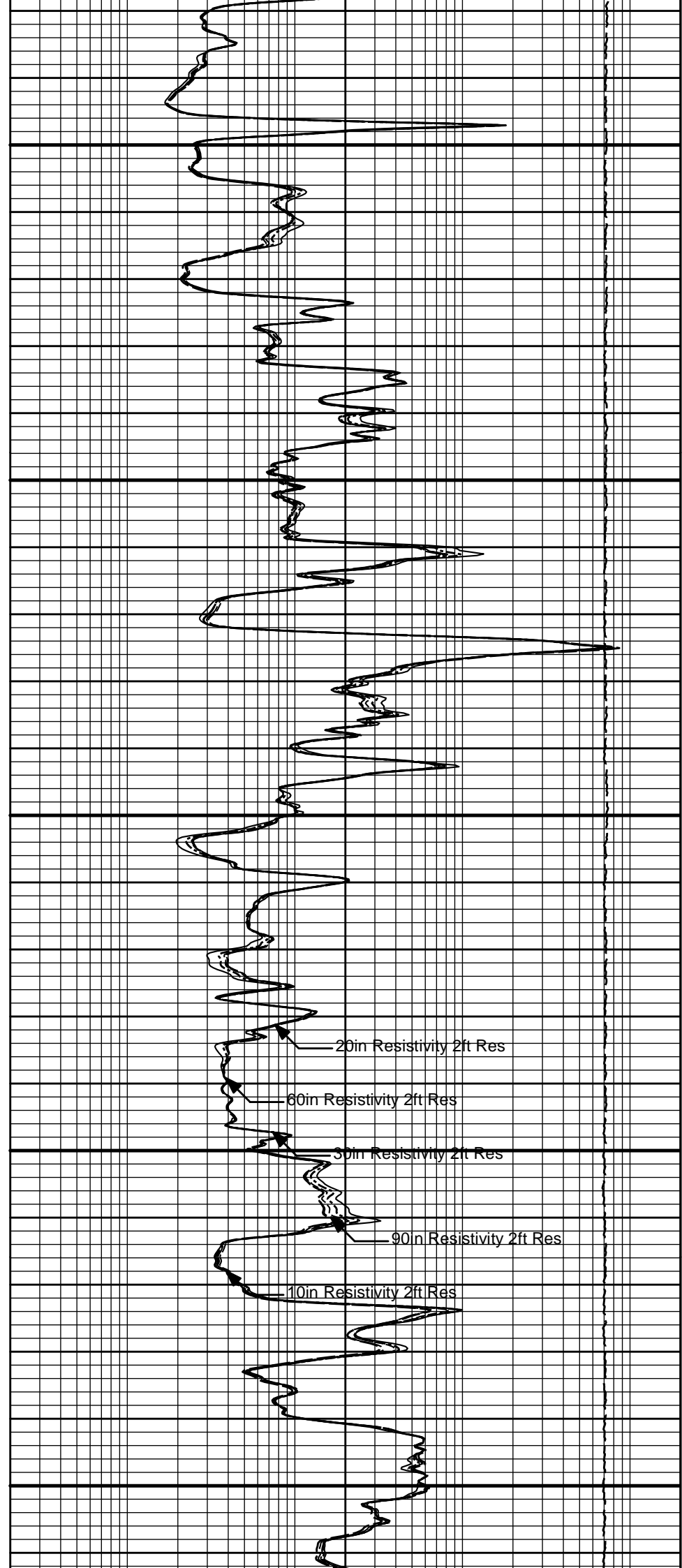


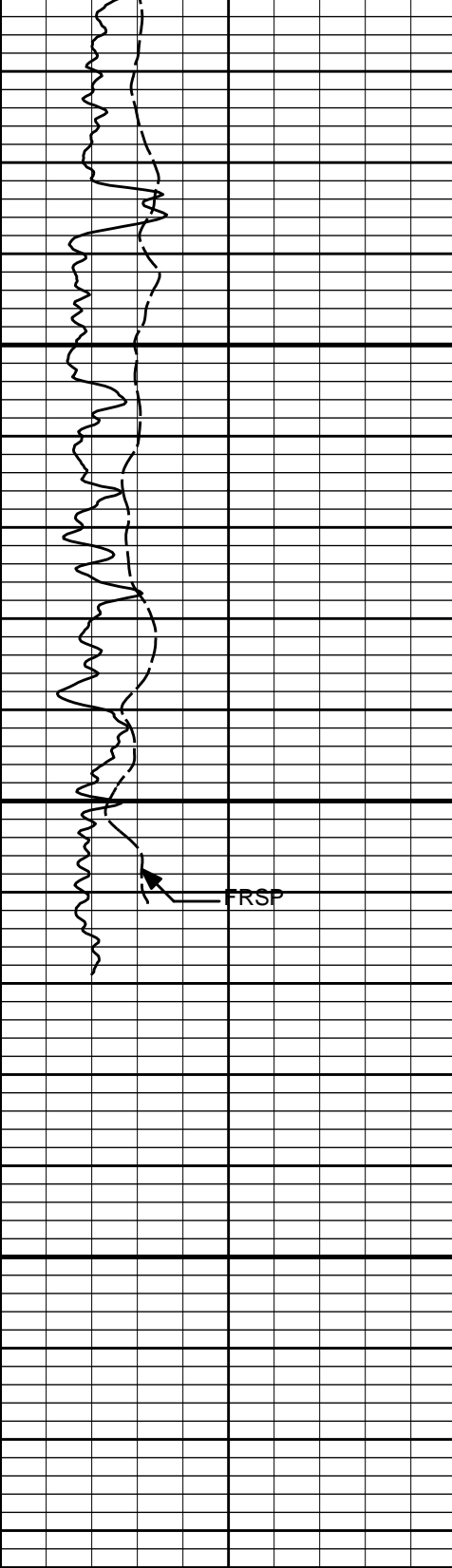


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5700

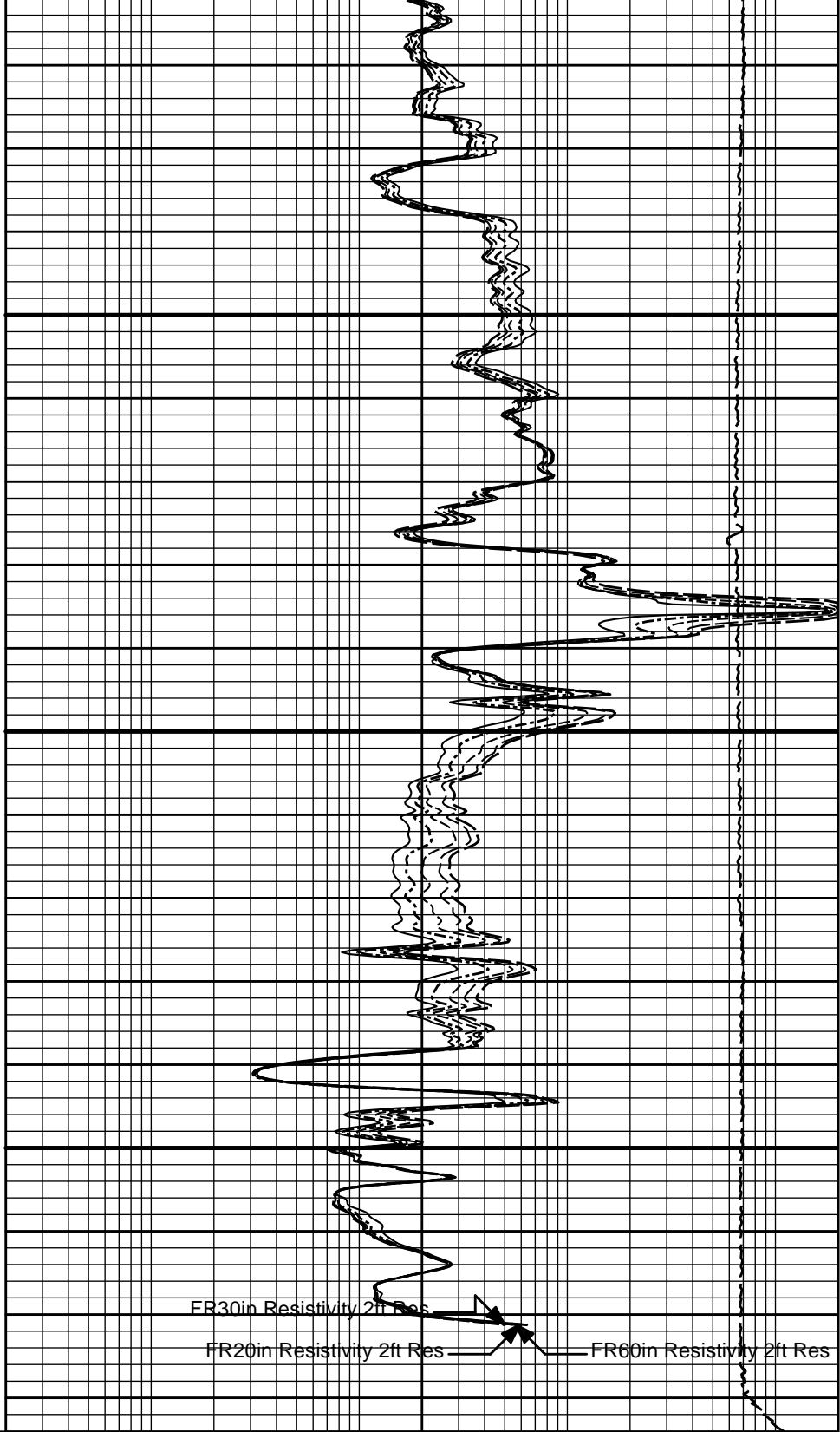
5800





5900

FRSP



FR30in Resistivity 2ft Res

FR20in Resistivity 2ft Res

FR60in Resistivity 2ft Res

0	Gamma API	150
	api	
	SP	
	-]20[+	

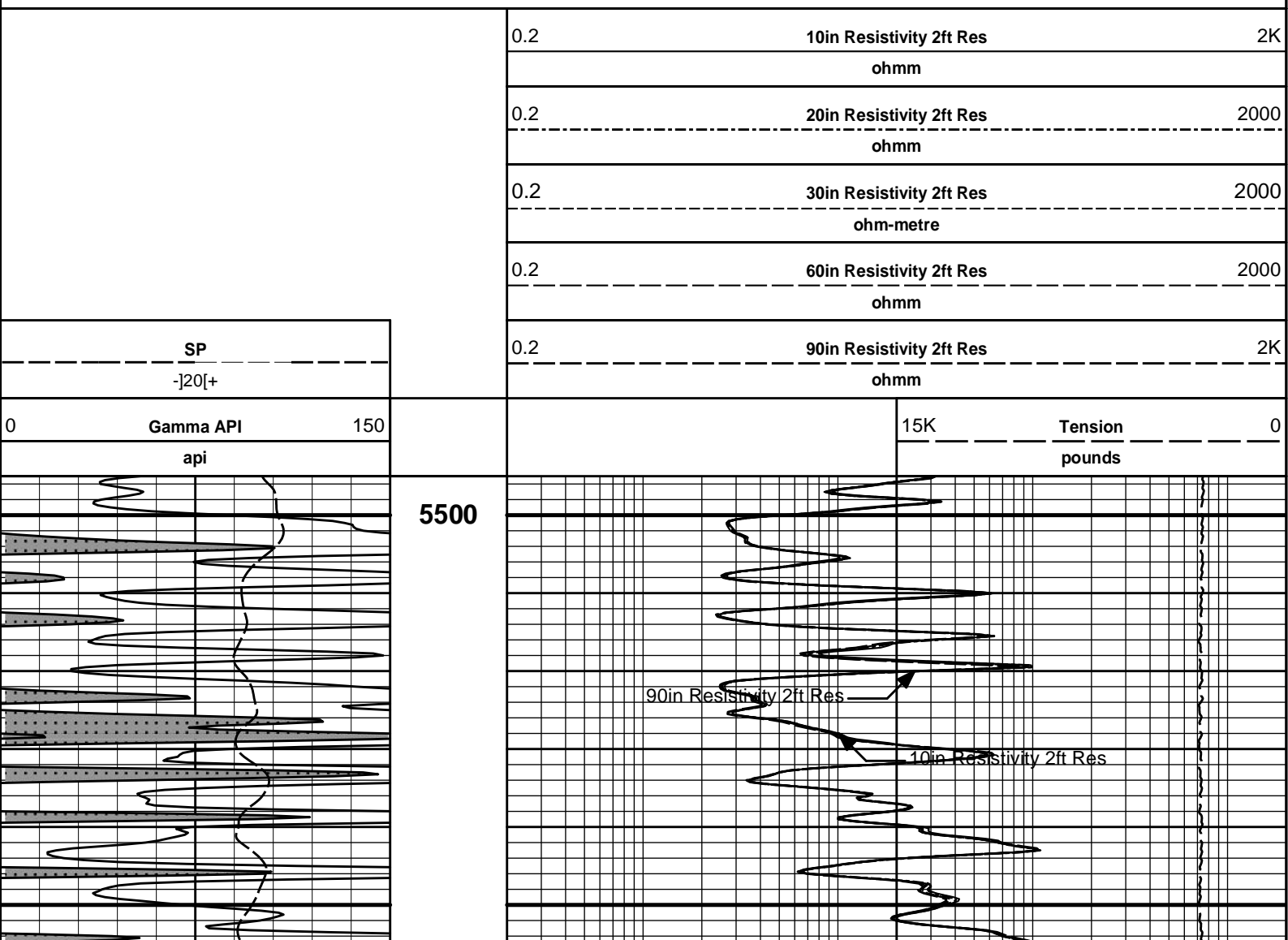
	15K	Tension	0
		pounds	
0.2	90in Resistivity 2ft Res		2K
	ohmm		
0.2	60in Resistivity 2ft Res		2000
	ohmm		
0.2	30in Resistivity 2ft Res		2000
	ohm-metre		
0.2	20in Resistivity 2ft Res		2000
	ohmm		
0.2	10in Resistivity 2ft Res		2K
	ohmm		

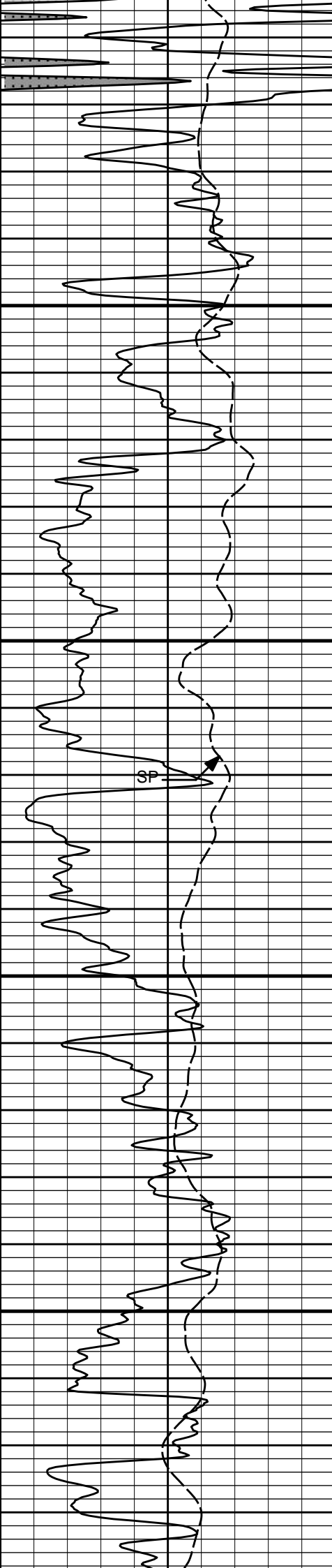
5 INCH MAIN LOG

5 INCH MAIN LOG

5 INCH REPEAT LOG

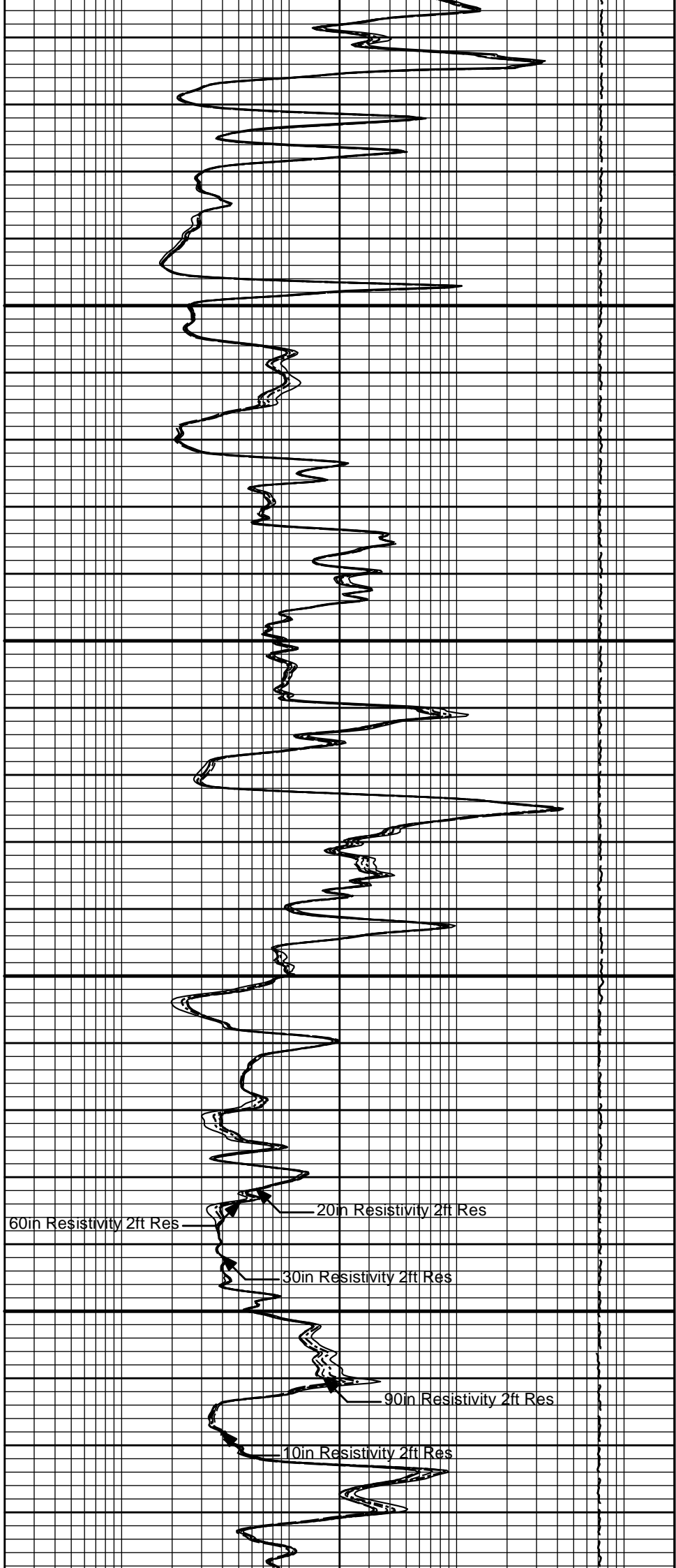
5 INCH REPEAT LOG

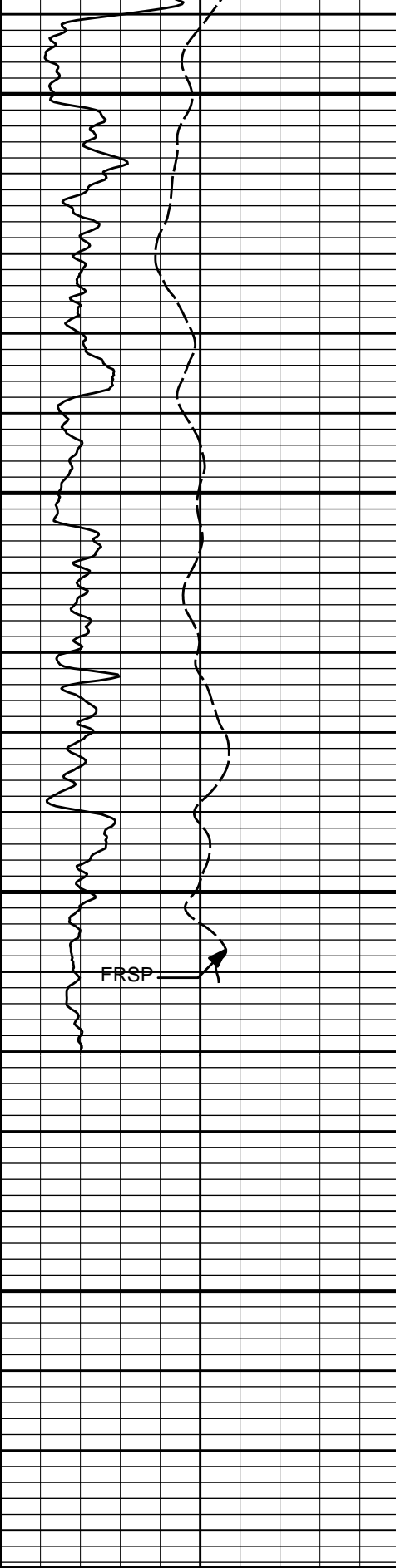




5600

5700

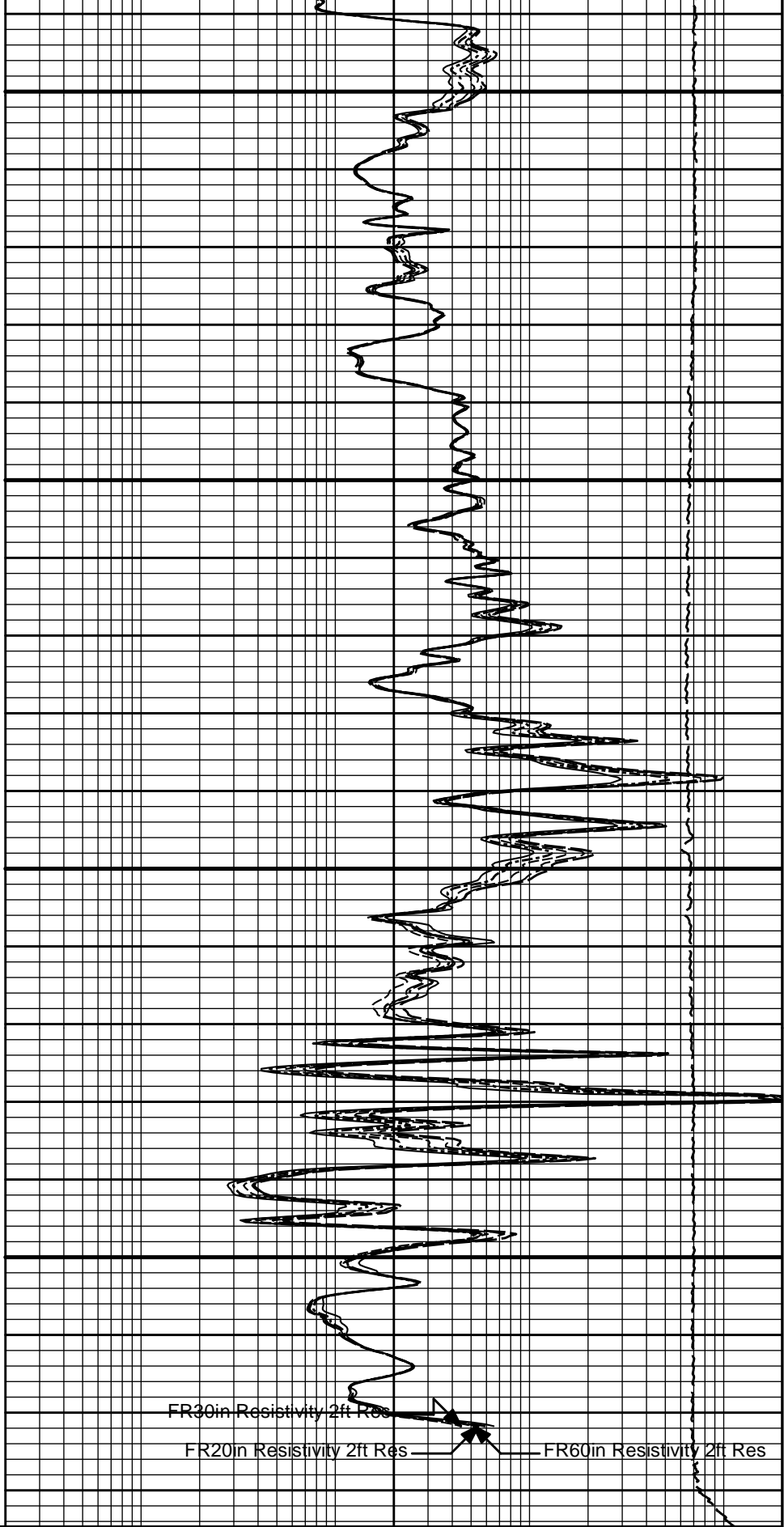




5800

5900

FRSP



FR30in Resistivity 2ft Res

FR20in Resistivity 2ft Res

FR60in Resistivity 2ft Res

0 Gamma API 150

api

SP

-20[+]

15K Tension 0

pounds

0.2 90in Resistivity 2ft Res 2K

ohmm

0.2 60in Resistivity 2ft Res 2000

ohmm

0.2 30in Resistivity 2ft Res 2000

	ohm-metre	
0.2	20in Resistivity 2ft Res	2000
	ohmm	
0.2	10in Resistivity 2ft Res	2K
	ohmm	

HALLIBURTON

Plot Time: 11-Aug-17 00:32:23
 Plot Range: 5495 ft to 5984.67 ft
 Data: LINDA_JO_1-22\Well Based\DAQ-0001-003\
 Plot File: \\-LOCAL-LINDA_JO_1-22\0001 GTET-DSNT-SDLT-BSAT-ACRTACRTACRT_5inch_main

5 INCH REPEAT LOG

5 INCH REPEAT LOG

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10971172 **Reference Calibration Date:** 05-Jul-17 12:41:12
Engineer: T. HYDE **Calibration Date:** 14-Jul-17 15:53:59
Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1

Calibrator Source S/N: TB-185
 Calibrator API Reference:228.00 api
 Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	27.0	23.5	api
Background + Calibrator	294.0	255.5	api
Calibrator	267.0	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10971172 **Reference Calibration Date:** 14-Jul-17 15:53:59
Engineer: T. HYDE **Calibration Date:** 31-Jul-17 09:22:39
Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1

Calibrator Source S/N: TB-185
 Calibrator API Reference:228.00 api
 Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	23.5	24.3	api
Background + Calibrator	255.5	258.9	api
Calibrator	232.0	234.6	api

Shop	Field	Difference	Tolerance
232.0	234.6	-2.6	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 12023046 **Reference Calibration Date:** 08-May-17 09:03:21
Engineer: T. HYDE **Calibration Date:** 05-Jul-17 14:38:25
Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1

Logging Source S/N: DSN-438

Tank Serial Number: 10730320

Reference value assigned to Tank: 56.100

Snow Block S/N: 668

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.00193	1.00528	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):	0.2347	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.5243	10.5595	0.035	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0800	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 - 12023046	Reference Calibration Date: 05-Jul-17 14:38:25
Engineer: T. HYDE	Calibration Date: 31-Jul-17 09:47:53
Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1

Logging Source S/N: DSN-438

Snow Block S/N: 668

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0800	0.0732	-0.0068	+/- 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: 31-Jul-17 09:29:06
Engineer: T. HYDE	Calibration Date: 31-Jul-17 09:34:52
Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1
Host Tool Name: DSNT - 12023046	

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3562.79	-3301.56	-7000.00 - -1000.00
Pad Gain	0.0004001	0.0003800	0.0002000 - 0.0006000
Arm Offset	-1709.09	-2120.30	-5000.00 - 3000.00
Arm Gain	0.0004654	0.0005034	0.000300 - 0.000700
Arm Power	-0.000000440	-0.000003440	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

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)	3.84	3.75	-0.09	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.46	6.50	0.04	+/- 0.20
Medium Ring (in)	8.14	8.25	0.11	+/- 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:** 31-Jul-17 09:34:52
Engineer: T. HYDE **Calibration Date:** 31-Jul-17 09:36:40
Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.74	-0.01	+/- 0.10
Ring Diameter	8.25	8.27	0.02	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: Passed
 Diameter Check: Passed

MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad - 12153526 **Reference Calibration Date:** 31-Jul-17 09:19:19
Engineer: T. HYDE **Calibration Date:** 31-Jul-17 09:21:08
Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1
Host Tool Name: DSNT - 12023046

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.17	-0.17	-0.01	-0.00	ohmm
Calibration Point #1	0.00	0.00	-0.00	0.00	ohmm
Calibration Point #2	20.01	20.00	20.00	20.00	ohmm
Internal Reference	19.88	19.87	19.97	19.97	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero		0.01		0.17	V
Calibration Point #1		44.98		1.31	V
Calibration Point #2		5336.68		6851.06	V
Internal Reference		5301.61		6839.77	V

MICRO LOG FIELD CHECK

Tool Name: Microlog Pad - 12153526 **Reference Calibration Date:** 31-Jul-17 09:21:08
Engineer: T. HYDE **Calibration Date:** 31-Jul-17 09:27:34

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.17	-0.17	-0.00	-0.00	ohmm
Internal Reference	19.87	19.87	19.97	19.97	ohmm

Summary

Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.87	19.87	0.00	+/- 0.80
Microlog Lateral	19.97	19.97	0.00	+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10865873

Reference Calibration Date: 11-May-17 10:56:48

Engineer: T. HYDE

Calibration Date: 05-Jul-17 13:02:30

Software Version: WL INSITE R5.0.5 (Build 8)

Calibration Version: 1

Logging Source S/N: 20791B

Aluminum Block S/N: EL RENO ALUMINUM

Density: 2.581g/cc

Pe: 3.170

Magnesium Block S/N: EL RENO MAGNESIUM

Density: 1.687g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0133	1.0988	0.90 - 1.10
Near Dens Gain	1.0164	1.0679	0.90 - 1.10
Near Peak Gain	1.0400	1.0978	0.90 - 1.10
Near Lith Gain	1.0400	1.0968	0.90 - 1.10
Far Bar Gain	1.0101	1.0199	0.90 - 1.10
Far Dens Gain	1.0001	1.0096	0.90 - 1.10
Far Peak Gain	0.9986	1.0093	0.90 - 1.10
Far Lith Gain	0.9724	0.9817	0.90 - 1.10
Near Bar Offset	0.1327	-0.6543	NONE
Near Dens Offset	0.0969	-0.3629	NONE
Near Peak Offset	-0.1129	-0.5939	NONE
Near Lith Offset	-0.1381	-0.6143	NONE
Far Bar Offset	0.1541	0.0639	NONE
Far Dens Offset	0.2032	0.1140	NONE
Far Peak Offset	0.1741	0.0775	NONE
Far Lith Offset	0.3213	0.2365	NONE
Near Bar Background	840.40	841.26	700 - 1450
Near Dens Background	276.97	274.42	230 - 480
Near Peak Background	121.49	121.24	100 - 210
Near Lith Background	146.82	146.46	125 - 260
Far Bar Background	472.80	472.41	450 - 900
Far Dens Background	186.19	186.04	175 - 345
Far Peak Background	72.59	73.12	70 - 140
Far Lith Background	75.44	77.06	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.685	1.687	0.002	+/- 0.015
Pe	2.572	2.561	-0.011	+/- 0.150
ALUMINUM				
Density (g/cc)	2.577	2.580	0.003	+/- 0.01500
Pe	3.165	3.134	-0.031	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0012	+/- 0.0110	0.0006	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0012	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	-0.0006	+/- 0.0140
Resolution	9.91	6.00 - 11.50	8.90	6.00 - 11.50
Internal Verifier(B+D+P+L)	1383	1200 - 2700	809	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 - 10865873	Reference Calibration Date: 05-Jul-17 13:02:30
Engineer: T. HYDE	Calibration Date: 31-Jul-17 09:19:26
Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1

Pad Temperature: 80.8 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1383.381	1376.524	-6.857	15.027
Far (B+D+P+L) cps	808.624	805.509	-3.115	15.724
Near Resolution	9.91	9.98	0.070	0.50
Far Resolution	8.90	9.14	0.240	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - 12109515	Reference Calibration Date: 10-Mar-17 16:30:34
Engineer: JORGE ORLANDO PEREZ	Calibration Date: 26-Jun-17 09:54:04
Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1
Host Tool Name: ACRt Instrument - 12109517	

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0343	1.05	0.95	1.0158	1.05	0.95	1.0090	1.05
A2 (50")	0.95	1.0478	1.05	0.95	1.0305	1.05	0.95	1.0275	1.05
A3 (29")	0.95	1.0359	1.05	0.95	1.0177	1.05	0.95	1.0125	1.05
A4 (17")	0.95	1.0289	1.05	0.95	1.0091	1.05	0.95	1.0060	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0141	1.05	0.95	1.0089	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9916	1.05	0.95	0.9874	1.05

SONDE OFFSET

Subarray	R12KHz (mmho/m)	R36KHz (mmho/m)	R72KHz (mmho/m)
A1 (80")	0.785	-4.447	-5.755
A2 (50")	-0.427	-3.982	-5.059
A3 (29")	-14.213	-4.684	-3.616
A4 (17")	-109.833	-33.558	-25.528
A5 (10")	N/A	-77.847	-35.599
A6 (6")	N/A	284.626	148.473

TRANSMITTER CURRENT GAIN

R-MUD VERIFICATION

Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.91	1.3	Mud Cell	0.95	1.00	1.05
36K	1.0	1.90	2.0				
72K	1.0	1.15	2.0				

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS
TOOL OK TO LOG	

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10971172						
Gamma Ray Calibrator	232.0	234.6	-----	-2.6	+/- 9.00	api
DSNT-12023046						
Snow-Block Porosity	0.0800	0.0732	-----	0.0068	+/- 0.0150	decp
SDLT-12153526						
Pad Extension	3.75	3.74	-----	0.01	+/-0.10	in
Ring Diameter	8.25	8.27	-----	-0.02	+/-0.15	in
Microlog Pad-12153526						
MicroLog Normal	19.87	19.87	-----	0.00	+/-0.80	ohmm
MicroLog Lateral	19.97	19.97	-----	0.00	+/-0.80	ohmm
SDLT Pad-10865873						
Near(B+D+P+L)	1383.381	1376.524	-----	6.857	+/-15.027	cps
Far(B+D+P+L)	808.624	805.509	-----	3.115	+/-15.724	cps
ACRt Sonde-12109515						
Mud Cell	1.00	-----	-----	0	-----	ohm-m

Data: LINDA_JO_1-22\0001 GTET-DSNT-SDLT-BSAT-ACRT\IDLE

Date: 10-Aug-17 18:57:16

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	8.900	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KDCT	Percent K in Mud by Weight?	0.00	%

SHARED	KPCI	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	0.920	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.000	in
SHARED	CSTR	Compressive Strength	1000.00	psia
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5980.00	ft
SHARED	BHT	Bottom Hole Temperature	125.0	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	
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	DNSO	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	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	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wyllie	

ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.19	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Centered	
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

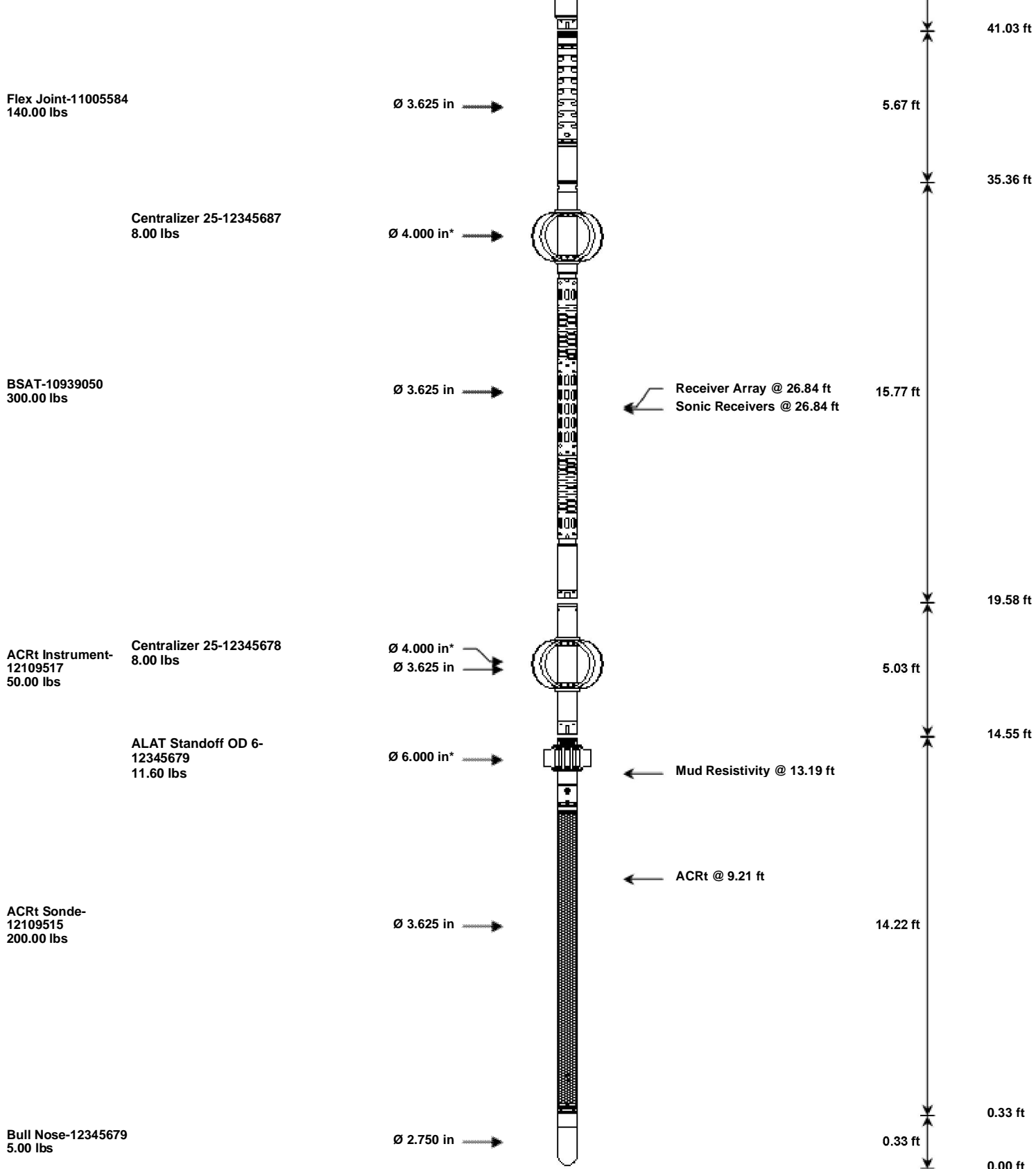
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Date: 10-Aug-17 23:32:49

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-11459024 37.50 lbs	Weak Point 7000 lbs- 12345678 0.01 lbs	Ø 2.750 in Ø 0.010 in*		← Temperature @ 76.74 ft	2.50 ft	77.24 ft
XOHD-11569312 20.00 lbs		Ø 2.750 in Ø 3.625 in			0.95 ft	74.74 ft
SP Sub-11441709 60.00 lbs		Ø 3.625 in		← SP @ 72.01 ft	3.74 ft	73.79 ft
				← Z-Accelerometer @ 69.60 ft		70.05 ft
GTET-10971172 165.00 lbs		Ø 3.625 in		← GammaRay @ 63.99 ft	8.52 ft	
						61.53 ft
DSNT-12023046 174.00 lbs	DSN Decentralizer- 12023046 6.60 lbs	Ø 5.000 in* Ø 3.625 in		← DSN Far @ 54.59 ft ← DSN Near @ 53.84 ft	9.69 ft	
						51.84 ft
SDLT-12153526 360.00 lbs	SDLT Pad-10865873 65.00 lbs Microlog Pad-12153526 8.00 lbs RAM-Cs137-00005155 1.00 lbs	Ø 4.500 in Ø 4.500 in* Ø 4.750 in* Ø 0.800 in*		← Microlog @ 44.03 ft ← SDL Caliper @ 43.84 ft ← SDL @ 43.83 ft	10.81 ft	



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max. Log Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	11459024	37.50	2.50	74.74	300.00
WP7K	Weak Point 7000 lbs	12345678	0.01	0.01	* 75.54	300.00
XOHD	Hostile to Dits Cross Over	11569312	20.00	0.95	73.79	300.00
SP	SP Sub	11441709	60.00	3.74	70.05	300.00
GTET	Gamma Telemetry Tool	10971172	165.00	8.52	61.53	60.00
DSNT	Dual Spaced Neutron	12023046	174.00	9.69	51.84	60.00
DCNT	DSN Decentralizer	12023046	6.60	5.13	* 55.17	300.00
SDLT	Spectral Density Tool	12153526	360.00	10.81	41.03	60.00
SDLP	Density Insite Pad	10865873	65.00	2.55	* 43.24	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	00005155	1.00	0.80	* 43.47	300.00
MICP	Microlog Pad	12153526	8.00	1.00	* 43.53	60.00
FLEX	Flex Joint	11005584	140.00	5.67	35.36	300.00
BSAT	Borehole Sonic Array Tool	10939050	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	12345687	8.00	2.08	* 32.29	300.00
ACRt	Array Compensated True Resistivity Instrument Section	12109517	50.00	5.03	14.55	120.00

ACRT	Array Compensated True Resistivity Instrument Section	12109517	50.00	3.33	14.33	120.00
OBCEN	Centralizer - 25 in. Overbody	12345678	8.00	2.08 *	16.24	300.00
ACRT	Array Compensated True Resistivity Sonde Section	12109515	200.00	14.22	0.33	120.00
ALATS	Array Laterolog Tool OD 6 Standoff	12345679	11.60	1.00 *	13.19	60.00
BLNS	Bull Nose	12345679	5.00	0.33	0.00	300.00

Total **1,619.71** **77.24**

* Not included in Total Length and Length Accumulation.

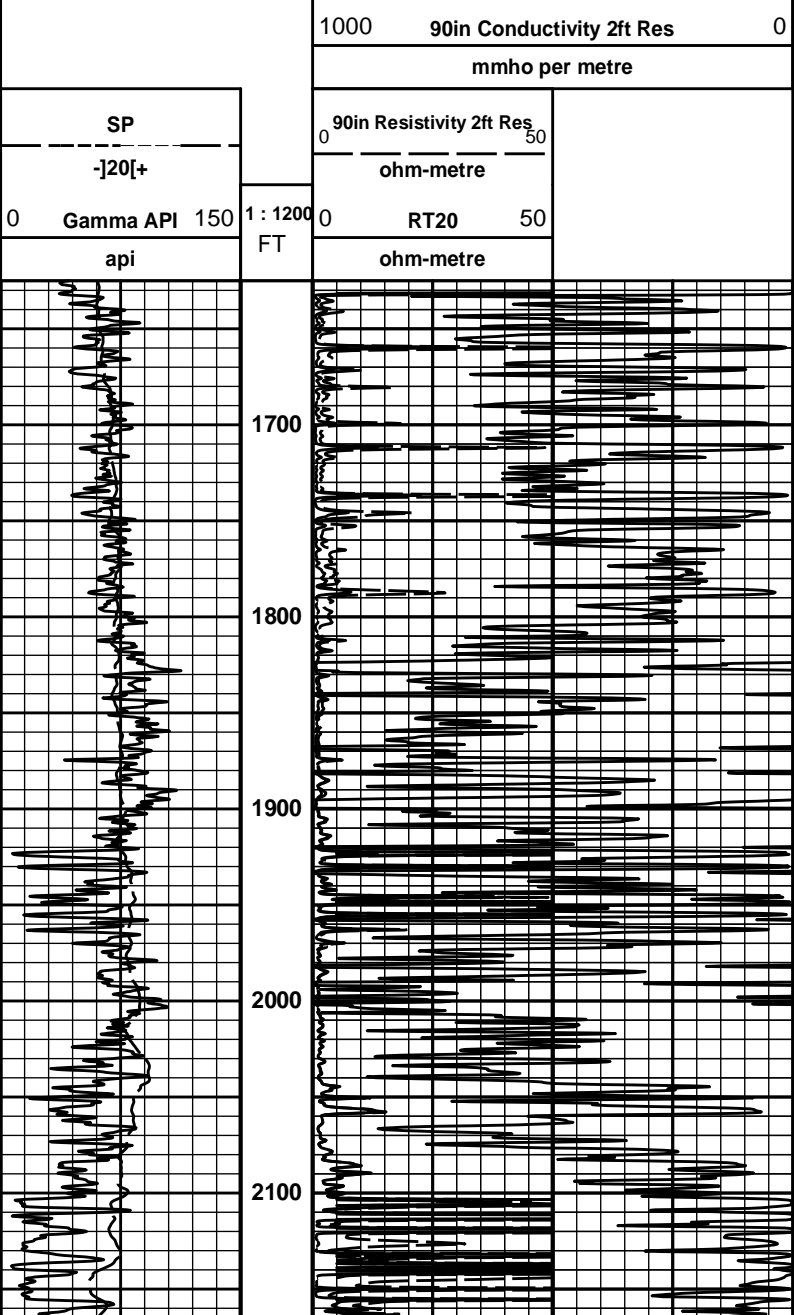
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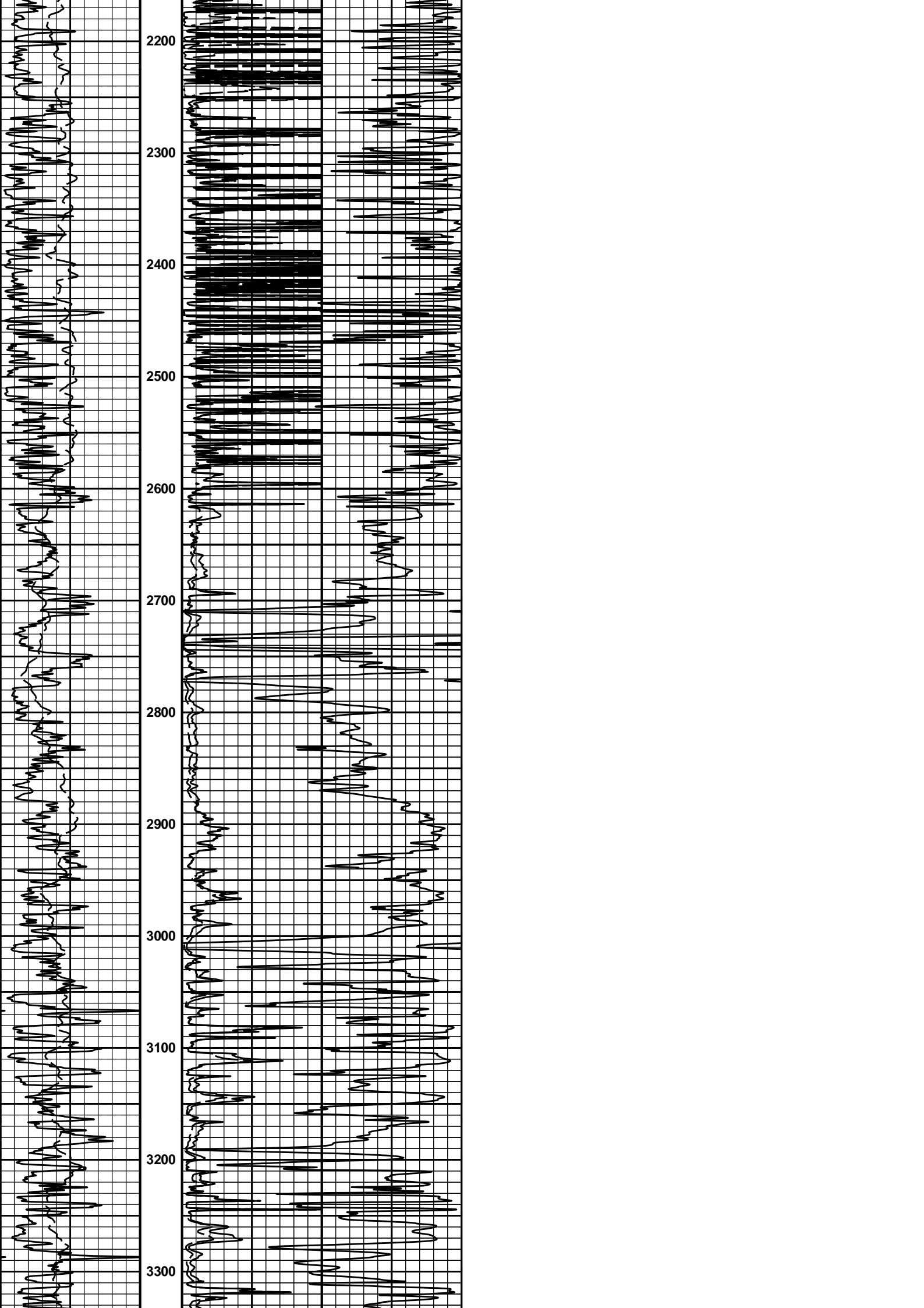
HALLIBURTON

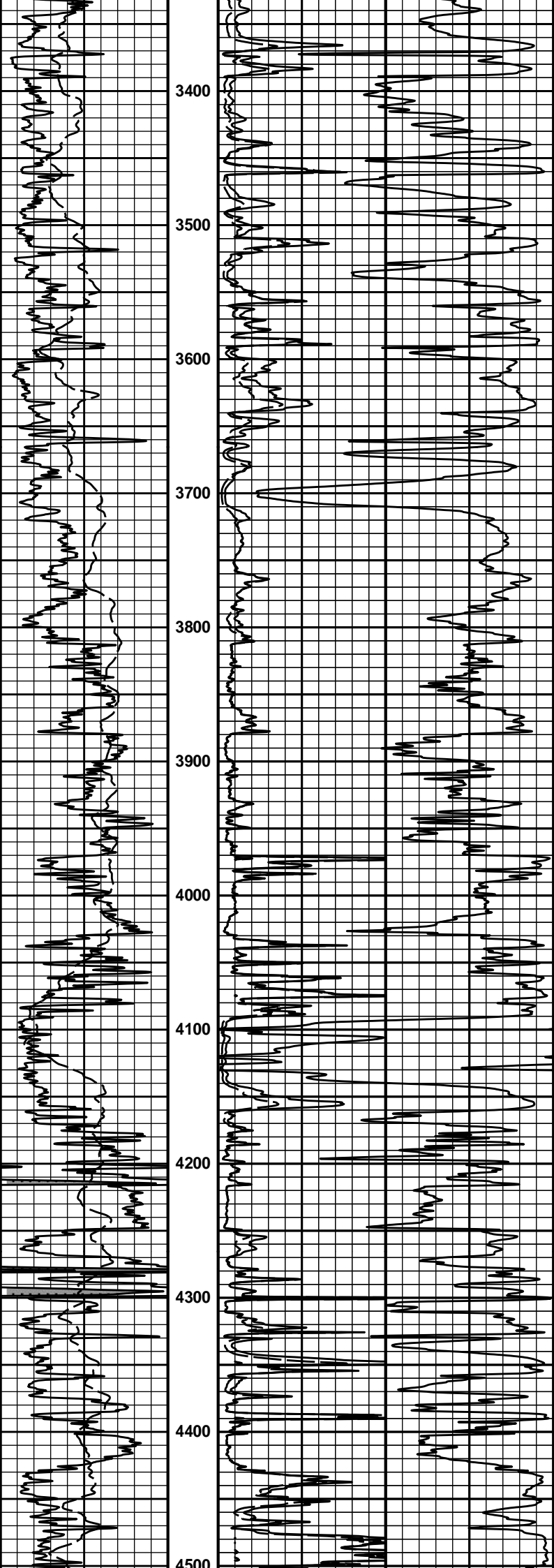
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 Plot File: \\LOCAL-LINDA_JO_1-22\0001 GTET-DSNT-SDLT-BSAT-ACRT\ACRT\ACRT_1_main

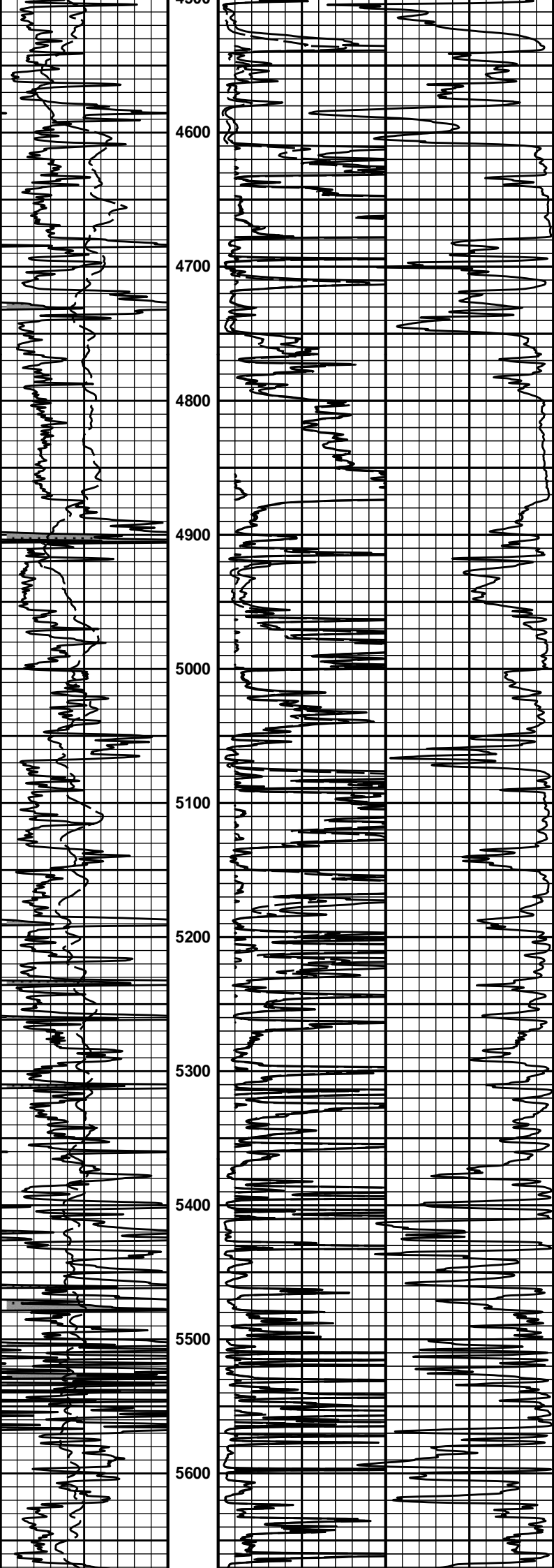
1 INCH MAIN LOG

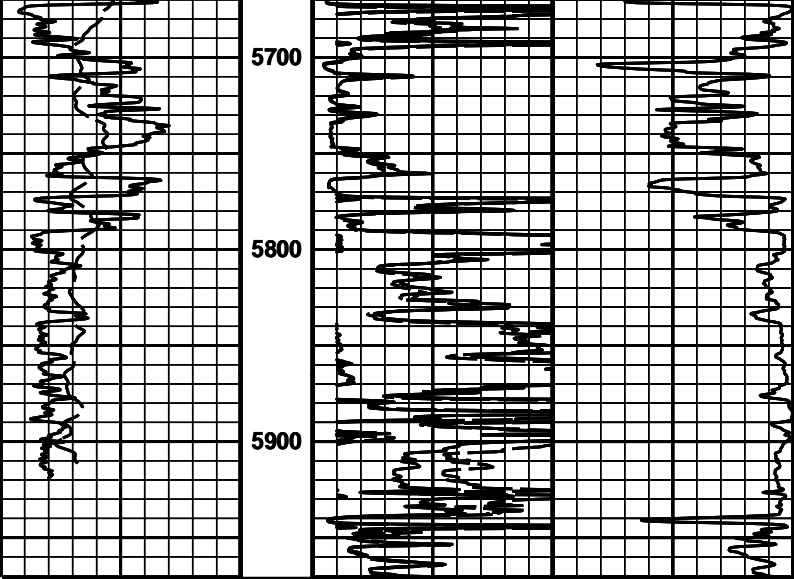
1 INCH CORRELATION LOG











0	Gamma API	150	1 : 1200	0	RT20	50
	api		FT		ohm-metre	
	SP			0	90in Resistivity 2ft Res	50
	-]20[+				ohm-metre	
				1000	90in Conductivity 2ft Res	0
					mmho per metre	

HALLIBURTON
 Plot Time: 11-Aug-17 00:32:31
 Plot Range: 1625 ft to 5971.25 ft
 Data: LINDA_JO_1-22\Well Based\DAQ-0001-005\
 Plot File: \\LOCAL\LINDA_JO_1-22\0001 GTET-DSNT-SDLT-BSAT-ACRTACRTACRT_1_main

1 INCH MAIN LOG

1 INCH CORRELATION LOG

COMPANY	RAYDON EXPLORATION INC.		
WELL	LINDA JO 1-22		
FIELD	WILDCAT		
COUNTY	SEWARD	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG	