HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY	OXY USA INC.
WELL	WIGGAINS 12-10
FIELD	GOOCH
COUNTY	STEVENS
STATE	KANSAS

COMPANY **OXY USA INC.**
WELL **WIGGAINS 12-10**
FIELD **GOOCH**
COUNTY **STEVENS** STATE **KANSAS**

API No. 15-189-22785
Location 1270' FSL & 330' FEL

Other Services:
MICROLOG
DSNT, SDLT
BSAT

Sect. 12 Twp. 35S Rge. 36W

Permanent Datum	GL	Elev. 3013.0 ft	Elev.: K.B. 3027.0 ft
Log measured from	KB	14.0 ft above perm. Datum	D.F. 3026.0 ft
Drilling measured from	KB		G.L. 3013.0 ft

Date	04-Oct-12		
Run No.	ONE		
Depth - Driller	6957.00 ft		
Depth - Logger	6962.0 ft		
Bottom - Logged Interval	6952.0 ft		
Top - Logged Interval	1828.0 ft		
Casing - Driller	8.625 in @ 1828.0 ft	@	@
Casing - Logger	1828.0 ft		
Bit Size	7.875 in	@	@
Type Fluid in Hole	WATER BASED MUD		
Density / Viscosity	9.4 ppg / 47.00 s/qt		
PH / Fluid Loss	10.30 pH / 8.0 cptm		
Source of Sample	FLOW LINE		
Rm @ Meas. Temperature	0.900 ohmm @ 75.00 degF	@	@
Rmf @ Meas. Temperature	0.66 ohmm @ 75.00 degF	@	@
Rmc @ Meas. Temperature	1.150 ohmm @ 75.00 degF	@	@
Source Rmf / Rmc	MEASURED / MEASURED		
Rm @ BHT	0.50 ohmm @ 139.0 degF	@	@
Time Since Circulation	9.0 hr		
Time on Bottom	04-Oct-12 03:32		
Max. Rec. Temperature	139.0 degF @ 6962.0 ft	@	@
Equipment / Location	10546696 / LIBERAL		
Recorded By	J. BOLLOM		
Witnessed By	C. WYLIE		

Fold here

Service Ticket No.: 9851547 API Serial No.: 15-189-22785 PGM Version: WL INSITE R3.6.0 (Build 3)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

RESISTIVITY SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
ONE	ACRT	N/A	1.5 S.O.	N/A
	I962_S909			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	11039640	Serial No.		Serial No.		Serial No.	
Model No.	GTET	Model No.		Model No.		Model No.	
Diameter	3.625"	No. of Cent.		Diameter		Diameter	
Detector Model No.	GTET	Spacing		Log Type		Log Type	
Type	SCINT			Source Type		Source Type	
Length	8'	LSA [Y/N]		Serial No.		Serial No.	
Distance to Source	10'	FWDA [Y/N]		Strength		Strength	

LOGGING DATA

GENERAL	GAMMA	ACOUSTIC	DENSITY	NEUTRON

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	
ONE	6962	1828	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING

CHLORIDES REPORTED AT 2000 MG/L

LCM REPORTED AT 12 LB/BBL

GTET-DSNT-SDLT-BSAT-ACRT RUN IN COMBINATION

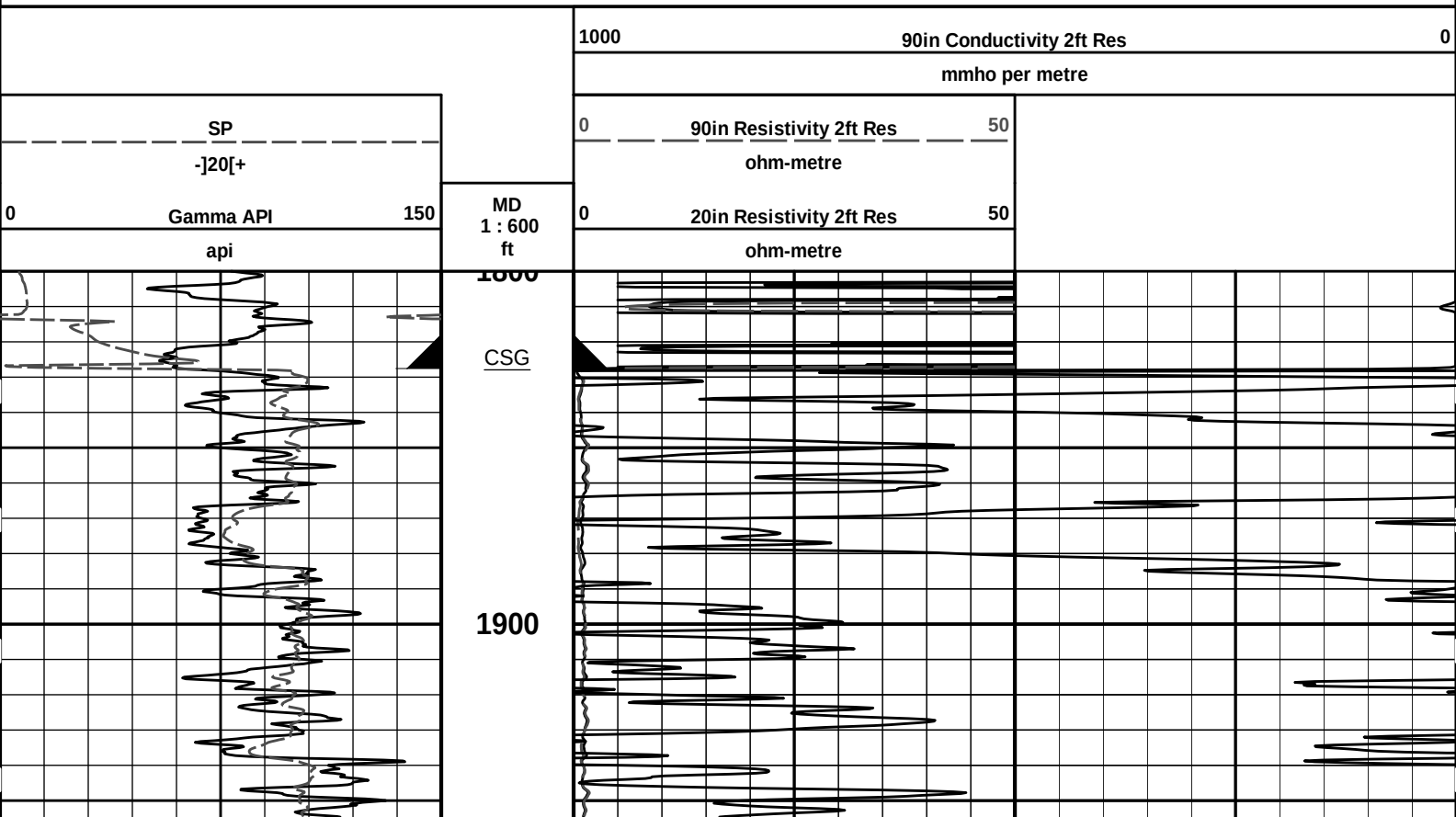
TODAY'S CREW: K. KING & B. TERREL

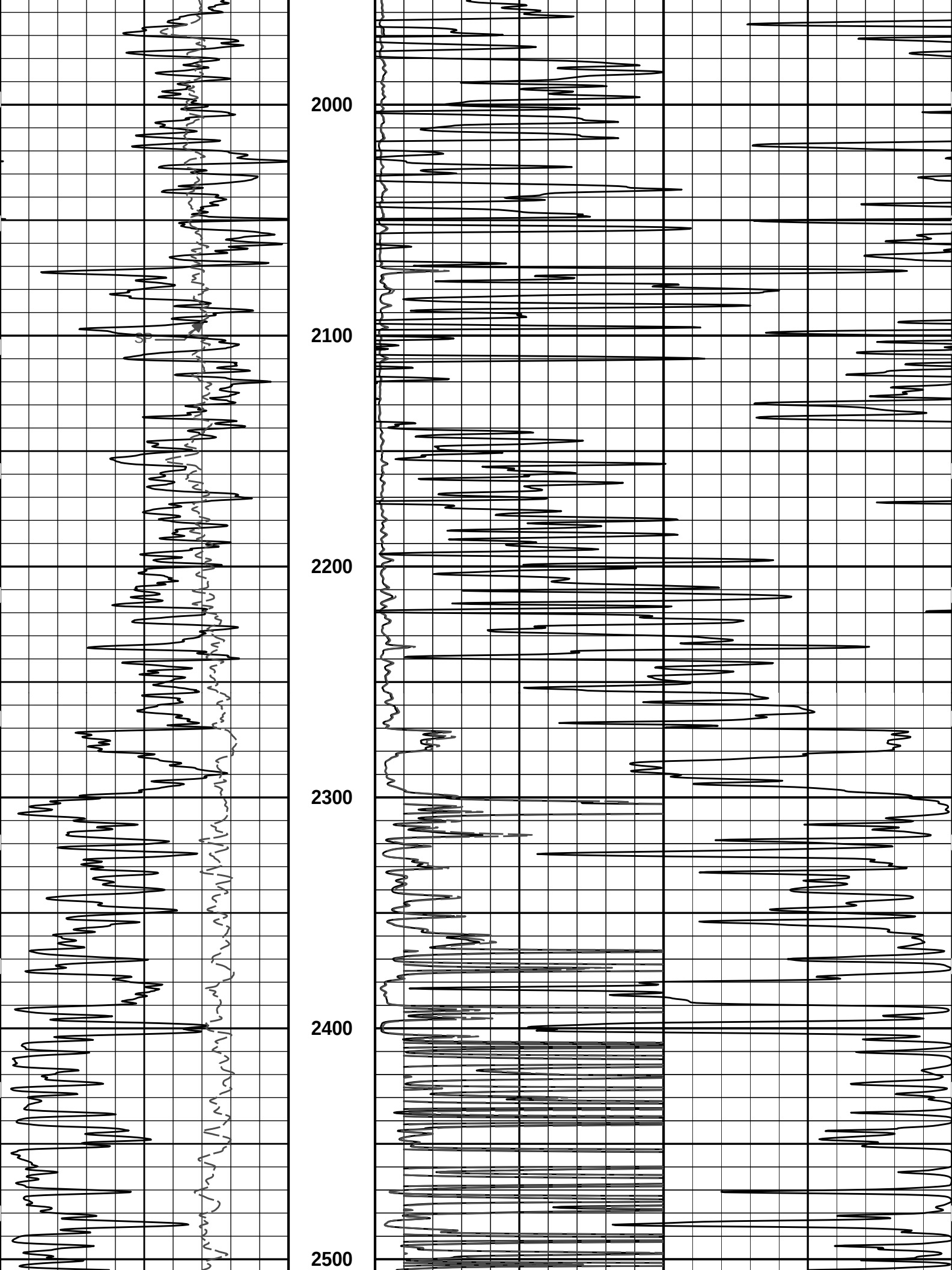
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123

HALLIBURTON

Plot Time: 04-Oct-12 07:33:56
Plot Range: 1800 ft to 6966 ft
Data: WIGGAINS_12_10\Well Based\CASING
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_2_lib

2 INCH MAIN LOG

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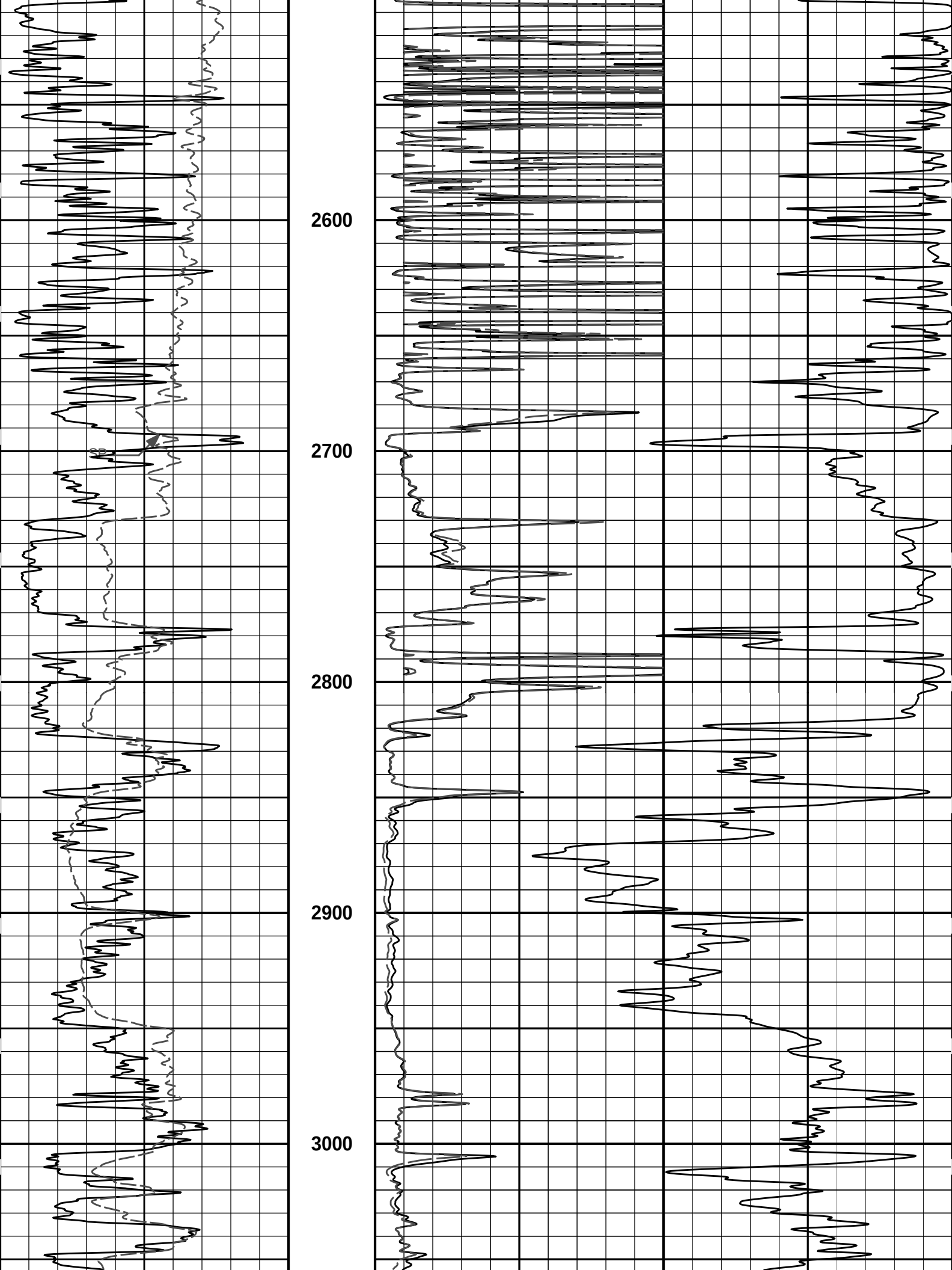
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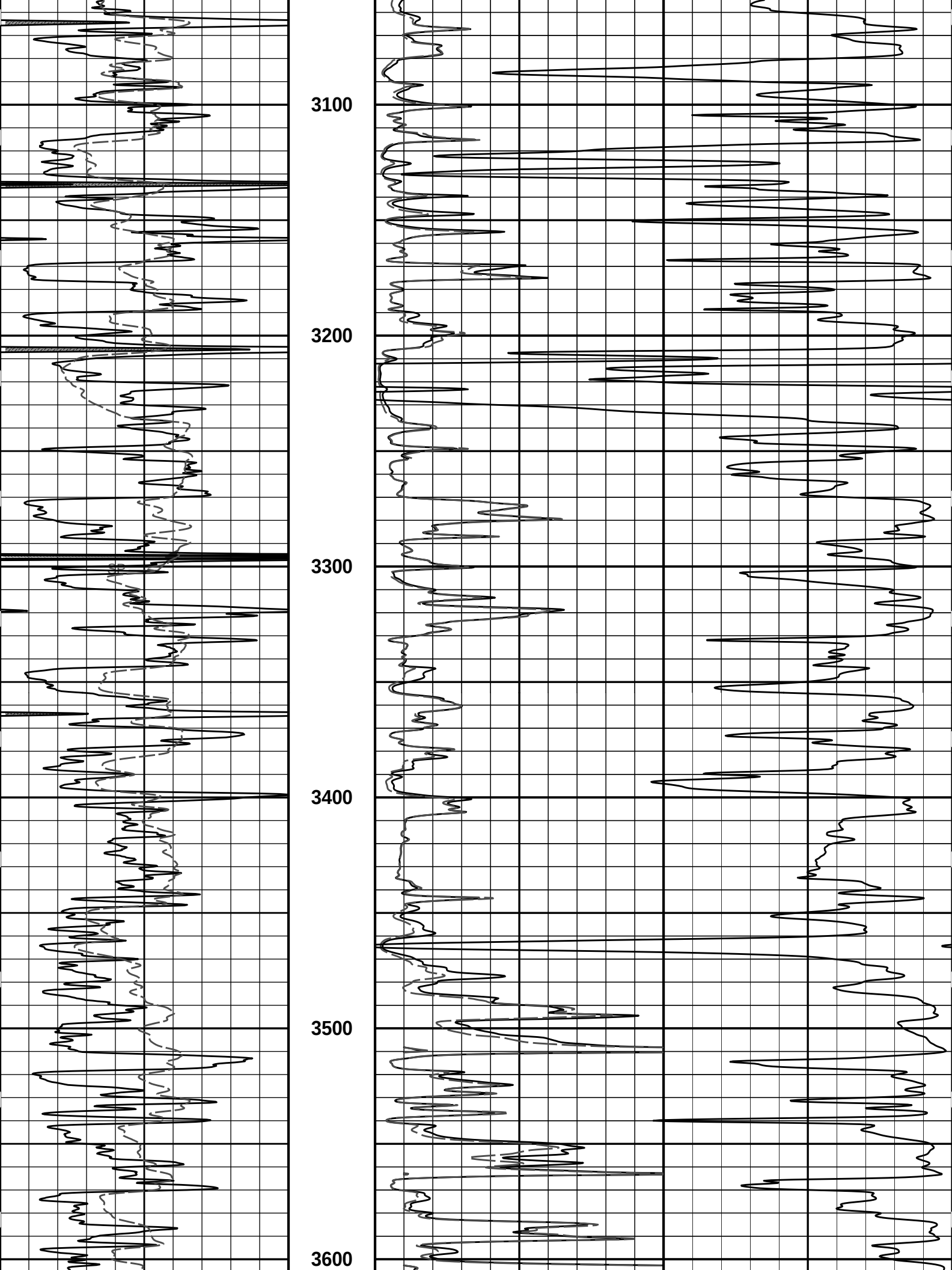
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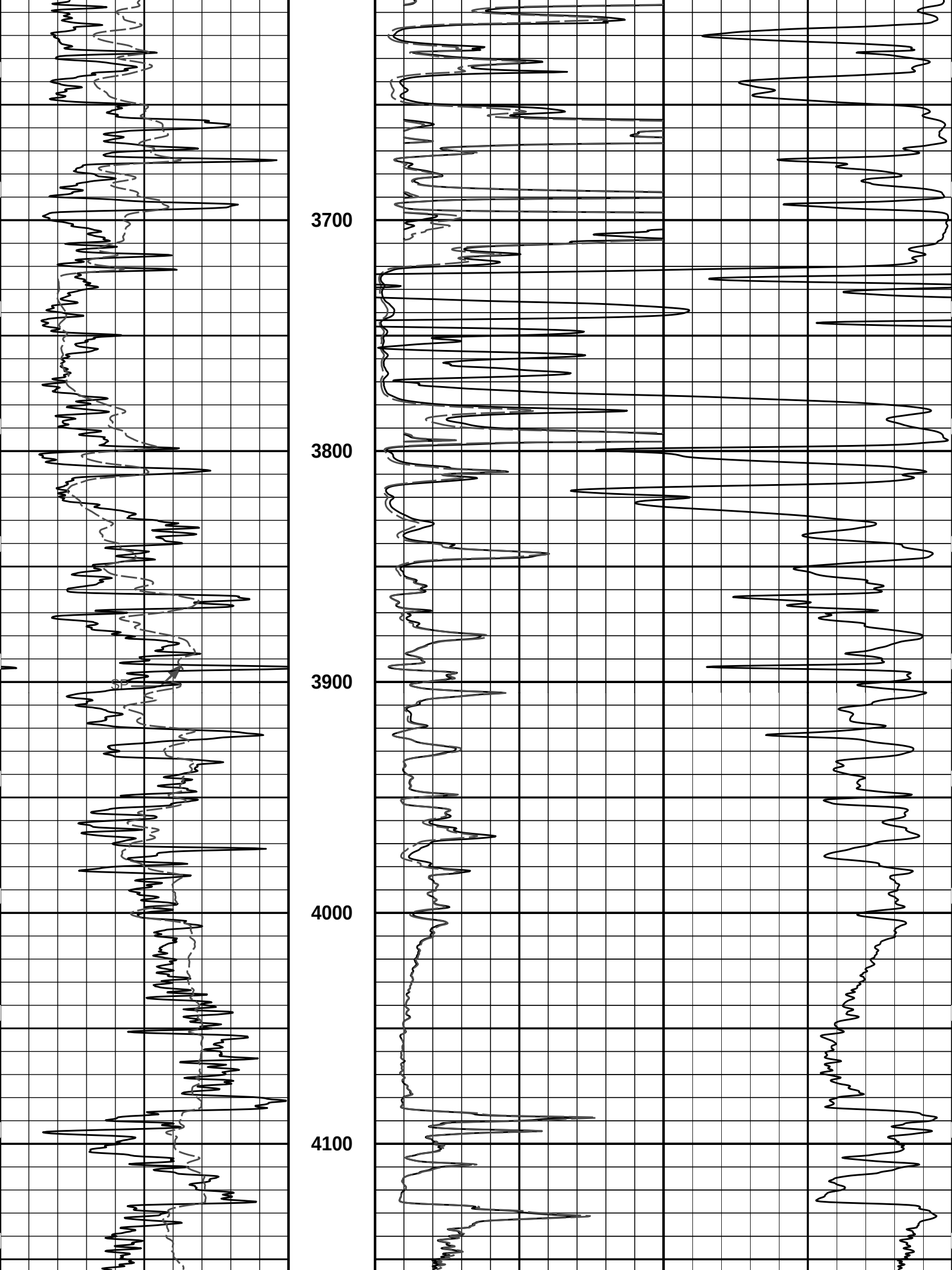
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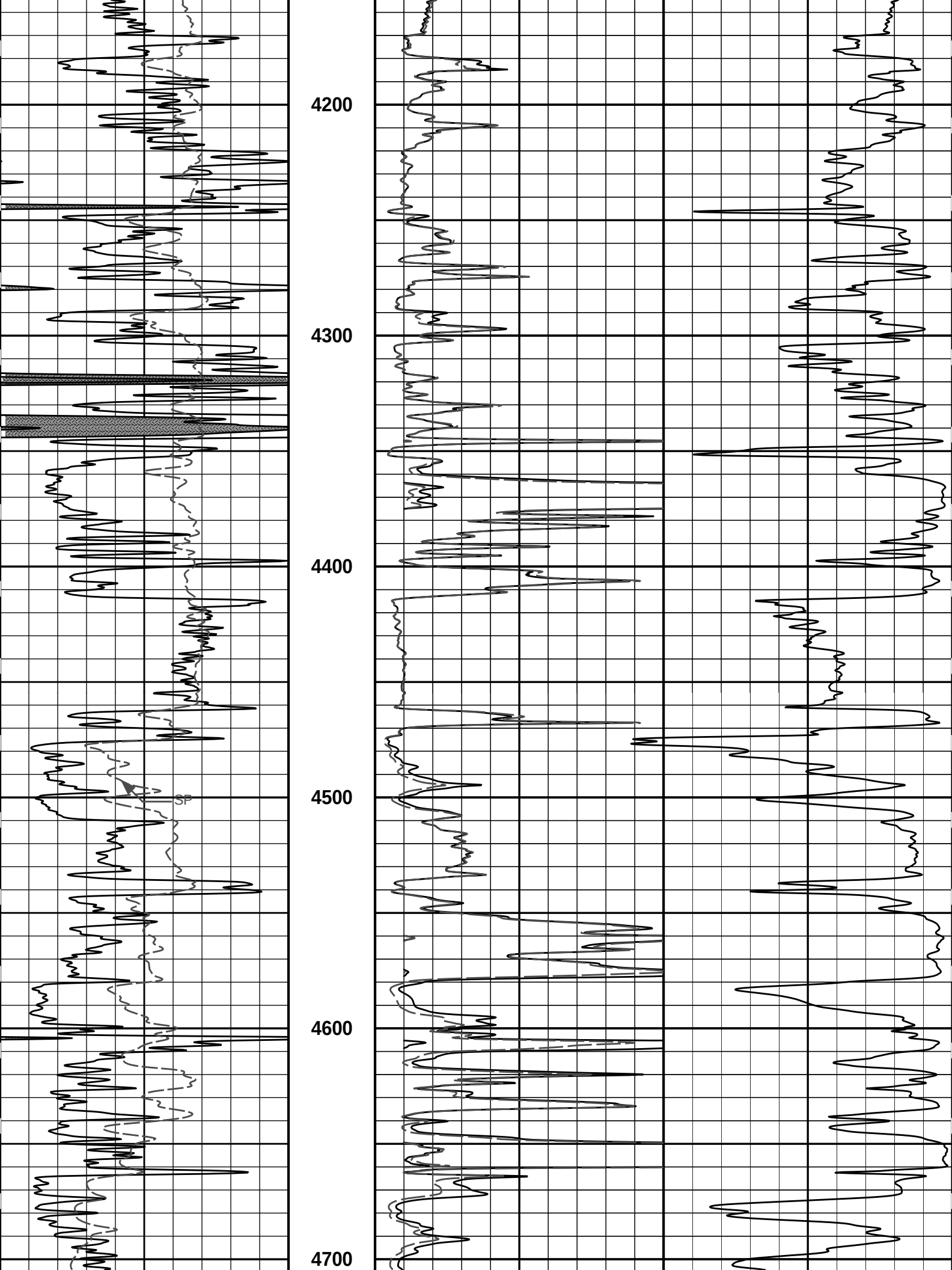
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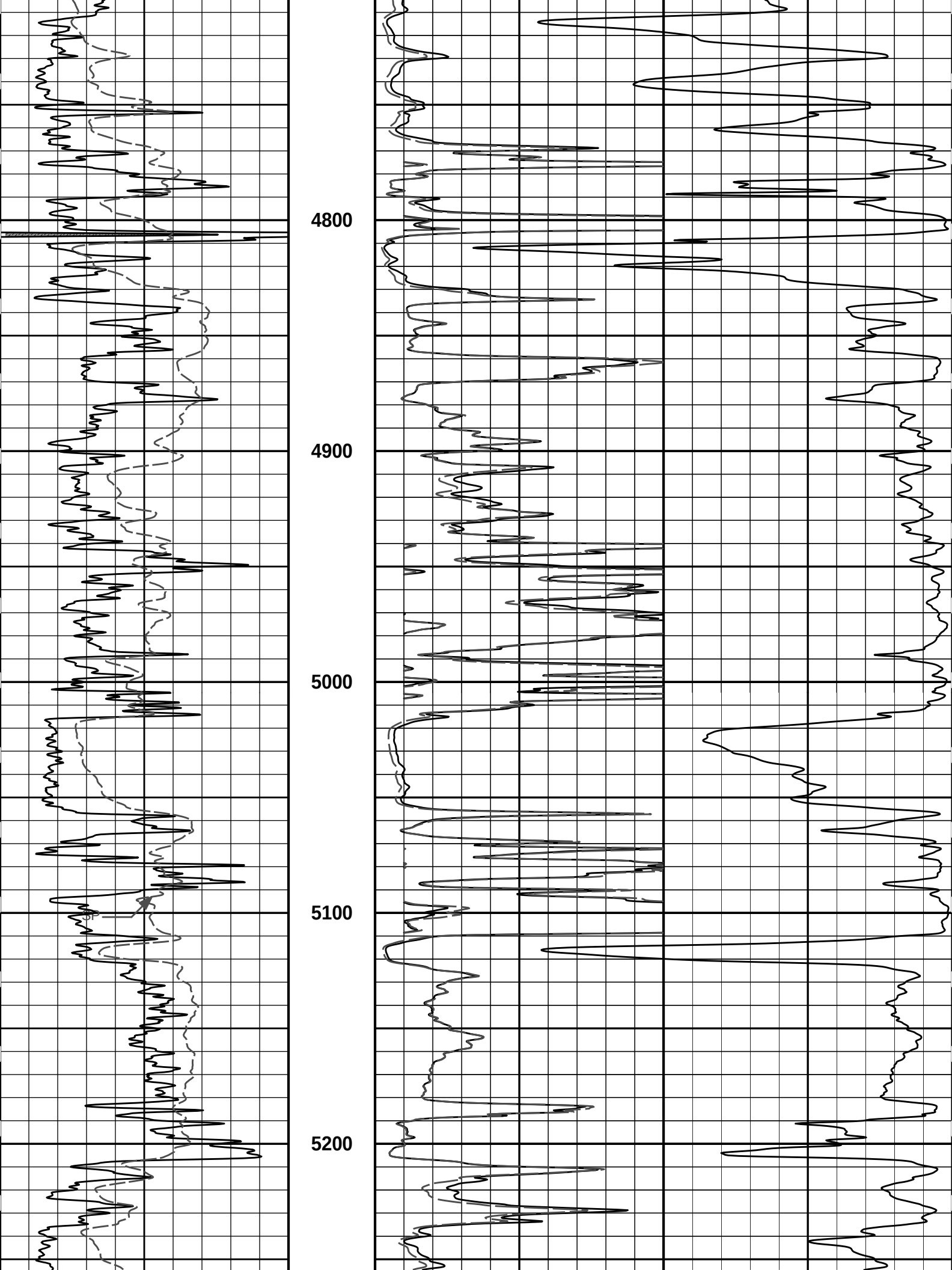
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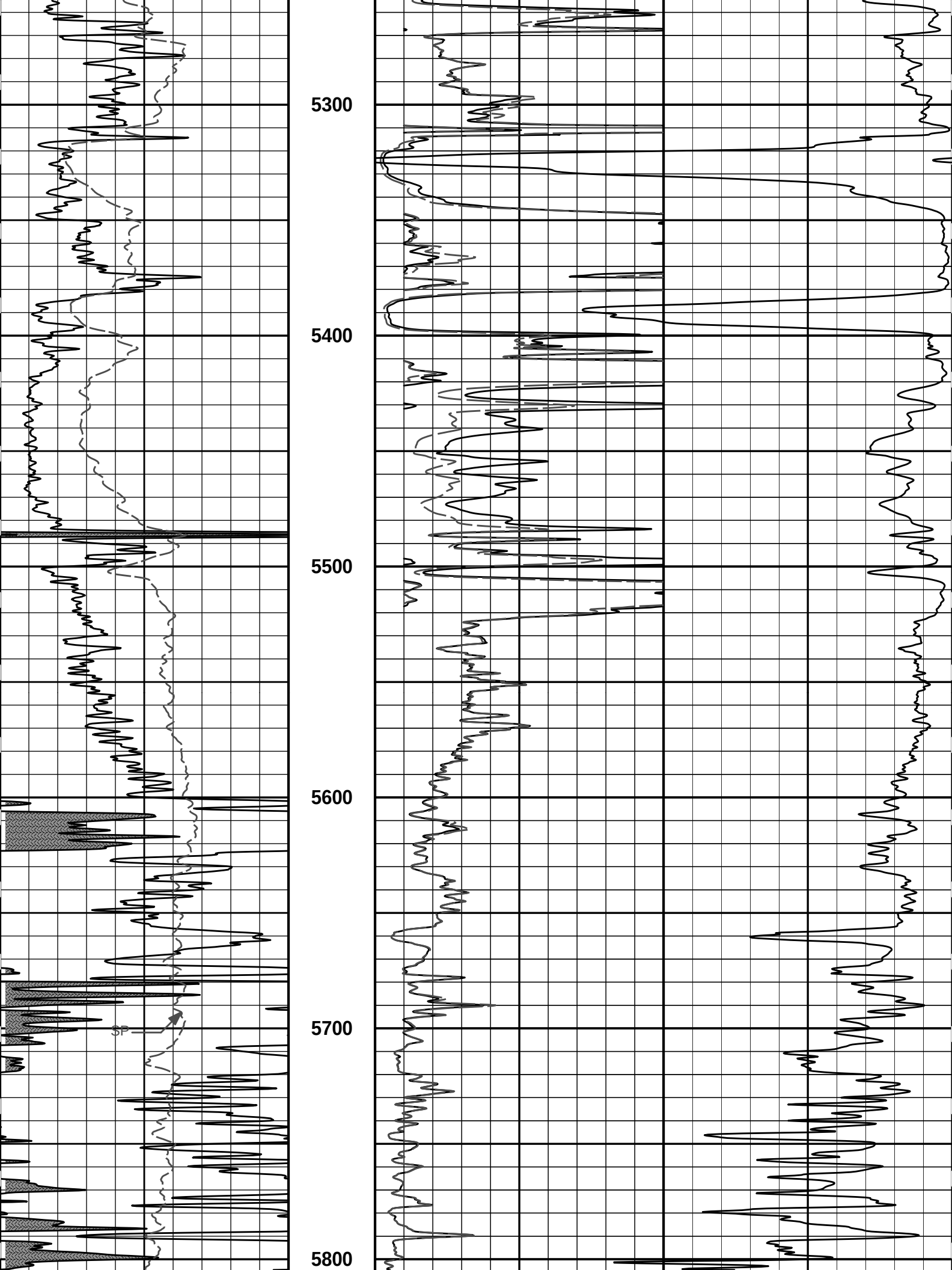
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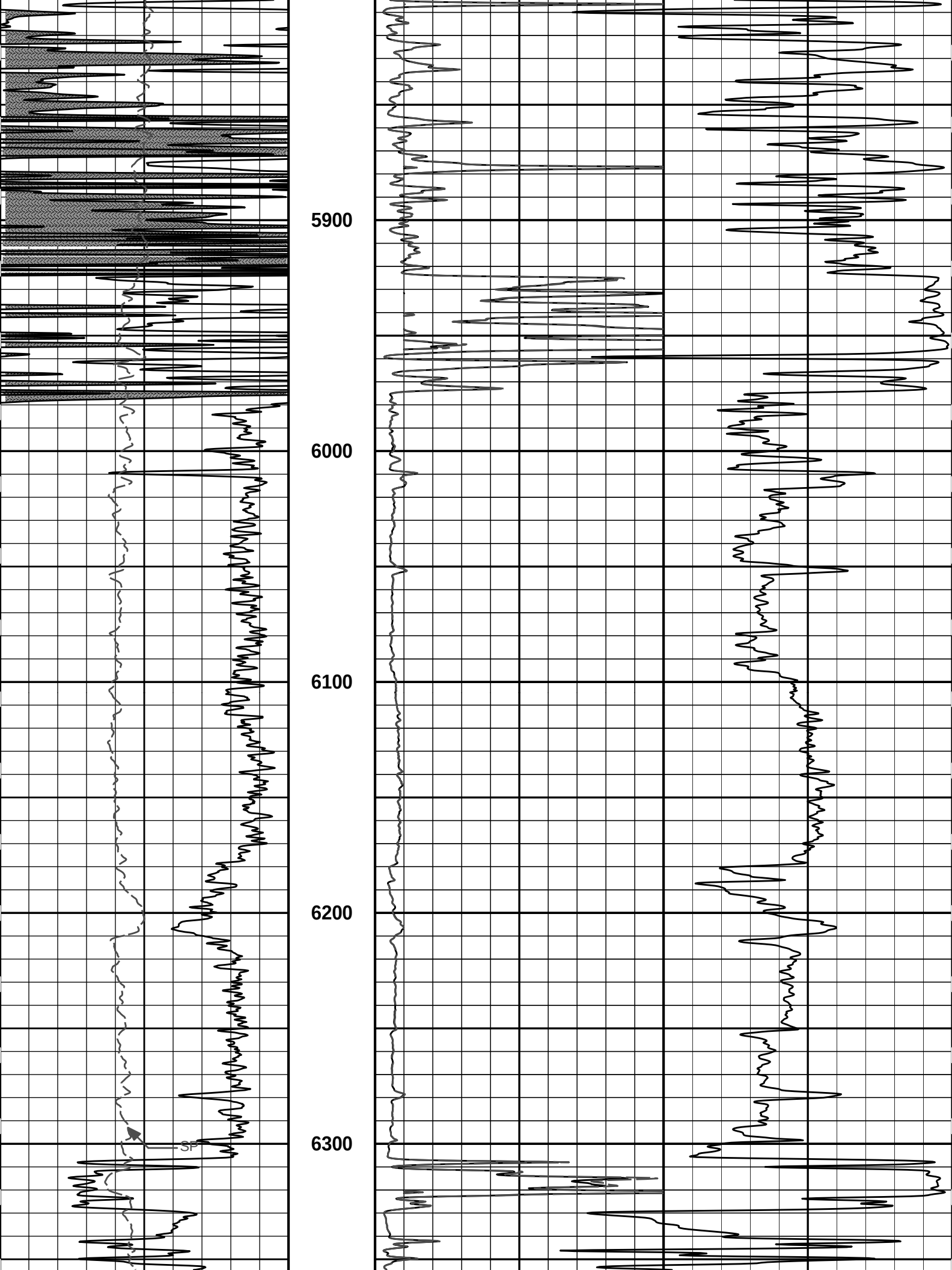
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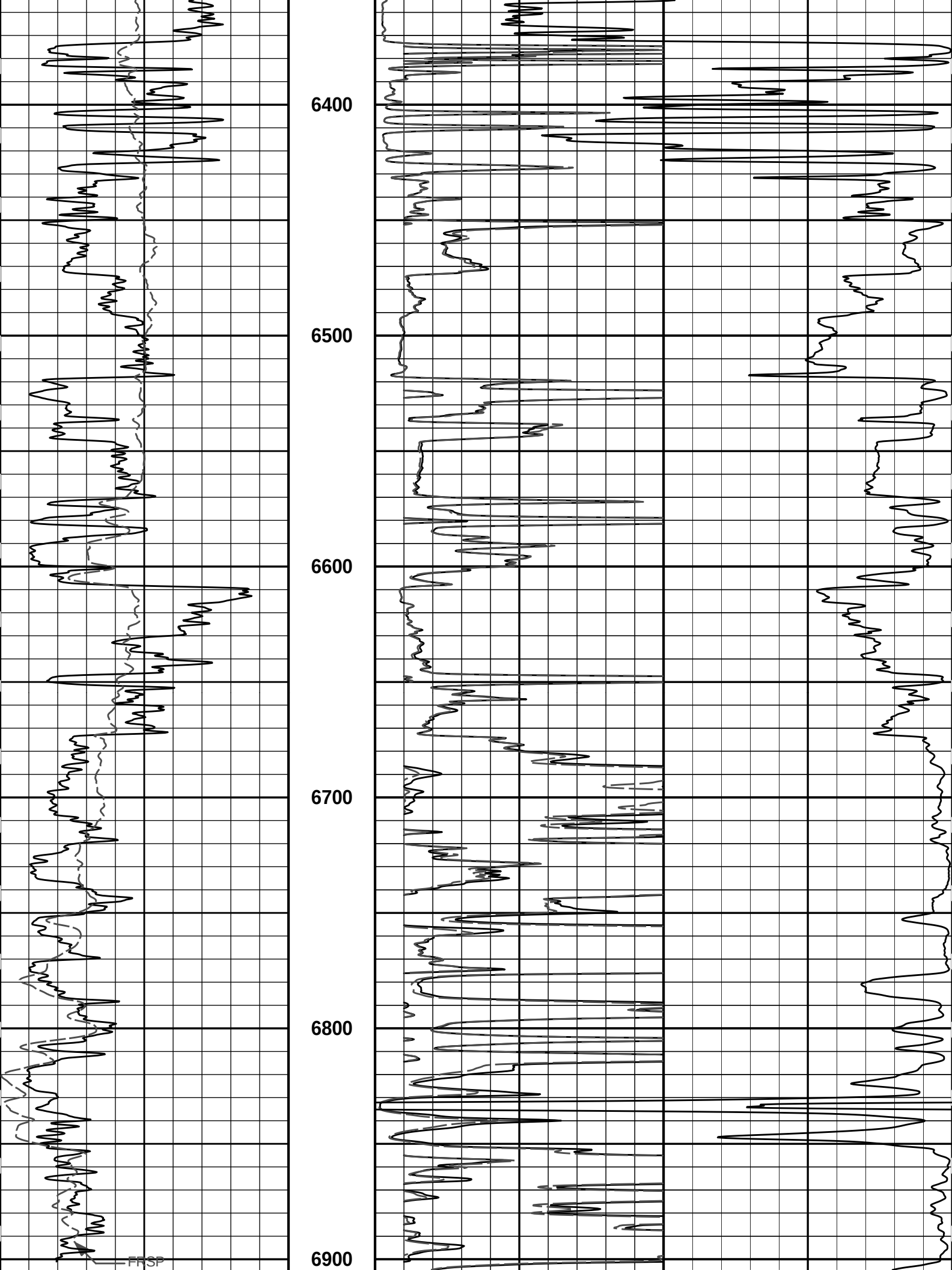
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6900
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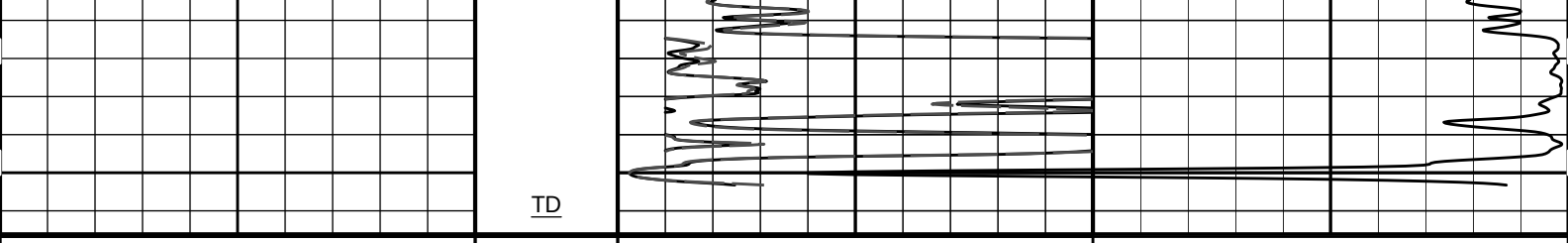


0 Gamma API 150
api
SP
-]20[+

MD
1 : 600
ft

0 20in Resistivity 2ft Res 50
ohm-metre
0 90in Resistivity 2ft Res 50
ohm-metre

1000 90in Conductivity 2ft Res 0
mmho per metre

HALLIBURTON

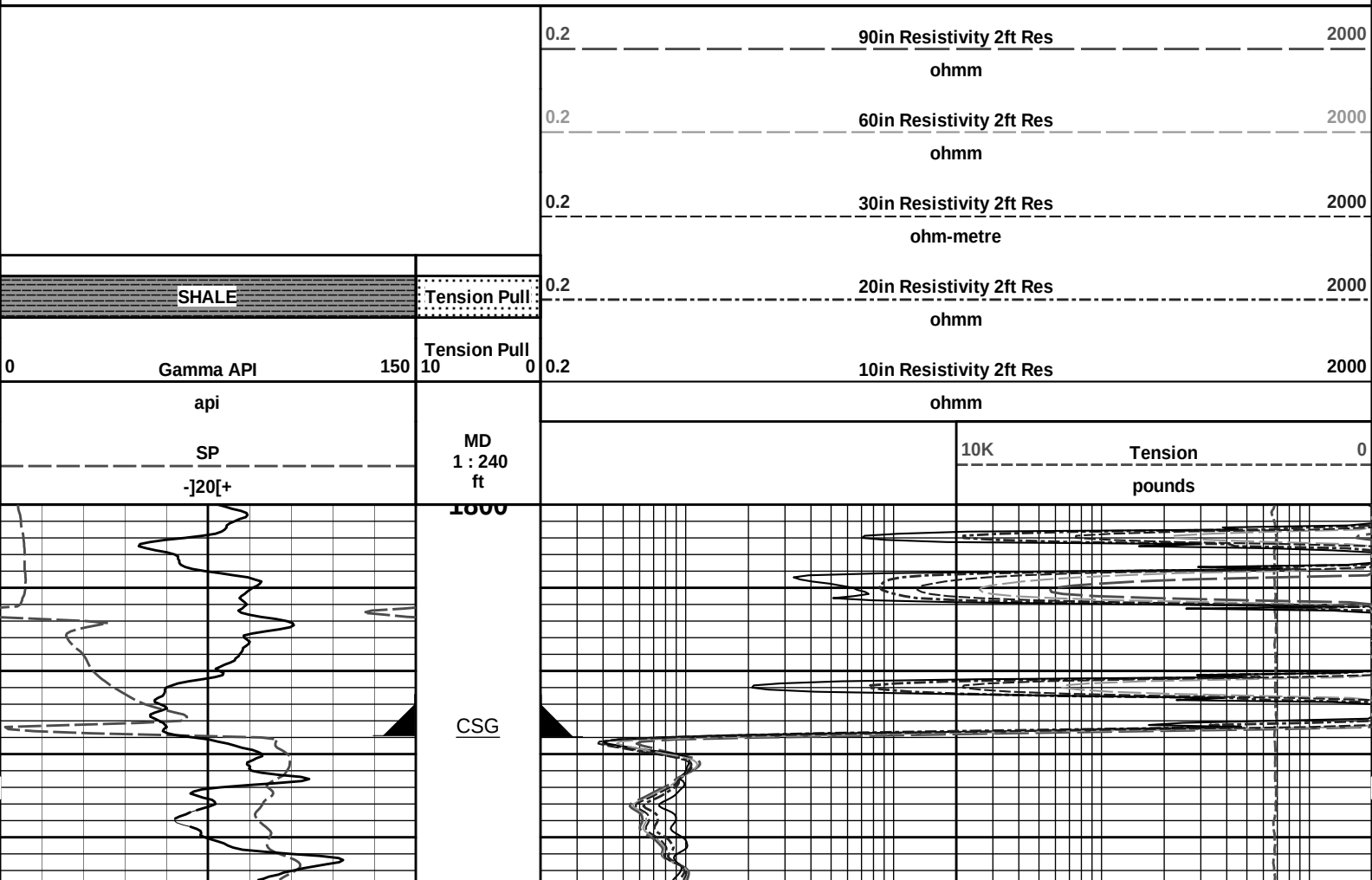
Plot Time: 04-Oct-12 07:34:03
Plot Range: 1800 ft to 6966 ft
Data: WIGGAINS_12_10\Well Based\CASING\
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_2_lib

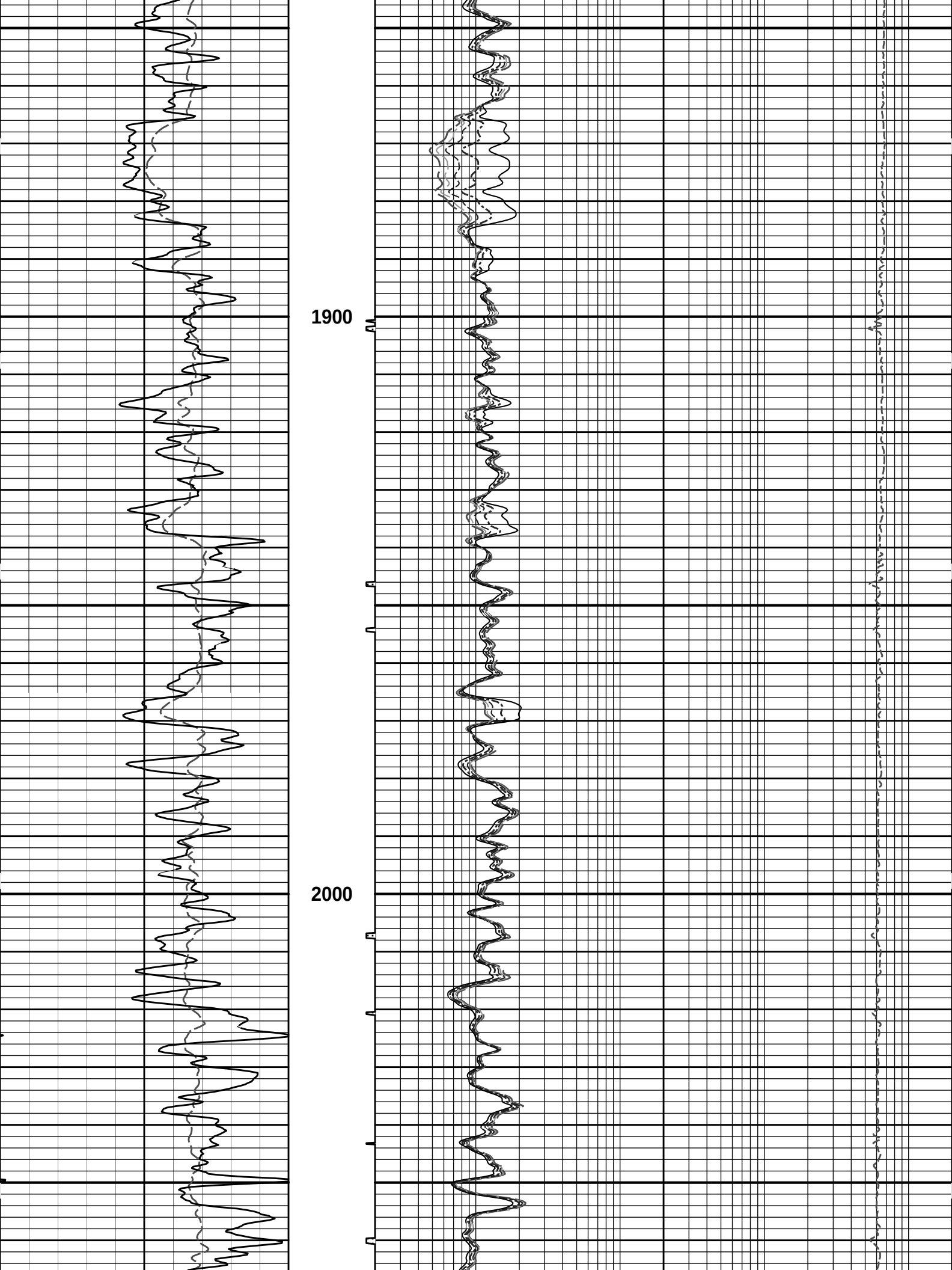
2 INCH MAIN LOG

HALLIBURTON

Plot Time: 04-Oct-12 07:34:03
Plot Range: 1800 ft to 6966 ft
Data: WIGGAINS_12_10\Well Based\CASING\
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

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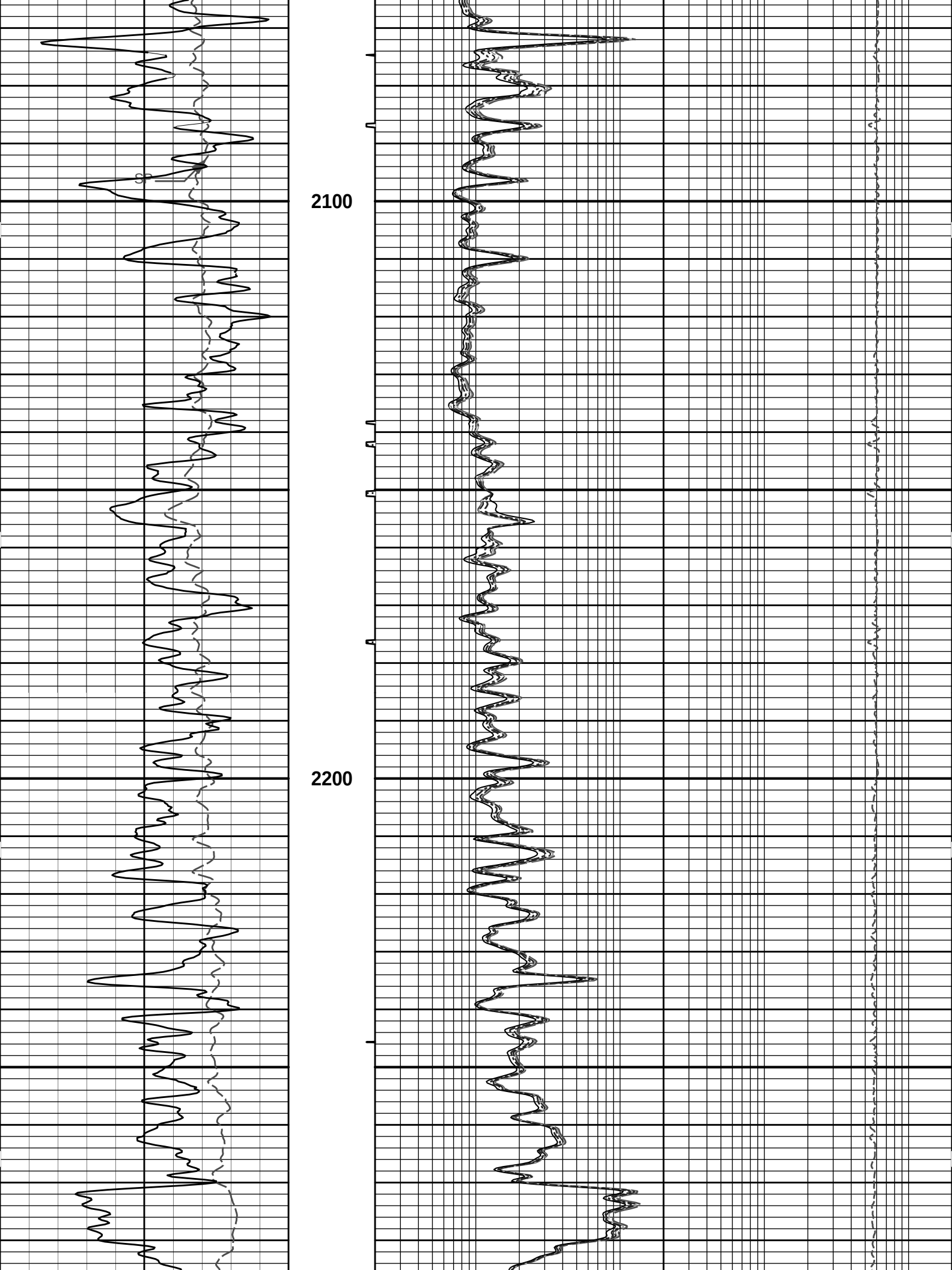
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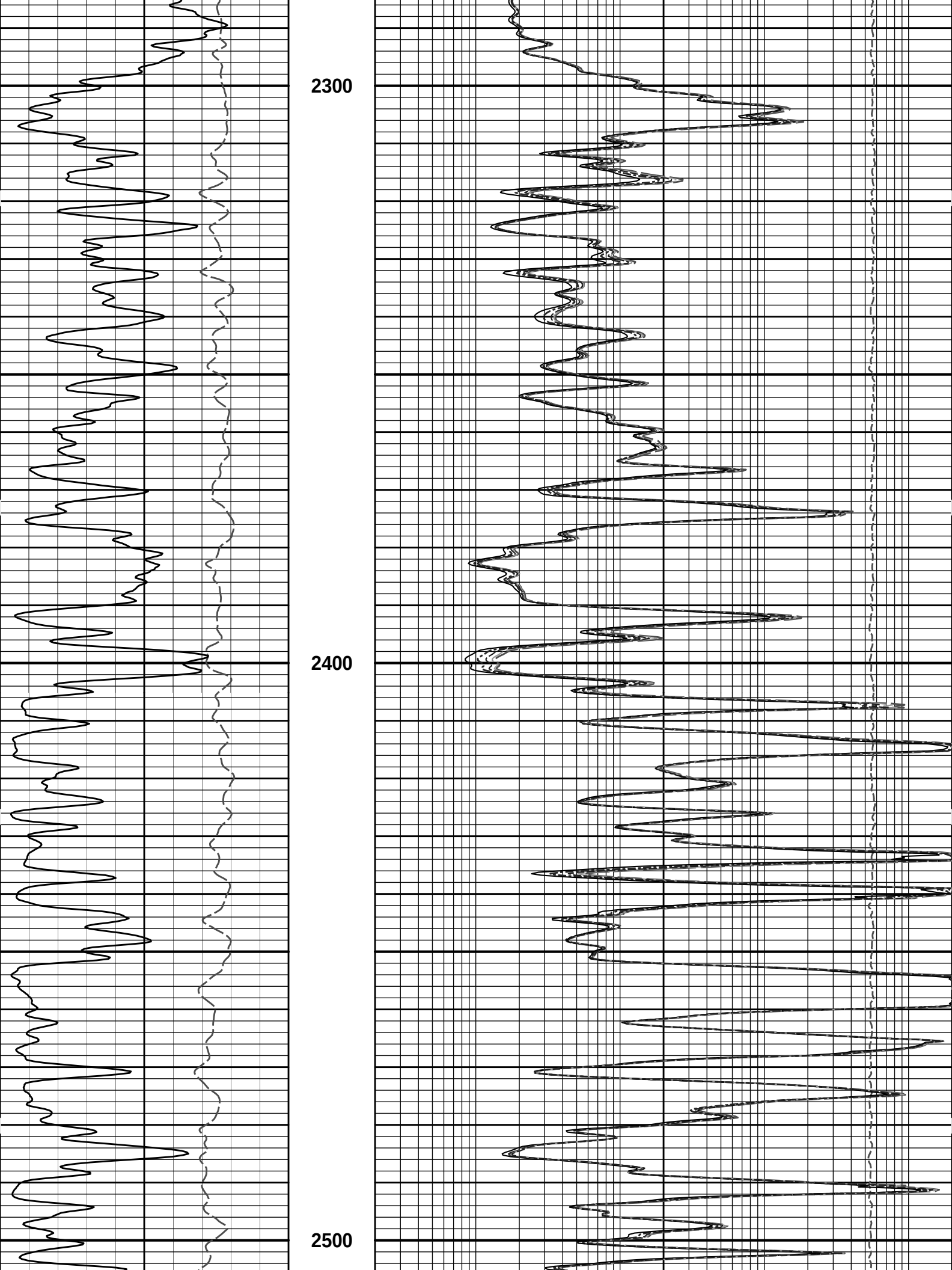
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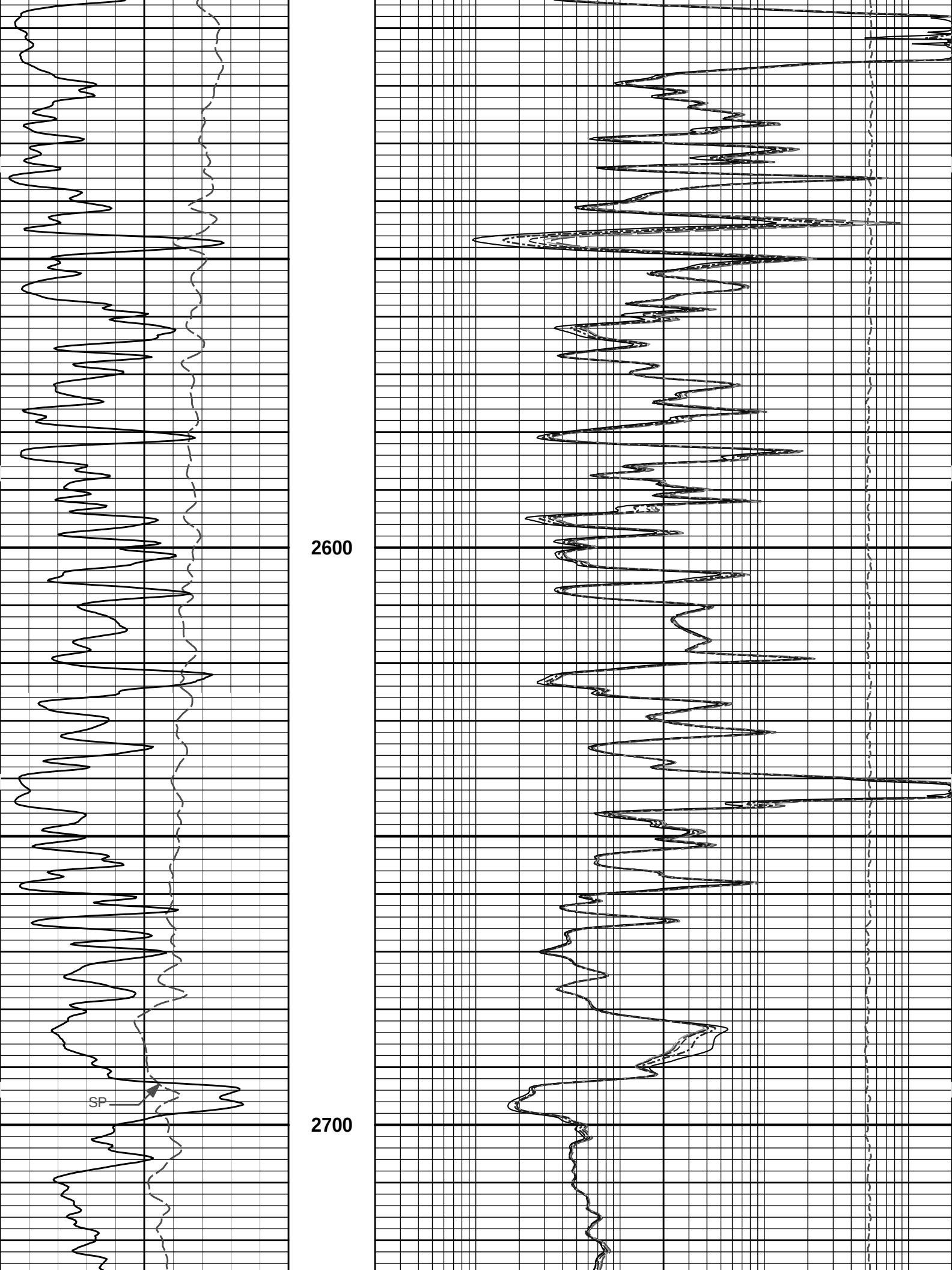
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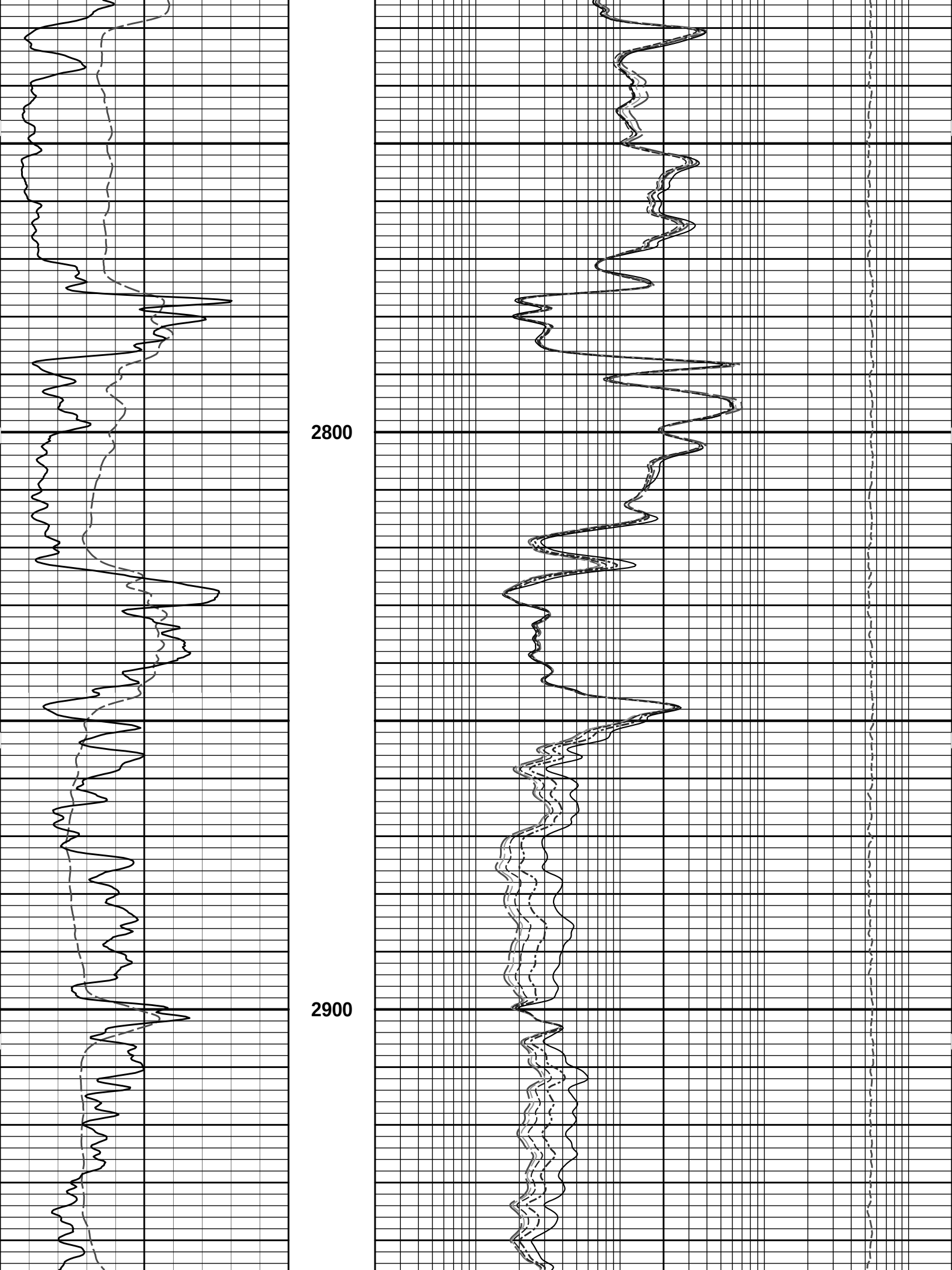
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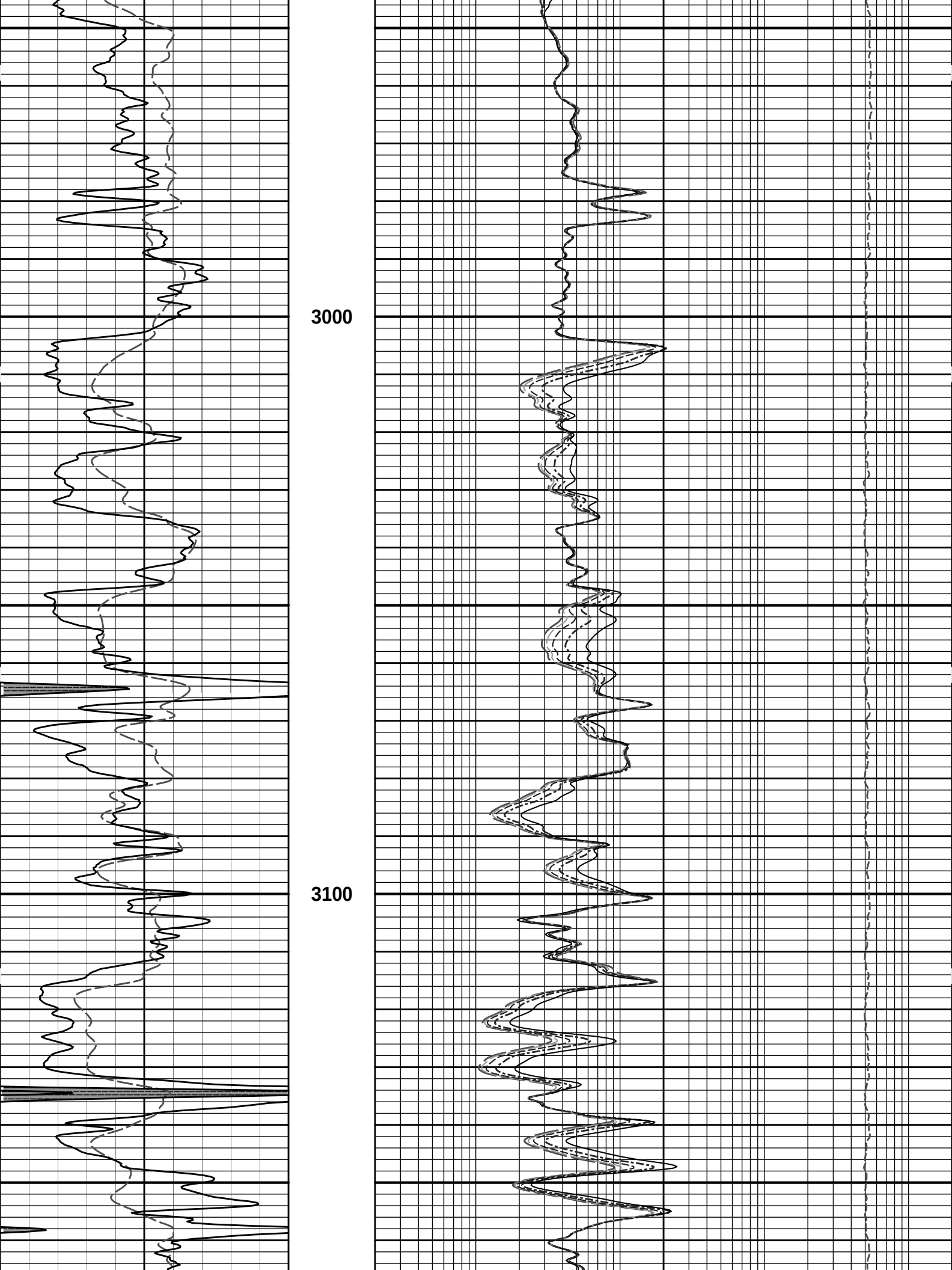
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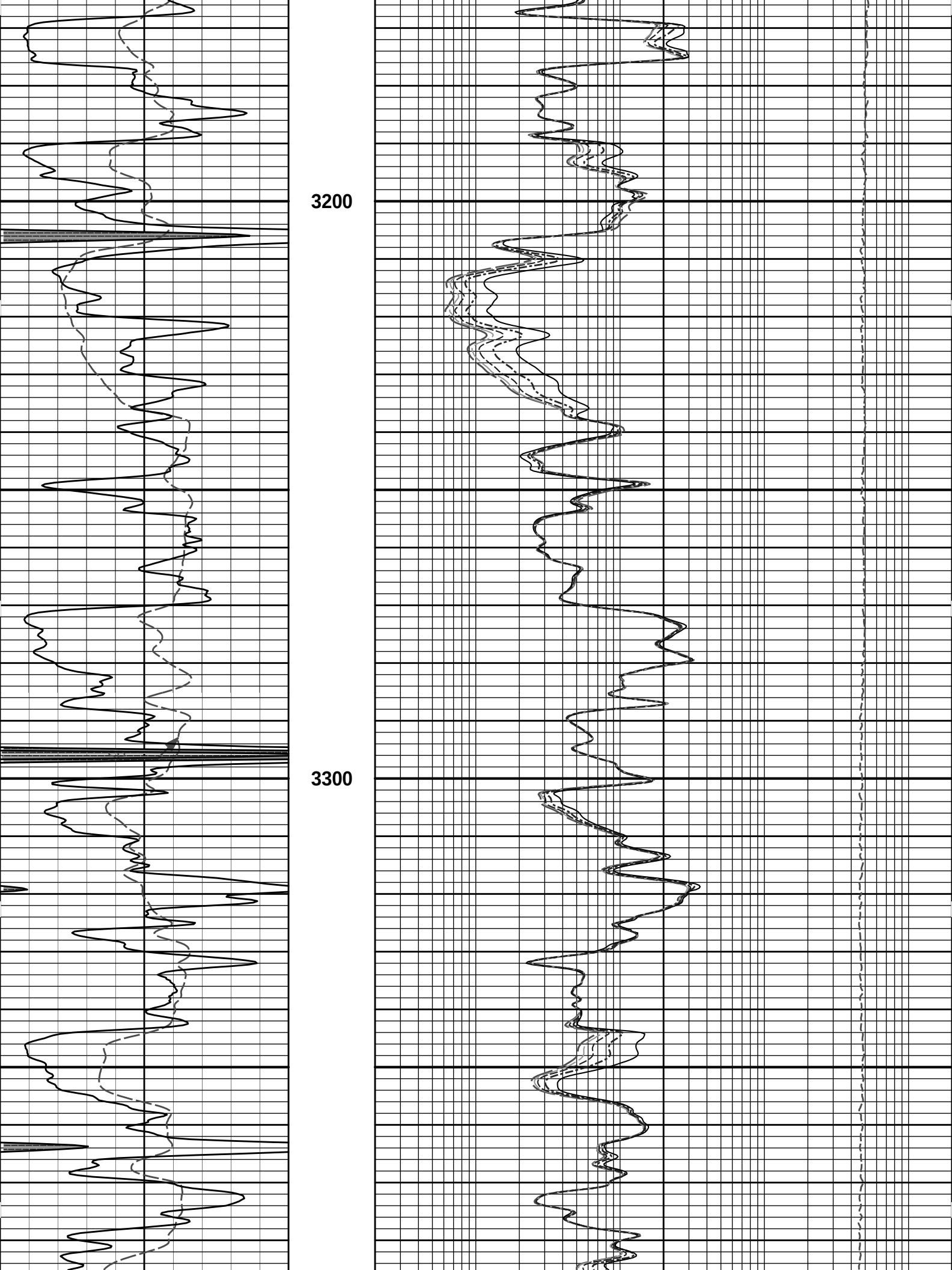
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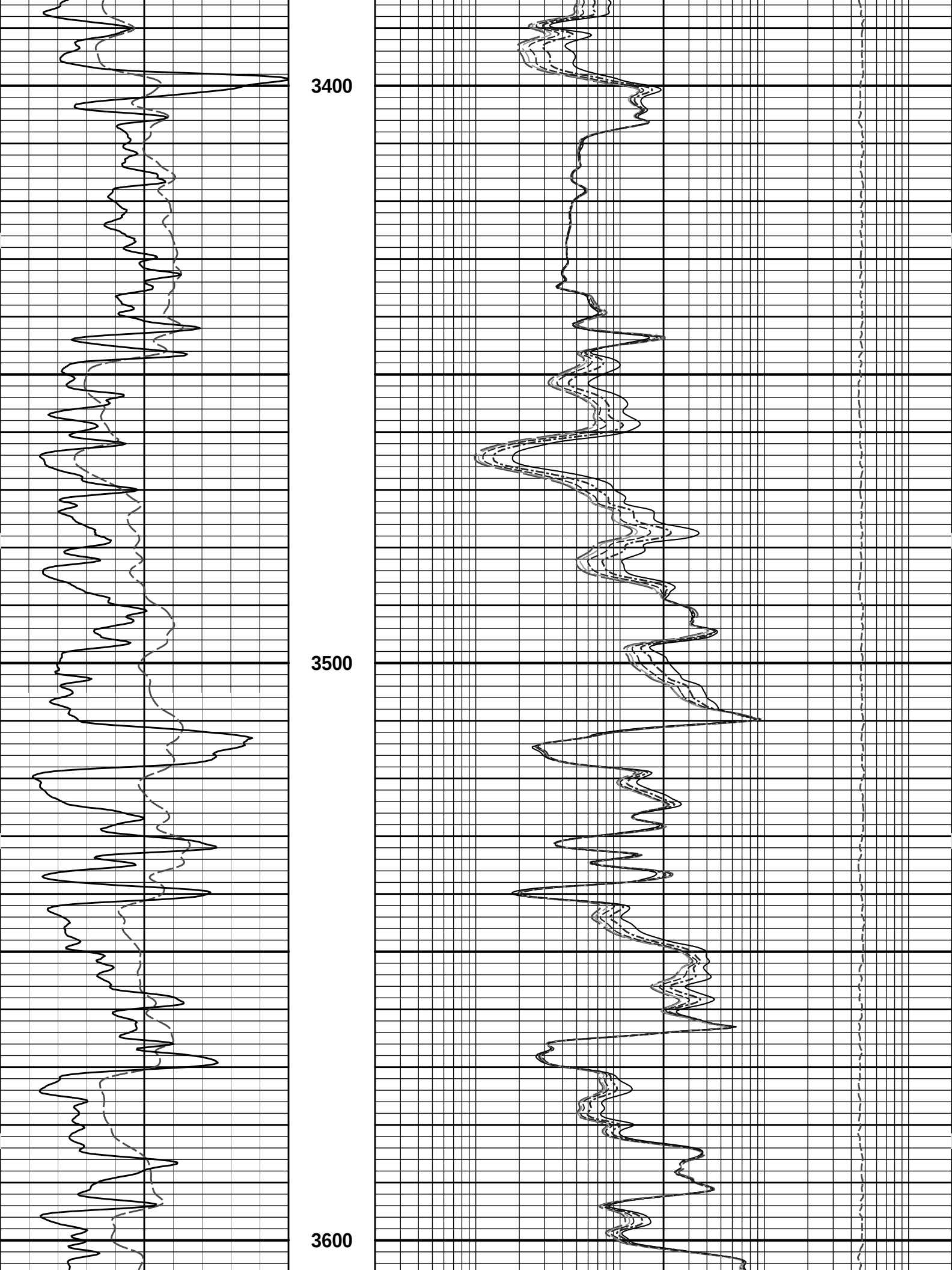
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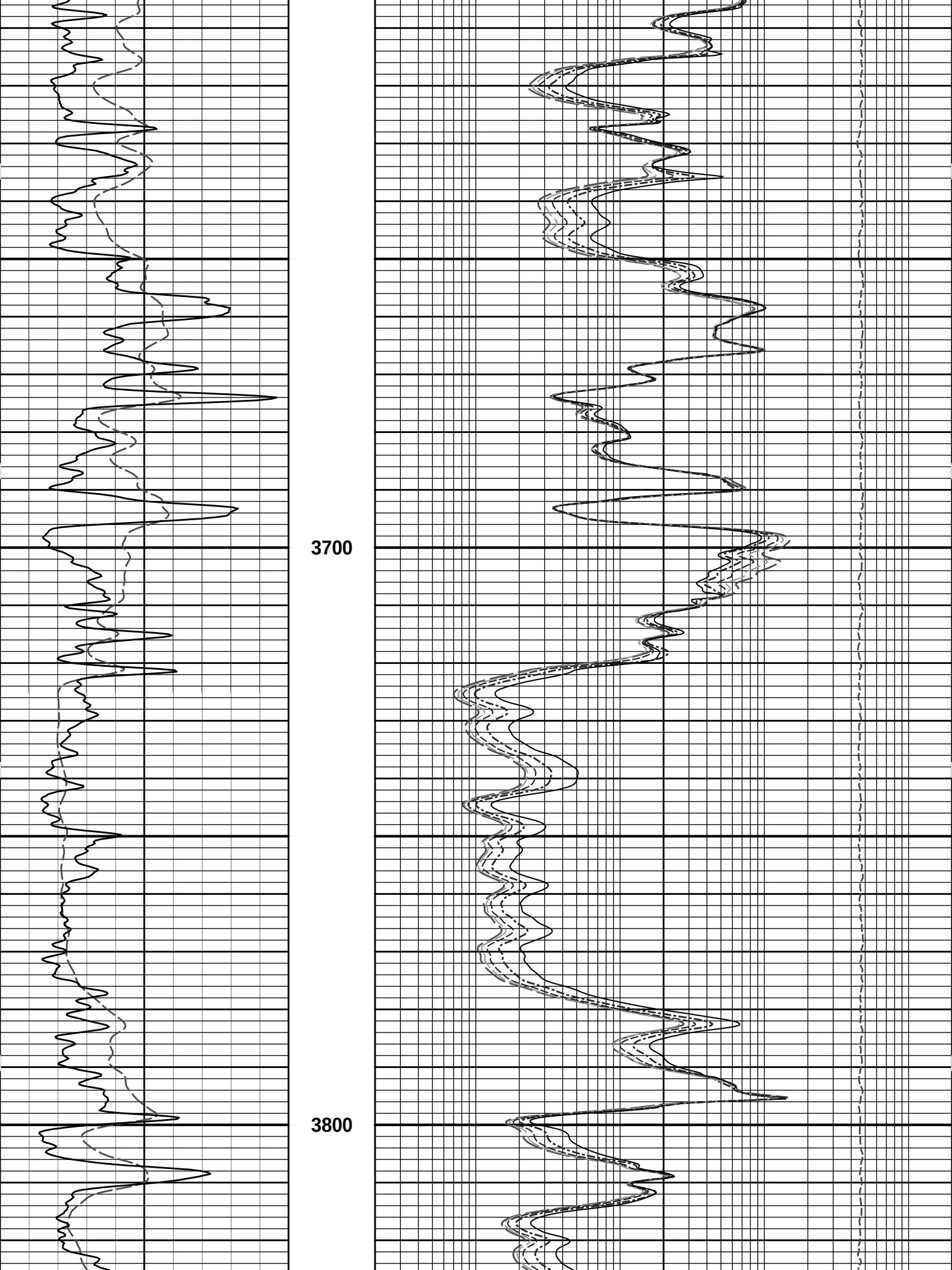
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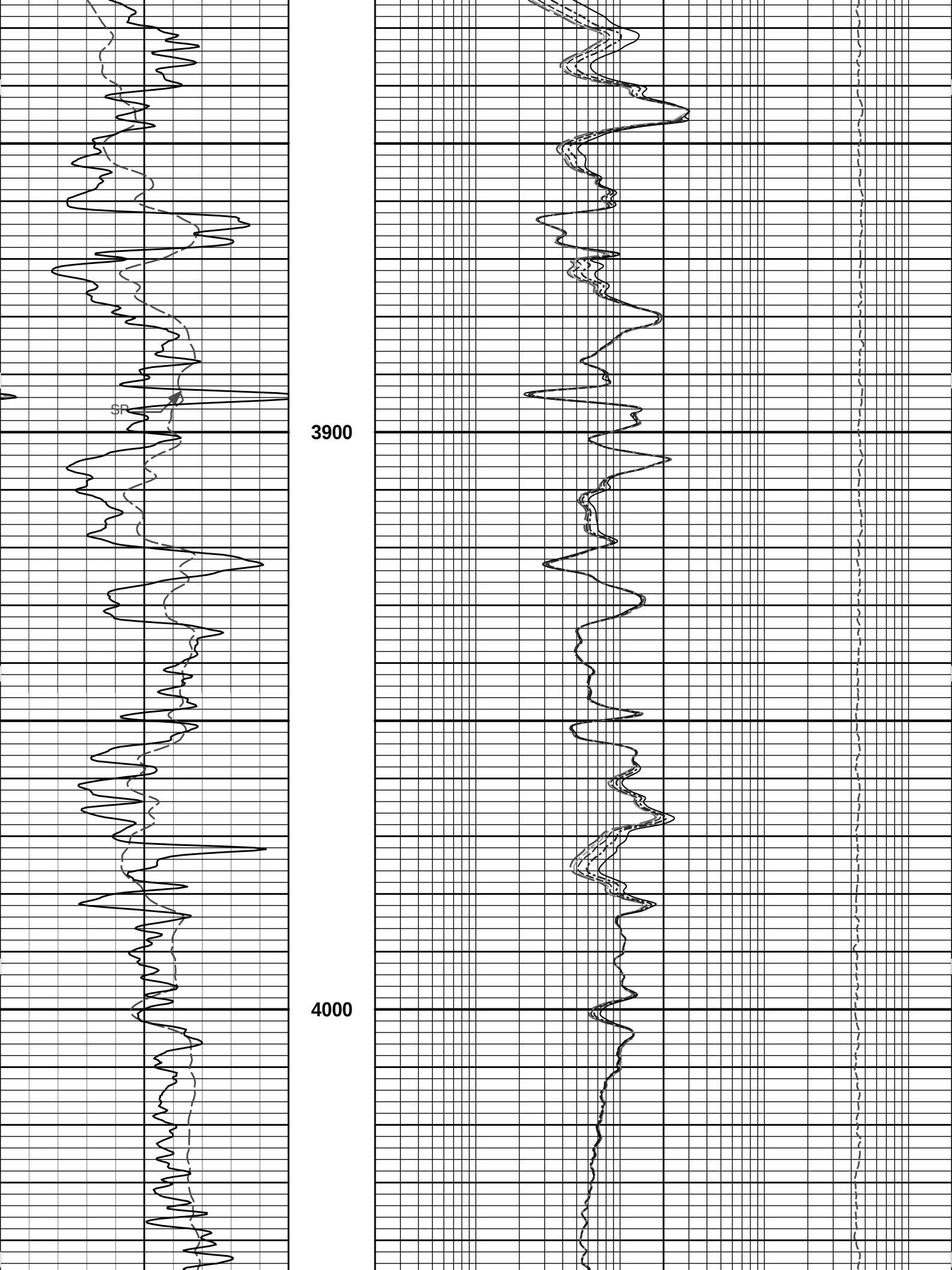
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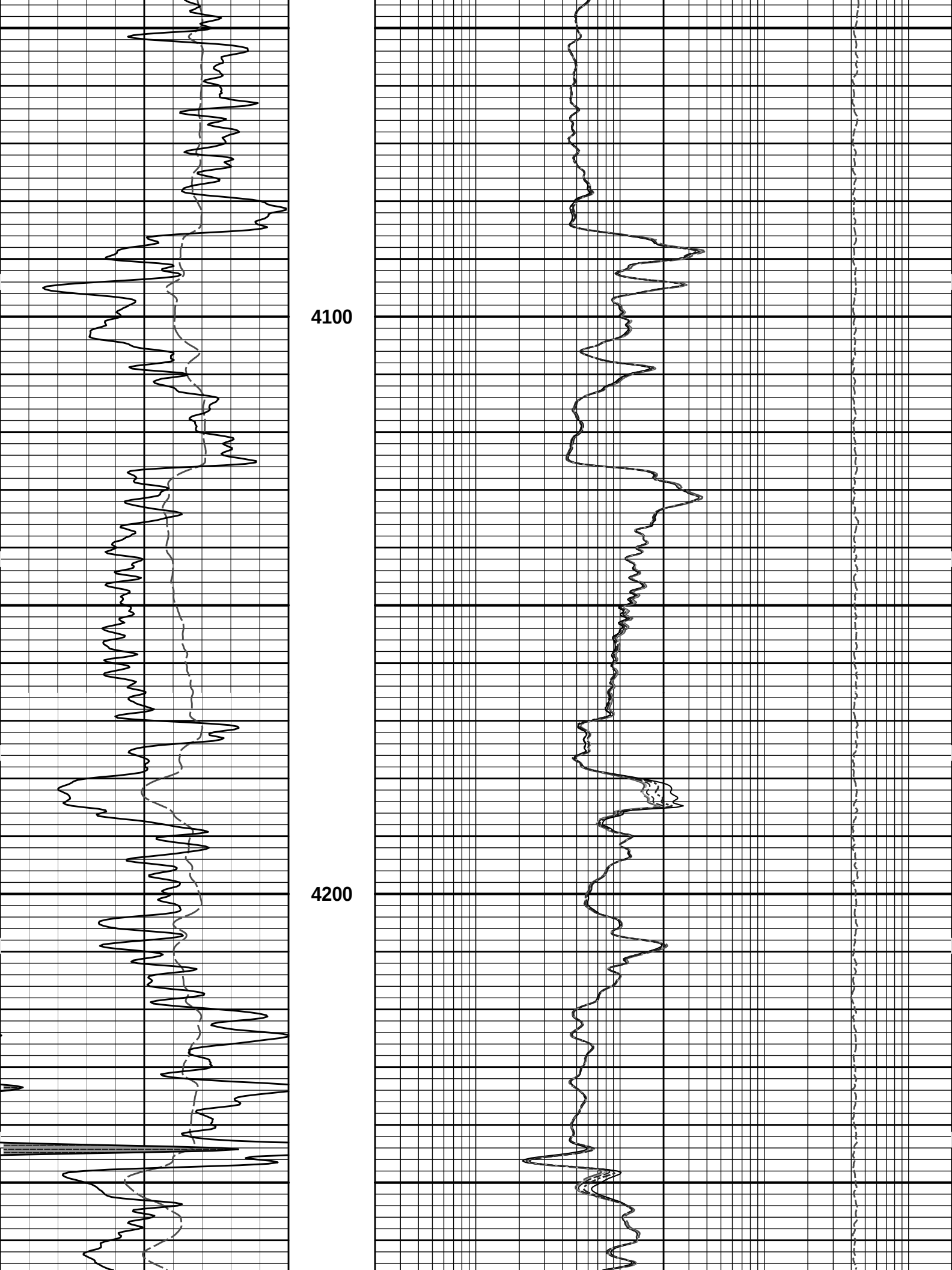
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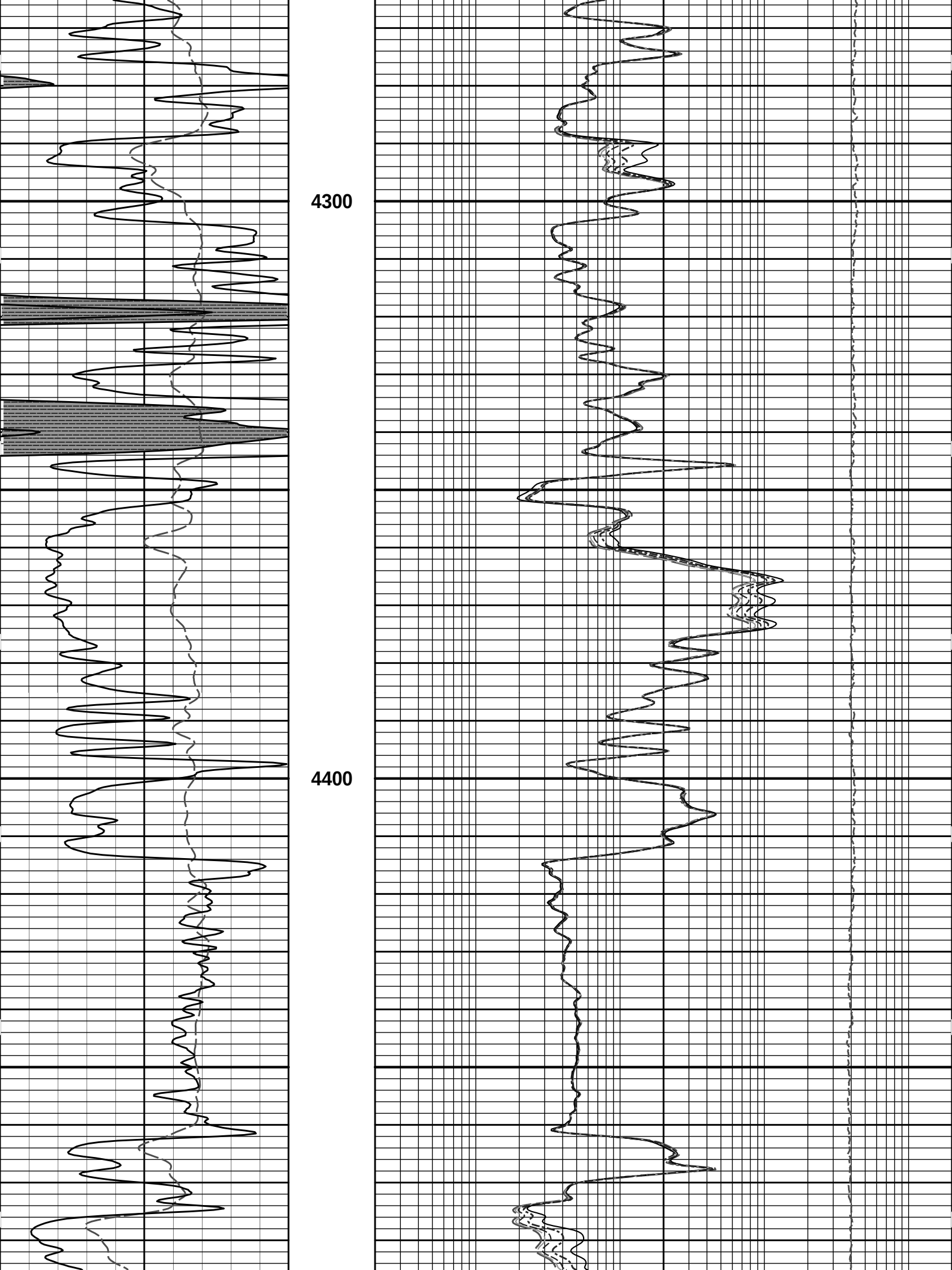
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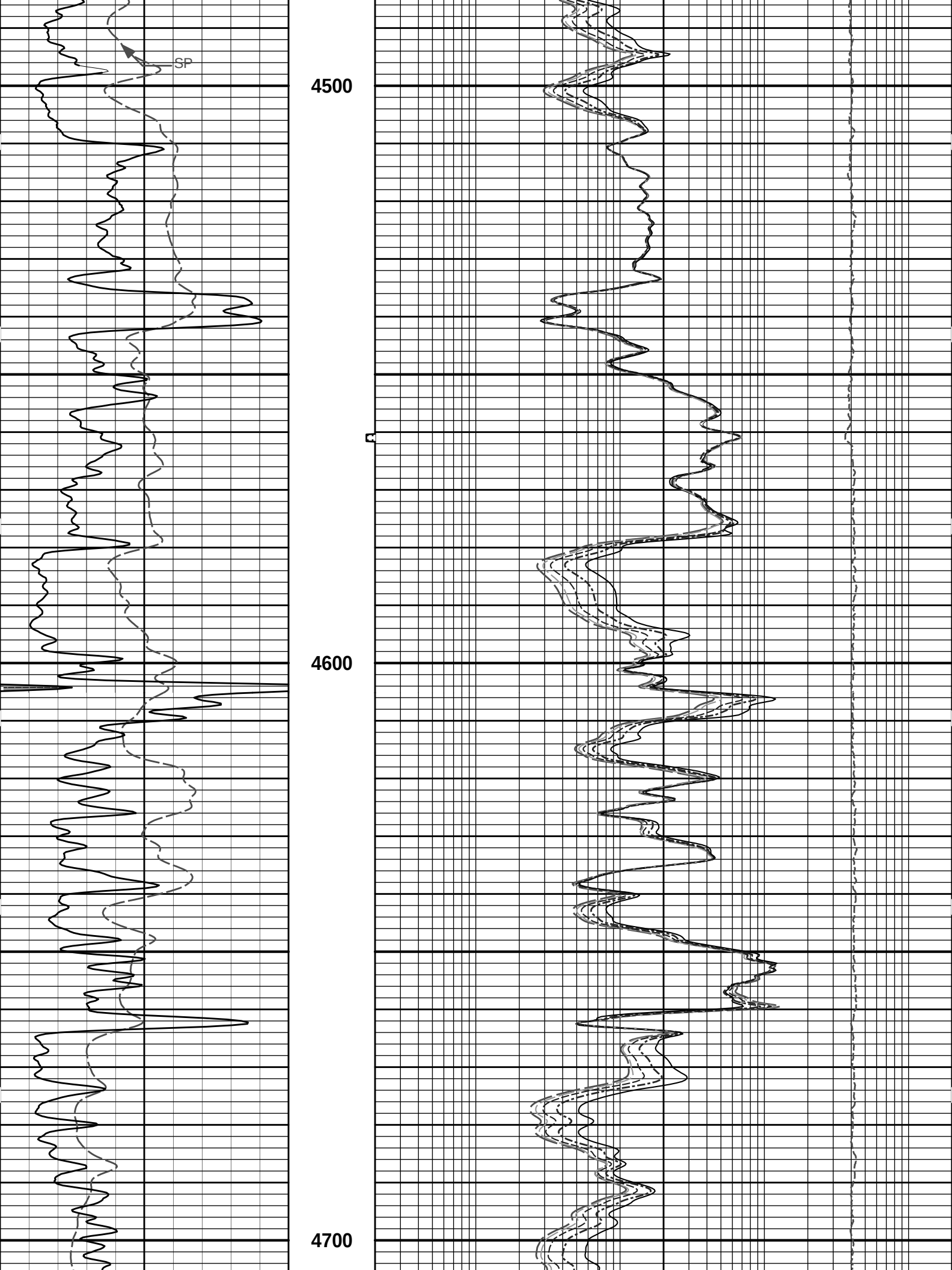
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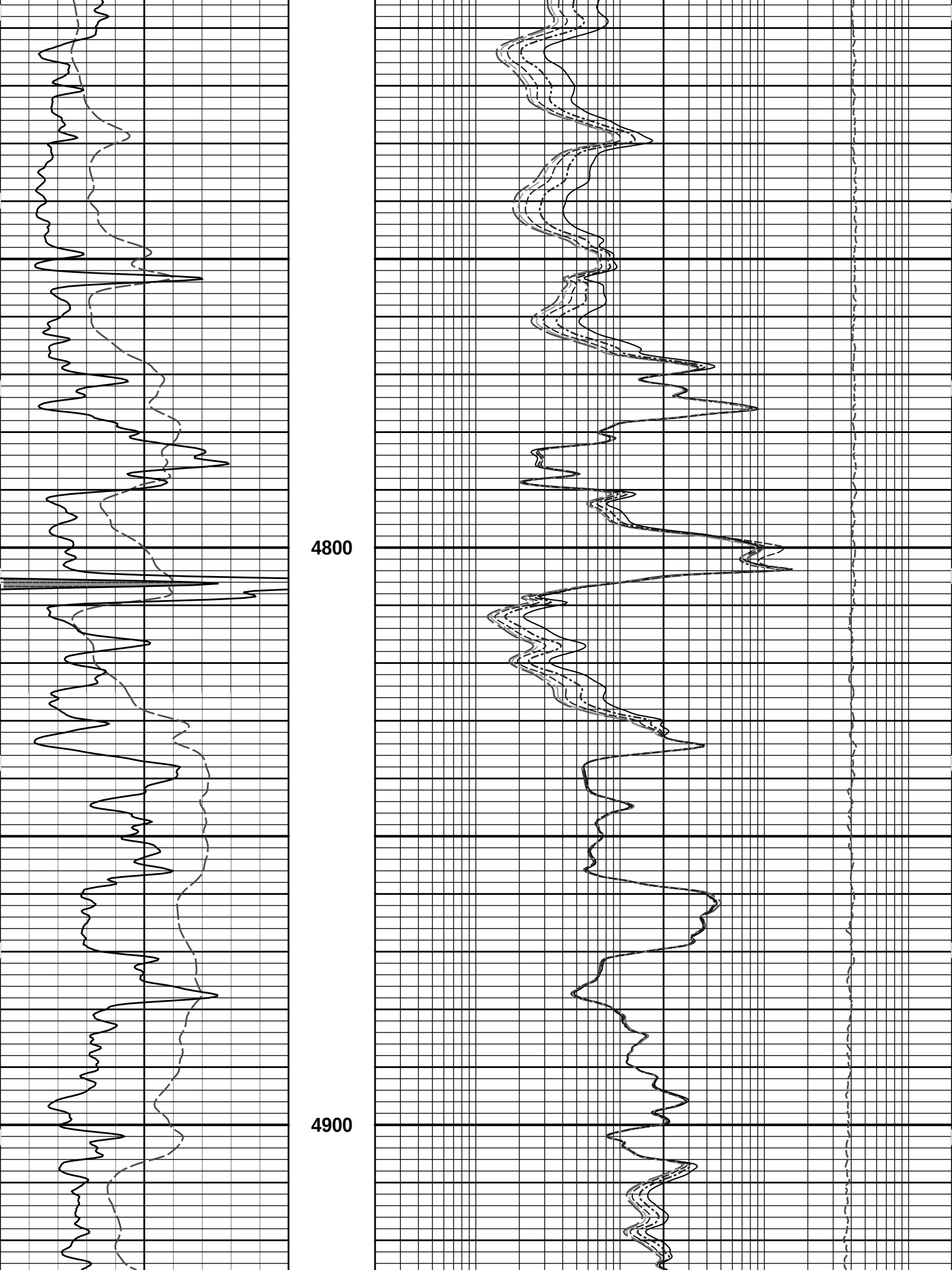
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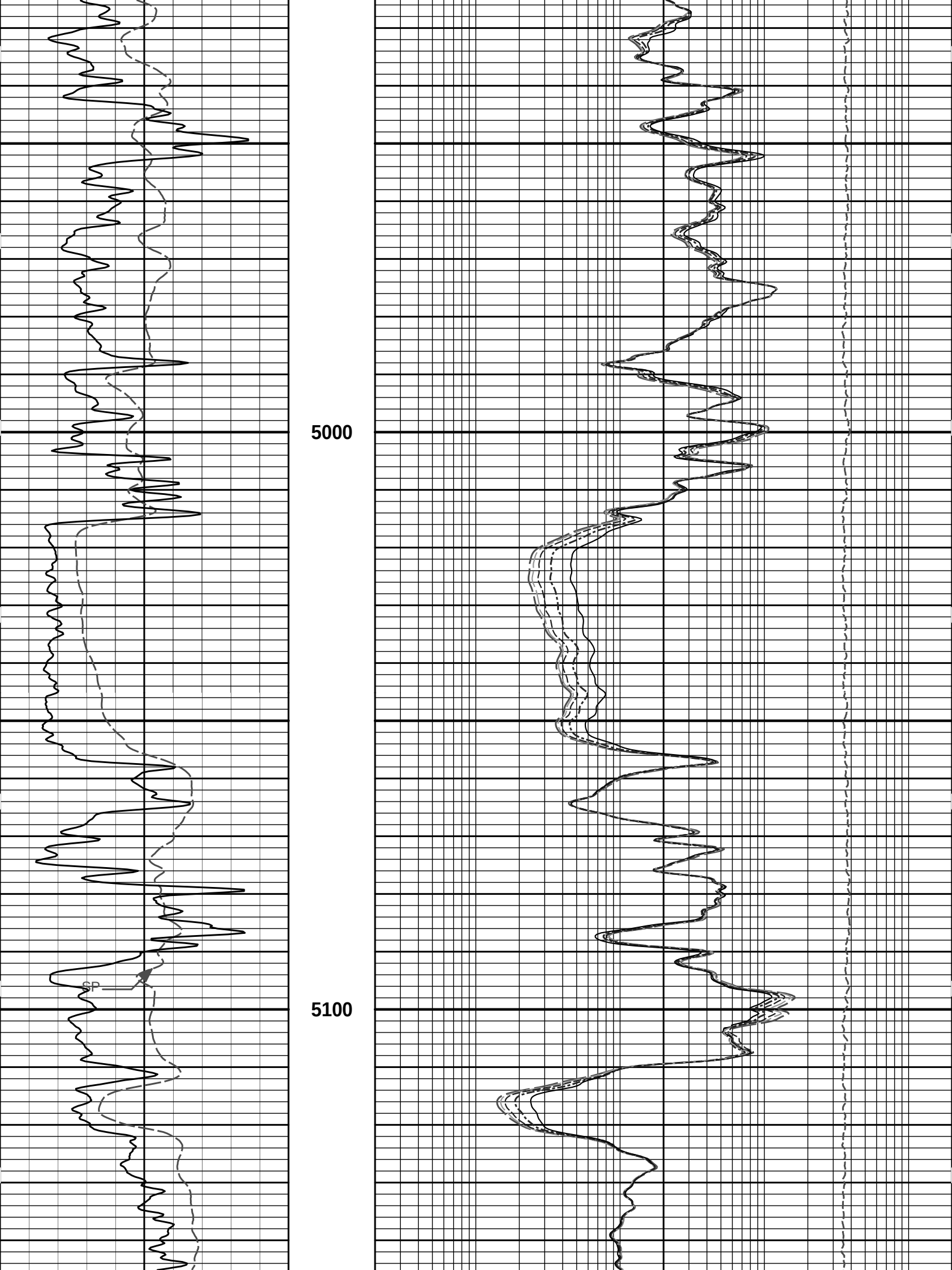
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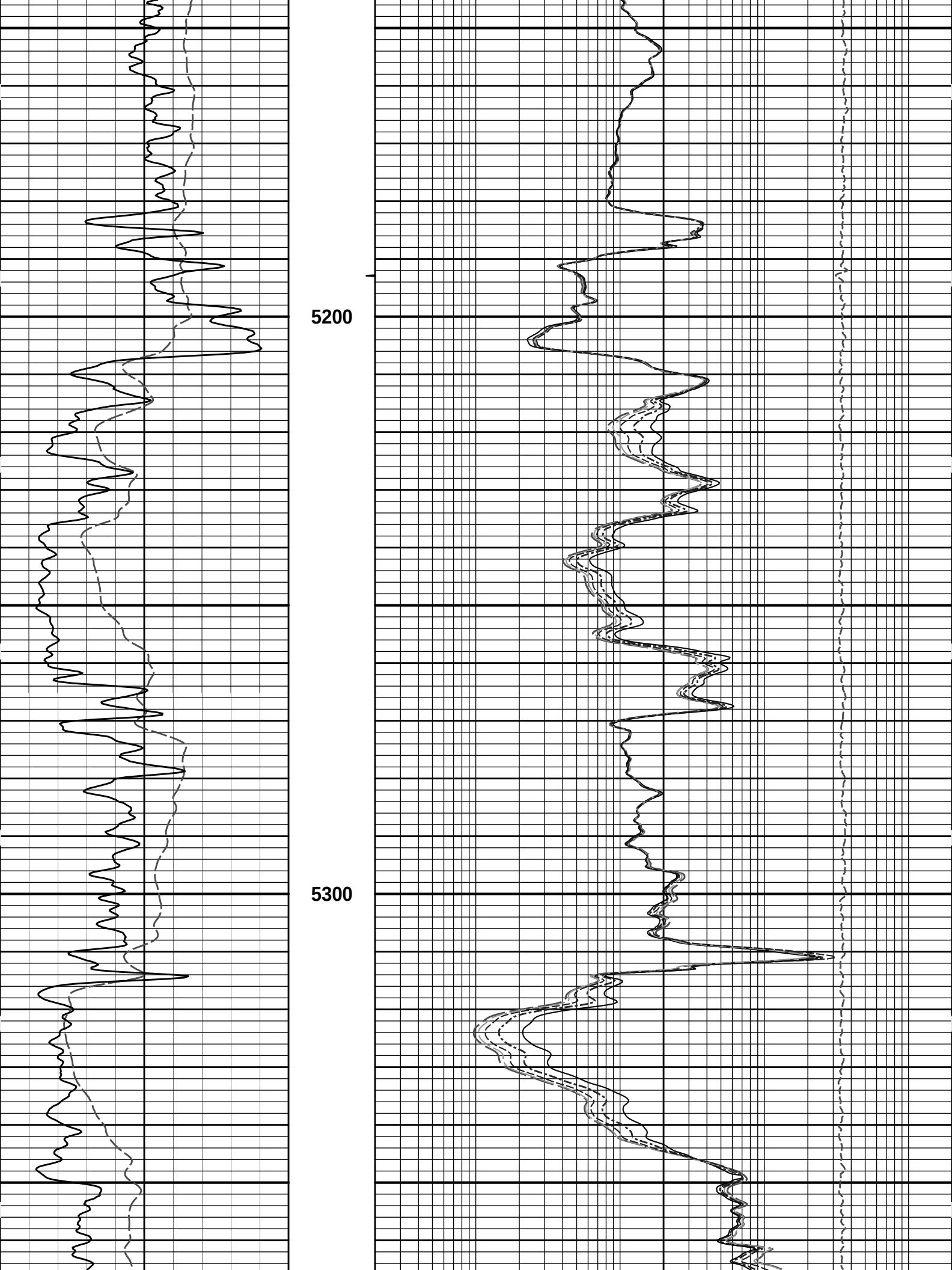
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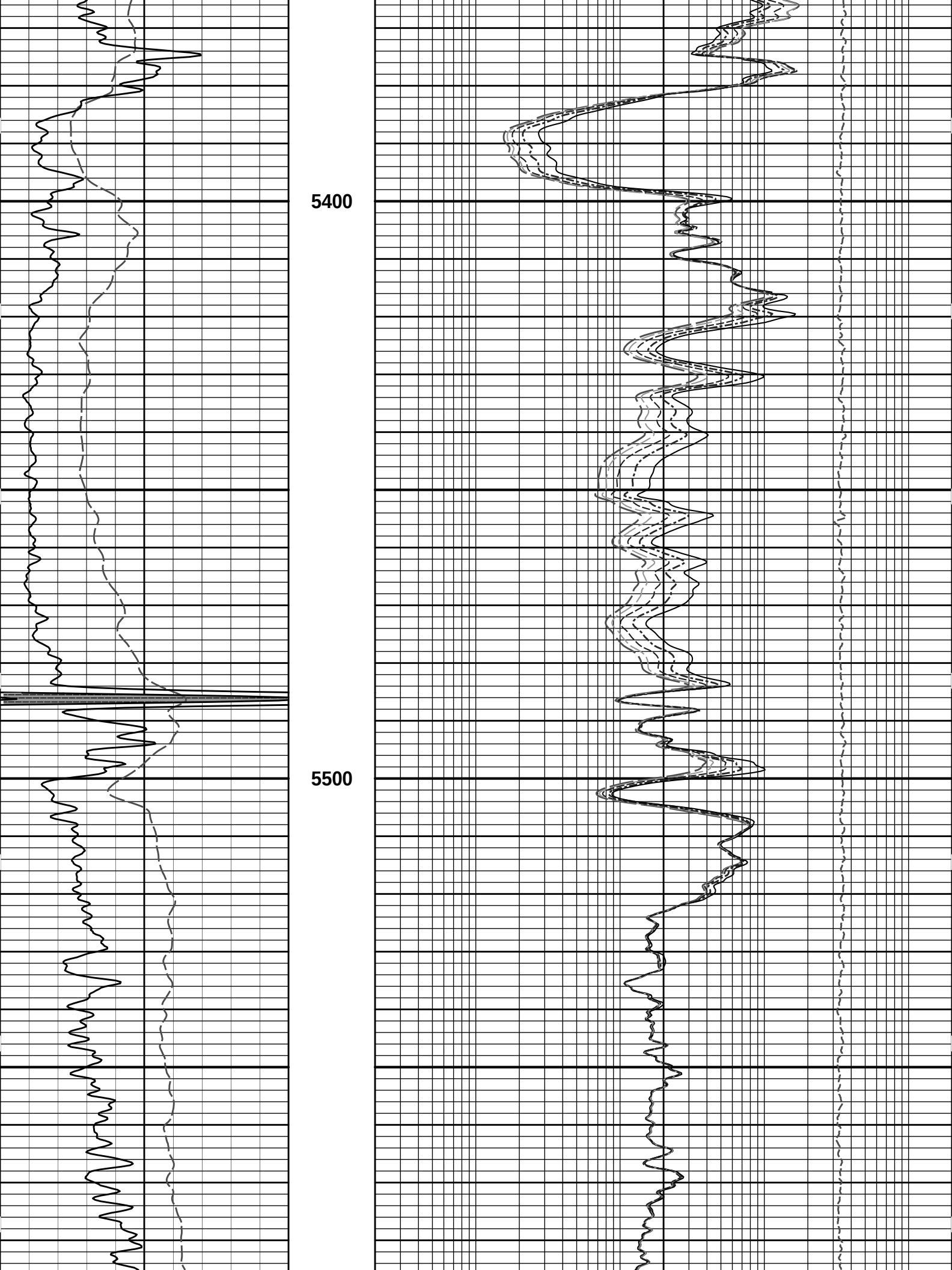
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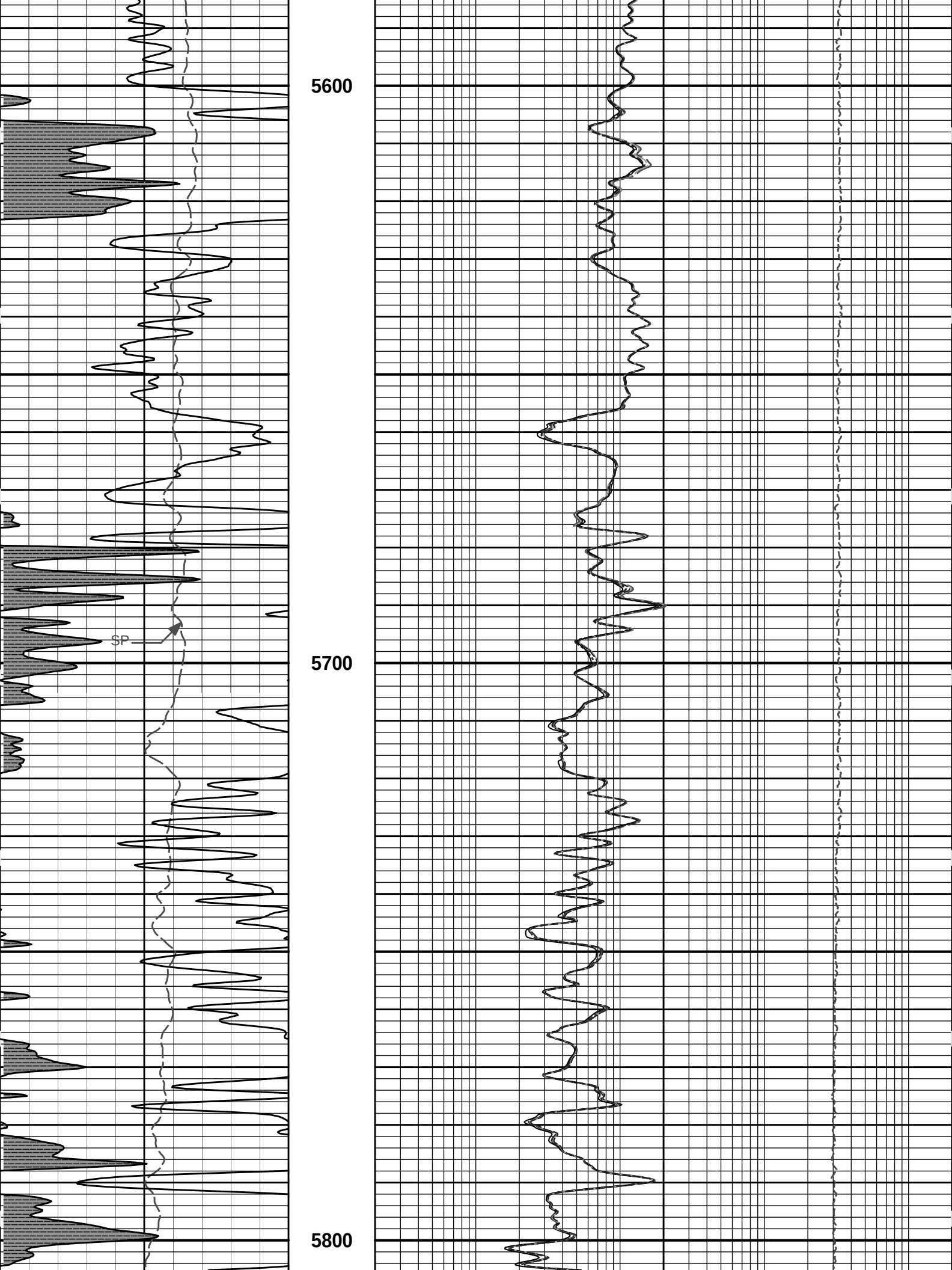
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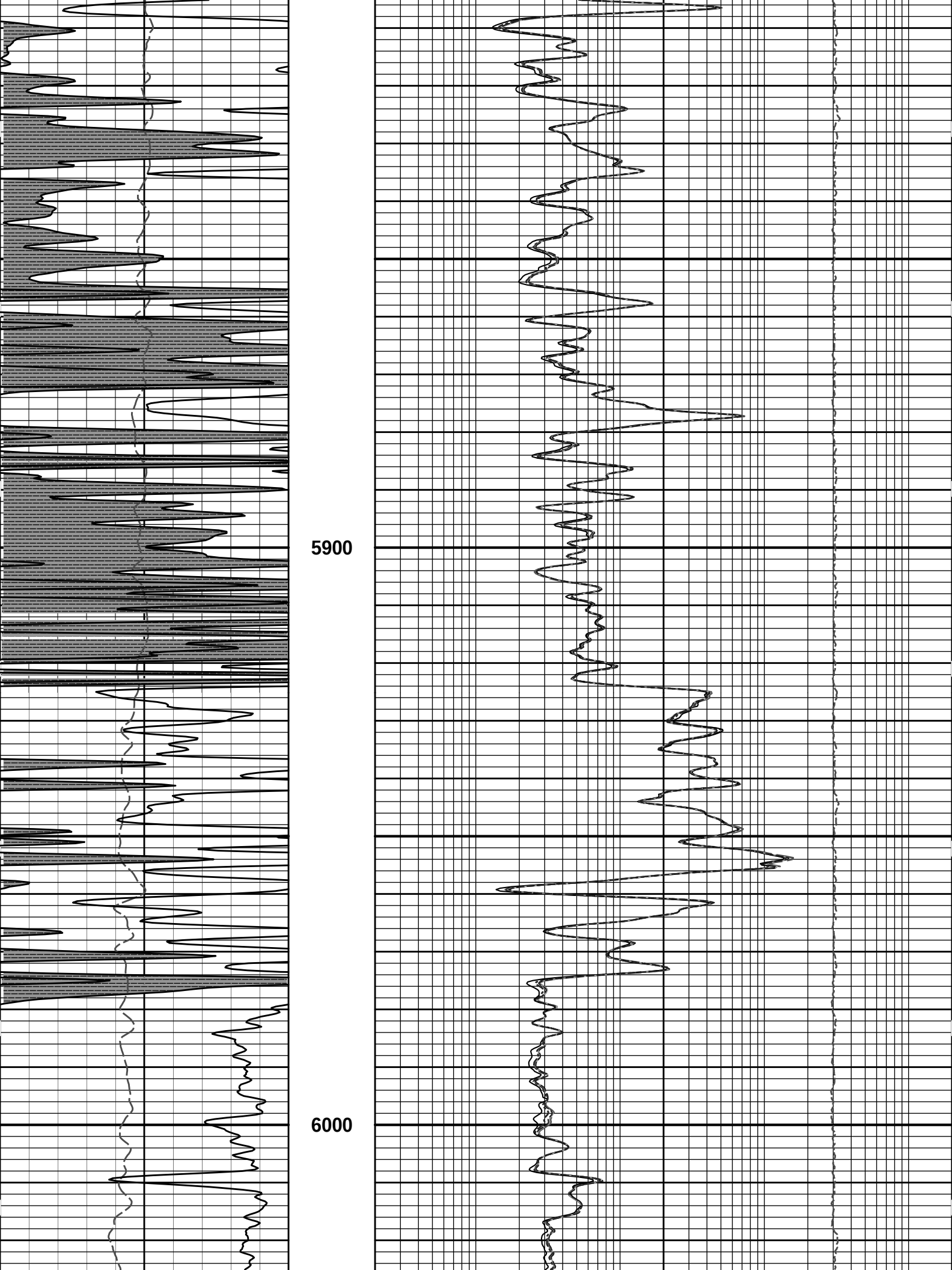
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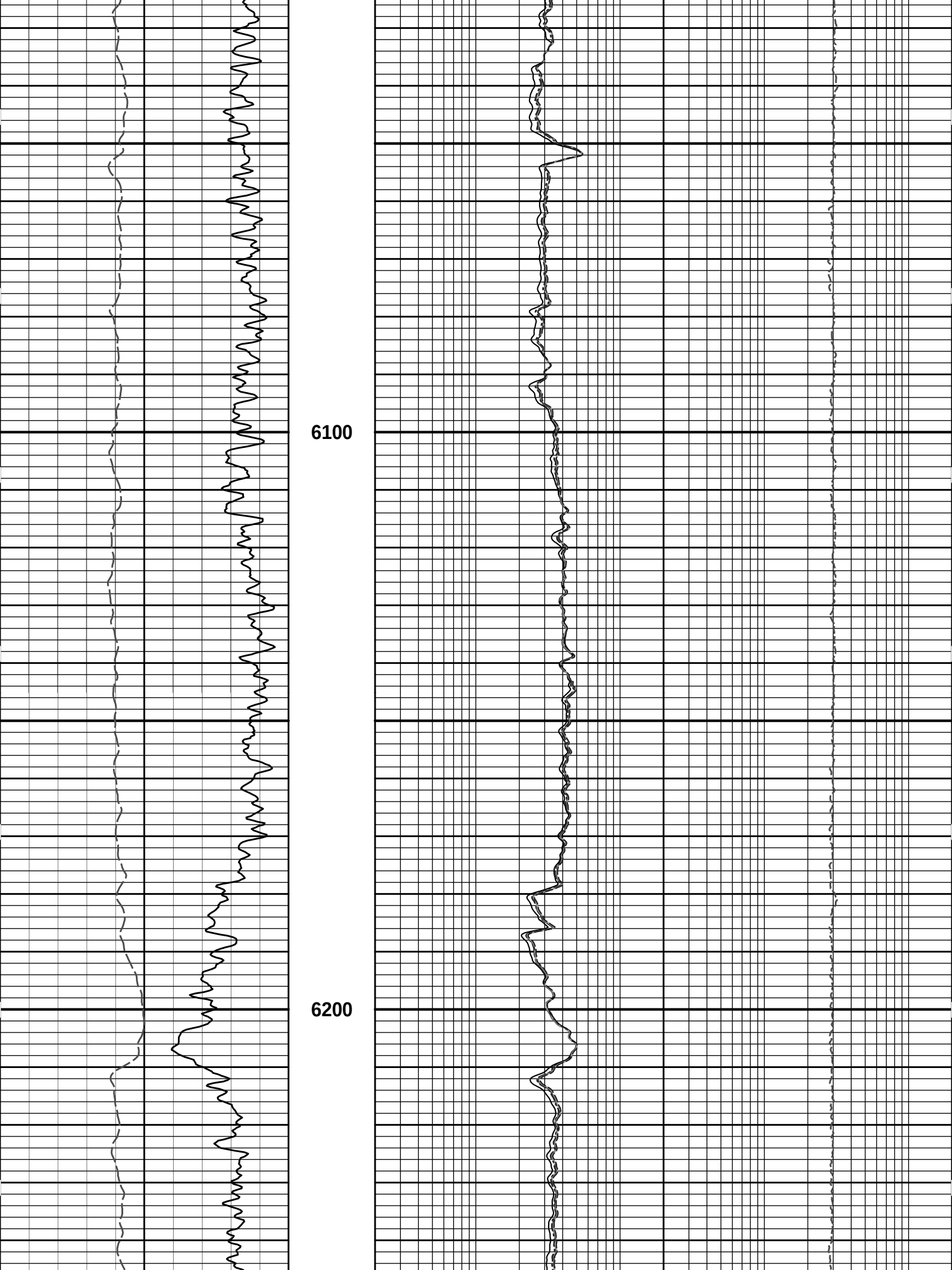
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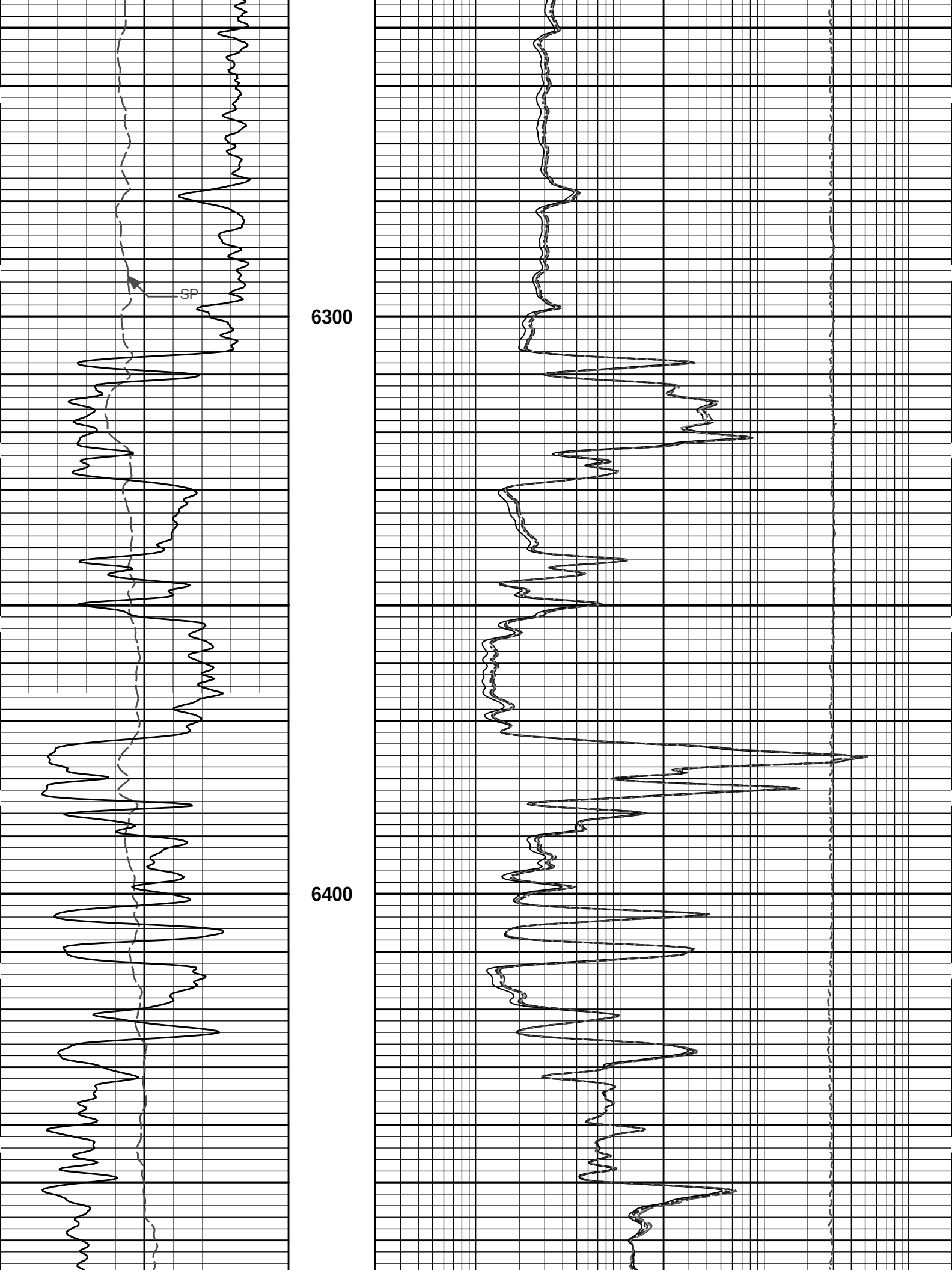
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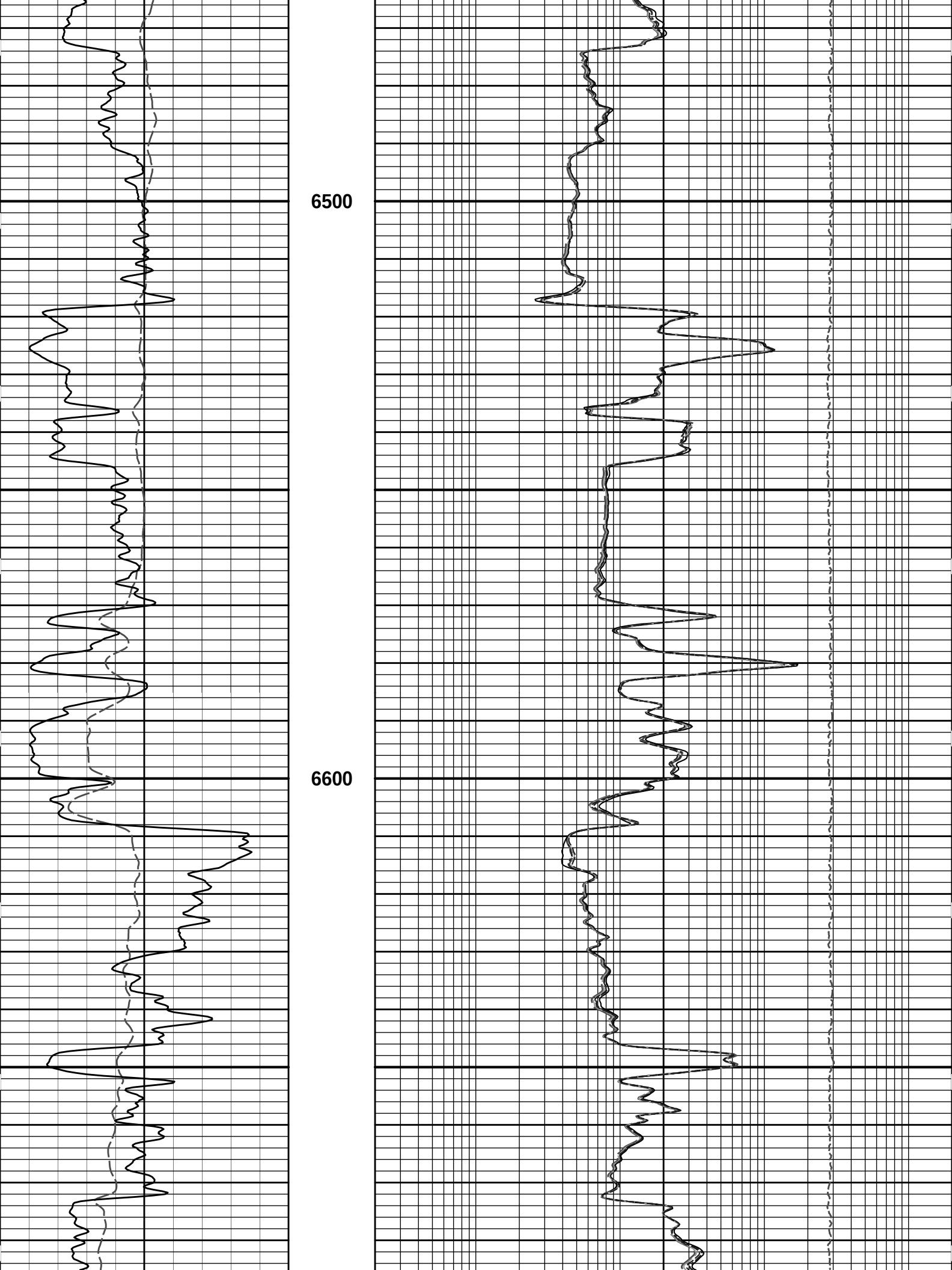
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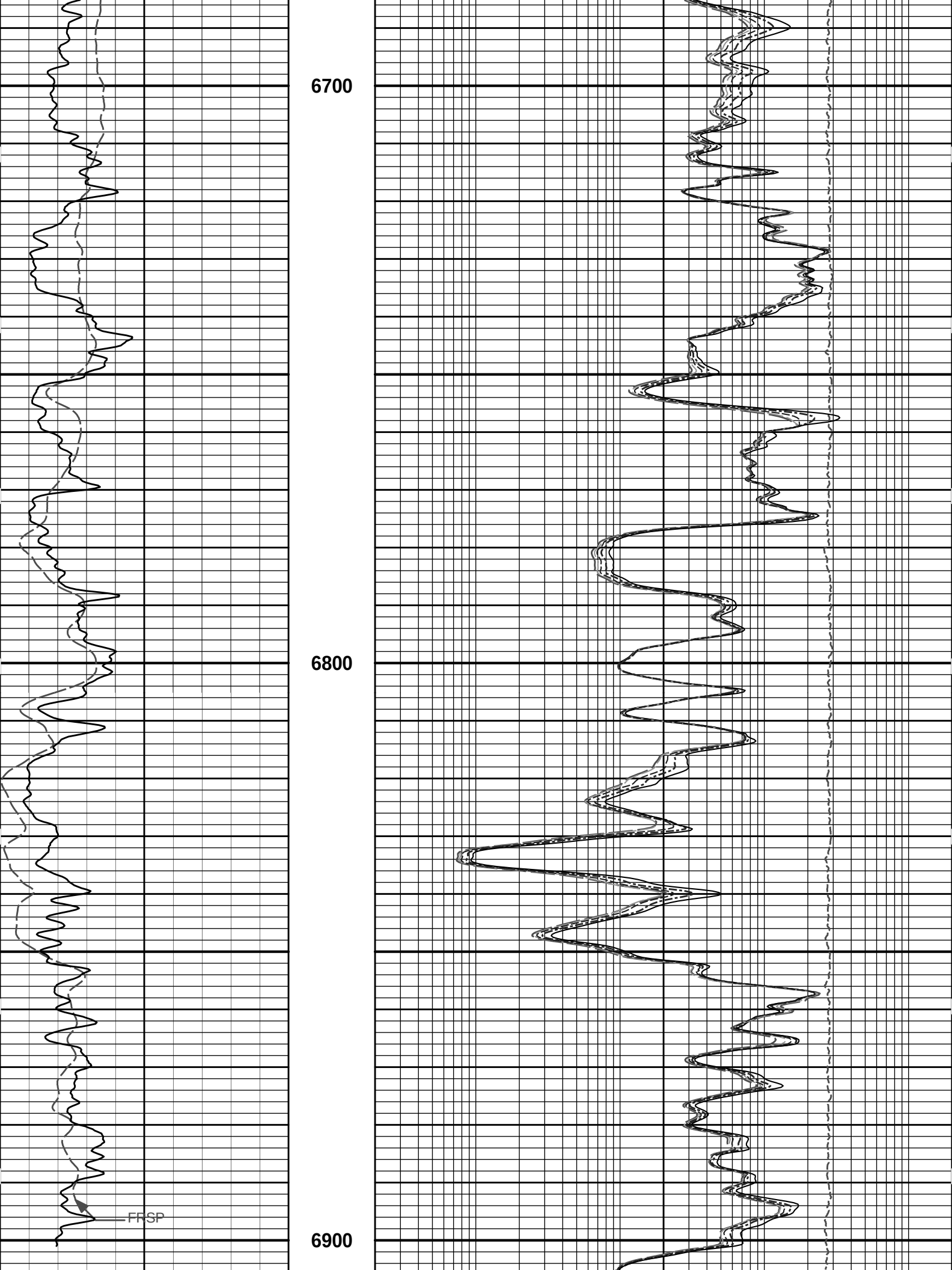
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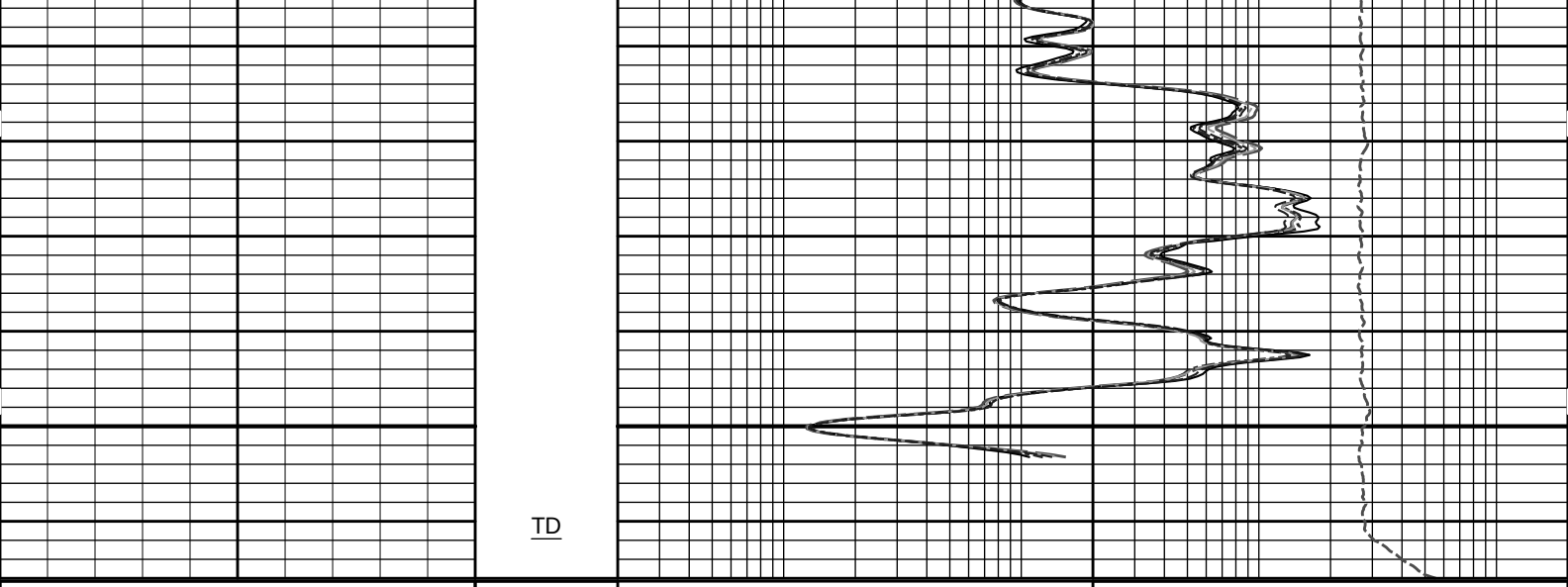


SP
-]20[+
0 Gamma API 150
api

MD
1 : 240
ft
Tension Pull
10 0

10K Tension 0
pounds

0.2 10in Resistivity 2ft Res 2000
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
0.2 90in Resistivity 2ft Res 2000
ohmm

SHALE

Tension Pull

HALLIBURTON

Plot Time: 04-Oct-12 07:34:18
Plot Range: 1800 ft to 6966 ft
Data: WIGGAINS_12_10\Well Based\CASING\
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

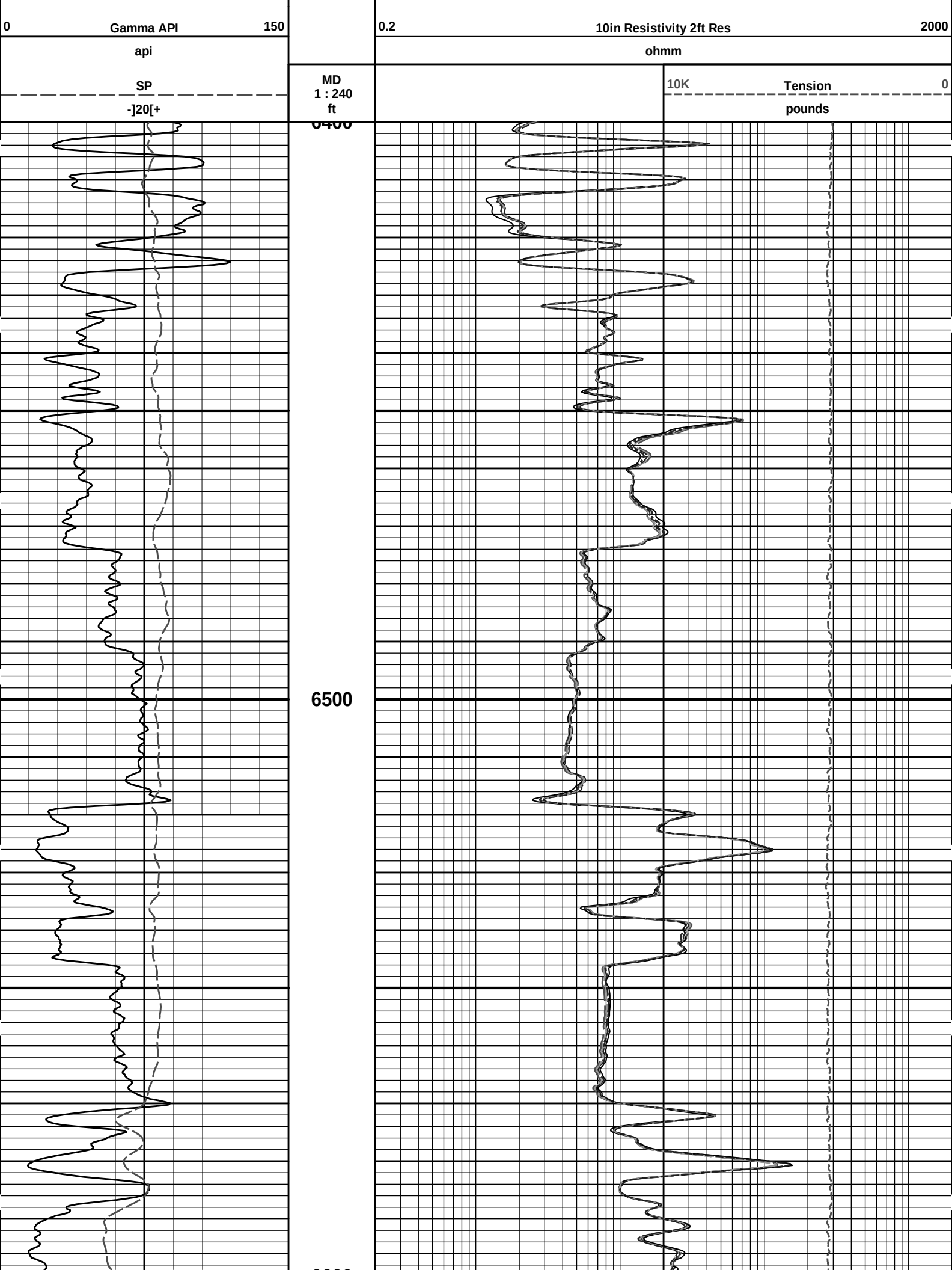
HALLIBURTON

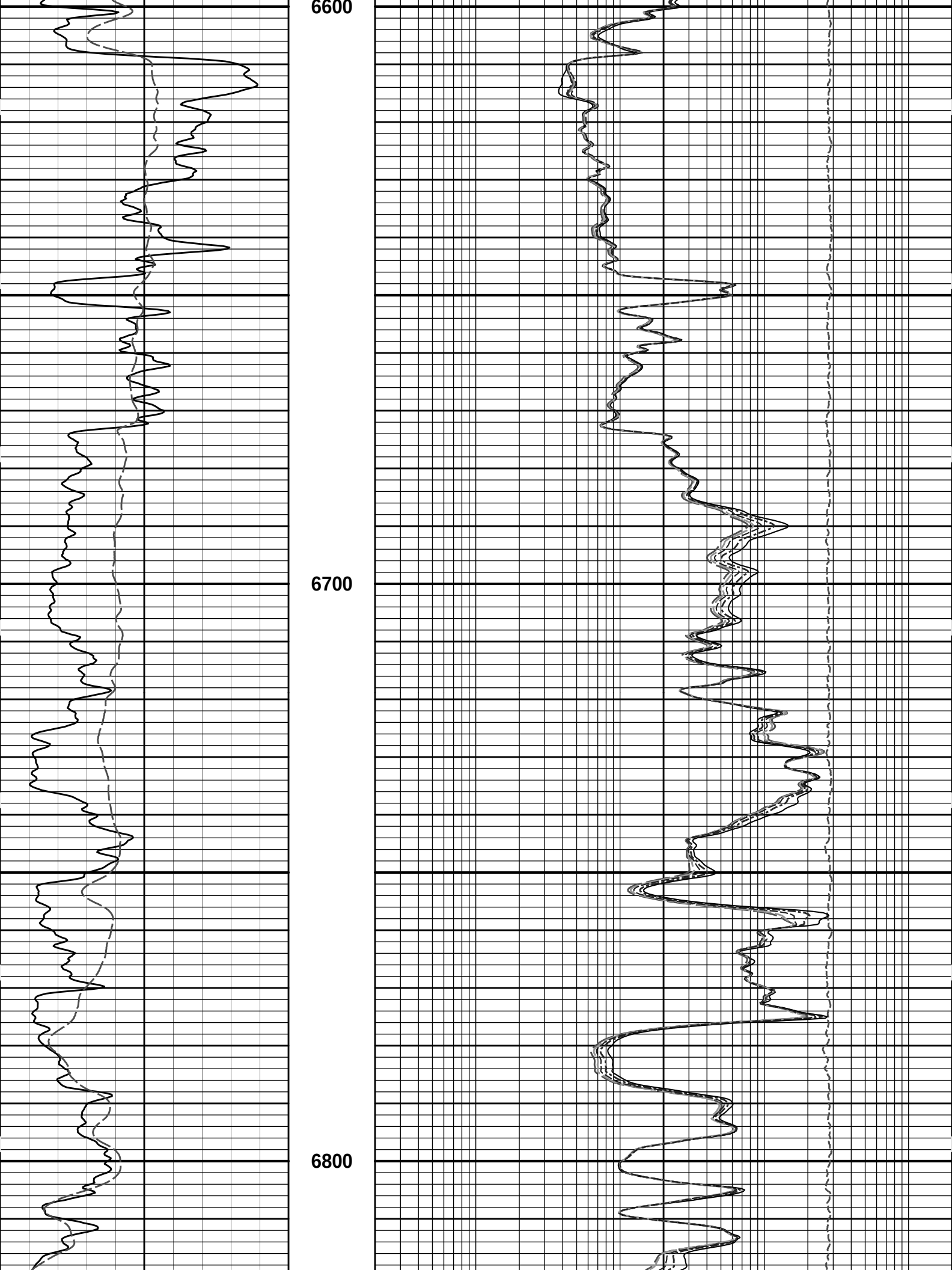
Plot Time: 04-Oct-12 07:34:18
Plot Range: 6400 ft to 6965.67 ft
Data: WIGGAINS_12_10\Well Based\REPEAT\
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

0.2 90in Resistivity 2ft Res 2000
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

SHALE


0
Gamma API
150
api
SP
-]20[+
MD
1 : 240
ft
0.2
10in Resistivity 2ft Res
2000
ohmm
10K
Tension
0
pounds
6400
6500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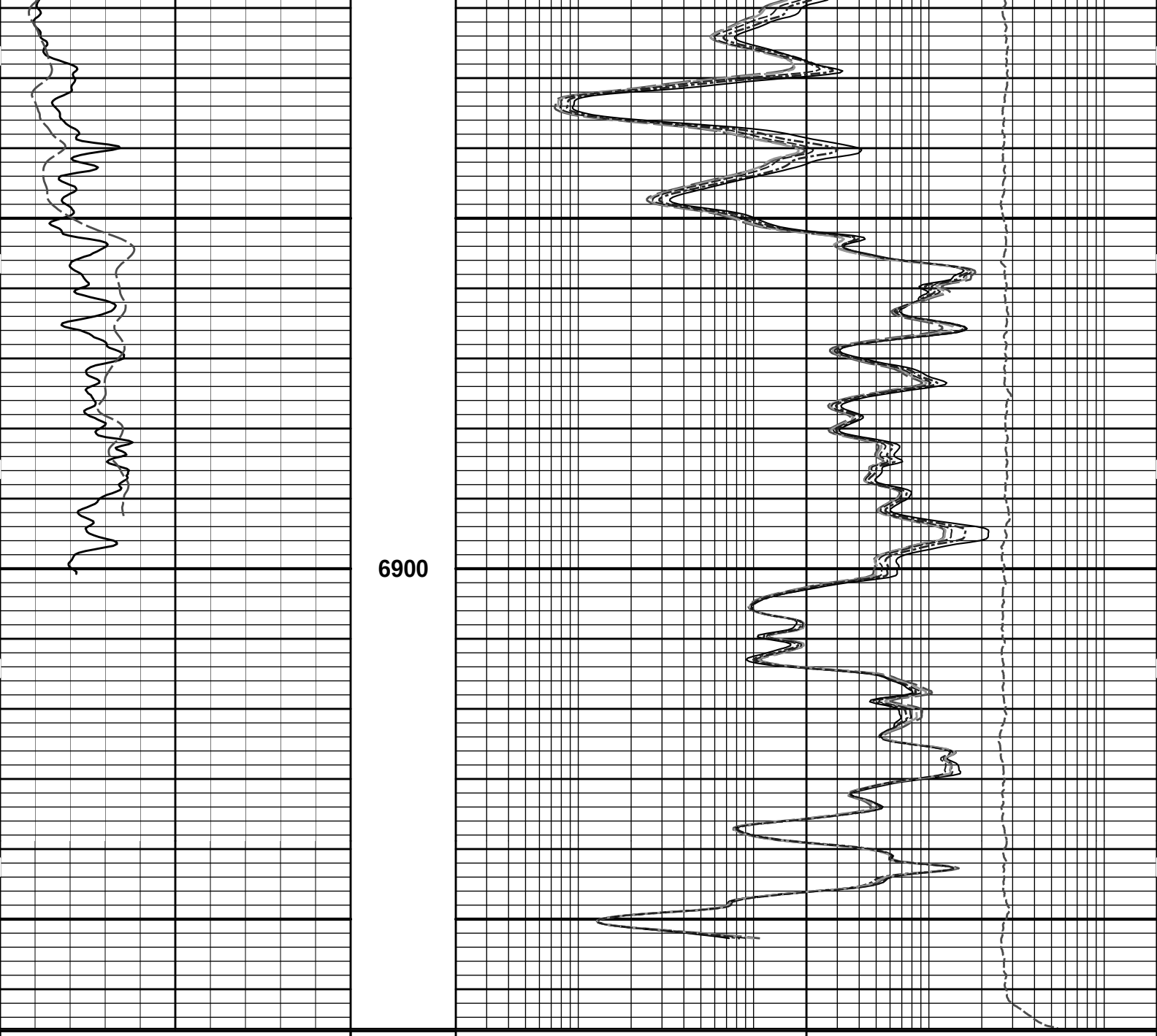


SP	MD		Tension
-]20[+	1 : 240 ft		10K 0 pounds
0 Gamma API 150		0.2 10in Resistivity 2ft Res 2000	
api		ohmm	
SHALE		0.2 20in Resistivity 2ft Res 2000	
		ohmm	
		0.2 30in Resistivity 2ft Res 2000	
		ohm-metre	
		0.2 60in Resistivity 2ft Res 2000	
		ohmm	
		0.2 90in Resistivity 2ft Res 2000	
		ohmm	

HALLIBURTON

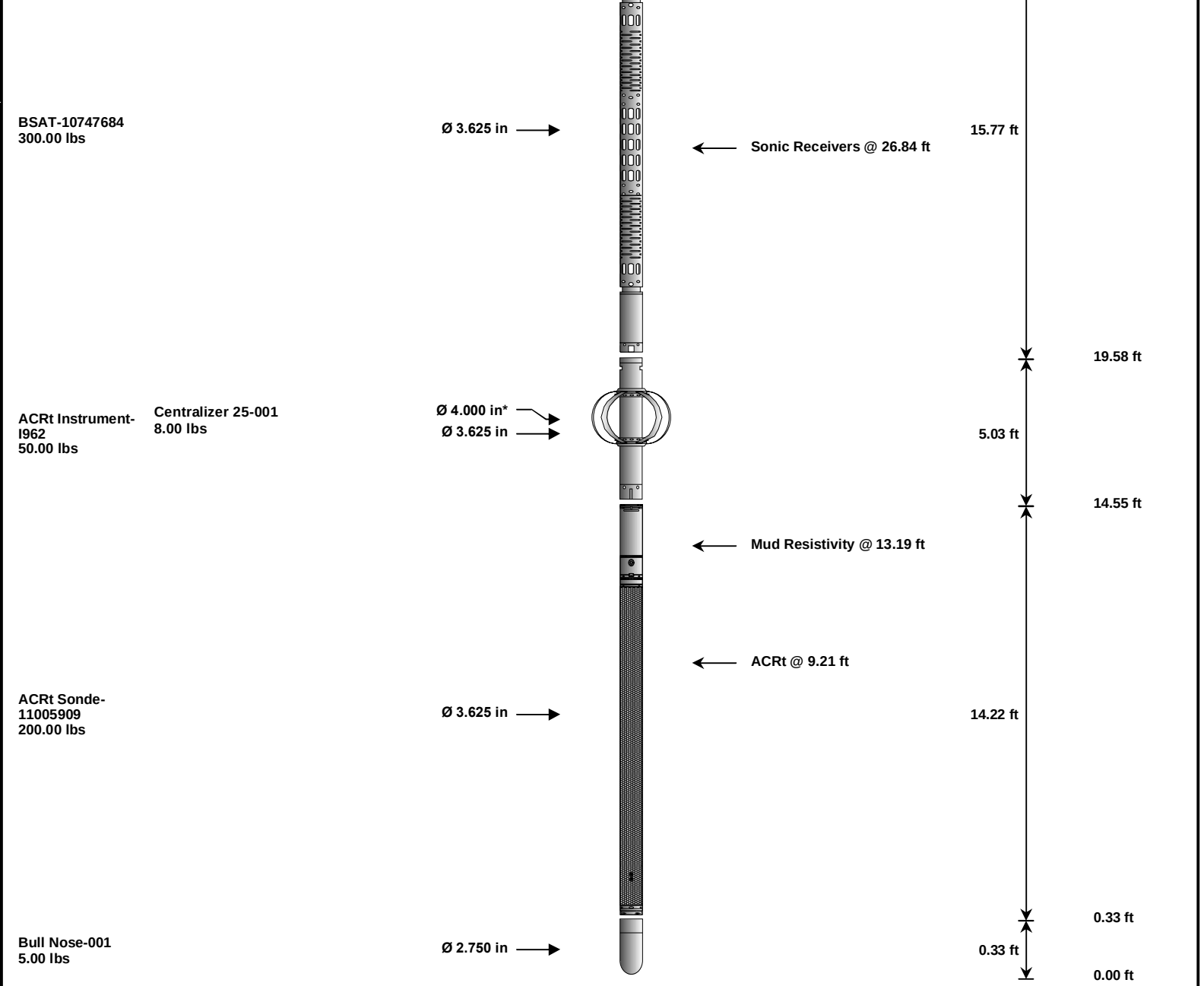
Plot Time: 04-Oct-12 07:34:20
Plot Range: 6400 ft to 6965.67 ft
Data: WIGGAINS_12_10\Well Based\REPEAT\
Plot File: \\-LOCAL-\WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						75.71 ft
Cable Head-PROT01 30.00 lbs		Ø 3.625 in			1.92 ft	
						73.79 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in		SP @ 72.01 ft	3.74 ft	
						70.05 ft
GTET-11039640 165.00 lbs		Ø 3.625 in		GammaRay @ 63.99 ft	8.52 ft	
						61.53 ft
DSNT-11055304 174.00 lbs	DSN Decentralizer-10755066 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-11014296 360.00 lbs	SDLT Pad-10865884 65.00 lbs Microlog Pad-11014296 8.00 lbs	Ø 4.500 in Ø 4.750 in* Ø 4.750 in*		Microlog @ 44.03 ft SDL Caliper @ 43.84 ft SDL @ 43.83 ft	10.81 ft	
						41.03 ft
IQ Flex-696 140.00 lbs		Ø 3.625 in			5.67 ft	
						35.36 ft
	Centralizer 25-002 8.00 lbs	Ø 4.000 in*				



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92		73.79	300.00
SP	SP Sub	11441455	60.00	3.74		70.05	300.00
GTET	Gamma Telemetry Tool	11039640	165.00	8.52		61.53	60.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69		51.84	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	55.17	300.00
SDLT	Spectral Density Tool	11014296	360.00	10.81		41.03	60.00
MICP	Microlog Pad	11014296	8.00	1.00	*	43.53	60.00
SDLP	Density Insite Pad	10865884	65.00	2.55	*	43.24	60.00
IQF	IQ Flex tool	696	140.00	5.67		35.36	300.00
BSAT	Borehole Sonic Array Tool	10747684	300.00	15.77		19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	*	32.96	300.00
ACRt	Array Compensated True Resistivity Instrument Section	I962	50.00	5.03		14.55	300.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	*	16.39	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22		0.33	300.00
BLNS	Bull Nose	001	5.00	0.33		0.00	300.00
Total			**1,579.60**	**75.71**			

* Not included in Total Length and Length Accumulation.

Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE **Date: 04-Oct-12 03:28:11**

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11039640**	**Reference Calibration Date:**	**24-Aug-12 11:06:42**
Engineer:	**S. INGERSOLL**	**Calibration Date:**	**25-Sep-12 15:48:12**
Software Version:	**WL INSITE R3.6.0 (Build 3)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	55.4	55.5	api
Background + Calibrator	324.5	325.2	api
Calibrator	269.1	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11039640**	**Reference Calibration Date:**	**25-Sep-12 15:48:12**
Engineer:	**T. HYDE**	**Calibration Date:**	**03-Oct-12 16:35:51**
Software Version:	**WL INSITE R3.6.0 (Build 3)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	55.5	50.7	api
Background + Calibrator	325.2	320.9	api
Calibrator	269.6	270.2	api

Shop	Field	Difference	Tolerance
269.6	270.2	-0.6	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 11005909**	**Reference Calibration Date:**	**23-Aug-12 19:00:08**
Engineer:	**S. INGERSOLL**	**Calibration Date:**	**26-Sep-12 12:26:10**
Software Version:	**WL INSITE R3.6.0 (Build 3)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - I962**		

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A2 (50")	0.95	1.02	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.01	1.05	0.95	1.00	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.98	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.02	2	-6	-3.17	-2	-8	-5.09	-2
A2 (50")	-7	-1.64	0	-7	-3.53	0	-7	-4.47	0

A3 (29")	-27	-14.39	-9	-9	-4.43	-3	-7	-2.87	-1
A4 (17")	-180	-101.04	-60	-45	-30.80	-15	-39	-26.17	-13
A5 (10")	N/A	N/A	N/A	-150	-100.41	-50	-80	-45.18	-10
A6 (6")	N/A	N/A	N/A	175	286.41	525	90	152.88	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.92	1.3
36K	1.0	1.36	2.0
72K	1.0	1.59	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS
SONDE OFFSET RANGE CHK	PASS
Tx CURRENT GAIN	PASS
Rmud VERIFICATION	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11039640						
Gamma Ray Calibrator	269.6	270.2	----------	-0.6	+/- 9.00	api
ACRt Sonde-11005909						
Mud Cell	1.00	----------	----------	0.00	----------	ohm-m

Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE **Date: 04-Oct-12 03:29:25**

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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	9.400	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	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	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	6957.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	

SHARED	BHSM	Borehole Size Master Tool	NONE	
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	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
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	DNTP	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	
SDLT	CLOK	Process Caliper 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
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
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 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	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 Upr	
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	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm

BOTTOM

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	SP Sub			
PLTC	Plot Control Mask	72.01	NO	
SP	Spontaneous Potential	72.01	BLK	1.250
SPR	Raw Spontaneous Potential	72.01	NO	
SPO	Spontaneous Potential Offset	72.01	NO	
	GTET			
TPUL	Tension Pull	63.99	NO	
GR	Natural Gamma Ray API	63.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	63.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	63.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	53.74	NO	
RNDS	Near Detector Telemetry Counts	53.84	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.59	TRI	0.583
DNTT	DSN Tool Temperature	53.84	NO	
DSNS	DSN Tool Status	53.74	NO	
ERND	Near Detector Telemetry Counts EVR	53.84	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.59	BLK	0.000
ENTM	DSN Tool Temperature EVR	53.84	NO	
	SDLT			
TPUL	Tension Pull	43.84	NO	
PCAL	Pad Caliper	43.84	TRI	0.250
ACAL	Arm Caliper	43.84	TRI	0.250
	BSAT			
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	
GMOD	Gain processing mode	19.58	NO	
	ACRt Sonde			
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000

F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	

SDLT Pad				
TPUL	Tension Pull	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHI	Near Cesium High	43.66	BLK	0.920
NLO	Near Cesium Low	43.66	BLK	0.920
NVA	Near Valley	43.66	BLK	0.920
NBA	Near Barite	43.66	BLK	0.920
NDE	Near Density	43.66	BLK	0.920
NPK	Near Peak	43.66	BLK	0.920
NLI	Near Lithology	43.66	BLK	0.920

NBAU	Near Barite Unfiltered	43.66	BLK	0.250
NLIU	Near Lithology Unfiltered	43.66	BLK	0.250
FAB	Far Above	44.01	BLK	0.250
FHI	Far Cesium High	44.01	BLK	0.250
FLO	Far Cesium Low	44.01	BLK	0.250
FVA	Far Valley	44.01	BLK	0.250
FBA	Far Barite	44.01	BLK	0.250
FDE	Far Density	44.01	BLK	0.250
FPK	Far Peak	44.01	BLK	0.250
FLI	Far Lithology	44.01	BLK	0.250
PTMP	Pad Temperature	43.84	BLK	0.920
NHV	Near Detector High Voltage	43.24	NO	
FHV	Far Detector High Voltage	43.24	NO	
ITMP	Instrument Temperature	43.24	NO	
DDHV	Detector High Voltage	43.24	NO	
	Microlog Pad			
TPUL	Tension Pull	44.03	NO	
MINV	Microlog Lateral	44.03	BLK	0.750
MNOR	Microlog Normal	44.03	BLK	0.750

Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE **Date: 04-Oct-12 03:28:44**

COMPANY	**OXY USA INC.**
WELL	**WIGGAINS 12-10**
FIELD	**GOOCH**
COUNTY	**STEVENS** STATE **KANSAS**

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ARRAY COMPENSATED TRUE RESISTIVITY LOG

HALLIBURTON

Plot Time: 04-Oct-12 07:34:21
Plot Range: 1800 ft to 6953.25 ft
Data: WIGGAINS_12_10\Well Based\CASING
Plot File: \\-LOCAL-\WIGGAINS_12_10\...\ACRT_1_lib

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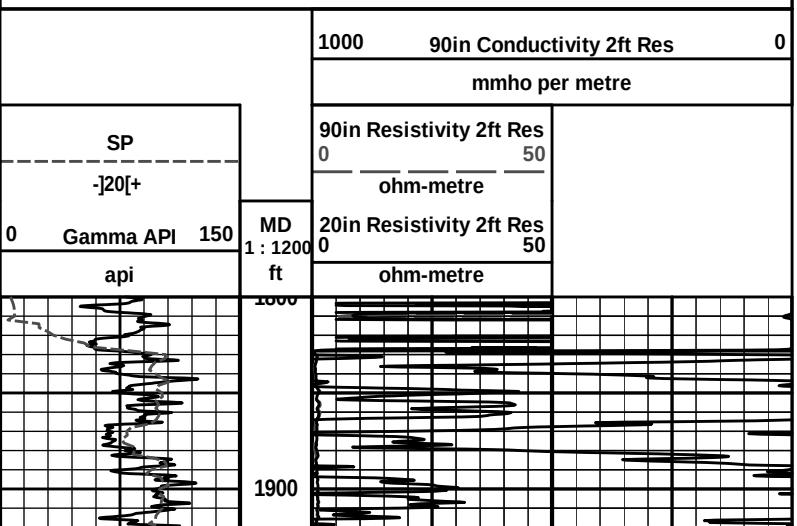

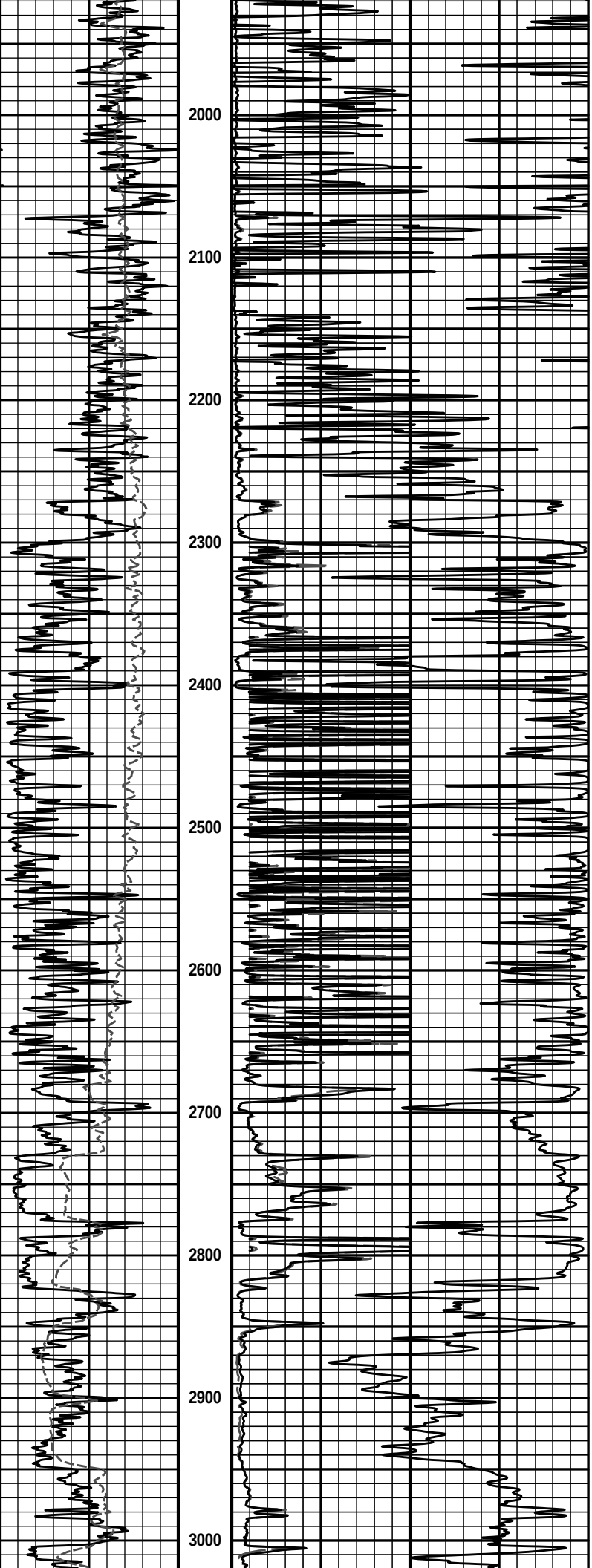
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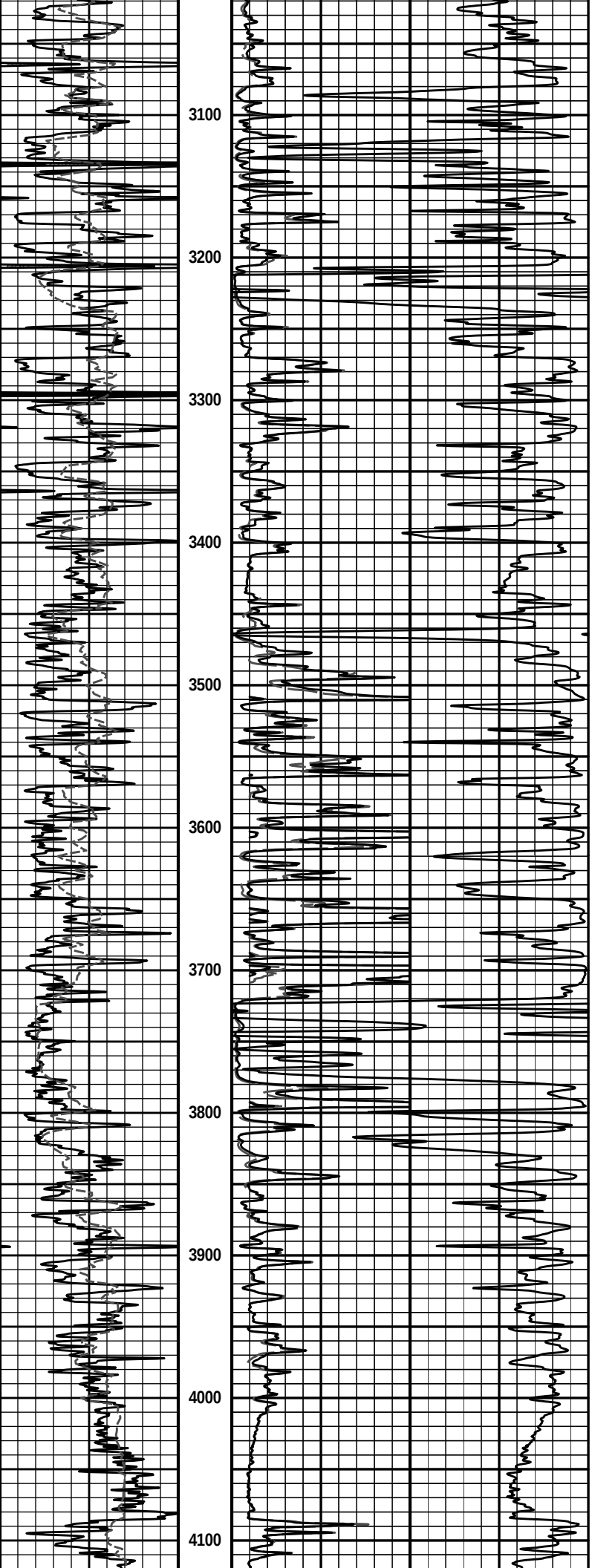
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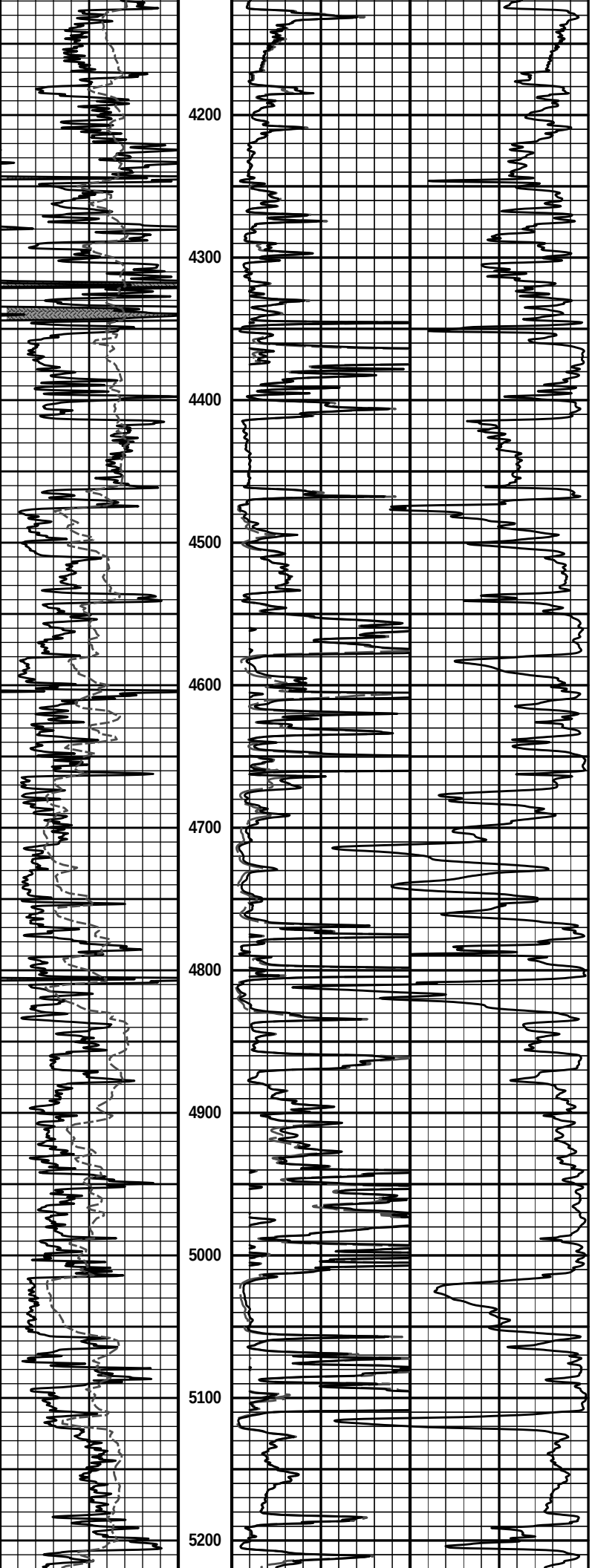
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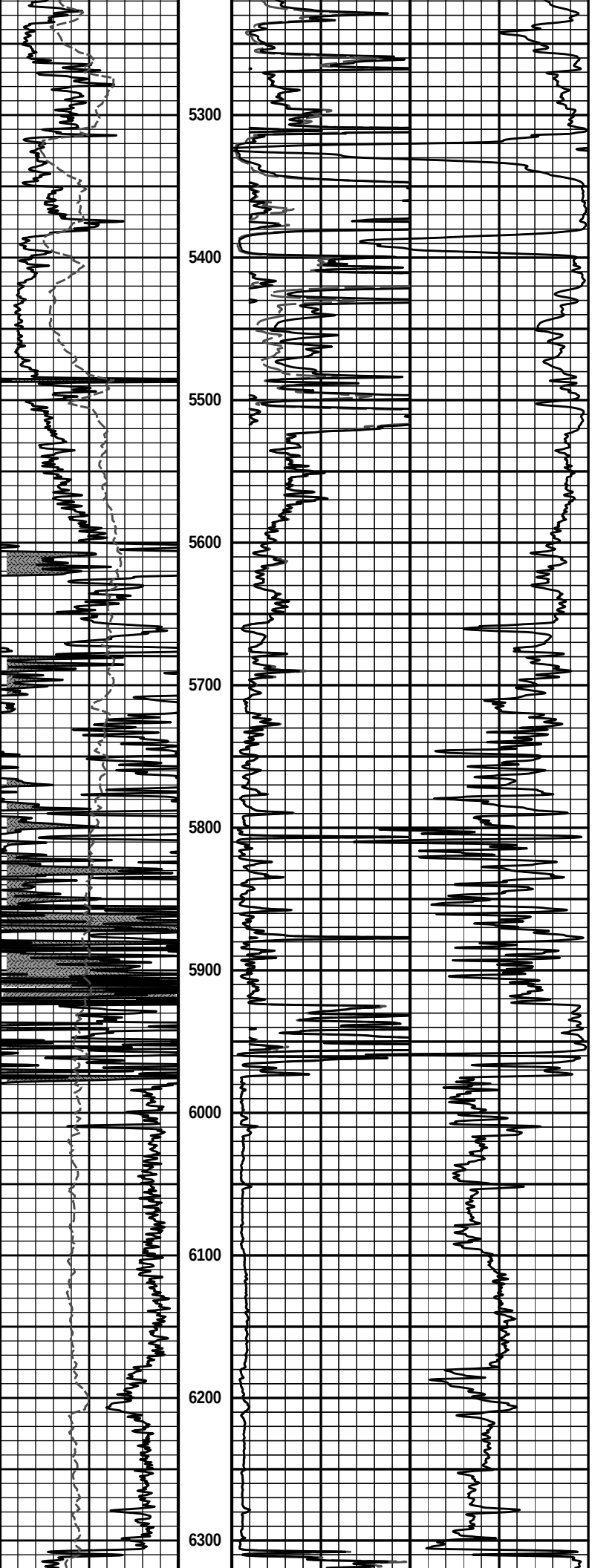
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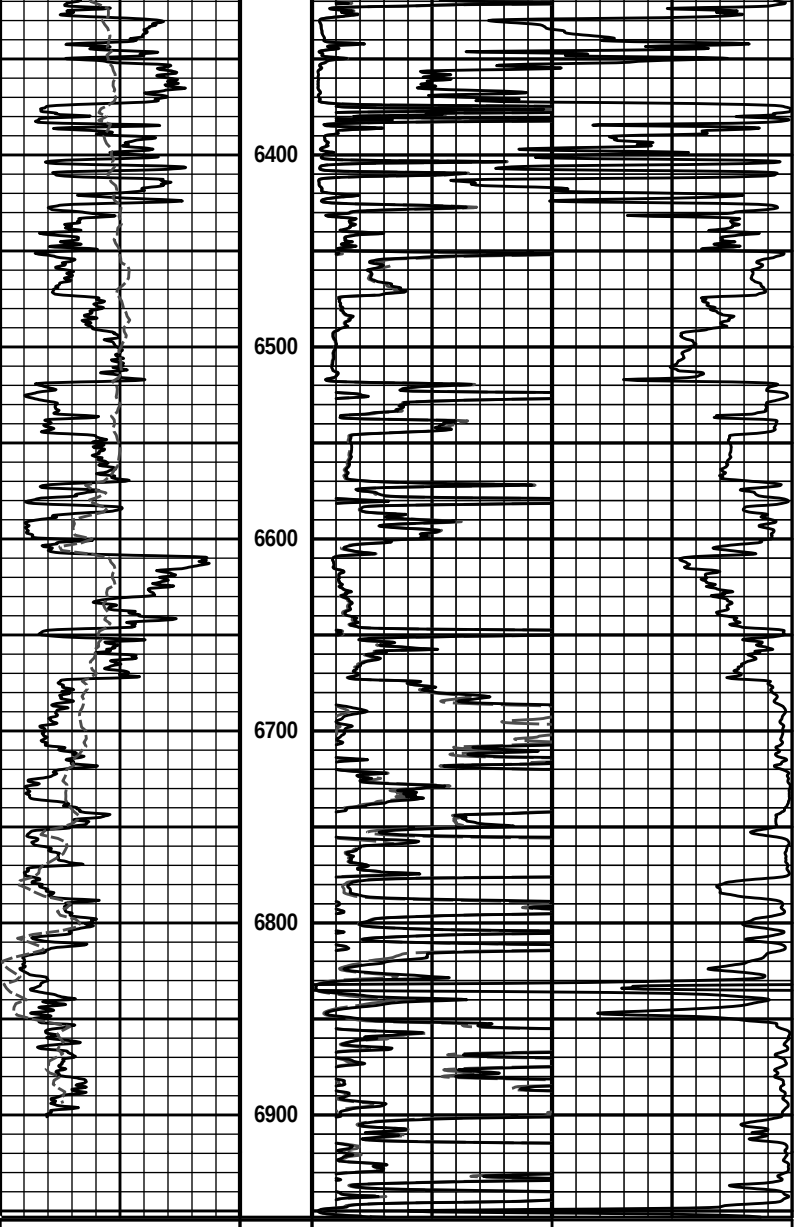

0 Gamma API 150	MD 1 : 1200 ft	20in Resistivity 2ft Res 0 50
api		ohm-metre
SP		90in Resistivity 2ft Res 0 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

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Plot Time: 04-Oct-12 07:34:28
Plot Range: 1800 ft to 6953.25 ft
Data: WIGGAINS_12_10\Well Based\CASING\
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1 INCH MAIN LOG