



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY / NEUTRON
PE LOG**

Company MULL DRILLING COMPANY, INC. Well APC - WAYNE #1-35 Field WILDCAT County CHEYENNE State COLORADO		Company MULL DRILLING COMPANY, INC. Well APC - WAYNE #1-35 Field WILDCAT County CHEYENNE State COLORADO		Location: API # : 05-017-07775-00 1686' FSL & 1056' FEL SEC 35 TWP 16S RGE 45W Permanent Datum GROUND LEVEL Elevation 4255 Log Measured From KELLY BUSHING 11' A.G.L. Drilling Measured From KELLY BUSHING Other Services DIL/MEL SONIC Elevation K.B. 4266 D.F. 4264 G.L. 4255	
Date	12/10/13				
Run Number	ONE				
Depth Driller	5472				
Depth Logger	5482				
Bottom Logged Interval	5458				
Top Log Interval	3600				
Casing Driller	8 5/8" @ 352'				
Casing Logger	350				
Bit Size	7 7/8"				
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,100 PPM			
Density / Viscosity	9.1/55				
pH / Fluid Loss	10.0/6.4				
Source of Sample	FLOWLINE				
Rim @ Meas. Temp	.950 @ 40F				
Rmf @ Meas. Temp	.713 @ 40F				
Rmc @ Meas. Temp	1.14 @ 40F				
Source of Rmf / Rmc	MEASUREMENT				
Rim @ BHT	.295 @ 129F				
Time Circulation Stopped	3 HOURS				
Time Logger on Bottom	6:15 P.M.				
Maximum Recorded Temperature	129F				
Equipment Number	4854				
Location	HAYS, KANSAS				
Recorded By	JEFF LUEBBERS				
Witnessed By	PHIL ASKEY				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

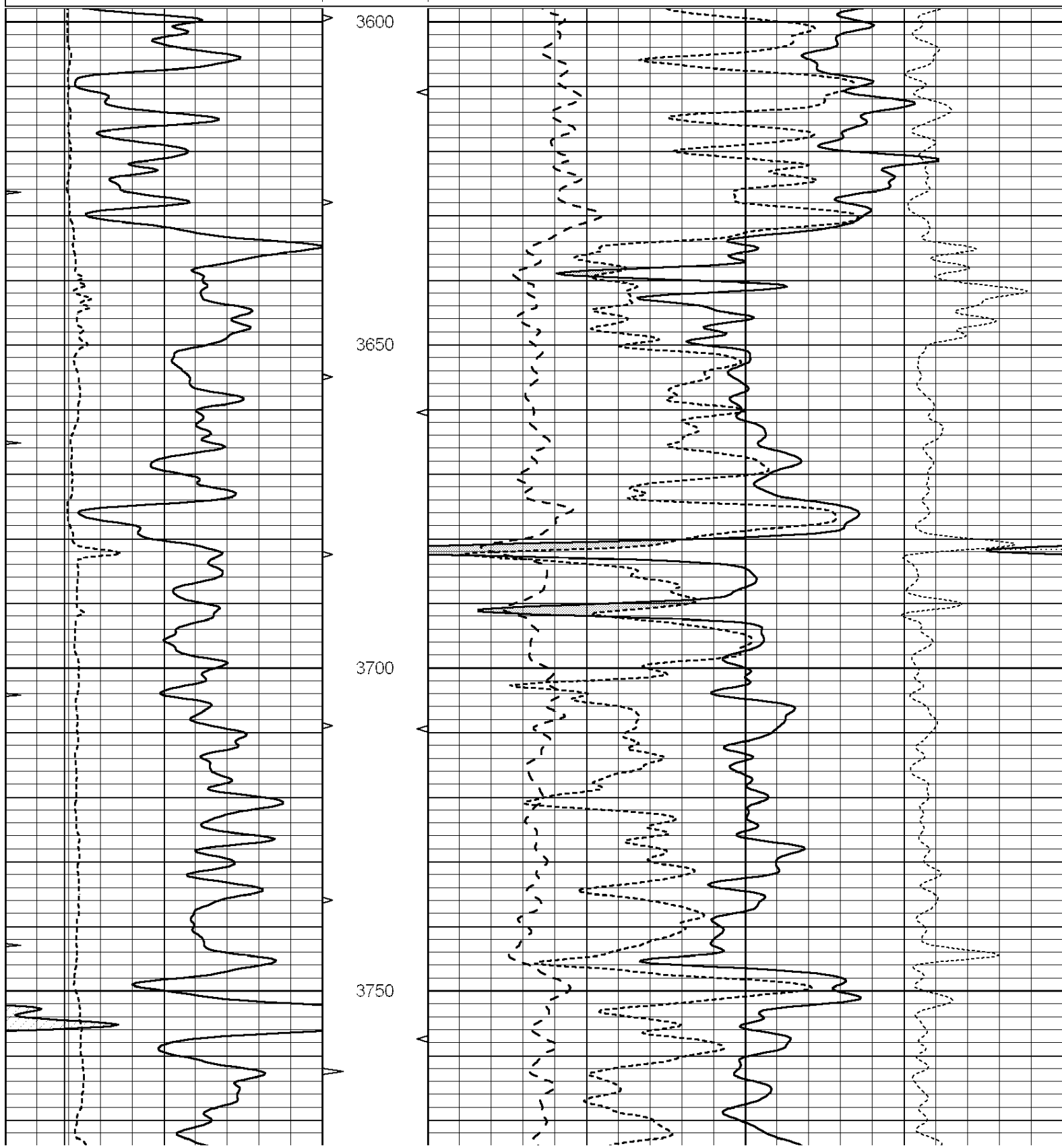
Comments

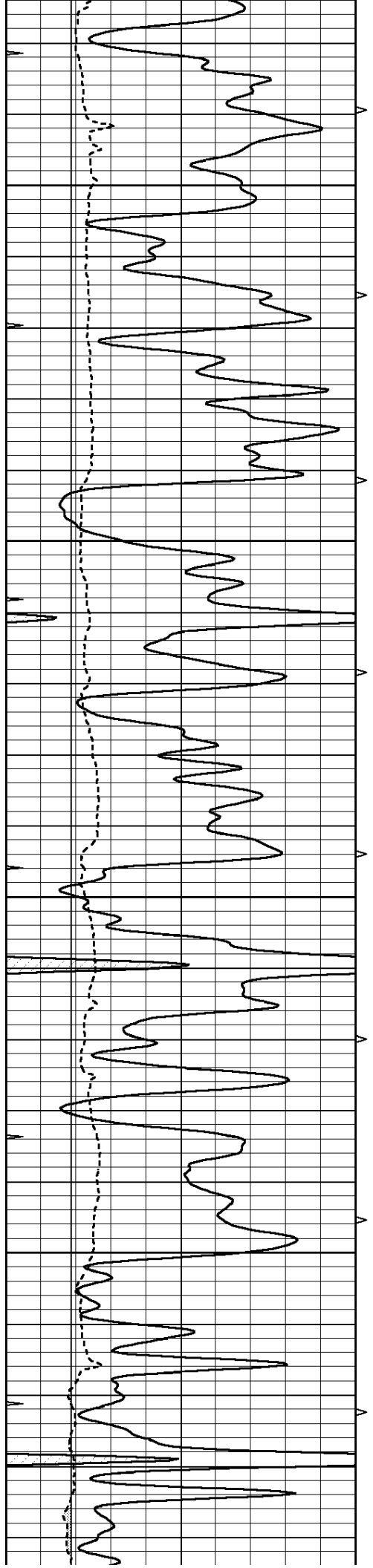
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628 6395
DIRECTIONS

CHEYENNE WELLS, CO., 13S. ON HWY 385 TO "RD. C", 5 1/2W. TO RADIO TOWER, 1 1/2S. ON LEASE RD., W. INTO

Database File: 011824pe.db
 Dataset Pathname: pass3.10
 Presentation Format: ldt_neu
 Dataset Creation: Tue Dec 10 22:00:59 2013
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV	0	PE	10 -0.25 CORRECTION (g/cc) 0.25
			0 (ft3) 10			



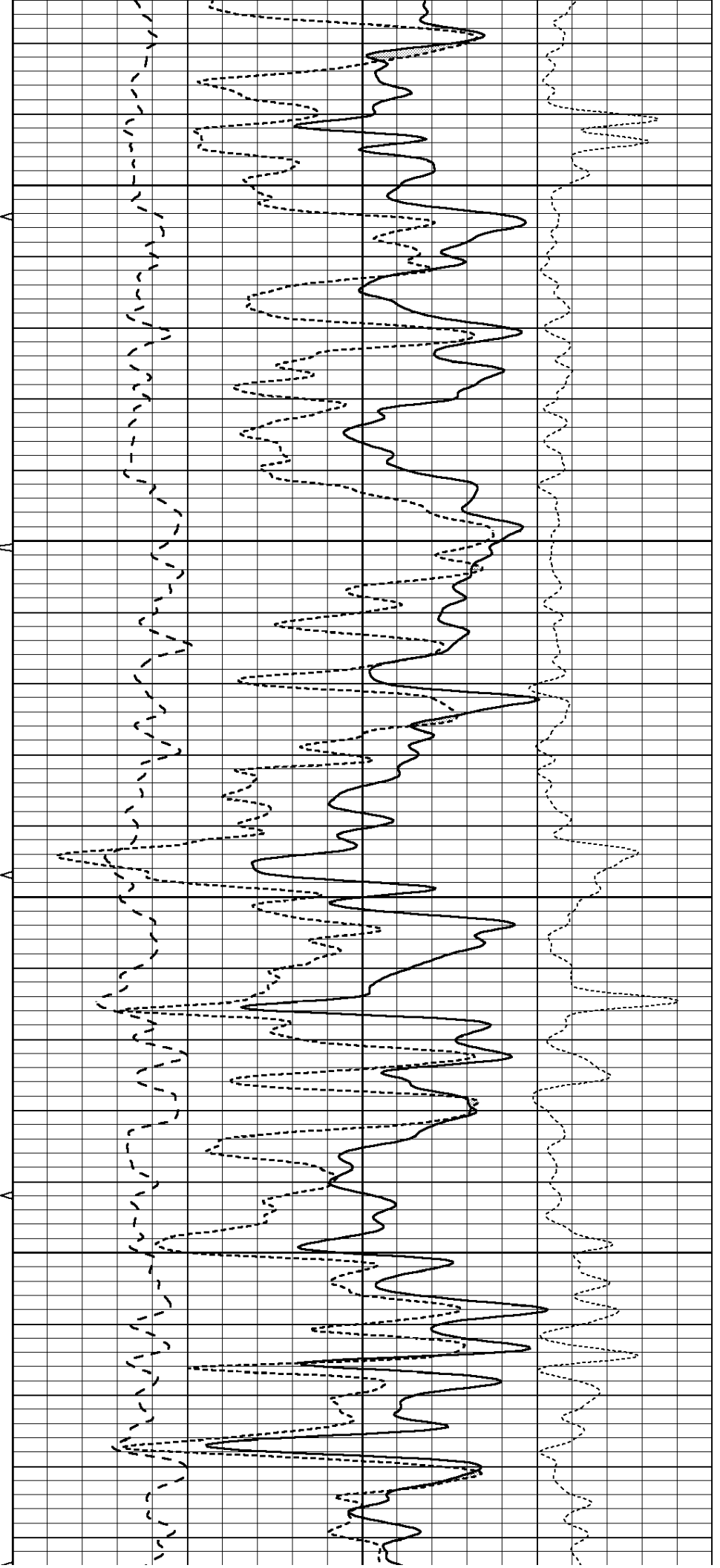


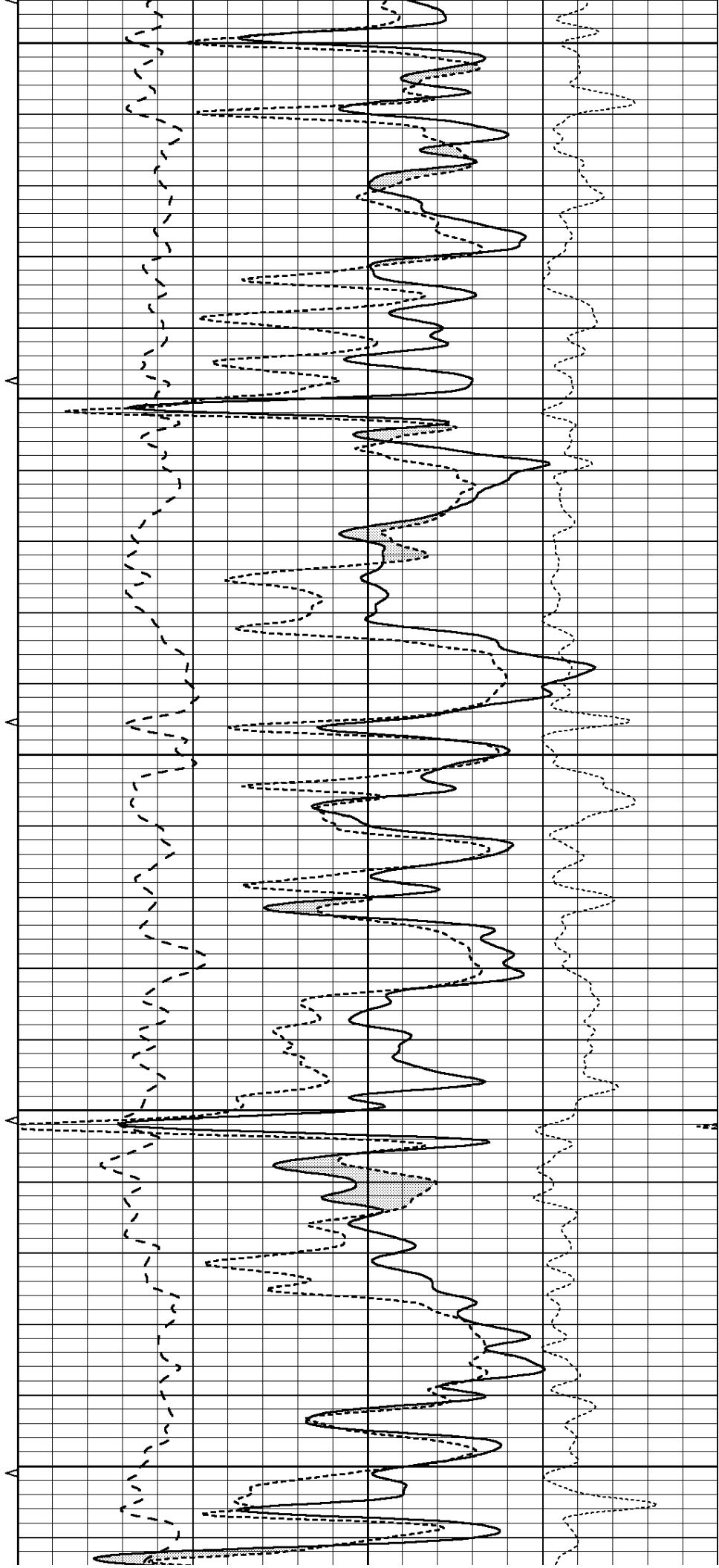
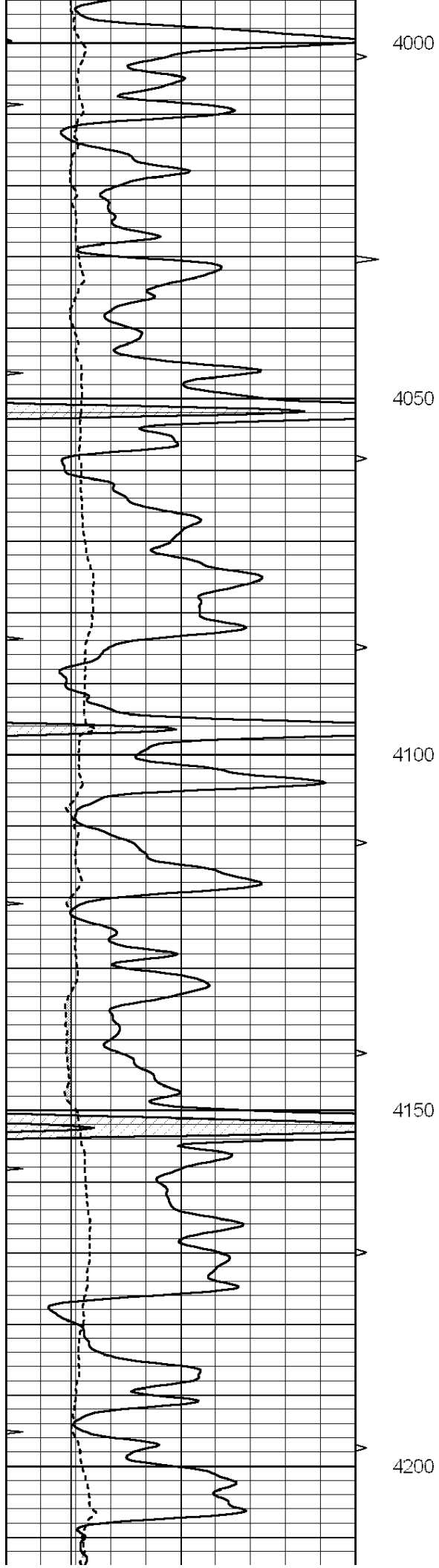
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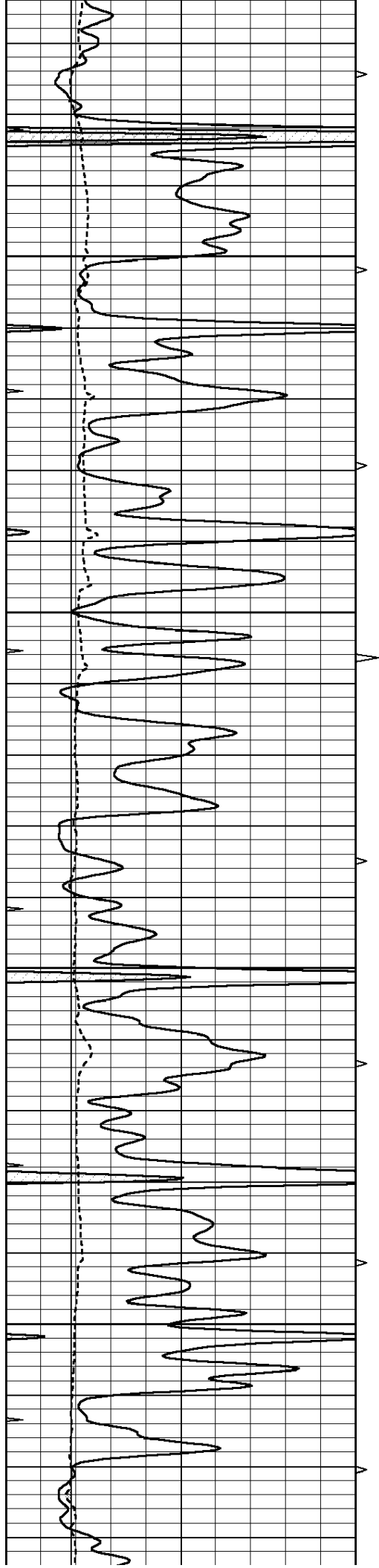
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3900

3950





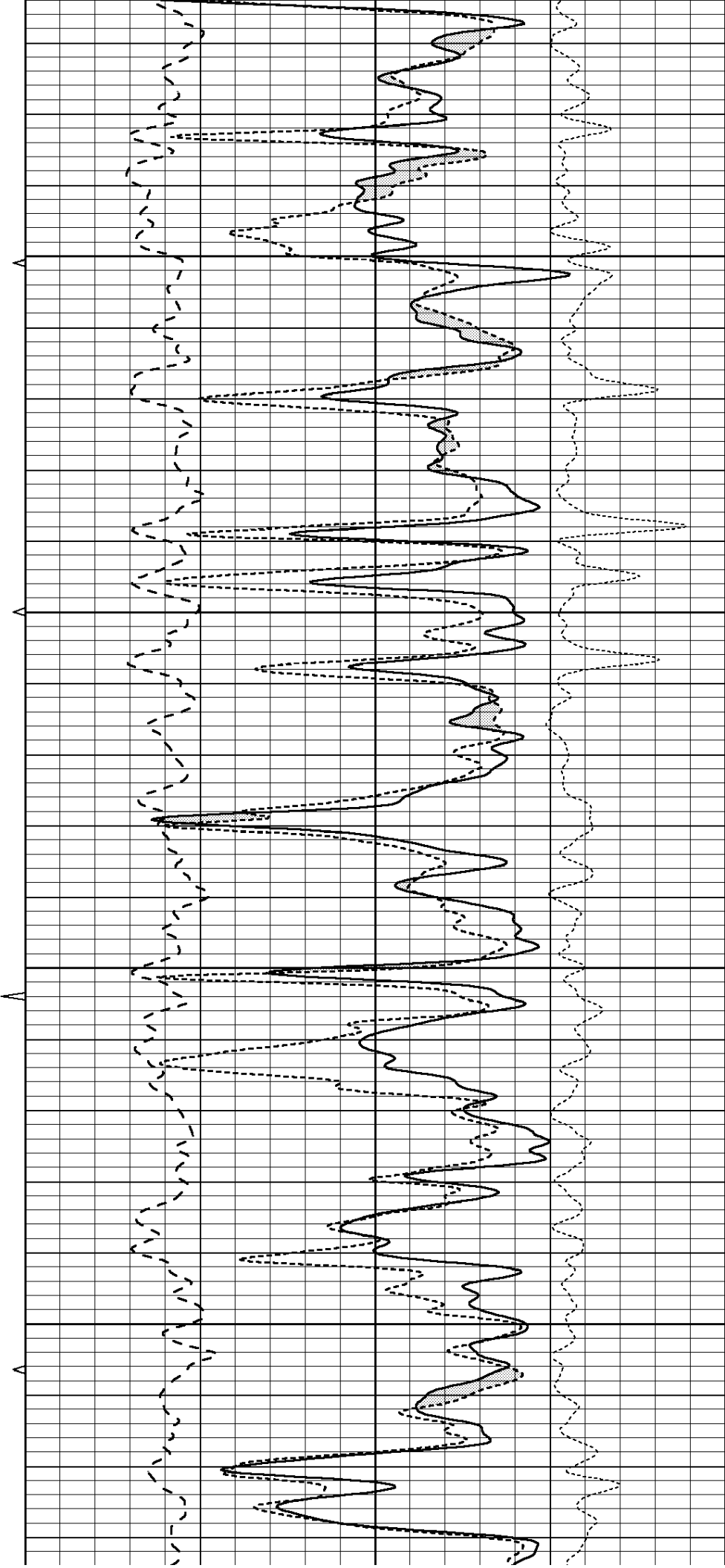


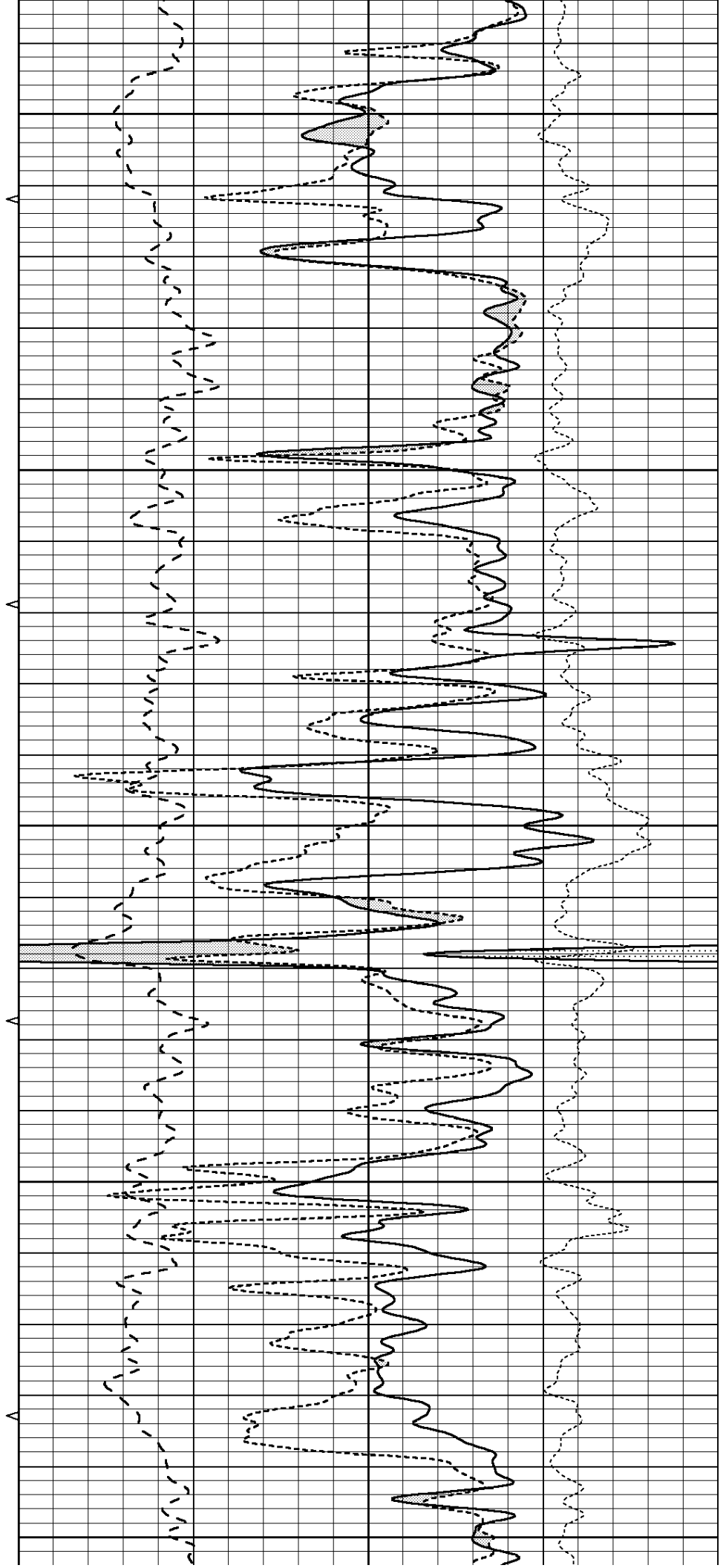
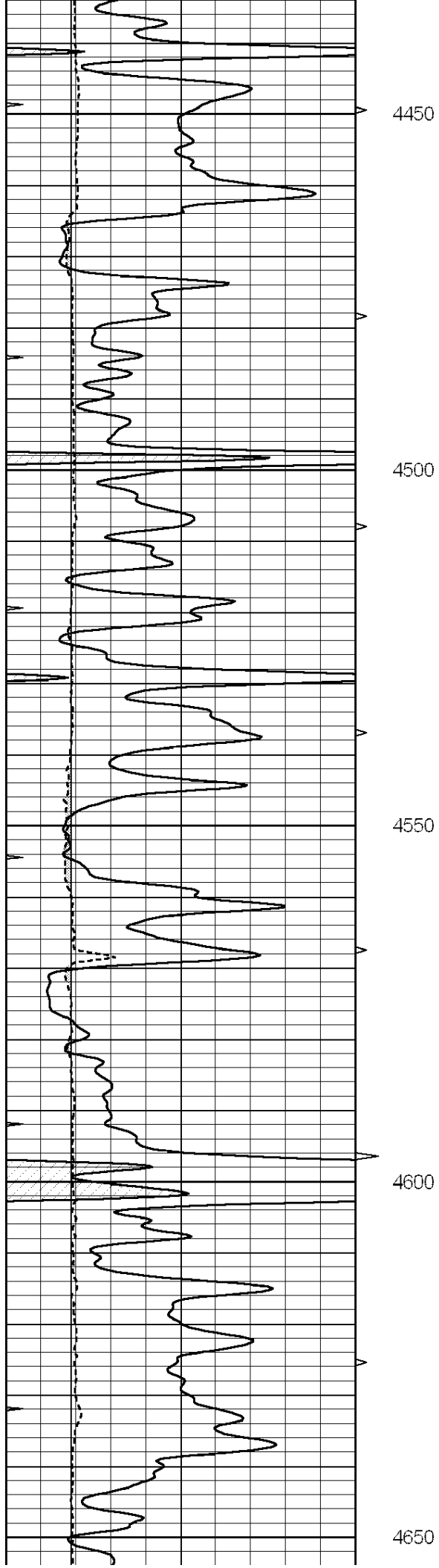
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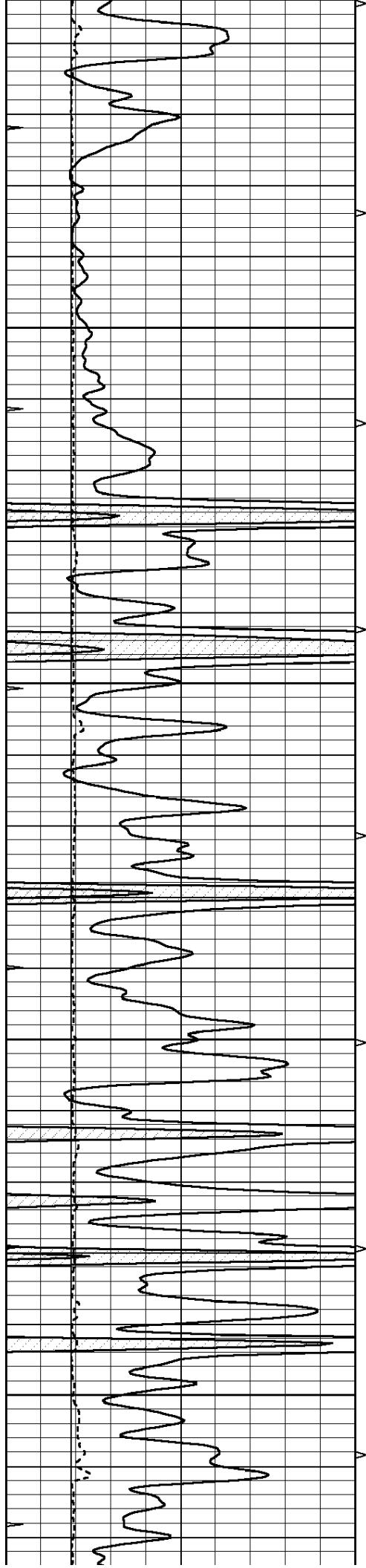
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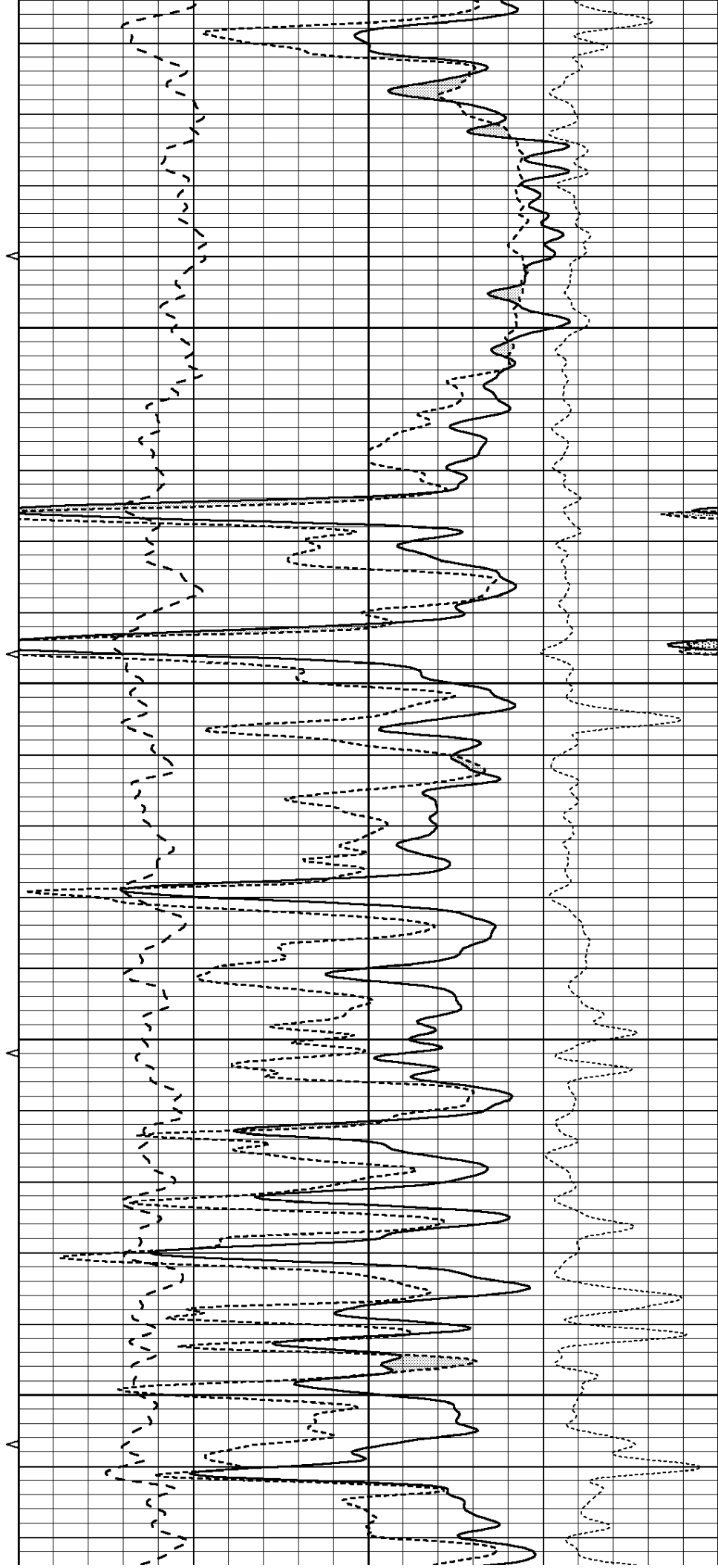


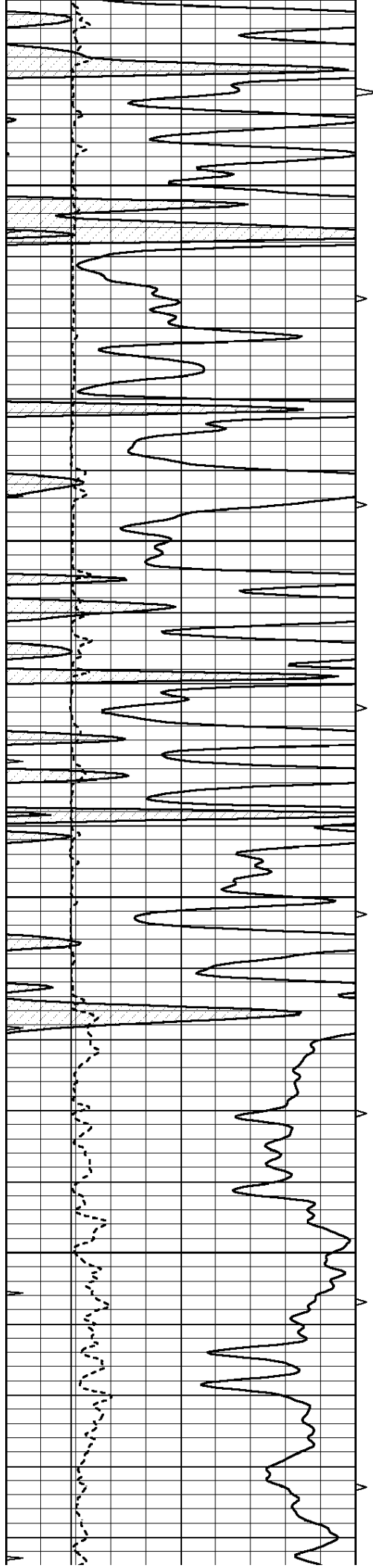
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4800

4850



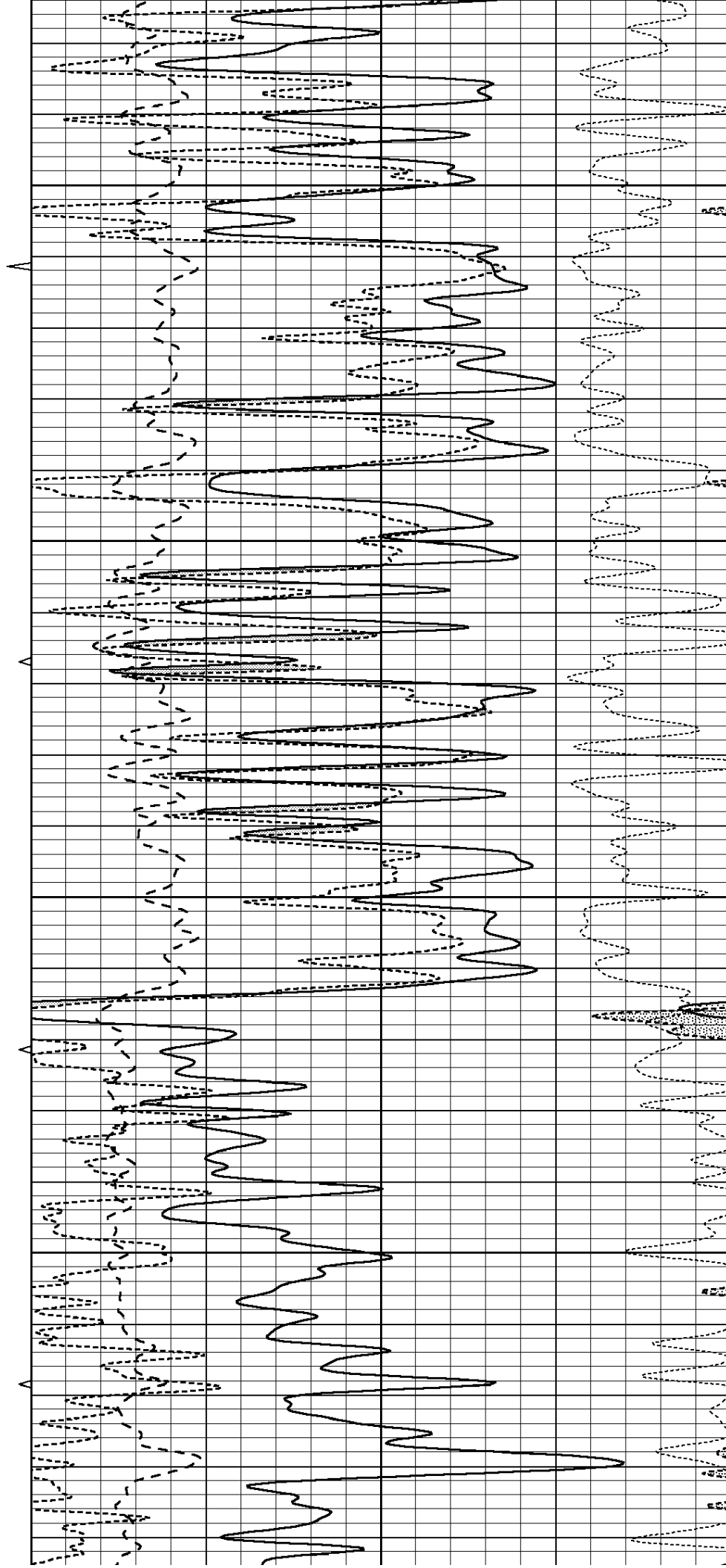


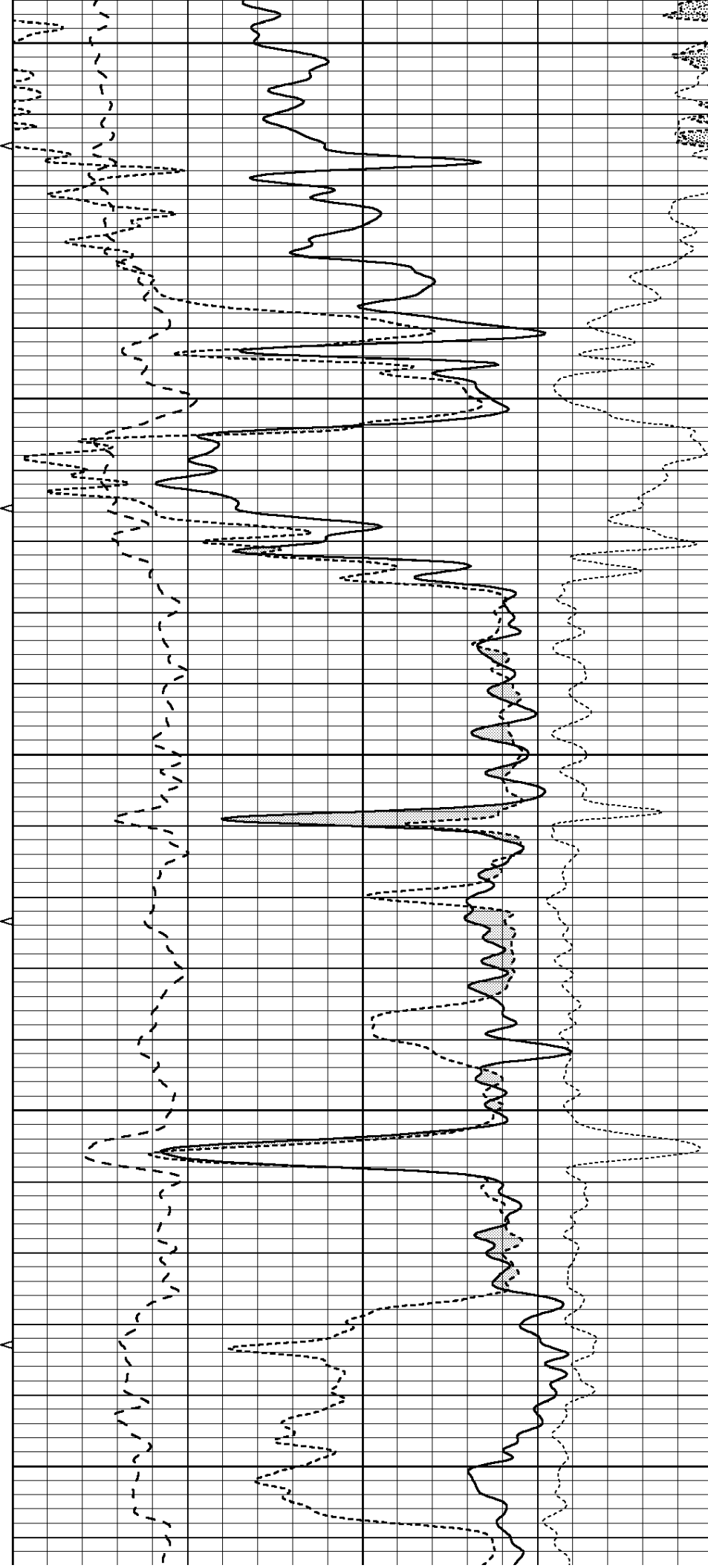
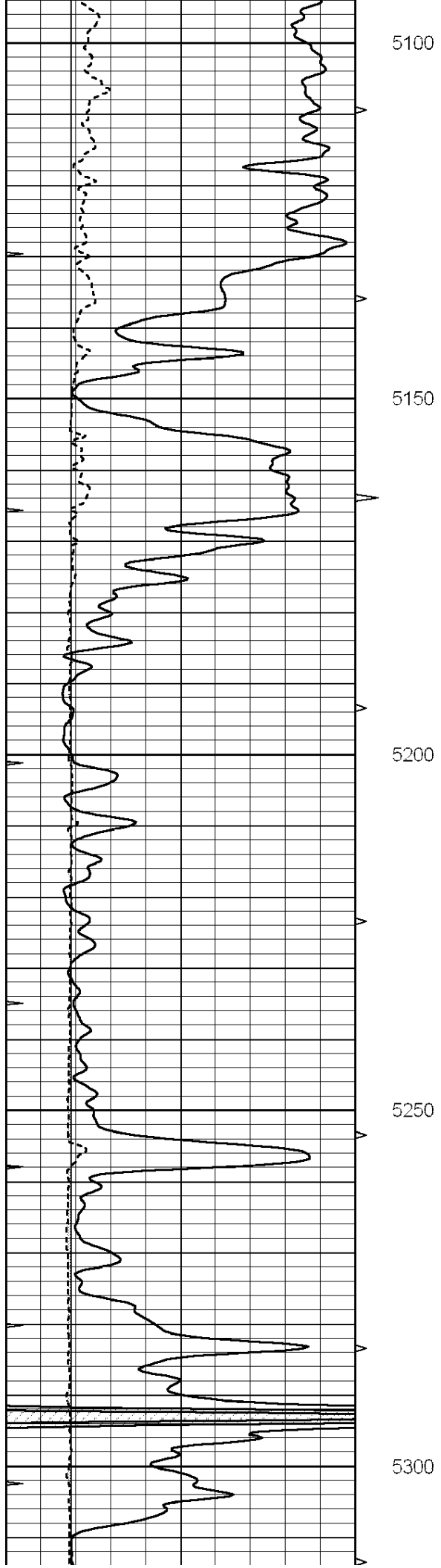
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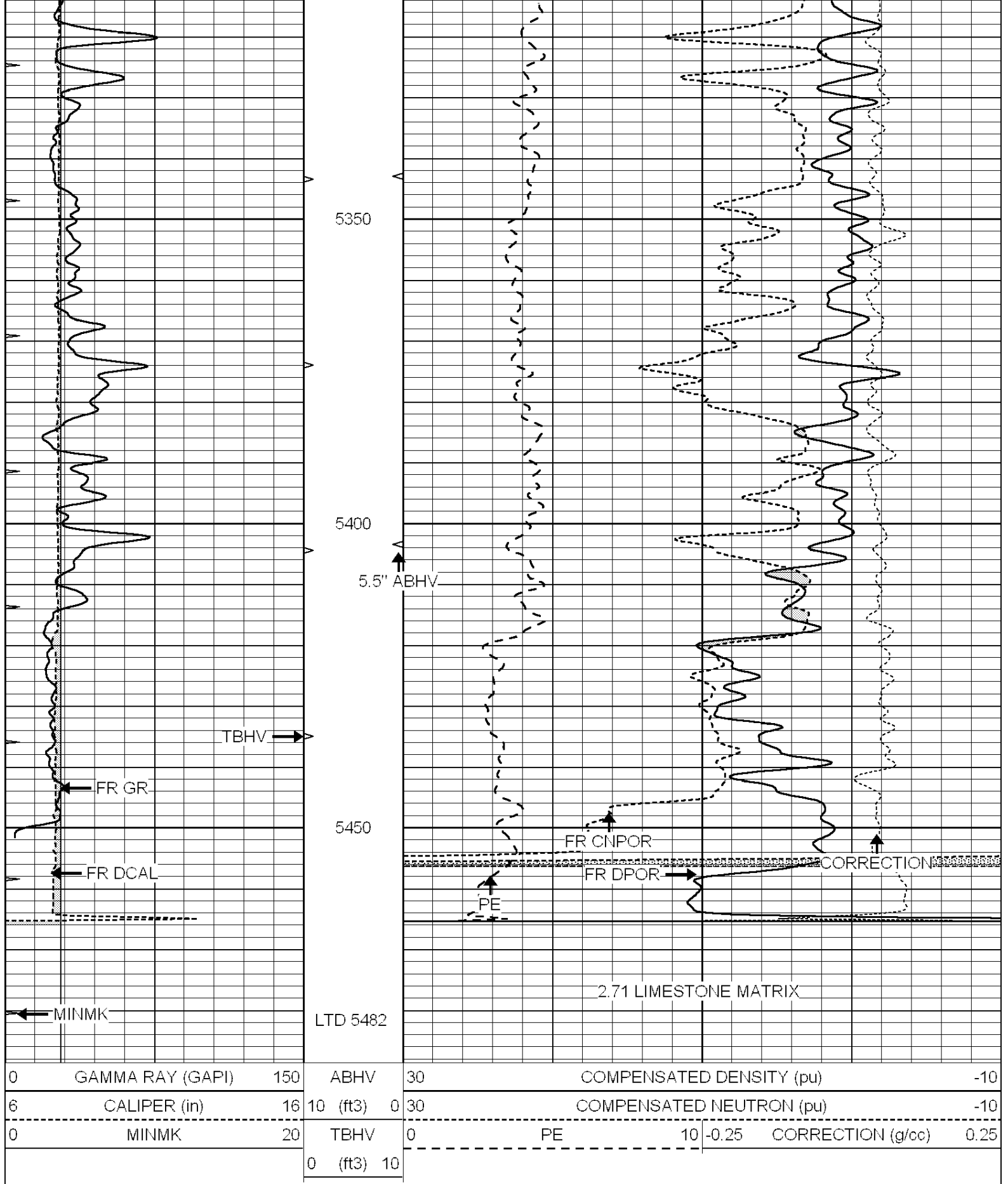
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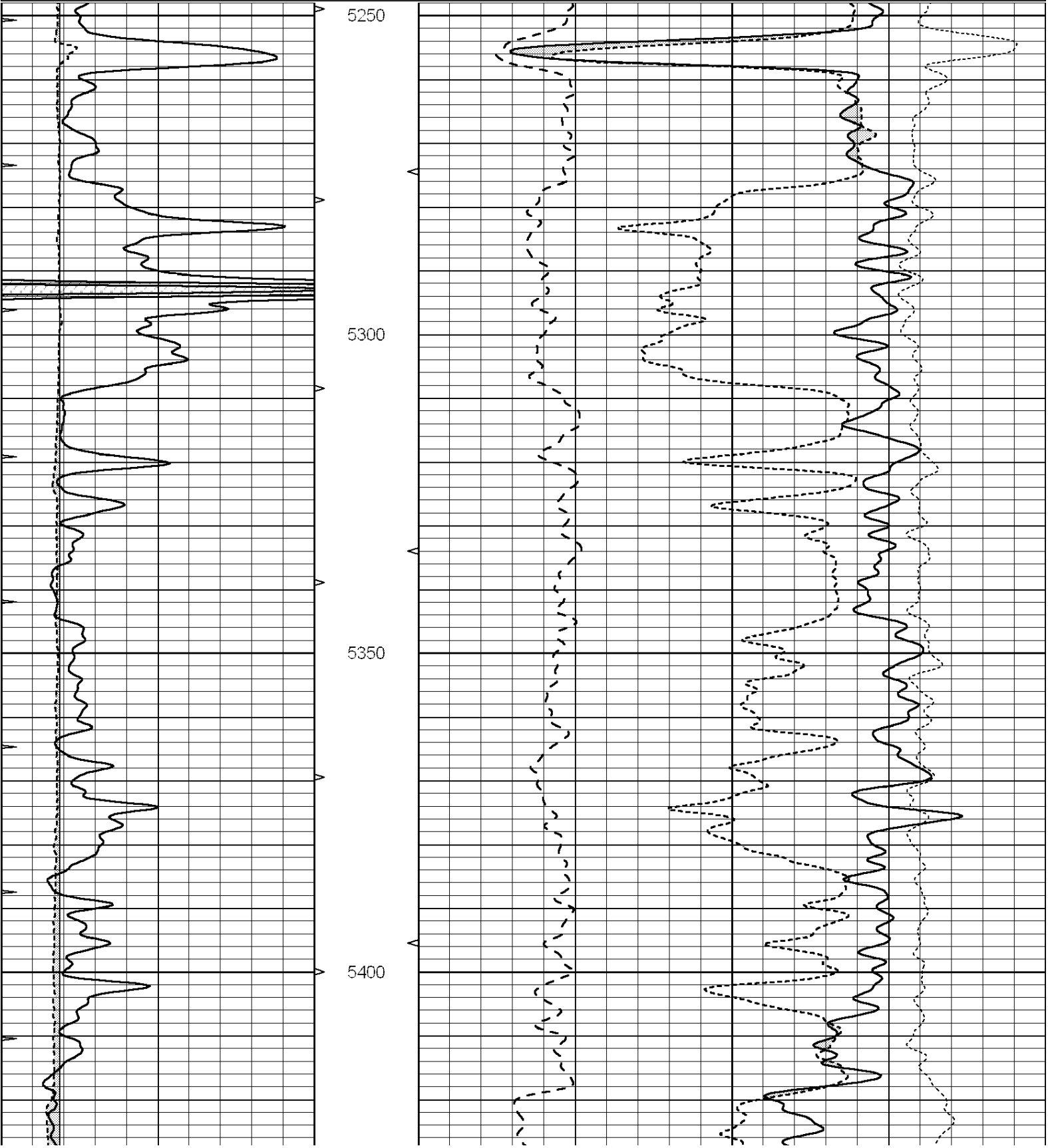


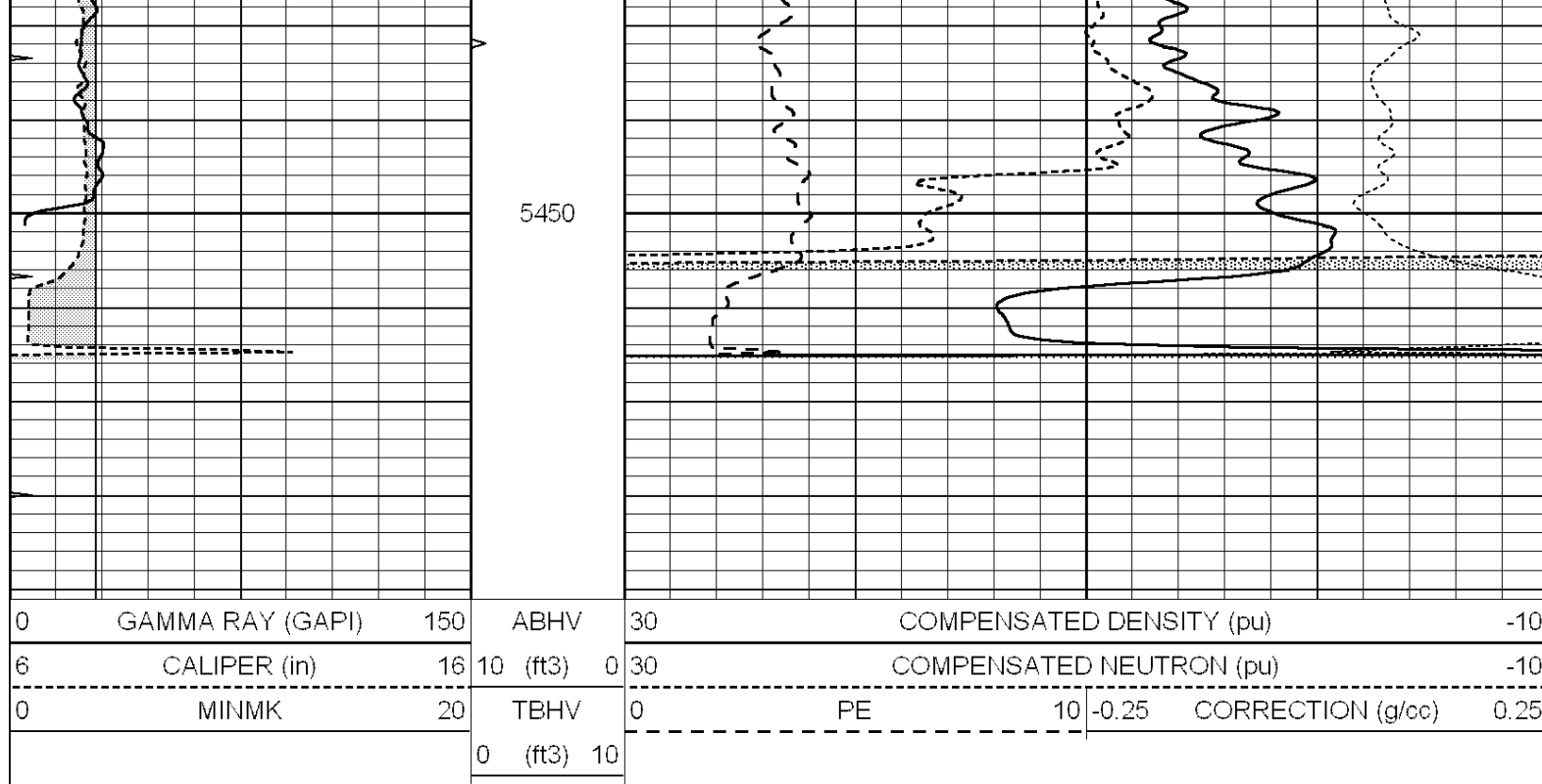




Database File: 011824pe.db
Dataset Pathname: pass2.8
Presentation Format: ldt_neu
Dataset Creation: Tue Dec 10 19:10:41 2013
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV	0	PE	10
			0 (ft3)	10	-0.25	CORRECTION (g/cc)
					0.25	





Calibration Report

Database File: 011824pe.db
Dataset Pathname: pass3.10
Dataset Creation: Tue Dec 10 22:00:59 2013

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Tue Dec 10 19:14:46 2013
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	650.000	-4.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-9.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

Readings				References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

Readings				Targets		Results	
	Zero	Cal		Zero	Cal	m'	b'

Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report

Serial: 004N Model: PRB

Master Calibration			Performed Mon Jun 03 09:36:56 2013					
	Background		Magnesium		Aluminum		Sandstone	
Window 1	1417.6		10391.4		3464.6		11537.5	cps
Window 2	1295.0		8959.7		3050.1		9816.4	cps
Window 3	1105.1		5464.2		2051.0		5838.8	cps
Window 4	315.0		317.7		312.9		319.8	cps
Long Space	0.0		7664.6		1755.0		8521.3	cps
Short Space	1.8		1582.4		1040.8		1699.4	cps
Rho			1.7100		2.5900		1.3800	g/cc
Pe			0.0000		2.5700		1.5500	
Rib Angle	: 44.1		Rib Slope	: 0.970	Density/Spine Ratio		: 0.574	
Spine Angle	: 74.1		Spine Slope	: 3.519	Spine Intercept		: -17.0	

Before Survey Verification			Performed Wed Dec 31 18:00:00 1969					
Window 1	0.0		0.0		0.0		0.0	cps
Window 2	0.0		0.0		0.0		0.0	cps
Window 3	0.0		0.0		0.0		0.0	cps
Window 4	0.0		0.0		0.0		0.0	cps
Long Space	0.0		0.0		0.0		0.0	cps
Short Space	0.0		0.0		0.0		0.0	cps
Measured Rho			0.0000		0.0000		0.0000	g/cc
Measured Correction			0.0000		0.0000		0.0000	g/cc
Measured Pe					0.0000		0.0000	

After Survey Verification			Performed Wed Dec 31 18:00:00 1969					
Window 1	0.0		0.0		0.0		0.0	cps
Window 2	0.0		0.0		0.0		0.0	cps
Window 3	0.0		0.0		0.0		0.0	cps
Window 4	0.0		0.0		0.0		0.0	cps
Long Space	0.0		0.0		0.0		0.0	cps
Short Space	0.0		0.0		0.0		0.0	cps
Measured Rho			0.0000		0.0000		0.0000	g/cc
Measured Correction			0.0000		0.0000		0.0000	g/cc
Measured Pe					0.0000		0.0000	

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Compensated Neutron Calibration Report

Serial Number:	070808
Tool Model:	Probe

PRE-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	070559		
Tool Model:	OPEN_GR		
Performed:	Mon Dec 09 00:21:31 2013		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.2800	GAPI/cps	