



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

COMPENSATED DENSITY / NEUTRON LOG

Company	RITCHIE EXPLORATION, INC.		
Well	#1 WINDERLIN 36D		
Field	WILDCAT		
County	GOVE		
State	KANSAS		
Location:	API # : 15-063-22156-0000		Other Services
	1610' FSL & 860' FEL		DIL
	SEC 36 TWP 15S RGE 31W		
Permanent Datum	GROUND LEVEL	Elevation	2800
Log Measured From	KELLY BUSHING 5' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Elevation			K.B. 2805 D.F. 2803 G.L. 2800
Date	12/2/13		
Run Number	ONE		
Depth Driller	4617		
Depth Logger	4624		
Bottom Logged Interval	4600		
Top Log Interval	3300		
Casing Driller	8 5/8"@232'		
Casing Logger	232		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2,800 PPM	
Density / Viscosity	9.2/49		
pH / Fluid Loss	11.0/7.2		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.980@70F		
Rinf @ Meas. Temp	.735@70F		
Rinc @ Meas. Temp	1.18@70F		
Source of Rinf / Rinc	MEASUREMENT		
Rin @ BHT	.562@122F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	9:30 P.M.		
Maximum Recorded Temperature	122F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	MAX LOVELY		

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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
HEALY, KS. 10W. TO "TAOS RD.", 6N. TO "RD. 280", 3E. TO "WILLOW RD.", CURVE 3N., W. INTO

Database File:

011818ddn.db

Dataset Pathname:

pass3.11

Presentation Format:

den_neu

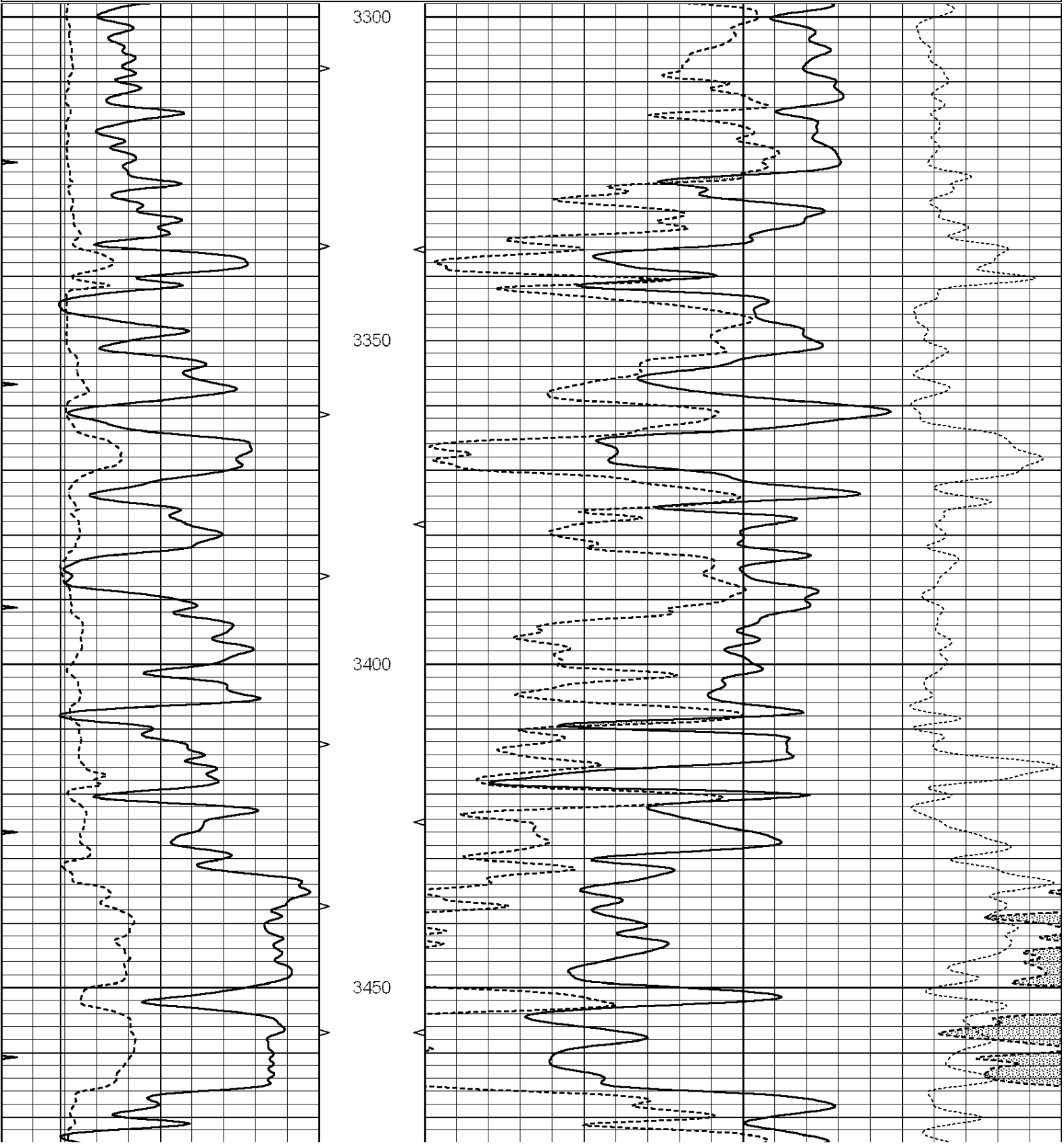
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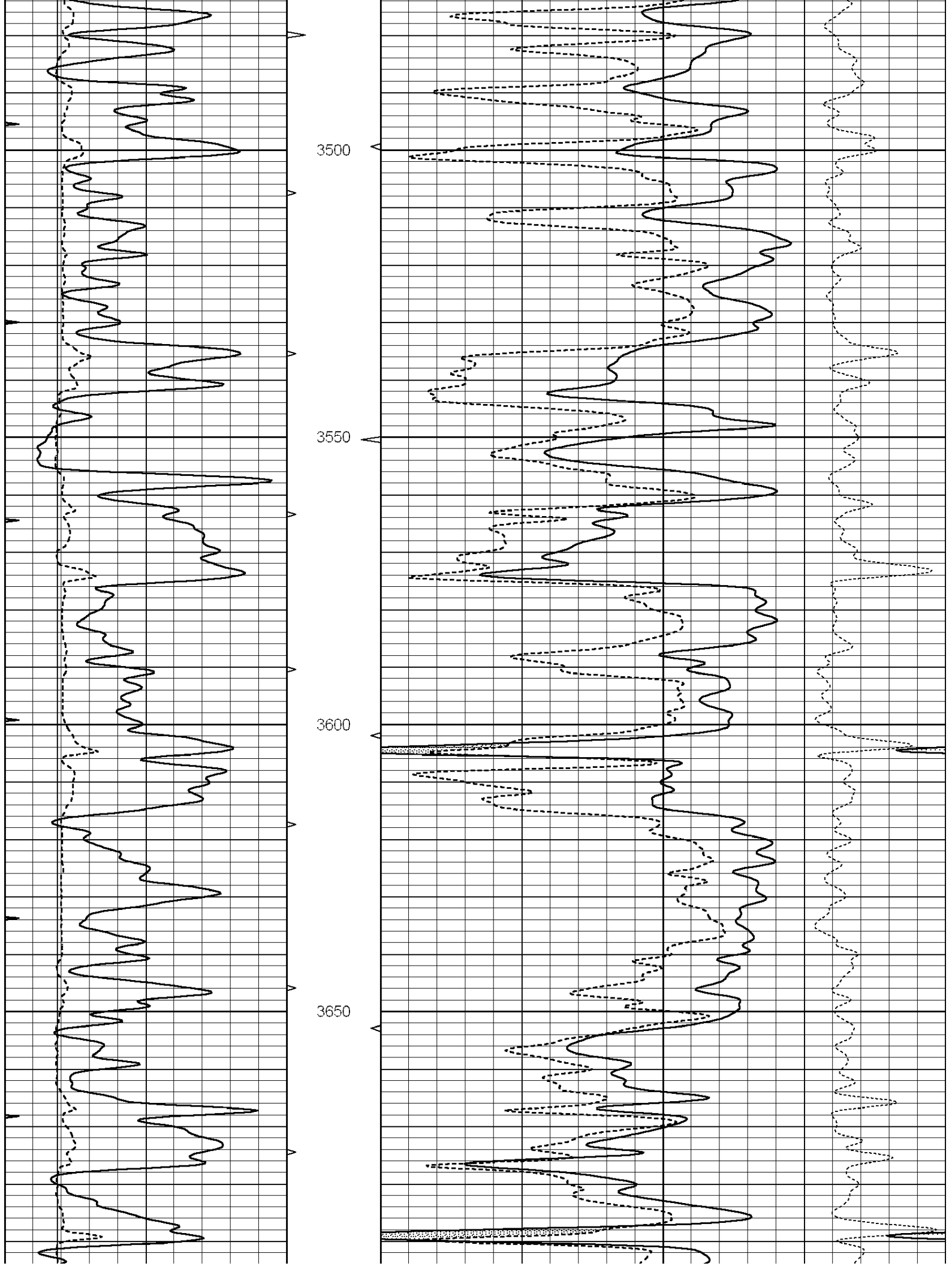
Tue Dec 03 00:10:52 2013

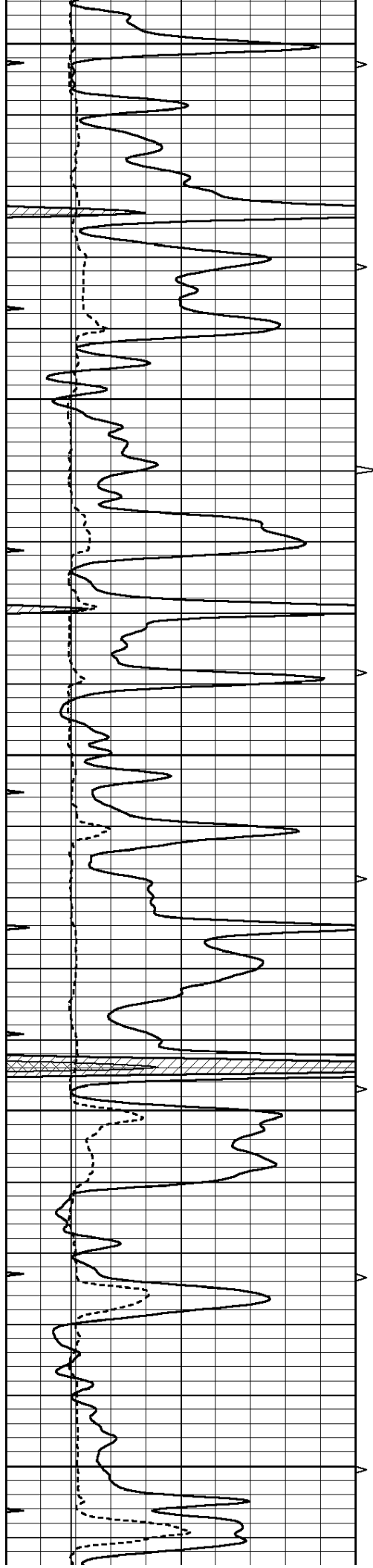
Charted by:

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		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		







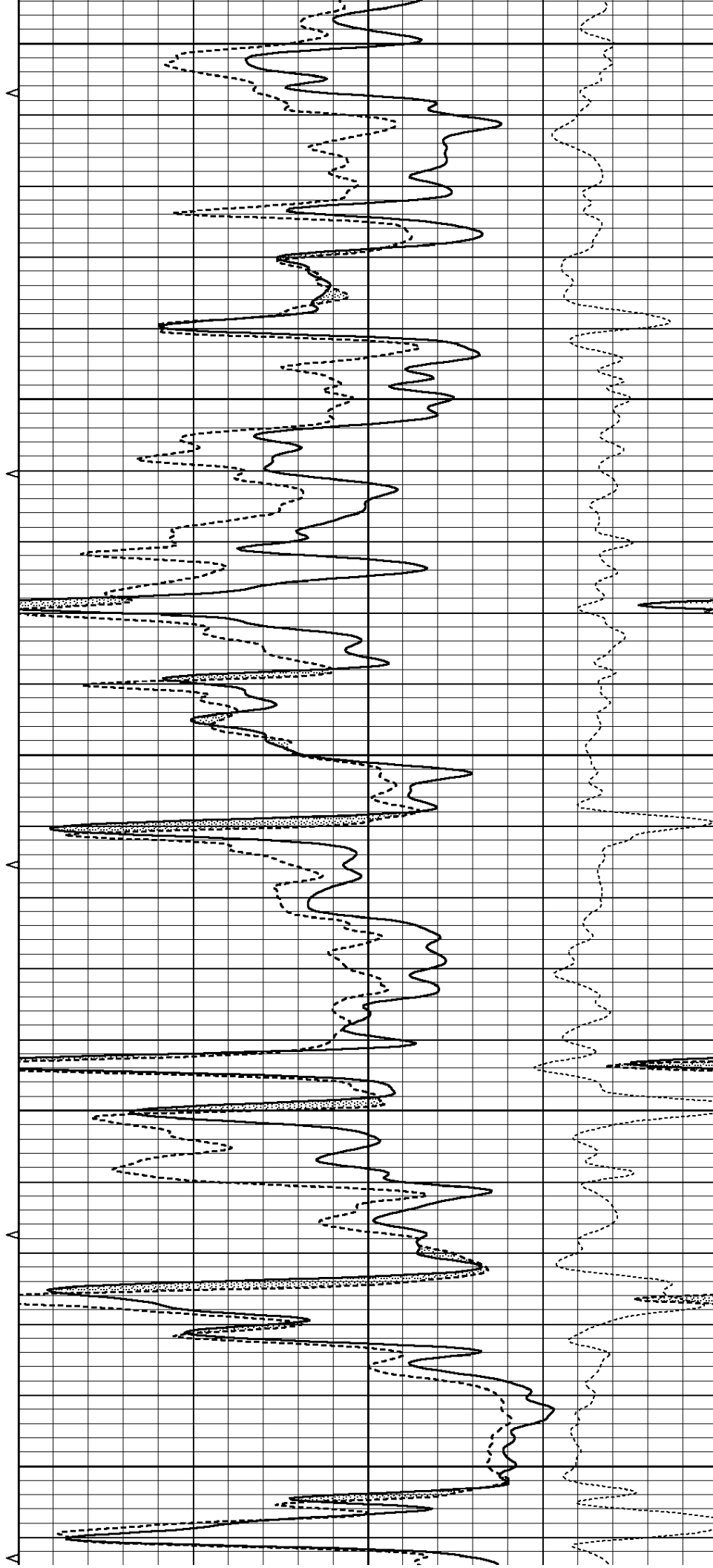
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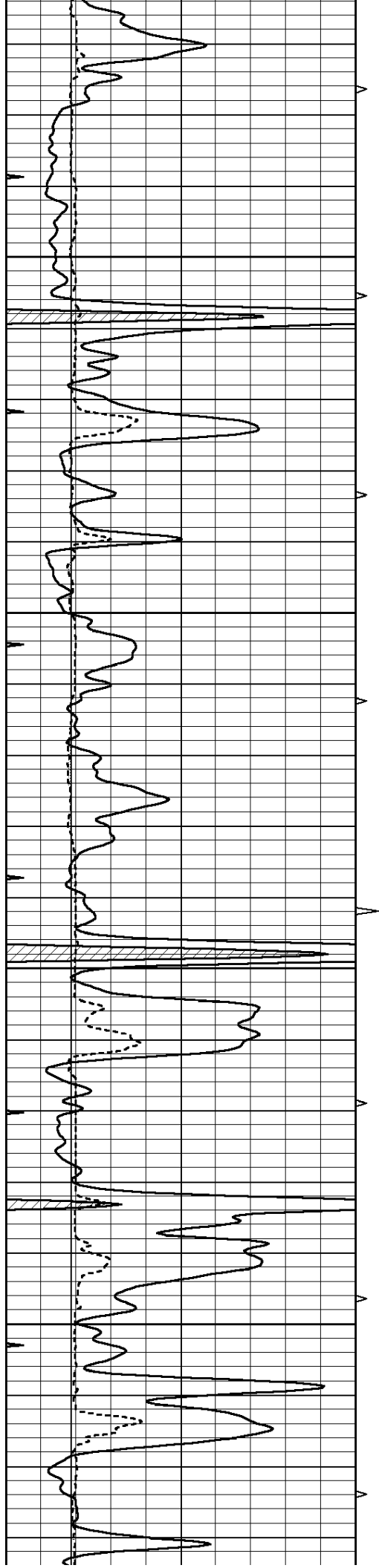
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3800

3850

3900



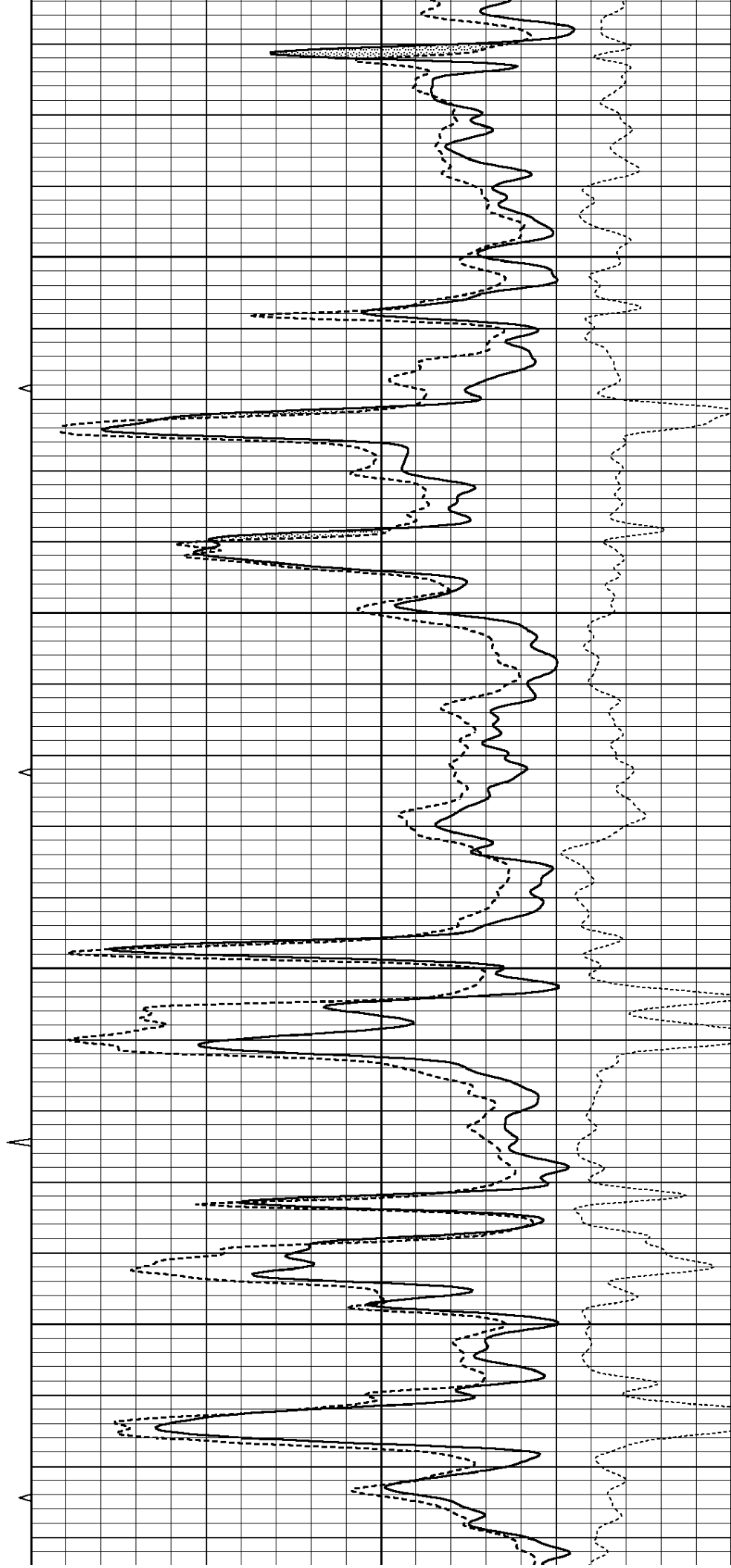


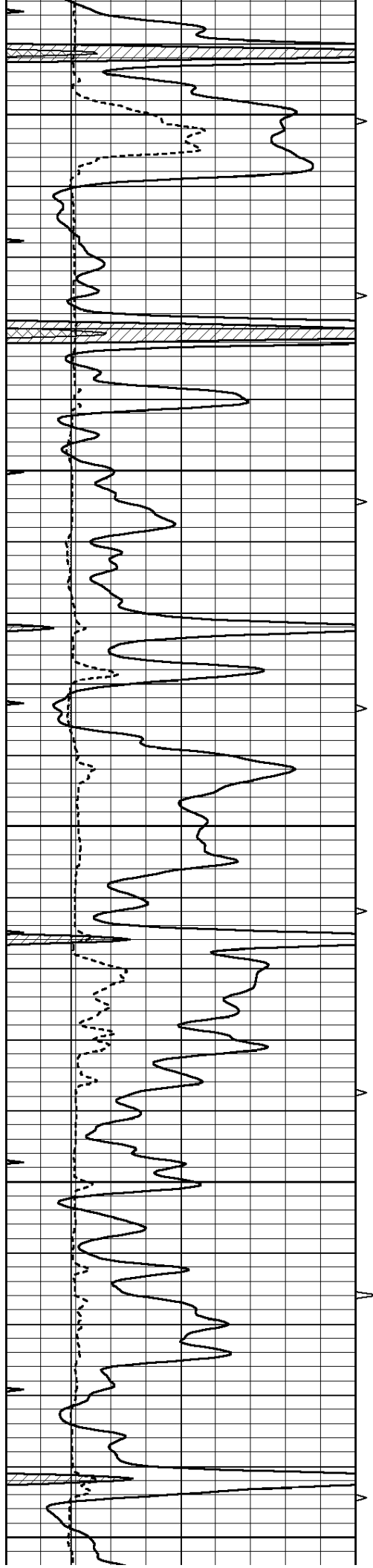
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4000

4050

4100





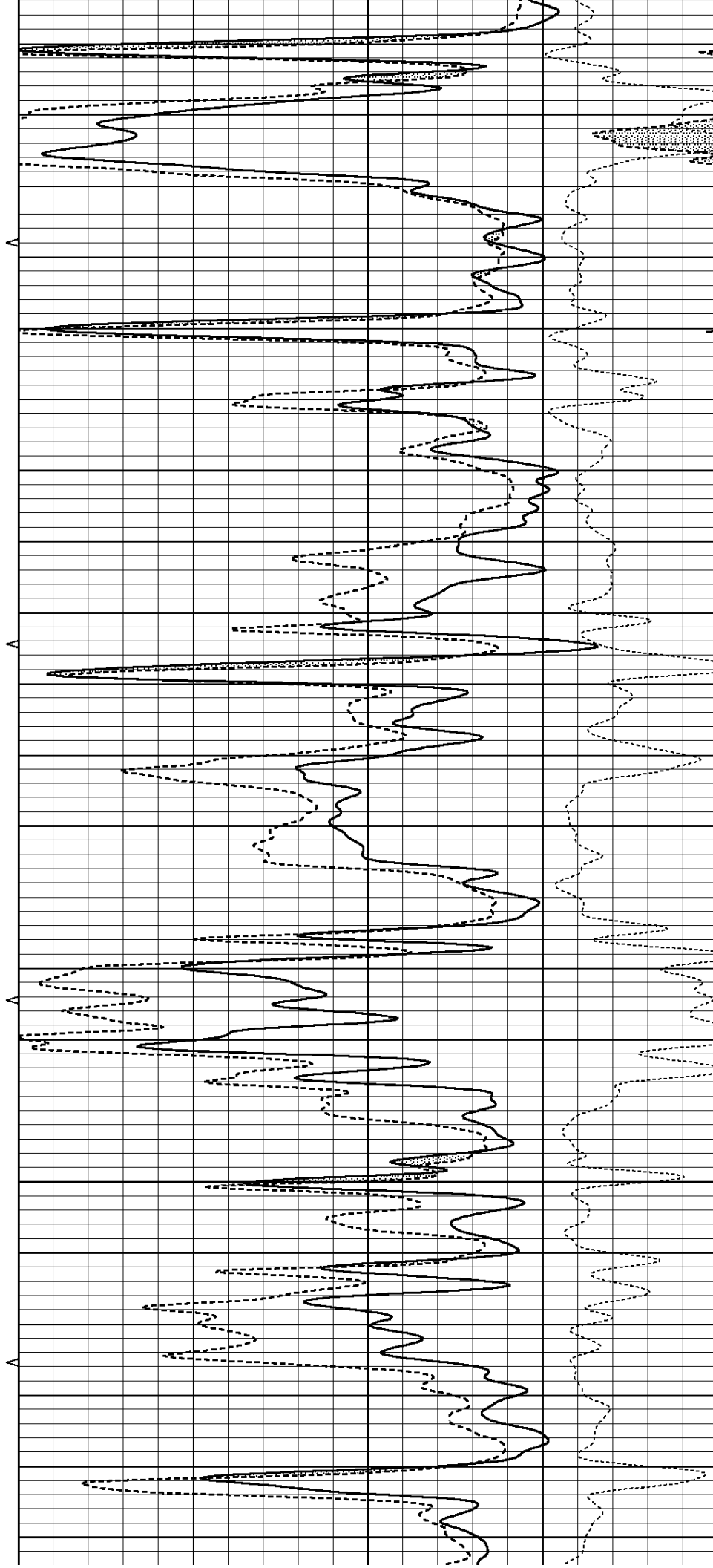
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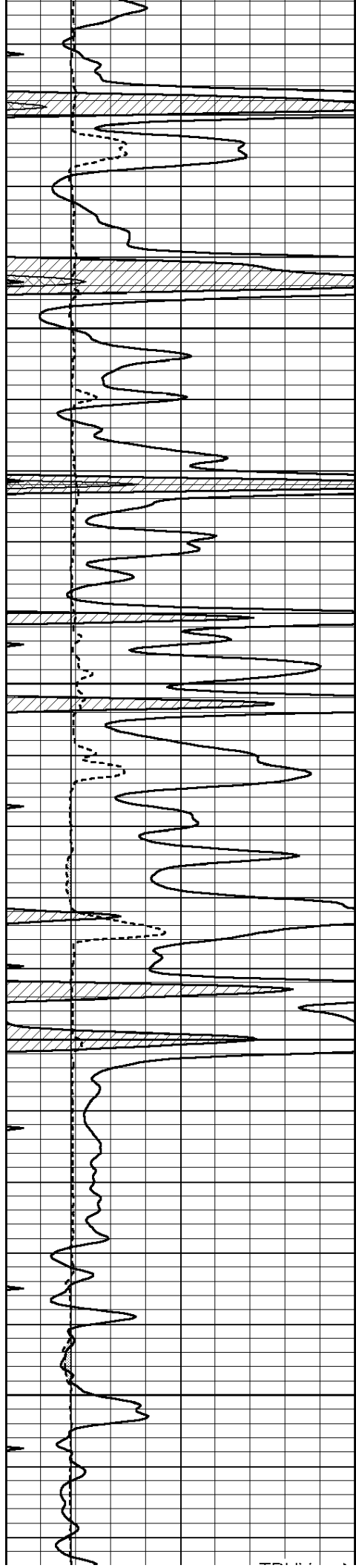
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4250

4300

4350





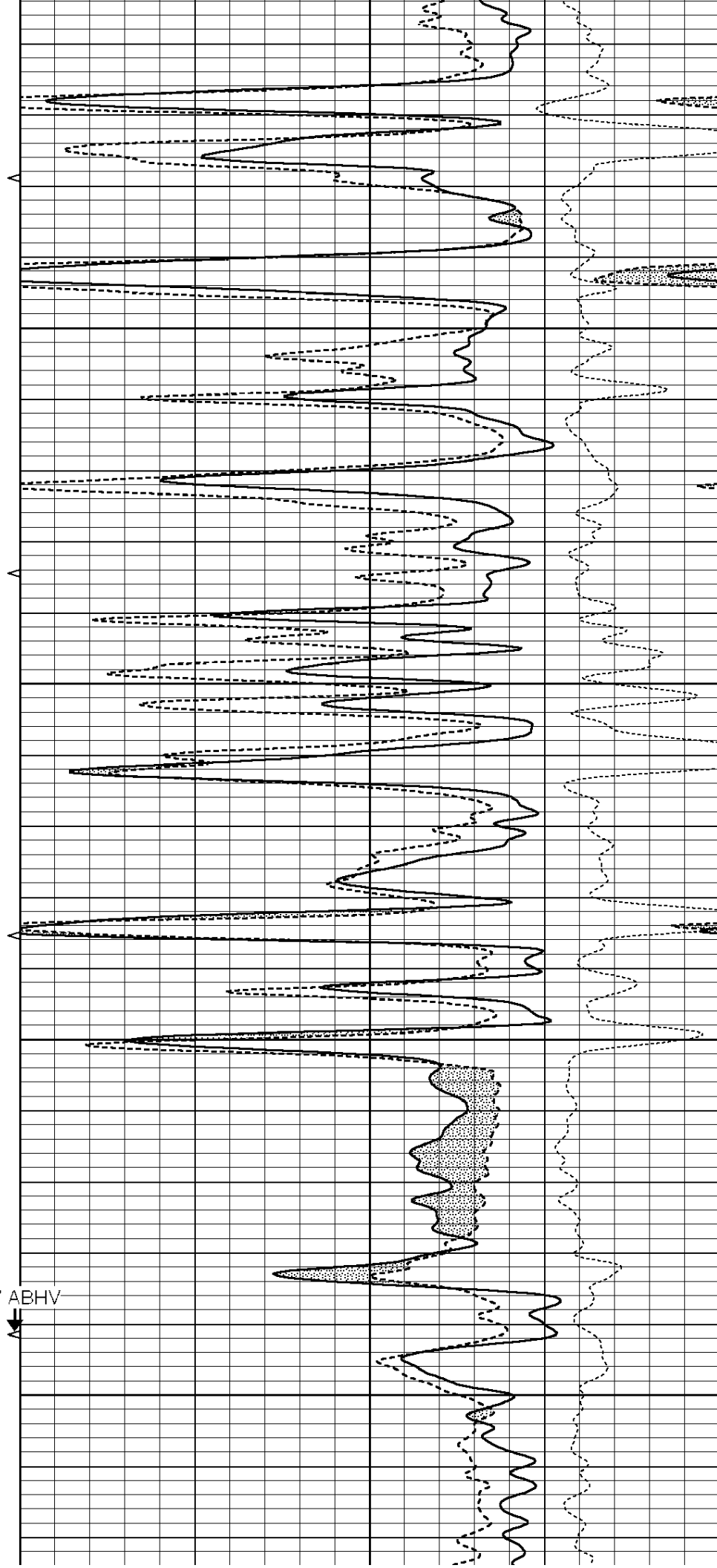
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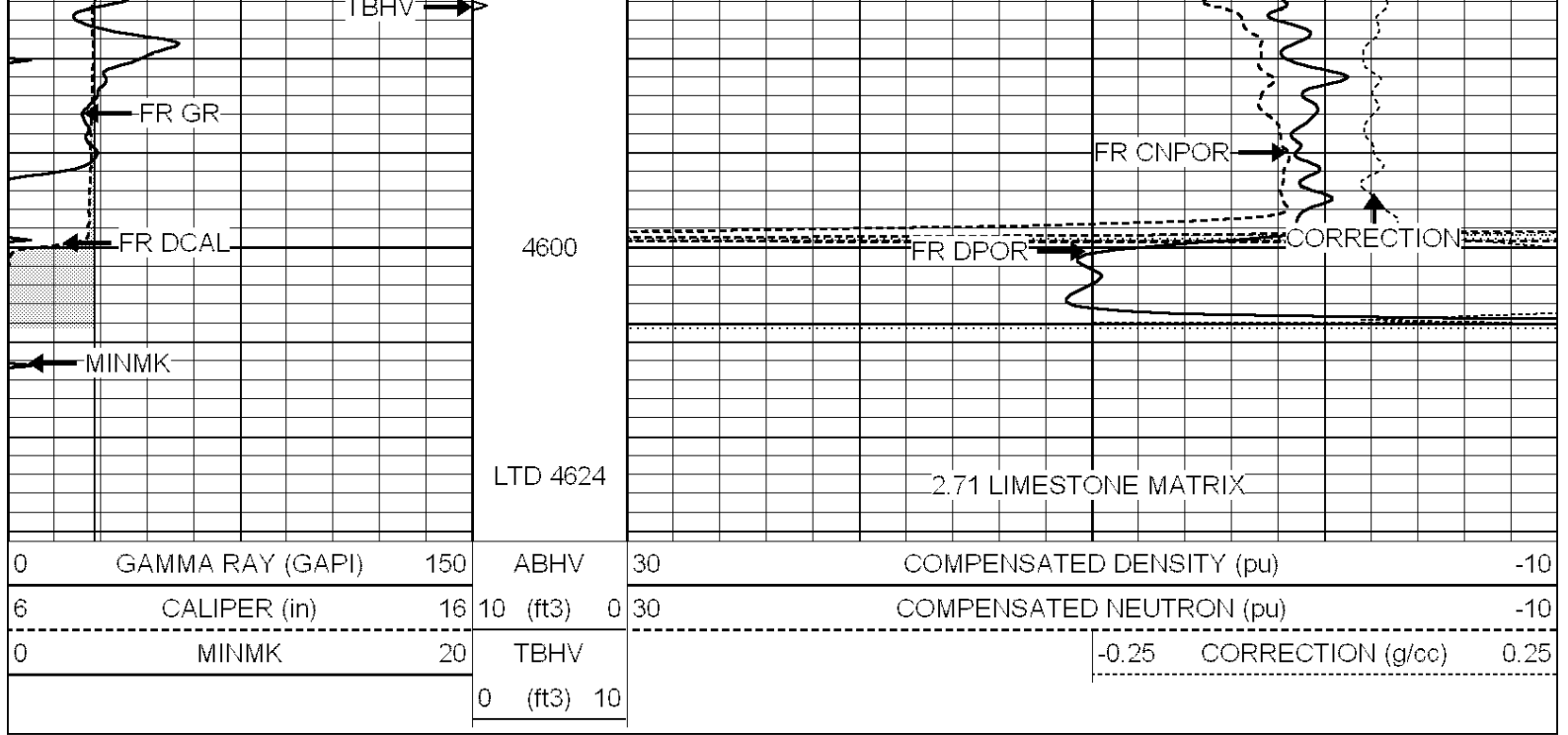
4450

4500

5.5" ABHV

4550



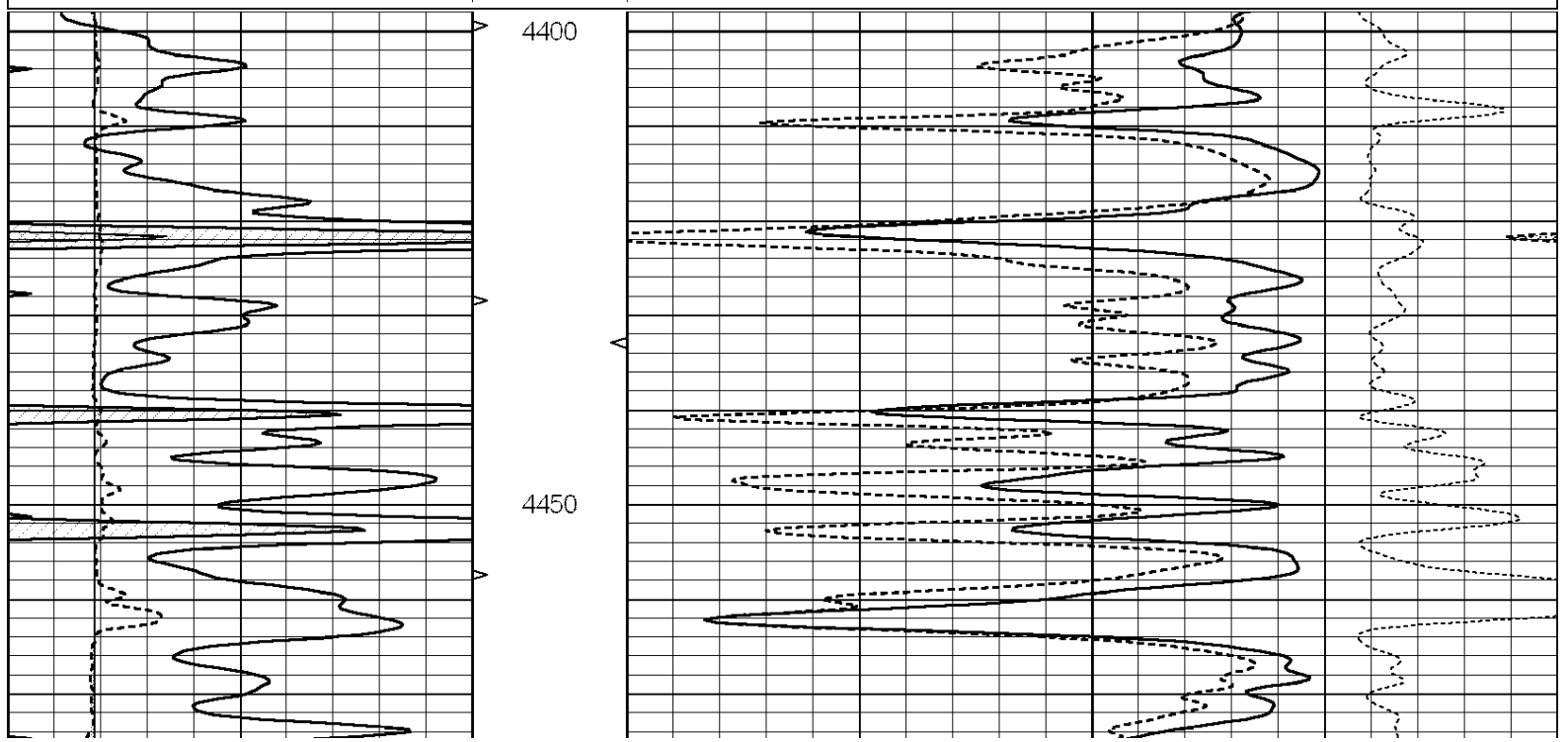


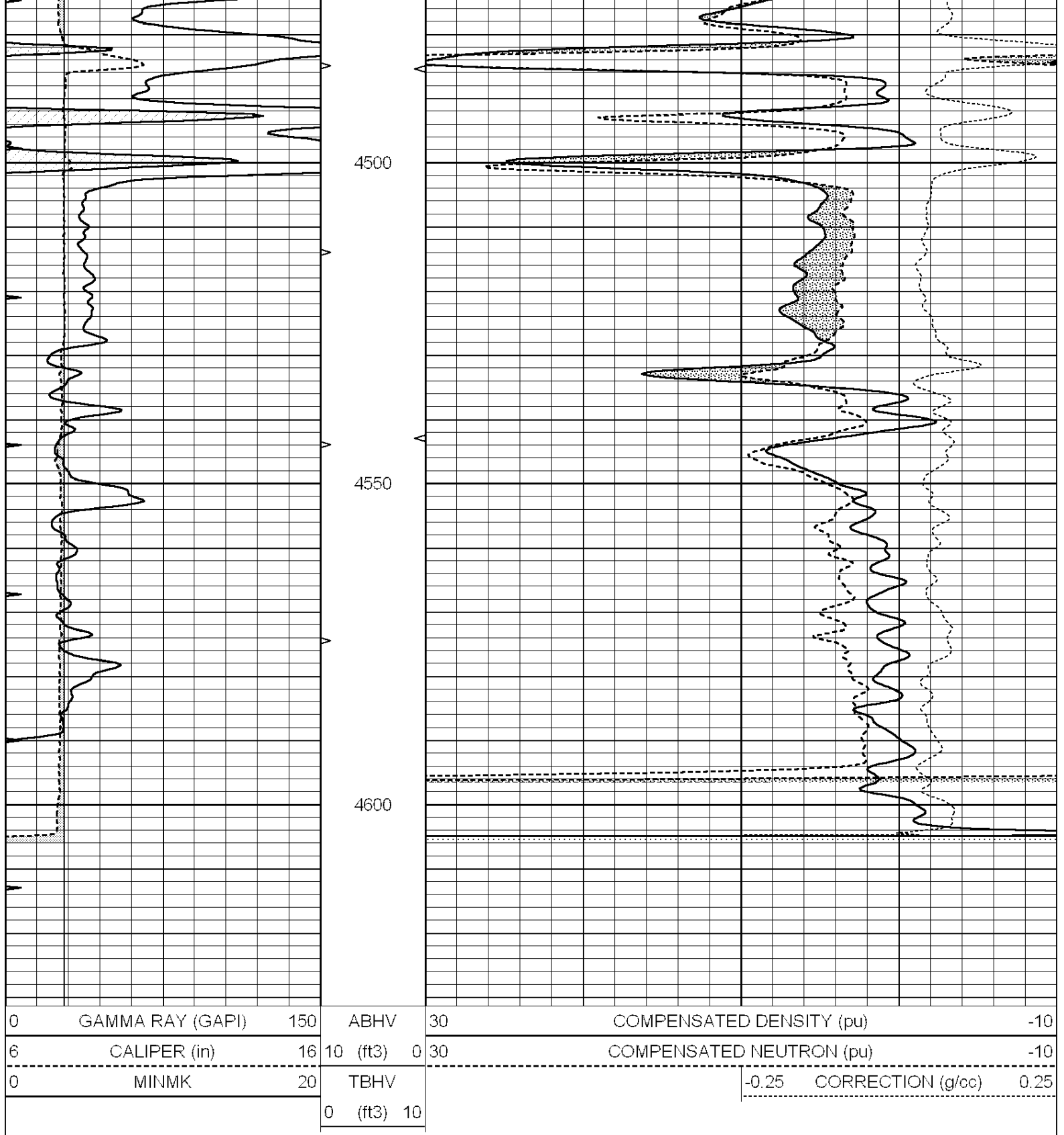
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REPEAT SECTION

Database File: 011818ddn.db
Dataset Pathname: pass2.7
Presentation Format: den_neu
Dataset Creation: Mon Dec 02 22:48:35 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		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





Calibration Report

Database File: 011818ddn.db
Dataset Pathname: pass3.11
Dataset Creation: Tue Dec 03 00:10:52 2013

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Tue Nov 19 06:44:33 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	-11.000
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	

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

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070559
Tool Model: OPEN_GR
Performed: Sun Nov 03 21:08:13 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.3000 GAPI/cps