



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENASTED  
DENSITY / NEUTRON  
PE LOG**

Company CITATION OIL & GAS CORP.  
Well PUTNAM INV #7  
Field  
County GRAHAM  
State KANSAS

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Well PUTNAM INV #7  
Field  
County GRAHAM State KANSAS

Location: API # : 15-065-23887-0000  
1650' FNL & 330' FWL  
NW - SW - NW  
SEC 23 TWP 9S RGE 21W  
Permanent Datum GROUND LEVEL Elevation 2303  
Log Measured From KELLY BUSHING 11' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL/MEL  
SONIIC  
Elevation  
K.B. 2314  
D.F. 2312  
G.L. 2303

Date	2/8/13
Run Number	ONE
Depth Driller	3854
Depth Logger	3855
Bottom Logged Interval	3831
Top Log Interval	2500
Casing Driller	8 5/8" @ 1761'
Casing Logger	1760
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/52
pH / Fluid Loss	10.0/8.0
Source of Sample	FLOWLINE
Rim @ Meas. Temp	1.30 @ 98F
Rmf @ Meas. Temp	0.98 @ 98F
Rmc @ Meas. Temp	1.56 @ 98F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	1.11 @ 115F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	115F
Equipment Number	4854
Location	HAYS, KANSAS
Recorded By	JEFF GRONEMEG
Witnessed By	ED GLASSMAN

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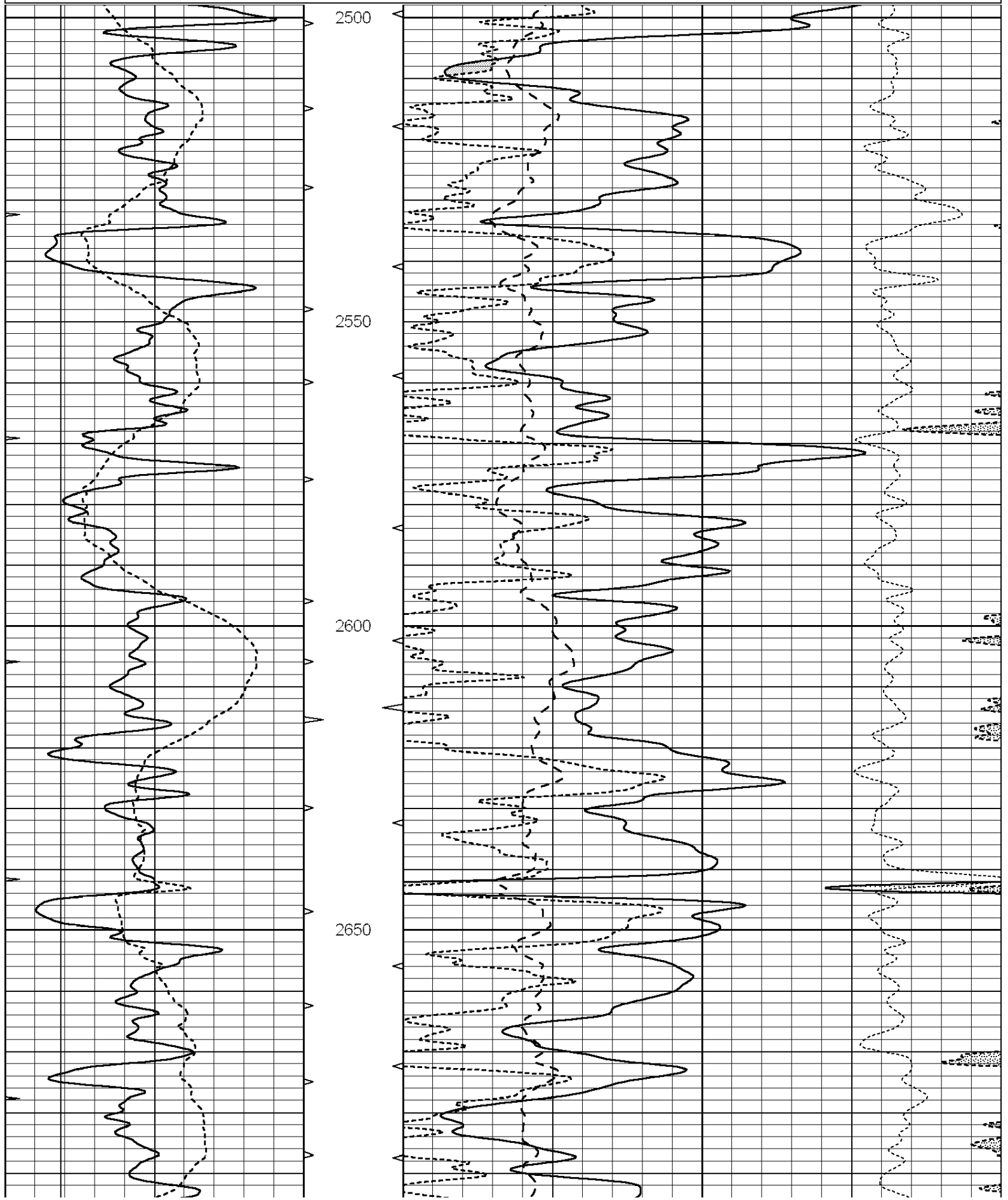
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

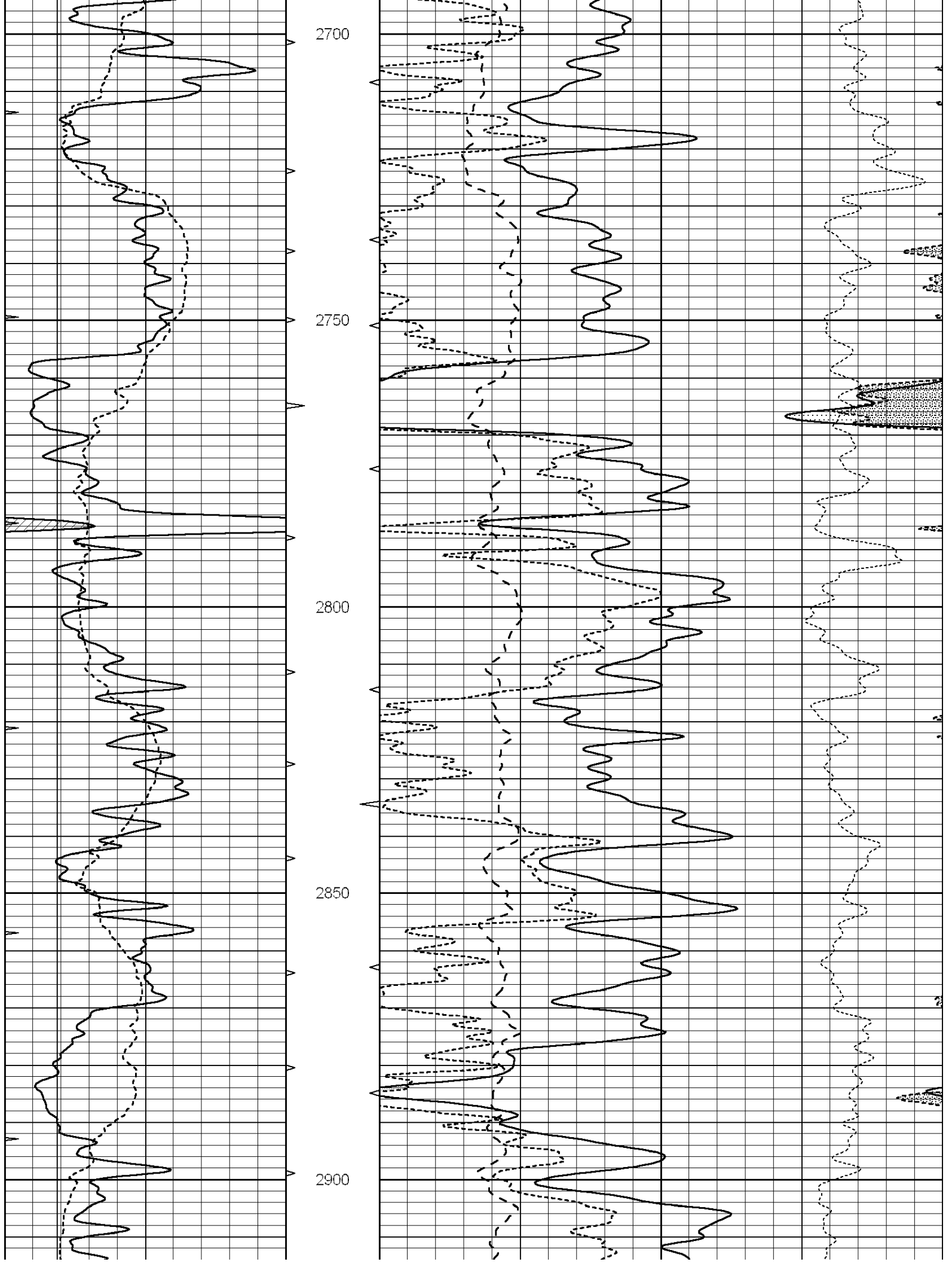
**Comments**

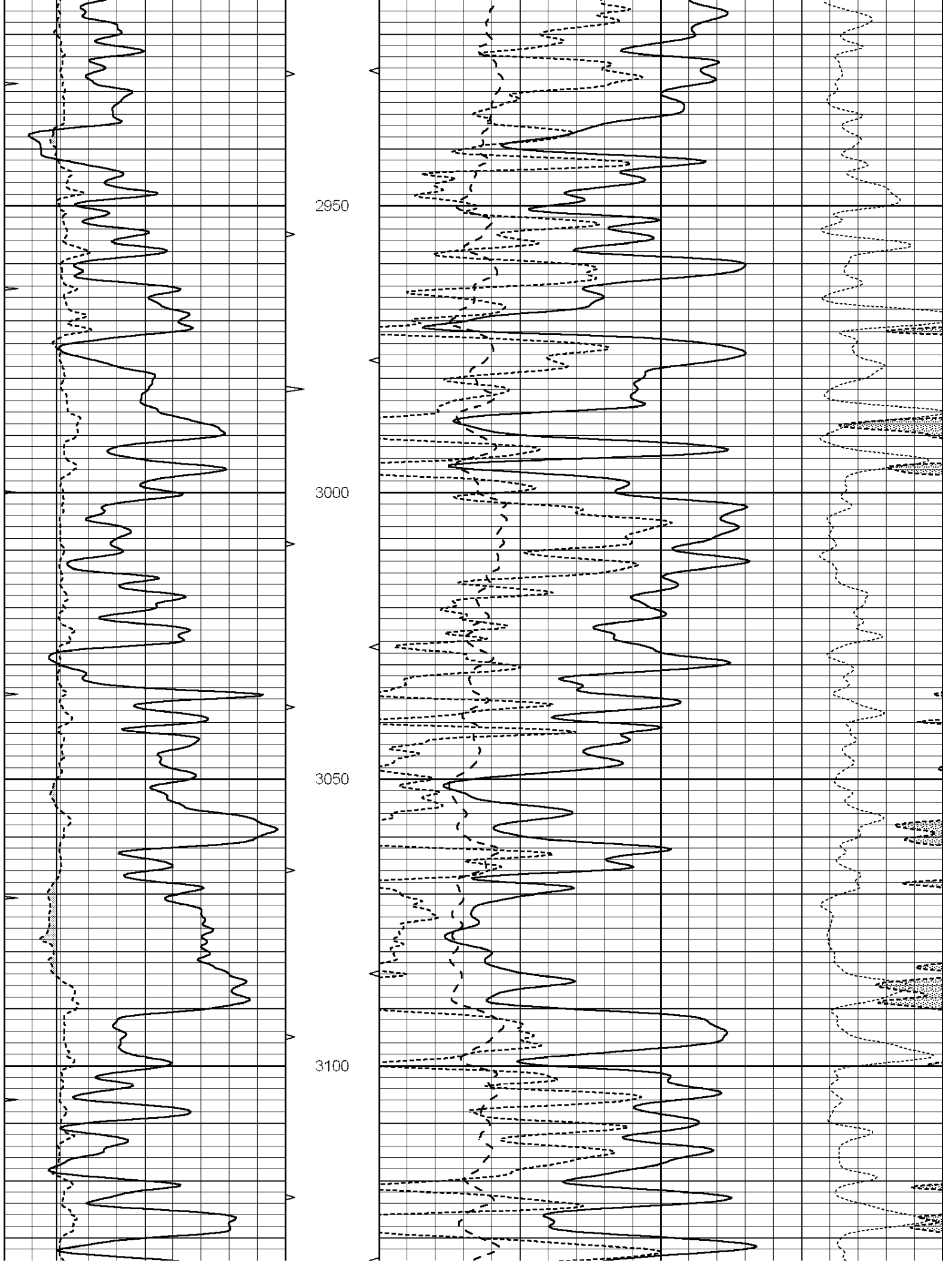
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
PALCO, KS - SOUTH TO RD X (REDLINE RD) - WEST 4 MILES TO CHURCH OF GOD  
1 1/2 MILES NORTH - EAST INTO

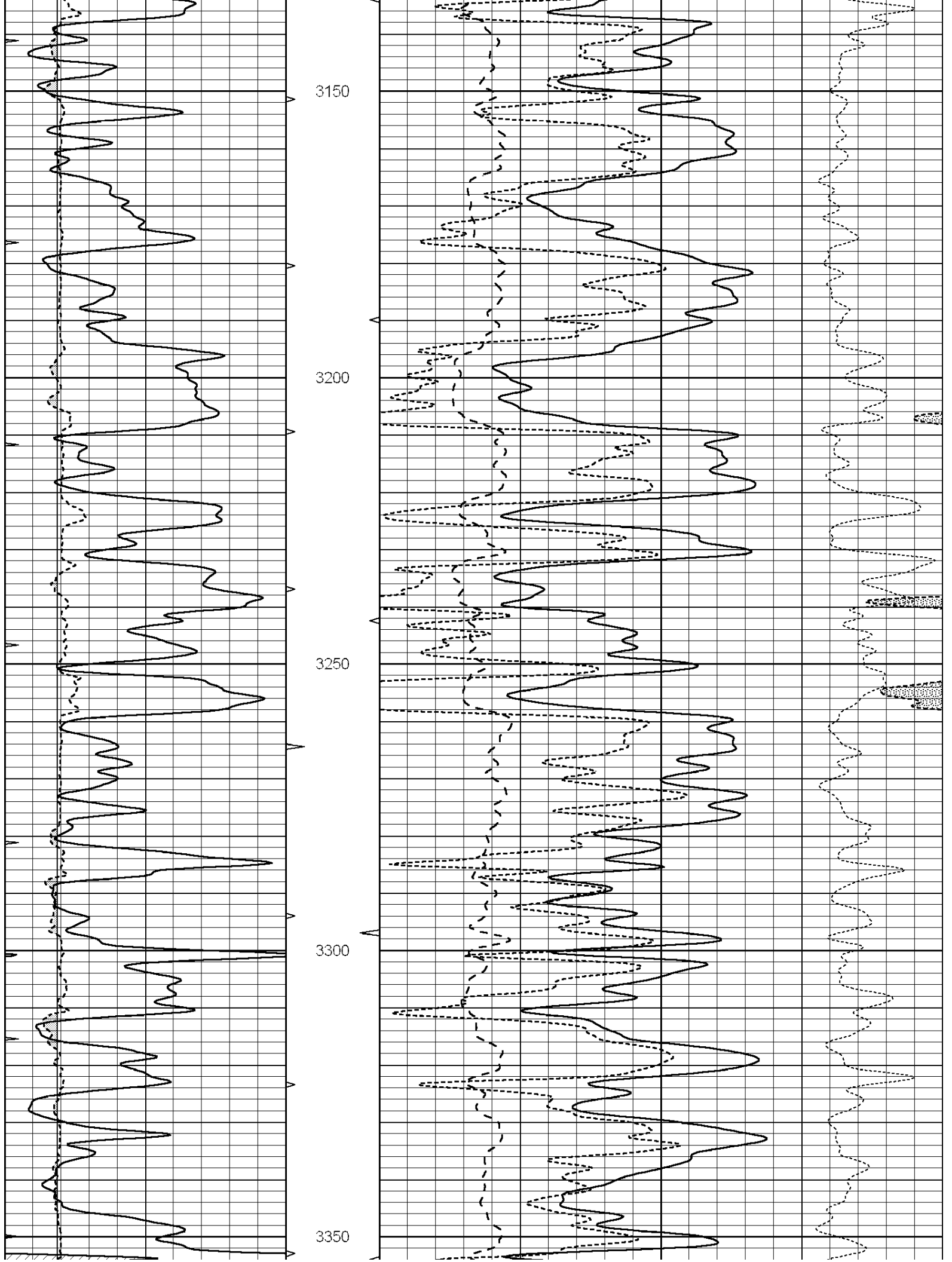
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Dataset Pathname: pass3.3  
Presentation Format: \_ldt\_neu  
Dataset Creation: Fri Feb 08 14:01:49 2013 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:240

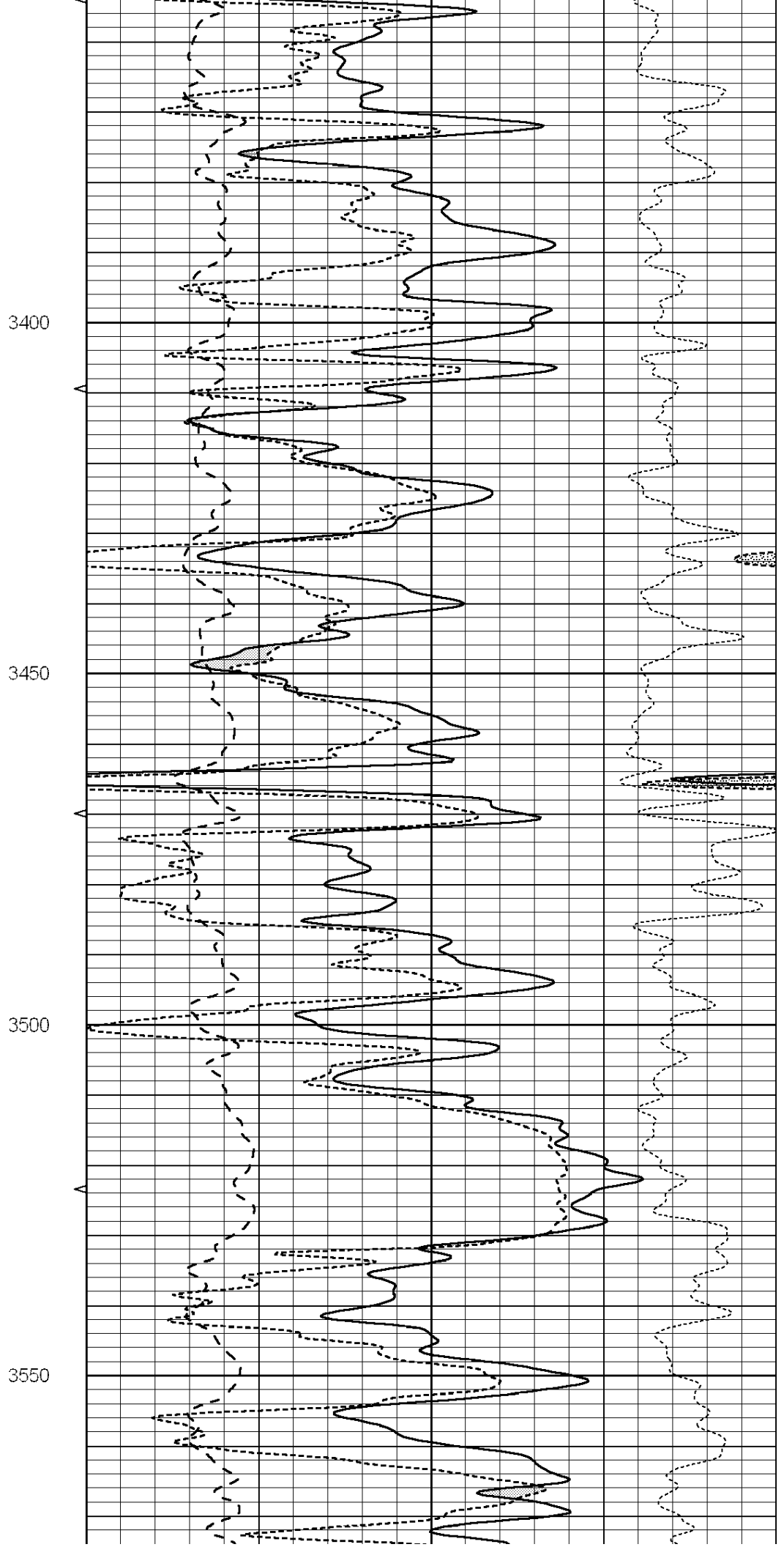
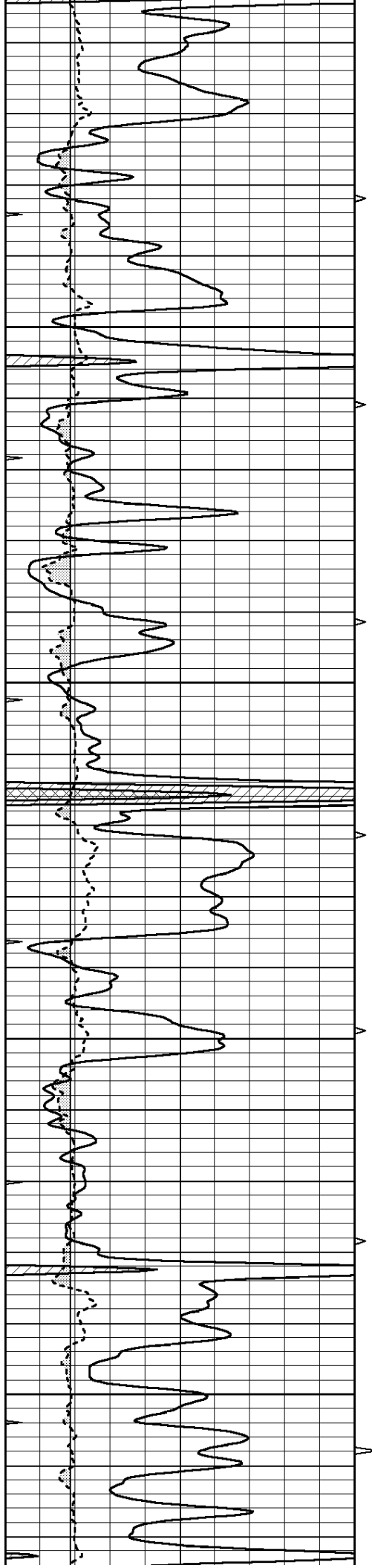
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

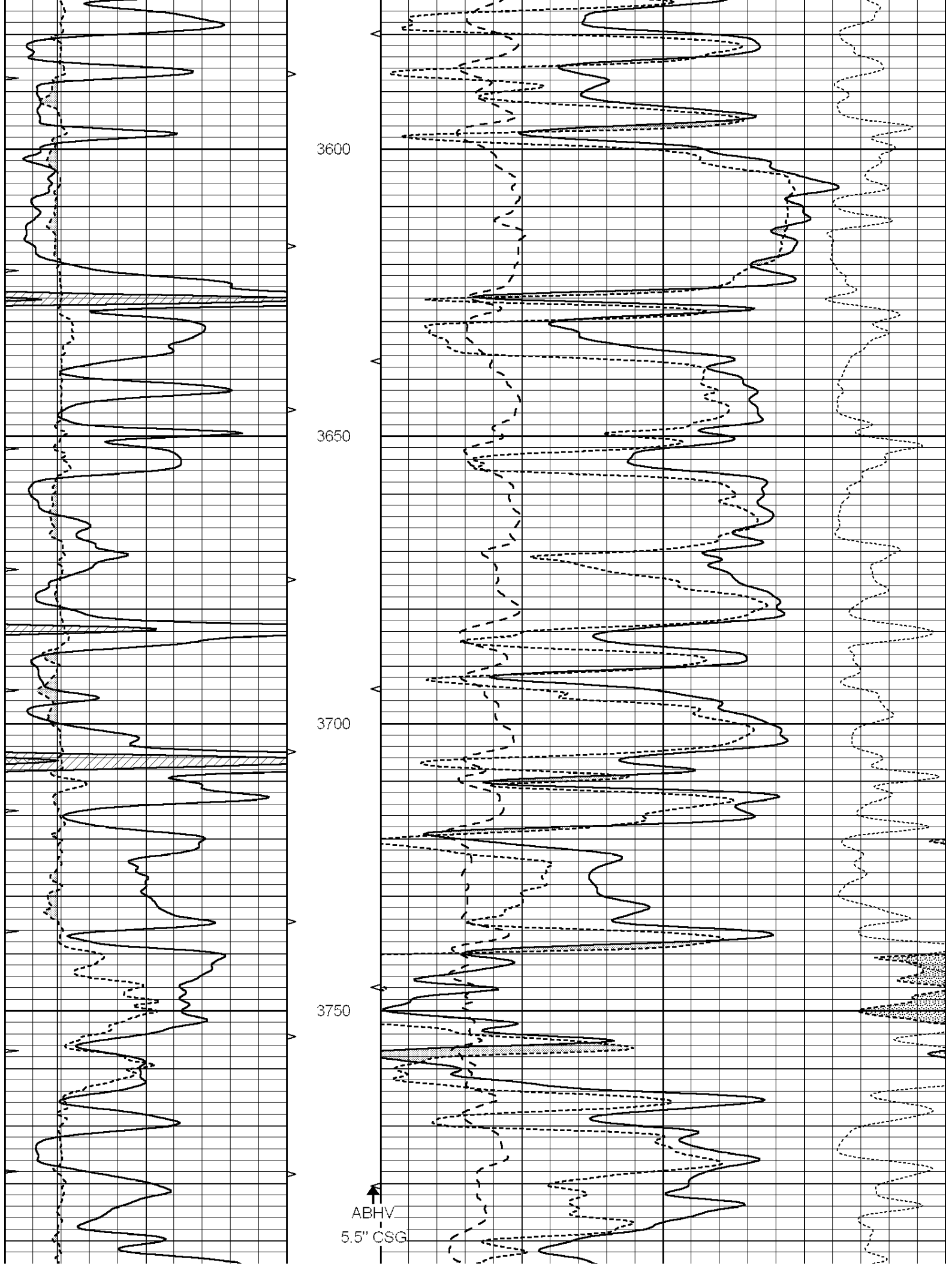












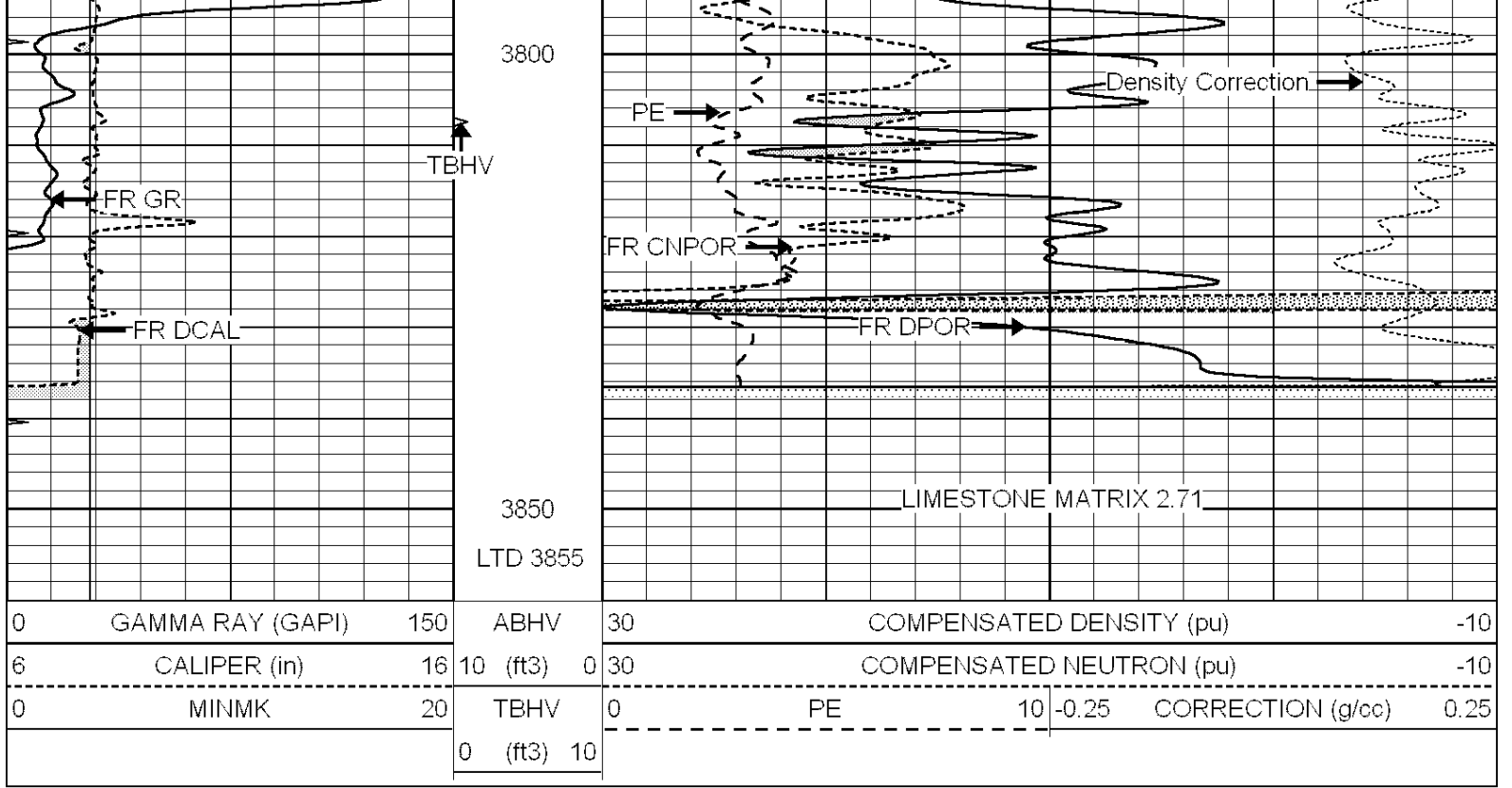
3600

3650

3700

3750

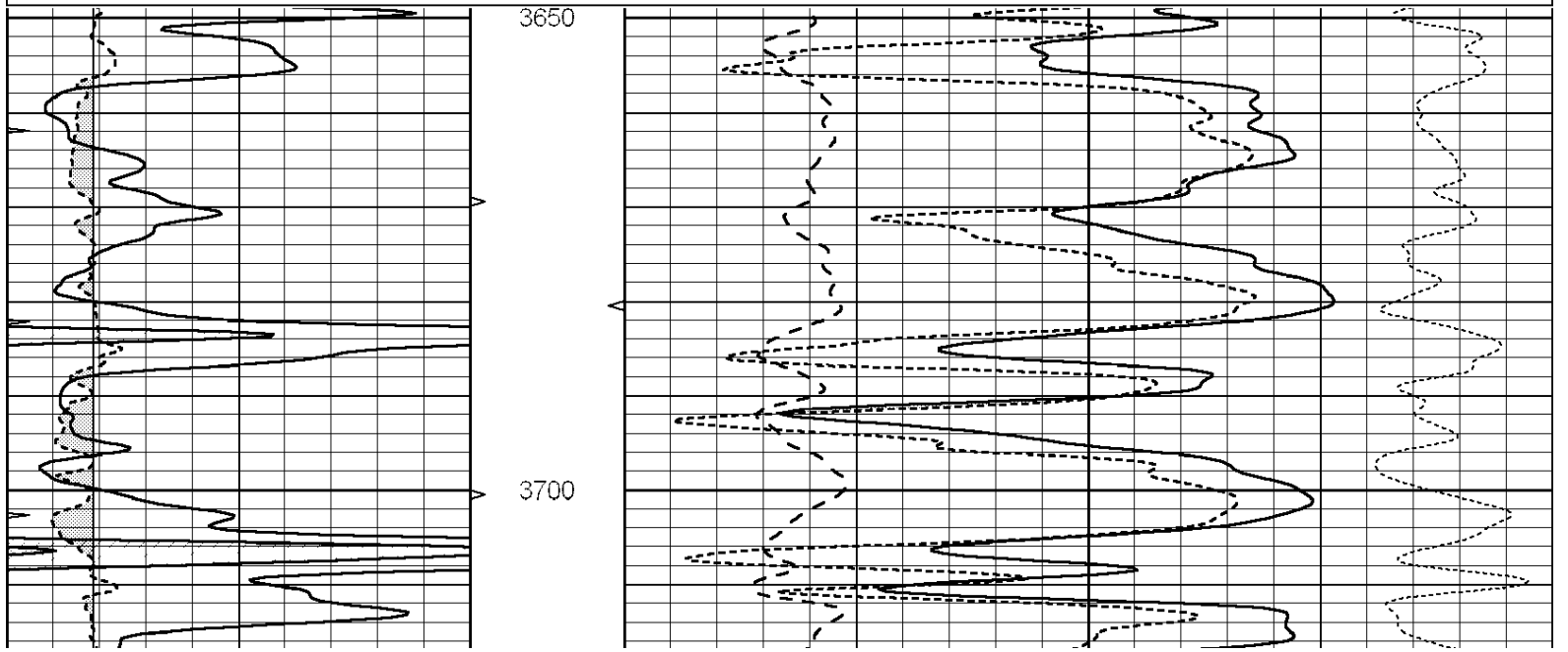
ABHV  
5.5" CSG

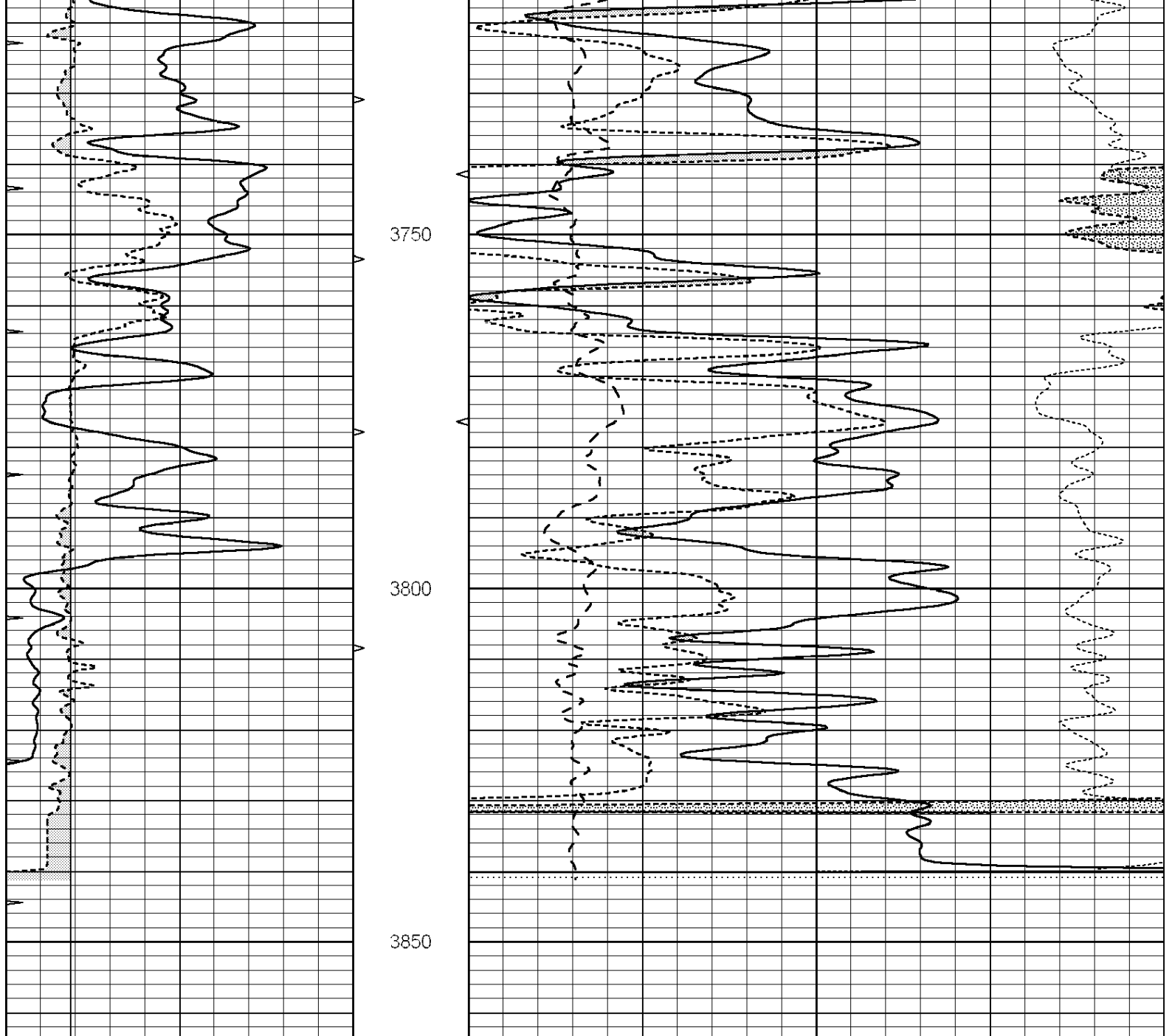


# REPEAT SECTION

Database File: 010409pe.db  
 Dataset Pathname: pass2.2  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Fri Feb 08 13:13:10 2013 by Calc SOC 120430  
 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					





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

Calibration Report

Database File: 010409pe.db  
 Dataset Pathname: pass3.3  
 Dataset Creation: Fri Feb 08 14:01:49 2013 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG  
 Surface Cal Performed: Fri Feb 01 20:16:08 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	621.923	-12.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-20.000
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: 006 Model: PRB

Master Calibration					Performed Sun Aug 15 09:48:41 2010			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1686.6	11612.8	3932.0	12718.8				cps
Window 2	1531.4	9204.7	3267.8	9851.9				cps
Window 3	1198.3	4733.6	1952.5	4920.6				cps
Window 4	317.3	321.2	325.9	303.6				cps
Long Space	0.0	7673.3	1736.4	8320.4				cps
Short Space	1.7	2548.5	1657.2	2628.8				cps
Rho		1.7100	2.5900	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 43.8	Rib Slope	: 0.961	Density/Spine Ratio				: 0.569
Spine Angle	: 73.8	Spine Slope	: 3.453	Spine Intercept				: -18.1

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: Wed Jan 30 12:02:17 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 0.3500 GAPI/cps