



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

COMPENSATED DENSITY/NEUTRON LOG

Company		RITCHIE EXPLORATION INC.	
Well	HEIER 13D #1		
Field	WILDCAT		
County	GOVE	State	KANSAS
Location:	975' FSL & 1150' FEL NW - SE - SE		API # : 15-063-22216-00-00 DIL
Permanent Datum	SEC 13	TWP 12S	RGE 29W
Log Measured From	GROUND LEVEL Elevation 2784		
Drilling Measured From	KELLY BUSHING 5' A.G.L. KELLY BUSHING		
Elevation	K.B. 2789 D.F. 2787 G.L. 2784		
Date	9/12/14		
Run Number	ONE		
Depth Driller	4640		
Depth Logger	4641		
Bottom Logged Interval	4617		
Top Log Interval	3500		
Casing Driller	8 5/8" @ 251		
Casing Logger	248		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES	1,500 PPM
Density / Viscosity	9.2 / 62		
pH / Fluid Loss	10.5 / 8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.00 @ 82F		
Rmt @ Meas. Temp	0.75 @ 82F		
Rmc @ Meas. Temp	1.20 @ 82F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	0.67 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	122F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	IAN MABB		
Witnessed By	MIKE ENGELBRECHT		

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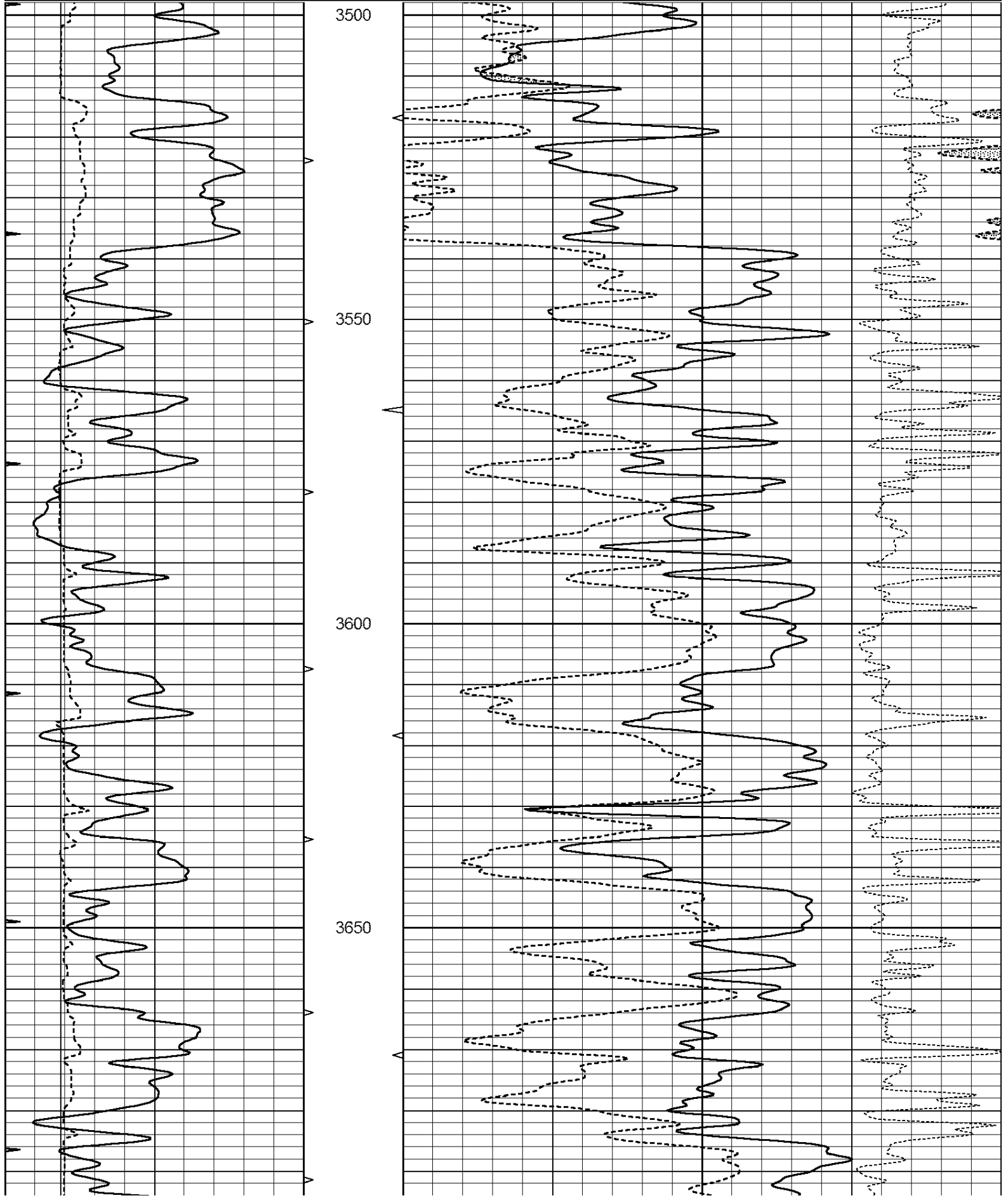
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

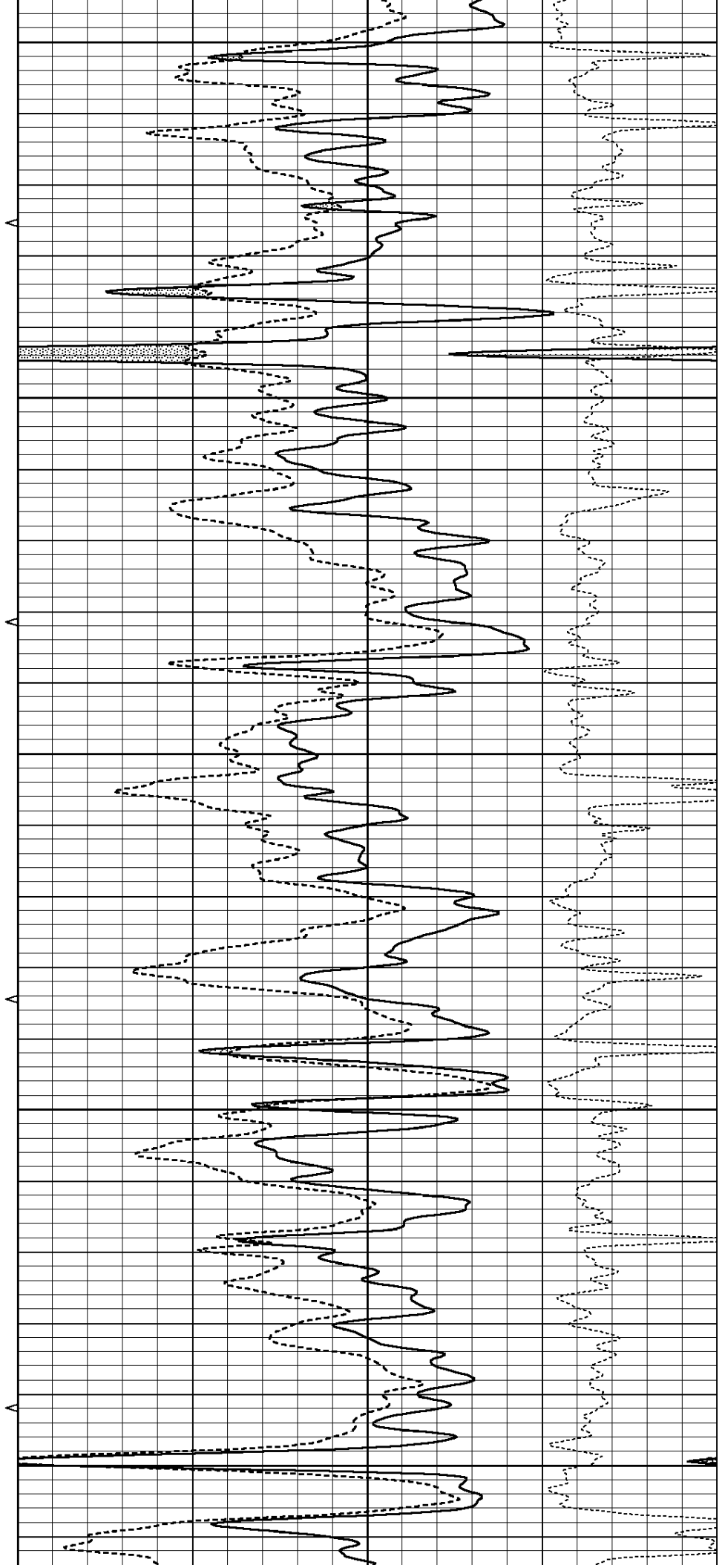
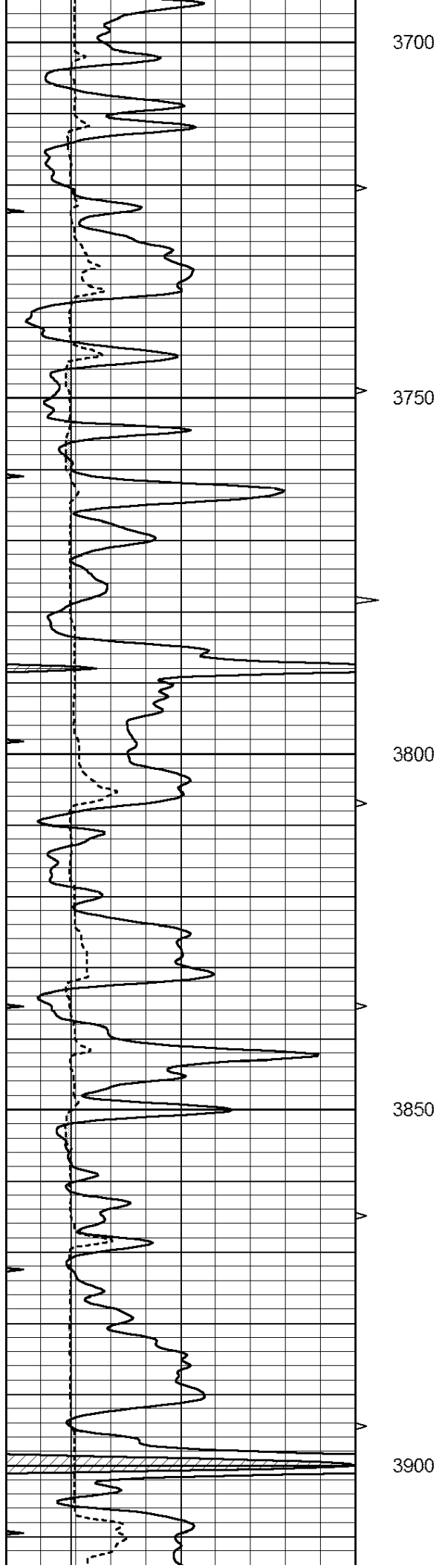
Comments

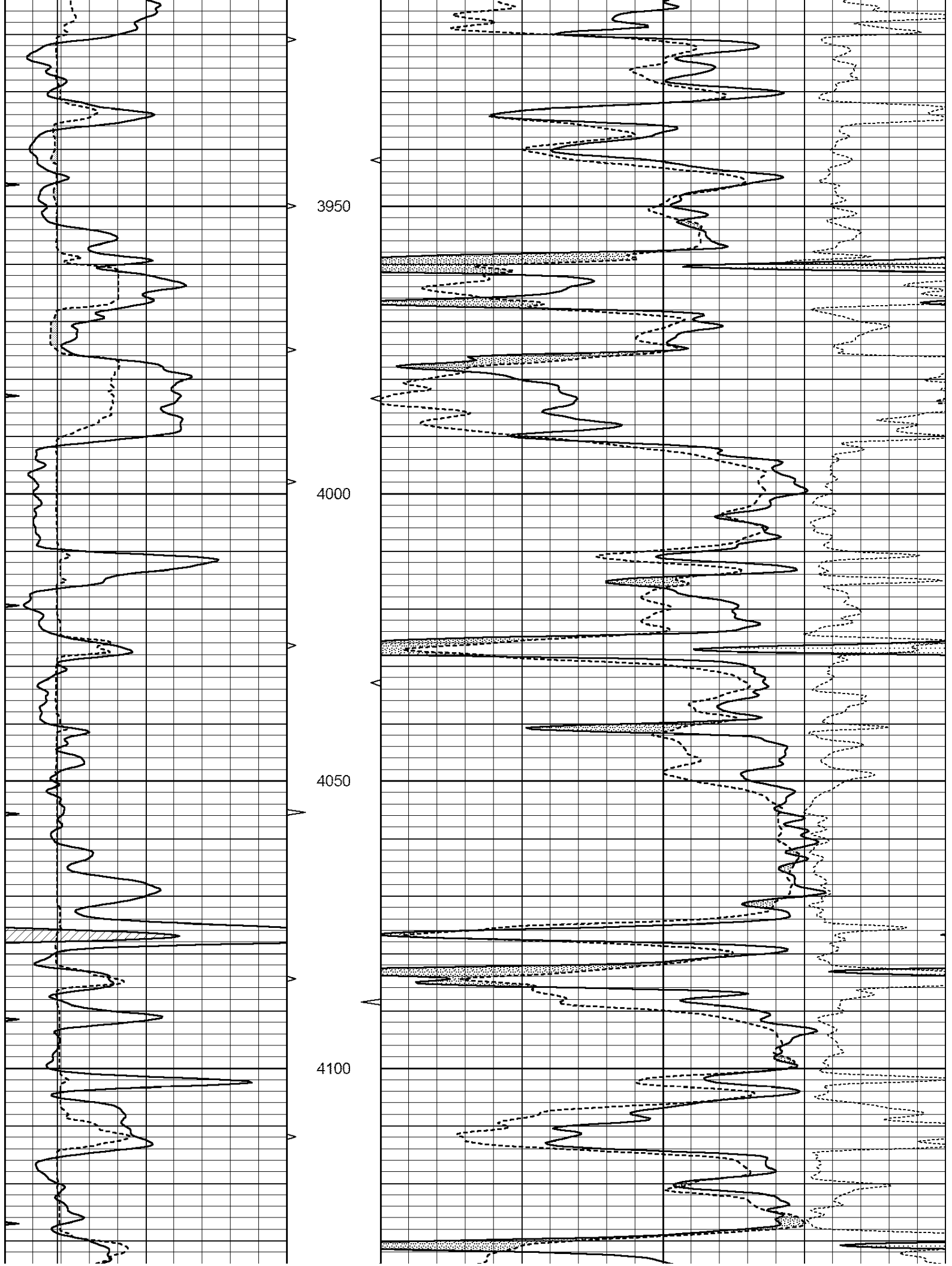
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
 DIRECTIONS:
 GOVE KS. - 3 MILES NORTH - WEST 1/2 MILE - NORTH INTO

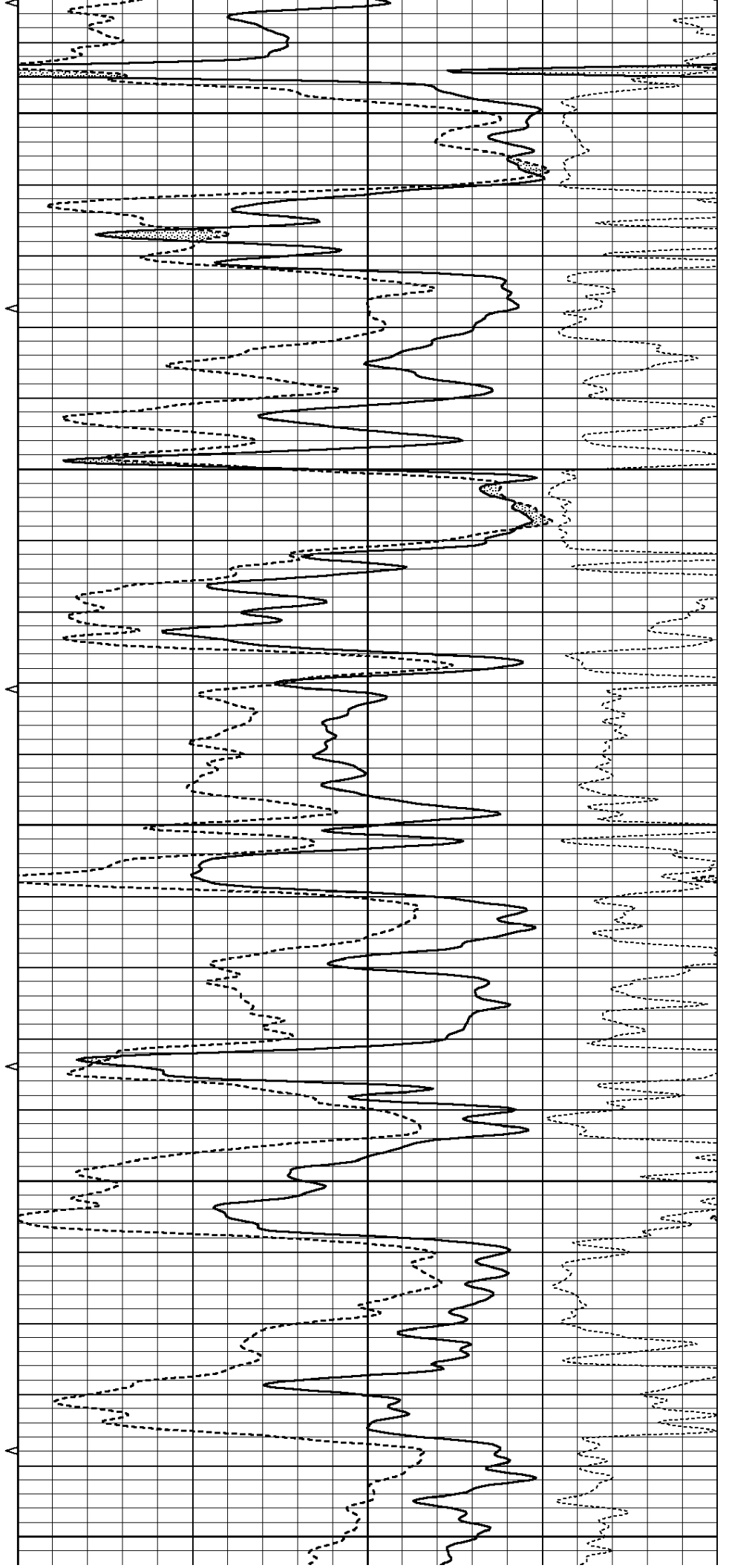
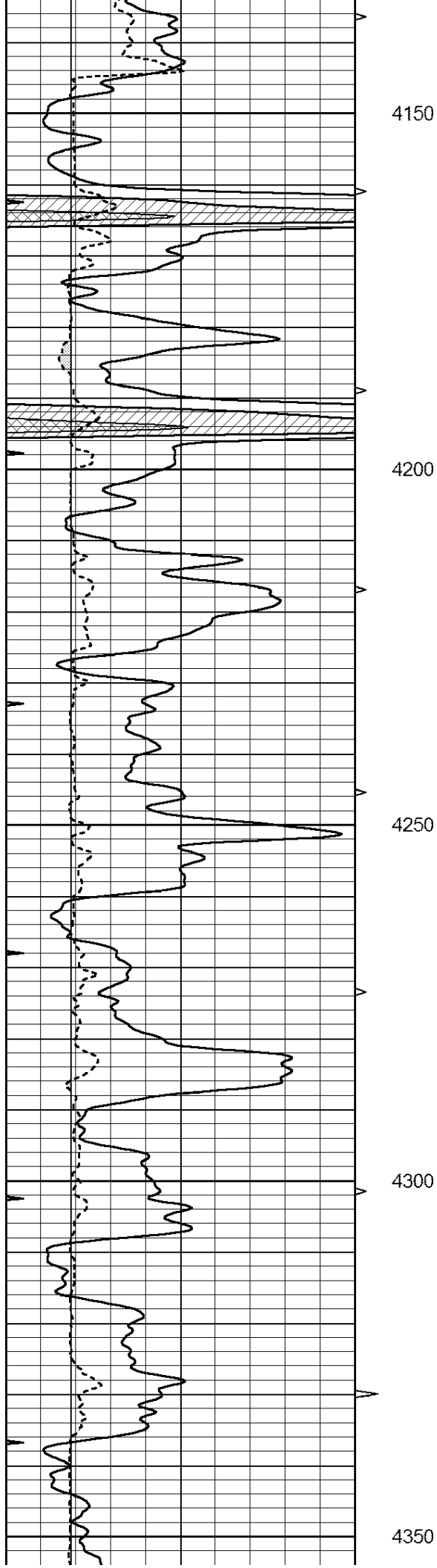
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 Dataset Pathname: pass3.3
 Presentation Format: den_neu
 Dataset Creation: Fri Sep 12 22:48:42 2014 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

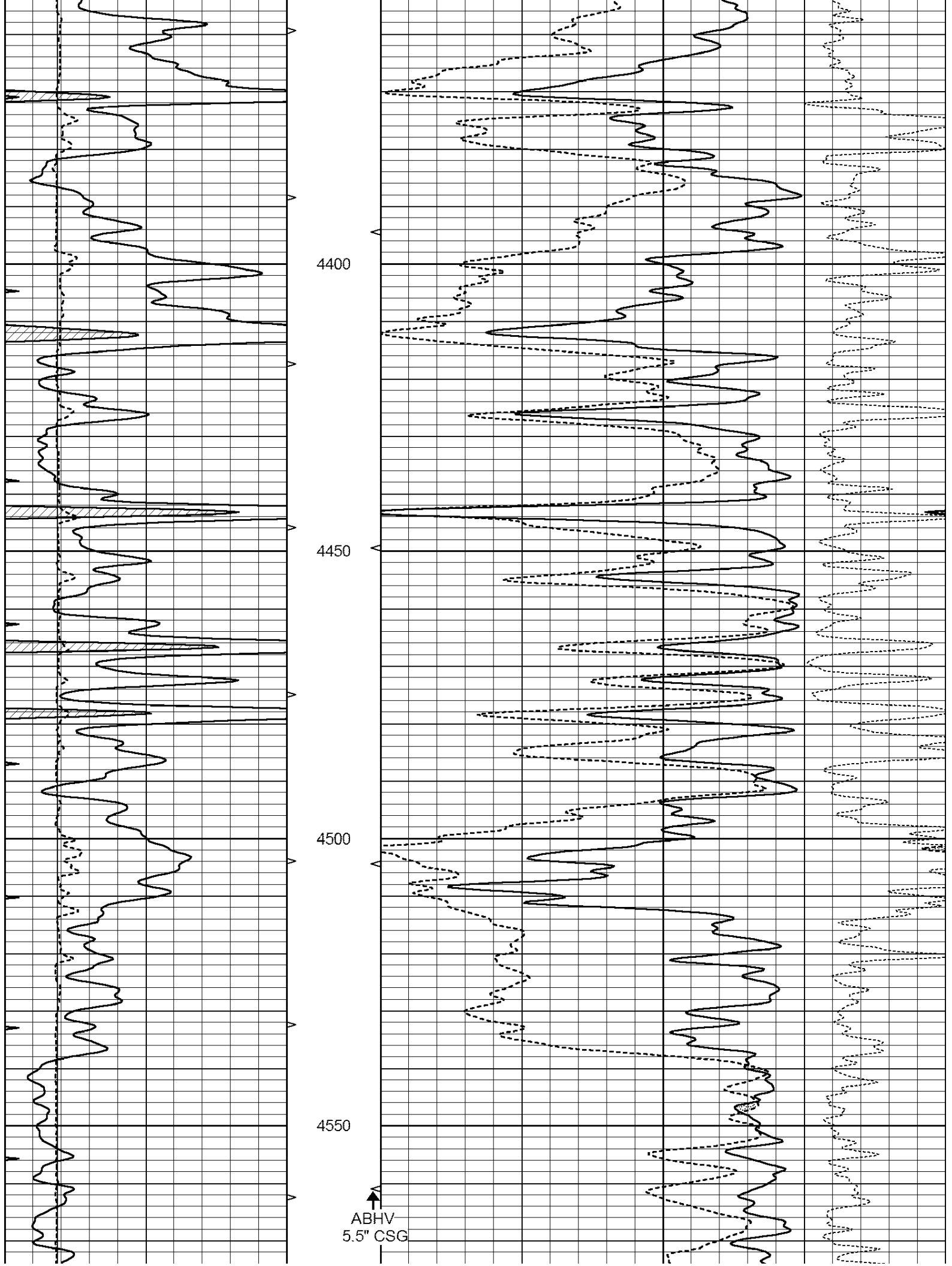
Charted by:		Depth in Feet scaled 1:2.10				
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25	CORRECTION (g/cc) 0.25
			0 (ft3) 10			

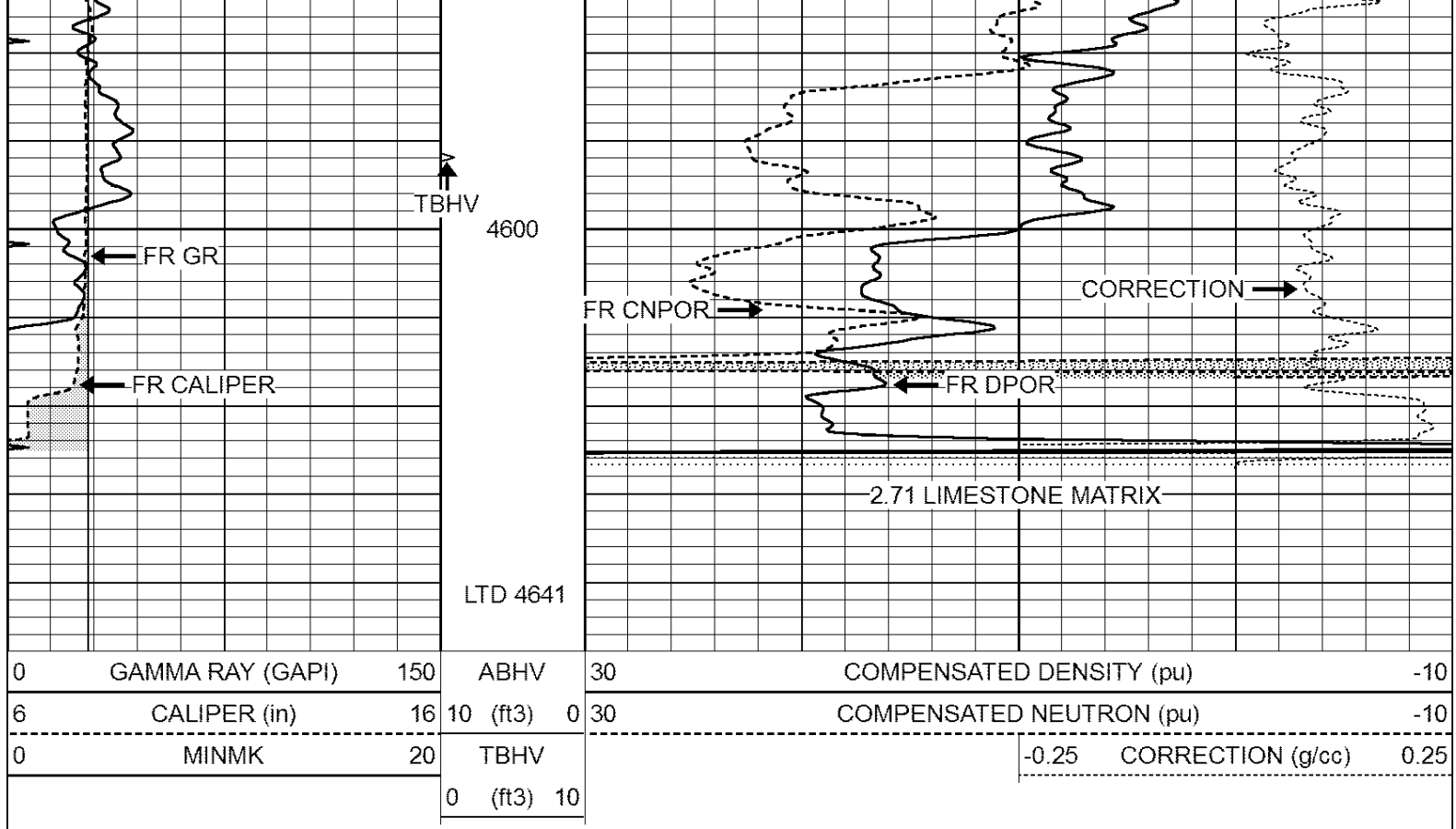








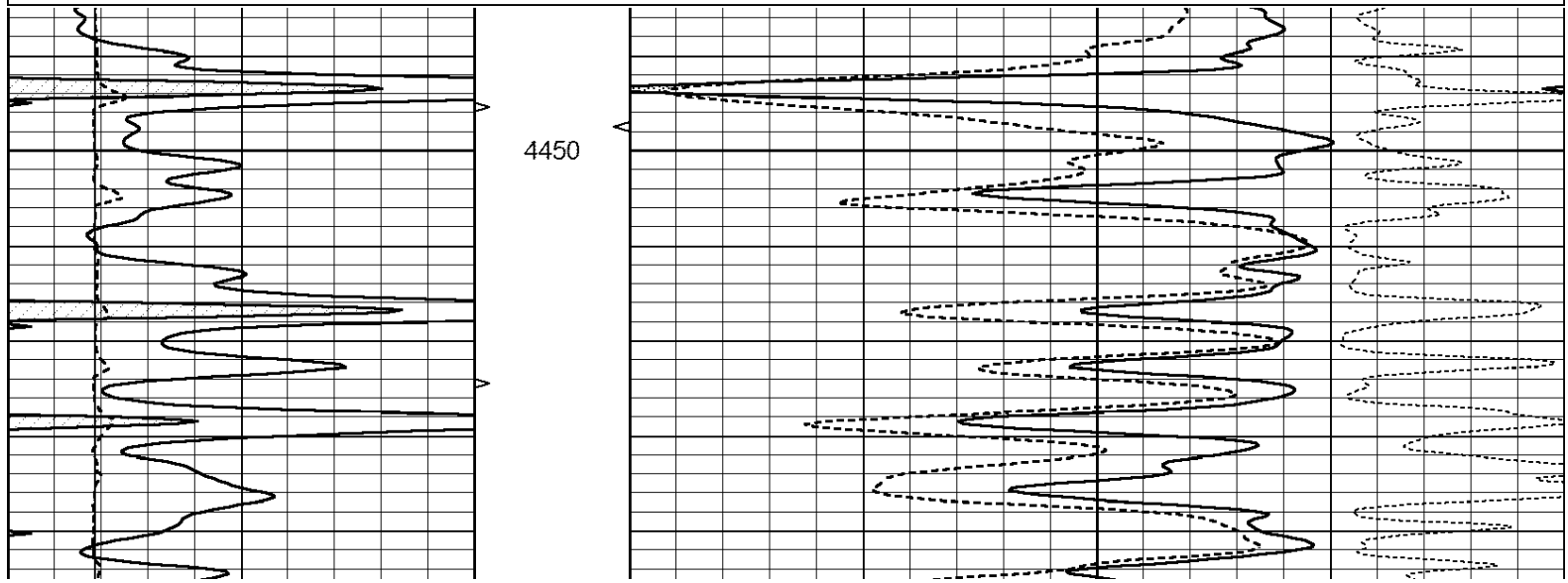


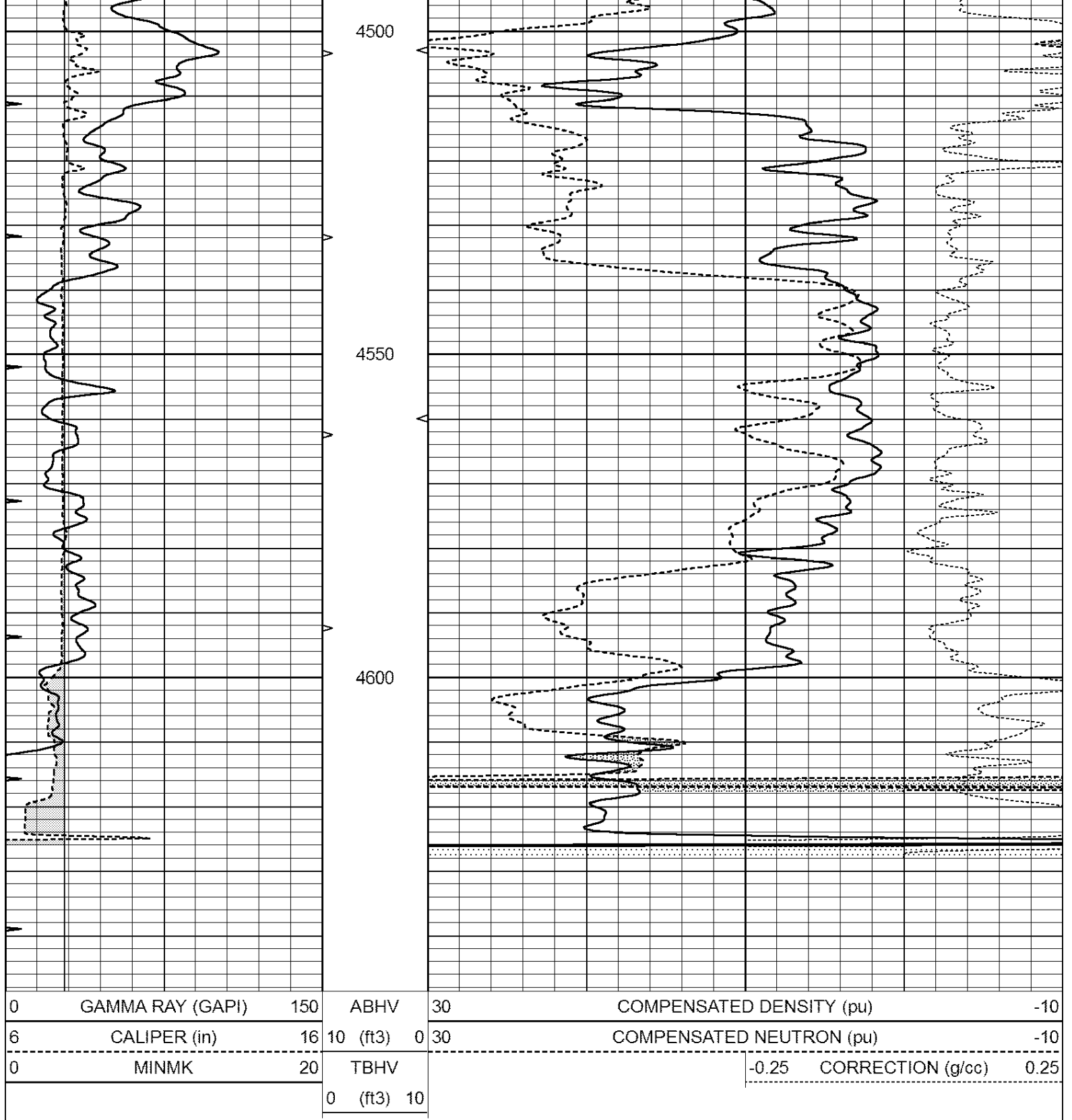


REPEAT SECTION

Database File: 25868ddn.db
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 Presentation Format: den_neu
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 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: 25868ddn.db
 Dataset Pathname: pass3.3
 Dataset Creation: Fri Sep 12 22:48:42 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Sun Aug 17 08:09:53 2014
Downhole Cal Performed:	Mon Jul 28 11:08:27 2008
After Survey Verification Performed:	Mon Jul 28 11:08:27 2008

		g/cc g/cc				g/cc g/cc	
Compensated Neutron Calibration Report							
		Serial Number:		6l			
		Tool Model:		G			
CALIBRATION							
Detector		Readings		Target		Normalization	
Short Space		1.00	cps	1.00	cps	1.0000	
Long Space		1.00	cps	1.00	cps	1.0000	
PRE-SURVEY VERIFICATION							
Detector		Readings		Measured		Target	
1)	Short Space		cps				
	Long Space		cps		pu		pu
2)	Short Space		cps				
	Long Space		cps		pu		
3)	Short Space		cps				
	Long Space		cps		pu		
POST-SURVEY VERIFICATION							
Detector		Readings		Measured		Target	
1)	Short Space		cps				
	Long Space		cps		pu		pu
2)	Short Space		cps				
	Long Space		cps		pu		pu
3)	Short Space		cps				
	Long Space		cps		pu		pu
Gamma Ray Calibration Report							
Serial Number:		GR6					
Tool Model:		OPEN					
Performed:		Sun Aug 17 15:23:09 2014					
Calibrator Value:		150.0		GAPI			
Background Reading:		0.0		cps			
Calibrator Reading:		276.0		cps			
Sensitivity:		0.7000		GAPI/cps			