



**SUPERIOR**  
Hays,  
Kansas

**COMPENSATED  
DENSITY / NEUTRON  
LOG**

Company: MULL DRILLING COMPANY, INC.  
Well: #1-13 GARVEY UNIT  
Field: WILDCAT  
County: GOVE  
State: KANSAS

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Location: 1811' FSL & 231' FEL  
API #: 15-063-21779-0000  
SEC 13 TWP 15S RGE 27W  
Permanent Datum: GROUND LEVEL Elevation: 2458  
Log Measured From: KELLY BUSHING 9' A.G.L.  
Drilling Measured From: KELLY BUSHING  
Other Services: DIL/ML SONIC  
Elevation: K.B. 2467, D.F. 2465, G.L. 2458

Date	7/8/09		
Run Number	ONE		
Depth Driller	4425		
Depth Logger	4426		
Bottom Logged Interval	4402		
Top Log Interval	3500		
Casing Driller	8 5/8"@210'		
Casing Logger	209		
Bit Size	7 7/8		
Type Fluid In Hole	CHEMICAL MUD	CHLORIDES 2,600 PPM	
Density / Viscosity	9.1/52		
pH / Fluid Loss	10.0/8.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.700@96F		
Rmf @ Meas. Temp	.525@96F		
Rmc @ Meas. Temp	.840@96F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.560@120F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	7:30 P.M.		
Maximum Recorded Temperature	120F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

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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 SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
UTICA, KS. 3W. ON HWY 4 TO CASTLE ROCK RD., 6 1/2N. TO GOVE COUNTY RD. "C", 2E. & N. ON CURVY RD. TO OLD FARMSTEAD. TURN E. BETWEEN LIMESTONE HOUSE & METAL SHED TO PASTURE BEHIND TREES

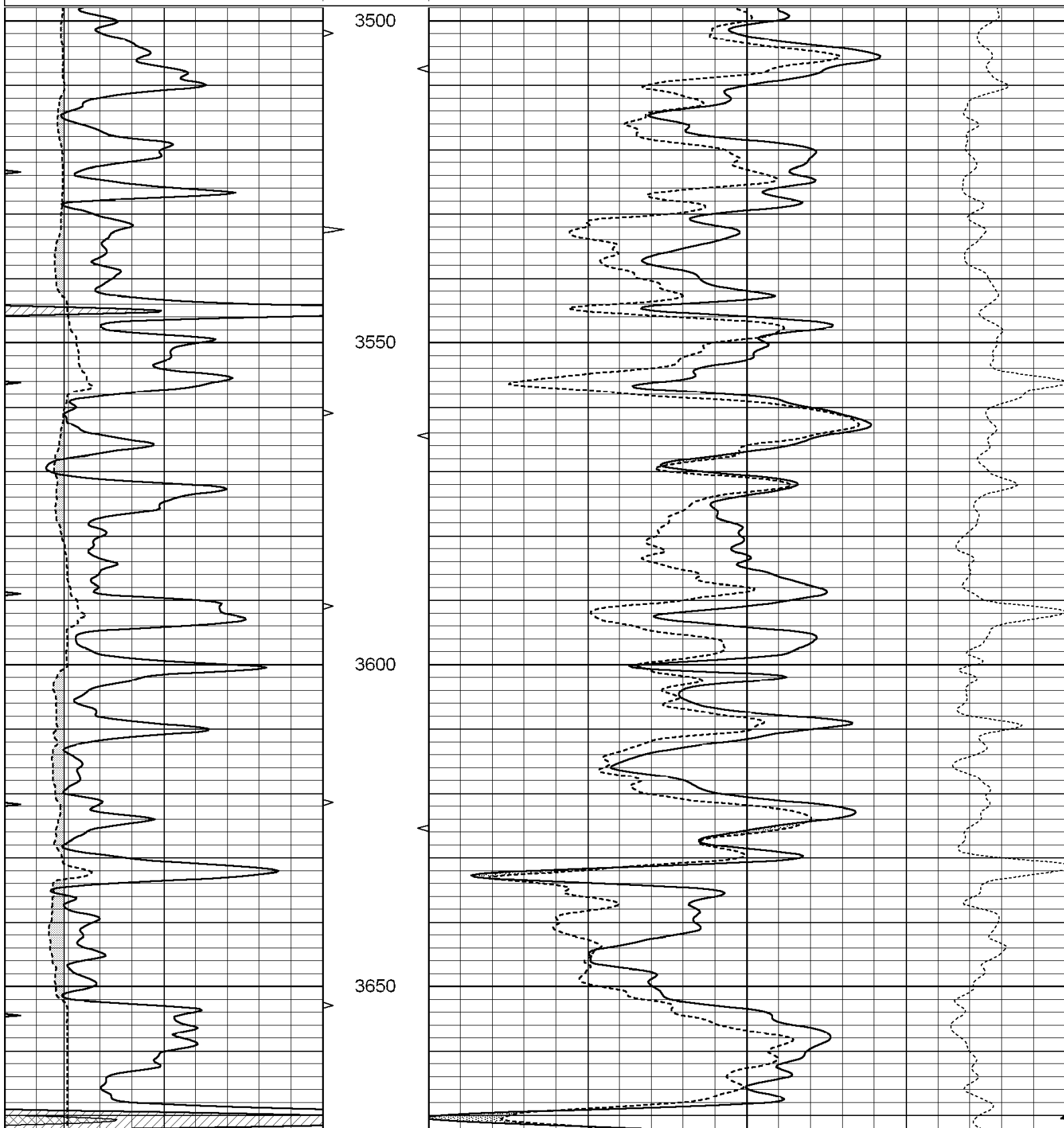


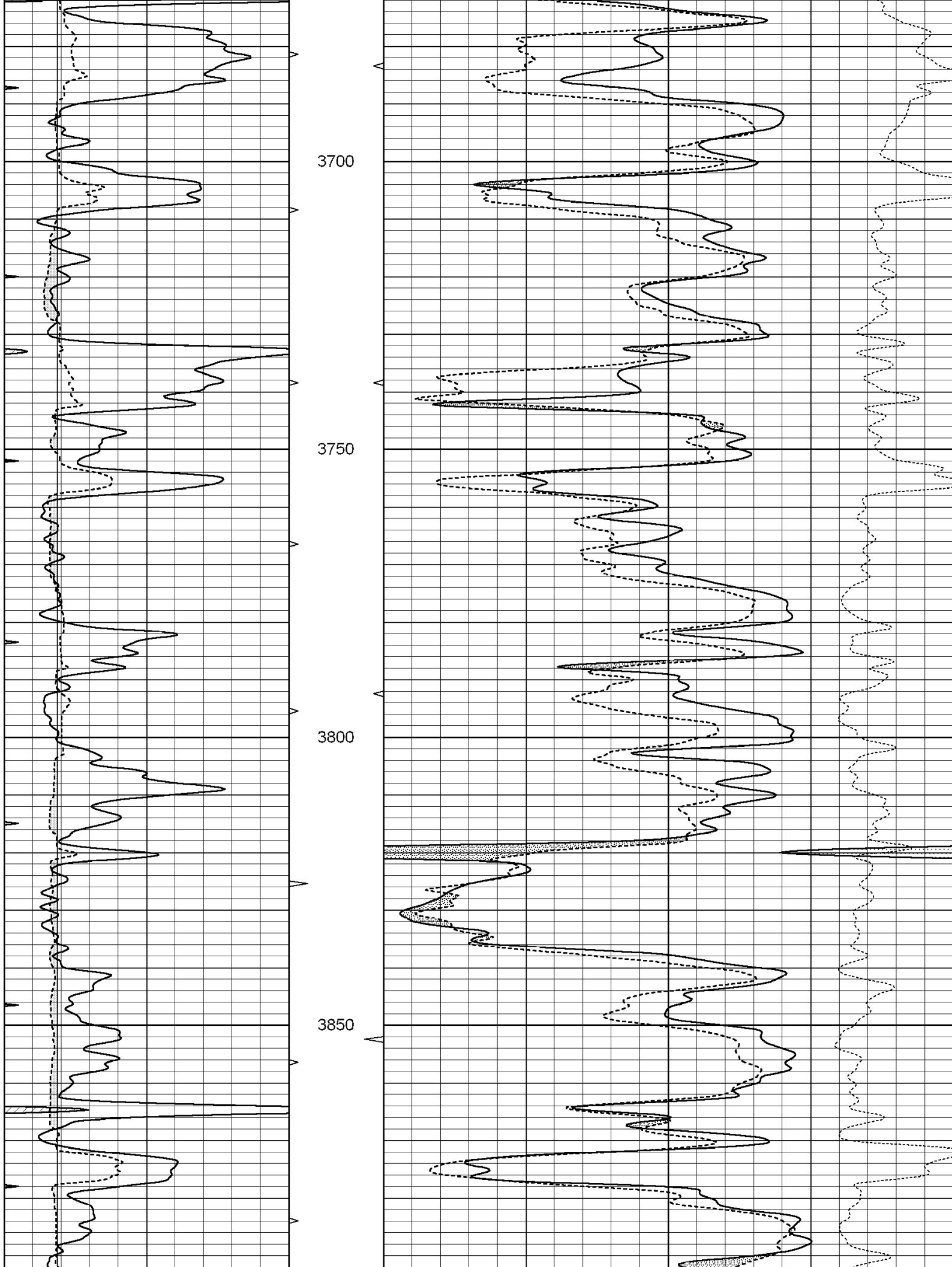
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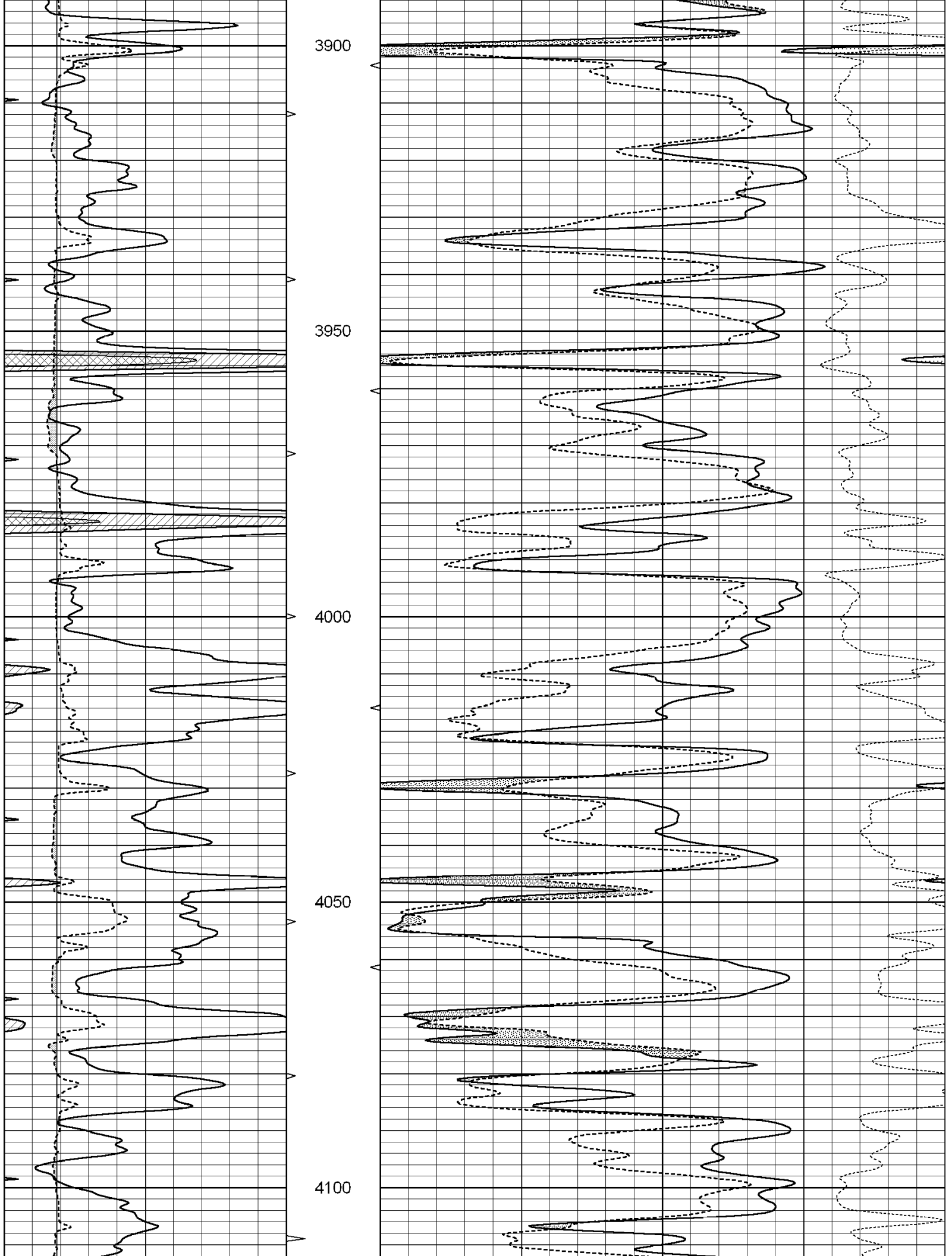
**MAIN SECTION**

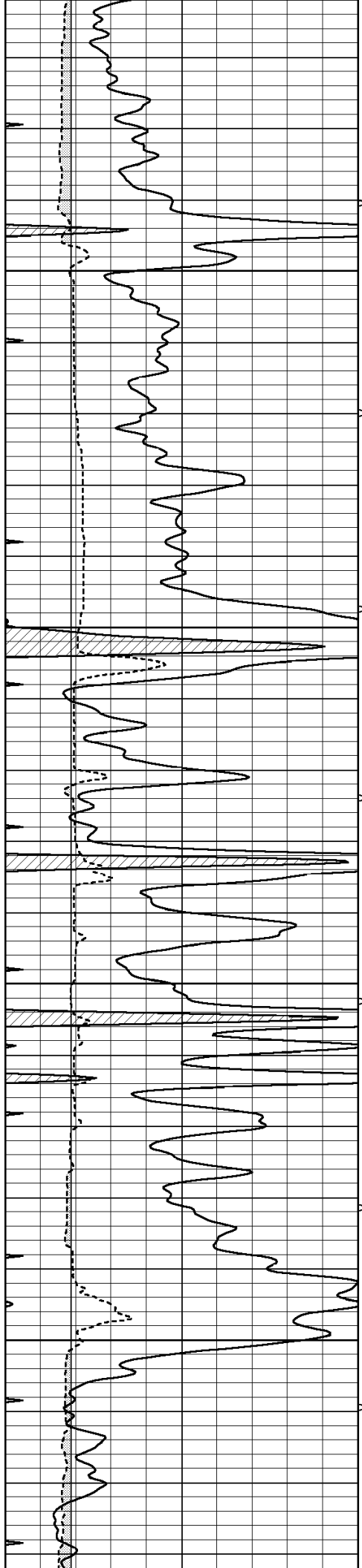
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 Dataset Pathname: pass3.2  
 Presentation Format: den\_neu  
 Dataset Creation: Wed Jul 08 20:13:04 2009 by Calc Open-Cased 060407  
 Charted by: Depth in Feet scaled 1:240

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







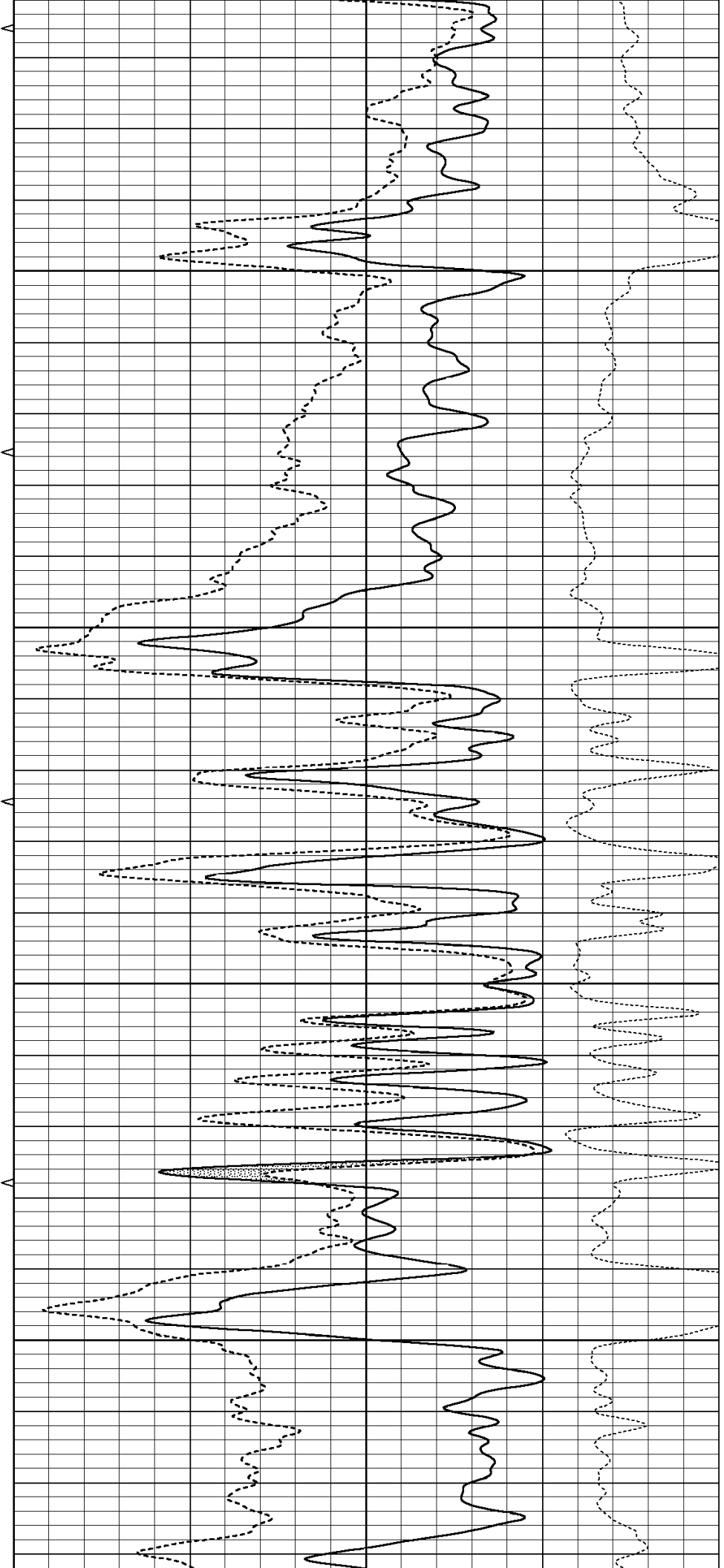


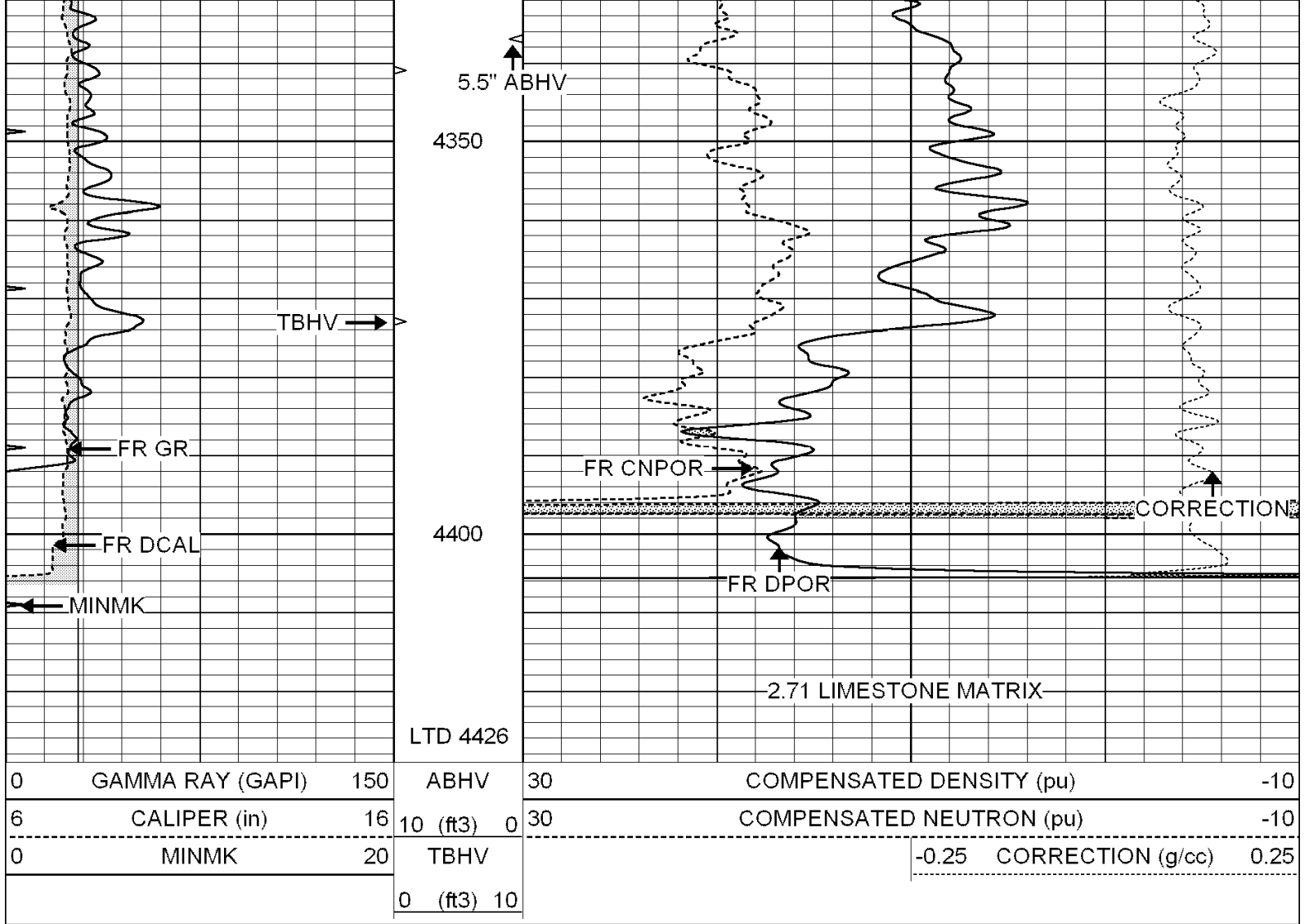
4150

4200

4250

4300



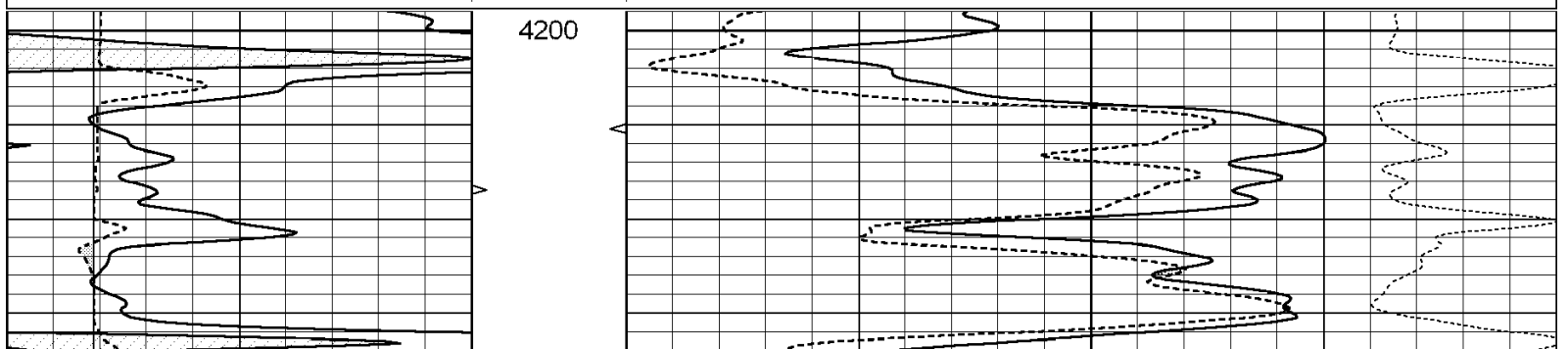


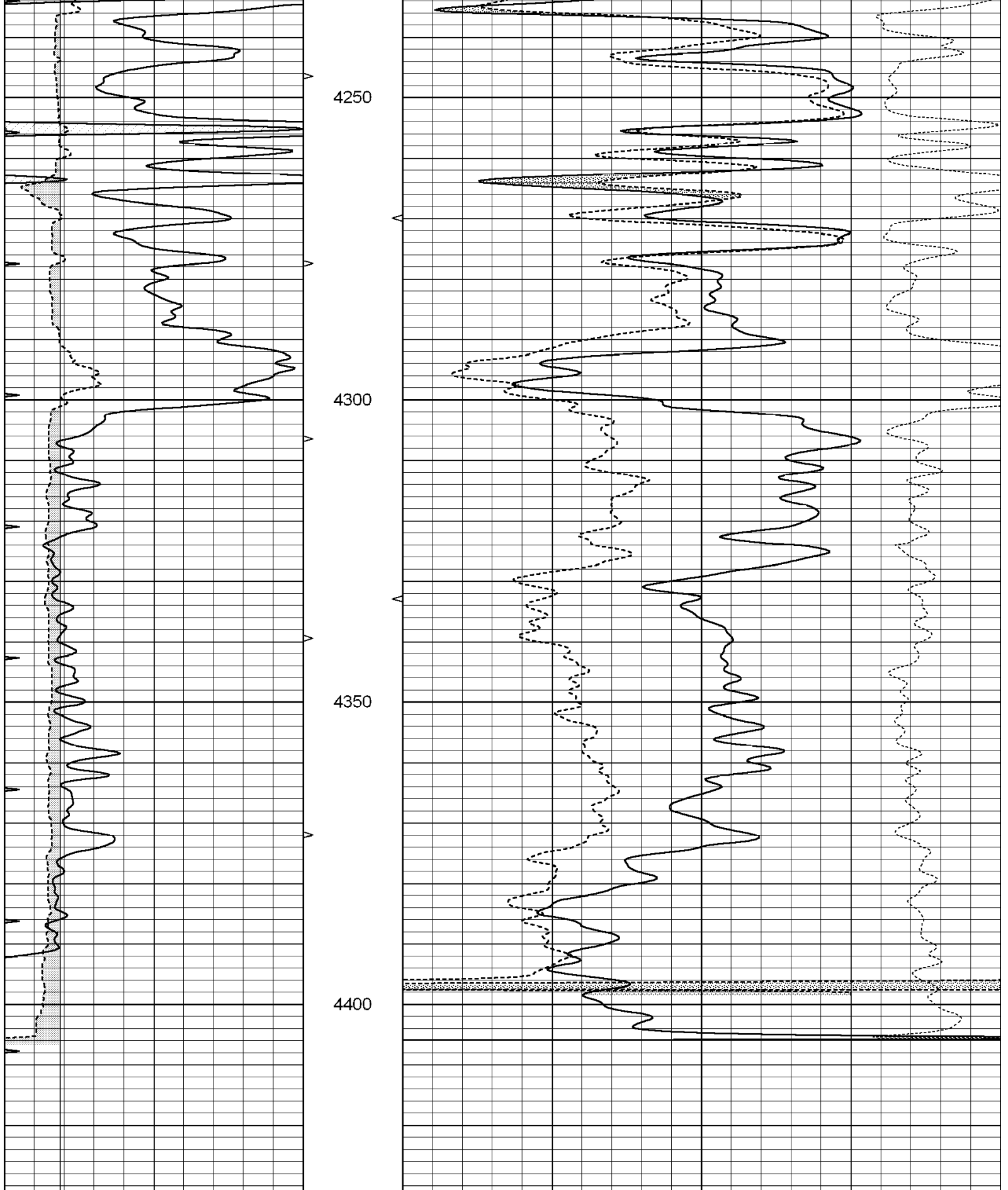
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# REPEAT SECTION

Database File: 003538ddh.db  
 Dataset Pathname: pass2.5  
 Presentation Format: den\_neu  
 Dataset Creation: Wed Jul 08 20:08:40 2009  
 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		





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: 003538ddn.db  
 Dataset Pathname: pass3.2  
 Dataset Creation: Wed Jul 08 20:13:04 2009 by Calc Open-Cased 060407

Dual Induction Calibration Report

Serial-Model: DIL2-GEAR  
 Performed: Wed Jul 08 18:06:21 2009

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.002	0.667	V	0.000	400.000	mmho-m	650.000	5.000
Medium	-0.003	0.739	V	0.000	462.500	mmho-m	720.000	-15.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.001	0.658	V	0.000	400.000	mmho-m	609.010	-0.700
Medium	0.015	0.761	V	0.000	462.500	mmho-m	620.392	-9.326

Litho Density Calibration Report  
 Serial: 003N Model: PRB  
 Performed Mon Jun 08 10:53:05 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2028.8	12047.1	4181.3	13199.9	cps
Window 2	1822.8	9337.8	3431.4	10000.3	cps
Window 3	1564.8	5811.2	2442.8	6095.5	cps
Window 4	469.1	474.6	468.9	469.9	cps
Long Space	0.0	7514.9	1608.6	8177.4	cps
Short Space	1.9	2397.2	1539.5	2522.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.0	Rib Slope	: 0.965	Density/Spine Ratio	: 0.549
Spine Angle	: 74.0	Spine Slope	: 3.481	Spine Intercept	: -18.2

Caliper

	Readings	Reference	
Low Ref	2.1	6.4	
High Ref	4.4	14.0	
Gain:	3.2		Offset: -0.3

Compensated Neutron Calibration Report

Serial Number: NEU\_3I  
 Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	997.00 cps	1000.00 cps	1.0000
Long Space	986.00 cps	1000.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR3  
 Tool Model: OPEN  
 Performed: Wed Jul 08 19:32:06 2009

Calibrator Value:	200.0	GAPI
Background Reading:	3.0	cps
Calibrator Reading:	186.0	cps
Sensitivity:	0.4500	GAPI/cps