

COMPENSATED DENSITY / NEUTRON LOG

Company	L.D. DRILLING, INC.		
Well	#4 KELLI		
Field	GATES		
County	STAFFORD	State	KANSAS
Location:	API # : 15-185-23997-0000 1700' FSL & 2088' FVL NW - SE - NE - SW		Other Services DIL/MEI
Permanent Datum	GROUND LEVEL	Elevation	1865
Log Measured From	KELLY BUSHING	5' A.G.L.	
Drilling Measured From	KELLY BUSHING		
SEC	30	TWP	21S
RGE	12W		
Date	9/20/17		
Run Number	ONE		
Depth Driller	3760		
Depth Logger	3758		
Bottom Logged Interval	3734		
Top Log Interval	2800		
Casing Driller	8 5/8"@334'		
Casing Logger	334		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES	7,900 PPM
Density / Viscosity	8.9 / 68		
pH / Fluid Loss	10.0 / 1.2		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.400@80F		
Rmf @ Meas. Temp	.300@80F		
Rmc @ Meas. Temp	.480@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.2812@114F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	4:00 A.M.		
Maximum Recorded Temperature	114F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KIM SHOEMAKER		

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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

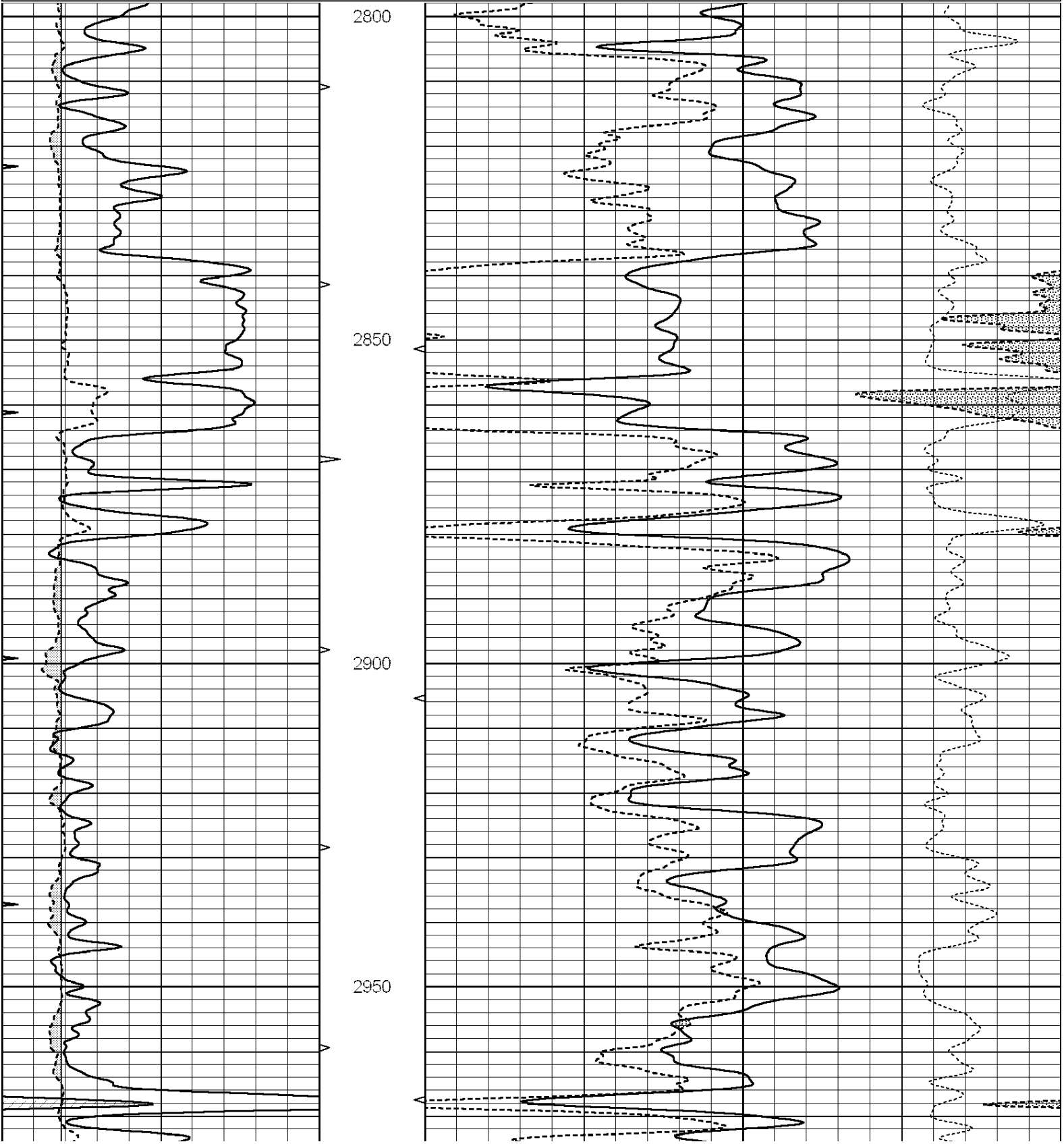
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
GREAT BEND, KS., S. ON HWY 281 5 MILES PAST COUNTY LINE TO "RD. 160", 3E., 1/2N., E. INTO

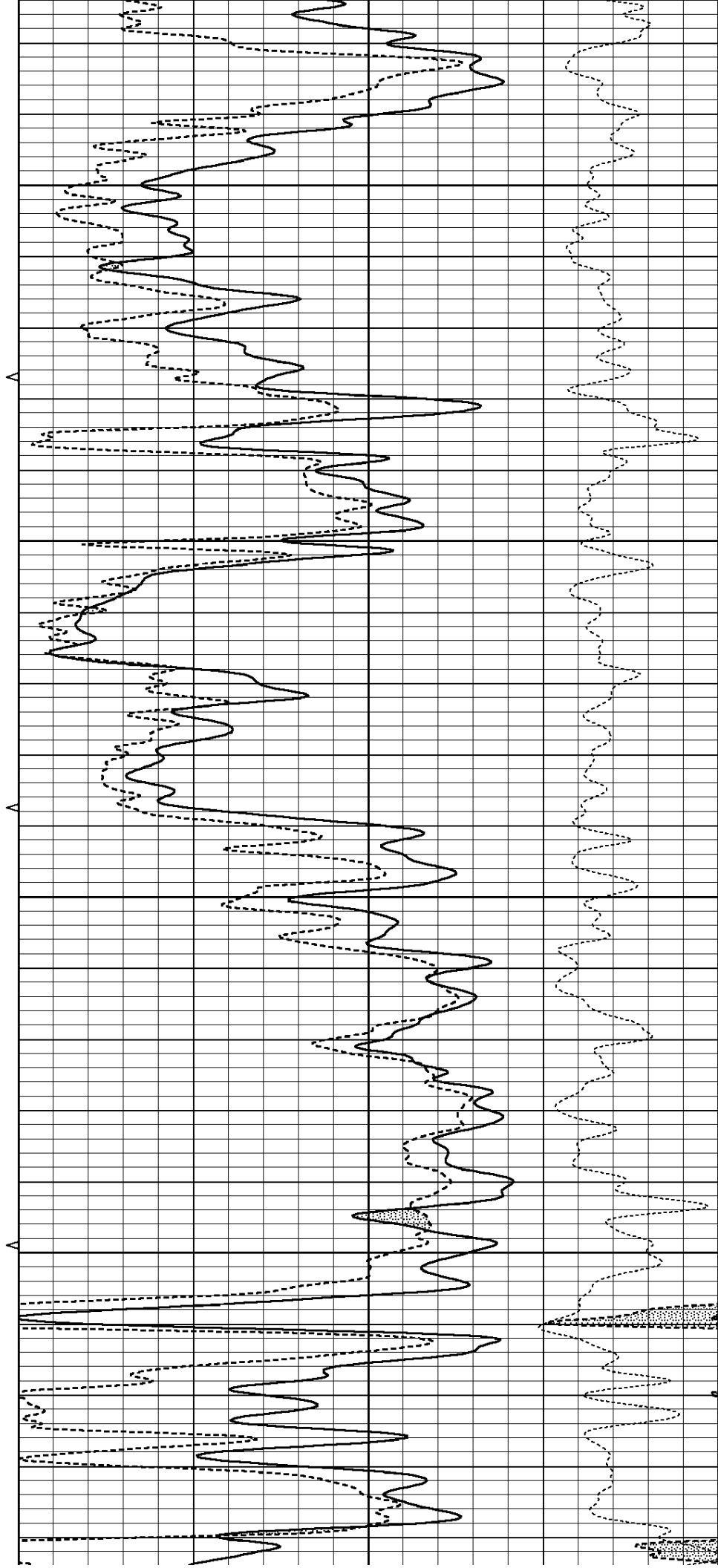
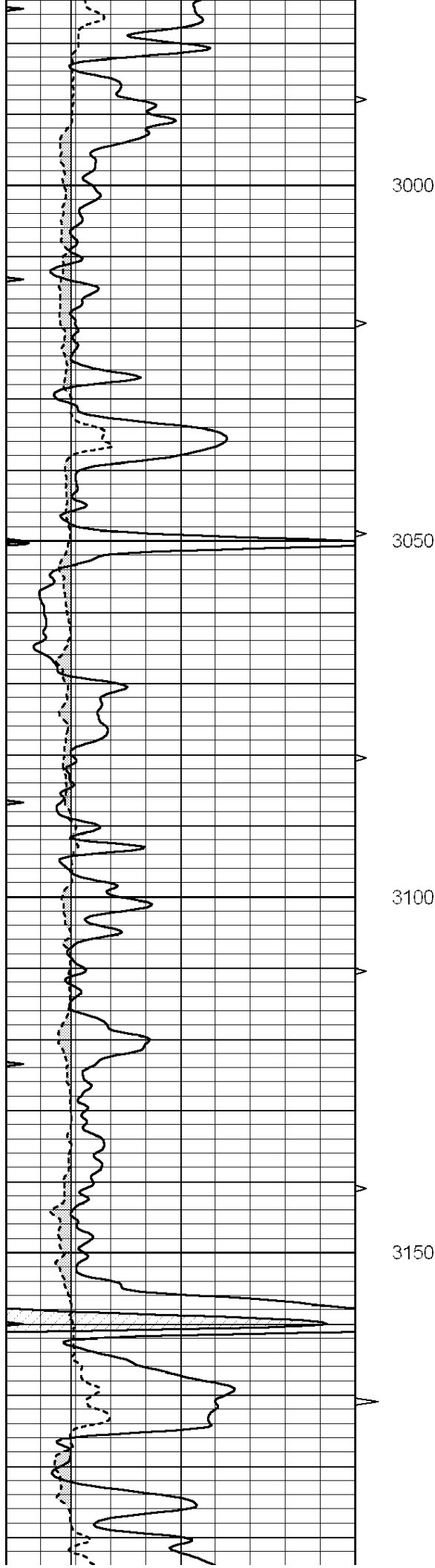


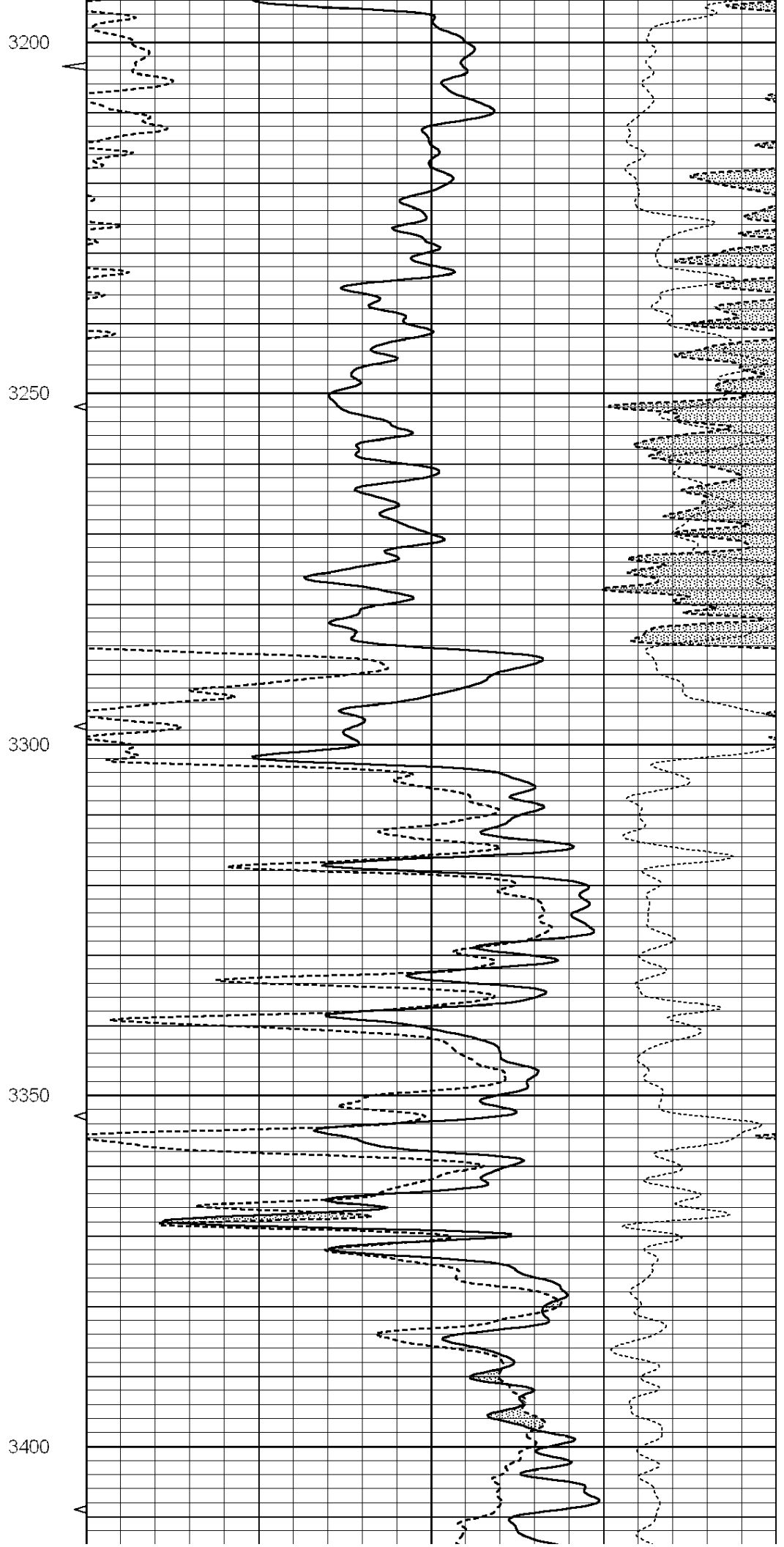
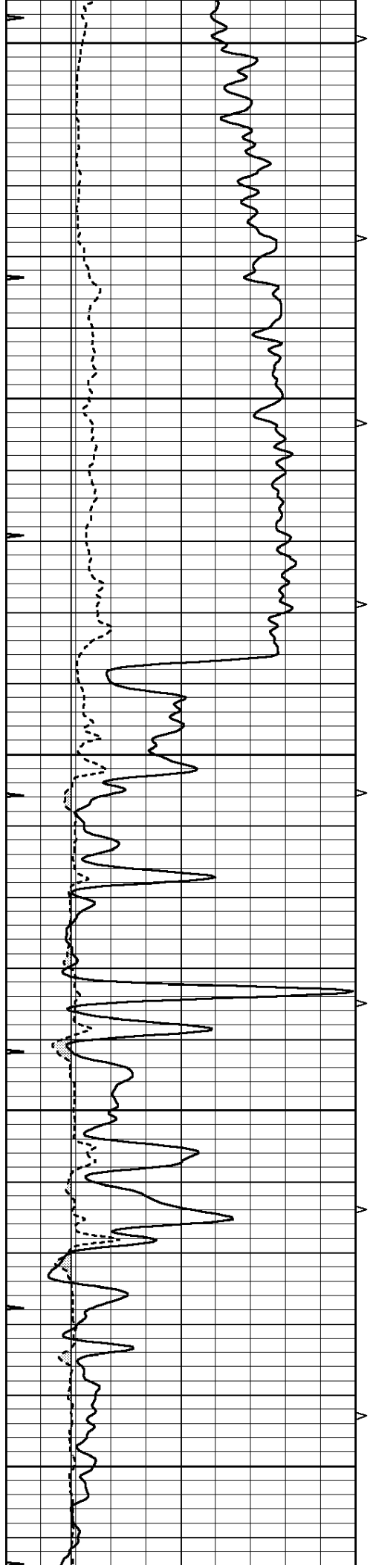
MAIN SECTION

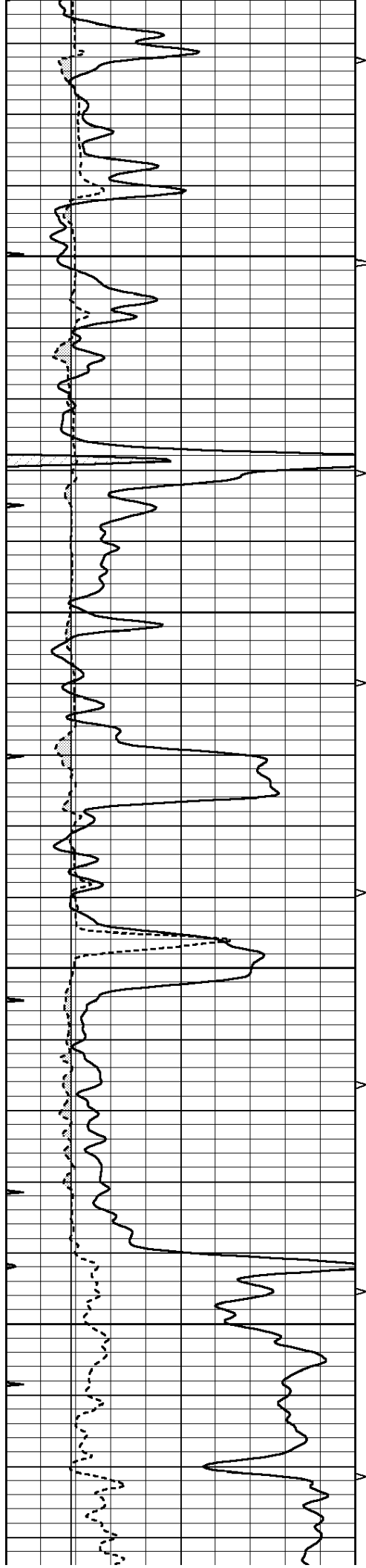
Database File: 1828ddn.db
Dataset Pathname: pass3.7
Presentation Format: den_neu
Dataset Creation: Wed Sep 20 05:28:19 2017
Charted by: Depth in Feet scaled 1:240

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		







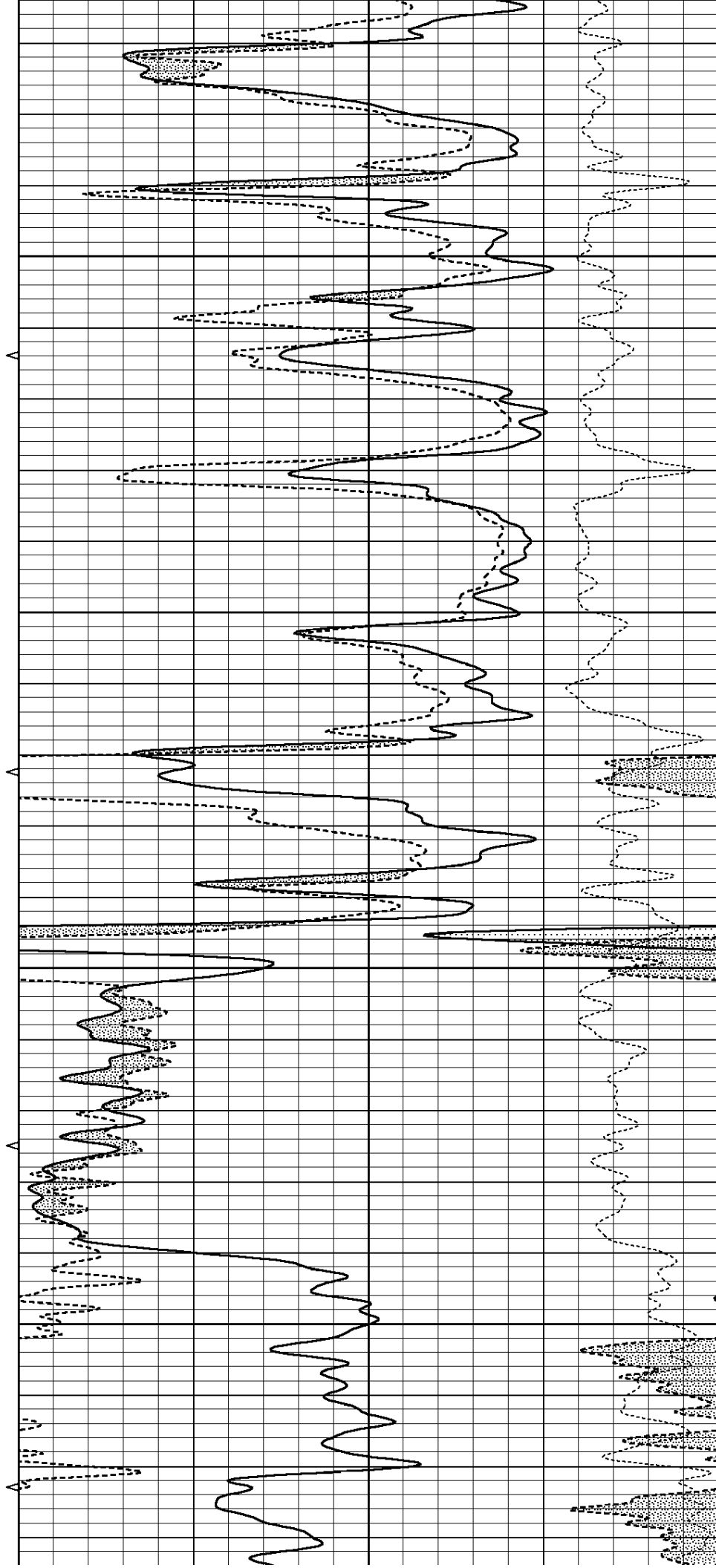


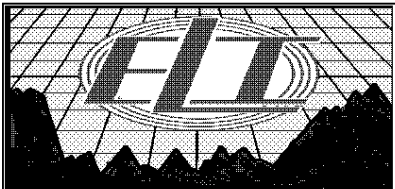
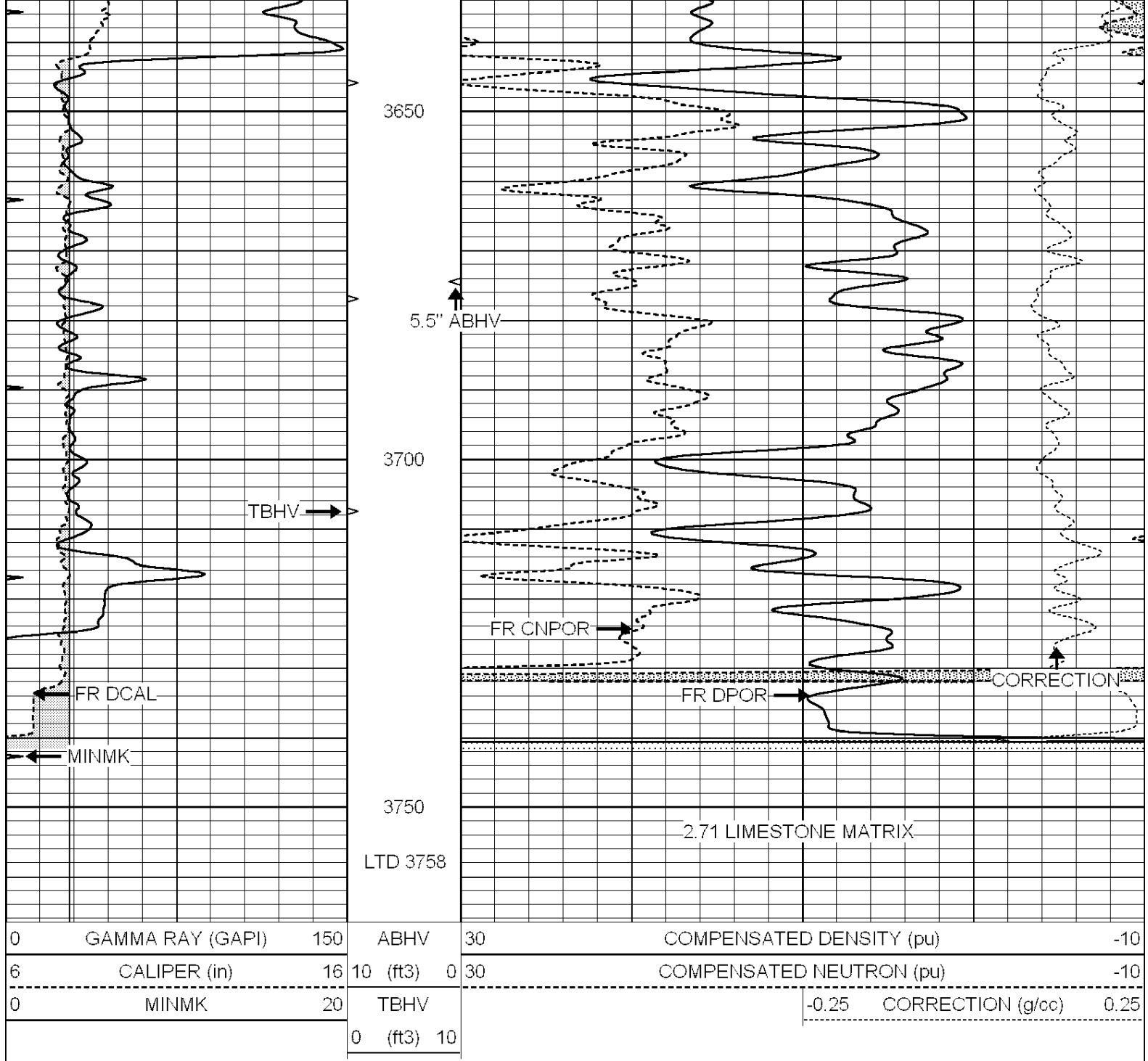
3450

3500

3550

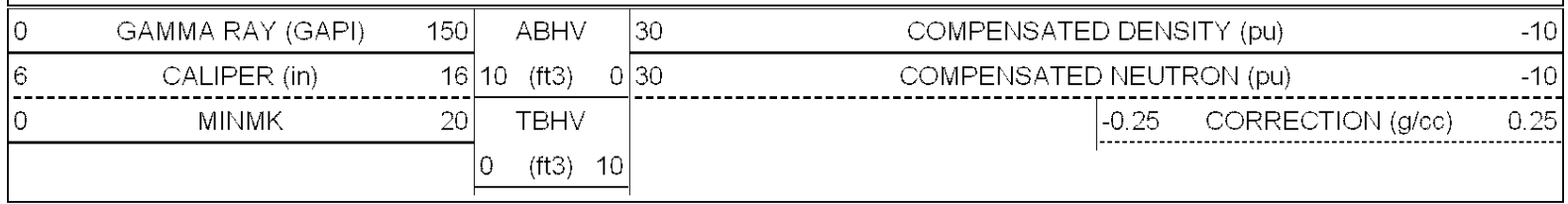
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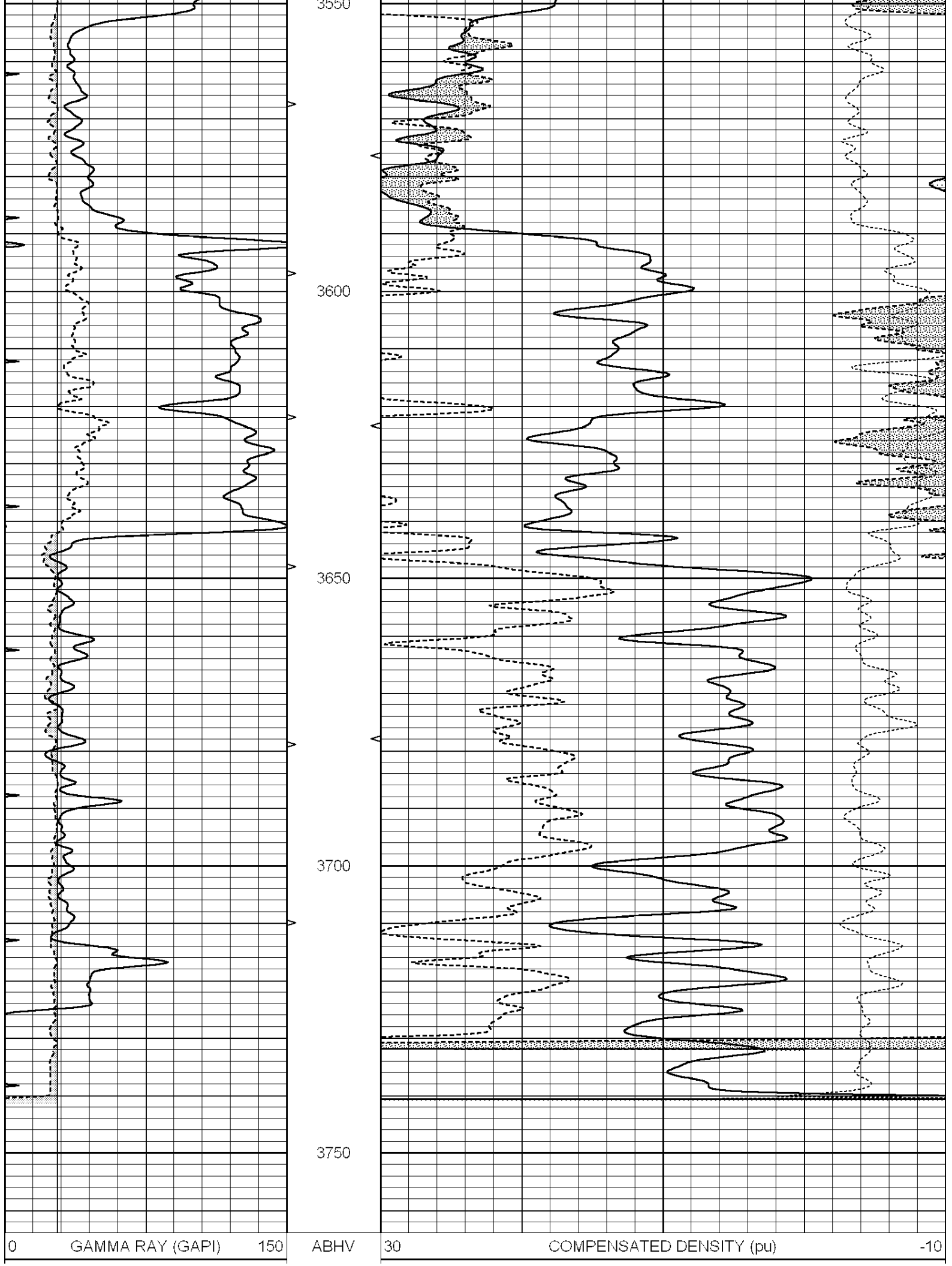




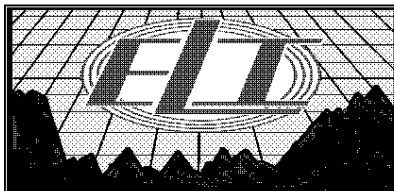
REPEAT SECTION

Database File: 1828ddn.db
 Dataset Pathname: pass2.3R
 Presentation Format: den_neu
 Dataset Creation: Wed Sep 20 05:36:55 2017 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240





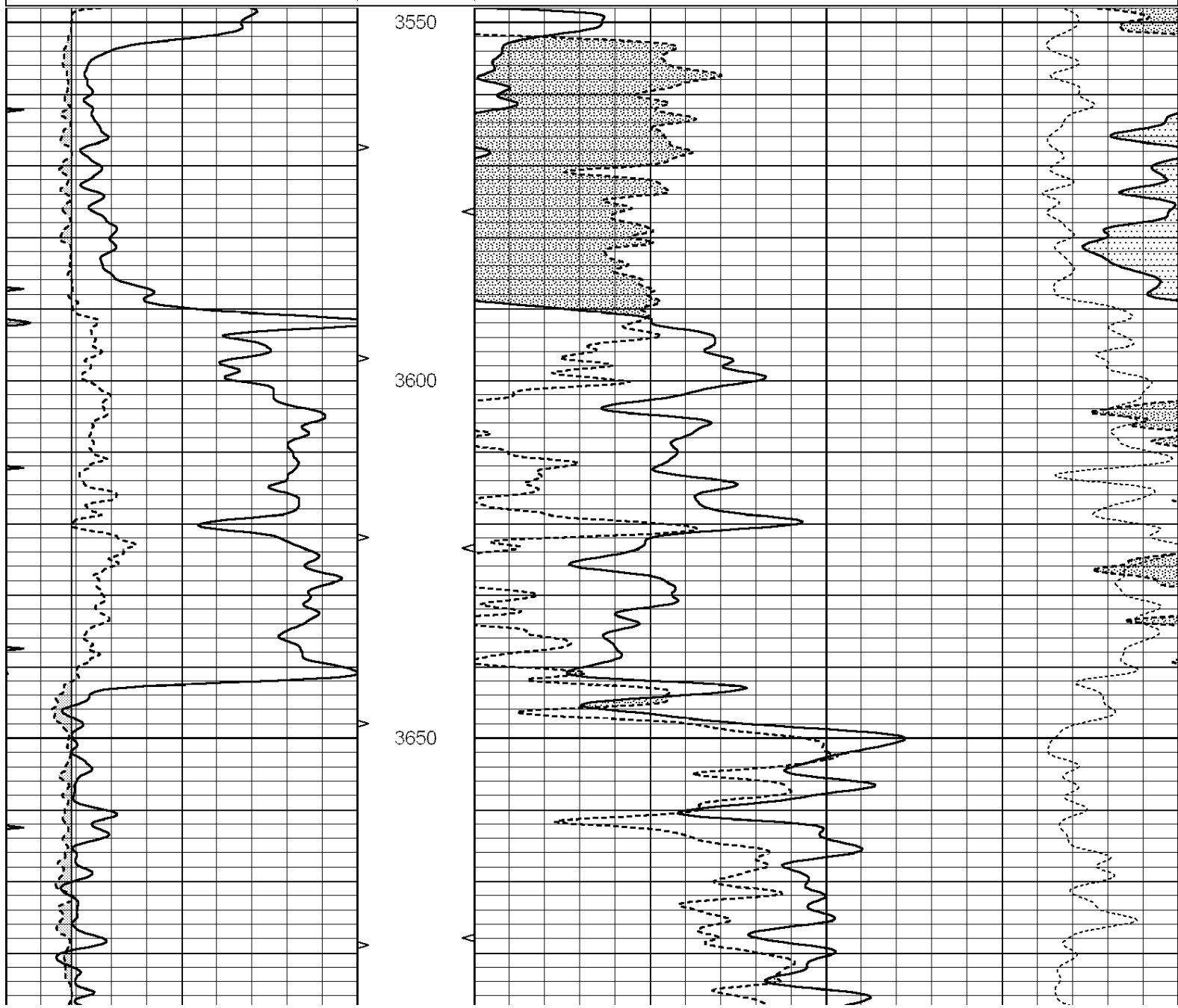
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)		-10
0	MINMK	20	TBHV			-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10				

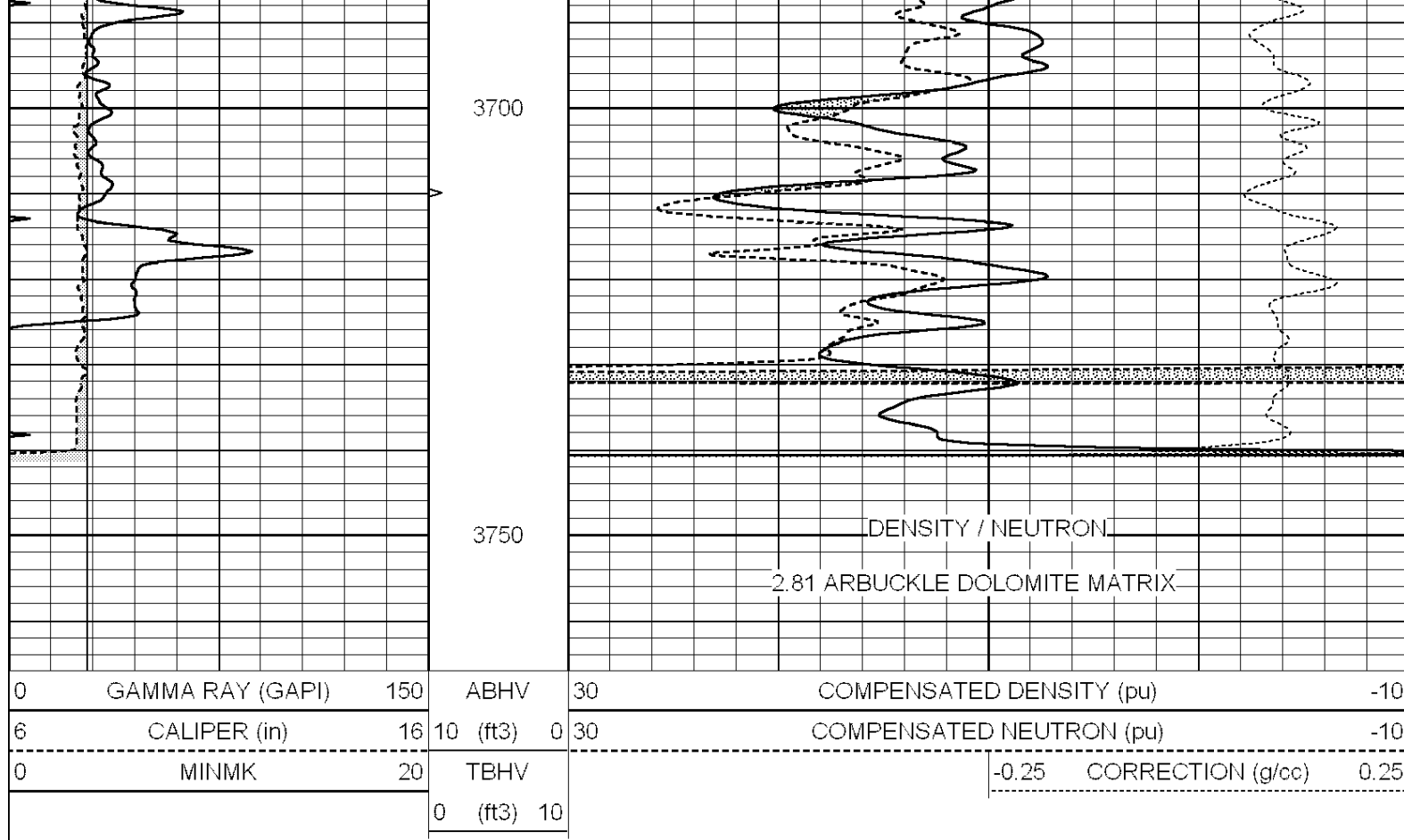


DOLOMITE MATRIX

Database File: 1828ddn.db
 Dataset Pathname: pass2.3D
 Presentation Format: den_neu
 Dataset Creation: Wed Sep 20 04:42:37 2017
 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: 1598ddn.db
 Dataset Pathname: pass4
 Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Wed Aug 30 00:06:33 2017
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
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: 002			Model: PRB					

Master Calibration			Performed Mon Aug 21 11:27:42 2017					
	Background	Magnesium	Aluminum	Sandstone				
Window 1	837.1	10632.5	2945.1	12110.1			cps	
Window 2	772.0	9117.4	2570.1	10197.3			cps	
Window 3	631.7	4669.0	1481.9	5042.9			cps	
Window 4	187.0	187.5	185.9	189.9			cps	
Long Space	0.0	8345.4	1798.1	9425.3			cps	
Short Space	1.1	1927.9	1285.9	2050.2			cps	
Rho		1.7100	2.5960	1.3800			g/cc	
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio			: 0.558	
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept			: -19.6	

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								
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Serial Number:			070808					
Tool Model:			Probe					

PRE-SURVEY VERIFICATION								
Detector	Readings		Measured	Target				

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:	070558		
Tool Model:	OPEN_GR		
Performed:	Wed May 31 00:09:32 2017		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.2800	GAPI/cps	