



COMPENSATED DENSITY/NEUTRON LOG

Company	DOWNING-NELSON OIL CO., INC.		
Well	RED #1-36		
Field	GROFF		
County	TREGO		
State	KANSAS		
Location:	API # : 15-195-23040-00-00		
SEC 36 TWP 14S RGE 21W	800 FSL & 2161 FWL		
Permanent Datum	GROUND LEVEL	Elevation	2049'
Log Measured From	KELLY BUSHING 8' A.G.L.	Other Services	DIL/MEL
Drilling Measured From	KELLY BUSHING	Elevation	K.B. 2057 D.F. 2055 G.L. 2049
Date	04/08/18	Run Number	ONE
Depth Driller	3865	Depth Logger	3866
Bottom Logged Interval	3842	Top Log Interval	3000
Casing Driller	8 5/8@ 1232	Casing Logger	1232
Bit Size	7 7/8"	Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.2/49	pH / Fluid Loss	9.5/8.0
Source of Sample	FLOWLINE	Rm @ Meas. Temp	1.1@56
Rmt @ Meas. Temp	.83@56	Rmc @ Meas. Temp	.62@56
Source of Rmt / Rmc	MEASURED	Rm @ BHT	.53@115
Time Circulation Stopped	2 HOURS	Time Logger on Bottom	///
Maximum Recorded Temperature	115F	Equipment Number	4010
Location	HAYS, KANSAS	Recorded By	GUS PFANENSTIEL
Witnessed By	MARC DOWNING		

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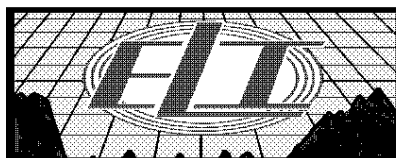
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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, KS. (785) 628-6395

DIRECTIONS

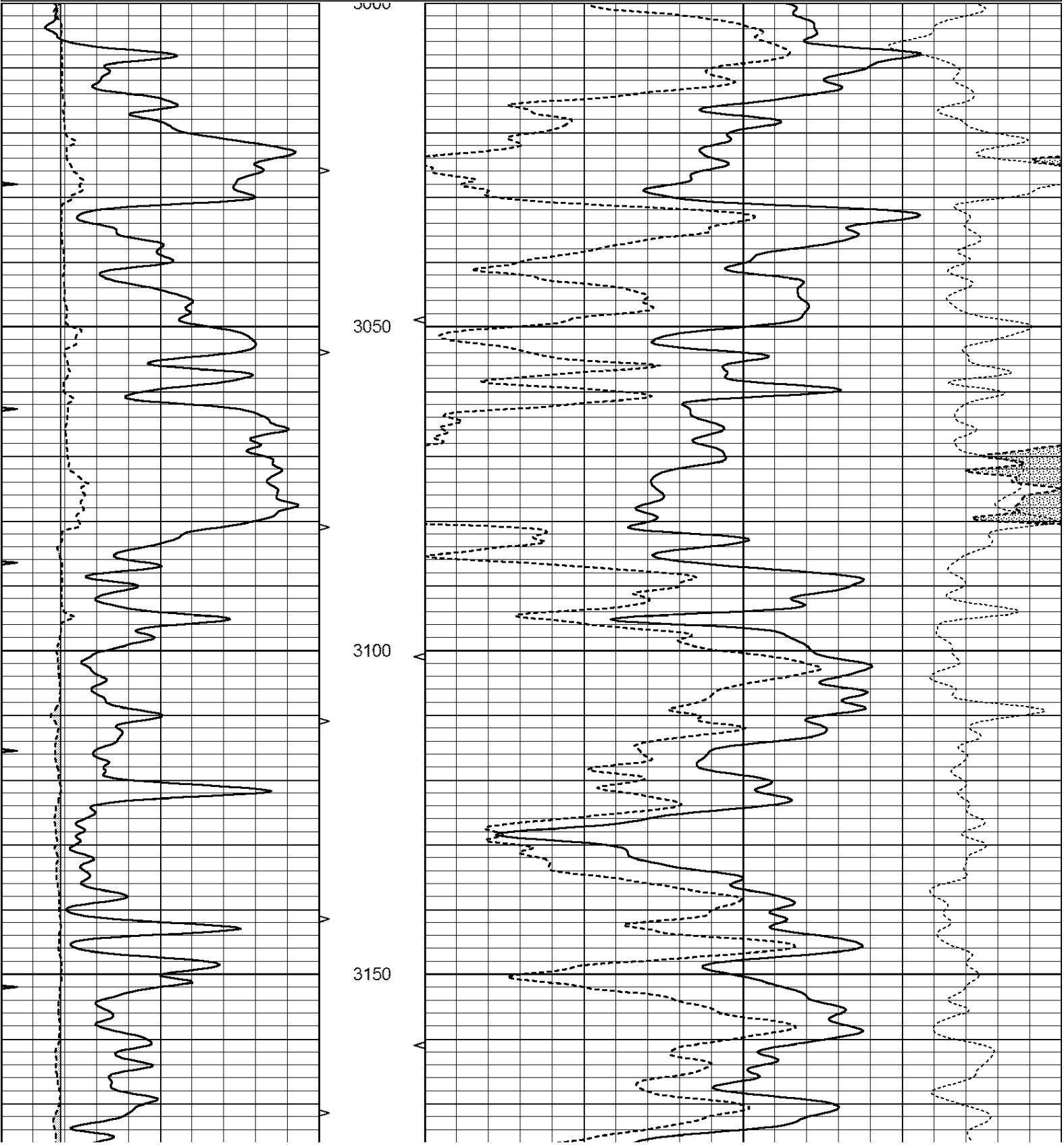
SOUTH OF ELLIS TO BUTTERFIELD TRAIL, WEST 3 MILES,
SOUTH TO T GO THROUGH CATTLE GUARD FOLLOW TRAIL.

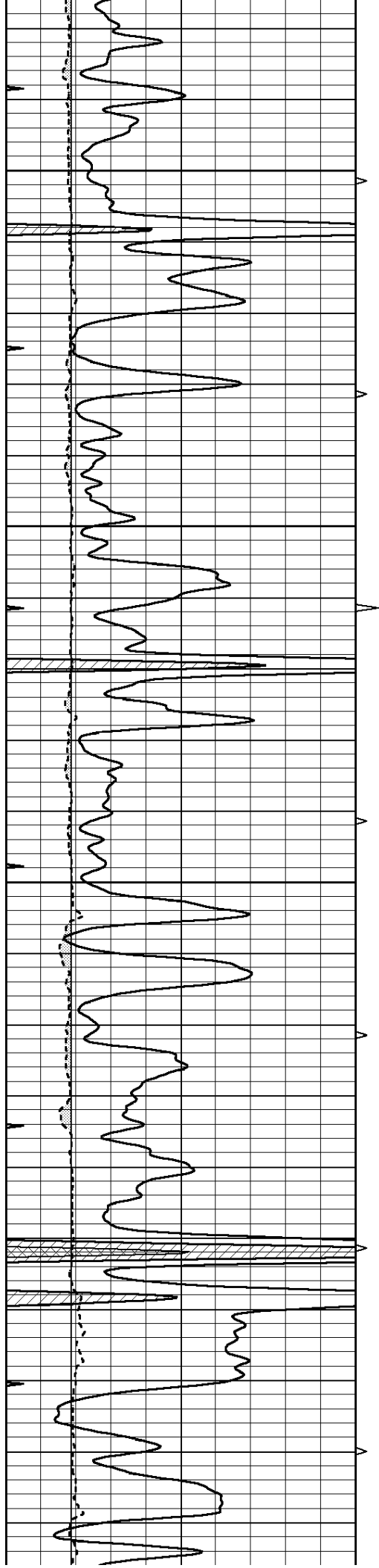


MAIN PASS

Database File: 2418ddn.db
Dataset Pathname: pass3.1
Presentation Format: den_neu
Dataset Creation: Sun Apr 08 07:01:15 2018 by Calc Open-Cased 090629
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		



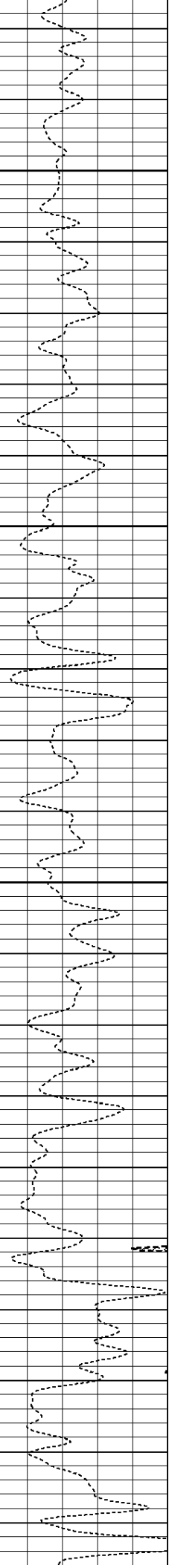
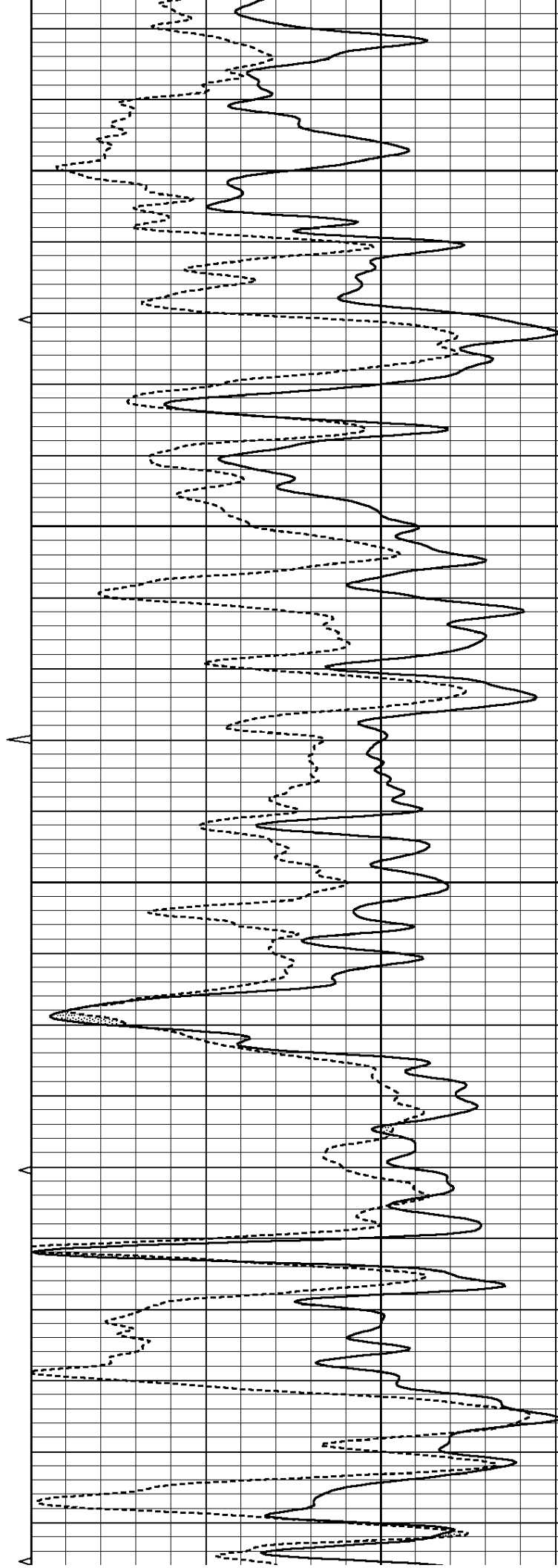


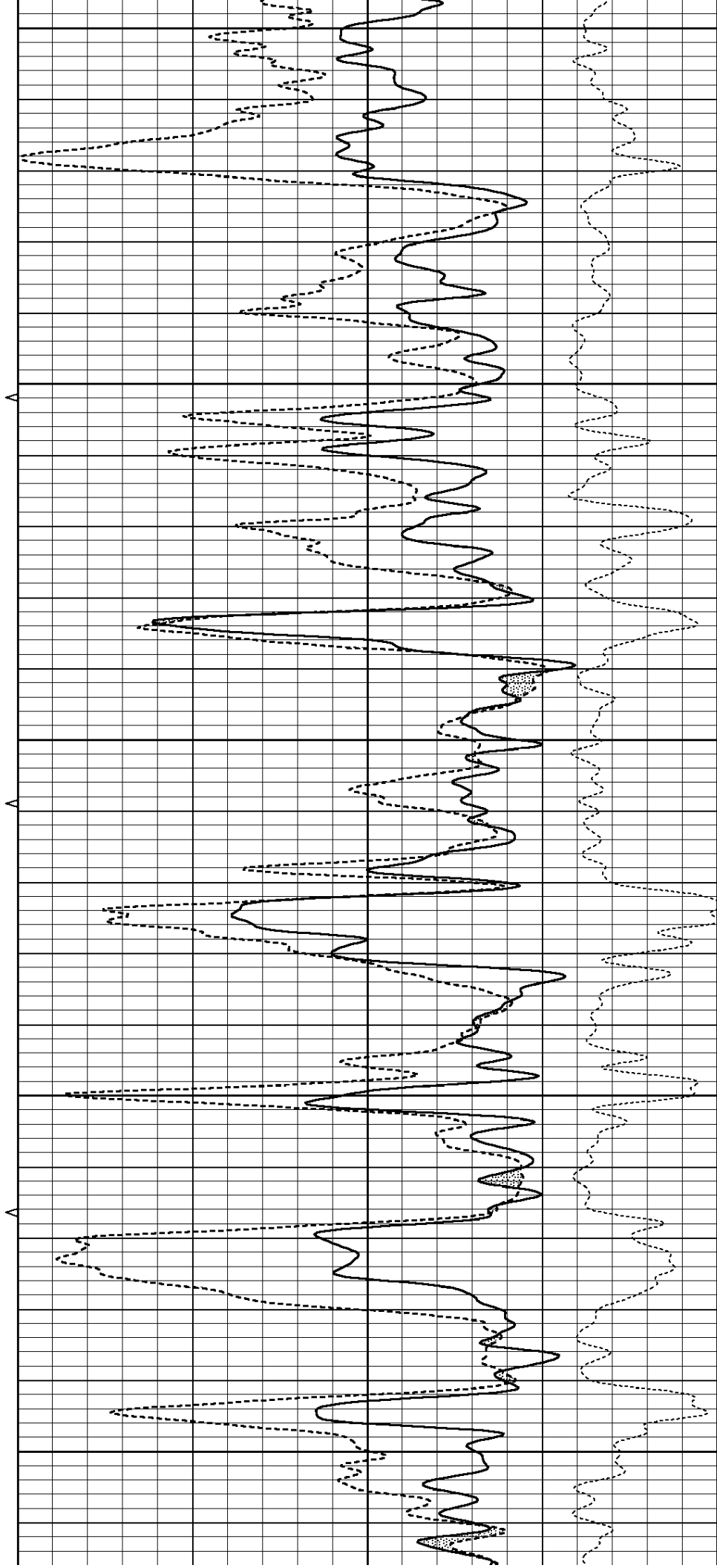
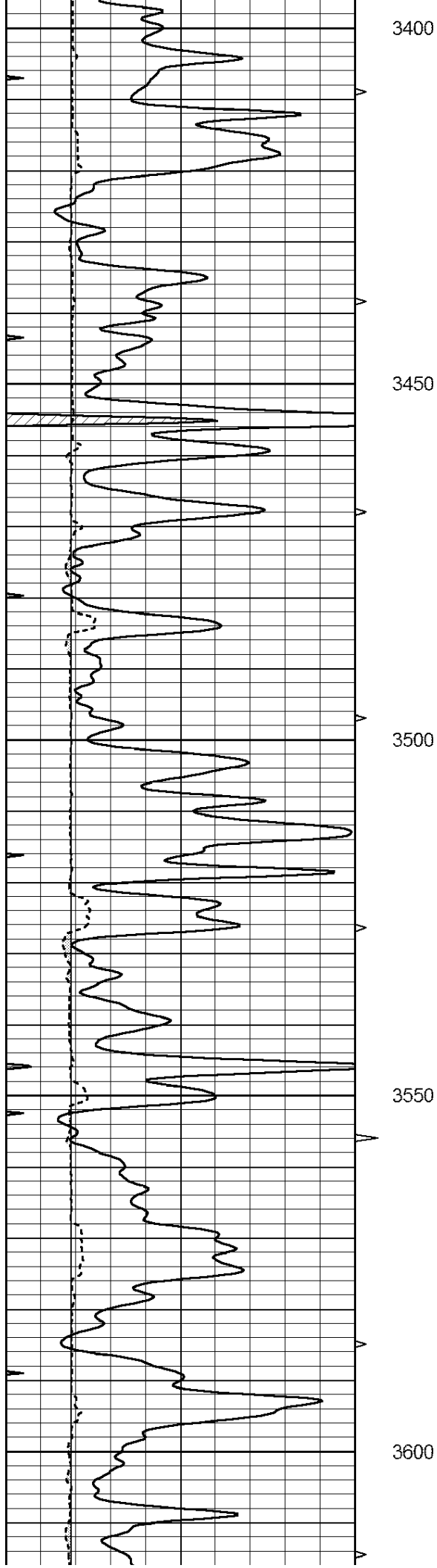
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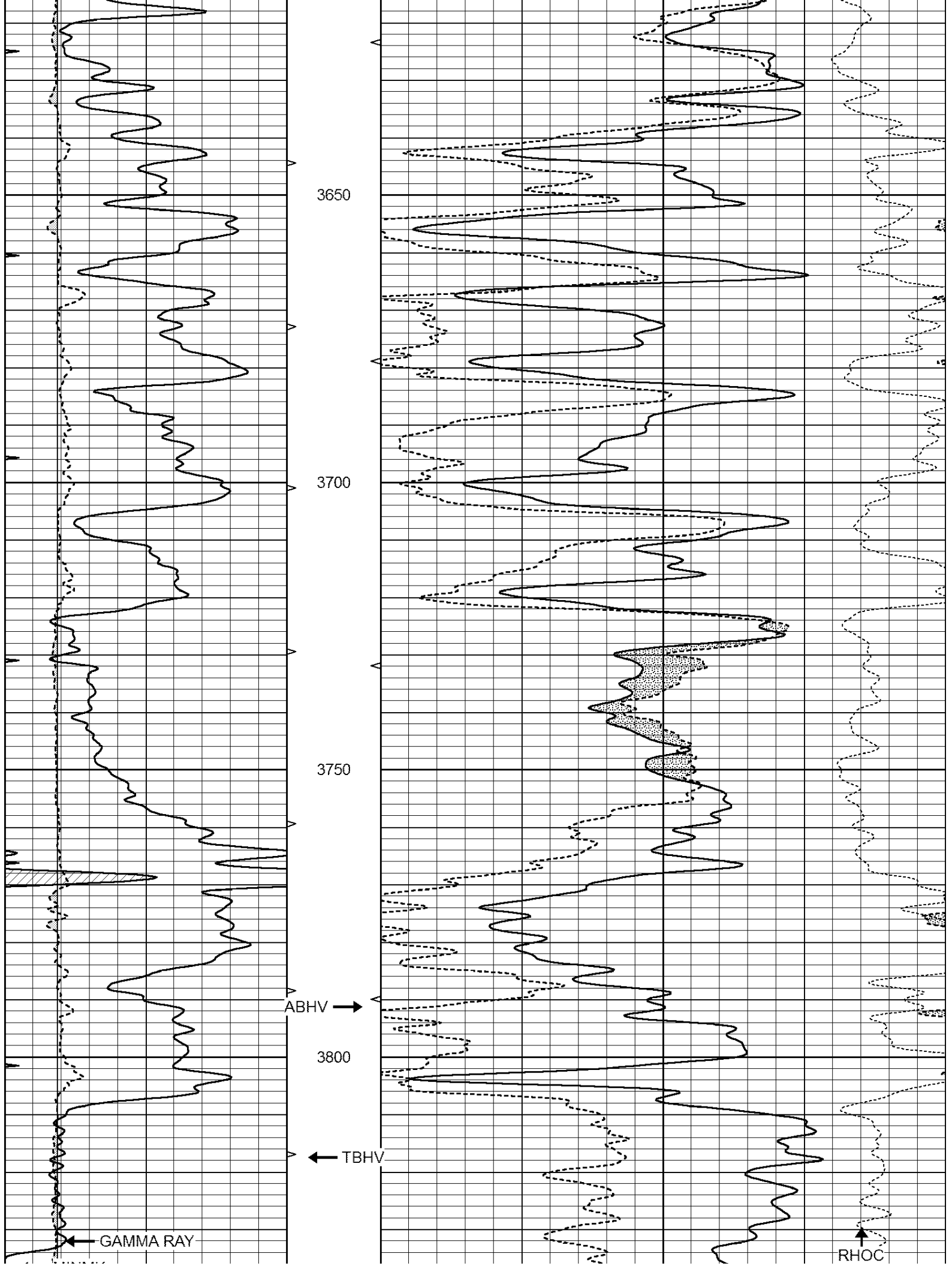
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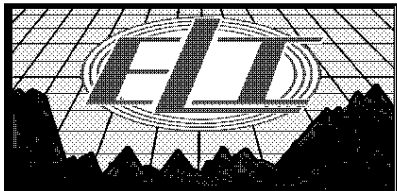
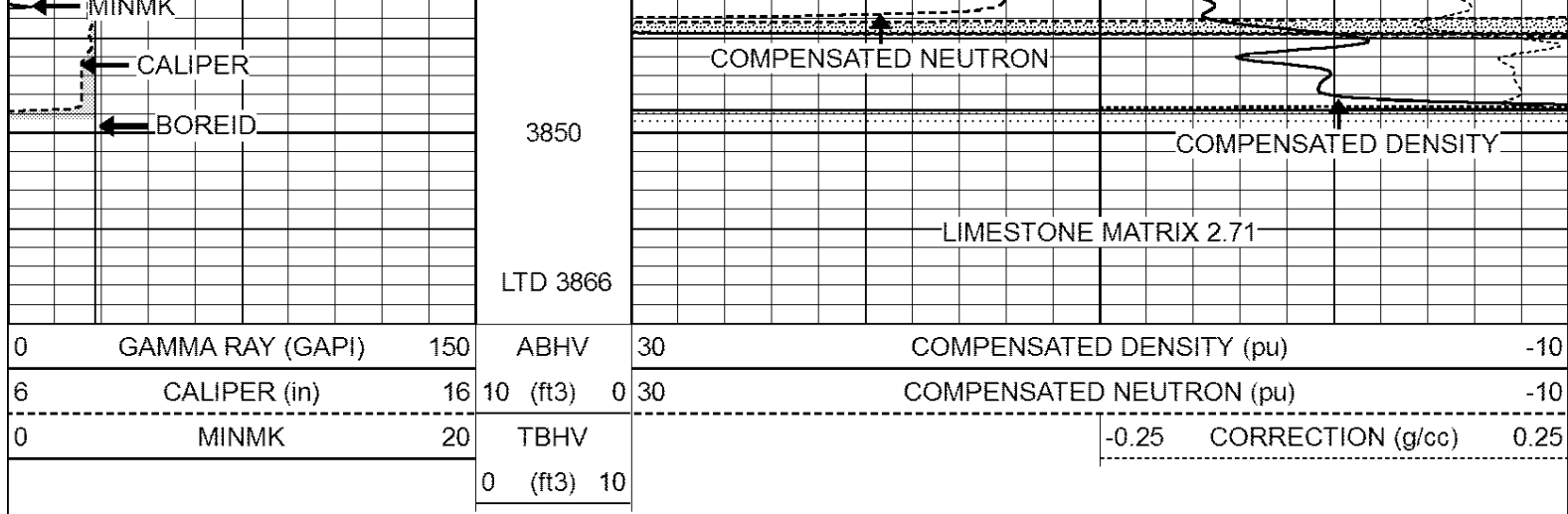
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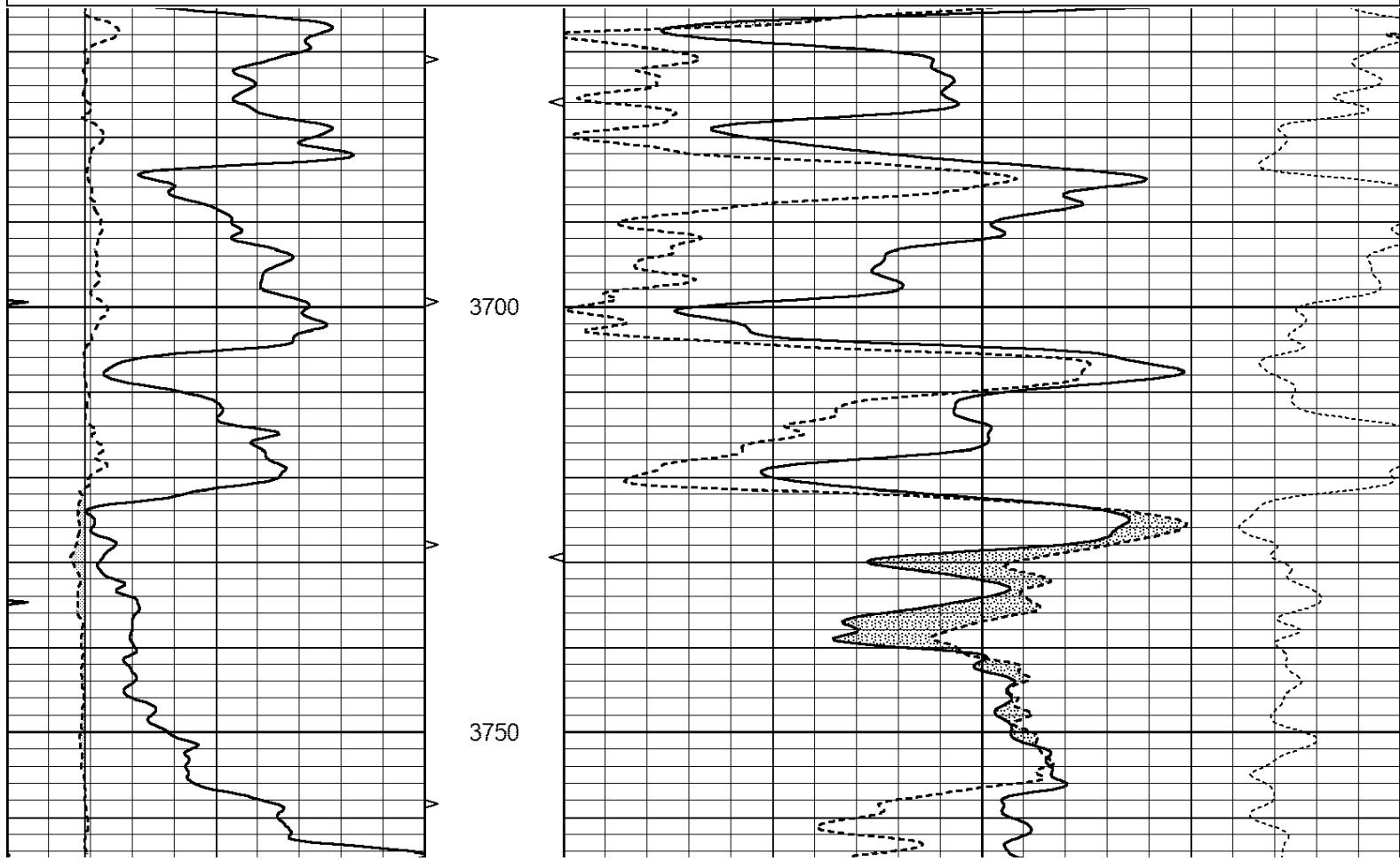


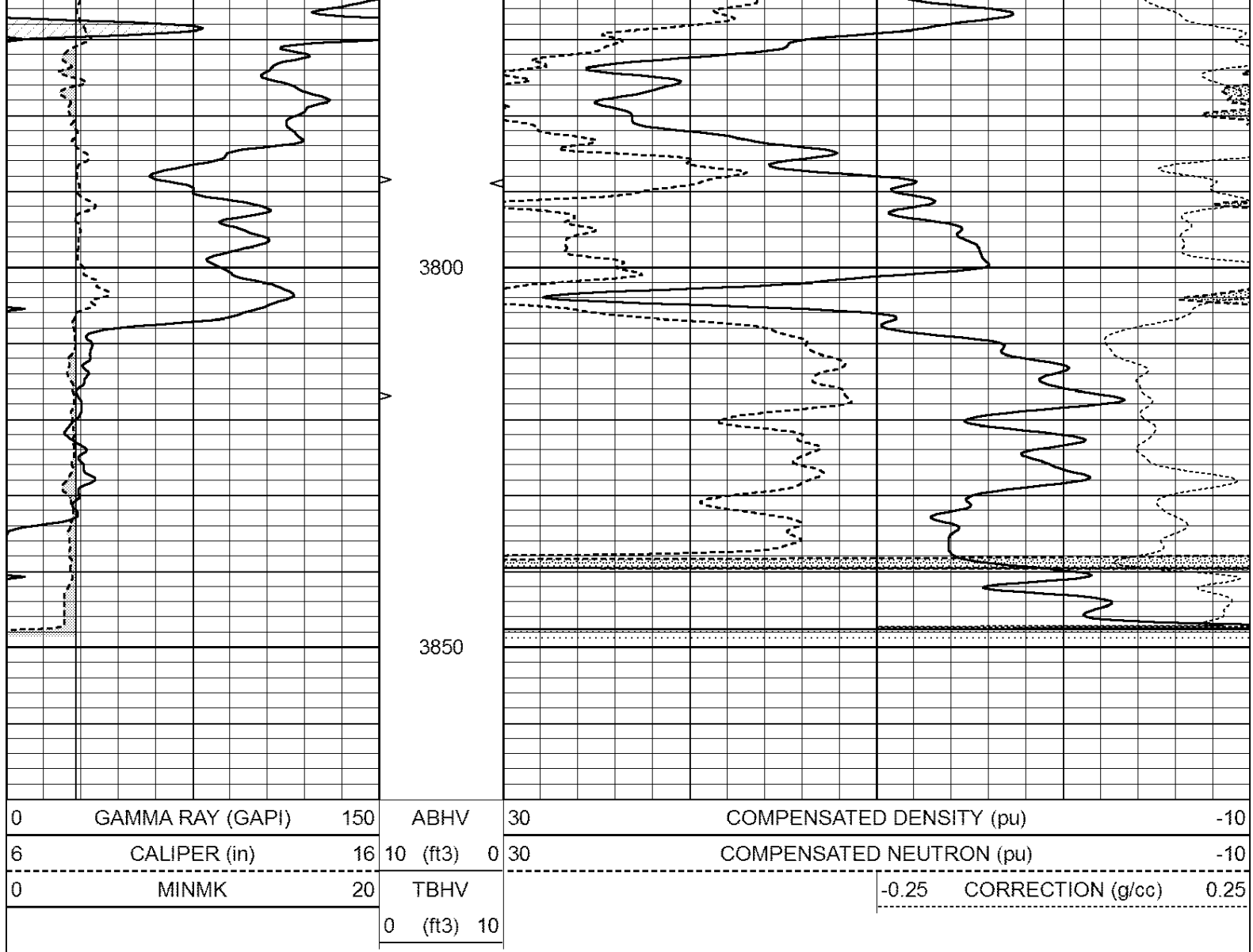


REPEAT SECTION

Database File: 2418ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: den_neu
 Dataset Creation: Sun Apr 08 05:58:05 2018 by Calc Open-Cased 090629
 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:	pe2.db							
Dataset Pathname:	pass2							
Dataset Creation:	Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629							
Dual Induction Calibration Report								
Serial-Model:		PROBE8-DILG						
Surface Cal Performed:		Mon Aug 21 11:58:18 2017						
Downhole Cal Performed:		Mon Aug 21 11:58:21 2017						
After Survey Verification Performed:		Mon Aug 21 11:58:23 2017						
Surface Calibration								
		Readings			References		Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739
Downhole Calibration								
		Readings			References		Results	

	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	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 11:56:41 2017			
	Background		Magnesium		Aluminum		Sandstone	
Window 1	833.6		7394.2		2287.3		8111.8	cps
Window 2	768.9		6322.3		1995.6		6800.0	cps
Window 3	621.5		3261.9		1186.4		3380.9	cps
Window 4	184.2		185.7		184.9		184.8	cps
Long Space	0.0		5553.4		1226.6		6031.1	cps
Short Space	1.2		1307.5		903.9		1387.7	cps
Rho			1.7100		2.5900		1.3800	g/cc
Pe			0.0000		2.5700		1.5500	
Rib Angle	: 46.3		Rib Slope	: 1.045	Density/Spine Ratio		: 0.566	
Spine Angle	: 76.3		Spine Slope	: 4.090	Spine Intercept		: -20.7	

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:			6I			
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:		Mon Aug 21 11:59:01 2017				
Calibrator Value:		150.0	GAPI			
Background Reading:		0.0	cps			
Calibrator Reading:		276.0	cps			
Sensitivity:		0.5500	GAPI/cps			