



COMPENSATED DENSITY/NEUTRON LOG

Company	PHILLIPS EXPLORATION COMPANY		
Well	ROHLEDER #1-9 SHR		
Field	COLLYER TOWNSITE		
County	TREGO	State	KANSAS
Location:	APL # : 15-195-23031-00-00		Other Services DIL/MEL
330' FNL & 330' FWL			
SEC 9 TWP 12S RGE 25W			
Permanent Datum	GROUND LEVEL	Elevation	2582'
Log Measured From	KELLY BUSHING 5' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Elevation			K.B. 2587' D.F. 2585' G.L. 2582'
Date	11/05/17		
Run Number	ONE		
Depth Driller	4250		
Depth Logger	4248		
Bottom Logged Interval	4225		
Top Log Interval	3400		
Casing Driller	8 5/8" @ 218		
Casing Logger	218		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2/5.1		
pH / Fluid Loss	10.5/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.0@55		
Rmt @ Meas. Temp	.75@55		
Rmc @ Meas. Temp	1.2@55		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.46@118		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	118F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	PAT DEENIHAN		

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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

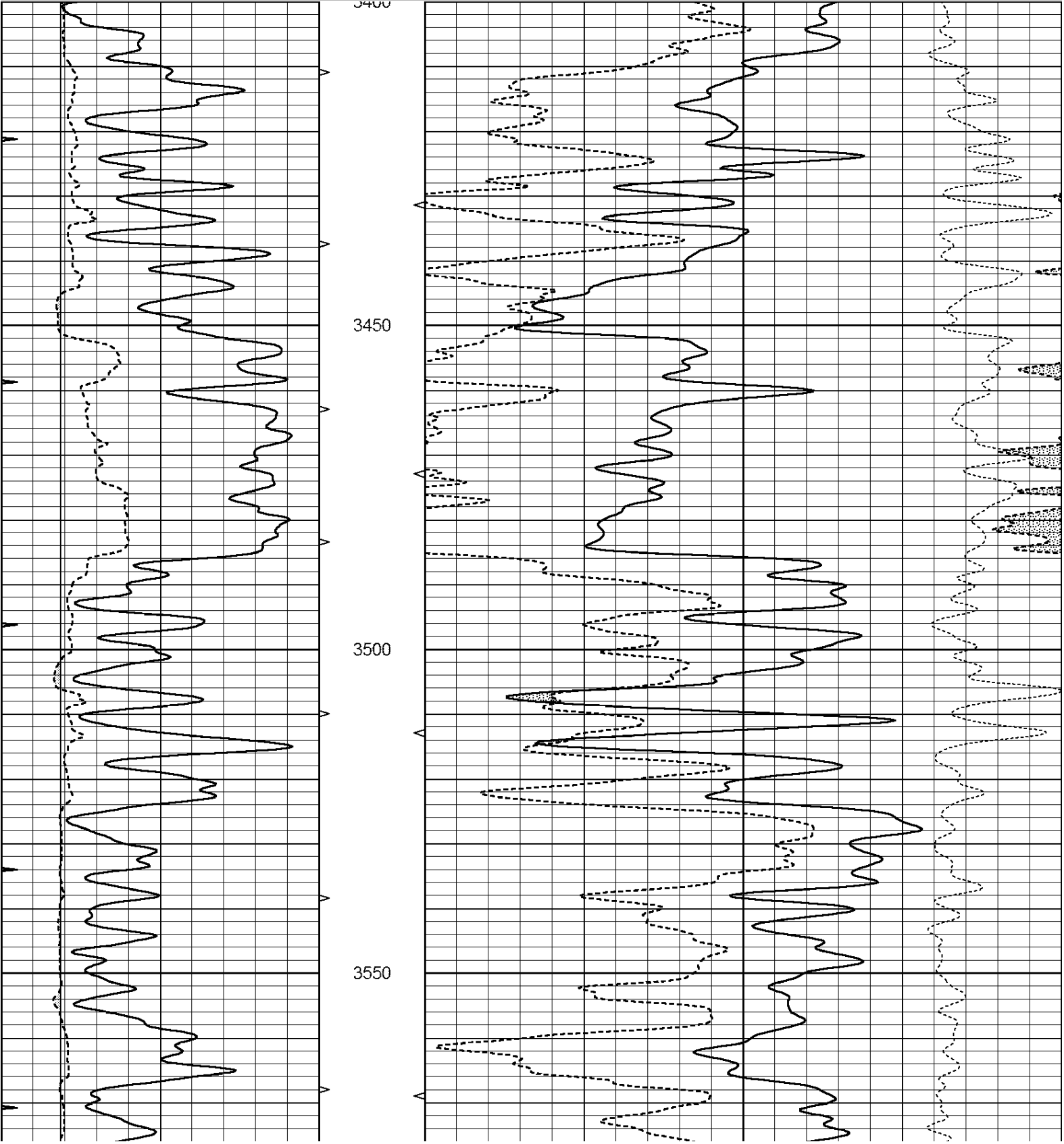
DIRECTIONS
COLLYER EXIT OFF I70 NORTH 3/4 MILE,
EAST INTO.

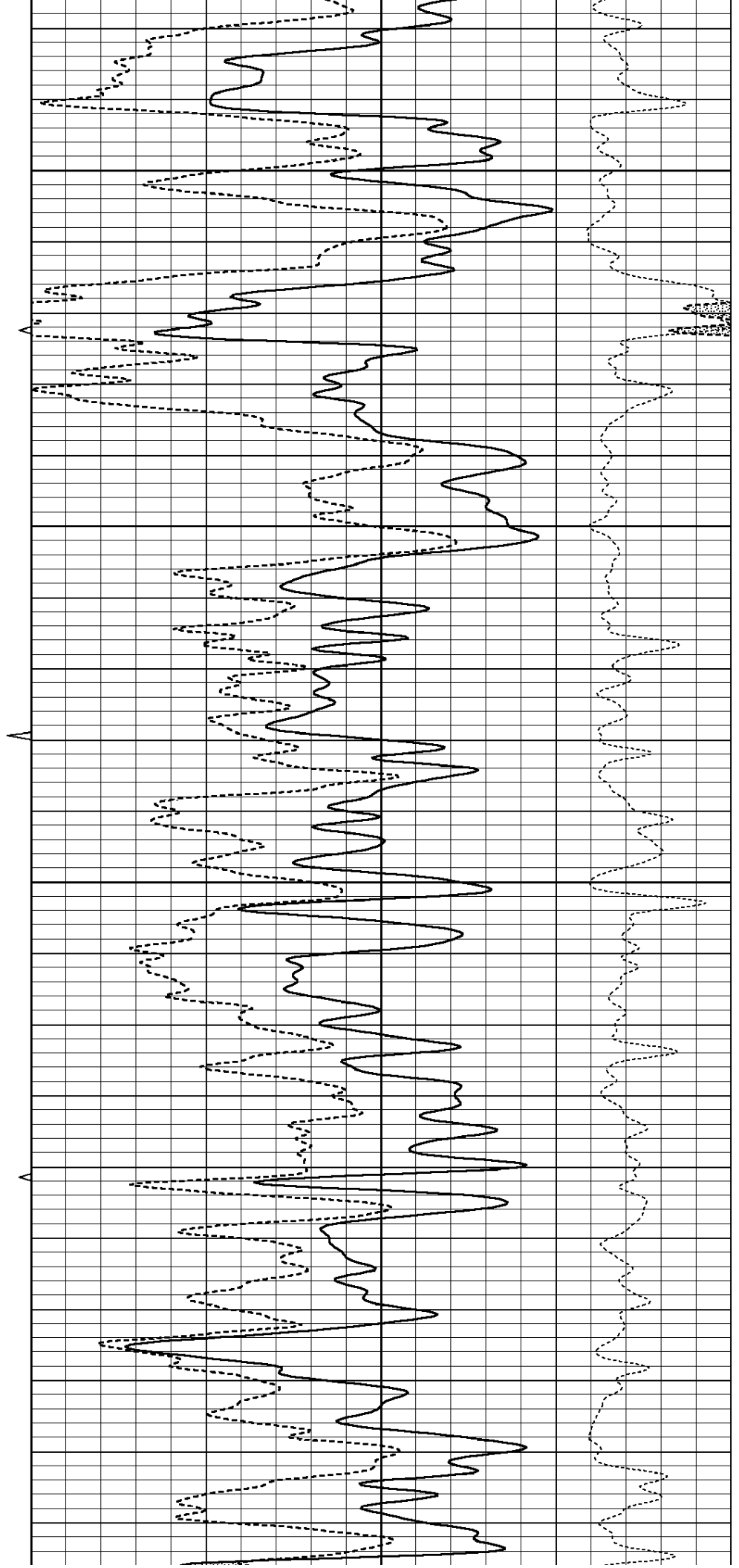
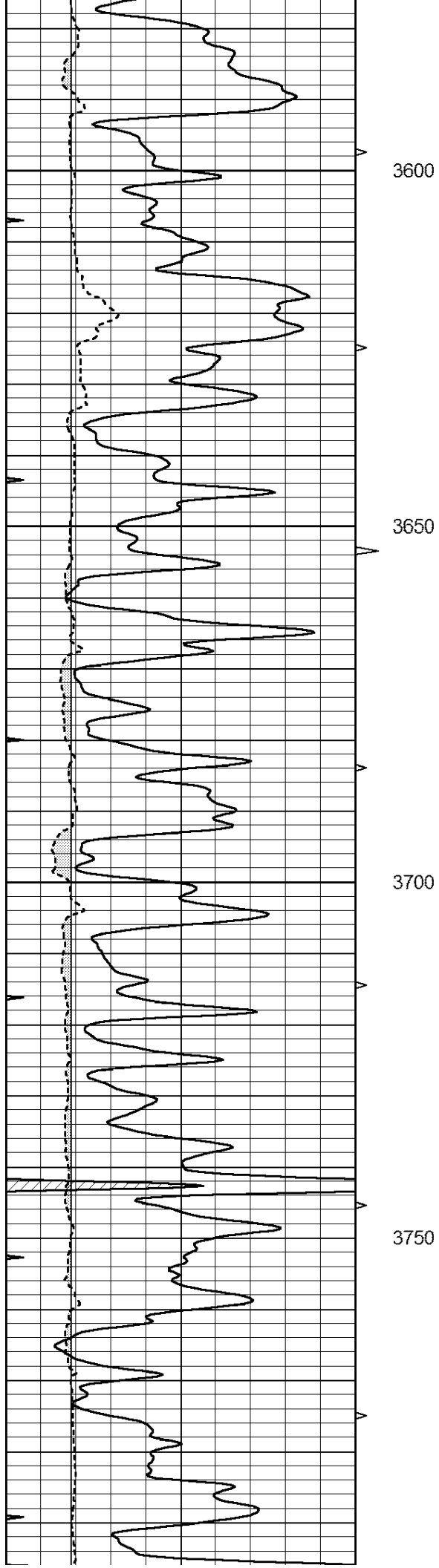


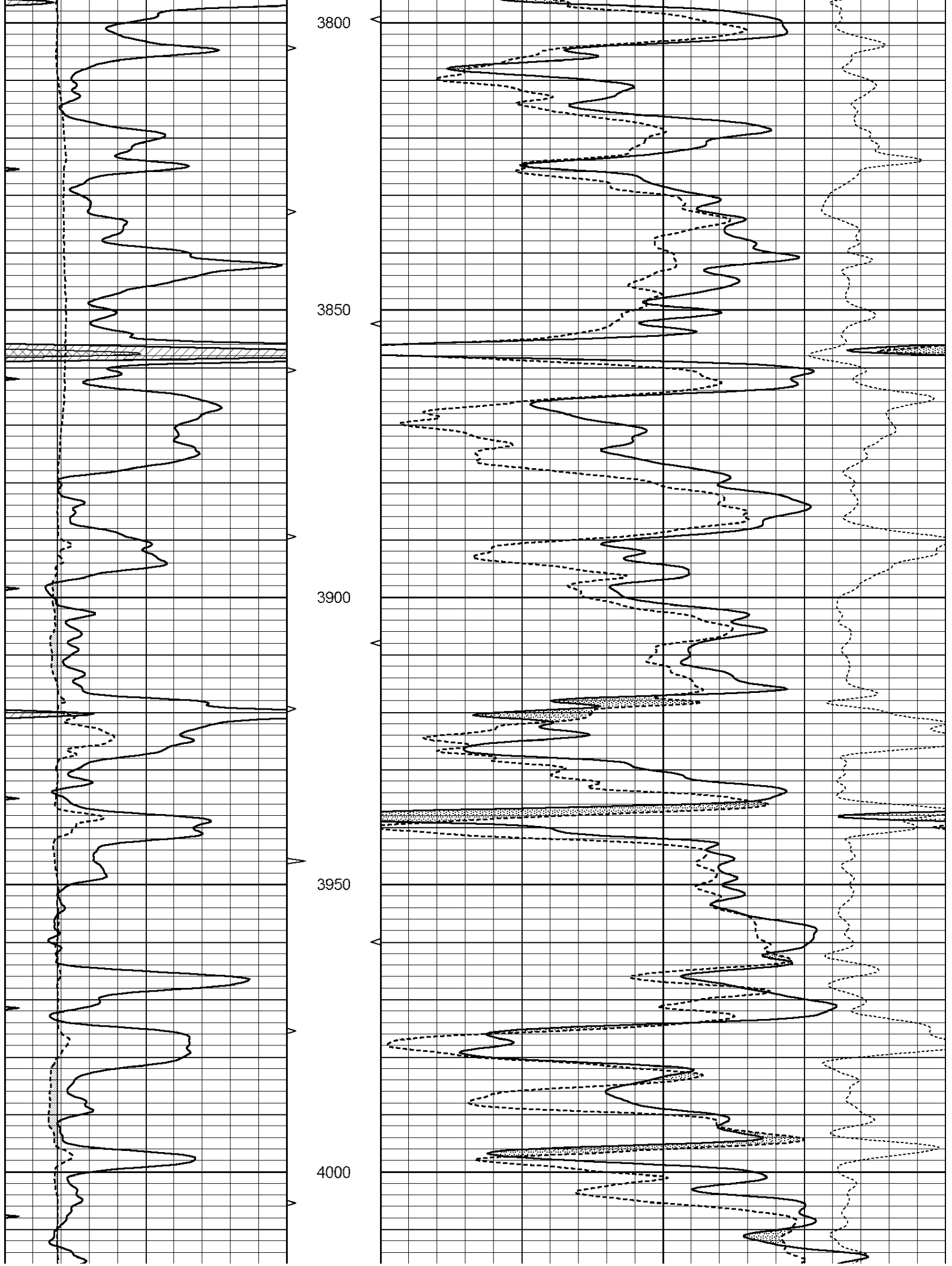
MAIN PASS

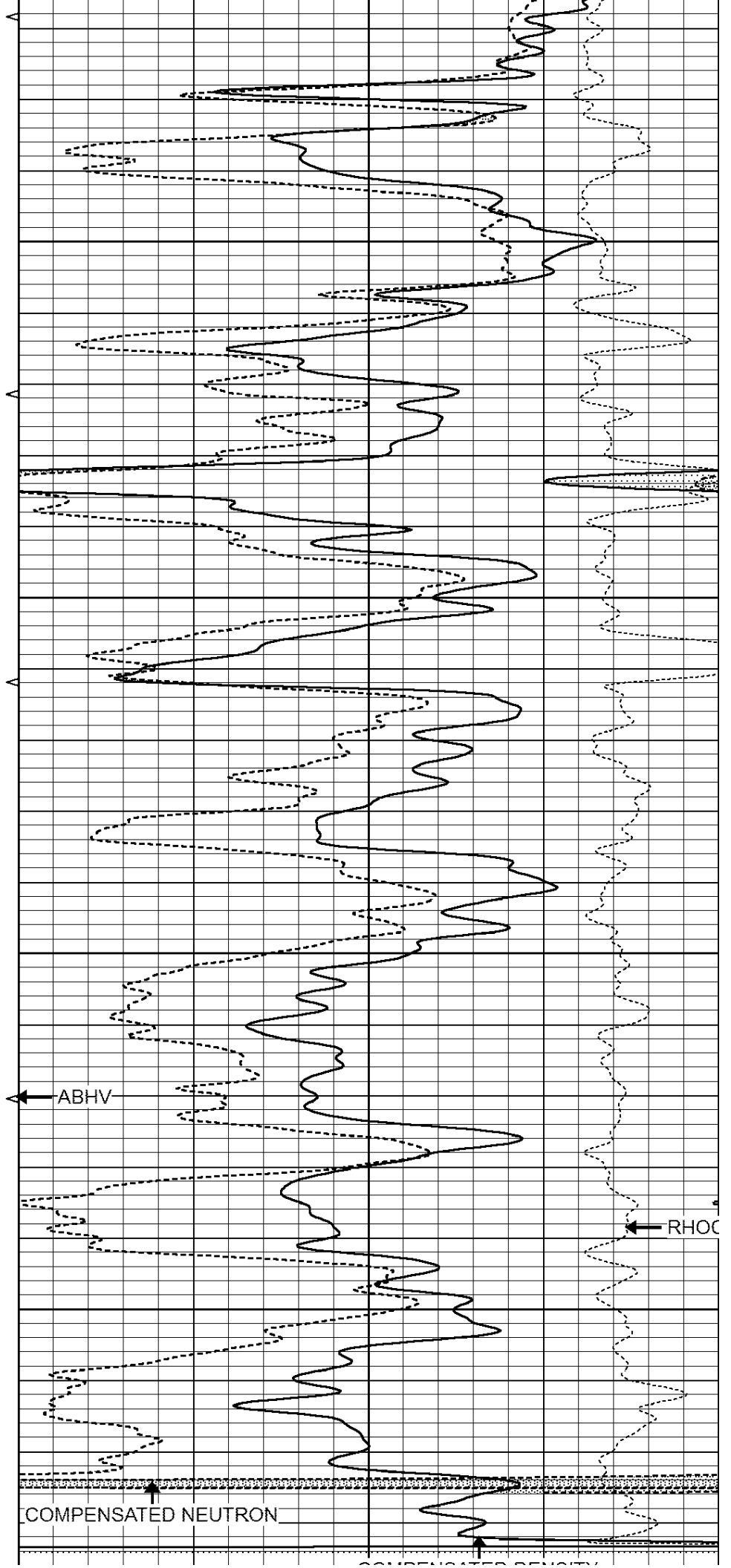
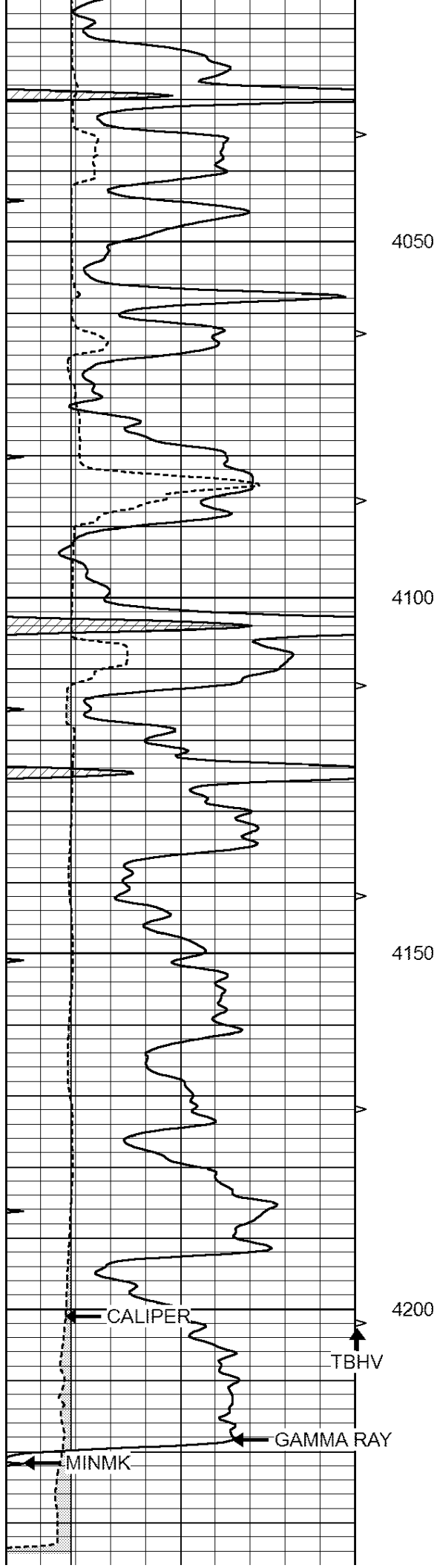
Database File: 2107ddn.db
Dataset Pathname: pass3.1
Presentation Format: den_neu
Dataset Creation: Sun Nov 05 10:16:29 2017 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

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		

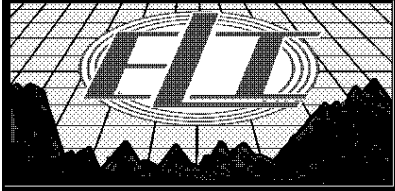








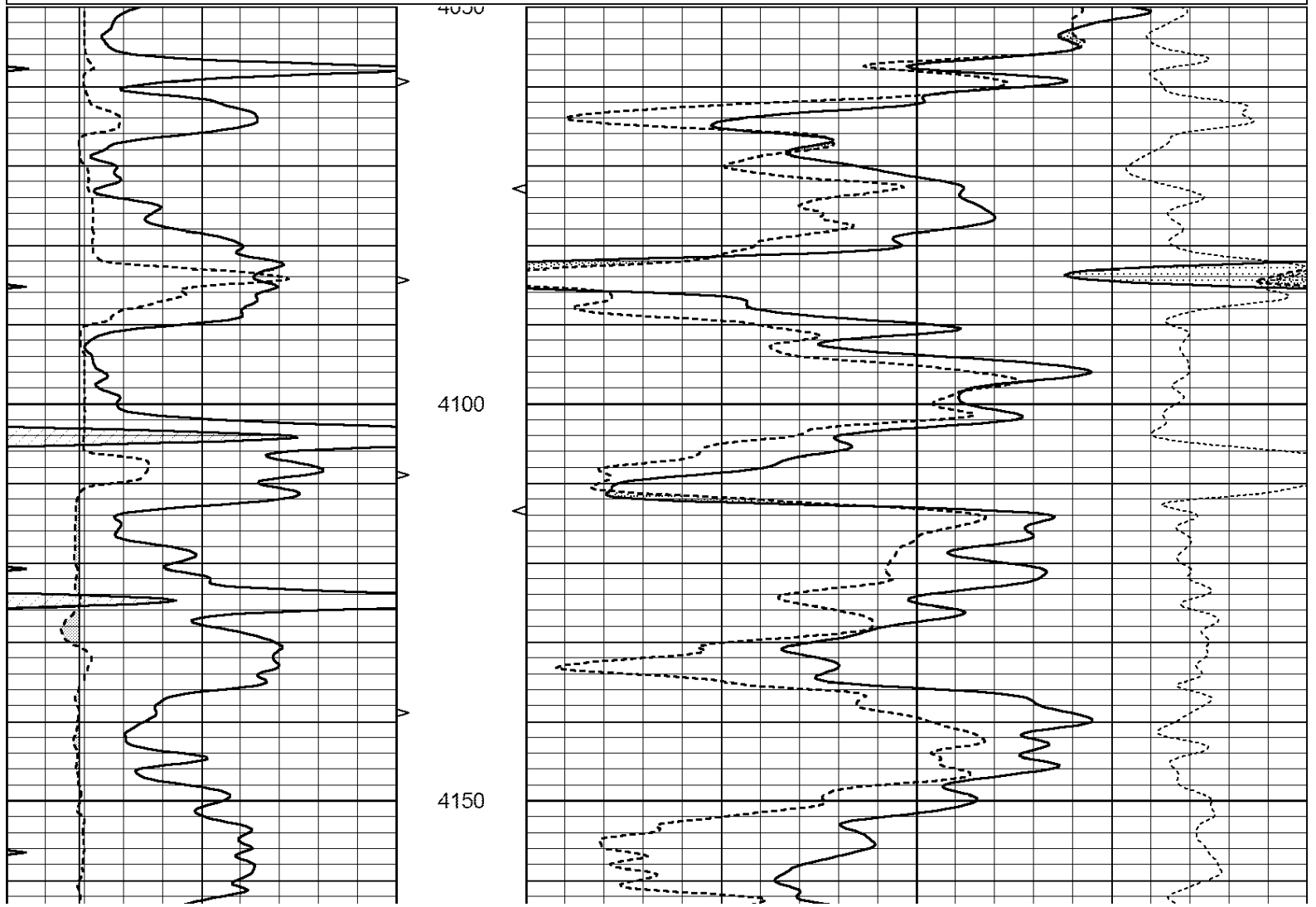
BOREID			LTD 4248 4250		COMPENSATED DENSITY											
					LIMESTONE MATRIX 2.71											
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)										-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)										-10
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0	MINMK	20	TBHV	-0.25 CORRECTION (g/cc)										0.25		
			0 (ft3)	10												

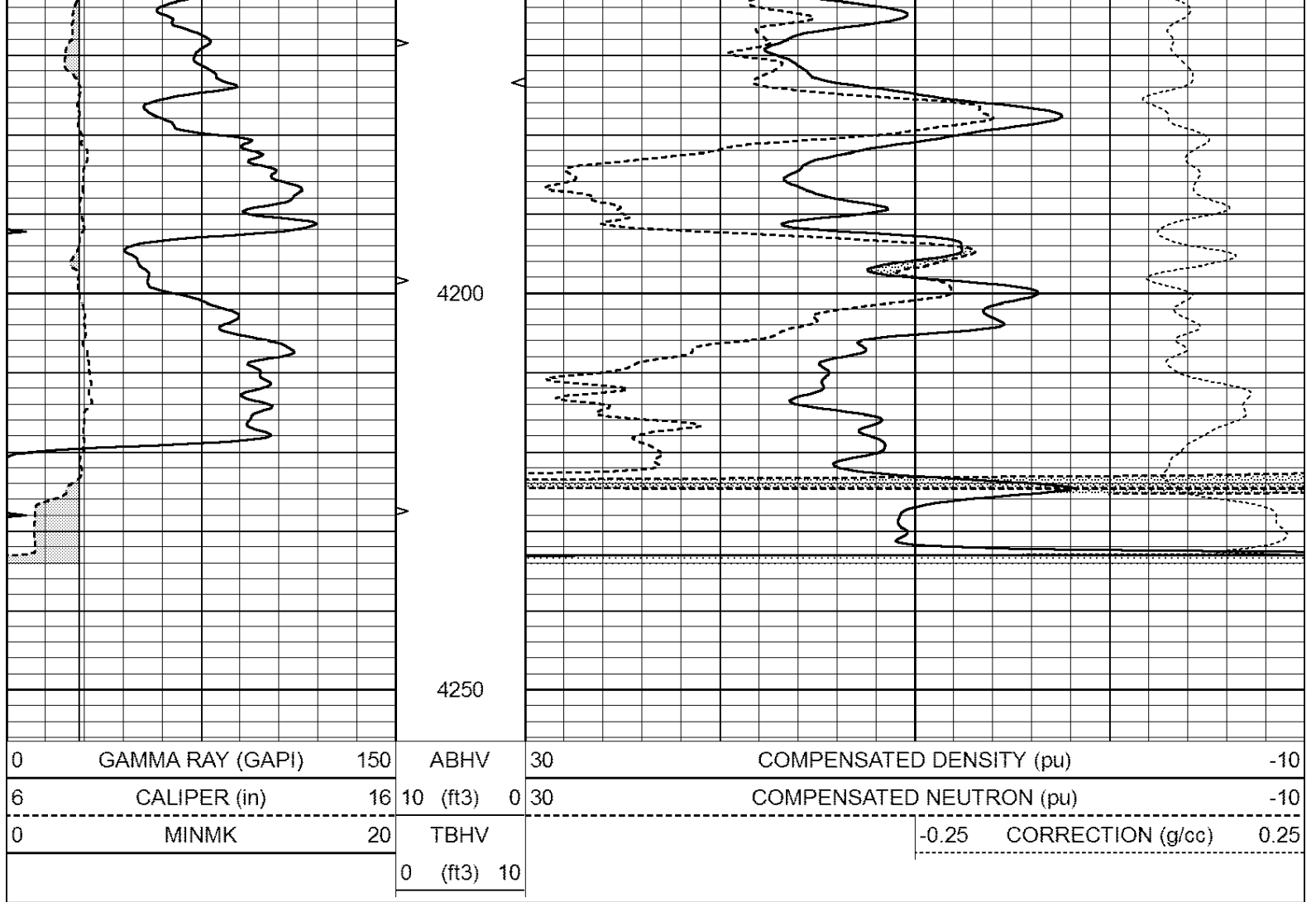


REPEAT SECTION

Database File: 2107ddn.db
 Dataset Pathname: pass2
 Presentation Format: den_neu
 Dataset Creation: Sun Nov 05 09:07:05 2017 by Log 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	7.500	500.000	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								
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Serial Number:			61					
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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