



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company RL INVESTMENT, LLC.  
Well HANNA #2-18  
Field GURK  
County GRAHAM  
State KANSAS

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Field GURK  
County GRAHAM State KANSAS

Location: API # : 15-065-24047-0000  
990' FNL & 1650' FEL  
SEC 18 TWP 10S RGE 25W  
Permanent Datum GROUND LEVEL Elevation 2553  
Log Measured From KELLY BUSHING & A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services DIL/MEL  
Elevation K.B. 2561  
D.F. 2559  
G.L. 2553

Date	6/11/14		
Run Number	ONE		
Depth Driller	4100		
Depth Logger	4099		
Bottom Logged Interval	4075		
Top Log Interval	3450		
Casing Driller	8 5/8" @ 220		
Casing Logger	218		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3200 PPM	
Density / Viscosity	9.265		
pH / Fluid Loss	10.5/8.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80 @ 92F		
Rmt @ Meas. Temp	.60 @ 92F		
Rmc @ Meas. Temp	.96 @ 94F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.63 @ 117F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	117F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	RICHARD BELL		

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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**

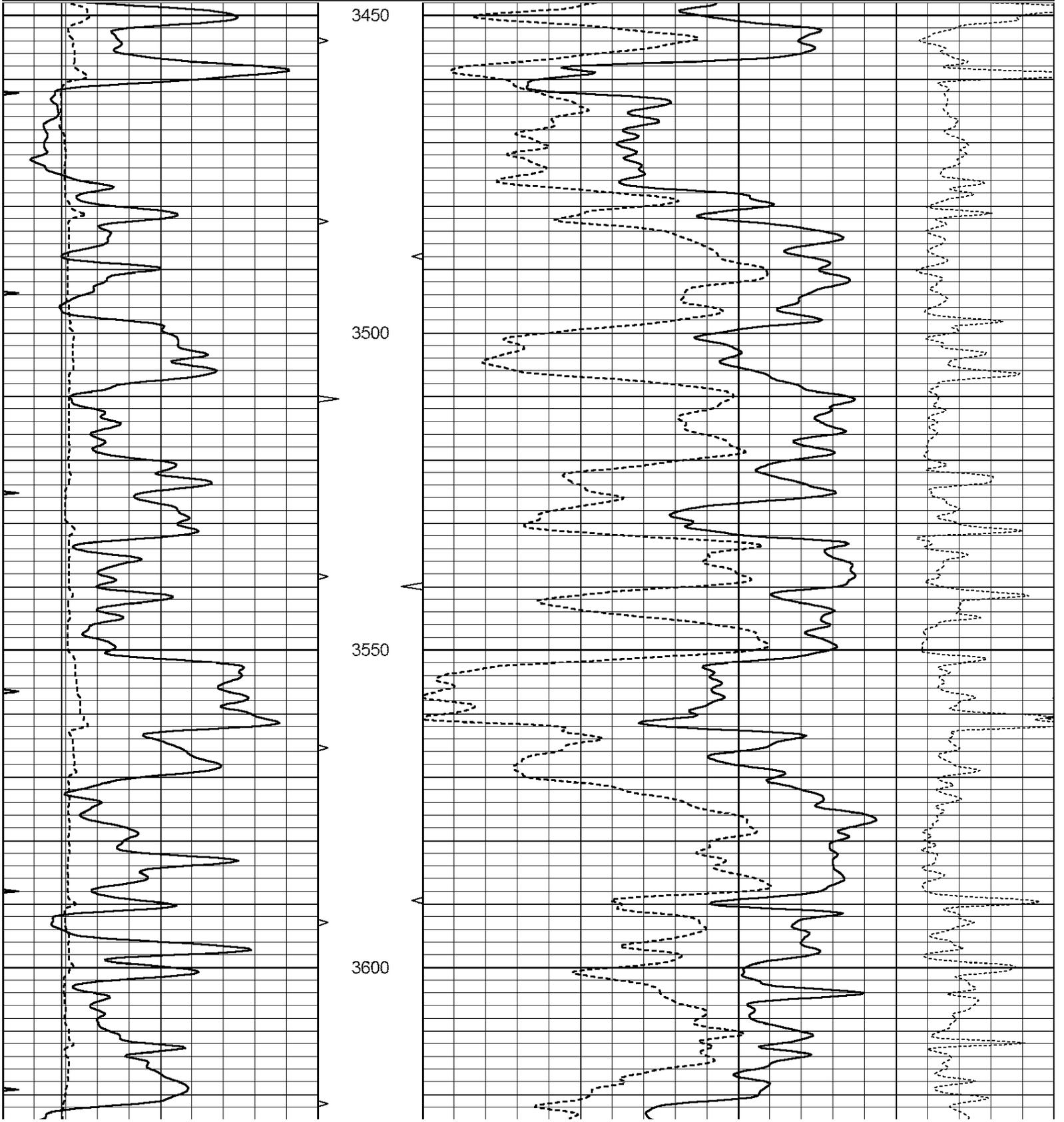
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395  
DIRECTIONS:  
ST. PETER, KS. - NORTH EDGE TO RD. E - 3 WEST - SOUTH INTO

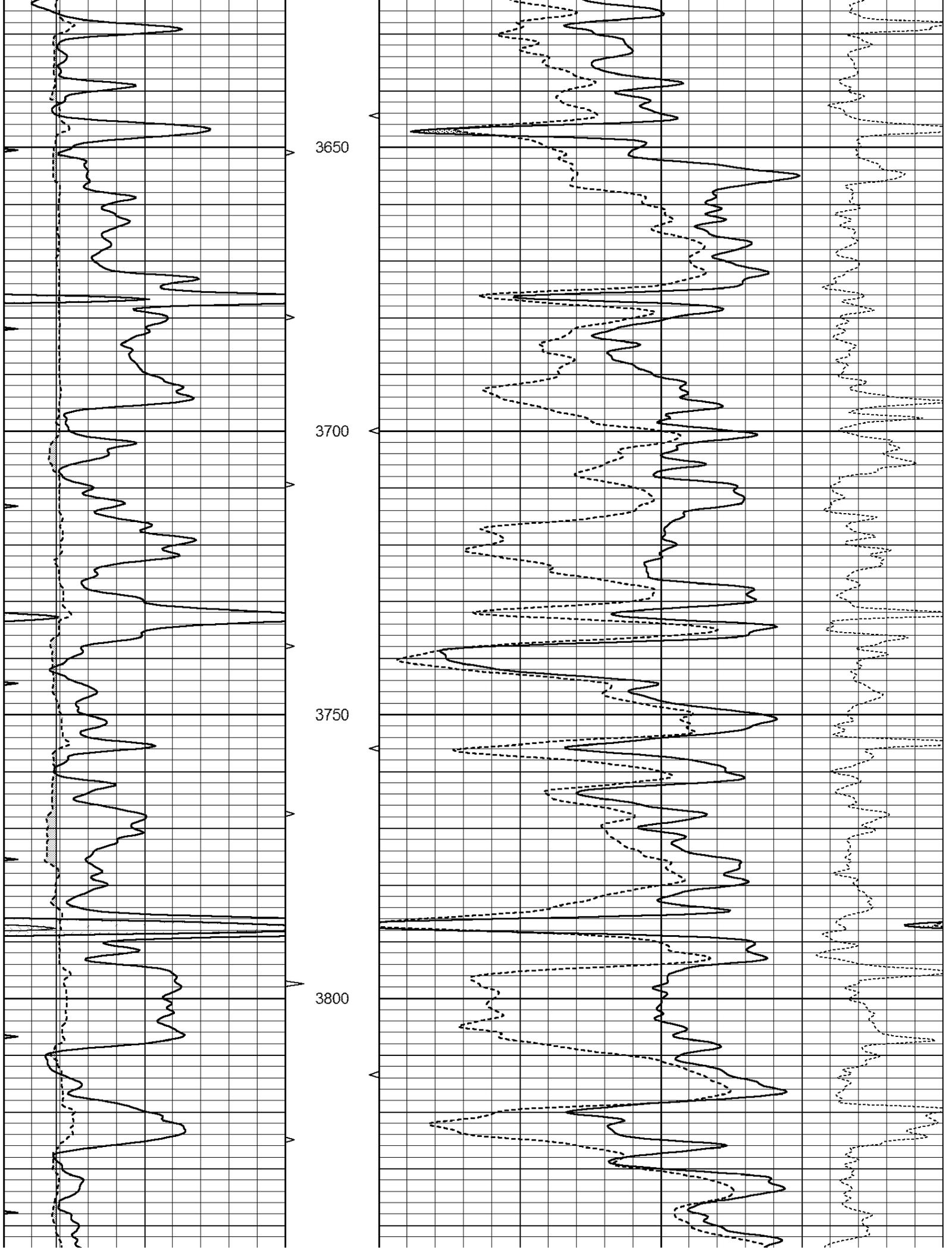


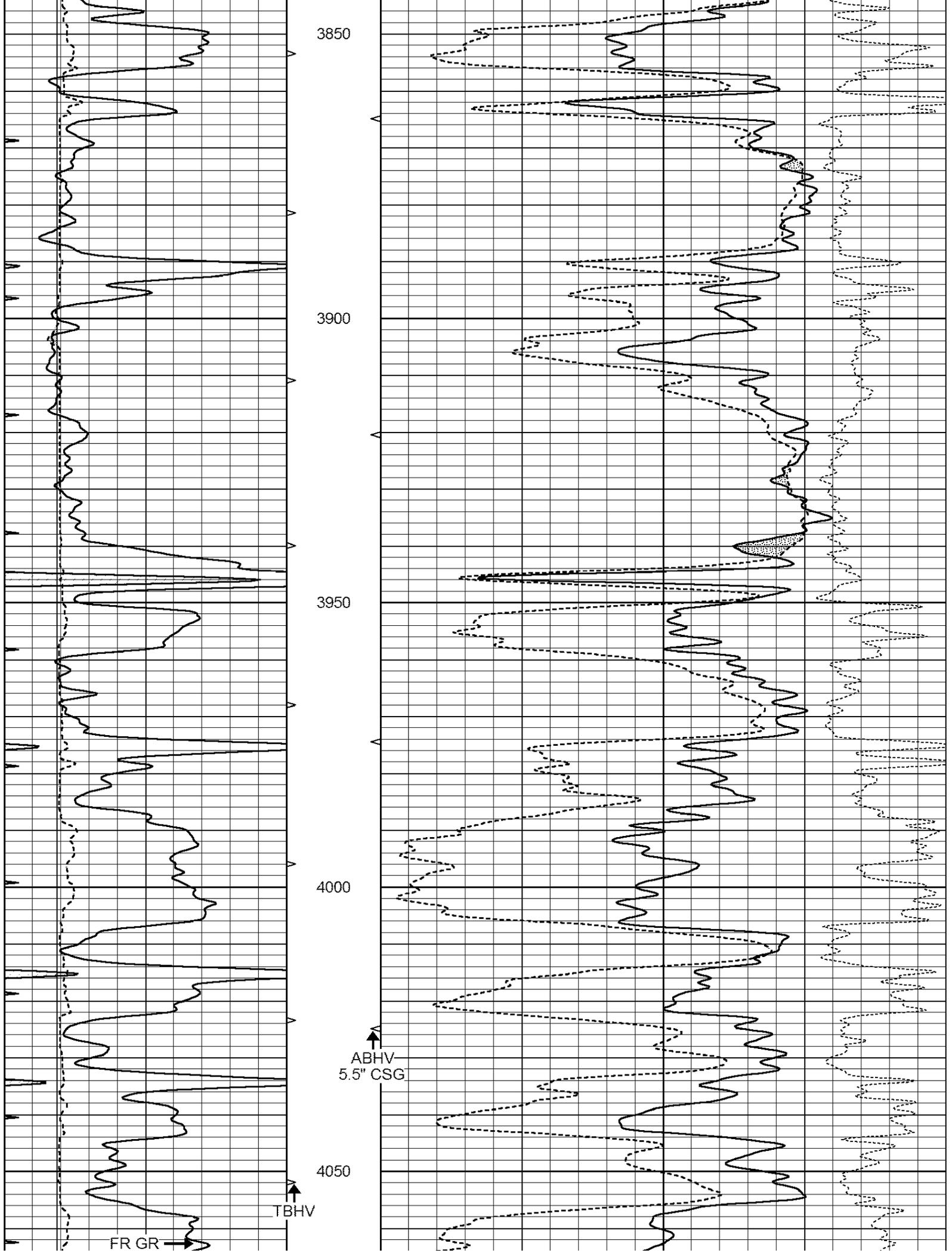
**MAIN SECTION**

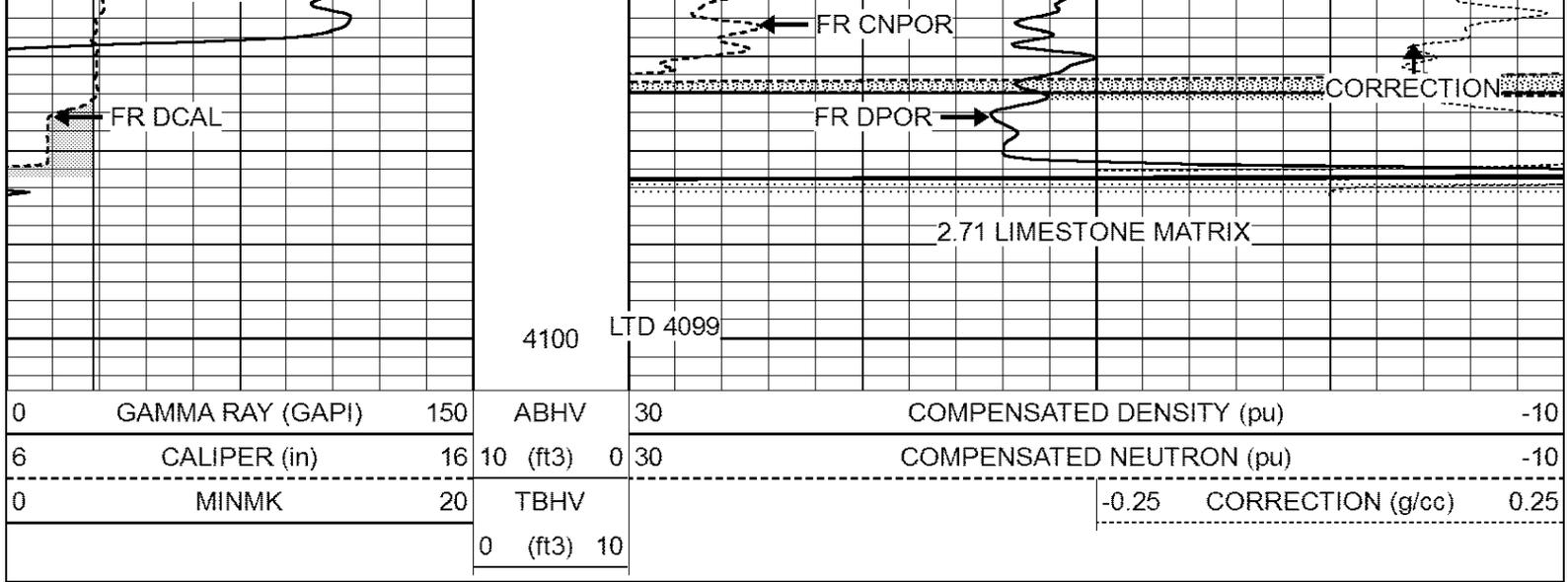
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 Dataset Pathname: pass3.1  
 Presentation Format: den\_neu  
 Dataset Creation: Wed Jun 11 22:10:28 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

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		





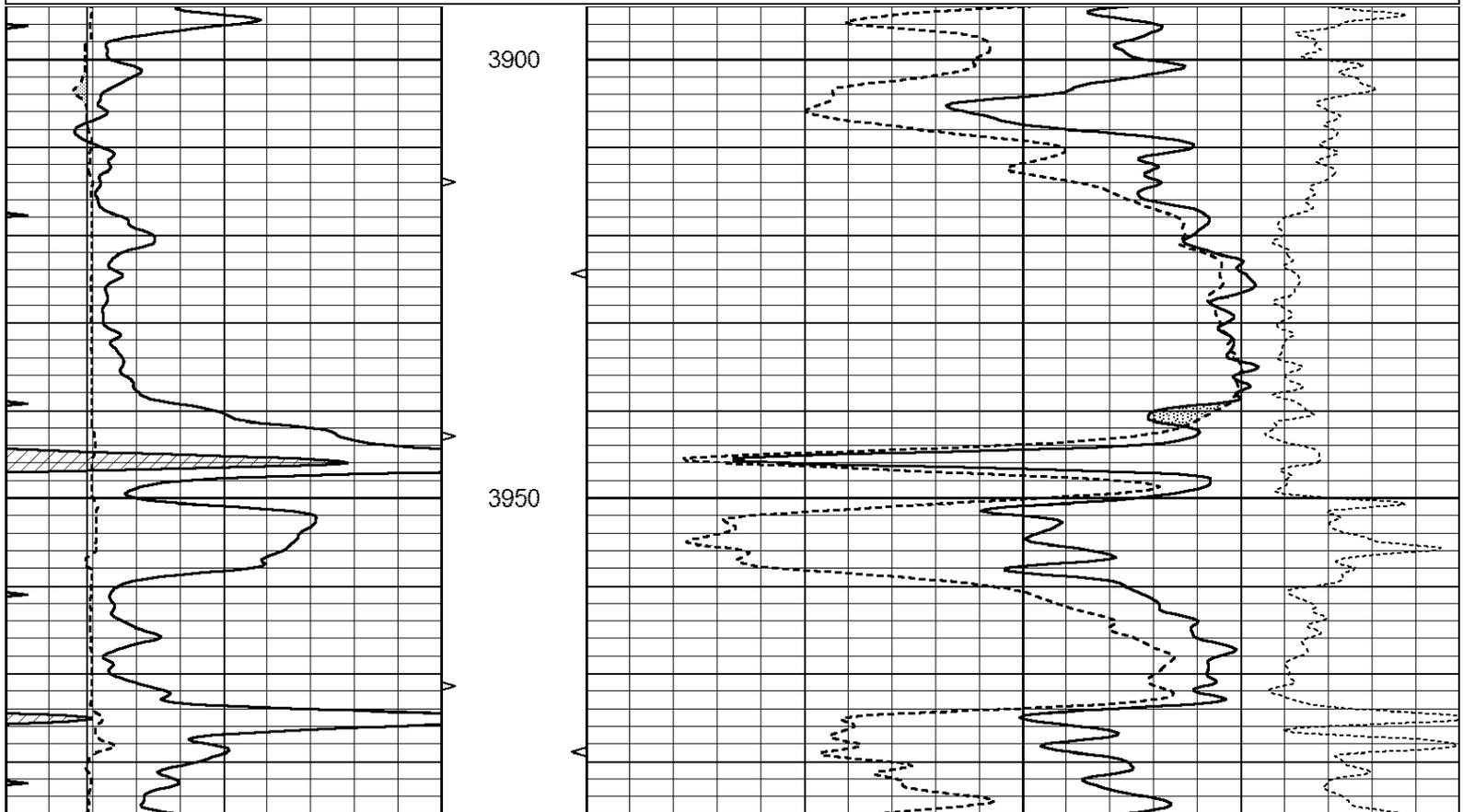


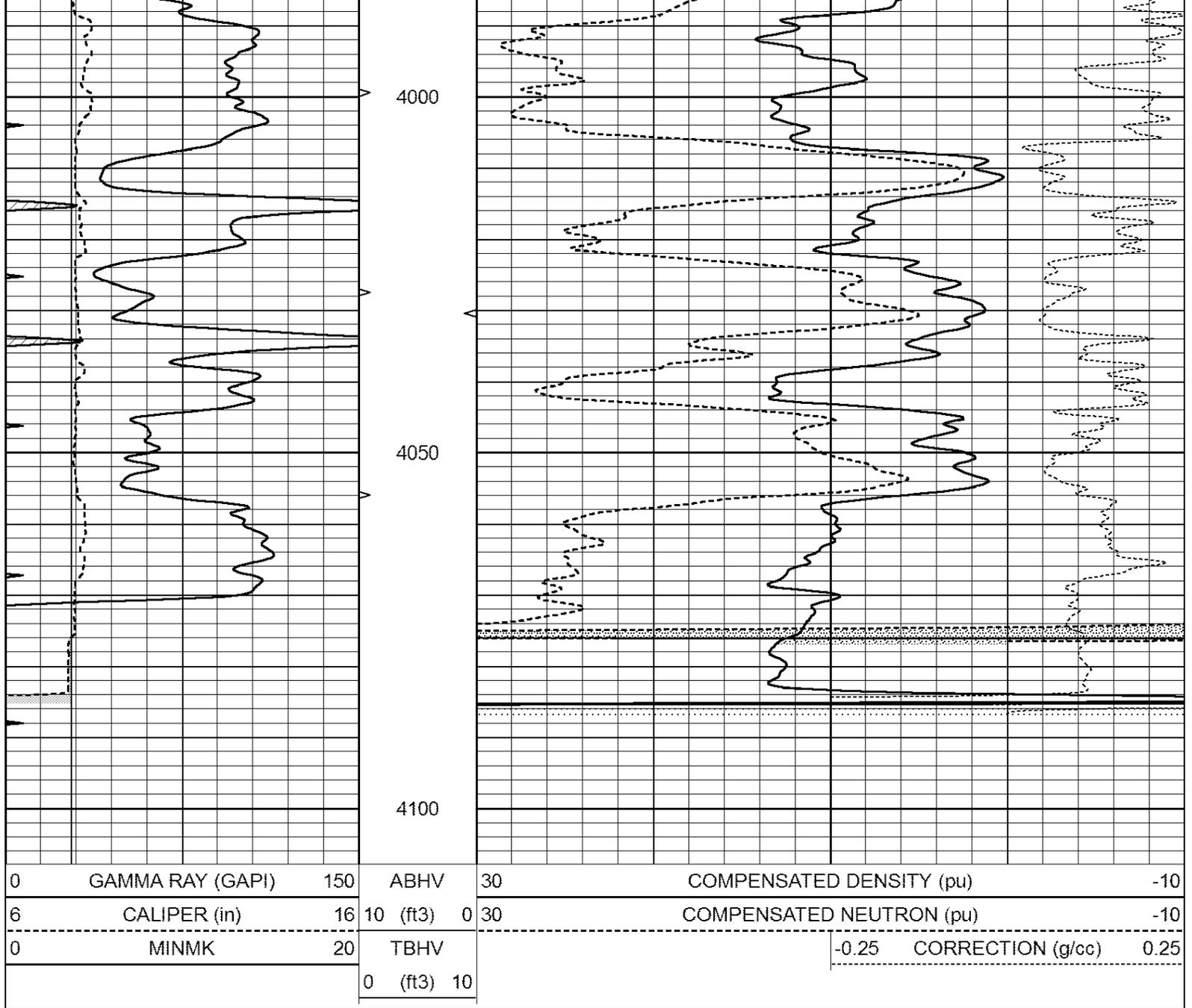


# REPEAT SECTION

Database File: 24633ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: den\_neu  
 Dataset Creation: Wed Jun 11 22:16:48 2014 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: 24633ddn.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Wed Jun 11 22:16:48 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Fri Aug 01 06:33:19 2008  
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008  
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings			V	References		Results		
	Air	Loop			Air	Loop	m	b	
Deep	0.015	0.648		V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796		V	0.000	464.000	mmho/m	605.049	-17.680
Internal:	Zero	Cal			Zero	Cal		m	b
Deep	0.017	0.657		V	0.000	400.000	mmho/m	625.152	10.610

Deep	0.017	0.037	V	0.000	400.000	mmho/m	625.133	-10.019
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		

**Compensated Density Calibration Report**

Serial-Model:	GEAR3-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Fri Jan 04 15:48:16 2013
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration						
	Density		Far Detector	Near Detector		
Magnesium	1.710	g/cc	935.36	501.55	cps	
Aluminum	2.580	g/cc	209.32	357.01	cps	
Spine Angle = 77.21			Density/Spine Ratio = 0.567			
	Size		Reading			
Small Ring	8.00	in	4.29	V		
Large Ring	14.00	in	6.24	V		

Before Survey Verification					
	Target	Measured			
		g/cc		g/cc	
		g/cc		g/cc	
		g/cc		g/cc	

After Survey Verification					
	Target	Measured			
		g/cc		g/cc	
		g/cc		g/cc	
		g/cc		g/cc	

**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:	Sat May 31 01:22:06 2014	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.7535	GAPI/cps