



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company BLACK DIAMOND OIL, INC.  
Well MULDER #1  
Field WILDCAT  
County NORTON  
State KANSAS

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Field WILDCAT  
County NORTON State KANSAS

Location: API # : 15-137-20633-0000  
335' FSL & 1185' FEL  
NW - SW - SE - SE  
SEC 21 TWP 3S RGE 21W  
Permanent Datum GROUND LEVEL Elevation 2305  
Log Measured From KELLY BUSHING 8' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL/MEL  
Elevation  
K.B. 2313  
D.F. 1311  
G.L. 1305

Date	2/27/13		
Run Number	ONE		
Depth Driller	3830		
Depth Logger	3831		
Bottom Logged Interval	3807		
Top Log Interval	3100		
Casing Driller	8 5/8" @ 221		
Casing Logger	220		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 800 PPM	
Density / Viscosity	9.2/47		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.95 @ 69F		
Rmt @ Meas. Temp	0.71 @ 69F		
Rmc @ Meas. Temp	1.14 @ 69F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	0.58 @ 114F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	114F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JEFF GRONEWEG		
Witnessed By	JEFF LAWLER		

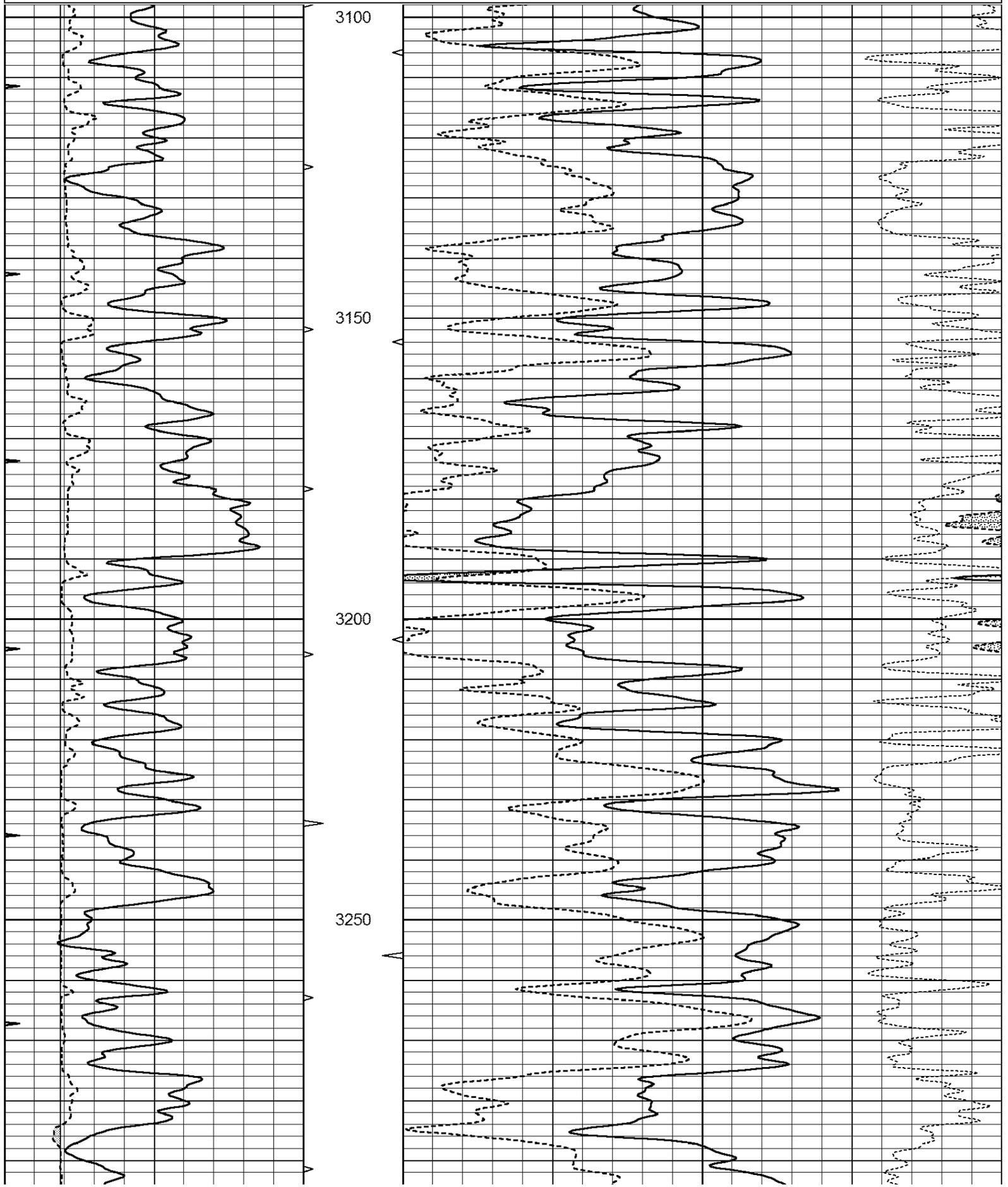
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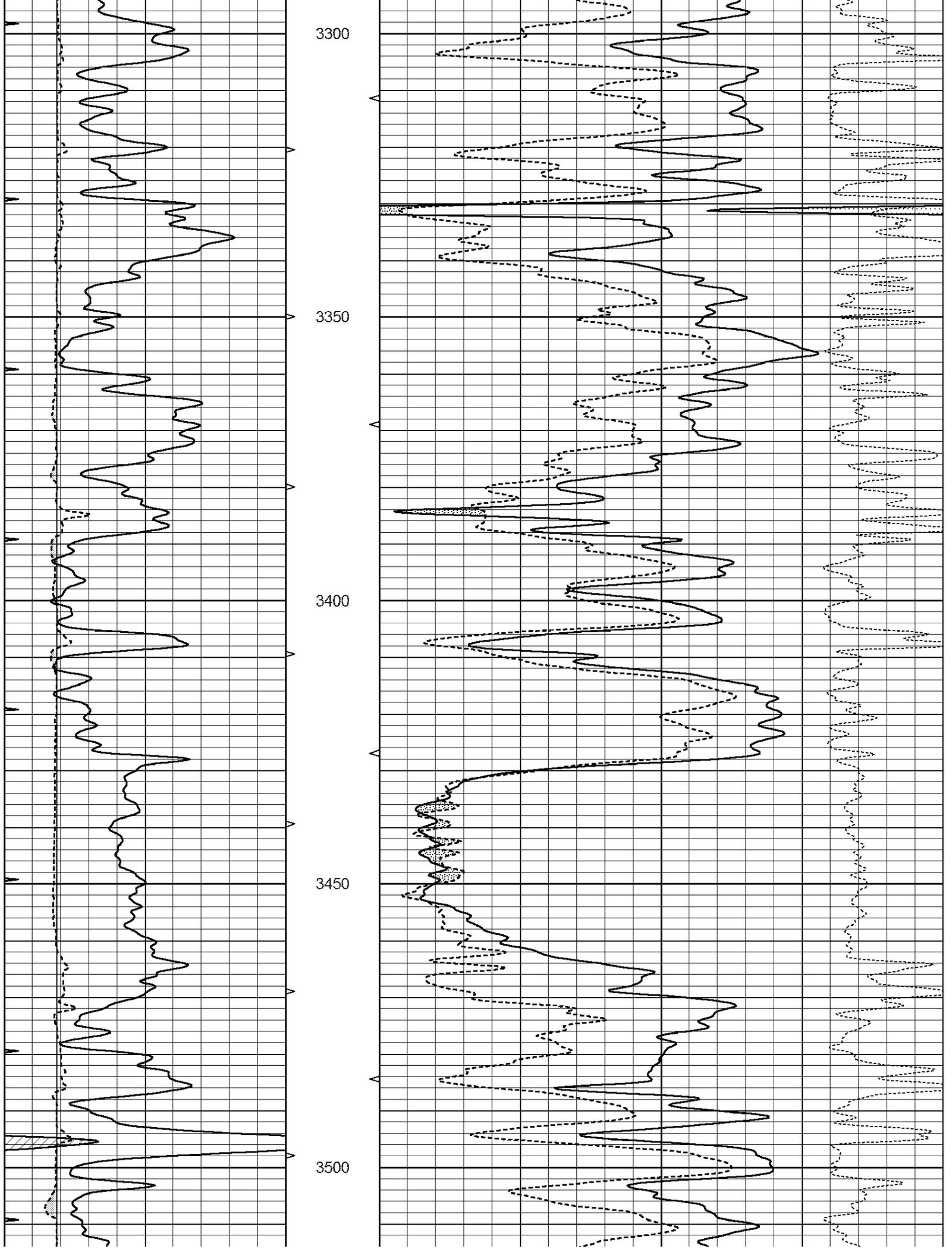
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

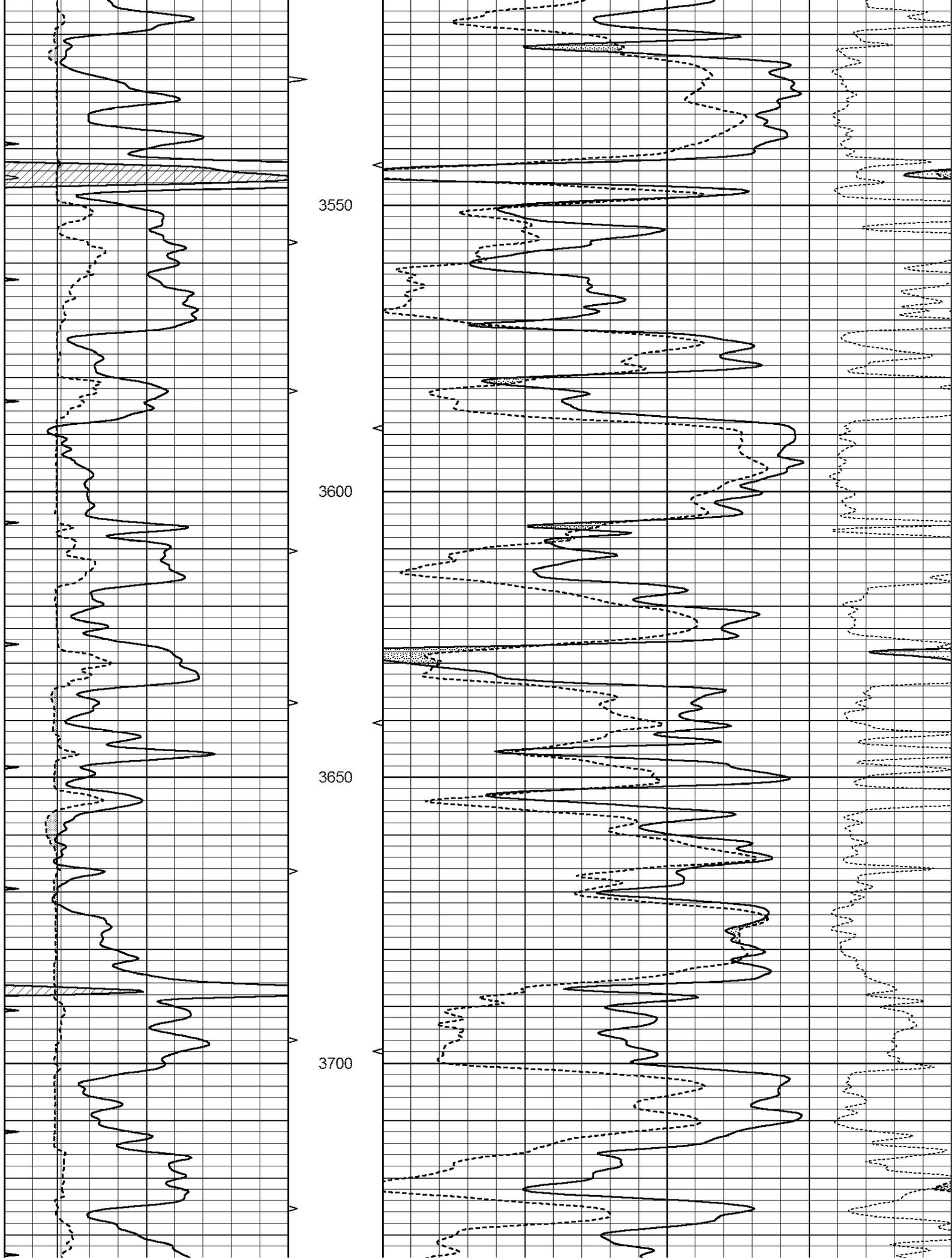
Comments

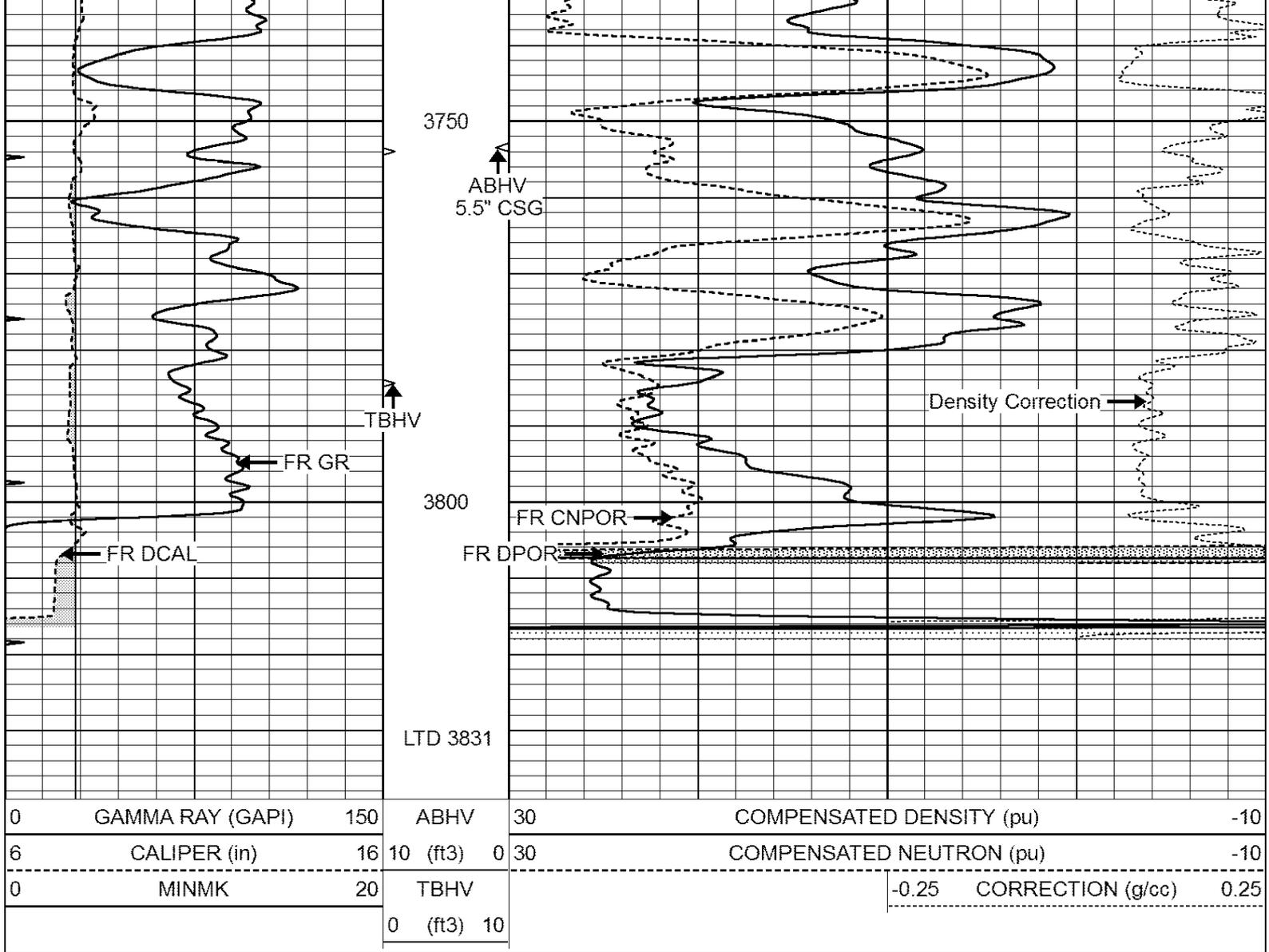
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395  
DIRECTIONS:  
LOGAN, KS - 6 MILES WEST TO RD 12 - 7 MILES NORTH TO RD R  
1 MILE WEST - 1 MILE NORTH - WEST INTO

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		





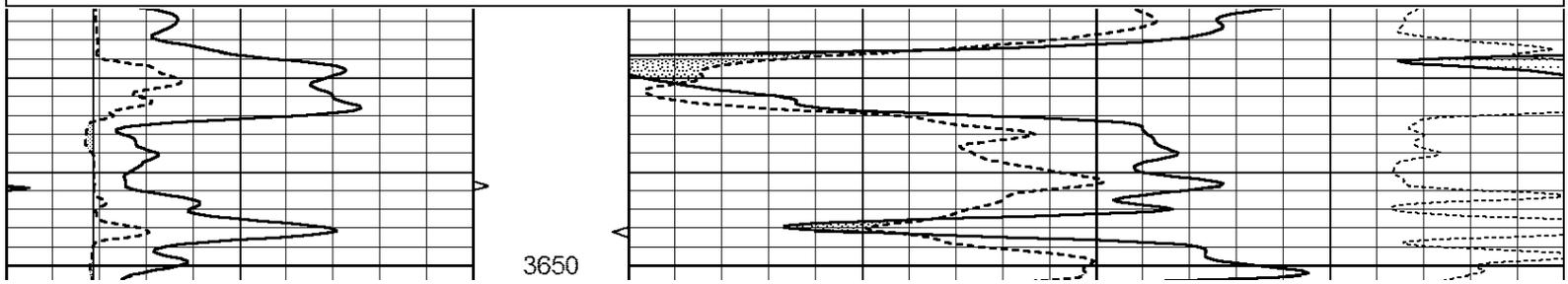


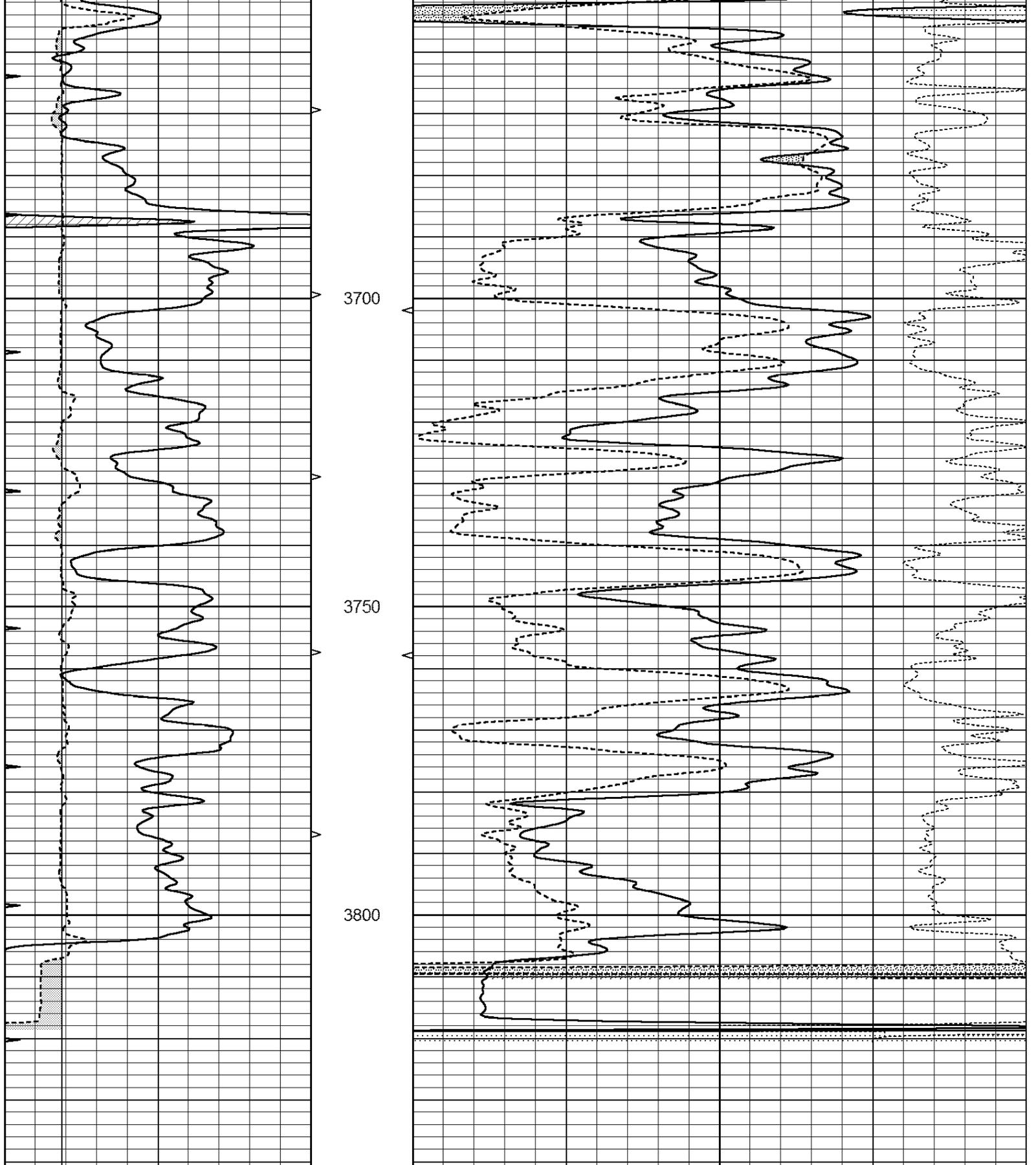


# REPEAT SECTION

Database File: 010650ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: den\_neu  
 Dataset Creation: Wed Feb 27 07:53:43 2013 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		





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			

### 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			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	625.153	-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		

### 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

	<u>Target</u>		<u>Measured</u>	
		g/cc		g/cc
		g/cc		g/cc
		g/cc		g/cc

After Survey Verification				
	<u>Target</u>		<u>Measured</u>	
		g/cc		g/cc
		g/cc		g/cc
		g/cc		g/cc

Compensated Neutron Calibration Report

Serial Number:	61
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:	Thu Mar 10 03:46:42 2011		
Calibrator Value:	150.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	276.0	cps	
Sensitivity:	1.3348	GAPI/cps	