



**SUPERIOR**  
Hays,  
Kansas

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company DOWNING-NELSON OIL COMPANY, INC.  
Well WARD #1-31  
Field POHO  
County RUSH  
State KANSAS

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County RUSH State KANSAS

Location: API # : 15-165-21991-00-00  
1800' FNL & 350' FWL  
SE - NW - SW - NW  
SEC 31 TWP 18S RGE 17W  
Permanent Datum GROUND LEVEL Elevation 2002  
Log Measured From KELLY BUSHING & A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services DIL/MEL SON  
Elevation K.B. 2010  
D.F. 2008  
G.L. 2002

Date	9/21/12		
Run Number	ONE		
Depth Driller	3851		
Depth Logger	3852		
Bottom Logged Interval	3828		
Top Log Interval	2900		
Casing Driller	8 5/8" @ 1130'		
Casing Logger	1130		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,000 PPM	
Density / Viscosity	9.3/6.0		
pH / Fluid Loss	9.5/10.4		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	0.65 @ 85F		
Rmf @ Meas. Temp	0.49 @ 85F		
Rmc @ Meas. Temp	0.78 @ 85F		
Source of Rmf / Rmc	MEASURED		
Rin @ BHT	0.48 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	IAN MABB	JEFF GRONEMEG	
Witnessed By	AL DOWNING		

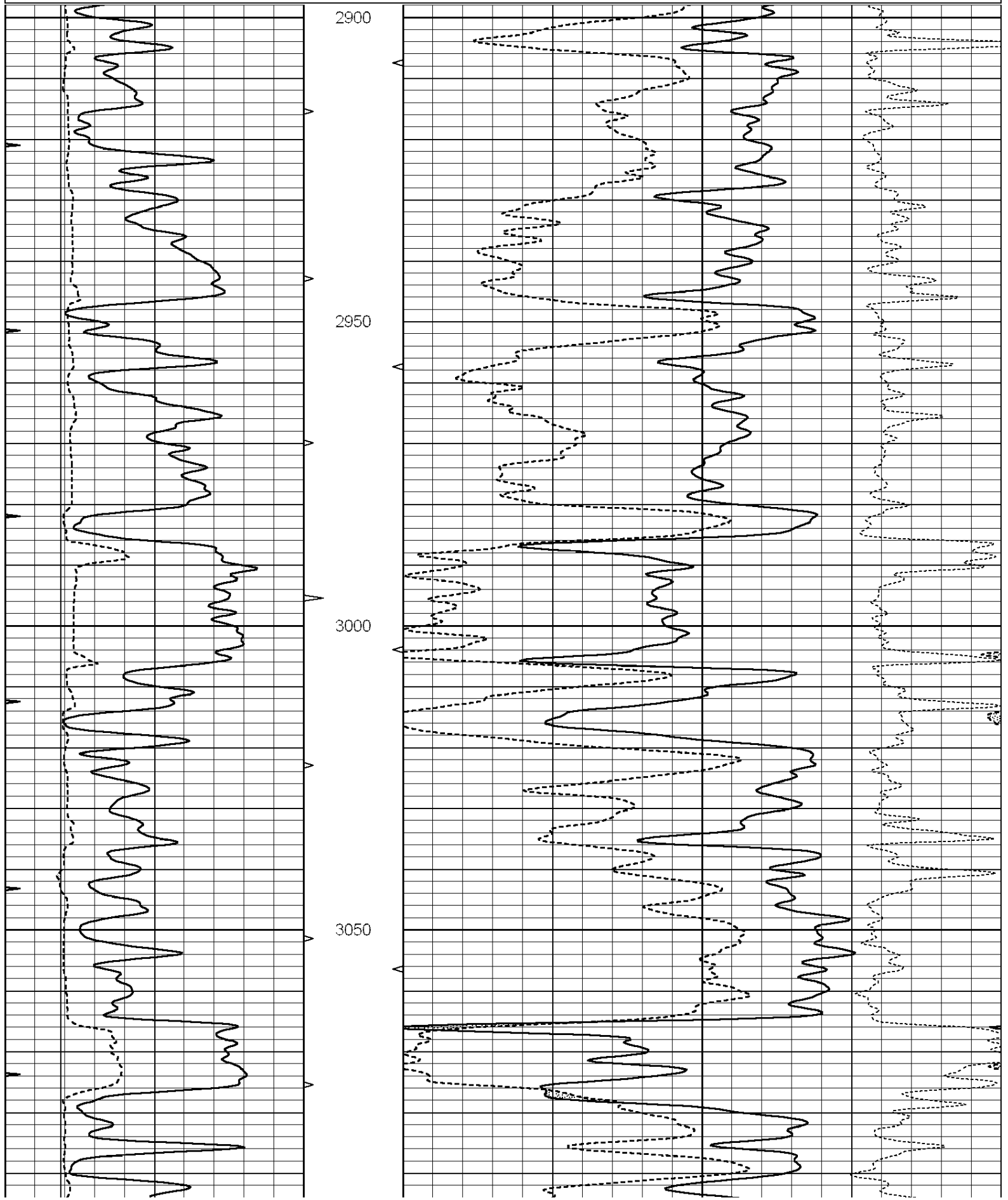
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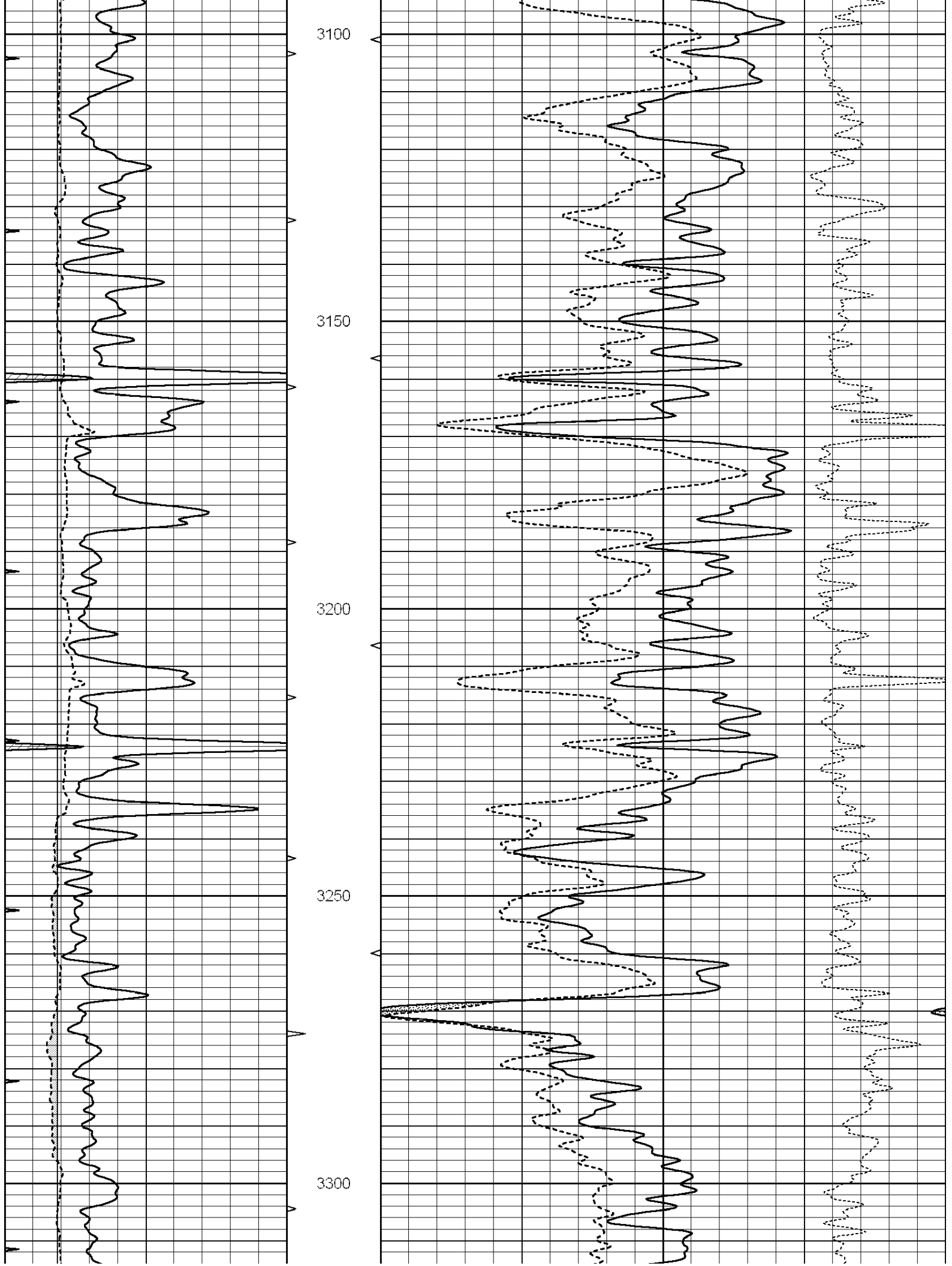
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

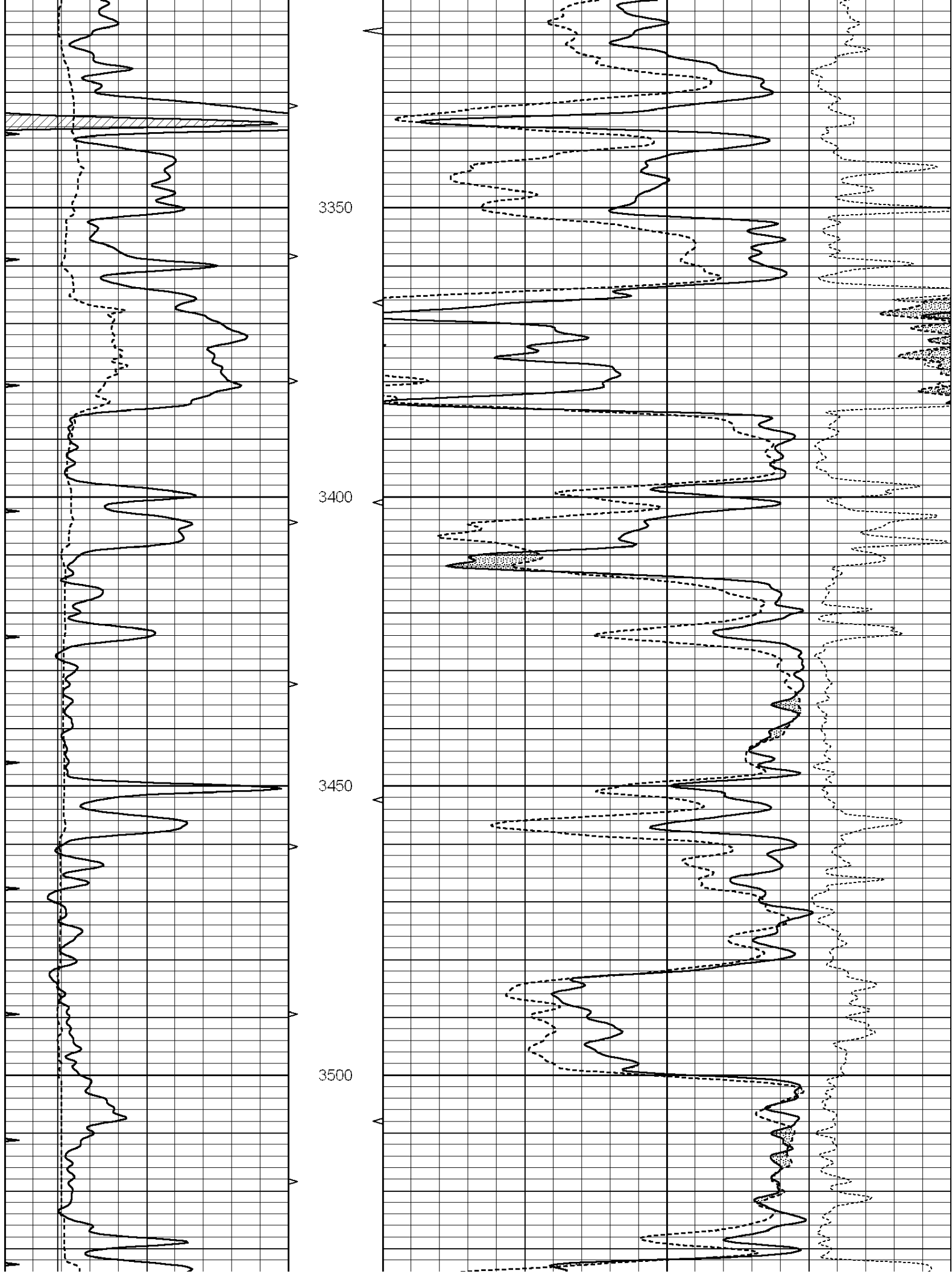
**Comments**

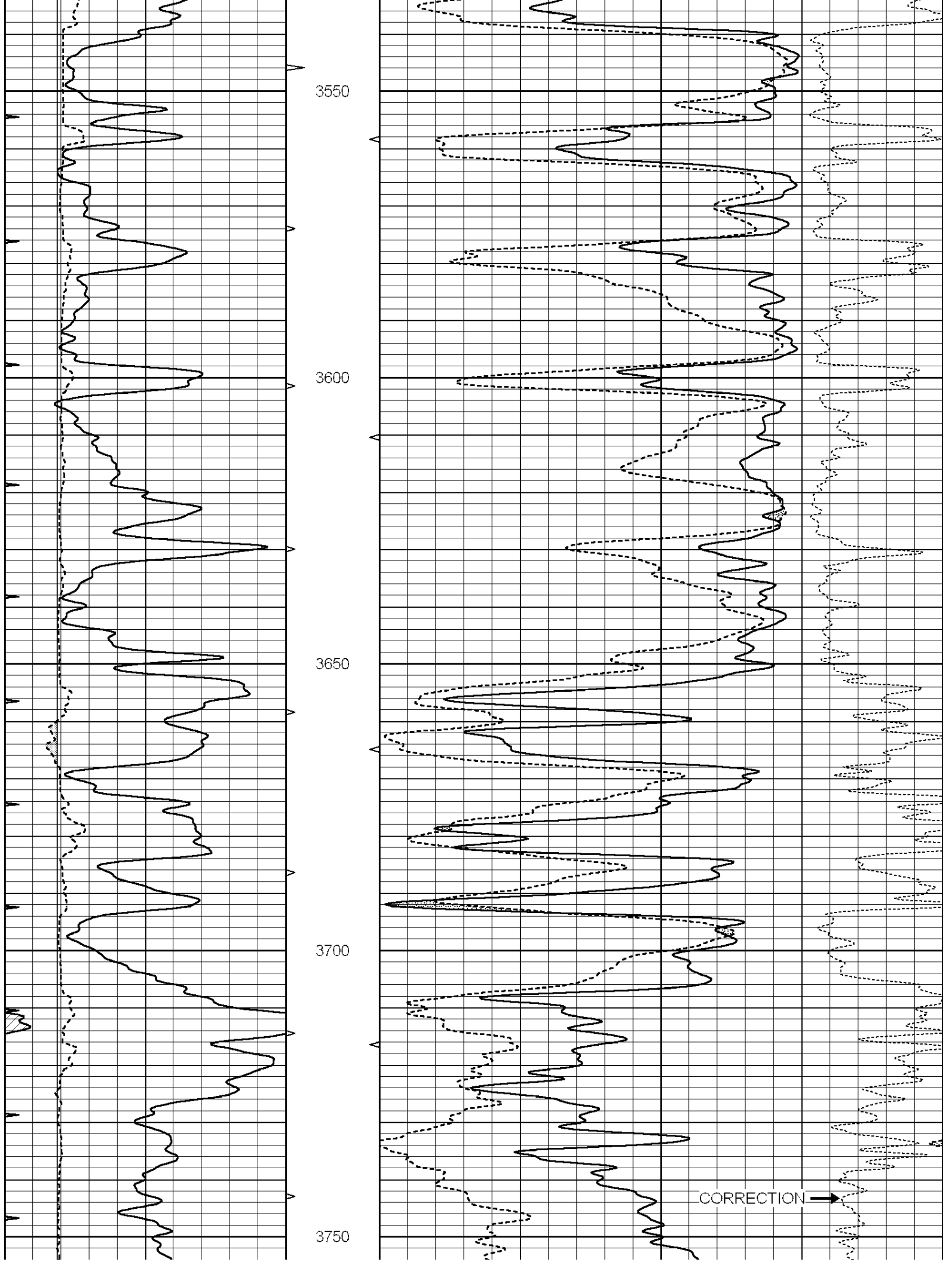
THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395  
DIRECTIONS  
RUSH CENTER, KS. 3 MILES EAST TO RD, 280, SOUTH 1.5 EAST INTO

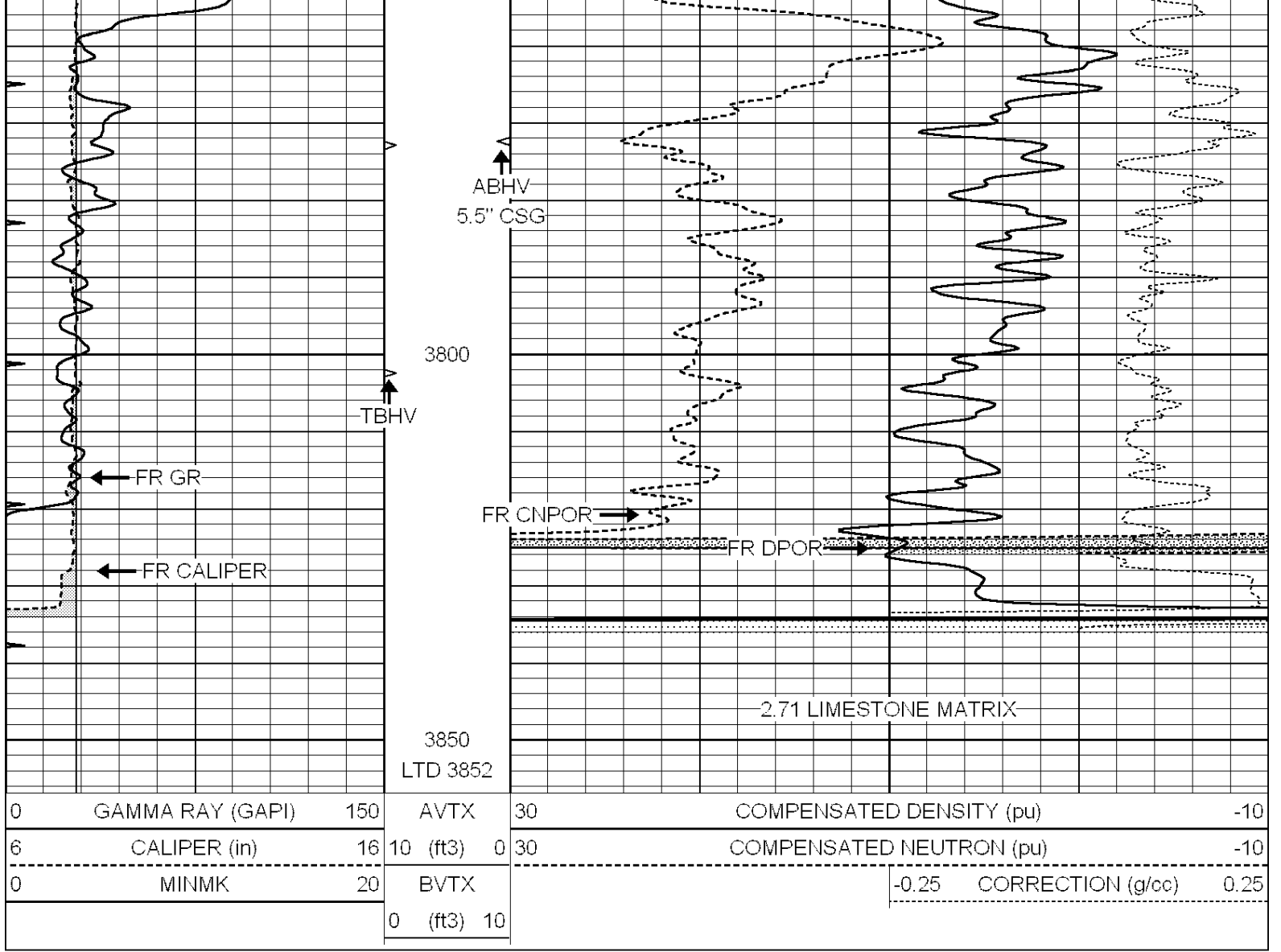
0	GAMMA RAY (GAPI)	150	AVTX	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	BVTX		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		









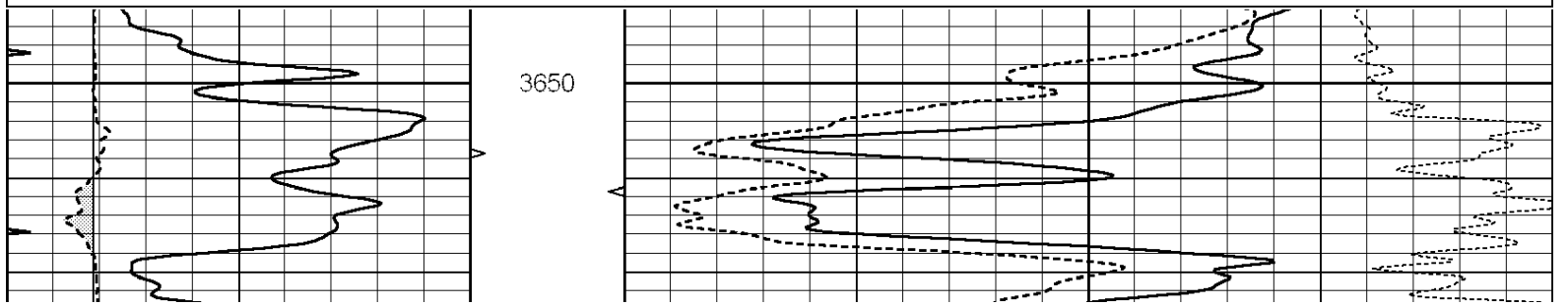


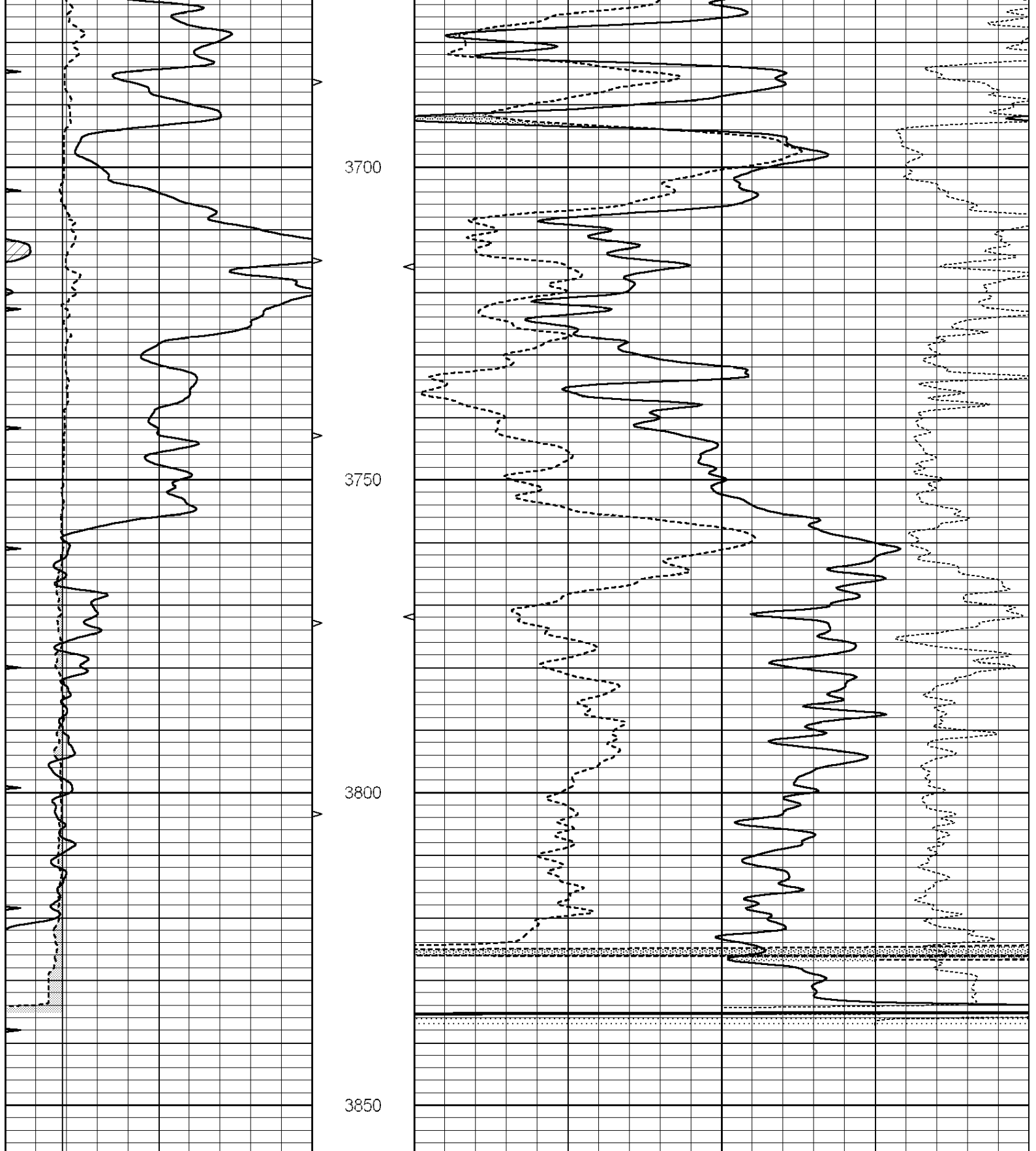
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 009735ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_den\_neu  
 Dataset Creation: Fri Sep 21 23:14:02 2012 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	AVTX	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	BVTX		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





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

Calibration Report

Database File: 009735ddn.db  
 Dataset Pathname: nnc3.1

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: GEAR4-GEARHART  
 Source / Verifier: 143 / 143  
 Master Calibration Performed: Mon Mar 19 19:07:19 2012

Master Calibration

	Density		Far Detector		Near Detector	
Magnesium	1.710	g/cc	1015.91	497.51	cps	
Aluminum	2.600	g/cc	227.67	350.20	cps	
Spine Angle = 76.79			Density/Spine Ratio = 0.579			
	Size		Reading			
Small Ring	8.00	in	3.21	V		
Large Ring	14.00	in	5.46	V		

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

Gamma Ray Calibration Report

Serial Number:	#8	
Tool Model:	OPEN	
Performed:	Mon Jun 13 16:56:43 2011	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	175.0	cps
Sensitivity:	0.8371	GAPI/cps