



**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY/NEUTRON
LOG**

Company DOWNING-NELSON OIL COMPANY, INC.
Well GROVE #1-32
Field LACROSSE NORTHWEST
County RUSH
State KANSAS

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County RUSH State KANSAS

Location: API # : 15-165-22045-0000
820' FSL & 1355' FEL
SE - NE - SW - SE
SEC 32 TWP 17S RGE 18W
Permanent Datum GROUND LEVEL Elevation 2086
Log Measured From KELLY BUSHING & A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
DIL
MEL/SON
Elevation
K.B. 2094
D.F. 2092
G.L. 2086

Date	11/15/13		
Run Number	ONE		
Depth Driller	3917		
Depth Logger	3920		
Bottom Logged Interval	3896		
Top Log Interval	3000		
Casing Driller	8 5/8" @ 1269		
Casing Logger	1268		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3500 PPM	
Density / Viscosity	9.0 / 65		
pH / Fluid Loss	10.5 / 8.4		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	0.90 @ 84F		
Rmf @ Meas. Temp	0.68 @ 64F		
Rmc @ Meas. Temp	1.08 @ 84F		
Source of Rmf / Rmc	MEASURED		
Rin @ BHT	0.66 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JEFF GRONEMEG		
Witnessed By	AL DOWNING		

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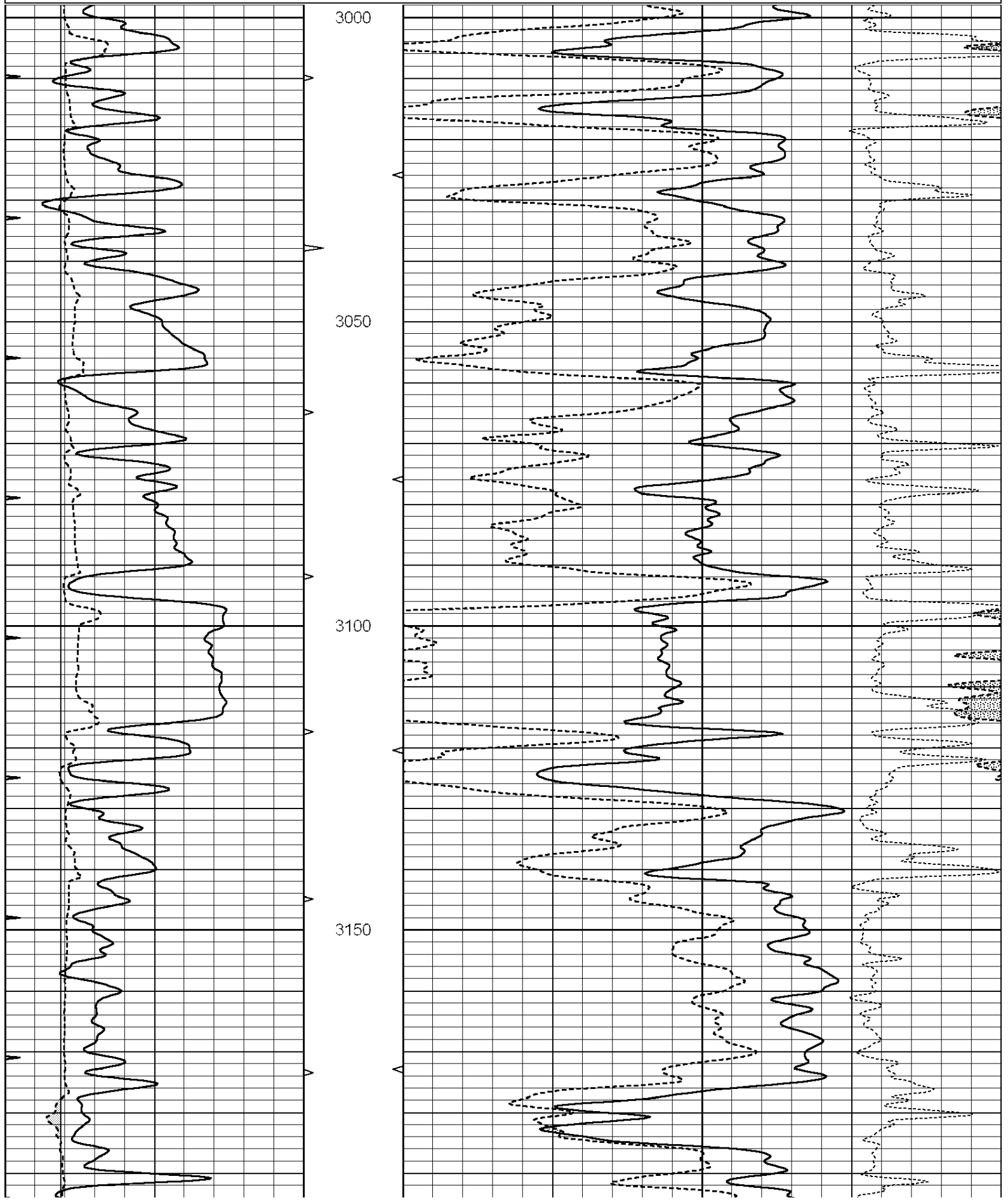
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

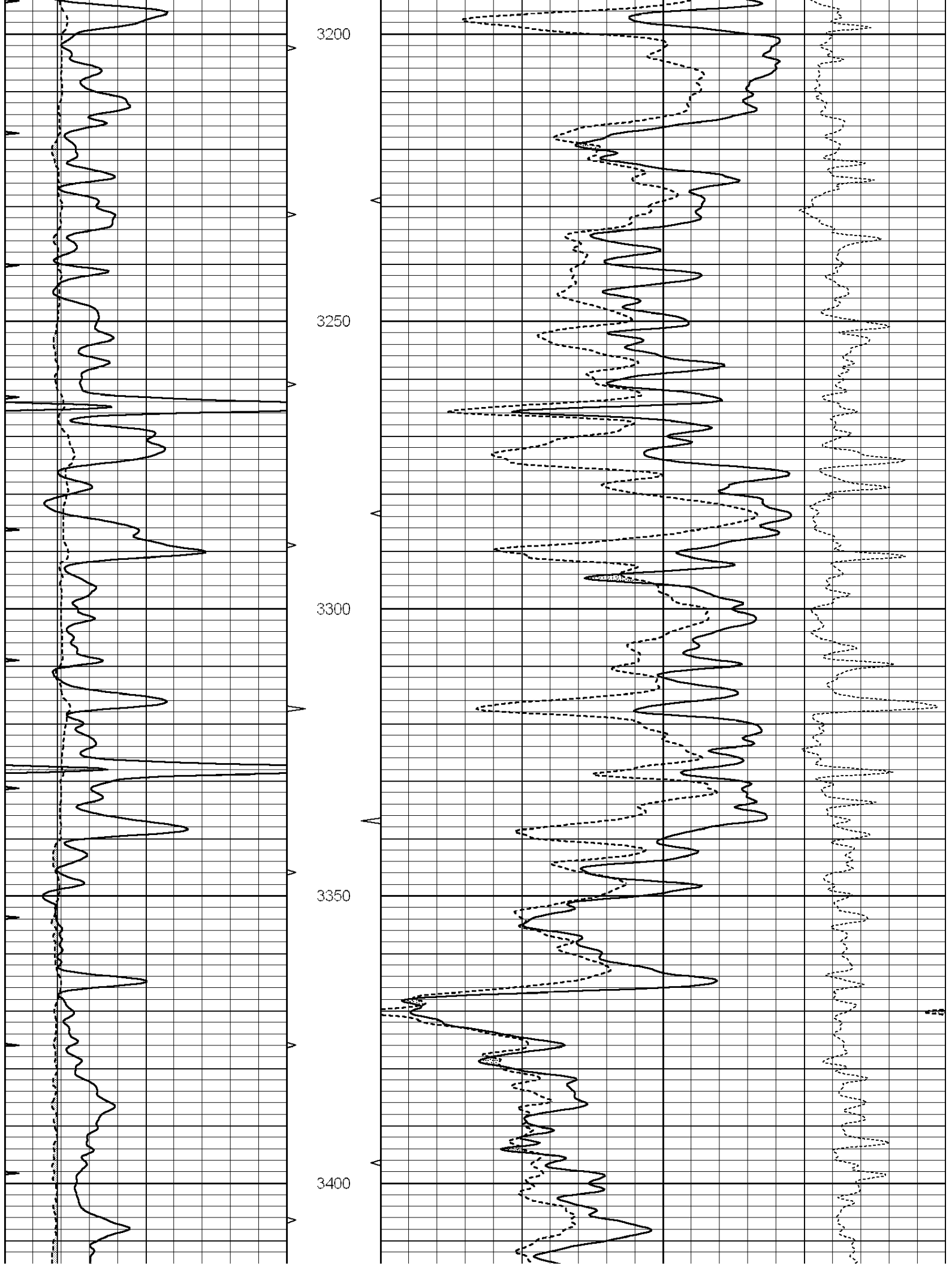
Comments

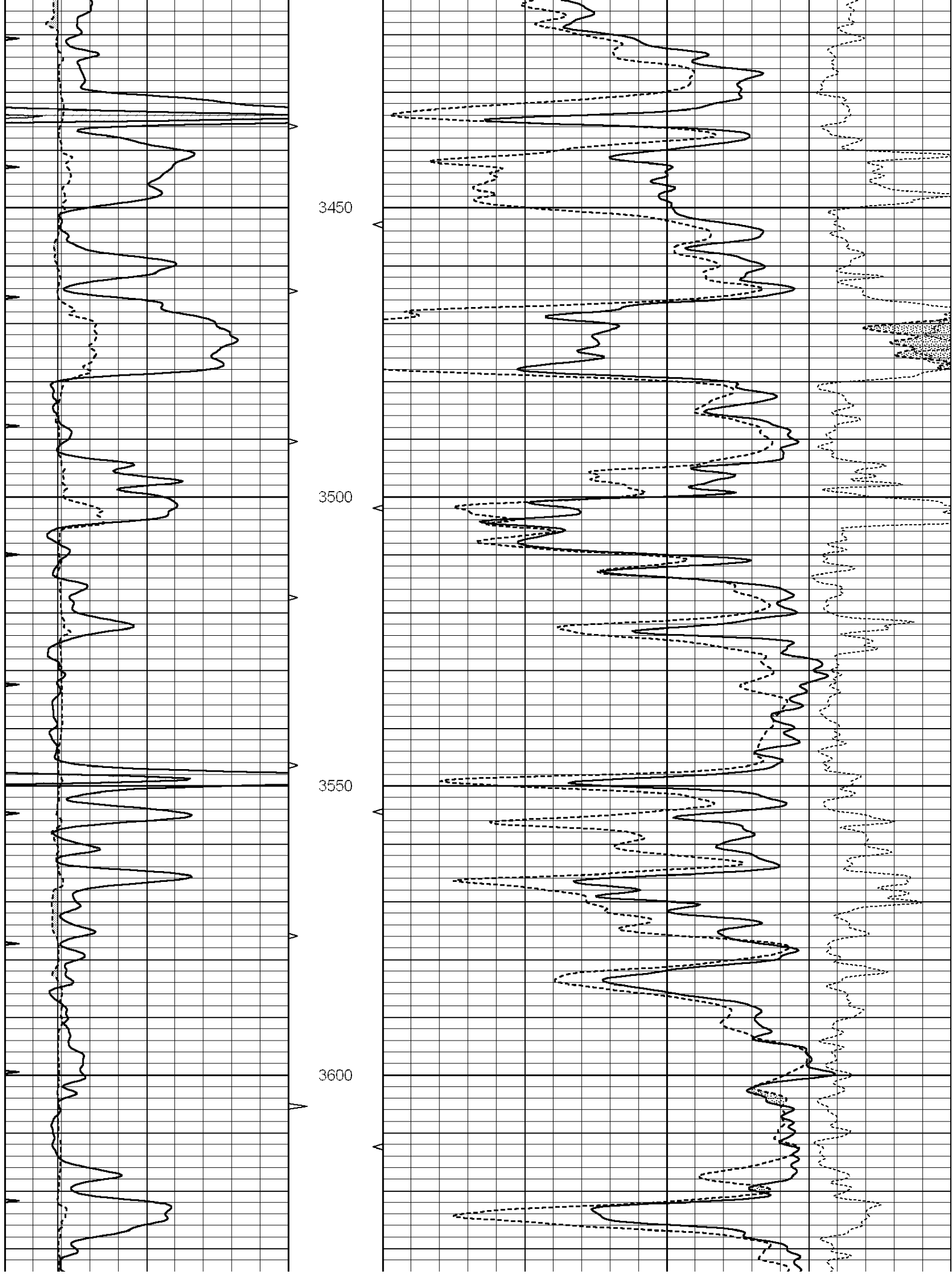
THANK YOU FOR USING NABORS COMPLETION & PRODUCTION SVCS. (785) 628-6395

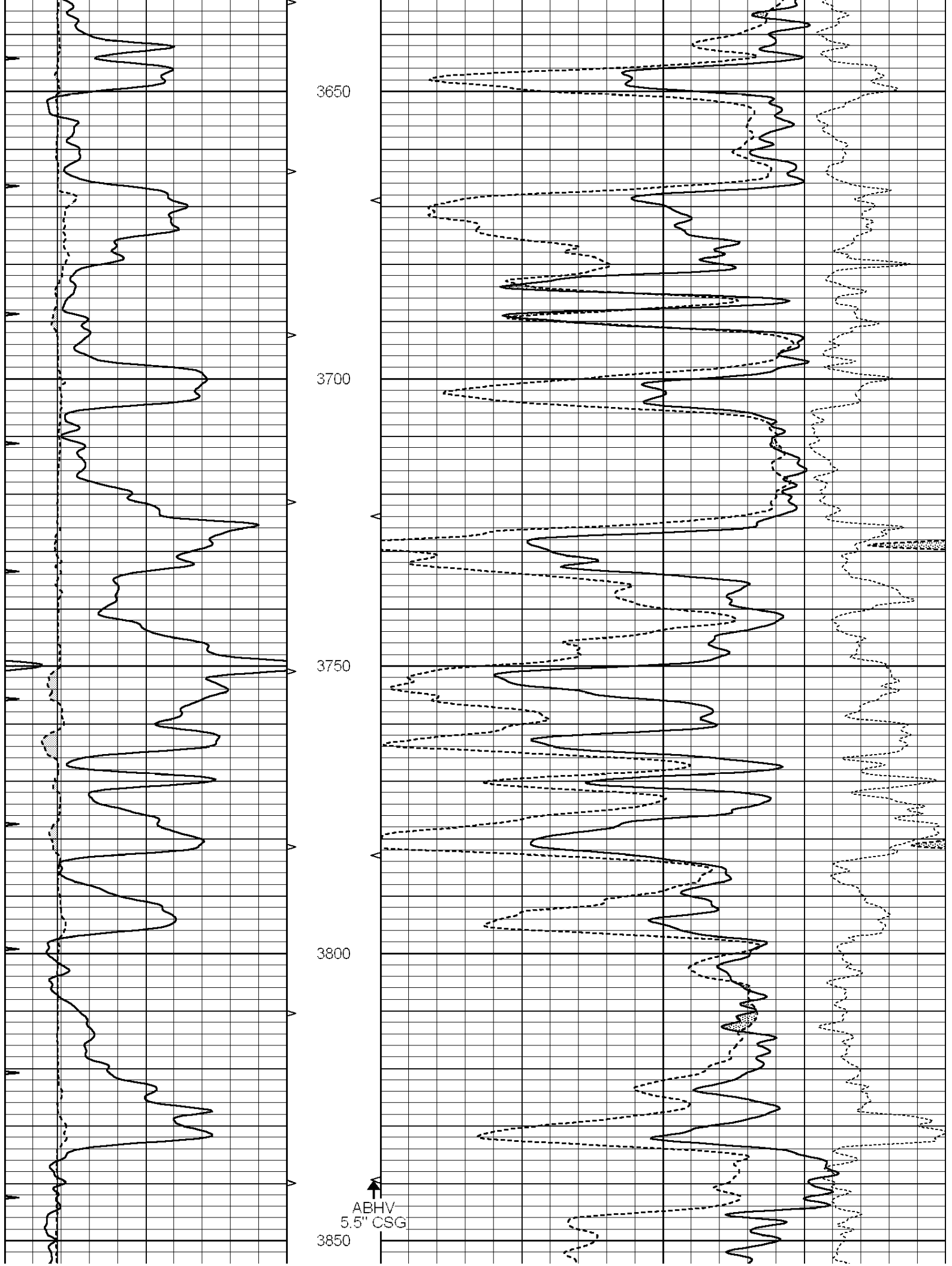
DIRECTIONS:
LACROSSE, KS - 1 MILE WEST TO CR 240 - 1 MILE SOUTH TO RD M
1/4 MILE WEST - NORTH INTO

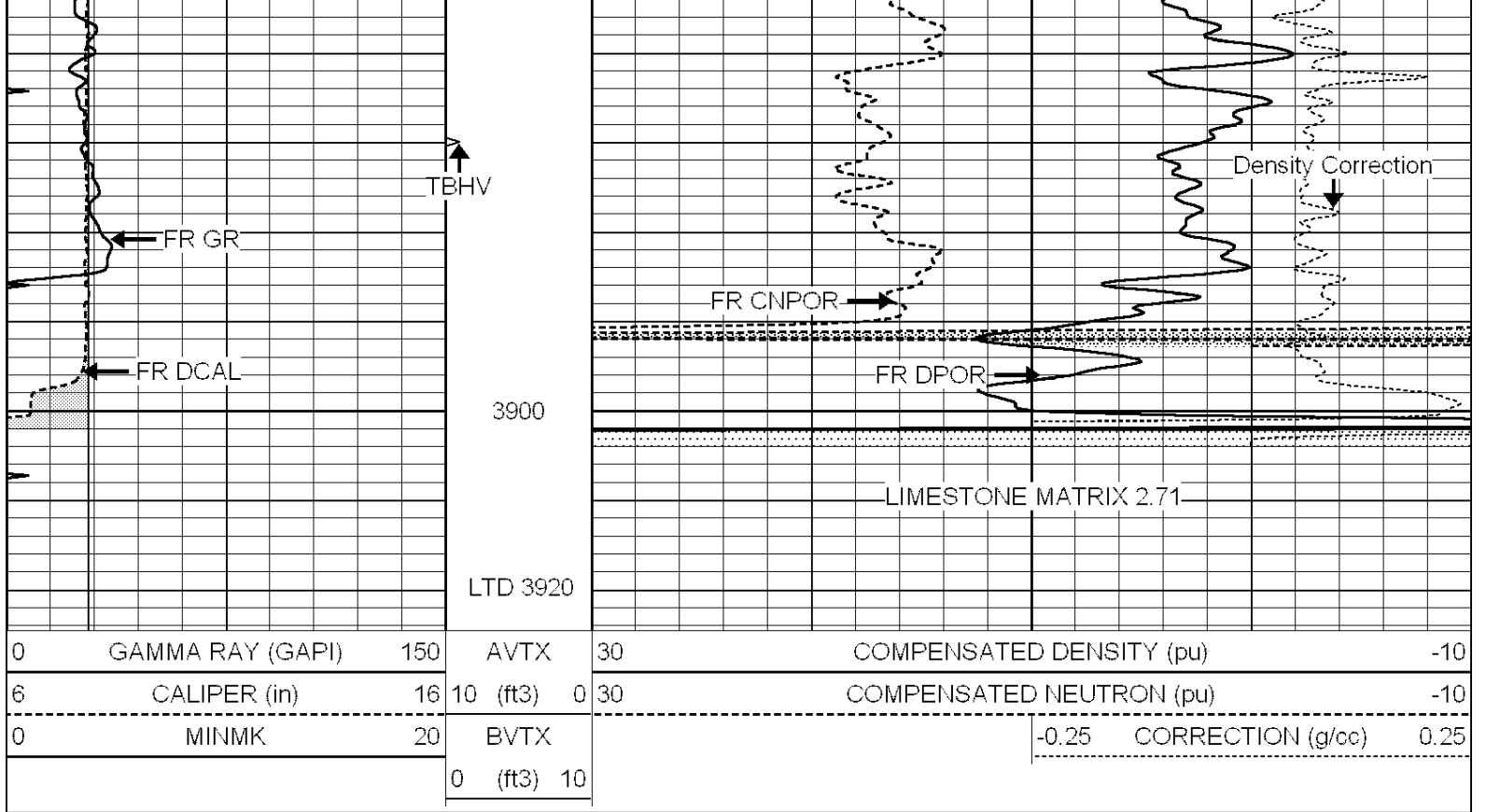
0	GAMMA RAY (GAPI)	150	AVTX	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	BVTX		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		







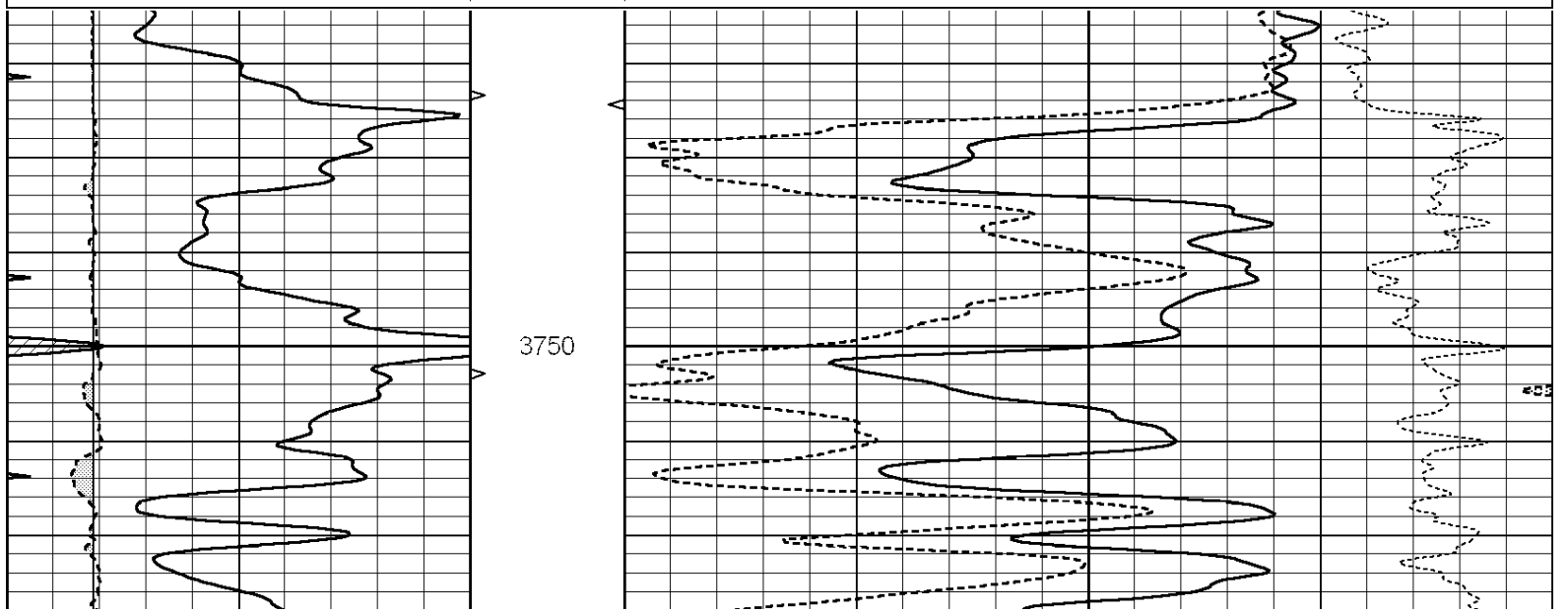


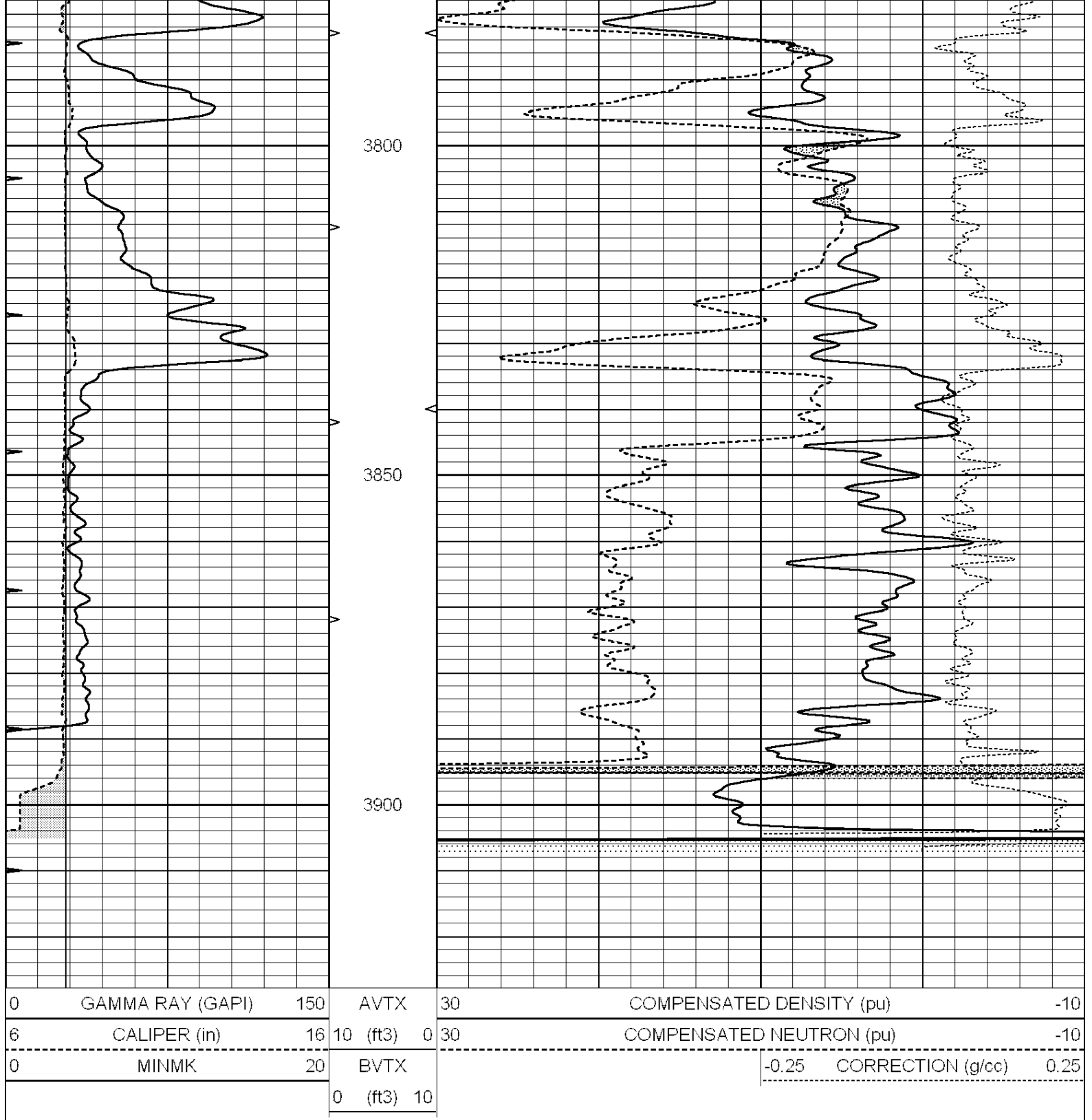


REPEAT SECTION

Database File: 012090ddn.db
 Dataset Pathname: pass2.2
 Presentation Format: _den_neu
 Dataset Creation: Fri Nov 15 01:37:59 2013 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			





Calibration Report

Database File: 012090ddn.db
 Dataset Pathname: pass3.2
 Dataset Creation: Fri Nov 15 01:29:17 2013 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

Readings

References

Results

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:	070808
Tool Model:	Probe

PRE-SURVEY VERIFICATION				
Detector	Readings	Measured	Target	
Short Space	cps			
Long Space	cps	pu		pu

POST-SURVEY VERIFICATION				
Detector	Readings	Measured	Target	

Short Space
Long Space

cps
cps

pu

pu

Gamma Ray Calibration Report

Serial Number:	080327	
Tool Model:	Probe1	
Performed:	Sun Jun 13 14:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4800	GAPI/cps