



**Casedhole
Solutions**

COMPENSATED DENSITY / NEUTRON LOG

Company		SHELBY RESOURCES, LLC.	
Well		FROETSCHNER #1-3	
Field		WILDCAT	
County		PAWNEE	
State		KANSAS	
Location:		API # : 15-145-21813-0000 SW - SE - NE - SE 1619' FSL & 403' FEL	
Permanent Datum Log Measured From Drilling Measured From		GROUND LEVEL KELLY BUSHING 11' A.G.L. KELLY BUSHING	
SEC 3		TWP 22S RGE 17W	
Other Services DIL/MEL SONIC		Elevation K.B. 2031 D.F. 2029 G.L. 2020	
Date	11/23/15		
Run Number	ONE		
Depth Driller	4155		
Depth Logger	4156		
Bottom Logged Interval	4132		
Top Log Interval	3100		
Casing Driller	8 5/8" @ 1061'		
Casing Logger	1061		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5,400 PPM	
Density / Viscosity	9.5/56		
pH / Fluid Loss	9.0/9.2		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.800 @ 70F		
Rmf @ Meas. Temp	.600 @ 70F		
Rmc @ Meas. Temp	.960 @ 70F		
Source of Rmf / Rmc	MEASUREMENT		
Rin @ BHT	.479 @ 117F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	12:45 A.M.		
Maximum Recorded Temperature	117F		
Equipment Number	22339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	CHARLIE STURDAVANT		

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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 C & J ENERGY (CASED HOLE SOLUTIONS) HAYS, KANSAS (785) 628-6395
 DIRECTIONS
 LARNED, KS., (MAIN ST. & HWY 56) 1 1/2 S.W. ON HWY 56 TO "RD. L", 3 1/2 DUE WEST TO "160TH
 RD.", 1N., 1/2E., 1 S. & E. INTO

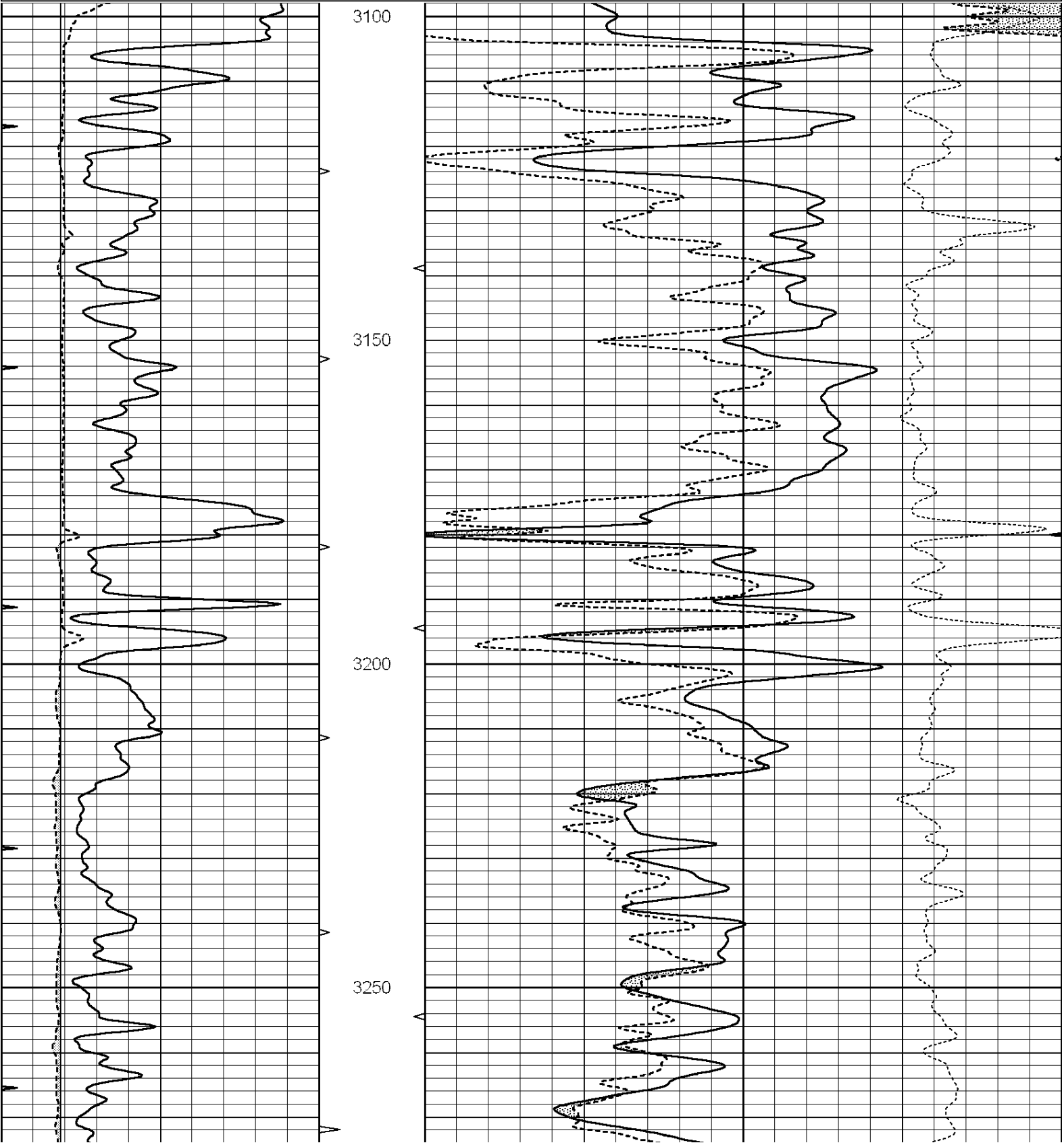


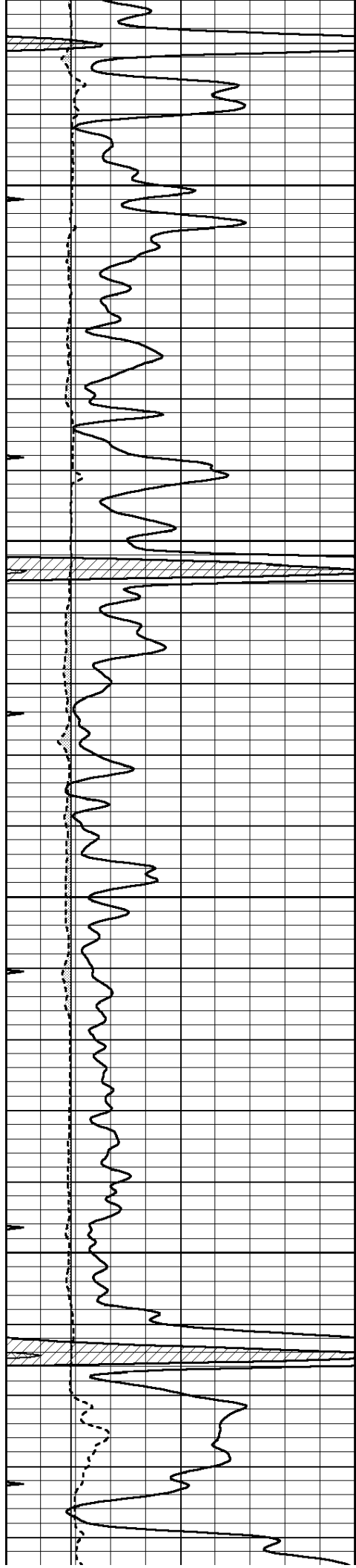
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MAIN SECTION

Database File: 30675ddn.db
Dataset Pathname: pass3.3
Presentation Format: den_neu
Dataset Creation: Mon Nov 23 02:14:43 2015 by Calc SOC 120430
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		



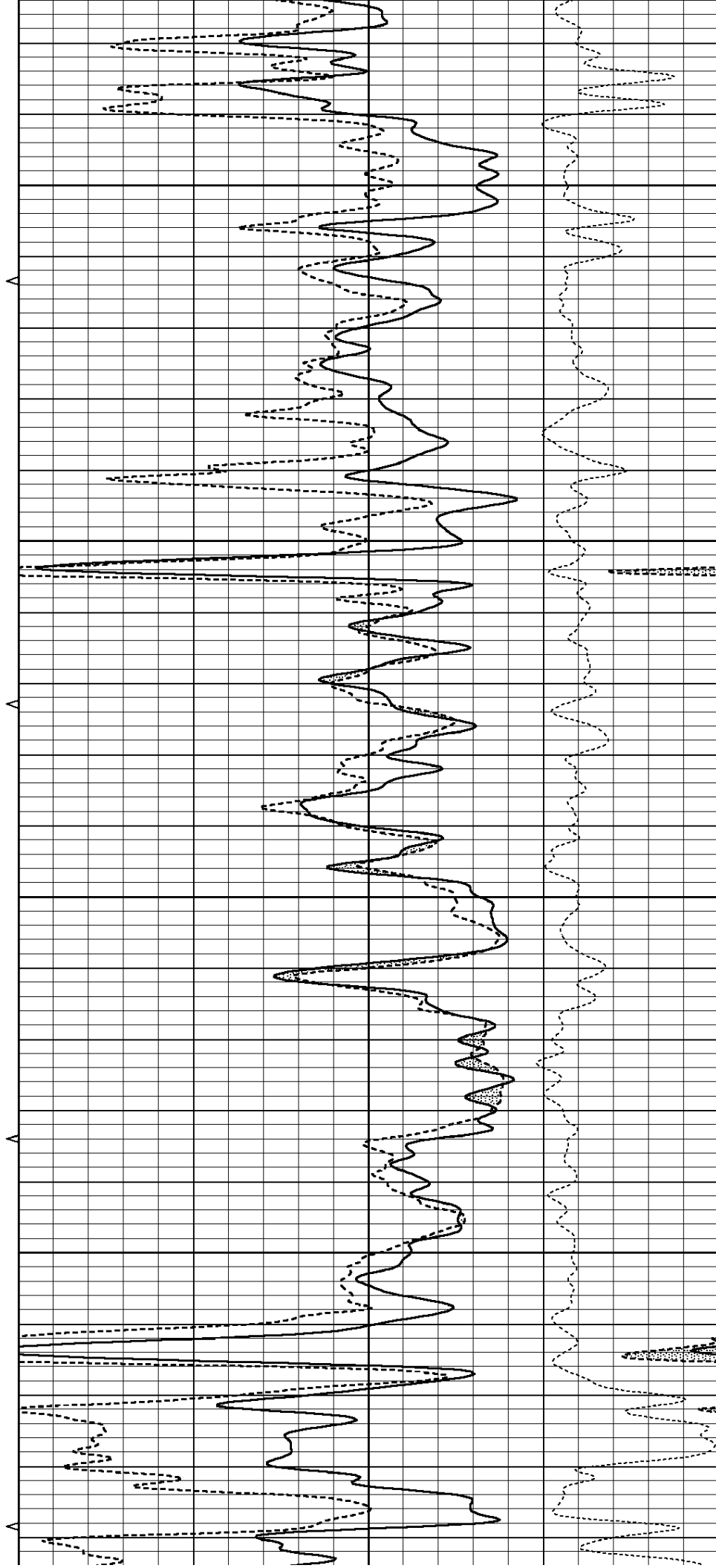


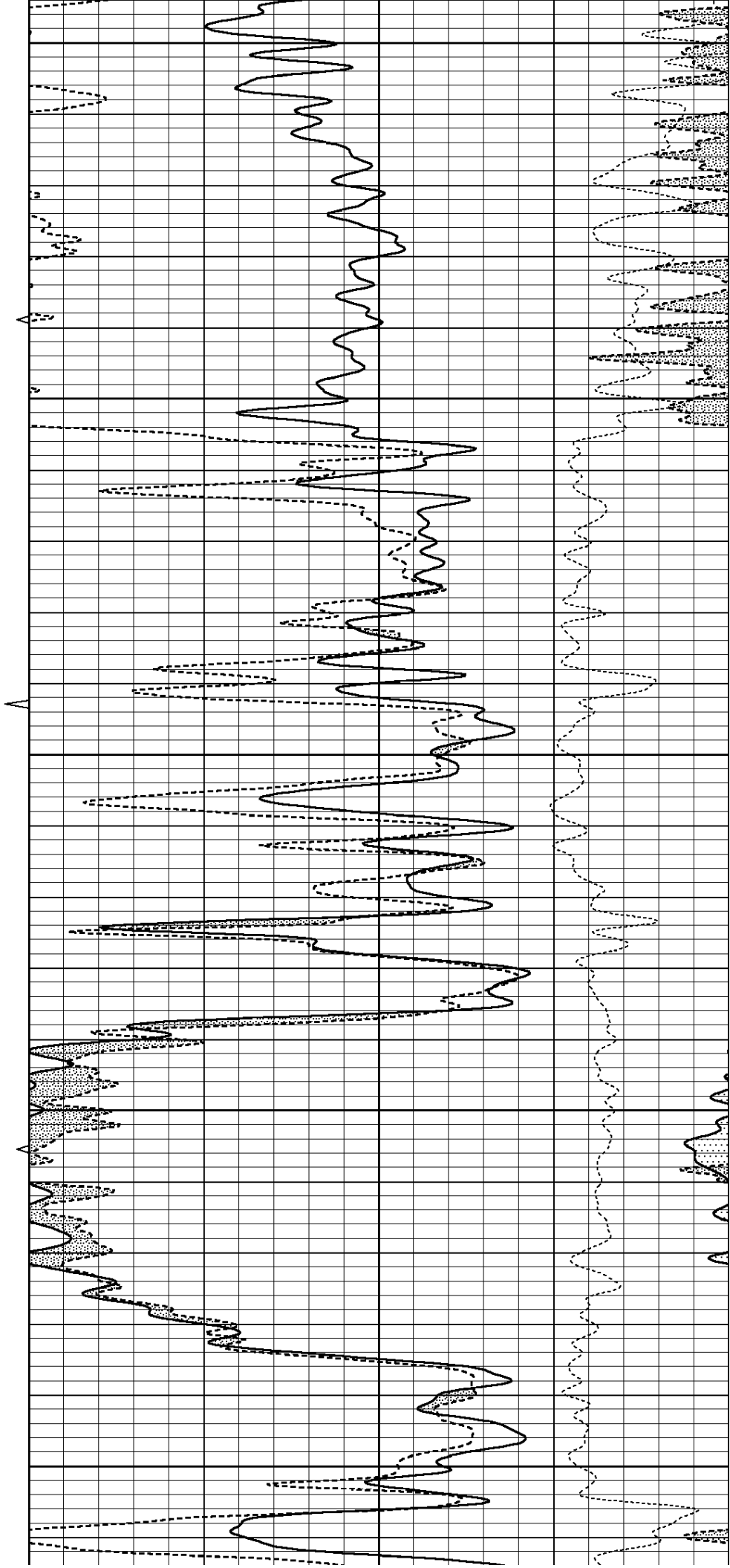
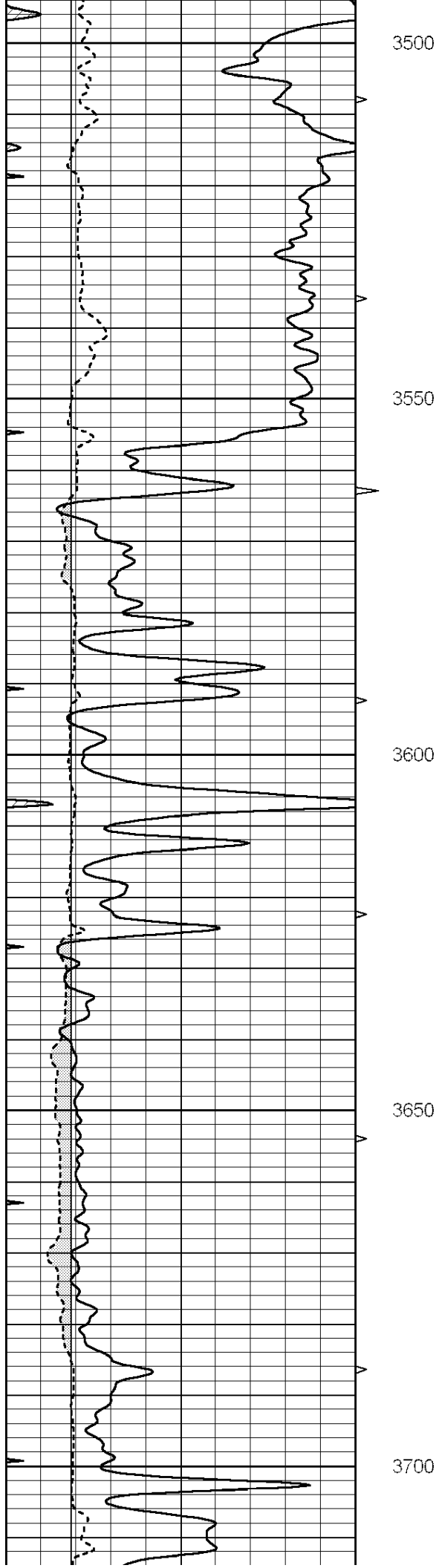
3300

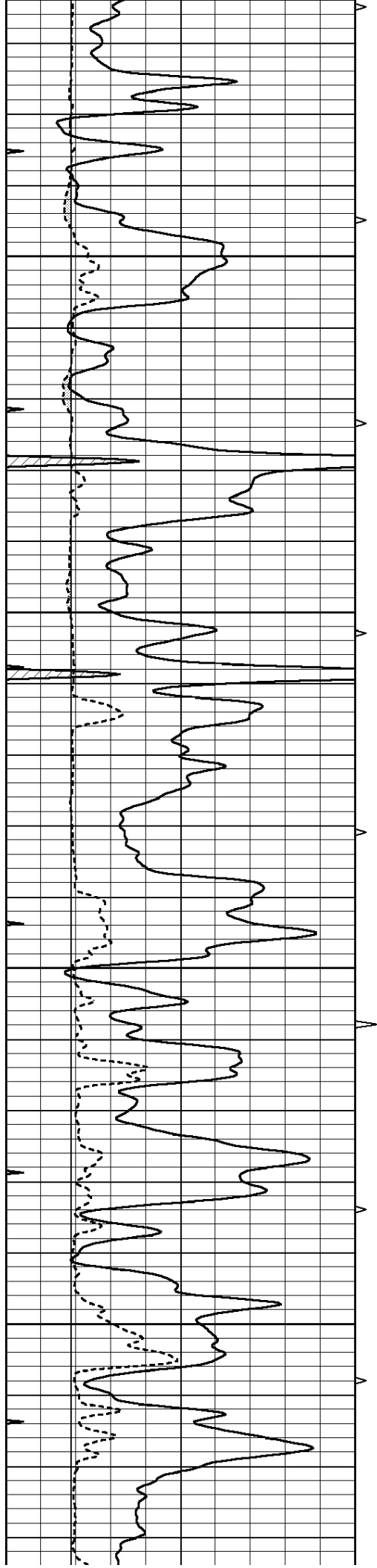
3350

3400

3450





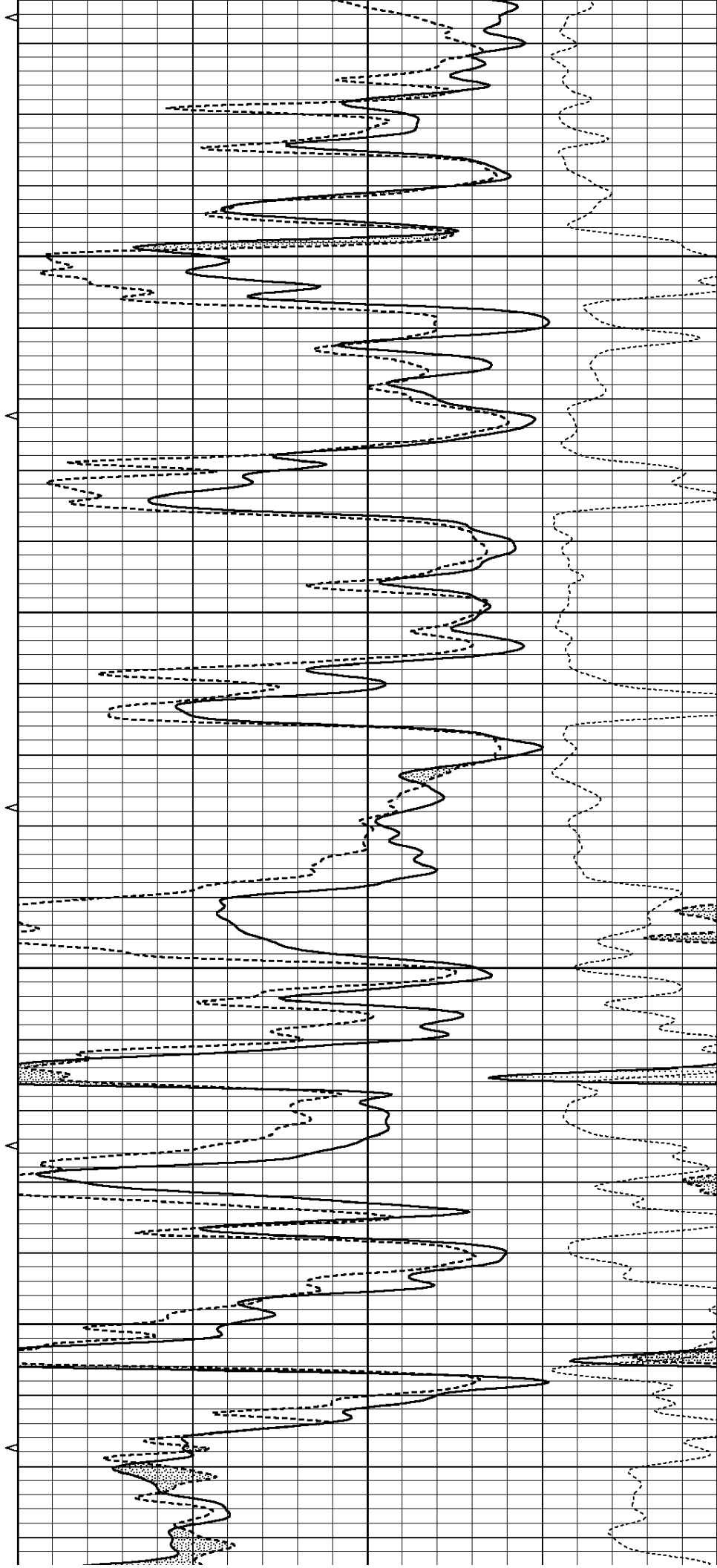


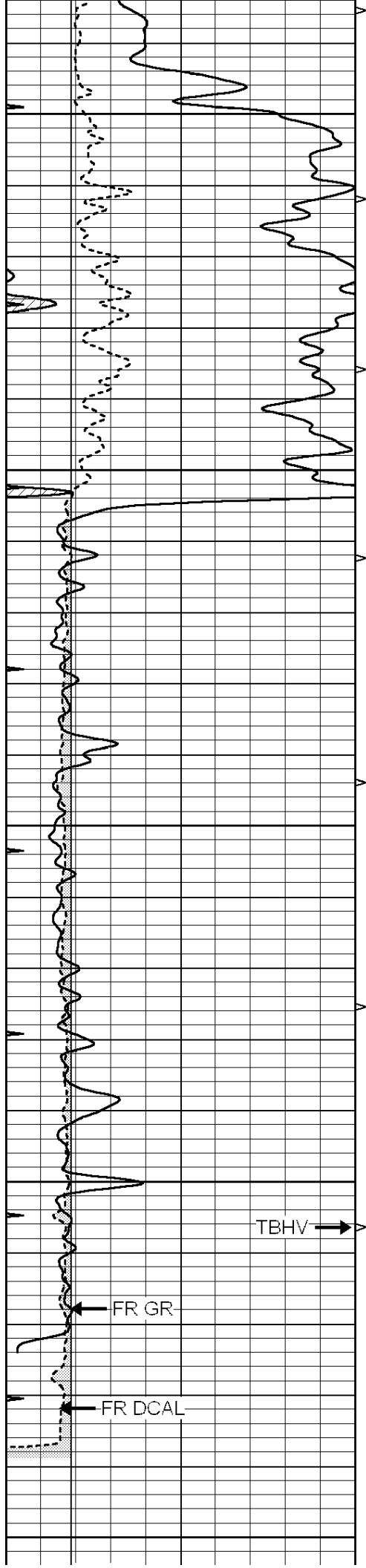
3750

3800

3850

3900





3950

4000

4050

4100

4150

5.5" ABHV

FR CNPOR

FR DPOR

CORRECTIONS

2.71 LIMESTONE MATRIX

MINMK			LTD 4156					
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					

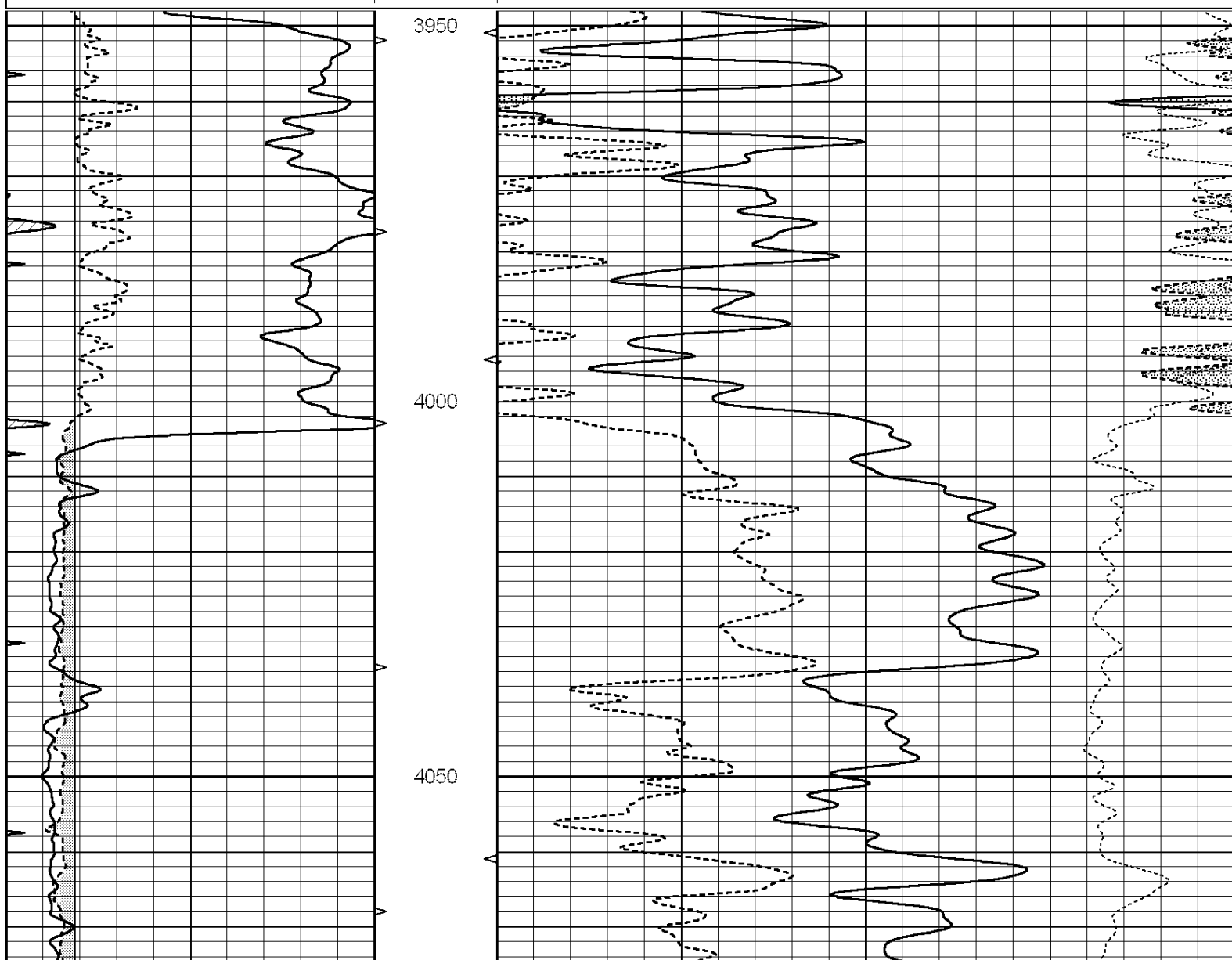


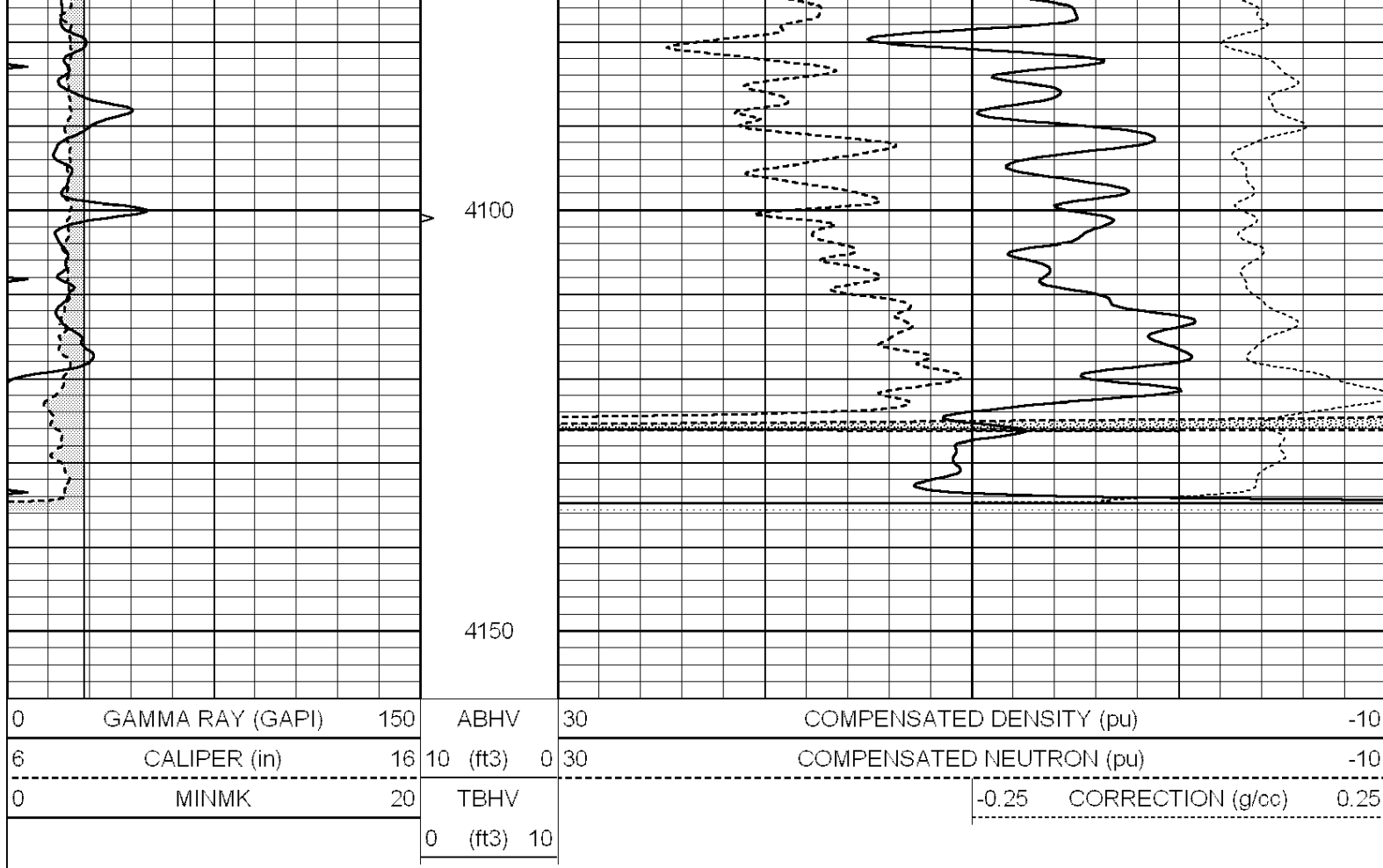
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REPEAT SECTION

Database File: 30675ddn.db
Dataset Pathname: pass2.9
Presentation Format: den_neu
Dataset Creation: Mon Nov 23 01:35:44 2015 by Calc SOC 120430
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					

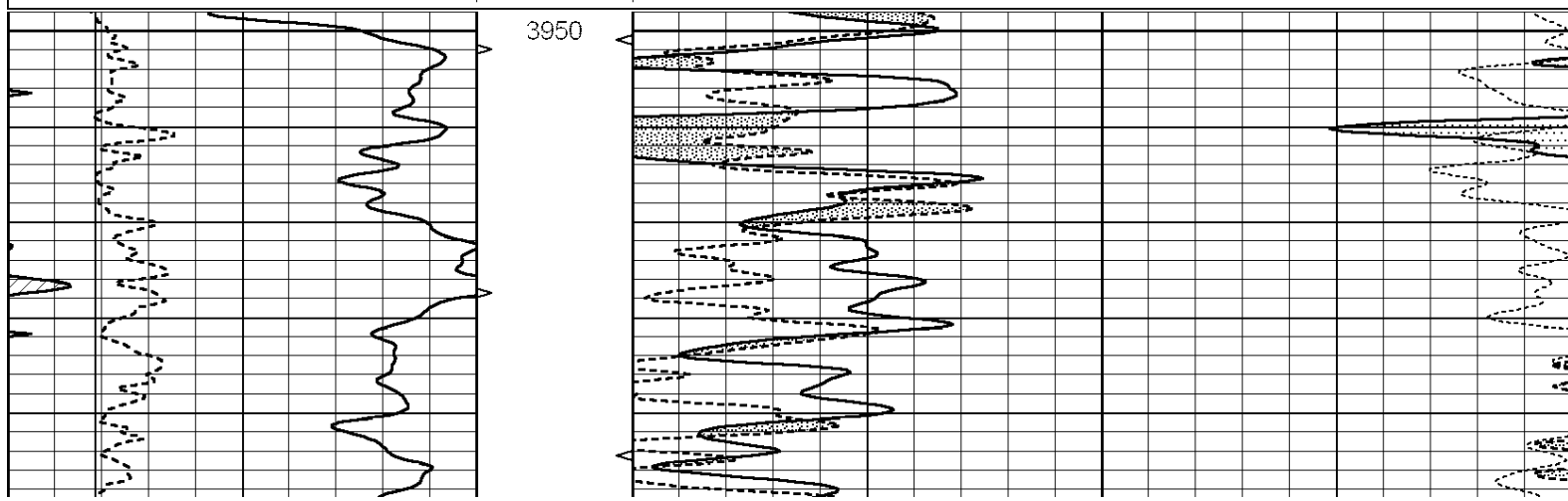
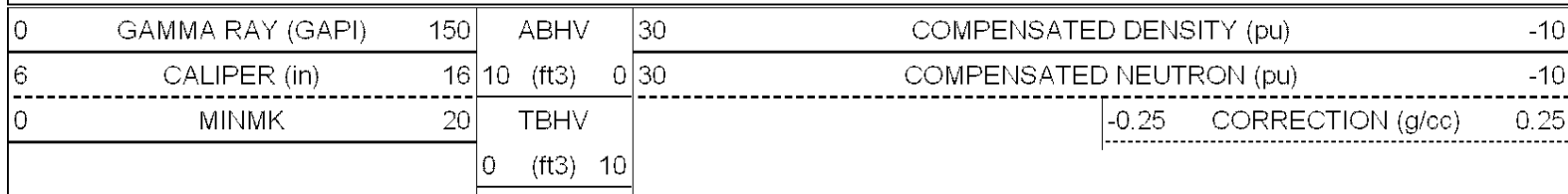


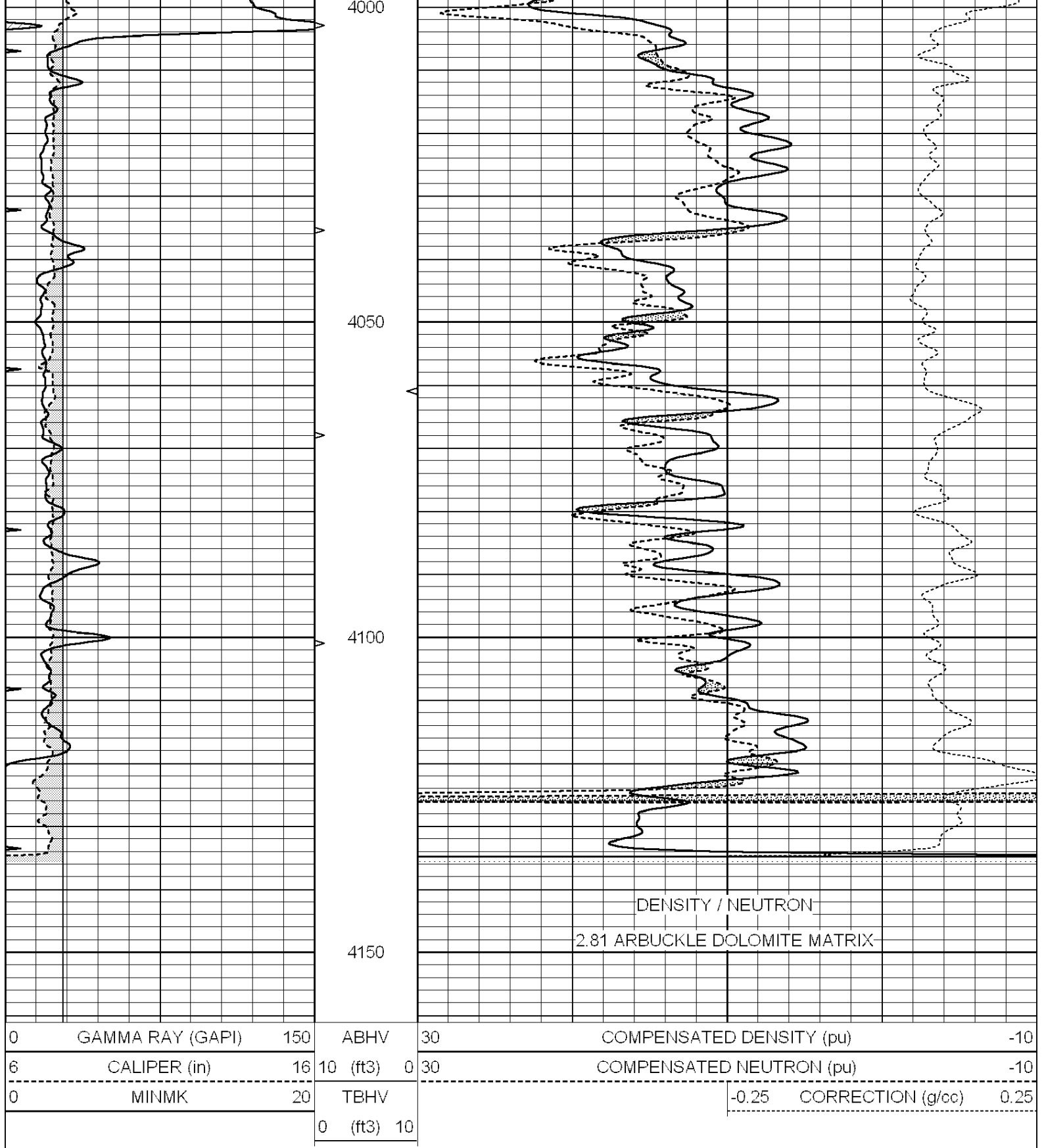


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DOLOMITE MATRIX

Database File: 30675ddn.db
 Dataset Pathname: pass2.9D
 Presentation Format: den_neu
 Dataset Creation: Mon Nov 23 01:38:51 2015
 Charted by: Depth in Feet scaled 1:240





Calibration Report

Database File: 30675ddn.db
Dataset Pathname: pass3.3
Dataset Creation: Mon Nov 23 02:14:43 2015 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Thu Oct 01 20:21:25 2015
Downhole Cal Performed: Mon Jul 28 12:02:56 2008

Surface Calibration								
Readings			References				Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-16.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	685.000	-28.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration								
Readings			References				Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	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: 004N			Model: PRB					

Master Calibration					Performed Fri May 30 11:01:00 2014			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1378.8	10804.6	3492.0	12453.4				cps
Window 2	1262.4	9313.5	3076.7	10594.7				cps
Window 3	1077.6	5668.7	2076.0	6314.8				cps
Window 4	306.4	313.0	306.4	315.6				cps
Long Space	0.0	8051.0	1814.3	9332.3				cps
Short Space	1.9	1706.1	1146.0	1707.6				cps
Rho		1.7100	2.5900	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 45.0	Rib Slope	: 1.002	Density/Spine Ratio			: 0.571	
Spine Angle	: 75.0	Spine Slope	: 3.745	Spine Intercept			: -18.9	

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					
		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	cps				
Long Space	cps	pu	pu		
Gamma Ray Calibration Report					
Serial Number:		070558			
Tool Model:		OPEN_GR			
Performed:		Mon Nov 23 01:41:31 2015			
Calibrator Value:		1.0	GAPI		
Background Reading:		0.0	cps		
Calibrator Reading:		1.0	cps		
Sensitivity:		0.2800	GAPI/cps		