Casedhole Solutions

COMPENSATED DENSITY / NEUTRON PE LOG

Company	HERMAN L. LOEB, LLC.
Well	KRAUTWURST #21
Field	KRAFT - PRUSA
County	BARTON
State	KANSAS

Company HERMAN L. LOEB, LLC.

Well KRAUTWURST #21

Field KRAFT - PRUSA

County BARTON State KANSAS

Location: API # : 15-009-26138-0000

860' FSL & 955' FEL

SE - NW - SE - SE

SEC 34 TWP 16S RGE 11W

Other Services: DIL/MEL

Permanent Datum GROUND LEVEL Elevation 1941

Log Measured From KELLY BUSHING 11' A.G.L.

Drilling Measured From KELLY BUSHING

Elevation: K.B. 1952, D.F. 1950, G.L. 1941

Date	3/12/16		
Run Number	ONE		
Depth Driller	3410		
Depth Logger	3402		
Bottom Logged Interval	3378		
Top Log Interval	2600		
Casing Driller	8 5/8"@786'		
Casing Logger	786		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5,700 PPM	
Density / Viscosity	8.9/34		
pH / Fluid Loss	7.5/10.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.20@70F		
Rmf @ Meas. Temp	.900@70F		
Rmc @ Meas. Temp	1.44@70F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.757@111F		
Time Circulation Stopped	8 HOURS		
Time Logger on Bottom	6:00 P.M.		
Maximum Recorded Temperature	111F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JON CHRISTENSEN		

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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 ENERY/ CASEDHOLE SOLUTIONS) HAYS, KANSAS (785) 628-6395

DIRECTIONS

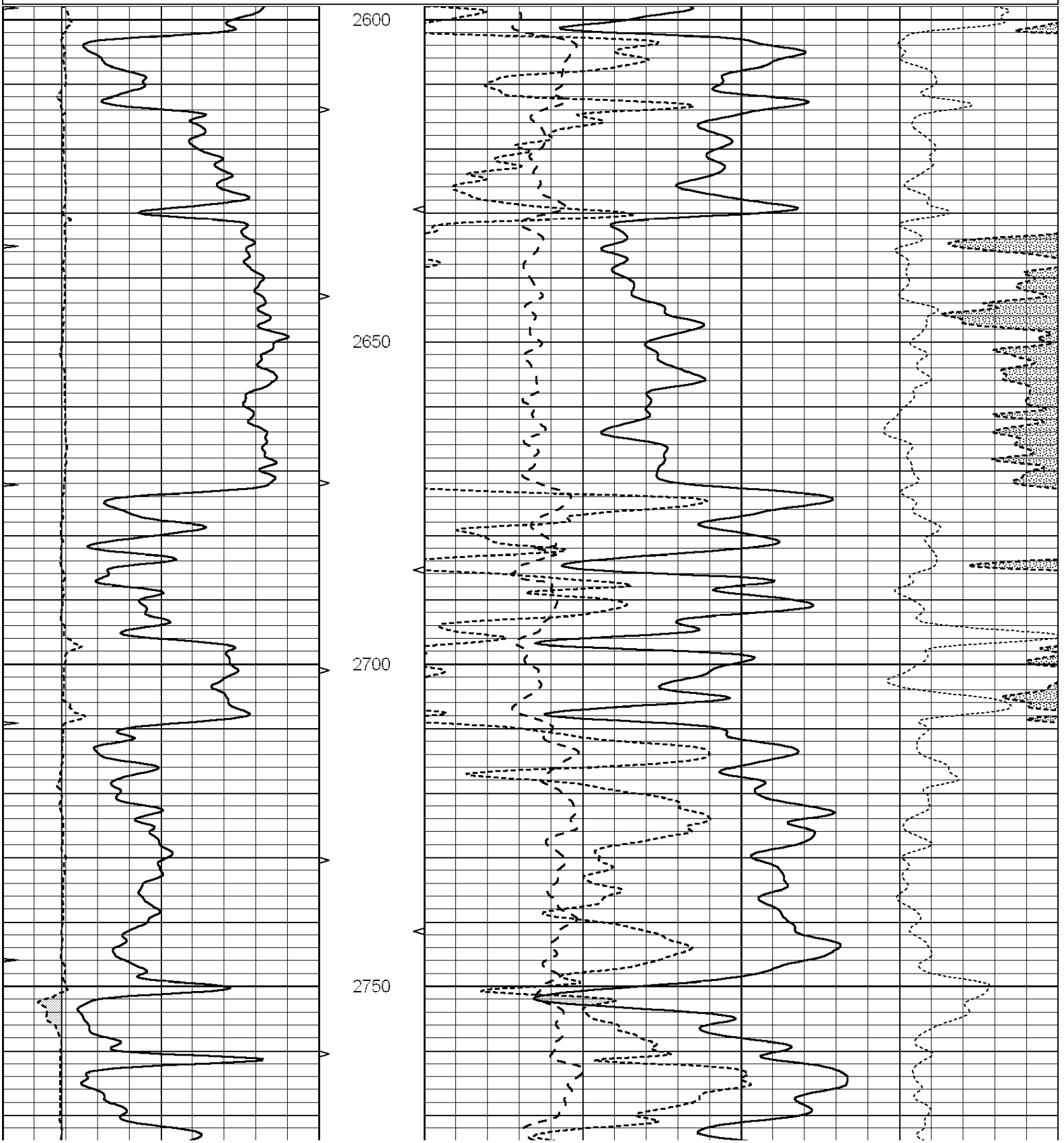
CLAFLIN, KS. (3RD STREET & HWY 4) 6N. ON BLKTOP TO "RD. 170 " 1/2E., N. INTO

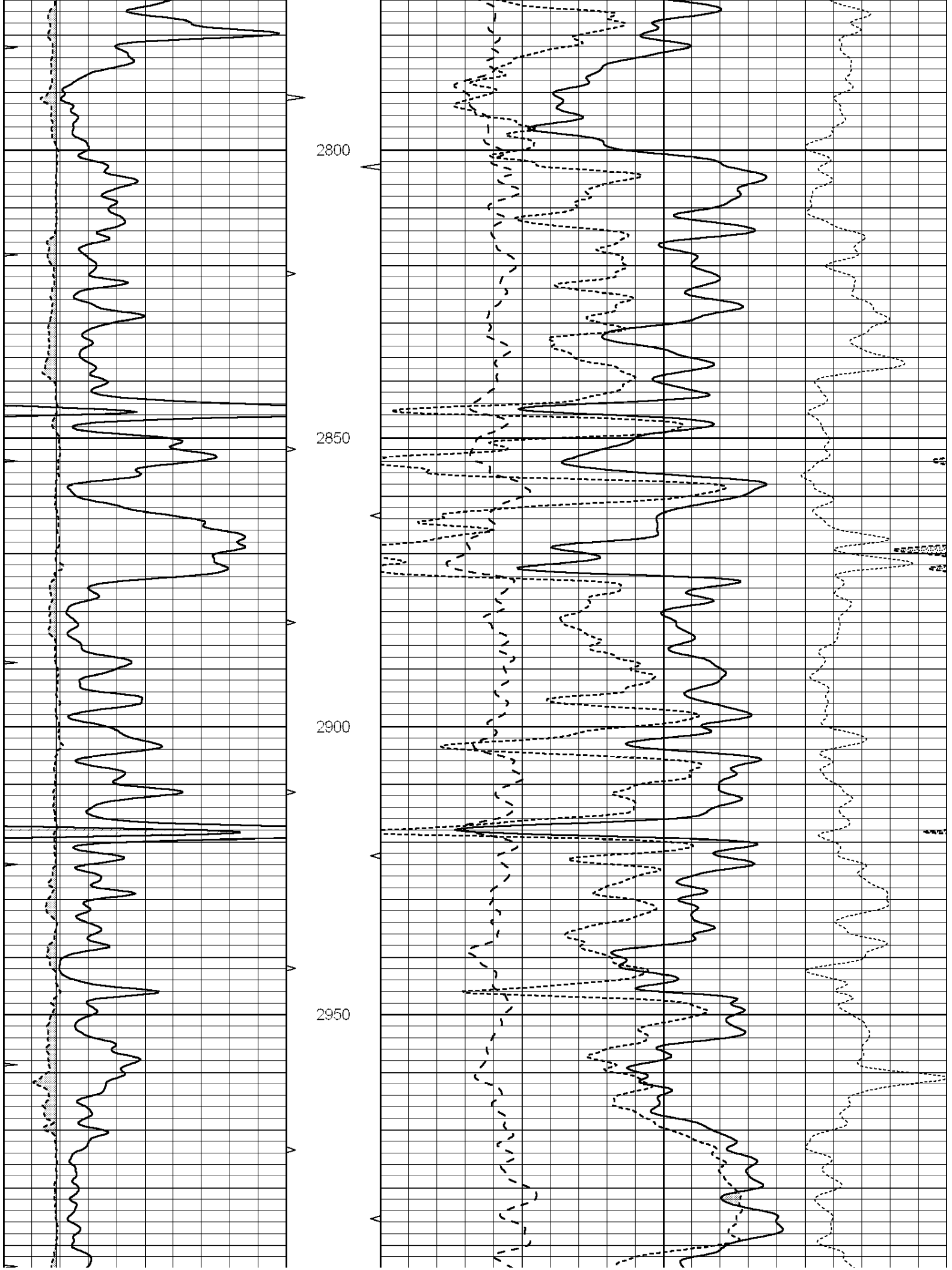
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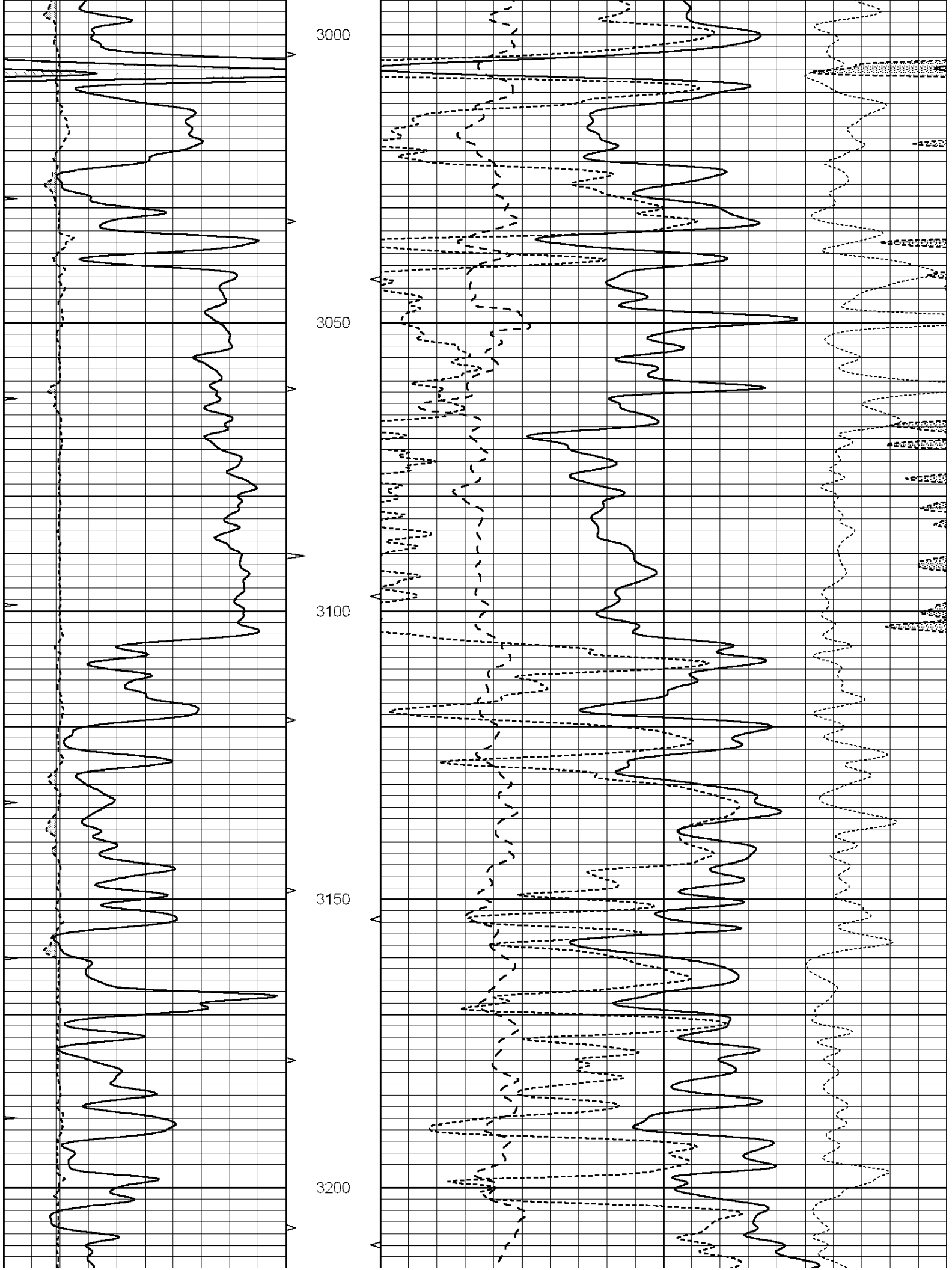
MAIN SECTION

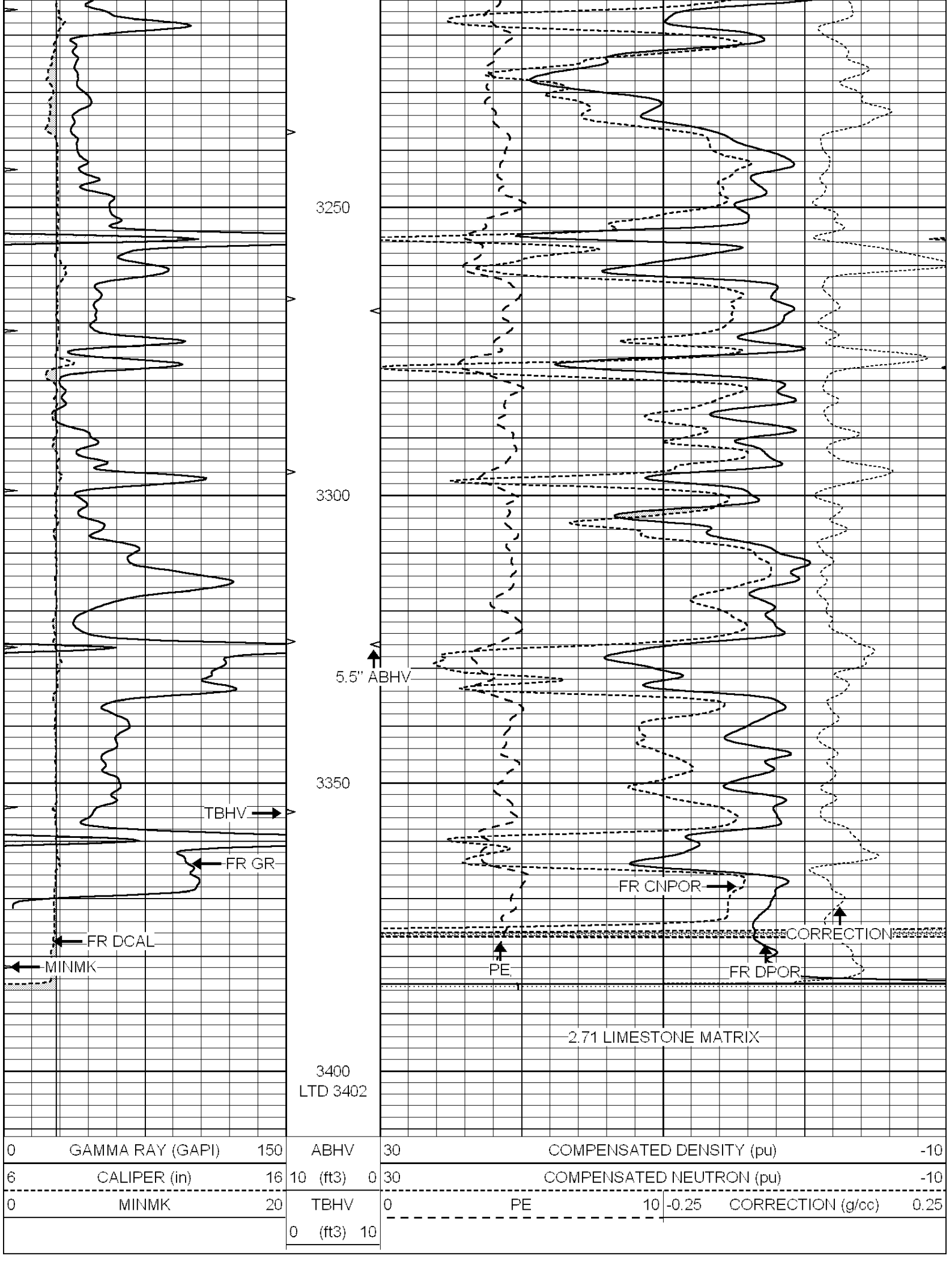
Database File:	30689pe.db
Dataset Pathname:	pass3.3
Presentation Format:	ldt_neu
Dataset Creation:	Sat Mar 12 19:43:27 2016
Charted by:	Depth in Feet scaled 1:240

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	PE	10 -0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10				




2800
2850
2900
2950


3000
3050
3100
3150
3200

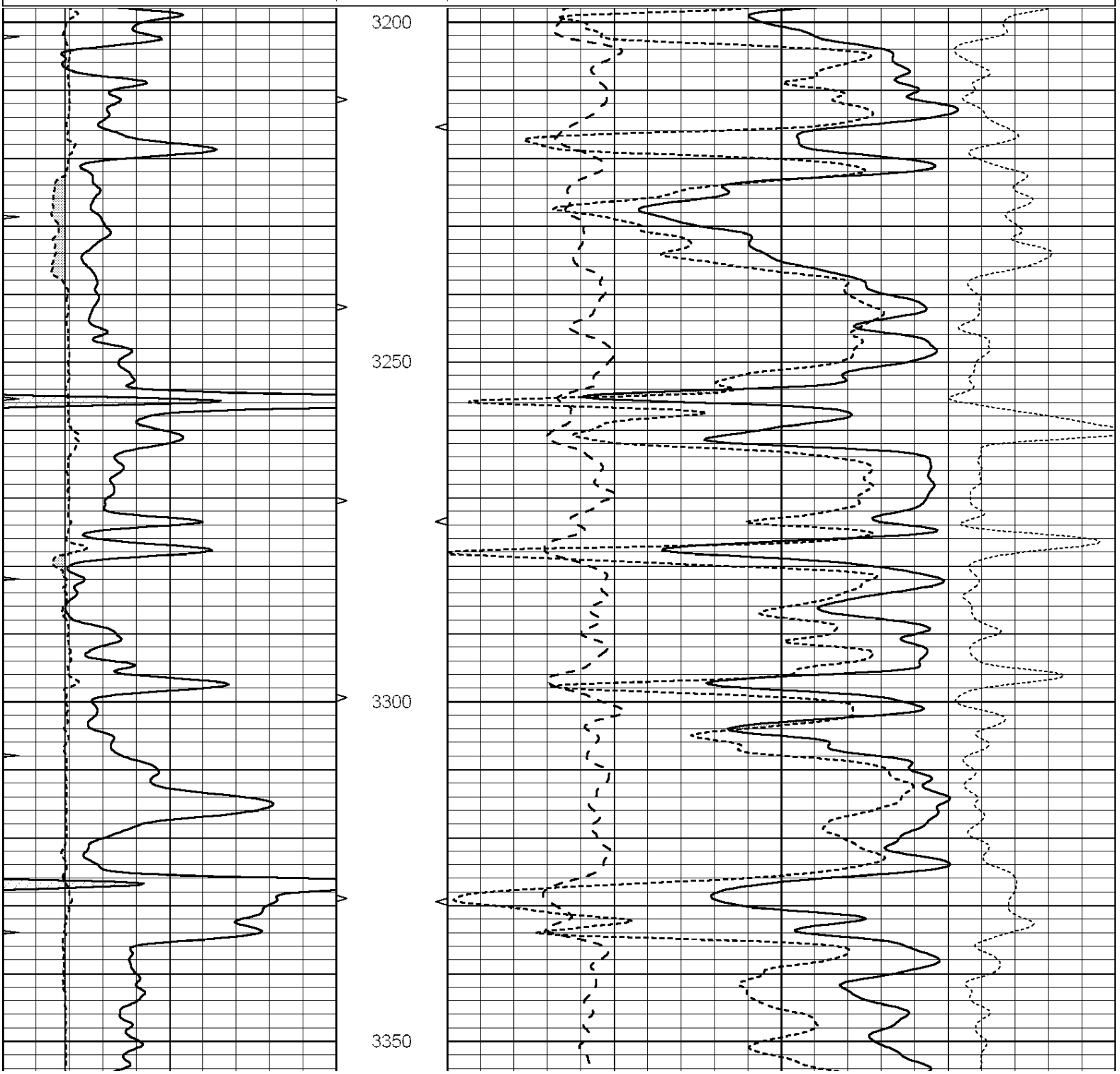

3250
3300
3350
3400
LTD 3402
5.5" ABHV
TBHV
FR GR
FR DCAL
MINMK
FR CNPOR
CORRECTION
PE
FR DPOR
2.71 LIMESTONE MATRIX
0 GAMMA RAY (GAPI) 150
6 CALIPER (in) 16
0 MINMK 20
ABHV
10 (ft3) 0
TBHV
0 (ft3) 10
30 COMPENSATED DENSITY (pu) -10
30 COMPENSATED NEUTRON (pu) -10
0 PE 10
-0.25 CORRECTION (g/cc) 0.25

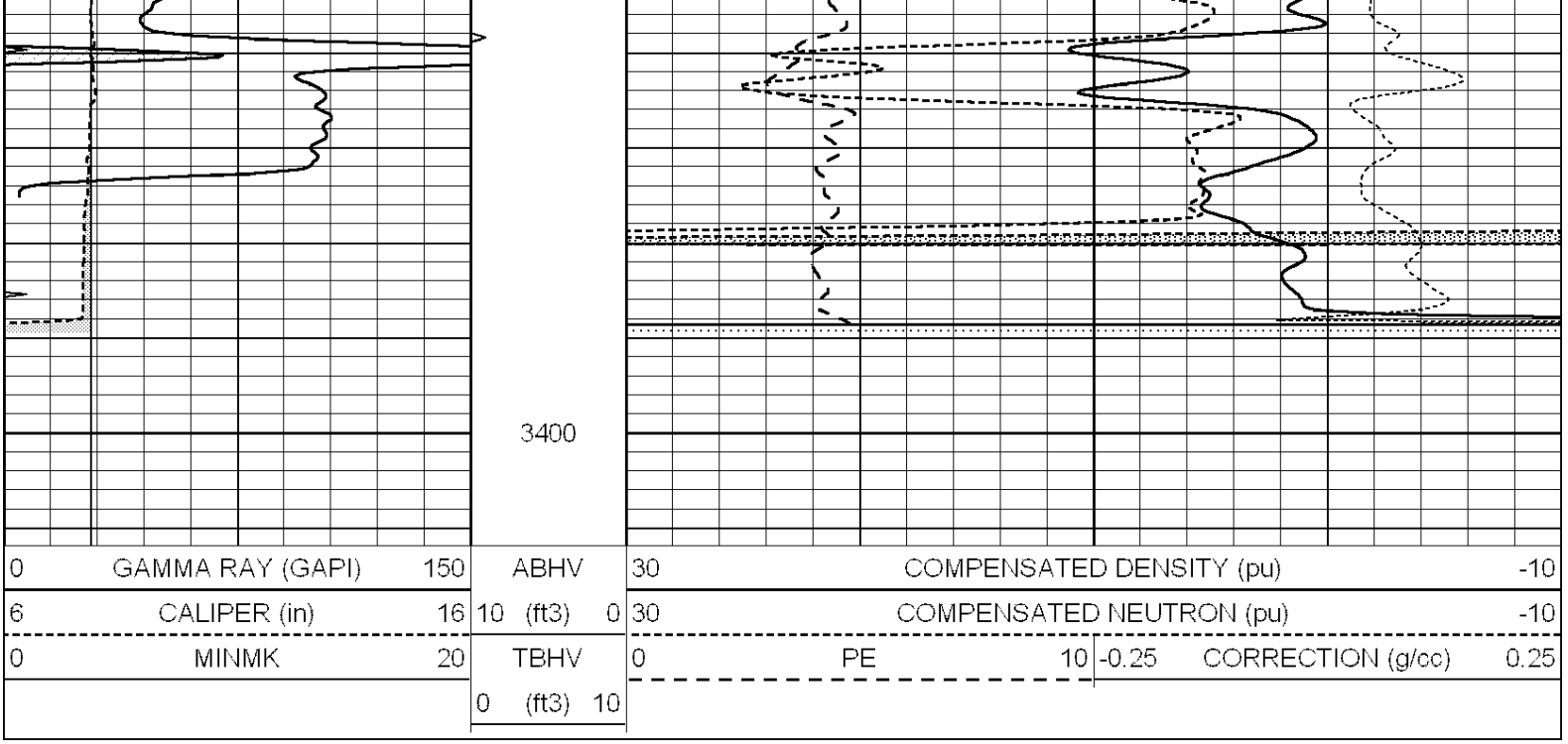
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REPEAT SECTION

Database File:	30689pe.db
Dataset Pathname:	pass2.3
Presentation Format:	ldt_neu
Dataset Creation:	Sat Mar 12 19:21:50 2016 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	PE 10	-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10				





Calibration Report

Database File: 30689pe.db
Dataset Pathname: pass3.3
Dataset Creation: Sat Mar 12 19:43:27 2016

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Sat Mar 12 18:49:27 2016
Downhole Cal Performed:	Mon Jul 28 12:02:56 2008
After Survey Verification 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	-13.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	685.000	-26.000
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

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	070558	
Tool Model:	OPEN_GR	
Performed:	Sat Mar 12 18:34:02 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps