



SUPERIOR
Hays,
Kansas

COMPENSATED DENSITY / NEUTRON LOG

Company MAI OIL OPERATIONS, INC.

Well LUDWIG #2

Field CARROLL

County BARTON

State KANSAS

Company MAI OIL OPERATIONS, INC.

Well LUDWIG #2

Field CARROLL

County BARTON State KANSAS

Location: API # : 15-009-25704-0000

2310' FSL & 660' FWL
N/2 - NW - SW

SEC 28 TWP 17S RGE 14W

Other Services
DIL/MEL

Permanent Datum GROUND LEVEL Elevation 1859
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1867
D.F. 1865
G.L. 1859

Date 7/3/12

Run Number ONE

Depth Driller 3425

Depth Logger 3422

Bottom Logged Interval 3398

Top Log Interval 2700

Casing Driller 8 5/8" @ 839'

Casing Logger 839

Bit Size 7 7/8"

Type Fluid in Hole CHEMICAL MUD

Density / Viscosity 8.9/5.1

pH / Fluid Loss 10.0/10.8

Source of Sample FLOWLINE

Rm @ Meas. Temp .400 @ 90F

Rmt @ Meas. Temp .300 @ 90F

Rmc @ Meas. Temp .480 @ 90F

Source of Rmt / Rmc MEASUREMENT

Rm @ BHT .324 @ 111F

Time Circulation Stopped 2 HOURS

Time Logger on Bottom 12:45 A.M.

Maximum Recorded Temperature 111F

Equipment Number 4010

Location HAYS, KANSAS

Recorded By JEFF LUEBBERS

Witnessed By KURT TALBOTT

<<< Fold Here >>>

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 HAYS, KANSAS (785) 628-6395
DIRECTIONS

S. OF RUSSELL, KS. TO (HWY 4 & 281) 2W. TO "NW 60 RD.", 1/2N. TO SHELTER BELT, E. & S. INTO

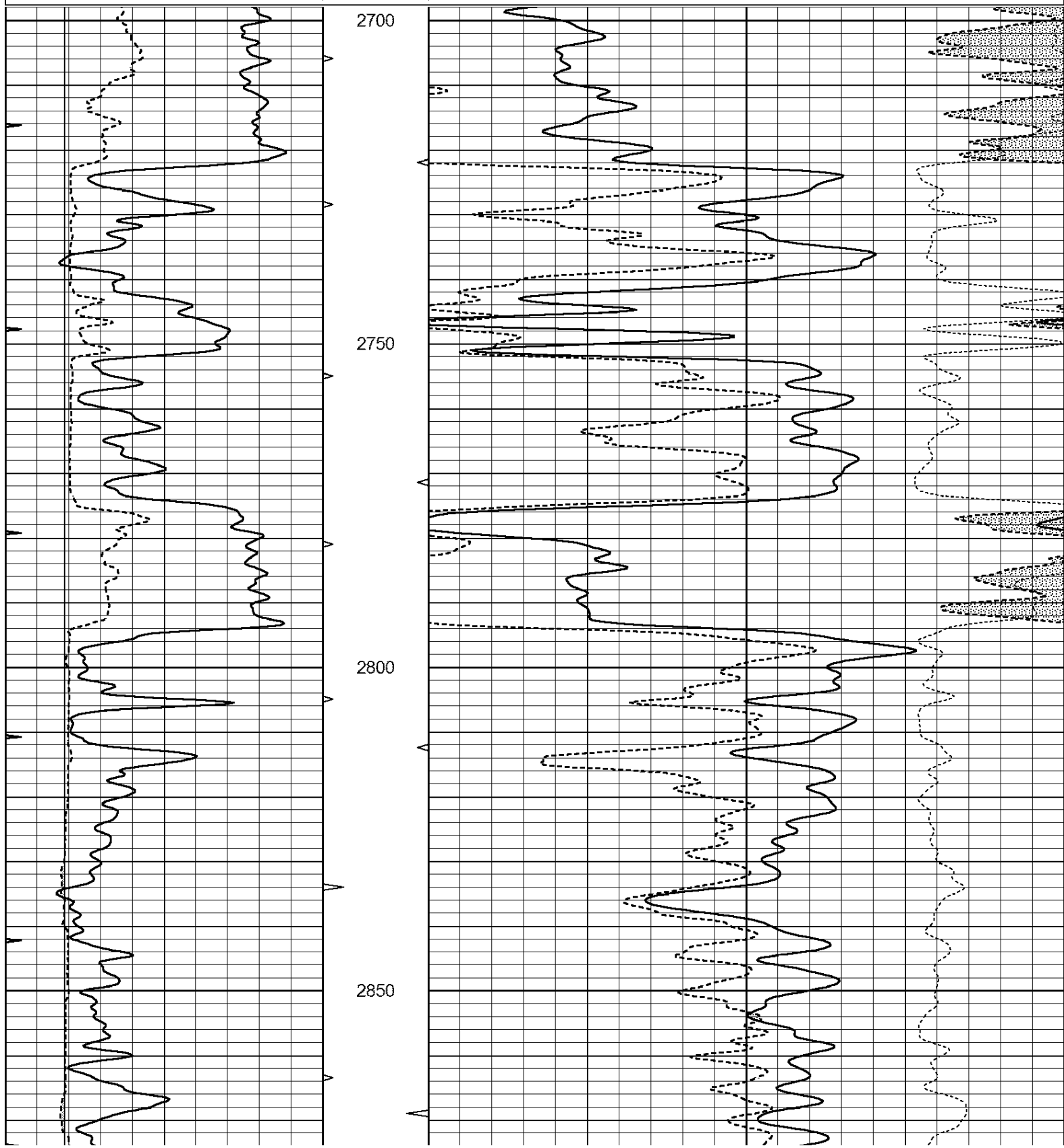


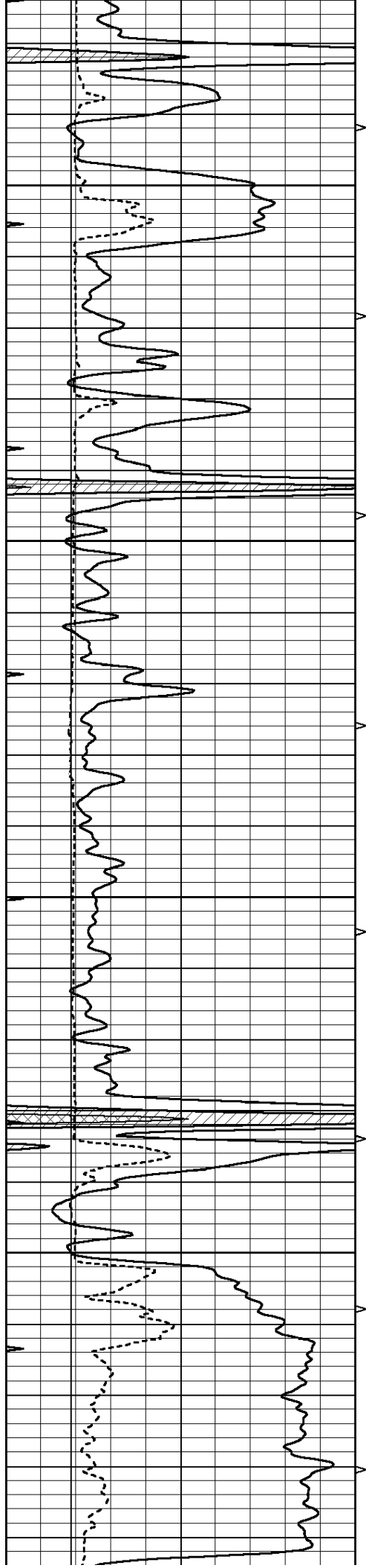
SUPERIOR
Hays,
Kansas

MAIN SECTION

Database File: 409426ddn.db
Dataset Pathname: pass3.6
Presentation Format: den_neu
Dataset Creation: Wed Jul 04 02:49:02 2012
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		



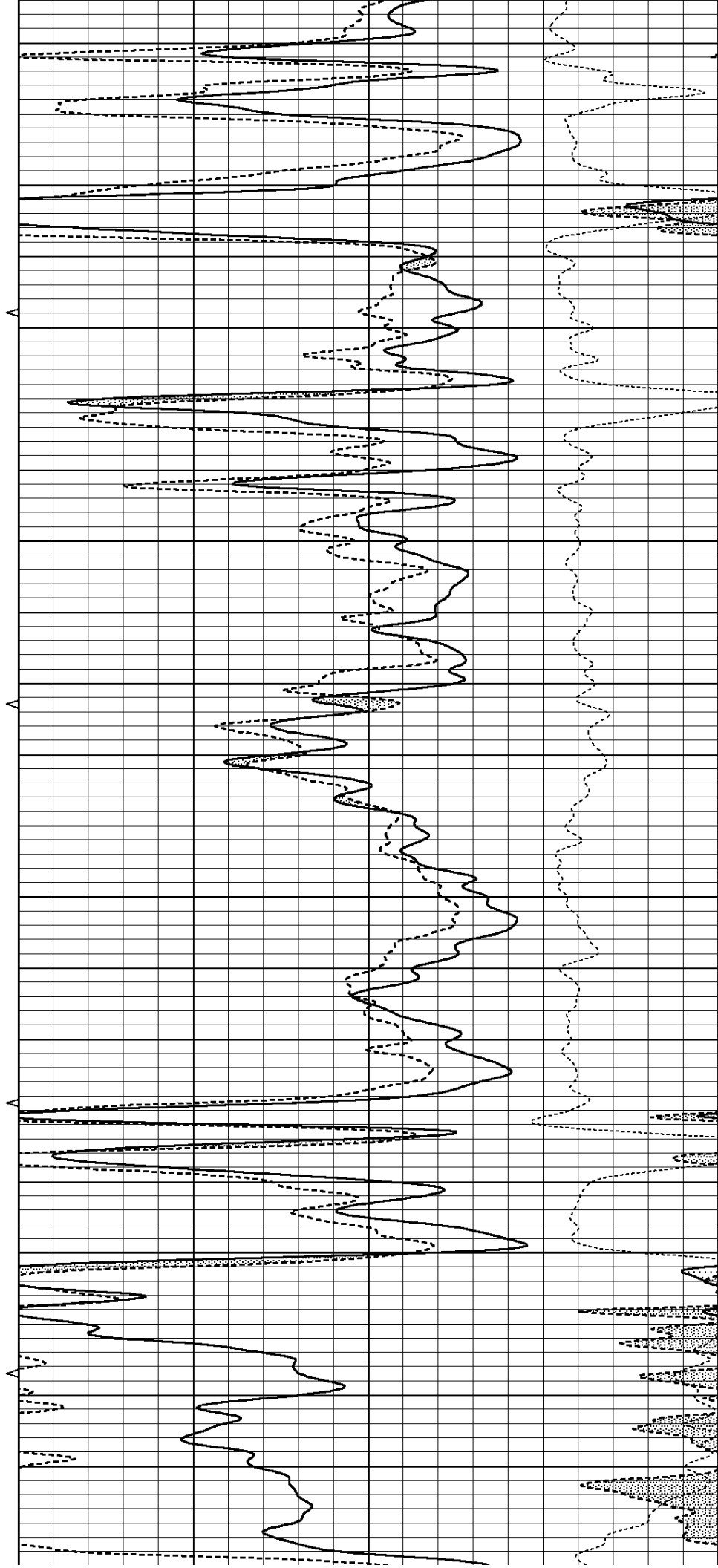


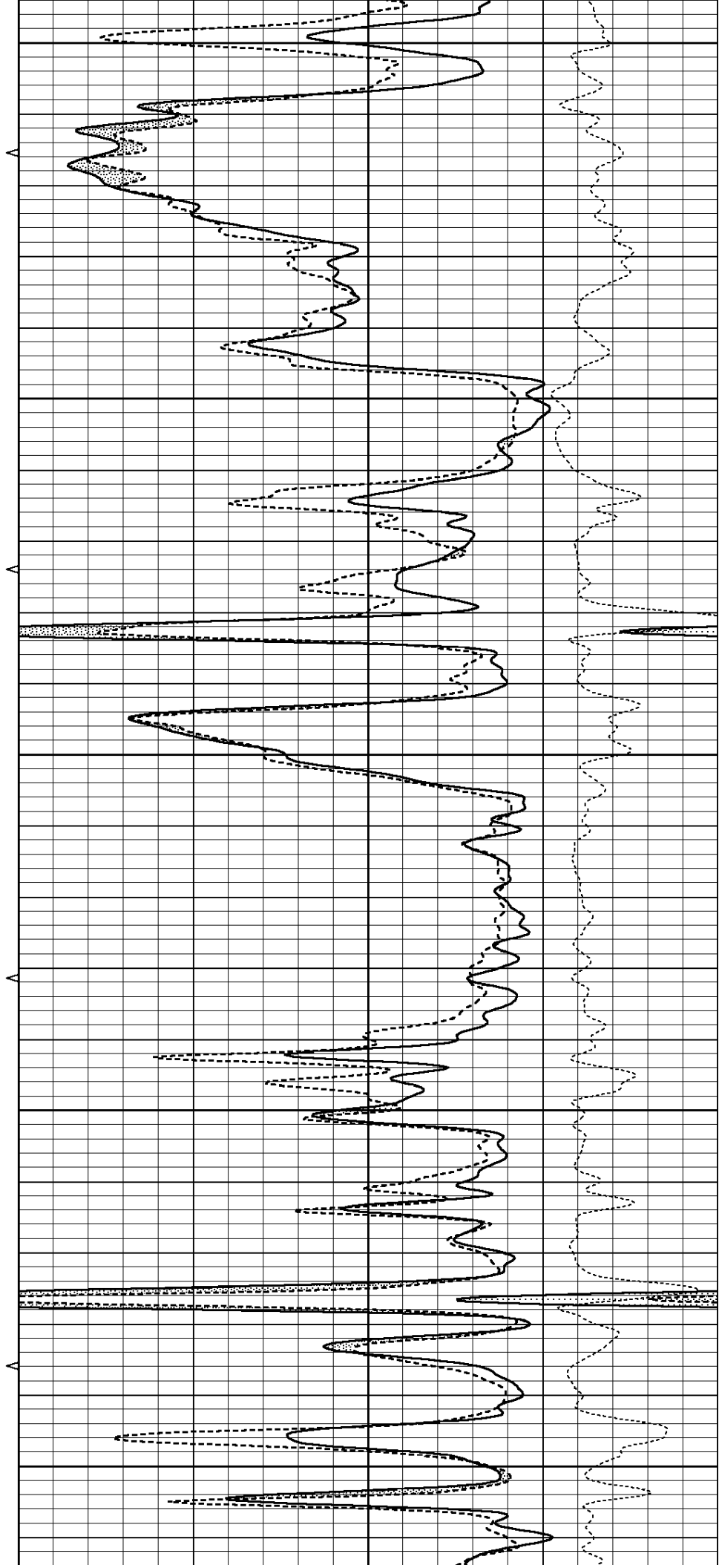
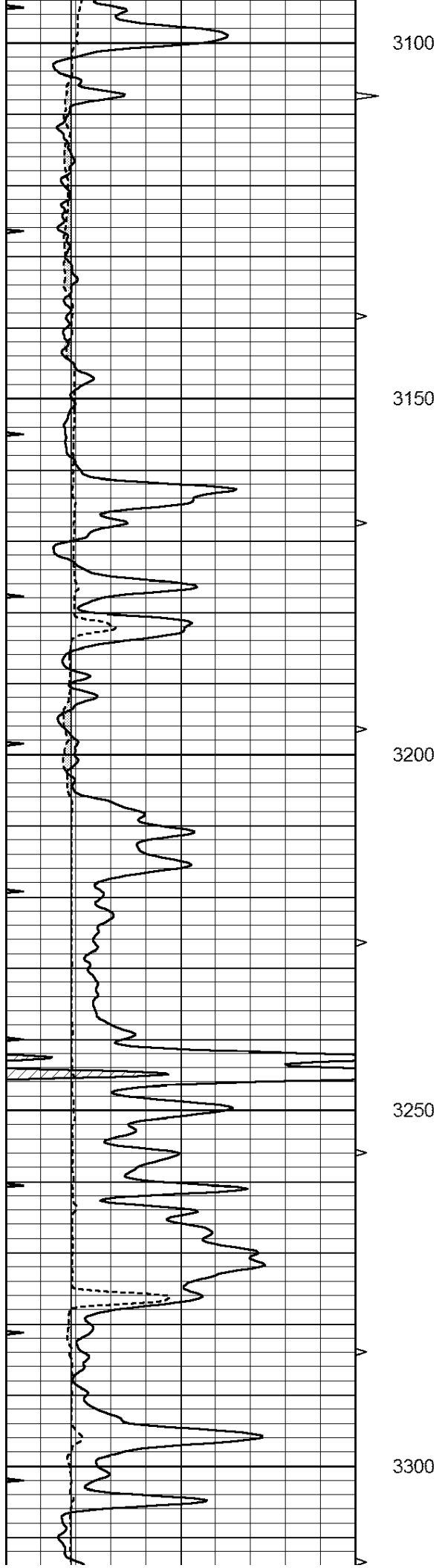
2900

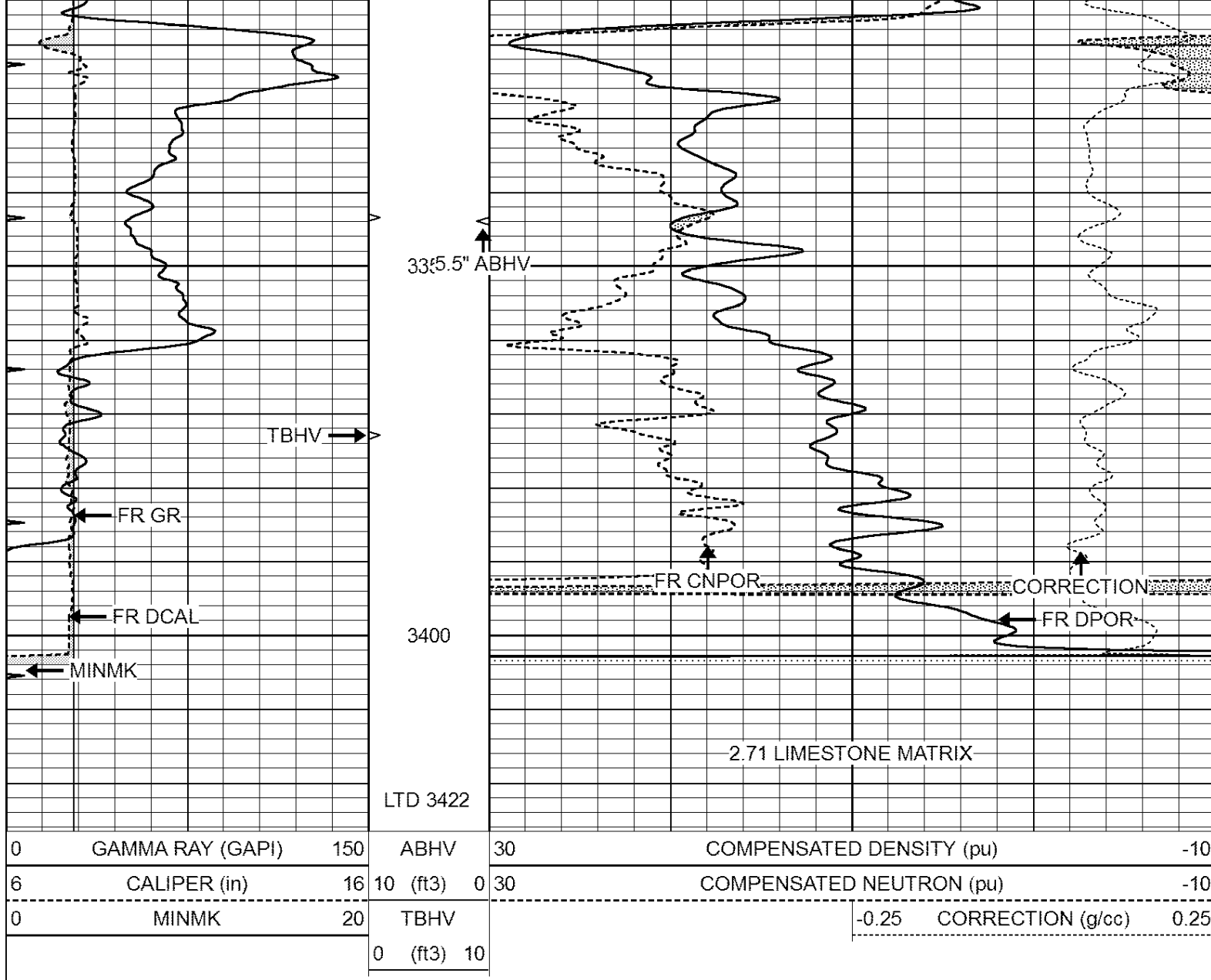
2950

3000

3050





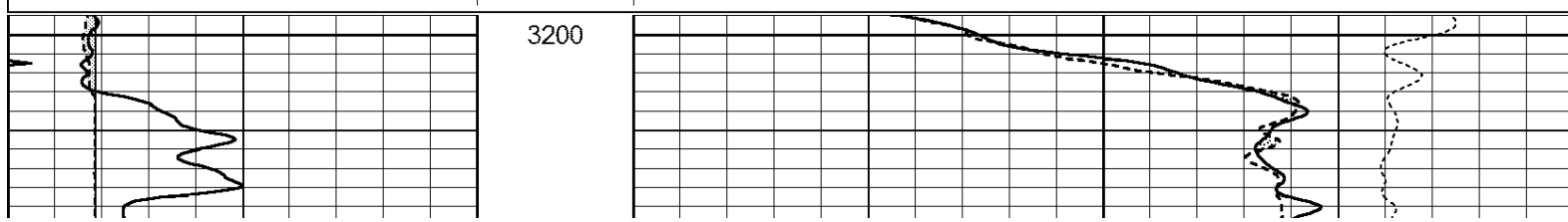


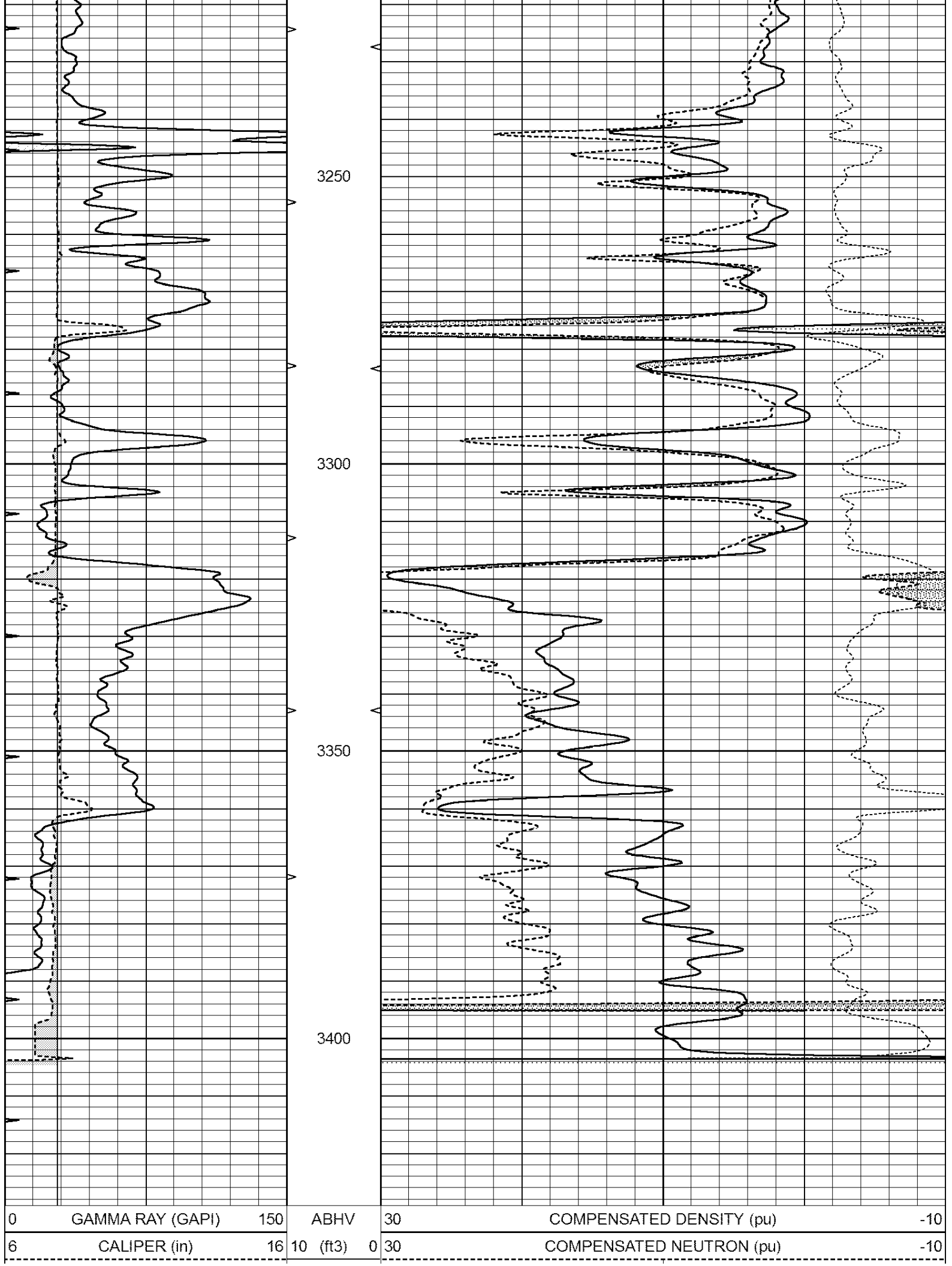
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 409426ddn.db
 Dataset Pathname: pass2.5
 Presentation Format: den_neu
 Dataset Creation: Wed Jul 04 01:10:02 2012
 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	MINMK	20	TBHV	-0.25	CORRECTION (g/cc)	0.25
		0	(ft3) 10			

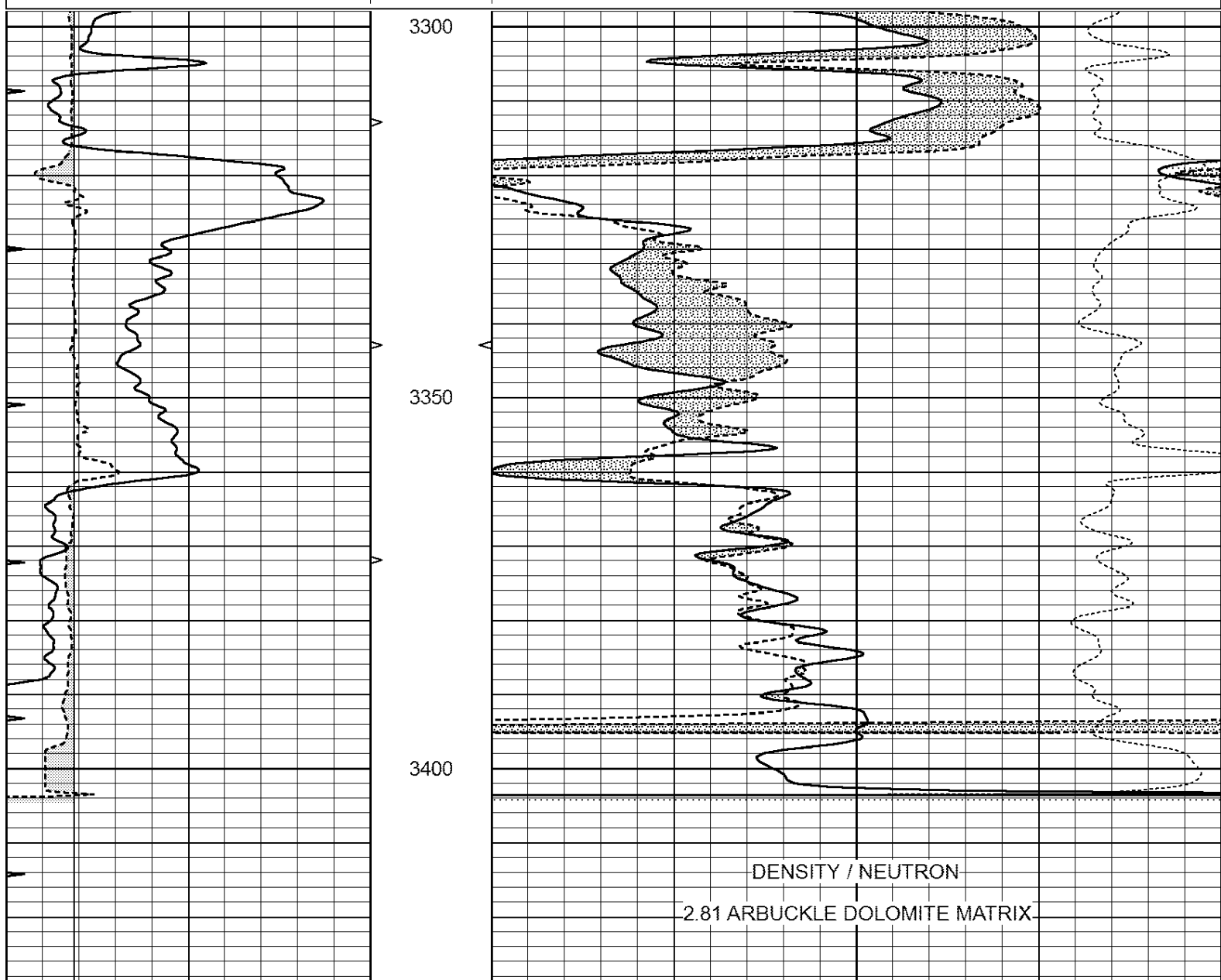


SUPERIOR
Hays,
Kansas

DOLOMITE MATRIX

Database File: 409426ddn.db
Dataset Pathname: pass2.7
Presentation Format: den_neu
Dataset Creation: Wed Jul 04 02:12:09 2012
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

Calibration Report

Database File: 409426ddn.db
 Dataset Pathname: pass3.6
 Dataset Creation: Wed Jul 04 02:49:02 2012

Dual Induction Calibration Report

Serial-Model: DIL4-GEAR
 Performed: Wed Jul 04 00:12:35 2012

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.008	0.666	V	0.000	400.000	mmho/m	570.000	2.000
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	560.000	1.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549

Litho Density Calibration Report
 Serial: 003N Model: PRB
 Performed Tue Sep 08 14:14:44 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

Caliper

	Readings	Reference
Low Ref	3.4	8.0
High Ref	5.5	15.0
Gain: 3.3		Offset: -3.3

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:	070559		
Tool Model:	OPEN_GR		
Performed:	Tue Jul 03 02:09:35 2012		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3000	GAPI/cps	