NABORS COMPLETION & PRODUCTION SERVICES CO.

COMPENSATED DENSITY / NEUTRON PE LOG

Company MULL DRILLING COMPANY, INC.
Well #1-24 ERB UNIT
Field WILDCAT
County NESS
State KANSAS

Company MULL DRILLING COMPANY, INC.
Well #1-24 ERB UNIT
Field WILDCAT
County NESS State KANSAS
Location: API # : 15-135-25773-0000
105' FNL & 1535' FWL
SEC 24 TWP 19S RGE 23W

Other Services
DIL/MEL
SONIC

Elevation
K.B. 2234
D.F. 2232
G.L. 2229

Permanent Datum GROUND LEVEL Elevation 2229
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Date	5/13/14		
Run Number	ONE		
Depth Driller	4475		
Depth Logger	4476		
Bottom Logged Interval	4452		
Top Log Interval	3500		
Casing Driller	8 5/8"@216'		
Casing Logger	218		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5,800 PPM	
Density / Viscosity	9.5/53		
pH / Fluid Loss	9.5/7.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.500@85F		
Rmf @ Meas. Temp	.375@85F		
Rmc @ Meas. Temp	.600@85F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.354@120F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	11:15 P.M.		
Maximum Recorded Temperature	120F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

<<< Fold Here >>>

Comments

THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
NESS CITY, KS., 4E. ON HWY 96 TO "RD. W", 4S. TO "RD. 90", 1/4E., S. INTO

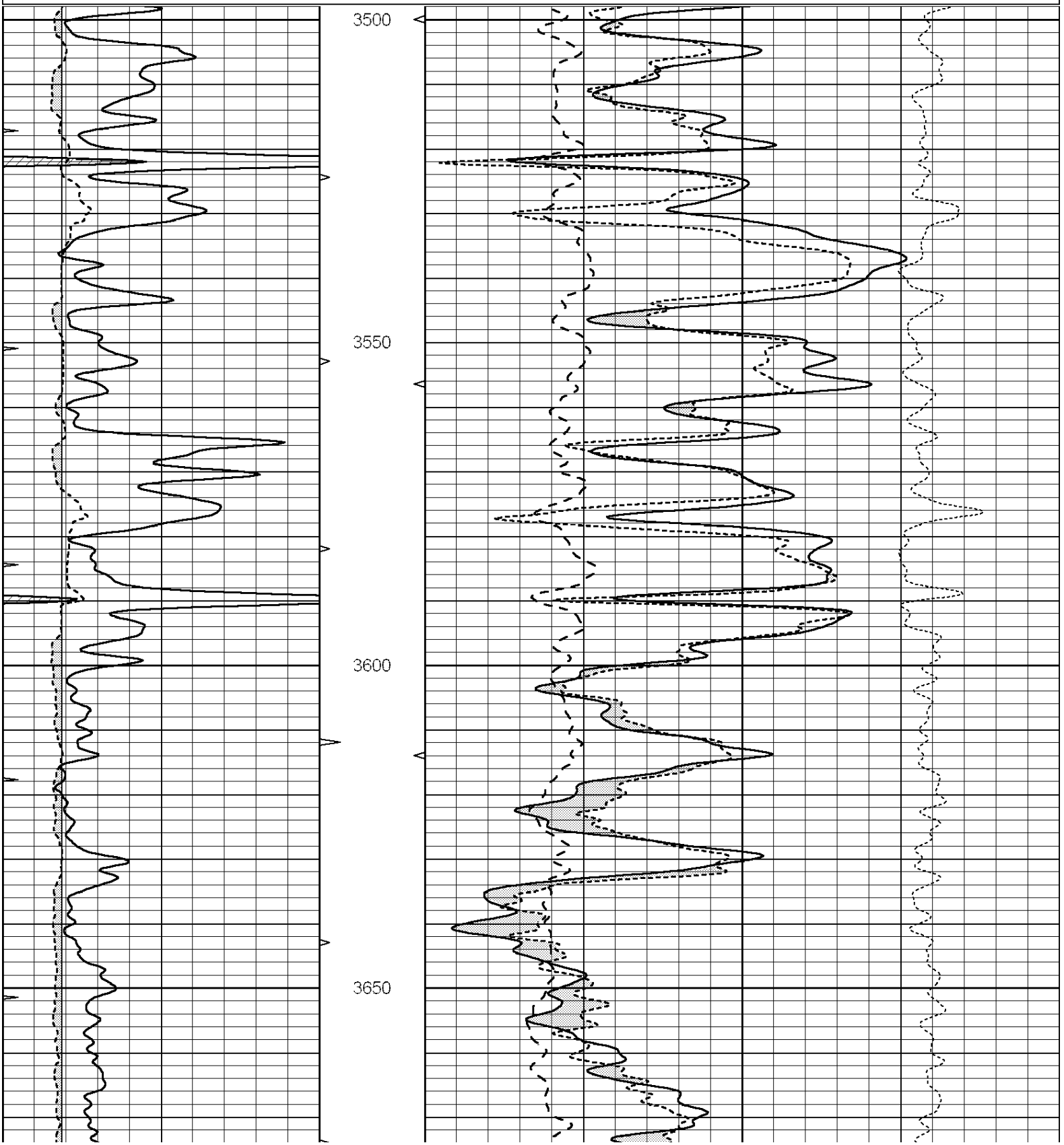
NABORS COMPLETION & PRODUCTION

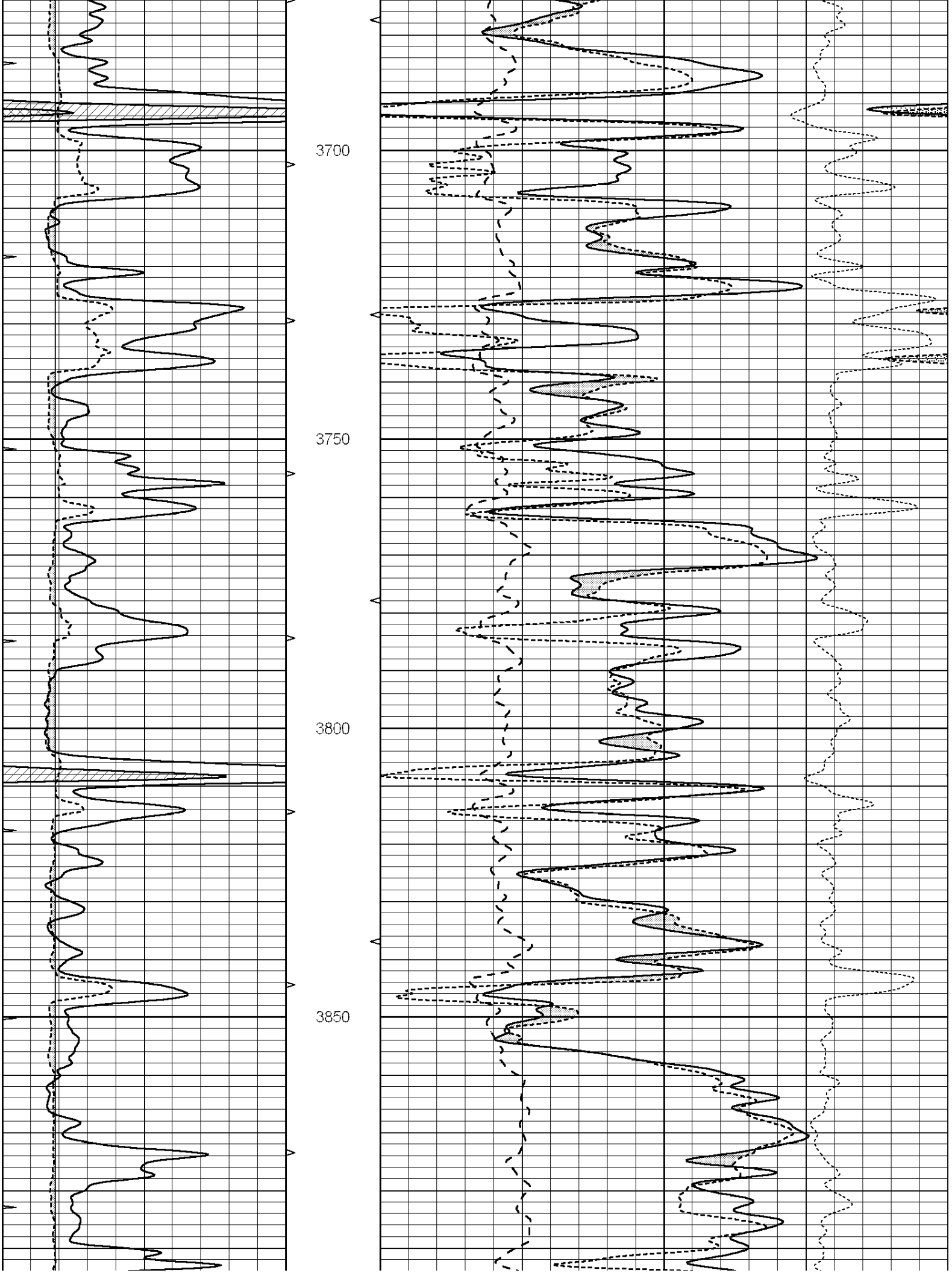
MAIN SECTION

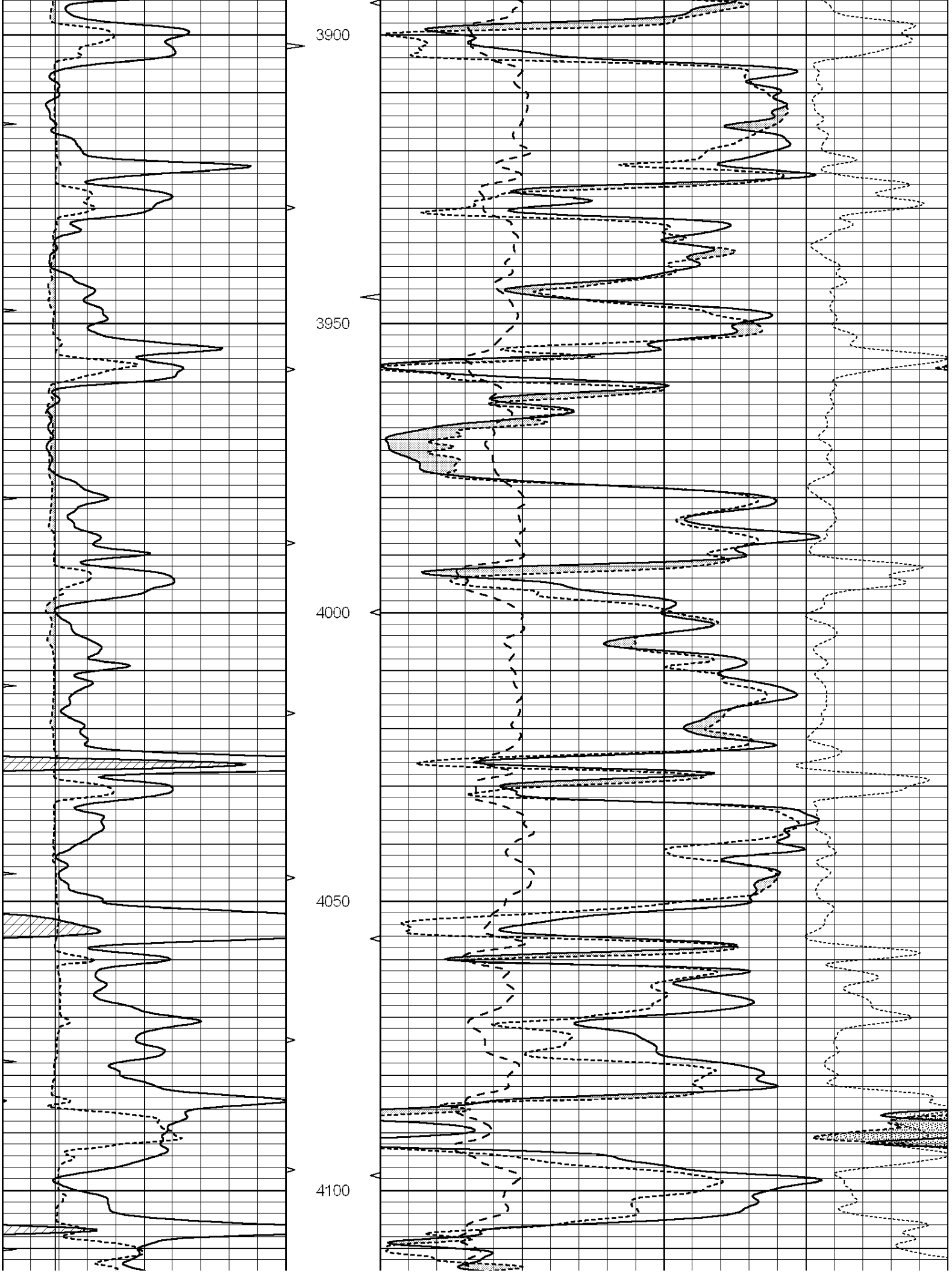
SERVICES CO.

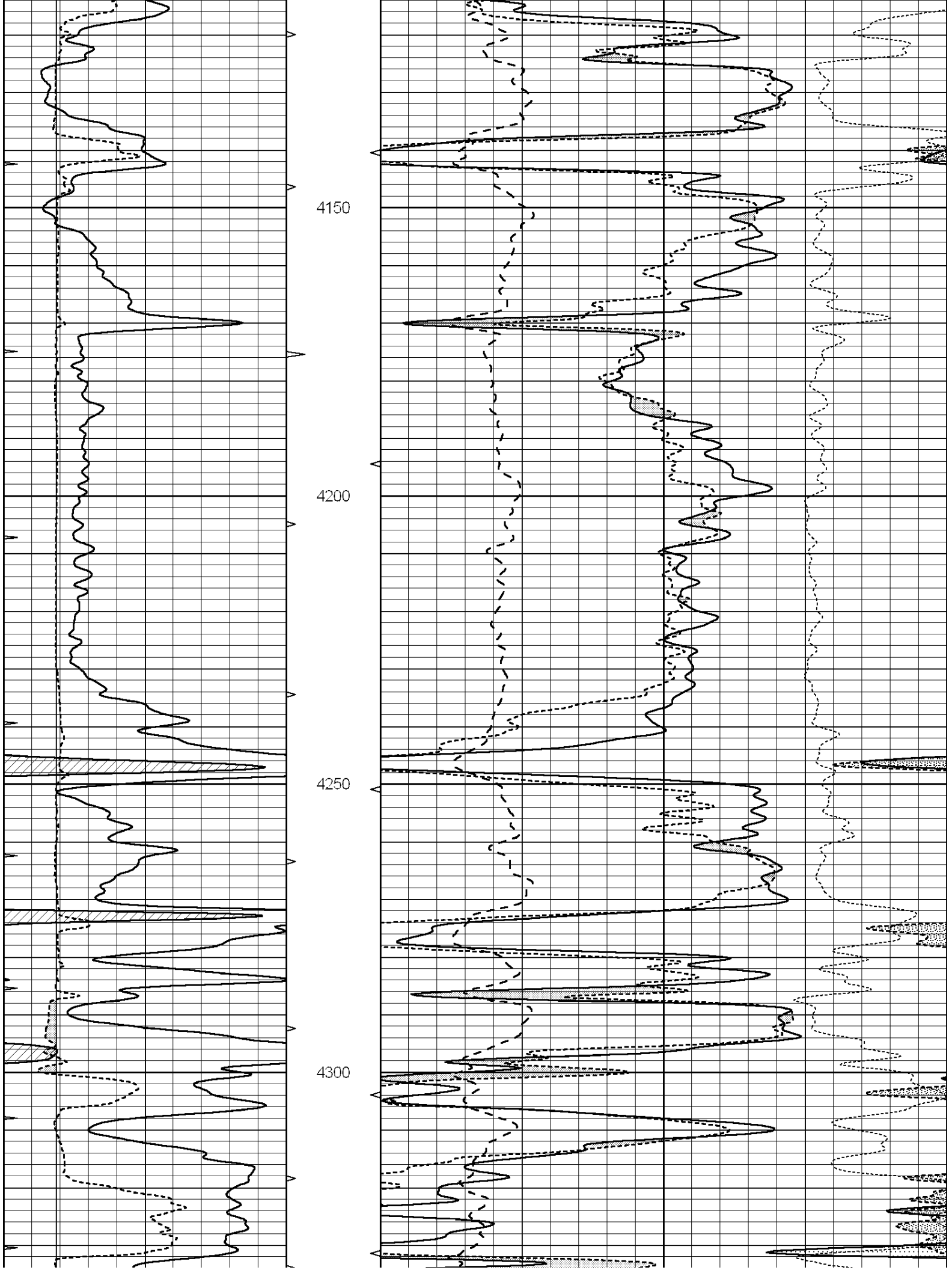
Database File: 24153pe.db
Dataset Pathname: pass3.9
Presentation Format: ldt_neu
Dataset Creation: Wed May 14 00:36:24 2014 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

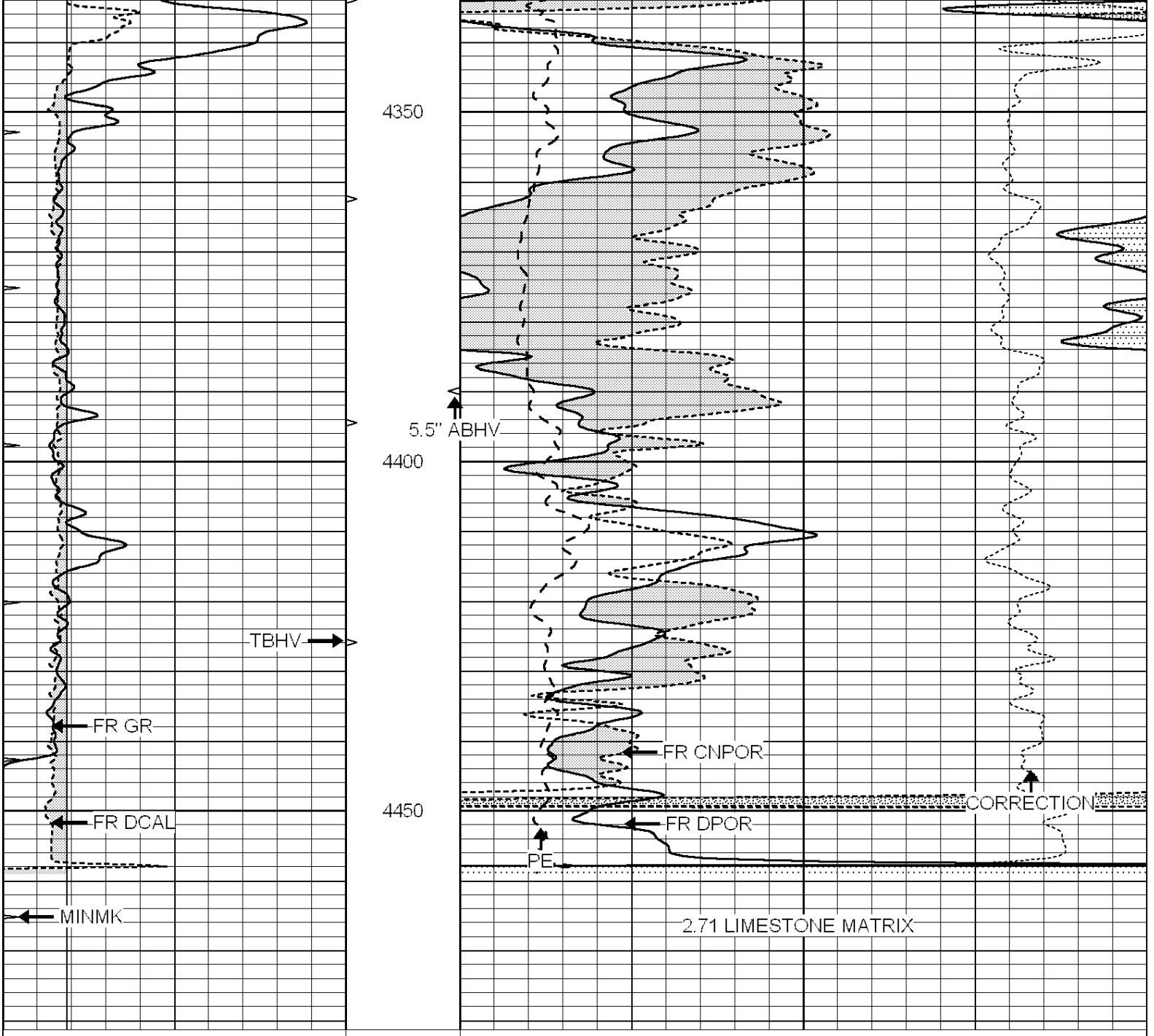
0 GAMMA RAY (GAPI) 150	ABHV	30 COMPENSATED DENSITY (pu) -10			
6 CALIPER (in) 16	10 (ft3) 0	30 COMPENSATED NEUTRON (pu) -10			
0 MINMK 20	TBHV	0 PE 10	-0.25 CORRECTION (g/cc) 0.25		
	0 (ft3) 10				




3700
3750
3800
3850


3900
3950
4000
4050
4100


4150
4200
4250
4300



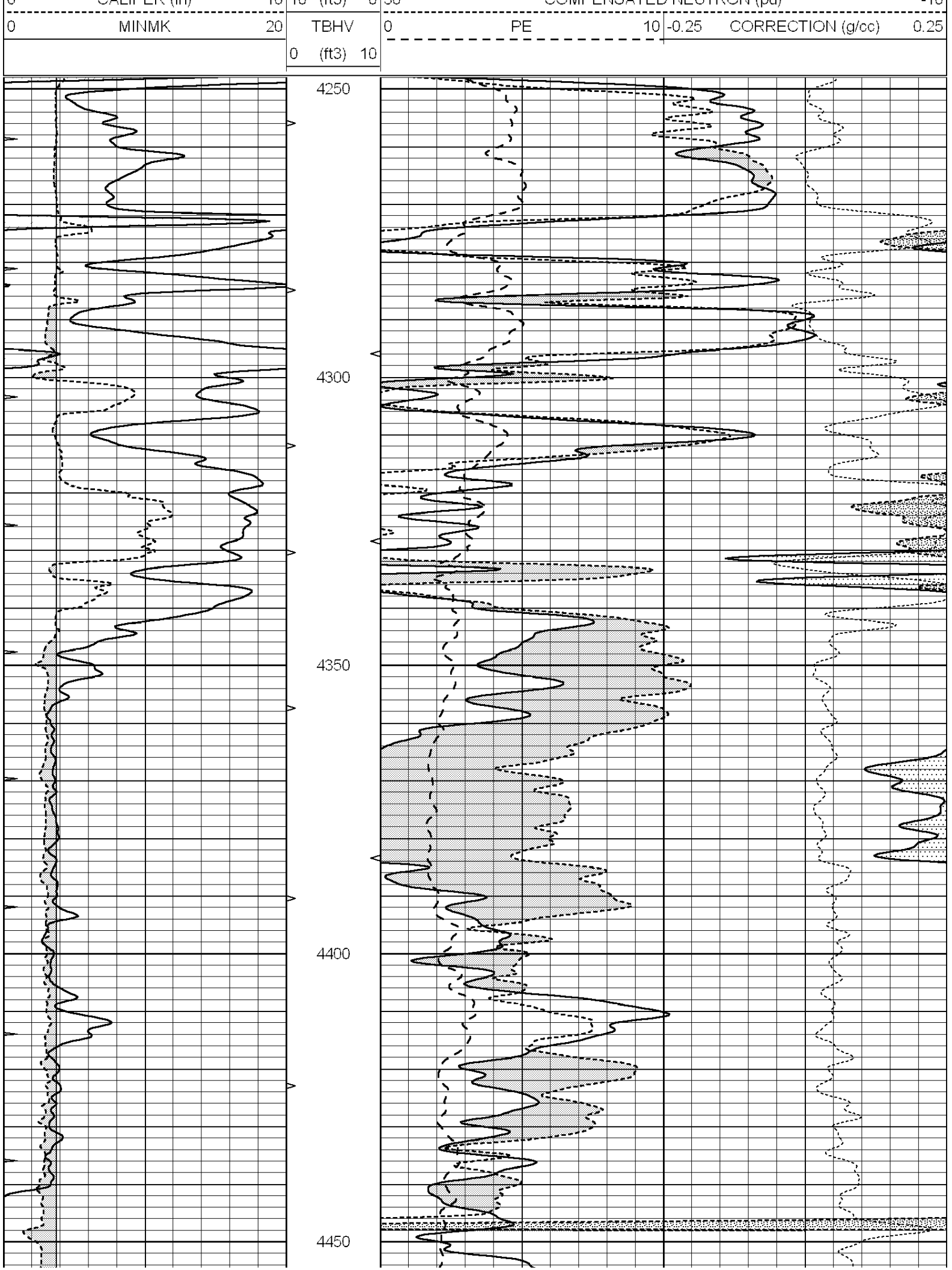
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)		-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)		-10
0	MINMK	20	TBHV	0	PE 10	-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10				

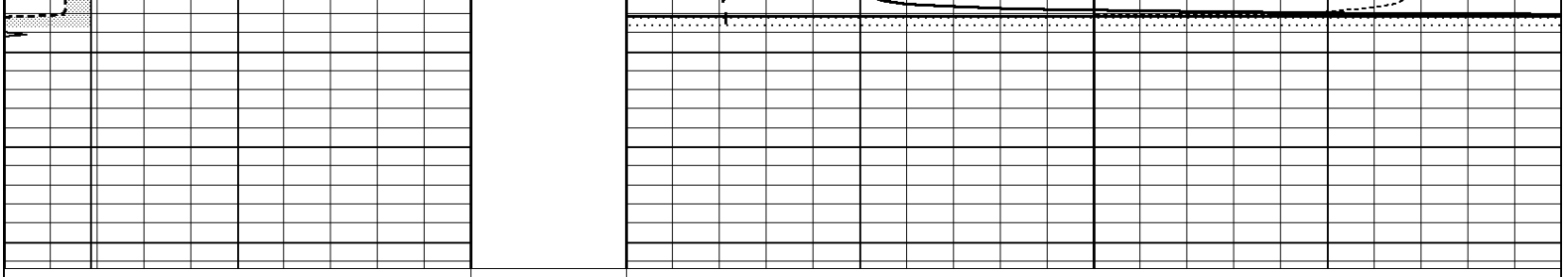
NABORS
COMPLETION & PRODUCTION SERVICES CO.

REPEAT SECTION

Database File:	24153pe.db
Dataset Pathname:	pass2.4
Presentation Format:	ldt_neu
Dataset Creation:	Tue May 13 23:35:34 2014
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				


0 CALIPER (in) 16
0 MINMK 20
10 (ft3) 0
TBHV
0 (ft3) 10
30 COMPENSATED NEUTRON (pu) -10
0 PE 10
-0.25 CORRECTION (g/cc) 0.25
4250
4300
4350
4400
4450



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: 24153pe.db
Dataset Pathname: pass3.9
Dataset Creation: Wed May 14 00:36:24 2014 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Sat May 03 21:20:05 2014
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	660.000	-18.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	650.000	-23.000
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: 003N Model: PRB

Master Calibration — Performed Tue Sep 08 14:14:44 2009

	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		0.0000	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

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: Tue May 13 22:28:03 2014

Performed:	Tue May 13 22:26:05 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps