



**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company H&C OIL OPERATING, INC.  
Well BAKEL UNIT #25 SIW  
Field DREIL  
County GRAHAM  
State KANSAS

Company H&C OIL OPERATING, INC.  
Well BAKEL UNIT #25 SIW  
Field DREIL  
County GRAHAM State KANSAS

Location: API # : 15-065-24150-00-00  
1650 FNL & 380 FEL  
SEC 25 TWP 9S RGE 25W  
Permanent Datum GROUND LEVEL Elevation 2575'  
Log Measured From KELLY BUSHING 8' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2583  
D.F. 2581  
G.L. 2575

Date	07/17/18
Run Number	ONE
Depth Driller	4185
Depth Logger	4188
Bottom Logged Interval	4164
Top Log Interval	3550
Casing Driller	8 5/8@ 259
Casing Logger	259
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.061
pH / Fluid Loss	10.5/6.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.3@86
Rmt @ Meas. Temp	.98@86
Rmc @ Meas. Temp	1.56@86
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.92@117
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	117F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	MARC DOWNING

<<< 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 ELI WIRELINE, HAYS, KS. (785) 628-6395

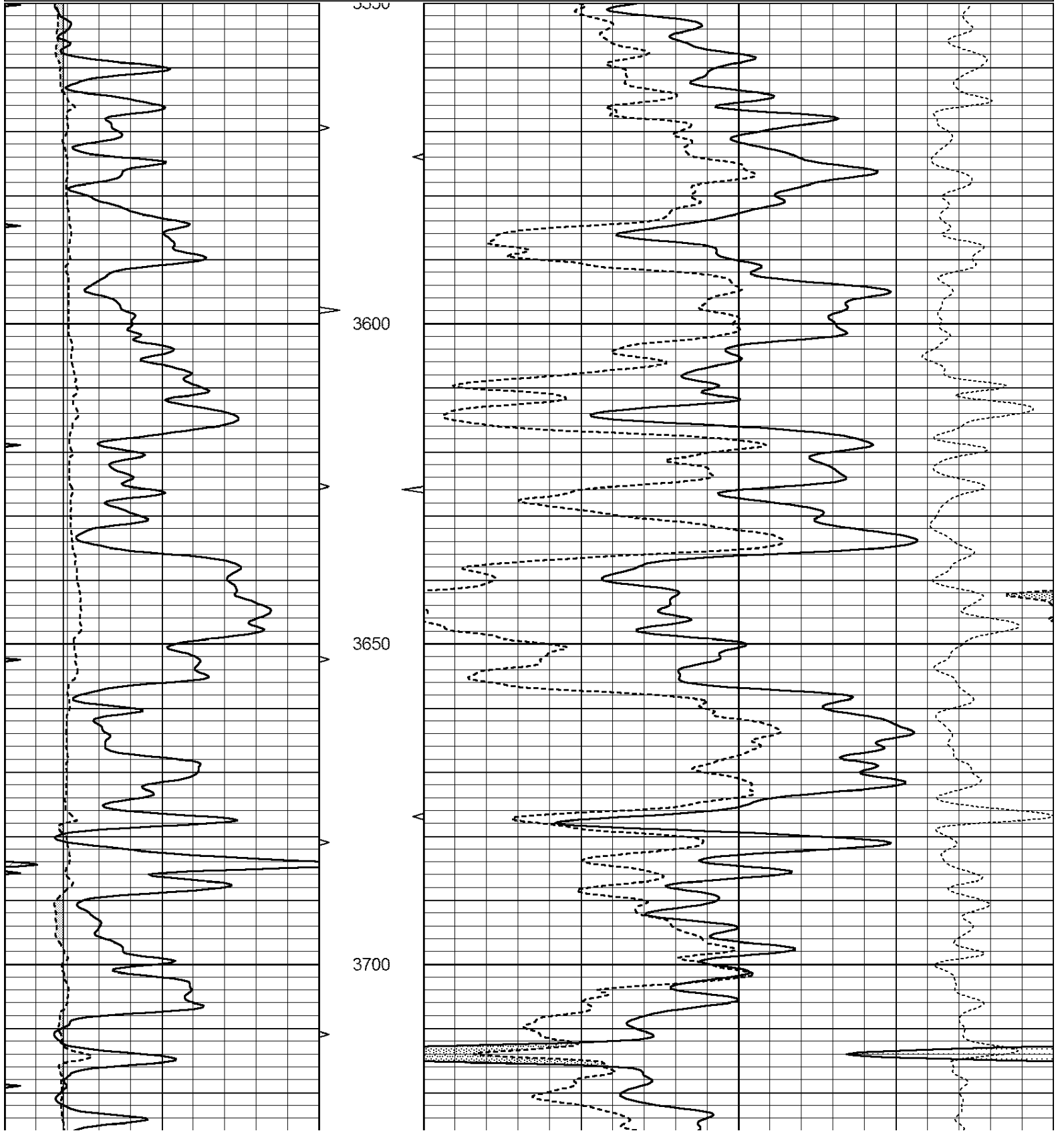
DIRECTIONS  
NORTH OF WAKEENEY TO REDLINE RD.  
WEST TO 160 RD., NORTH 1/2 MILE  
WEST INTO. AT TANKS

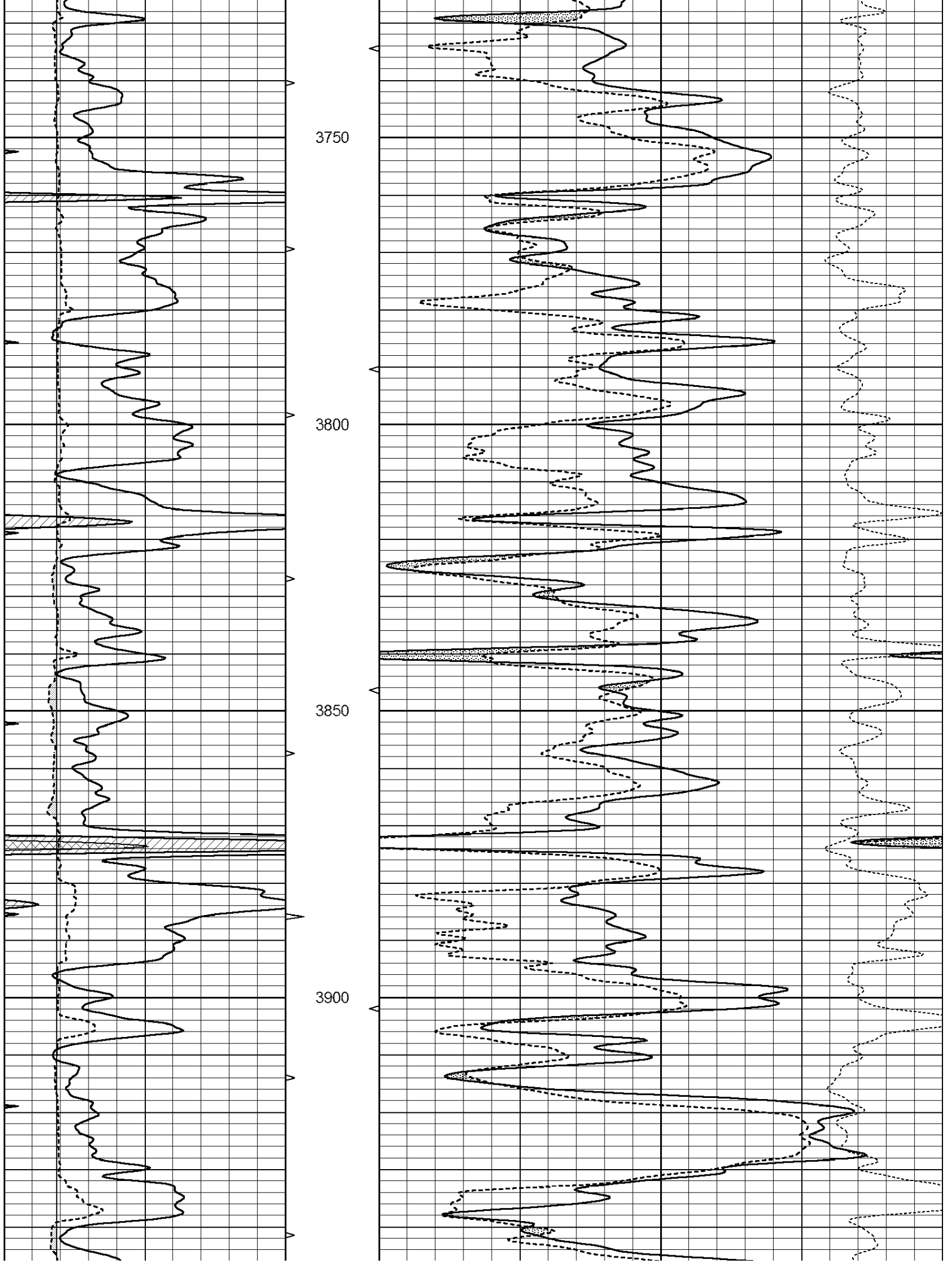


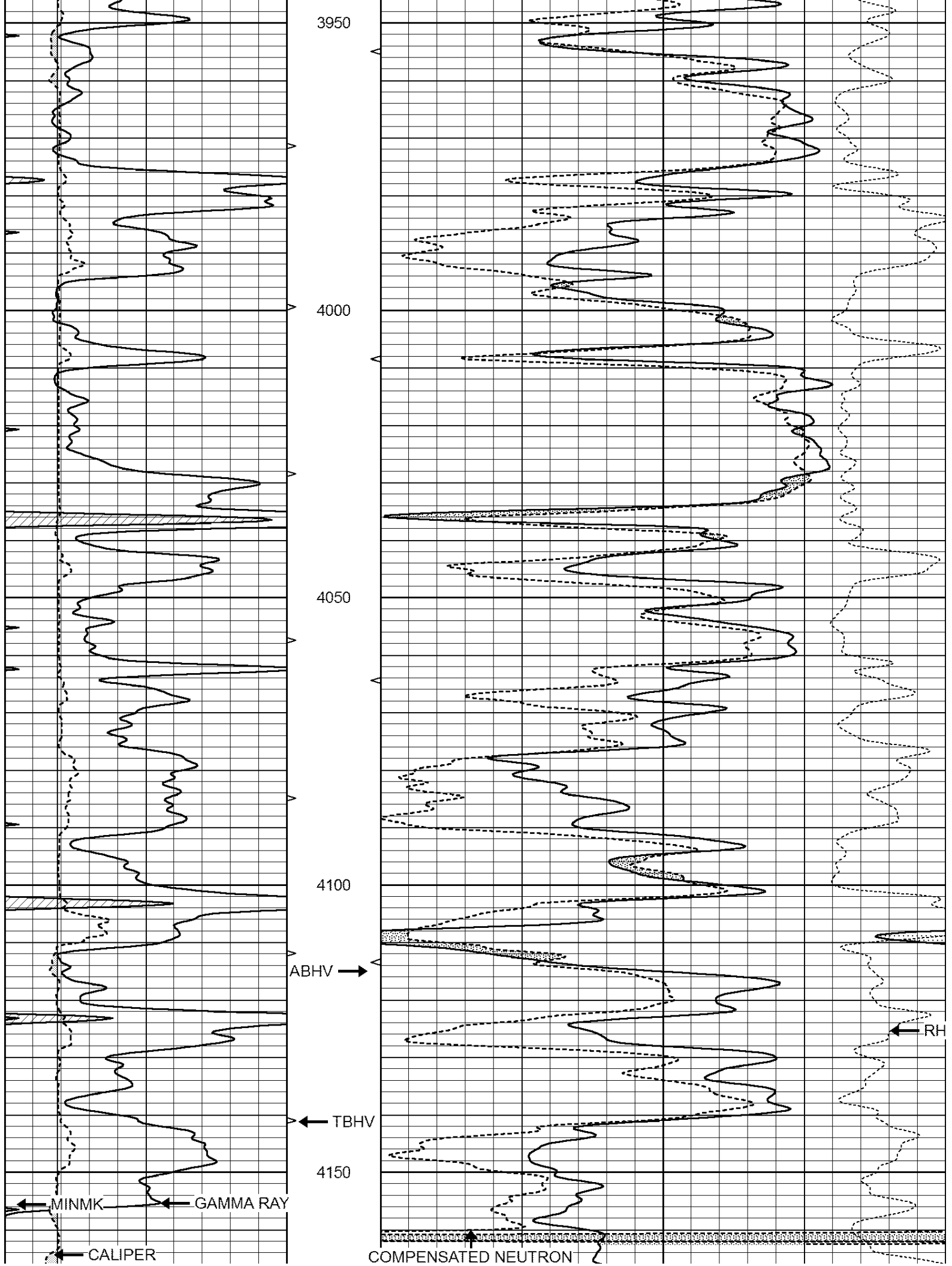
**MAIN PASS**

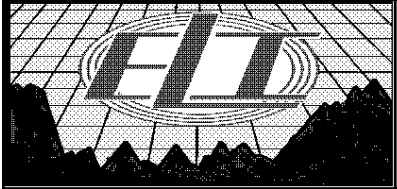
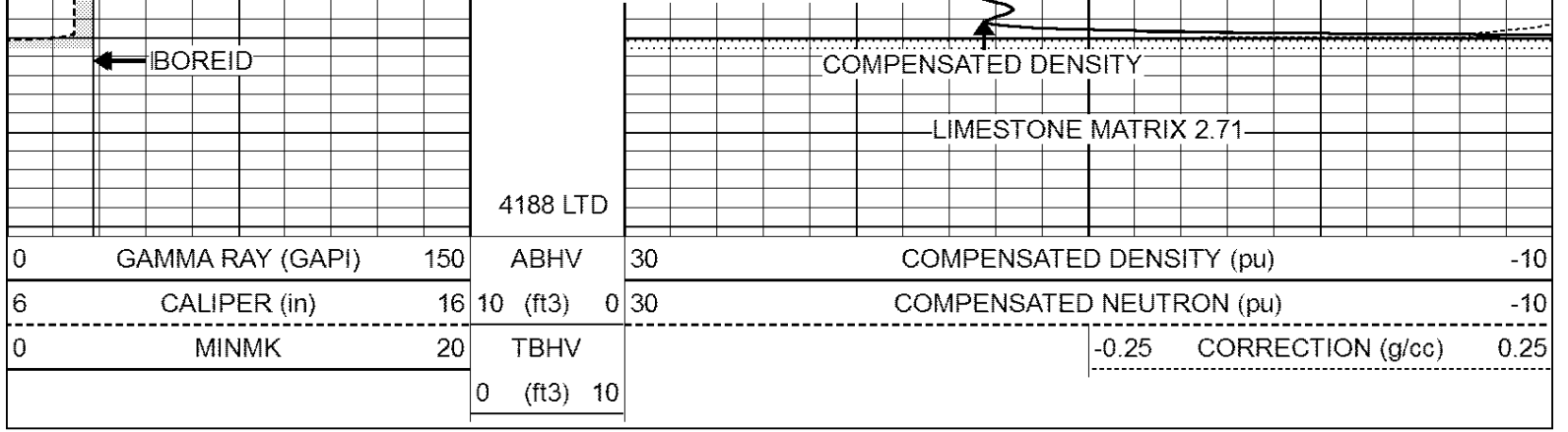
Database File: 2692ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: den\_neu  
 Dataset Creation: Tue Jul 17 20:36:39 2018 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

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		





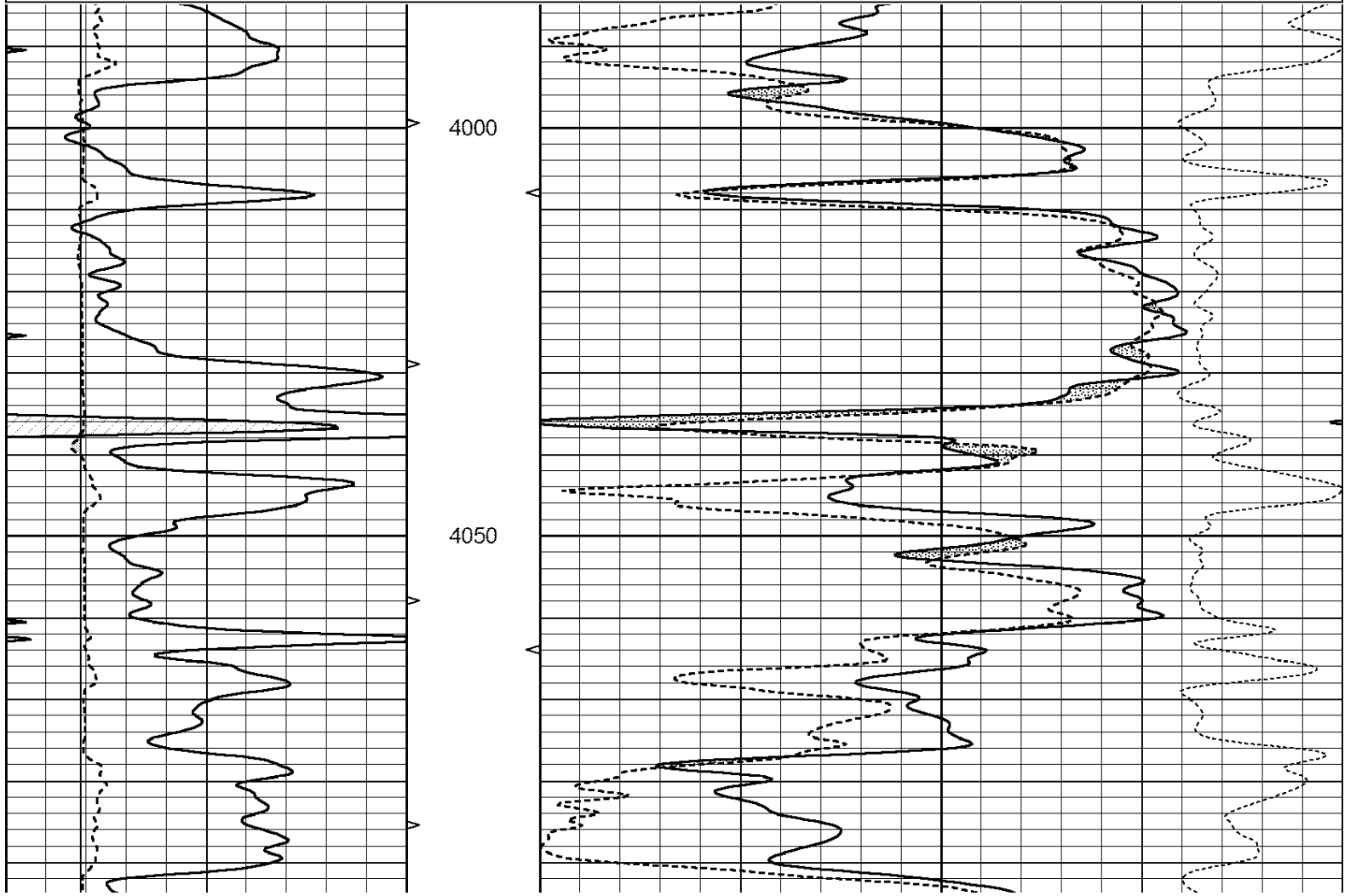


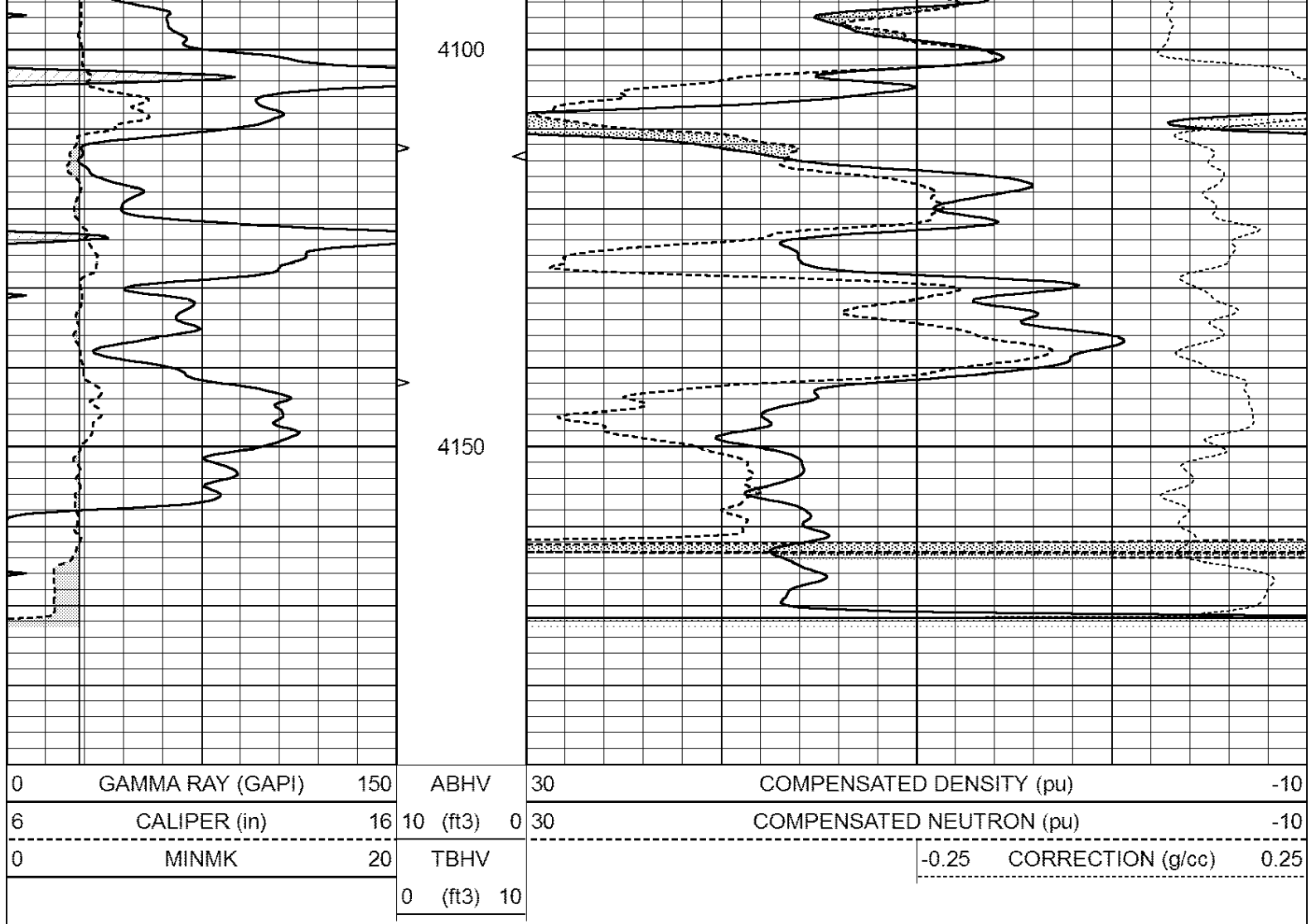


# REPEAT SECTION

Database File: 2692ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: den\_neu  
 Dataset Creation: Tue Jul 17 19:59:56 2018 by Calc Open-Cased 090629  
 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			





### Calibration Report

Database File: pe2.db  
 Dataset Pathname: pass2  
 Dataset Creation: Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Mon Aug 21 11:58:18 2017  
 Downhole Cal Performed: Mon Aug 21 11:58:21 2017  
 After Survey Verification Performed: Mon Aug 21 11:58:23 2017

#### Surface Calibration

Loop:	Readings				References		Results	
	Air	Loop			Air	Loop	m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
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	0.014	405.777	mmho/m	1.000	0.000

Deep	0.000	0.000	mmho/m	2.011	403.777	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		

Litho Density Calibration Report  
Serial: 002      Model: PRB

Master Calibration		Performed Mon Aug 21 11:56:41 2017						
	Background	Magnesium	Aluminum	Sandstone				
Window 1	833.6	7394.2	2287.3	8111.8			cps	
Window 2	768.9	6322.3	1995.6	6800.0			cps	
Window 3	621.5	3261.9	1186.4	3380.9			cps	
Window 4	184.2	185.7	184.9	184.8			cps	
Long Space	0.0	5553.4	1226.6	6031.1			cps	
Short Space	1.2	1307.5	903.9	1387.7			cps	
Rho		1.7100	2.5900	1.3800			g/cc	
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 46.3	Rib Slope	: 1.045	Density/Spine Ratio			: 0.566	
Spine Angle	: 76.3	Spine Slope	: 4.090	Spine Intercept			: -20.7	

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969						
Window 1	0.0	0.0	0.0	0.0	0.0		cps	
Window 2	0.0	0.0	0.0	0.0	0.0		cps	
Window 3	0.0	0.0	0.0	0.0	0.0		cps	
Window 4	0.0	0.0	0.0	0.0	0.0		cps	
Long Space	0.0	0.0	0.0	0.0	0.0		cps	
Short Space	0.0	0.0	0.0	0.0	0.0		cps	
Measured Rho		0.0000	0.0000	0.0000	0.0000		g/cc	
Measured Correction		0.0000	0.0000	0.0000	0.0000		g/cc	
Measured Pe			0.0000	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	0.0		cps	
Window 2	0.0	0.0	0.0	0.0	0.0		cps	
Window 3	0.0	0.0	0.0	0.0	0.0		cps	
Window 4	0.0	0.0	0.0	0.0	0.0		cps	
Long Space	0.0	0.0	0.0	0.0	0.0		cps	
Short Space	0.0	0.0	0.0	0.0	0.0		cps	
Measured Rho		0.0000	0.0000	0.0000	0.0000		g/cc	
Measured Correction		0.0000	0.0000	0.0000	0.0000		g/cc	
Measured Pe			0.0000	0.0000	0.0000			

Compensated Neutron Calibration Report

Serial Number: 61  
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	1.00 cps	1.00 cps	1.0000
Long Space	1.00 cps	1.00 cps	1.0000

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6  
Tool Model: OPEN  
Performed: Mon Aug 21 11:59:01 2017

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 276.0 cps

Sensitivity: 0.5500 GAPI/cps