NABORS COMPLETION & PRODUCTION SERVICES CO.

COMPENSATED DENSITY/NEUTRON LOG

Company	PICKRELL DRILLING CO., INC.
Well	#3 PETTY "E"
Field	LOCKER NW
County	TREGO
State	KANSAS

Company PICKRELL DRILLING CO., INC.
Well #3 PETTY "E"
Field LOCKER NW
County TREGO State KANSAS
Location: API # : 15-195-22854-0000
330' FNL & 1050' FWL
SEC 30 TWP 13S RGE 21W

Other Services: DIL/MEL

Permanent Datum GROUND LEVEL Elevation 2337
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2347
D.F. 2345
G.L. 2337

Date	9/13/13		
Run Number	ONE		
Depth Driller	4165		
Depth Logger	4165		
Bottom Logged Interval	4141		
Top Log Interval	3400		
Casing Driller	8 5/8" @ 222		
Casing Logger	220		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2400 PPM	
Density / Viscosity	9.4/77		
pH / Fluid Loss	10.5/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 89F		
Rmf @ Meas. Temp	.56 @ 89F		
Rmc @ Meas. Temp	.90 @ 89F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.57 @ 117F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	117F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	JERRY SMITH		

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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 NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
I 70 & OGALLAH EXIT - 5 S.TO RD. P - 2 E. TO RD. 350 - 1 S. - E. INTO

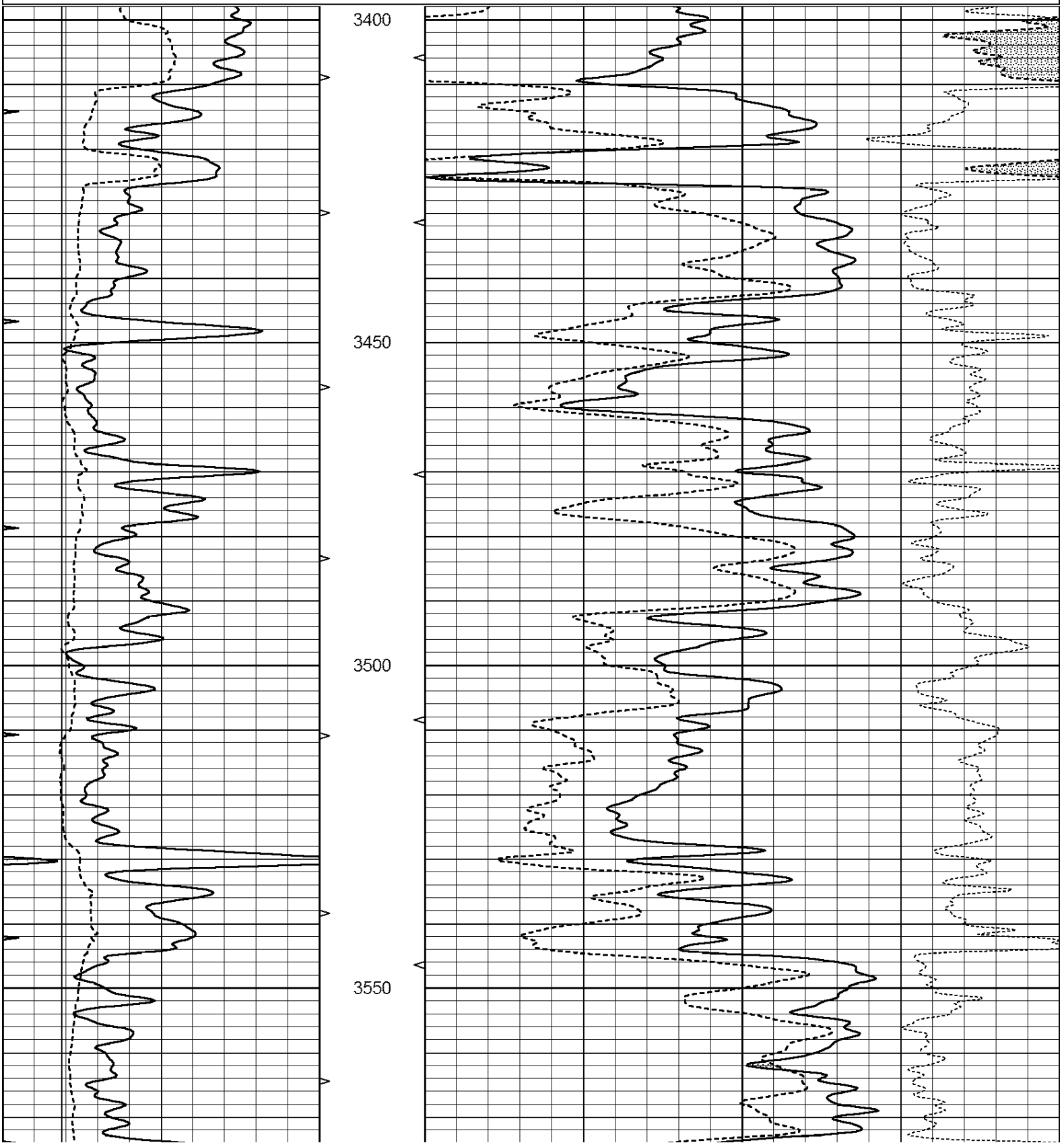
NABORS COMPLETION & PRODUCTION SERVICES CO.

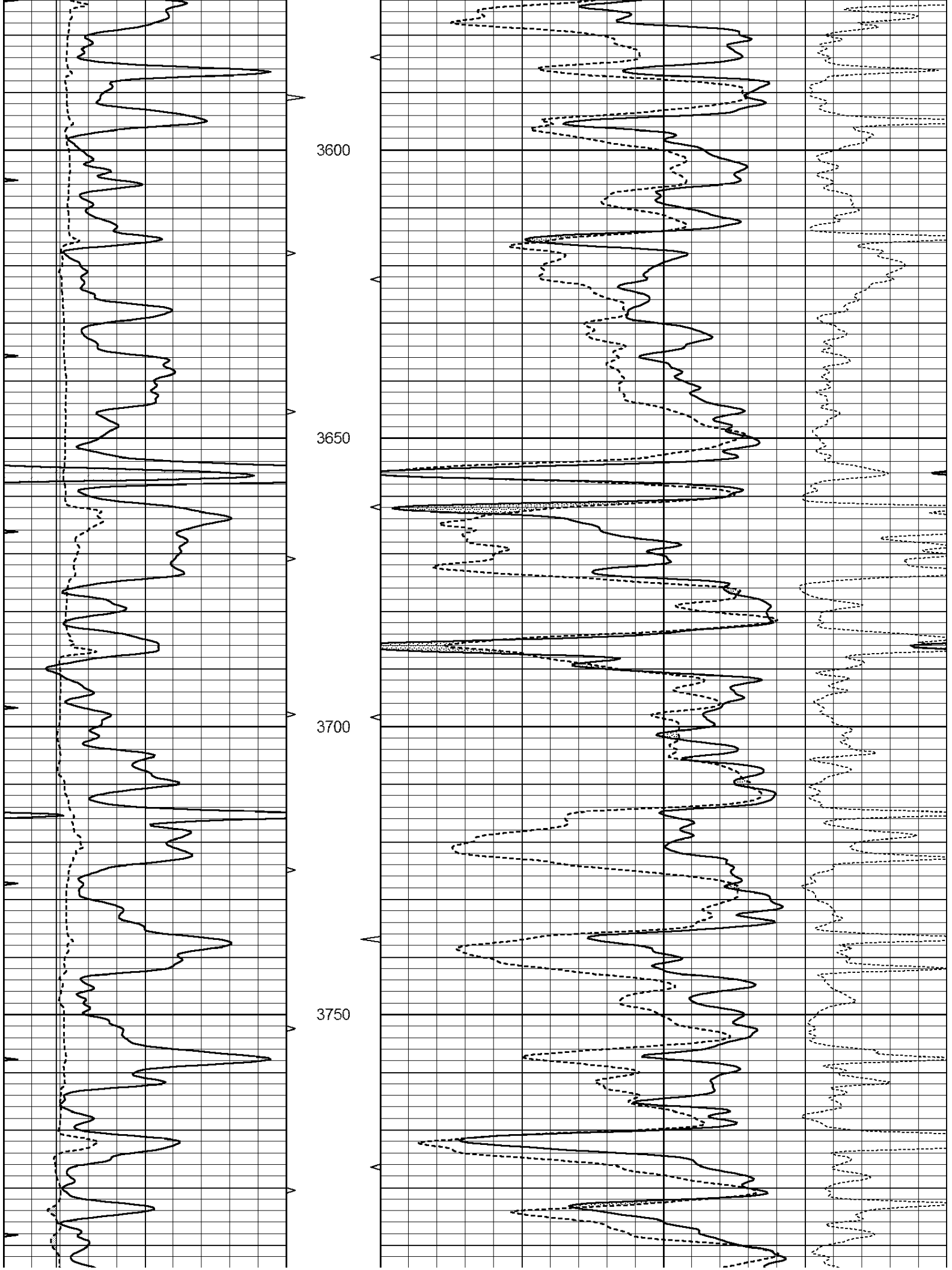
MAIN SECTION

SERVICES CO.

Database File: 011780ddn.db
Dataset Pathname: pass3.1
Presentation Format: den_neu
Dataset Creation: Fri Sep 13 23:05:42 2013 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		

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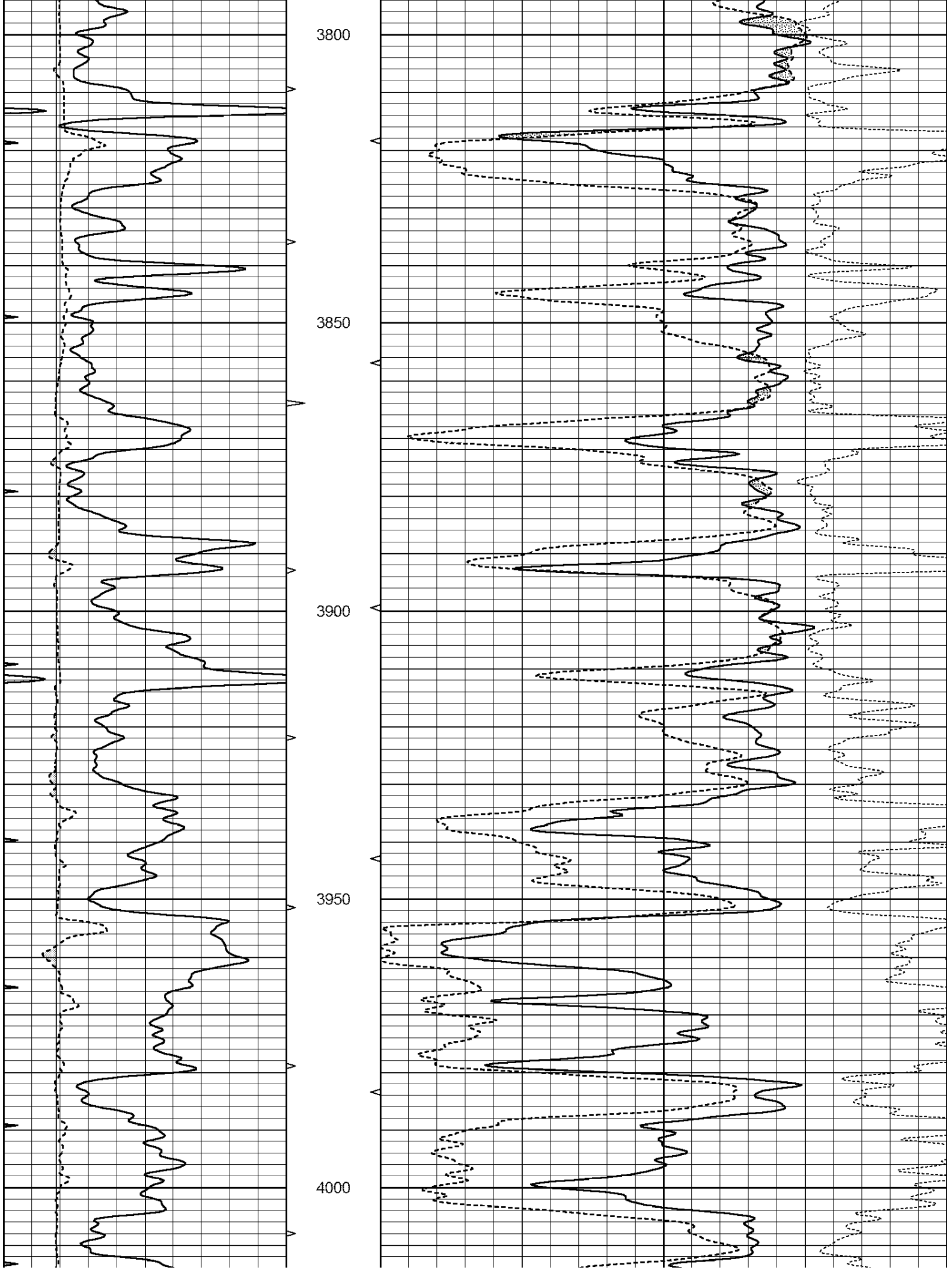
3750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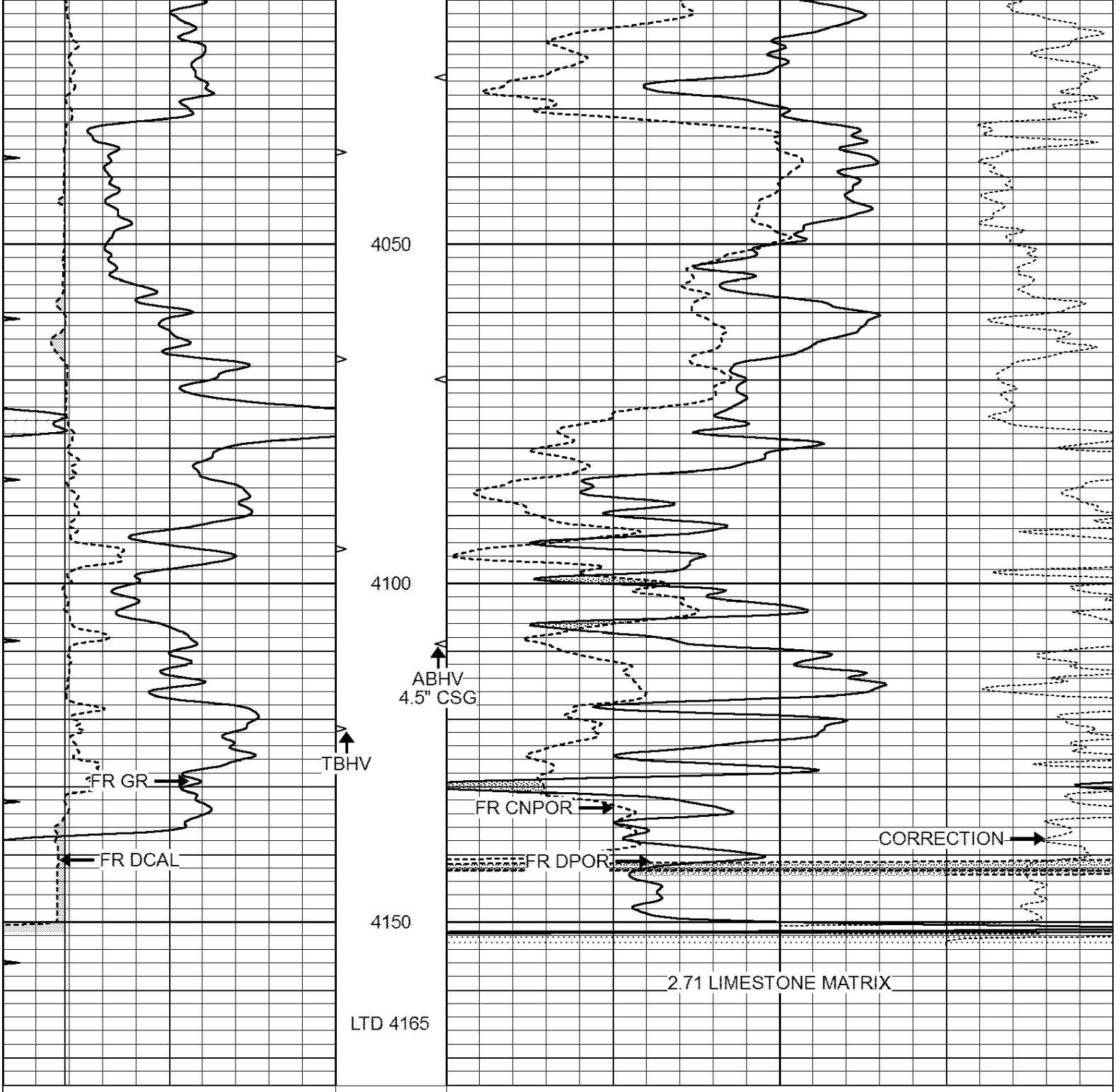


NABORS
COMPLETION & PRODUCTION SERVICES CO.

REPEAT SECTION

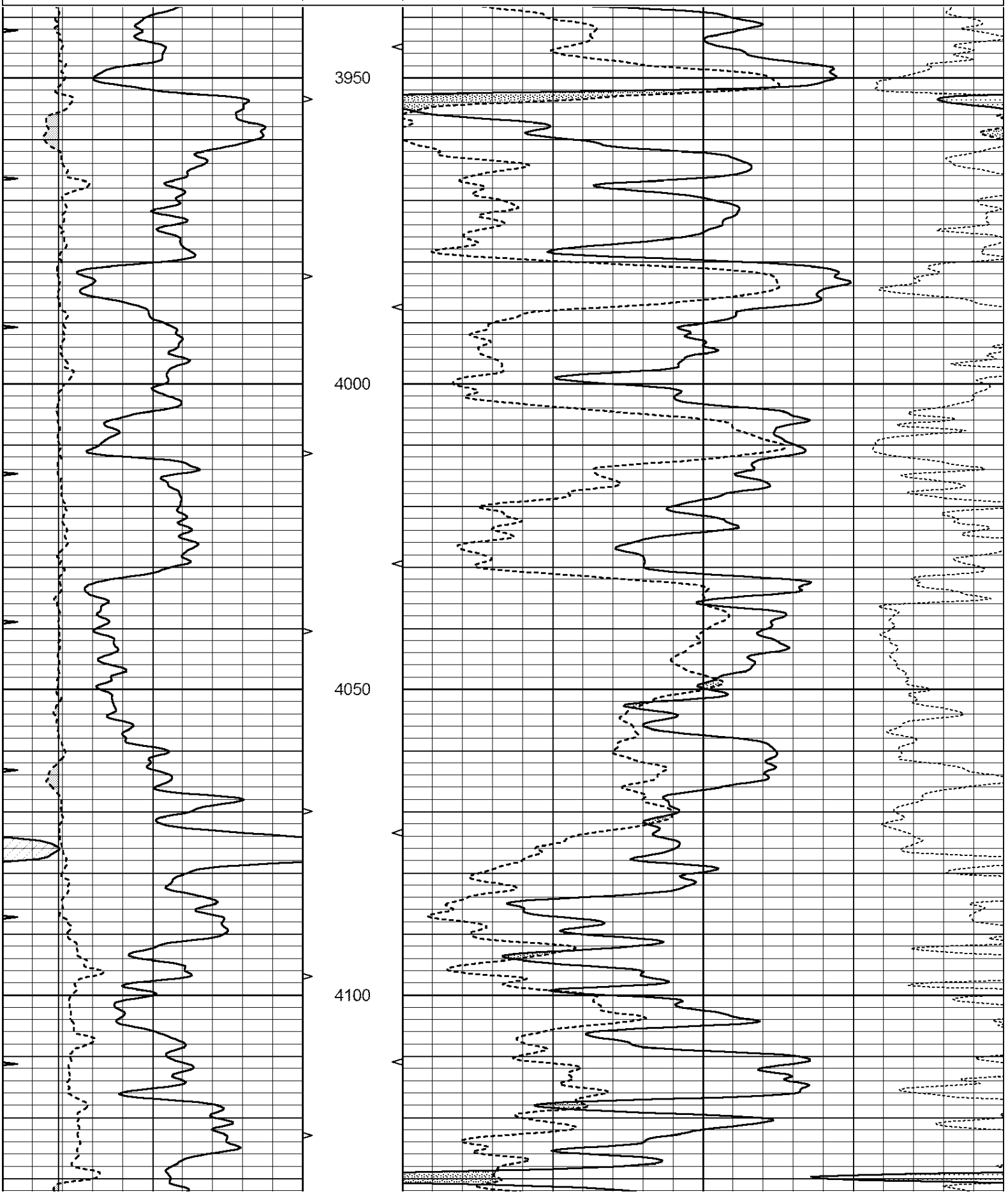
Database File: 011780ddn.db
Dataset Pathname: pass2.1
Presentation Format: den_neu
Dataset Creation: Fri Sep 13 22:55:41 2013 by Calc Open-Cased 090629

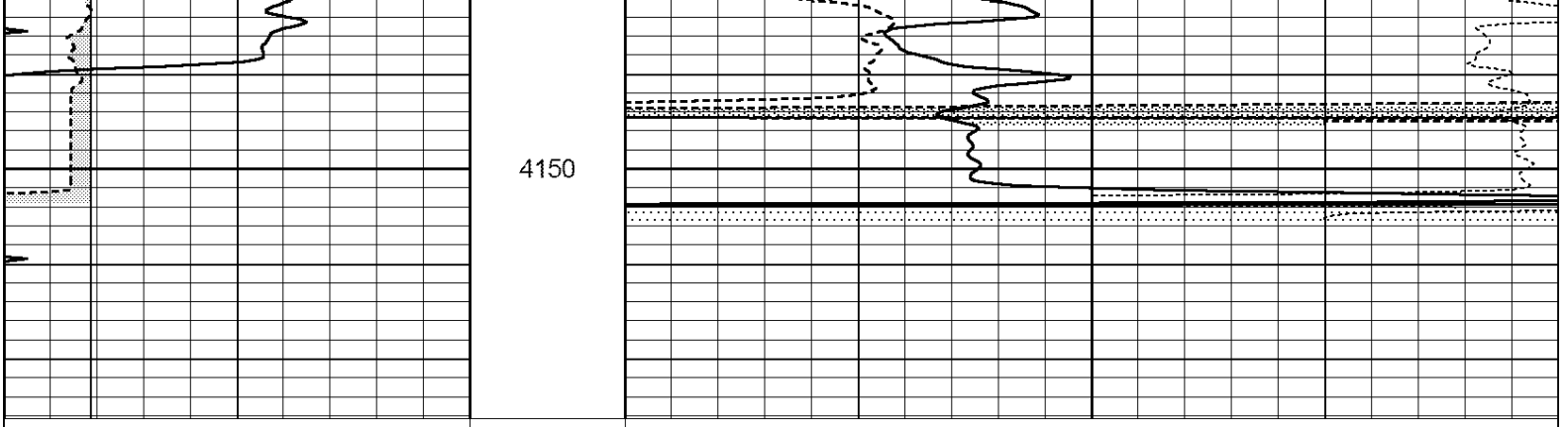
Charted by: Depth in Feet scaled 1:240

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
-0.25	CORRECTION (g/cc)	0.25





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: 011780ddn.db
Dataset Pathname: pass2.1
Dataset Creation: Fri Sep 13 22:55:41 2013 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Fri Aug 01 06:33:19 2008
Downhole Cal Performed:	Mon Jul 28 11:08:27 2008
After Survey Verification Performed:	Mon Jul 28 11:08:27 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
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	2.011	405.777	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		

Compensated Density Calibration Report

Serial-Model:	GEAR4-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Tue Jun 18 20:13:29 2013
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1075.98	532.39	cps
Aluminum	2.560	g/cc	286.51	422.88	cps

Spine Angle = 80.13 Density/Spine Ratio = 0.633

	Size		Reading	
Small Ring	8.00	in	3.21	V
Large Ring	14.00	in	5.46	V

Before Survey Verification

Target		Measured	
	g/cc		g/cc
	g/cc		g/cc
	g/cc		g/cc

After Survey Verification

Target		Measured	
	g/cc		g/cc
	g/cc		g/cc
	g/cc		g/cc

Compensated Neutron Calibration Report

Serial Number:	6I
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:	#8	
Tool Model:	OPEN	
Performed:	Tue Jun 18 19:34:11 2013	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	175.0	cps
Sensitivity:	0.8371	GAPI/cps