



COMPENSATED DENSITY/NEUTRON LOG

Company	PHILLIPS EXPLORATION COMPANY, L.C.	Company	PHILLIPS EXPLORATION COMPANY, L.C.
Well	HAFLIGER UNIT # C19	Well	HAFLIGER UNIT # C19
Field	WILDCAT	Field	WILDCAT
County	TREGO	County	TREGO
State	KANSAS	State	KANSAS
Location:	API # : 15-195-23104-0000 2438' FNL & 202' FWL	Other Services DIL	
Permanent Datum	SEC 32 TWP 12S RGE 23W	Elevation	
Log Measured From	GROUND LEVEL Elevation 2417 KELLY BUSHING 5' A.G.L	K.B. 2422 D.F. 2420 G.L. 2417	
Drilling Measured From	KELLY BUSHING		
Date	6/15/20		
Run Number	ONE		
Depth Driller	4460		
Depth Logger	4458		
Bottom Logged Interval	4434		
Top Log Interval	3500		
Casing Driller	8 5/8" @ 208'		
Casing Logger	208'		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4900 PPM	
Density / Viscosity	9.3/53		
pH / Fluid Loss	11.0/6.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.20 @ 74F		
Rmf @ Meas. Temp	0.90 @ 74F		
Rmc @ Meas. Temp	1.08 @ 74F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	0.74 @ 120F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	120F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPELLUCCI		
Witnessed By	PAT DEENIHAN		

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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

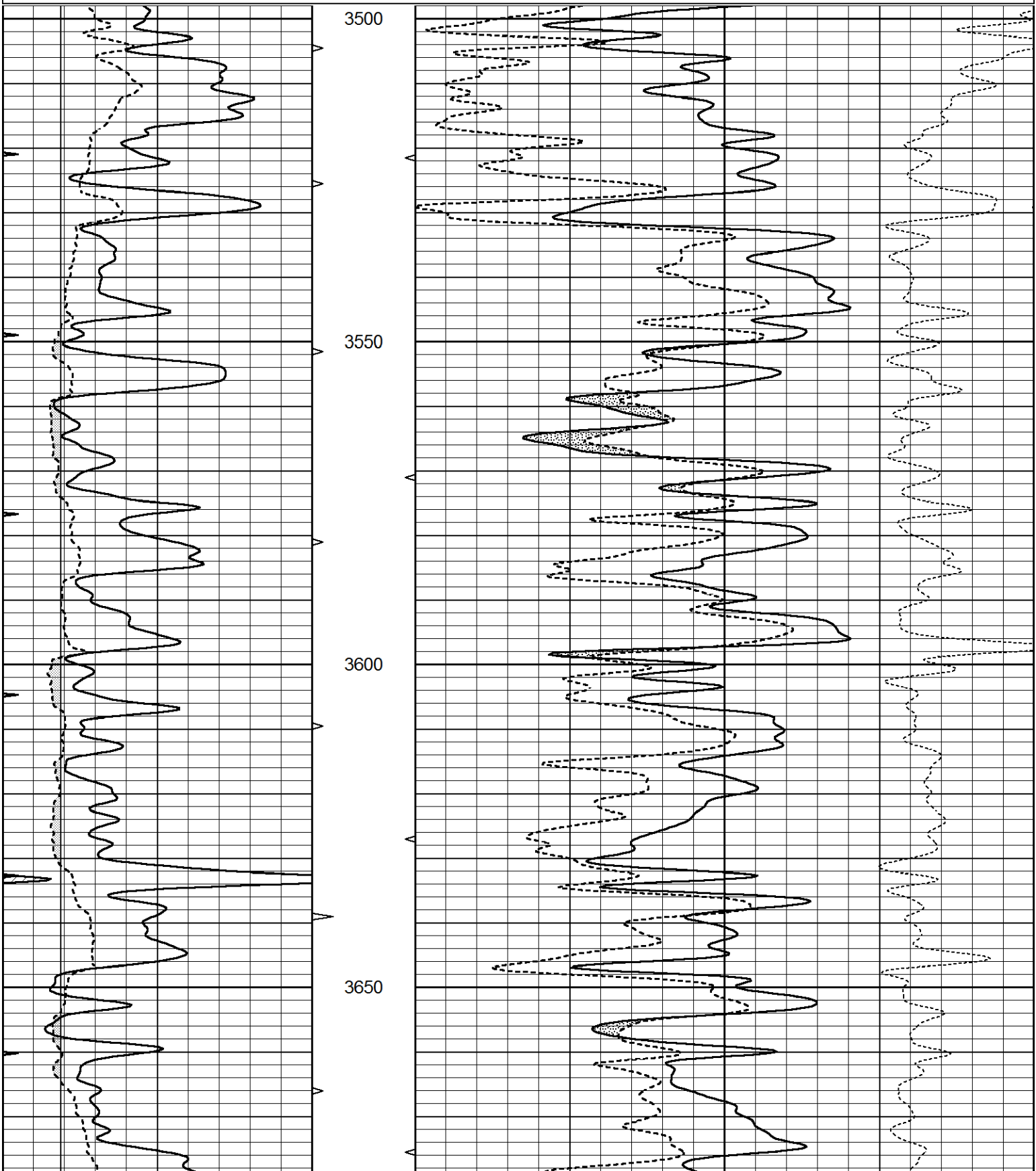
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
WAKEENEY, KS. - 4 SOUTH TO LANDFILL RD. - 1 WEST - 1/4 NORTH - EAST INTO

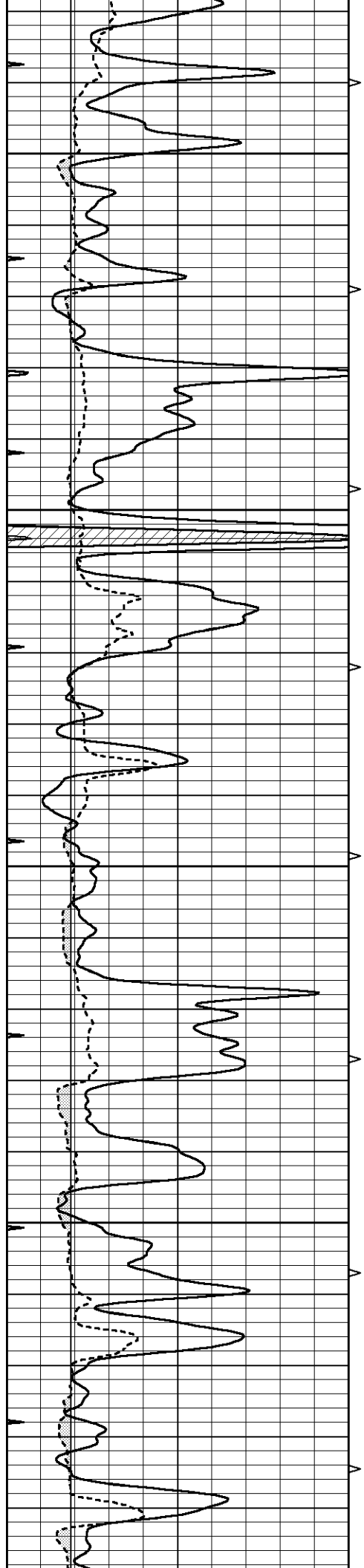


MAIN SECTION

Database File	4739ddn.db
Dataset Pathname	pass3.1
Presentation Format	_den_neu
Dataset Creation	Mon Jun 15 22:50:10 2020
Charted by	Depth in Feet scaled 1:240

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



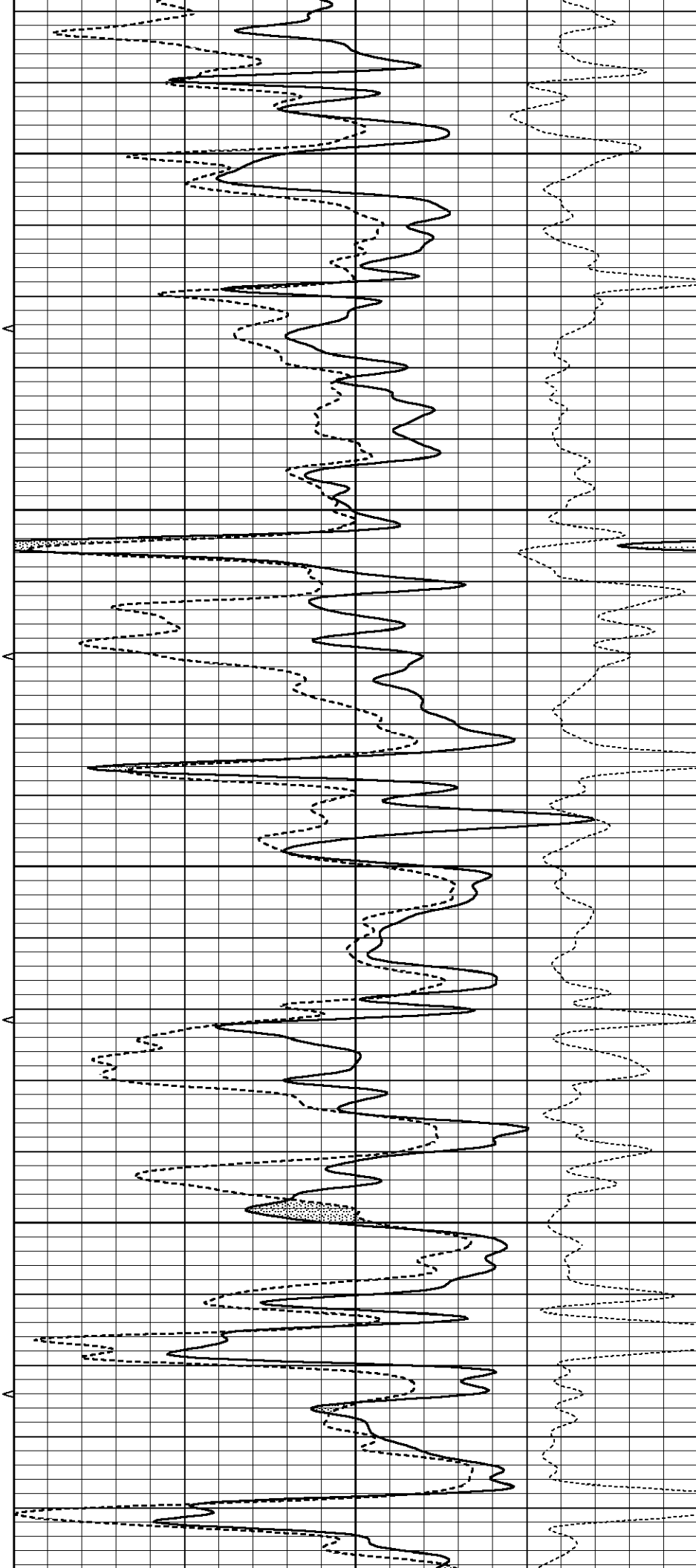


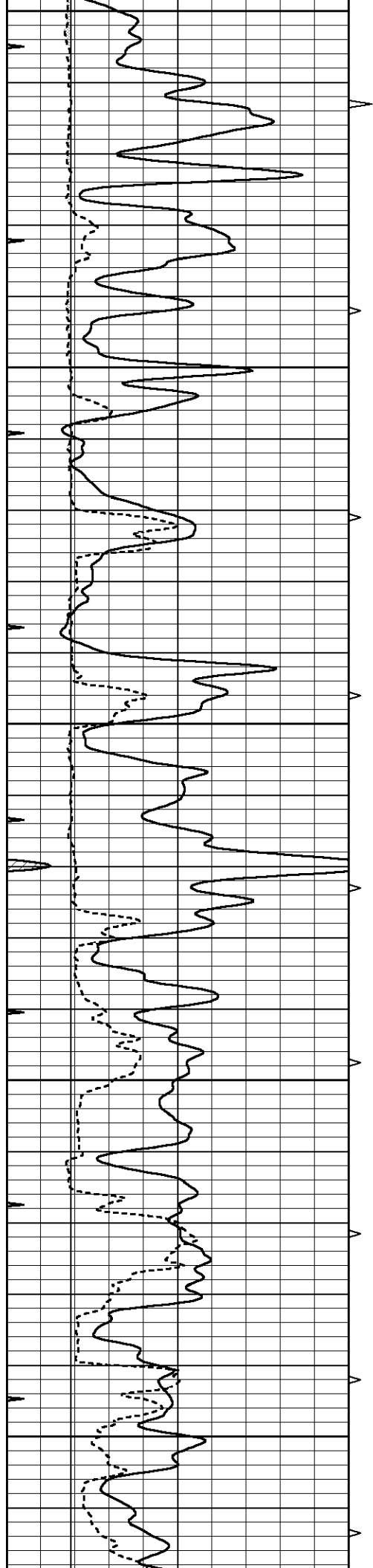
3700

3750

3800

3850





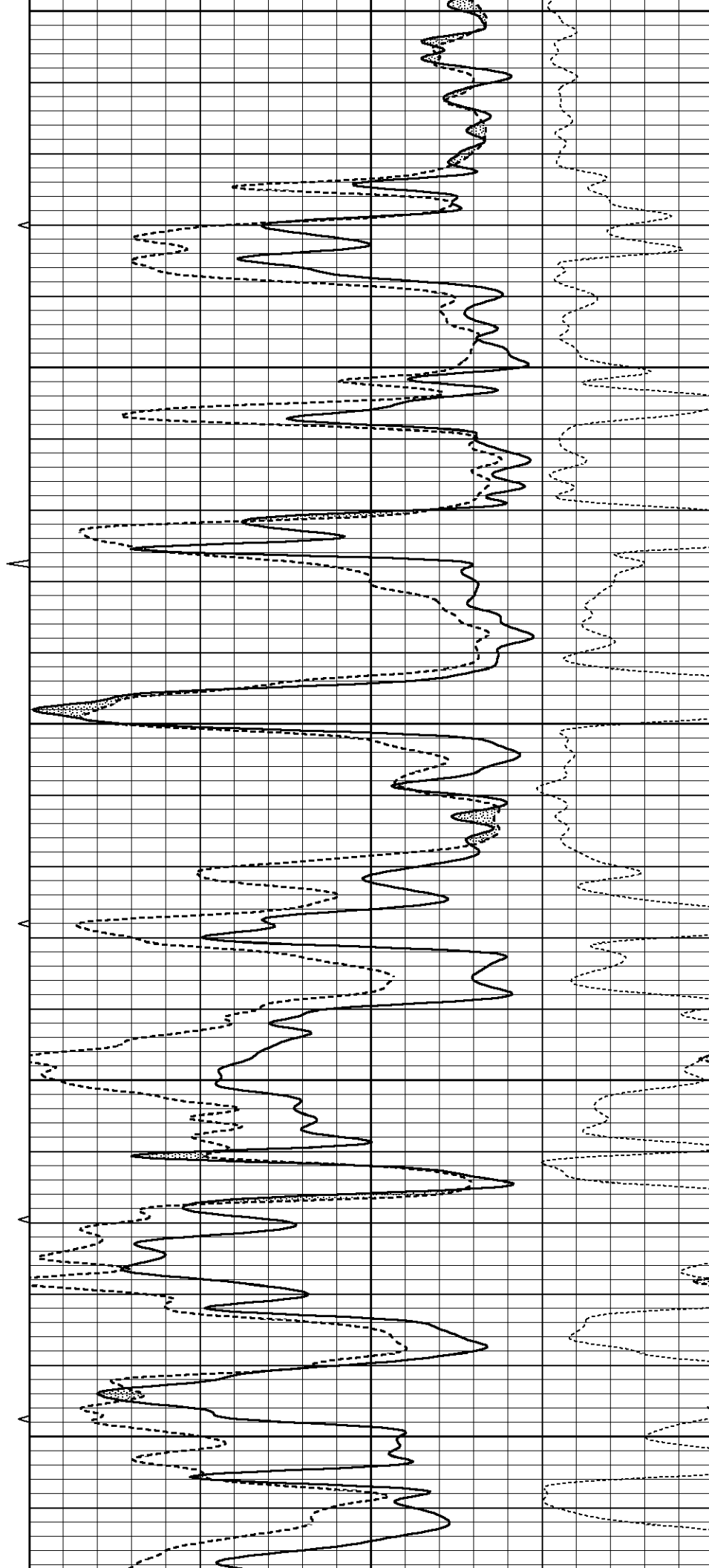
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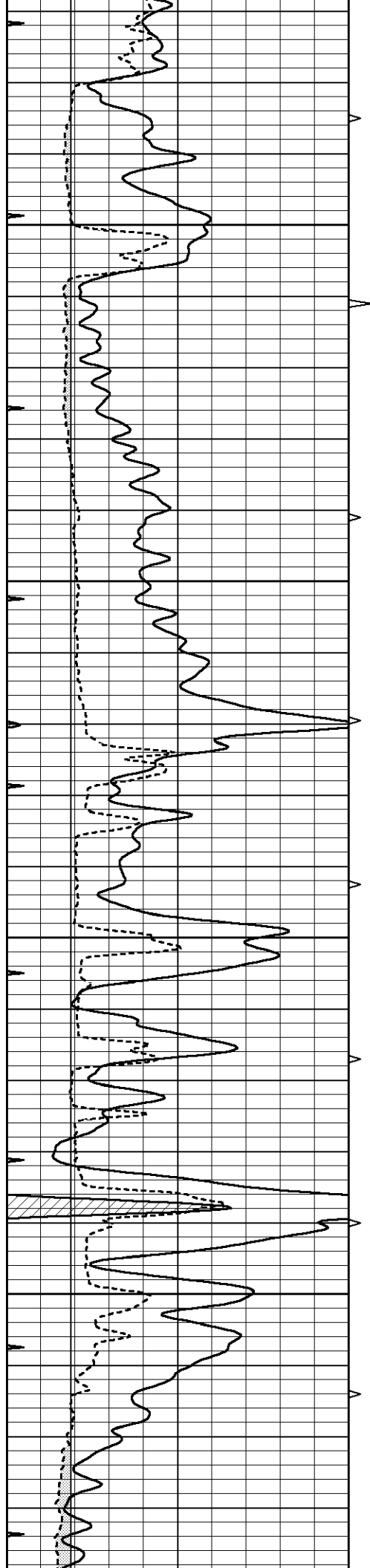
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4000

4050

4100



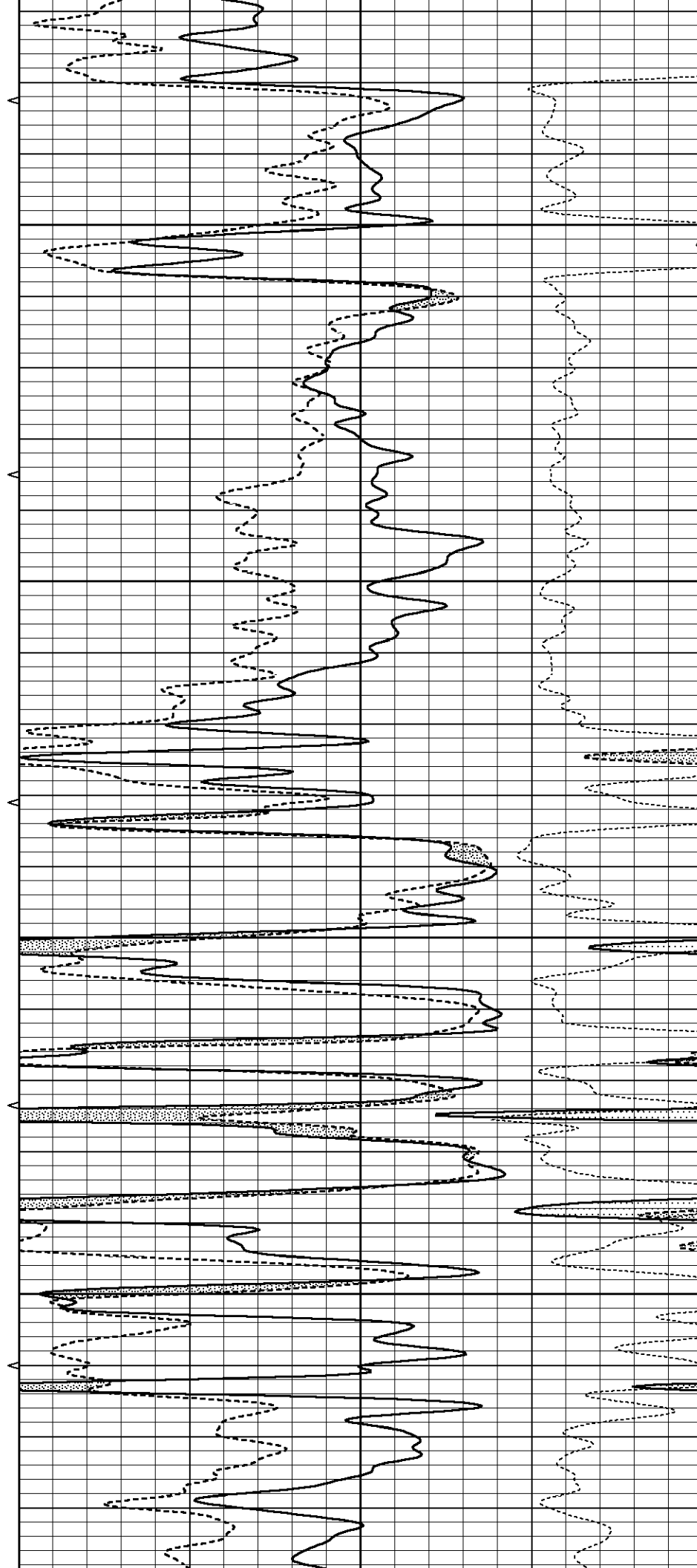


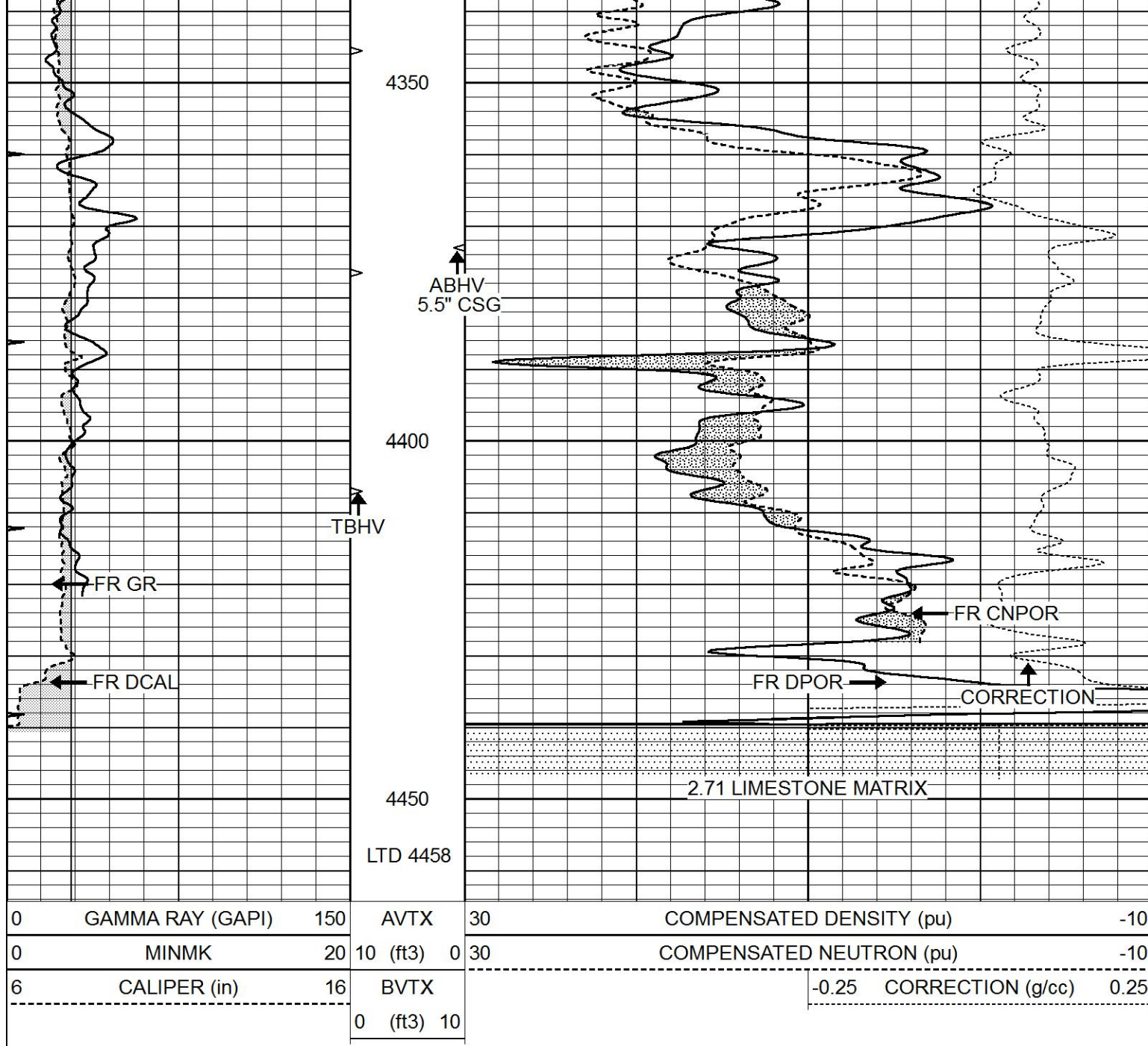
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4200

4250

4300

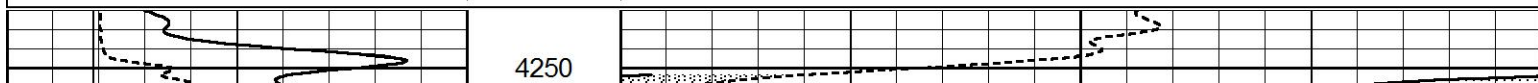


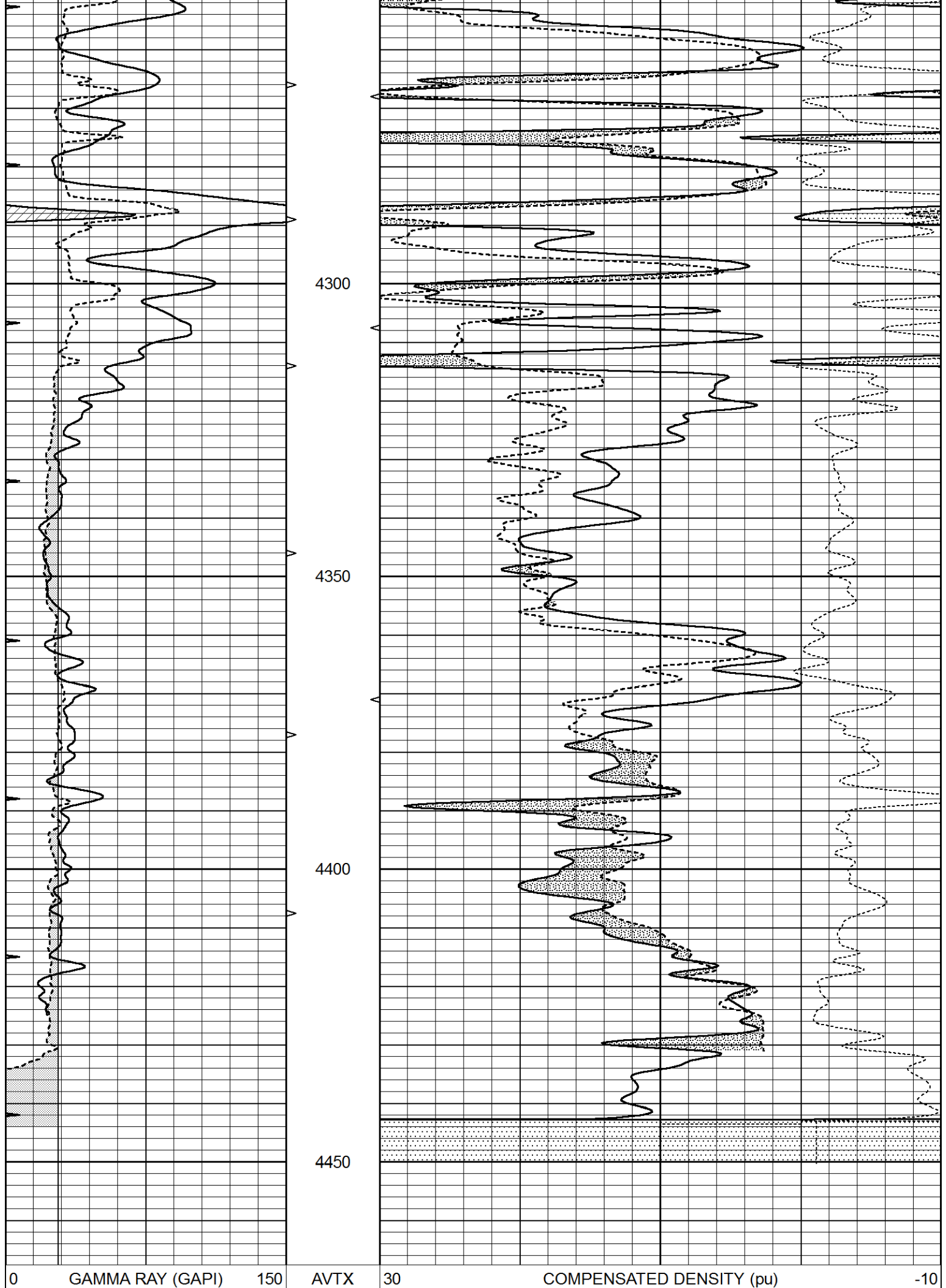


REPEAT SECTION

Database File 4739ddn.db
 Dataset Pathname pass2.1
 Presentation Format _den_neu
 Dataset Creation Mon Jun 15 22:48:28 2020
 Charted by Depth in Feet scaled 1:240

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





0	MINMK	20	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
6	CALIPER (in)	16	BVTX				-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

Calibration Report									
Database File	4739ddn.db								
Dataset Pathname	pass2.1								
Dataset Creation	Mon Jun 15 22:48:28 2020								

Dual Induction Calibration Report									
Serial-Model:					FW1410-56-Probe				
Surface Cal Performed:					Tue Jul 25 12:15:33 2017				
Downhole Cal Performed:					Tue Jul 25 12:15:37 2017				
After Survey Verification Performed:					Tue Jul 25 12:15:38 2017				

Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.008	0.765	V	1.000	400.000	mmho/m	400.061	-3.201	
Medium	-0.056	0.761	V	1.000	464.000	mmho/m	425.187	32.510	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.005	0.624	V	0.000	400.000	mmho/m	645.611	-3.034	
Medium	0.012	0.721	V	0.000	464.000	mmho/m	653.591	-7.532	

Downhole Calibration									
Readings				References			Results		
	Zero	Cal		Zero	Cal		m'	b'	
Deep	-0.647	301.329	mmho/m	-0.780	336.378	mmho/m	1.117	-0.058	
Medium	38.256	411.013	mmho/m	39.046	441.706	mmho/m	1.080	-2.280	
LL3		7.471	V		2500.000	Ohm-m			
		0.001	V		20.000	Ohm-m			
		-7.085	V		5000.000	mmho-m			

After Survey Verification									
Readings				Targets			Results		
	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	-0.647	301.329	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	38.256	411.013	mmho/m	1.000	0.000	
LL3		0.000	Ohm-m		1500.000	Ohm-m			
		0.000	Ohm-m		20.000	Ohm-m			
		0.000	mmho-m		3745.000	mmho-m			

Litho Density Calibration Report									
Serial: 140703									
Model: V4_10P									
Source Number: 74GBq-19									

Master Calibration					Performed: Thu May 21 10:43:15 2020				
	Background		Aluminum		Magnesium				
Window 1	531.08		5459.71		23833.72	cps			
Window 2	42.08		1230.06		5814.64	cps			
Window 4	232.81		1236.34		5296.40	cps			
Window 5	564.62		8687.43		16546.07	cps			

Window 6	44.20	1453.03	2846.27	cps	
Window 8	270.67	2786.28	5209.33	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	
LS Alpha:	: -1.8459	SS Alpha:	: -0.7701	LS CPE:	: 1.1427
LS Beta:	: 125609.8082	SS Beta:	: 19396.7594	SS CPE:	: 1.5007

Before Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969		
Window 1	0.00	cps			
Window 2	0.00	cps			
Window 4	0.00	cps			
Window 5	0.00	cps			
Window 6	0.00	cps			
Window 8	0.00	cps			

After Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969		
Window 1	0.00	cps			
Window 2	0.00	cps			
Window 4	0.00	cps			
Window 5	0.00	cps			
Window 6	0.00	cps			
Window 8	0.00	cps			

Lithodensity Caliper Calibration			Performed: Thu May 21 10:43:15 2020		
Results	Readings	References (in)			
Low	High	Low	High	Gain	Offset
4564.4	7712.2	8.0	14.0	0.0	-1.1

Before Survey Caliper Verification			Performed:		
	Reference	Reading			
	_____	_____			
Caliper (in)					

After Survey Caliper Verification			Performed:		
	Reference	Reading			
	_____	_____			
Caliper (in)					

Compensated Neutron Calibration Report					
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Serial Number:		080621PMC			
Tool Model:		NABORS			

PRE-SURVEY VERIFICATION					
Detector		Readings	Measured	Target	
Short Space		cps			
Long Space		cps	pu	pu	

POST-SURVEY VERIFICATION					
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Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	7		
Tool Model:	Probe1		
Performed:	Tue Dec 10 10:02:55 2019		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.4800	GAPI/cps	