



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company	IA OPERATING, INC.		
Well	THOMPSON UNIT #1-19		
Field	FAIRPORT		
County	RUSSELL	State	KANSAS
Location:	APL # : 15-167-23976-0000		Other Services CDL/CNL MEL
775' FSL & 2465' FWL			
SEC 19 TWP 11S RGE 15W			
Permanent Datum	GROUND LEVEL	Elevation	1784
Log Measured From	KELLY BUSHING 8' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	6/4/14		
Run Number	ONE		
Depth Driller	3610		
Depth Logger	3610		
Bottom Logged Interval	3608		
Top Log Interval	00		
Casing Driller	8 5/8" @ 969		
Casing Logger	970		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7500 PPM	
Density / Viscosity	9.4/59		
pH / Fluid Loss	10.0/8.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.60 @ 94F		
Rmt @ Meas. Temp	.45 @ 94F		
Rmc @ Meas. Temp	.72 @ 94F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.50 @ 112F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	112F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	JEFF LAWLER		

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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:
FAIRPORT, KS. - 1/2 WEST TO THE T - 1/2 NORTH - 1 MILE EAST & NORTH INTO

Database File:

24630ddn.db

Dataset Pathname:

pass3.3

Presentation Format:

_dil2

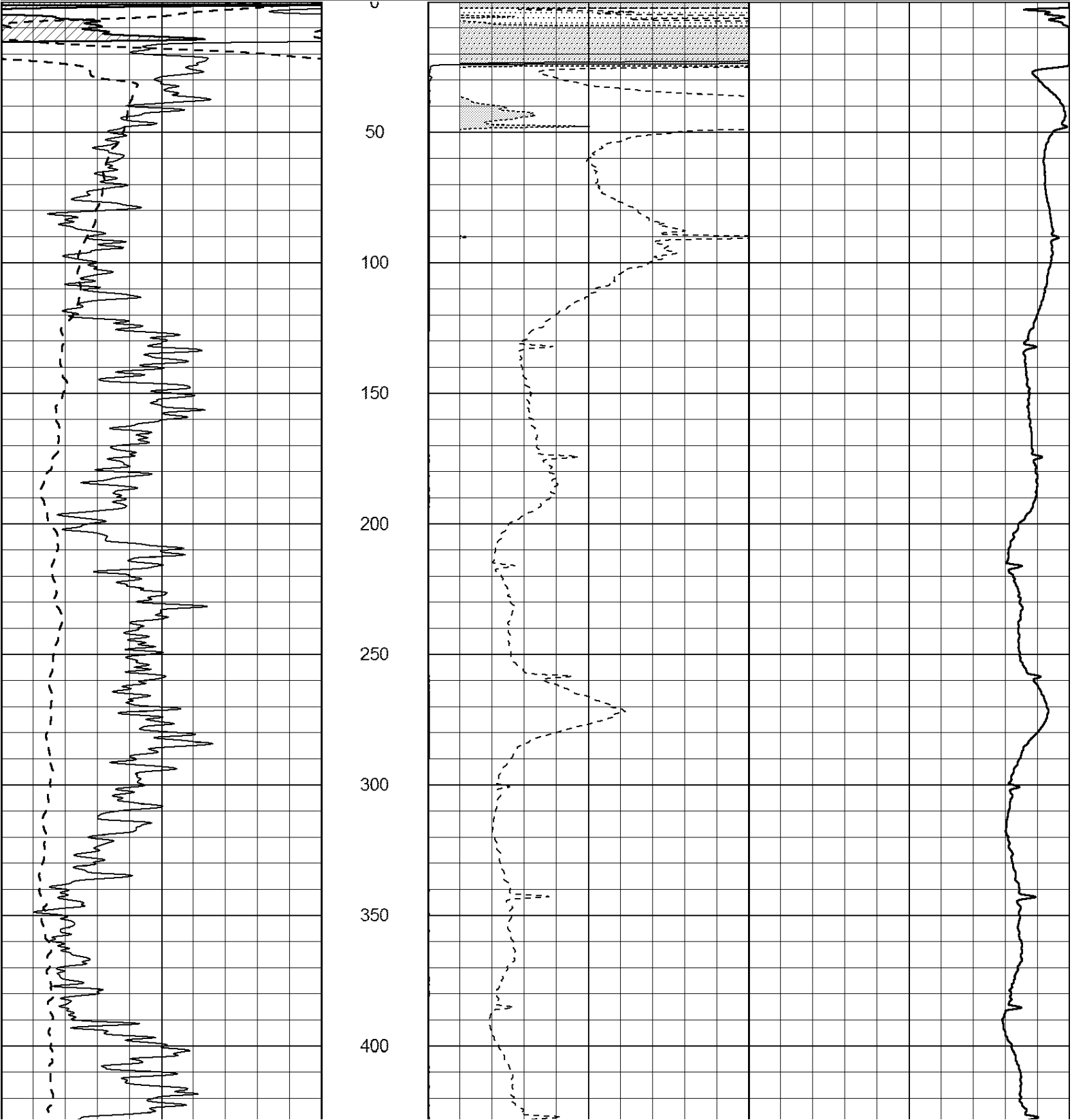
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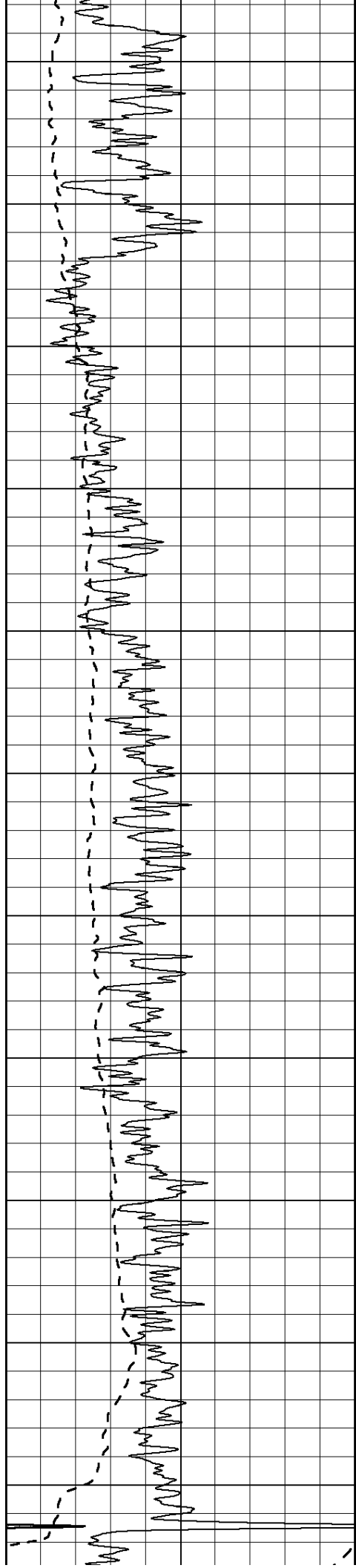
Wed Jun 04 10:26:12 2014 by Calc Open-Cased 090629

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
-----			-----			
			1000		CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	





450

500

550

600

650

700

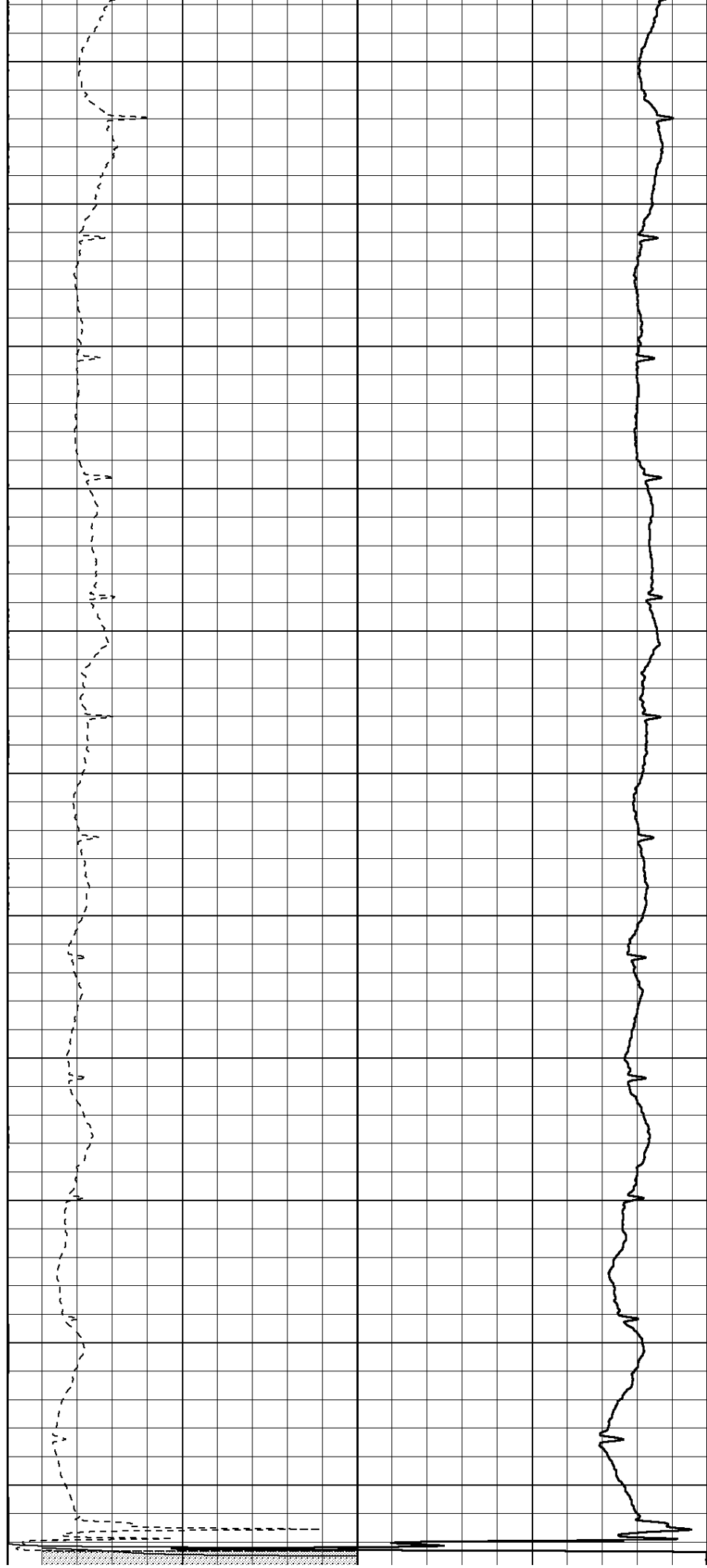
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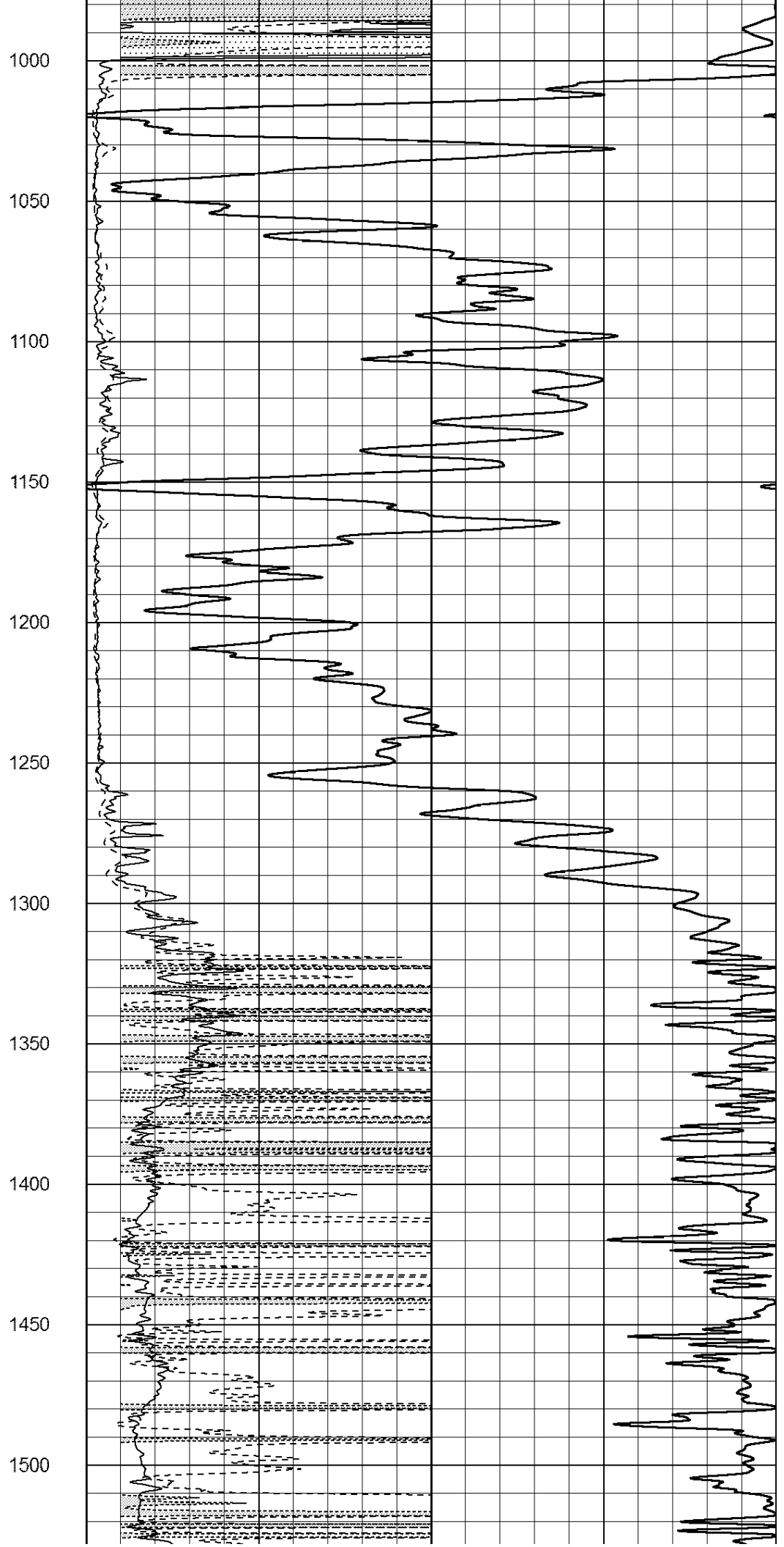
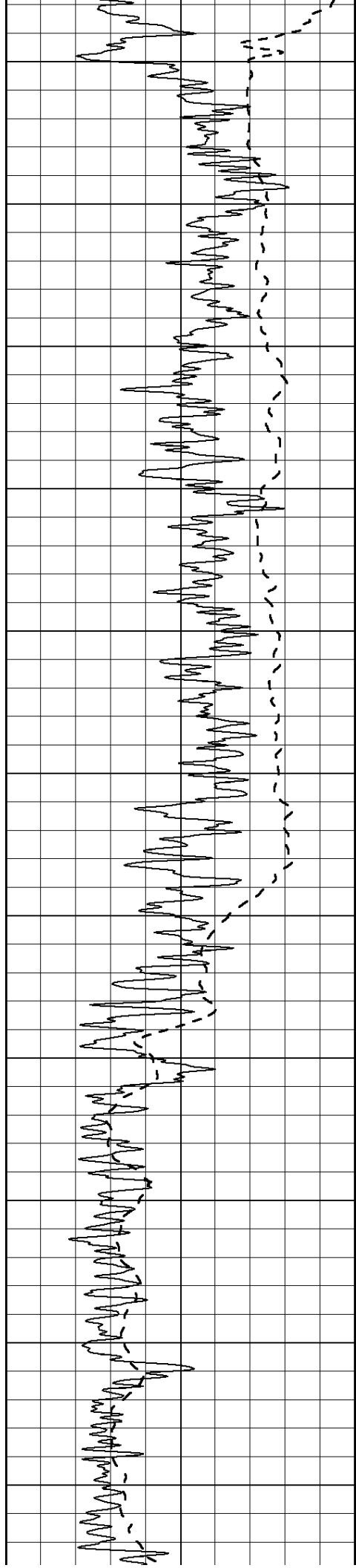
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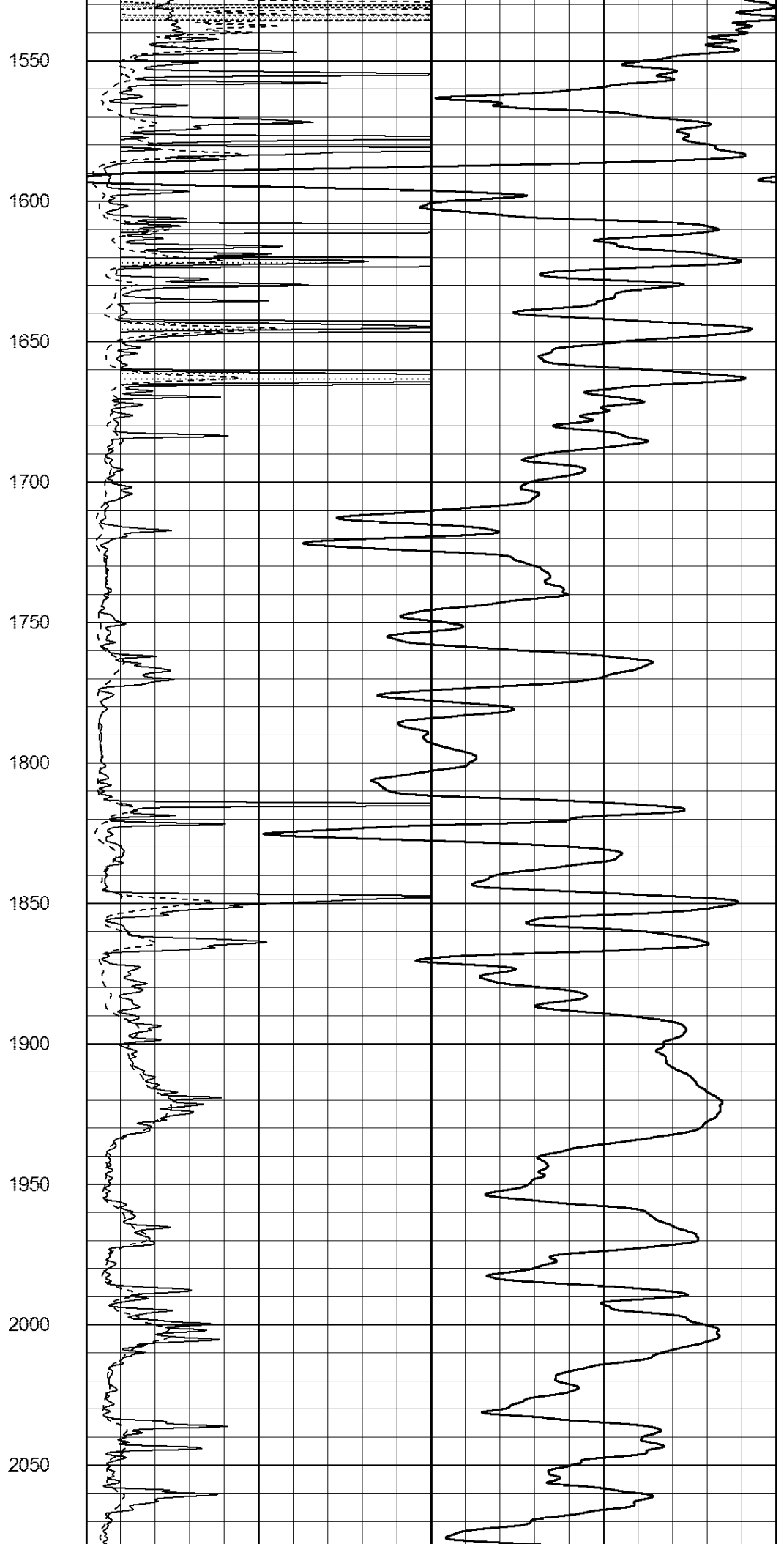
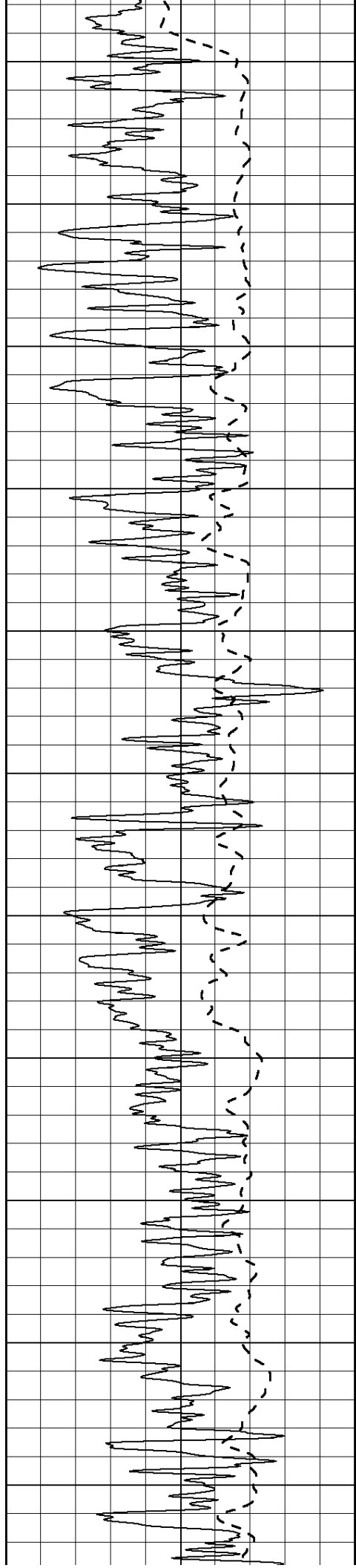
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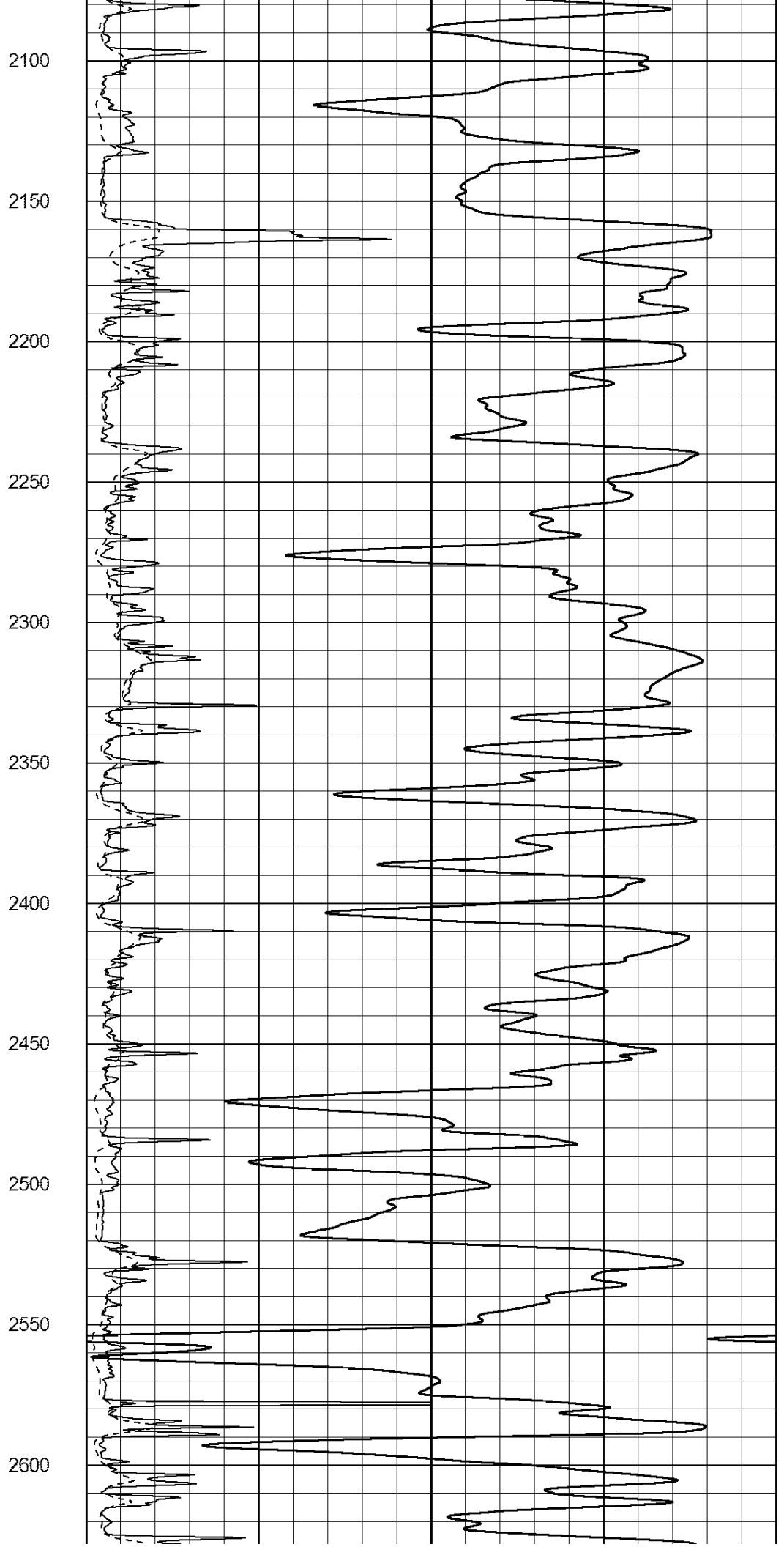
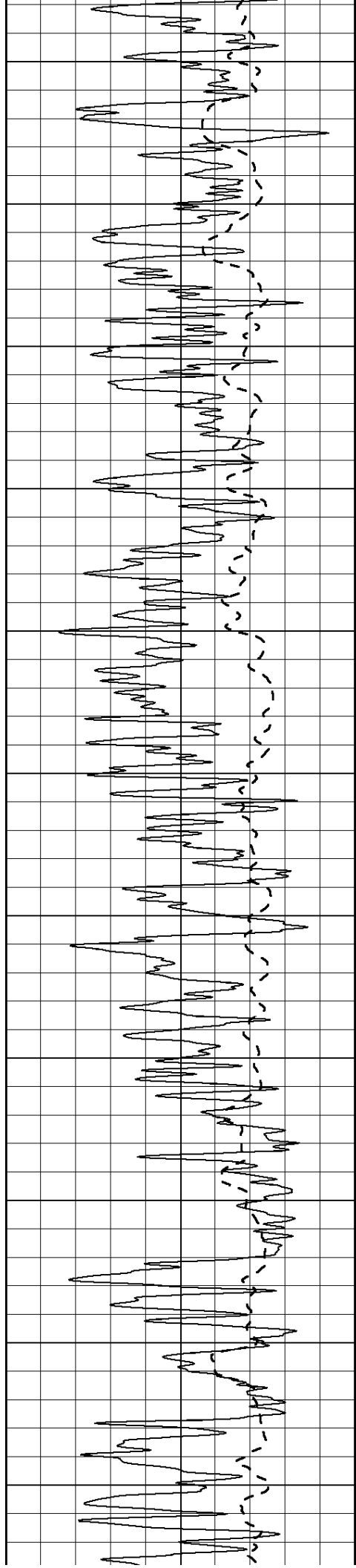
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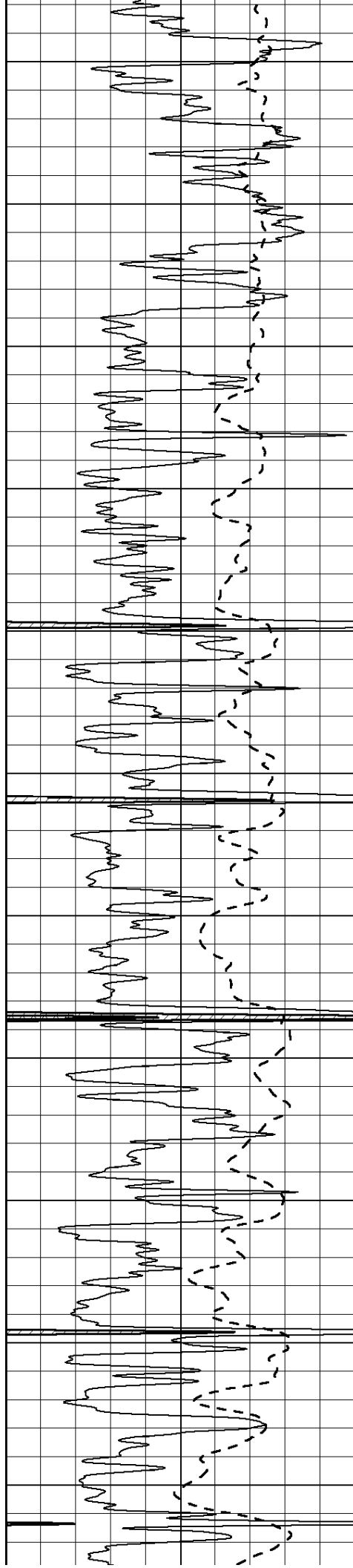
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2650

2700

2750

2800

2850

2900

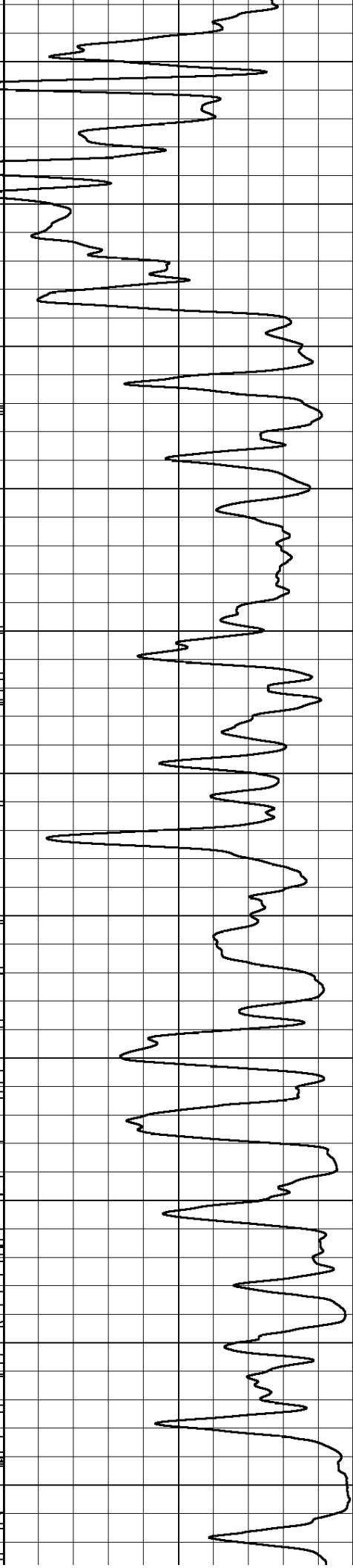
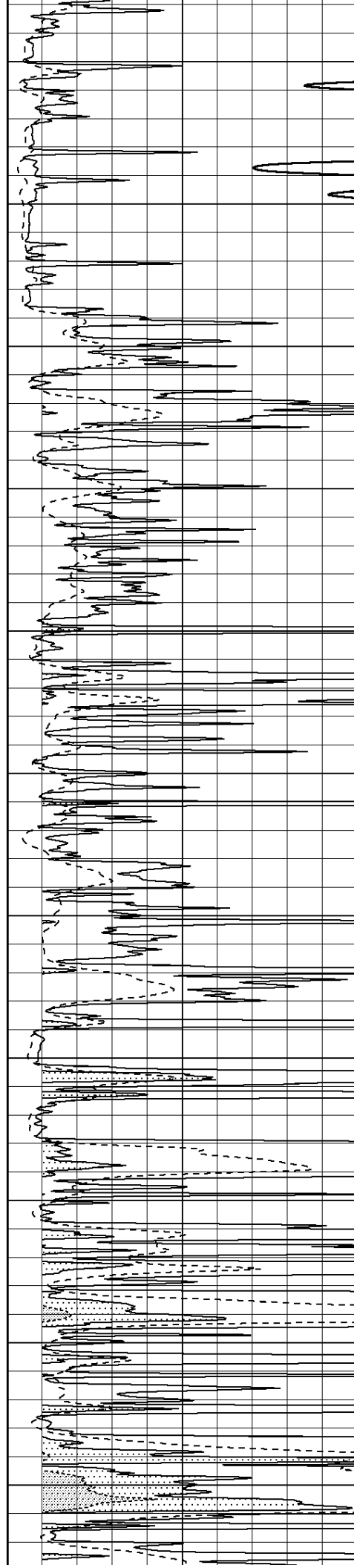
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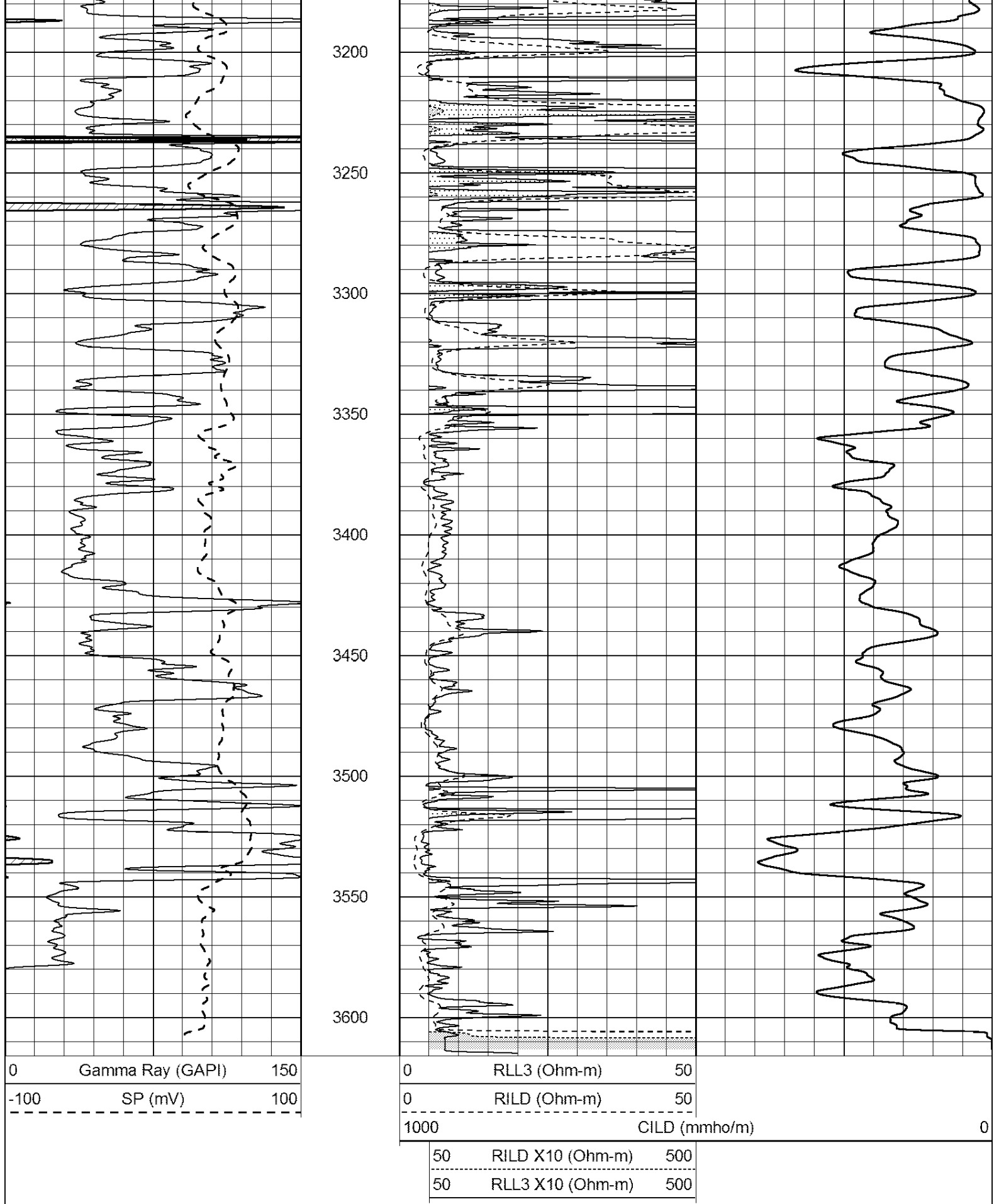
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3050

3100

3150

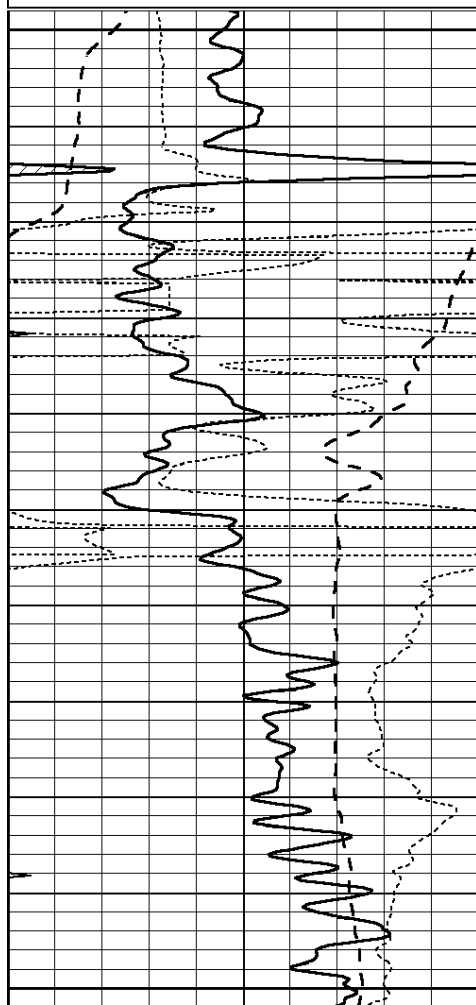




Database File: 24630ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Wed Jun 04 10:03:15 2014 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

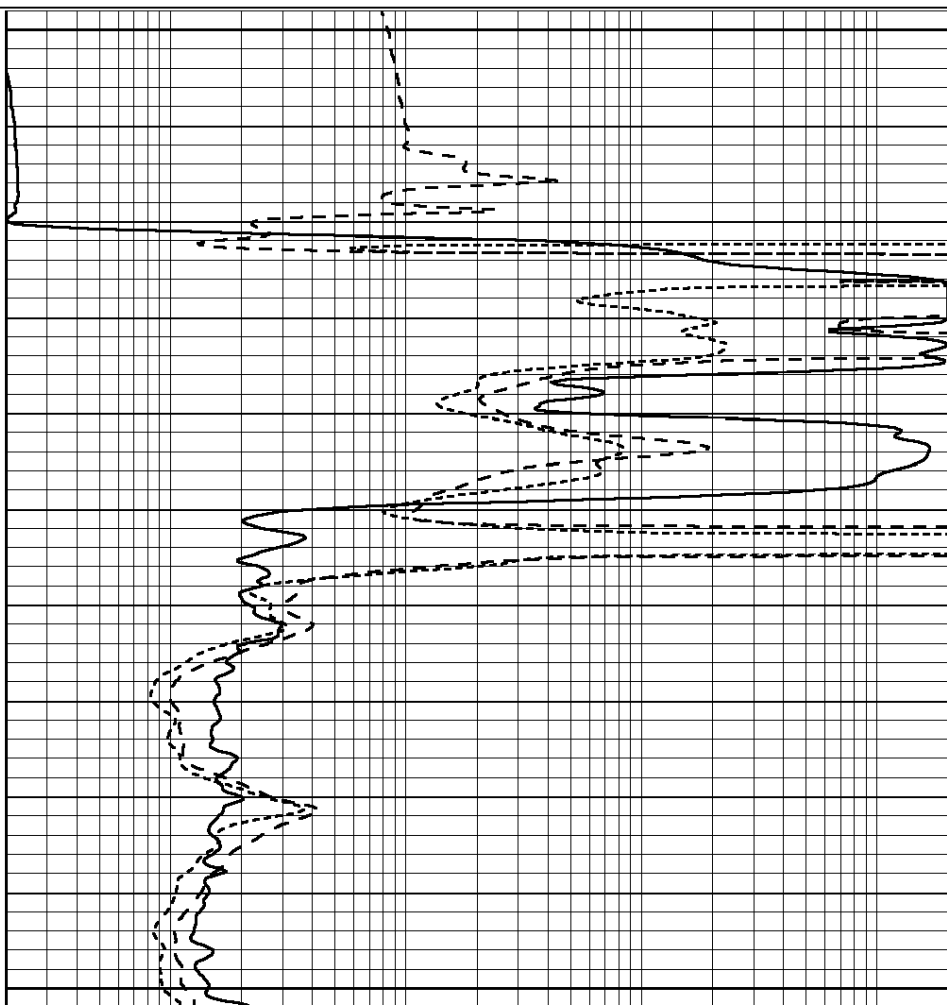


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

950

1000

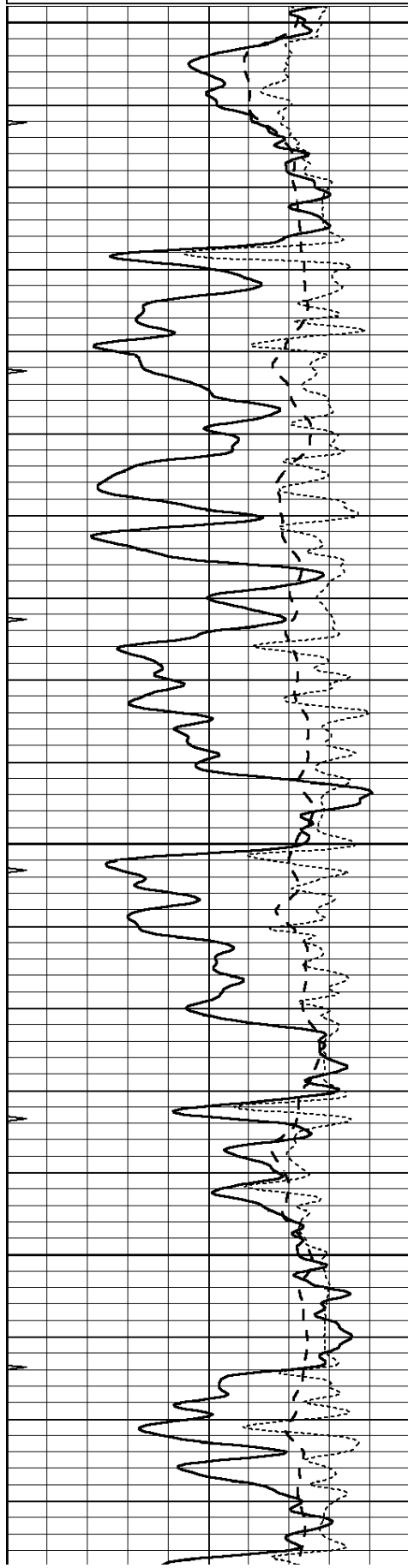
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0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

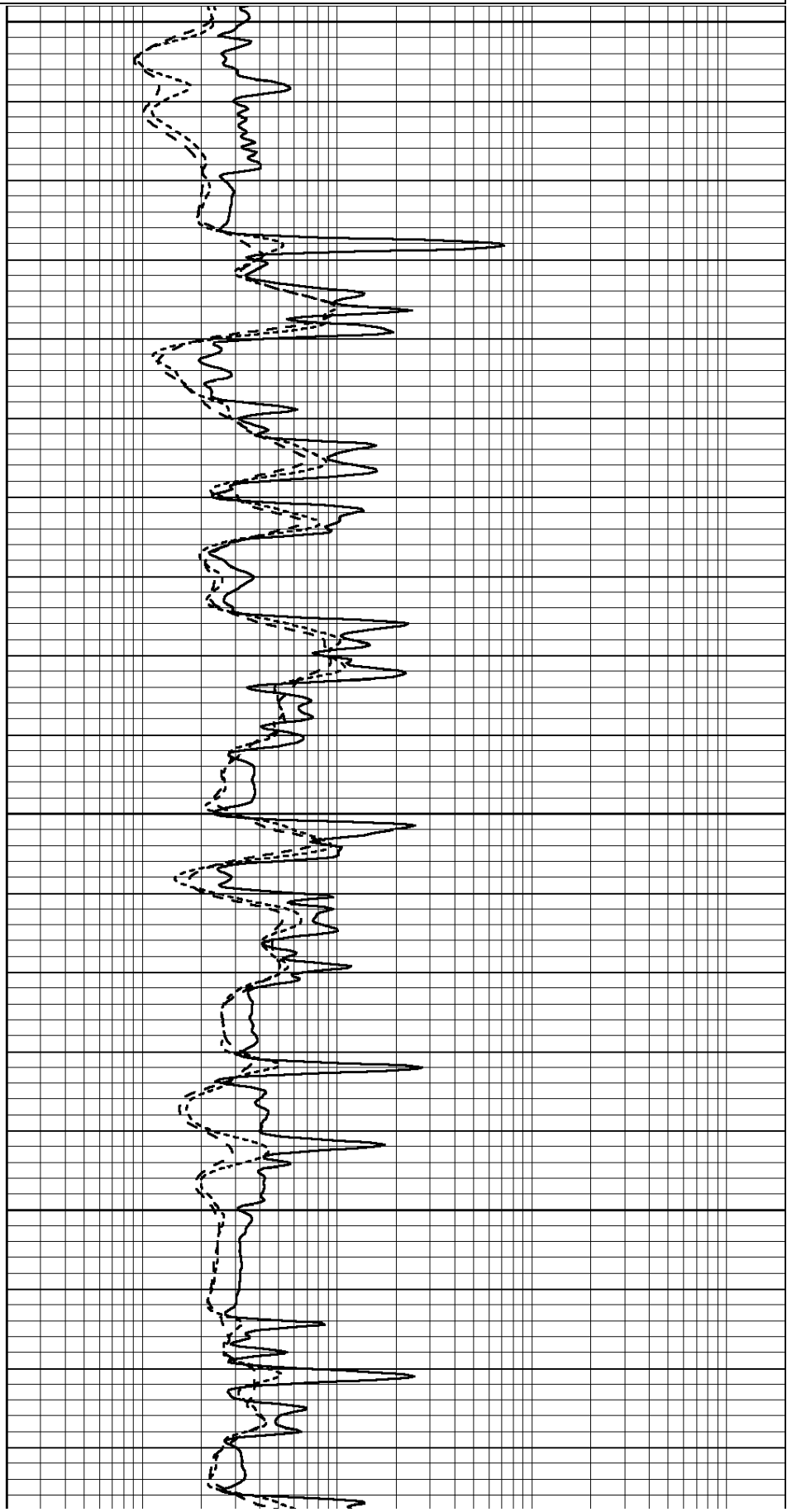


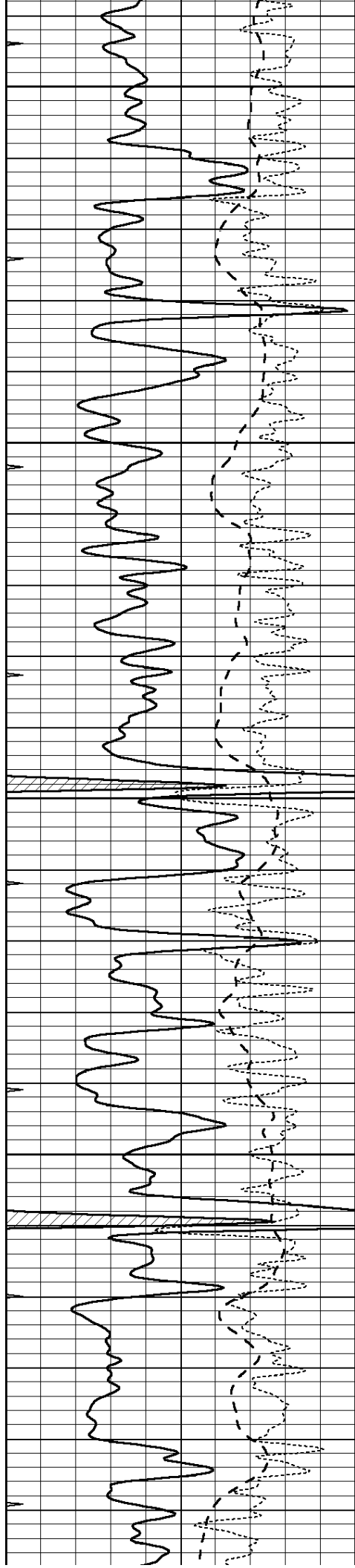
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2600

2650

2700





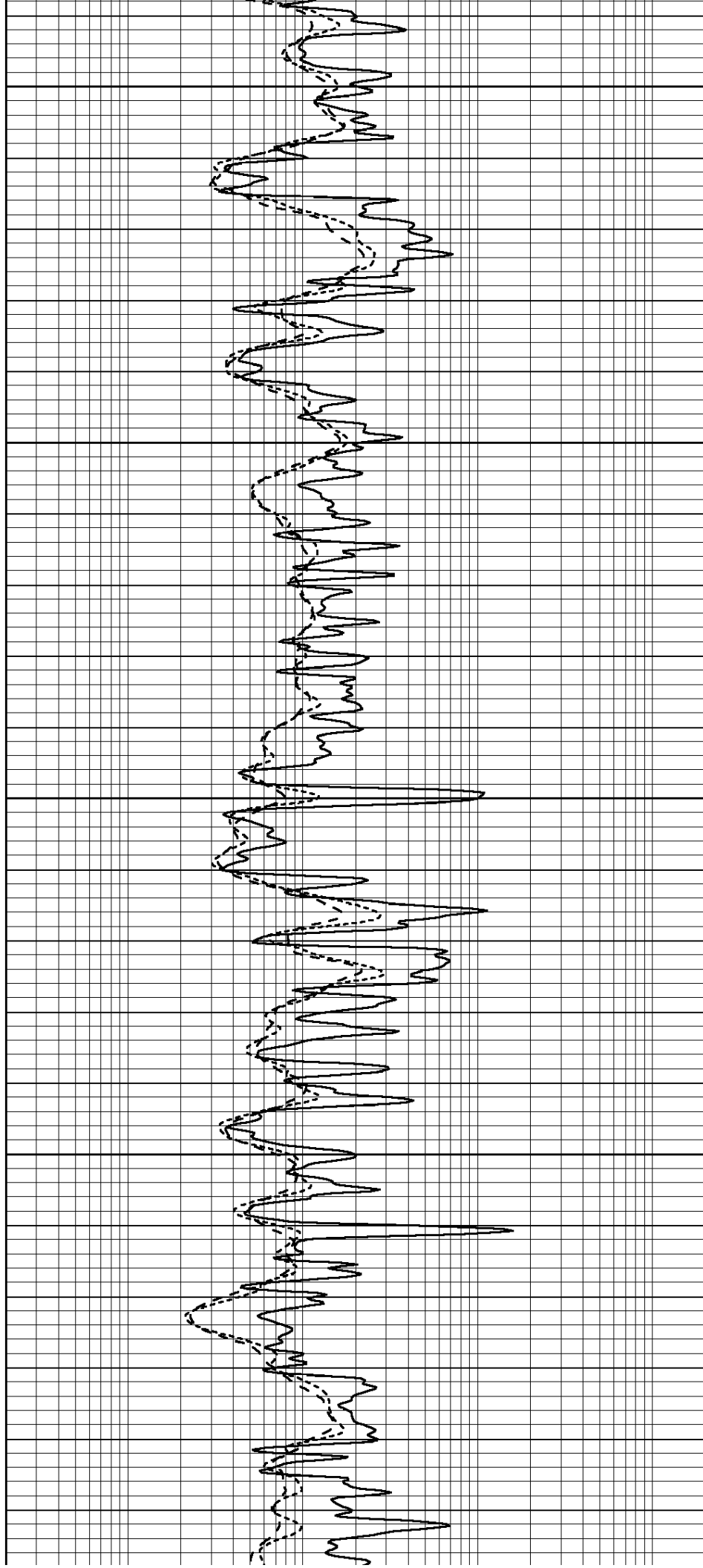
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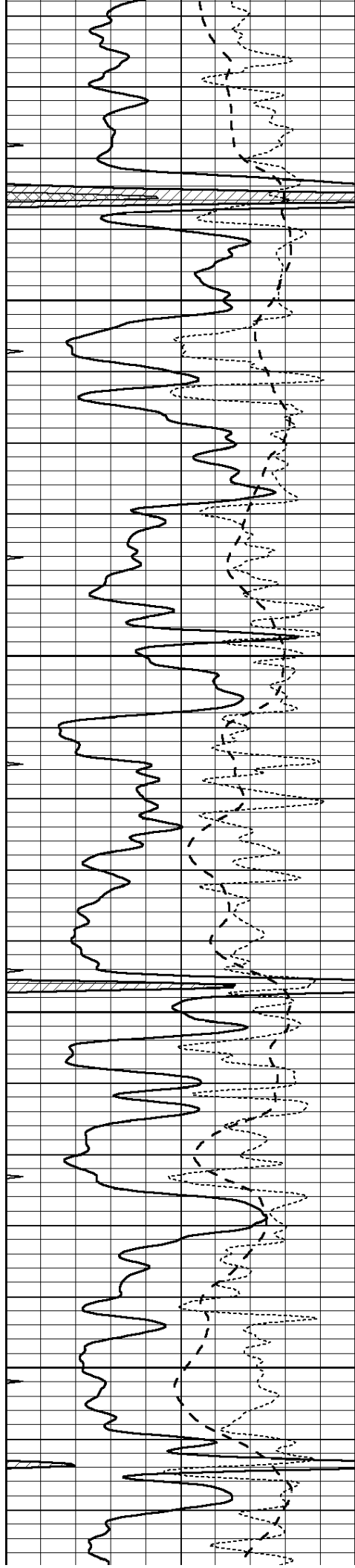
2800

2850

2900

2950



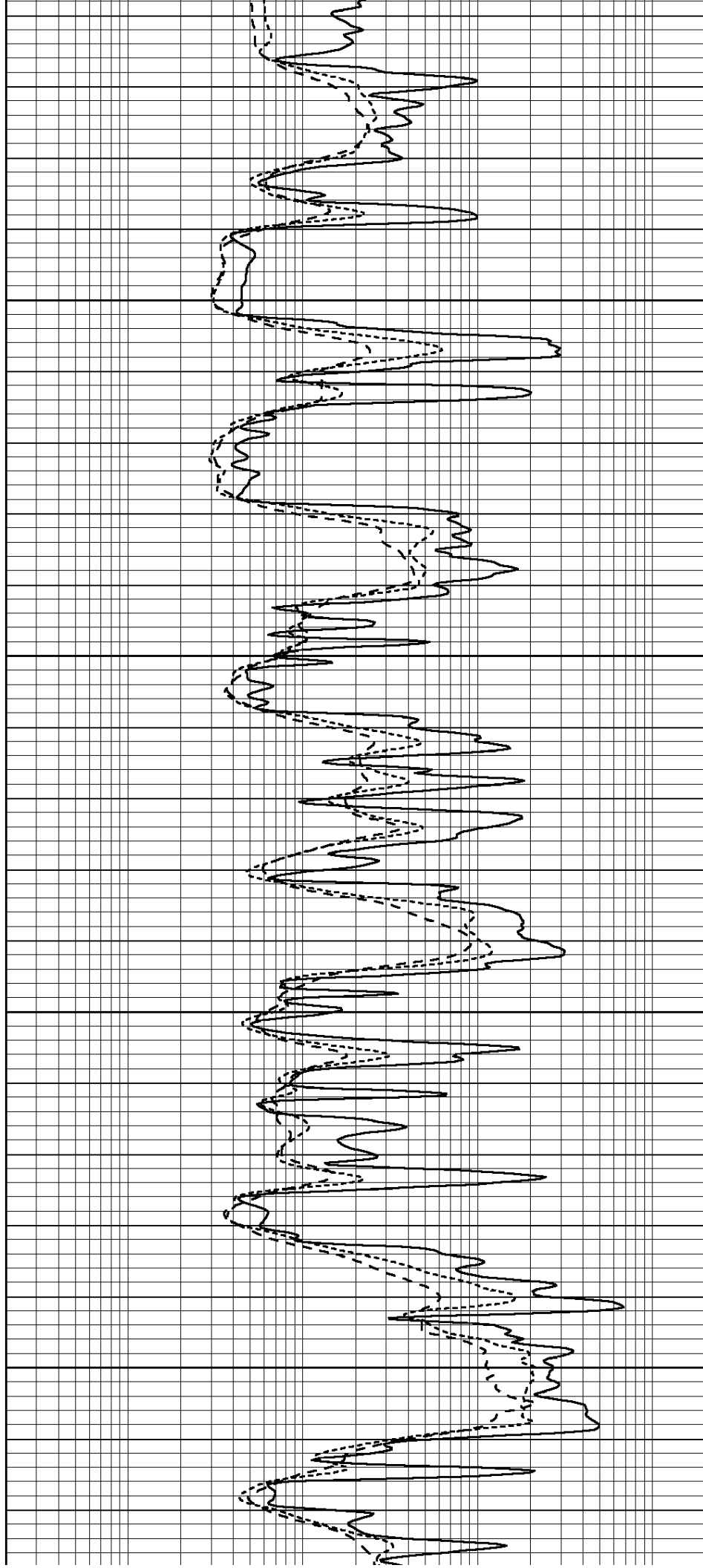


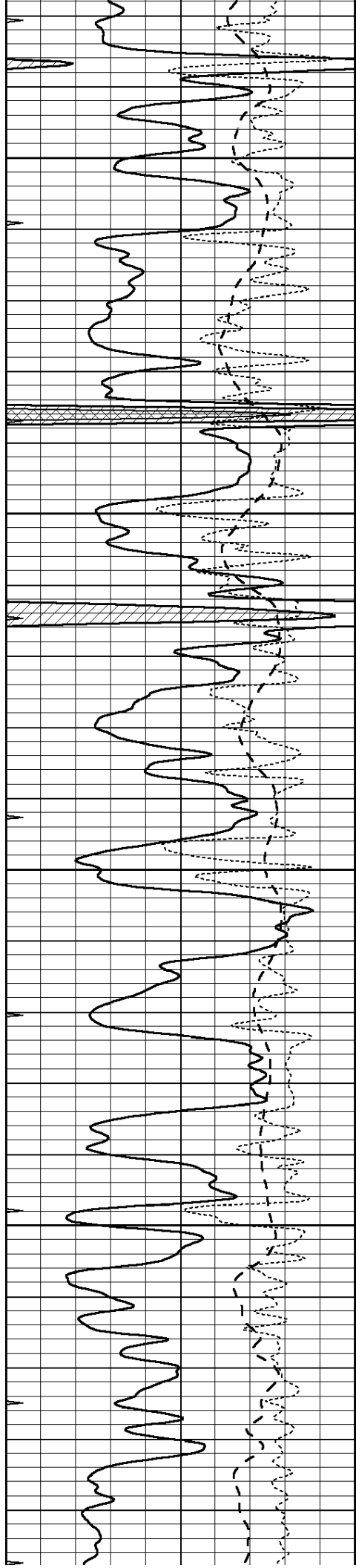
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3050

3100

3150



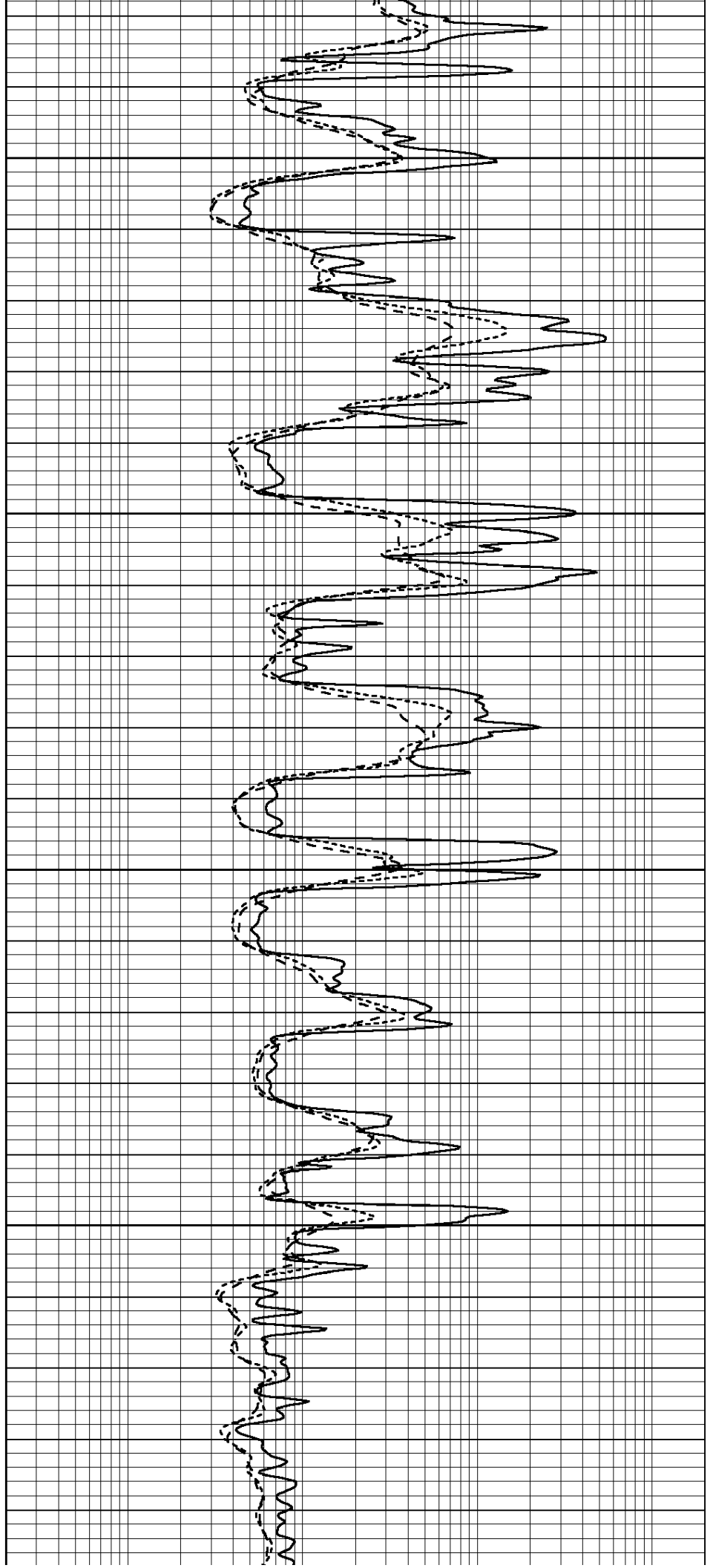


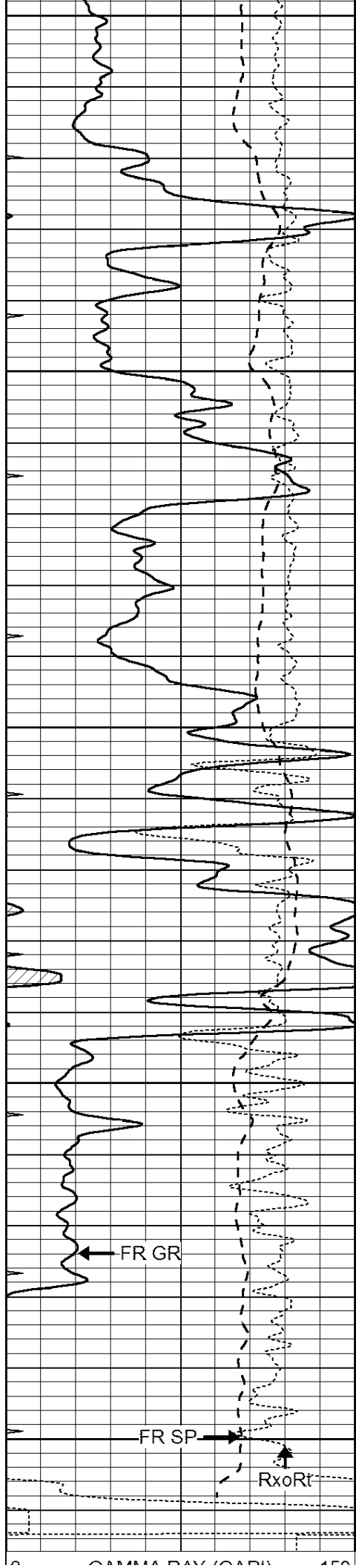
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3250

3300

3350





3400

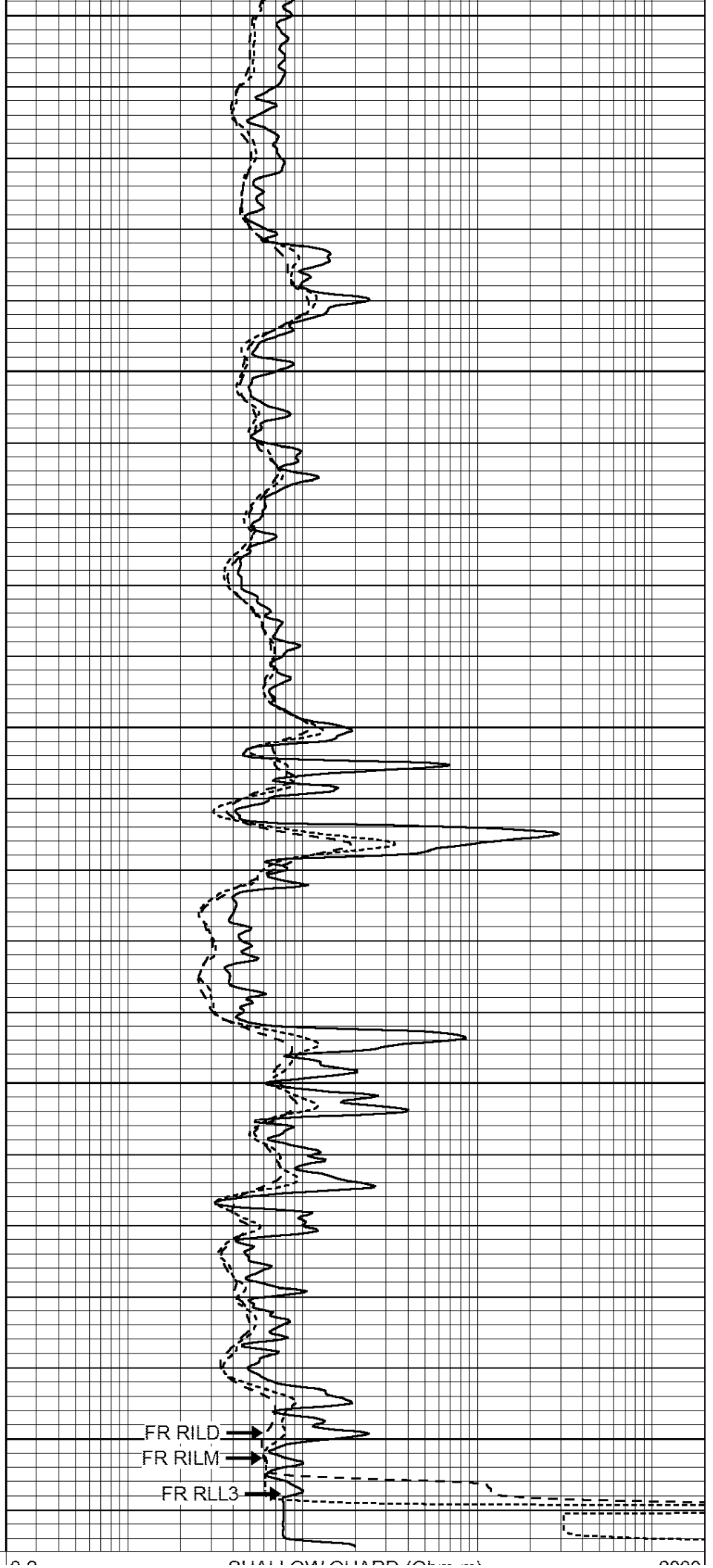
3450

3500

3550

3600

LTD 3610



3400

3450

3500

3550

3600

LTD 3610

	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

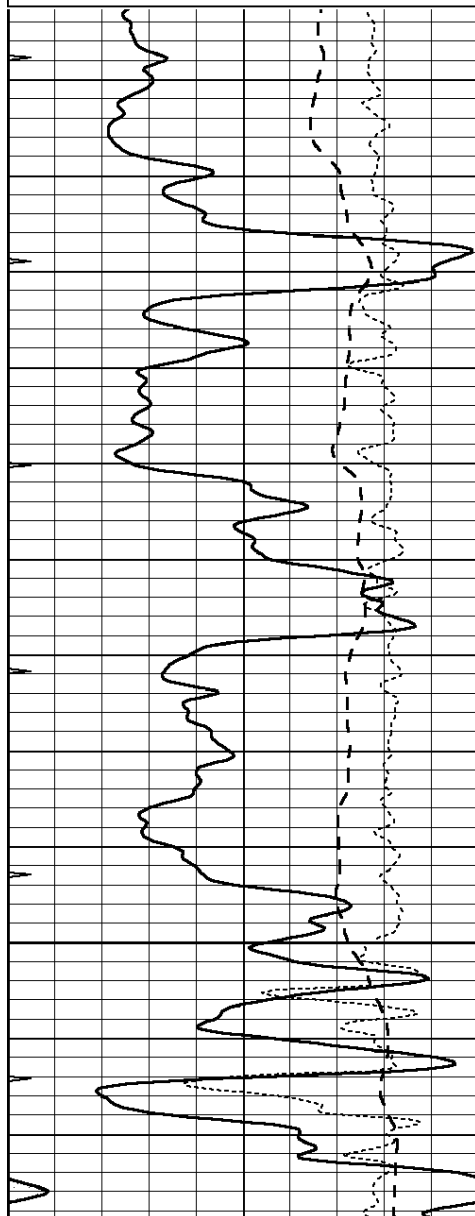


REPEAT SECTION

Database File: 24630ddn.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Wed Jun 04 09:34:33 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

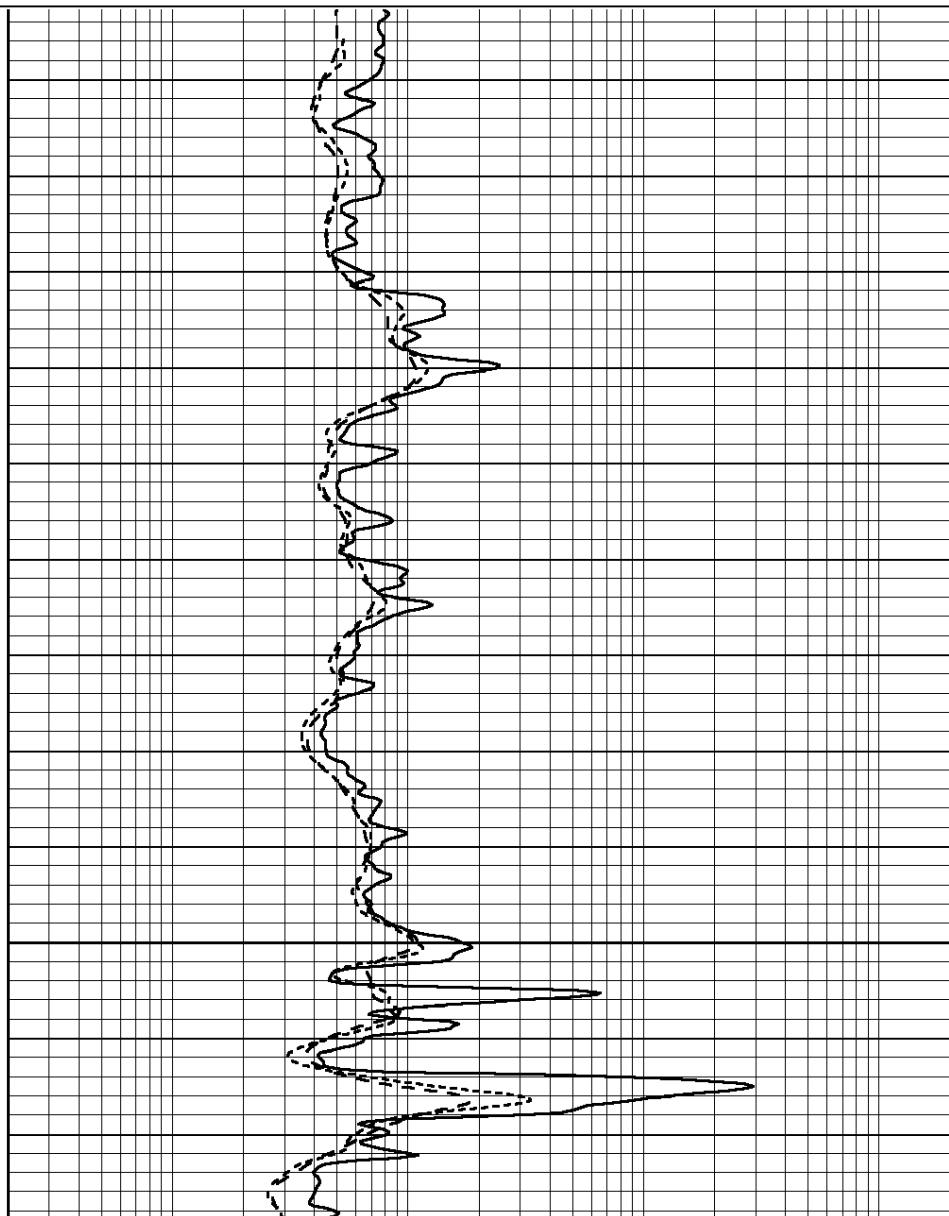
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

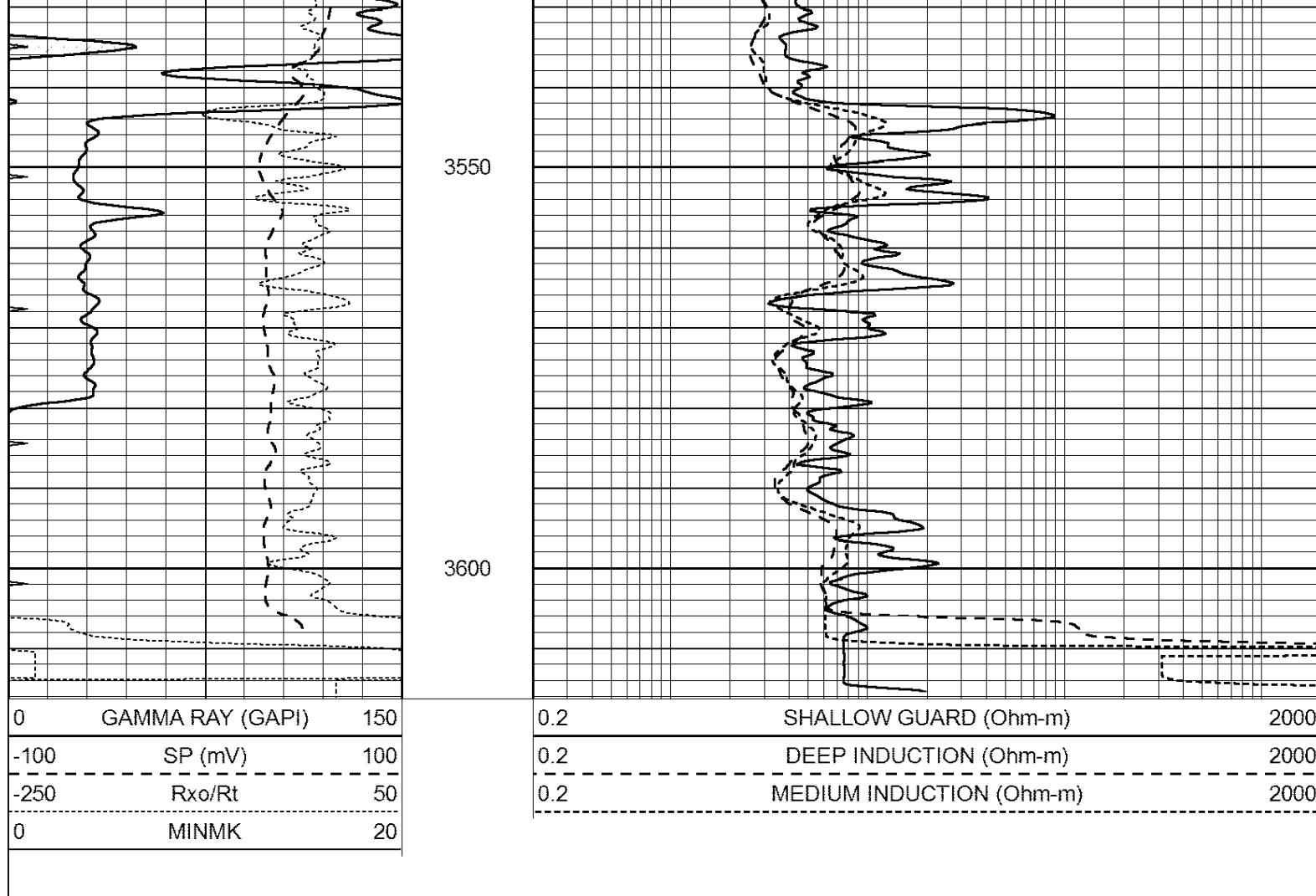
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3450

3500





Calibration Report									
Database File:	24630ddn.db								
Dataset Pathname:	pass2.1								
Dataset Creation:	Wed Jun 04 09:34:33 2014 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	0.000
Medium	0.000	0.000	mmho/m	0.000	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:			GEAR3-GEARHART			
Source / Verifier:			143 / 143			
Master Calibration Performed:			Fri Jan 04 15:48:16 2013			
Before Survey Verification Performed:						
After Survey Verification Performed:						
Master Calibration						
	Density		Far Detector		Near Detector	
Magnesium	1.710	g/cc	935.36	501.55	cps	
Aluminum	2.580	g/cc	209.32	357.01	cps	
Spine Angle = 77.21			Density/Spine Ratio = 0.567			
	Size		Reading			
Small Ring	8.00	in	4.29	V		
Large Ring	14.00	in	6.24	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				

1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	
3)	Short Space Long Space	cps cps	pu	

POST-SURVEY VERIFICATION				
	Detector	Readings	Measured	Target
1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report				
	Serial Number:	GR6		
	Tool Model:	OPEN		
	Performed:	Sat May 31 01:22:06 2014		
	Calibrator Value:	150.0	GAPI	
	Background Reading:	0.0	cps	
	Calibrator Reading:	276.0	cps	
	Sensitivity:	0.7535	GAPI/cps	