



Casedhole Solutions

DUAL INDUCTION LOG

Company L.D. DRILLING, INC.
 Well #1-15 DOWD
 Field WILDCAT
 County LANE
 State KANSAS

Company L.D. DRILLING, INC.
 Well #1-15 DOWD
 Field WILDCAT
 County LANE State KANSAS

Location: 795' FSL & 1050' FEL
 API #: 15-101-22578-0000
 Permanent Datum GROUND LEVEL Elevation 2679
 Log Measured From KELLY BUSHING 5' A.G.L.
 Drilling Measured From KELLY BUSHING
 SEC 15 TWP 18S RGE 27W
 Other Services CDL/CNL MEL
 Elevation K.B. 2684 D.F. 2682 G.L. 2679

Date	2/8/16		
Run Number	ONE		
Depth Driller	4704		
Depth Logger	4706		
Bottom Logged Interval	4704		
Top Log Interval	00		
Casing Driller	8 5/8" @ 305'		
Casing Logger	304		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3900 PPM	
Density / Viscosity	9.5/46		
pH / Fluid Loss	9.0/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80 @ 55F		
Rmt @ Meas. Temp	.60 @ 55F		
Rmc @ Meas. Temp	.96 @ 55F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.36 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	122F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	KIM SHOEMAKER		

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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 CASED HOLE SOLUTIONS, HAYS, KS. (785) 628-6395
 DIRECTIONS:
 NESS CITY, KS. - WEST TO COUNTY LINE - 2 MILES WEST TO MILE MARKER
 96 - 1/4 MORE WEST - NORTH & WEST INTO



MAIN SECTION

Database File: 30892ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: _dil2
 Dataset Creation: Tue Feb 09 01:02:37 2016 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:600

0 Gamma Ray (GAPI) 150
 -100 SP (mV) 100

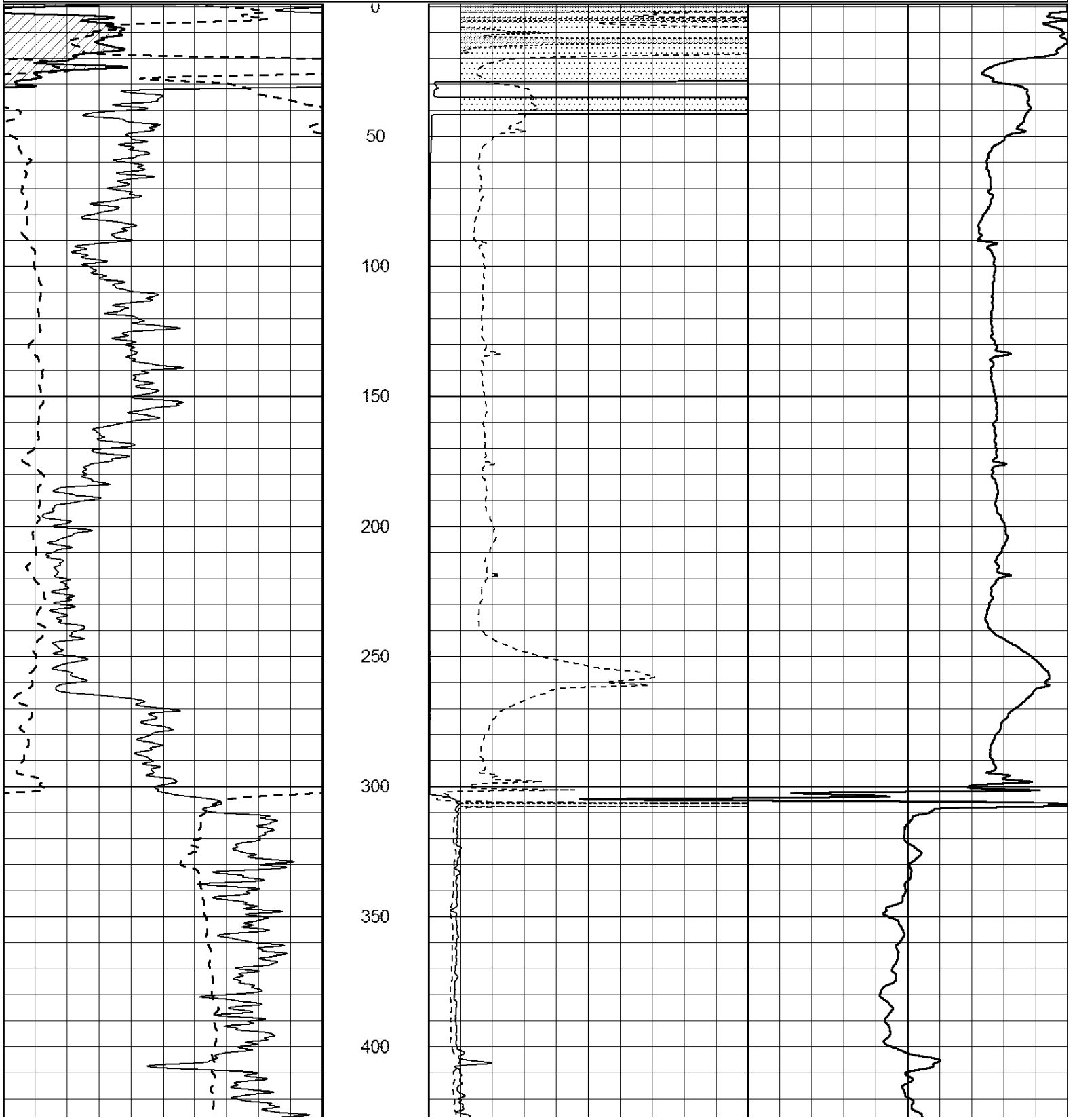
0 RLL3 (Ohm-m) 50

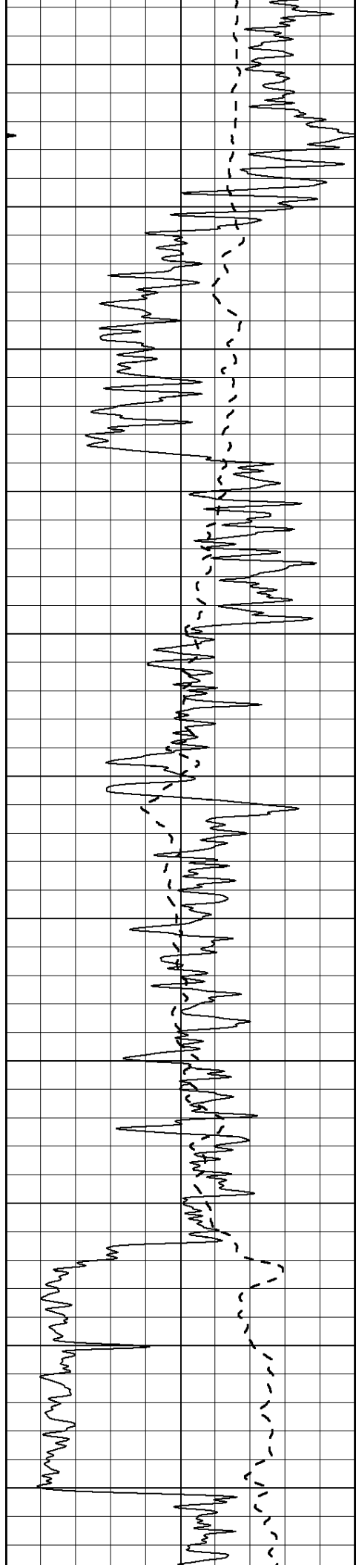
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1000 CILD (mmho/m) 0

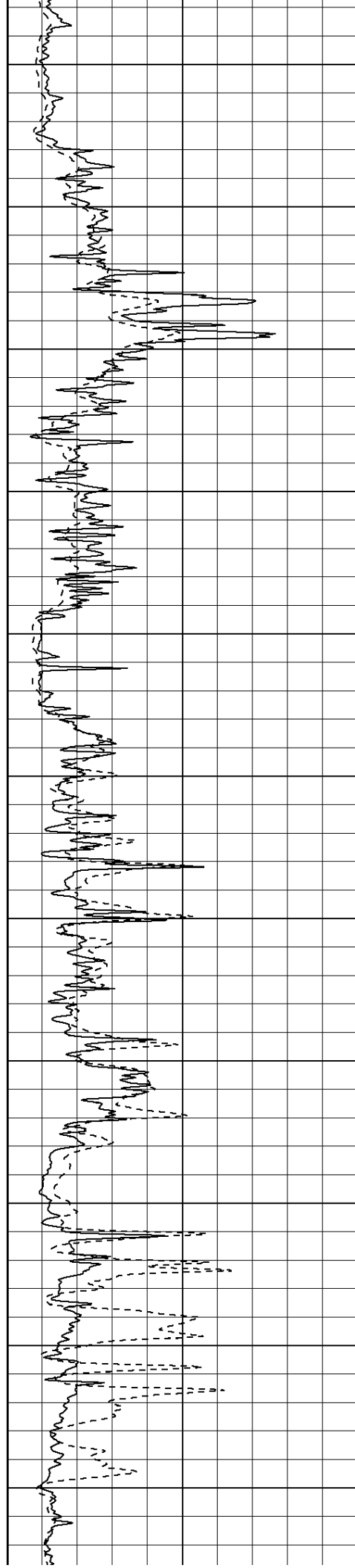
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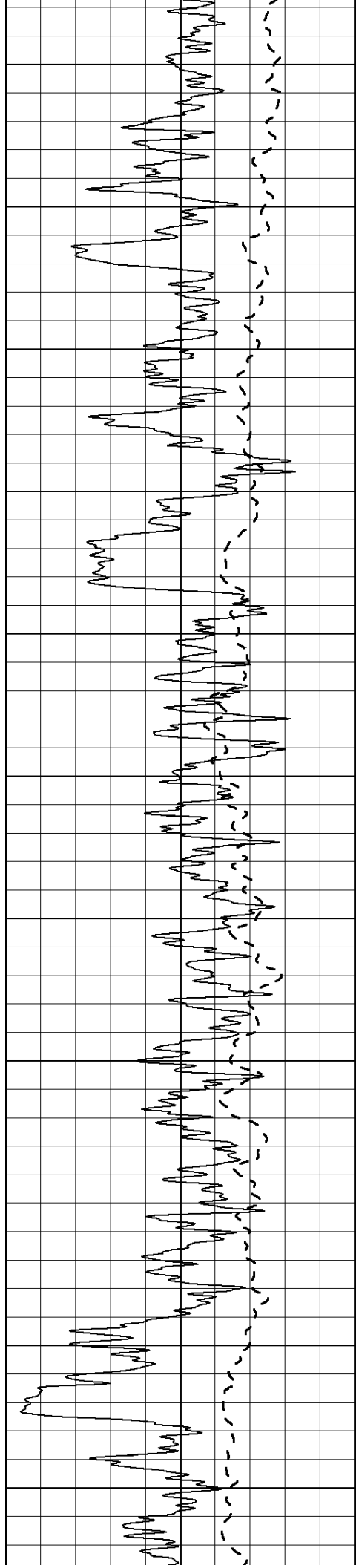
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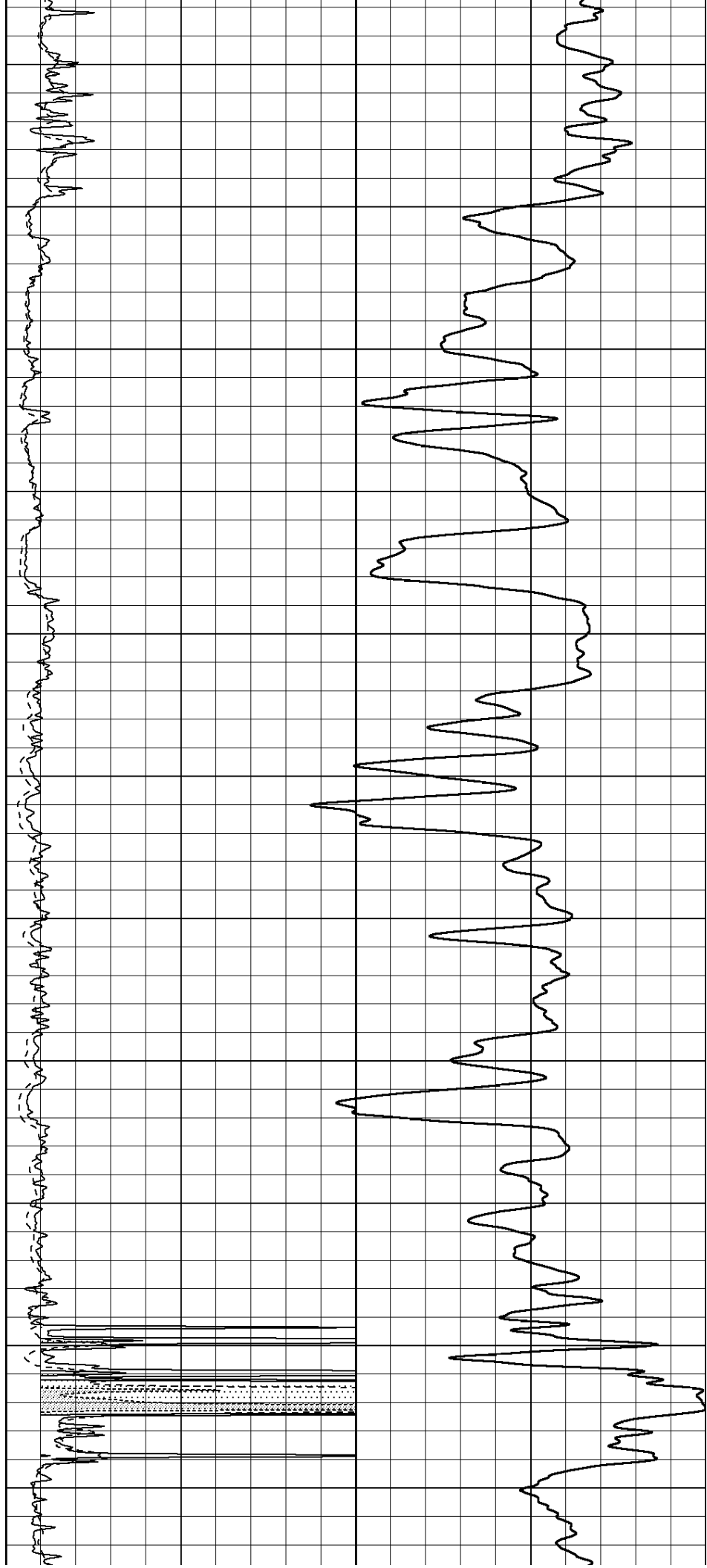


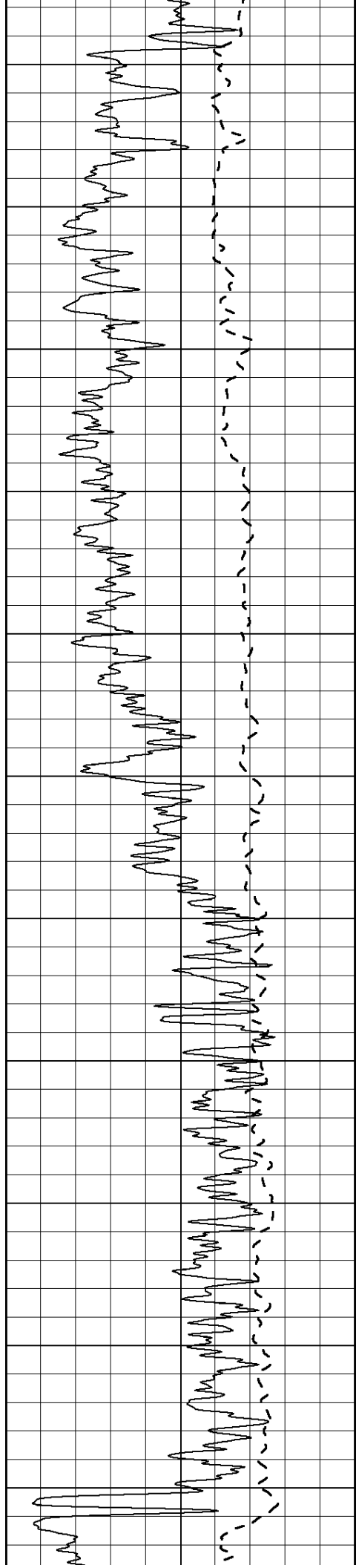
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950



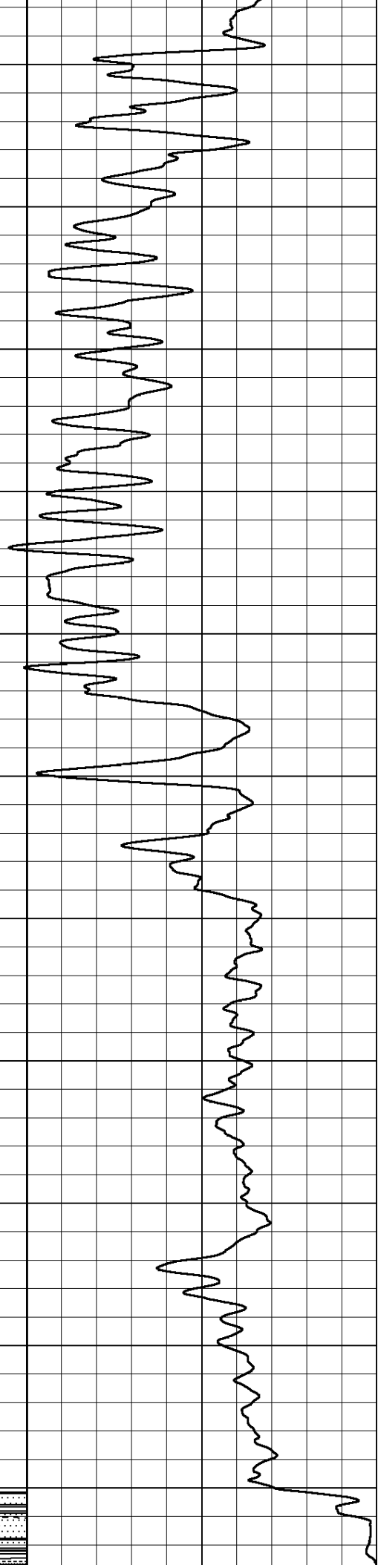
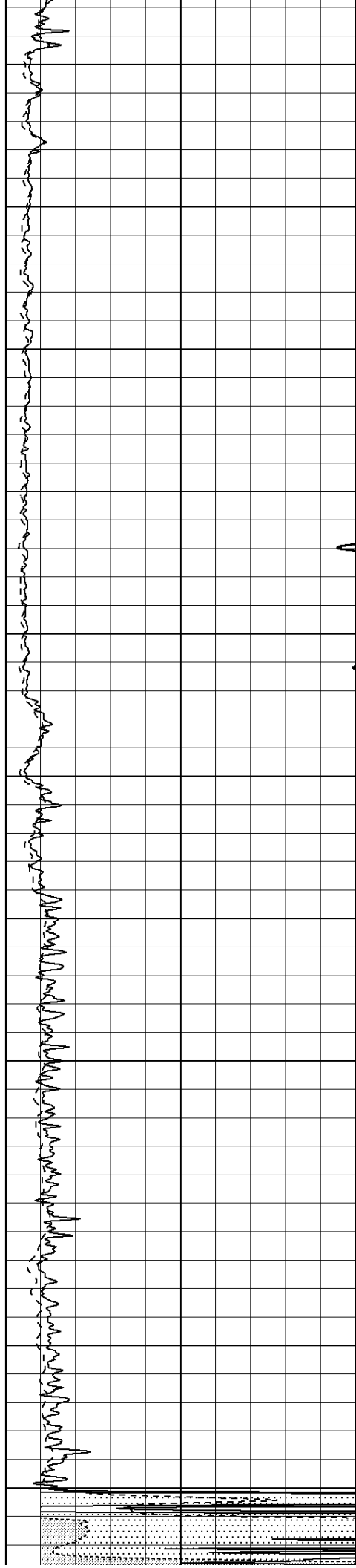


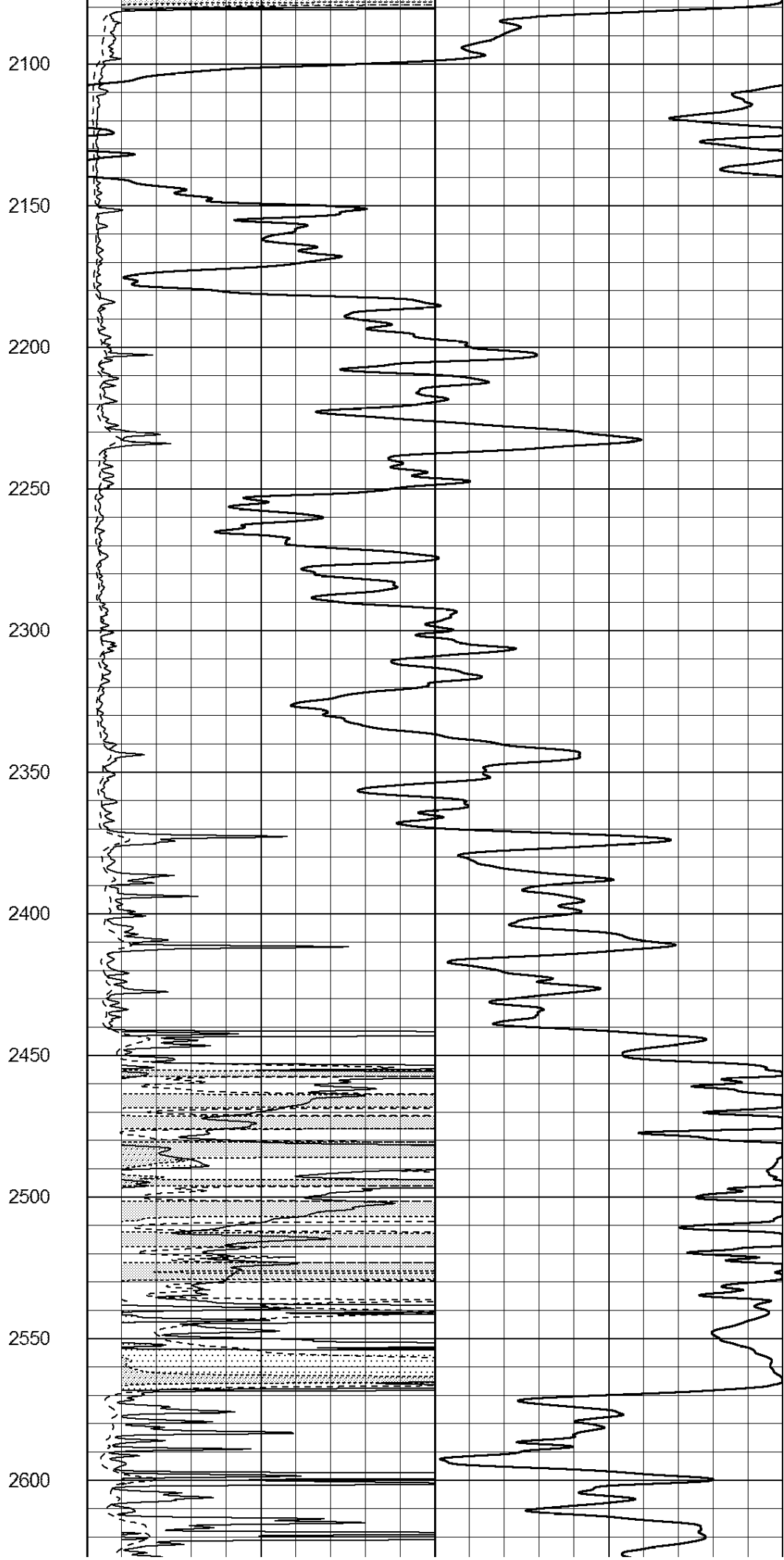
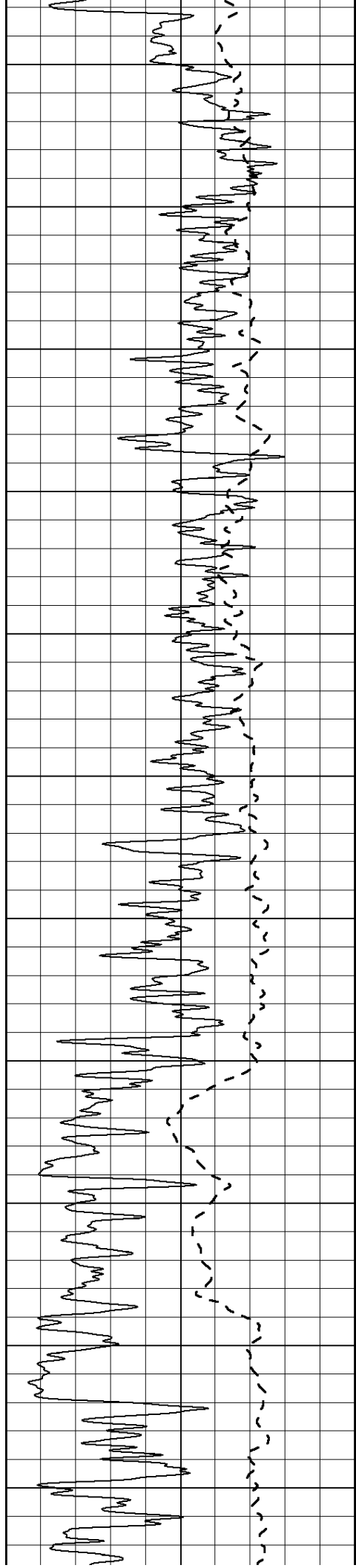
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1300
1350
1400
1450
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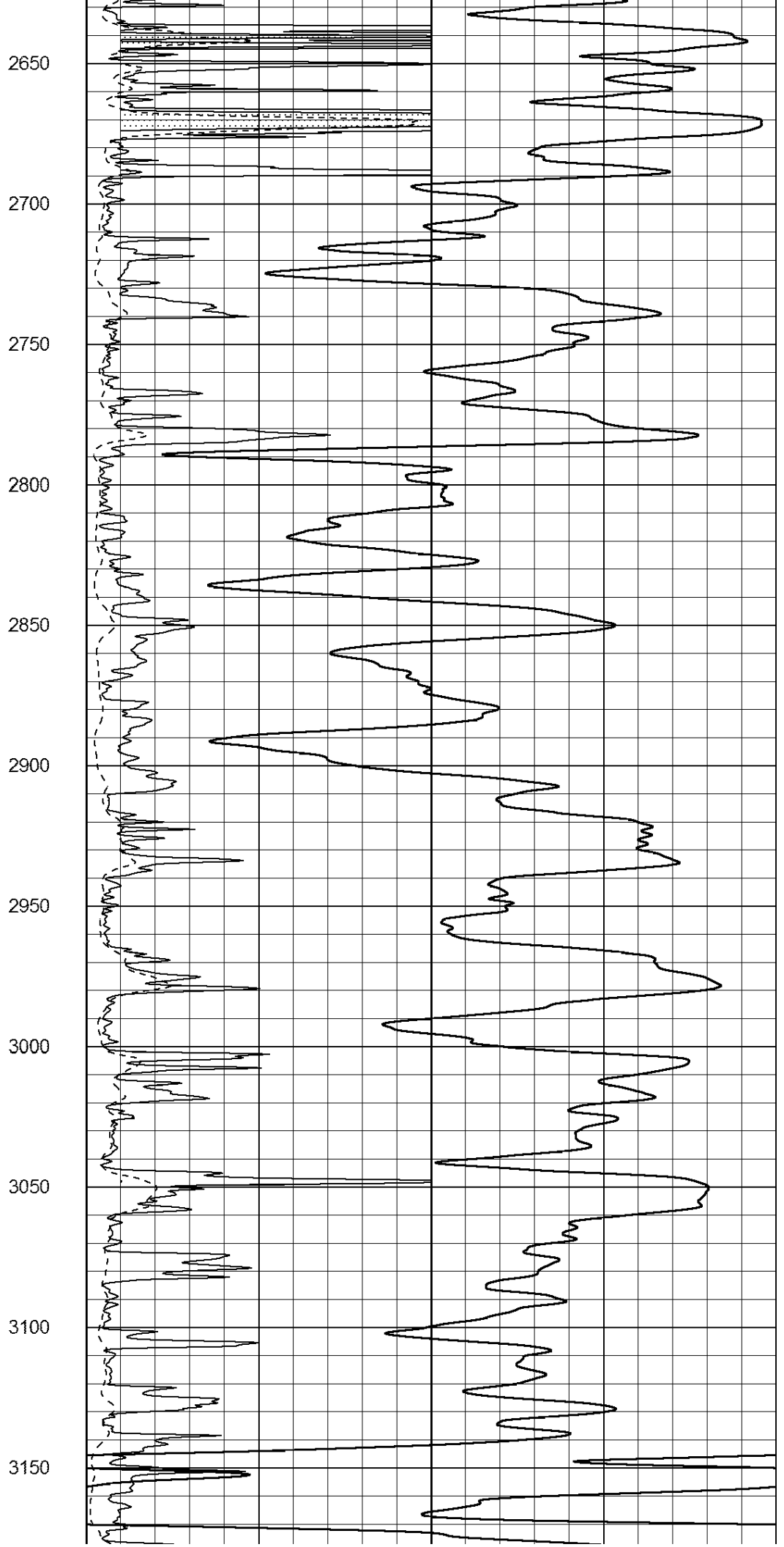
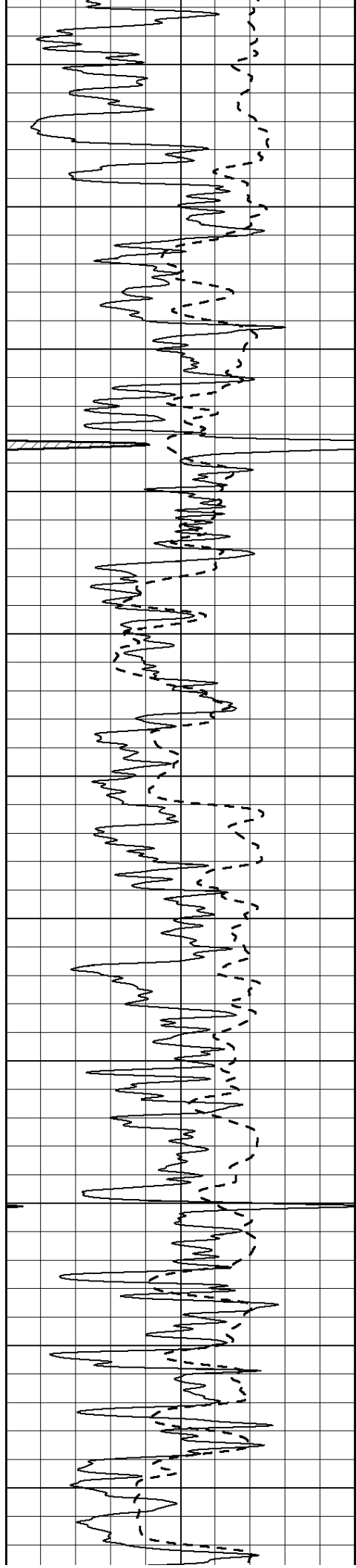


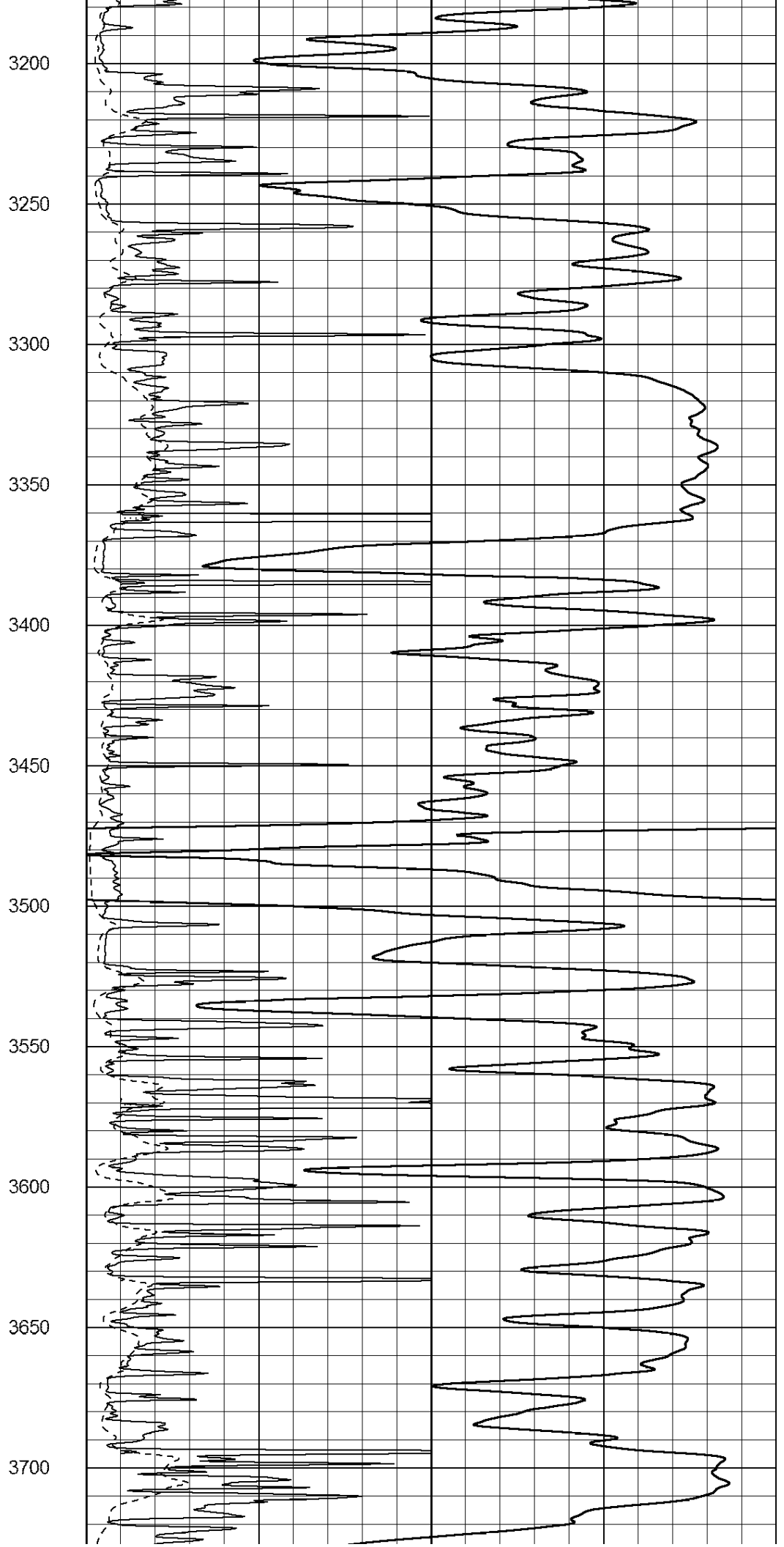
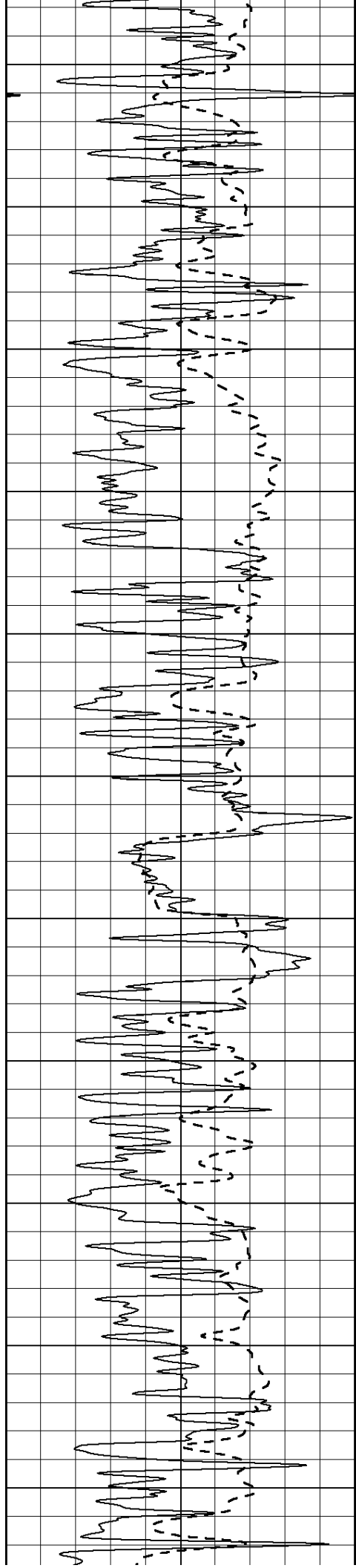


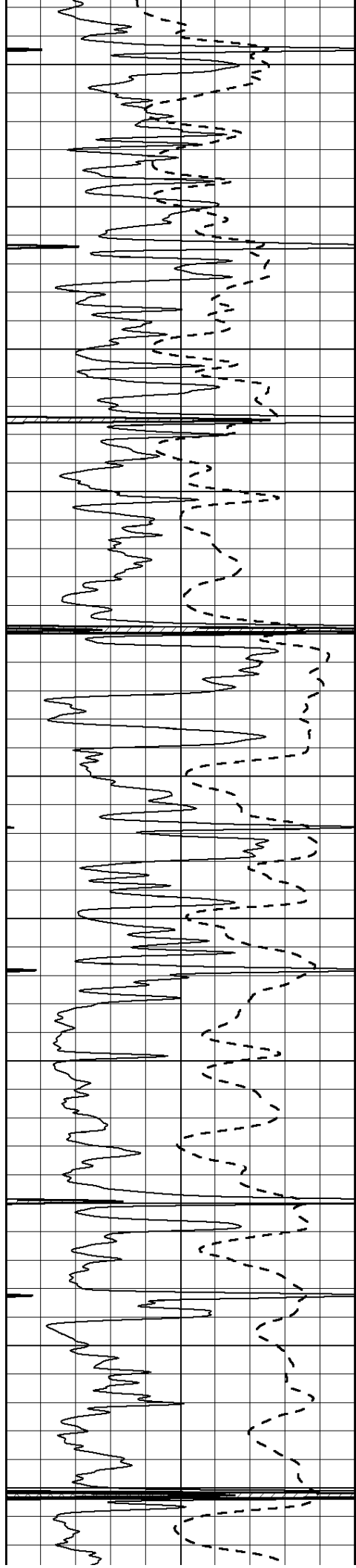
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1850
1900
1950
2000
2050



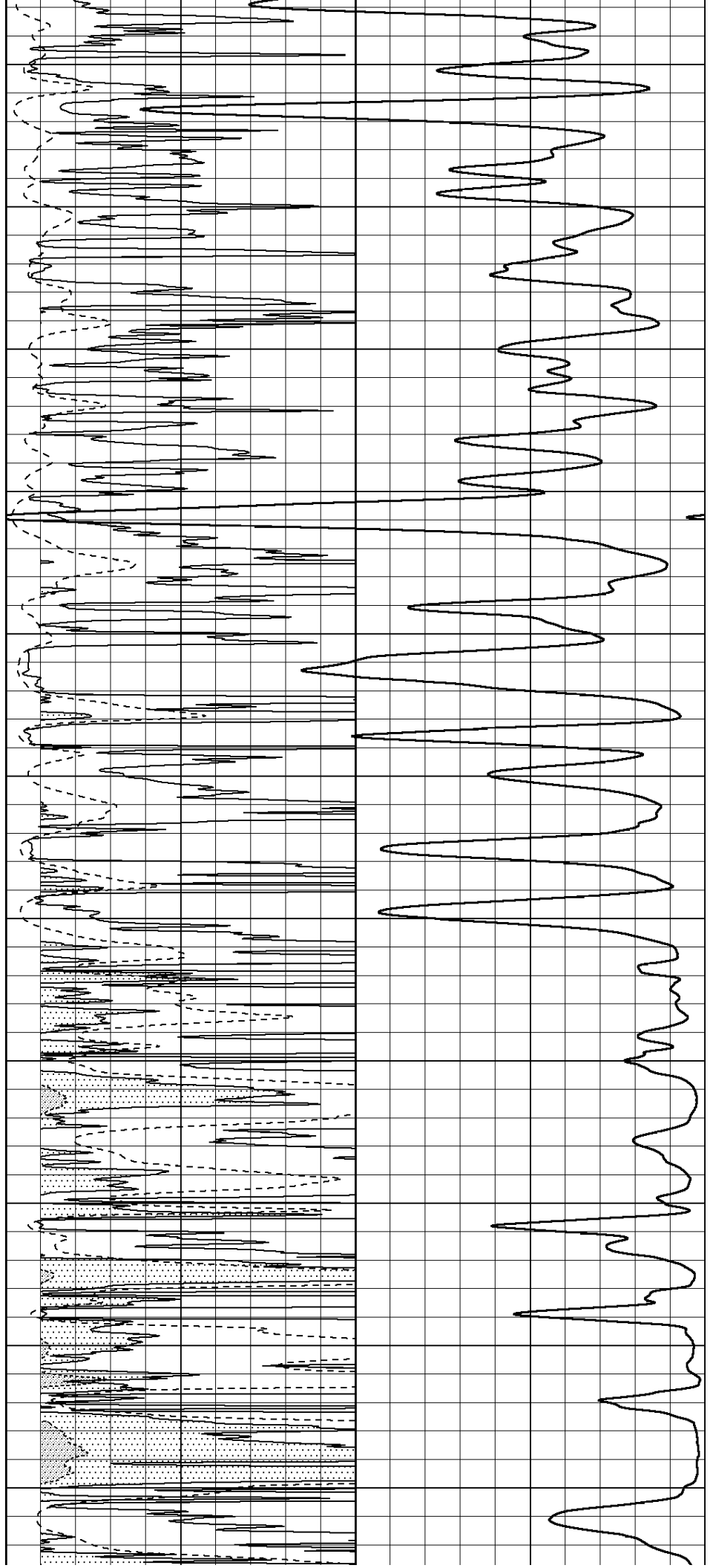


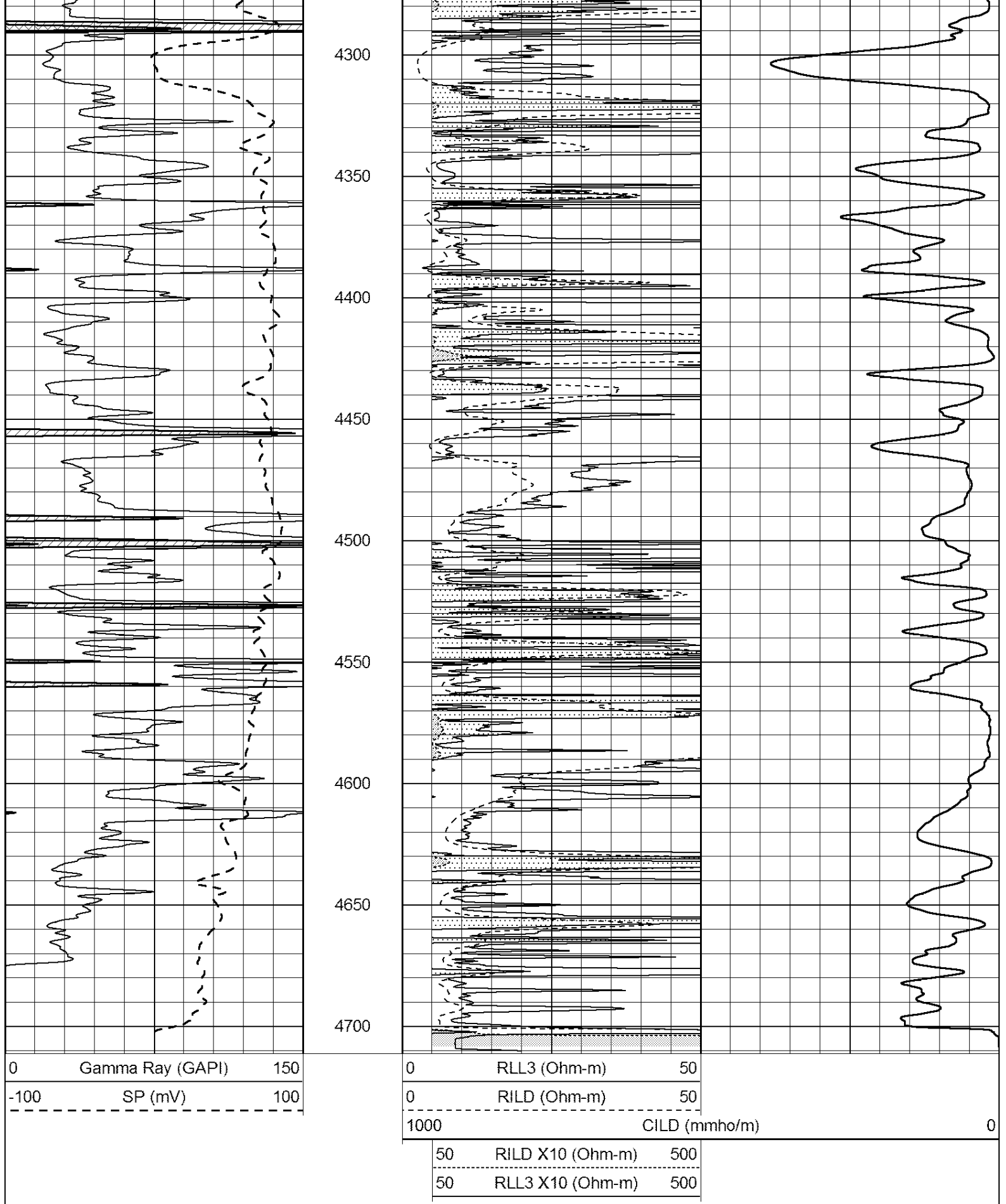






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3850
3900
3950
4000
4050
4100
4150
4200
4250





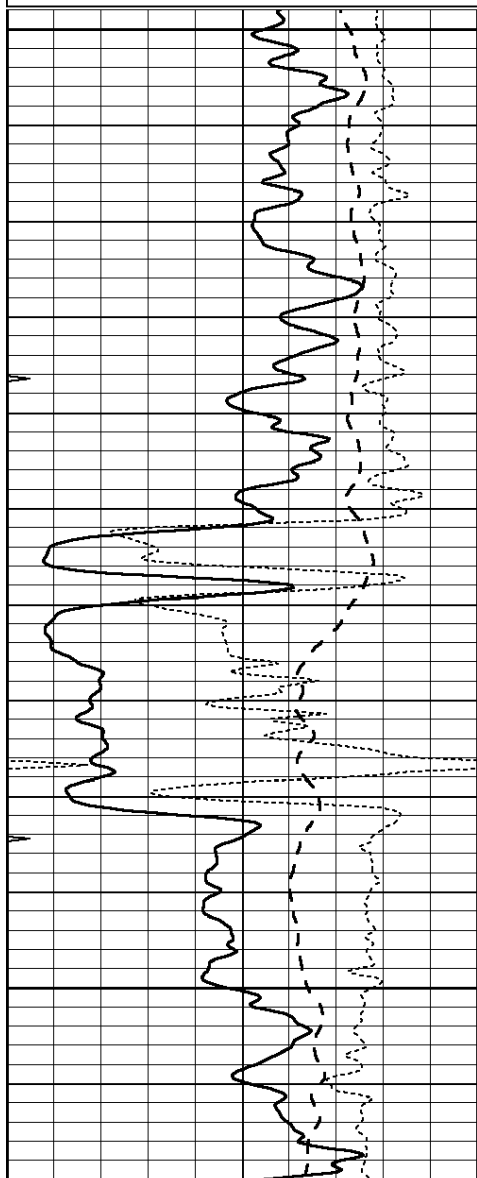
**Casedhole
Solutions**

ANHYDRITE

Database File: 30892ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Tue Feb 09 00:20:19 2016 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

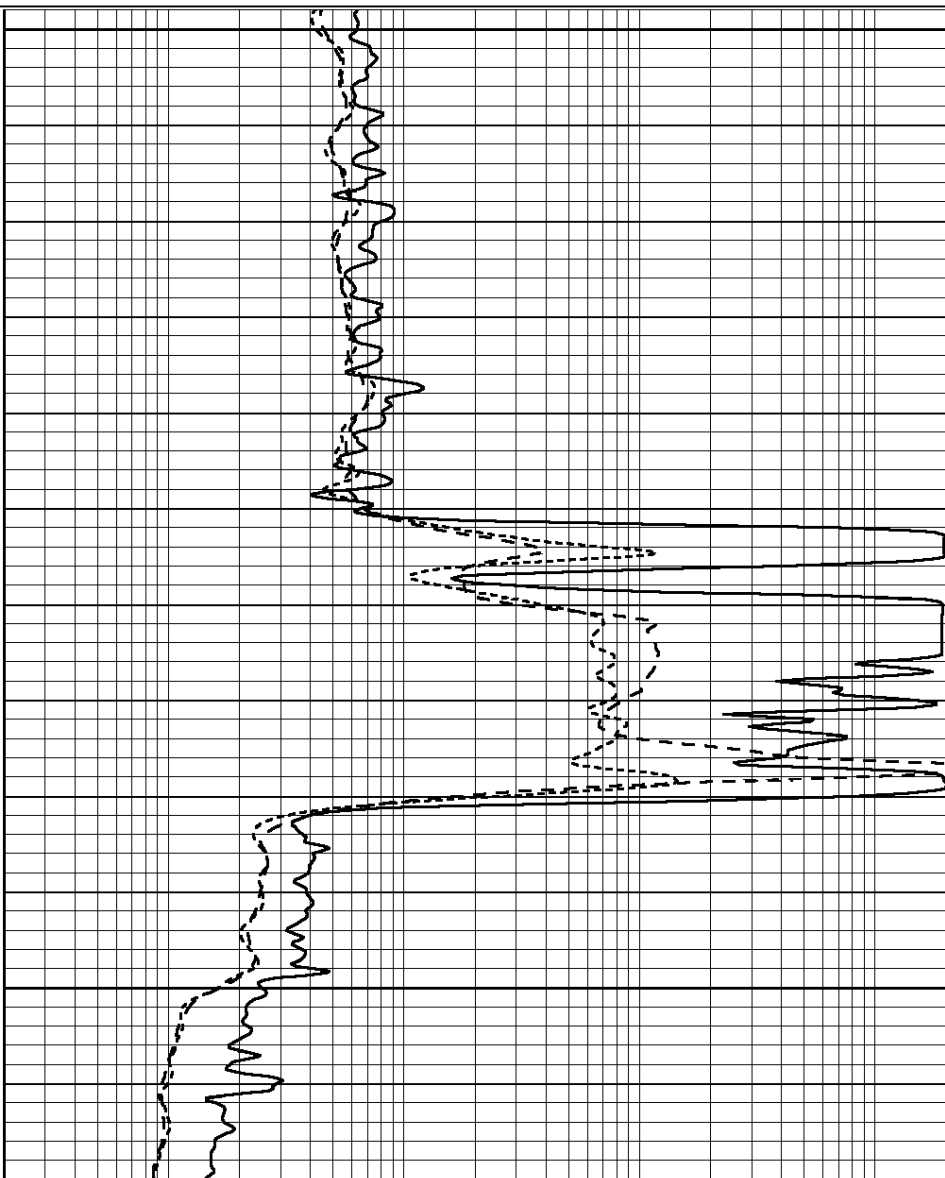
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



2000

2050

2100



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



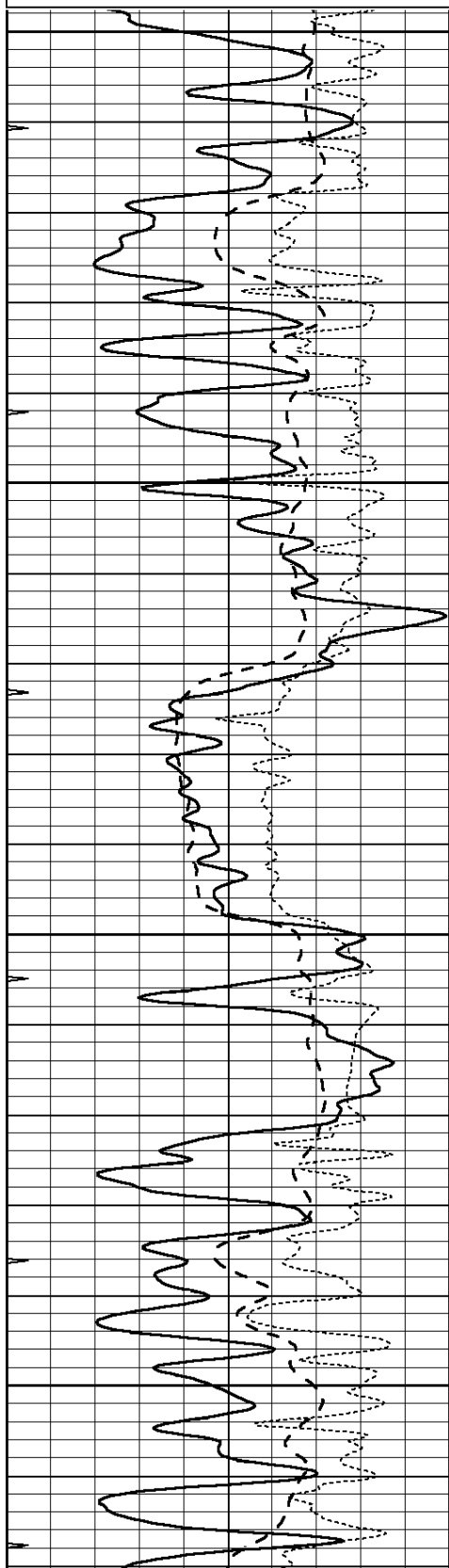
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MAIN SECTION

Database File: 30892ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Tue Feb 09 00:00:23 2016 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

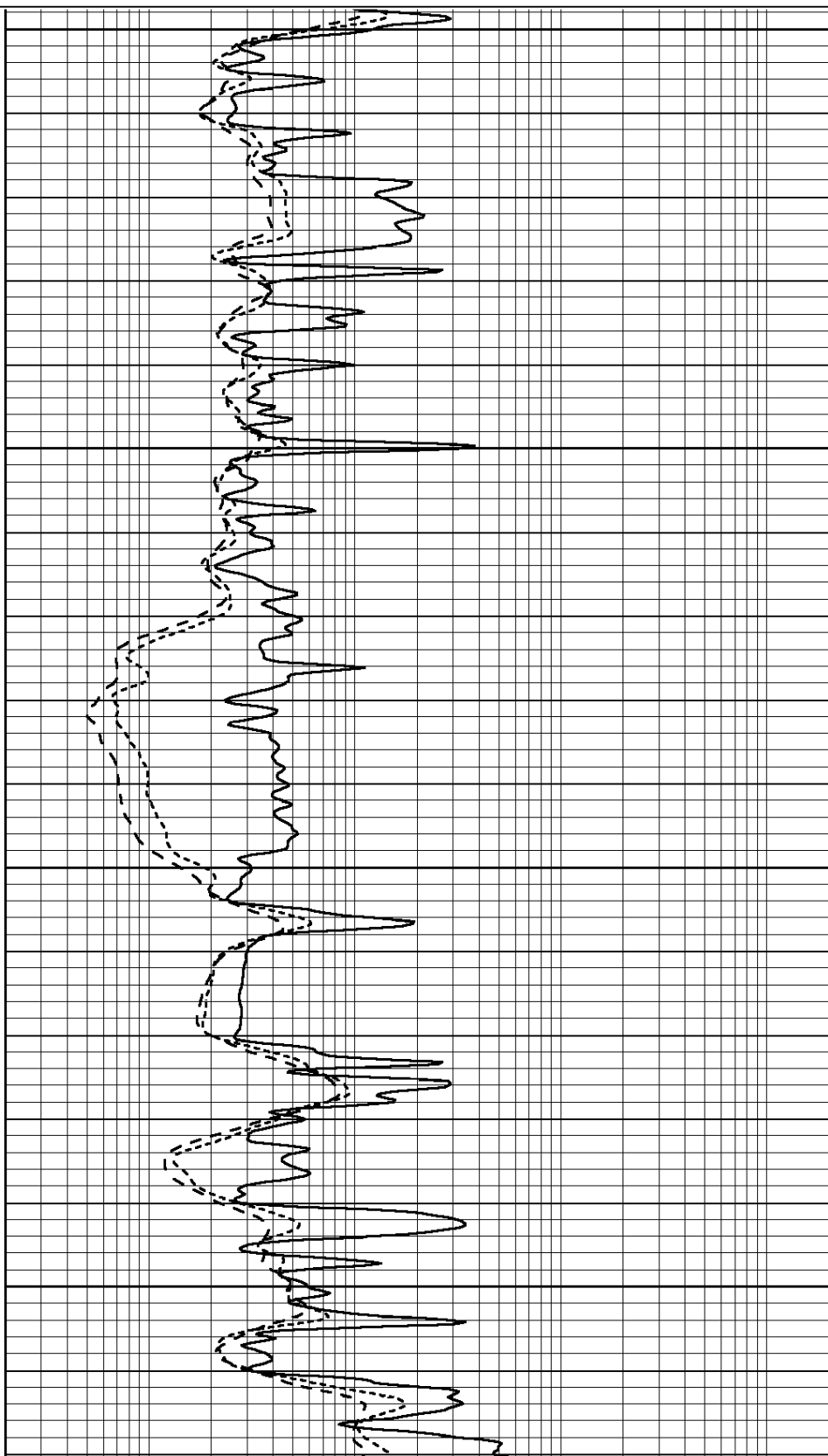


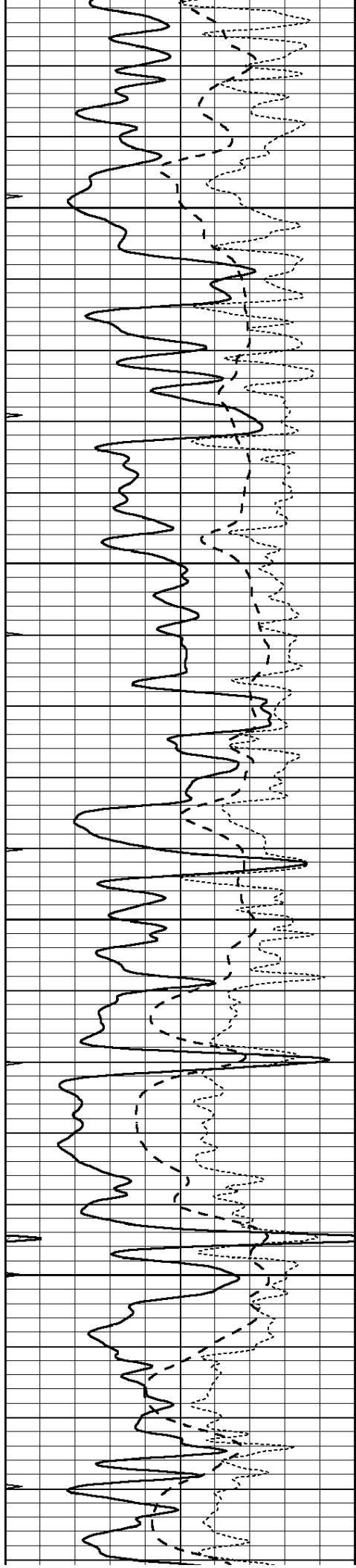
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3500

3550



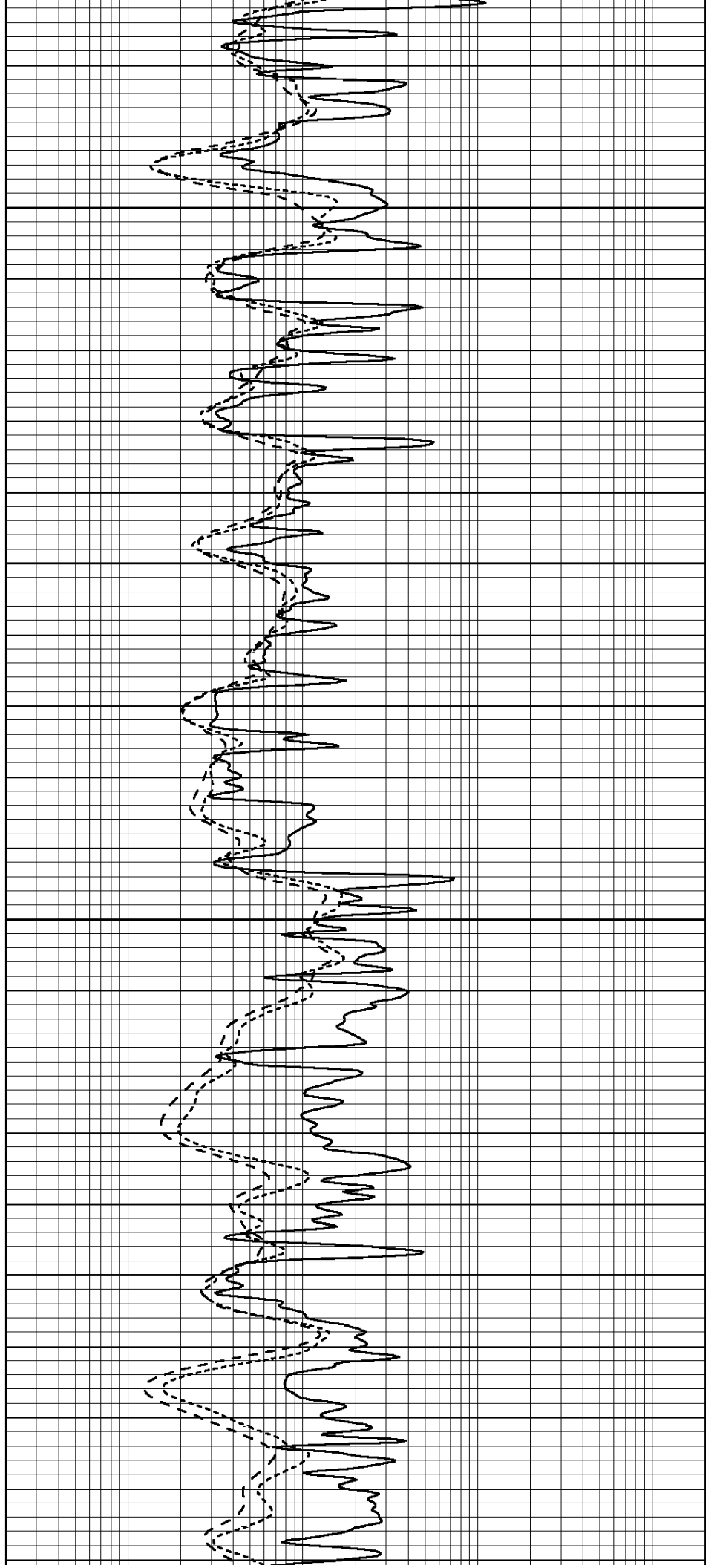


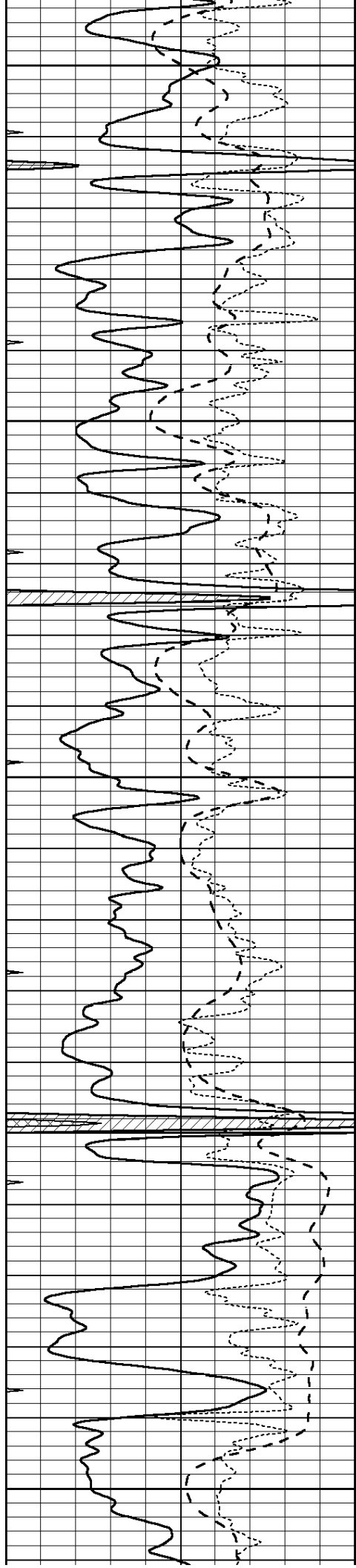
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3700

3750





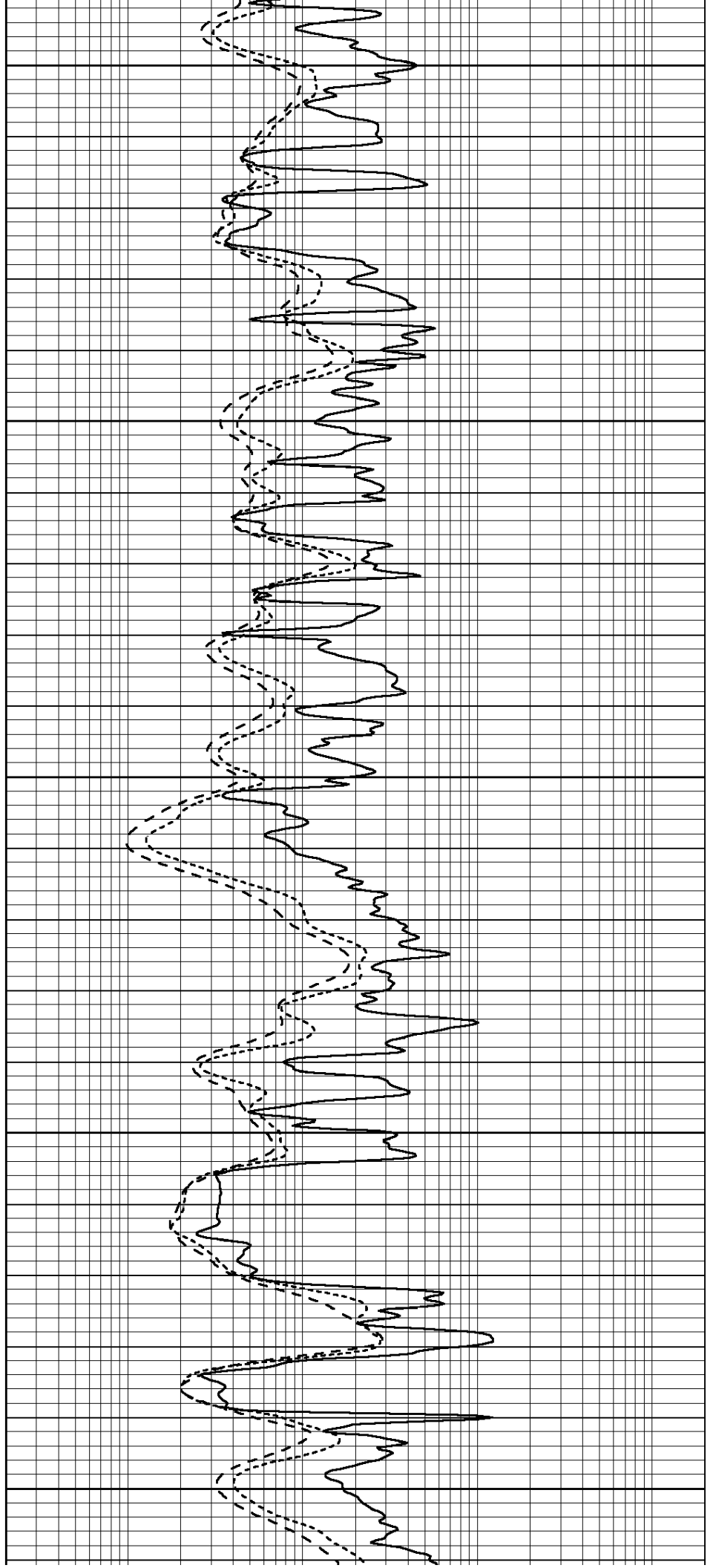
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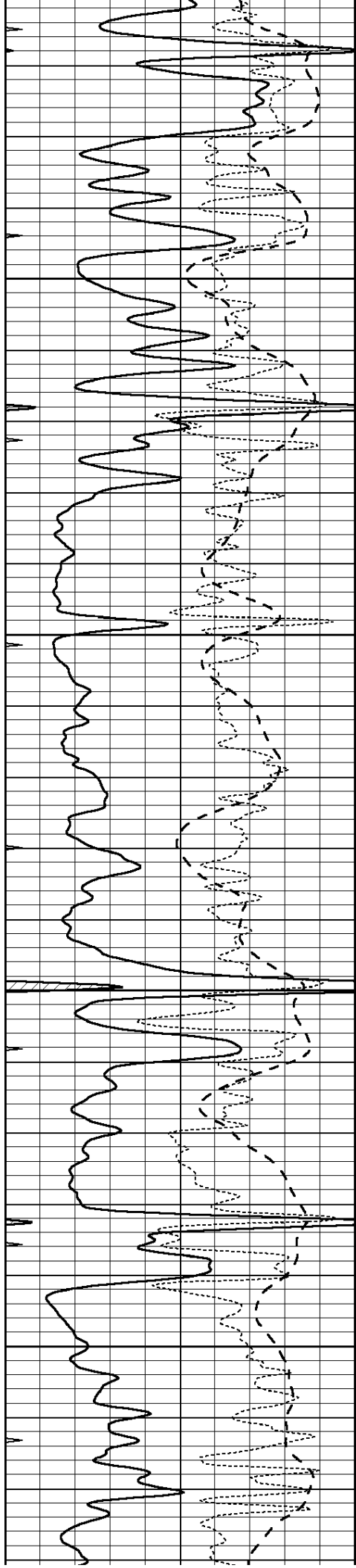
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3900

3950

4000



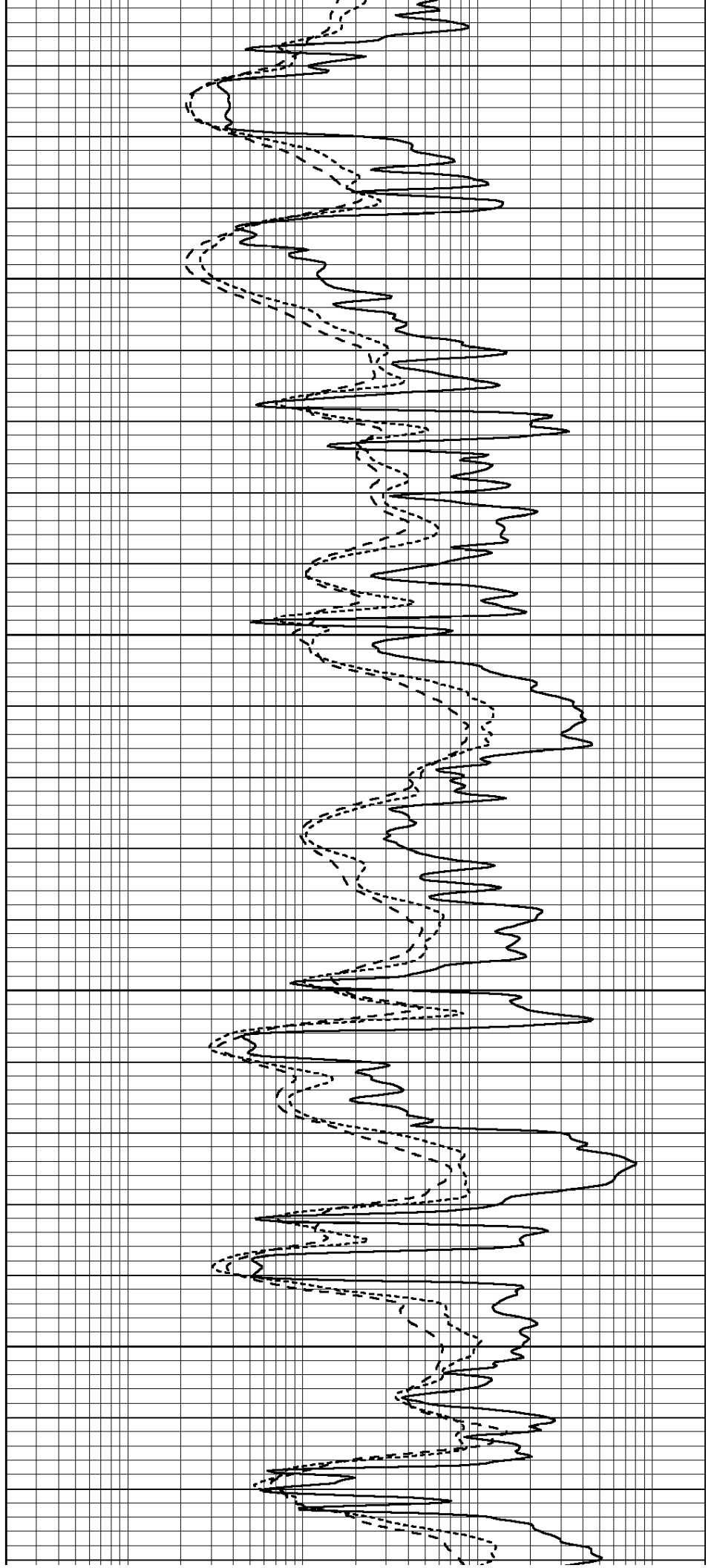


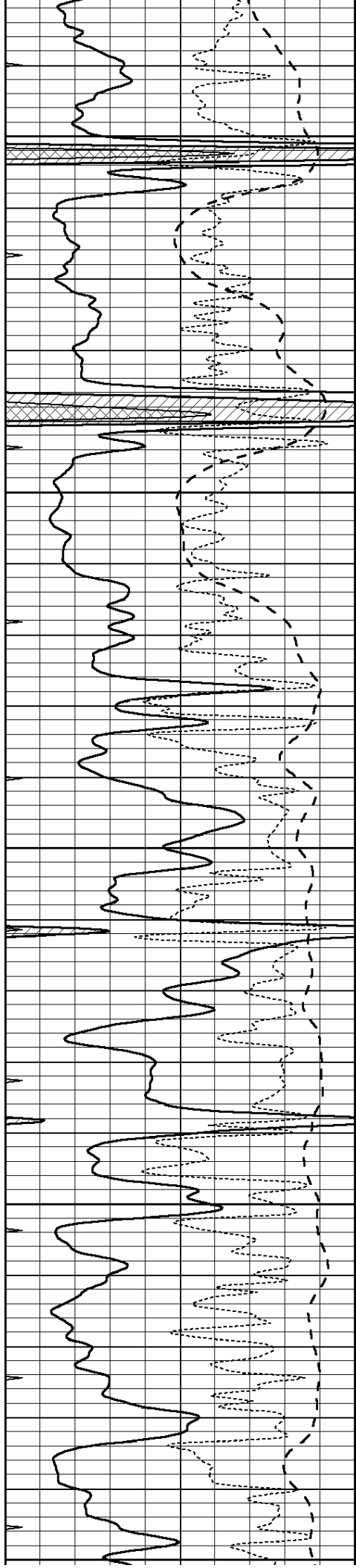
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4150

4200





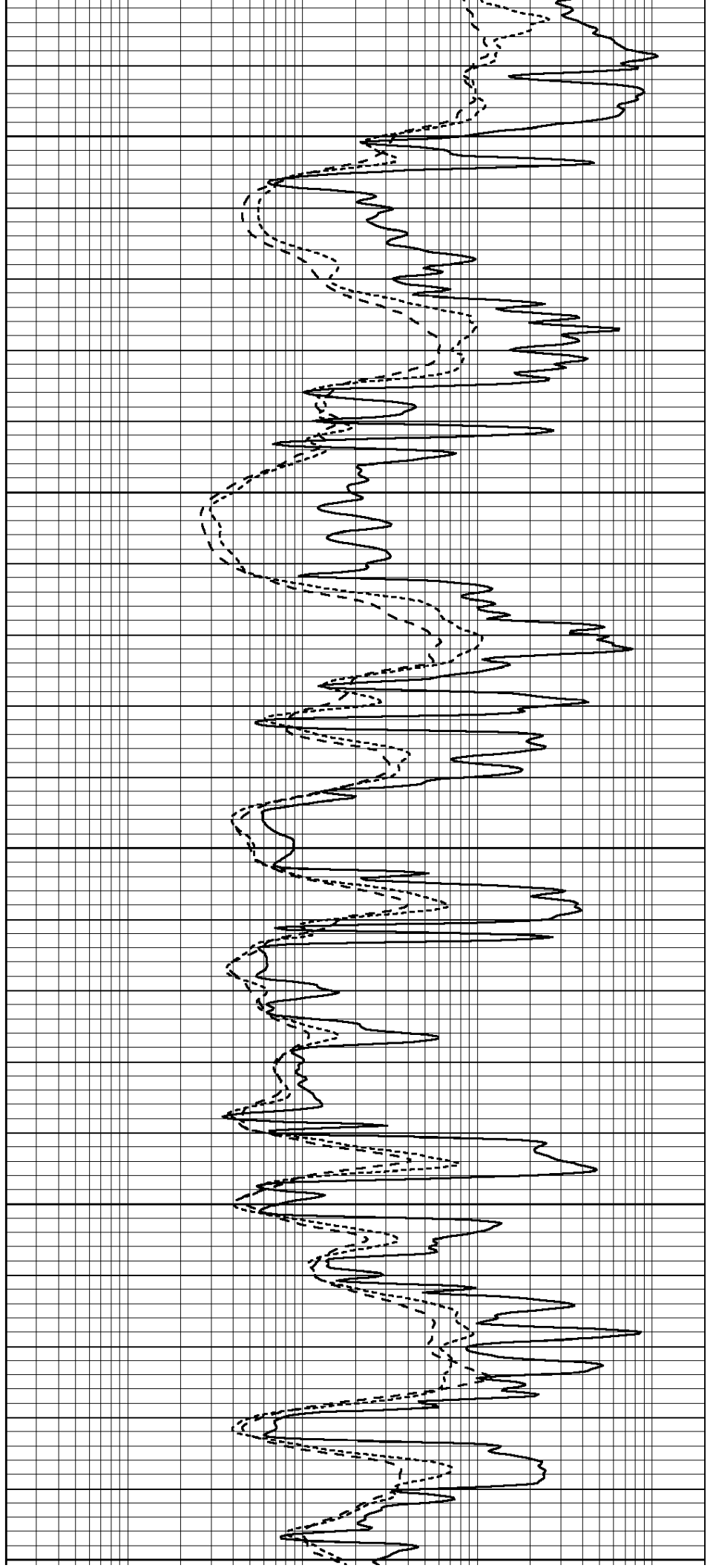
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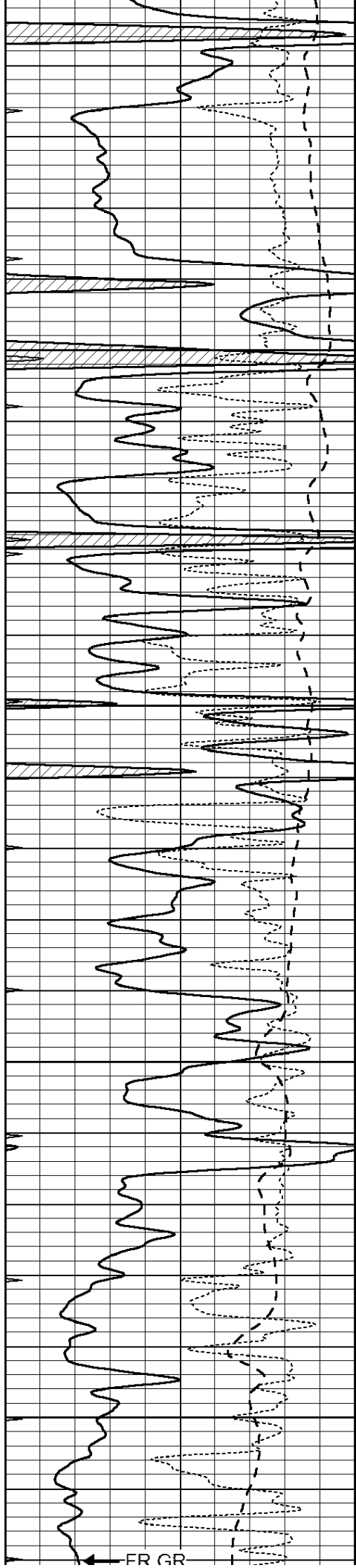
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4450





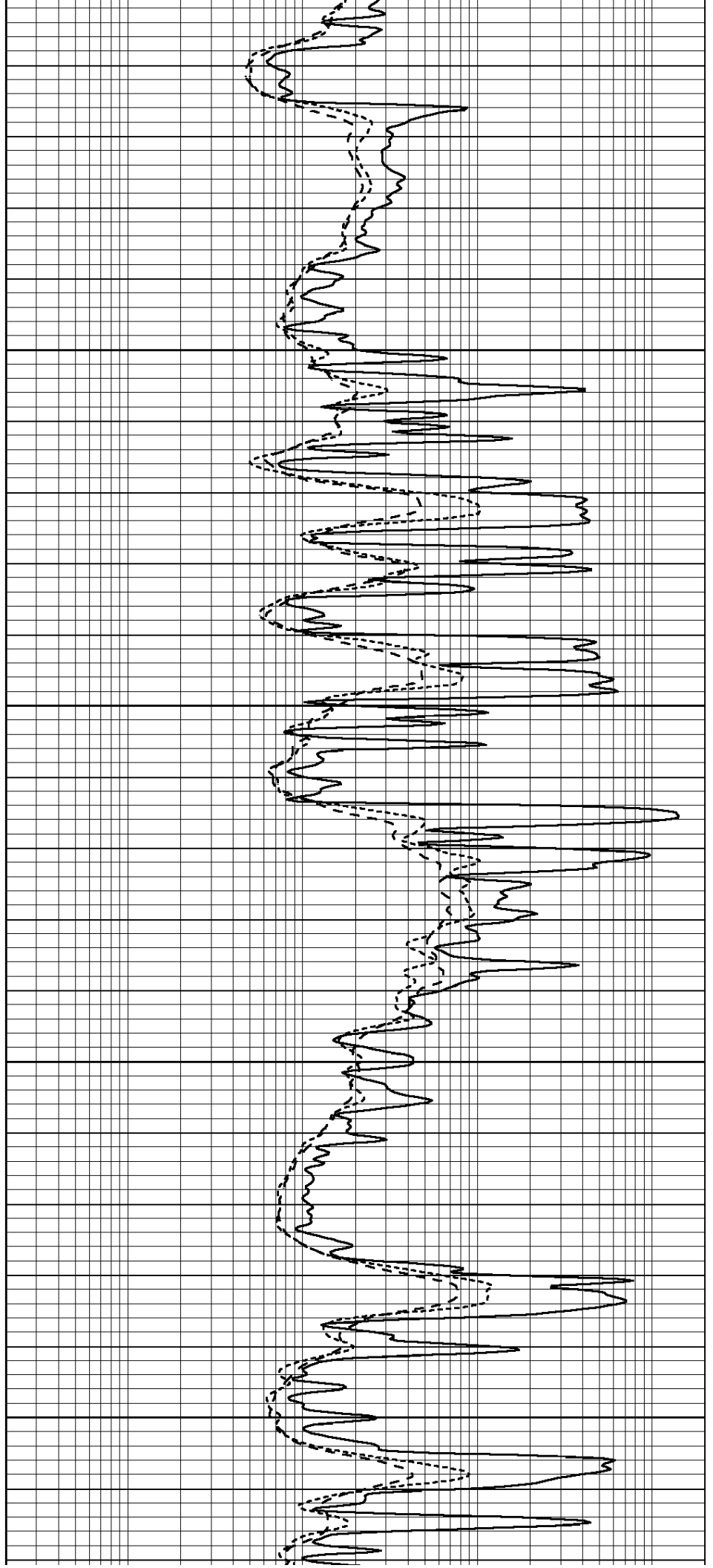
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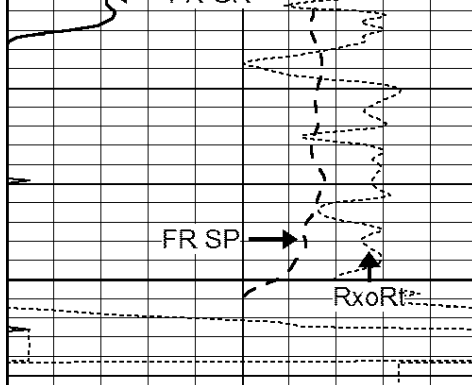
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4650

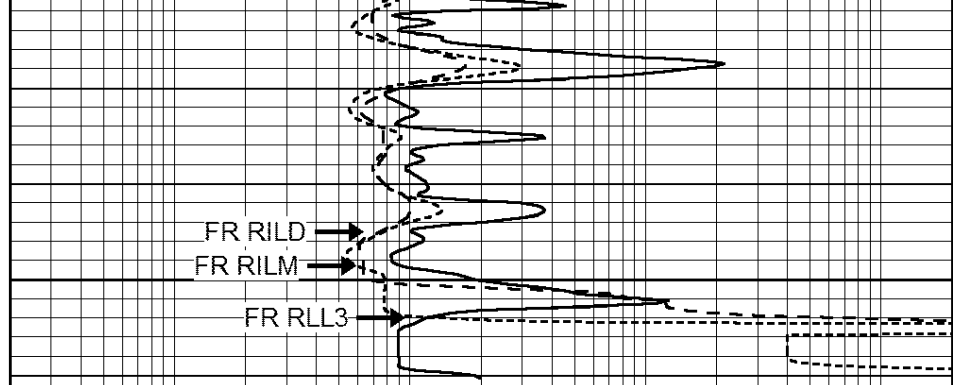
FR GR





4700
LTD 4706

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



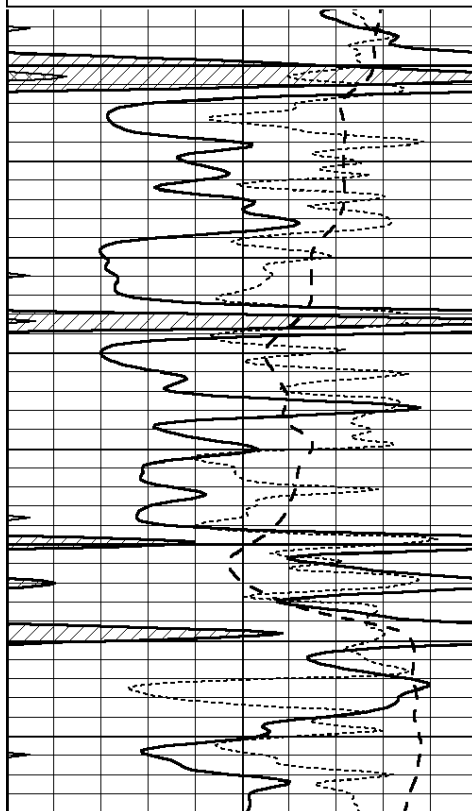
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Solutions**

REPEAT SECTION

Database File: 30892ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: _dil
 Dataset Creation: Mon Feb 08 23:40:03 2016 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

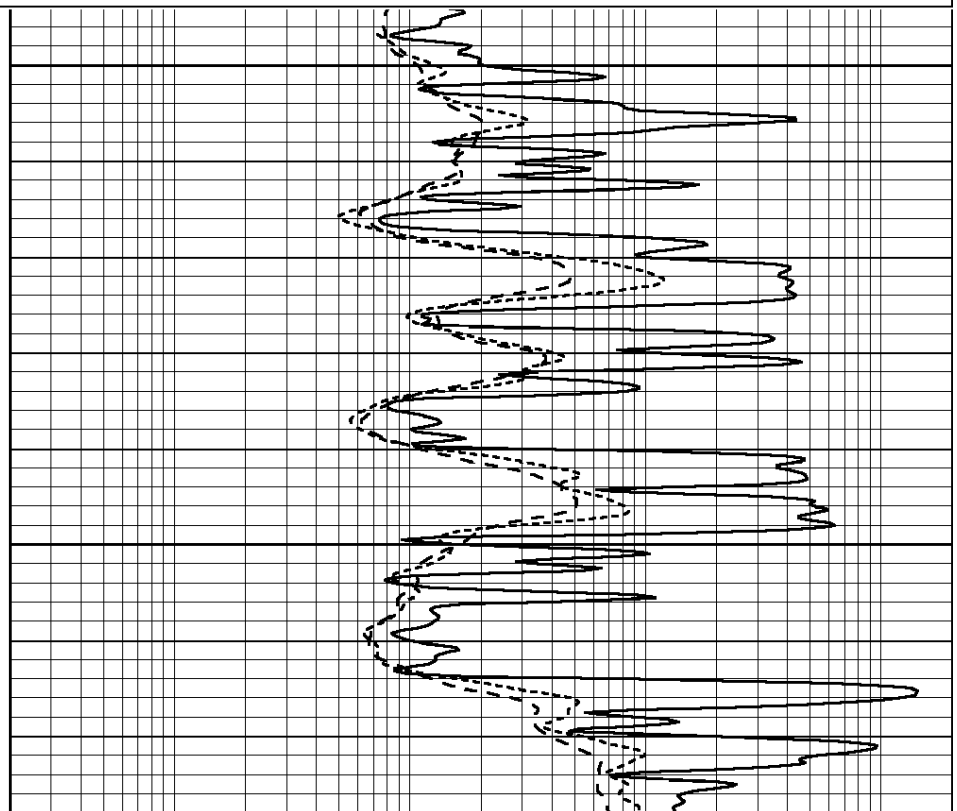
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

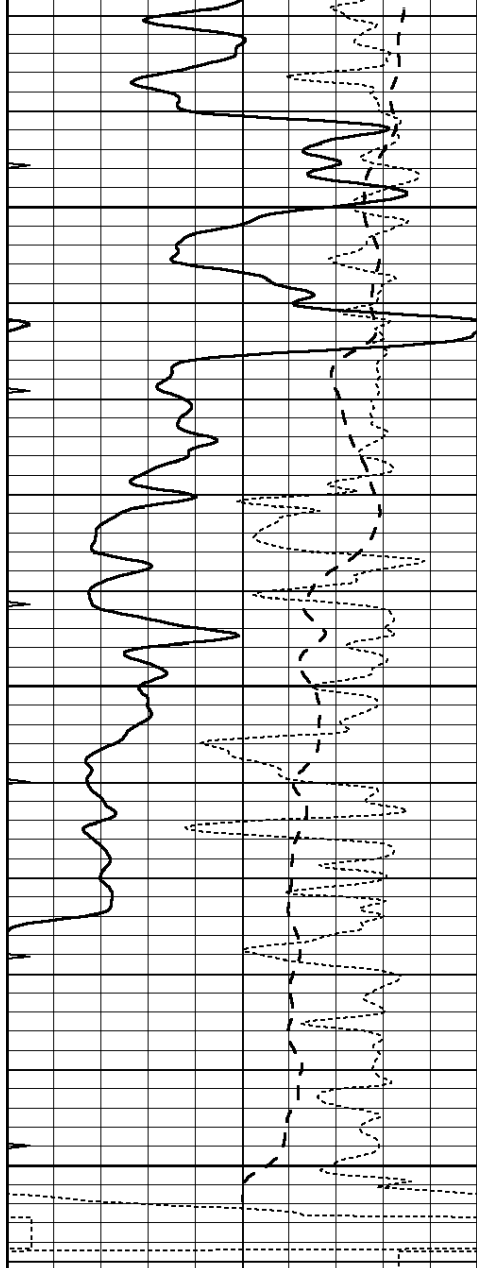
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4500

4550



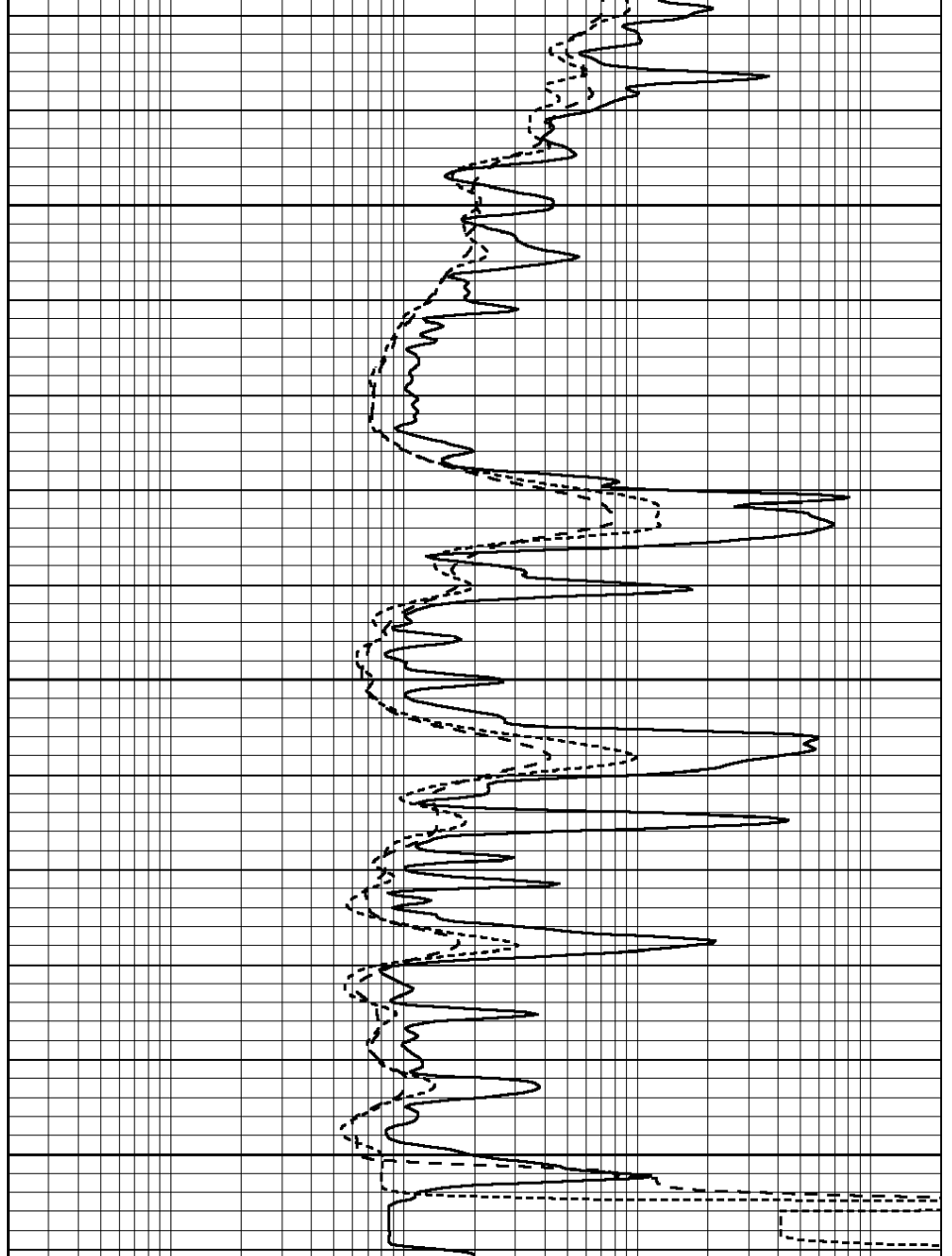


4600

4650

4700

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

Calibration Report

Database File: 30892ddn.db
 Dataset Pathname: pass2.1
 Dataset Creation: Mon Feb 08 23:40:03 2016 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Sun May 10 19:54:09 2015
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings		References		Results	
	Air	Loop	Air	Loop	m	b
1	0.015	0.010	0.000	100.000	0.000	0.000

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	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:	GEAR5-GEARHART
Source / Verifier:	/
Master Calibration Performed:	Sun Dec 06 13:45:22 2015
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration						
	Density		Far Detector	Near Detector		
Magnesium	1.710	g/cc	798.83	465.02	cps	
Aluminum	2.570	g/cc	178.16	323.19	cps	
	Spine Angle = 76.37		Density/Spine Ratio = 0.557			
	Size		Reading			
Small Ring	7.00	in	1.47	V		
Large Ring	14.00	in	3.01	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: 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: Thu Nov 12 05:47:01 2015

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.4500 GAPI/cps