



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company	CHARTER ENERGY, INC.		
Well	HAMMOND #1		
Field	PAWNEE ROCK		
County	PAWNEE	State	KANSAS
Company	CHARTER ENERGY, INC.	Well	HAMMOND #1
Field	PAWNEE ROCK	County	PAWNEE
State	KANSAS	State	KANSAS
Location:	API # : 15-145-21771-0000		Other Services CDL/CNL MEL
Permanent Datum	1645' FNL & 745' FEL NE - NW - SE - NE		Elevation
Log Measured From	SEC 13 TWP 20S RGE 16W		K.B. 2052 D.F. 2050 G.L. 2046
Drilling Measured From	GROUND LEVEL KELLY BUSHING 6' A.G.L. KELLY BUSHING		2046
Date	7/2/14		
Run Number	ONE		
Depth Driller	3850		
Depth Logger	3850		
Bottom Logged Interval	3848		
Top Log Interval	00		
Casing Driller	8 5/8" @ 1080		
Casing Logger	1050		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5800 PPM	
Density / Viscosity	9.1/5.1		
pH / Fluid Loss	10.5/12.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.70 @ 95F		
Rmt @ Meas. Temp	.52 @ 95F		
Rmc @ Meas. Temp	.84 @ 95F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.57 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	2:00 P.M.		
Maximum Recorded Temperature	115F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	KURT TALBOTT		

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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:
PAWNEE ROCK, KS. - 3 NORTH - 3 WEST UNTIL THE BLKTOP ENDS
1/2 MORE WEST - SOUTH INTO

Database File:

24644ddn.db

Dataset Pathname:

pass3.3

Presentation Format:

_dil2

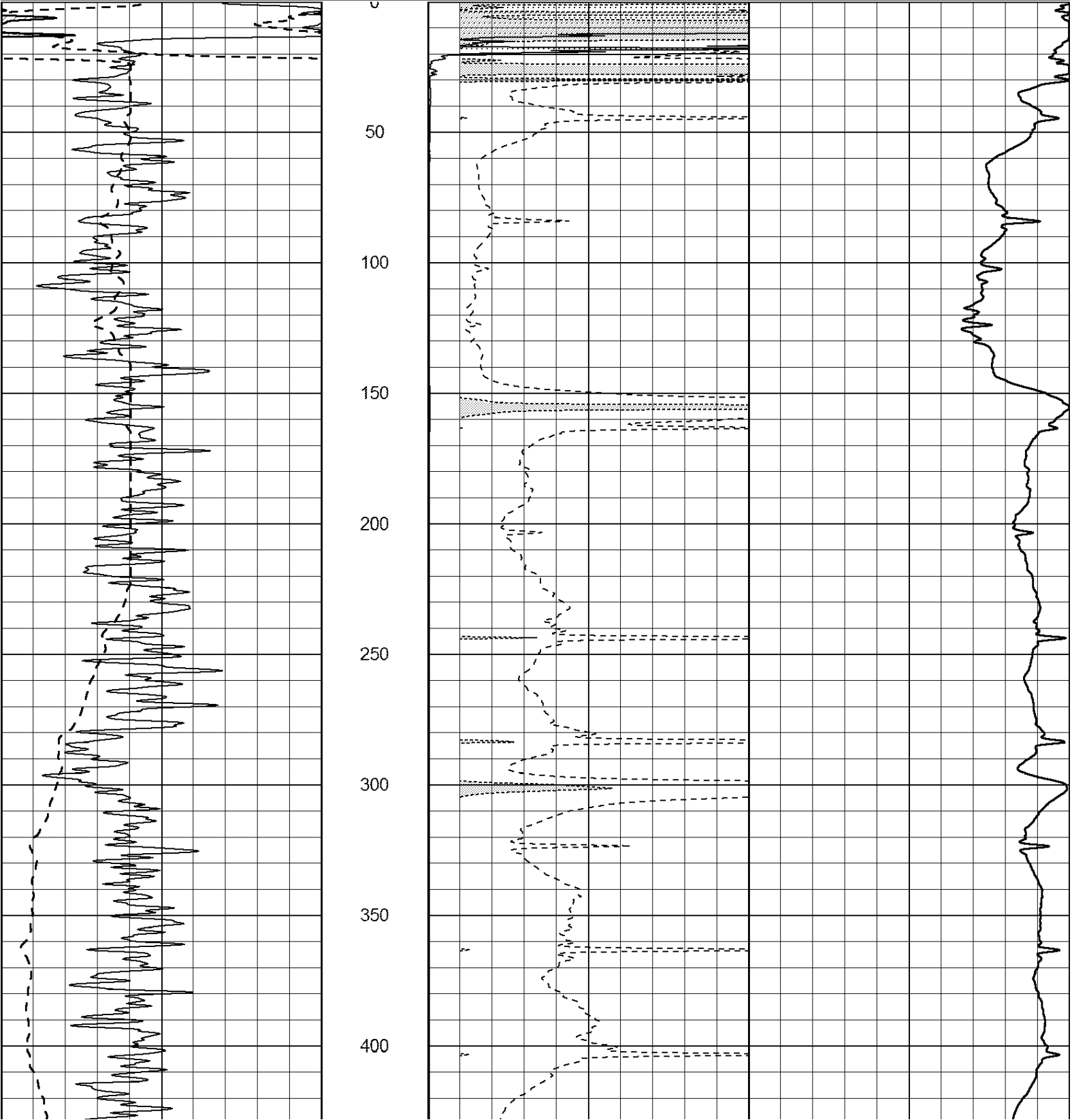
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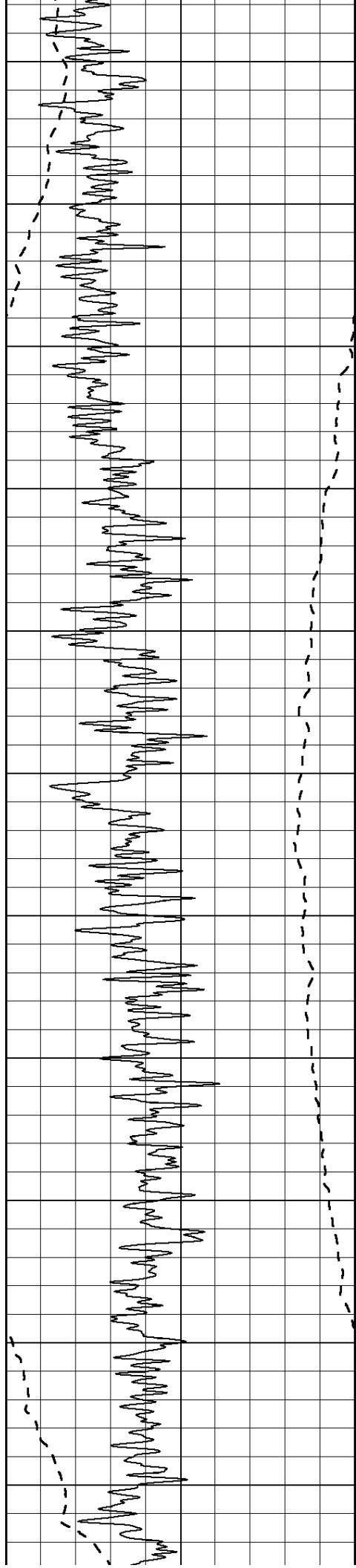
Wed Jul 02 15:27:45 2014 by Calc Open-Cased 090629

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

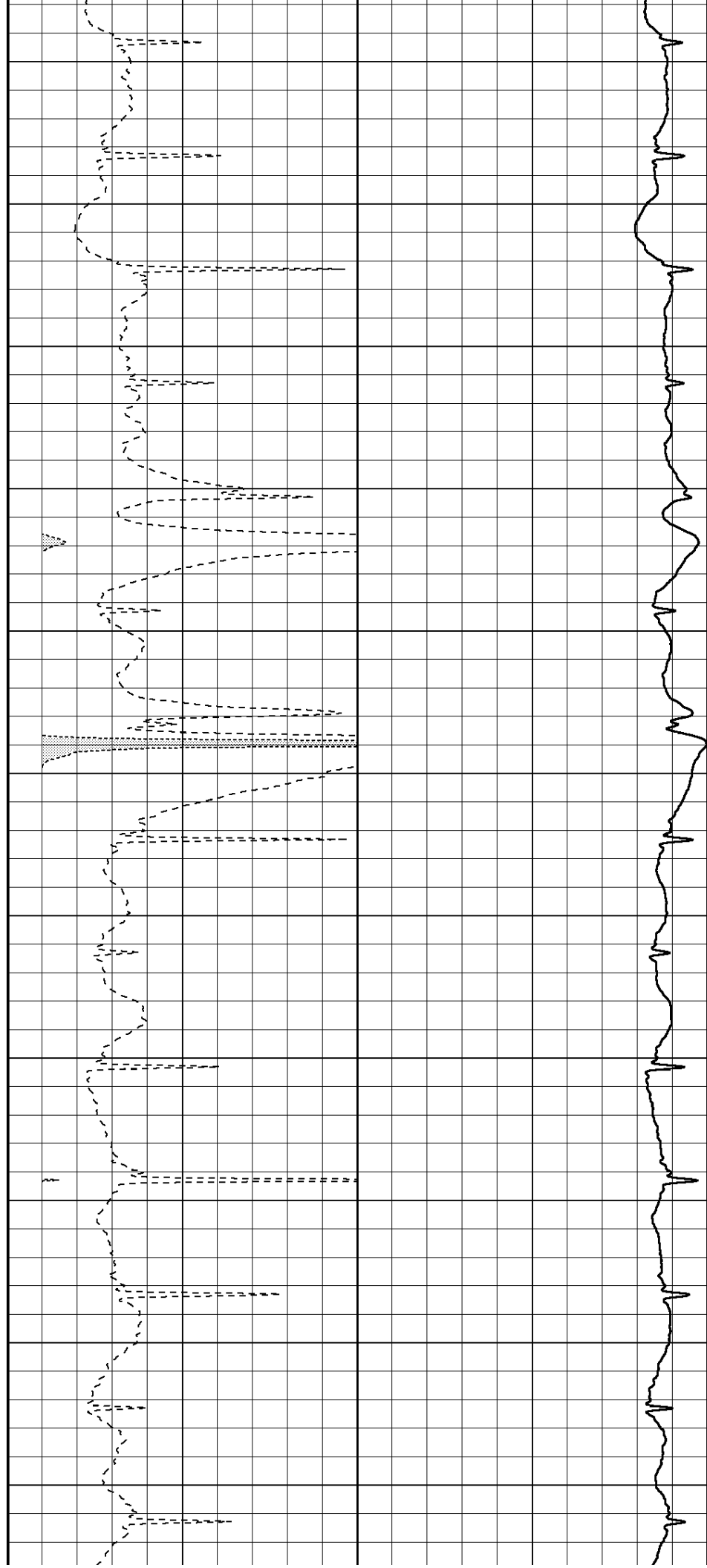
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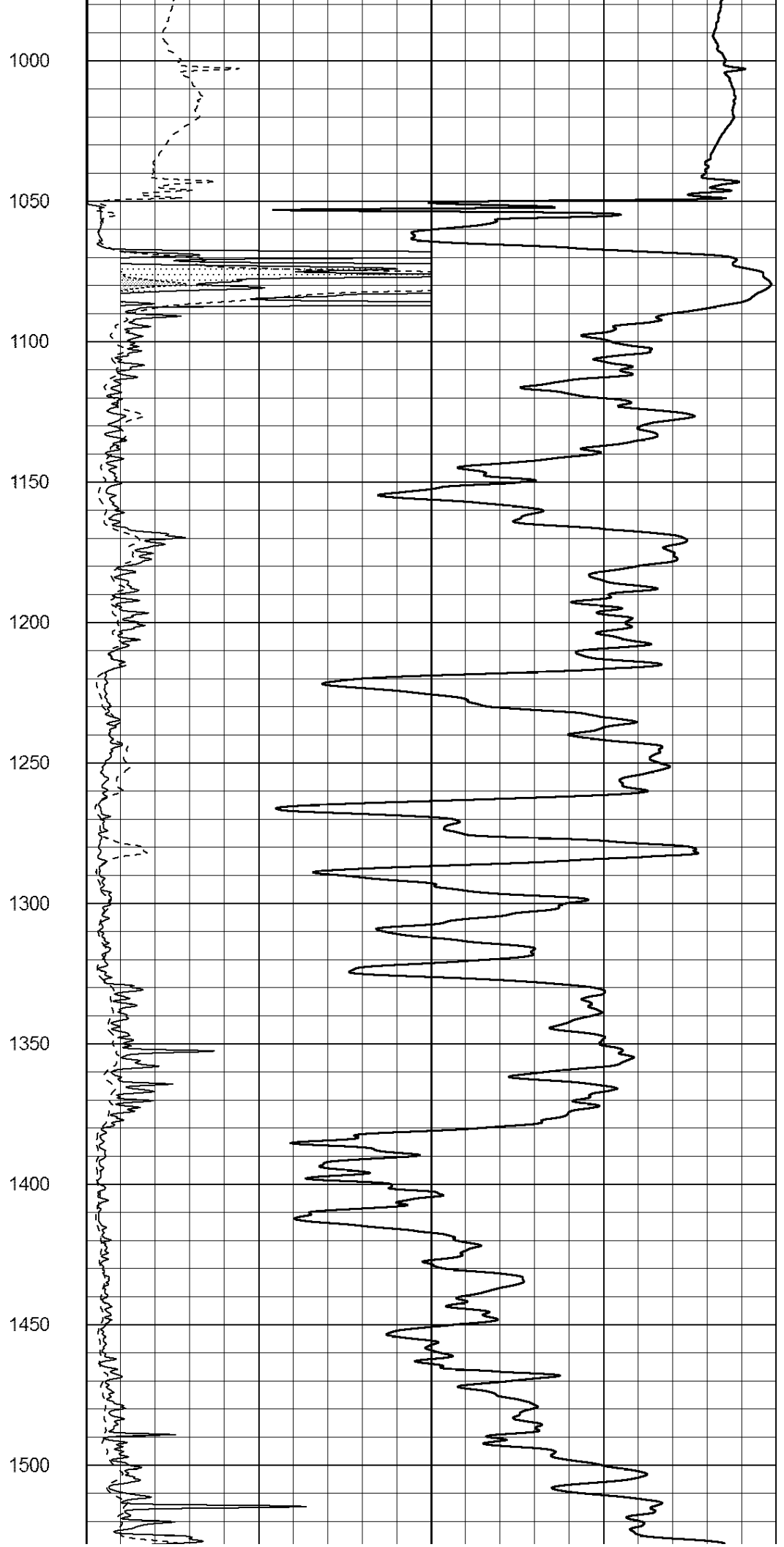
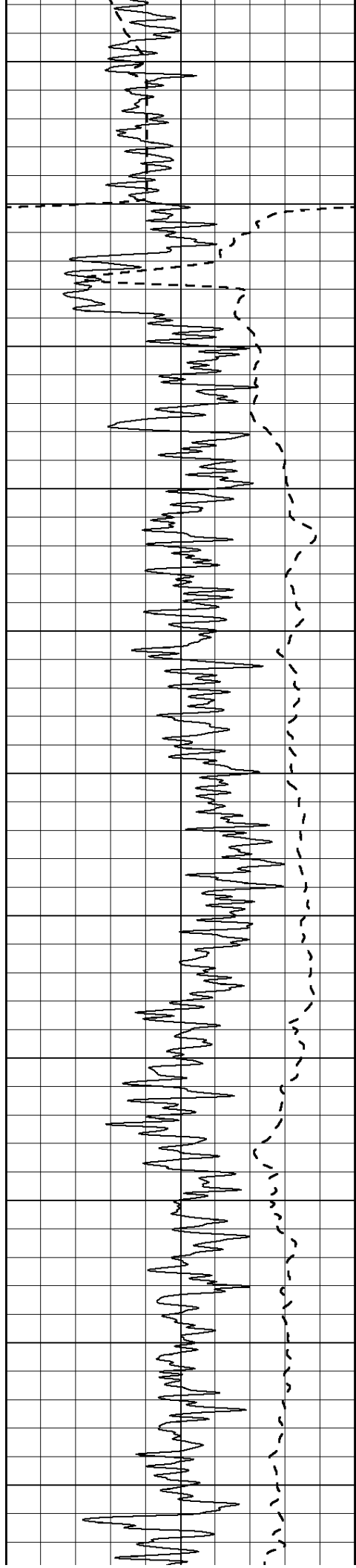
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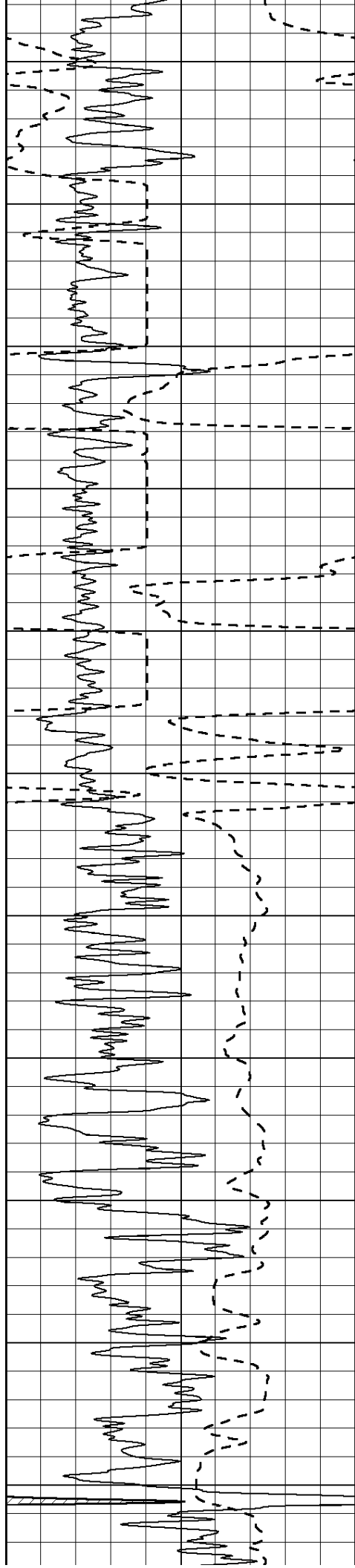
850

900

950







1550

1600

1650

1700

1750

1800

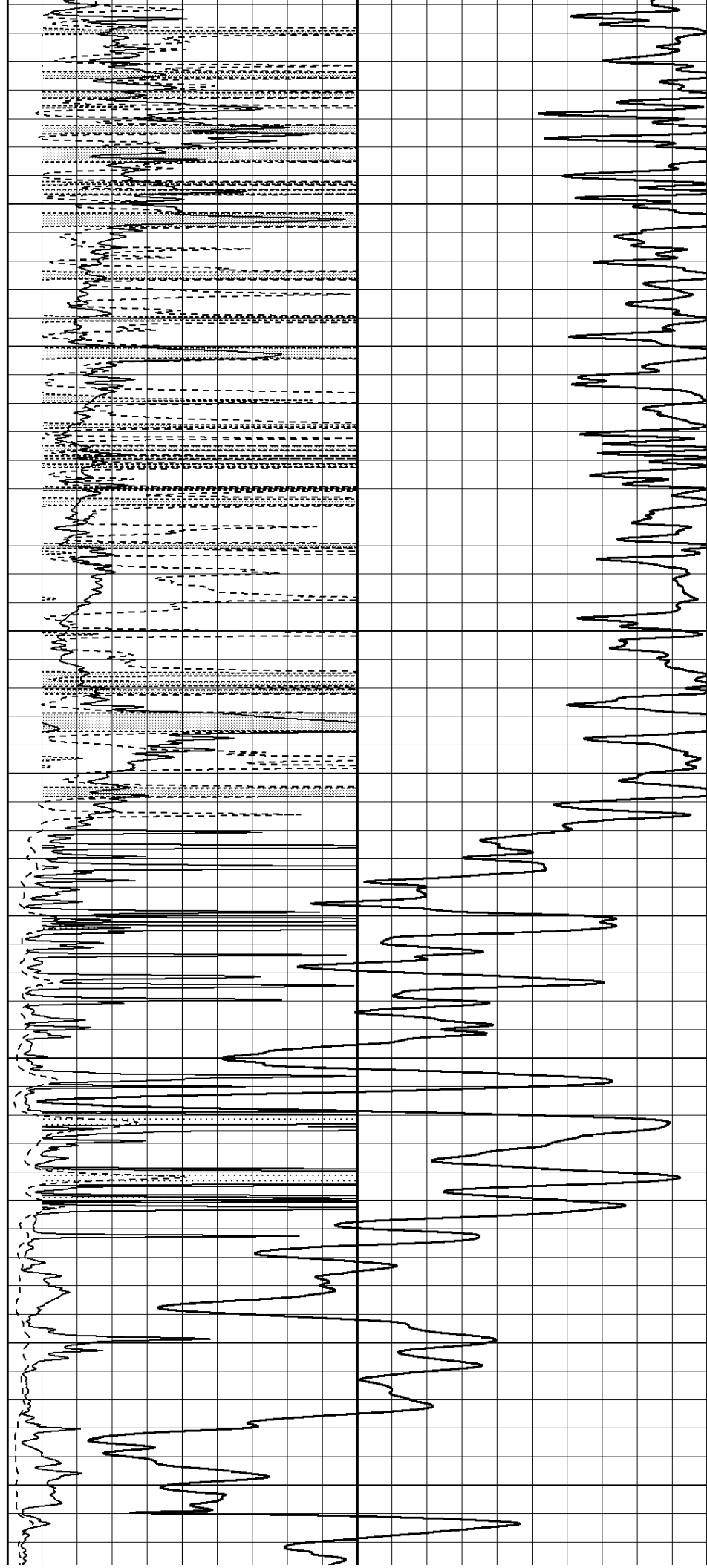
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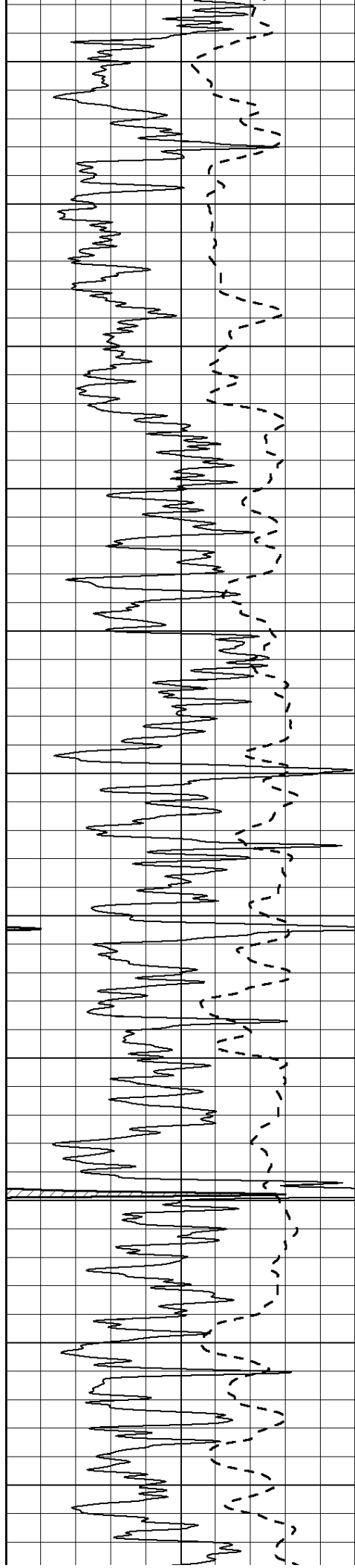
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1950

2000

2050





2100

2150

2200

2250

2300

2350

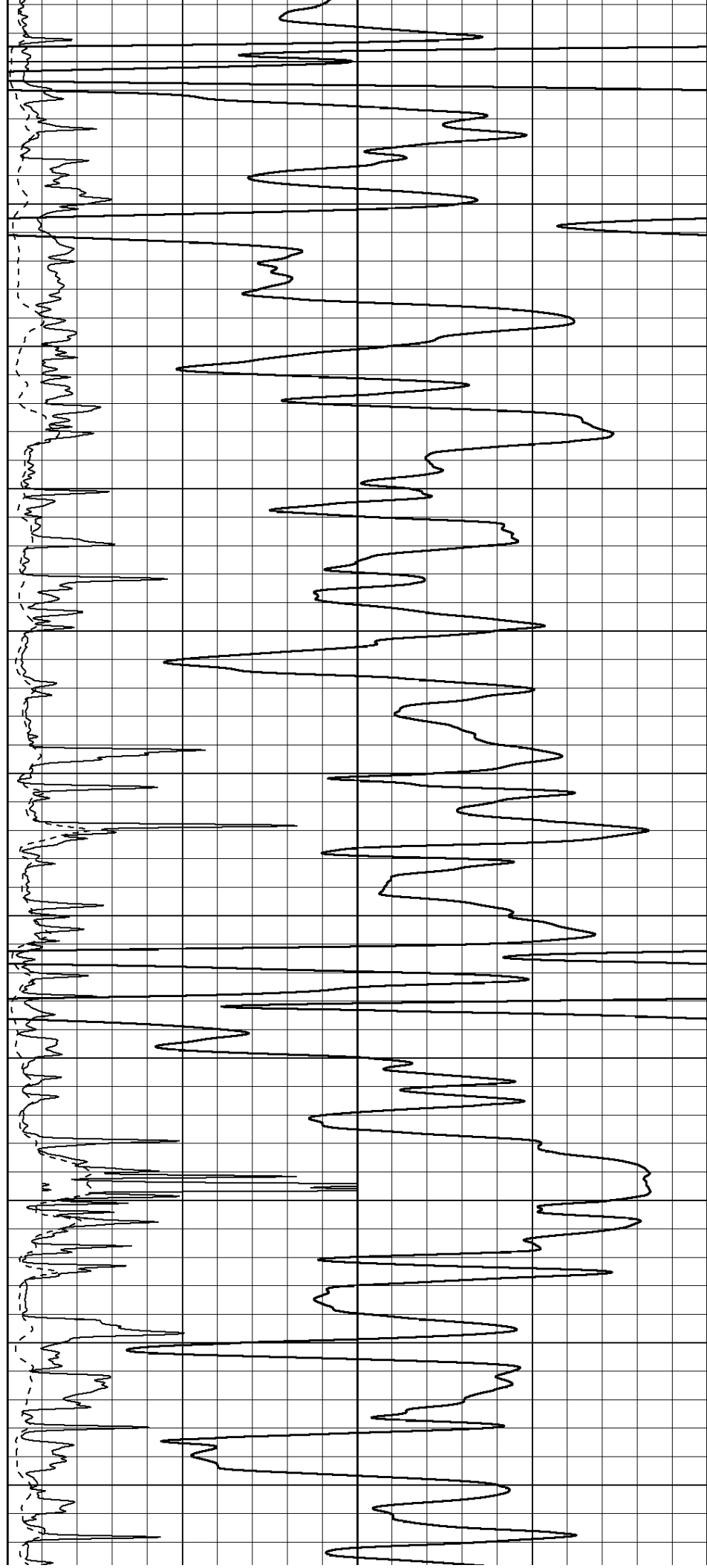
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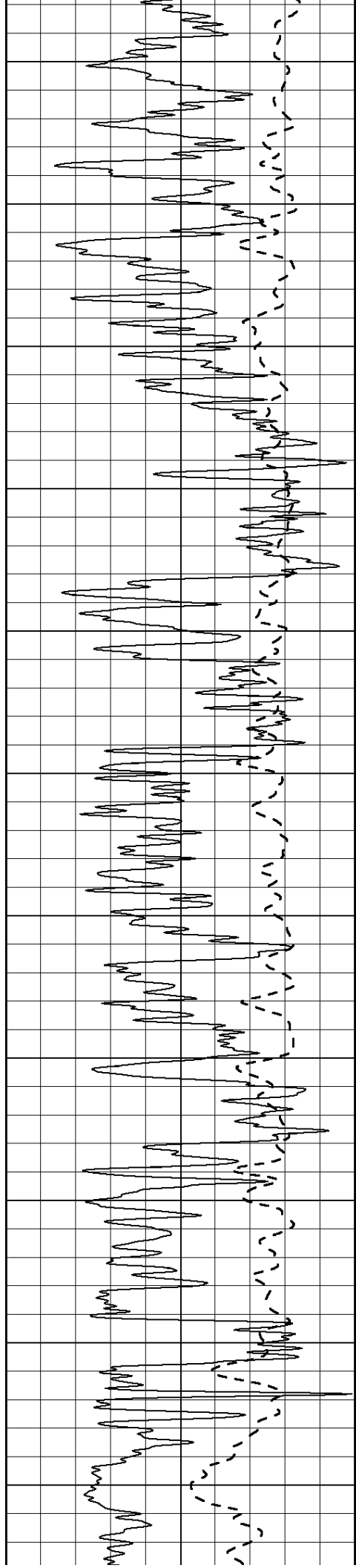
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2500

2550

2600





2650

2700

2750

2800

2850

2900

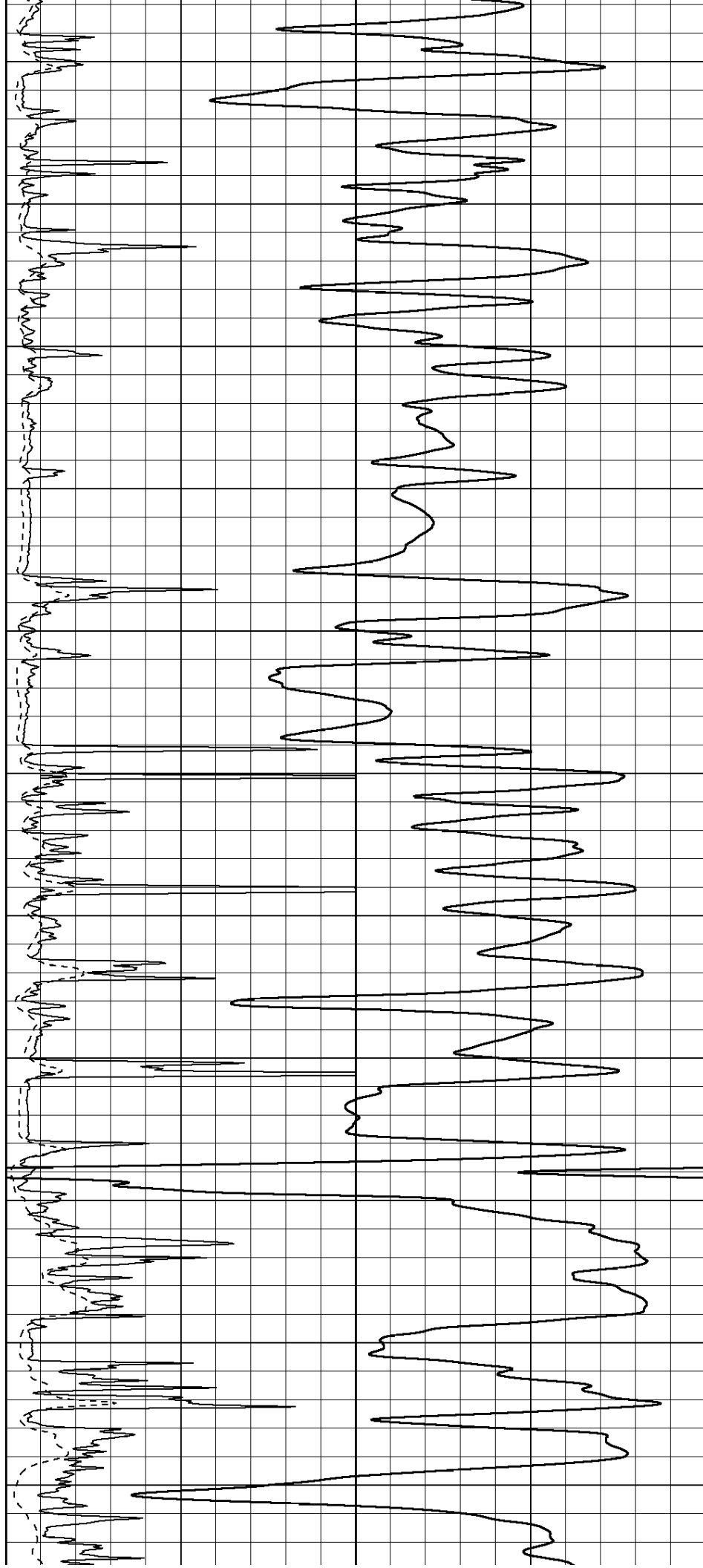
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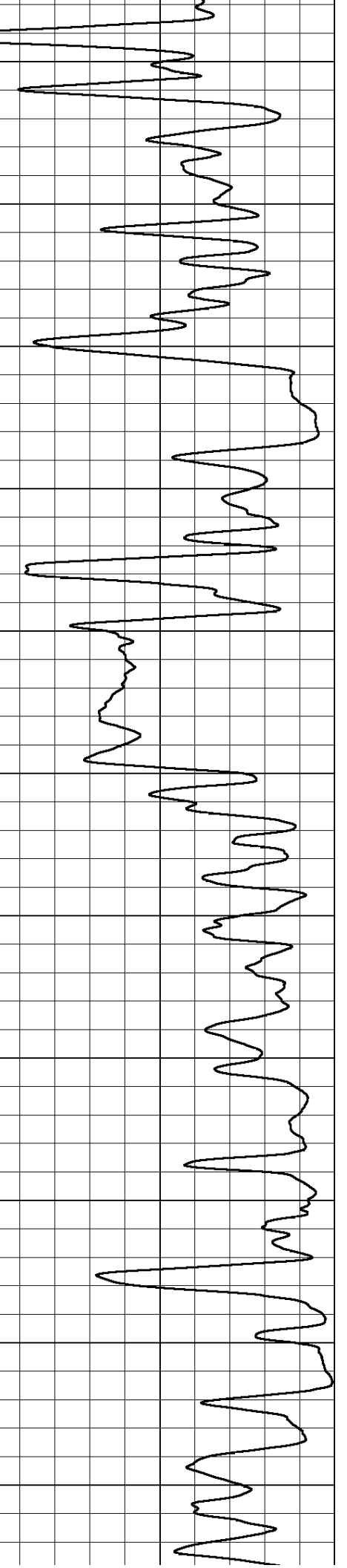
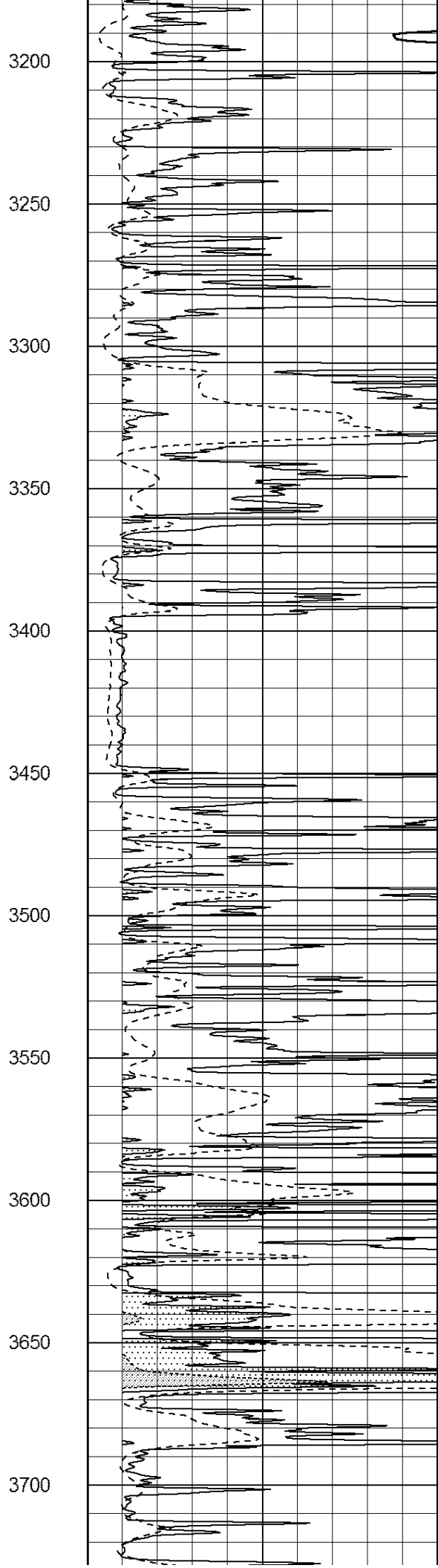
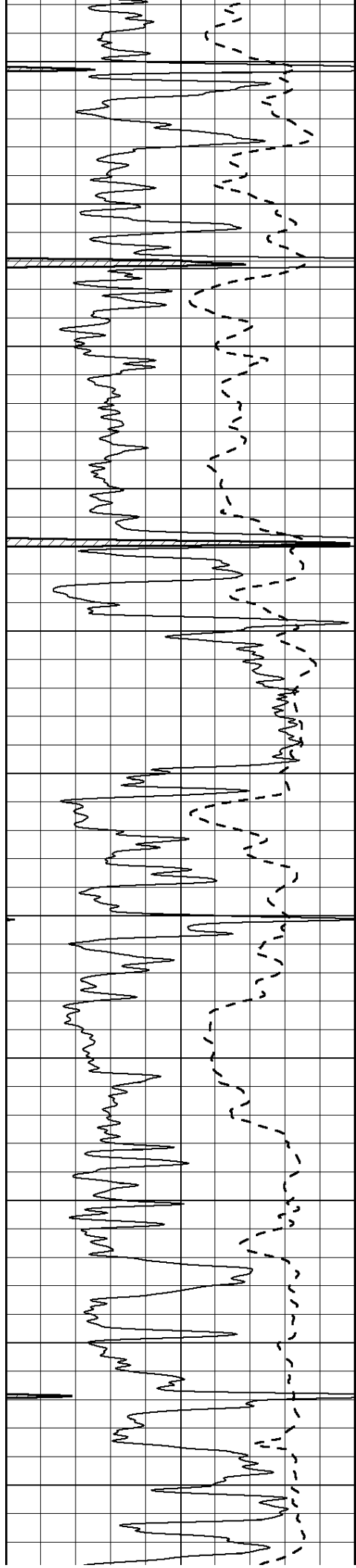
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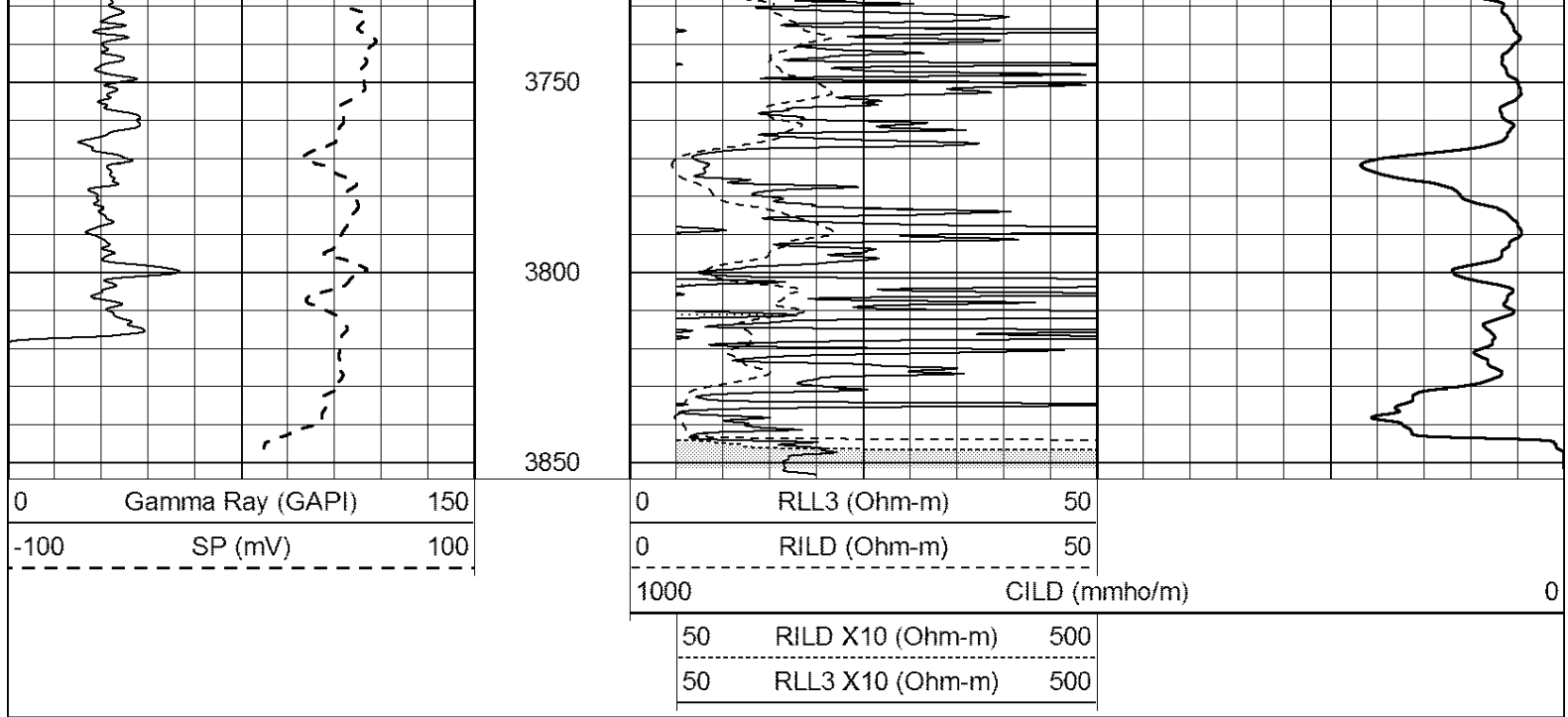
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3100

3150



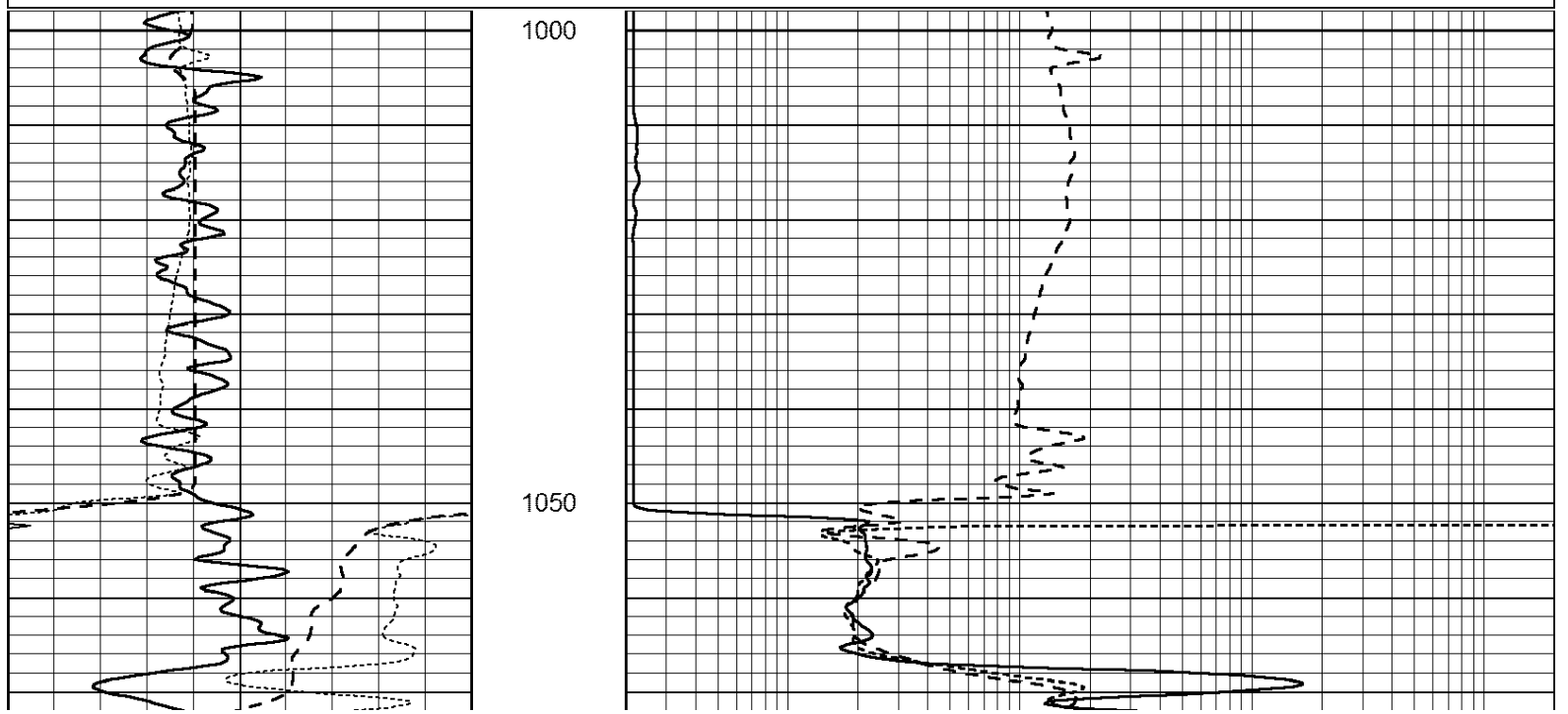


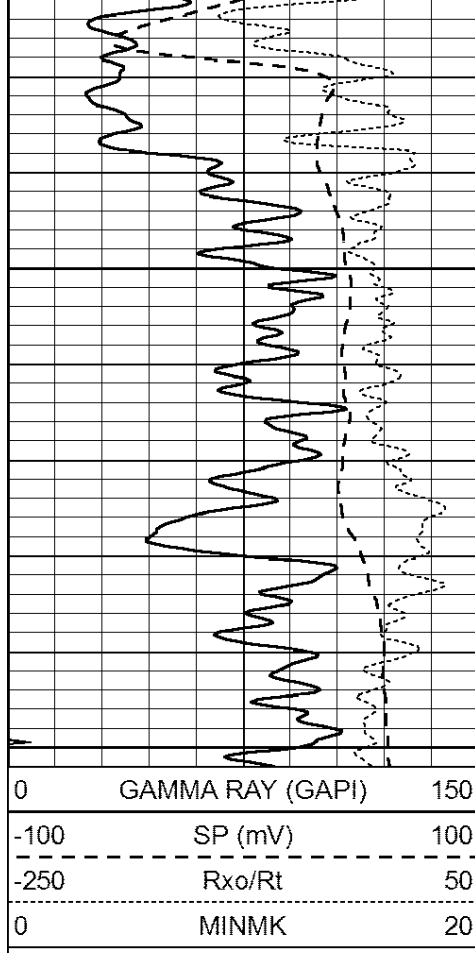


ANHYDRITE

Database File: 24644ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Wed Jul 02 15:09:31 2014 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

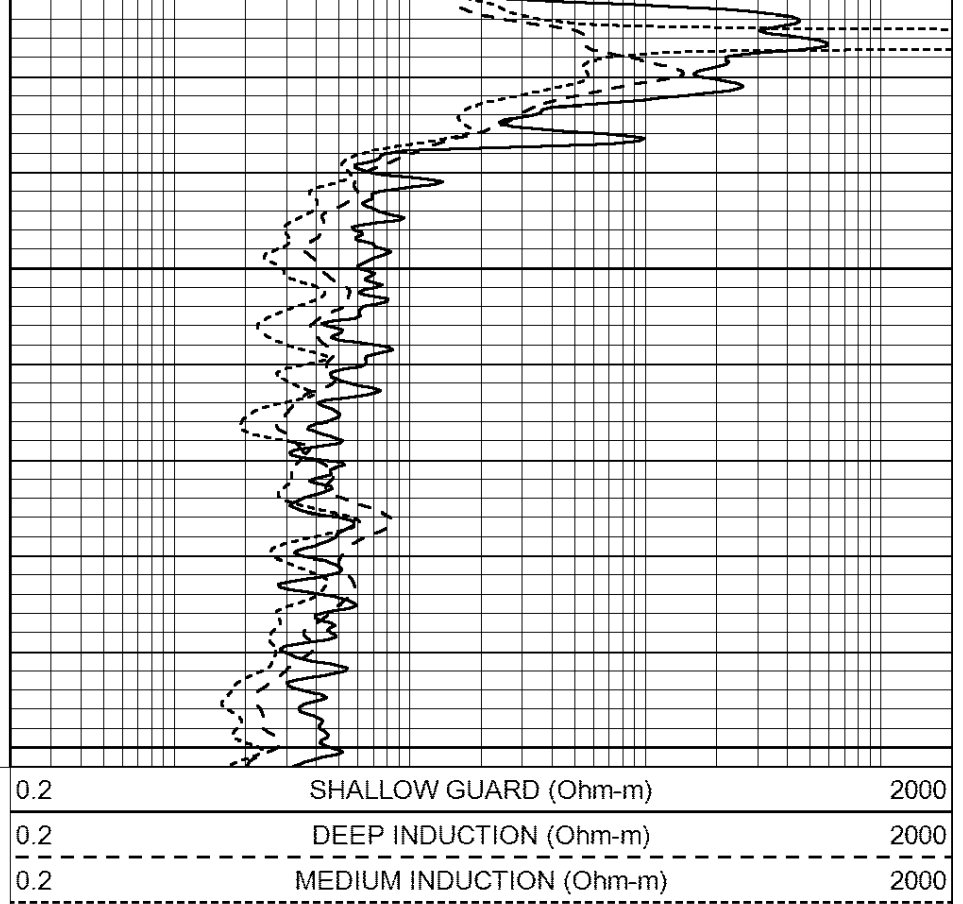
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





1100

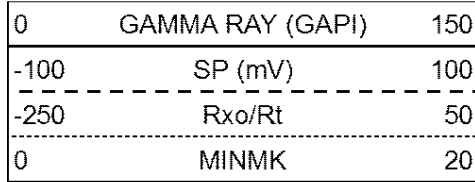
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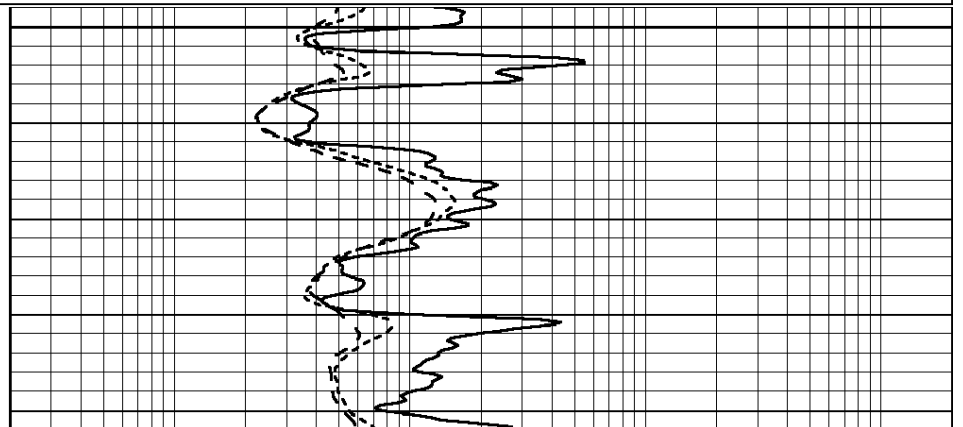
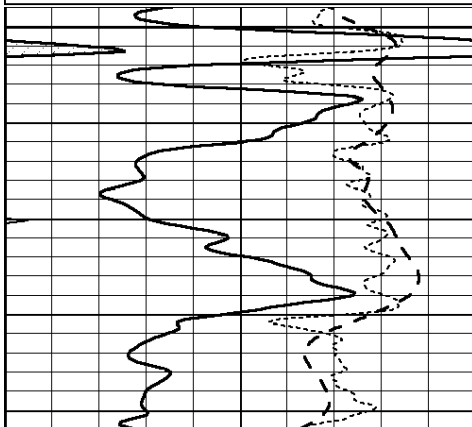
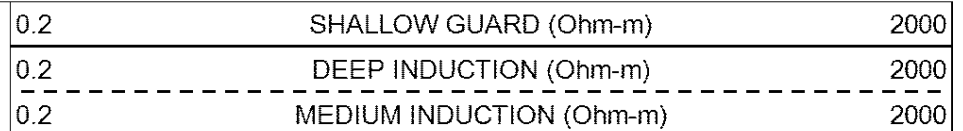
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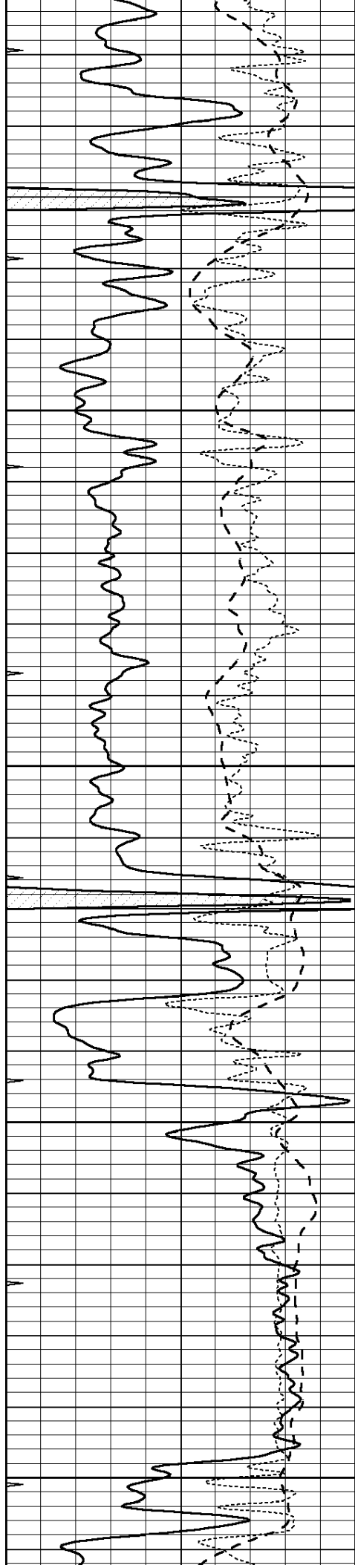
MAIN SECTION

Database File: 24644ddn.db
Dataset Pathname: pass3.1
Presentation Format: _dil
Dataset Creation: Wed Jul 02 14:39:01 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240



3200





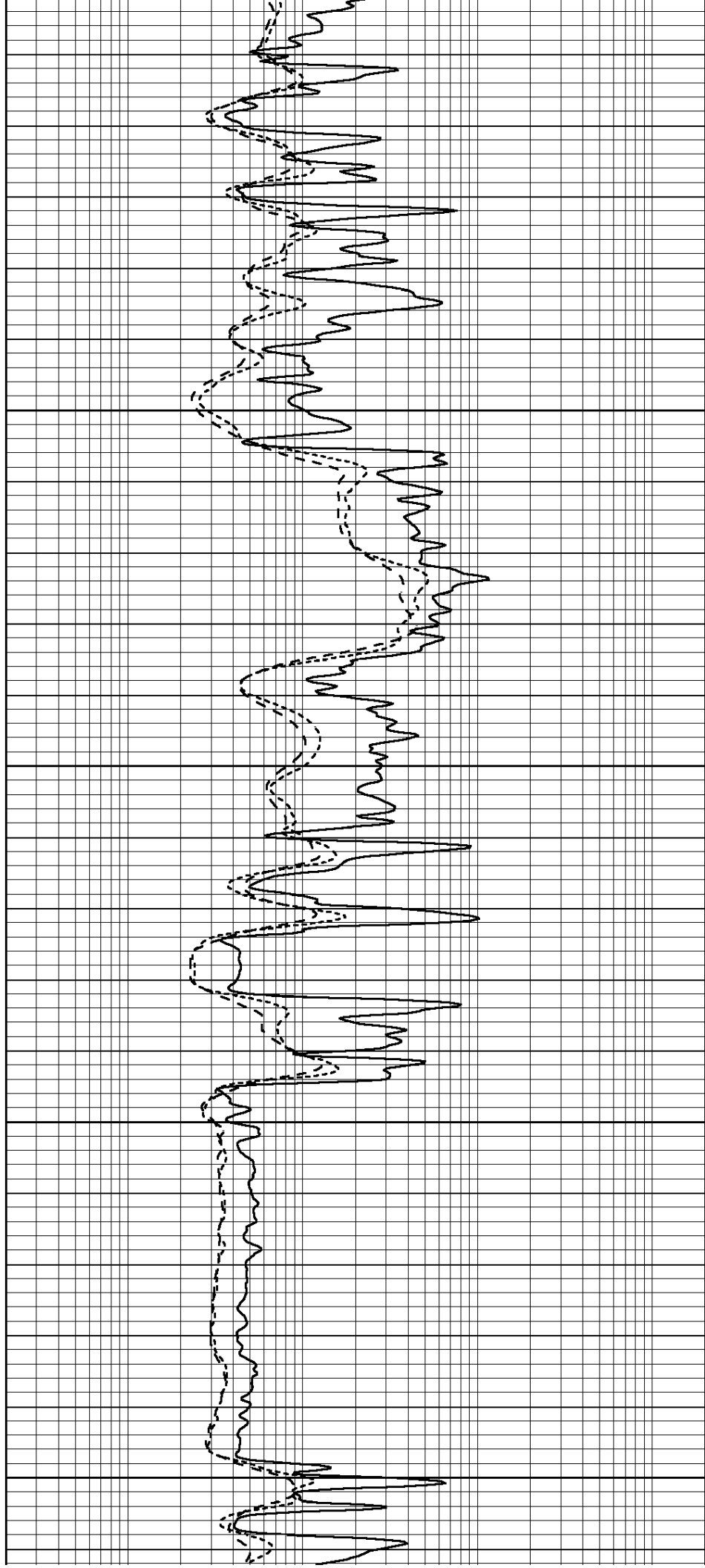
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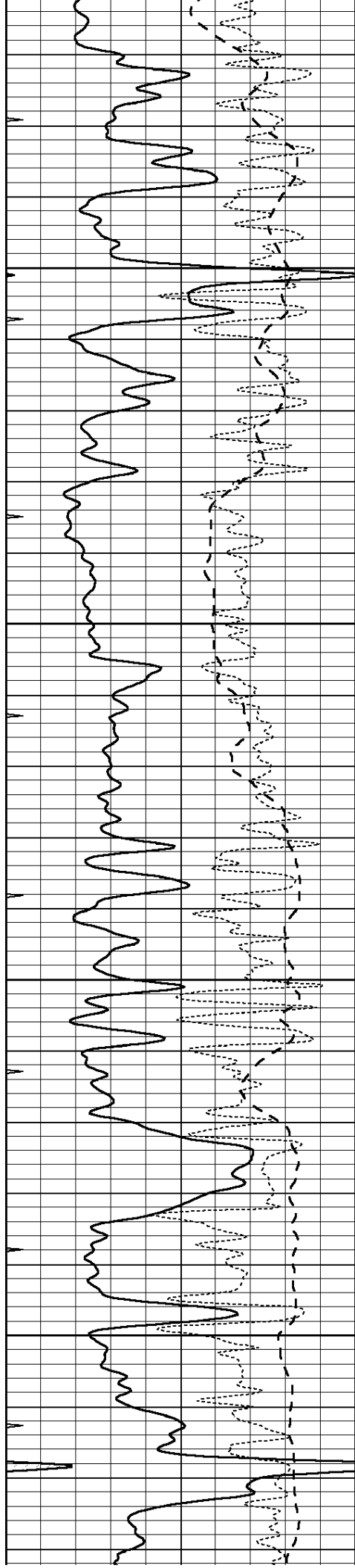
3300

3350

3400

3450



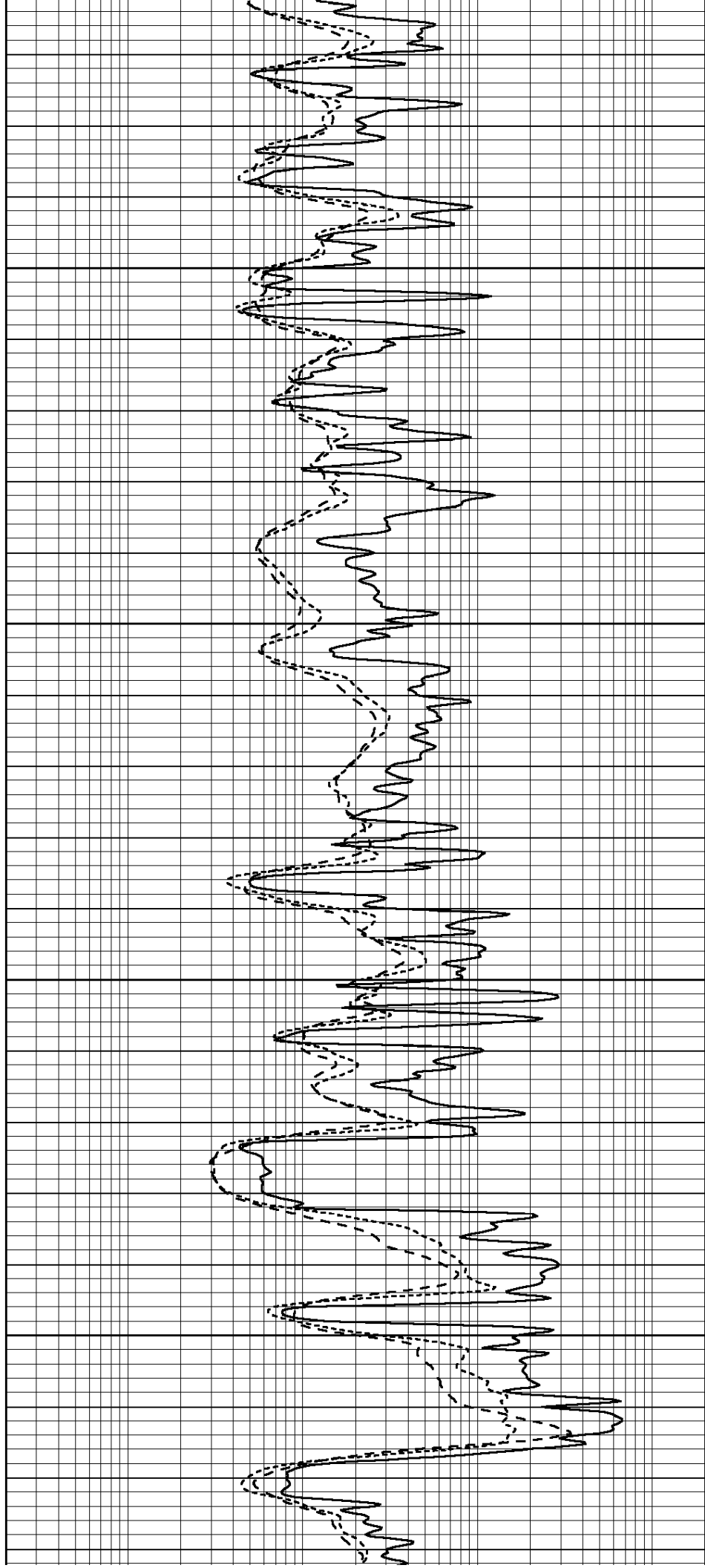


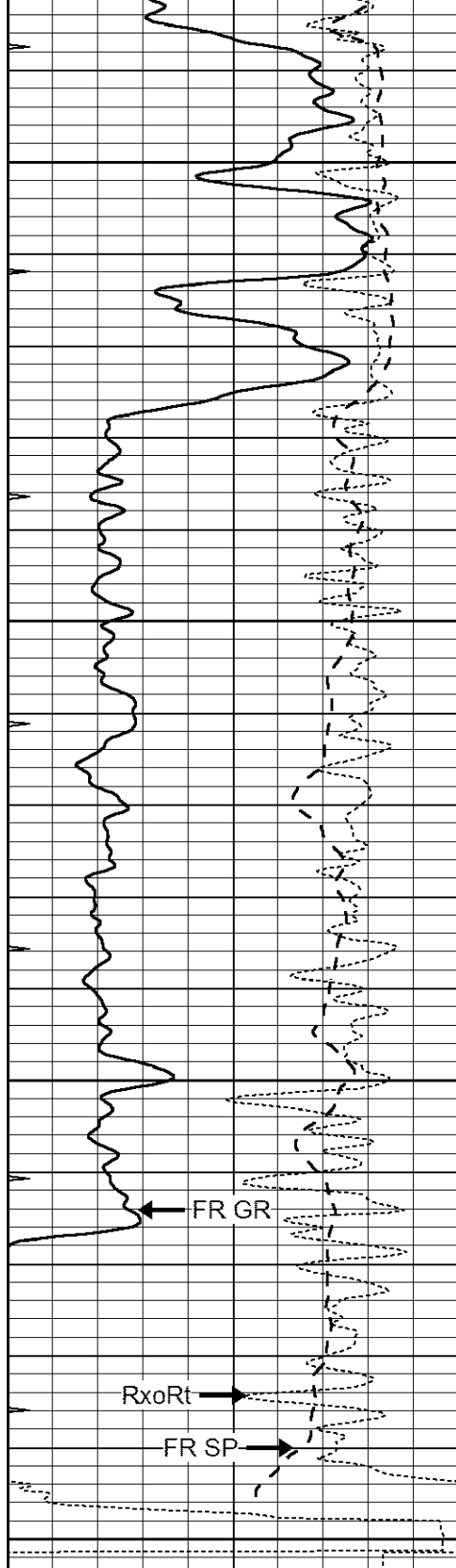
3500

3550

3600

3650





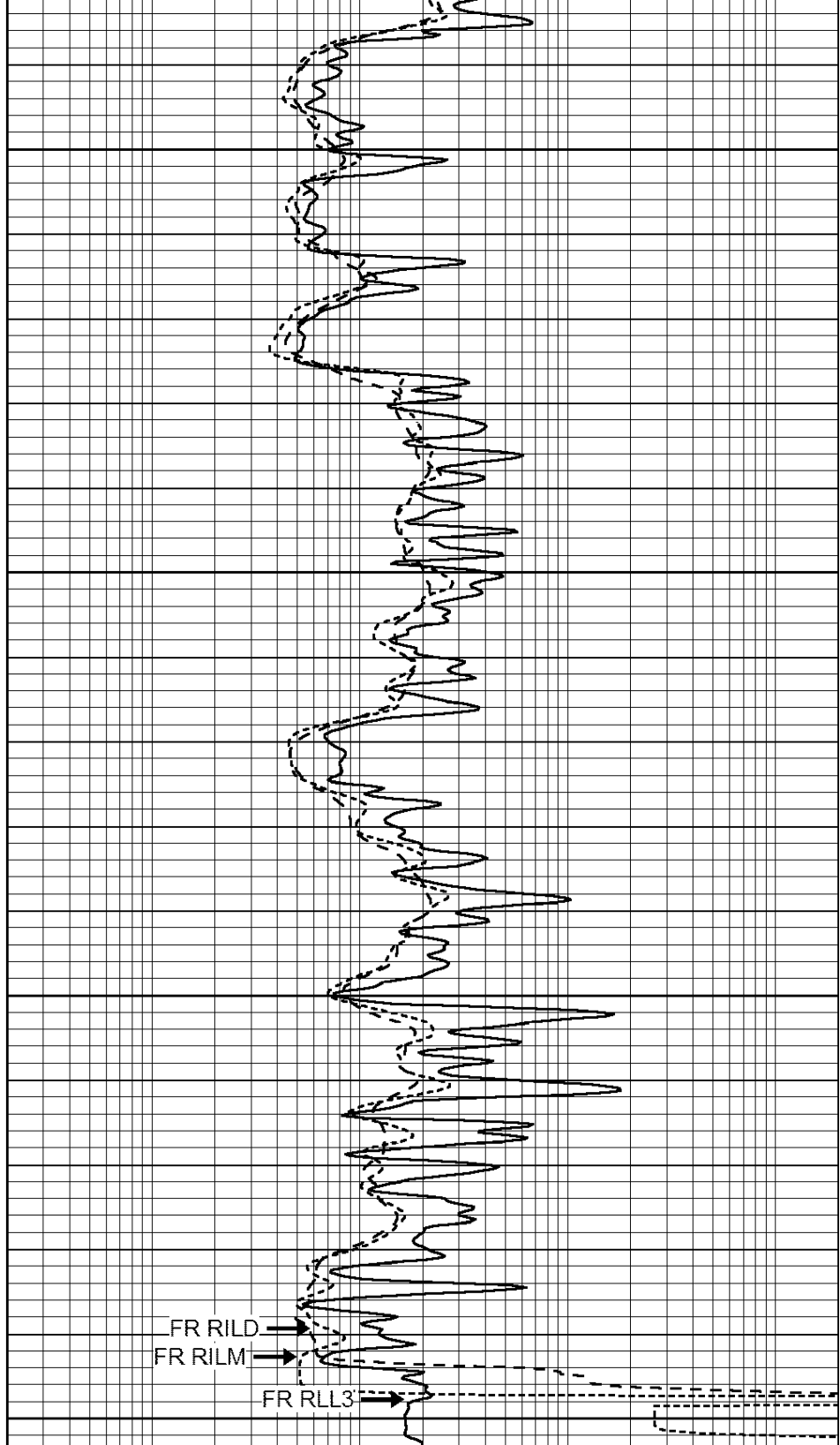
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

3700

3750

3800

LTD 3850

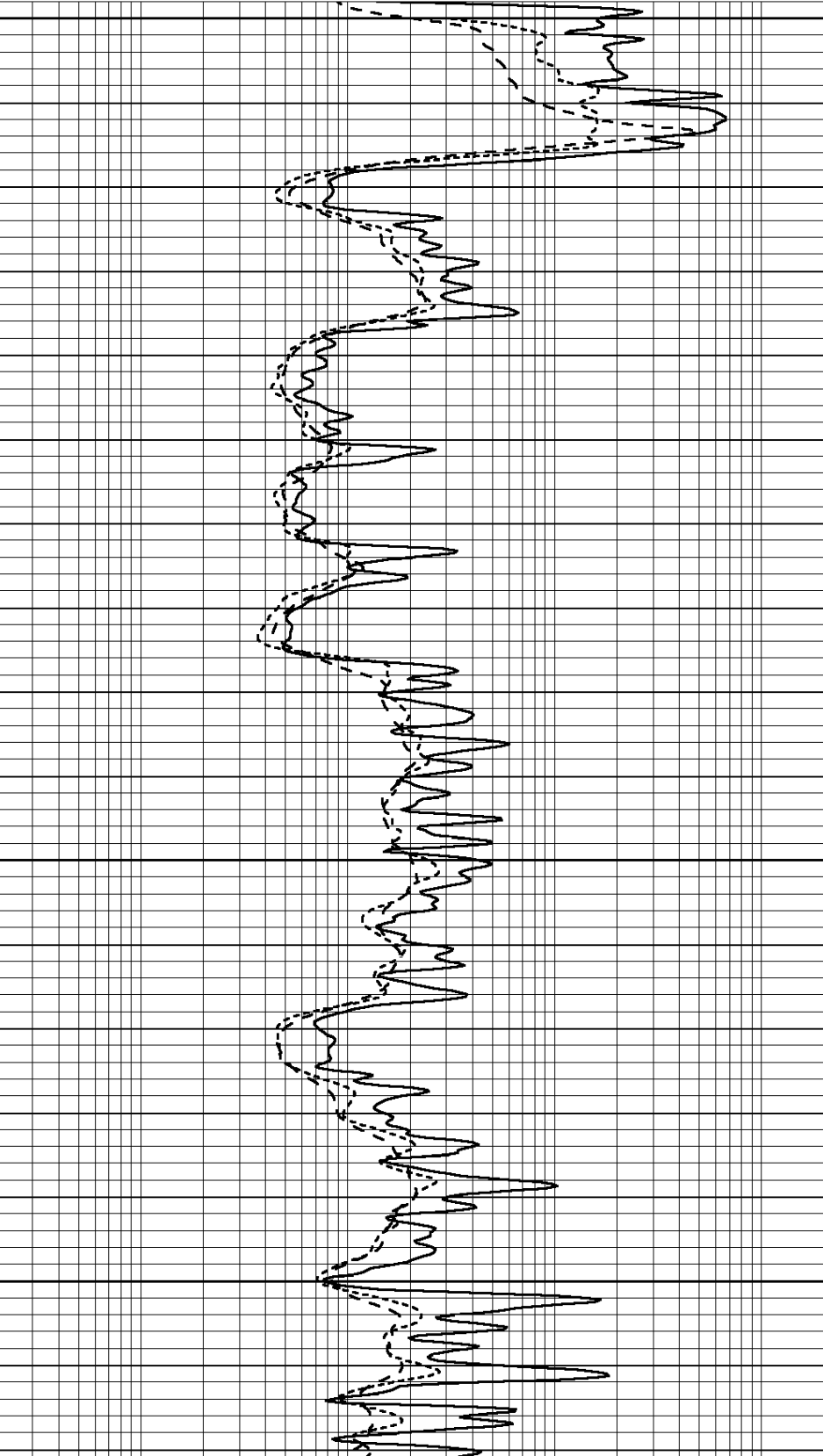
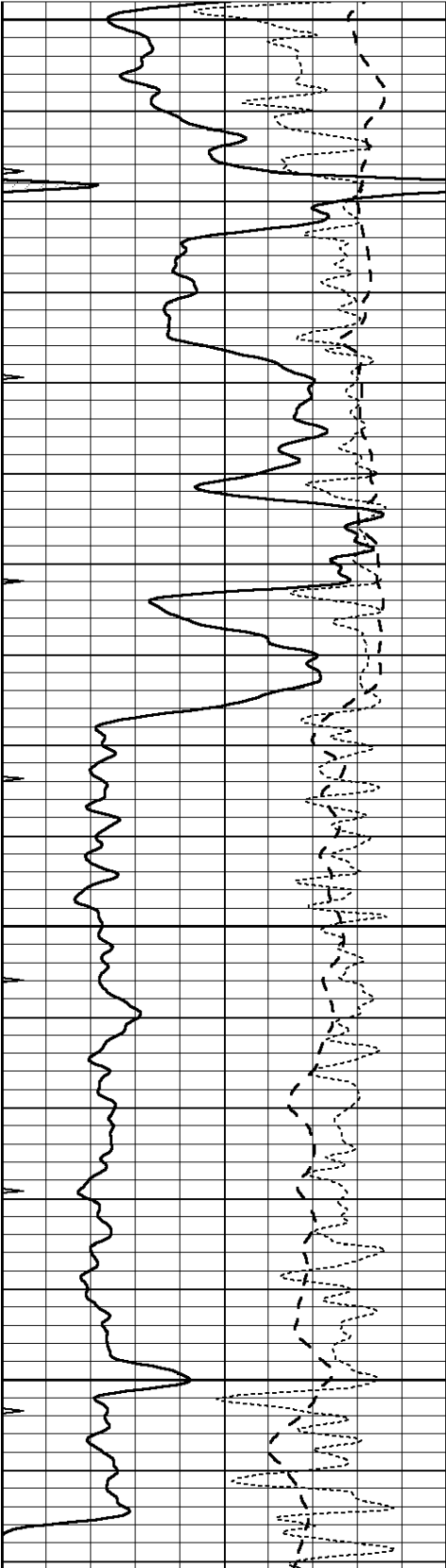


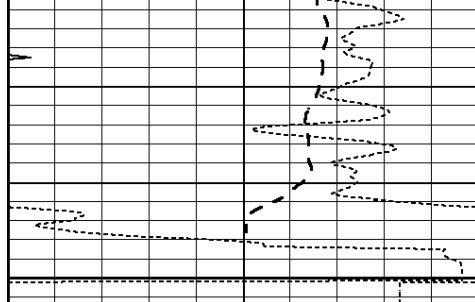
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 24644ddn.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Wed Jul 02 14:33:16 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

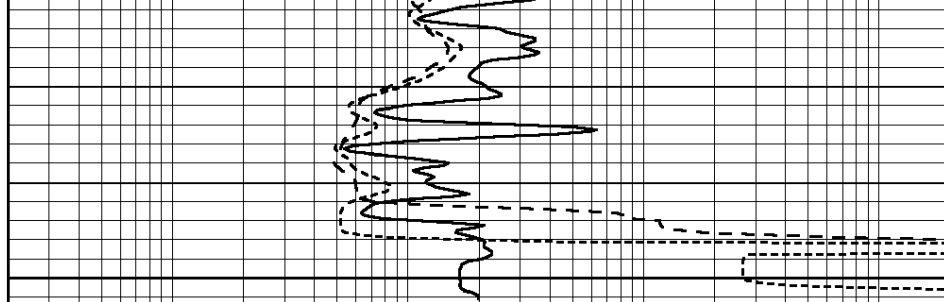
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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





3850



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: 24644ddn.db
Dataset Pathname: pass2.1
Dataset Creation: Wed Jul 02 14:33:16 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	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

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		
	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 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	