The Perforators LLC

SINGLE INDUCTION LOG

Company	Pioneer Natural Resources
Well	Cedar 31-19
Field	Purgatoire River
County	Las Animas
State	Colorado

Company Pioneer Natural Resources

Well Cedar 31-19

Field Purgatoire River

County Las Animas State Colorado

Location: API # : 05 071 09714 00

716' FNL & 2076' FEL

SEC 19 TWP 32S RGE 67W

Other Services: CDNL

Permanent Datum: Ground Level Elevation: 8151'

Log Measured From: Kelly Bushing 4' AGL

Drilling Measured From: Kelly Bushing

Elevation: K.B. 8155' D.F. ----- G.L. 8151'

Date	6-29-11				
Run Number	One				
Depth Driller	3314'				
Depth Logger	3300'				
Bottom Logged Interval	3298'				
Top Log Interval	Surface Casing				
Casing Driller	8 5/8" @ 612'				
Casing Logger	612'				
Bit Size	7 7/8"				
Type Fluid in Hole	Airiated Water				
Density / Viscosity	///				
pH / Fluid Loss	///				
Source of Sample	////				
Rm @ Meas. Temp	////				
Rmf @ Meas. Temp	////				
Rmc @ Meas. Temp	////				
Source of Rmf / Rmc	////				
Rm @ BHT	////				
Time Circulation Stopped	11:30 A.M.				
Time Logger on Bottom	3:45 P.M.				
Maximum Recorded Temperature	108 DEG F				
Equipment Number	T590				
Location	Trinidad				
Recorded By	C. Sisneros				
Witnessed By	Mr. Derrick Berry				

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Comments

Directions:
Wet Canyon, take right across cattlegaurd by Millards House, stay straight up canyon, drive thru the Lightning location.

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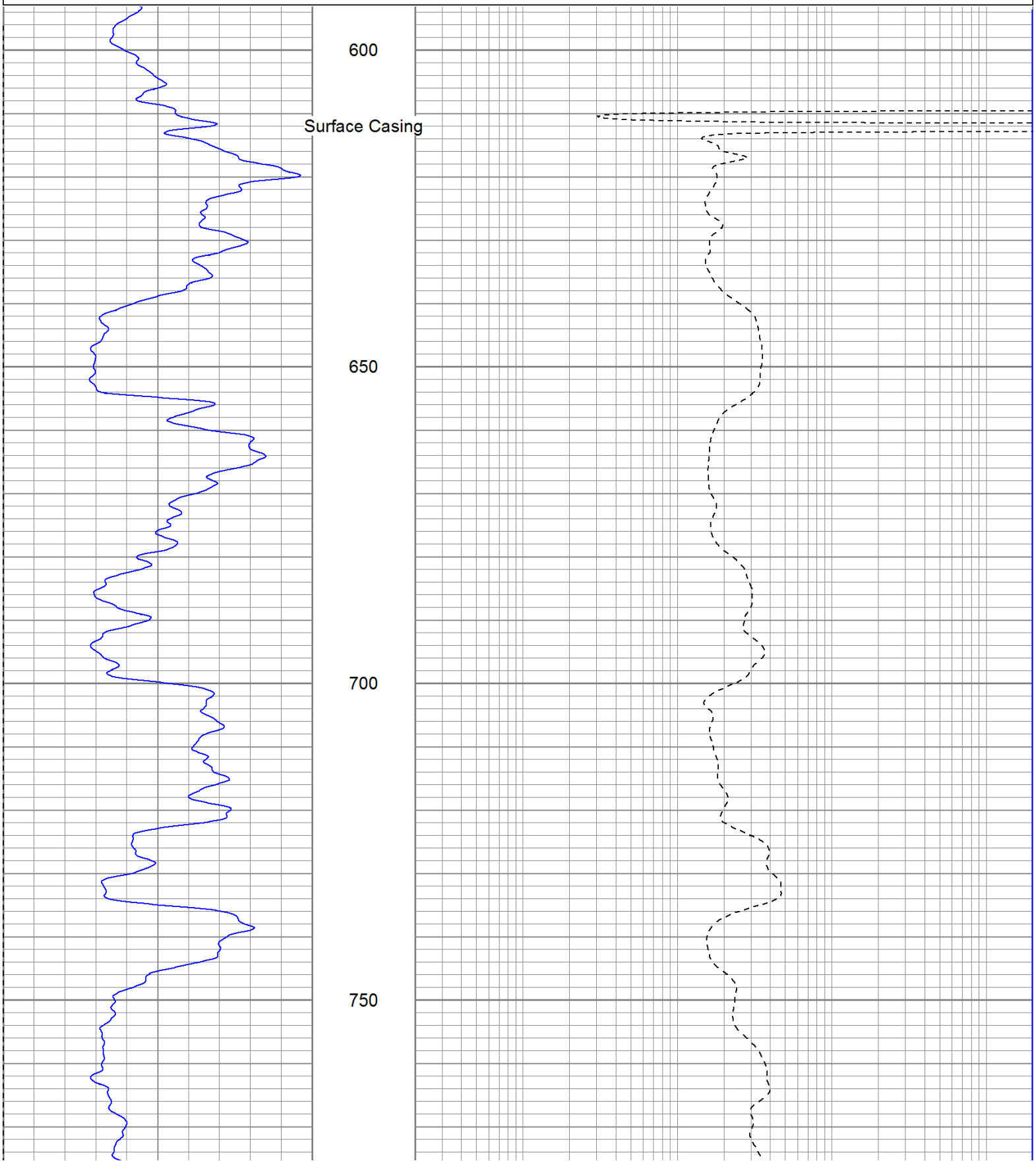
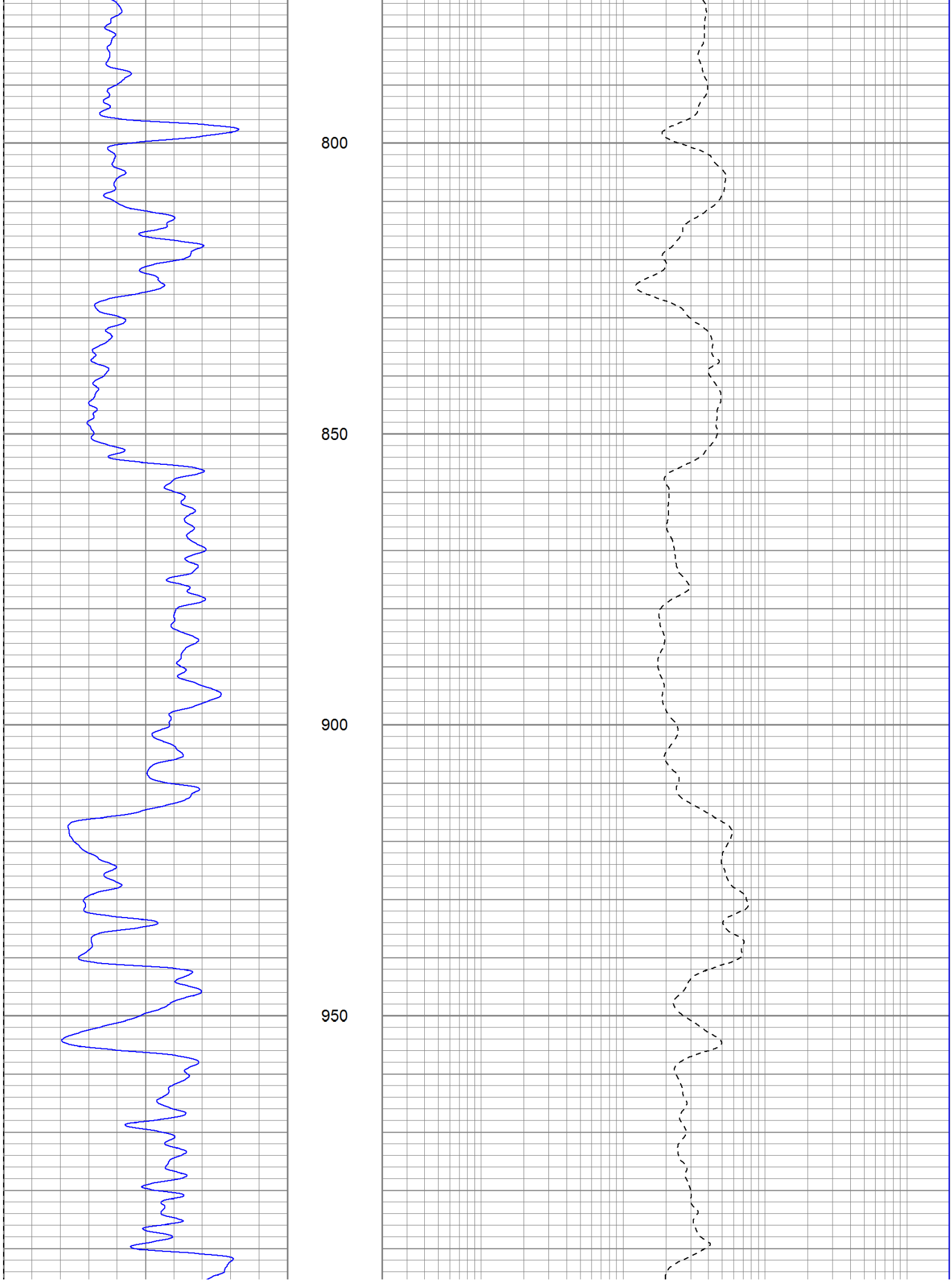
Main Pass

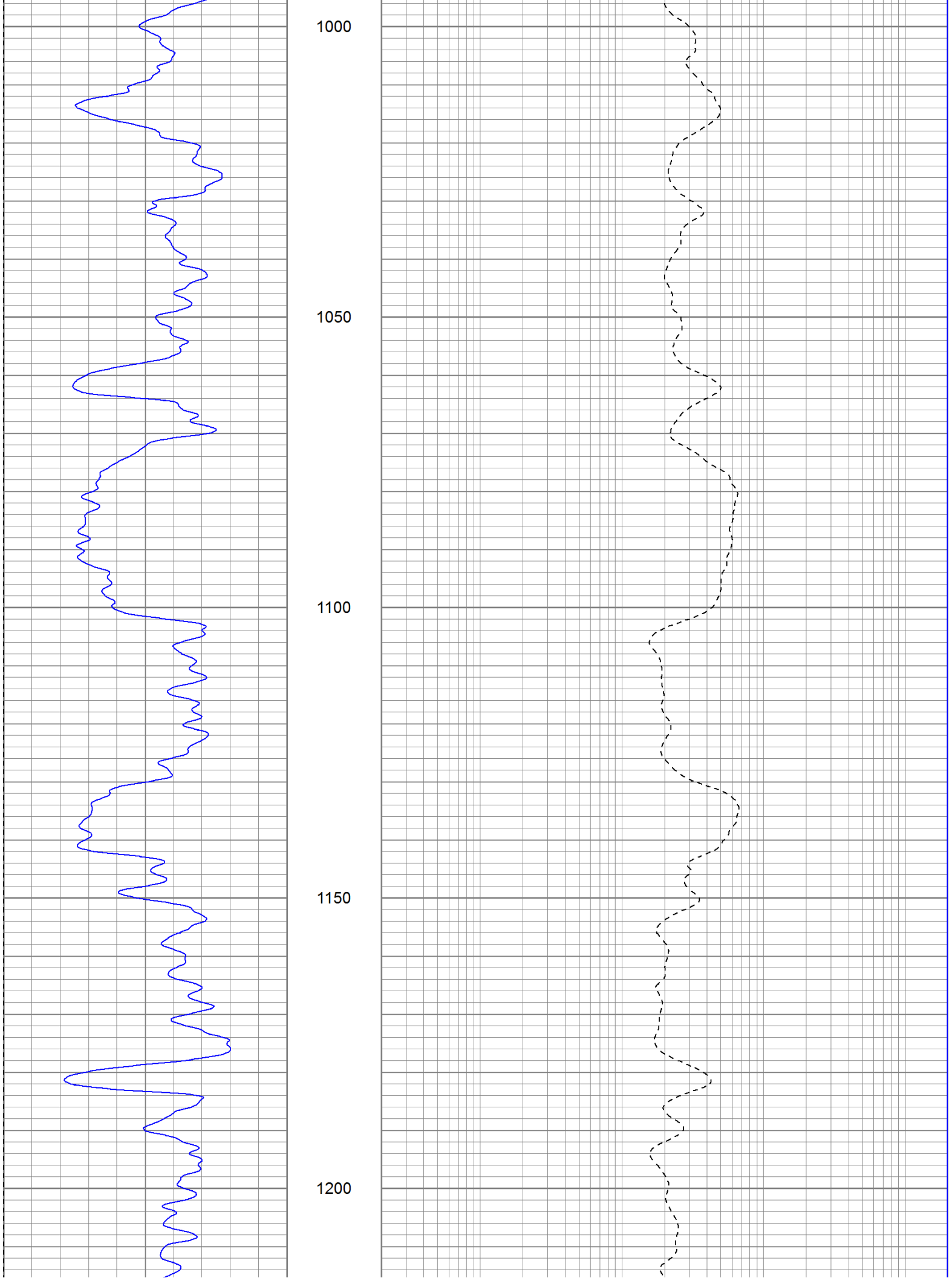
Database File:	cedar.db
Dataset Pathname:	pass2.1
Presentation Format:	iel
Dataset Creation:	Wed Jun 29 17:37:19 2011 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240

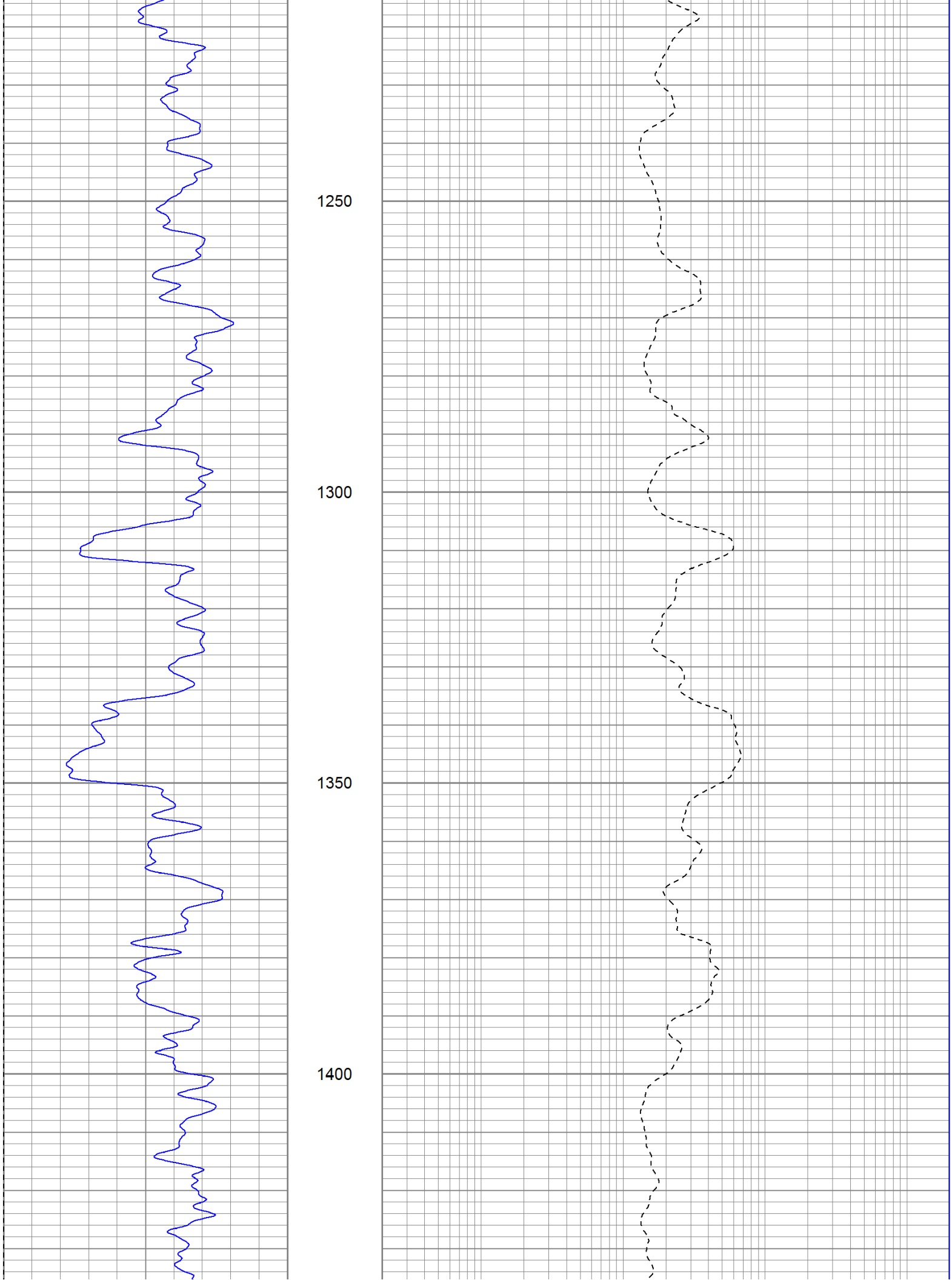
0	GR (GAPI)	200
-200	SP (mV)	0

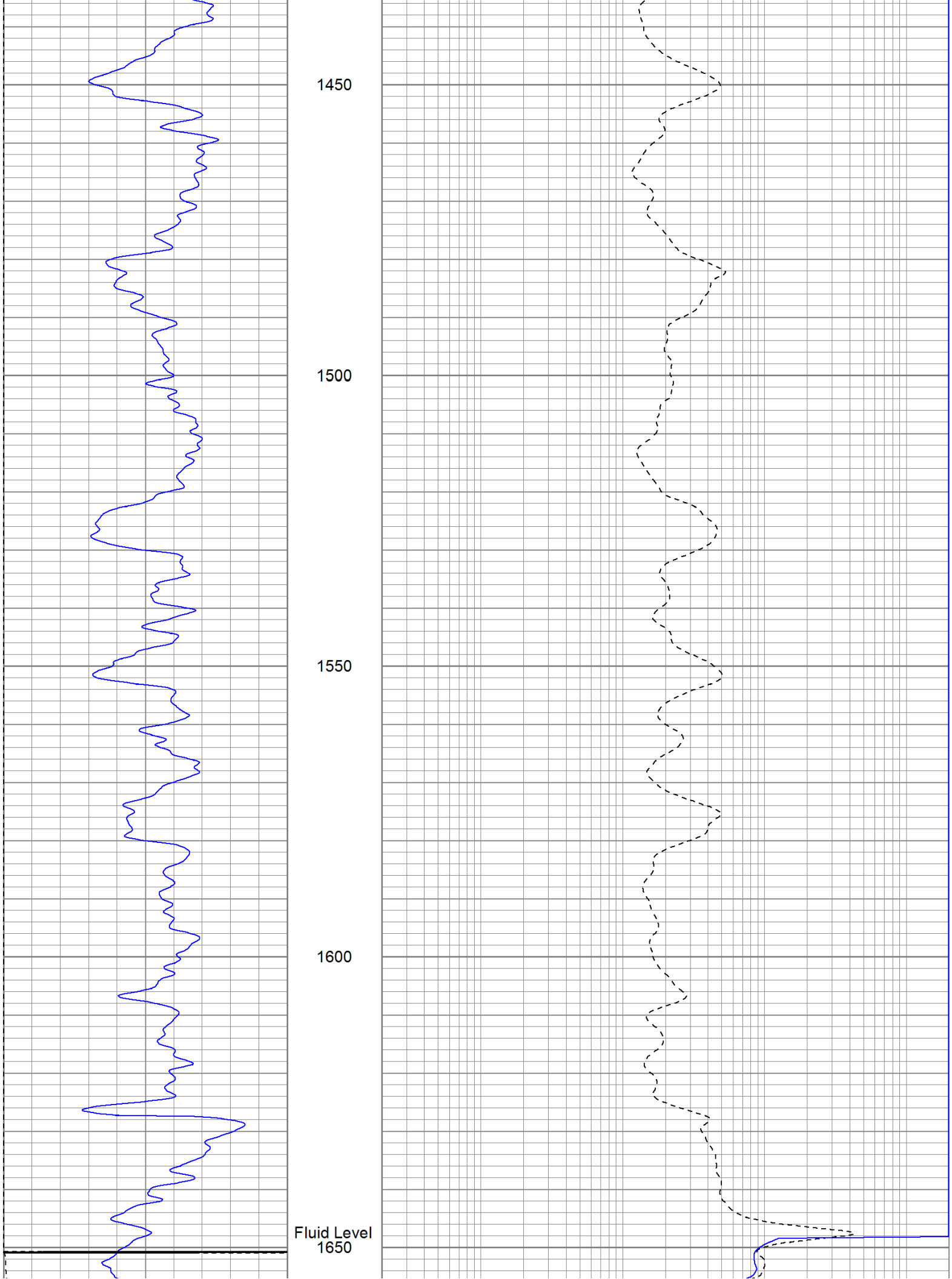
0.2	DIR (Ohm-m)	2000
0.2	SN (Ohm-m)	2000

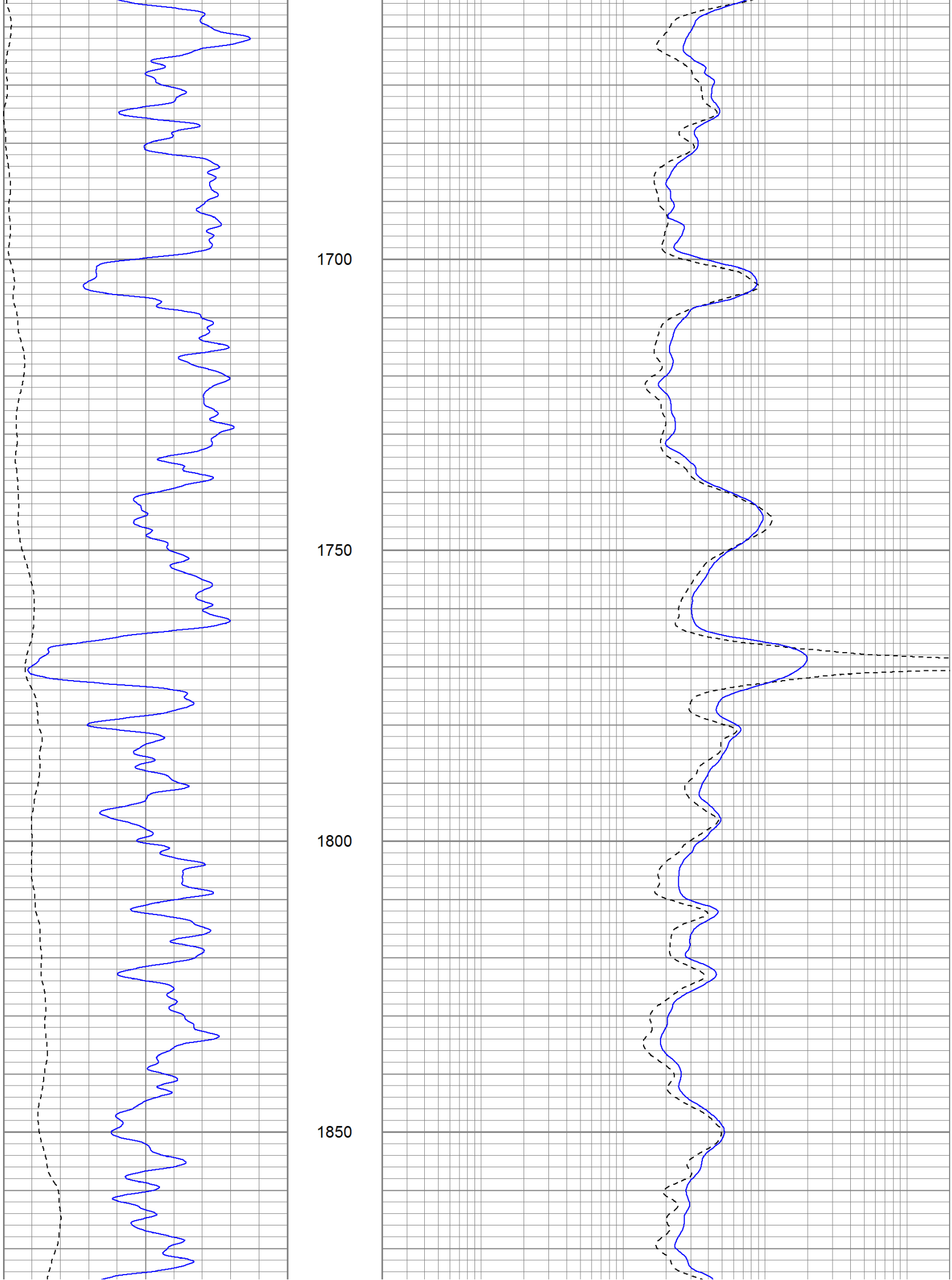


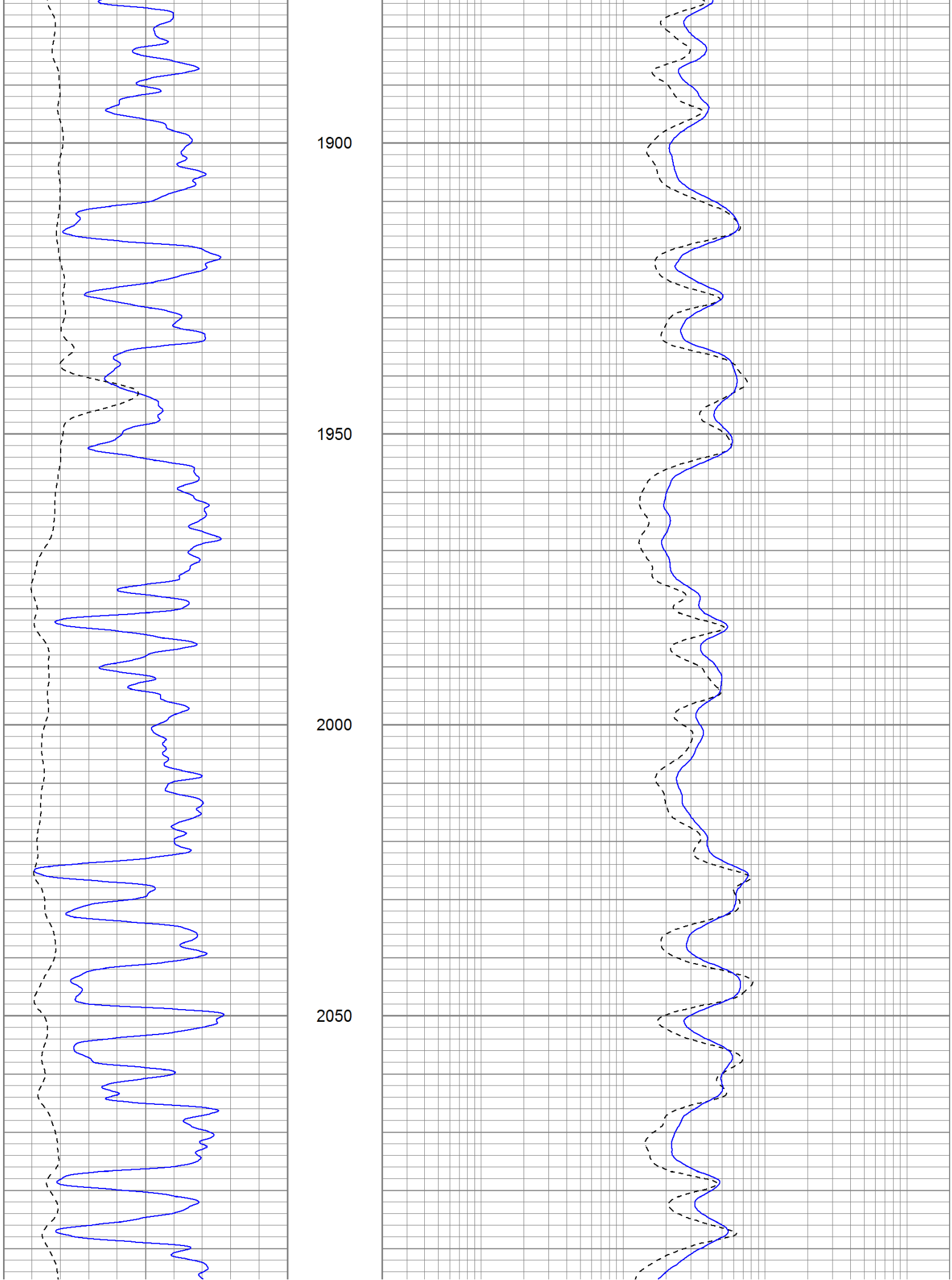

800
850
900
950

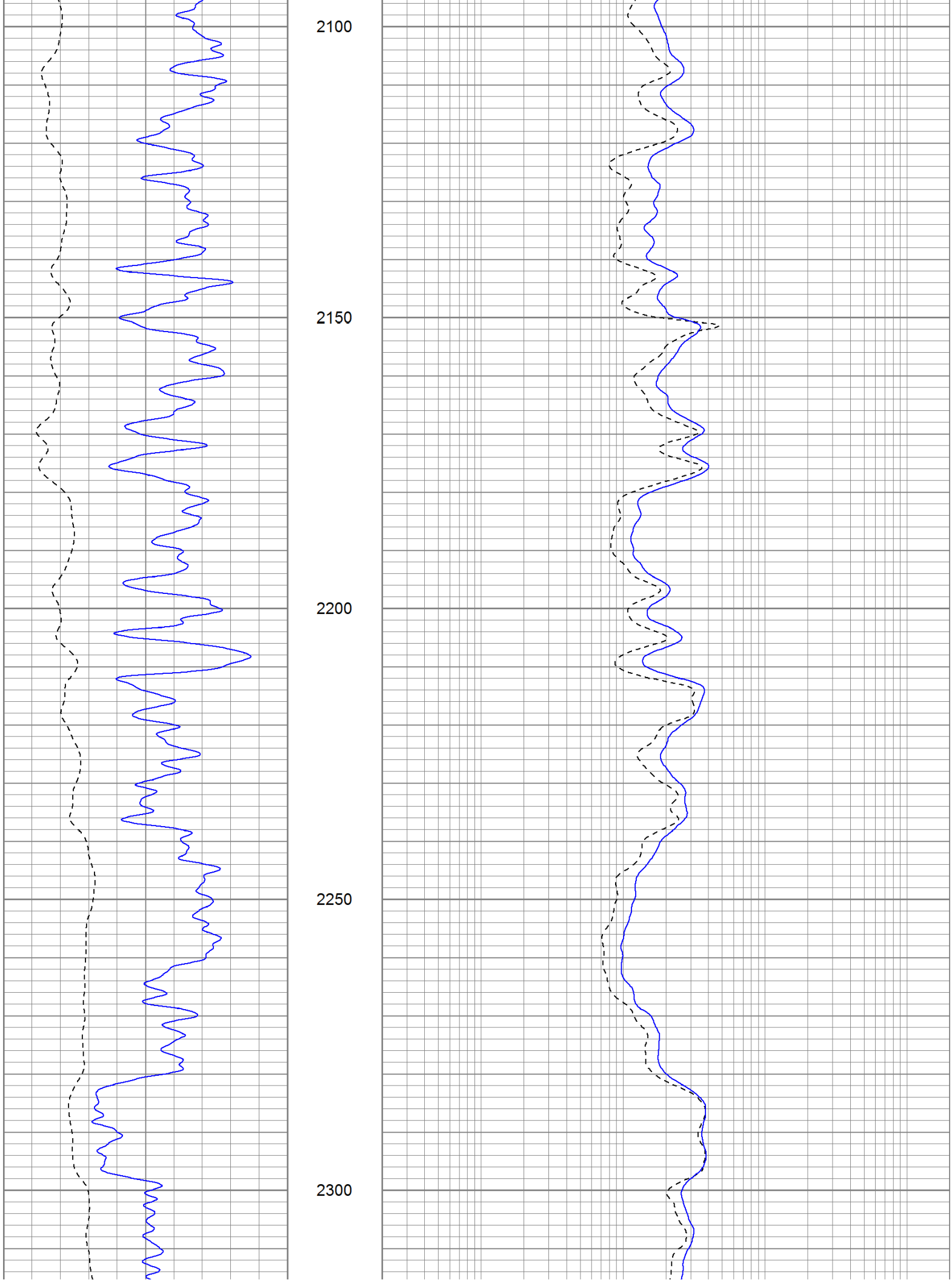

1000
1050
1100
1150
1200


1250
1300
1350
1400


1450
1500
1550
1600
Fluid Level
1650


1700
1750
1800
1850


1900
1950
2000
2050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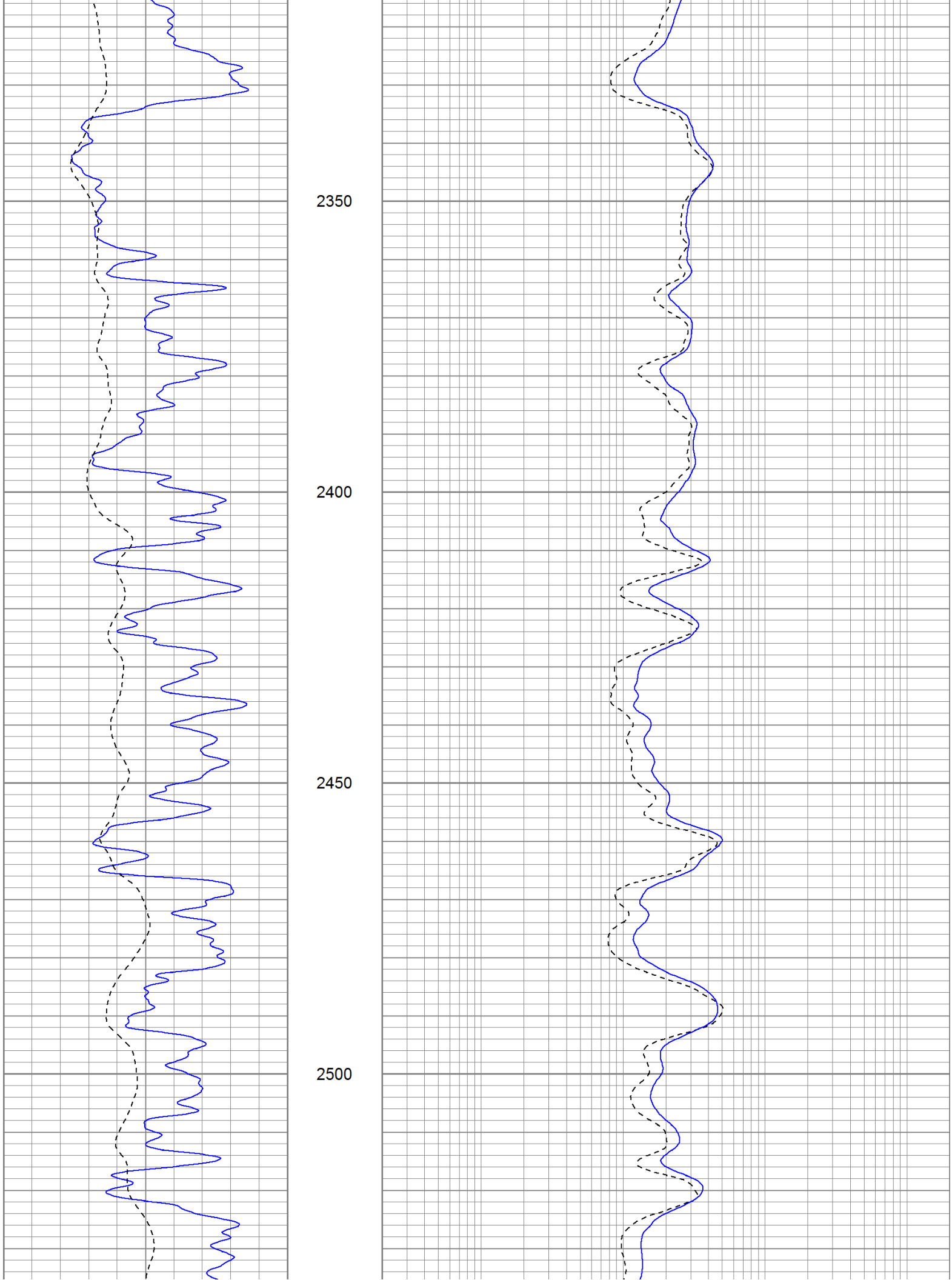
2150
2200
2250
2300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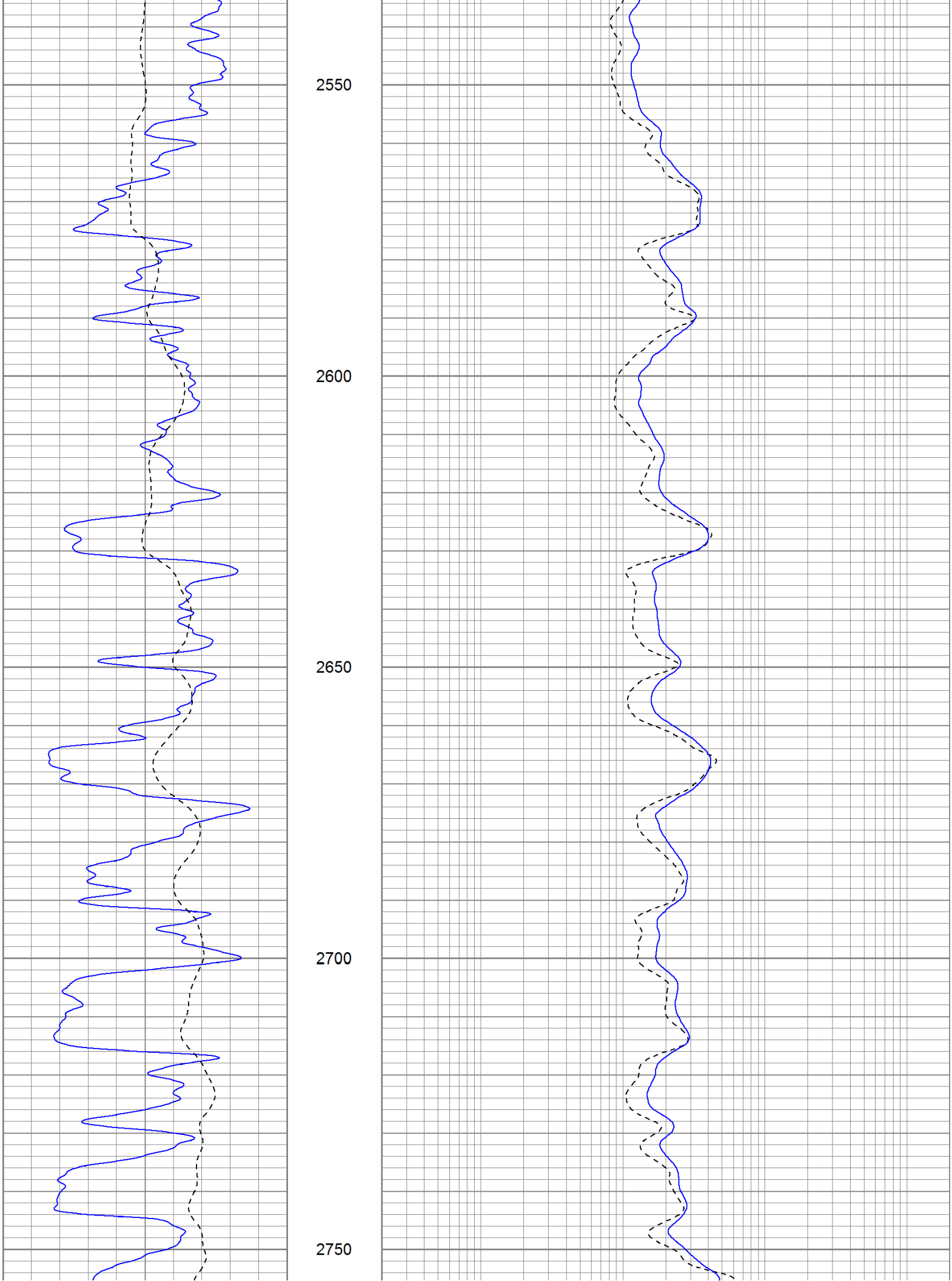
2400
2450
2500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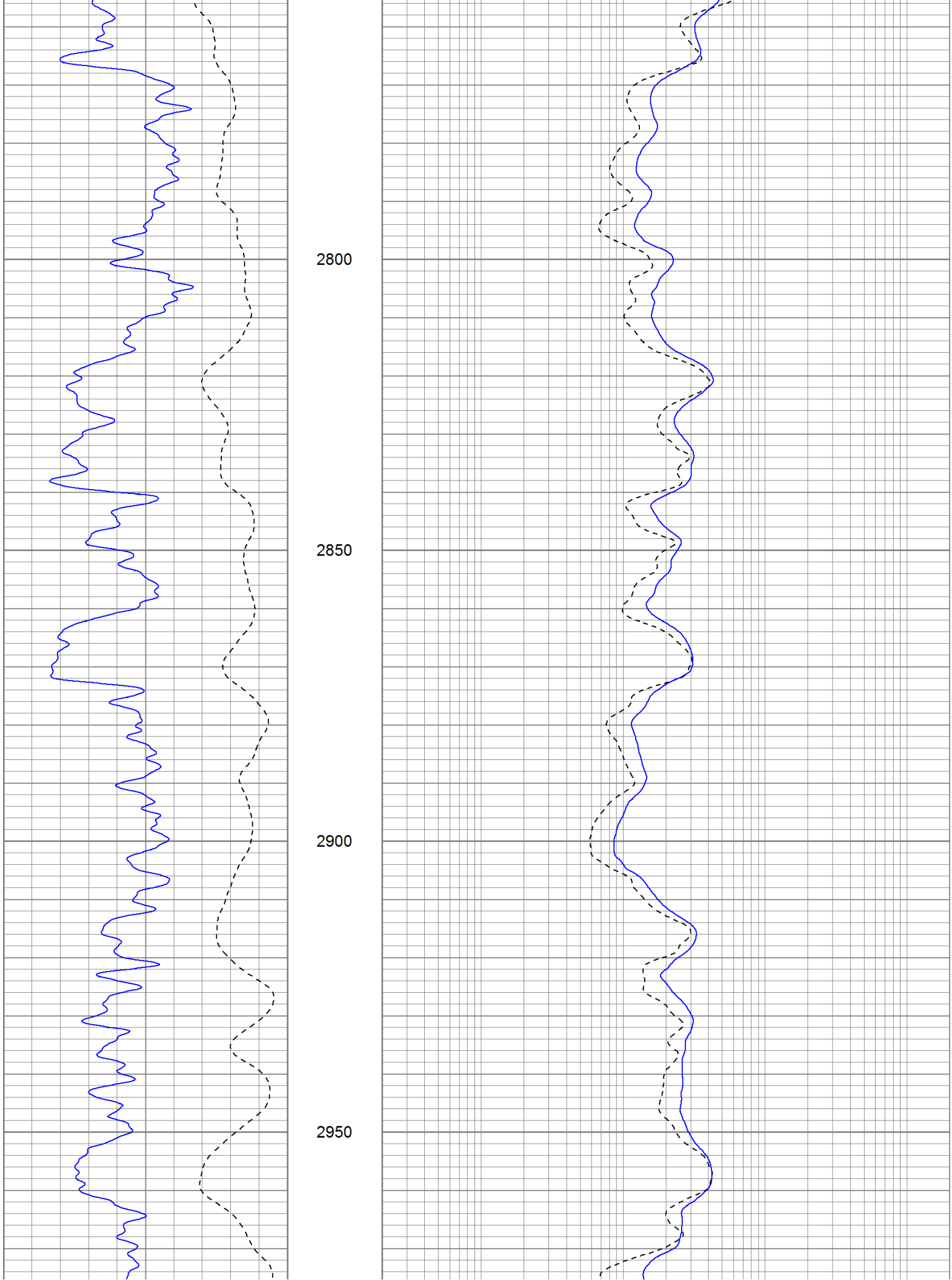
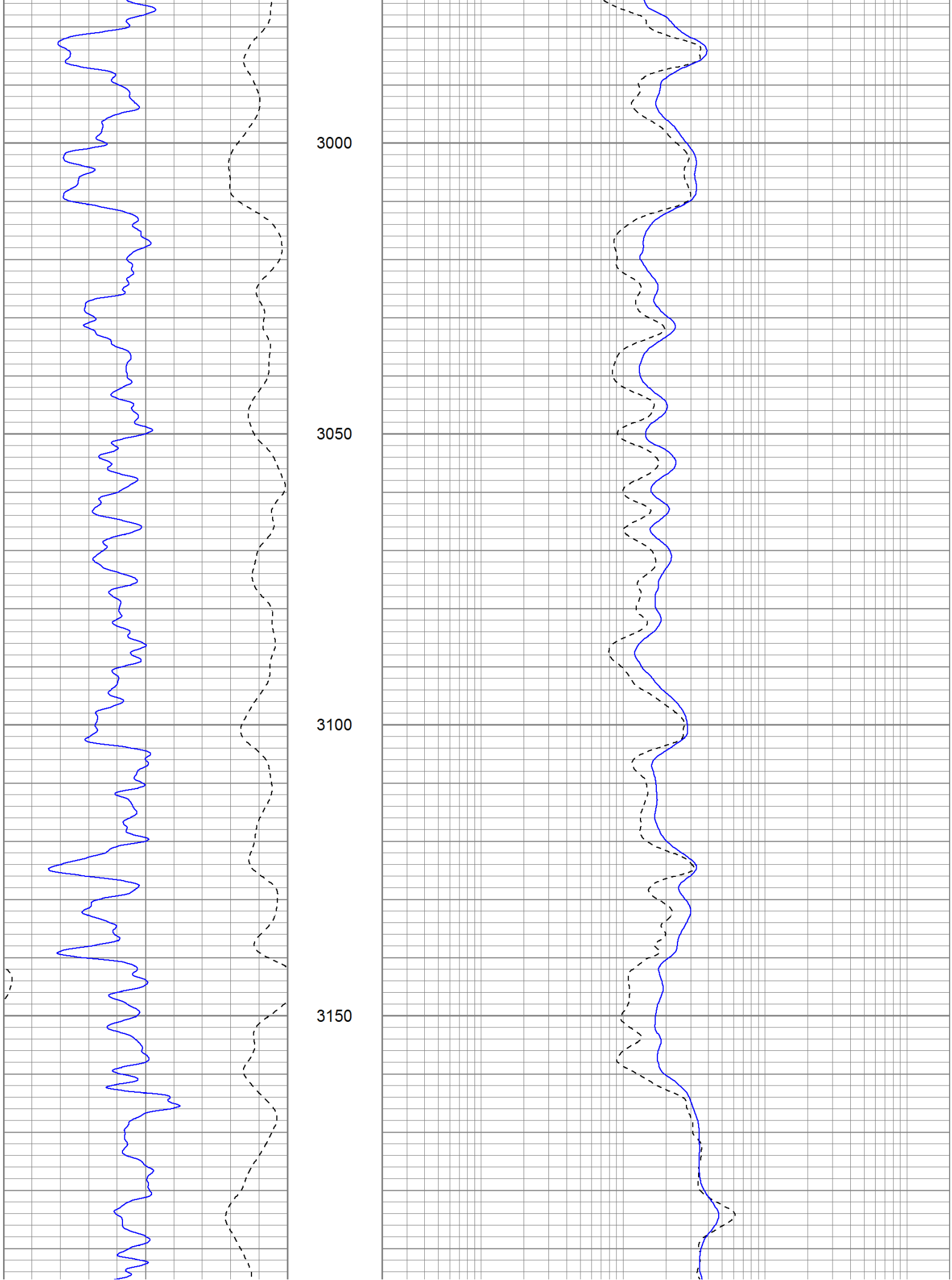
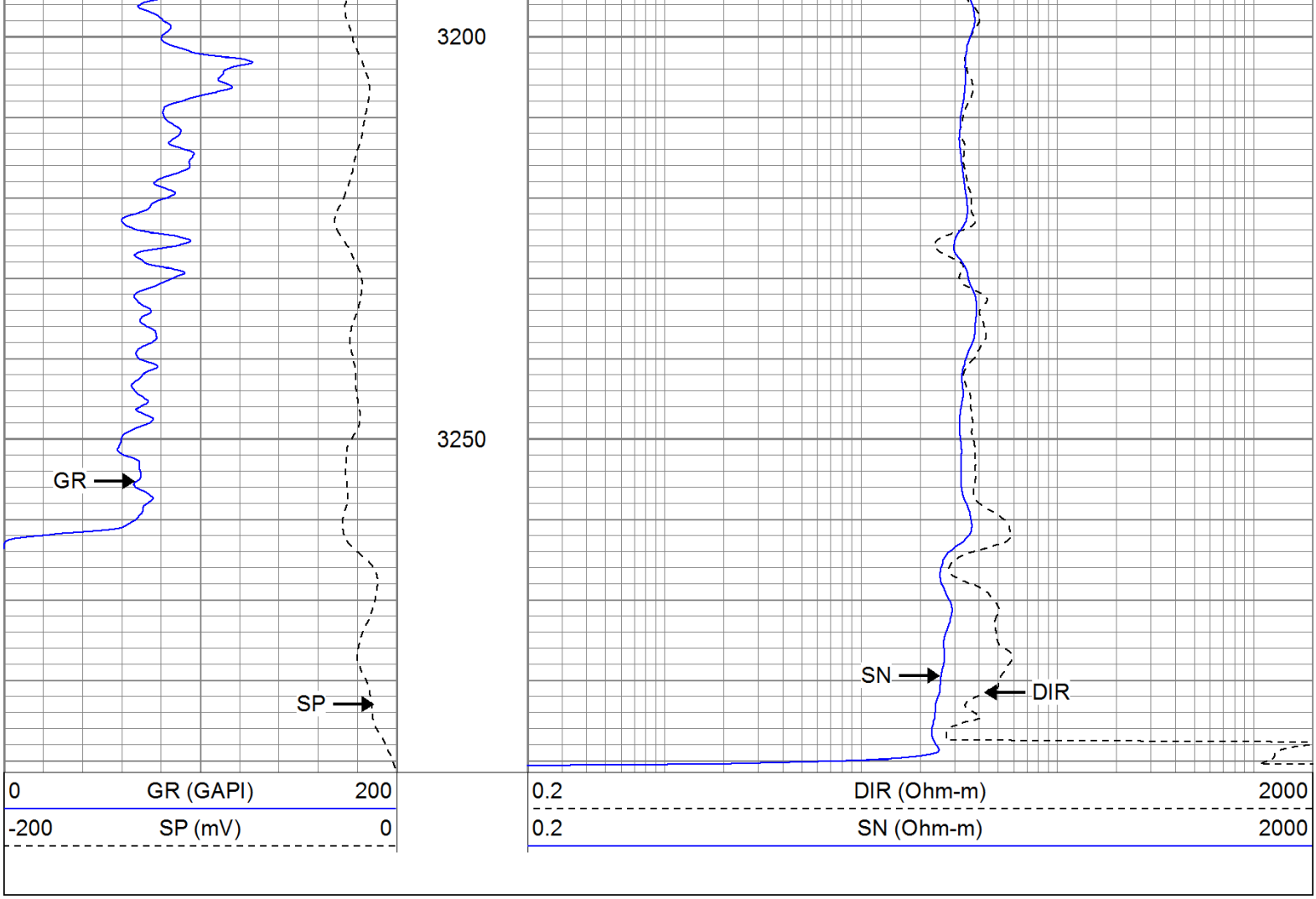
2600
2650
2700
2750


2800
2850
2900
2950


3000
3050
3100
3150



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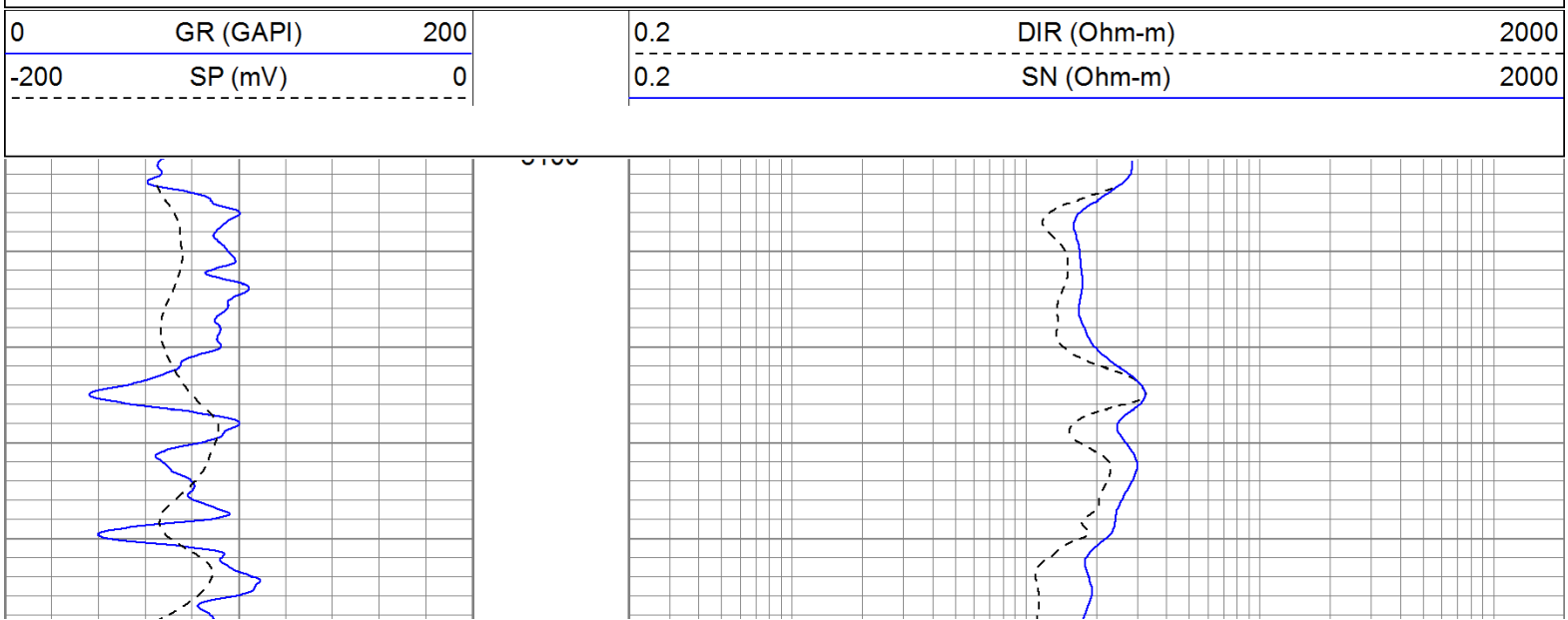
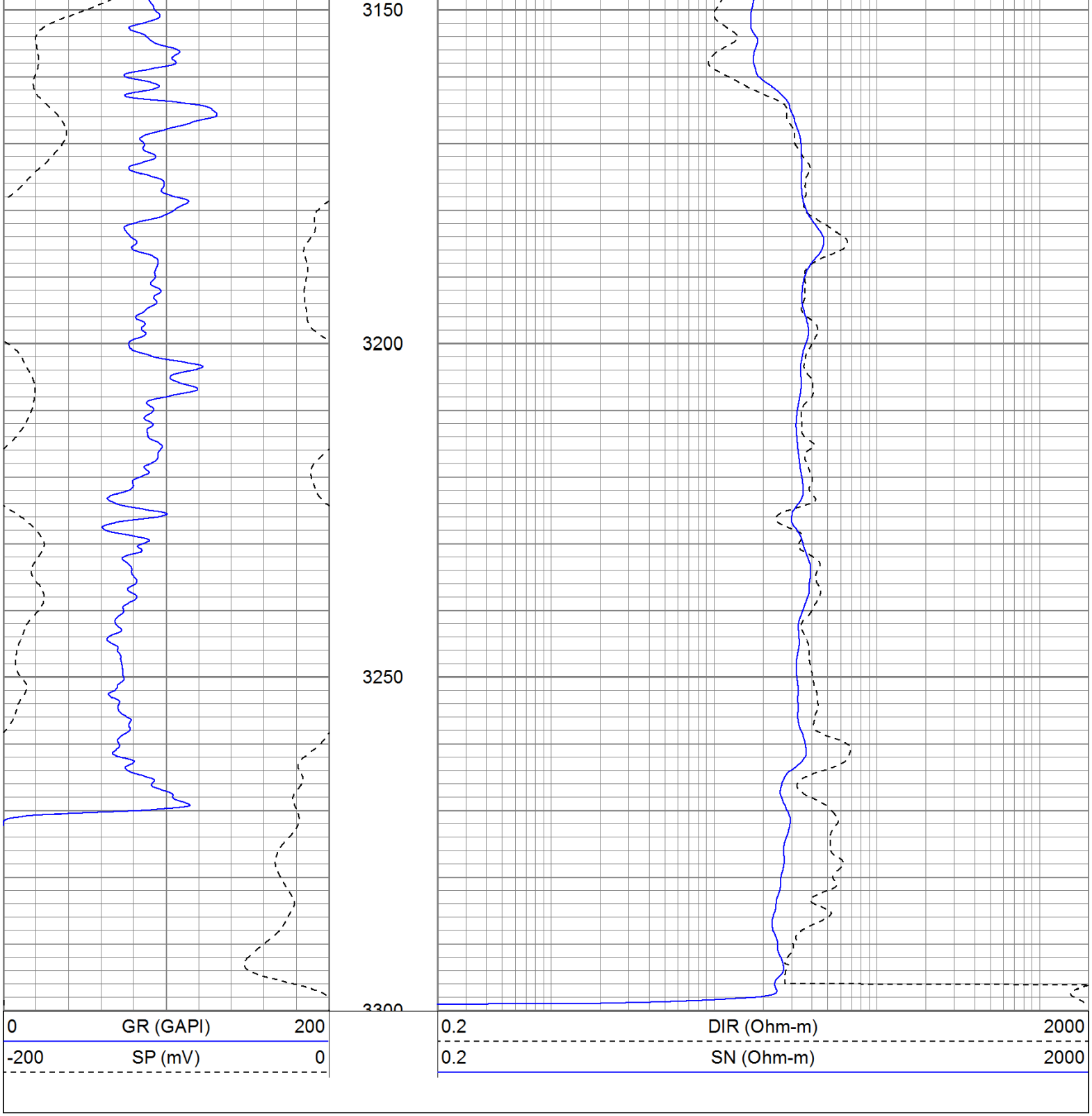
Repeat Pass

Database File:	cedar.db
Dataset Pathname:	pass1.1
Presentation Format:	iel
Dataset Creation:	Wed Jun 29 17:40:54 2011 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240





Calibration Report

Database File: cedar.db
Dataset Pathname: pass1
Dataset Creation: Wed Jun 29 15:55:44 2011 by Log Open-Cased 110302

Induction Tool Calibration Report

Serial Number:	903
Tool Model:	Probe
Downhole Cal Performed:	Sat Jun 18 15:02:12 2011
Surface Cal Performed:	Sat Jun 18 17:40:00 2011
After Survey Verification Performed:	

Surface Calibration:	Air	Loop
Conductivity Reference:	0.000	500.000 mmho

Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	-0.045	0.642	V
Internal Reference:	Zero	Cal	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	0.006	0.641	V

Downhole Calibration:	Internal Zero	Internal Cal	
Conductivity Reference:	-0.702	499.904	mmho
Conductivity Reading:	-0.082	503.319	V
Short Normal Reference:	0.000	20.000	Ohm-m
Short Normal Reading:	0.006	0.233	V

Results:	Gain	Offset	
Loop Conductivity:	728.211	32.770	
Downhole Correction:	0.994	-0.621	
Short Normal Resistivity:	88.245	-3.000	

After Survey Verification	Internal Zero	Internal Cal	
Conductivity Reading:	0.000	0.000	V
Conductivity Result:	0.000	0.000	mmho
Short Normal Reading:	0.000	0.000	V
Short Normal Result:	0.000	0.000	Ohm-m

Compensated Density Calibration Report

Serial-Model:	901-2.75POH
Source / Verifier:	/
Master Calibration Performed:	Wed Jun 08 09:11:26 2011
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1001.79	578.48	cps
Aluminum	2.590	g/cc	180.36	300.39	cps

Spine Angle = 69.08 Density/Spine Ratio = 0.479

	Size		Reading	
Small Ring	8.00	in	2.50	V
Large Ring	16.00	in	4.57	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

Neutron Calibration Report

Serial Number:	803	
Tool Model:	2.75POH	
Performed:	Wed Jun 08 13:12:55 2011	
Calibrator Value:	1	NAPI
Calibrator Reading:	1	cps

Calibrator Reading:	1	cps
Sensitivity:	1	NAPI/cps

Gamma Ray Calibration Report

Serial Number:	804	
Tool Model:	2.75POH	
Performed:	Tue Jun 14 18:09:29 2011	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			None	0.75	1.50	5.00
GR	29.58		GR-2.75POH (804) Probe 2.75" Probe Open Hole Gamma Ray	3.73	2.75	43.00
NEU	24.04		NEU-2.75POH (803) Probe Epithermal	4.75	2.75	58.00
			CDL-2.75POH (901) Probe	8.43	2.75	106.00
LSD	16.21					
DCAL	15.94					
SSD	15.69					
			IEL-Probe (903)	13.46	2.75	93.00
DIC	6.24					
SP	2.25					
SN	1.71					

Dataset: cedar.db: field/well/run1/pass1

Total Length:	31.11 ft
Total Weight:	305.00 lb
O.D.	2.75 in