The Perforators LLC

SINGLE INDUCTION LOG

Company	Pioneer Natural Resources
Well	Gremlin 23-35
Field	Purgatoire River
County	Las Animas
State	Colorado

Location:		API # : 05 071 09769 00				Other Services	
2286' FSL & 1774' FWL						CDNL	
SEC 35	TWP 32S	RGE 66W					
Permanent Datum	Ground Level	Elevation	7154'			Elevation	
Log Measured From	Kelly Bushing 4' AGL					K.B. 7158'	
Drilling Measured From	Kelly Bushing					D.F. -----	
						G.L. 7154'	

Date	11-2-11				
Run Number	One				
Depth Driller	2022'				
Depth Logger	2021'				
Bottom Logged Interval	2019'				
Top Log Interval	Surface Casing				
Casing Driller	8 5/8" @ 496'				
Casing Logger	496'				
Bit Size	7 7/8"				
Type Fluid in Hole	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	9:00 A.M.				
Time Logger on Bottom	12:00 P.M.				
Maximum Recorded Temperature	DEG F				
Equipment Number	T590				
Location	Trinidad				
Recorded By	C. Sisneros				
Witnessed By	Mr. Billy Vigil				

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Comments

Directions:

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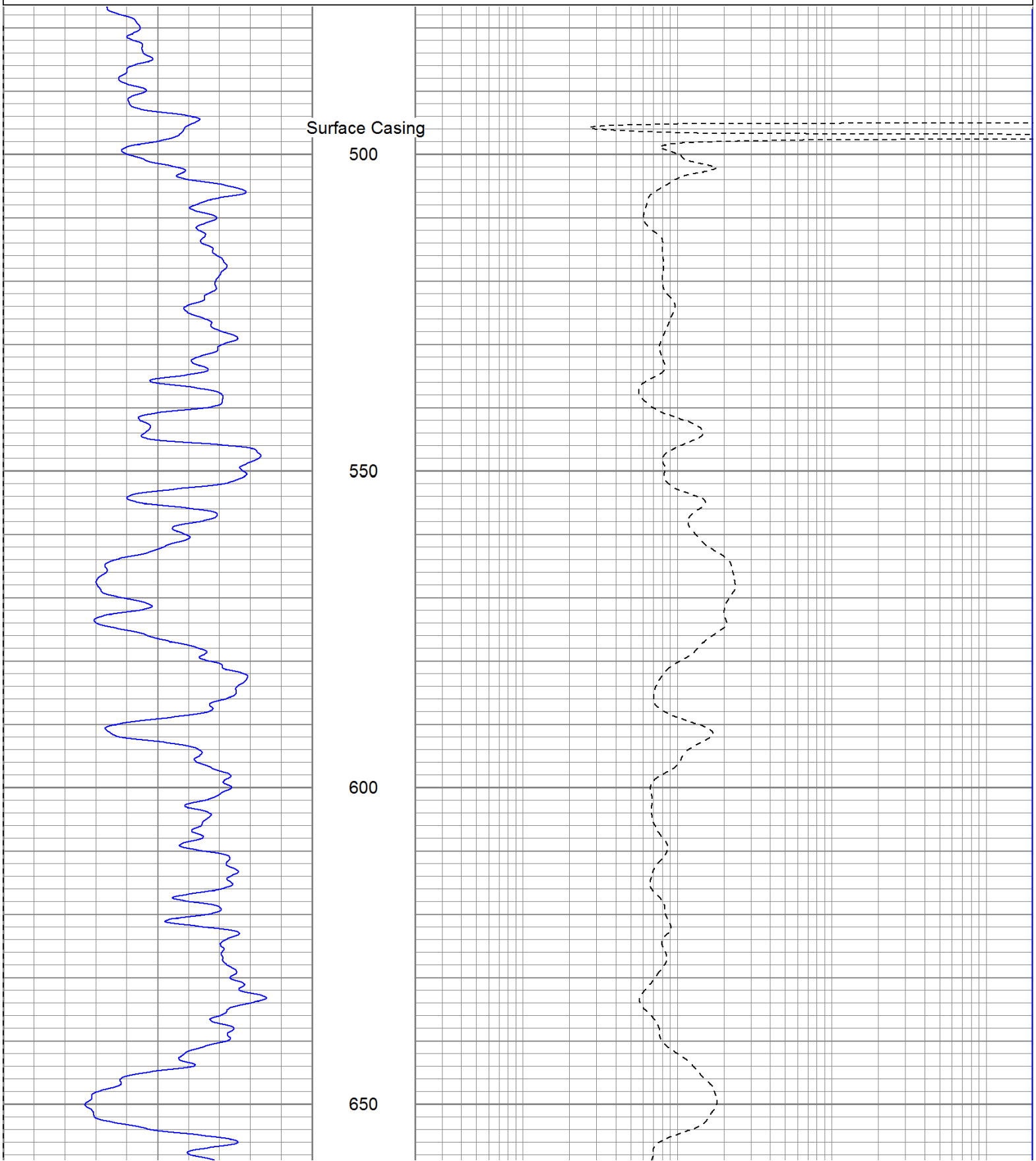
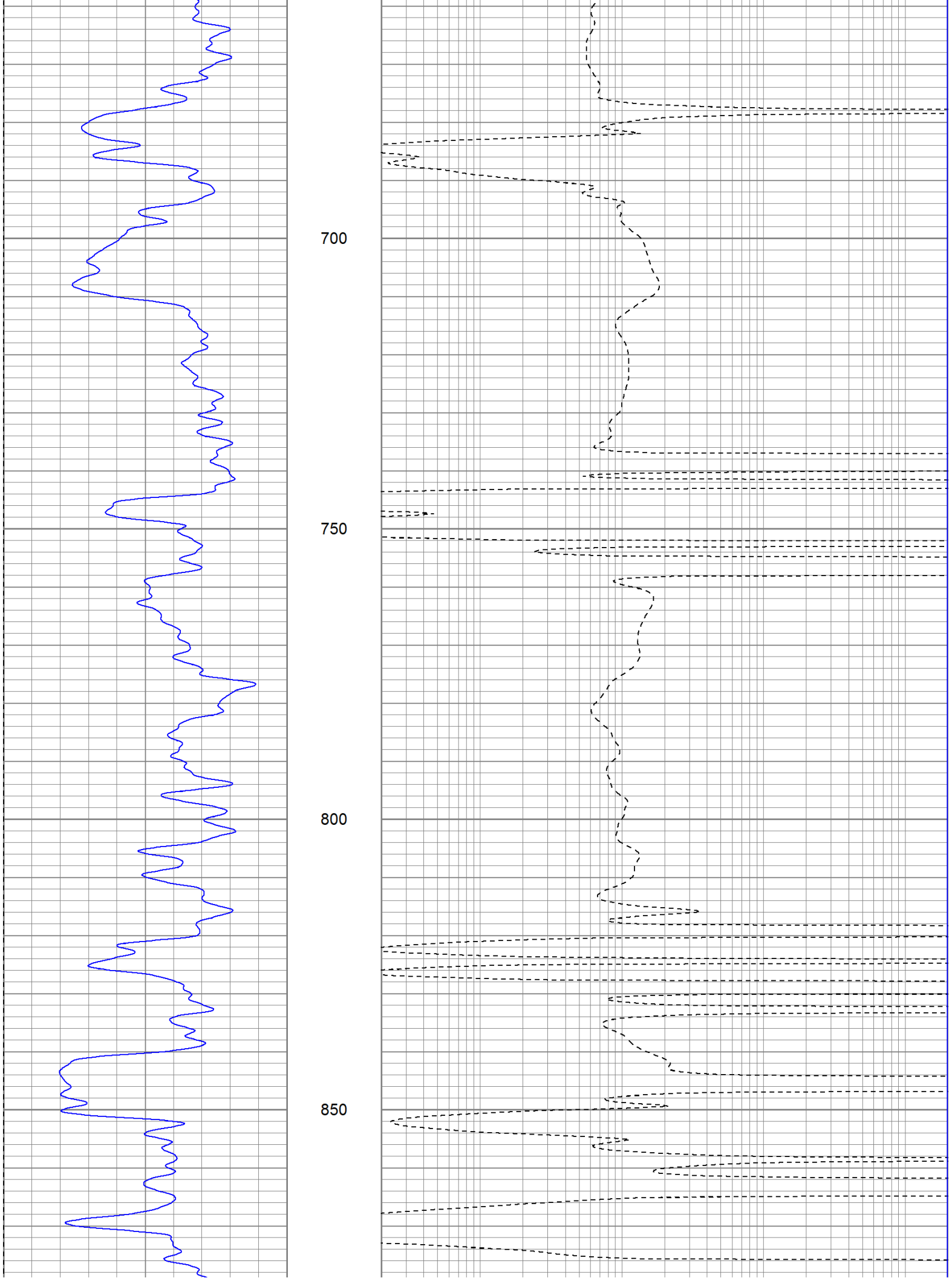
Main Pass

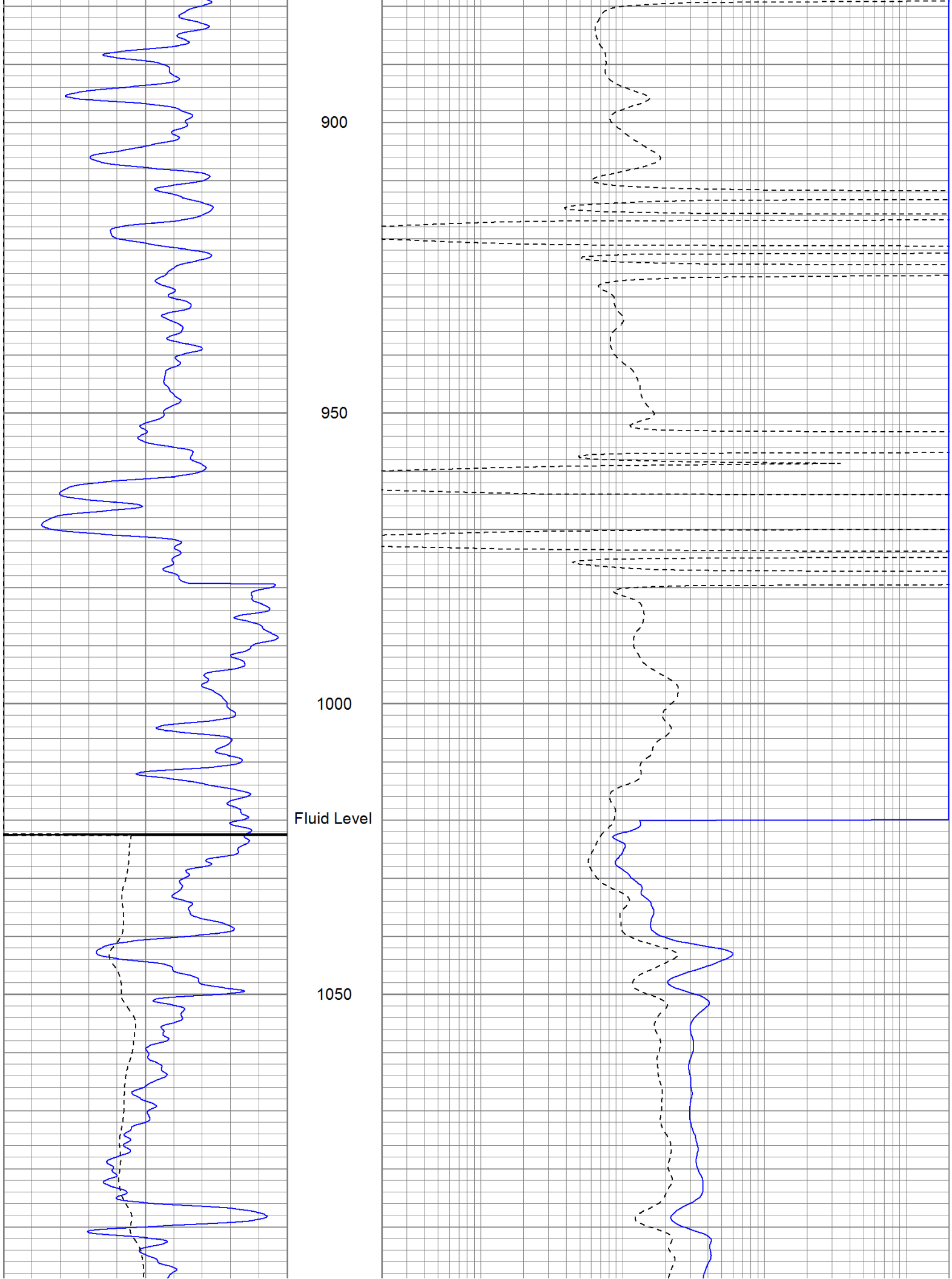
Database File:	gremlin.db
Dataset Pathname:	pass2.1
Presentation Format:	iel
Dataset Creation:	Wed Nov 02 13:10:17 2011 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240

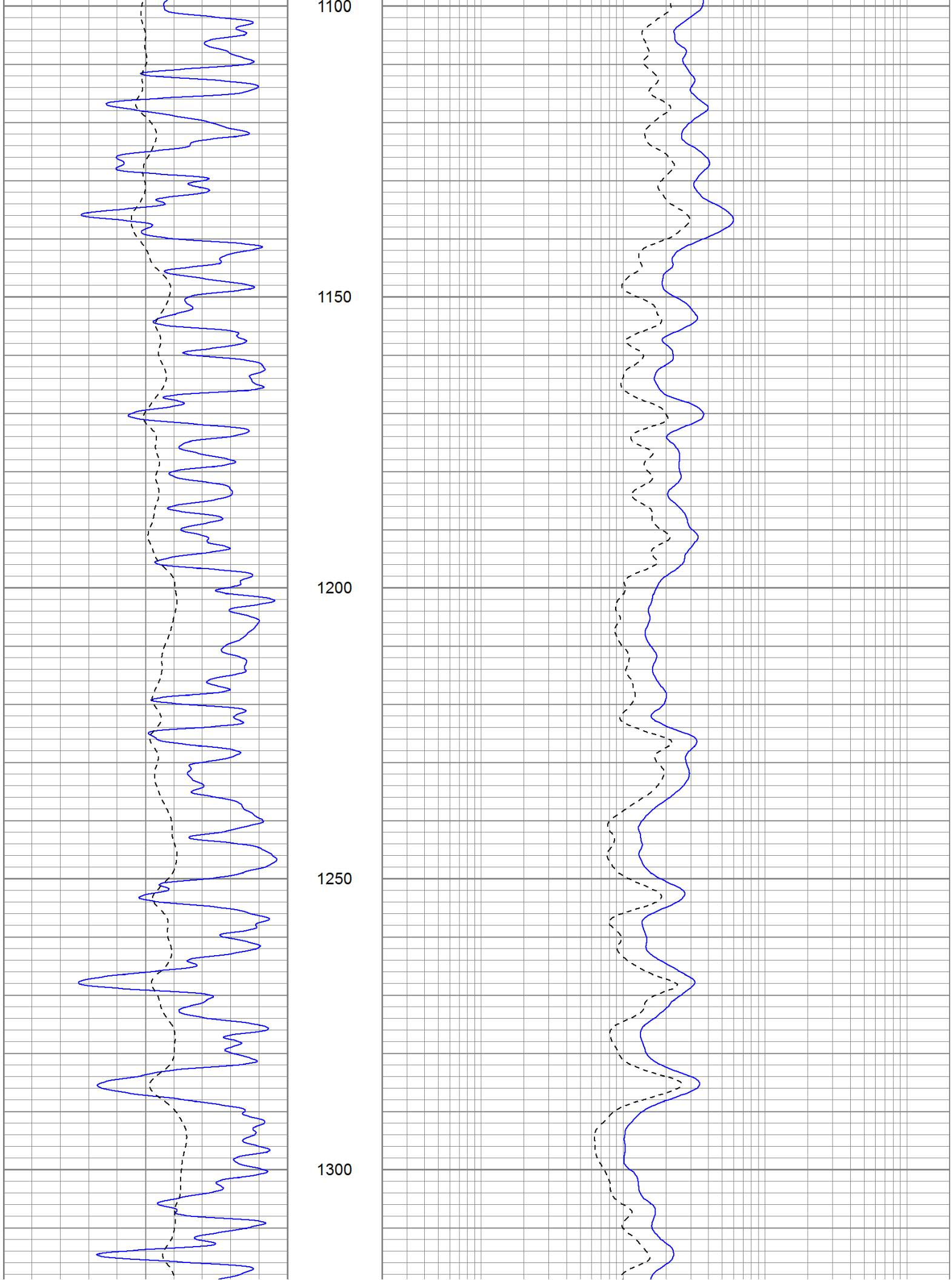
0	GR (GAPI)	200
-200	SP (mV)	0

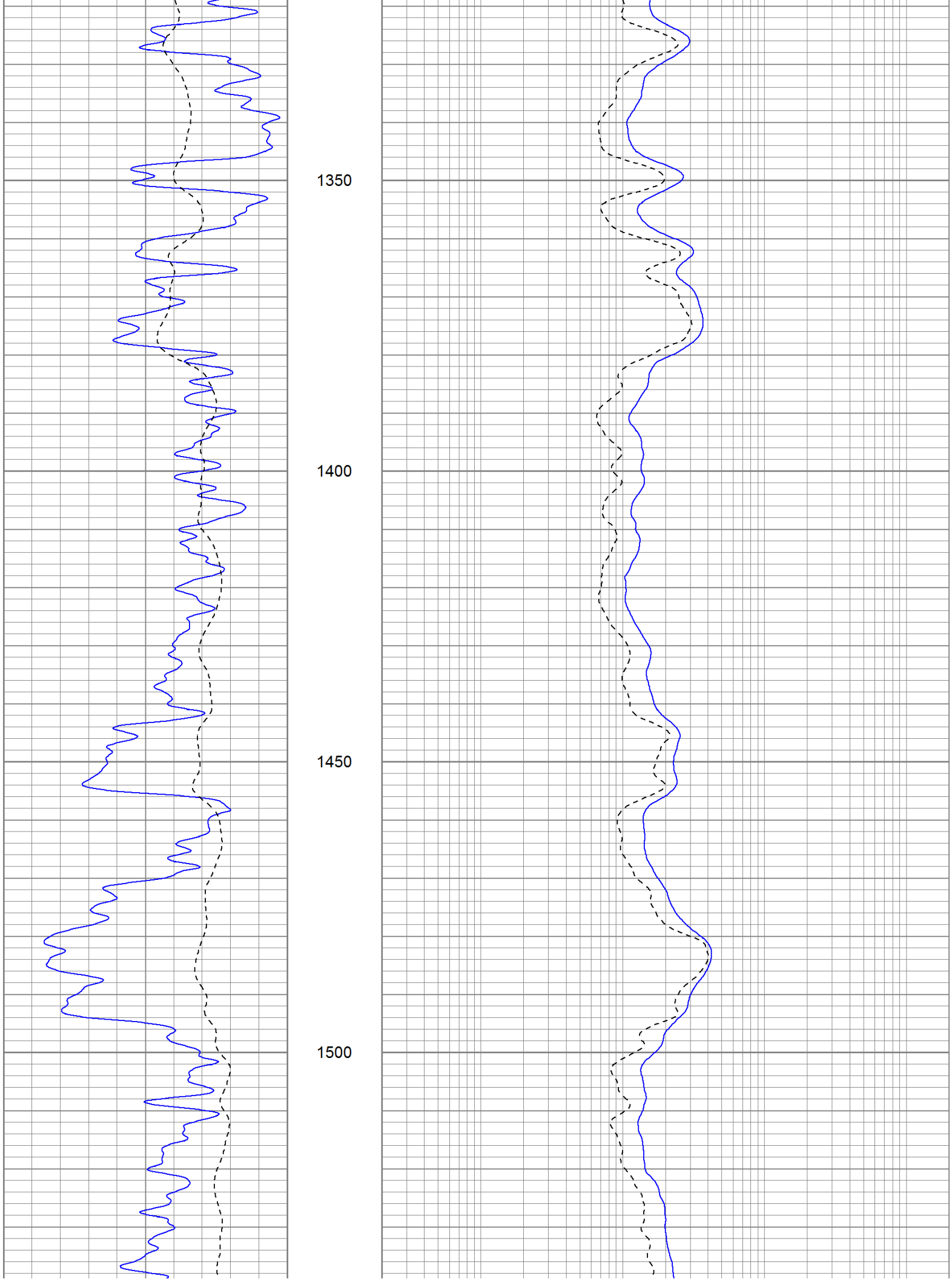
0.2	DIR (Ohm-m)	2000
0.2	SN (Ohm-m)	2000

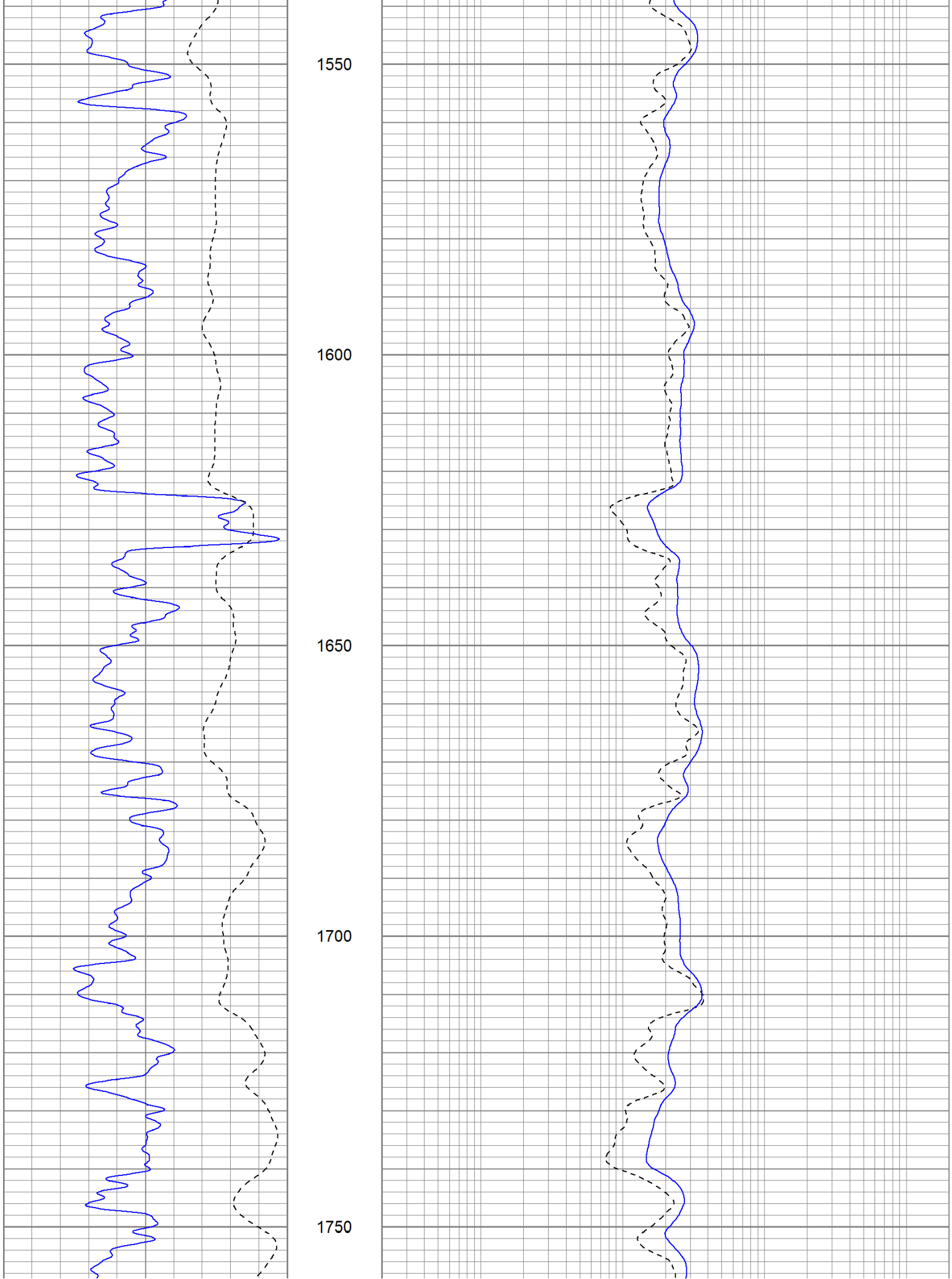


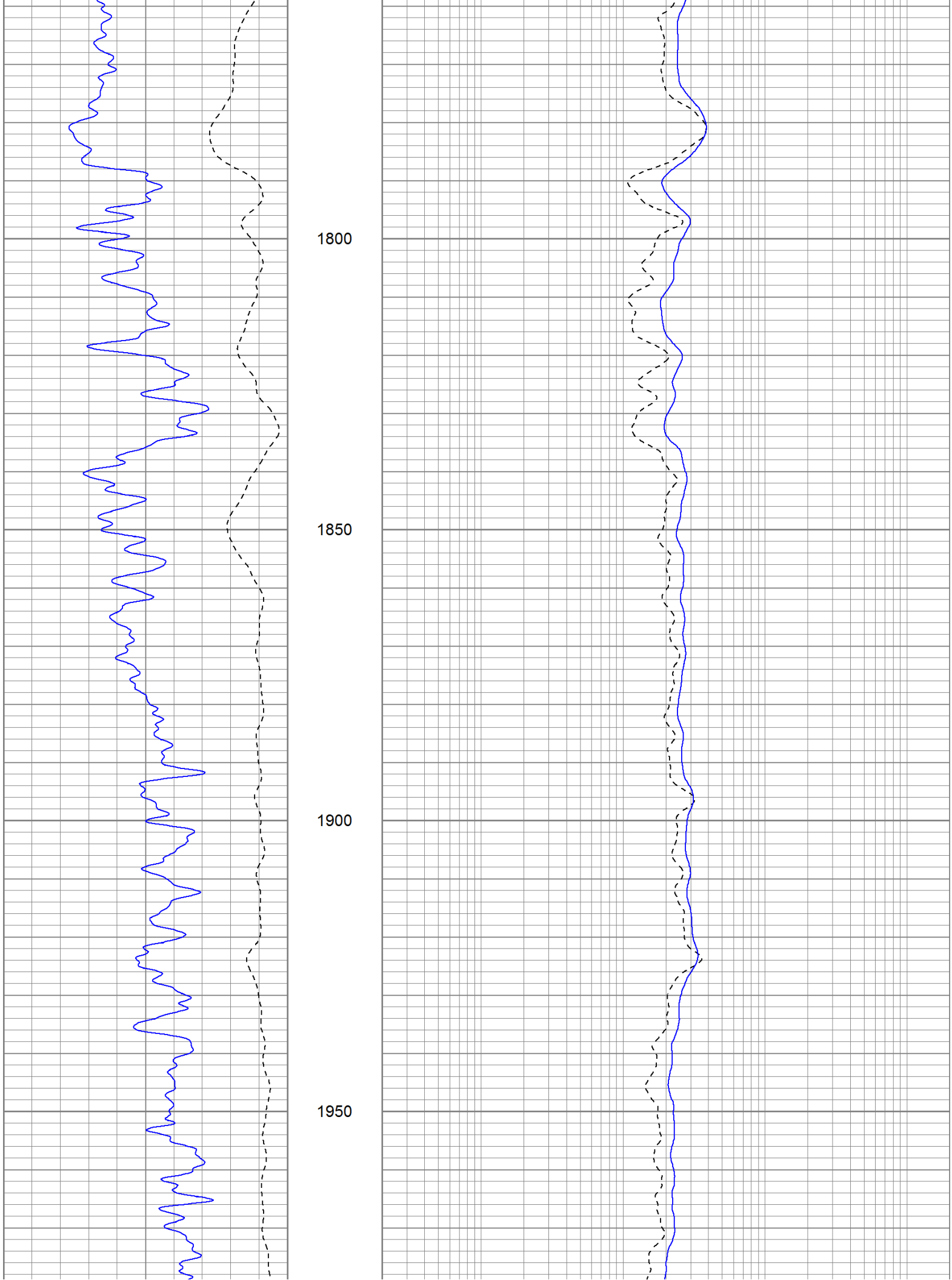

700
750
800
850

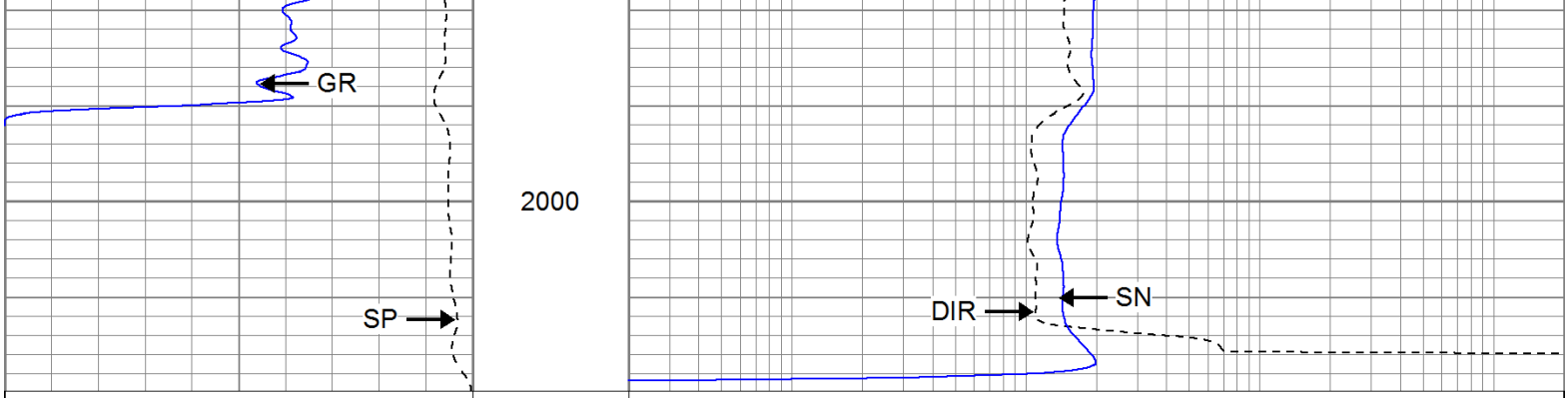

900
950
1000
Fluid Level
1050


1100
1150
1200
1250
1300


1350
1400
1450
1500


1550
1600
1650
1700
1750


1800
1850
1900
1950



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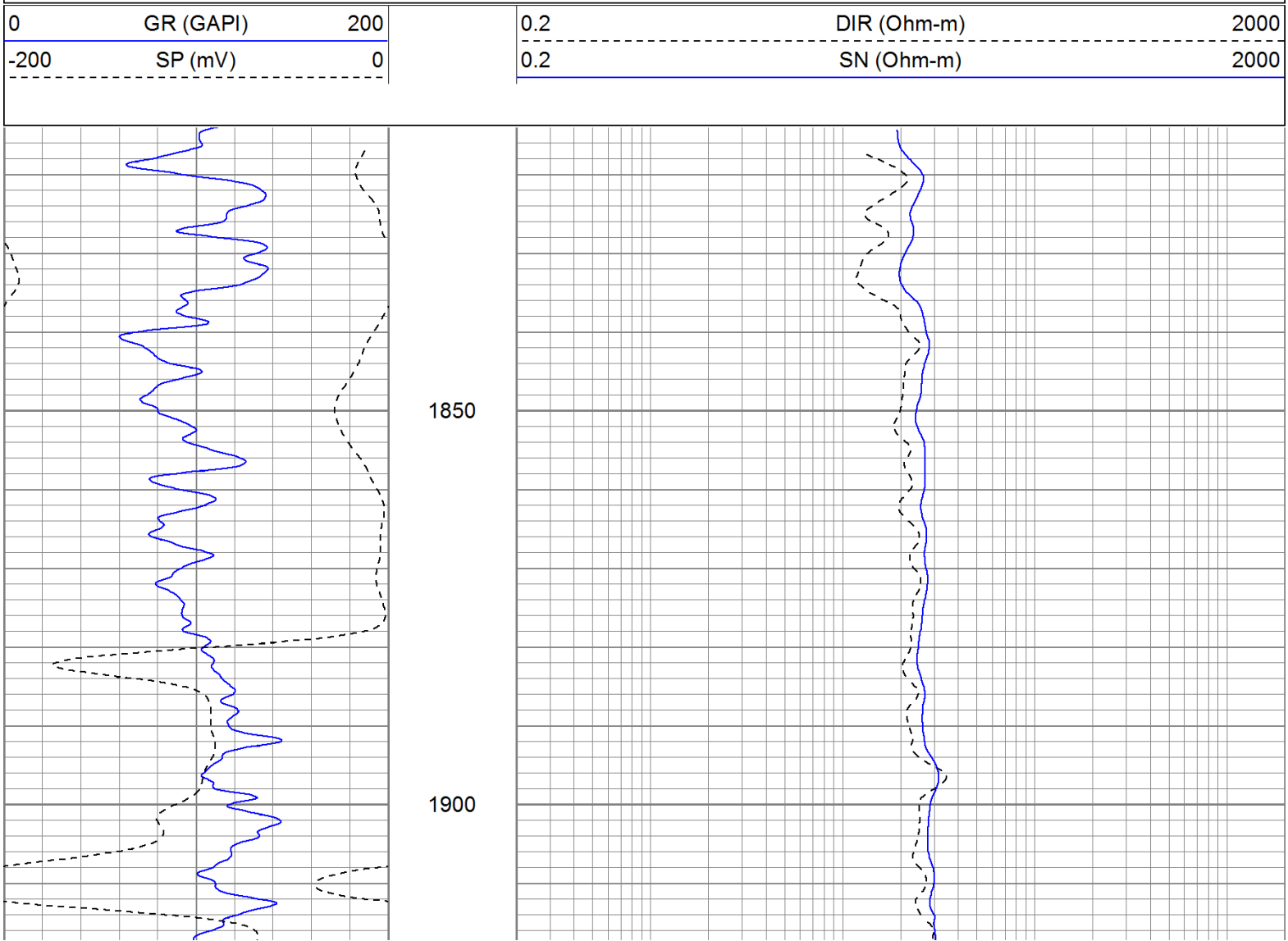
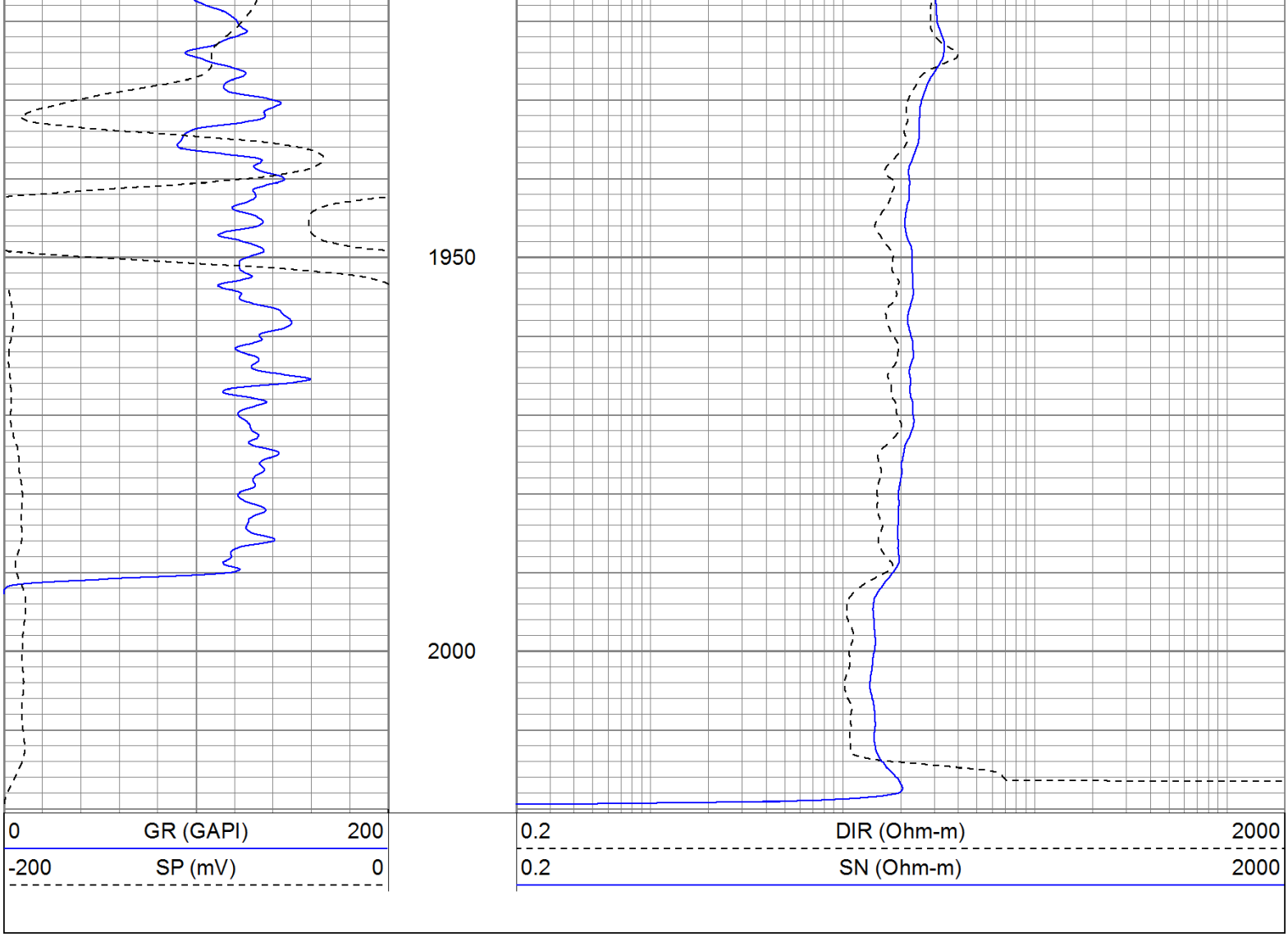
Repeat Pass

Database File:	gremlin.db
Dataset Pathname:	pass1.1
Presentation Format:	iel
Dataset Creation:	Wed Nov 02 13:15:02 2011 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240





Calibration Report

Database File: gremlin.db
Dataset Pathname: pass1
Dataset Creation: Wed Nov 02 12:05:39 2011 by Log Open-Cased 110302

Induction Tool Calibration Report

Serial Number:	701
Tool Model:	Probe
Downhole Cal Performed:	Wed Jun 08 22:14:25 2011
Surface Cal Performed:	Wed Jun 08 22:14:40 2011
After Survey Verification Performed:	

Surface Calibration:	Air	Loop	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	0.006	0.644	V
Internal Reference:	Zero	Cal	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	0.007	0.643	V

Downhole Calibration:	Internal Zero	Internal Cal	
Conductivity Reference:	0.703	499.163	mmho
Conductivity Reading:	0.000	0.000	V
Short Normal Reference:	0.000	20.000	Ohm-m
Short Normal Reading:	0.005	0.214	V

Results:	Gain	Offset
Loop Conductivity:	783.886	-4.674
Downhole Correction:	1.000	0.000
Short Normal Resistivity:	95.281	-2.000

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:	Mon Oct 10 09:20:39 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	8.20	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:	Mon Oct 10 09:27:42 2011	
Calibrator Value:	1	NAPI
Calibrator Reading:	1	cps
Sensitivity:	1	NAPI/cps

Gamma Ray Calibration Report

Serial Number:	804	
Tool Model:	2.75POH	
Performed:	Mon Oct 10 09:53:04 2011	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6500	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					
DIC	6.24		IEL-Probe (701)	13.46	2.75	93.00
SP	2.25					
SN	1.71					

Dataset:	gremlin.db: field/well/run1/pass1
Total Length:	31.11 ft
Total Weight:	305.00 lb
O.D.	2.75 in