



INDUCTION ARRAY LOG

Company COMANCHE RESOURCES Co., LLC
Well LOHRDING 8-1
Field WILDCAT
County COMANCHE State KANSAS

Location: API #: 15-033-21562
SEC 8 TWP 31S RGE 19W
Permanent Datum GL Elevation 2168 ft.
Log Measured From KB , 11 ft. above perm. datum
Drilling Measured From KB
Other Services
GR/CNL
LDT/SP
MEL/MAS
Elevation
K.B. 2179 ft.
D.F. 2178 ft.
G.L. 2168 ft.

Date	04/26/2010		
Run Number	ONE		
Depth Driller	5830 ft		
Depth Logger	5828 ft		
Bottom Logged Interval	5827 ft		
Top Log Interval	936 ft		
Casing Driller	8.625" @ 946 ft	@	@
Casing Logger	946 ft		
Bit Size	7.875 "	@	@
Type Fluid in Hole	WBM		
Density / Viscosity	9.2 / 55		
pH / Fluid Loss	10.5 / 18		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	2.2 @ 47 F	@	@
Rmt @ Meas. Temp	1.6 @ 44 F	@	@
Rmc @ Meas. Temp	2.4 @ 44 F	@	@
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	1.23 @ 126 F	@	@
Time Circulation Stopped	00:00		
Time Logger on Bottom	08:35		
Maximum Recorded Temperature	126 F		
Equipment Number	10002		
Location	OKC		
Recorded By	K.GASMI	J.BROWNAWELL	
Witnessed By	J.SPELLMAN		

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Equipment and Log Data

Service Order: 21005

Gamma		Density		Neutron		Sonic		IAT	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	C10099	Serial No.	B10111	Serial No.	C10089	Serial No.	C10038SS	Serial No.	B10109
O.D.	3.375 in.	Source No.		Source No.		Centralizers		Standoffs	@
		O.D.	4.5 in.	O.D.	3.375 in.	O.D.	3.375 in.	O.D	3.875 in.

Logging Pass Data

General			Gamma		Density			Neutron			Sonic			IAT	
			Scales		Scales			Scales			Scales			Scales	
Run	Depths		Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right	Matrix	Left	Right
ONE	TD	CSG	0	150	30%	-10%	2.71	30%	-10%	LIME	140	40	LIME	0.2	2000

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

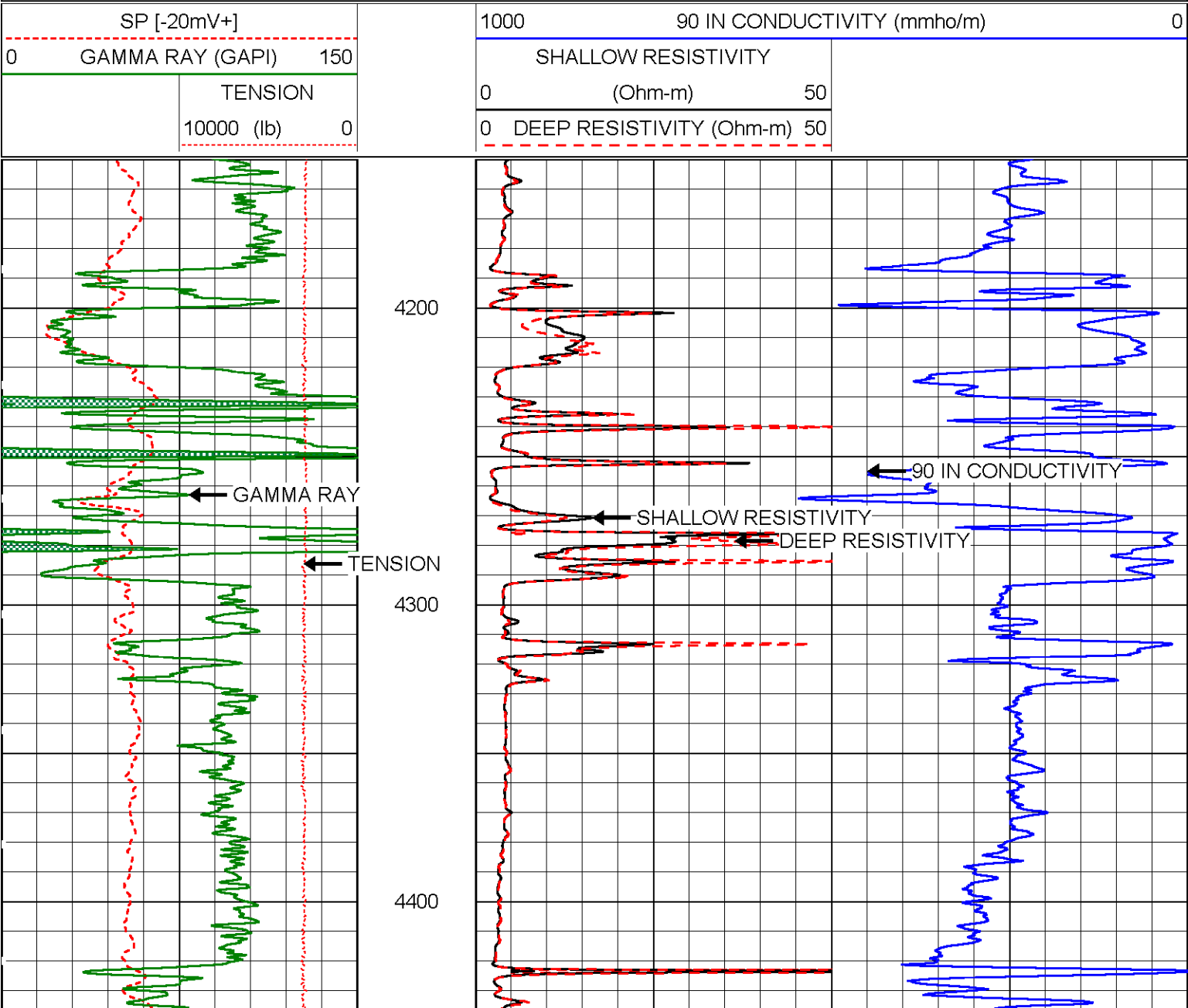
AHV CALCULATED FOR 5.5 INCH CASING
CNL DECENTRALIZED
CAL RECORDED 100 FT IN CSG
CHLORIDES AT 5800 PPM

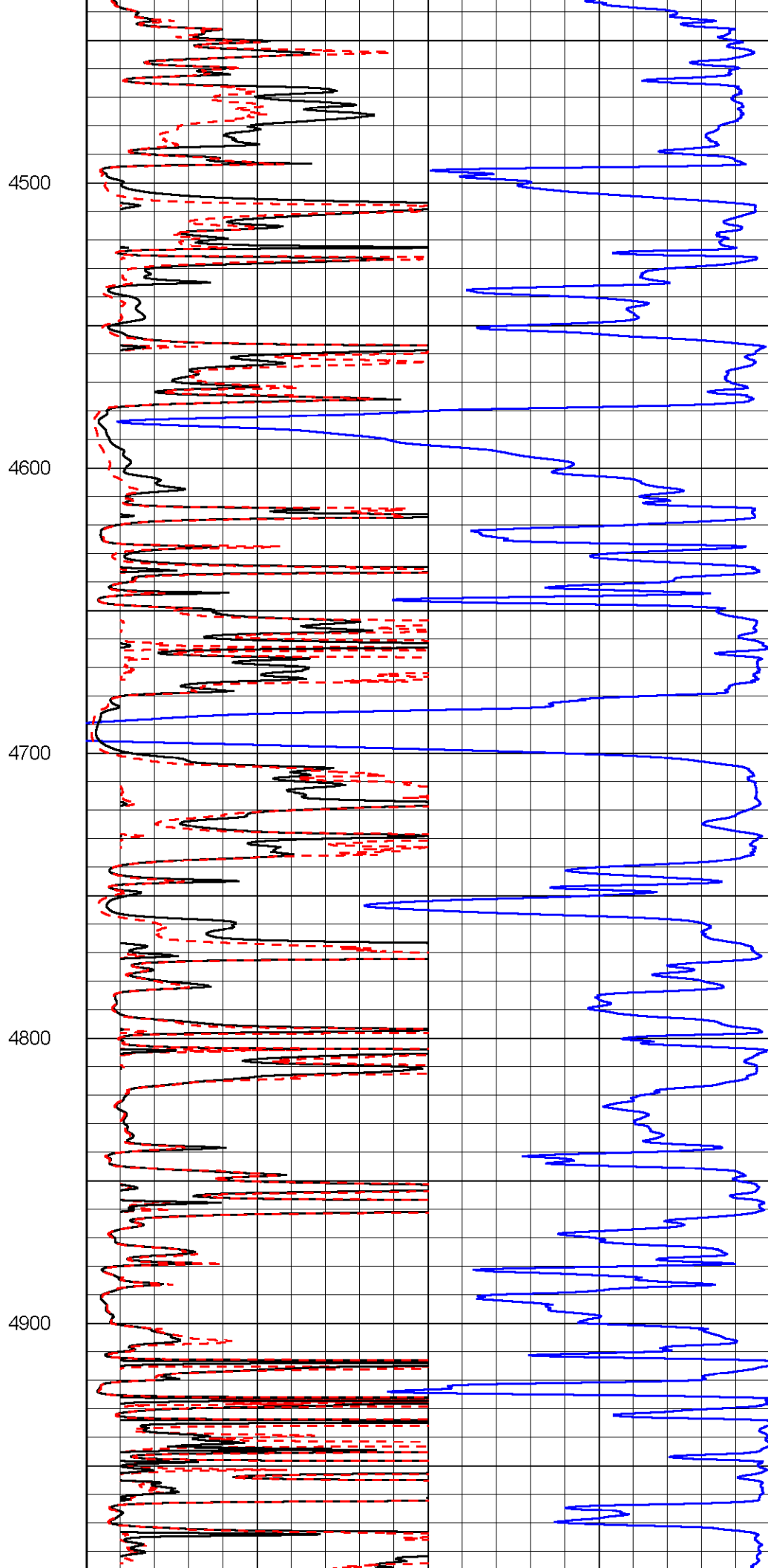
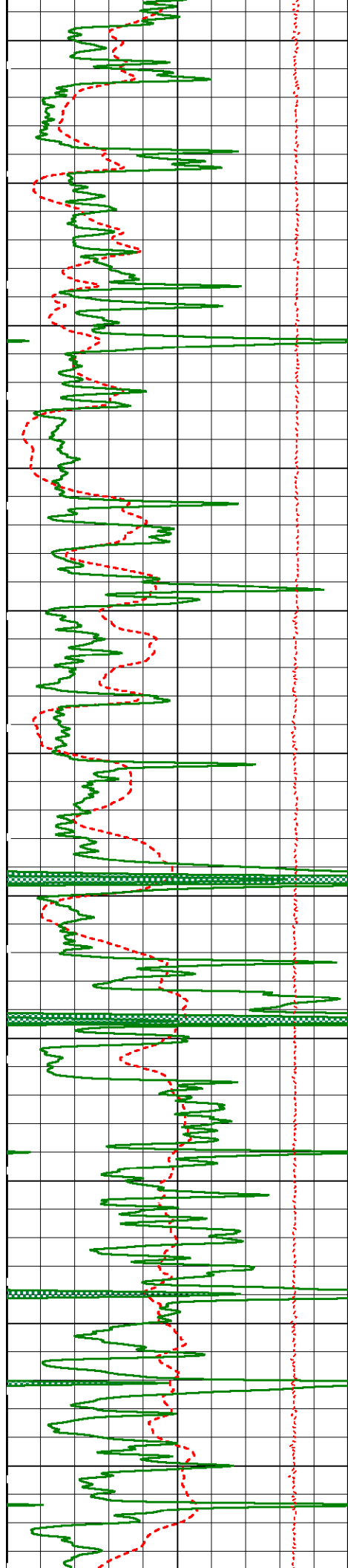
YOUR CREW TODAY: K. GASMI, J. BROWNAWELL, M. GARDNER, P. MURPHY
THANK YOU FOR CHOOSING ALLIED WIRELINE. OKLAHOMA CITY, OK. (405) 445-7135.

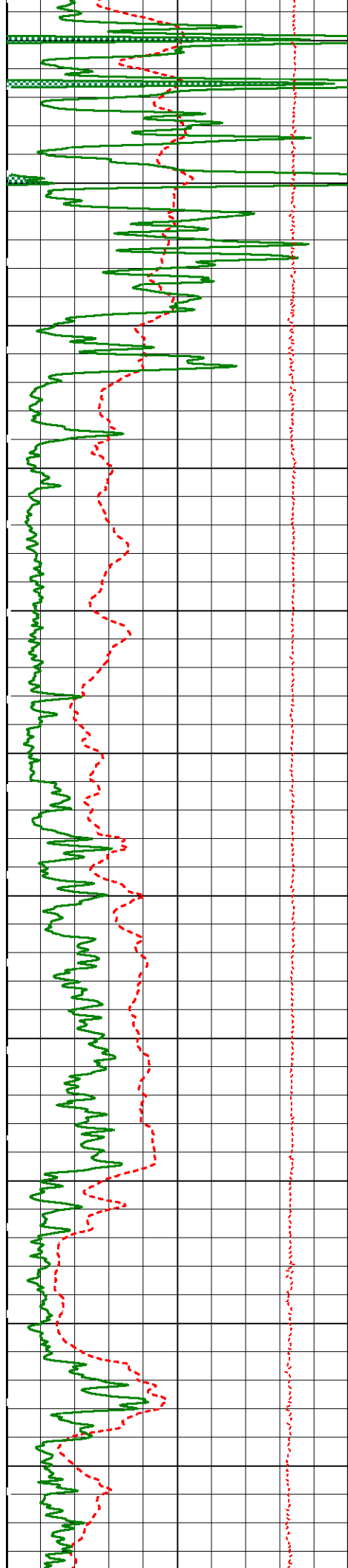
MAIN PASS

2 INCH

Database File: lohding_8_1.db
Dataset Pathname: Lohrding_/run1/pass3
Presentation Format: acond2
Dataset Creation: Wed Apr 27 09:09:25 2011 by Log Sondex V7.03
Charted by: Depth in Feet scaled 1:600







5000

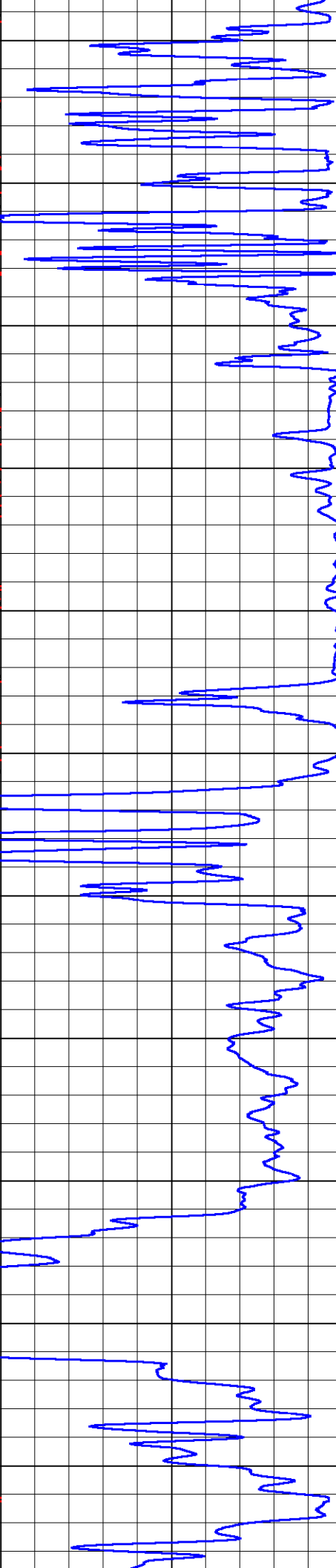
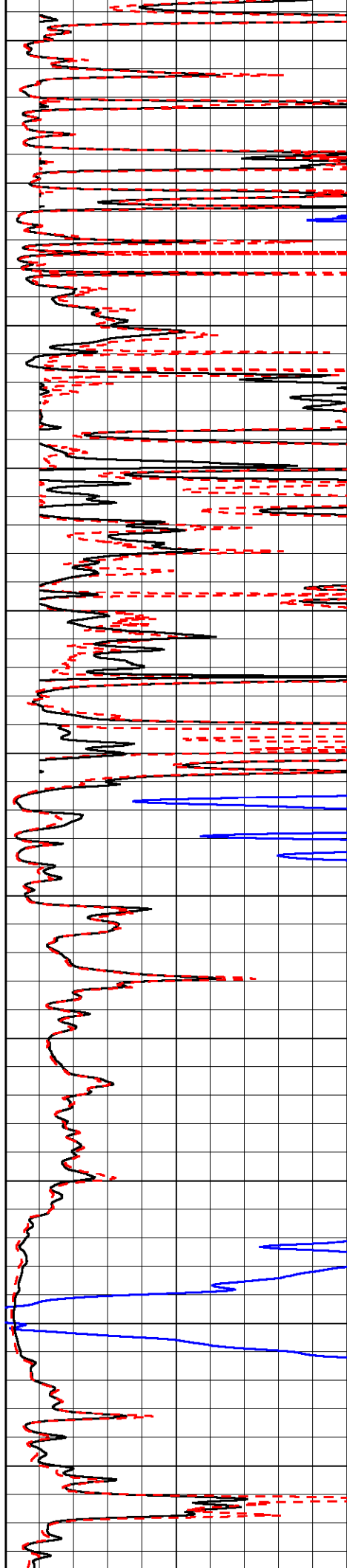
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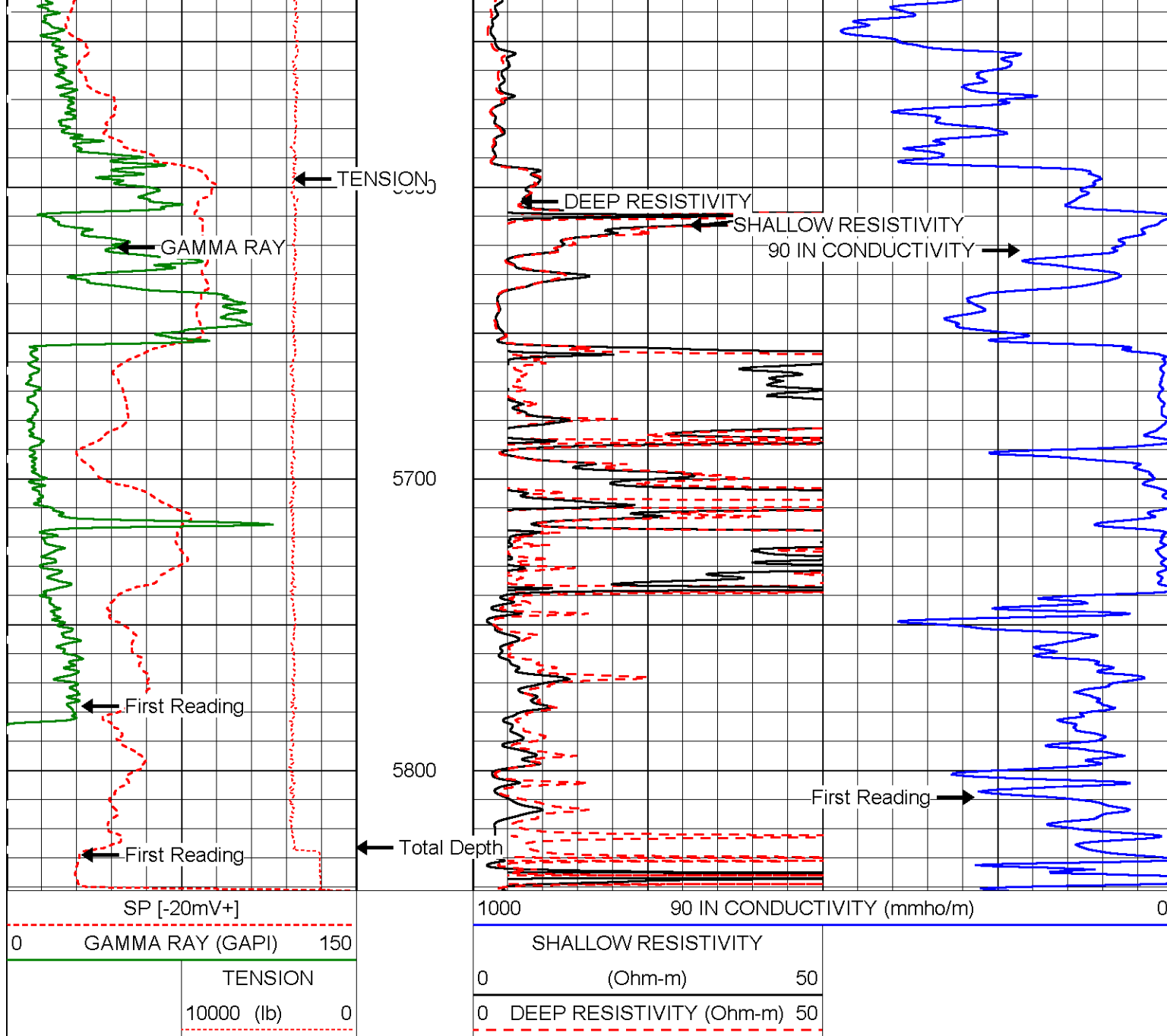
5200

5300

5400

5500



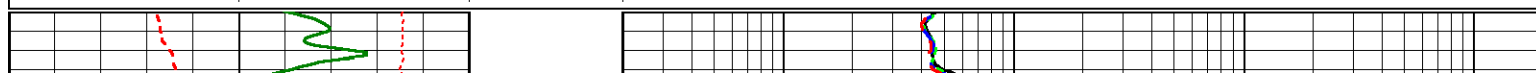


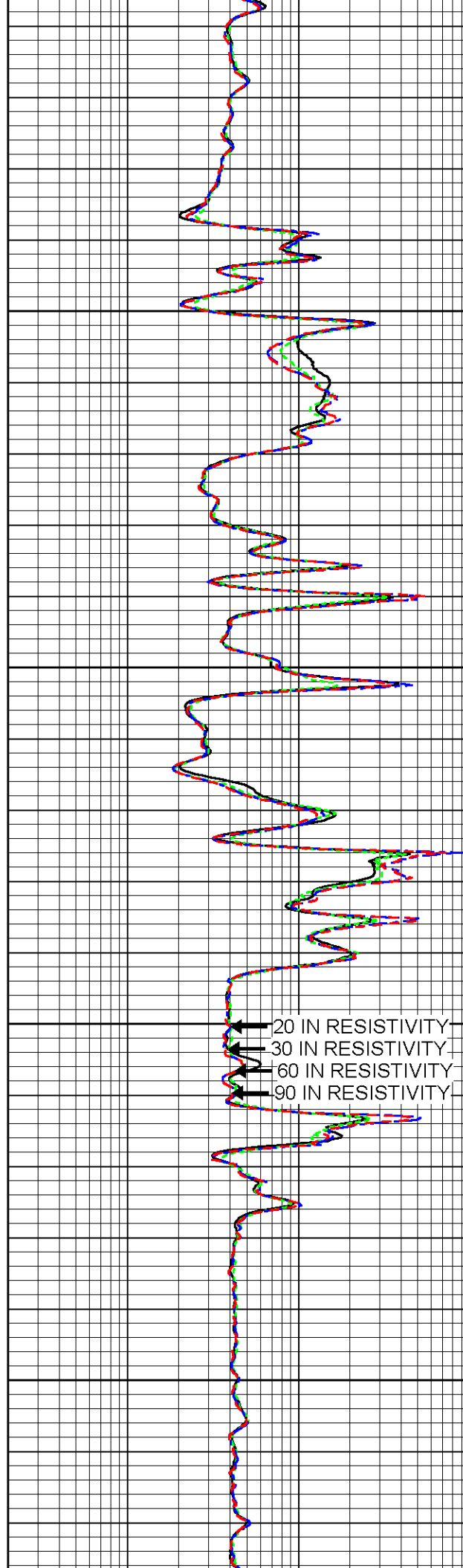
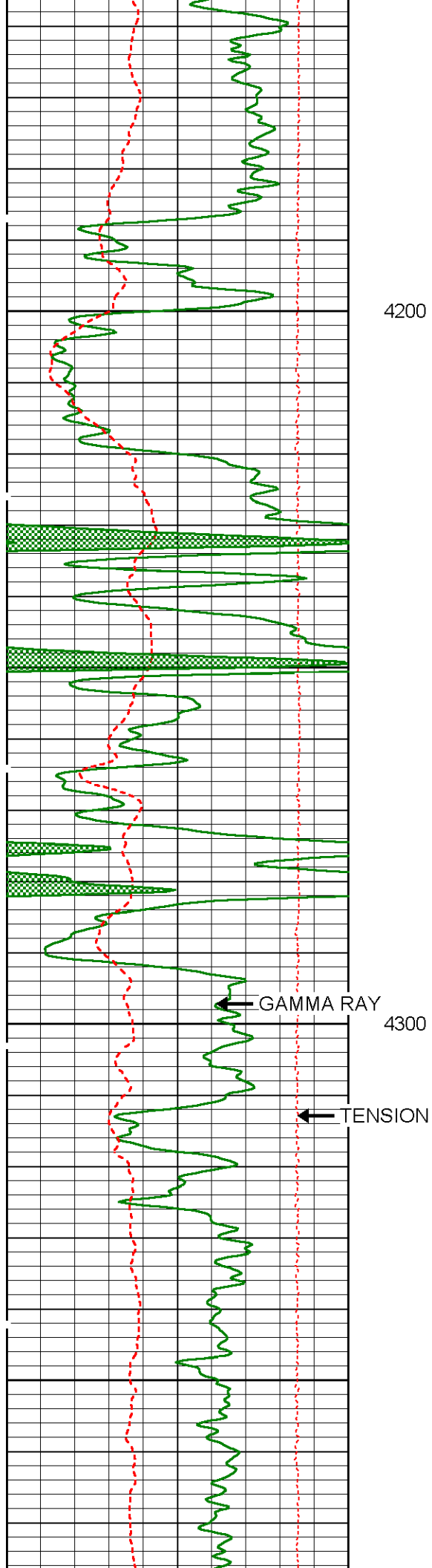
MAIN PASS

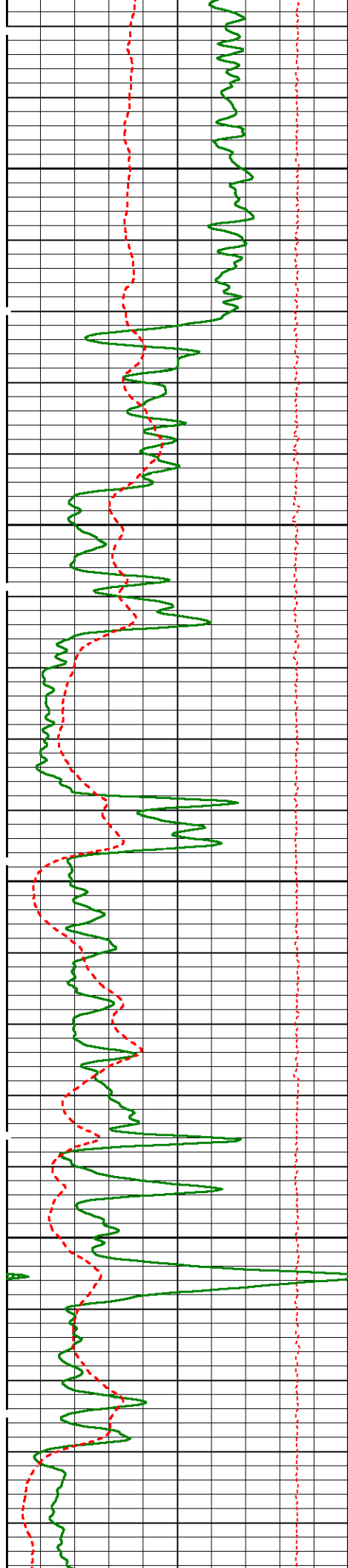
5 INCH

Database File: lohding_8_1.db
 Dataset Pathname: Lohrding_/run1/pass3
 Presentation Format: aind2r
 Dataset Creation: Wed Apr 27 09:09:25 2011 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	20 IN RESISTIVITY (Ohm-m)	2000
	SP [-20mV+]		0.2	30 IN RESISTIVITY (Ohm-m)	2000
	TENSION		0.2	60 IN RESISTIVITY (Ohm-m)	2000
	10000 (lb)	0	0.2	90 IN RESISTIVITY (Ohm-m)	2000

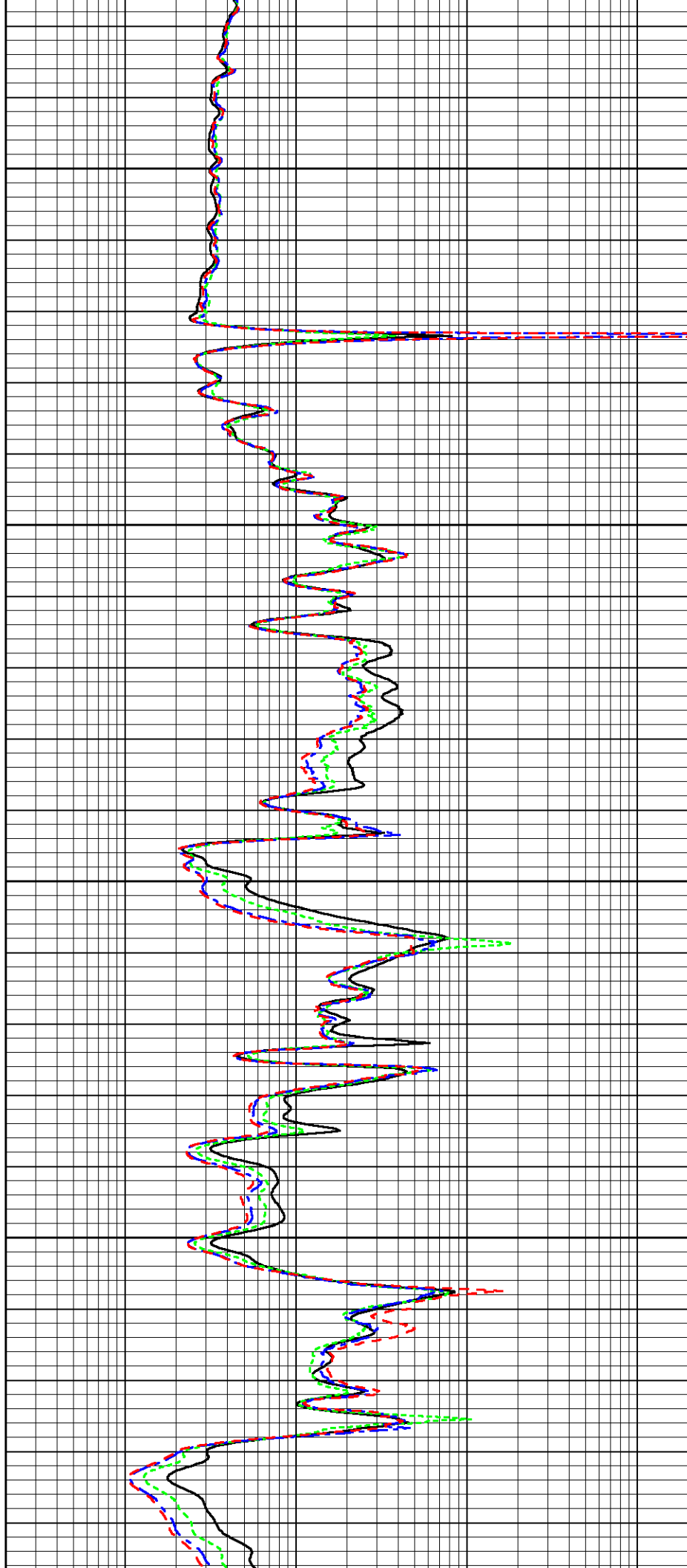


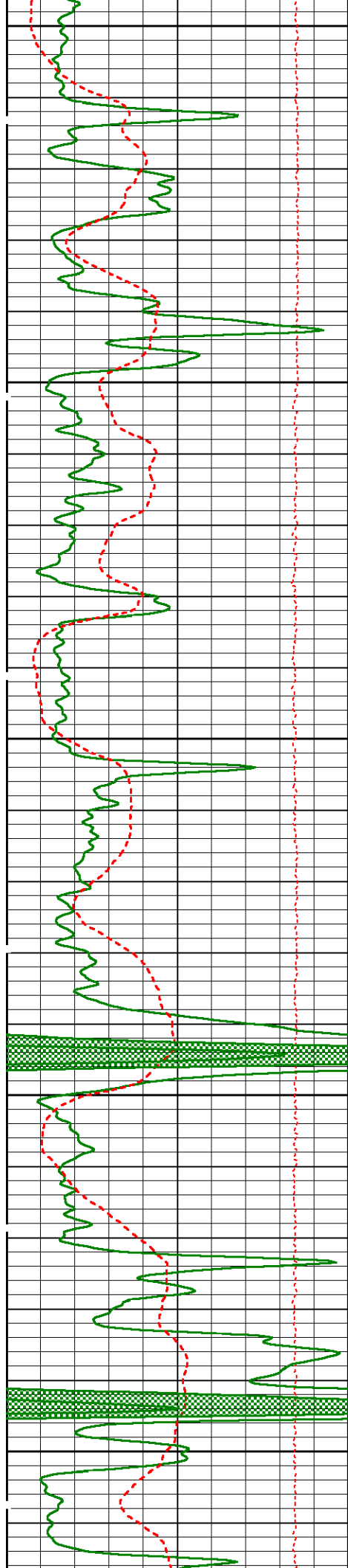




4400

4500

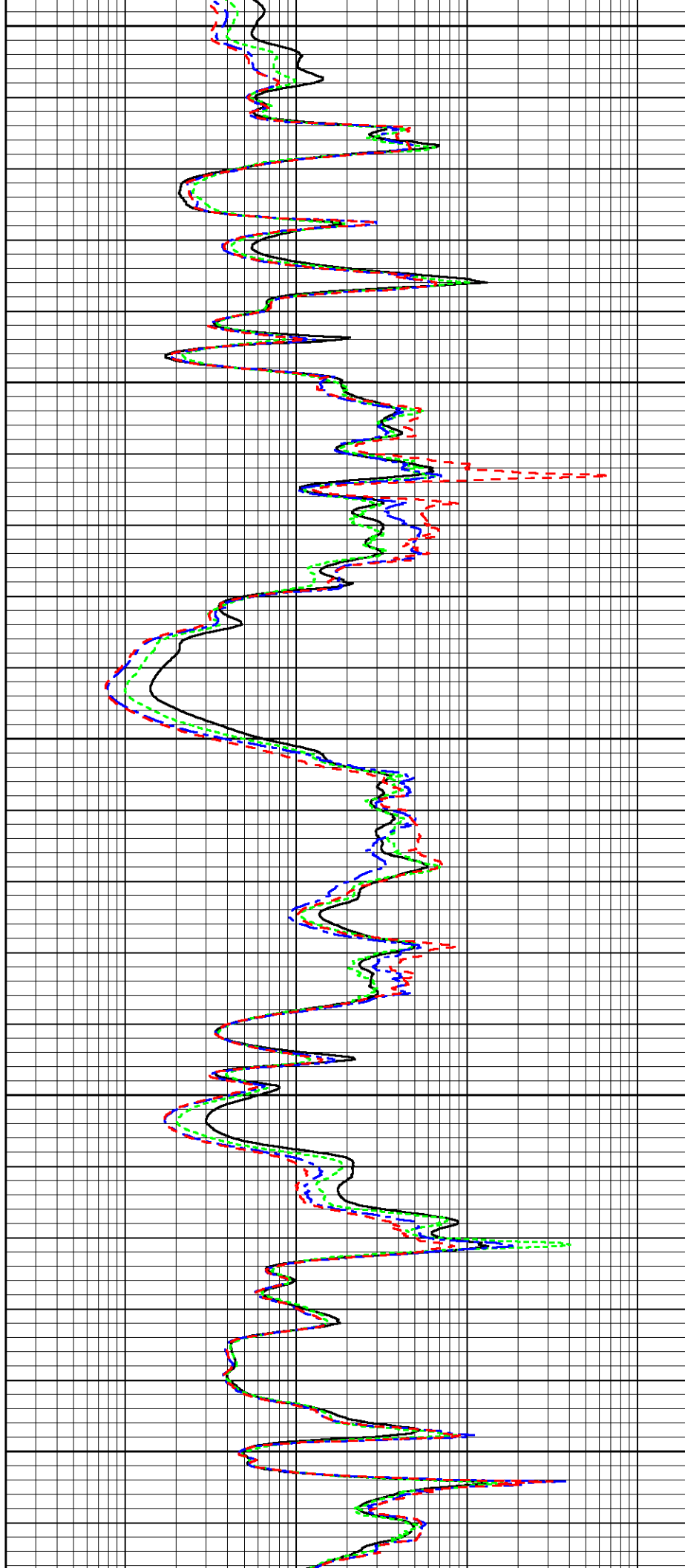


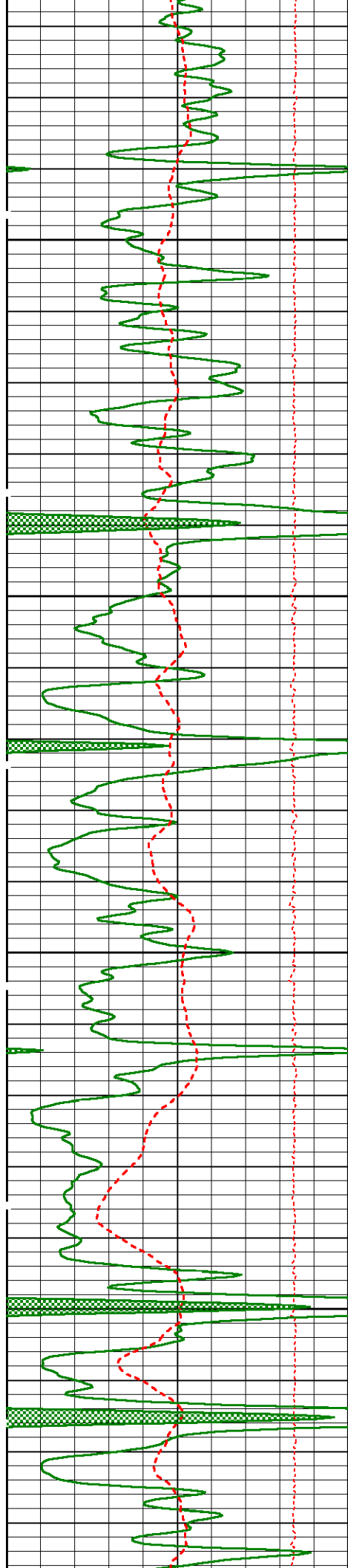


4600

4700

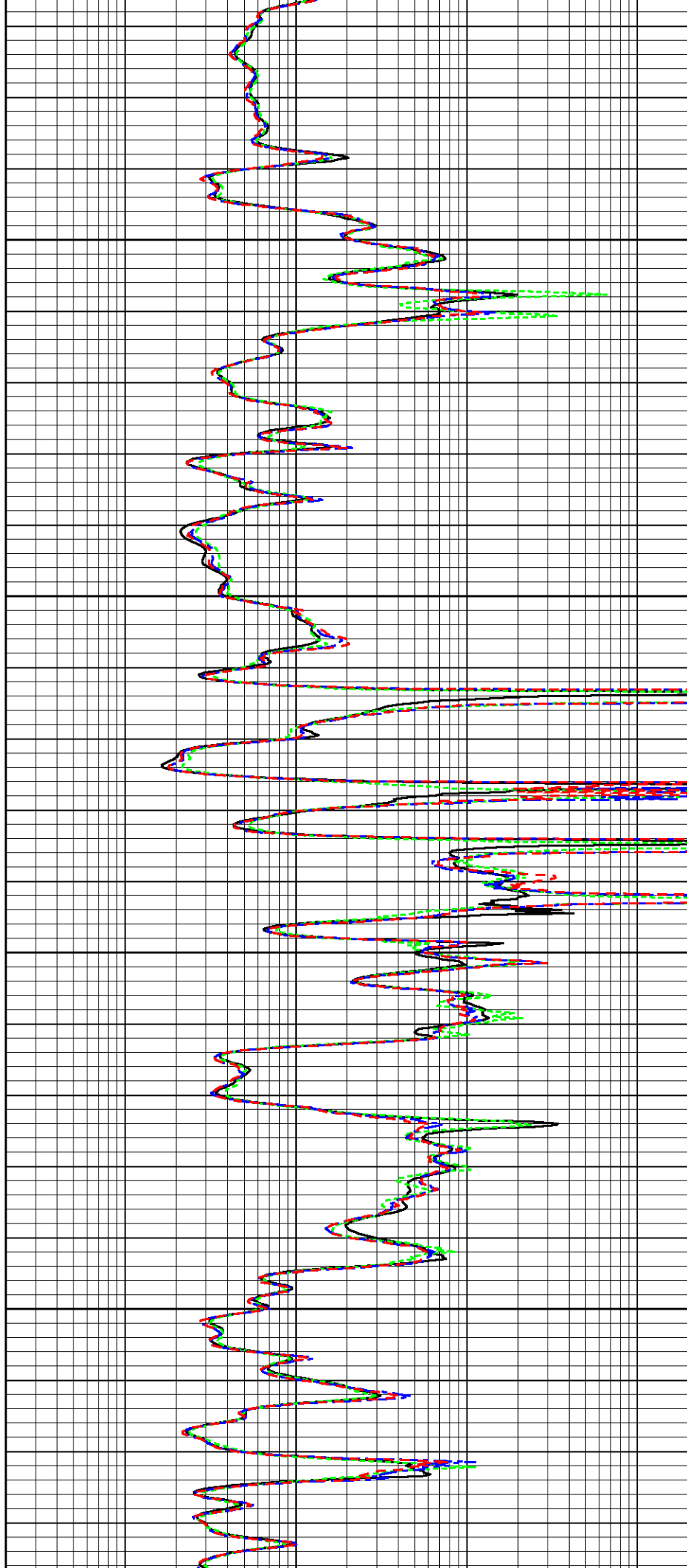
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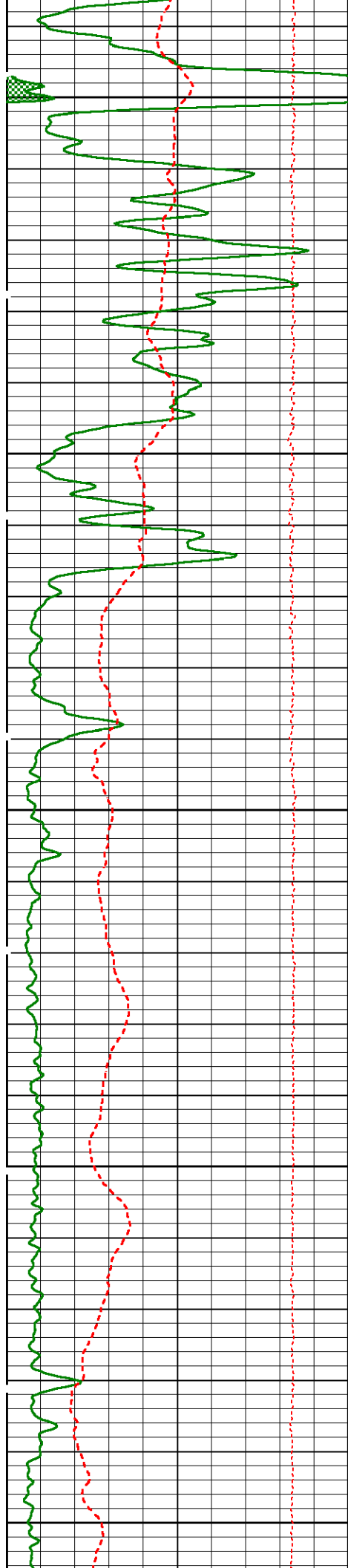




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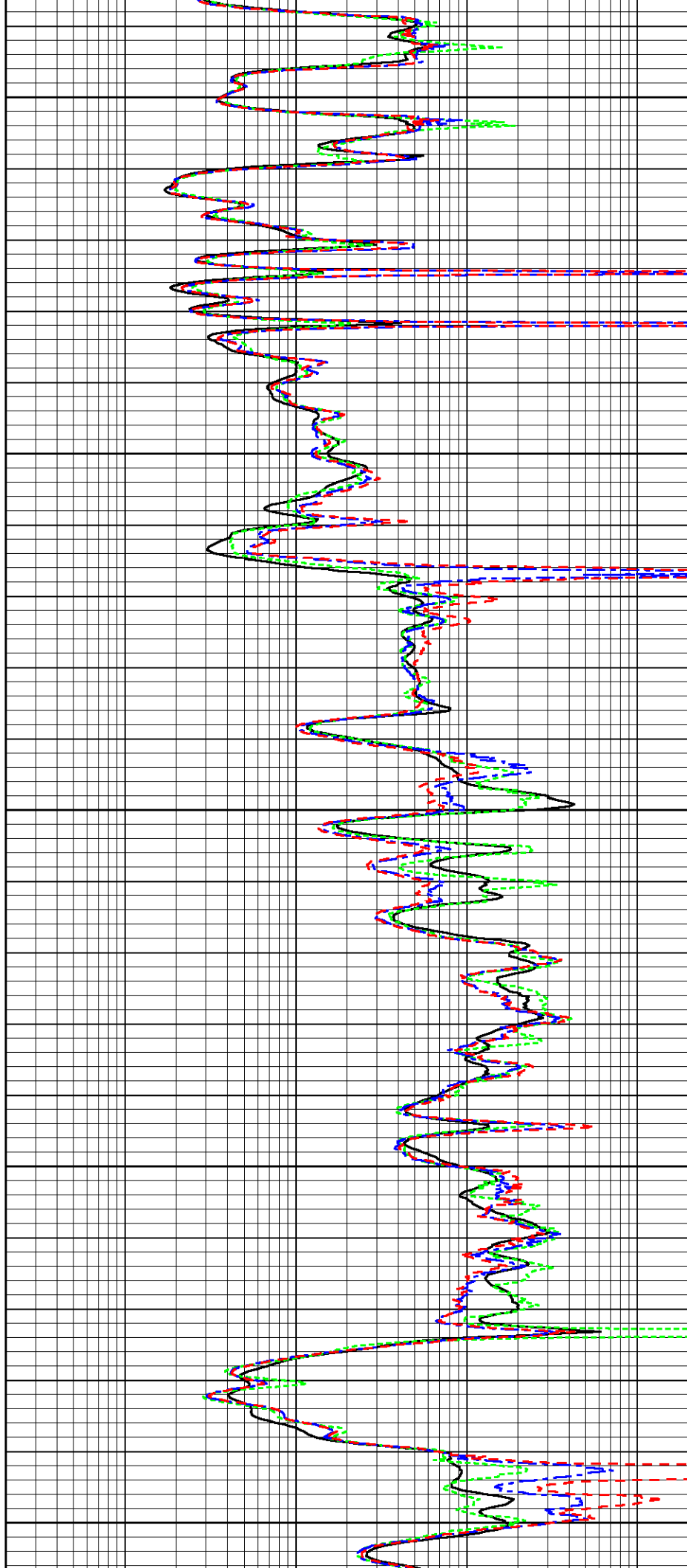
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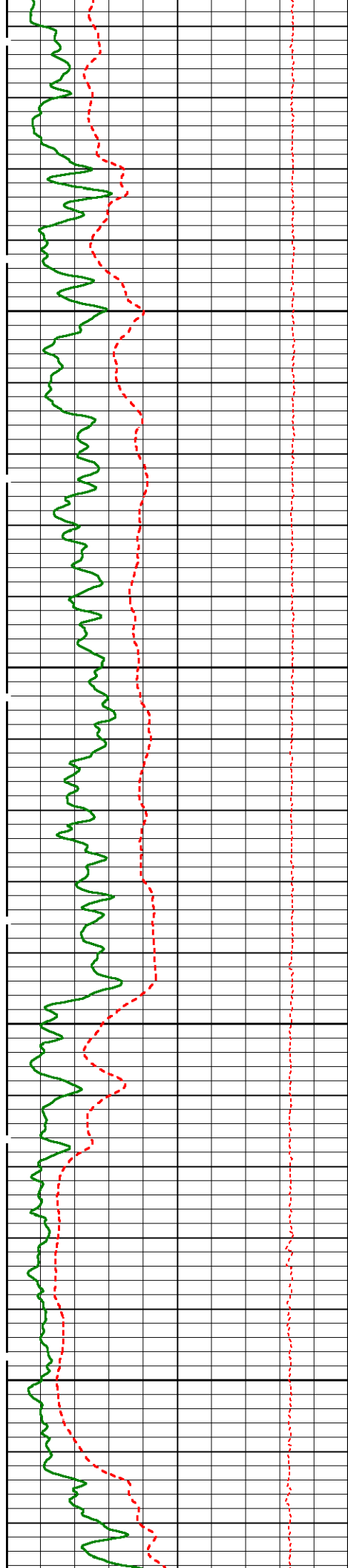




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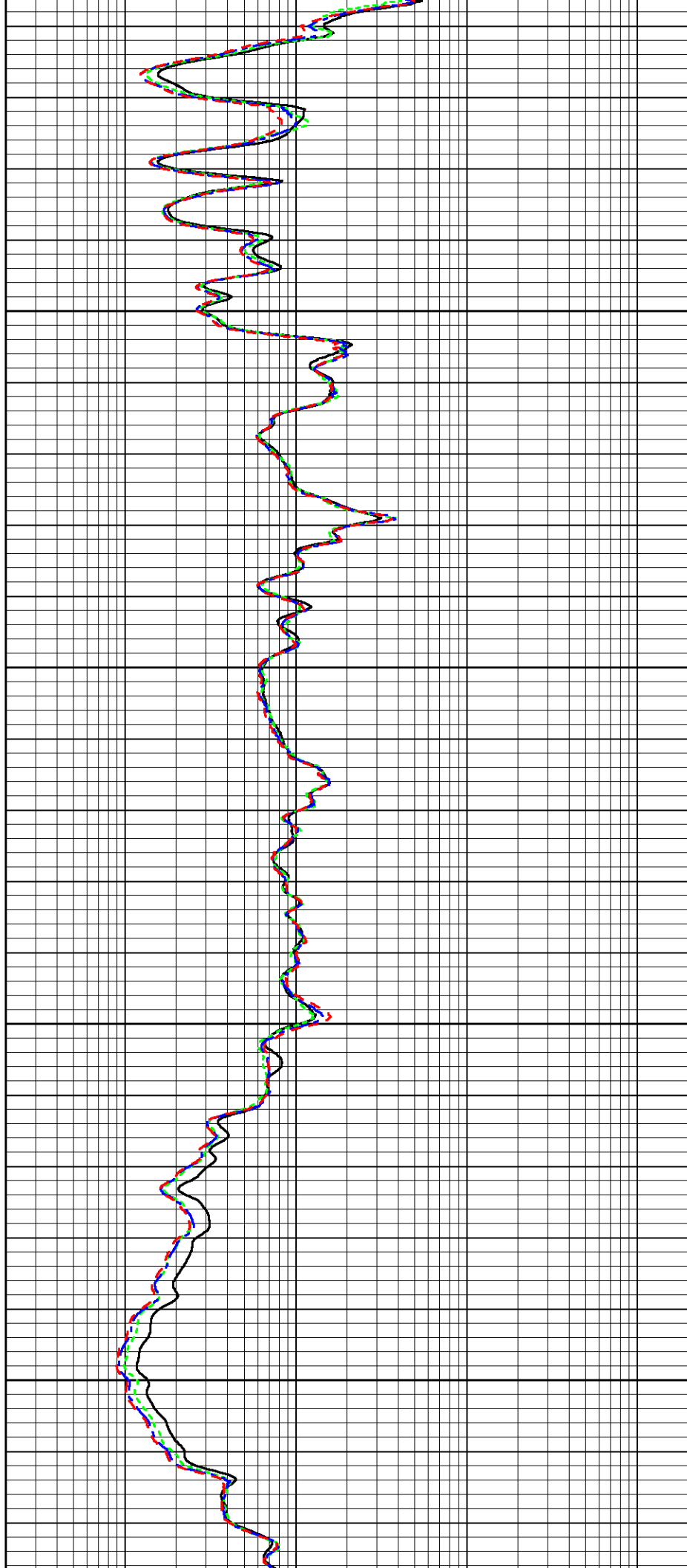
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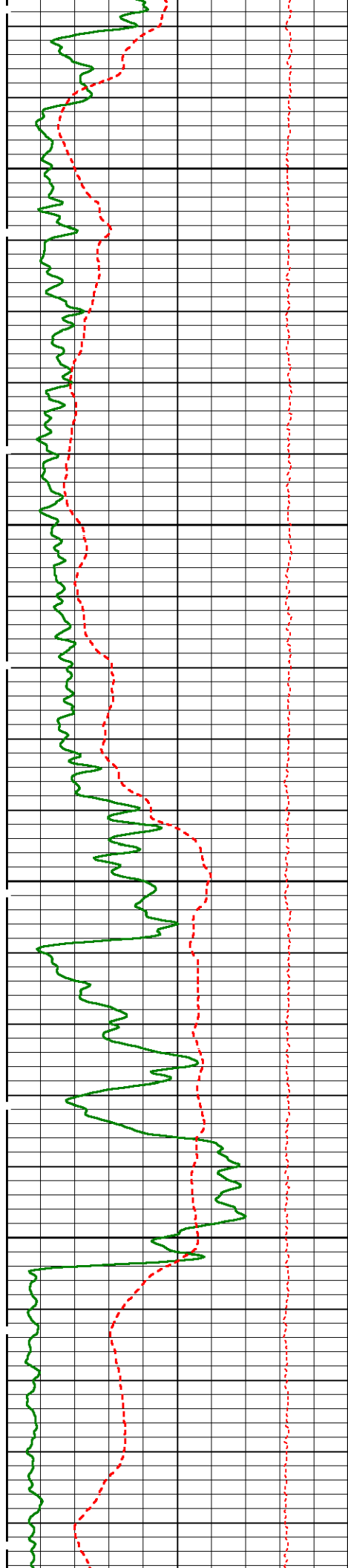




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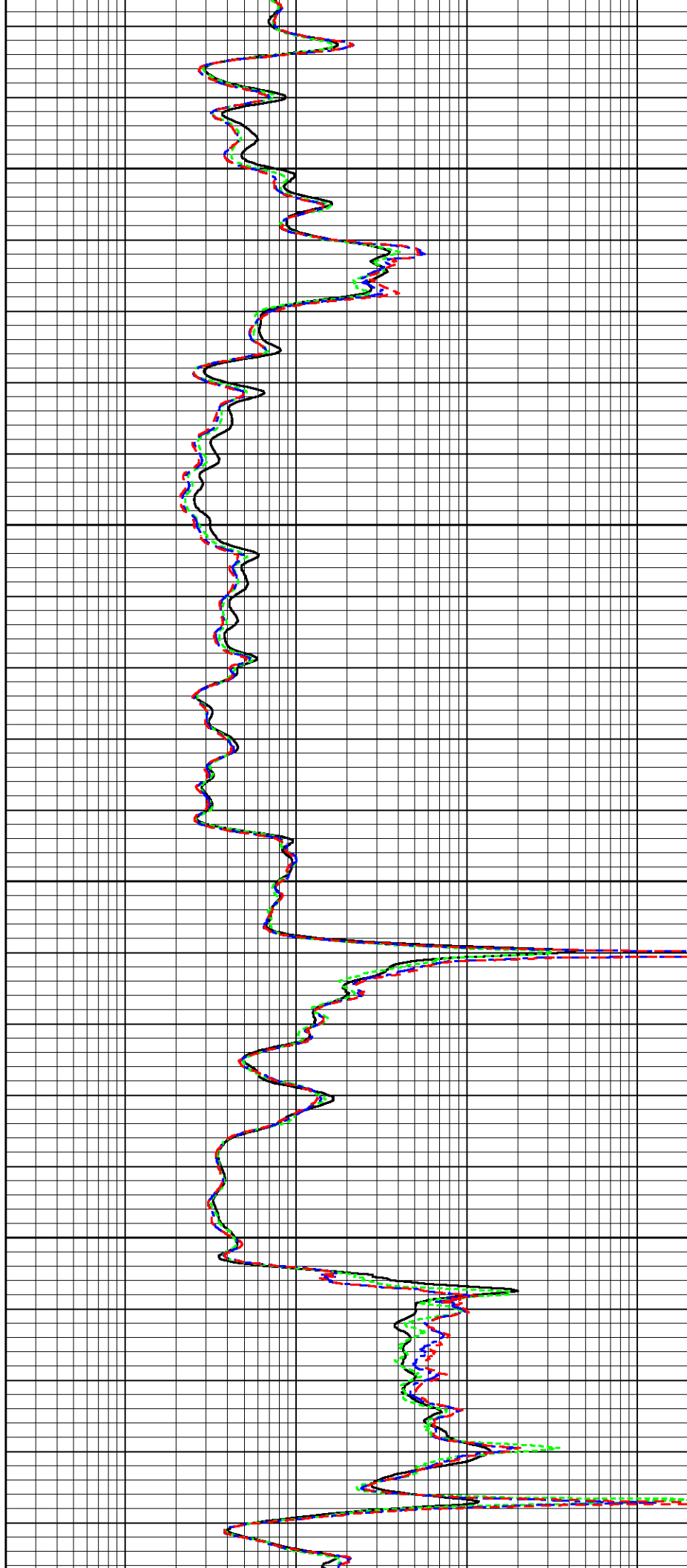
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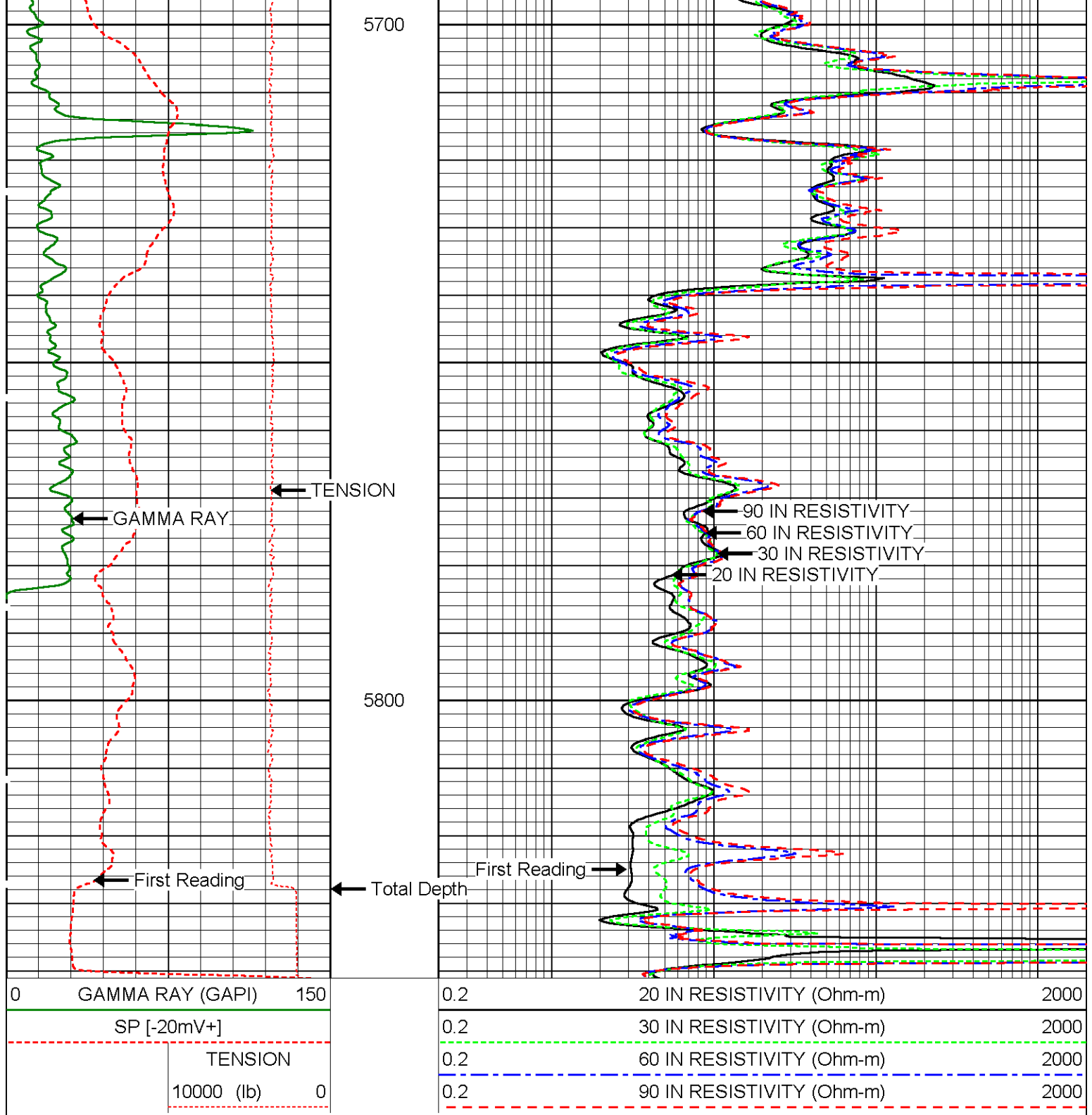




5500

5600



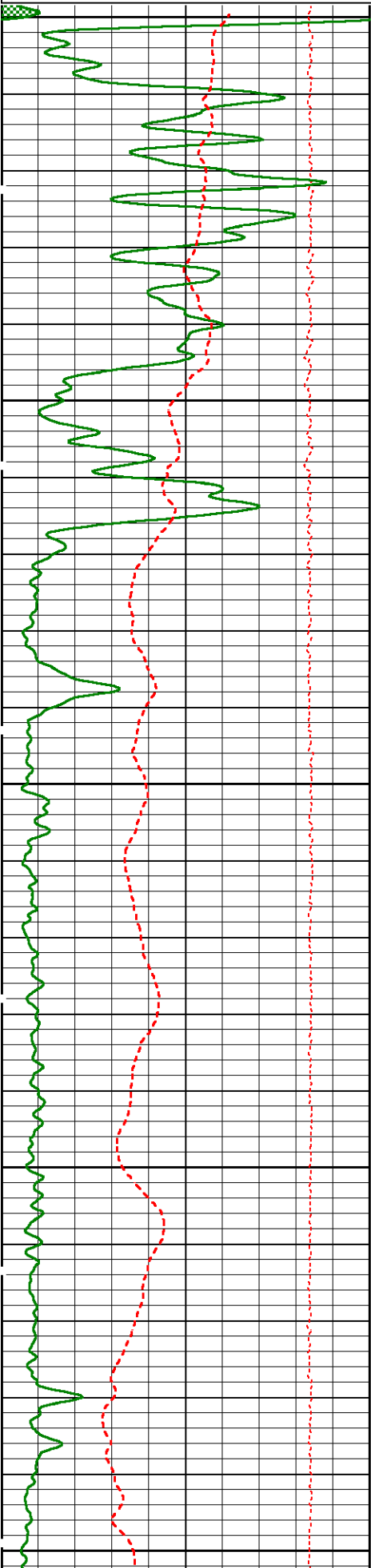


REPEAT PASS

5 INCH

Database File: lohrding_8_1.db
Dataset Pathname: Lohrding_/run1/repeat
Presentation Format: aind2r
Dataset Creation: Wed Apr 27 09:18:47 2011 by Calc Sondex V7.03
Charted by: Depth in Feet scaled 1:240

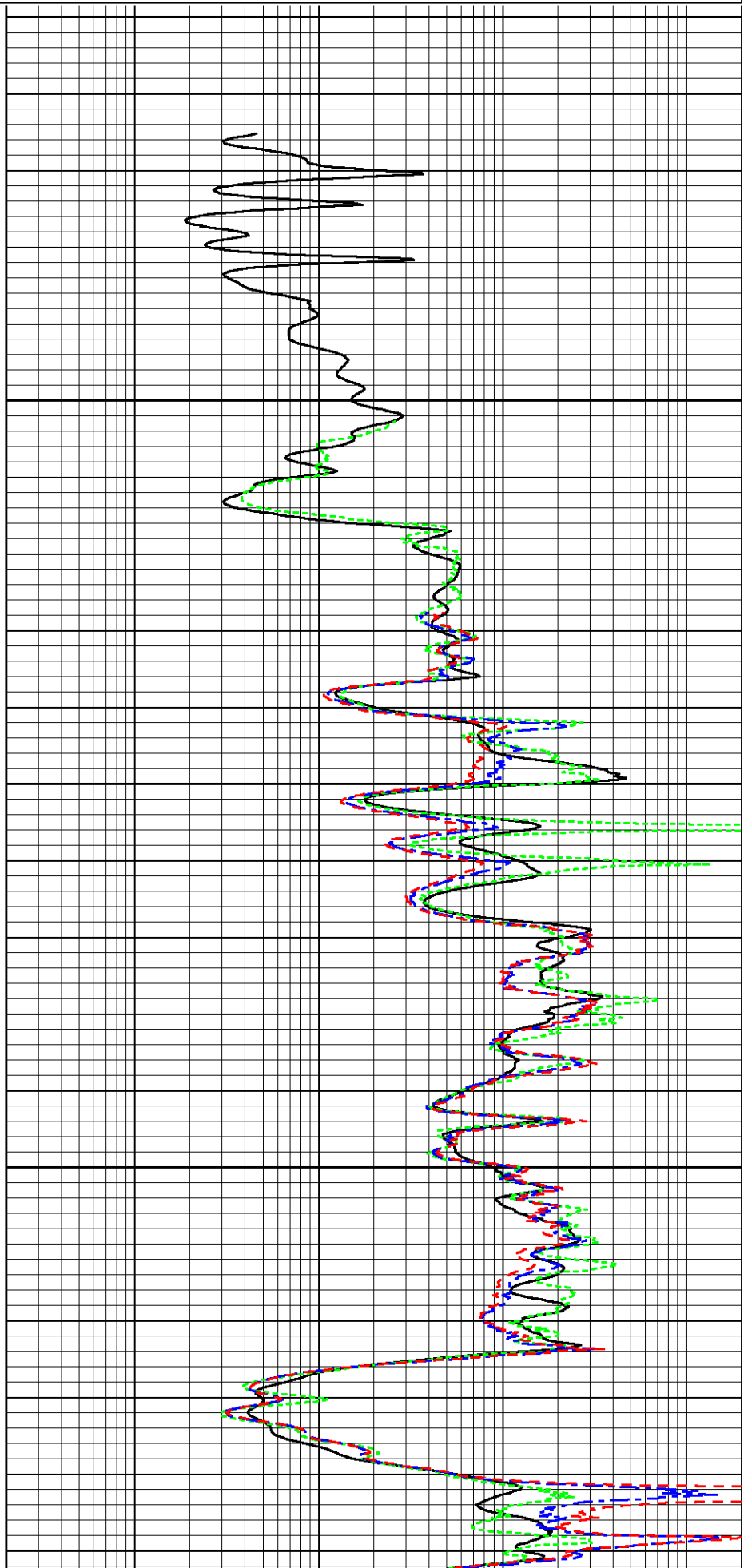
SP [-20mV+]		
TENSION		
10000 (lb)	0	

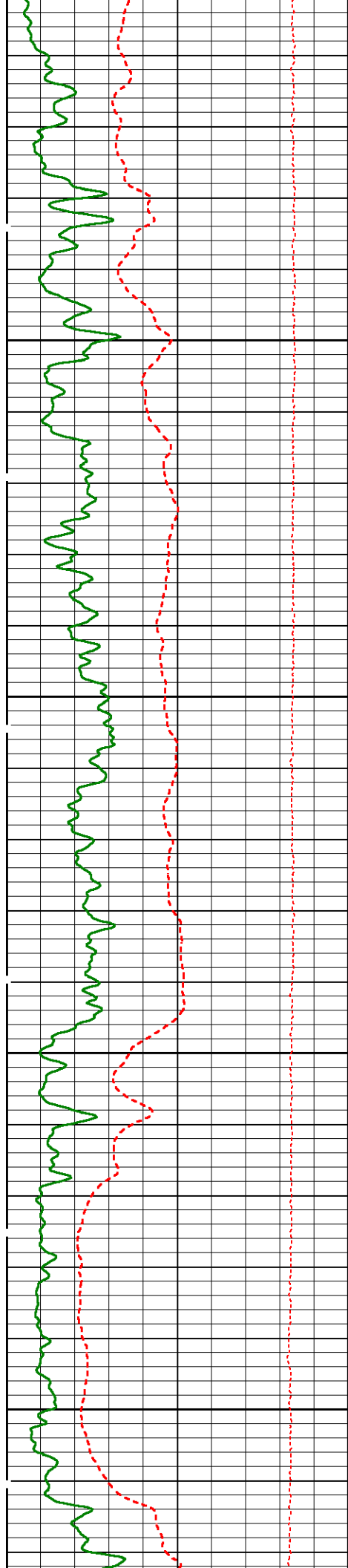


5100

5200

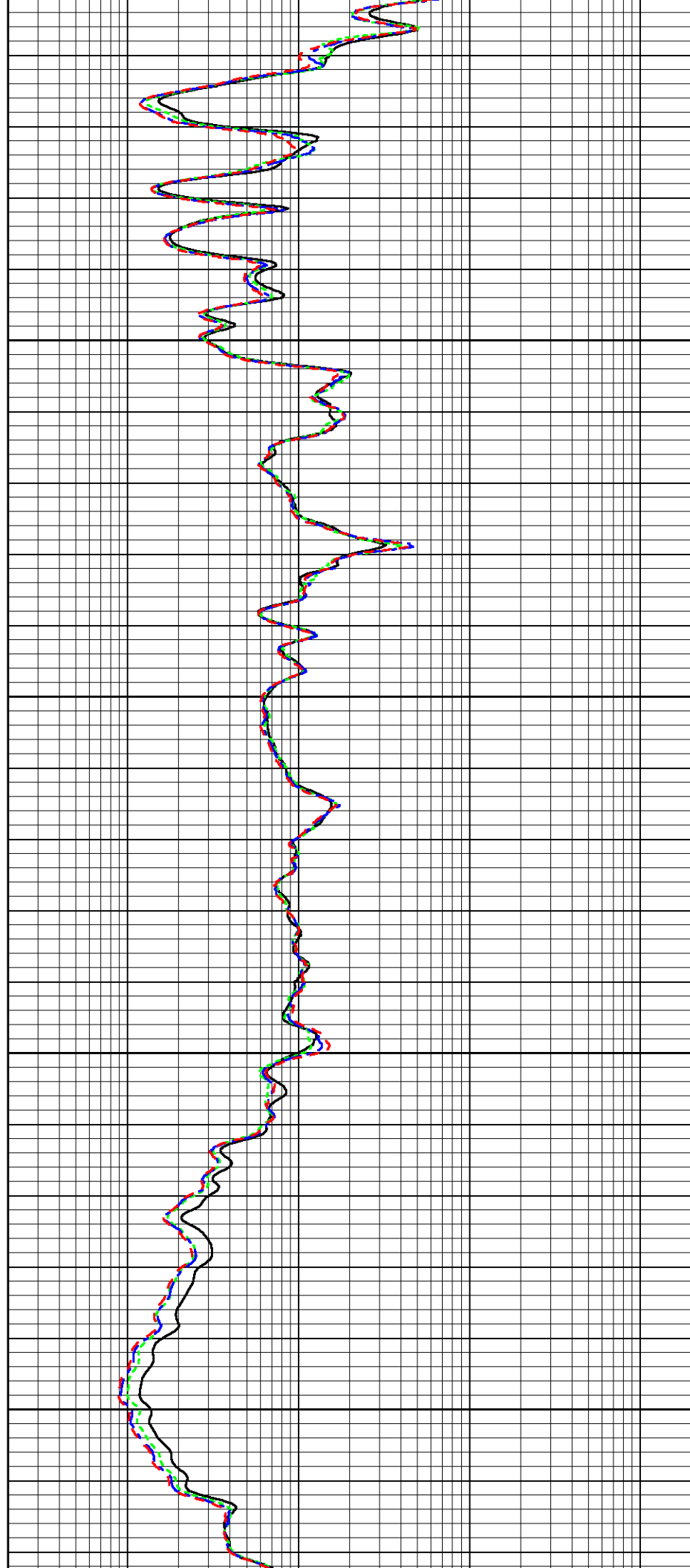
0.2	30 IN RESISTIVITY (Ohm-m)	2000
0.2	60 IN RESISTIVITY (Ohm-m)	2000
0.2	90 IN RESISTIVITY (Ohm-m)	2000

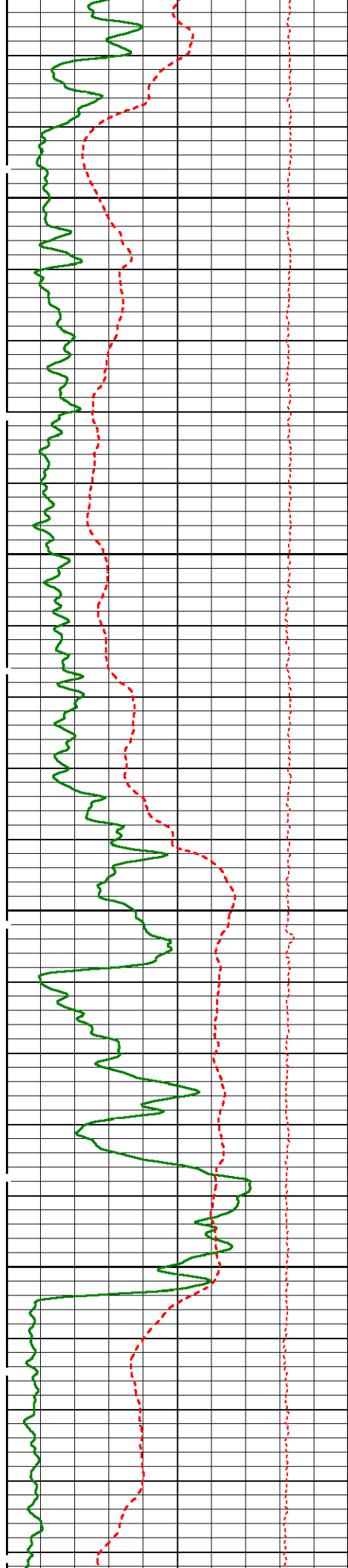




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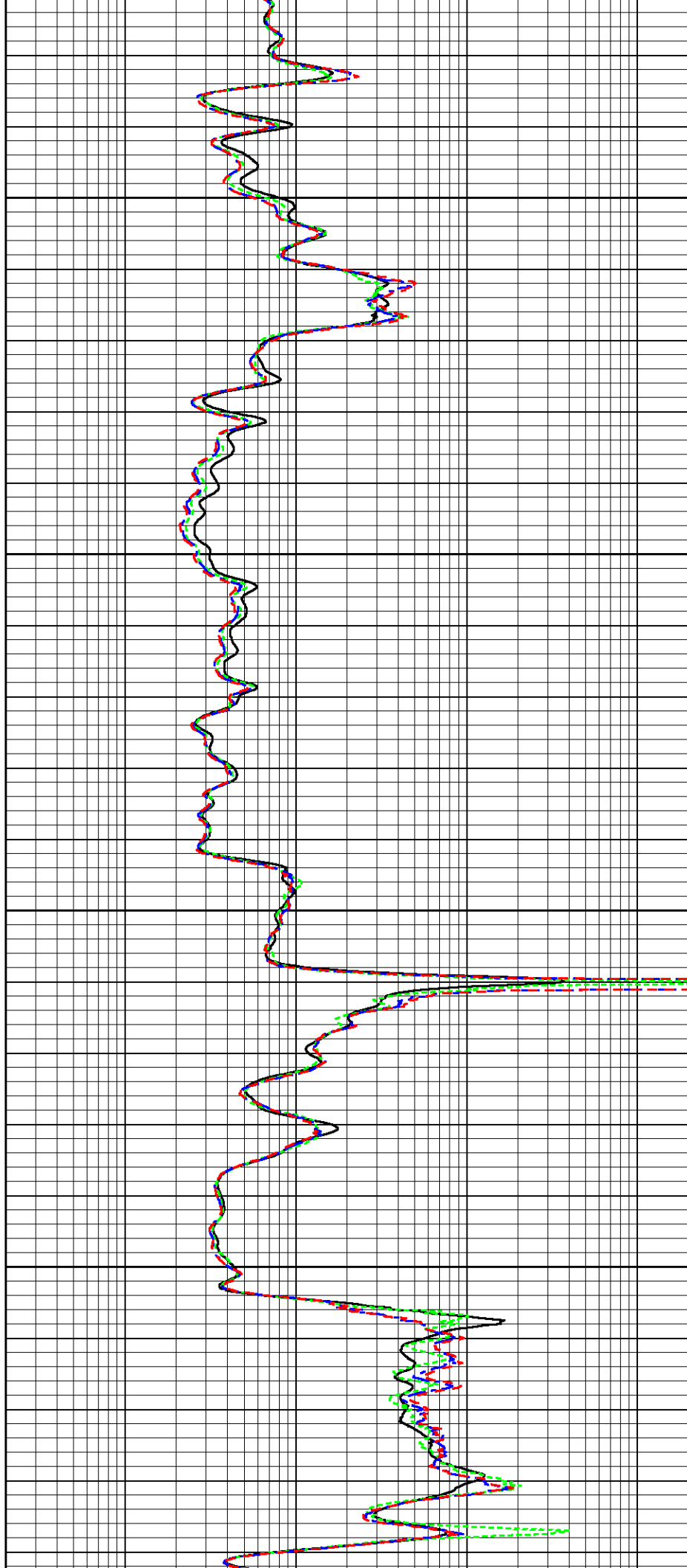
5400

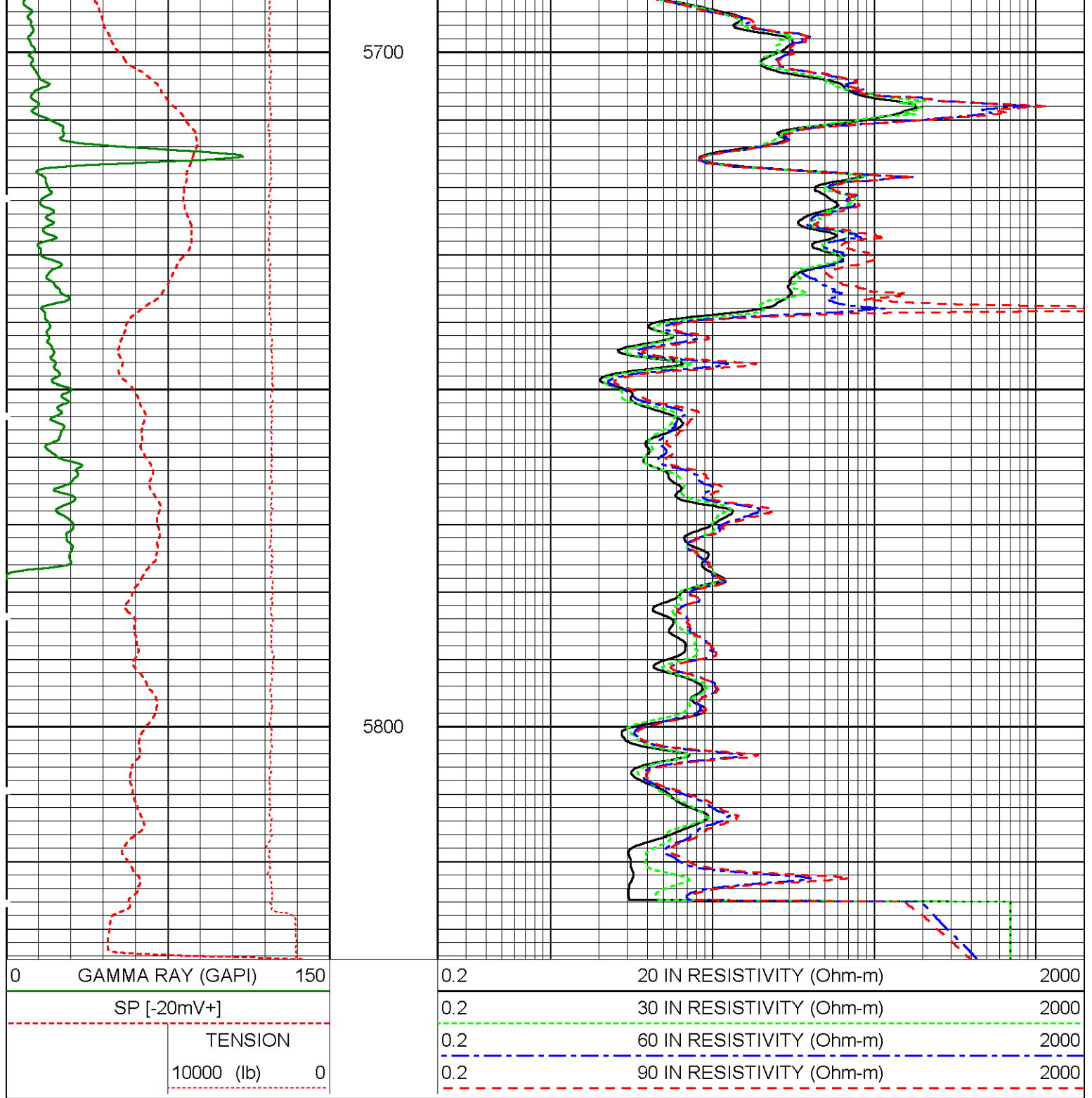




5500

5600





Log Variables

Database: C:\Warrior\Data\Lohrding_8_1.db

Dataset: field/Lohrding_run1/pass3

Top - Bottom

FRMSALIN kppm 0	MUDSALIN kppm 0	DEVI ° 0	SRFTEMP degF 68	SO in 0.25	DE-CENT Yes	CASED? No	CASEWGHT lb/ft 11.5
AIR_HOLE? No	MudWgt lb/gal 9.2	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	COMPACT 1
SVFLUID usec/ft	SVMATRIX usec/ft	SPSHIFT mV	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in

189	47.6	0	5.5	0	5830	126	7.875
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Calibration Report	
Database File:	lohrding_8_1.db
Dataset Pathname:	Lohrding_/run1/repeat
Dataset Creation:	Wed Apr 27 09:18:47 2011 by Calc Sondex V7.03

Induction Array Tool Calibration Report

Serial Number:	B10109
Tool Model:	002
Filter Version:	

Master Calibration Performed:		Wed Oct 06 07:31:12 2010					
Temperature:		64.8 degF					
Sonde Error:							
Array	1	2	3	4	5	6	7
Real	194.9	-9.2	-37.7	-13.3	-1.3	1.7	5.2 mmho/m
Imaginary	162.8	-7.6	-13.6	-28.4	-1.3	-0.9	-0.0 mmho/m
Loop Gain:							
Array	1	2	3	4	5	6	7
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8 mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8 mmho/m
Real	762.5	724.6	1251.1	1388.6	1170.7	747.9	426.4 mmho/m
Imaginary	238.2	80.5	372.7	395.5	351.8	223.7	128.3 mmho/m
Gain (real)	0.947	0.925	1.005	0.994	0.977	0.955	0.961
Gain (imaginary)	0.973	1.050	1.009	0.990	0.976	0.955	0.949

Before Survey Verification Performed:		Tue Apr 26 11:04:53 2011					
Sonde 1 Temperature:		61.1 degF					
Sonde 2 Temperature:		62.6 degF					
Array 1 Temperature:		61.5 degF					
Array	1	2	3	4	5	6	7
TxIR	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
TxIX	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Tx Magnitude	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Gain	133.5	158.3	134.3	142.8	171.9	127.6	126.1
RxCR	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
RxCX	0.2	0.1	0.3	0.1	0.1	0.2	0.2
RxC Magnitude	1.6	4.2	1.7	3.0	6.7	1.3	1.2

Litho Density Tool Calibration Report

Serial Number:	B10111S50130B
Tool Model:	002

Caliper Calibration Performed:		Thu Apr 21 10:02:08 2011					
	Diameter				Reading		
Small Ring:	6.000	in			1138.200	cps	
Large Ring:	13.000	in			2003.900	cps	
Gain:	0.0081						
Offset:	-3.3534						

Master Calibration Performed:	Wed Apr 20 14:53:22 2011
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Source Number: 50130B
Medium: Water
Al Block Density: 2.6014 g/cc

	Background	Al Block	Al Block + Fe	
SS1	793.4	4572.5	4371.0	cps
SS2	2247.4	30837.7	29281.9	cps
SSTOTAL	5267.8	49416.2	46593.1	cps
LITH	107.3	548.3	390.9	cps
LL	212.4	905.8	870.8	cps
LU	611.4	1203.0	1175.6	cps
LS	823.8	2108.9	2046.5	cps
LSTOTAL	1557.3	5112.5	4597.6	cps
SSHV	631.1	635.4	639.1	V
LSHV	539.3	541.8	544.7	V
SSFF	0.01	0.01	0.01	
LSFF	-0.00	0.00	0.01	

Before Survey Verification Performed: Tue Apr 26 11:06:24 2011
After Survey Verification Performed:

	Master Background	Before Survey Background	After Survey Background	
SS1	793.4	790.5		cps
SS2	2247.4	2236.4		cps
SSTOTAL	5267.8	5251.3		cps
LITH	107.3	107.9		cps
LL	212.4	215.1		cps
LU	611.4	616.4		cps
LS	823.8	831.5		cps
LSTOTAL	1557.3	1562.7		cps
SSHV	631.1	633.9		V
LSHV	539.3	537.4		V
SSFF	0.01	0.02		
LSFF	-0.00	0.02		

Compensated Neutron Tool Calibration Report

Serial Number: C10089S66006B
Tool Model: 009

Master Calibration Performed: Mon Apr 25 11:49:56 2011

Source Number: 66006B

Short Spacing Counts: 6155.82 cps
Long Spacing Counts: 241.55 cps
High Voltage: 1378.98 V

Target Ratio: 27.2000
Ratio: 25.4842
K-Factor: 1.0673

Before Survey Verification Performed: Tue Apr 26 11:17:18 2011
After Survey Verification Performed:

Verifier Number: 6490

Verifier Values	Master Cal	Before Survey	After Survey	
Short Spacing Counts:	248.24	297.95		cps
Long Spacing Counts:	270.23	278.92		cps

High Voltage Ratio:	1378.95 0.9186	1379.27 1.0683	V
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Micro Electric Log Calibration Report

Serial Number:	000001
Tool Model:	001

Caliper Calibration Performed:	Mon Mar 21 16:54:34 2011
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	Diameter		Reading 1	Reading 2
Small Ring:	3.000	in	1315.800	1351.000
Large Ring:	6.500	in	1323.400	1500.800
Gain:			0.4605	0.0234
Offset:			-602.9610	-28.5654

Pad Calibration

	Inverse	Normal
Gain:	1.0000	1.0000
Offset:	0.7000	0.7000

Gamma Ray Calibration Report

Serial Number:	C10099
Tool Model:	001

Performed:	Tue Apr 26 11:26:08 2011
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Calibrator Value:	236.0	GAPI
Background Reading:	105.6	cps
Calibrator Reading:	815.6	cps
Sensitivity:	0.3324	GAPI/cps

Head Tension Unit Calibration Report

Serial Number:	000003
Tool Model:	011

Performed:	Thu Oct 21 05:29:52 2010
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Point #	Reference		Reading	
1	-20000.000	lb	3476.000	cps
2	0.000	lb	31341.000	cps
3	20000.000	lb	59363.000	cps
4		lb		cps
5		lb		cps
6		lb		cps
7		lb		cps
8		lb		cps
9		lb		cps
10		lb		cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
HTEN	61.68		CHD-001 (000004) Cable Head	2.19	3.38	35.00	
			XTU-008 (C10087) Crossover Ultrawire Toolbus to Ultralink	2.08	3.38	47.00	
			HTU-011 (000003) Head Tension Unit	2.18	3.38	55.00	
GR	57.54		SJT-001 (000001) Swivel Joint	2.11	3.38	53.00	
			GRT-001 (C10099) Gamma Ray Tool	3.22	3.38	69.00	

				GR1-001 (C10033) Gamma Ray Tool	3.22	3.38	69.00
MEL	47.55			MEL-001 (000001) Micro Electric Log	9.17	3.38	190.00
CNLSC	42.74						
CNSSC	42.24			CNL-009 (C10089S66006B) Compensated Neutron Logging Tool	5.27	3.38	125.00
LDT	32.58			LDT-002 (B10111S50130B) Litho Density Tool	9.75	4.50	310.00
				KJT-001 (000001) Knuckle Joint	2.86	3.38	72.00
WVFUTRF	21.68						
WVFUTRN	20.68			MAS-001SS (C10038SS) Multi Array Sonic Tool (SS)	14.28	3.38	242.00
WVFLTRF	20.68						
WVFLTRN	19.68						
IAT	8.44			IAT-002 (B10109) Induction Array Tool	13.22	3.88	196.00
SP	0.42			BN-SOFF (000001) Bottom Nose Standoff	0.38	6.88	6.00
Dataset: lohrding_8_1.db: field/Lohrding_/run1/repeat Total Length: 66.71 ft Total Weight: 1400.00 lb O.D. 6.88 in							

MAIN PASS

1 INCH

SP [-20mV+]		1000	90 IN CONDUCTIVITY (mmho/m)		0
GAMMA RAY		SHALLOW RESISTIVITY			
0	(GAPI)	150	0	(Ohm-m)	50
TENSION		DEEP RESISTIVITY			
	(lb)		0	(Ohm-m)	50
10000		0			

