DUAL INDUCTION LOG

Company ARP OPERATING, LLC.
Well CV #3
Field WILDCAT
County ELLIS State KANSAS

Location: API # : 15-051-26989-0000

1730' FNL & 915' FEL

SEC 16 TWP 12S RGE 20W

Other Services
CDL/CNL/MEL
SON

Elevation
K.B. 2294
D.F. 2292
G.L. 2289

Permanent Datum	GROUND LEVEL Elevation 2289
Log Measured From	KELLY BUSHING 5' A.G.L
Drilling Measured From	KELLY BUSHING

Date	11/22/20
Run Number	ONE
Depth Driller	4120
Depth Logger	4123
Bottom Logged Interval	4121
Top Log Interval	00
Casing Driller	8 5/8" @ 218
Casing Logger	218
Bit Size	7 7/8
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.1/54
pH / Fluid Loss	10.5/5.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.1 @ 62F
Rmf @ Meas. Temp	.83 @ 62F
Rmc @ Meas. Temp	1.32 @ 62F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.58 @ 117F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	////
Maximum Recorded Temperature	117F
Equipment Number	3802
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	SEAN DEENIHAN

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State KANSAS

<< Fold Here >>>

Comments

THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395

DIRECTIONS

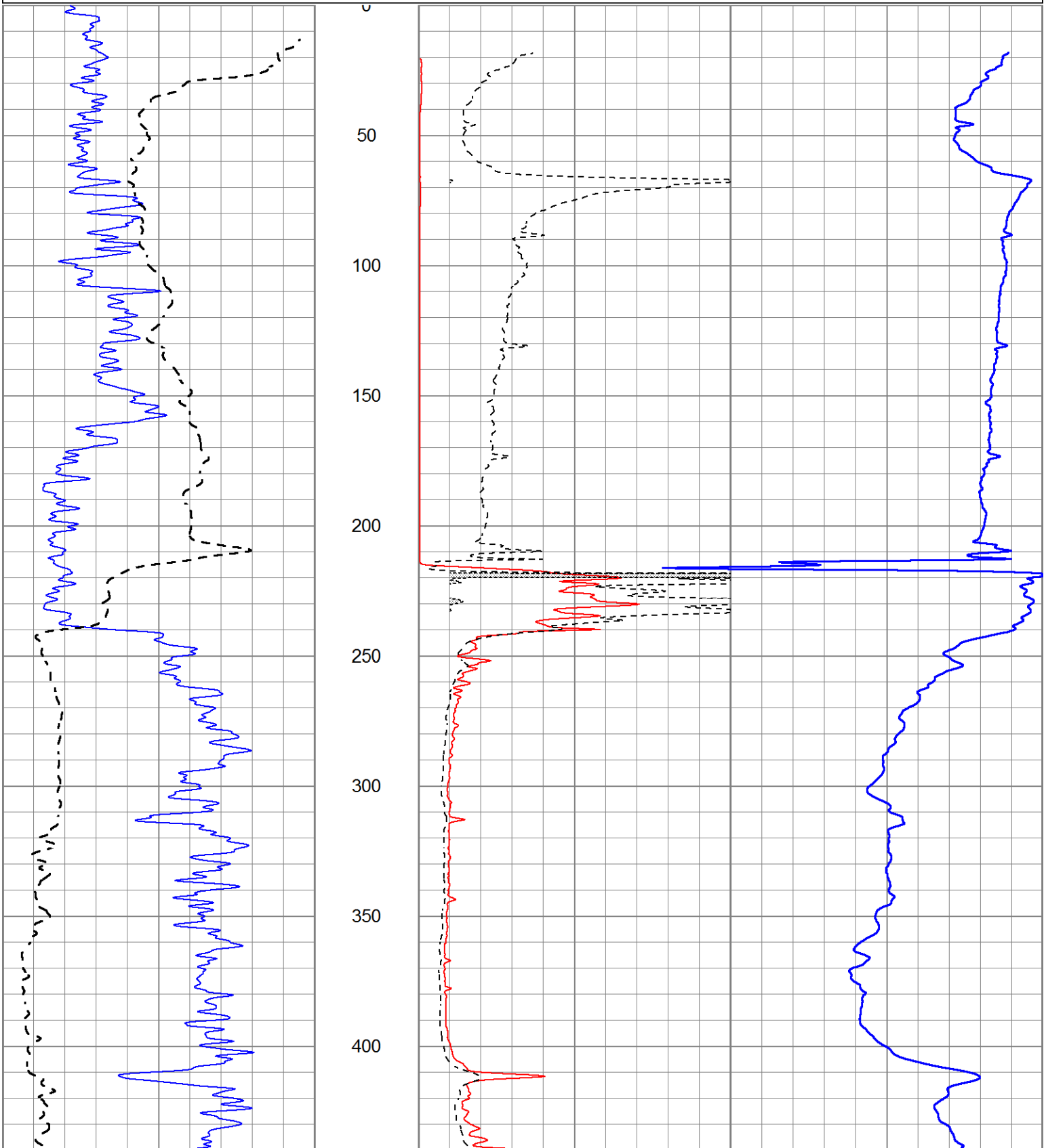
ELLIS NORTH 5 MILES ON BLACKTOP
WEST INTO.

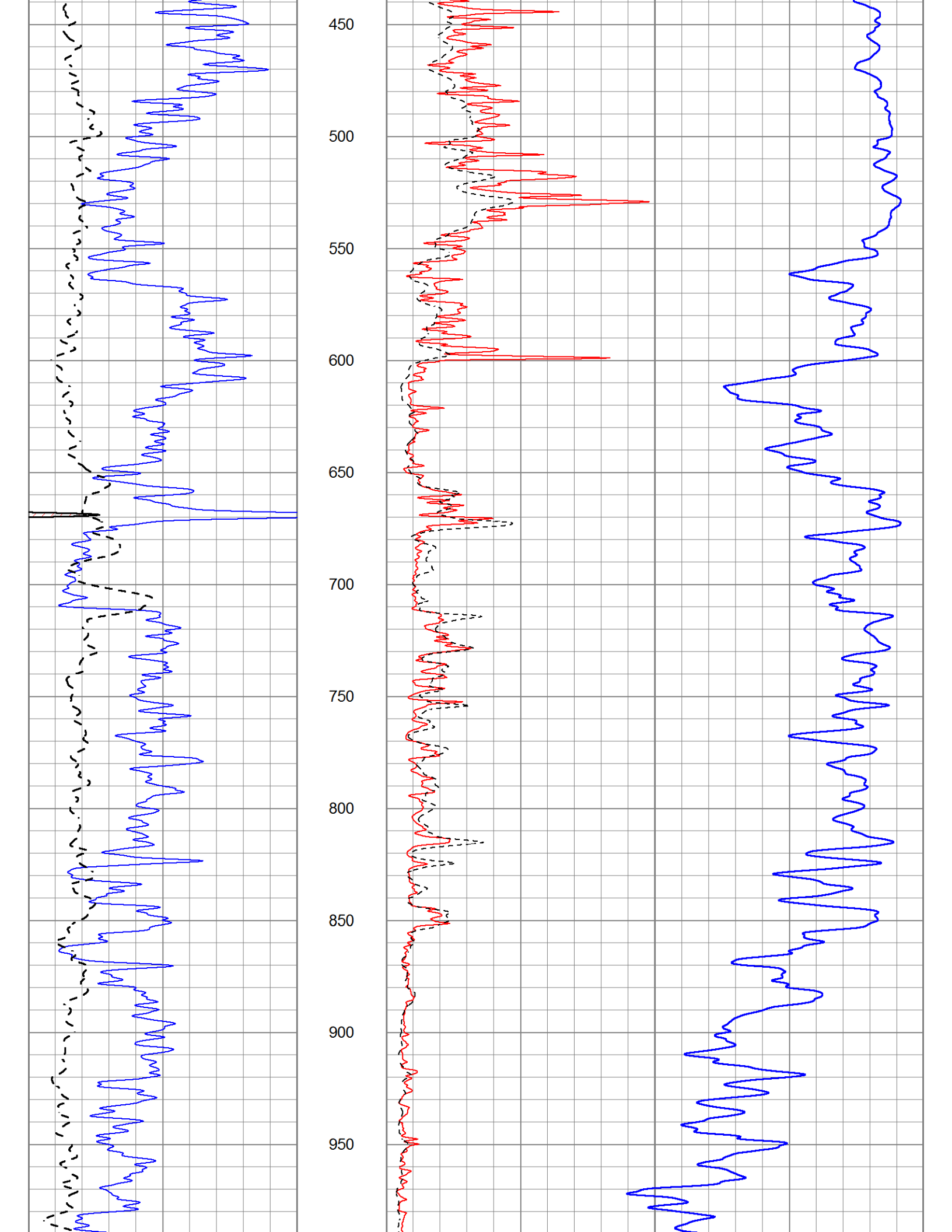
MAIN PASS

Database File	5241ddn.db
Dataset Pathname	pass3.1
Presentation Format	_dil2
Dataset Creation	Sun Nov 22 21:04:32 2020
Charted by	Depth in Feet scaled 1:600

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

1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

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650
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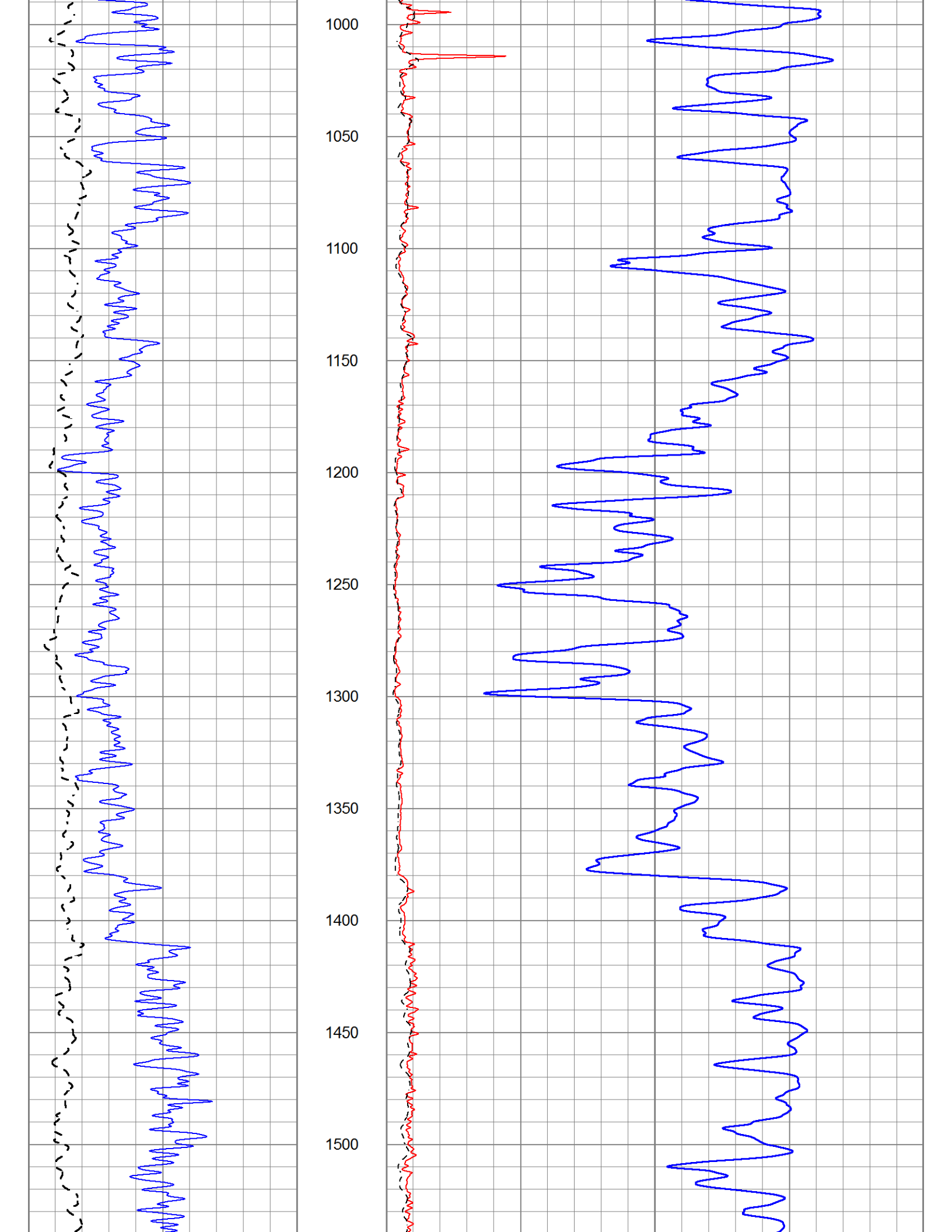
950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1200
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1450
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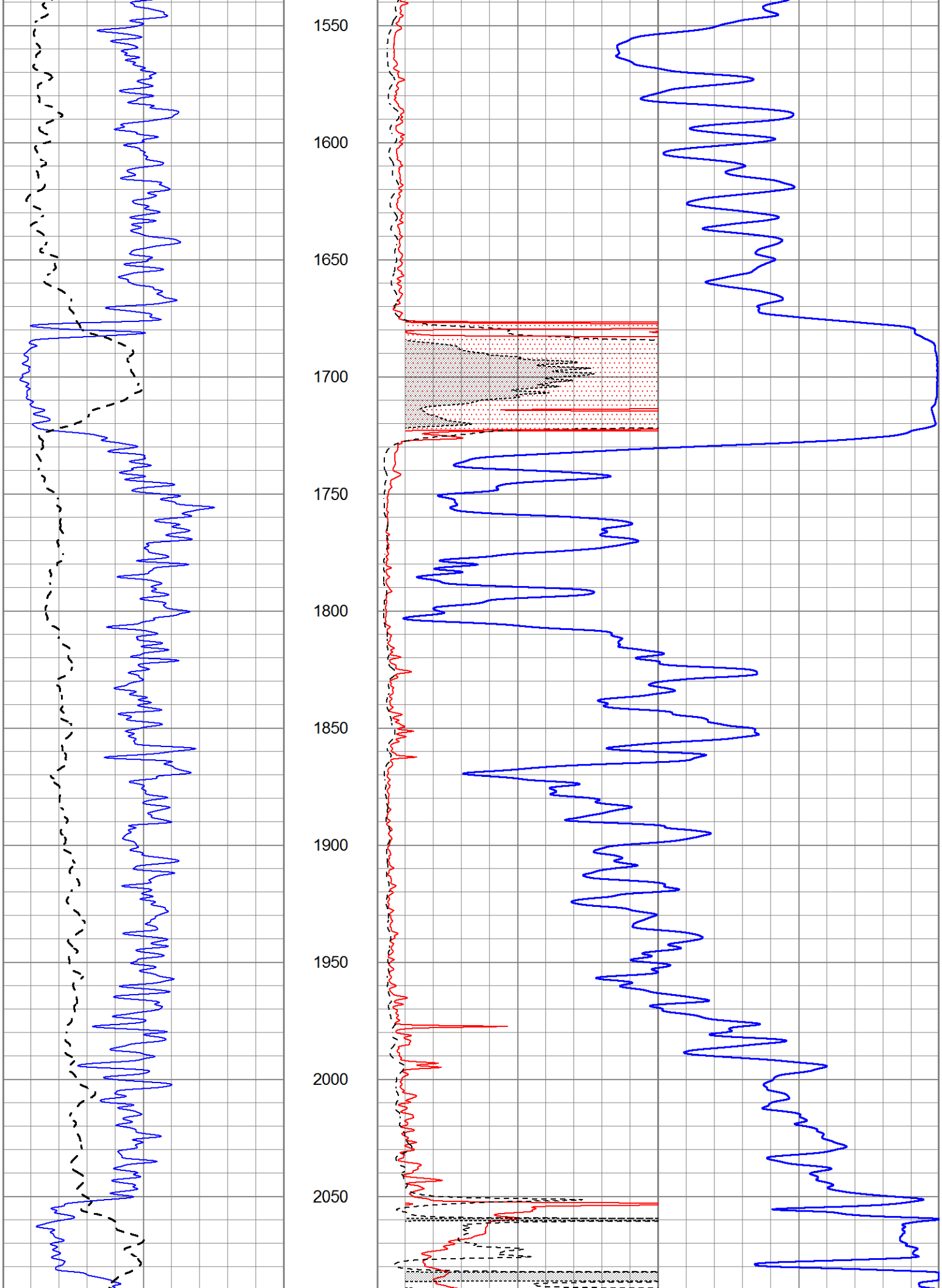
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1700
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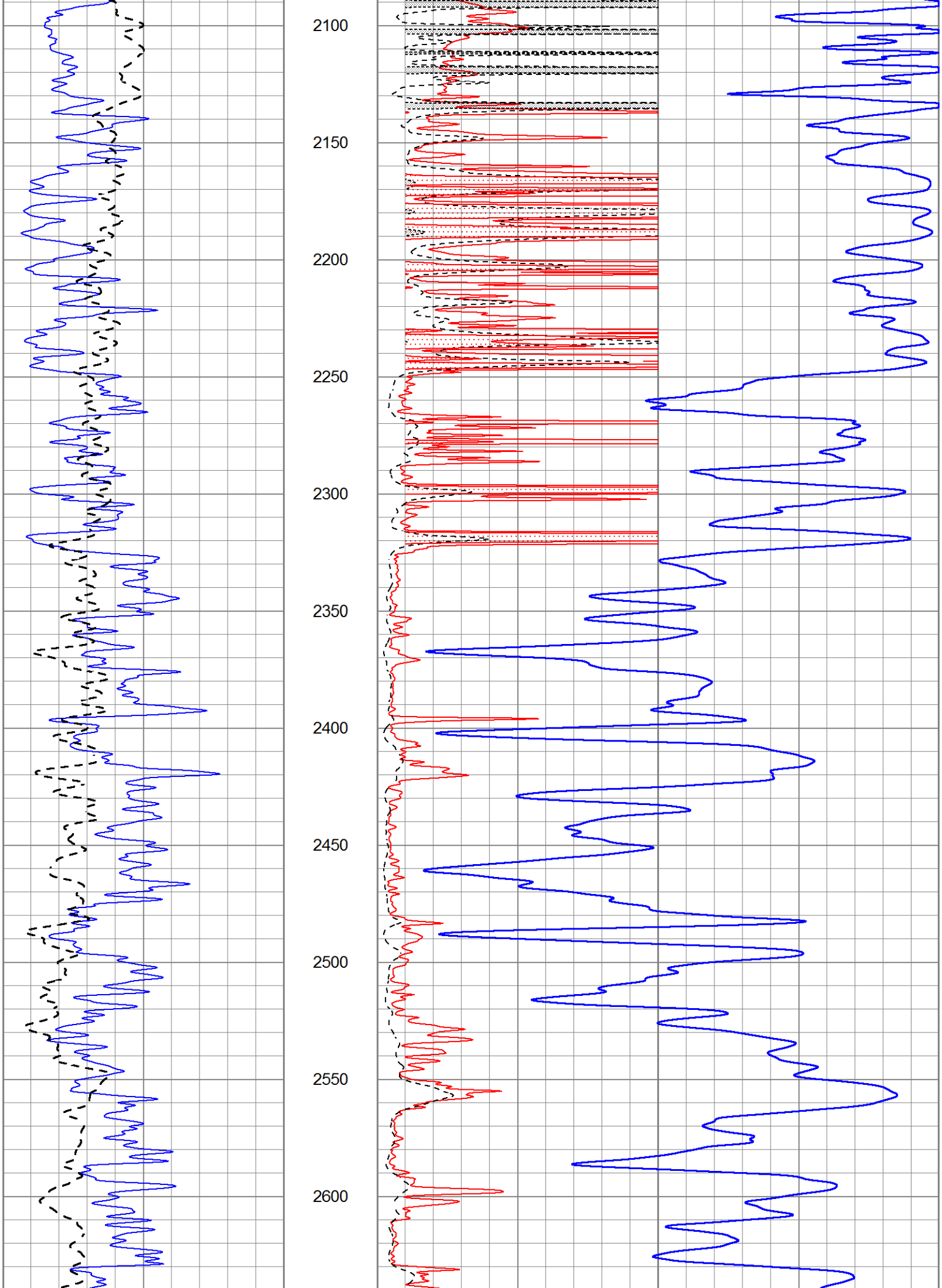
1850
1900
1950
2000
2050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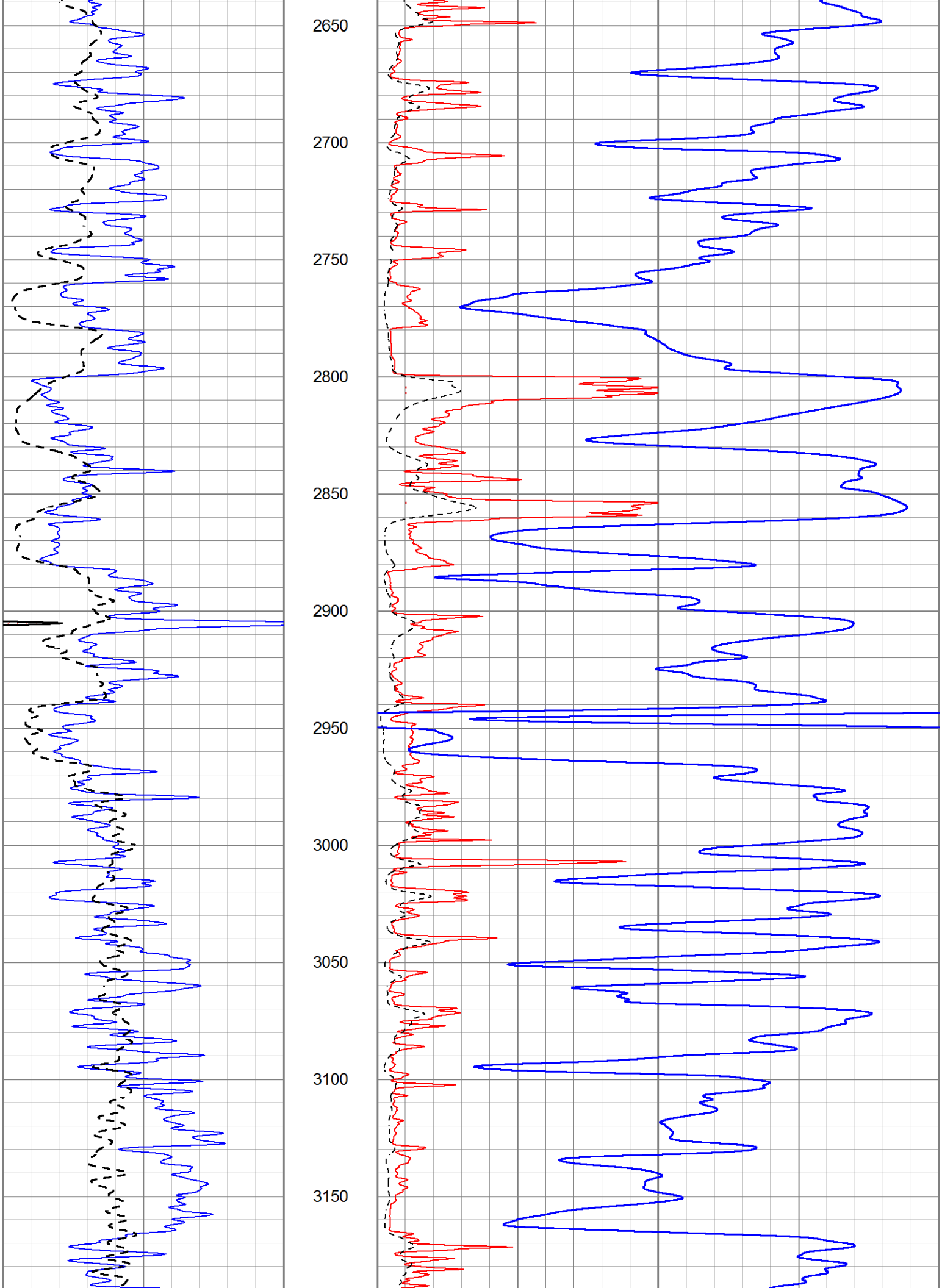
2400
2450
2500
2550
2600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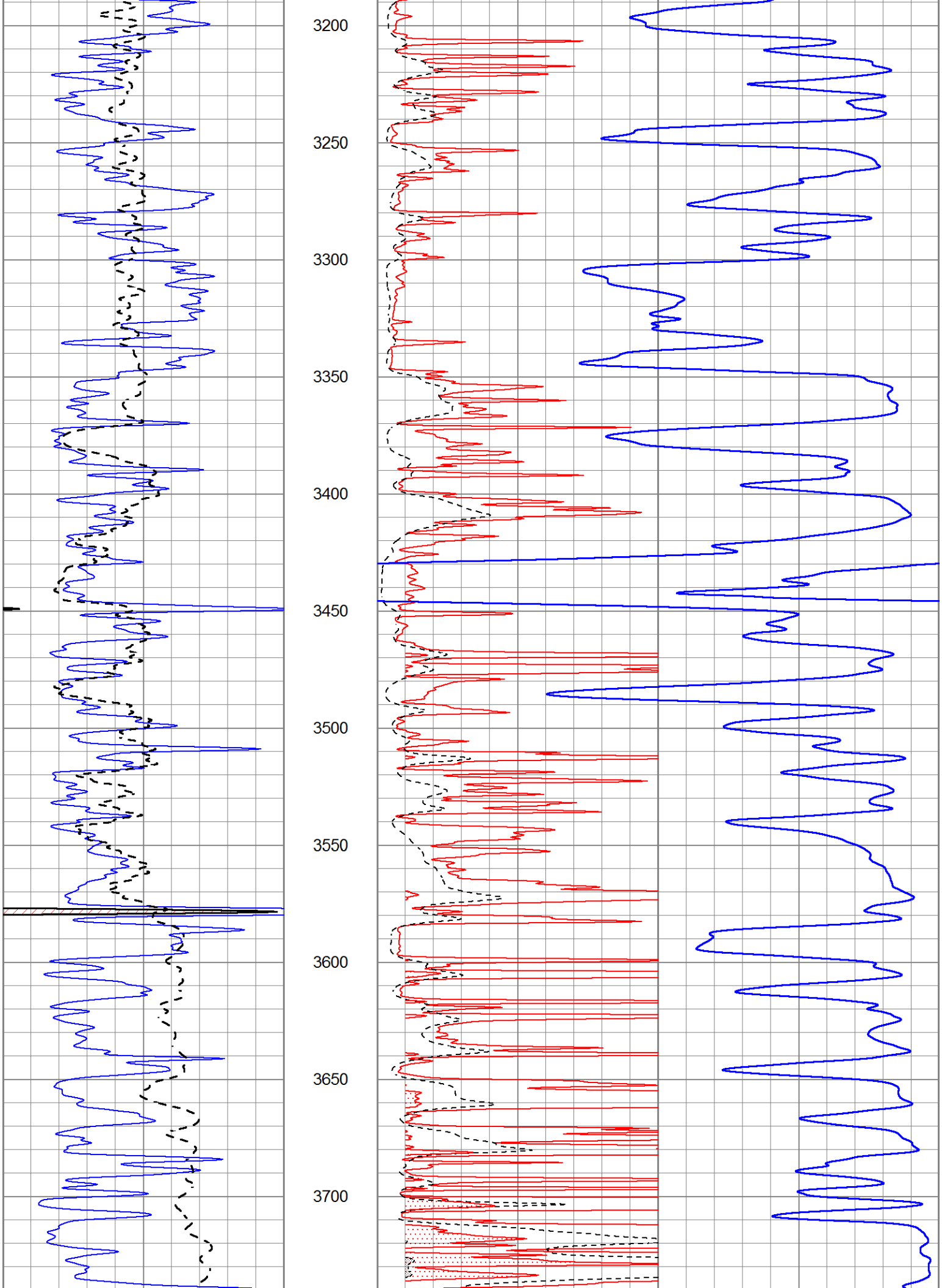
2800
2850
2900
2950
3000
3050
3100
3150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3400
3450
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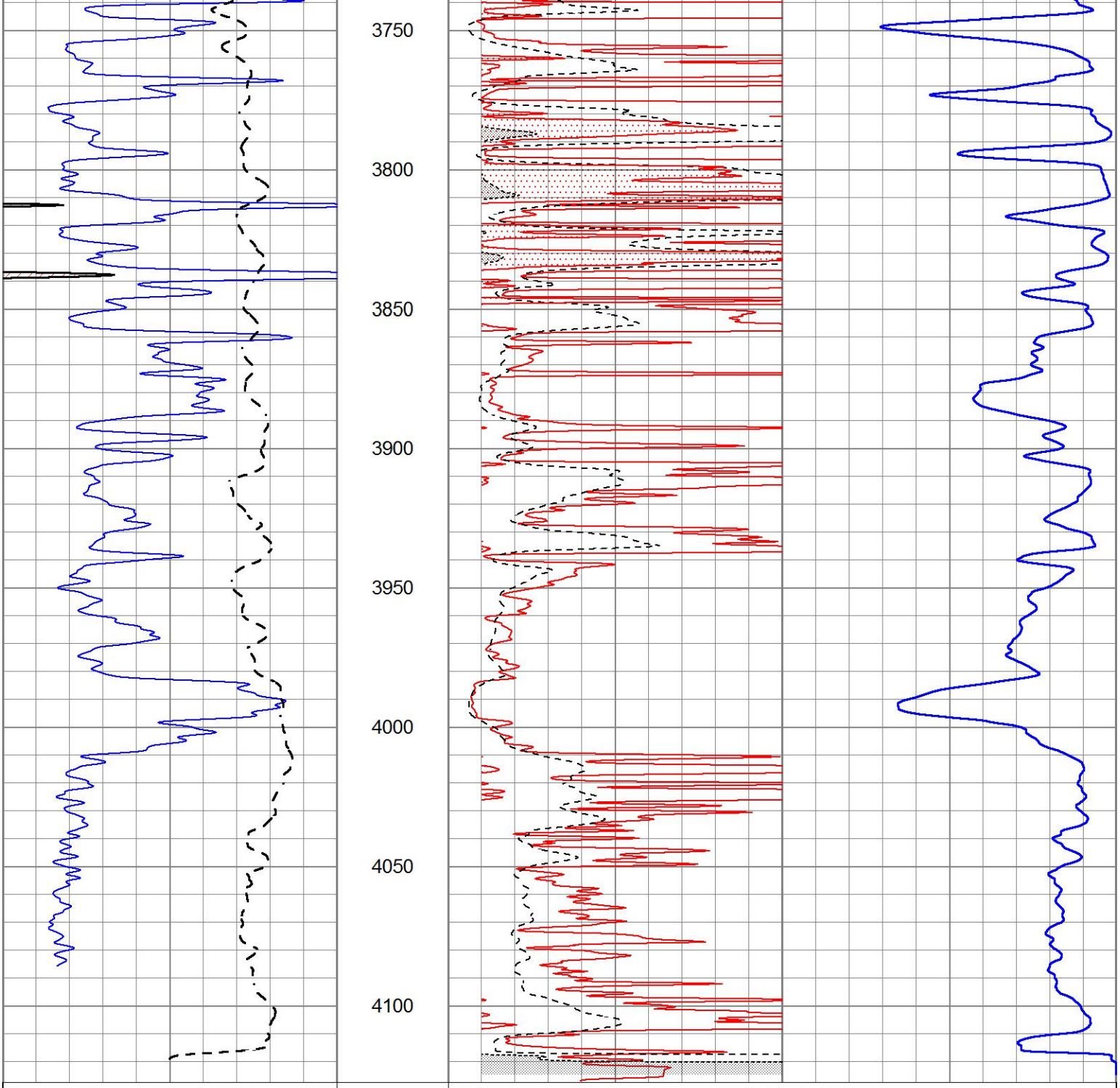
3550
3600
3650
3700

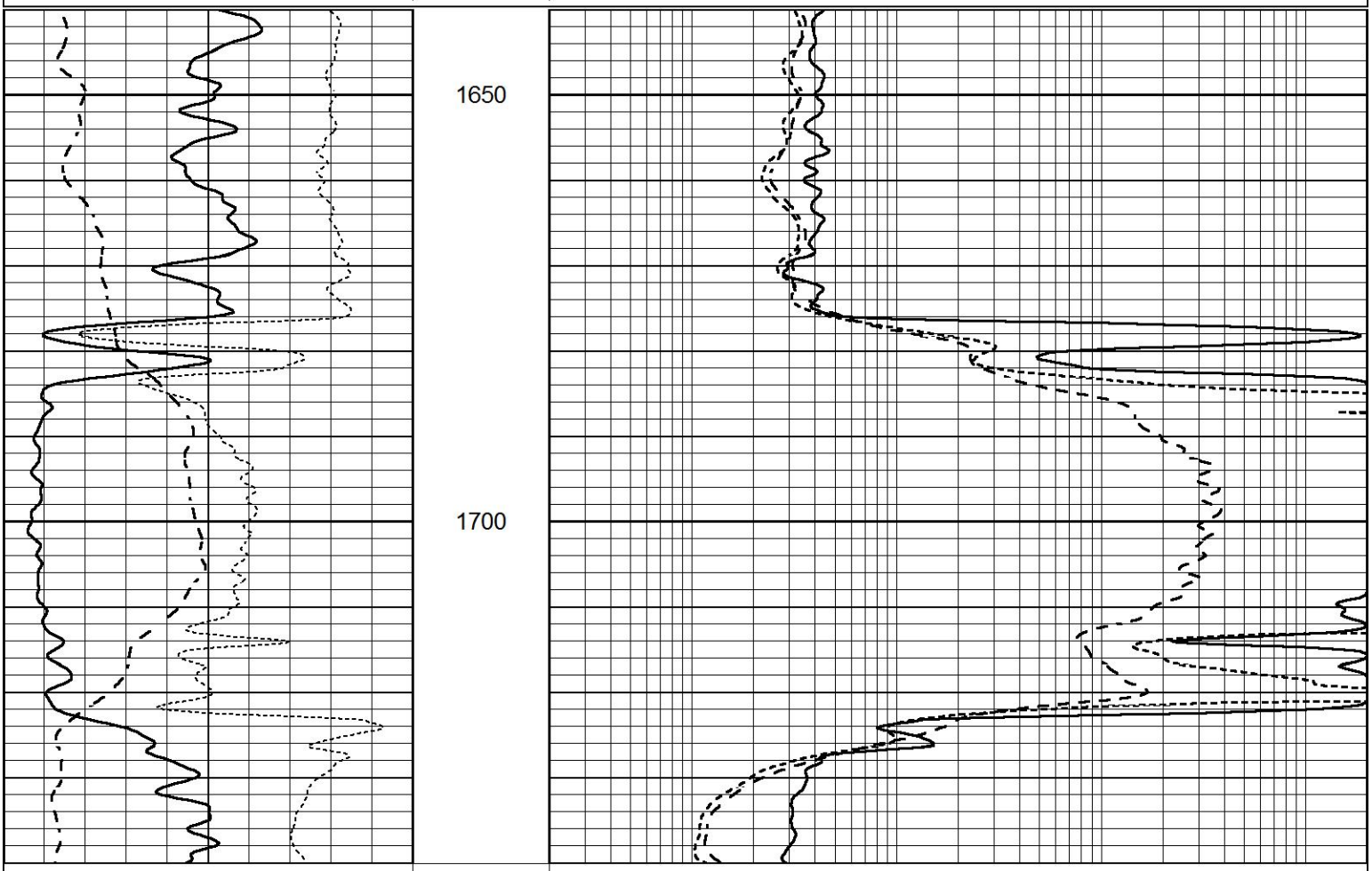


MAIN PASS

Database File	5241ddn.db
Dataset Pathname	pass3.1
Presentation Format	_dil
Dataset Creation	Sun Nov 22 21:04:32 2020

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	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000



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

MAIN PASS

Database File	5241ddn.db
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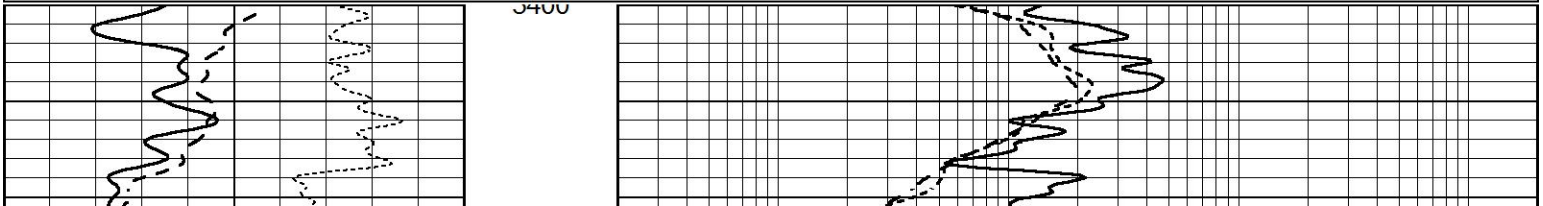
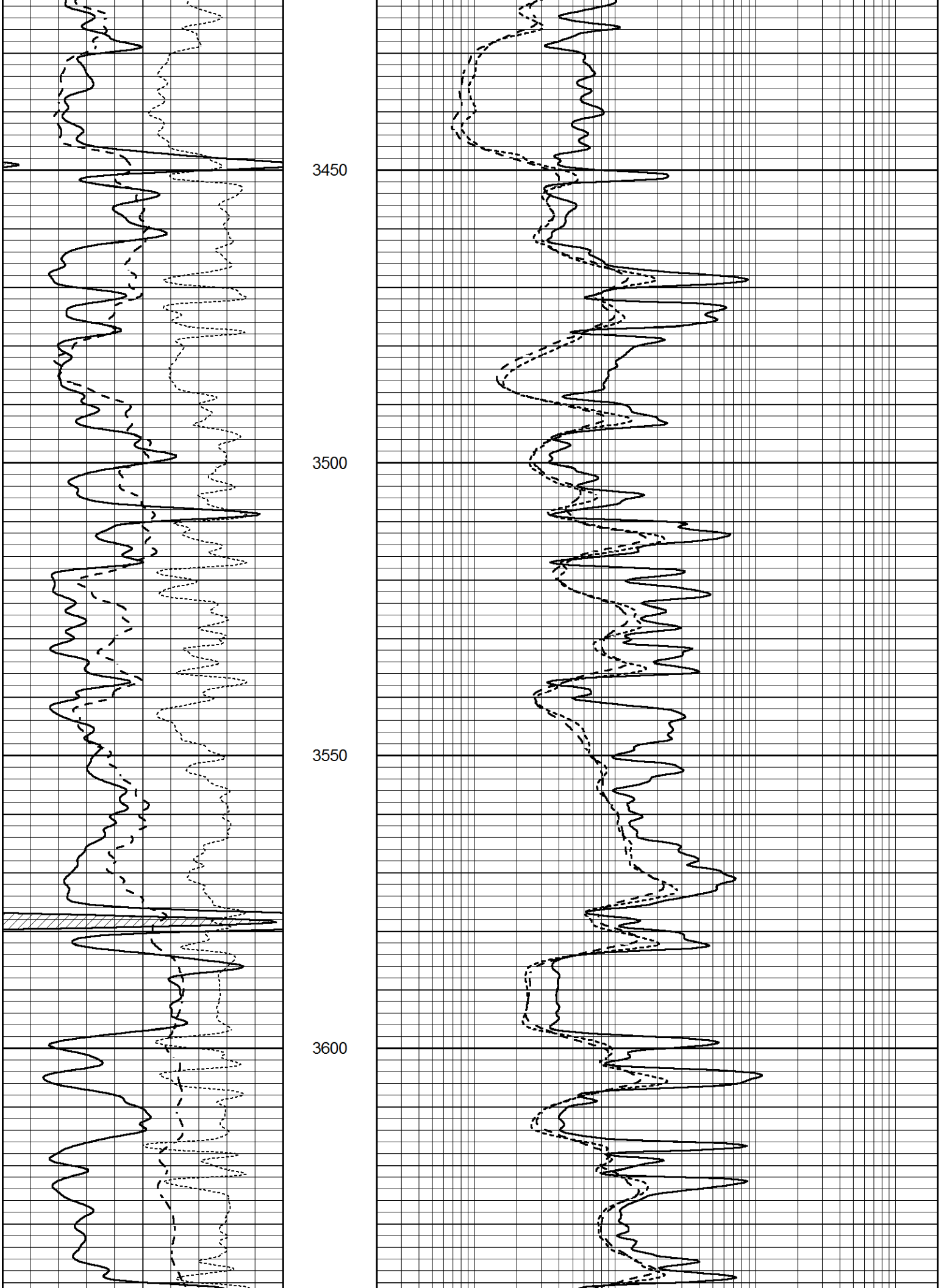
Dataset Creation	Sun Nov 22 21:04:32 2020
Charted by	Depth in Feet scaled 1:240

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

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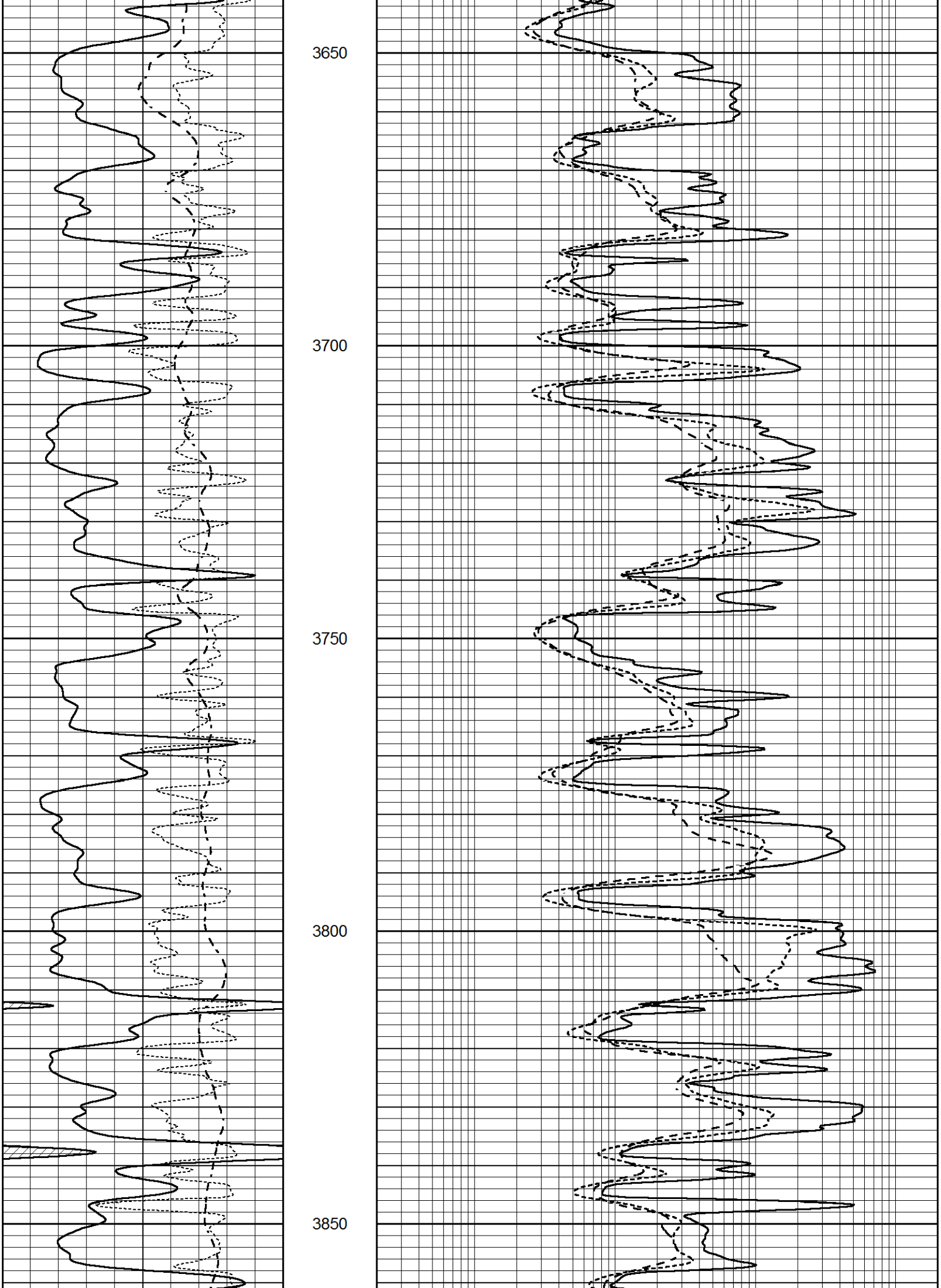
3550
3600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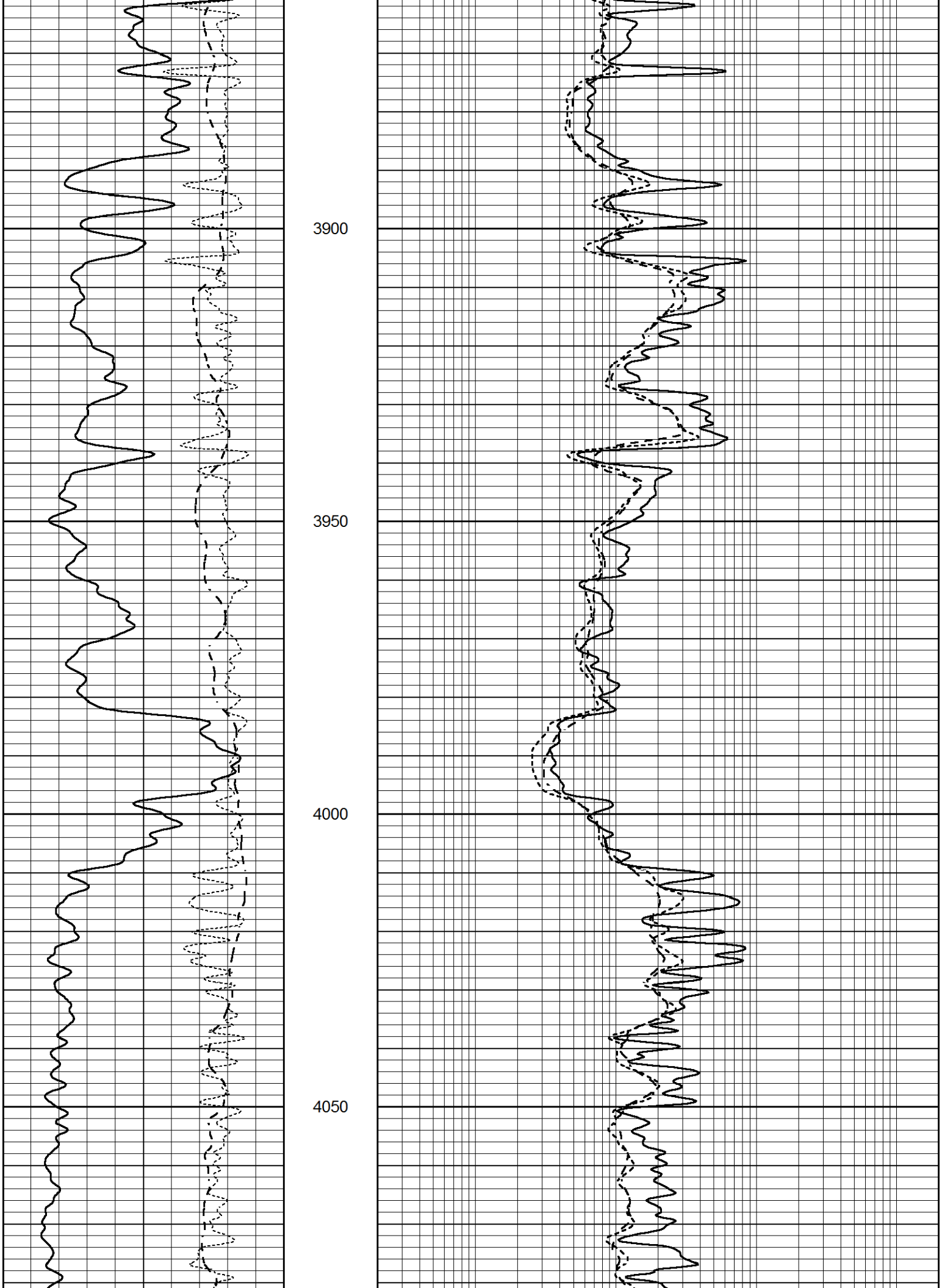
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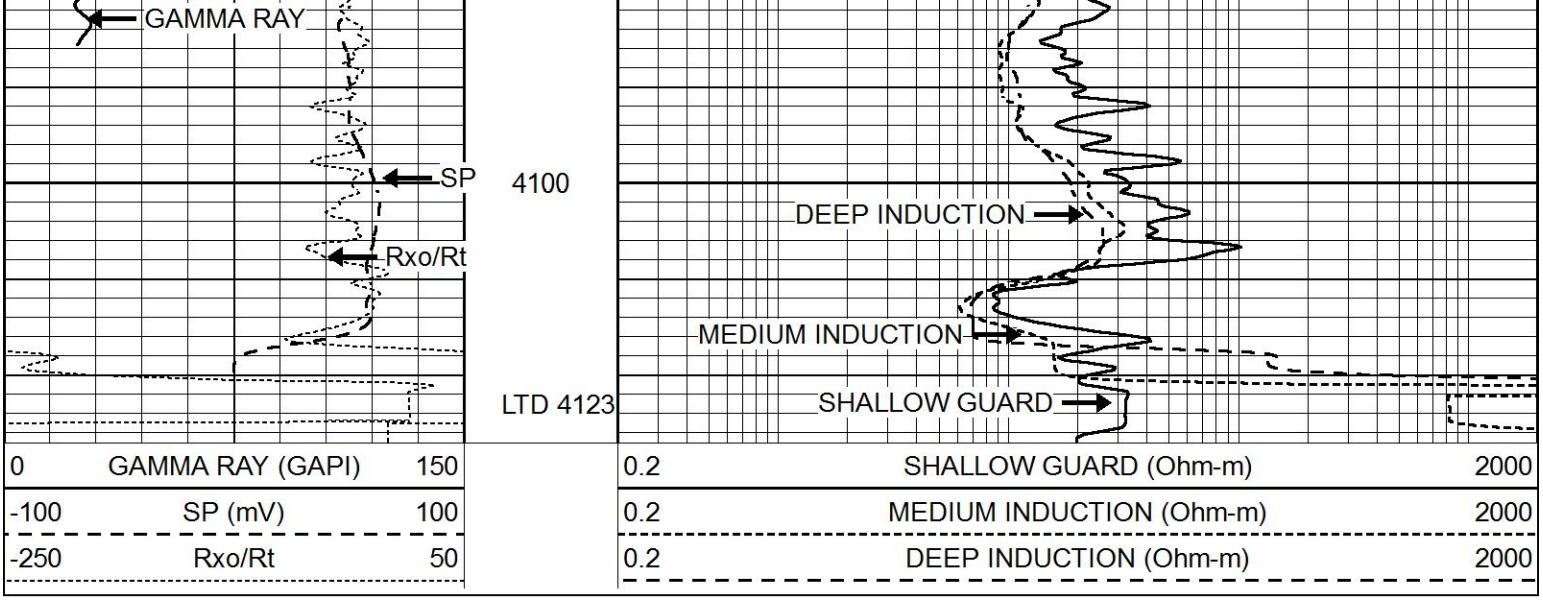


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

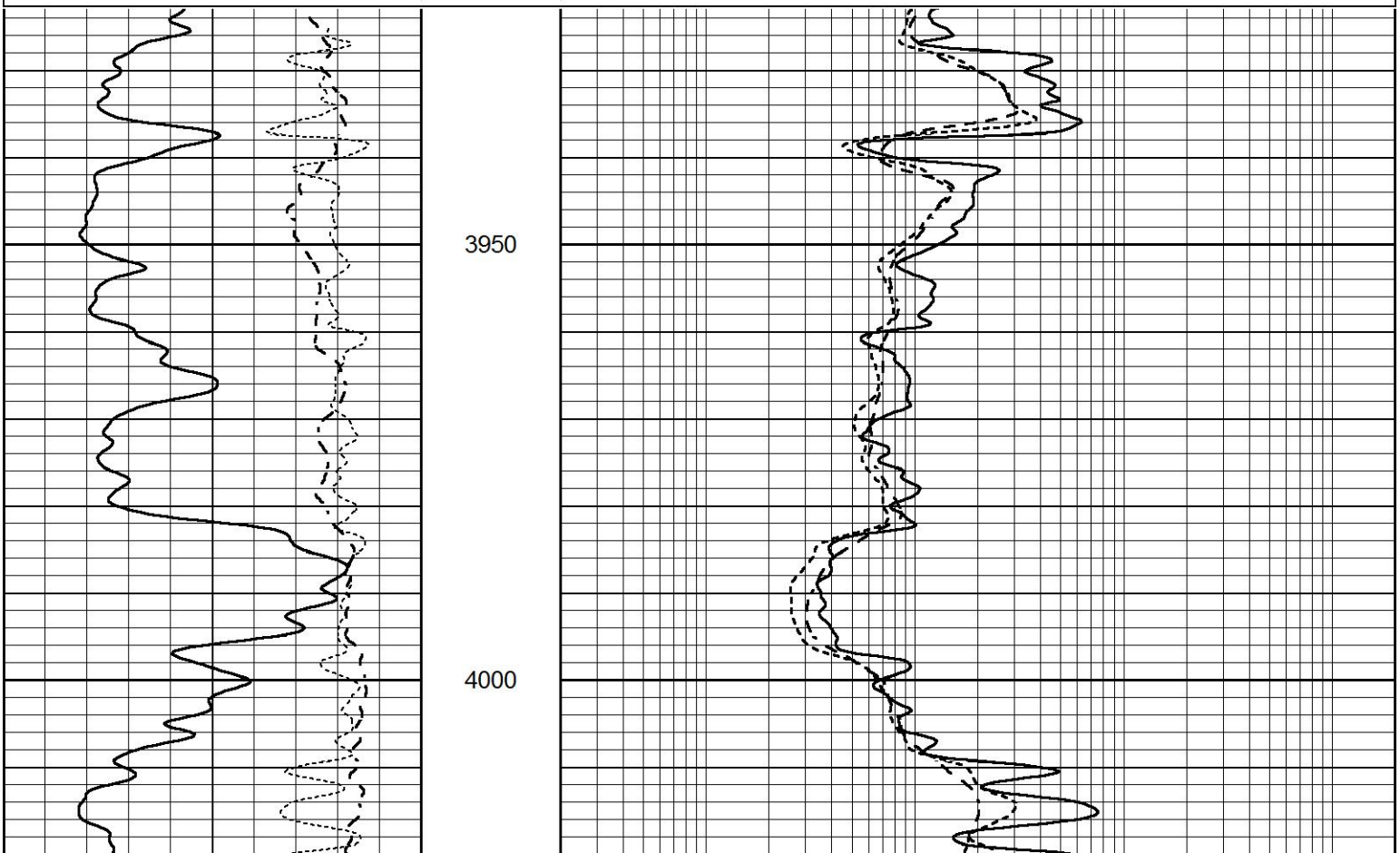
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

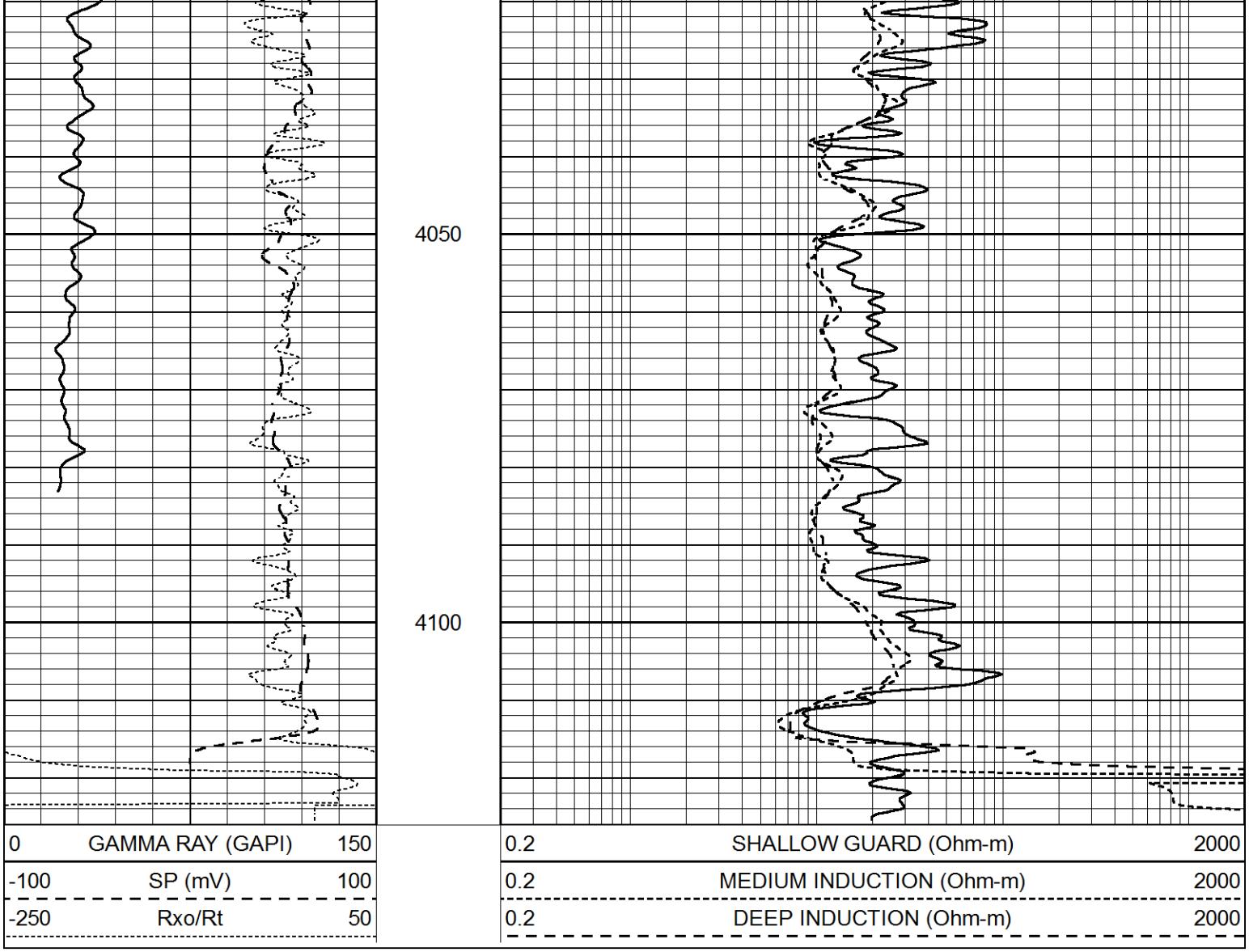
REPEAT SECTION

Database File	5241ddn.db
Dataset Pathname	pass2.1
Presentation Format	_dil
Dataset Creation	Sun Nov 22 20:24:49 2020
Charted by	Depth in Feet scaled 1:240

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

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





Calibration Report

Database File	5241ddn.db
Dataset Pathname	pass2.1
Dataset Creation	Sun Nov 22 20:24:49 2020

Dual Induction Calibration Report

Serial-Model:	FW1410-55-Probe
Surface Cal Performed:	Tue Feb 19 11:44:18 2019
Downhole Cal Performed:	Tue Feb 19 11:44:24 2019
After Survey Verification Performed:	Tue Feb 19 11:44:27 2019

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			References			Results	

	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report

Serial: 140703
Model: V4_10P
Source Number: 74GBq-19

Master Calibration — Performed: Fri Oct 30 10:28:51 2020

	Background	Aluminum	Magnesium	
Window 1	542.44	5567.78	24103.74	cps
Window 2	44.66	1254.11	5862.88	cps
Window 4	233.89	1249.47	5395.29	cps
Window 5	561.63	8508.97	16290.56	cps
Window 6	44.30	1445.42	2841.86	cps
Window 8	267.45	2710.48	5092.88	cps
Bulk Density	-	2.6020	1.6830	g/cc
Pe	-	3.0000	2.5070	b/e

LS Alpha:	: -1.8545	SS Alpha:	: -0.7763	LS CPE:	: 1.1359
LS Beta:	: 130052.2542	SS Beta:	: 19130.5414	SS CPE:	: 1.4655

Before Survey Backround Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration — Performed: Fri Oct 30 10:28:51 2020

Results		Readings		References (in)			
Low	High	Low	High			Gain	Offset

4306.9	7563.2	8.0	14.0	0.0	-0.5

Before Survey Caliper Verification Performed:

	Reference	Reading
Caliper (in)		

After Survey Caliper Verification Performed:

	Reference	Reading
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number: 080621PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 7
Tool Model: Probe1
Performed: Tue Dec 10 10:02:55 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.4800 GAPI/cps