



**DUAL COMPENSATED
POROSITY /
MICRO LOG**

Company FG HOLL COMPANY, LLC
Well MILLARD TRUST #2-31
Field WILDCAT
County BARTON **State** KANSAS

Company FG HOLL COMPANY, LLC
Well MILLARD TRUST #2-31
Field WILDCAT
County BARTON
State KANSAS

Location: API #: 15-009-26226-00-00
 180' E OF NE NE SE
 2310' FSL & 150' FEL
 SEC 31 TWP 18S RGE 13W
Permanent Datum GROUND LEVEL Elevation 1881'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services DIL/BHCS
Elevation 1889'
K.B. N/A
D.F. N/A
G.L. 1881'

Date	8/24/2018	
Run Number	ONE	
Type Log	CNL / CDL / ML	
Depth Driller	3650'	
Depth Logger	3651'	
Bottom Logged Interval	3650'	
Top Logged Interval	1700'	
Type Fluid In Hole	CHEMICAL	
Salinity, PPM CL	9400	
Density	8.8	
Level	FULL	
Max. Rec. Temp. F	113	
Operating Rig Time	6 HOURS	
Equipment -- Location	91 COLBY	
Recorded By	D. SCHMIDT	
Witnessed By	RYAN GREENBAUM	

Borehole Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	856'	8.625"	23#	0'	856'
TWO	7.875"	856'					

Casing Record

Run No.	Bit	From	To
ONE	12.25"	0'	856'
TWO	7.875"	856'	

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

HOISINGTON,
SOUTH TO 50 RD, 1 WEST, 1/8 NORTH,
WEST INTO

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

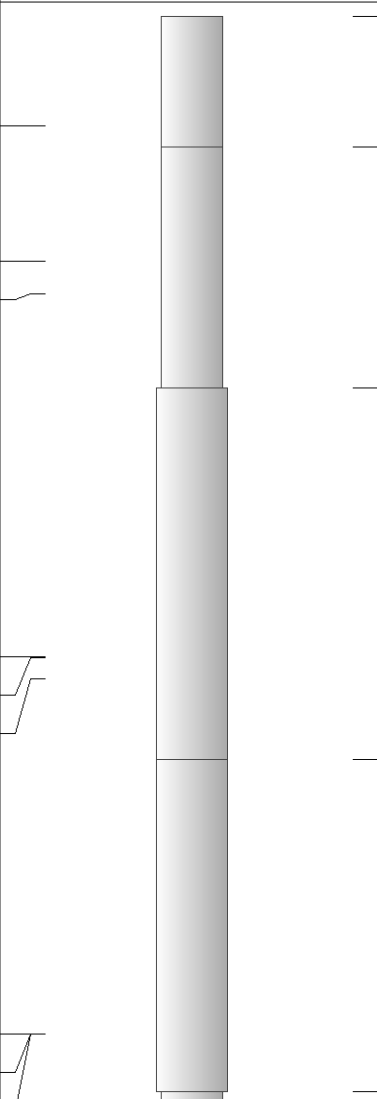
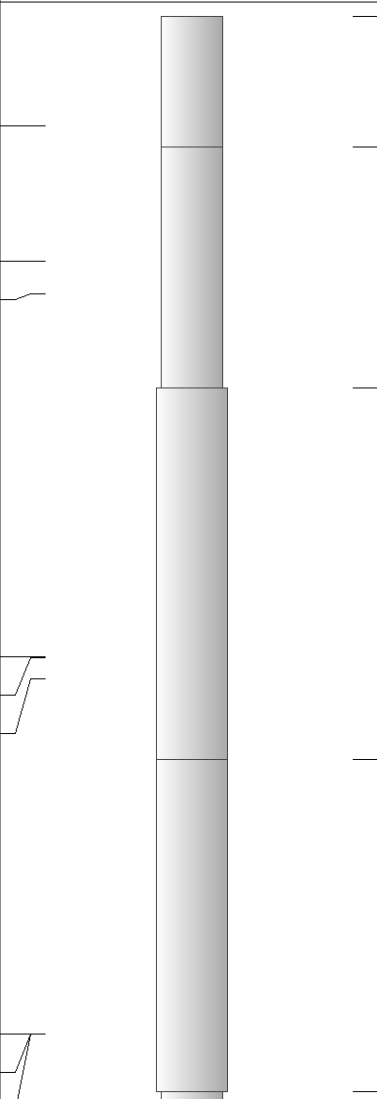
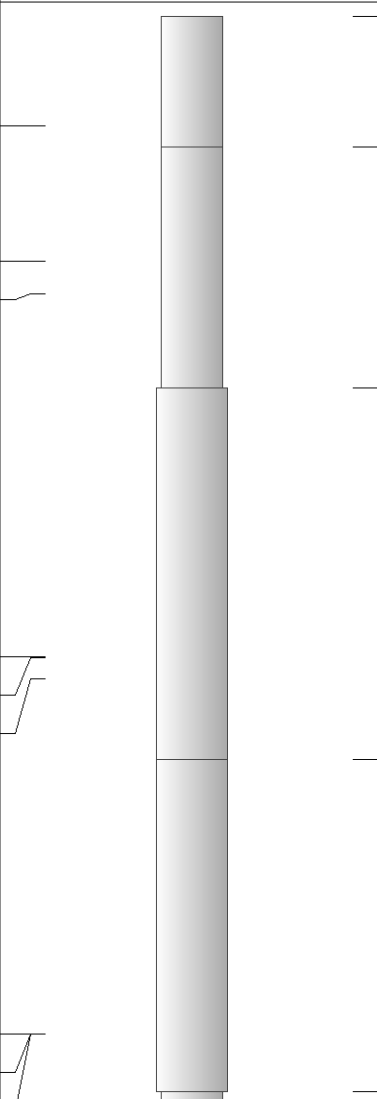
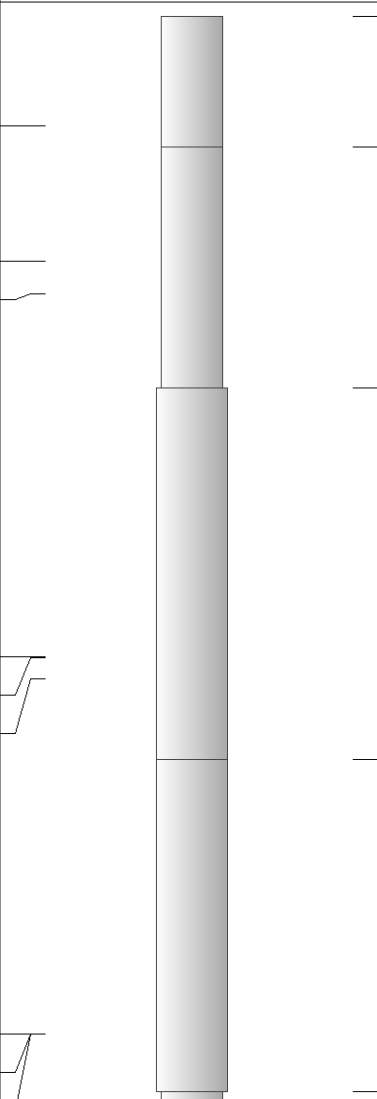
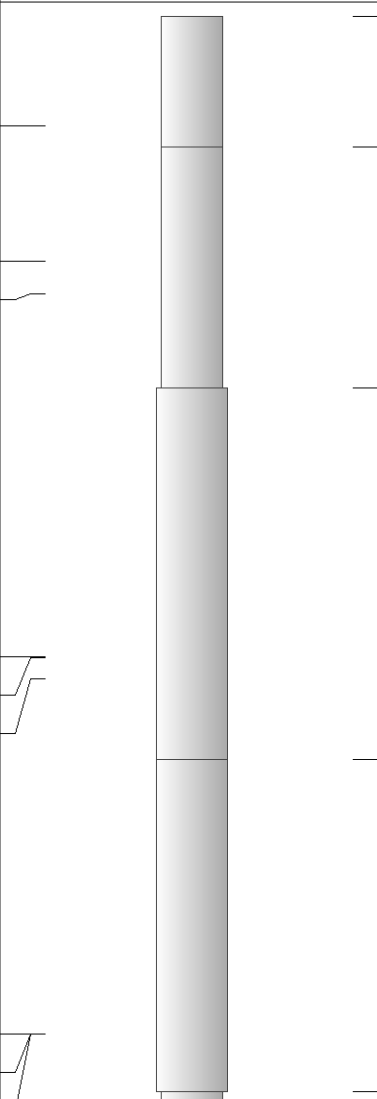
Engineer: D. SCHMIDT
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: RYAN GREENBAUM
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	615	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	3651	113	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (817-947)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

CILD 8.00

CILM 4.70

SP 0.20

DIL-PSI HIGH TEMP (967 (HT))

18.50

3.50

220.00

Dataset: fg holl_millard trust 2-31.db: field/well/STKML/pass5.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

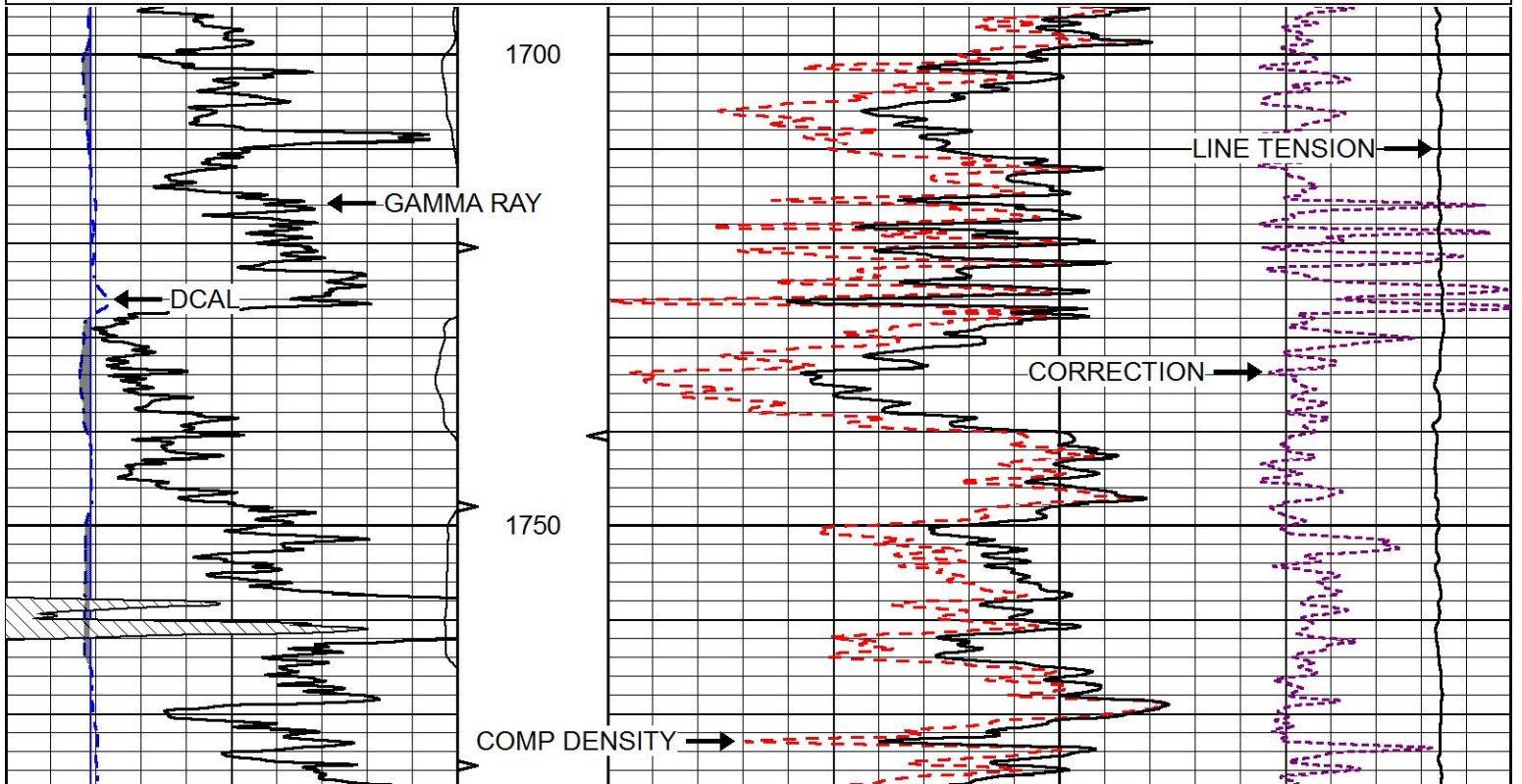


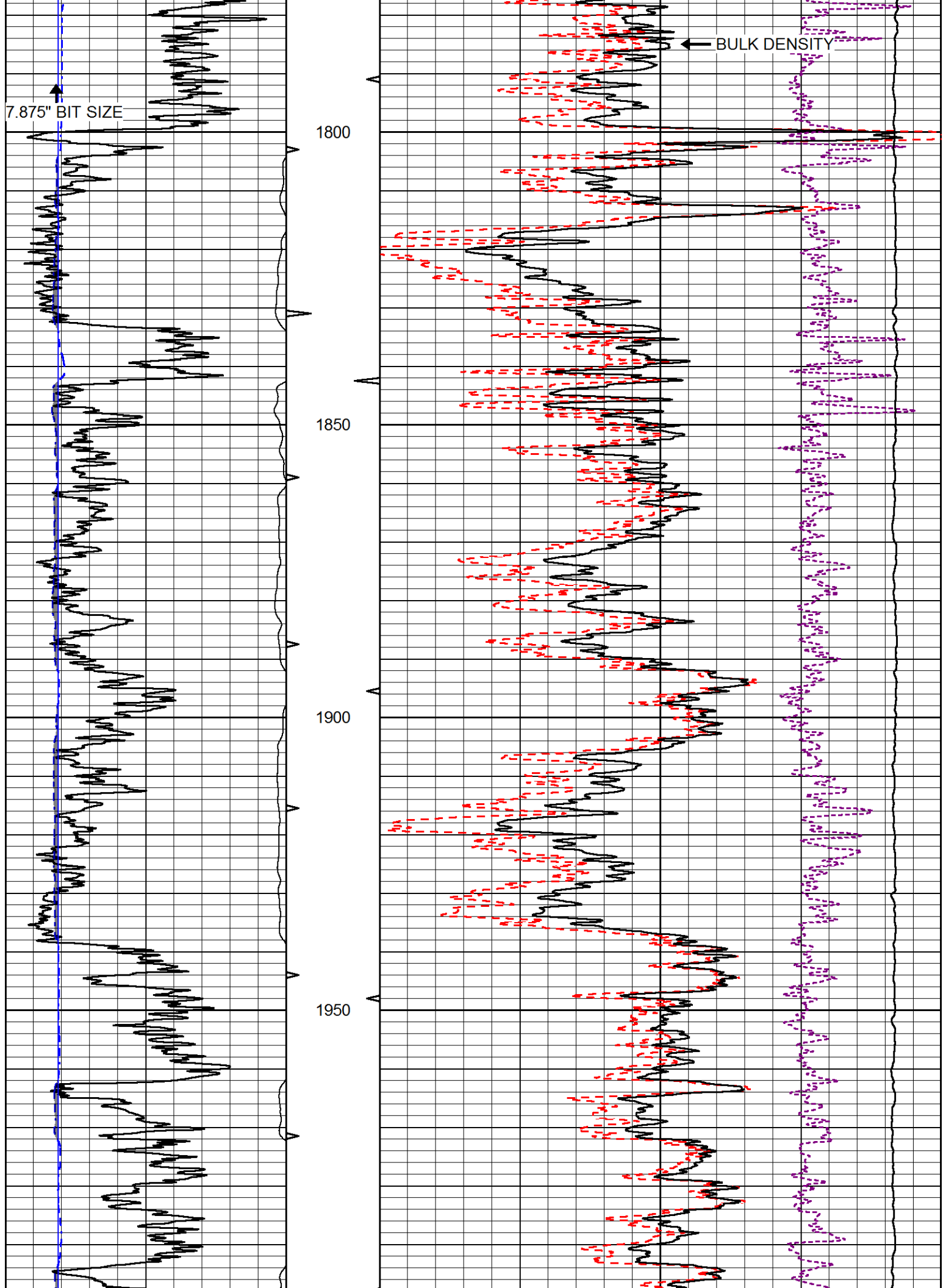
MAIN PASS

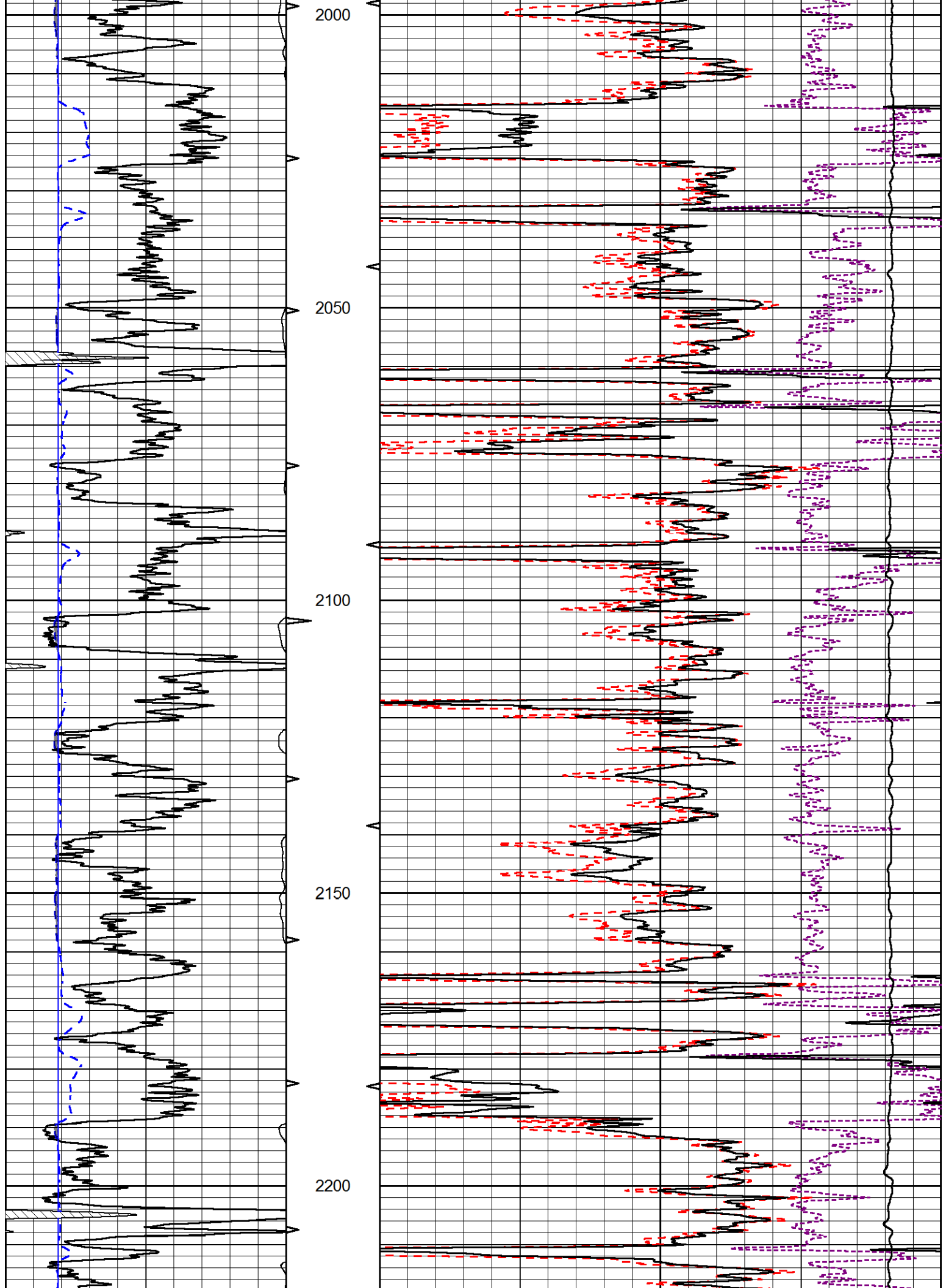
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 Dataset Pathname STKML/pass5.3
 Presentation Format cdl
 Dataset Creation Fri Aug 24 14:04:37 2018
 Charted by Depth in Feet scaled 1:240

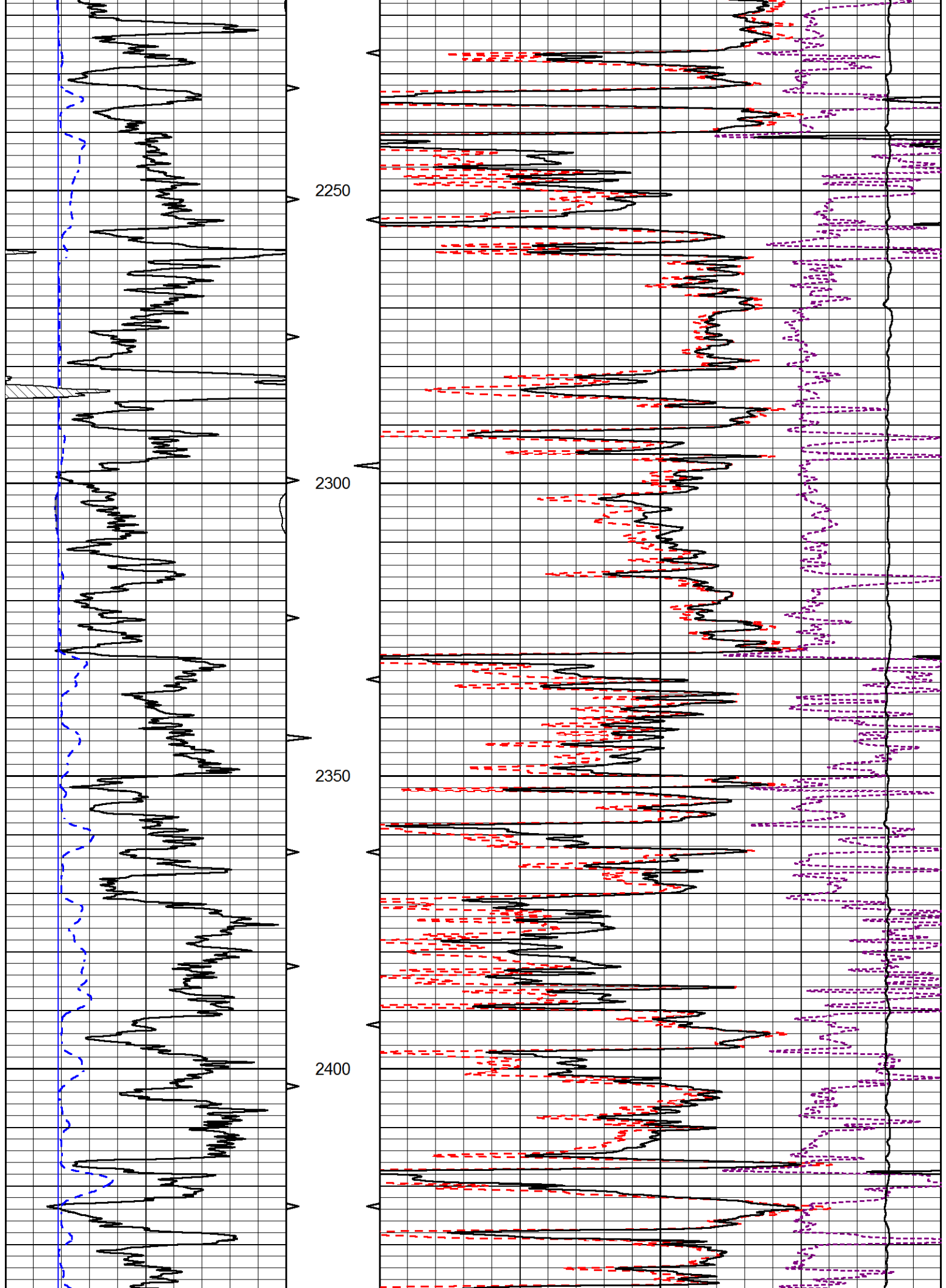
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6	DCAL (in)	16

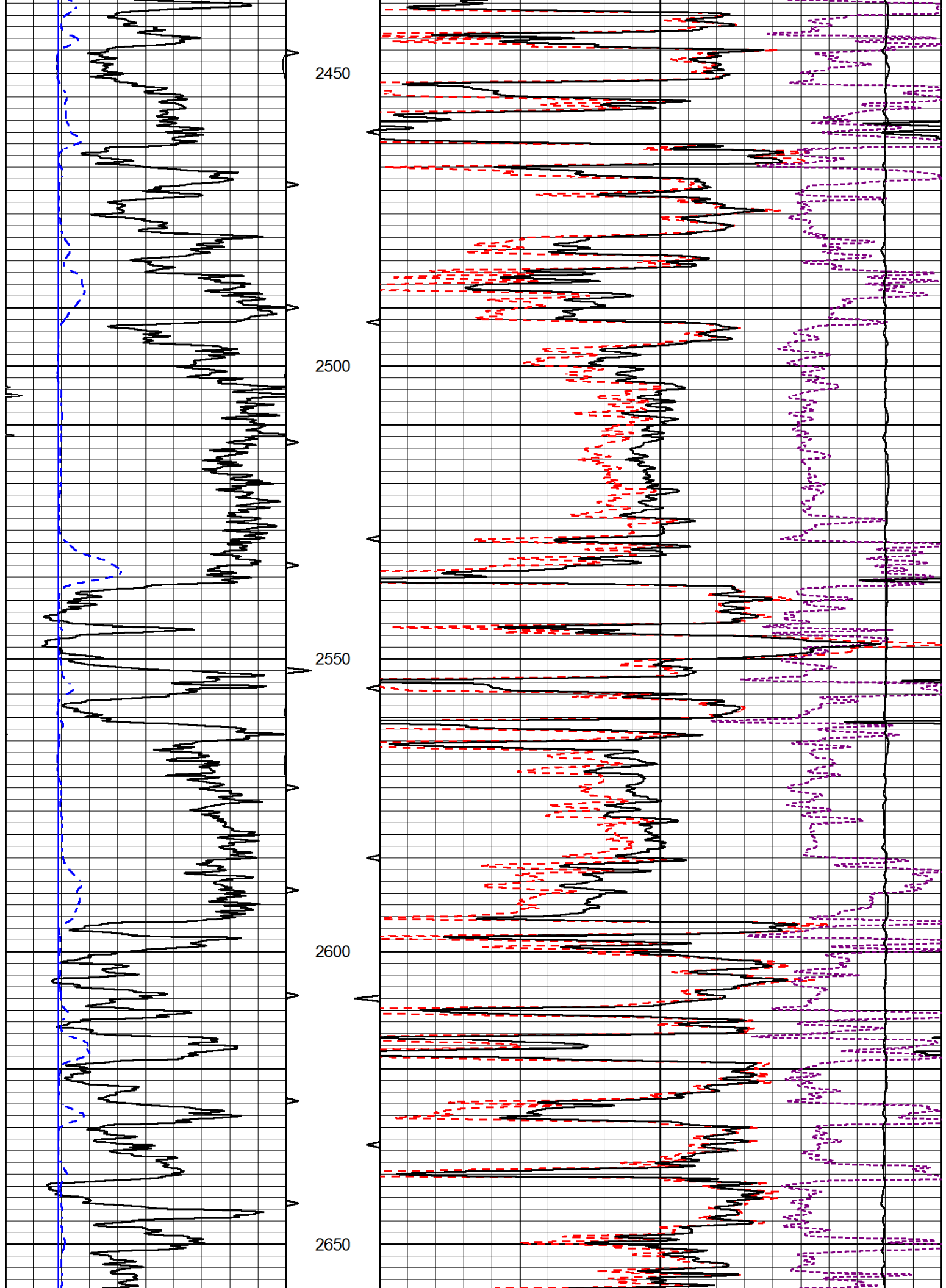
30	COMPENSATED DENSITY (2.71 MA)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25

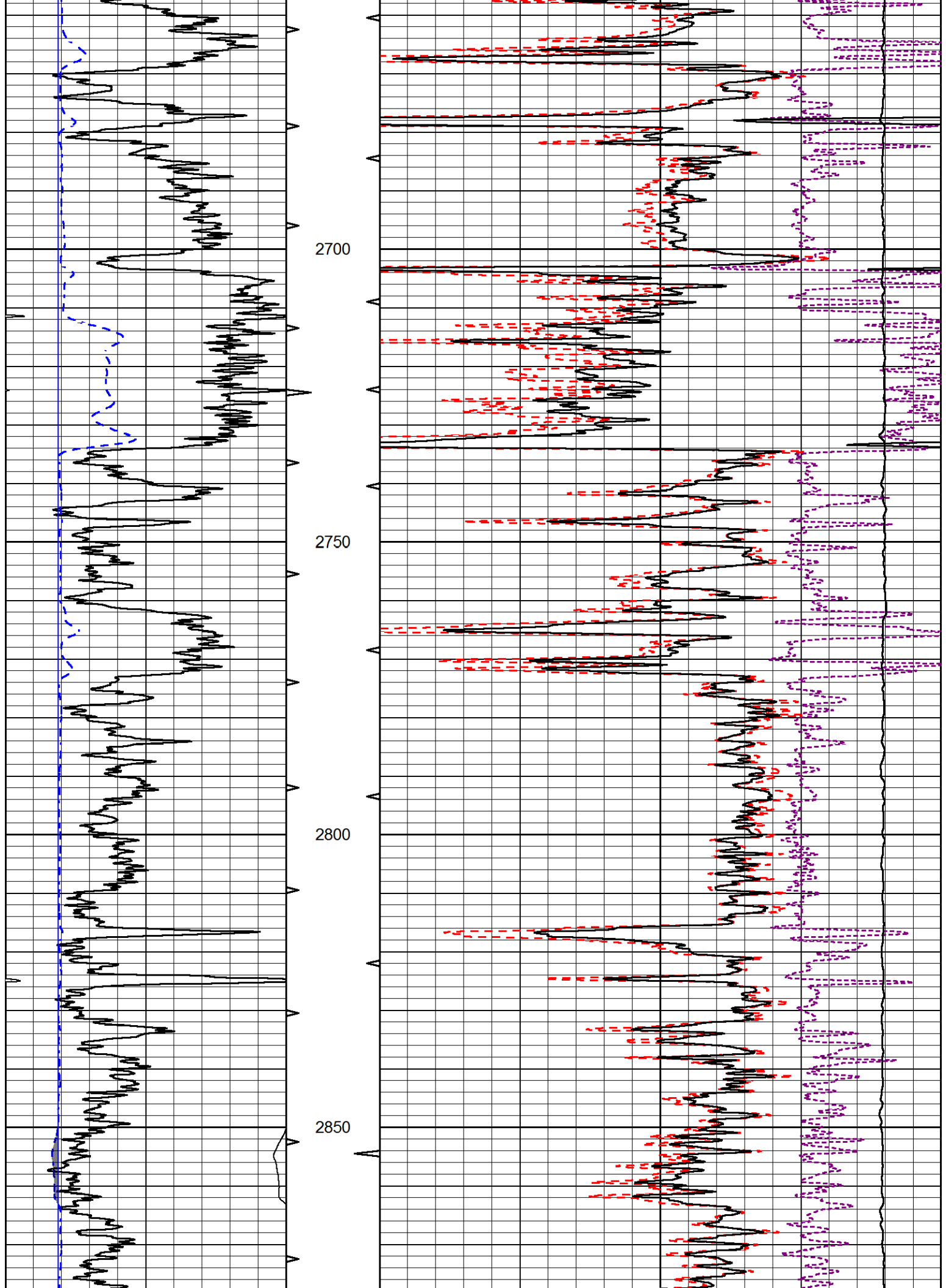


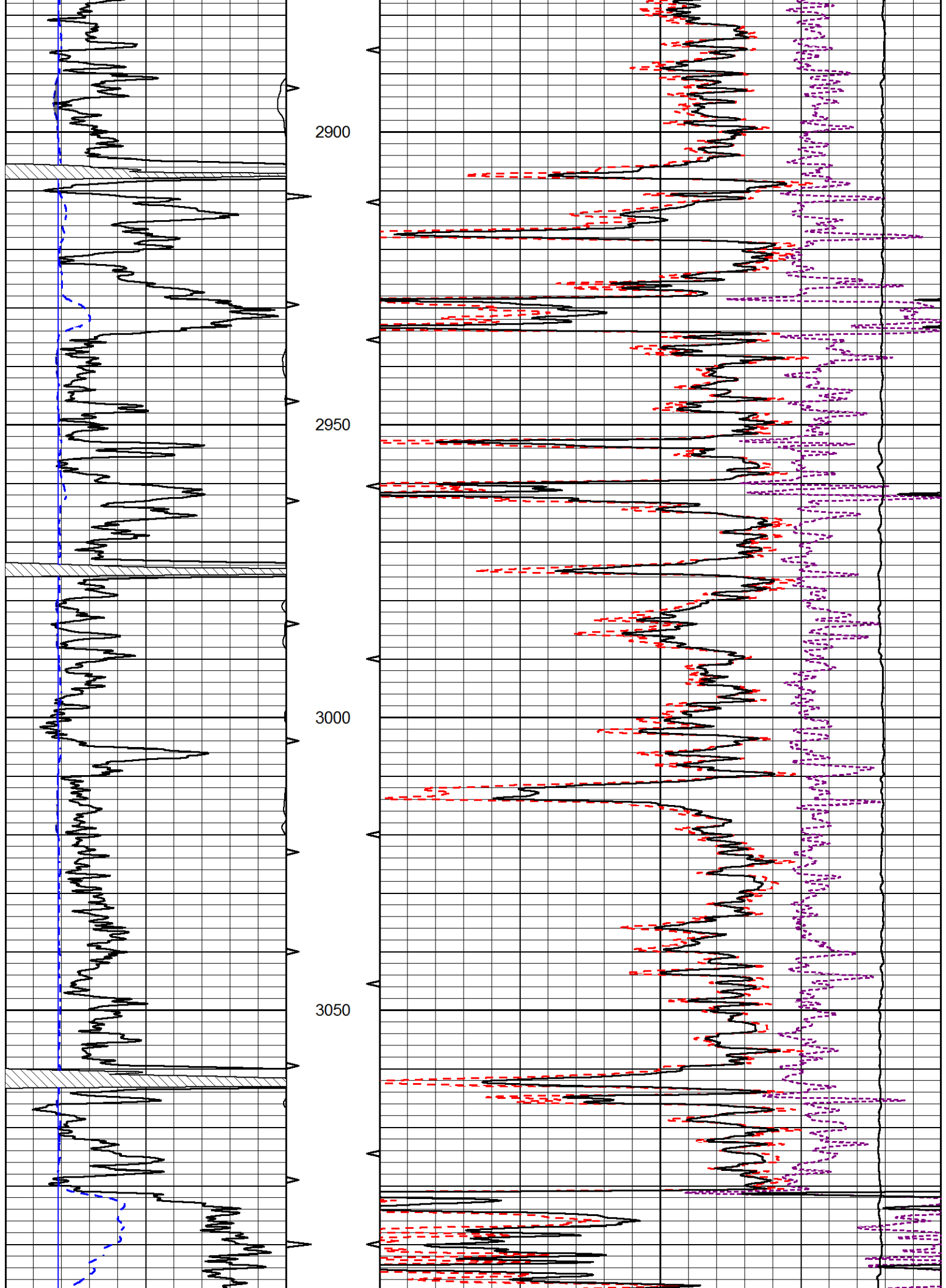


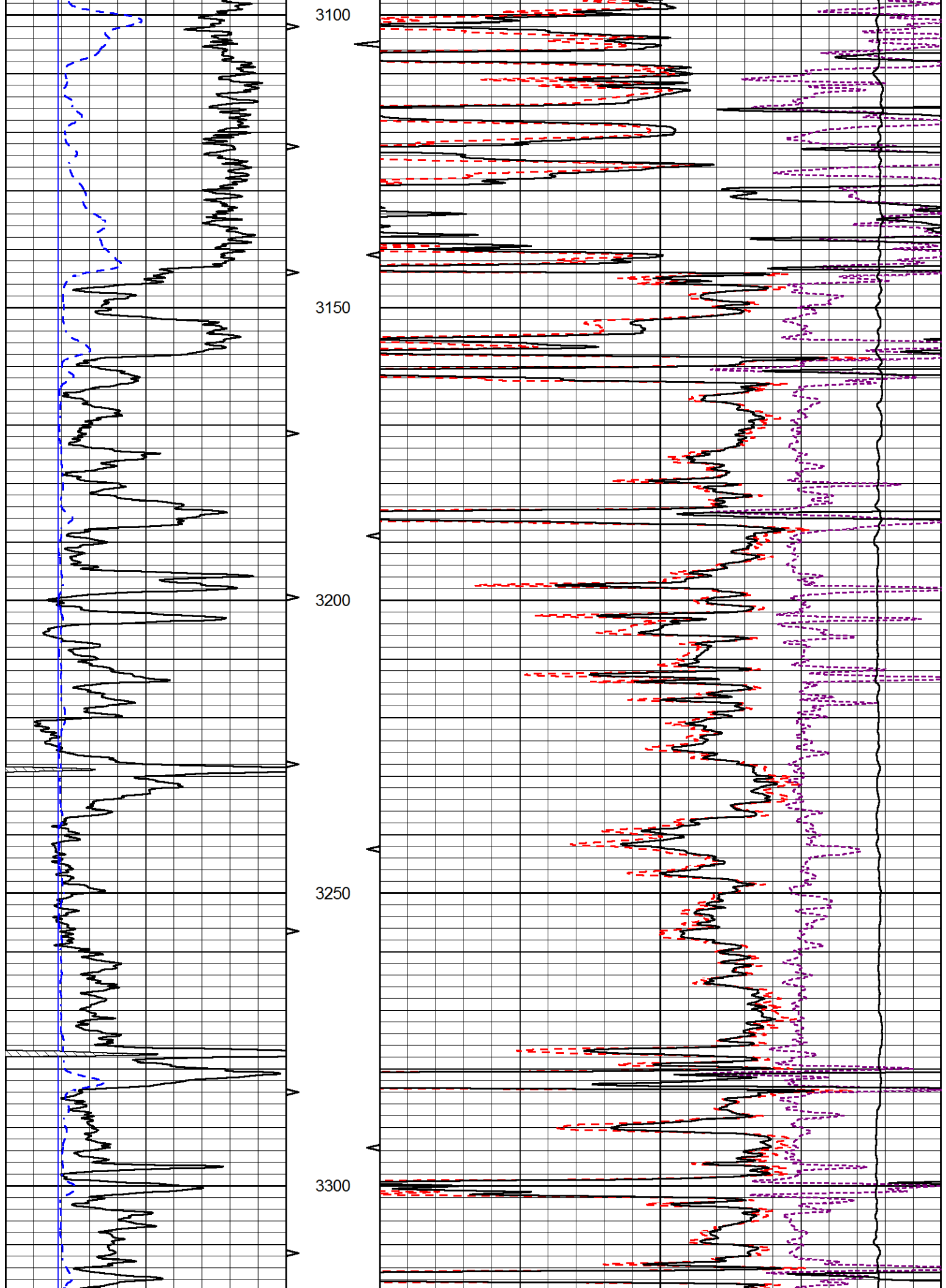


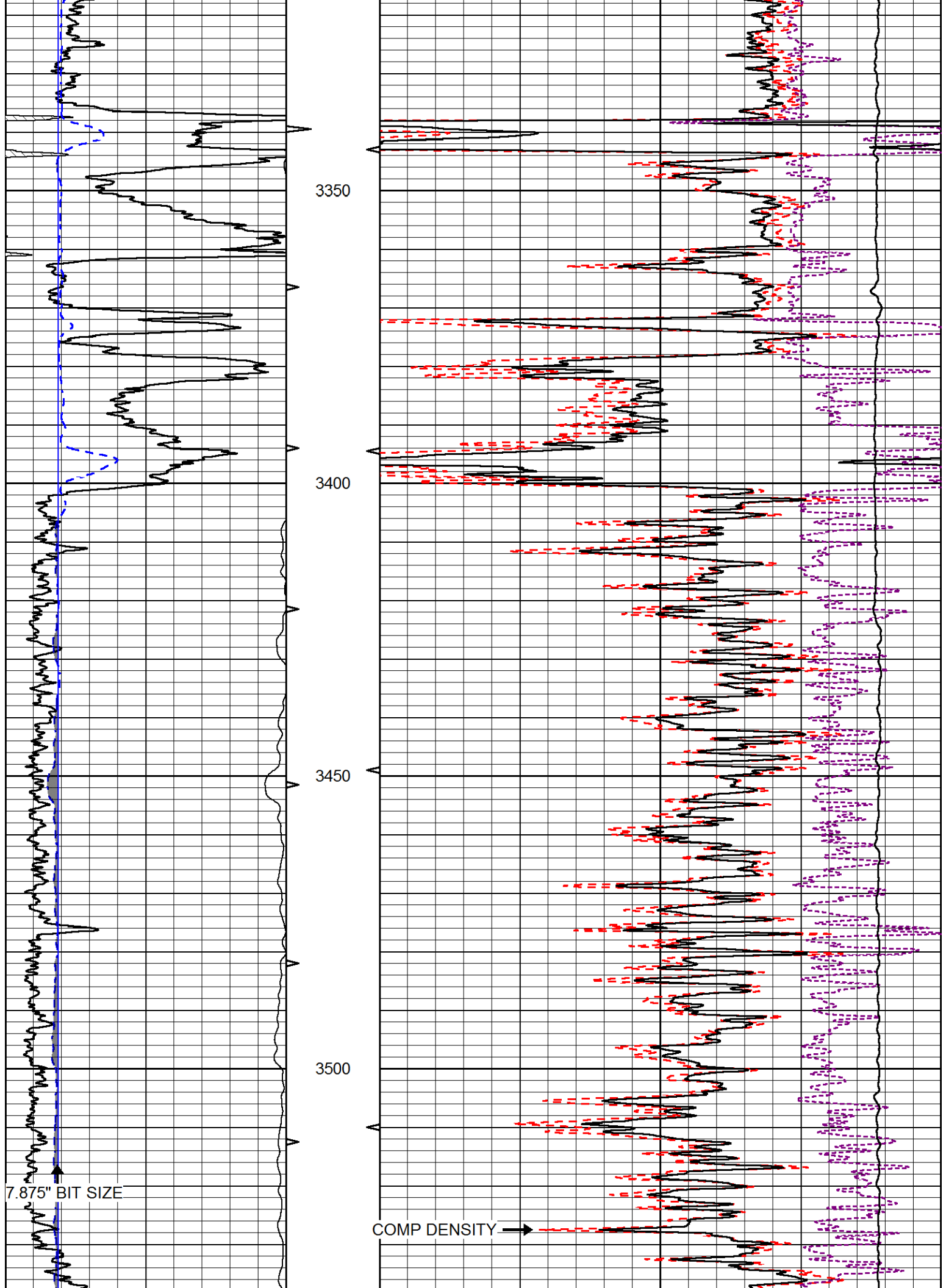


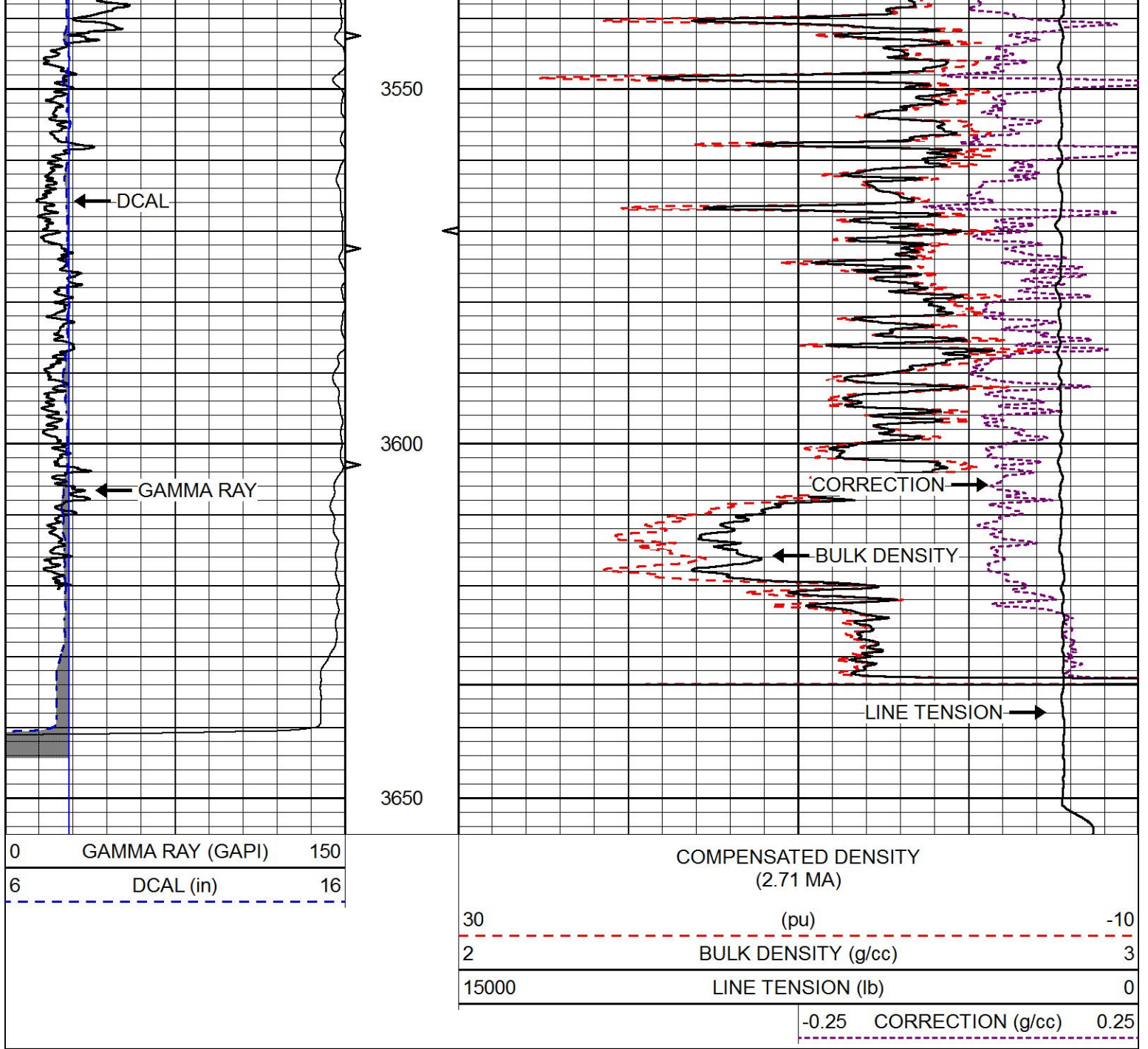












MAIN PASS

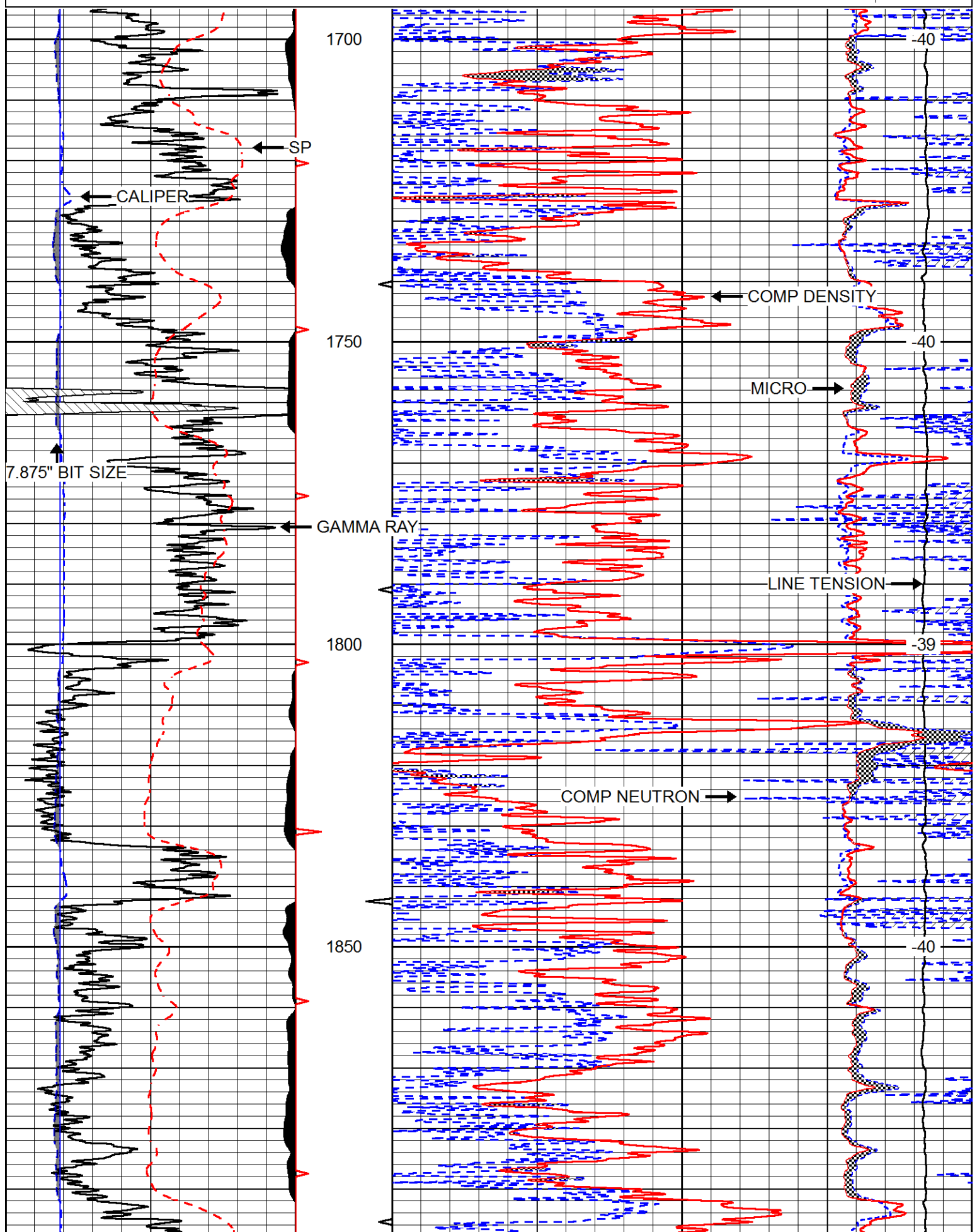
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 Presentation Format cnd/spml
 Dataset Creation Fri Aug 24 14:04:37 2018
 Charted by Depth in Feet scaled 1:240

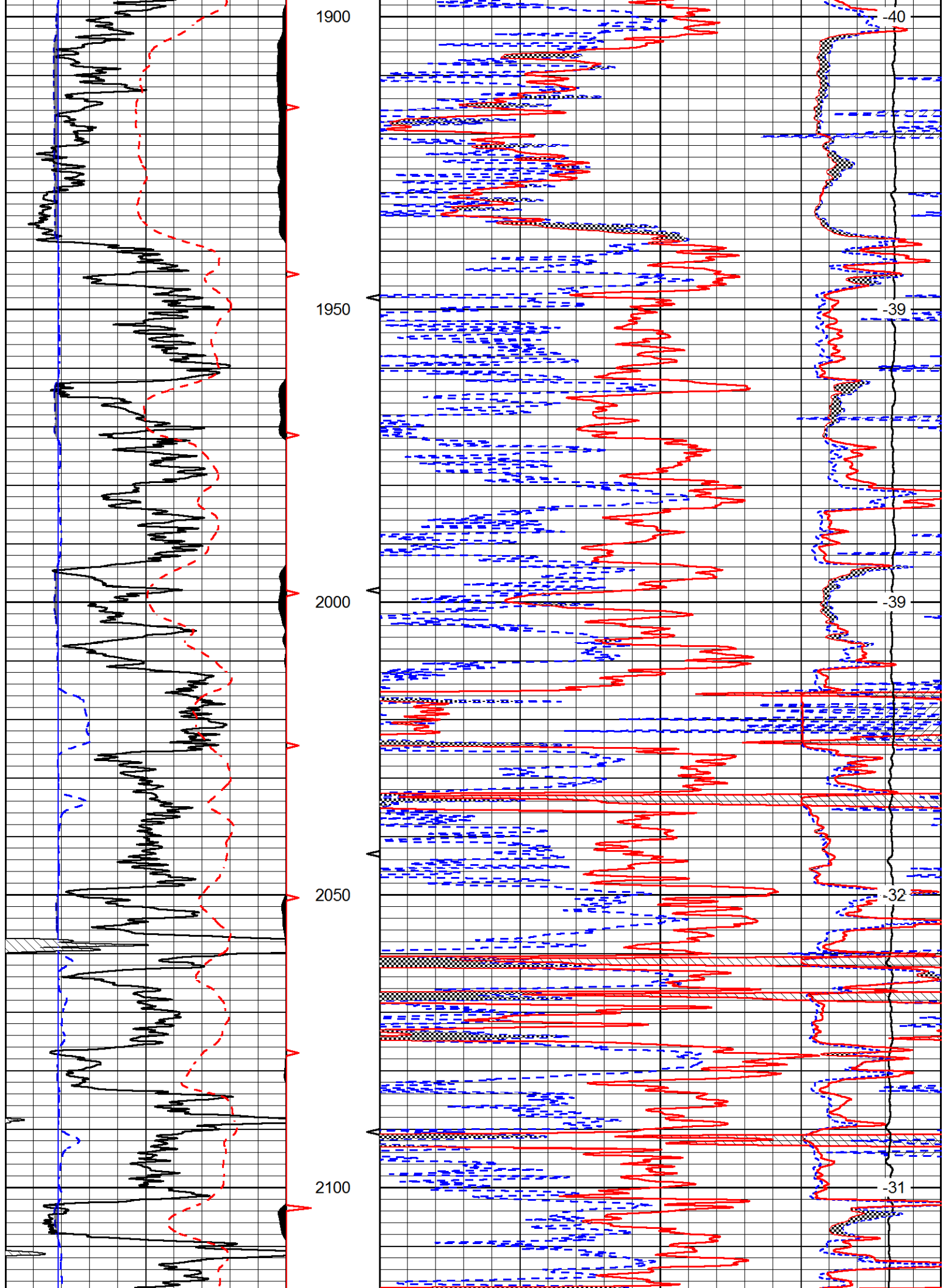
0	Gamma Ray (GAPI)	150	30	Compensated Neutron (pu)	-10
6	Caliper (in)	16	30	Compensated Density (pu)	-10
-200	SP (mV)	0	15000	Line Tension (lb)	0

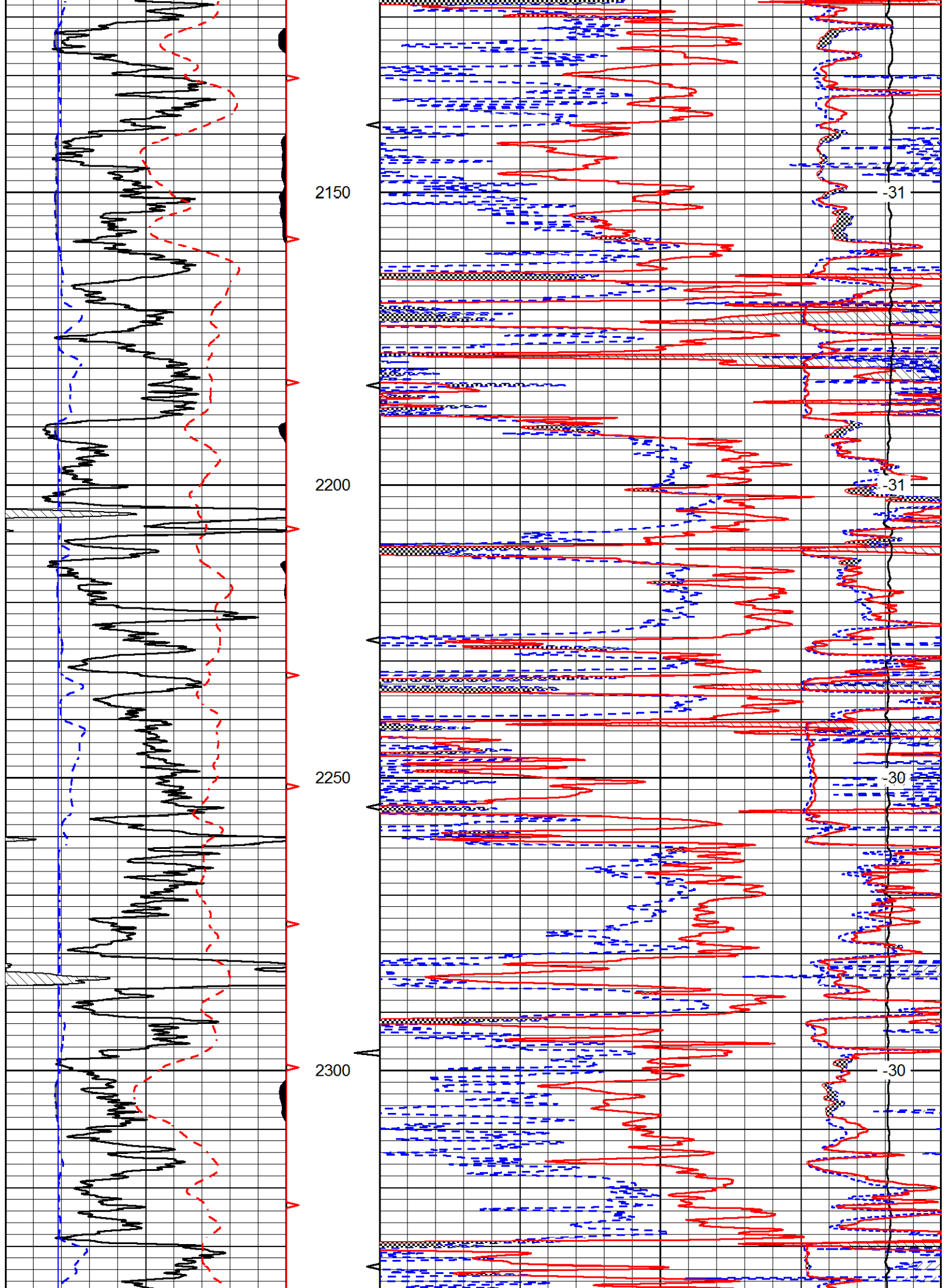
Micro Normal
 0 (Ohm-m) 20
 Micro Inverse

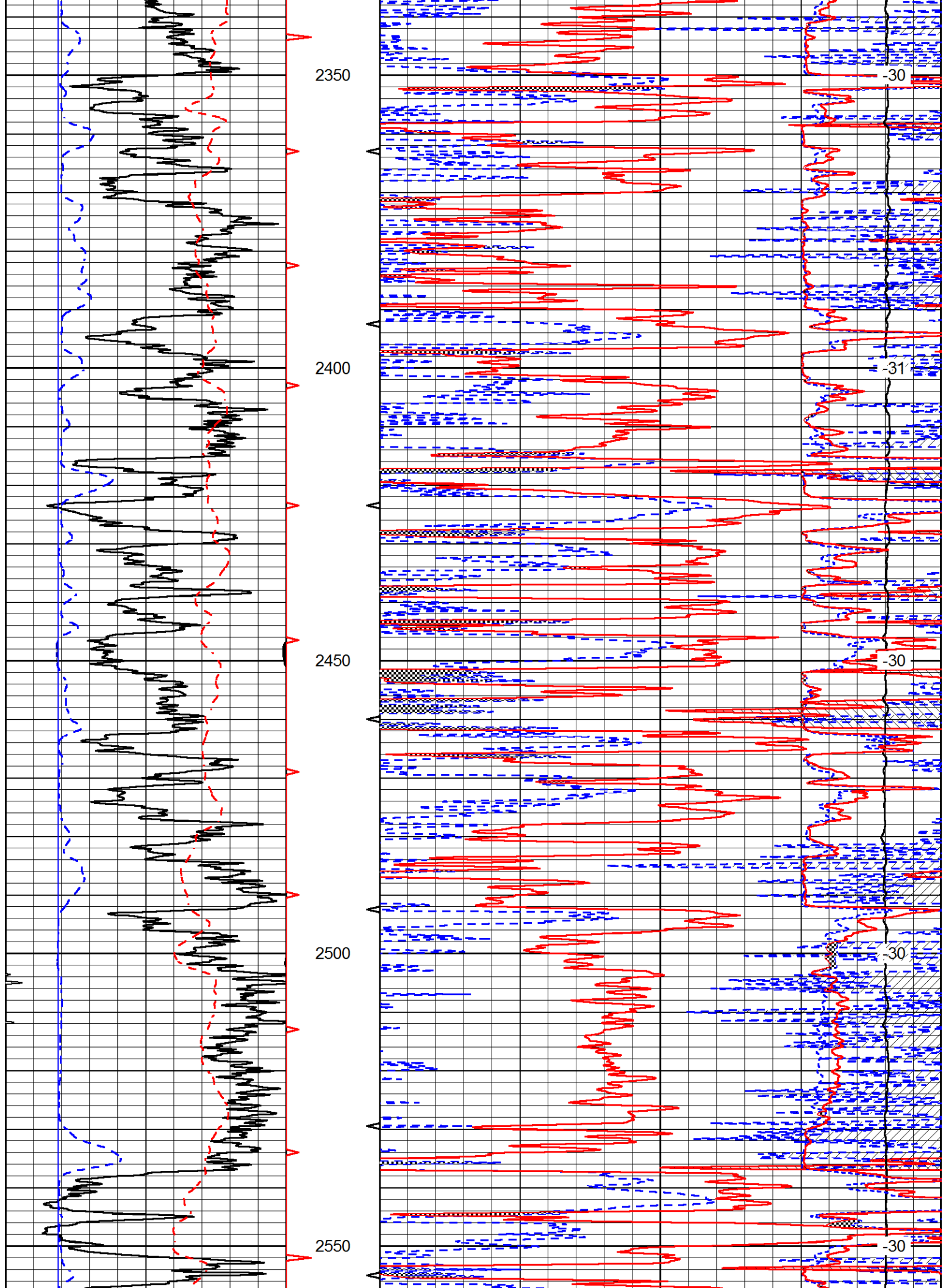
0 (Ohm-m) 20

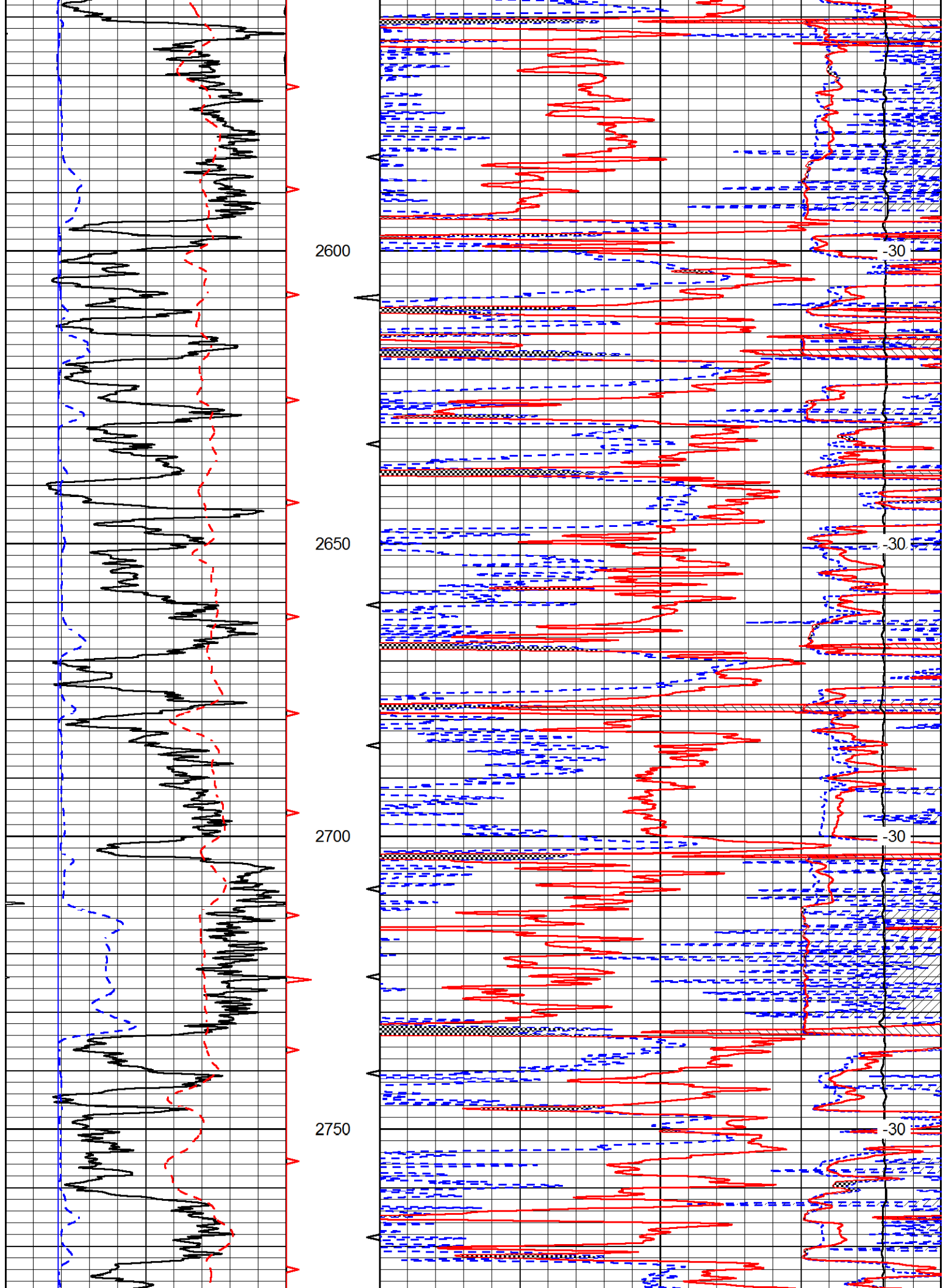
LSPD
(ft/min)

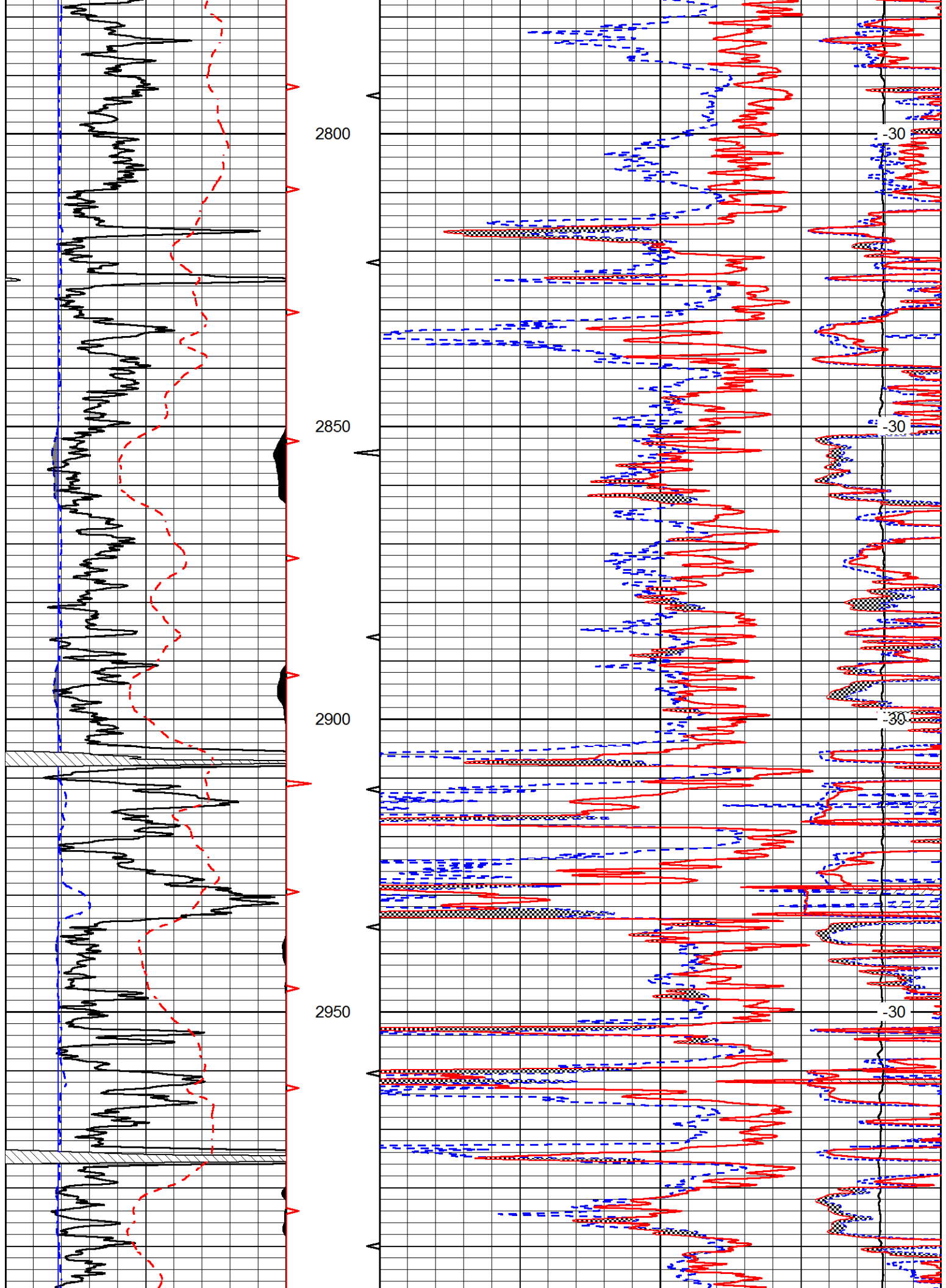


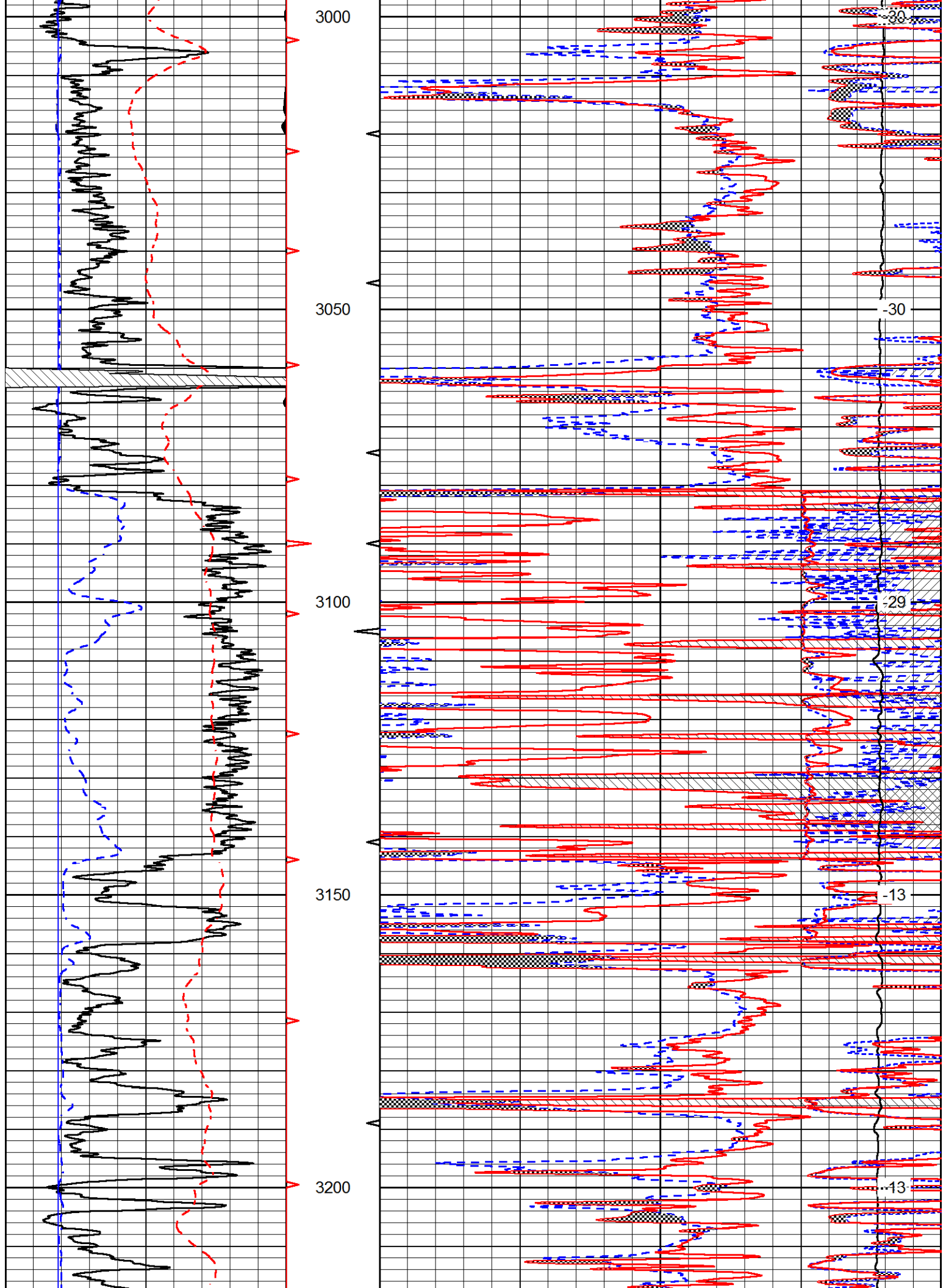


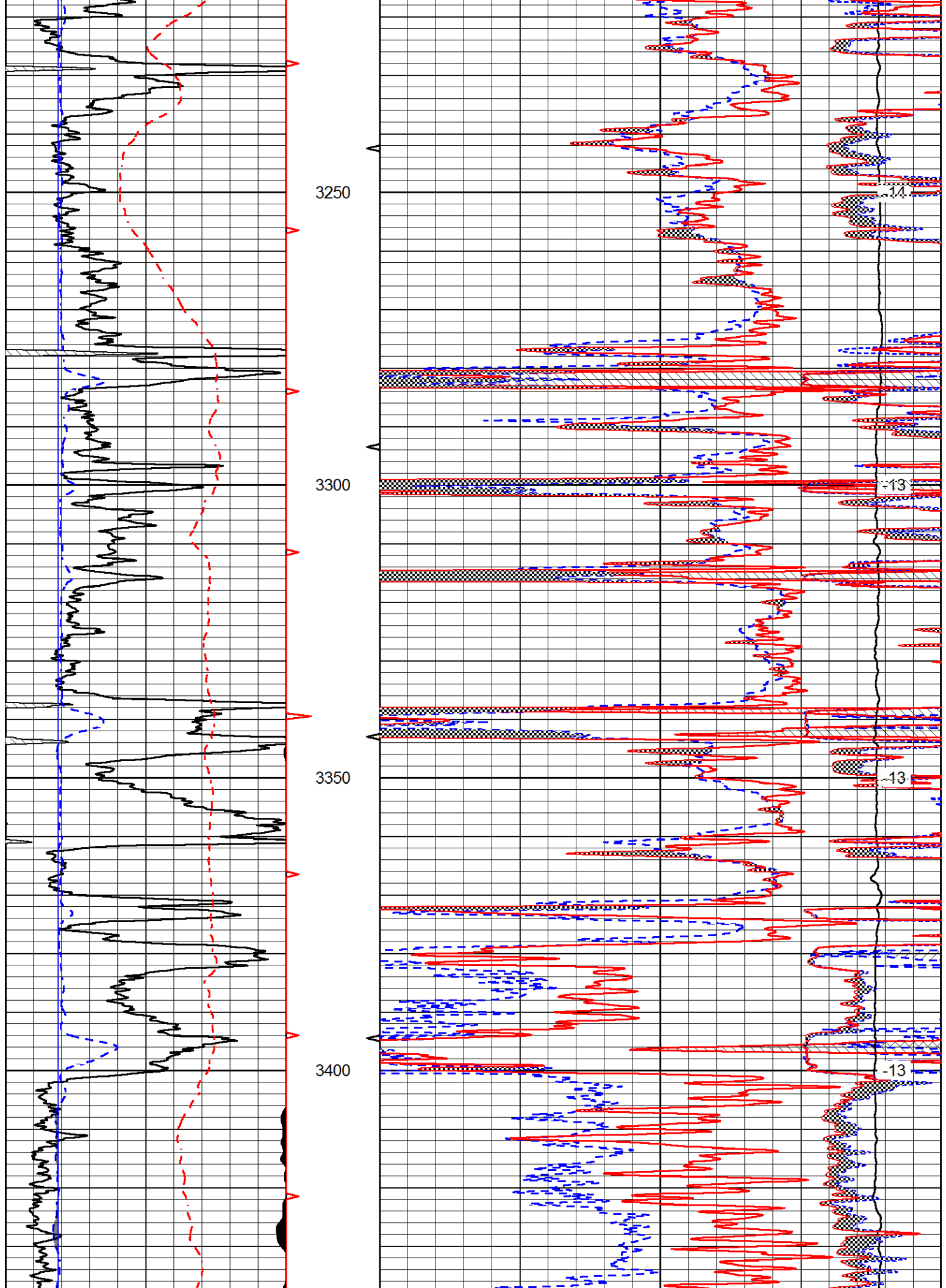


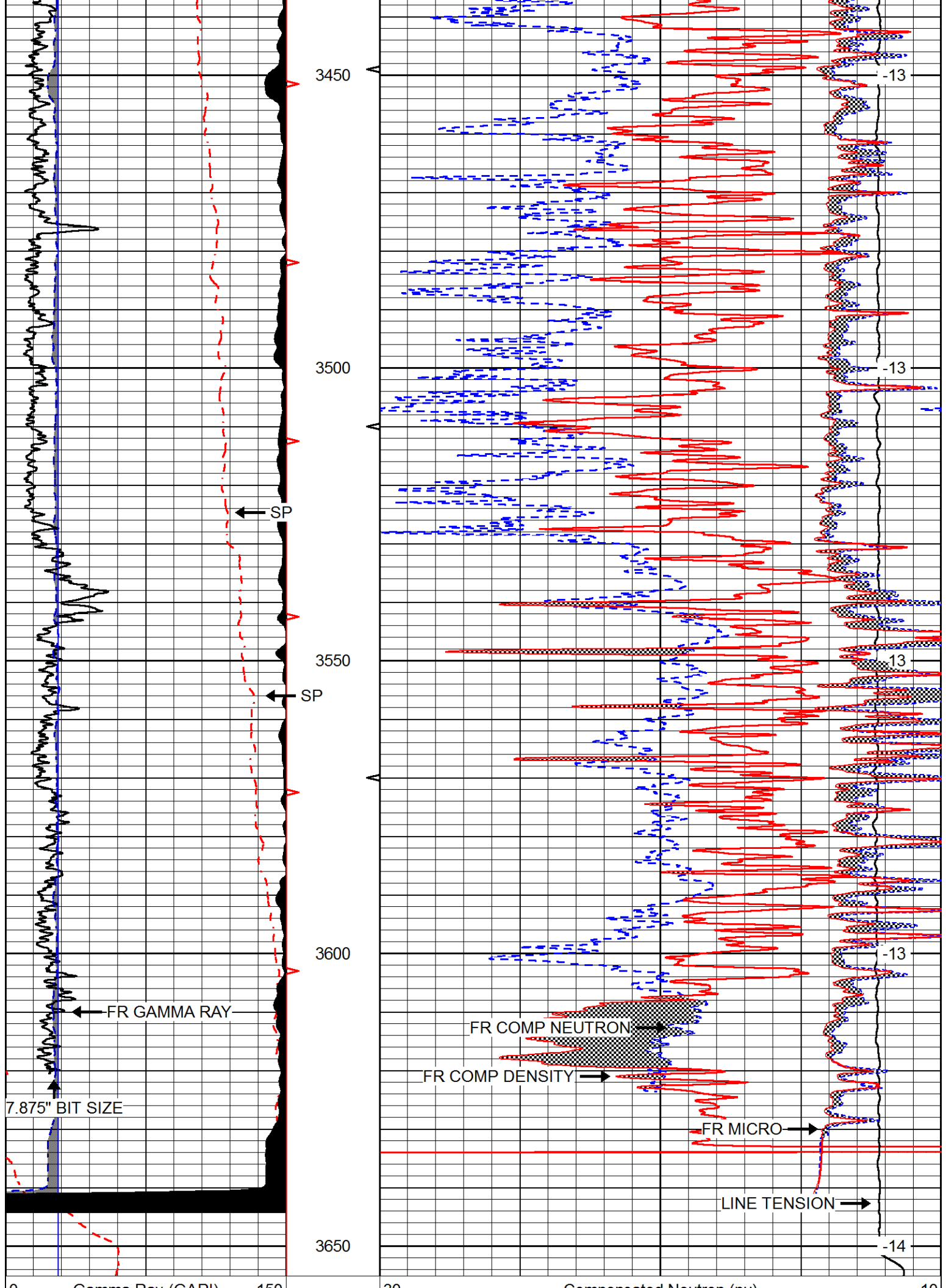












0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-200	SP (mV)	0

30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
15000	Line Tension (lb)	0

Micro Normal
0 (Ohm-m) 20
Micro Inverse
0 (Ohm-m) 20
LSPD
(ft/min)



MAIN PASS

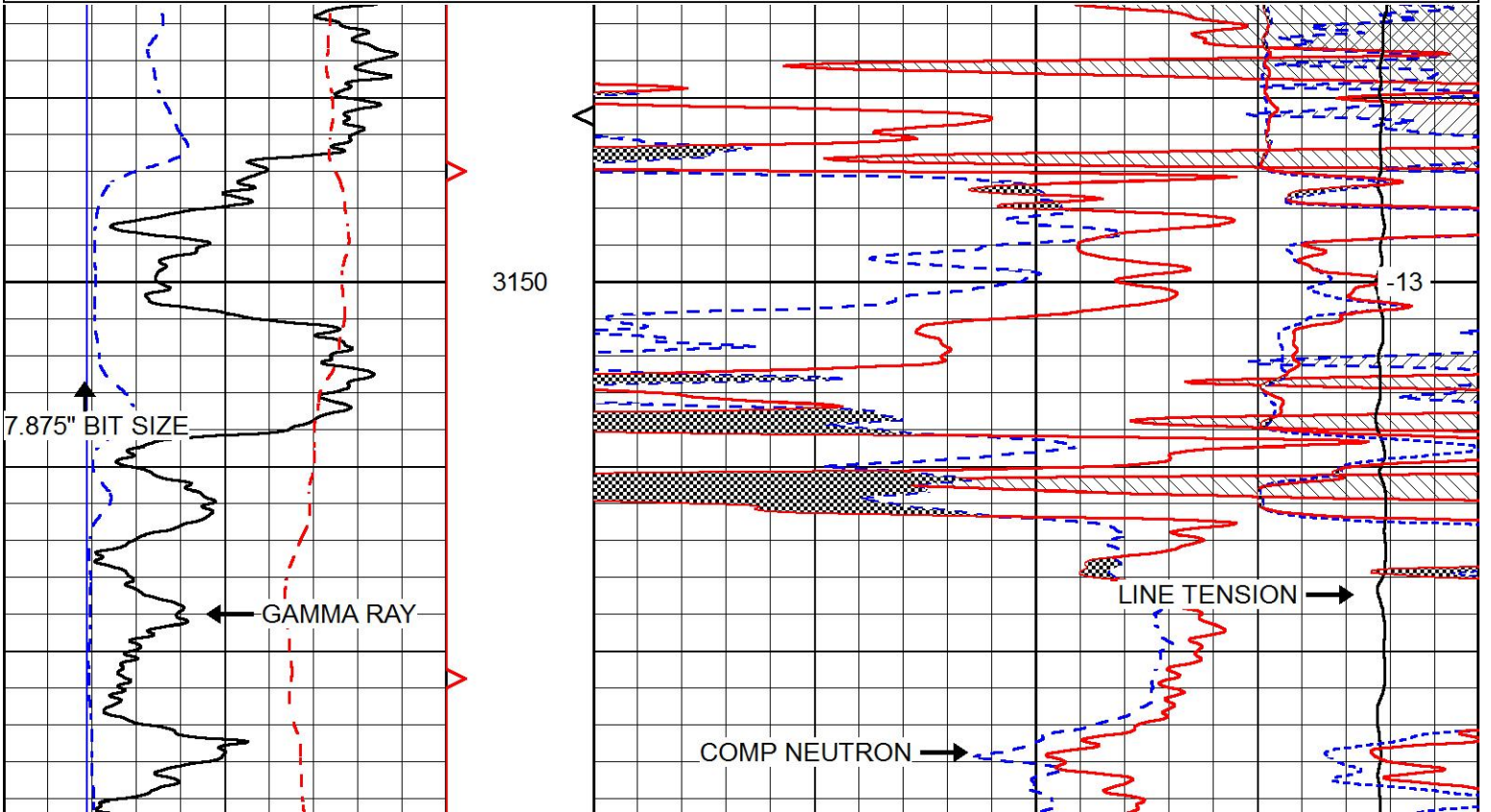
HIGH RESOLUTION

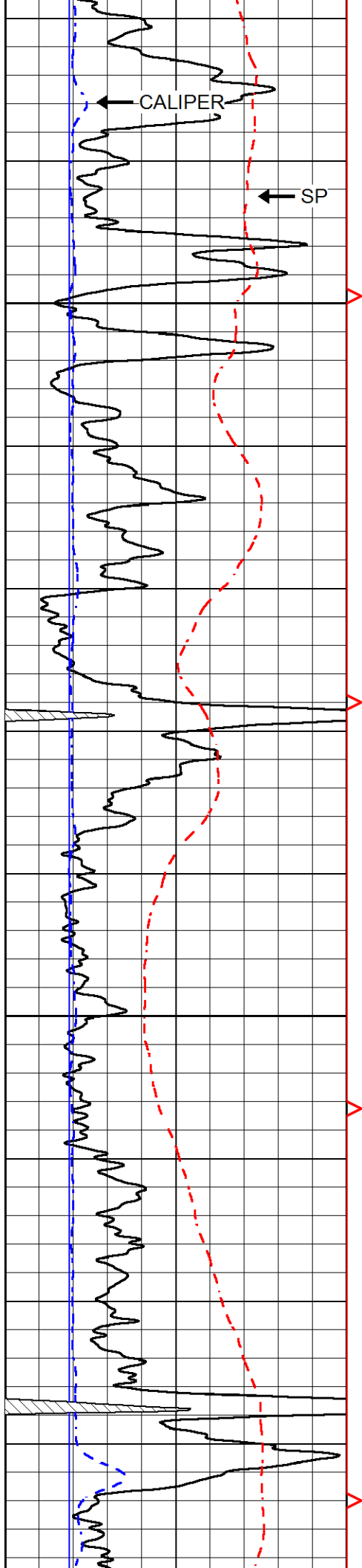
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 Dataset Pathname STKML/pass3.4
 Presentation Format cndlspml
 Dataset Creation Fri Aug 24 14:07:07 2018
 Charted by Depth in Feet scaled 1:120

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-200	SP (mV)	0

30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
15000	Line Tension (lb)	0

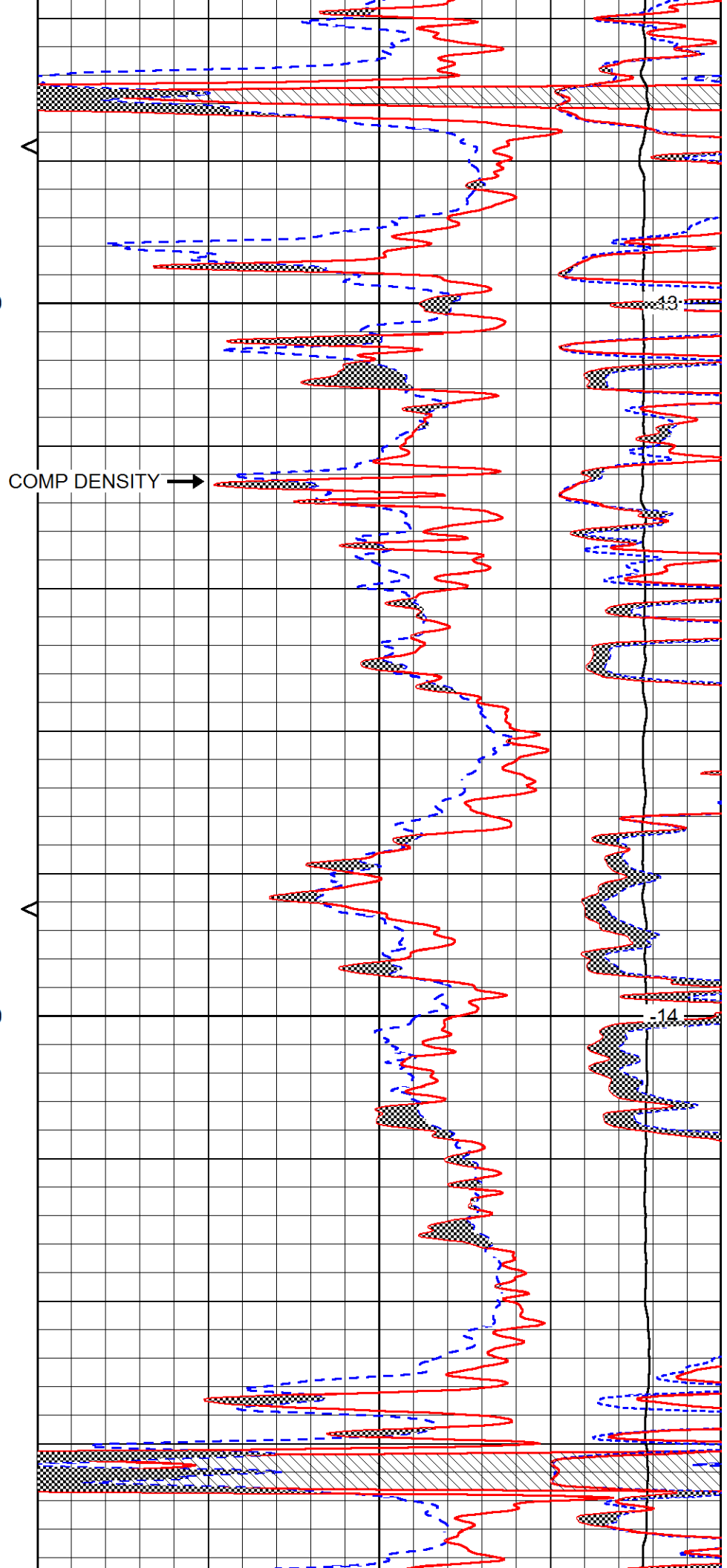
Micro Normal
0 (Ohm-m) 20
Micro Inverse
0 (Ohm-m) 20
LSPD
(ft/min)





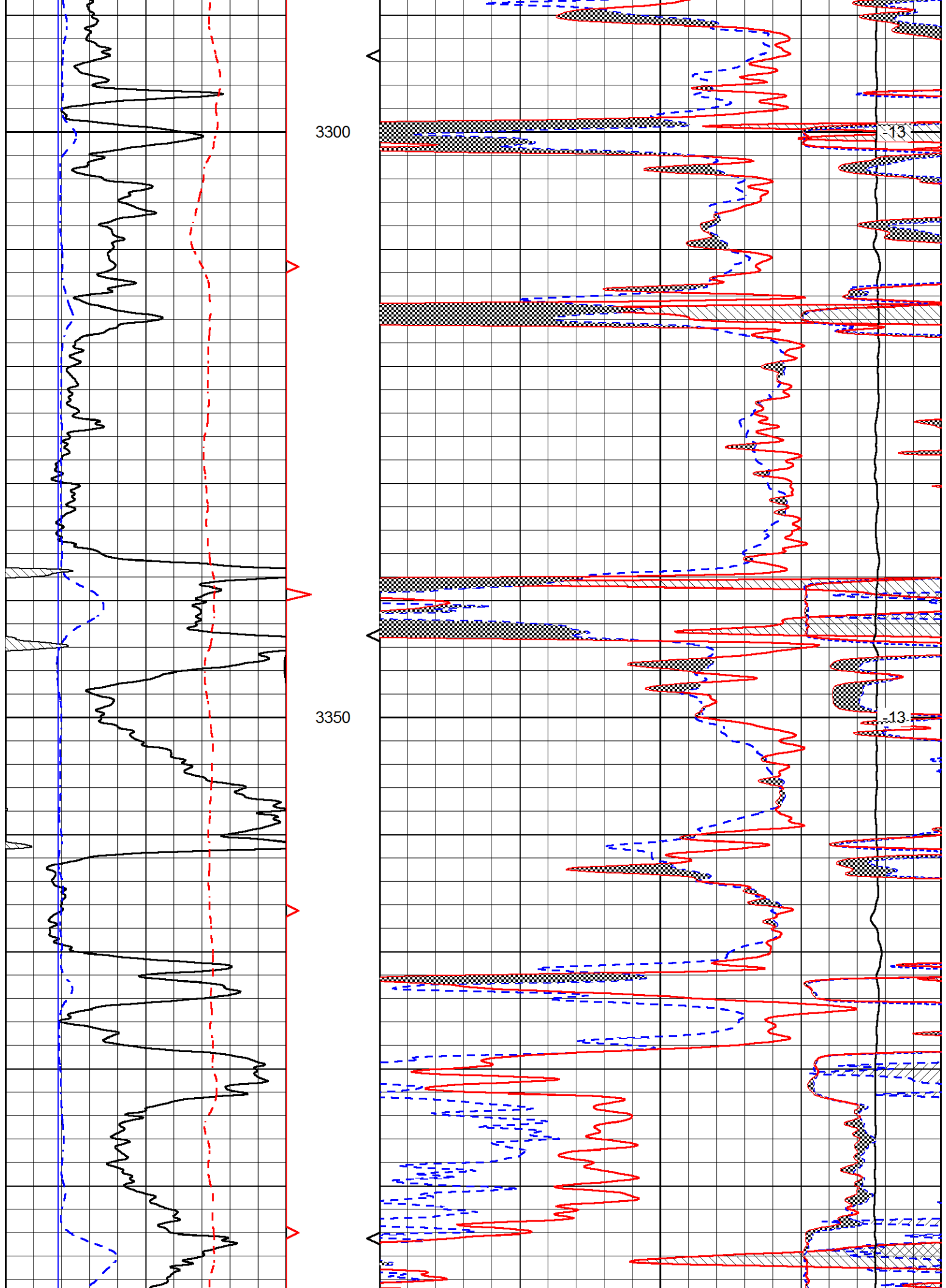
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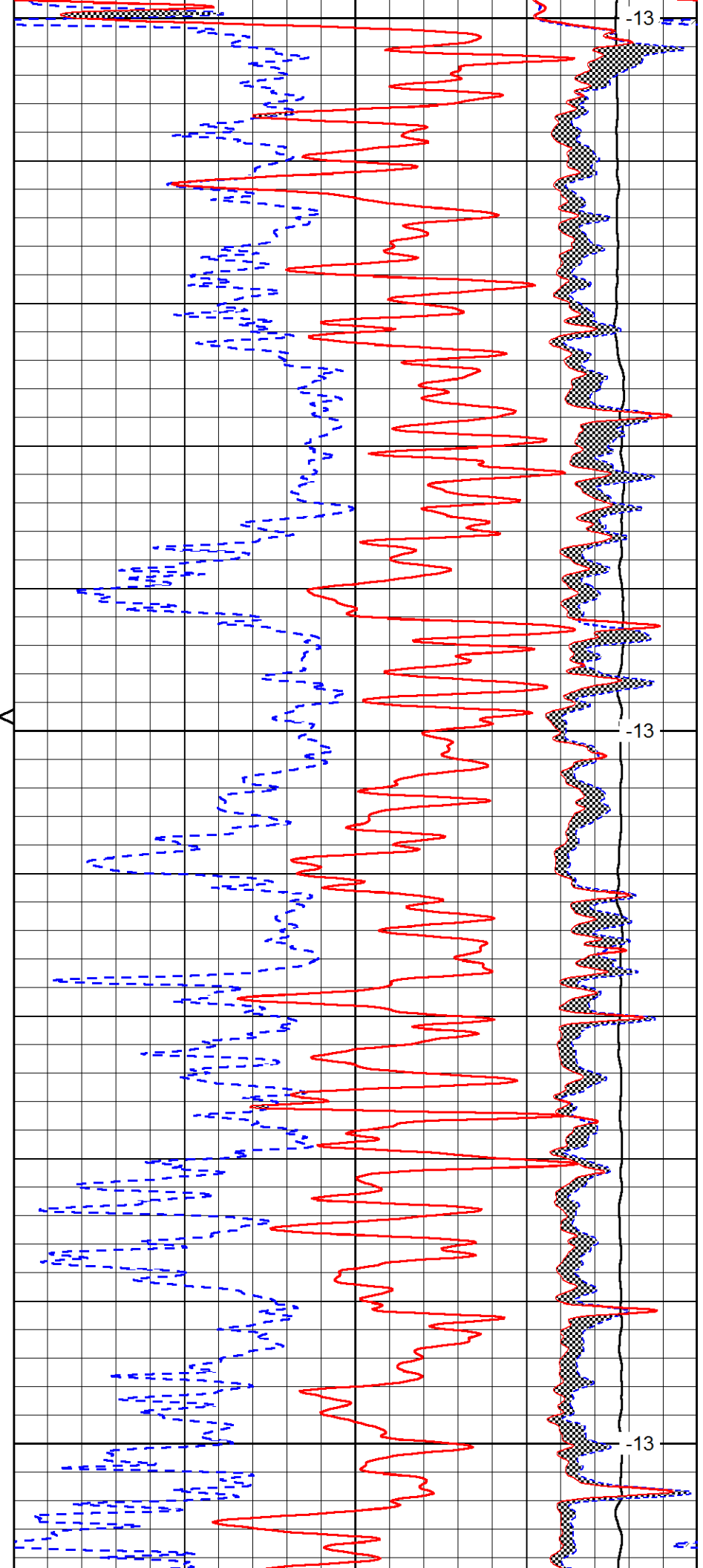
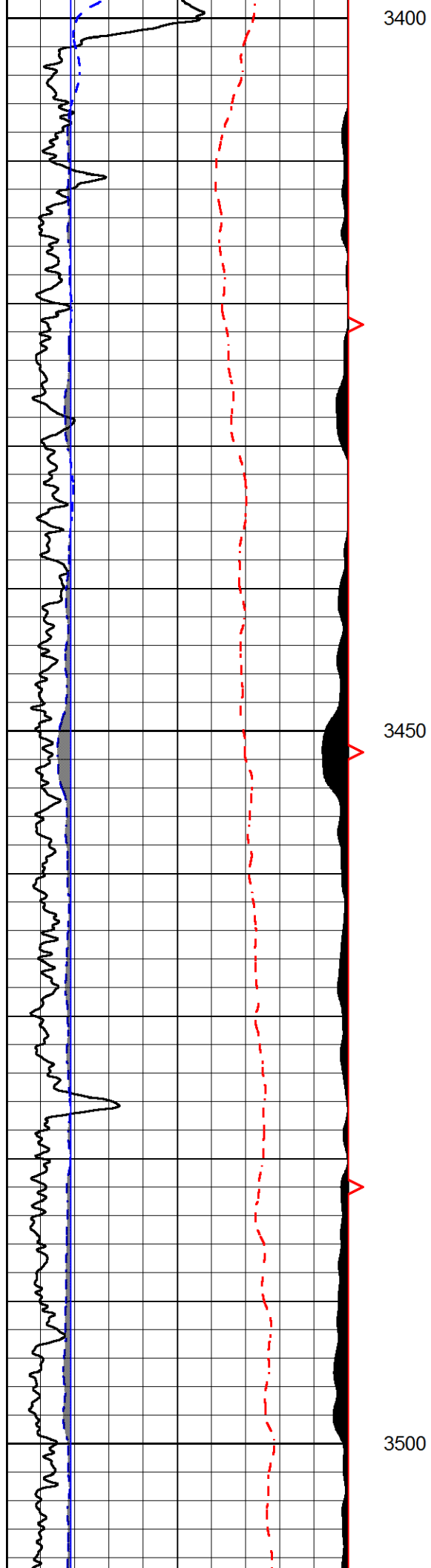
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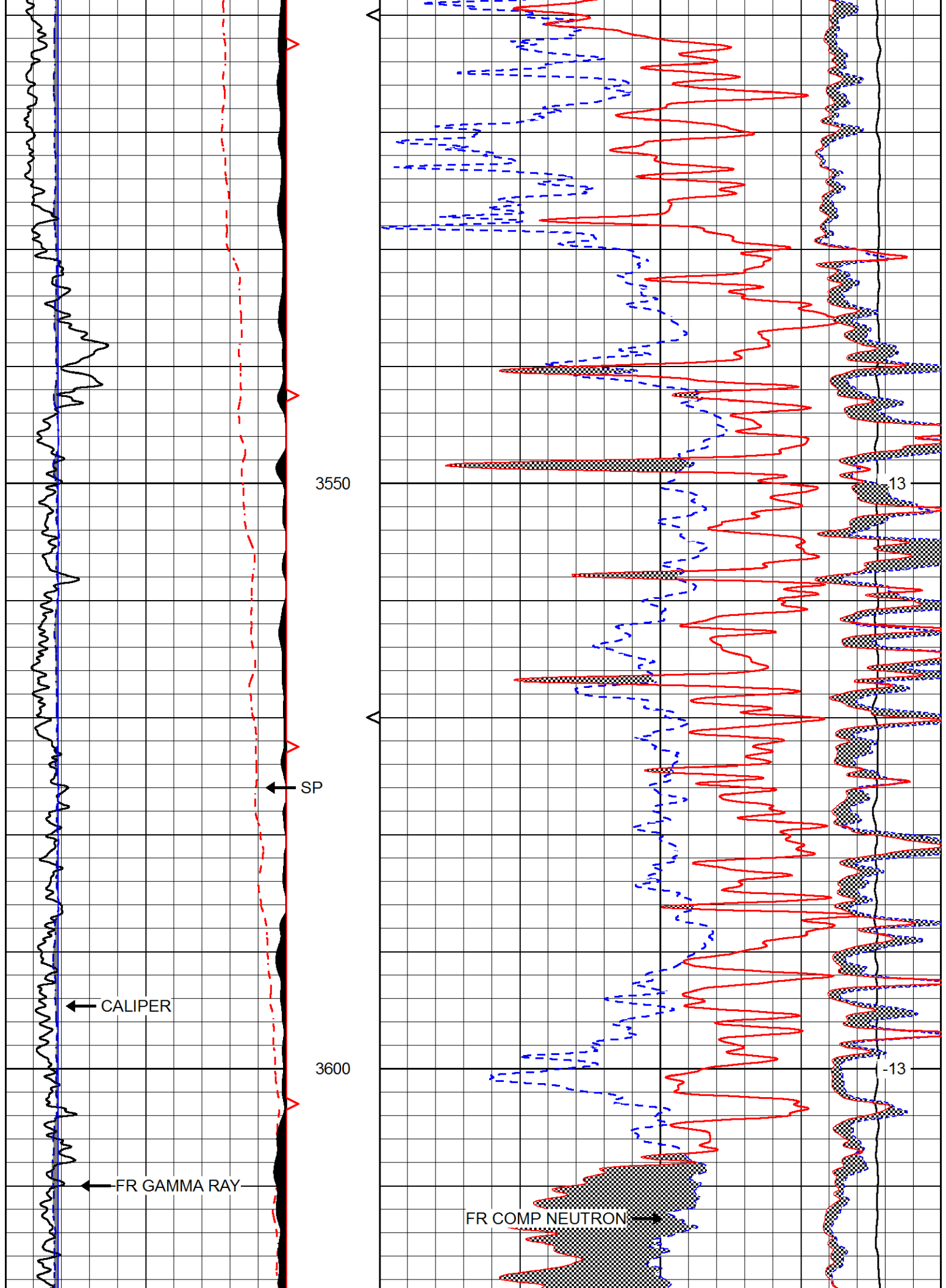


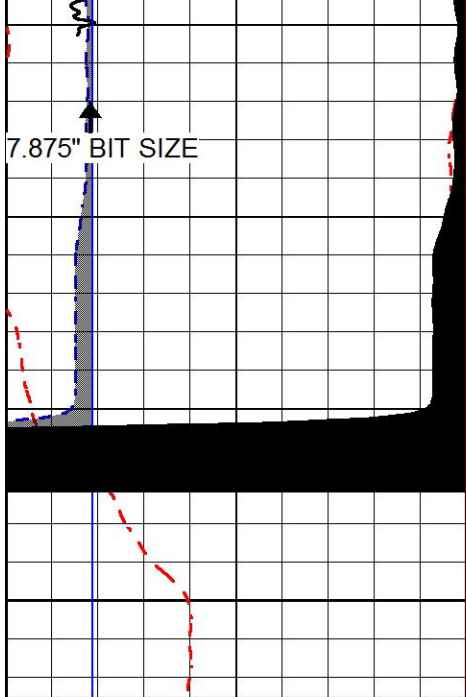
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14



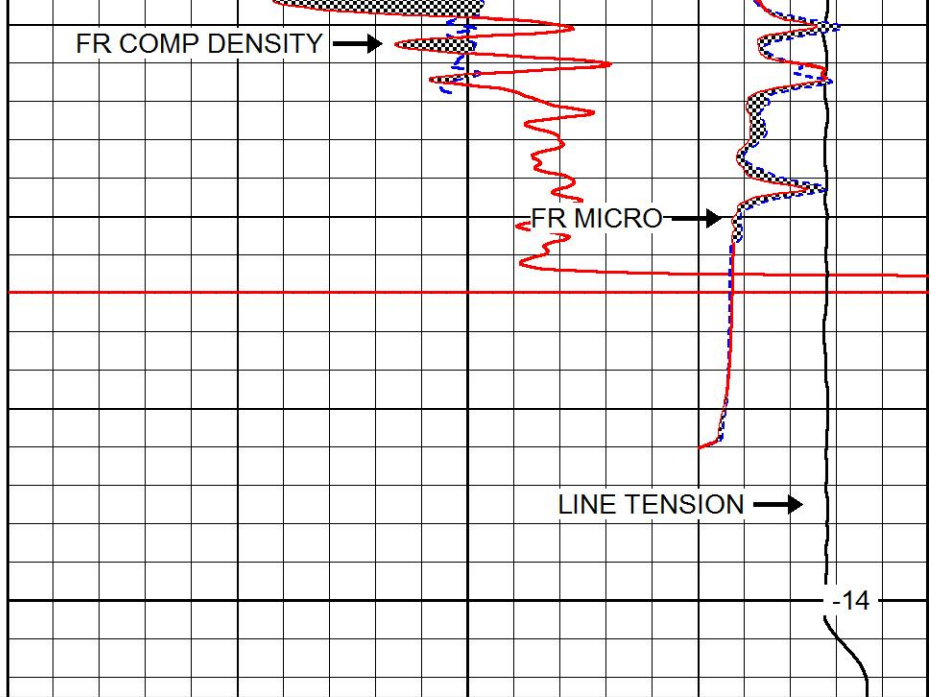






0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-200	SP (mV)	0

3650



30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
15000	Line Tension (lb)	0

Micro Normal		
0	(Ohm-m)	20
Micro Inverse		
0	(Ohm-m)	20
LSPD (ft/min)		



MAIN PASS

DOLOMITE MATIX (2.83)

Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass4.2
 Presentation Format cndldolo
 Dataset Creation Fri Aug 24 14:12:19 2018
 Charted by Depth in Feet scaled 1:120

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

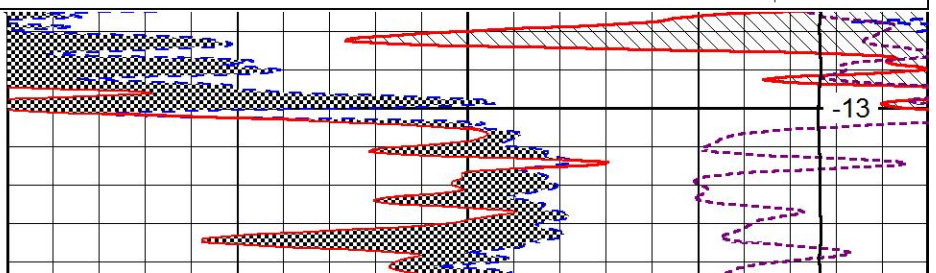
30	Compensated Neutron (pu)	-10
30	Compensated Density 2.83 g/cc (pu)	-10
15000	Line Tension (lb)	0

-0.25	Correction (g/cc)	0.25
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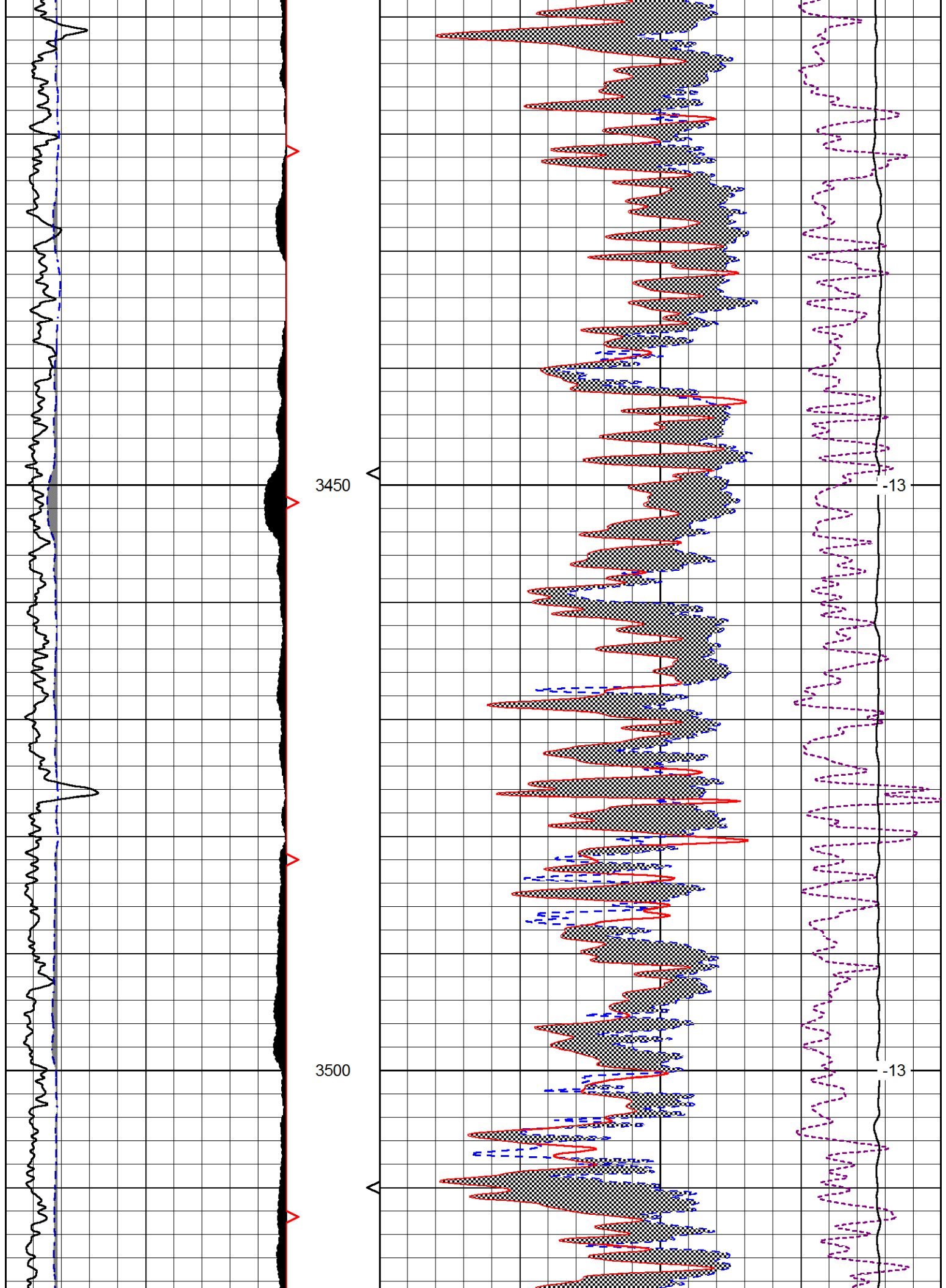
LSPD (ft/min)		
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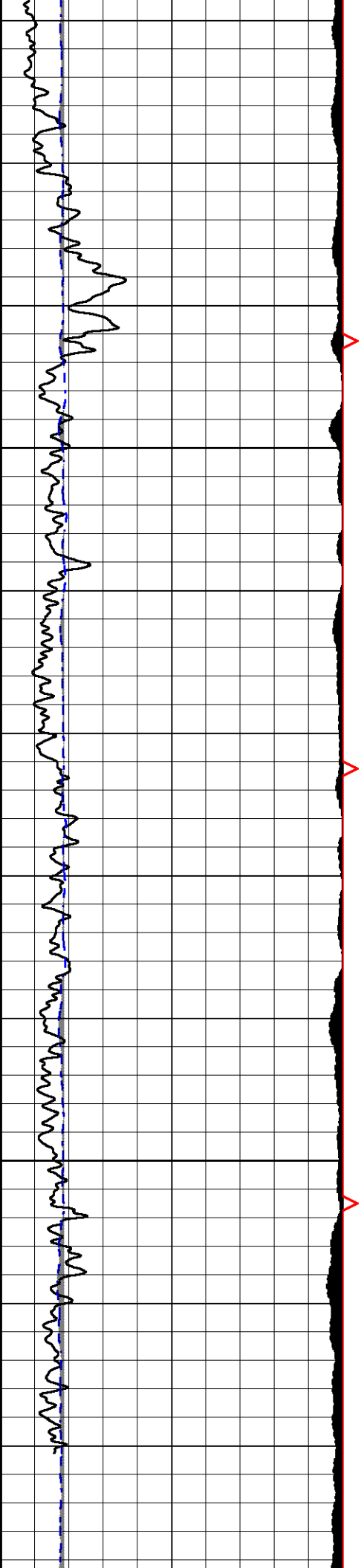


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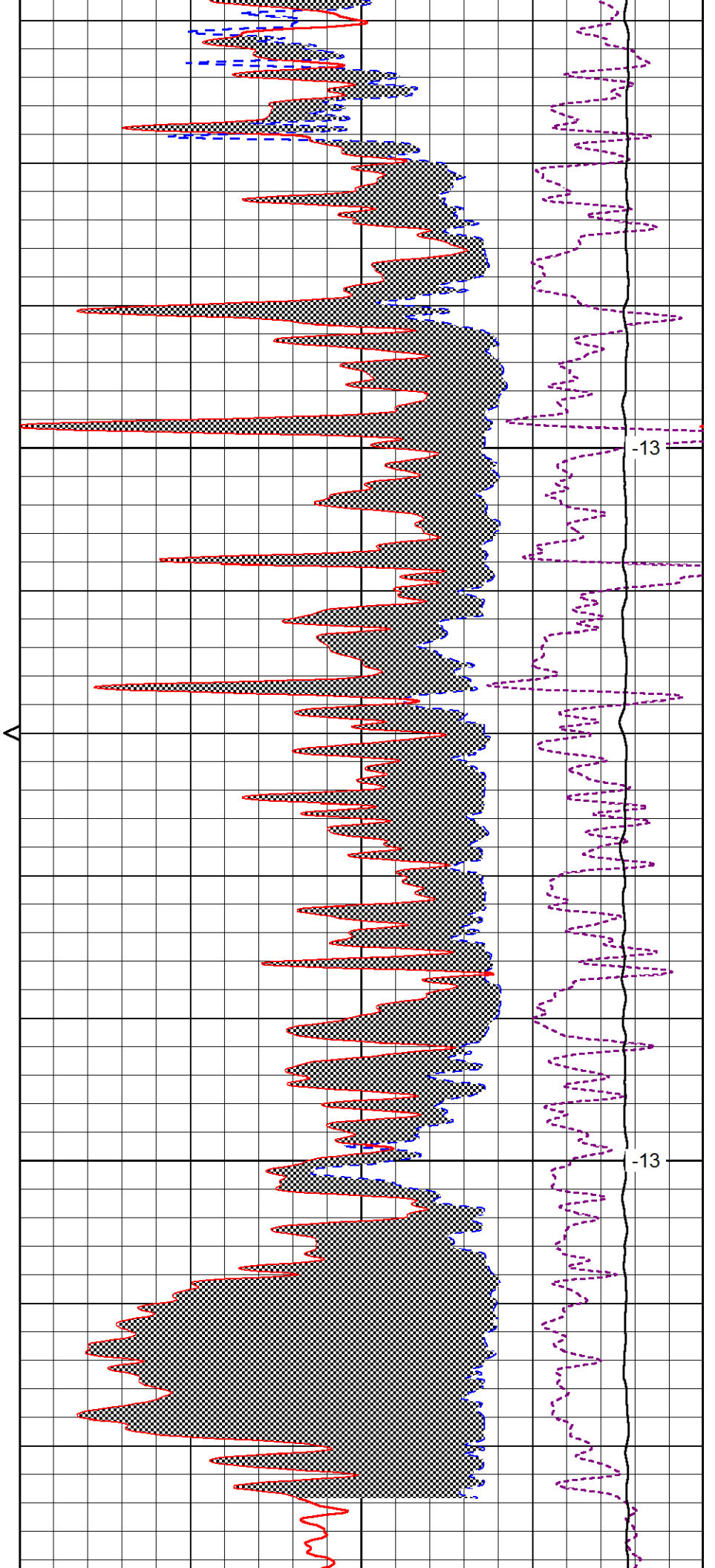
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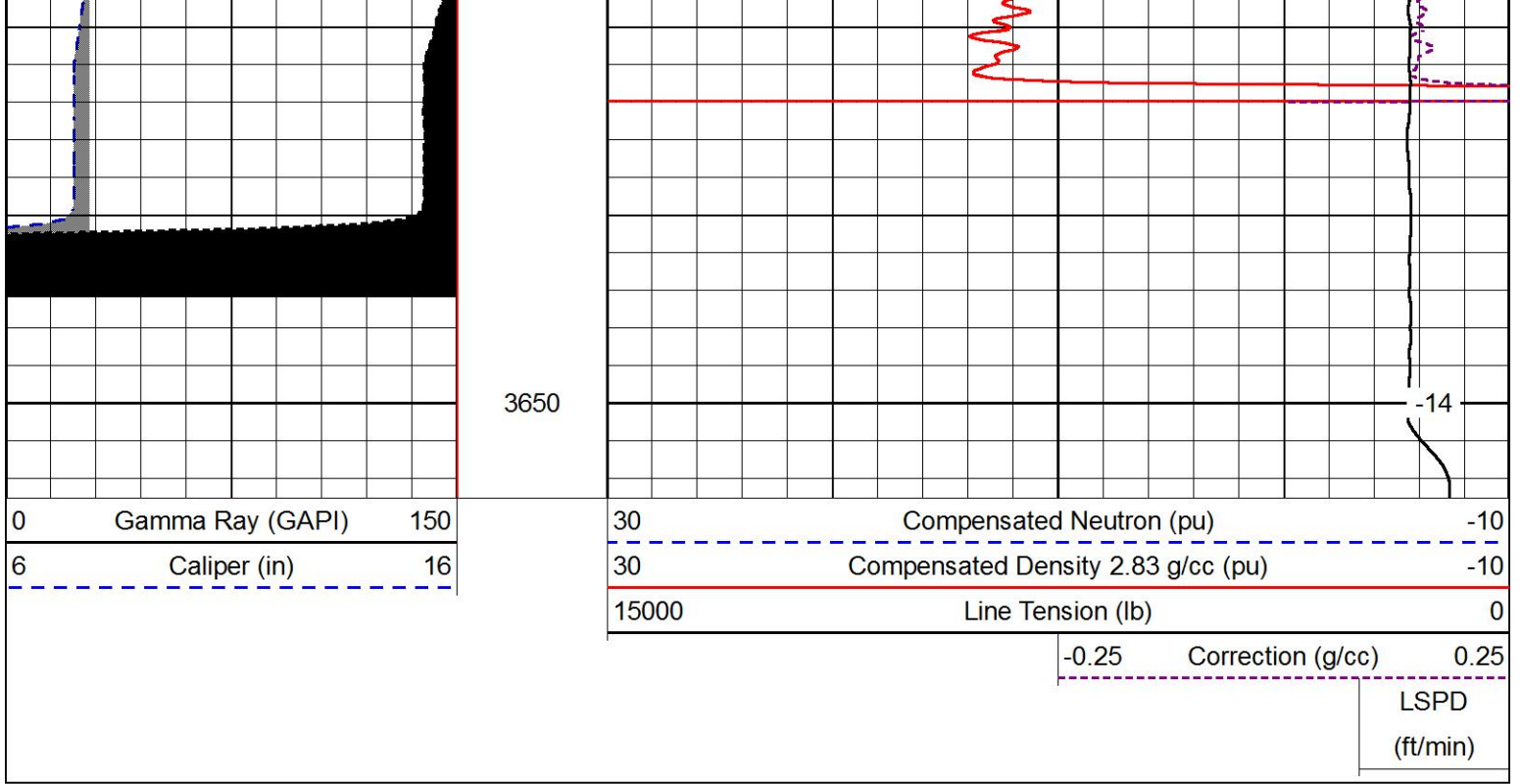
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3600



13

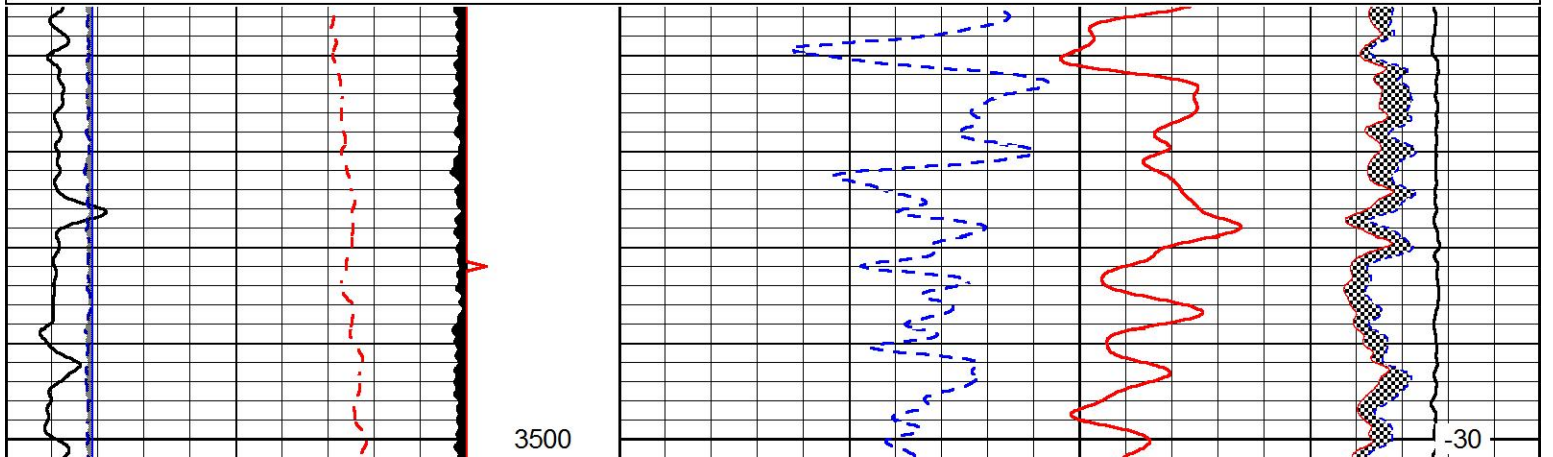
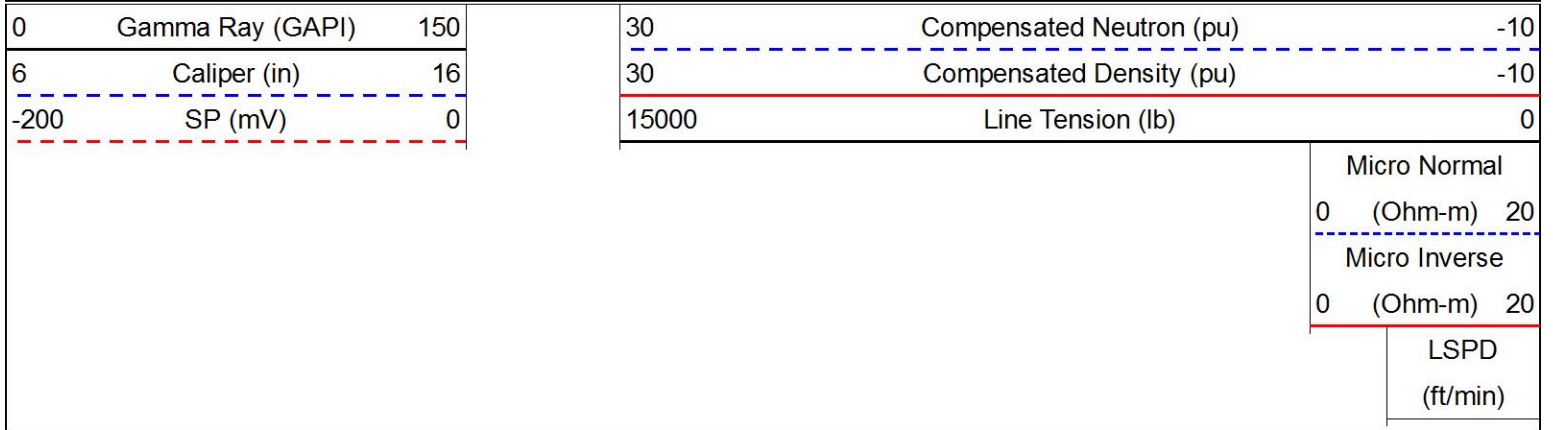
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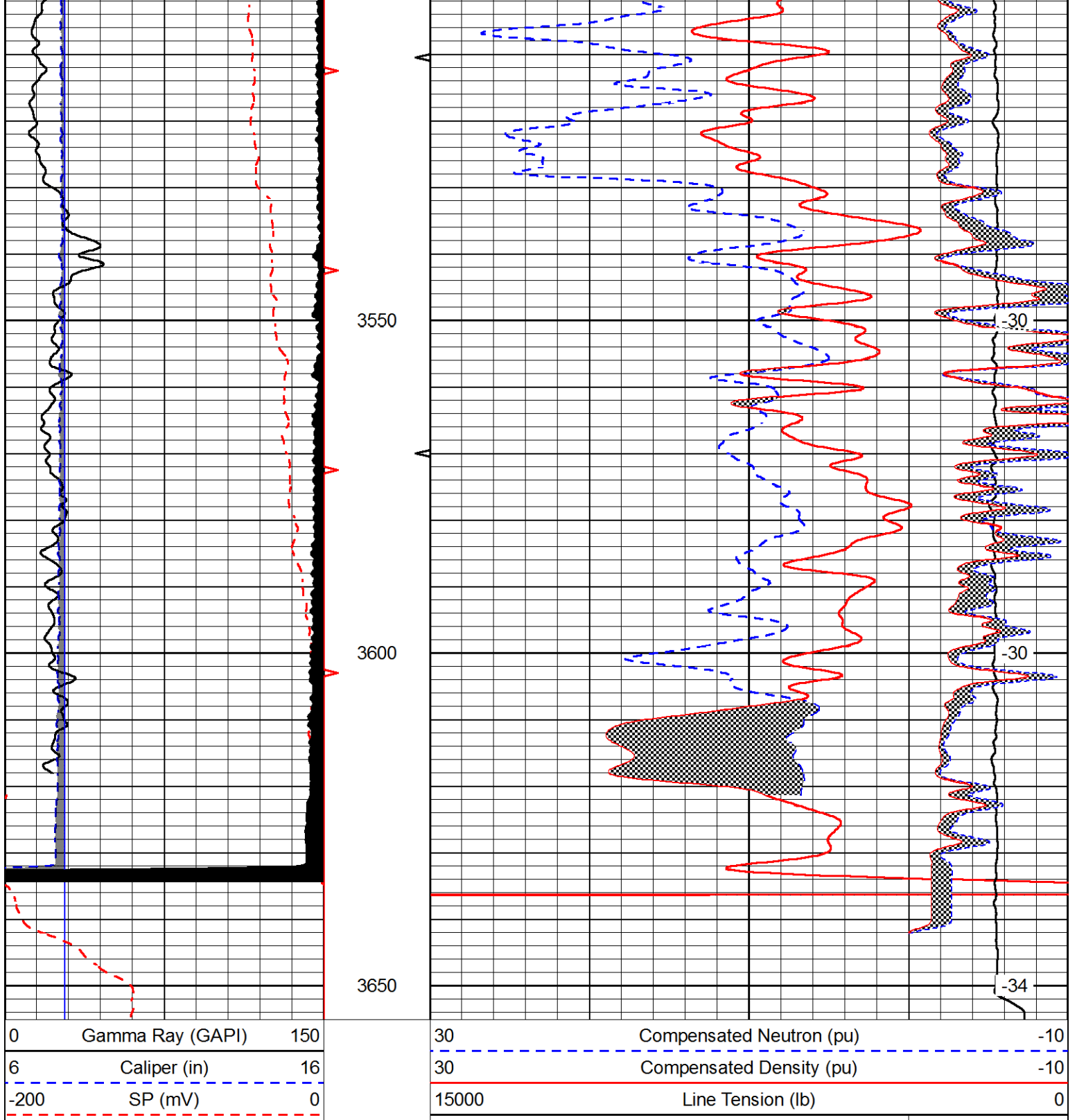




REPEAT SECTION

Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass2.1
 Presentation Format cndispml
 Dataset Creation Fri Aug 24 13:24:20 2018
 Charted by Depth in Feet scaled 1:240





0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-200	SP (mV)	0

30	Compensated Neutron (pu)	-10
30	Compensated Density (pu)	-10
15000	Line Tension (lb)	0

Micro Normal	
0 (Ohm-m)	20
Micro Inverse	
0 (Ohm-m)	20
LSPD (ft/min)	

Calibration Report

Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass5.1
 Dataset Creation Fri Aug 24 13:44:46 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Fri Aug 24 11:15:17 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-23.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-39.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Fri Aug 24 11:15:30 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	25000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-66.0000

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Fri Aug 24 11:16:00 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.15		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: FRI AUG 24 10:30:30 2018

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 89
 Tool Model: M&W
 Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



PIONEER

Pioneer Energy Services

Company	FG HOLL COMPANY, LLC
Well	MILLARD TRUST #2-31
Field	WILDCAT
County	BARTON
State	KANSAS