



DUAL COMP POROSITY LOG

Pioneer Energy Services

Company **STEWART PRODUCERS, INC.**
 Well **SUTTON NO. 4**
 Field **UNNAMED**
 County **NESS** State **KANSAS**

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 County **NESS**
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Location: **1784' FSL & 1700' FWL**
SEC 8 TWP 18S RGE 24W
 Permanent Datum **GROUND LEVEL Elevation 2319'**
 Log Measured From **KELLY BUSHING**
 Drilling Measured From **KELLY BUSHING**
 Other Services **DIL MEL**

Date	12/13/2017						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4410'						
Depth Logger	4409'						
Bottom Logged Interval	4380'						
Top Logged Interval	2900'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	7600						
Density	9.2						
Level	FULL						
Max. Rec. Temp. F	120 DEG/F						
Operating Rig Time	2 HOURS						
Equipment -- Location	108 HAYS						
Recorded By	J. HENRICKSON						
Witnessed By	DAVID GOLDAK						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	218'	8.625"	23#	0	218'
TWO	7.875"	218'		TD			
Casing Record							

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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.
 NESS CITY KANSAS
 3 NORTH TO 160 RD, 5 3/4 WEST, SOUTH INTO

Log Measured From: **KELLY BUSHING** 5 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

Engineer: **J. HENRICKSON**
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

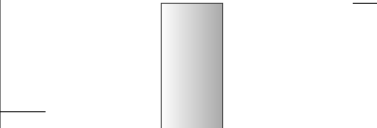
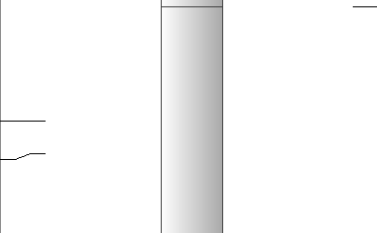
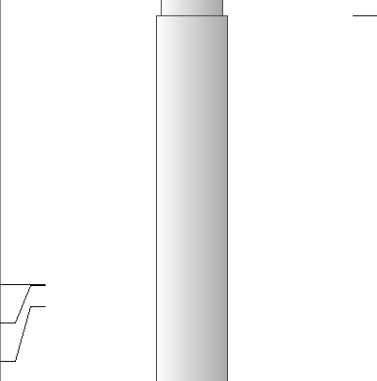
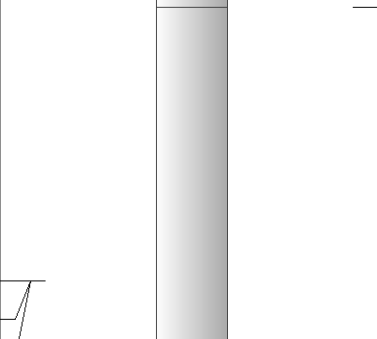
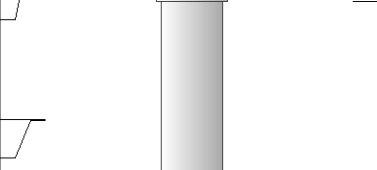
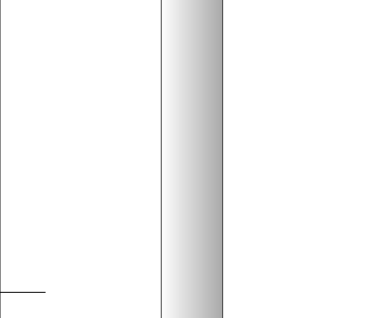
Primary Witness: **DAVID GOLDAK**
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\stewart_sutton_4.db
Dataset field/well/stackml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-320	0	Off	4409

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (168-986)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (PSI 978)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: stewart_sutton_4.db: field/well/stackml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

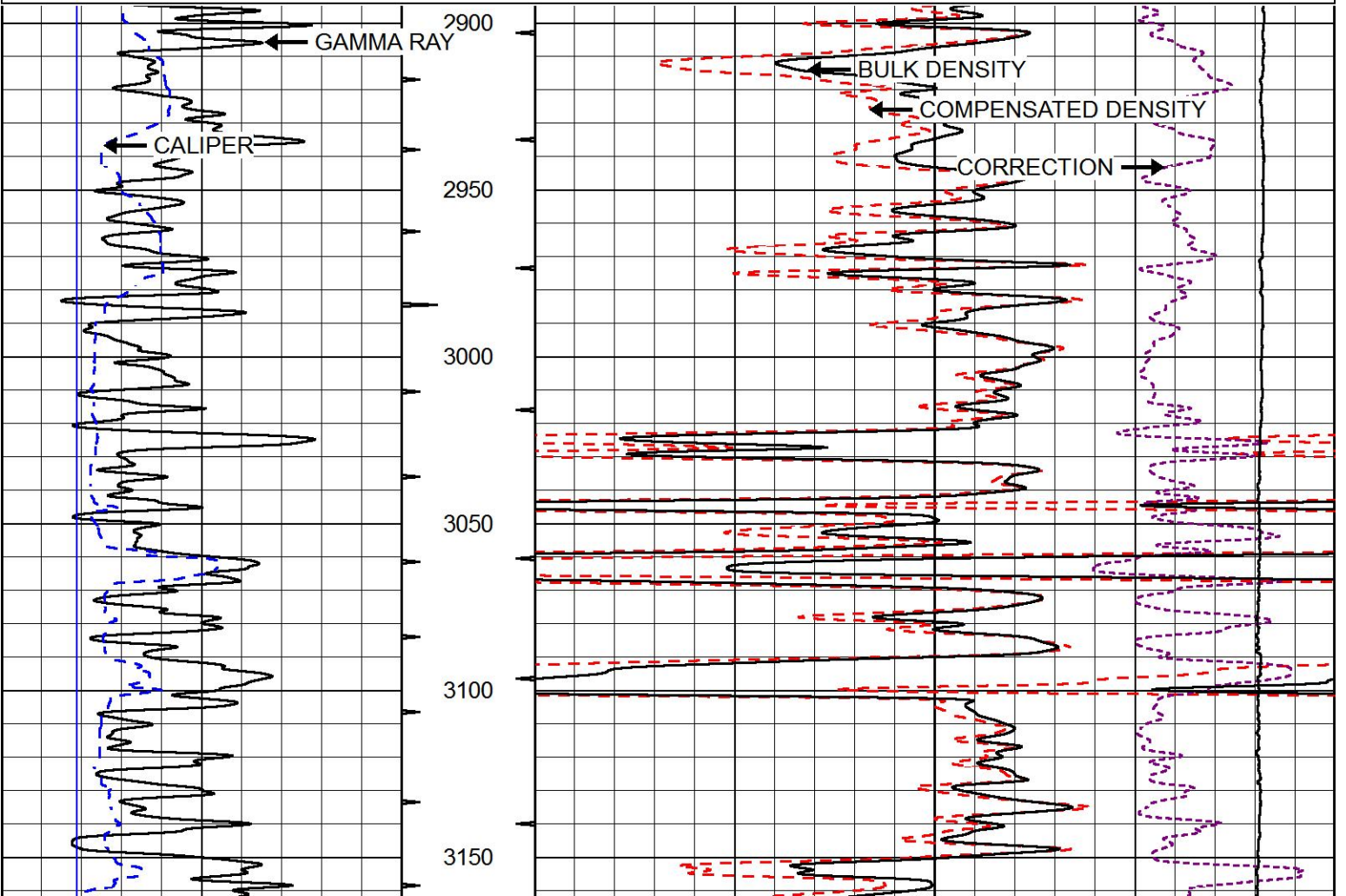


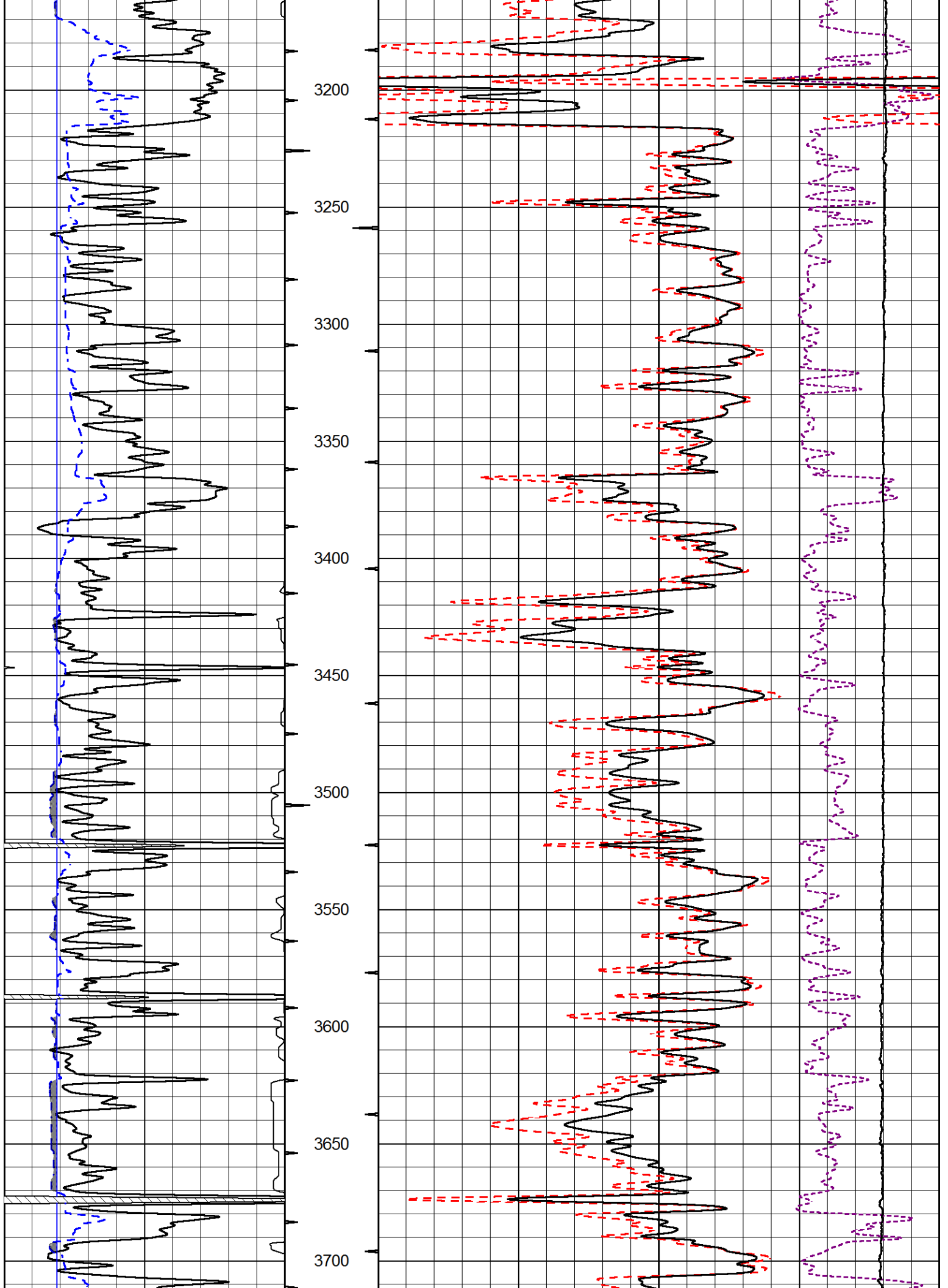
MAIN PASS

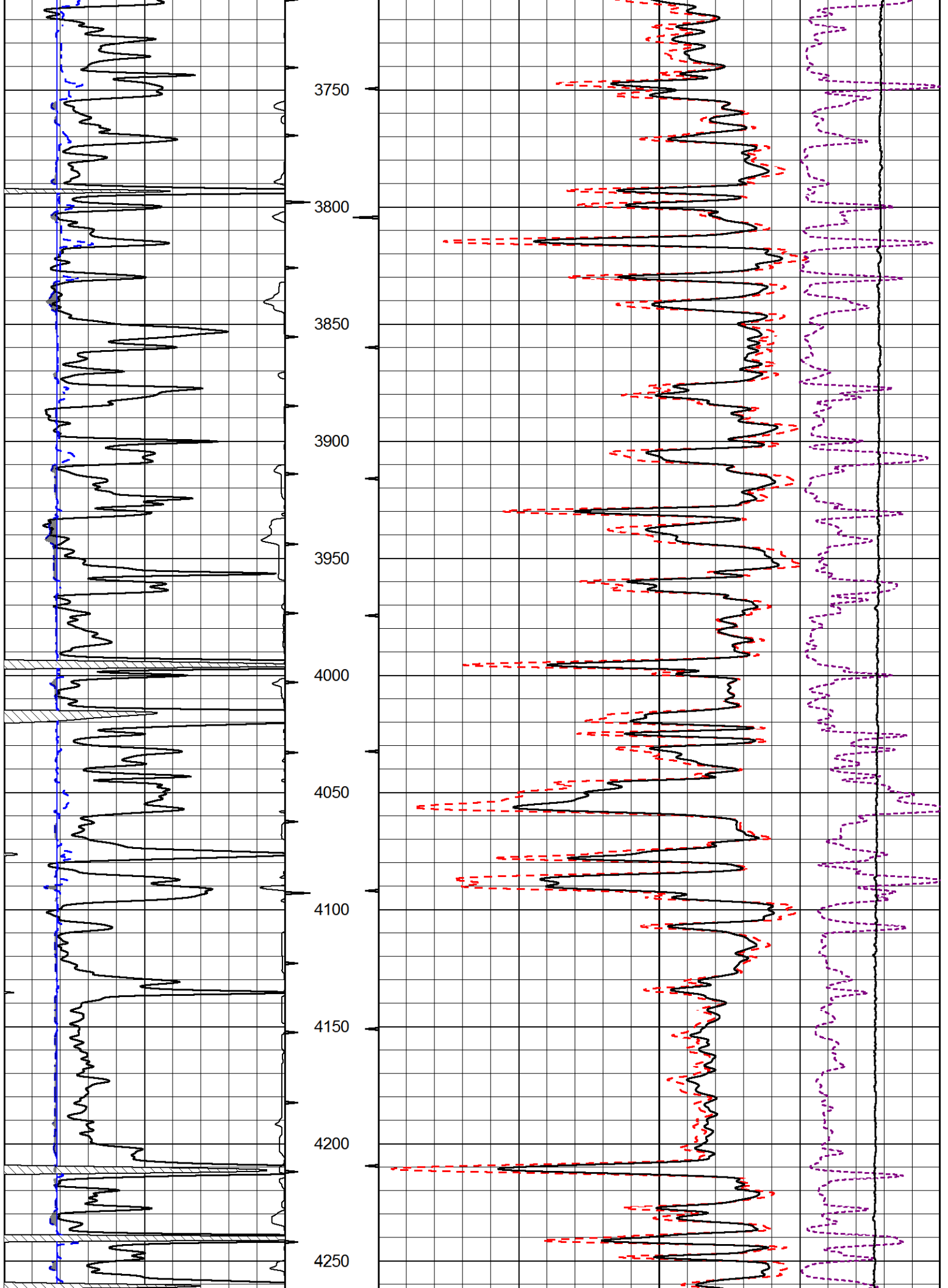
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 Dataset Pathname stackml/pass3.1
 Presentation Format cdl
 Dataset Creation Wed Dec 13 14:57:33 2017
 Charted by Depth in Feet scaled 1:600

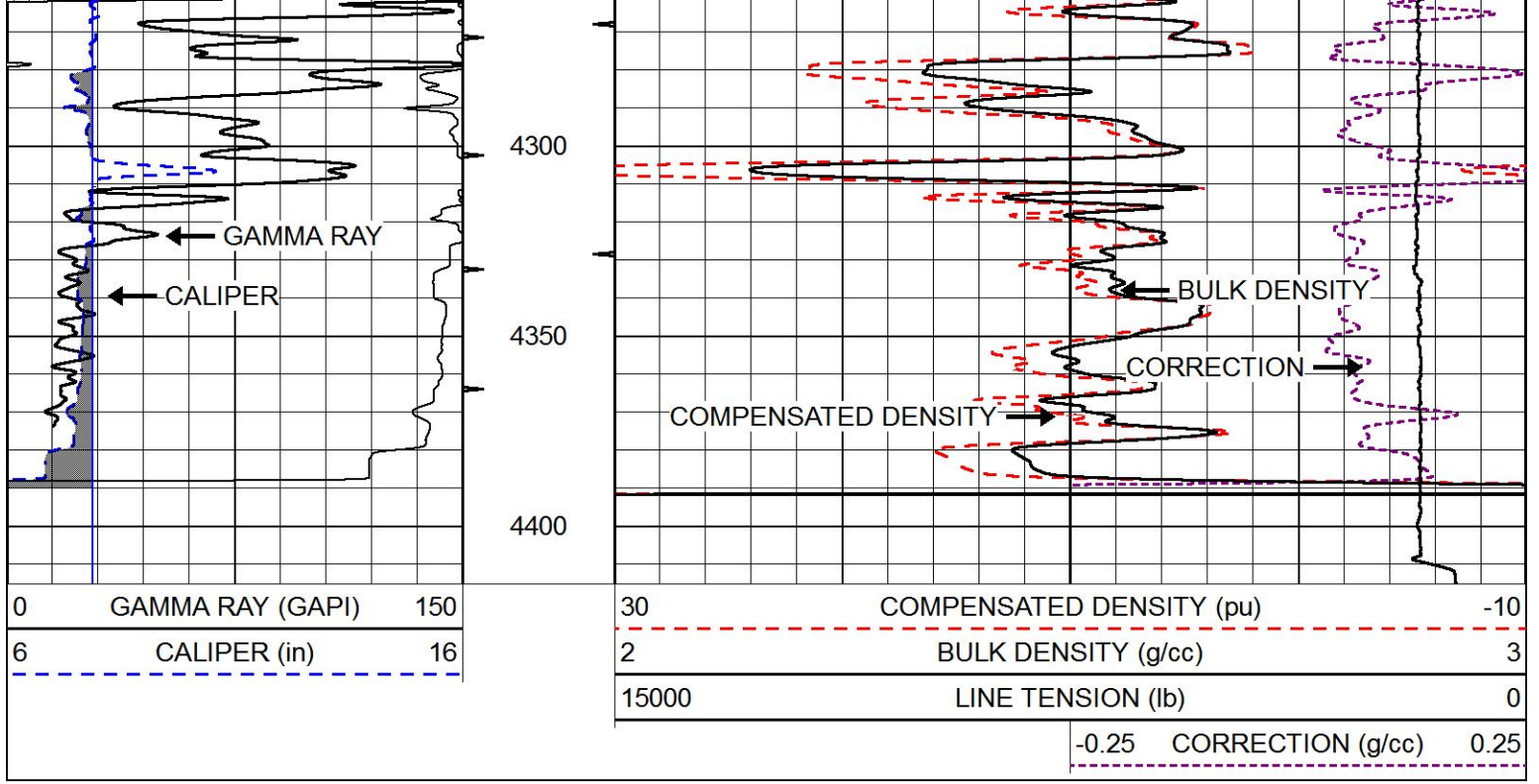
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

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



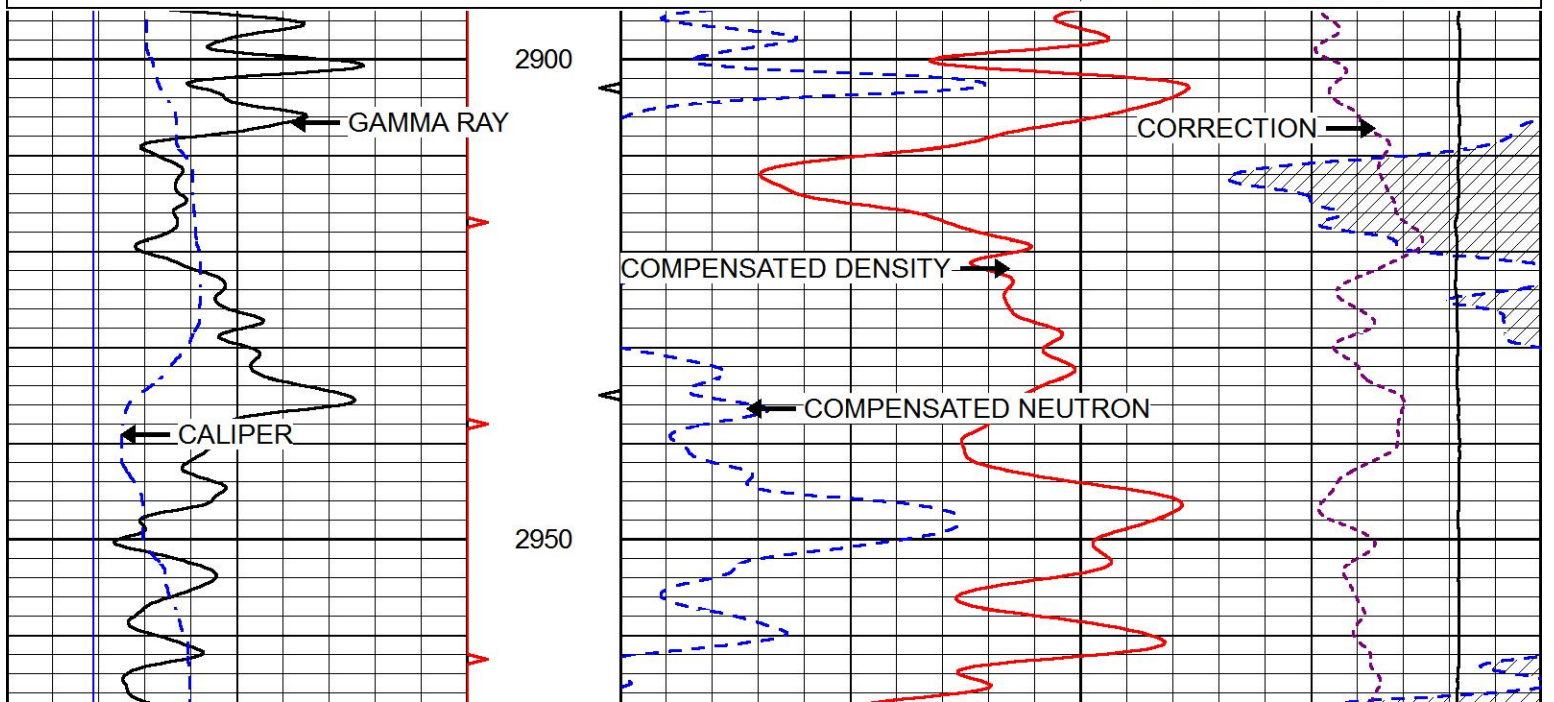
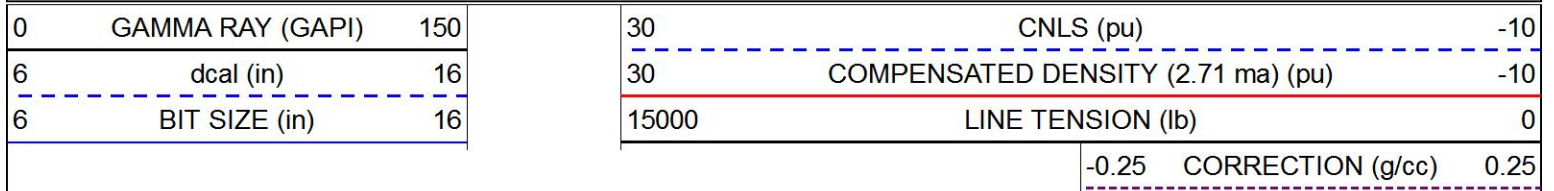


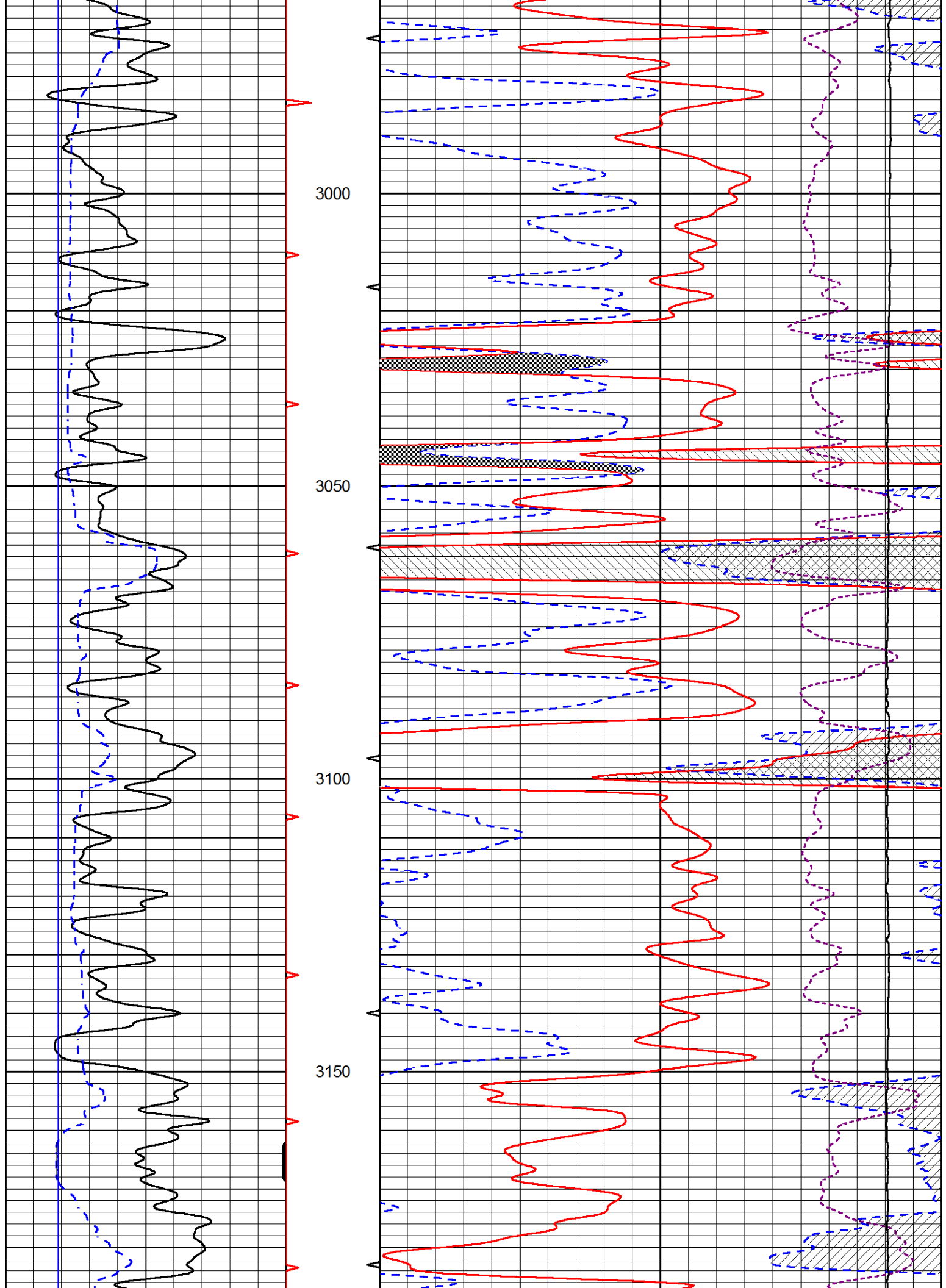


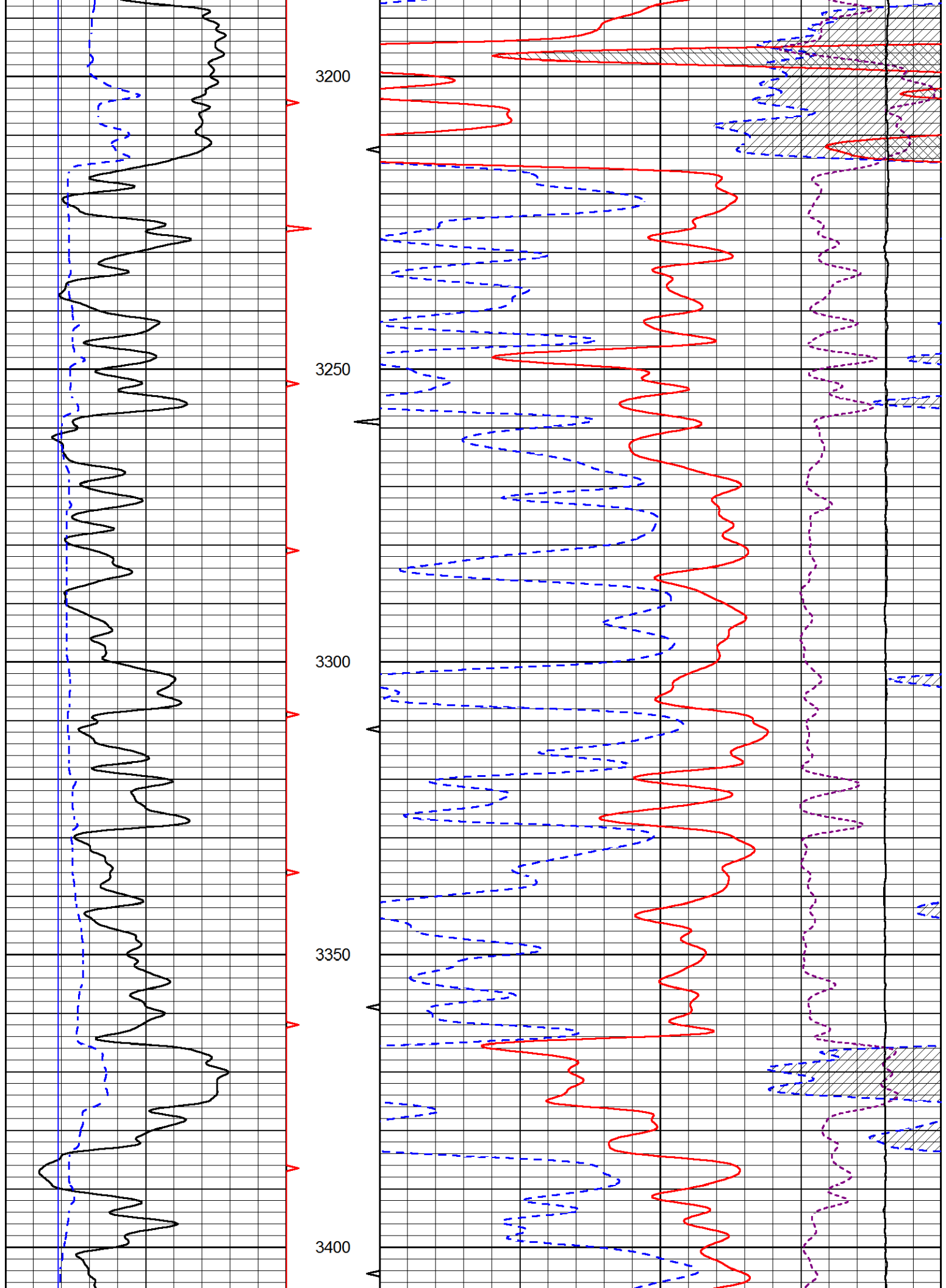


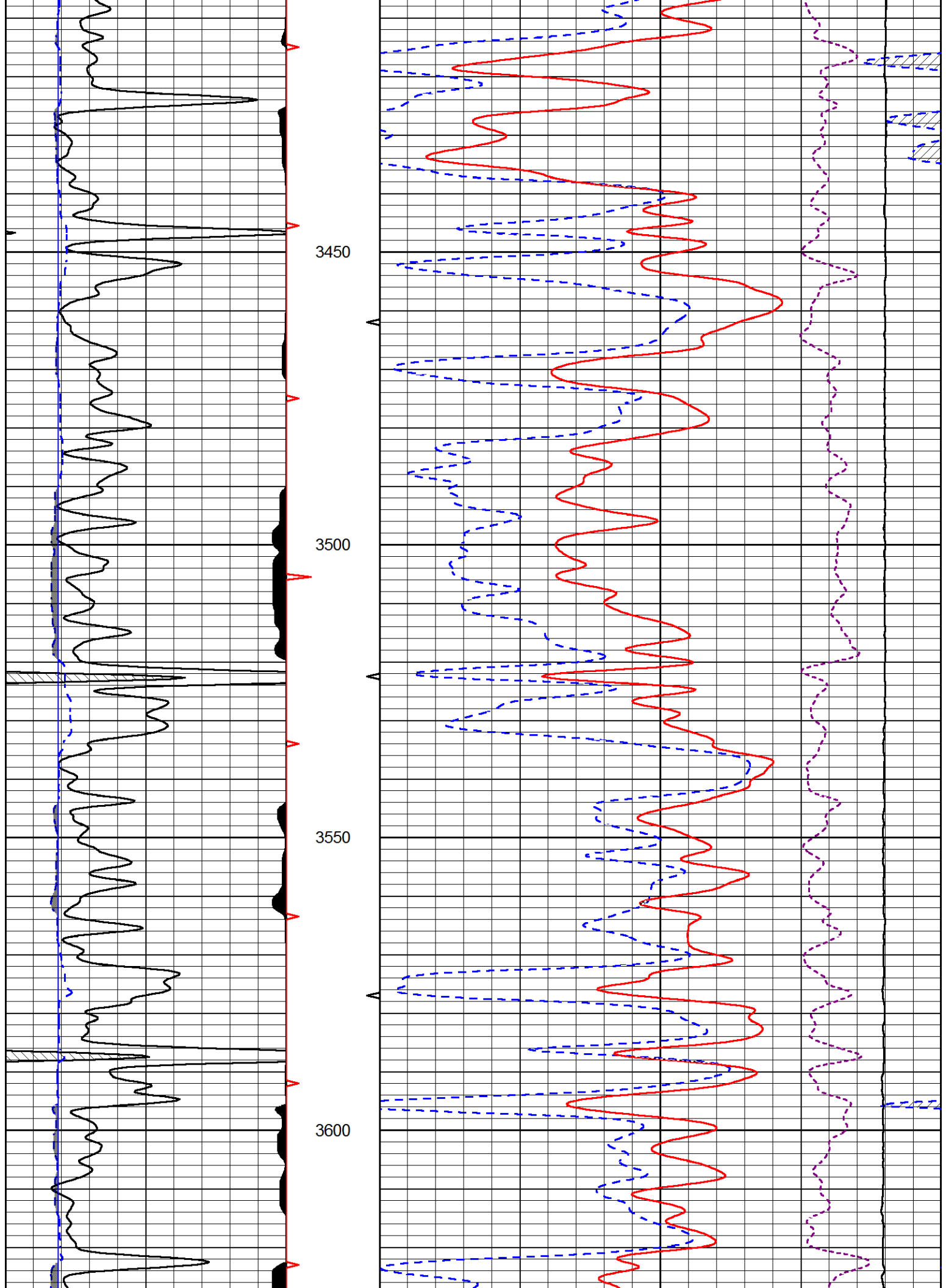
MAIN PASS

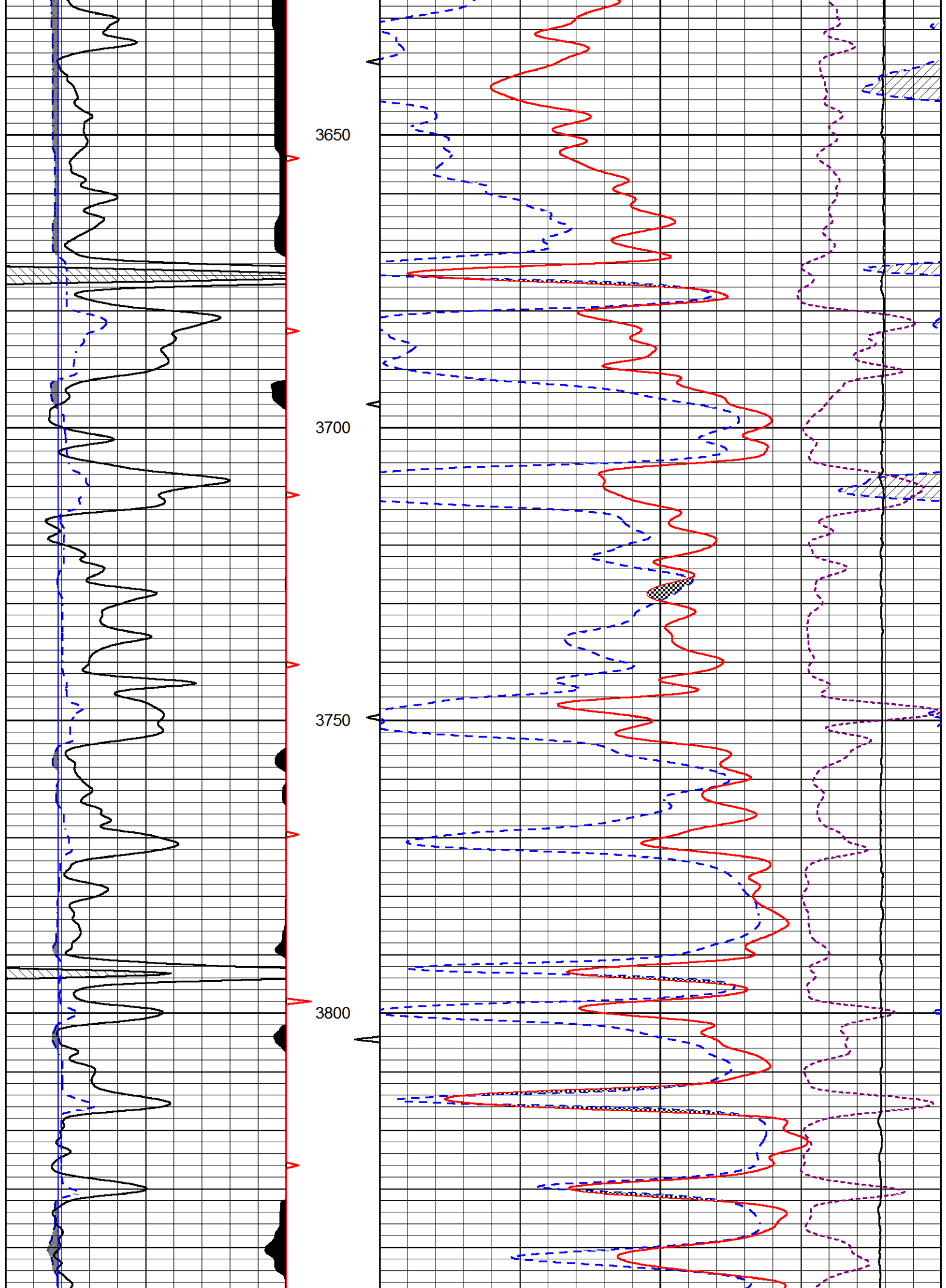
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 Dataset Pathname stackml/pass3.1
 Presentation Format cndlspec
 Dataset Creation Wed Dec 13 14:57:33 2017
 Charted by Depth in Feet scaled 1:240

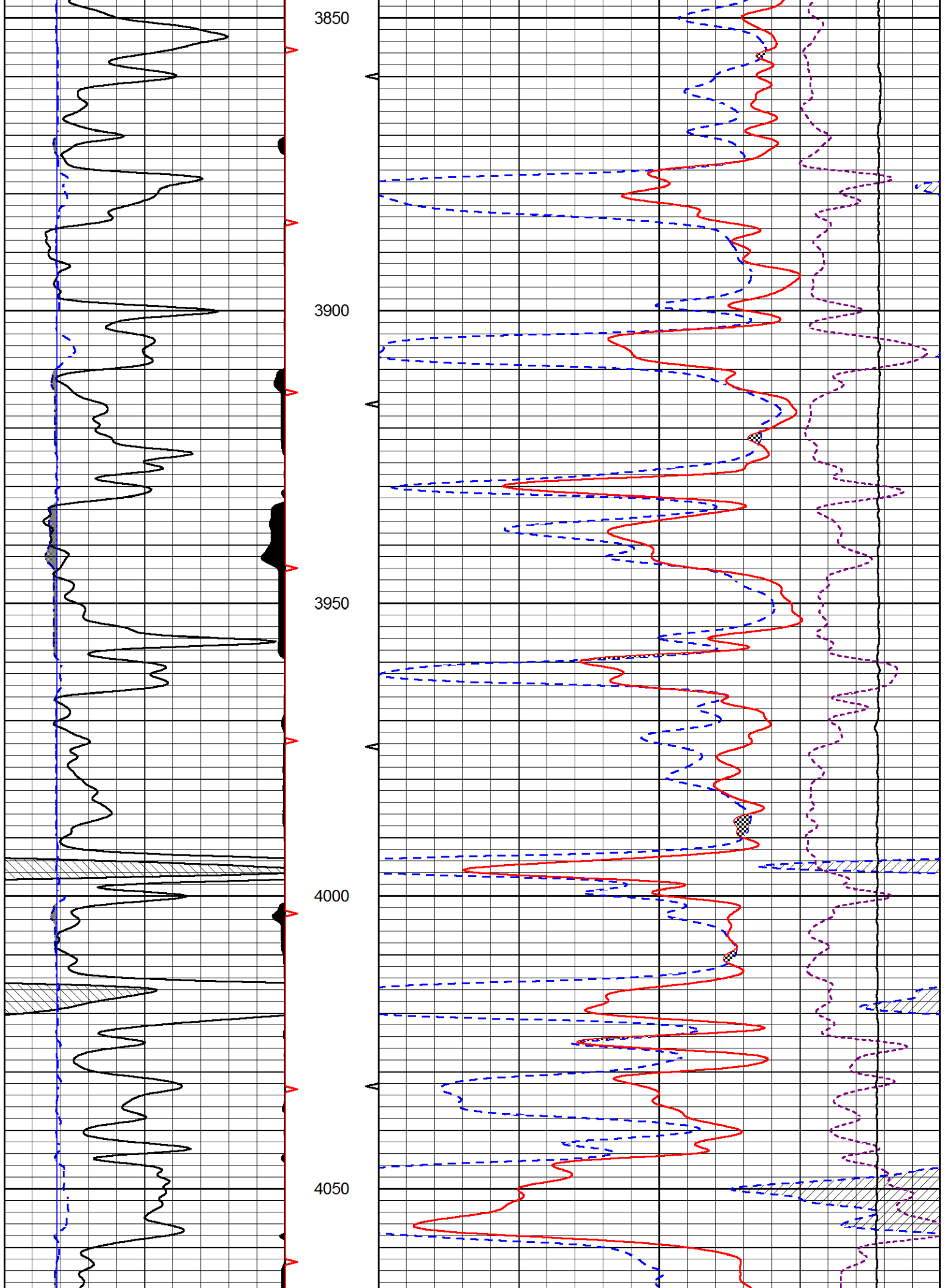


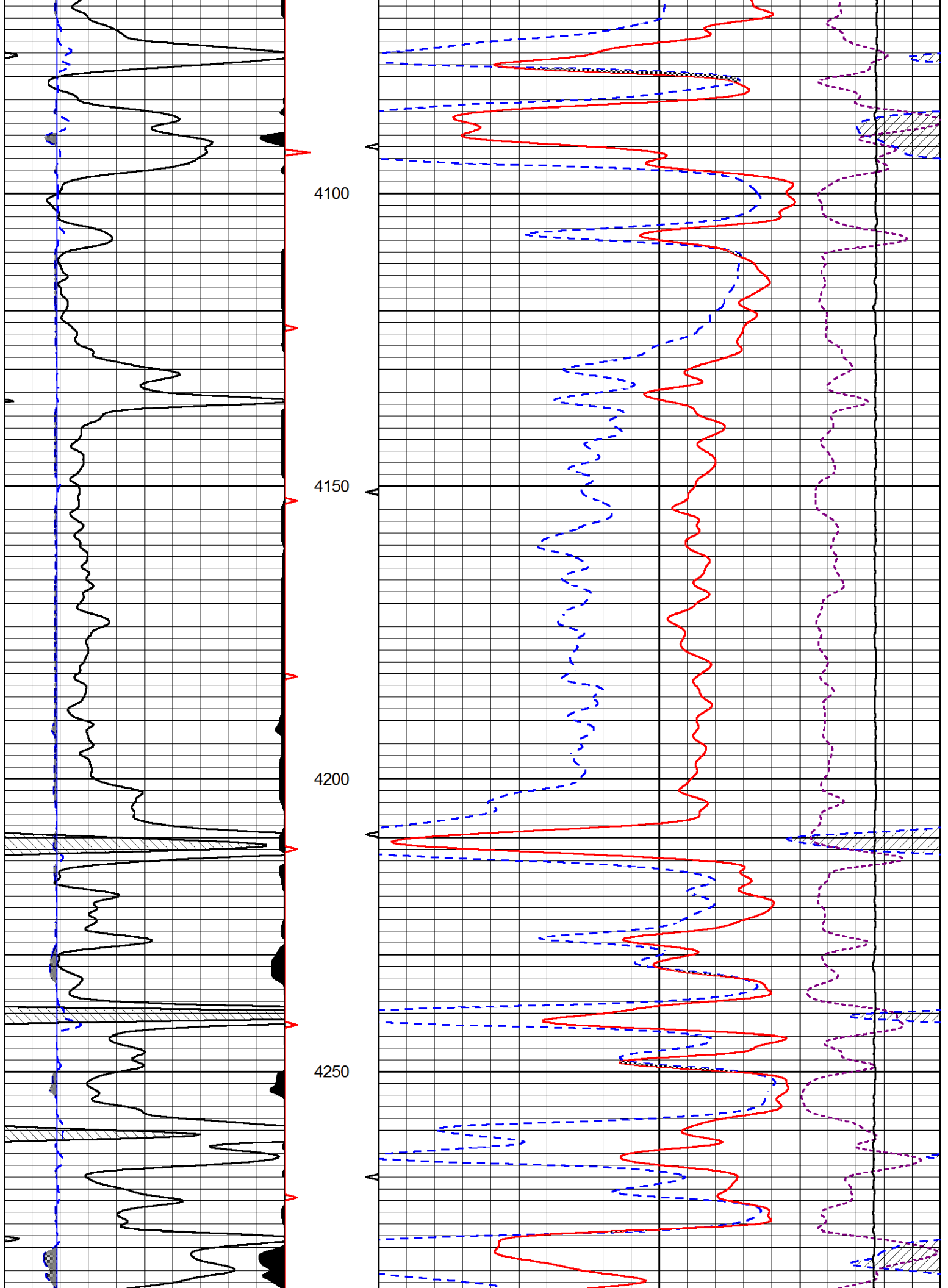


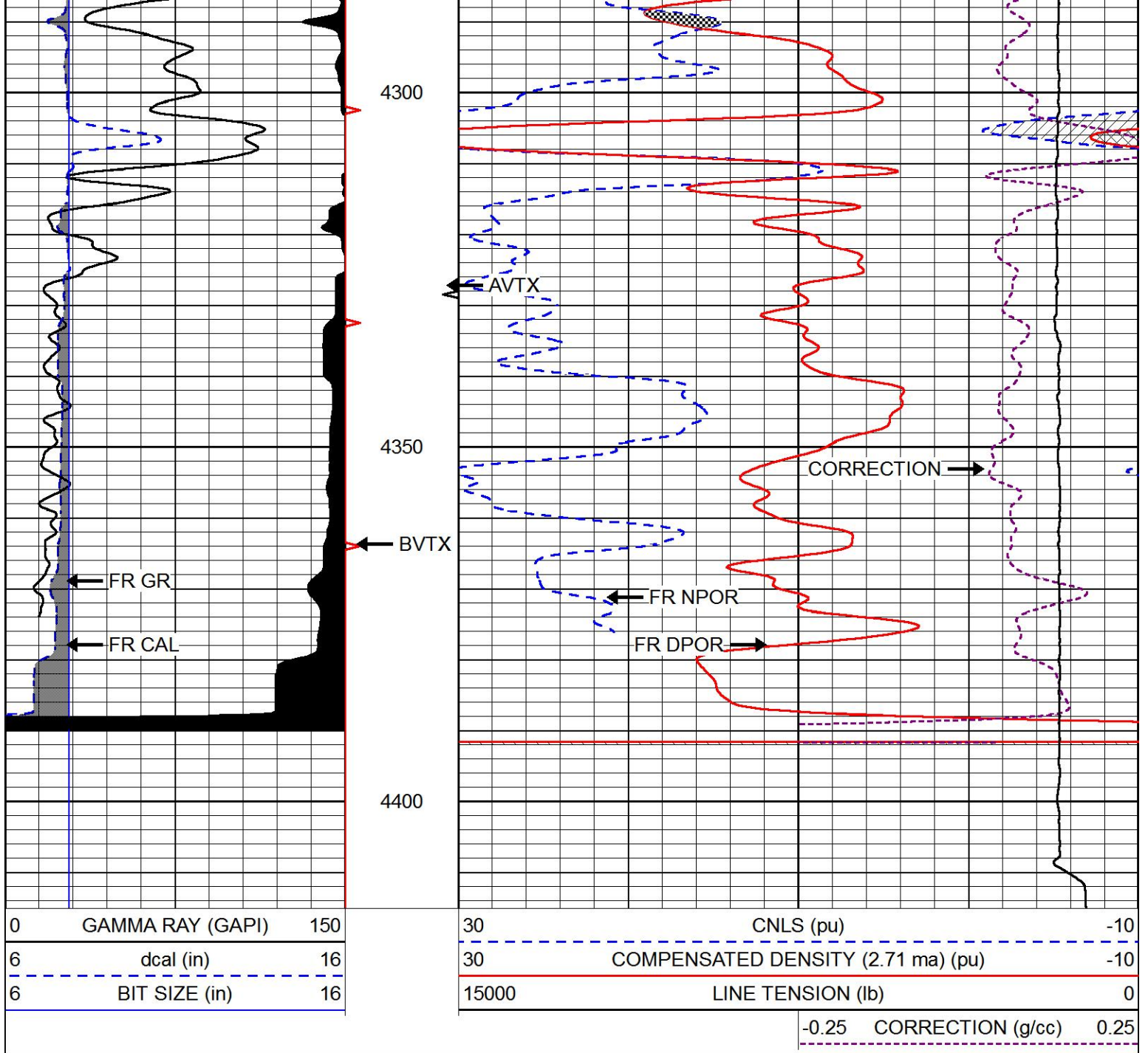








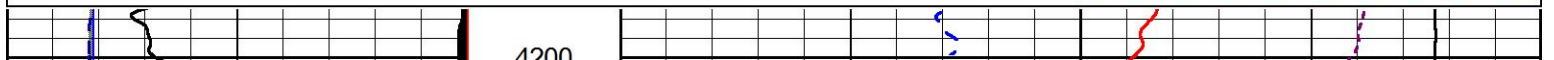


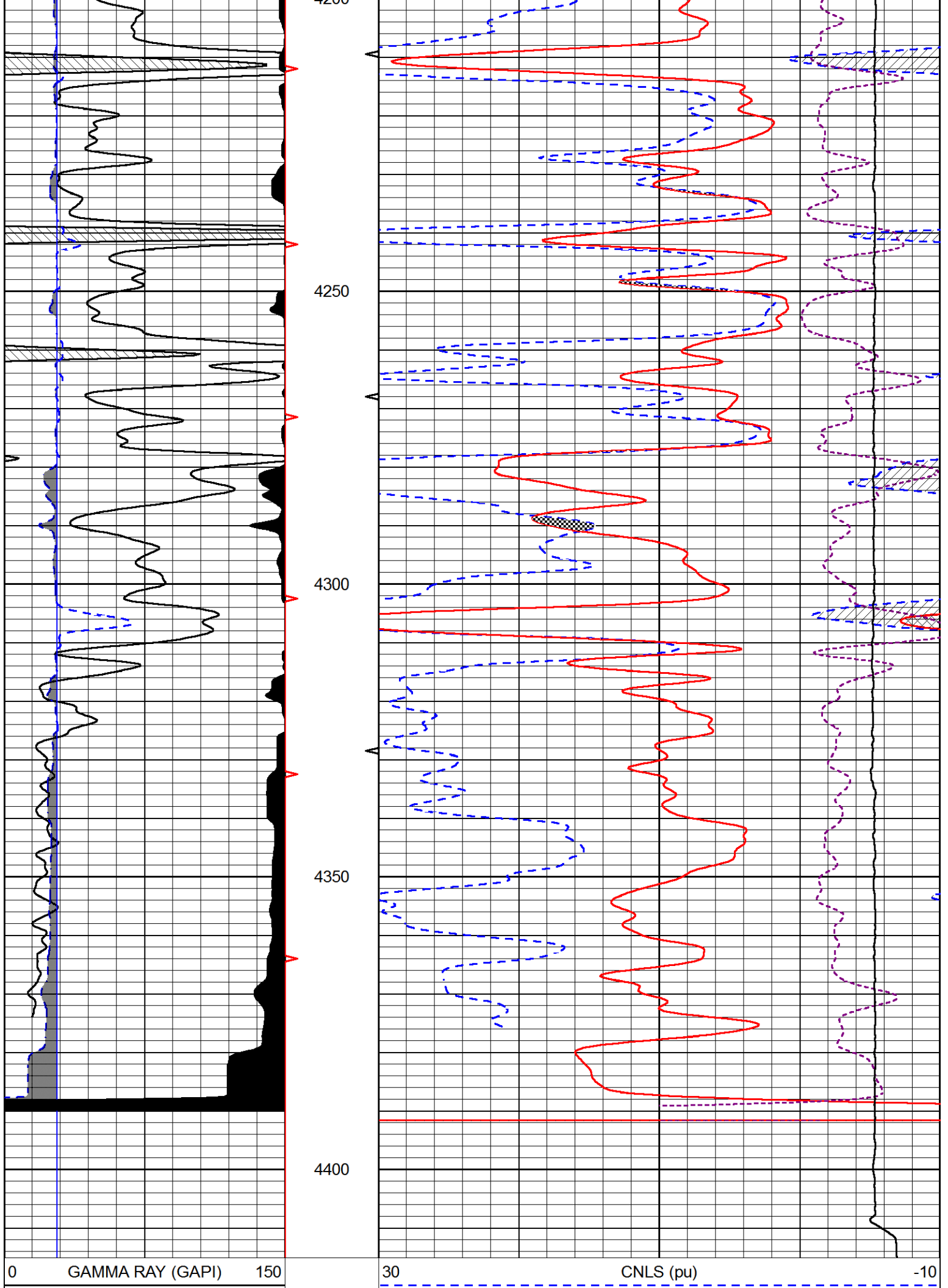


REPEAT SECTION

Database File stewart_sutton_4.db
 Dataset Pathname stackml/pass2.1
 Presentation Format cndlspec
 Dataset Creation Wed Dec 13 14:58:08 2017
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	30	CNLS (pu)	-10	
6	dcal (in)	16	30	COMPENSATED DENSITY (2.71 ma) (pu)	-10	
6	BIT SIZE (in)	16	15000	LINE TENSION (lb)	0	
				-0.25	CORRECTION (g/cc)	0.25





6	dcal (in)	16
6	BIT SIZE (in)	16

30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25

Calibration Report

Database File stewart_sutton_4.db
Dataset Pathname stackml/pass3.1
Dataset Creation Wed Dec 13 14:57:33 2017

Dual Induction Calibration Report

Serial-Model: PSI 978-M&W
Calibration Performed: Wed Dec 13 12:45:09 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.560	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.420	-35.000

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML
Performed: Fri Jun 23 01:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	12000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	13000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.5000

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
Source / Verifier: /
Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.690	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.531		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		


Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Nov 16 11:21:36 2016

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-M&W		
Tool Model:	M&W		
Calibration Performed:	Tue Apr 11 17:08:01 2017		
Calibrator Value:	1000.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	6.2	cps	
Sensitivity:	0.5200	GAPI/cps	

 <p>PIONEER Pioneer Energy Services</p>	Company	STEWART PRODUCERS, INC.
	Well	SUTTON NO. 4
	Field	UNNAMED
	County	NESS
	State	KANSAS