



DUAL COMP POROSITY LOG

Pioneer Energy Services

Company **ROCK CREEK CRUDE, LLC**
 Well **BAUMAN #3**
 Field **STRAHM**
 County **NEMAHA** State **KANSAS**

Location: API #: 15-131-20245-00-00

3170' FSL & 4750' FEL

SEC 27 TWP 2S RGE 14E

Permanent Datum **GROUND LEVEL** Elevation **1313'**
 Log Measured From **KELLY BUSHING**
 Drilling Measured From **KELLY BUSHING**

Other Services
**DILMEL
 BHCS**

Elevation
 K.B. 1319'
 D.F. N/A
 G.L. 1313'

Date **4/5/2018**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **2962'**

Depth Logger **2962'**

Bottom Logged Interval **2933'**

Top Logged Interval **2300'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **N/A**

Density **9.1**

Level **FULL**

Max. Rec. Temp. F **106**

Operating Rig Time **4 HOURS**

Equipment -- Location **91 HAYS**

Recorded By **D. SCHMIDT**

Witnessed By **DOUG DAVIS**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	248'	8.625"	23#	0'	248'
TWO	7.875"	248'					

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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.

**SABETHA,
 SOUTH TO HWY 36, 6 WEST, 1/2 NORTH,
 EAST INTO**

Log Measured From: KELLY BUSHING 6 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

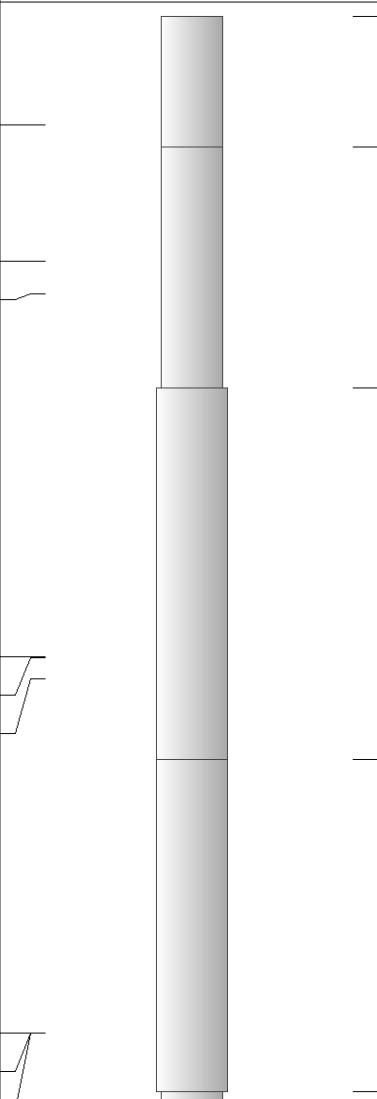
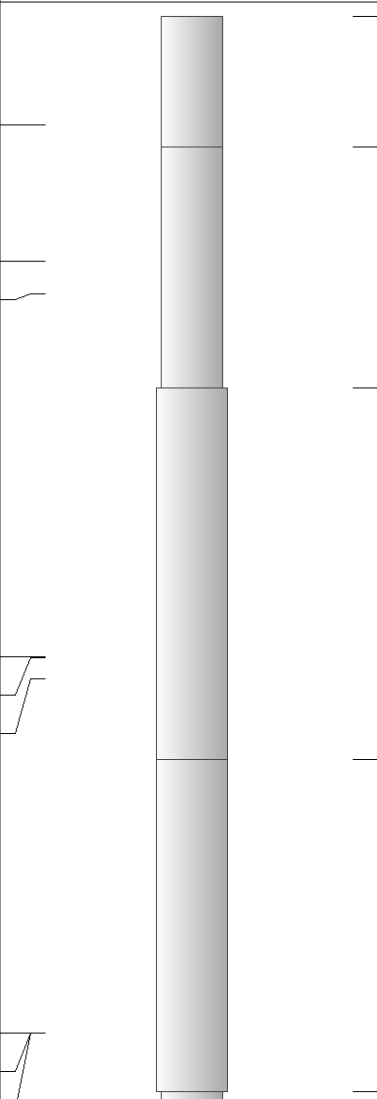
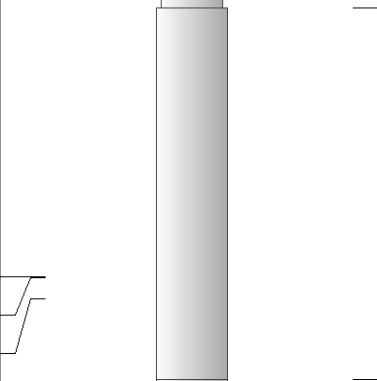
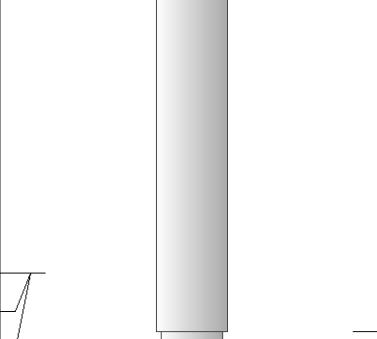
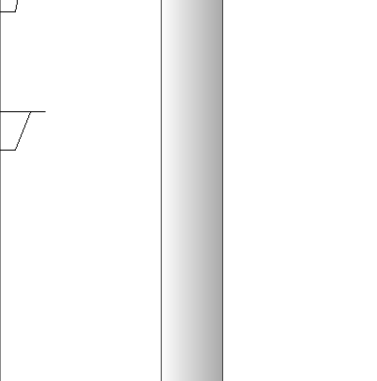
Engineer: **D. SCHMIDT**
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: **DOUG DAVIS**
 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	-30	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	30	0	5.5	0	3962	106	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 (182-152)	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					

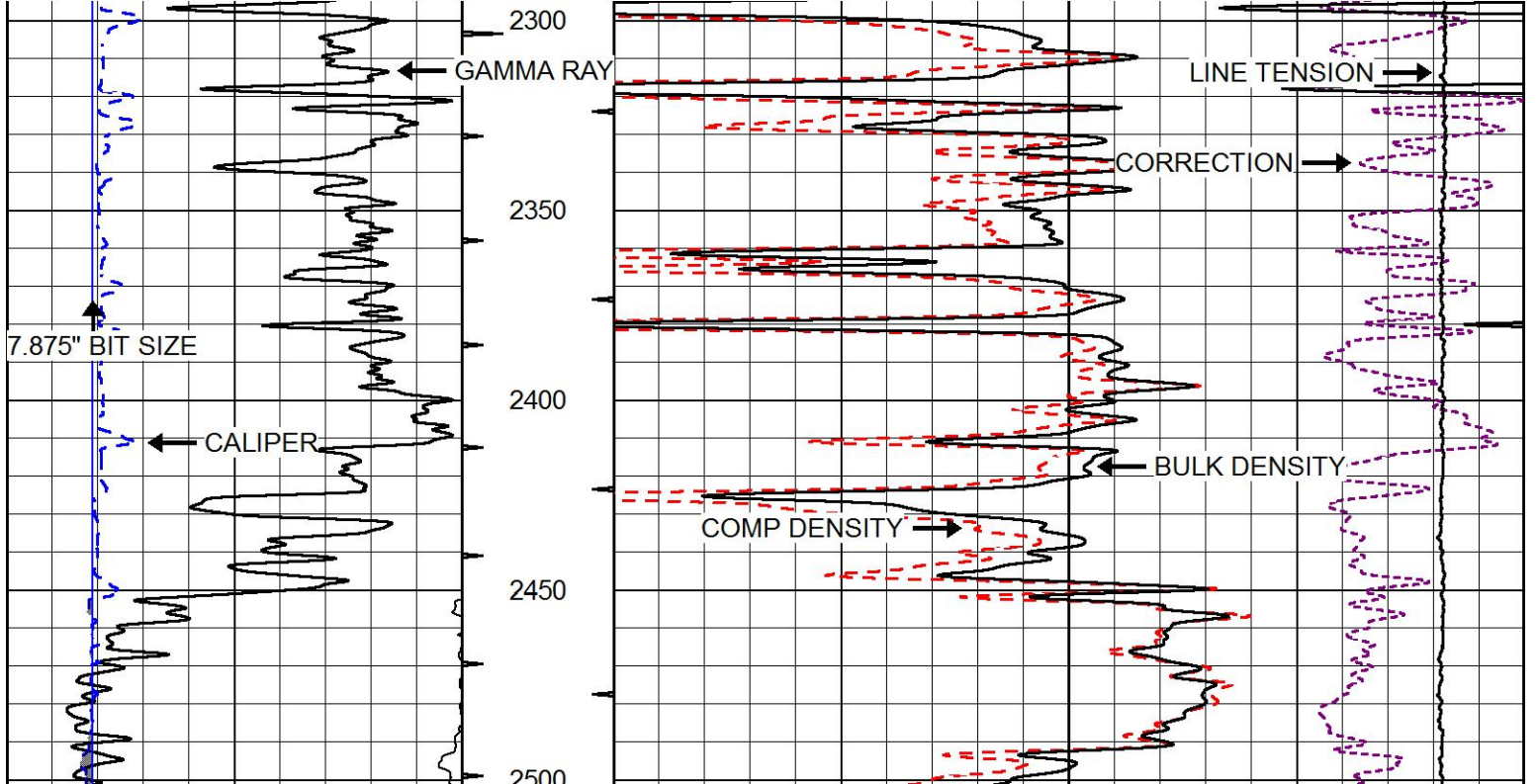
CILD	8.00		DIL-PSI HIGH TEMP (933 (HT))	18.50	3.50	220.00
CILM	4.70					
SP	0.20					
Dataset: rock creek_bauaman 3.db: field/well/STKML/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

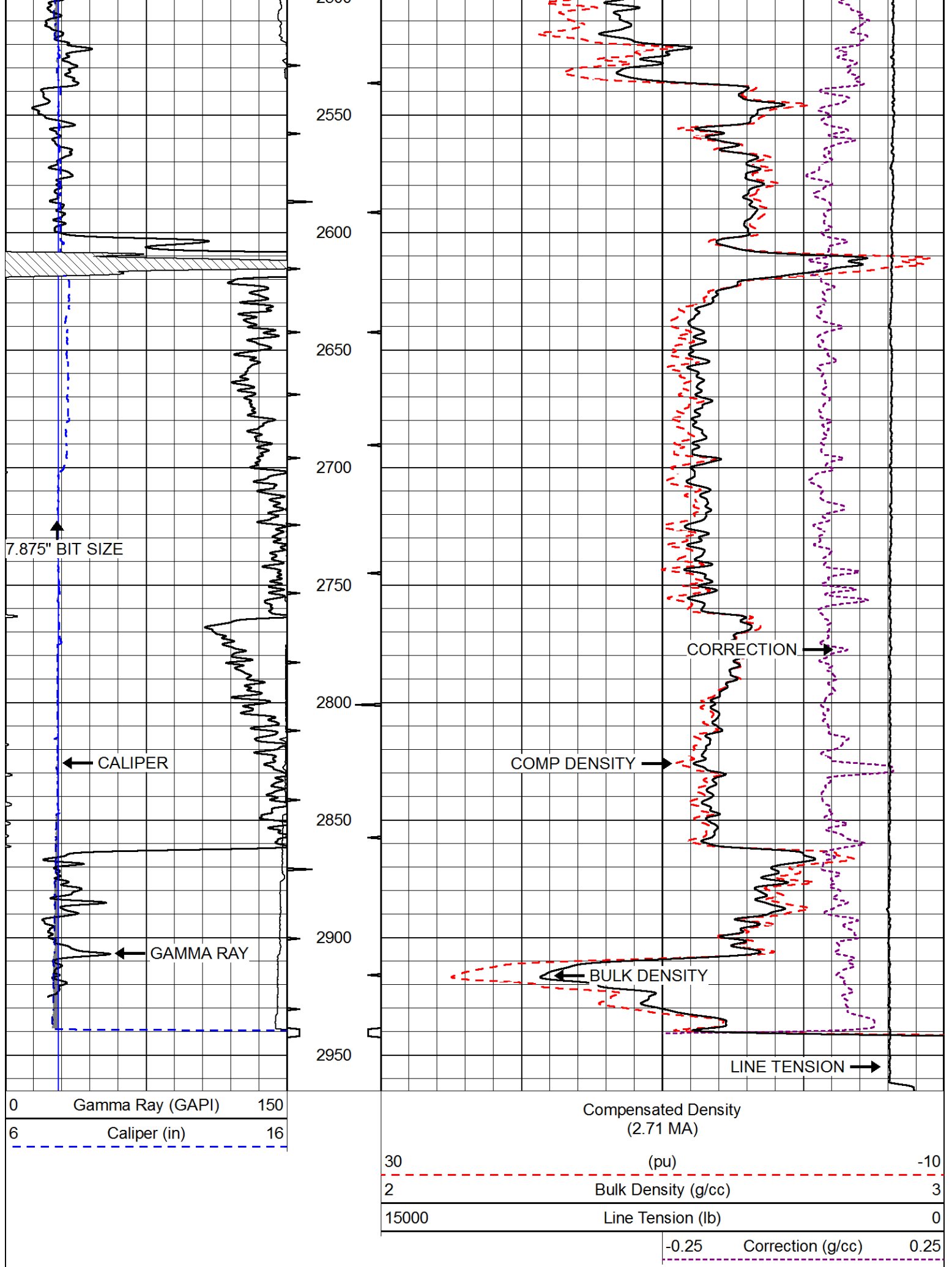


MAIN PASS

Database File	rock creek_bauaman 3.db
Dataset Pathname	STKML/pass3.1
Presentation Format	cdl
Dataset Creation	Thu Apr 05 08:28:52 2018
Charted by	Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
Compensated Density (2.71 MA)		
30	(pu)	-10
<hr style="border: none; border-top: 1px dashed red;"/>		
2	Bulk Density (g/cc)	3
<hr style="border: none; border-top: 1px solid black;"/>		
15000	Line Tension (lb)	0
<hr style="border: none; border-top: 1px solid black;"/>		
	-0.25	Correction (g/cc)
		0.25
<hr style="border: none; border-top: 1px dashed purple;"/>		



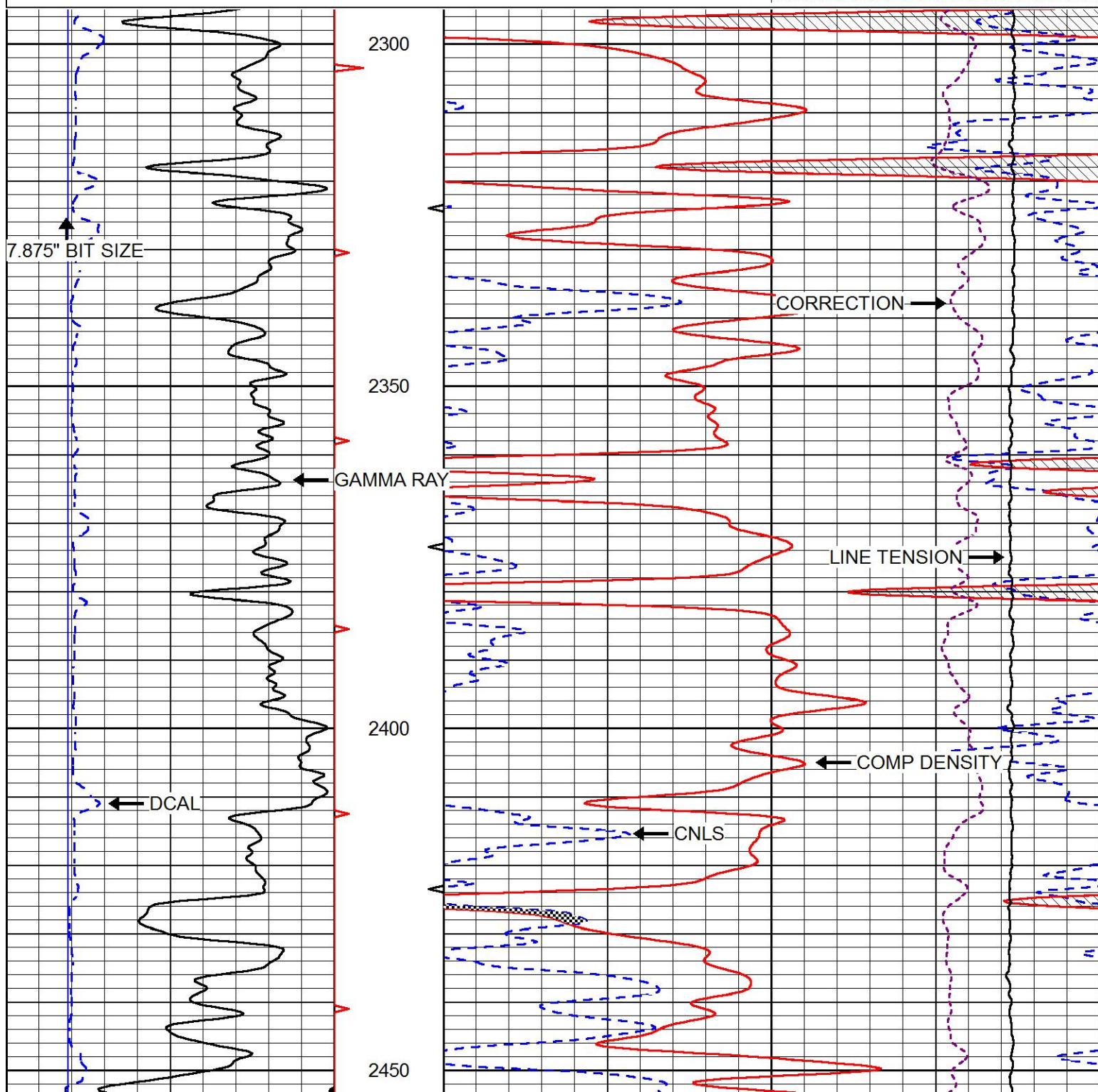


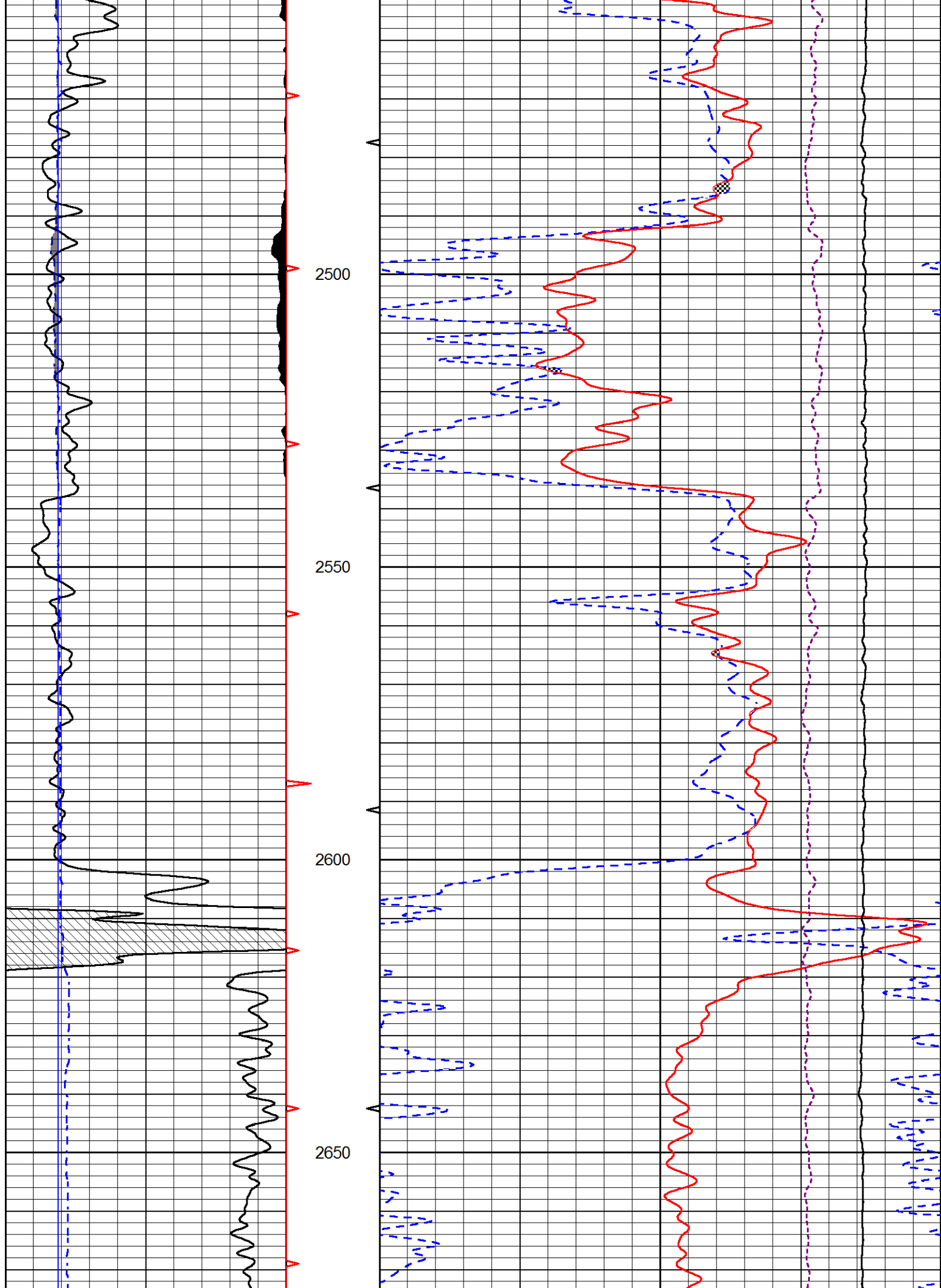
MAIN PASS

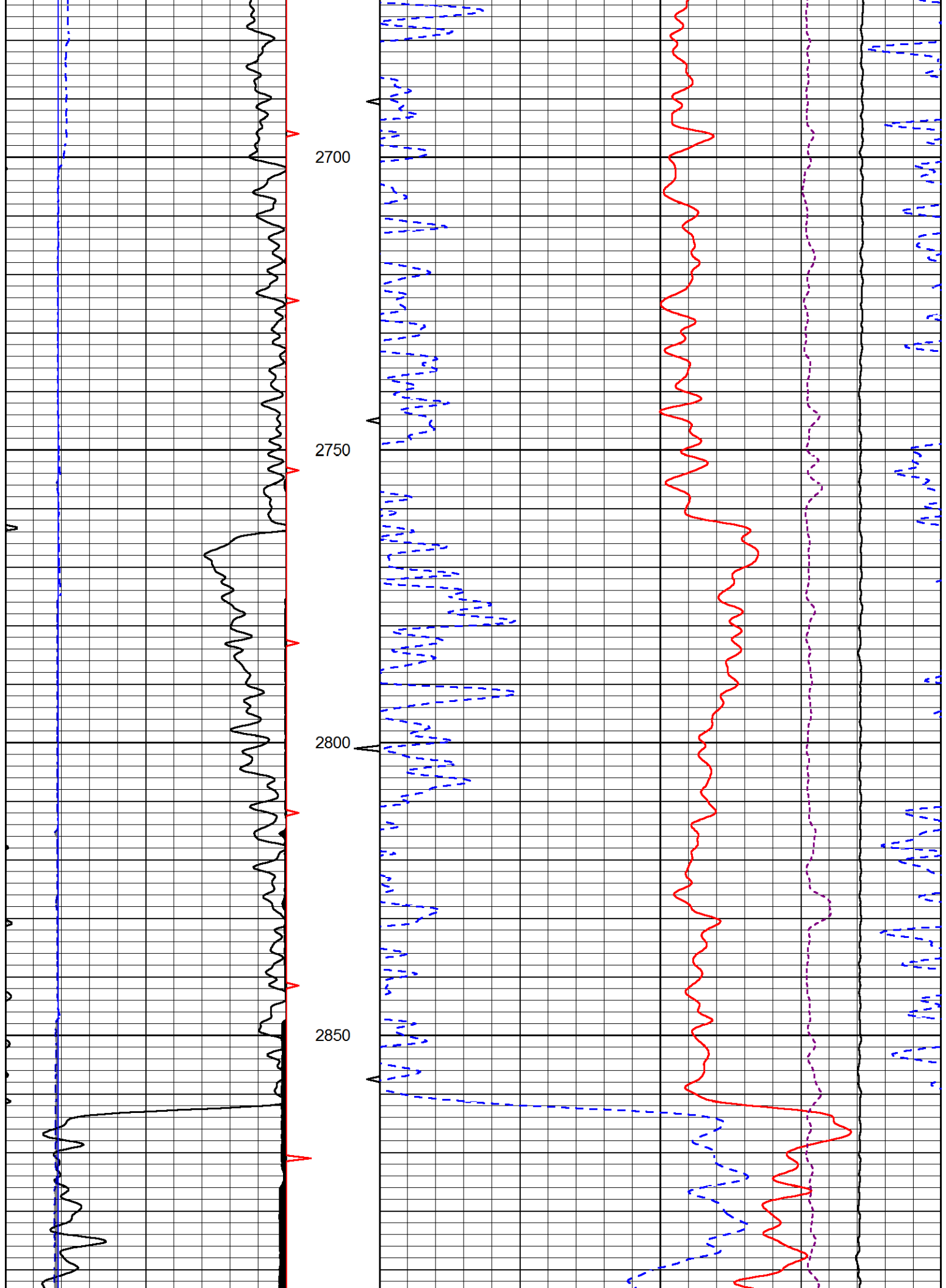
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 Dataset Pathname STKML/pass3.1
 Presentation Format cndlspec
 Dataset Creation Thu Apr 05 08:28:52 2018
 Charted by Depth in Feet scaled 1:240

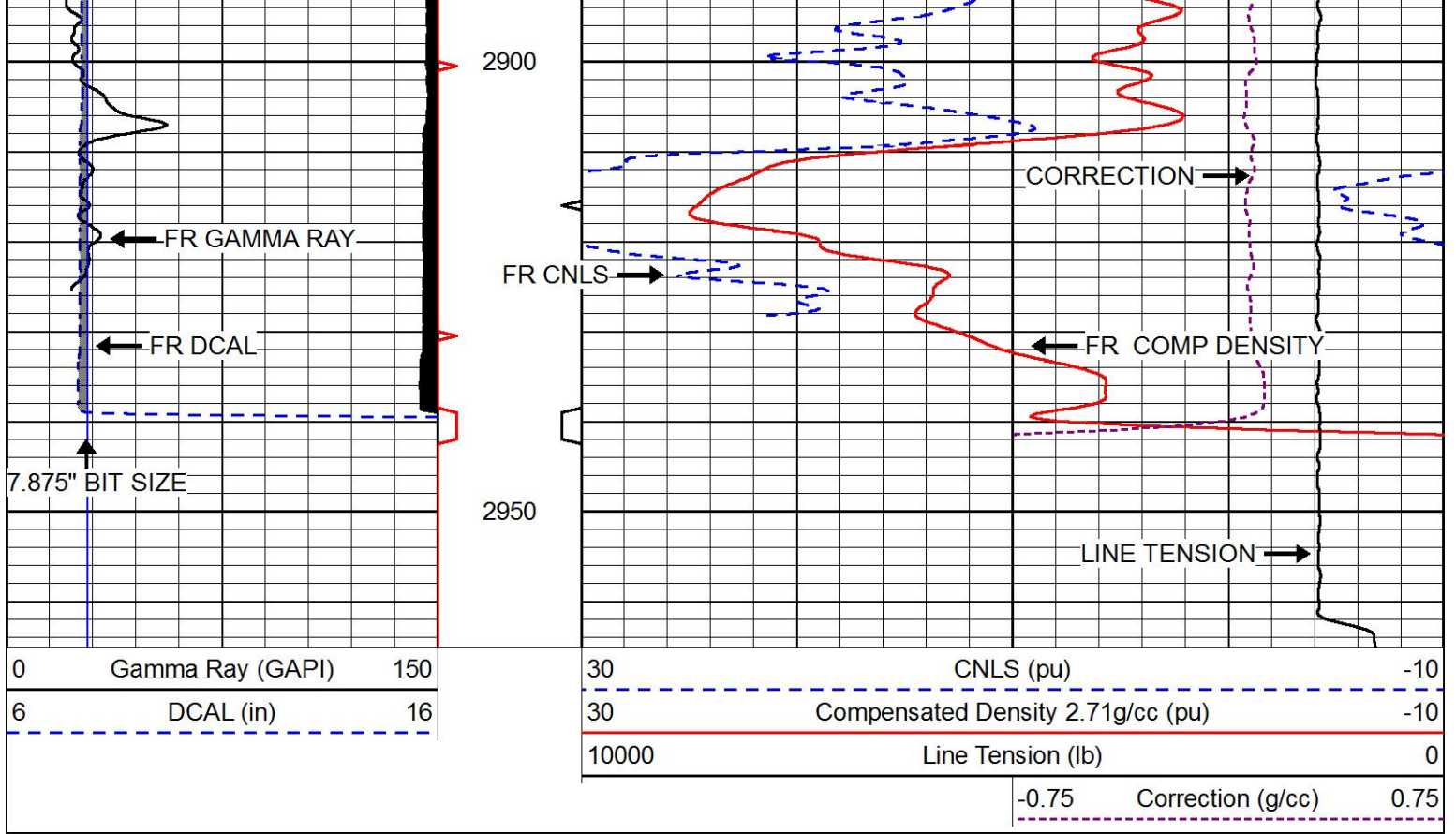
0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

30	CNLS (pu)	-10
30	Compensated Density 2.71g/cc (pu)	-10
10000	Line Tension (lb)	0
-0.75	Correction (g/cc)	0.75





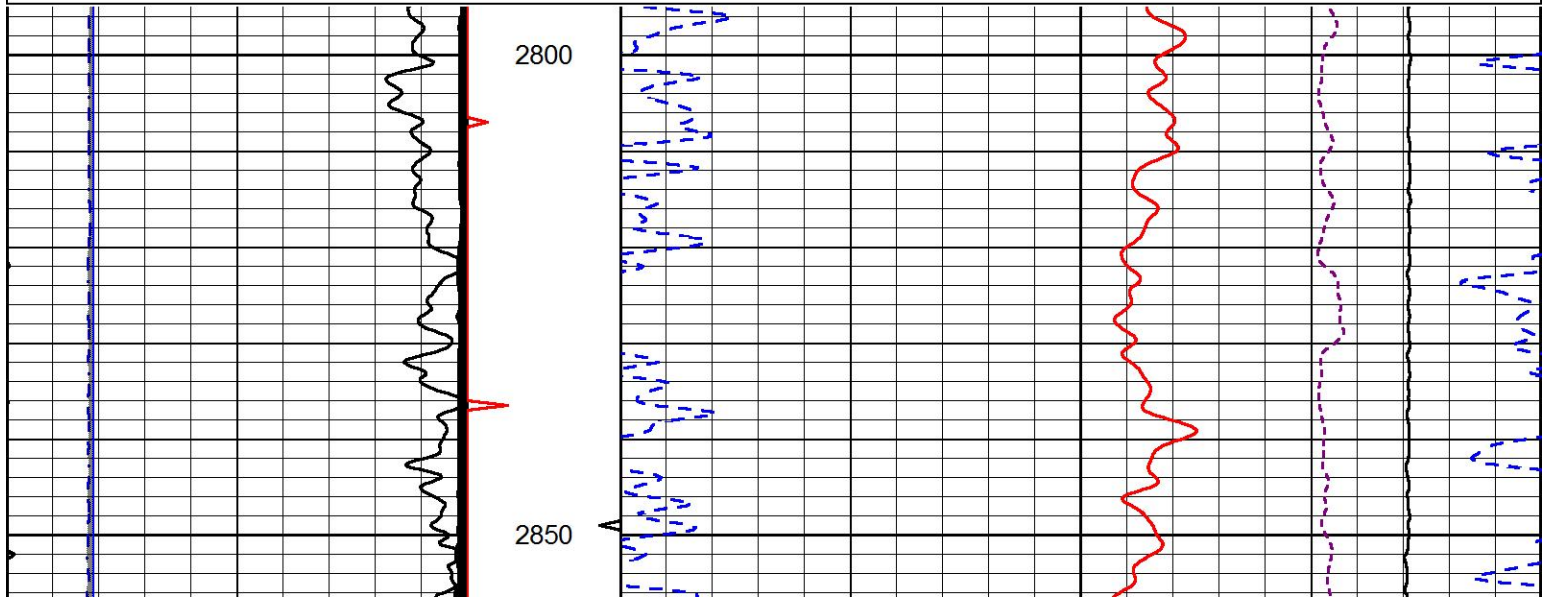


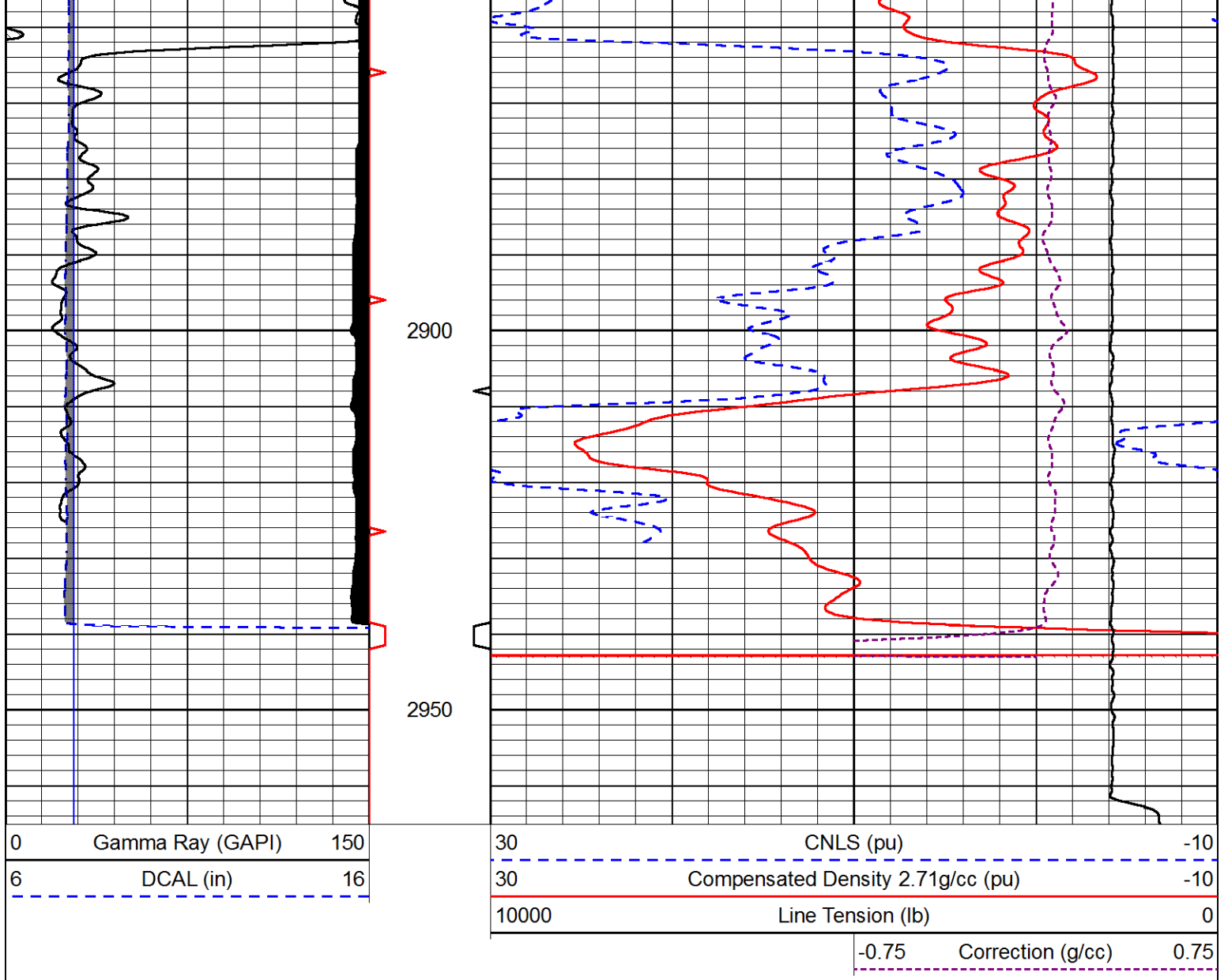


REPEAT SECTION

Database File rock_creek_bauaman 3.db
 Dataset Pathname STKML/pass2.1
 Presentation Format cndlspec
 Dataset Creation Thu Apr 05 08:32:25 2018
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	Compensated Density 2.71g/cc (pu)	-10
			10000	Line Tension (lb)	0
			-0.75	Correction (g/cc)	0.75





Calibration Report

Database File rock creek_bauaman 3.db
 Dataset Pathname STKML/pass3.1
 Dataset Creation Thu Apr 05 08:28:52 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Feb 18 17:32:17 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.700	-18.350
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.565	-63.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sun Mar 18 23:48:42 2018

Readings References Results

	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18500.0000	-1.9000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	19500.0000	-1.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model: 182-152-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Wed Mar 28 03:05:33 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4992.81	6098.44	cps
Aluminum	2.670	g/cc	945.67	3945.60	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.532		
	Size		Reading		
Small Ring	4.50	in	1.09		
Large Ring	15.00	in	1.03		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: FRI MAR 9 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: Mon Jan 15 11:20:44 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company: ROCK CREEK CRUDE, LLC
Well: BAUMAN #3
Field: STRAHM
County: NEMAHA
State: KANSAS