



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company	COBALT ENERGY, LLC
Well	JE UNIT A #1-5
Field	WILDCAT
County	GOVE
State	KANSAS
Location:	API #: 15-063-22345-00-00
Permanent Datum	SEC 5 TWP 14S RGE 27W
Log Measured From	2386' FNL & 86' FWL
Drilling Measured From	GROUND LEVEL Elevation 2564'
	KELLY BUSHING
	KELLY BUSHING
	Elevation
	K.B. 2569'
	D.F. N/A
	G.L. 2564'
Date	2/26/2019
Run Number	ONE
Depth Driller	4355'
Depth Logger	4348'
Bottom Logged Interval	4347'
Top Log Interval	3500'
Casing Driller	8.625" @ 247'
Casing Logger	248'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	4000
Density / Viscosity	9.3 60
pH / Fluid Loss	10.0 7.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.25 @ 65
Rmt @ Meas. Temp	0.94 @ 65
Rmc @ Meas. Temp	1.69 @ 65
Source of Rmt / Rmc	CHARTS
Rm @ BHT	0.68 @ 4355
Operating Rig Time	4 HOURS
Max Rec. Temp. F	120
Equipment Number	P-24
Location	HAYS
Recorded By	IAN MABB
Witnessed By	ROBERT HENDRIX

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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.

QUINTER, KS.
SOUTH TO RD K, WEST TO GO RD 60,
NORTH INTO 1 1/2 MILES

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: IAN MABB
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: ROBERT HENDRIX
Secondary Witness:
Secondary Witness:
Secondary Witness:

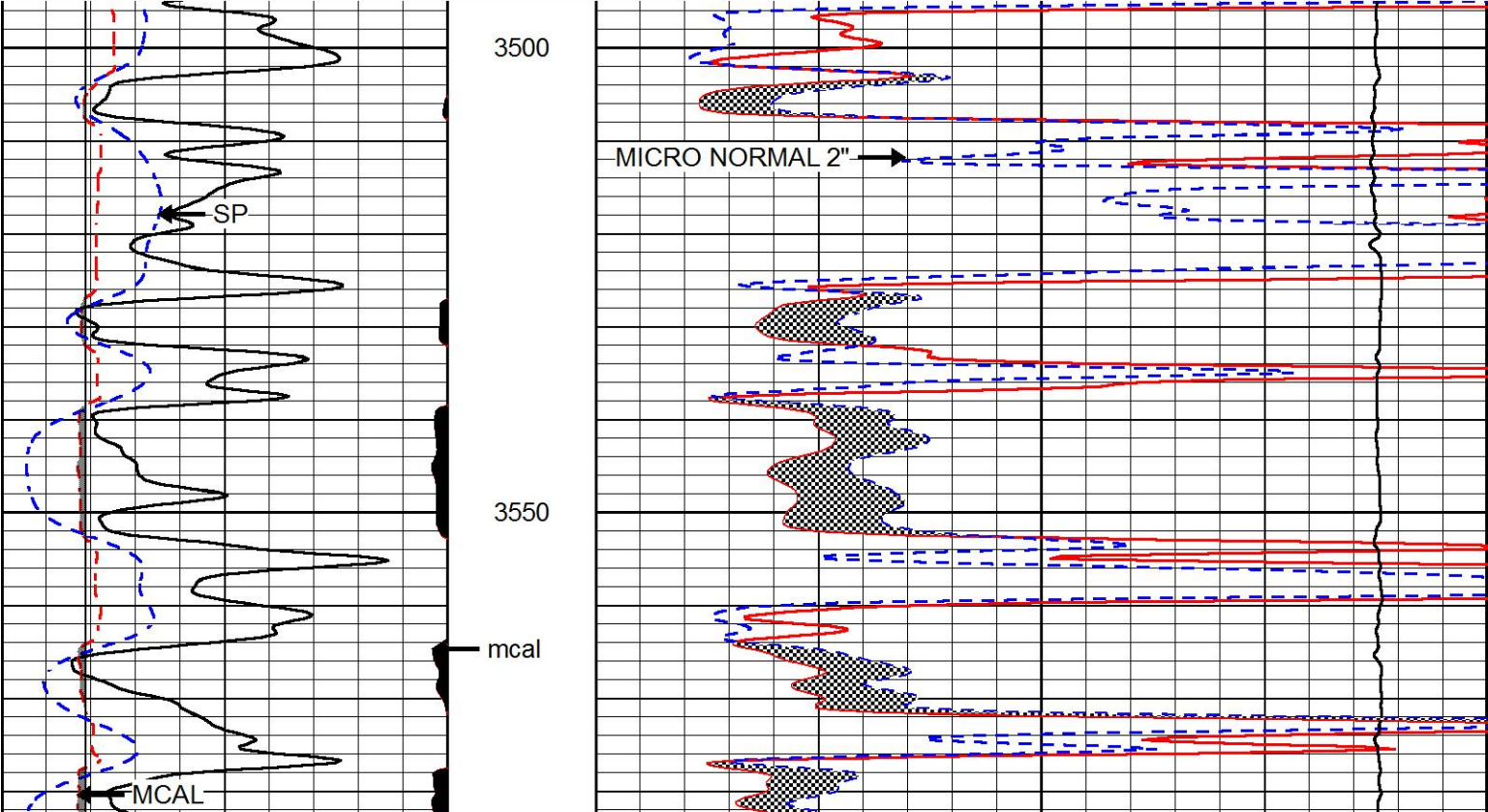
Top - Bottom

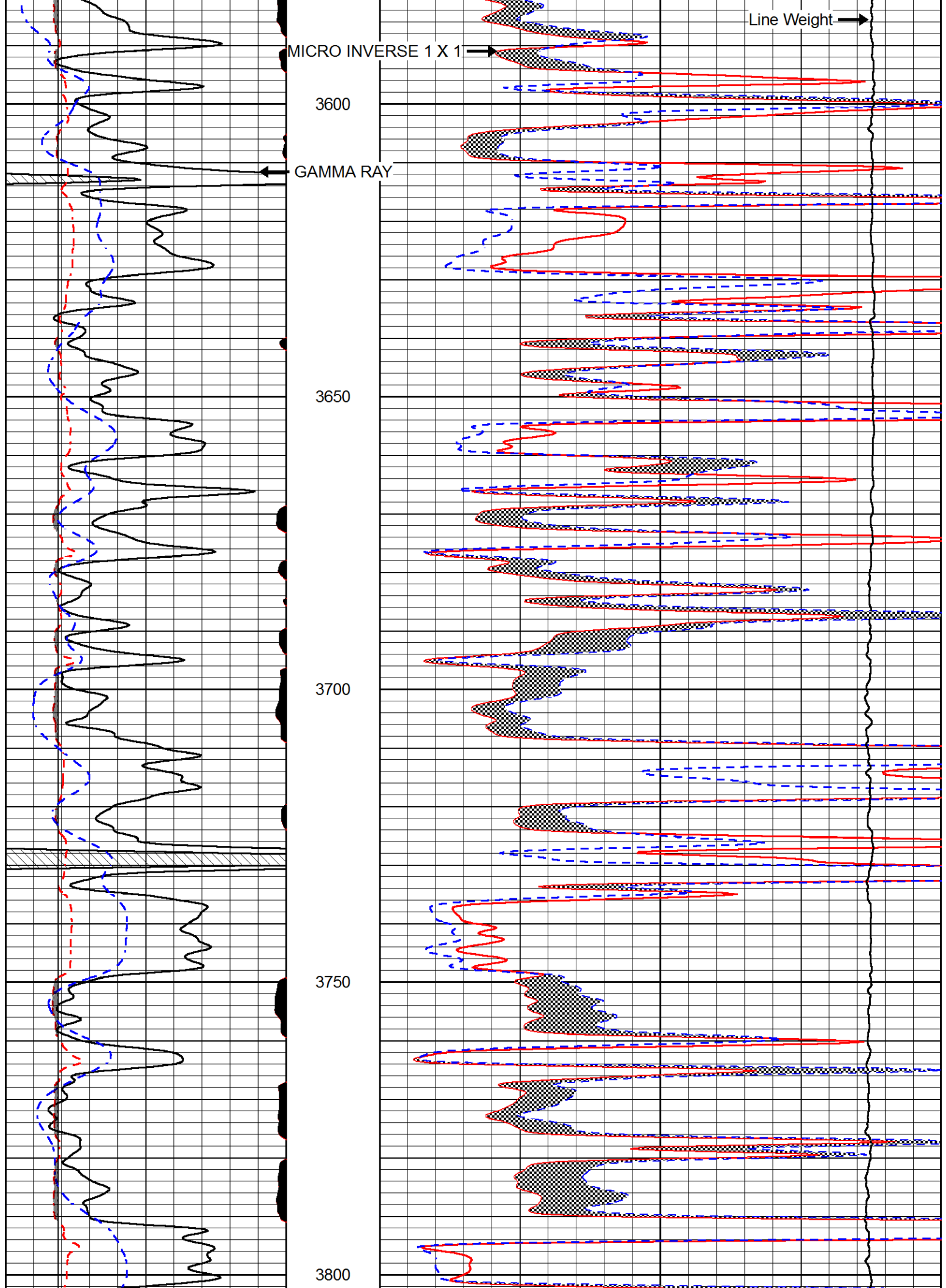
A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 120	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV 153	degF 0	Off	ft 4348

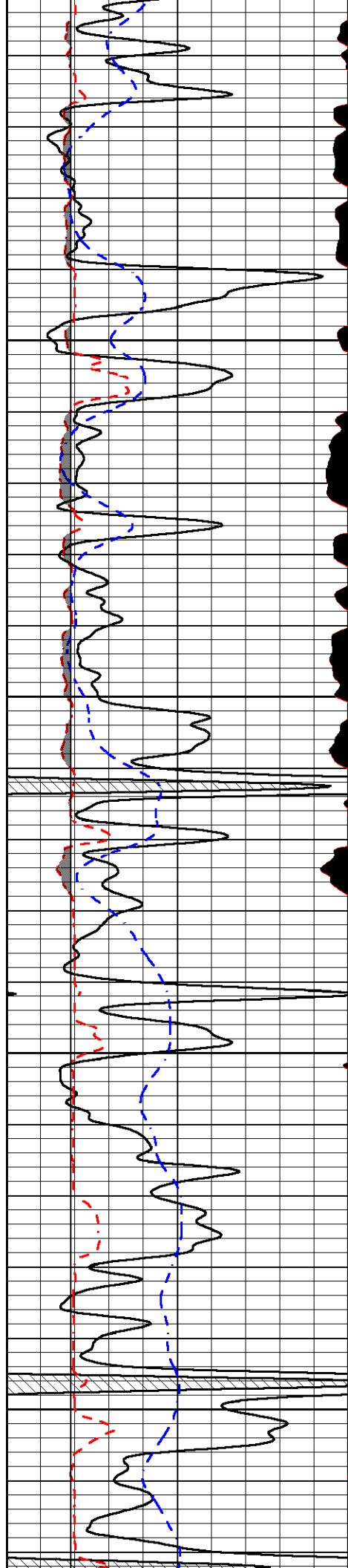
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (126-186)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

				DIL-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00
CILD	8.00						
CILM	4.70						
SP	0.20						
Dataset: cobal_je_unit_a_1_5.db: field/well/stackmel/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in							

		MAIN PASS	
Database File	cobal_je_unit_a_1_5.db		
Dataset Pathname	stackmel/pass3.1		
Presentation Format	micro		
Dataset Creation	Tue Feb 26 15:10:29 2019		
Charted by	Depth in Feet scaled 1:240		
0	GAMMA RAY (GAPI)	150	
6	MCAL (in)	16	
2.875	mcals (in)	7.875	
6	Bit Size (in)	16	
-200	SP (mV)	0	
0	MICRO INVERSE 1 X 1 (Ohm-m)	40	
0	MICRO NORMAL 2" (Ohm-m)	40	
10000	Line Weight (lb)	0	





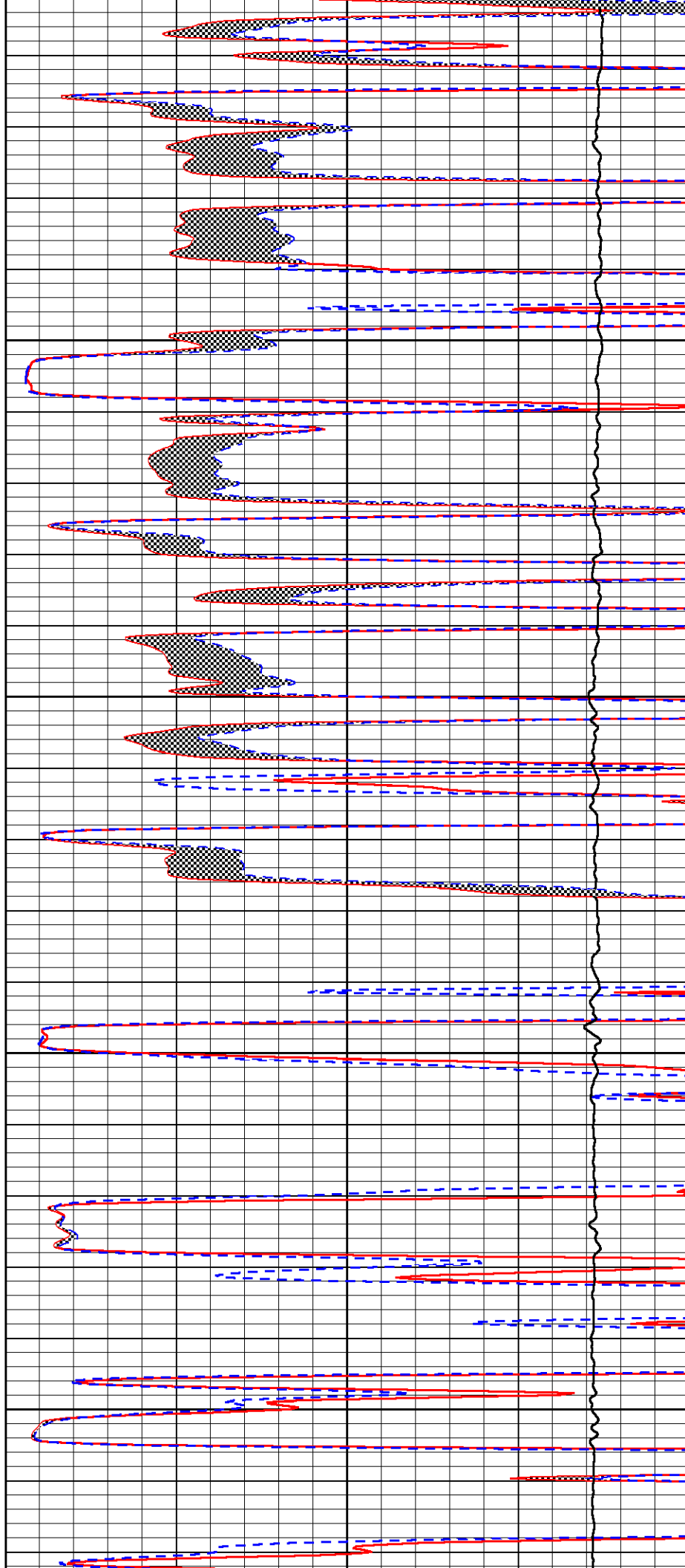


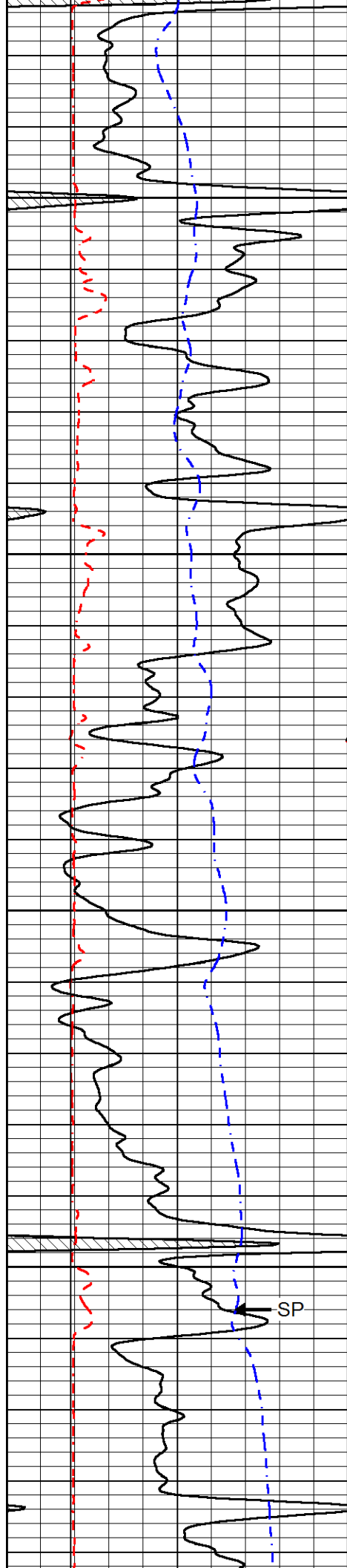
3850

3900

3950

4000



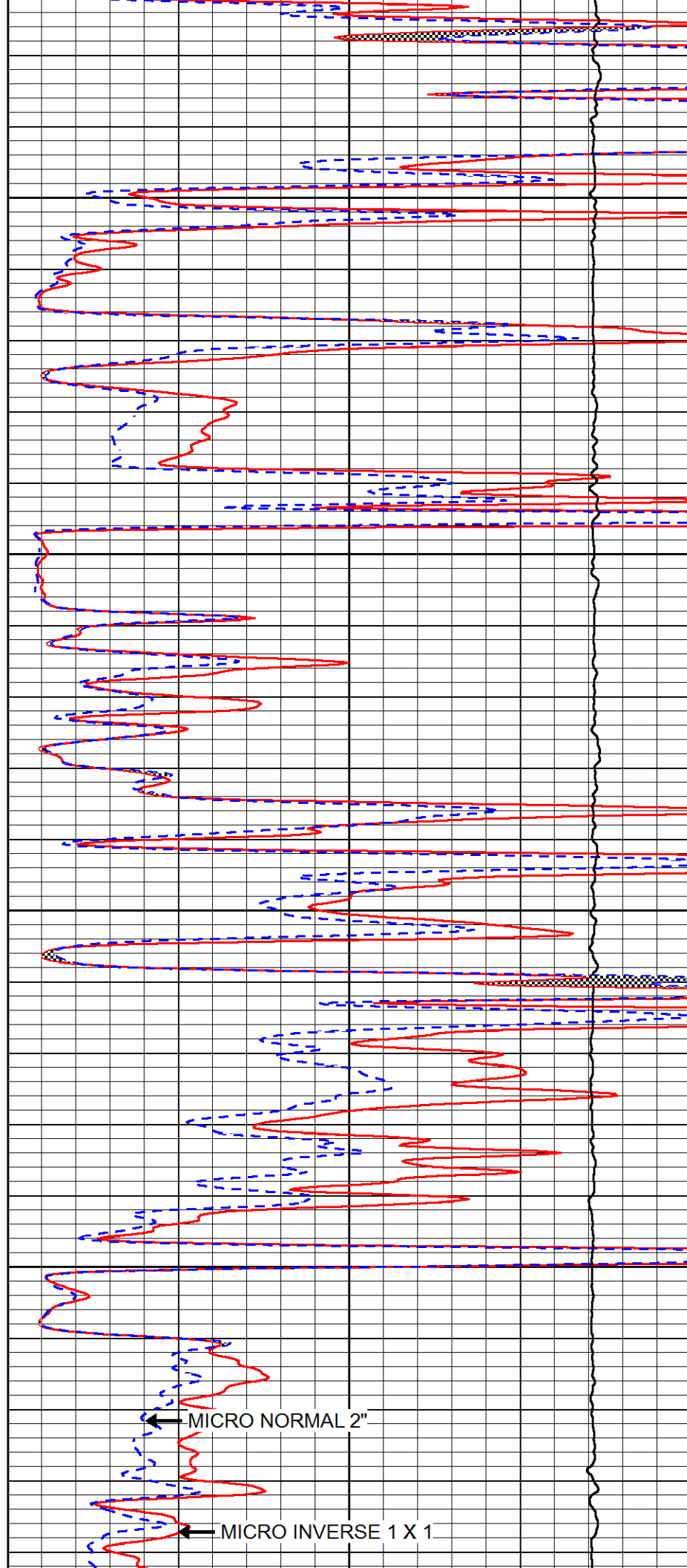


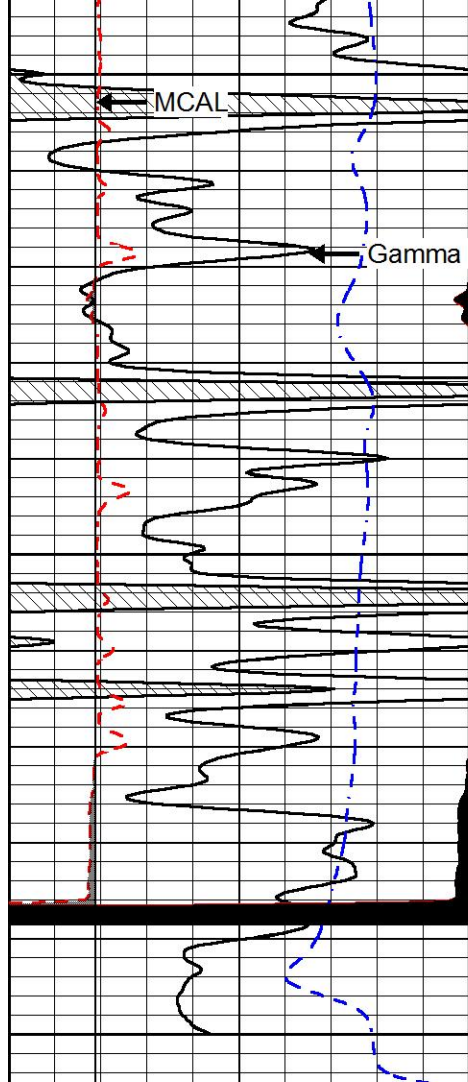
4050

4100

4150

4200



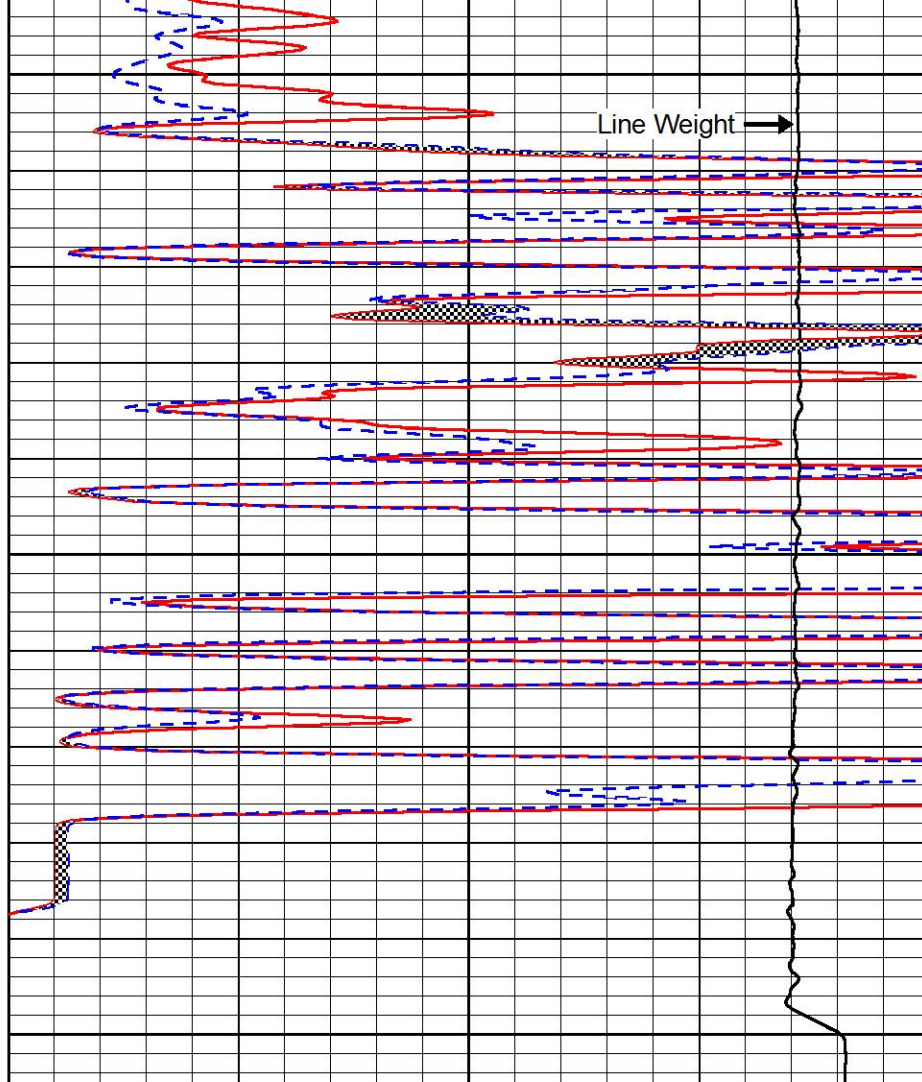


4250

4300

4350

0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0



0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0

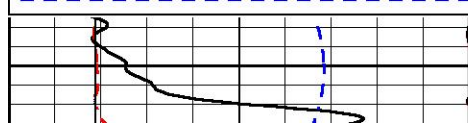


REPEAT SECTION

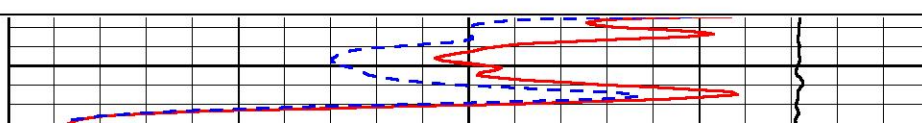
Database File cobal_je_unit_a_1_5.db
 Dataset Pathname stackmel/pass2.1
 Presentation Format micro
 Dataset Creation Tue Feb 26 14:37:57 2019
 Charted by Depth in Feet scaled 1:240

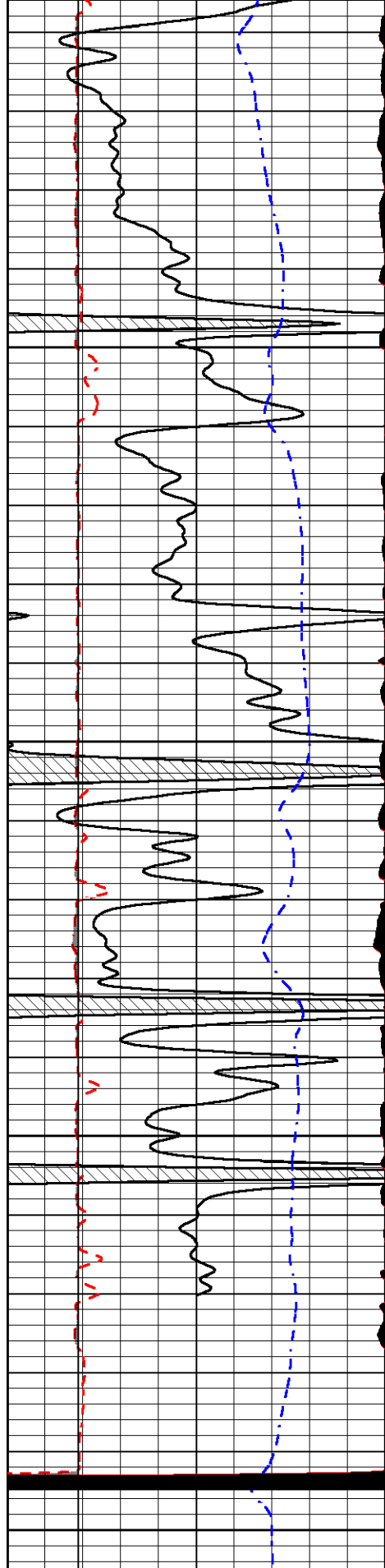
0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0



4150





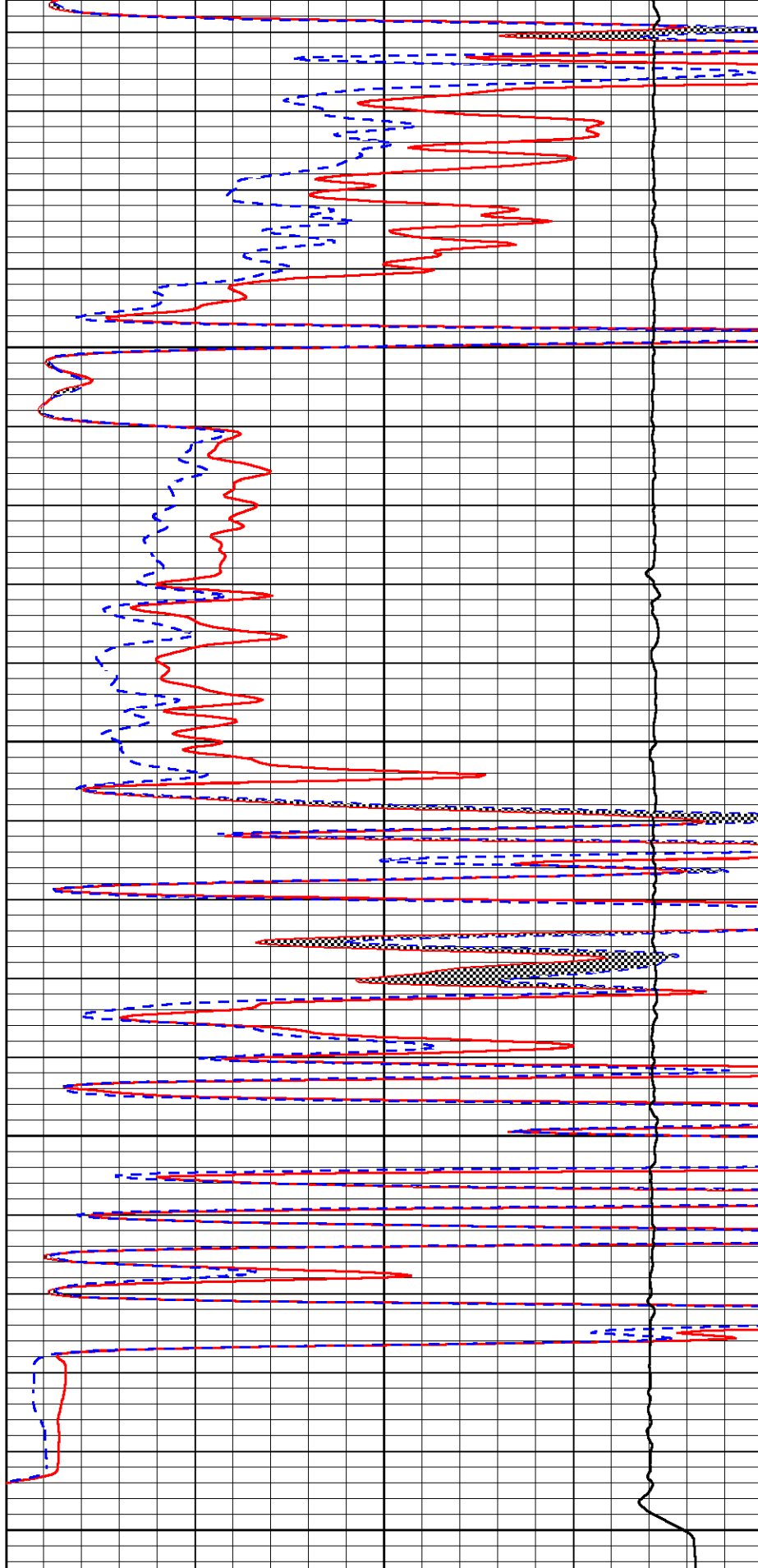
4200

4250

4300

4350

0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16



0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0

Calibration Report	
Database File	cobal_je_unit_a_1_5.db
Dataset Pathname	stackmel/pass3.1
Dataset Creation	Tue Feb 26 15:10:29 2019

Dual Induction Calibration Report

Serial-Model:	967 (HT)-PSI HIGH TEMP
Calibration Performed:	Sun Oct 07 19:24:22 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-17.500
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model:	PSI-01-PSIML
Performed:	Sun Feb 24 09:53:40 2019

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	28000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.5000

Compensated Density Calibration Report

Serial-Model:	126-186-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Tue Feb 12 14:50:39 2019

Master Calibration						
	Density			Far Detector	Near Detector	
Magnesium	1.755	g/cc		4753.97	6898.87	cps
Aluminum	2.678	g/cc		896.28	4374.48	cps
Spine Angle = 74.73			Density/Spine Ratio = 0.533			
	Size			Reading		
Small Ring	4.00	in		2.58		
Large Ring	14.00	in		1.66		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	WED FEB 13 10:30:30 2019

Detector	Readings	Target	Normalization
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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

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