PIONEER
Pioneer Energy Services

COMPENSATED DENSITY
COMPENSATED NEUTRON
GAMMA RAY

Company	WIEPKING-FULLERTON ENERGY INC.
Well	GOOD DEAL #13
Field	WILDCAT
County	LINCOLN
State	CO

Company WIEPKING-FULLERTON ENERGY INC.
Well GOOD DEAL #13
Field WILDCAT
County LINCOLN State CO

Location: API # : 05-073-06709
SHL: 810' FSL & 660' FWL SWSW
SEC 16 TWP 10S RGE 55W

Other Services
DUAL
INDUCTION

Permanent Datum	GL	Elevation 5165'	Elevation K.B. 5178' D.F. 5177' G.L. 5165'
Log Measured From	KB		
Drilling Measured From	KB		

Date	19 NOVEMBER 2015		
Run Number	1		
Depth Driller	8010'		
Depth Logger	7995'		
Bottom Logged Interval	7995'		
Top Log Interval	2000'		
Casing Driller	313'		
Casing Logger	313'		
Bit Size	7-7/8"		
Type Fluid in Hole	CHEM GEL		
Density / Viscosity	9.3 / 67		
pH / Fluid Loss	10 / 7.2		
Source of Sample	MUDPIT		
Rm @ Meas. Temp	2.2 @ 58 F		
Rmf @ Meas. Temp	1.23 @ 58 F		
Rmc @ Meas. Temp	2.75 @ 58 F		
Source of Rmf / Rmc	MEASURE / CALC		
Rm @ BHT	0.64 @ 198F		
Time Circulation Stopped	1115		
Time Logger on Bottom	1450		
Maximum Recorded Temperature	198 F		
Equipment Number	52		
Location	FT. MORGAN		
Recorded By	SHAUN STUMP		
Witnessed By	GREG SMITH		

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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

THANK YOU FOR USING PIONEER ENERGY SERVICES

MURFIN FRILLING RIG #25

SO# 2-013805

ANNULAR VOLUME CALCULATED TO 5.5" CASING

Log Variables

DatabaseC:\ProgramData\Warrior\Data\2-013805.db
Dataset field/well/run1/pass5/_vars_

Top - 3990.00 ft

SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SRFTEMP degF
Off	Limestone	1	2.71	0	0	0	0
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
0	5.5	0	0	198	8.875		

3990.00 ft - 4370.00 ft

SZCOR	**NPORSEL**	FLUIDDEN g/cc	**MATRXDEN g/cc**	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SRFTEMP degF
Off	**Sandstone**	1	**2.68**	0	0	0	0
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
0	5.5	0	0	198	8.875		

4370.00 ft - 7540.00 ft

SZCOR	**NPORSEL**	FLUIDDEN g/cc	**MATRXDEN g/cc**	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SRFTEMP degF
Off	**Limestone**	1	**2.71**	0	0	0	0
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
0	5.5	0	0	198	8.875		

7540.00 ft - 7700.00 ft

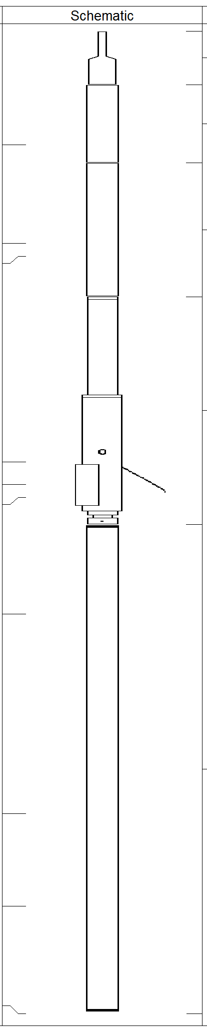
SZCOR	**NPORSEL**	FLUIDDEN g/cc	**MATRXDEN g/cc**	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SRFTEMP degF
Off	**Sandstone**	1	**2.68**	0	0	0	0
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
0	5.5	0	0	198	8.875		

7700.00 ft - Bottom

SZCOR	**NPORSEL**	FLUIDDEN g/cc	**MATRXDEN g/cc**	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SRFTEMP degF
Off	**Limestone**	1	**2.71**	0	0	0	0
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
0	5.5	0	0	198	8.875		

Sensor	Offset (ft)
GR	0.00
CNLSC	3.67
CNSSC	4.17
DCAL	11.84
LSD	12.67
SSD	13.17
RLL3	17.52
CILD	24.97
CILM	28.42
SP	32.42

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb
CHD (~0)	2.00	3.50	30.00
GR-PSI (939)	2.92	3.50	40.00
CNT-PSI (856)	5.00	3.50	70.00
CDL-PSI (934)	8.50	5.00	285.00
DIL-PSI (1011)	18.25	3.75	175.00

Dataset:	2-013805.db: field/well/run1/pass5
Total length:	36.67 ft
Total weight:	600.00 lb
O.D.:	5.00 in

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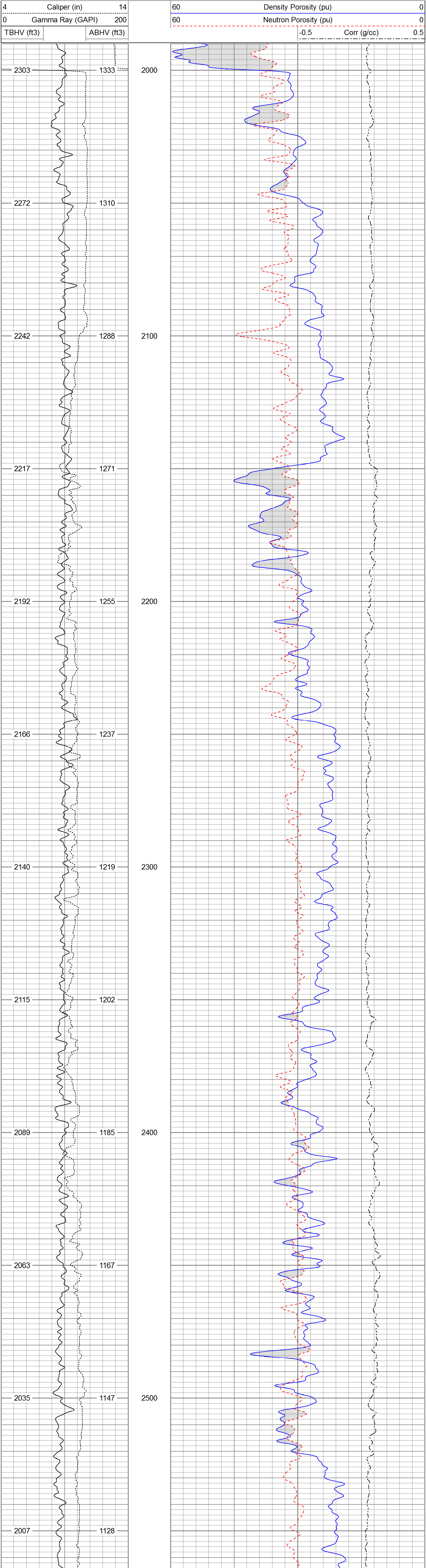
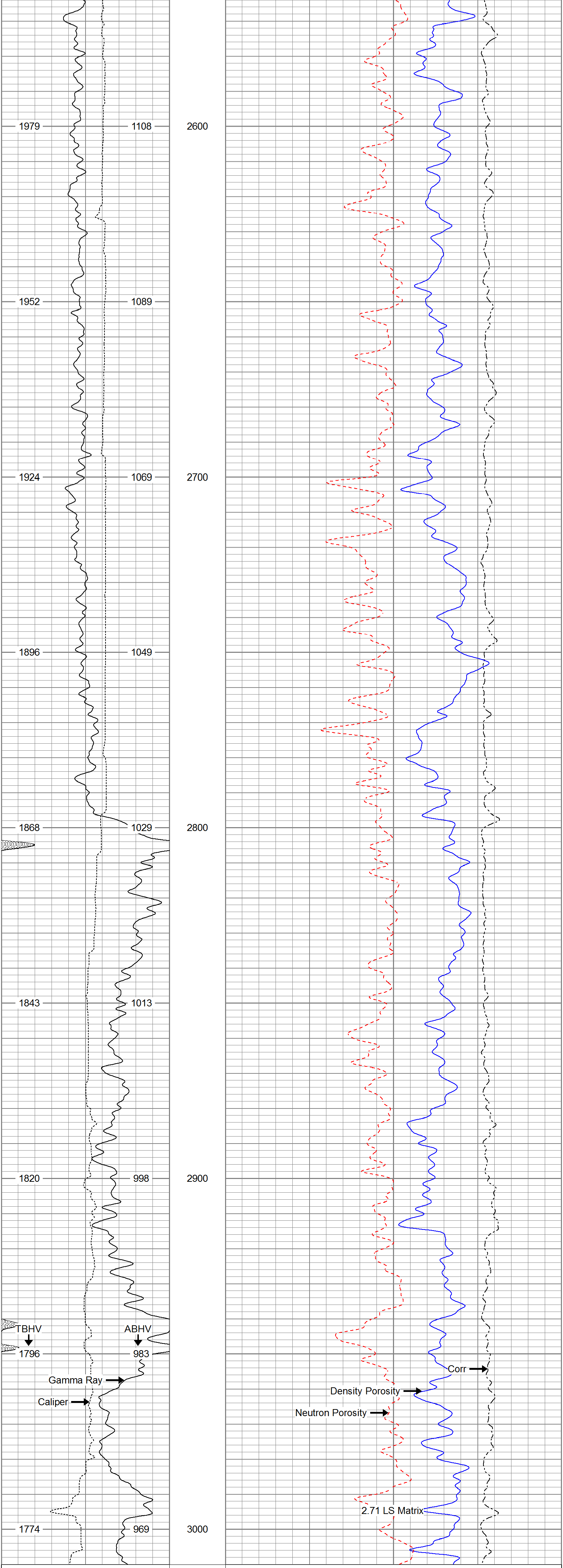
MAIN PASS

Database File	2-013805.db
Dataset Pathname	pass5
Presentation Format	poro60
Dataset Creation	Thu Nov 19 15:12:34 2015
Charted by	Depth in Feet scaled 1:240





4 Caliper (in) 14	60 Density Porosity (pu) 0	
0 Gamma Ray (GAPI) 200	60 Neutron Porosity (pu) 0	
TBHV (ft3)	ABHV (ft3)	-0.5 Corr (g/cc) 0.5

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END OF MAIN PASS

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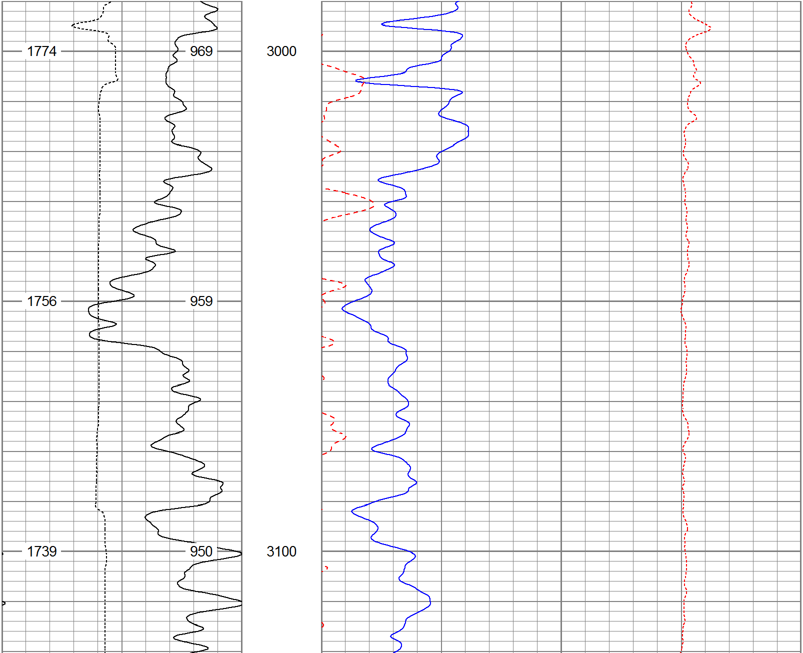
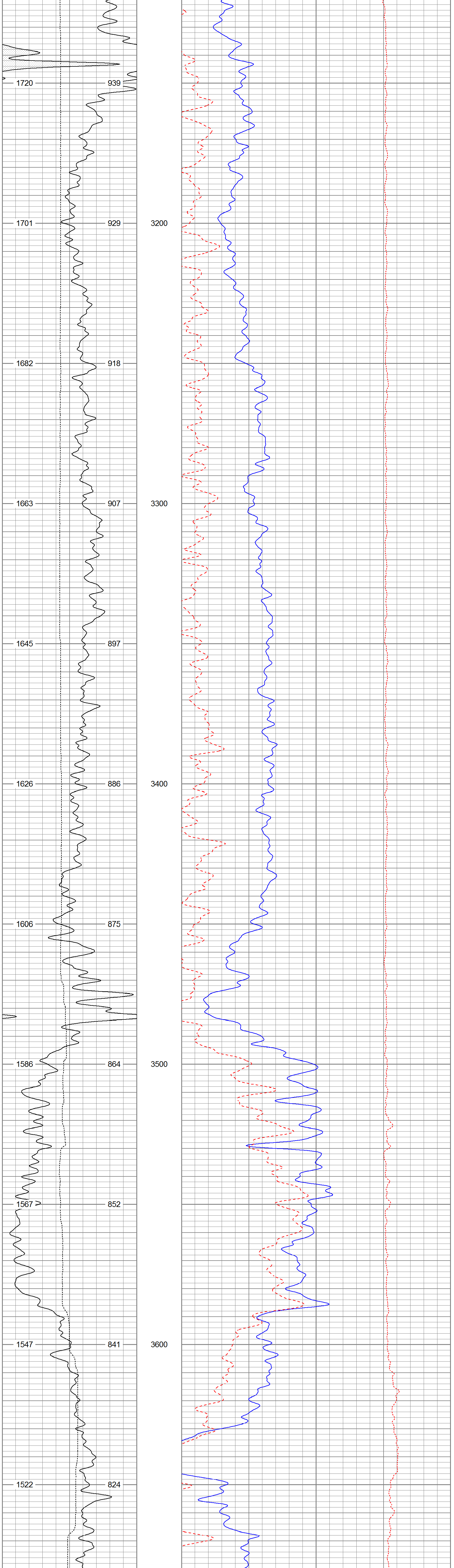
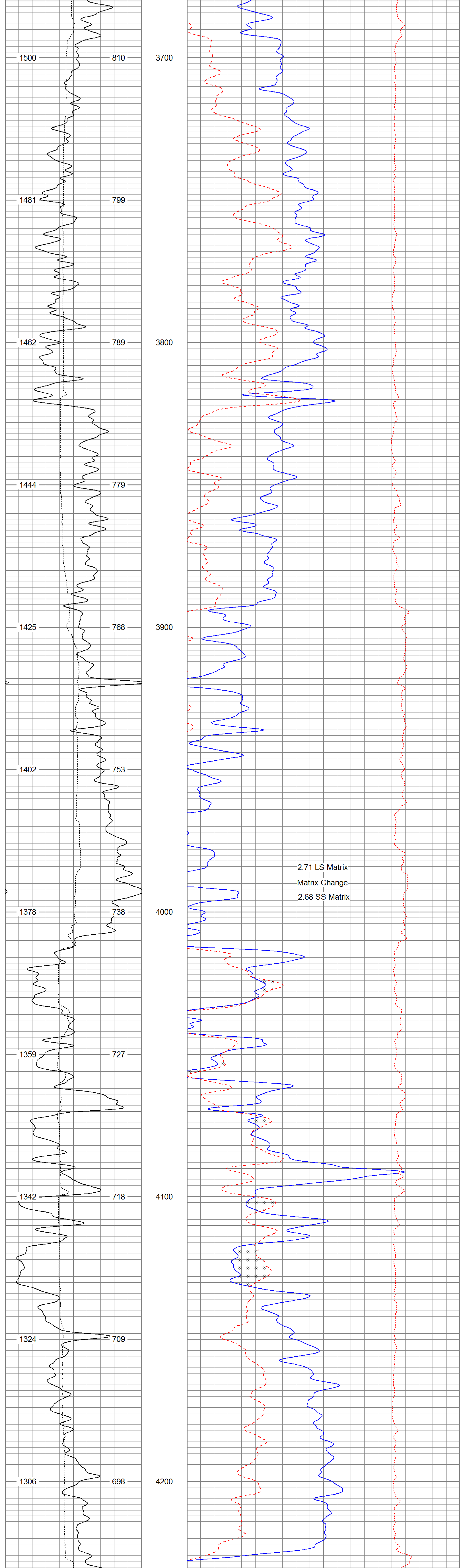
MAIN PASS

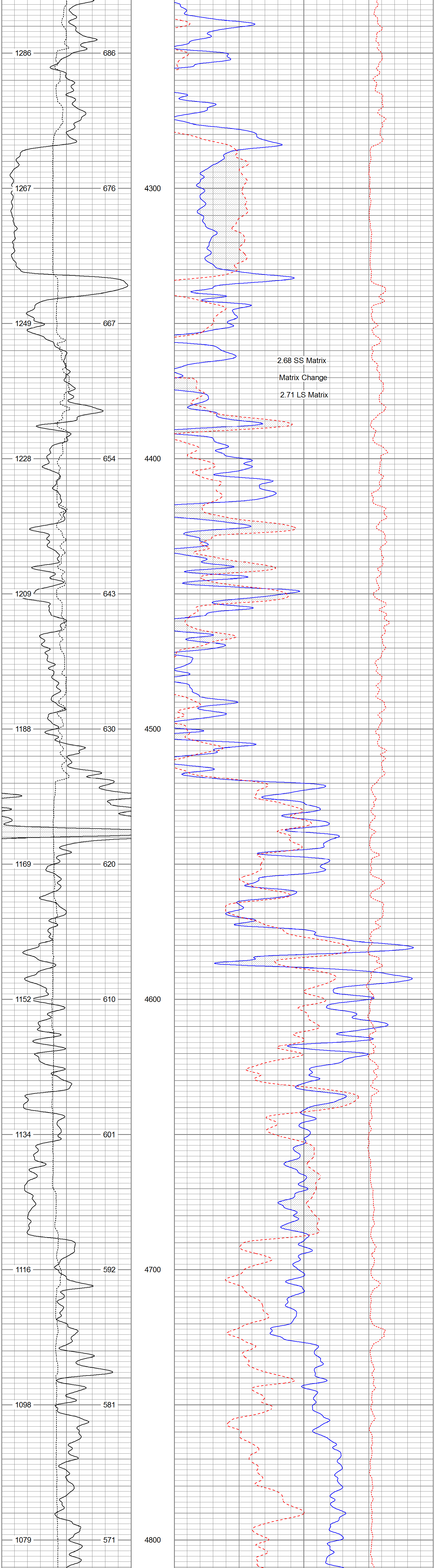
Database File	2-013805.db
Dataset Pathname	pass5
Presentation Format	poro
Dataset Creation	Thu Nov 19 15:12:34 2015
Charted by	Depth in Feet scaled 1:240

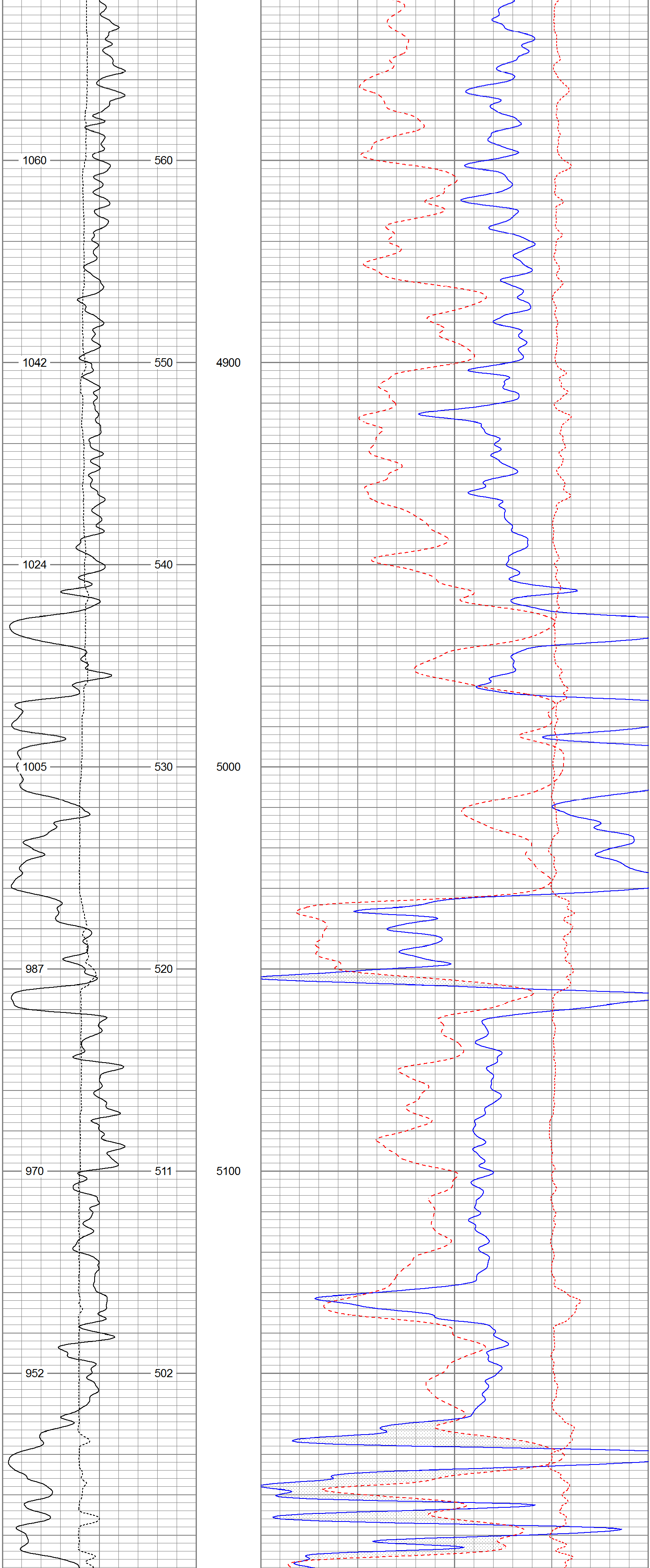
4 Caliper (in) 14	30 Density Porosity (pu) -10	
0 Gamma Ray (GAPI) 200	30 Neutron Porosity (pu) -10	
TBHV (ft3)	ABHV (ft3)	-0.5 Correction (g/cc) 0.5

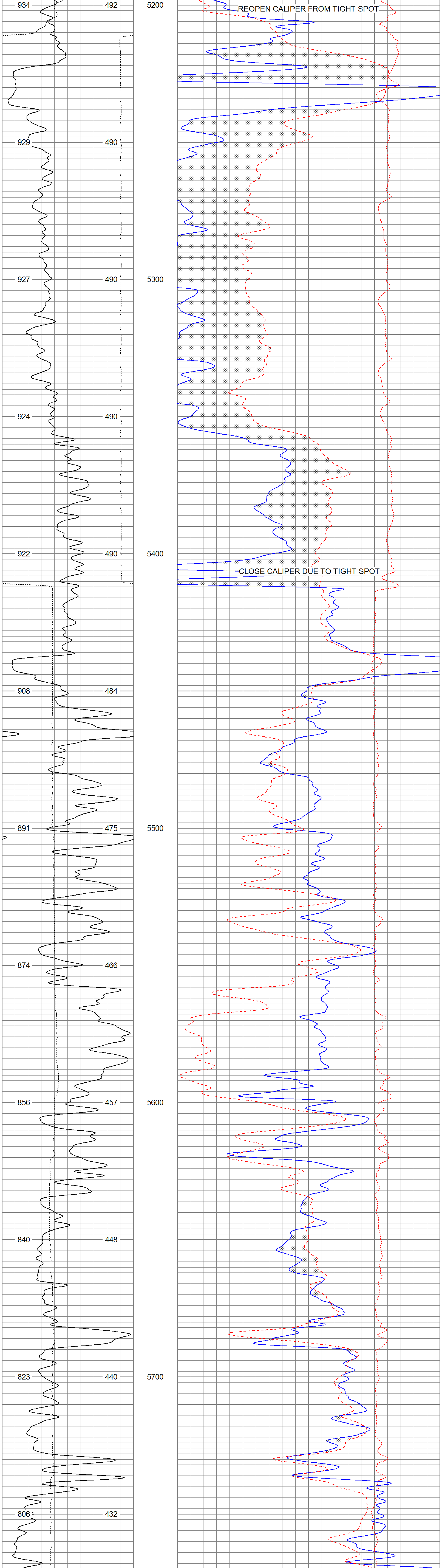


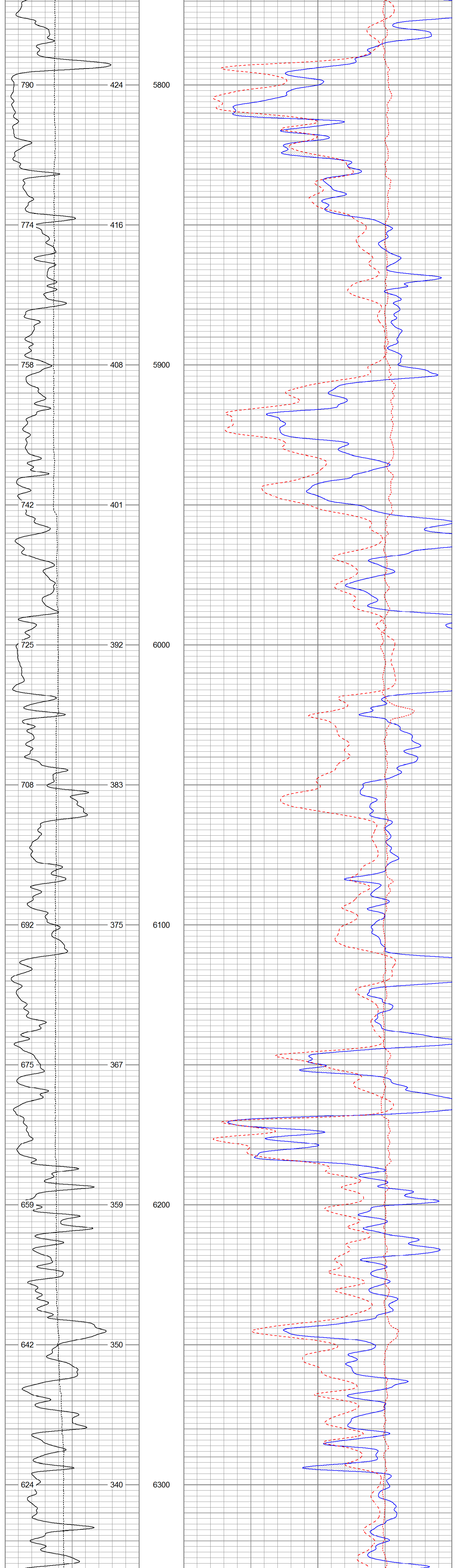


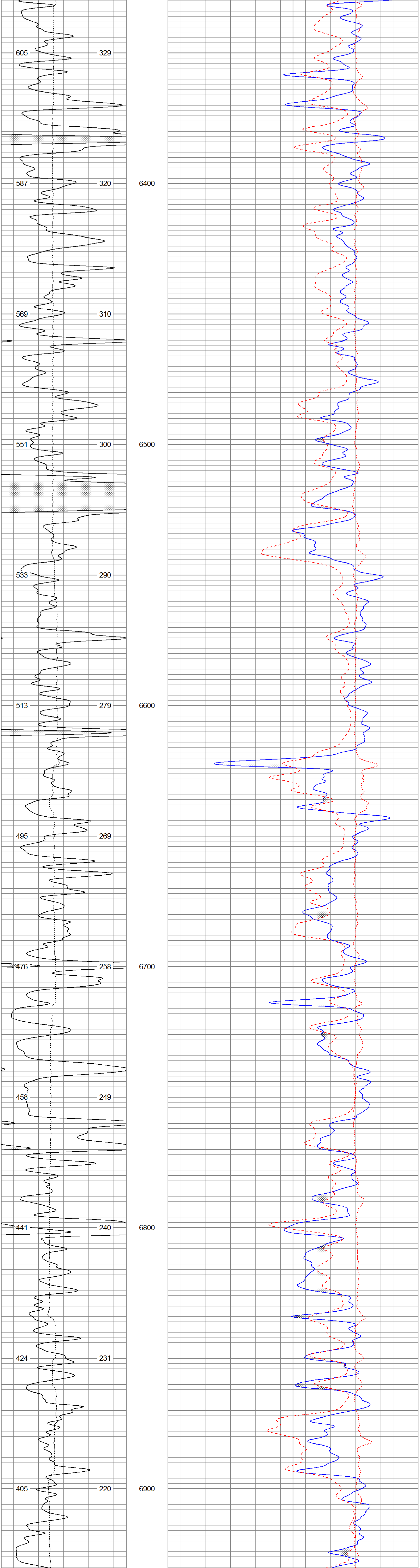


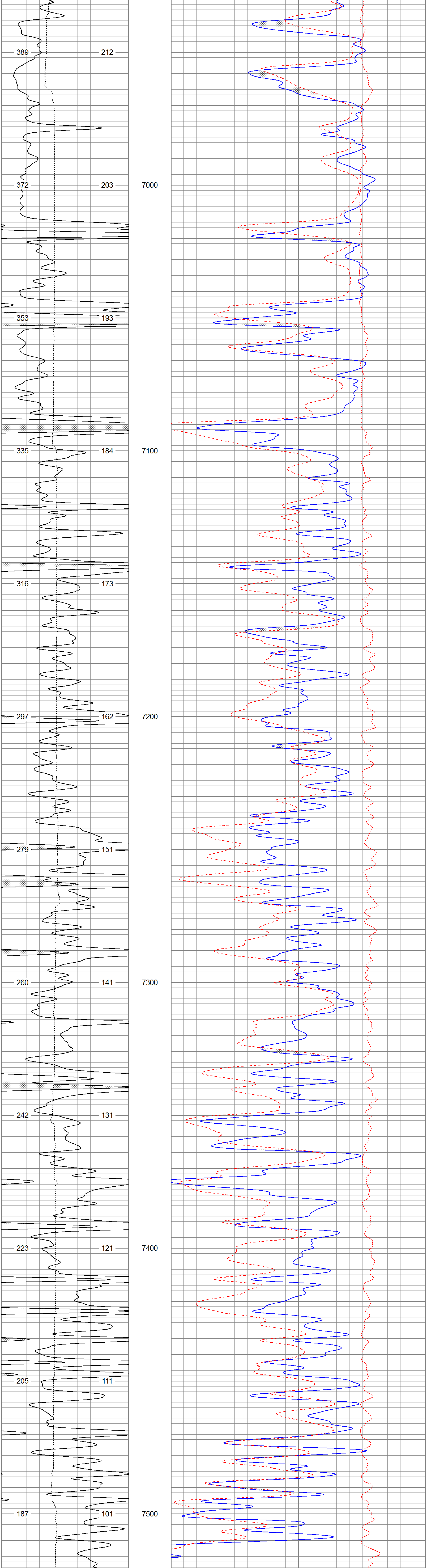


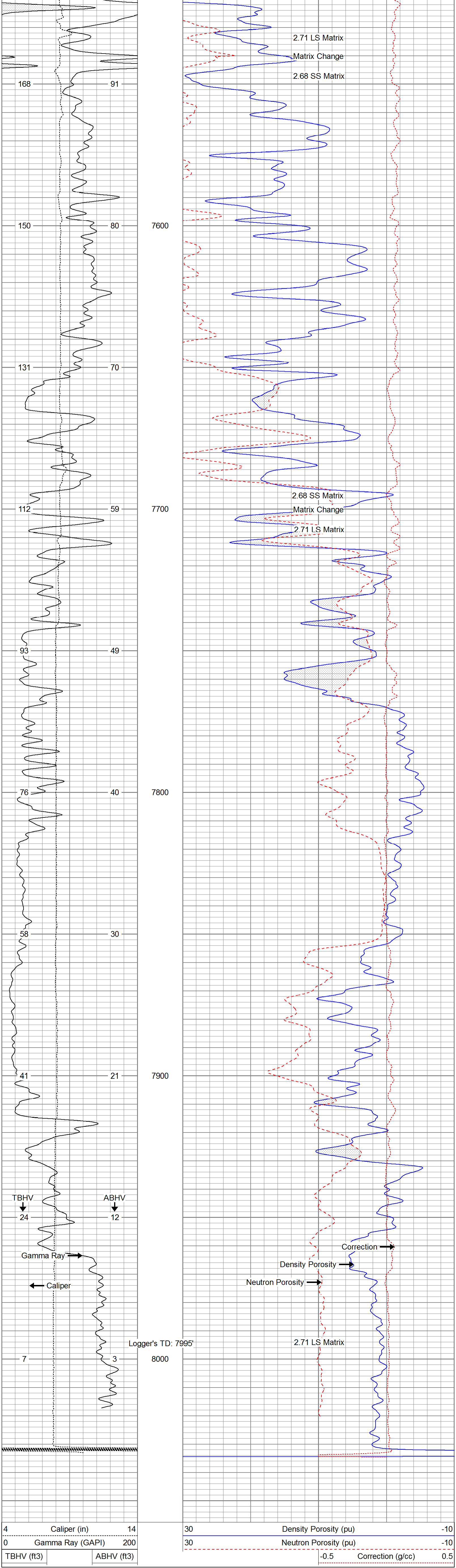












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END OF MAIN PASS

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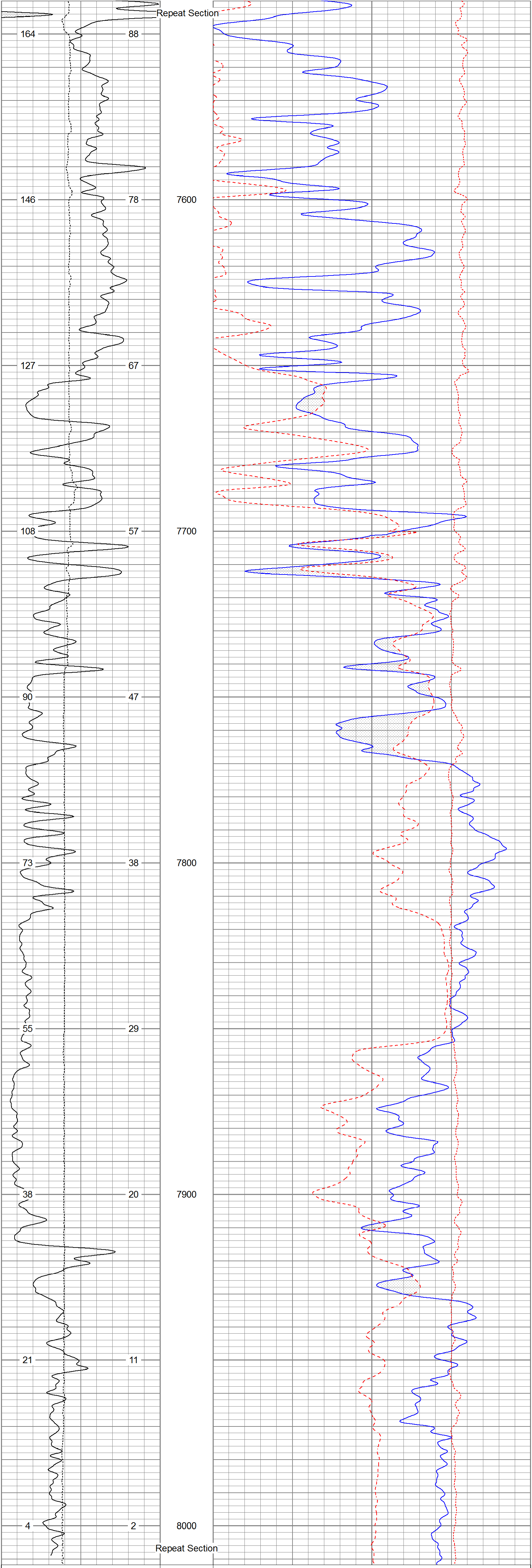
REPEAT SECTION

Database File	2-013805.db
Dataset Pathname	pass4.1
Presentation Format	poro
Dataset Creation	Thu Nov 19 15:08:19 2015
Charted by	Depth in Feet scaled 1:240

4 Caliper (in) 14
0 Gamma Ray (GAPI) 200
TBHV (ft3) ABHV (ft3)

30 Density Porosity (pu) -10
30 Neutron Porosity (pu) -10
-0.5 Correction (g/cc) 0.5



4 Caliper (in) 14
0 Gamma Ray (GAPI) 200
TBHV (ft3) ABHV (ft3)

30 Density Porosity (pu) -10
30 Neutron Porosity (pu) -10
-0.5 Correction (g/cc) 0.5

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END OF REPEAT SECTION

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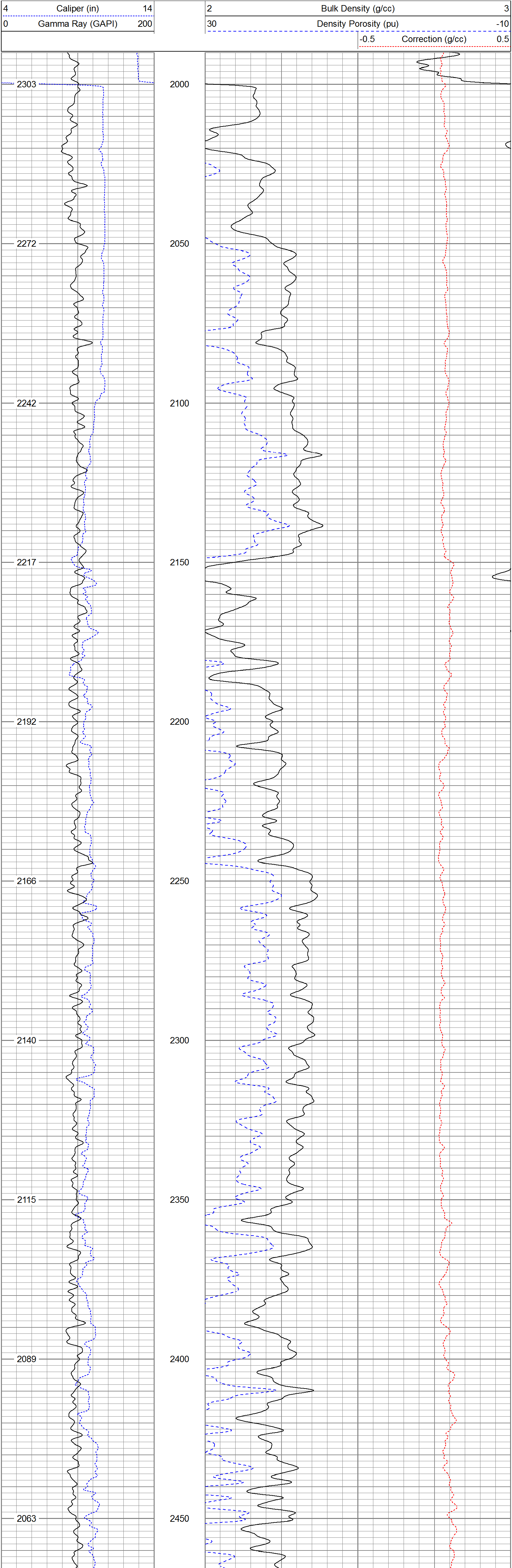
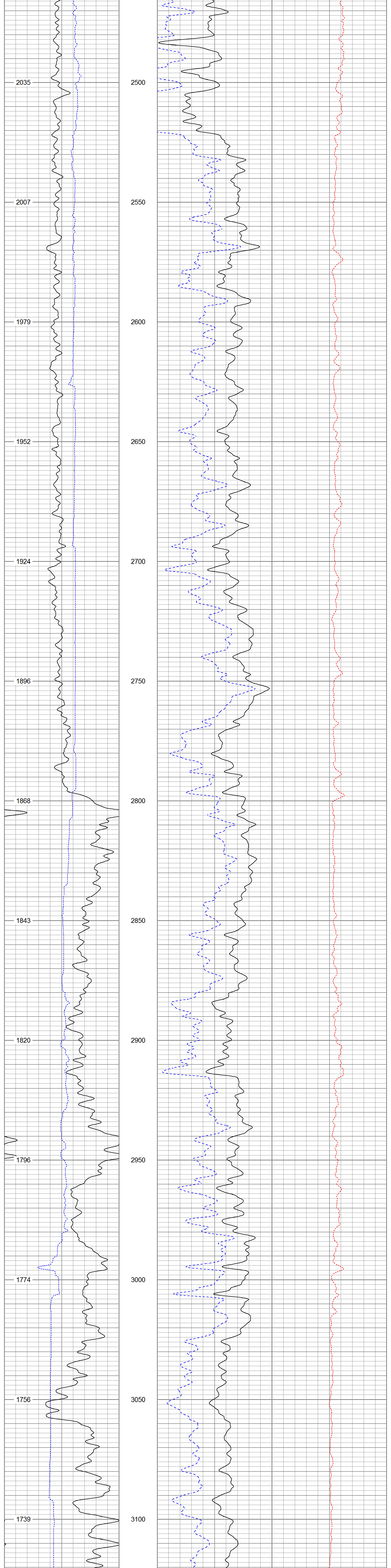
MAIN PASS

Database File	2-013805.db
Dataset Pathname	pass5
Presentation Format	cdl
Dataset Creation	Thu Nov 19 15:12:34 2015
Charted by	Depth in Feet scaled 1:240

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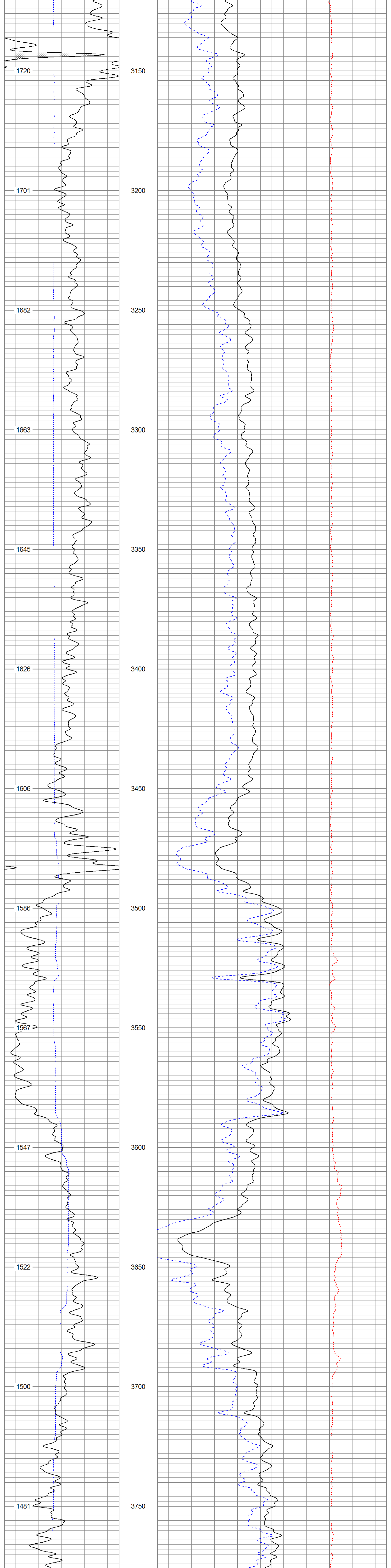
3000
3050
3100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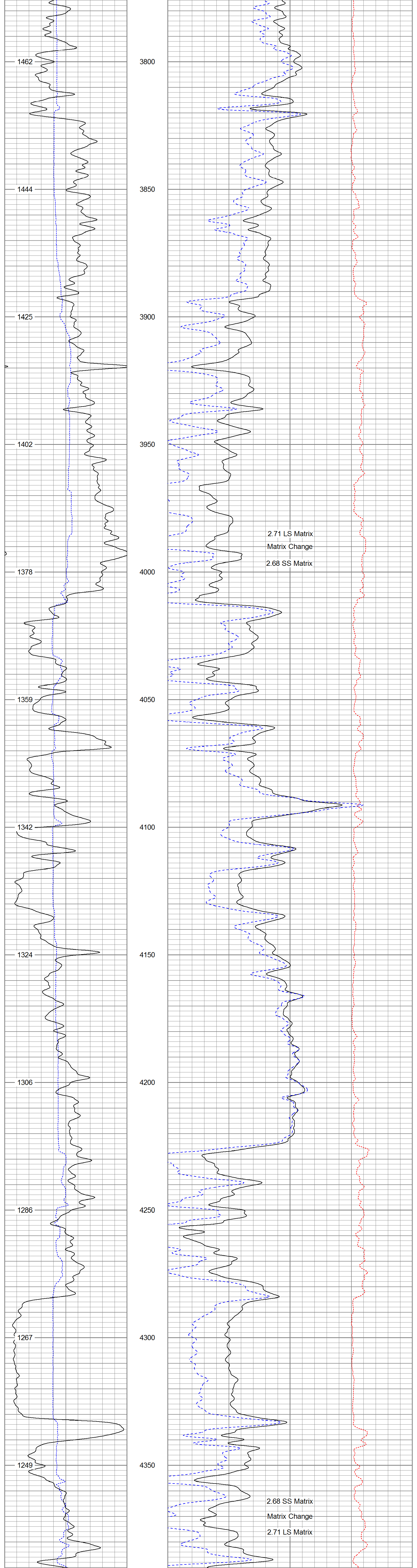
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4000
4050
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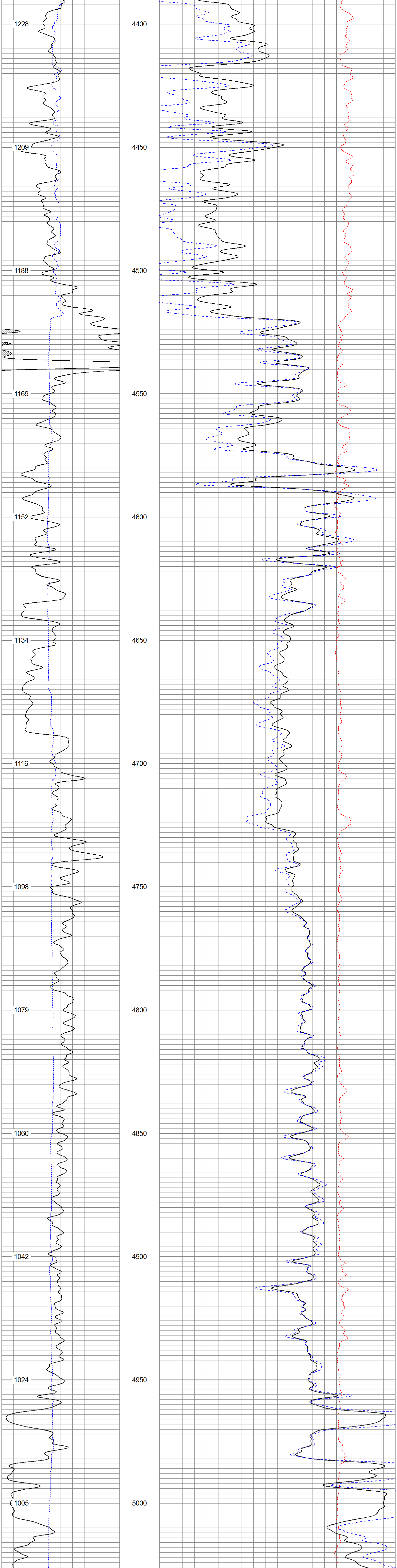
2.71 LS Matrix
Matrix Change
2.68 SS Matrix
2.68 SS Matrix
Matrix Change
2.71 LS Matrix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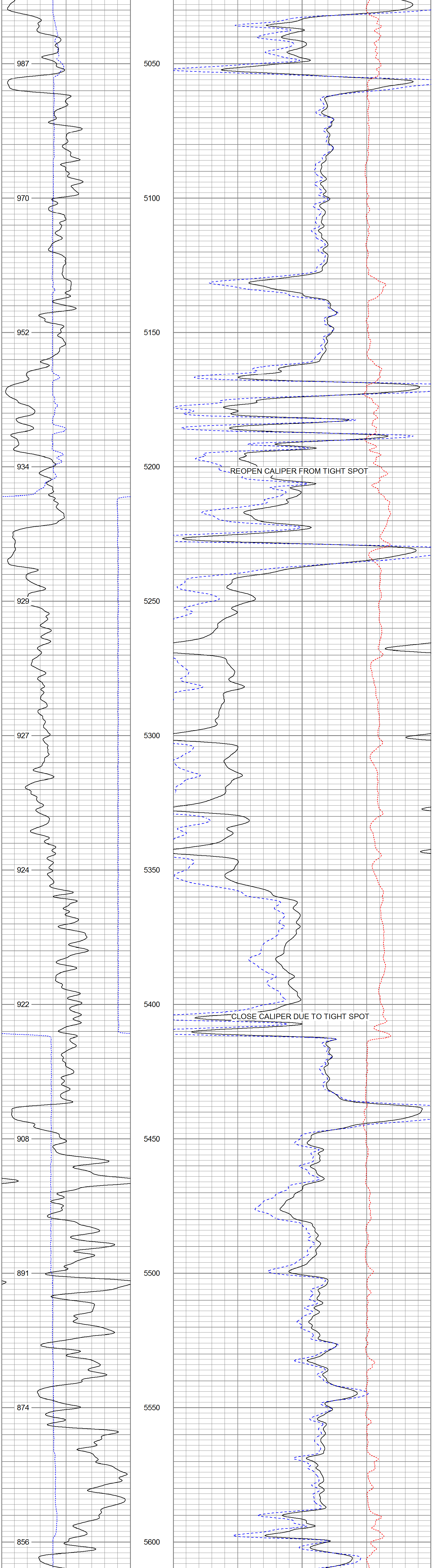
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REOPEN CALIPER FROM TIGHT SPOT
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CLOSE CALIPER DUE TO TIGHT SPOT
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5500
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5550
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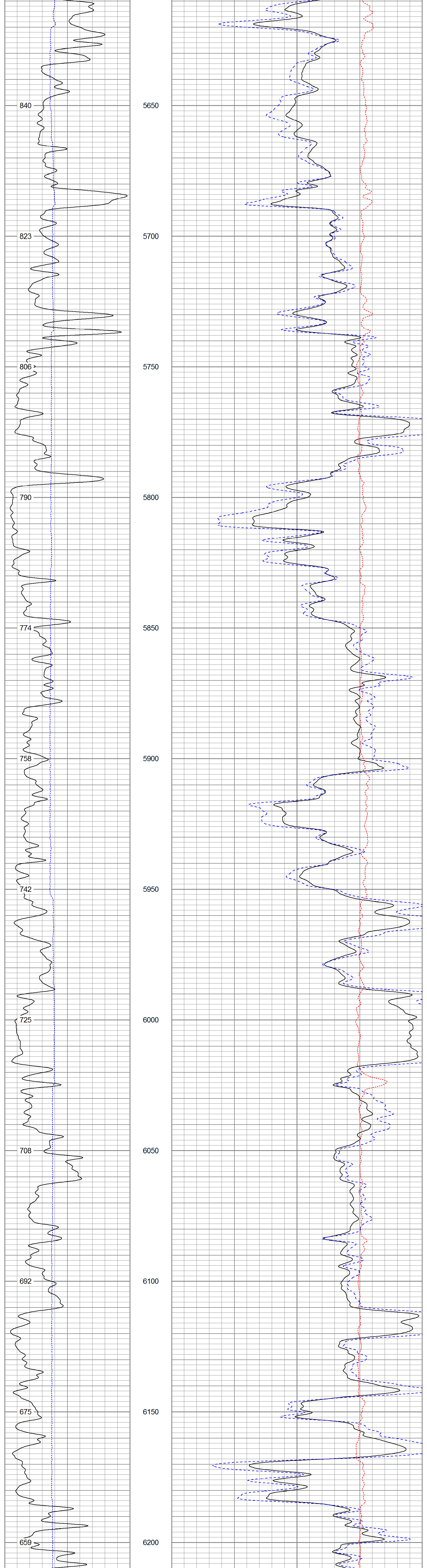
5600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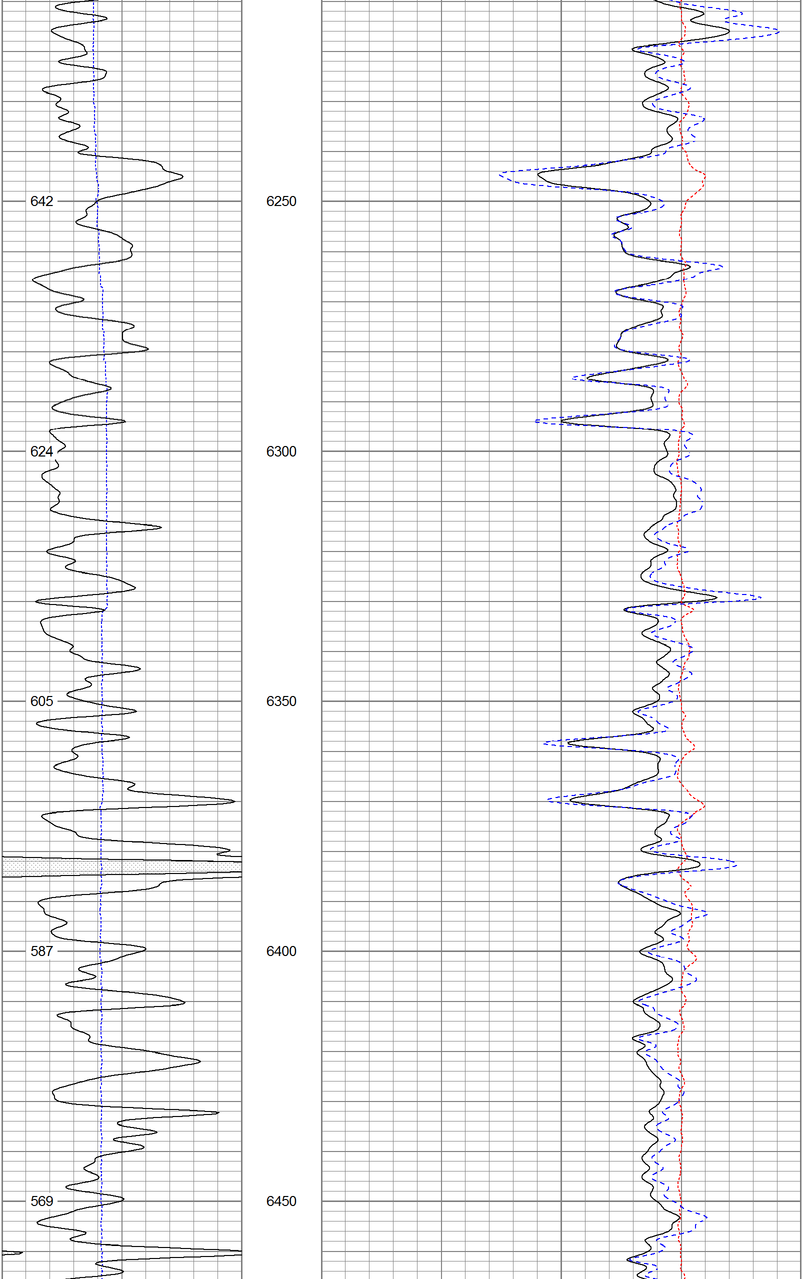
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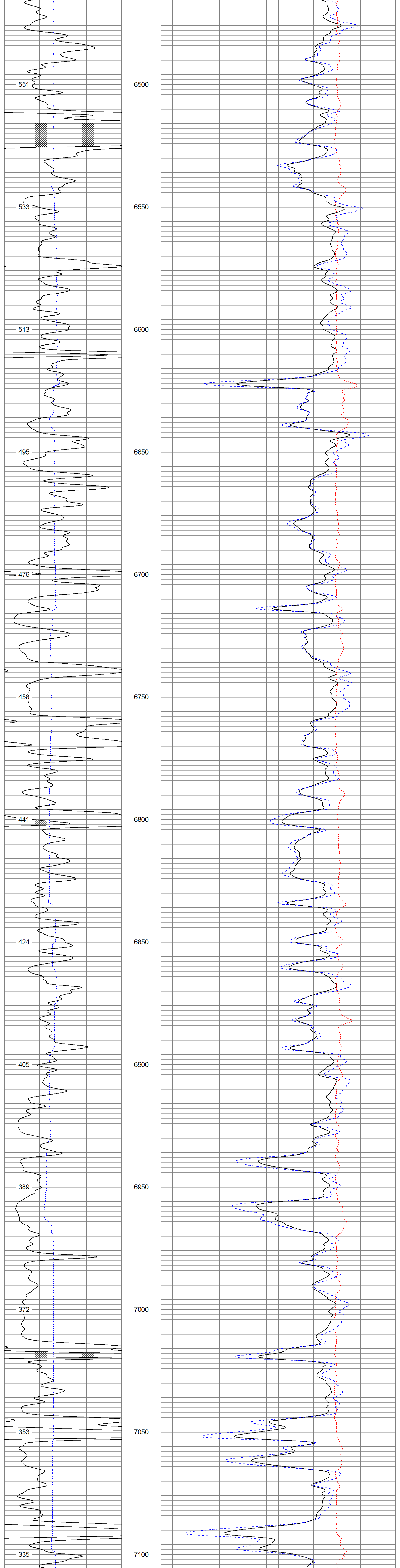

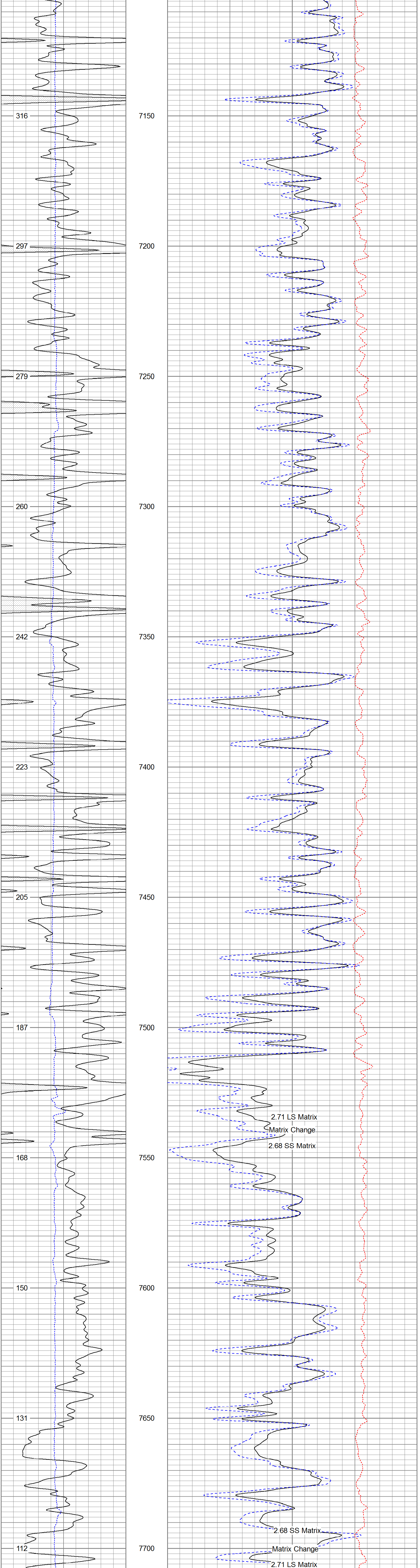

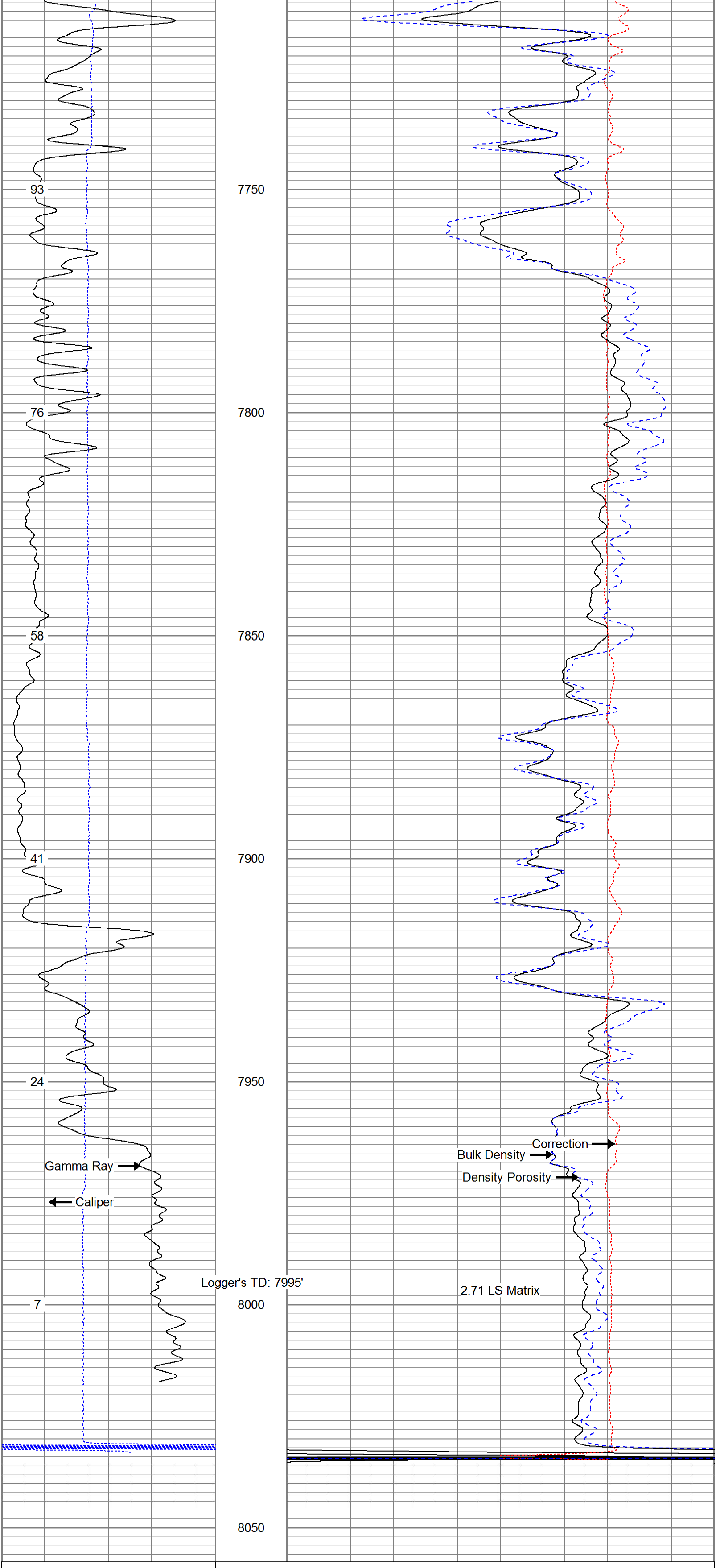

4 Caliper (in) 14
0 Gamma Ray (GAPI) 200

2 Bulk Density (g/cc) 3
30 Density Porosity (pu) -10
-0.5 Correction (g/cc) 0.5

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END OF MAIN PASS

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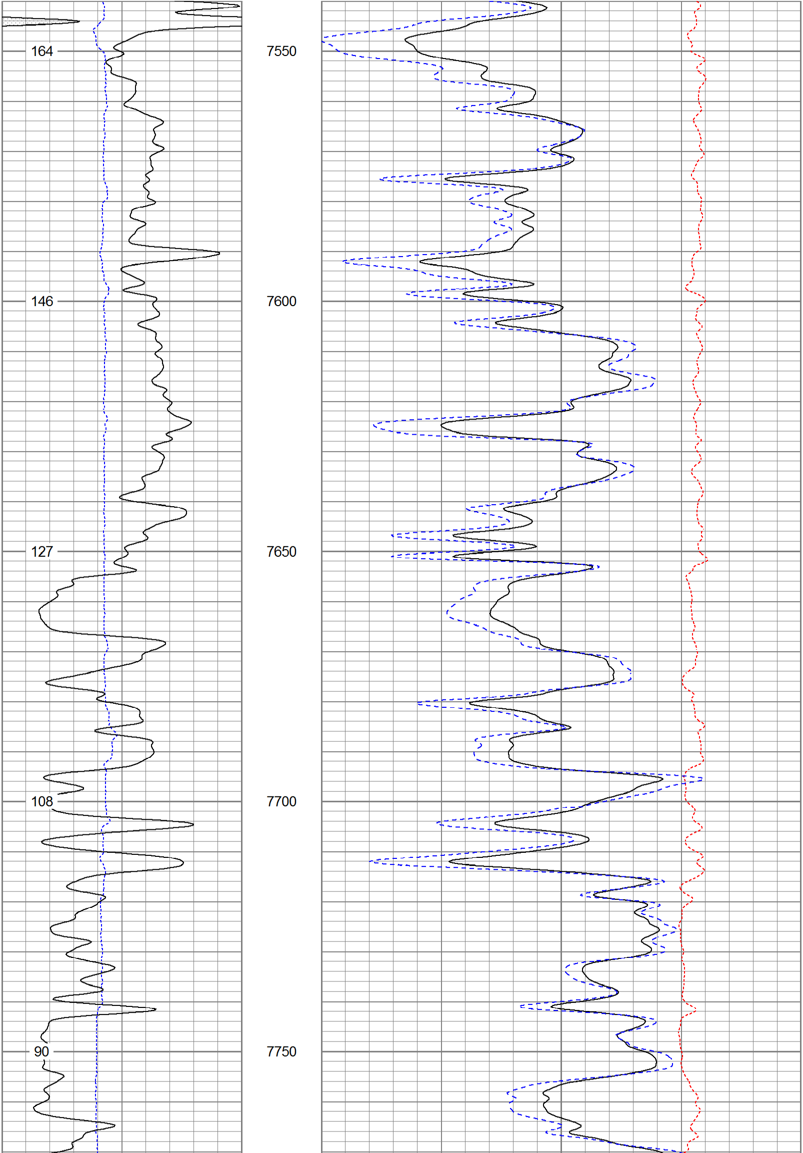
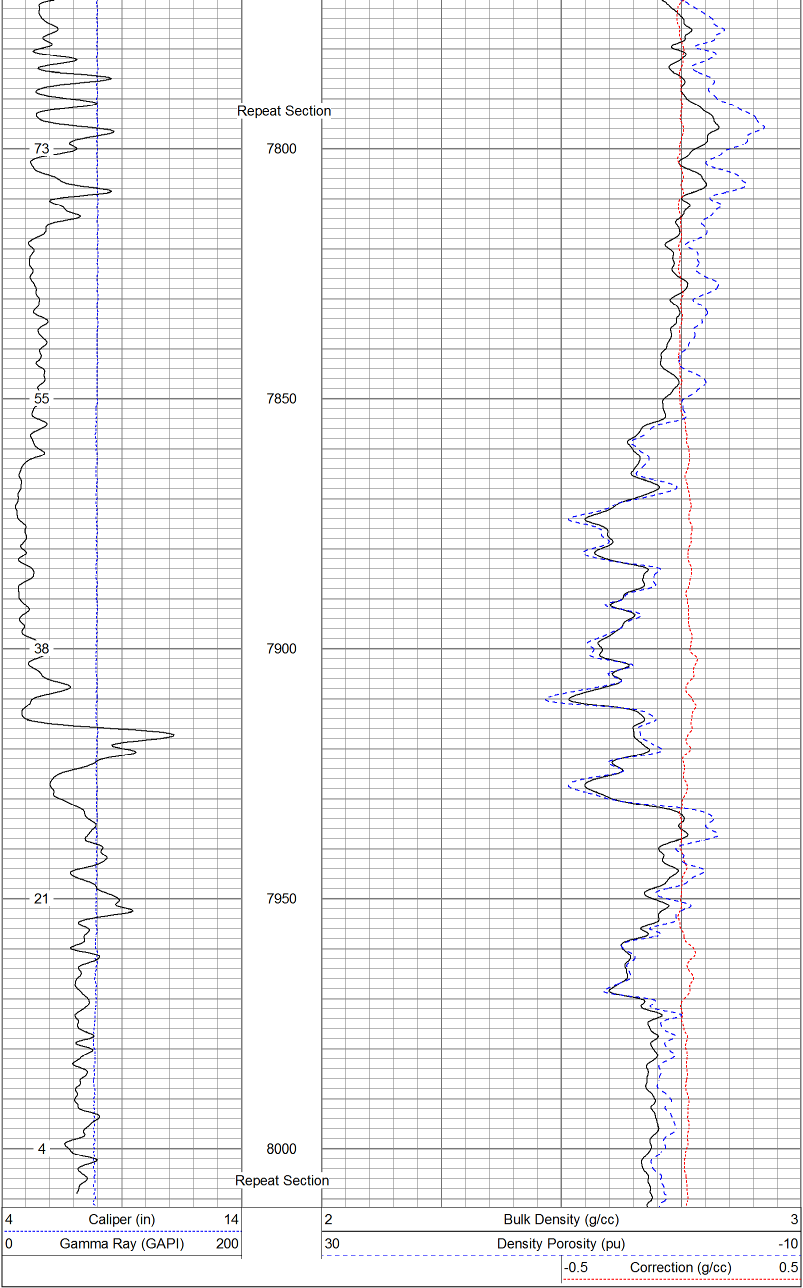
REPEAT SECTION

Database File	2-013805.db
Dataset Pathname	pass4.1
Presentation Format	cdl
Dataset Creation	Thu Nov 19 15:08:19 2015
Charted by	Depth in Feet scaled 1:240

4 Caliper (in) 14
0 Gamma Ray (GAPI) 200

2 Bulk Density (g/cc) 3
30 Density Porosity (pu) -10
-0.5 Correction (g/cc) 0.5





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END OF REPEAT SECTION

Calibration Report

Database File	2-013805.db
Dataset Pathname	pass4
Dataset Creation	Thu Nov 19 14:47:08 2015

Dual Induction Calibration Report

Serial-Model:	1011-PSI
Surface Cal Performed:	

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.580	-28.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.490	-30.000

Compensated Density Calibration Report

Serial-Model:	934-PSI
Source / Verifier:	4400 / PSI
Master Calibration Performed:	Wed Sep 09 10:47:28 2015
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	4705.08	3463.47	cps
Aluminum	2.690	g/cc	869.10	2216.04	cps

Spine Angle = 75.19

Density/Spine Ratio = 0.538

	Size		Reading
Small Ring	3.75	in	1.16
Large Ring	13.50	in	1.01

Compensated Neutron Calibration Report

Serial Number:	856
Tool Model:	PSI

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.9000
Long Space	1.00	cps	1.00	cps	2.1500

Gamma Ray Calibration Report

Serial Number:	939	
Tool Model:	PSI	
Performed:	Thu Nov 12 21:59:47 2015	
Calibrator Value:	150.0	GAPI
Background Reading:	45.0	cps
Calibrator Reading:	295.0	cps
Sensitivity:	0.6300	GAPI/cps

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Company	WIEPKING-FULLERTON ENERGY INC.
Well	GOOD DEAL #13
Field	WILDCAT
County	LINCOLN
State	CO