PHOENIX SURVEYS, INC.

HIGH RESOLUTION INDUCTION

Company
Well
Field
County
State/Prv

Company	**Noble Energy Inc.**
Well	**Wells Ranch PC AA22-13**
Field	**Wattenberg**
County	**Weld**
State/Province	**Colorado**

Location
848' FSL & 594' FWL
SWSW
Sec. 22, Twp. 6N, Rge. 63W

Other Services
Density
Neutron
Micro Log

Permanent Datum	GL	Elevation	4757
Log Measured From	KB		
Drilling Measured From	KB		

Elevation
K.B. 4771
D.F. 4770
G.L. 4757

Date	January 20, 2011		
Run Number	1		
Depth Driller	6995		
Depth Logger	6992		
Bottom Logged Interval	6992		
Top Log Interval	Casing		
Casing Driller	614		
Casing Logger	614		
Bit Size	7-7/8"		
Type Fluid in Hole	Chem Gel		
Density / Viscosity	9.0 / 30		
pH / Fluid Loss	7.0 / nc		
Source of Sample	Flowline		
Rm @ Meas. Temp	4.00 @ 55 F		
Rmf @ Meas. Temp	3.20 @ 55 F		
Rmc @ Meas. Temp	4.95 @ 55 F		
Source of Rmf / Rmc	Measure / Calc		
Rm @ BHT	1.09 @ 202 F		
Time Circulation Stopped	1900		
Time Logger on Bottom	0215		
Maximum Recorded Temperature	202 F		
Equipment Number	49		
Location	Brighton, CO		
Recorded By	Schuman		
Witnessed By	Turner		

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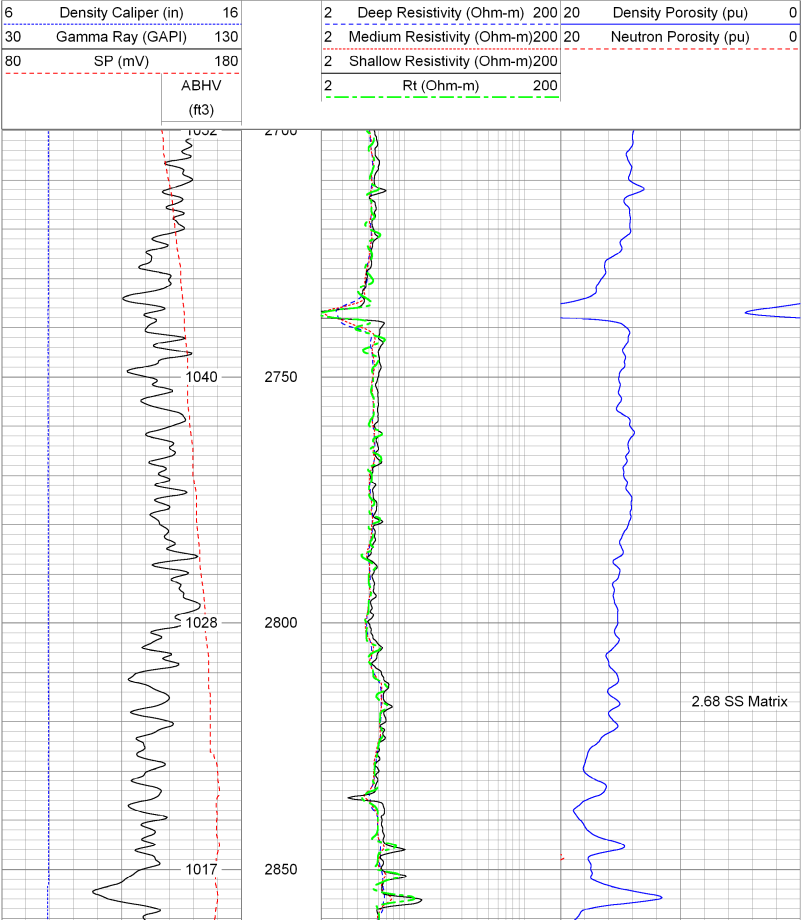
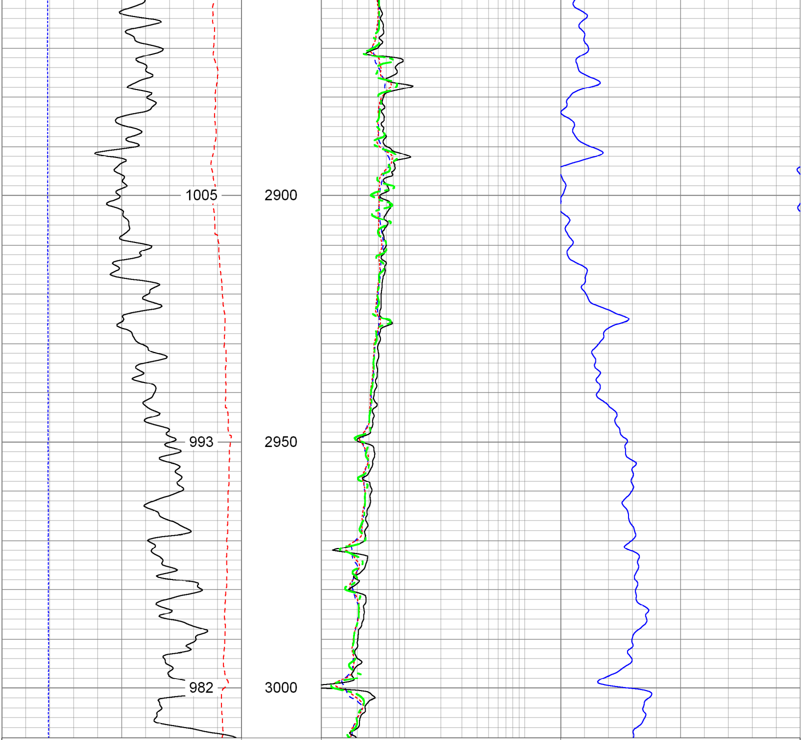
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Annular volume calculated for 4.5" casing
Cade Drilling Rig 22
Thank you for using Phoenix Surveys!!
API #: 05-123-29098
No repeat pass due to hole conditions.

Database File: 11310.db
Dataset Pathname: main
Presentation Format: pdc1
Dataset Creation: Thu Jan 20 05:16:13 2011
Charted by: Depth in Feet scaled 1:240





Min	Curve	Max
6	Density Caliper (in)	16
30	Gamma Ray (GAPI)	130
80	SP (mV)	180
	ABHV (ft3)	
2	Deep Resistivity (Ohm-m)	200
2	Medium Resistivity (Ohm-m)	200
2	Shallow Resistivity (Ohm-m)	200
2	Rt (Ohm-m)	200
20	Density Porosity (pu)	0
20	Neutron Porosity (pu)	0

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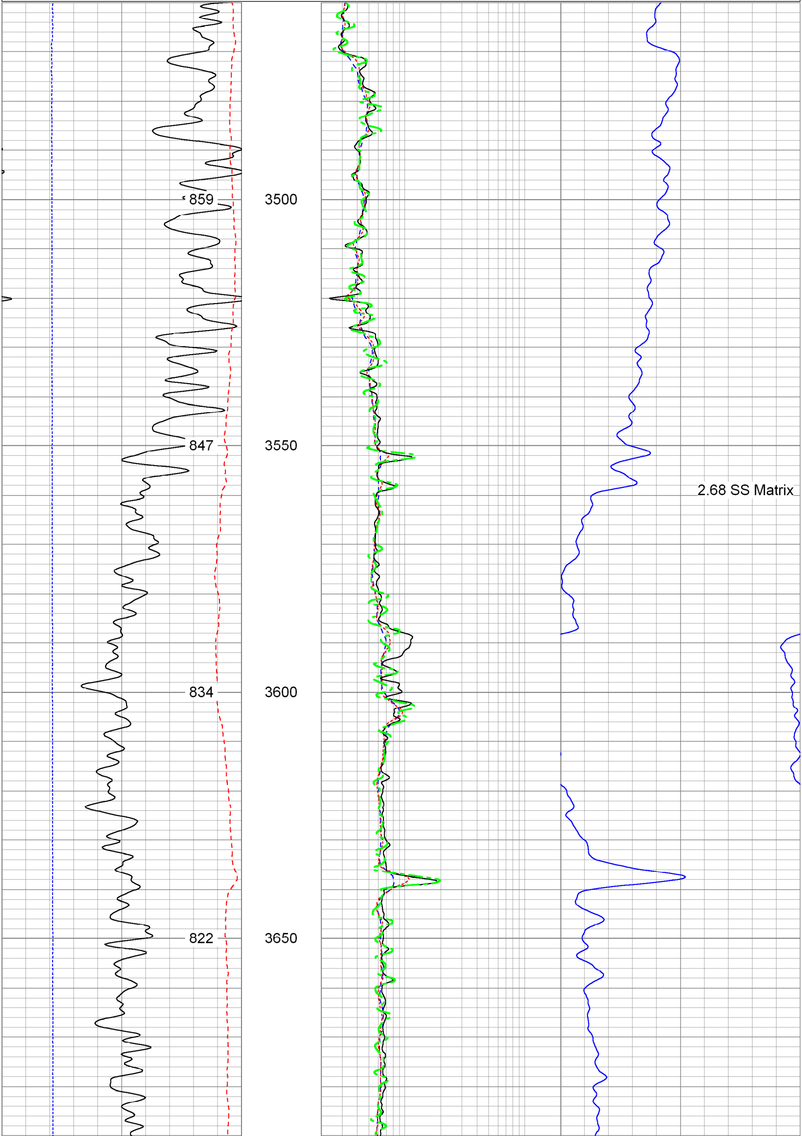

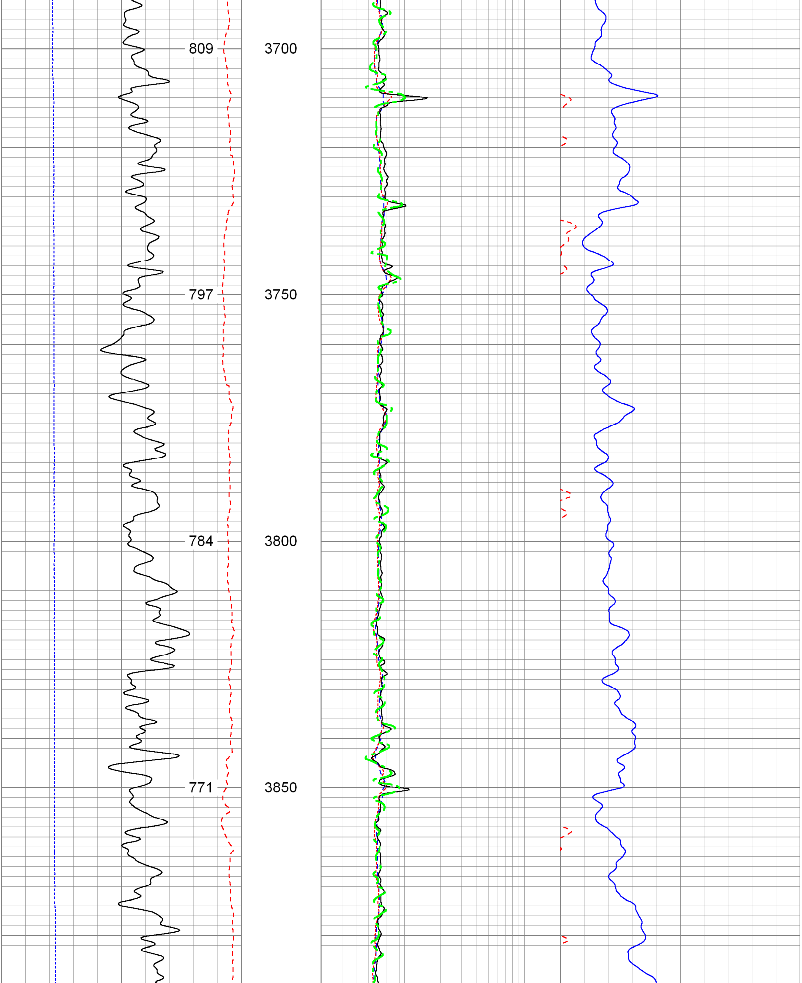

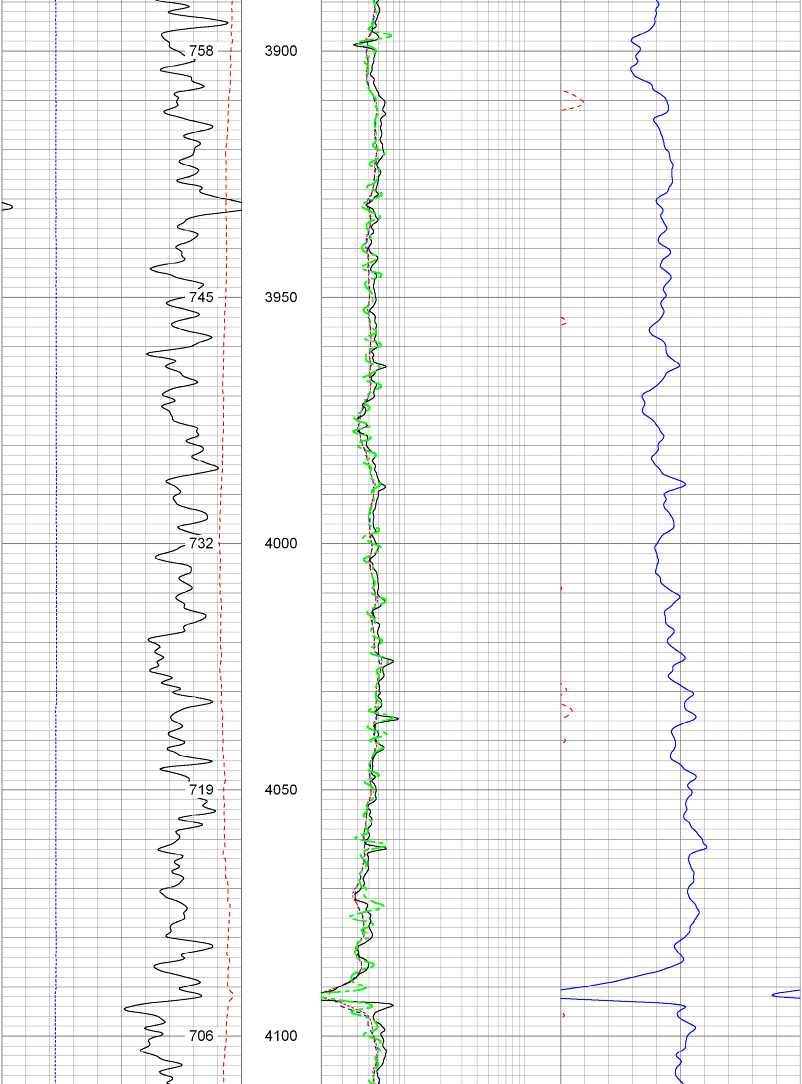

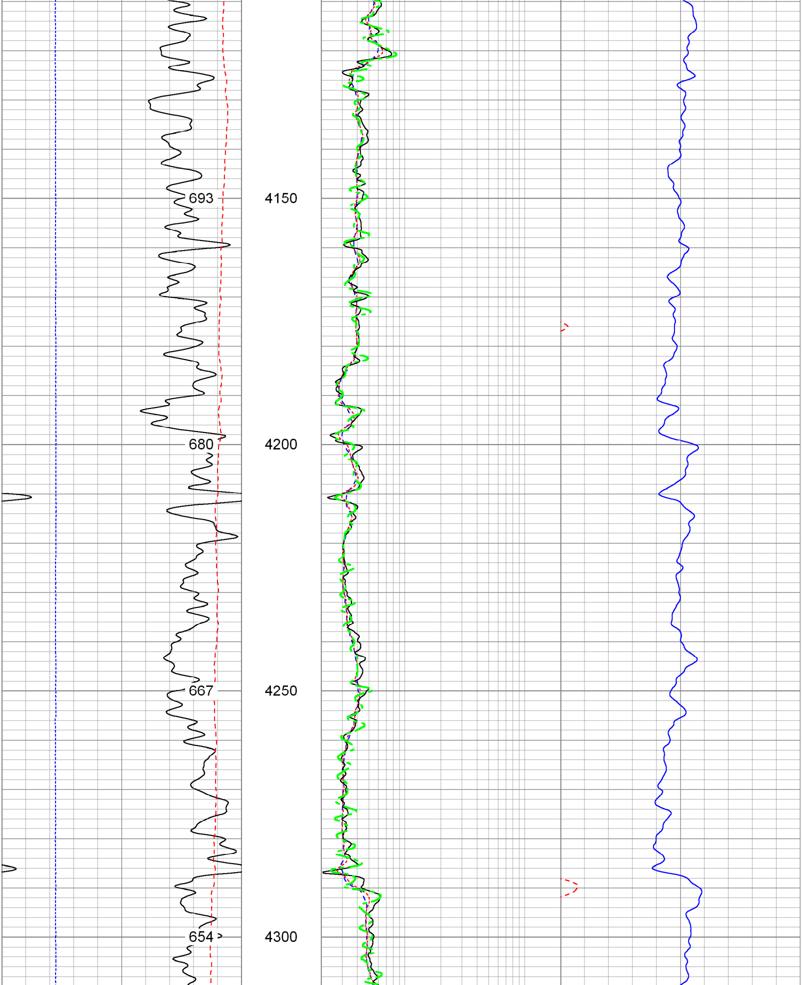

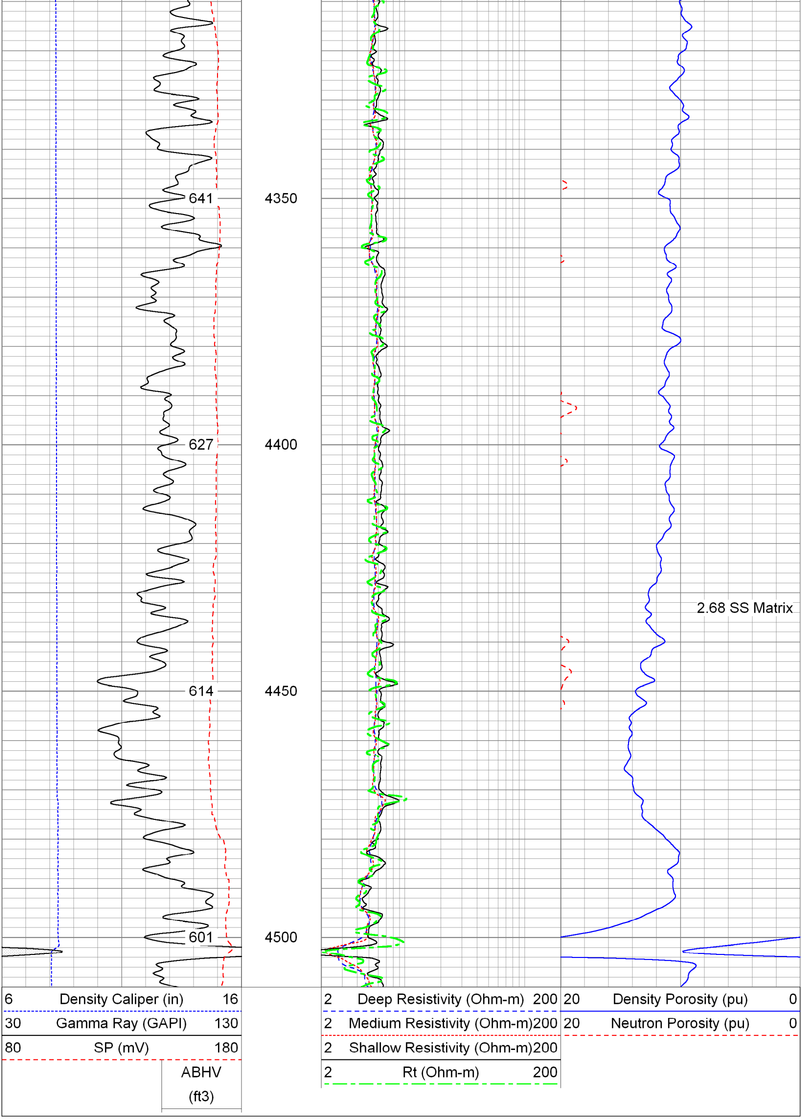

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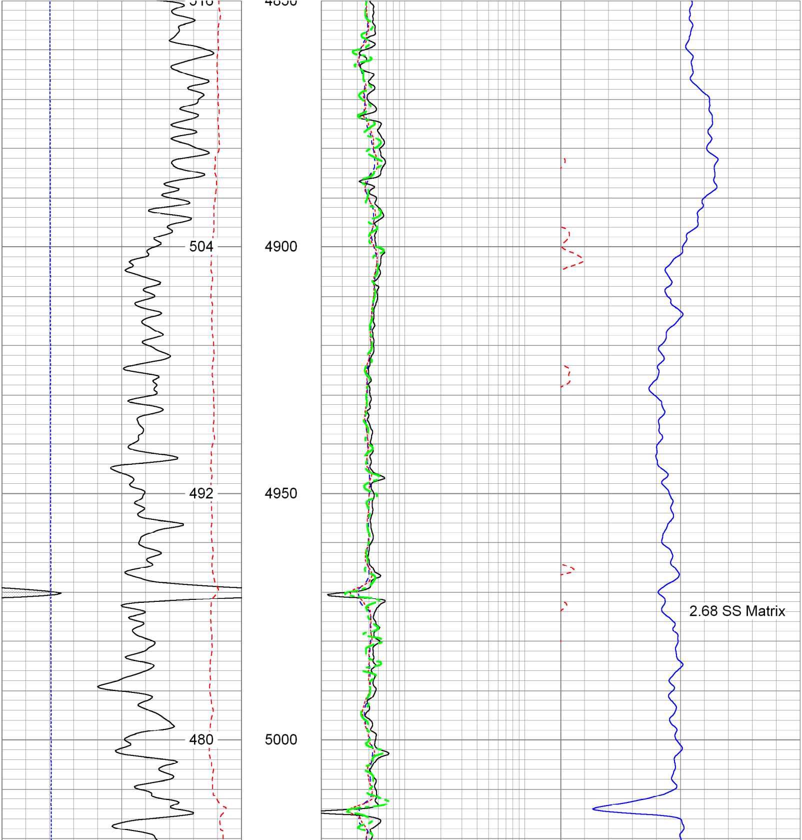
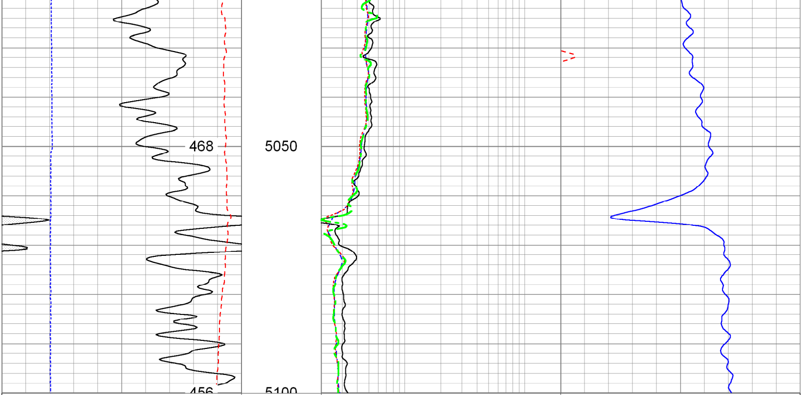
20 Neutron Porosity (pu) 0





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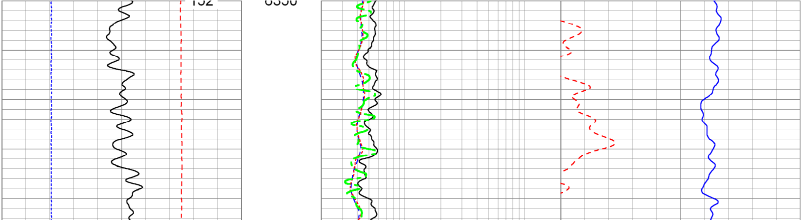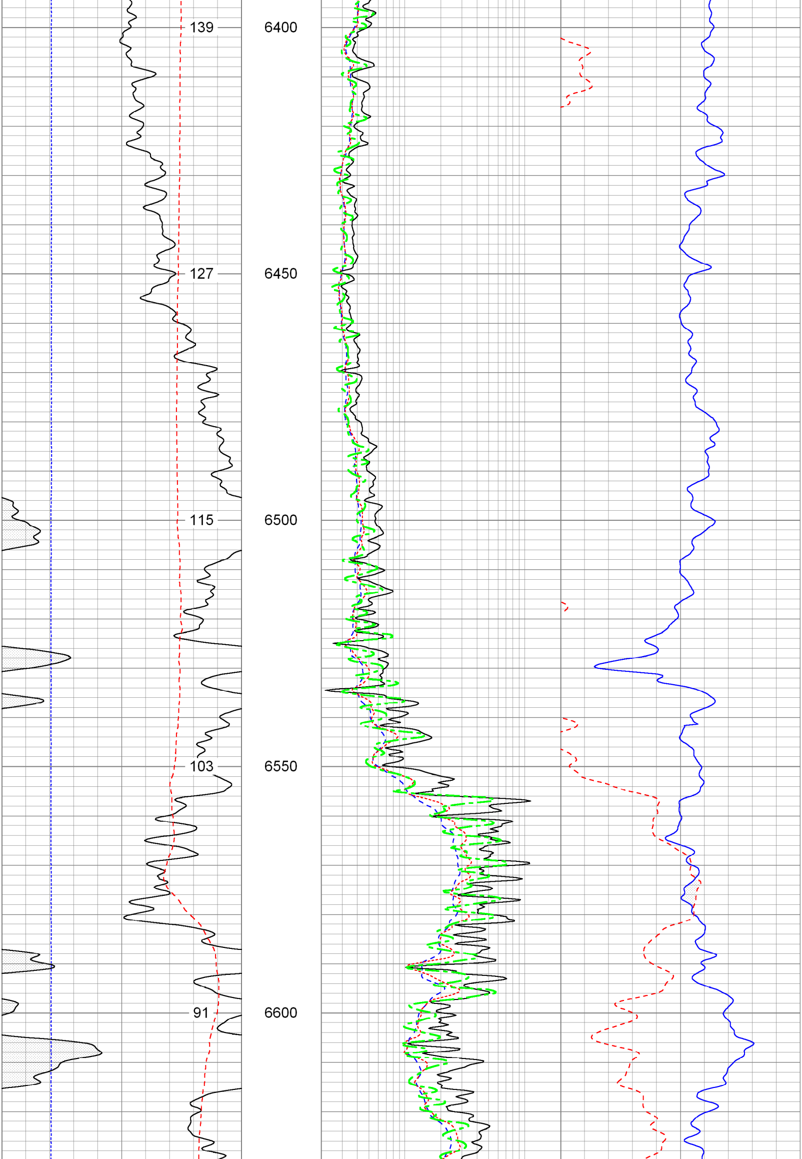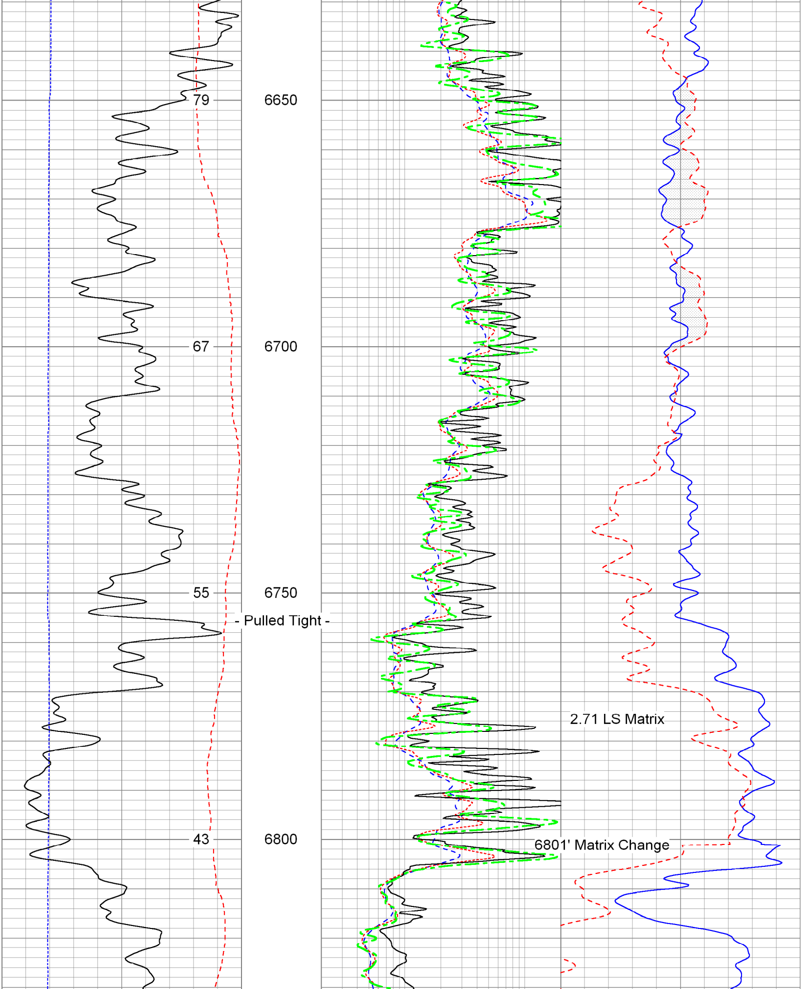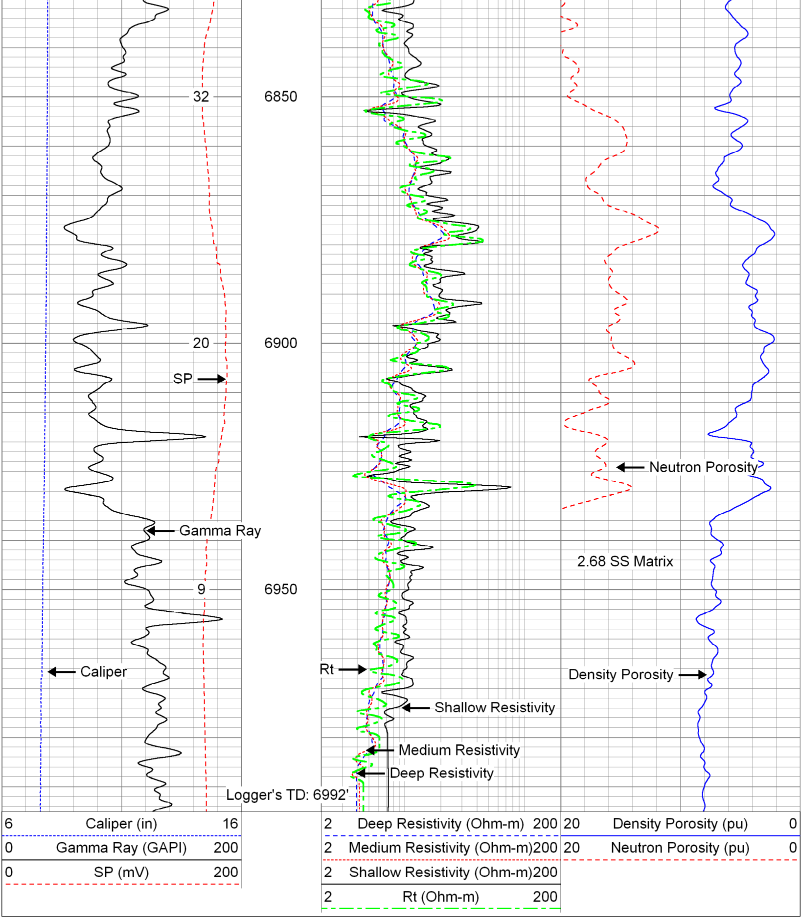6 Caliper (in) 16		2 Deep Resistivity (Ohm-m) 200	20 Density Porosity (pu) 0
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