PIONEER
Pioneer Energy Services

HIGH RESOLUTION INDUCTION COMPENSATED DENSITY COMPENSATED NEUTRON

Company	Augustus Energy Resources, LLC
Well	McConnell 21-23 4N47W
Field	Buffalo Grass
County	Yuma
State	Colorado

Company Augustus Energy Resources, LLC
Well McConnell 21-23 4N47W
Field Buffalo Grass
County Yuma State Colorado

Location: API # : 05 125 12120
SHL: 620' FNL & 1670' FWL NENW
SEC 23 TWP 4N RGE 47W

Other Services
None

			Elevation
Permanent Datum	GL	Elevation 3963	K.B. 3969
Log Measured From	KB		D.F. 3968
Drilling Measured From	KB		G.L. 3963

Date	October 10, 2014		
Run Number	1		
Depth Driller	2943		
Depth Logger	2926		
Bottom Logged Interval	2926		
Top Log Interval	Casing		
Casing Driller	494		
Casing Logger	494		
Bit Size	6.25		
Type Fluid in Hole	WBM		
Density / Viscosity	8.9 / 32		
pH / Fluid Loss	8.0 / 8.0		
Source of Sample	Mudpit		
Rm @ Meas. Temp	0.4 @ 72 F		
Rmf @ Meas. Temp	0.28 @ 72 F		
Rmc @ Meas. Temp	0.36 @ 72 F		
Source of Rmf / Rmc	Calc / Calc		
Rm @ BHT	0.26 @ 109 F		
Time Circulation Stopped	2200 10/9/2014		
Time Logger on Bottom	0115 10/10/2014		
Maximum Recorded Temperature	109 F		
Equipment Number	36		
Location	Ft. Morgan, CO		
Recorded By	Shaun Stump		
Witnessed By	Juslin Stone		

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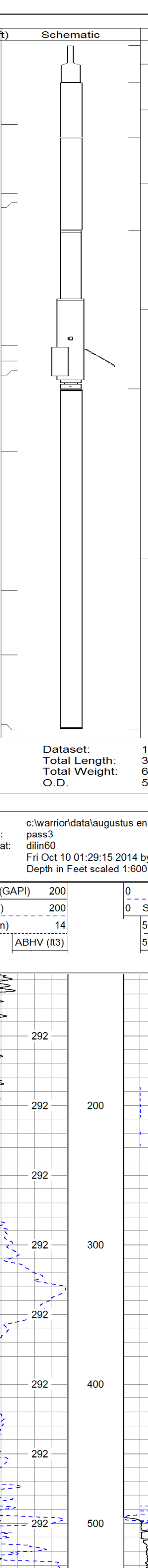
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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
Excell Drilling Rig 2
Thank you for using Pioneer Energy Services.

SO# 2-013715



Sensor	Offset (ft)	Description	Len (ft)	OD (in)	Wt (lb)
		CHD (~0)	2.00	3.50	30.00
GR	0.00	GR-PSI (43)	2.92	3.50	40.00
CNLSC CNSSC	-3.67 -4.17	CNT-PSI (853)	5.00	3.50	70.00
DCAL LSD SSD	-11.84 -12.67 -13.17	CDL-PSI (771)	8.50	5.00	285.00
RLL3 CILD CILM SP	-17.52 -24.97 -28.42 -32.42	DIL-PSI (1010)	18.25	3.75	175.00

Dataset: 13715.db: field/well/run1/pass3
Total Length: 36.67 ft
Total Weight: 600.00 lb
O.D. 5.00 in

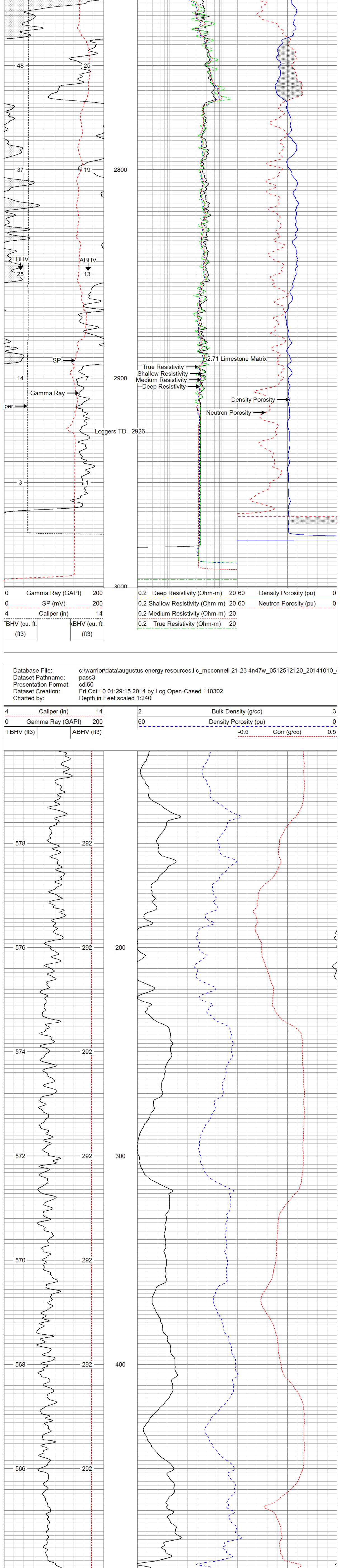
Database File: c:\warrior\data\augustus energy resources,llc_mcconnell 21-23 4n47w_0512512120_20141010_
Dataset Pathname: pass3
Presentation Format: dilin60
Dataset Creation: Fri Oct 10 01:29:15 2014 by Log Open-Cased 110302
Charted by: Depth in Feet scaled 1:600

0 Gamma Ray (GAPI) 200	0 Deep Resistivity (Ohm-m) 50	1000 CILD (mmho/m) 0
0 SP (mV) 200	0 Shallow Resistivity (Ohm-m) 50	
4 Caliper (in) 14	50 RILD (Ohm-m) 500	
TBHV (ft3) ABHV (ft3)	50 RLL3 (Ohm-m) 500	

0 Gamma Ray (GAPI) 200	0 Deep Resistivity (Ohm-m) 50	1000 CILD (mmho/m) 0
0 SP (mV) 200	0 Shallow Resistivity (Ohm-m) 50	
4 Caliper (in) 14	50 RILD (Ohm-m) 500	
TBHV (ft3) ABHV (ft3)	50 RLL3 (Ohm-m) 500	

Database File: c:\warrior\data\augustus energy resources,llc_mcconnell 21-23 4n47w_0512512120_20141010_
Dataset Pathname: pass3
Presentation Format: pdce
Dataset Creation: Fri Oct 10 01:29:15 2014 by Log Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

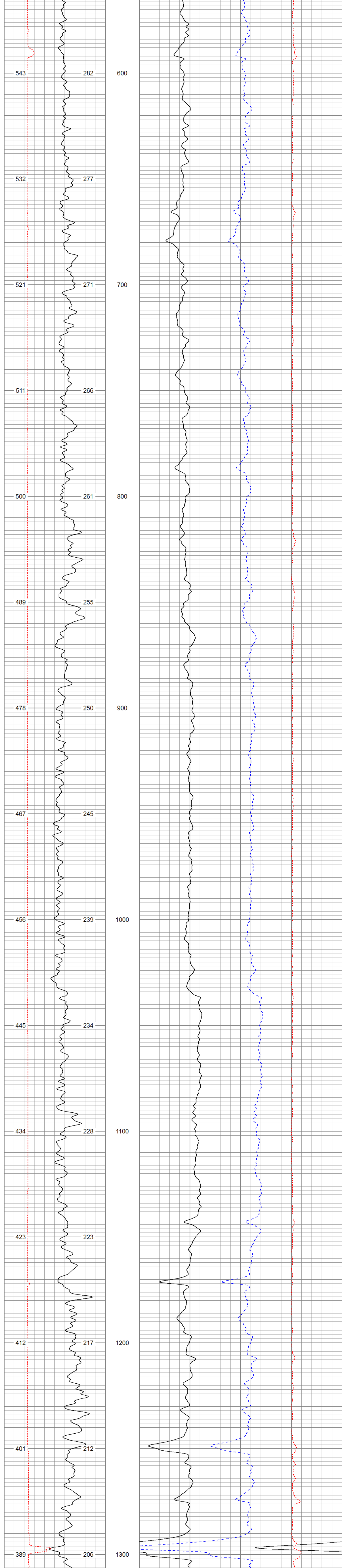
0 Gamma Ray (GAPI) 200	0.2 Deep Resistivity (Ohm-m) 20	60 Density Porosity (pu) 0
0 SP (mV) 200	0.2 Shallow Resistivity (Ohm-m) 20	60 Neutron Porosity (pu) 0
4 Caliper (in) 14	0.2 Medium Resistivity (Ohm-m) 20	
TBHV (cu. ft. (ft3) ABHV (cu. ft. (ft3)	0.2 True Resistivity (Ohm-m) 20	



0 Gamma Ray (GAPI) 200	0.2 Deep Resistivity (Ohm-m) 20	60 Density Porosity (pu) 0
0 SP (mV) 200	0.2 Shallow Resistivity (Ohm-m) 20	60 Neutron Porosity (pu) 0
4 Caliper (in) 14	0.2 Medium Resistivity (Ohm-m) 20	
TBHV (cu. ft. (ft3) ABHV (cu. ft. (ft3)	0.2 True Resistivity (Ohm-m) 20	

Database File: c:\warrior\data\augustus energy resources,llc_mcconnell 21-23 4n47w_0512512120_20141010_
Dataset Pathname: pass3
Presentation Format: cdl60
Dataset Creation: Fri Oct 10 01:29:15 2014 by Log Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

4 Caliper (in) 14	2 Bulk Density (g/cc) 3
0 Gamma Ray (GAPI) 200	60 Density Porosity (pu) 0
TBHV (ft3) ABHV (ft3)	-0.5 Corr (g/cc) 0.5



Calibration Report

Database File: C:\Warrior\Data\Augustus Energy Resources,LLC_McConnell 21-23 4N47W_0512512120_20141
Dataset Pathname: pass3
Dataset Creation: Fri Oct 10 01:29:15 2014 by Log Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: 1010-PSI
Surface Cal Performed:

Loop:	Readings Air	Readings Loop	References Air	References Loop		Results m	Results b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.550	-33.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.480	-27.000

Compensated Density Calibration Report

Serial-Model: 771-PSI
Master Calibration Performed: Wed Aug 20 14:19:31 2014

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	6323.60	8557.33	cps
Aluminum	2.690	g/cc	1148.13	5455.46	cps

	Size		Reading
Small Ring		in	
Medium Ring		in	
Large Ring		in	

Compensated Neutron Calibration Report

Serial Number: 853
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	1.9200

PRE-SURVEY VERIFICATION

	Detector	Readings		Measured		Target	
1)	Short Space		cps		pu		pu
	Long Space		cps				
2)	Short Space		cps		pu		
	Long Space		cps				
3)	Short Space		cps		pu		
	Long Space		cps				

POST-SURVEY VERIFICATION

	Detector	Readings		Measured		Target	
1)	Short Space		cps		pu		pu
	Long Space		cps				
2)	Short Space		cps		pu		pu
	Long Space		cps				
3)	Short Space		cps		pu		pu
	Long Space		cps				

Gamma Ray Calibration Report

Serial Number: 43
Tool Model: PSI
Performed: Tue Oct 18 17:42:20 2011

Calibrator Value: 275.0 GAPI

Background Reading: 32.0 cps
Calibrator Reading: 340.0 cps

Sensitivity: 0.6000 GAPI/cps

Log Variables

Database: C:\Warrior\Data\Augustus Energy Resources,LLC_McConnell 21-23 4N47W
Dataset: field/well/run1/pass3

Top - Bottom

SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m
On	Limestone	1	2.71	22	0	0

CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
4.5	0	0	109	6.25