J-W WIRELINE COMPANY

CEMENT BOND GAMMA RAY COLLAR CORRELATION LOG

Company NOBLE ENERGY INC.
Well LDS D 08-29
Field WATTENBERG
County WELD
State COLORADO

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County WELD State COLORADO
Location: API #: 05-123-31990-00
189' FSL & 1,312' FWL
SE SW
SEC.5 TWP 3N RGE 64 W
SEC TWP RGE

Other Services
NONE

Permanent Datum GROYND LEVEL Elevation 4752
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 4765
D.F. 4765
G.L. 4752

Date	28-MARCH-2012
Run Number	ONE
Depth Driller	7173
Depth Logger	7094
Bottom Logged Interval	7093
Top Log Interval	1870
Open Hole Size	7 7/8
Type Fluid	WATER
Density / Viscosity	—
Max. Recorded Temp.	240
Estimated Cement Top	2114
Time Well Ready	—
Time Logger on Bottom	—
Equipment Number	2405/1 11/16 TECKO
Location	BRIGHTON
Recorded By	HAYES
Witnessed By	MR. TROY SETTLE

Borehole Record			Tubing Record		
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8 5/8	24#	SURFACE	739
Prot. String				
Production String	4.5	11.6#	SURFACE	7163
Liner				

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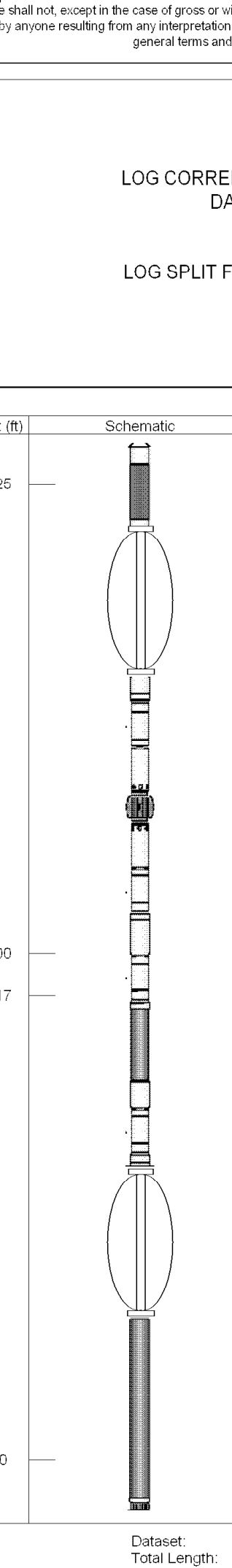
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

LOG CORRELATED TO AC TR SD DSN LOG
DATED 17-MARCH-2012

LOG SPLIT FOR CORRELATION PURPOSES

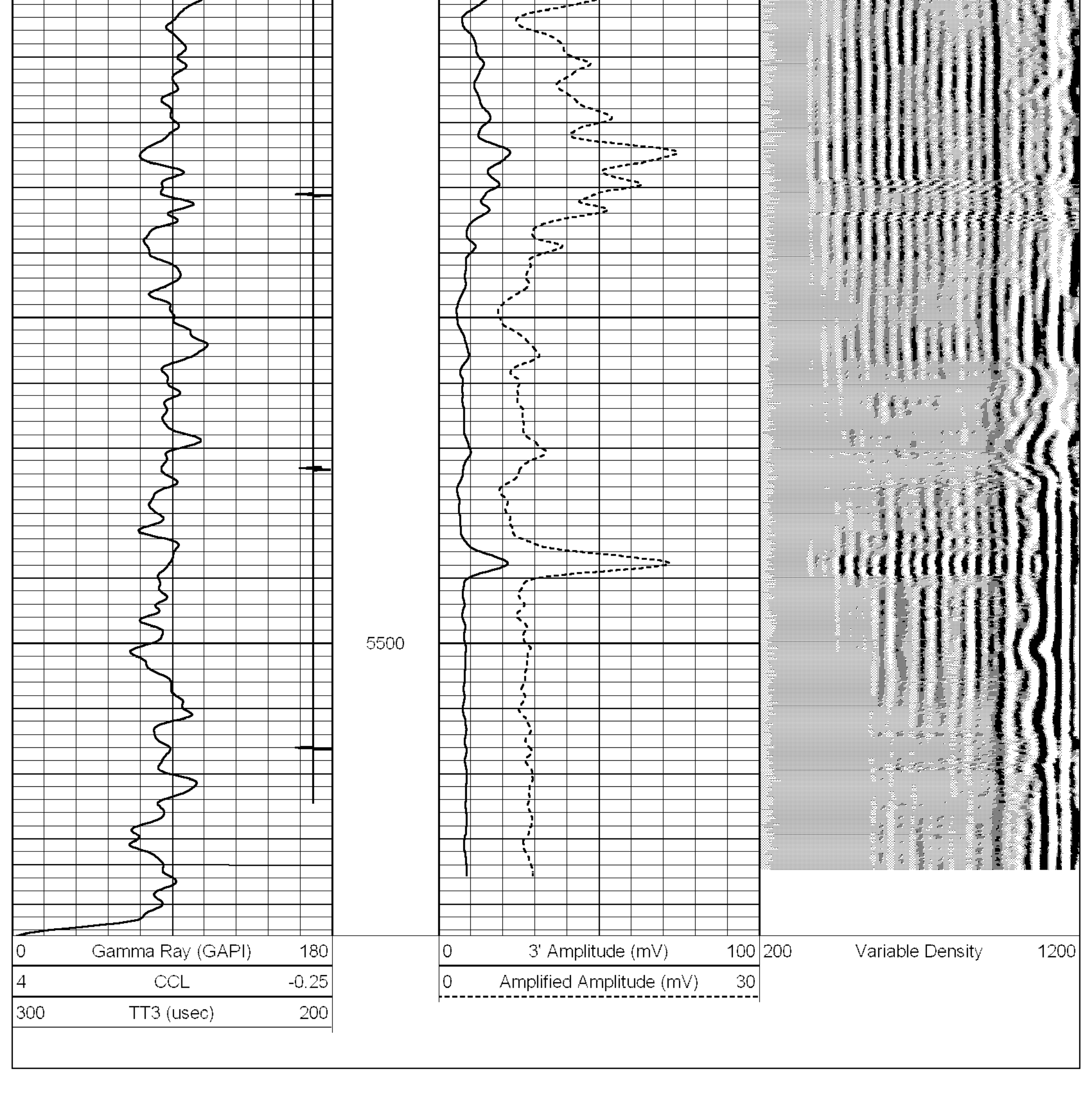


Sensor	Offset (ft)	Description	Len (ft)	OD (in)	Wt (lb)
CCL	20.25	CCL-169TEKCO (169) 1 11/16" Tekco Logging	1.67	1.69	20.00
		CENT-TekCo (1 11/16 Adj.) (001) 1 11/16" Tekco Cent	2.92	1.69	10.00
WVF3	11.00	CBL-3-5tekco169 (1) 1 11/16 Tekco w/o Temp	9.75	1.69	70.00
WVF5	10.17				
		CENT-TekCo (1 11/16 Adj.) (002) 1 11/16" Tekco Cent	2.92	1.69	10.00
GR	1.00	GR-1.69TEKCO (576) 1 11/16 Tekco Logging GR	3.83	1.69	50.00

Dataset: lds d 08-29.db: field/well/run1/pass3
Total Length: 21.08 ft
Total Weight: 160.00 lb
O.D. 1.69 in

Database File: lds d 08-29.db
Dataset Pathname: pass3
Presentation Format: cblx
Dataset Creation: Wed Mar 28 10:12:48 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	180	0	3' Amplitude (mV)	100	200	Variable Density	1200
4	CCL	-0.25	0	Amplified Amplitude (mV)	30			
300	TT3 (usec)	200						



0	Gamma Ray (GAPI)	180
4	CCL	-0.25
300	TT3 (usec)	200

0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30

200	Variable Density	1200

Database File: lds d 08-29.db
Dataset Pathname: pass2
Presentation Format: cblx
Dataset Creation: Wed Mar 28 09:44:35 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	180
4	CCL	-0.25
300	TT3 (usec)	200

0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30

200	Variable Density	1200

0	Gamma Ray (GAPI)	180
4	CCL	-0.25
300	TT3 (usec)	200

0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30

200	Variable Density	1200

Calibration Report

Database File: lds d 08-29.db
Dataset Pathname: pass3
Dataset Creation: Wed Mar 28 10:12:48 2012 by Log Std Casedhole 10121

Gamma Ray Calibration Report

Serial Number:	576	
Tool Model:	1.69TEKCO	
Performed:	Thu Jan 12 13:03:35 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Cement Bond Log Calibration Report

Serial Number:	1		
Tool Model:	3-5tekco169		
Performed:	Wed Mar 28 09:23:22 2012		
Depth:	1321.14	ft	
Casing Diameter:	4.5	in	
	3' Spacing	5' Spacing	
Signal Zero:	3	3	mV
Calibrated Amplitude:	81.1961	81.1961	mV
Reading at Signal Zero:	-0.2	0	V
Reading in Free Pipe:	2.5	2.5	V
Gain:	28.9615	31.2784	
Offset:	8.7923	3	