Company NOBLE ENERGY INC.
Well LDS D 08-30D
Field WATENBERG
County WELD
State COLORADO

JW WIRELINE COMPANY

CEMENT BOND
GAMMA RAY
COLLAR CORRELATION LOG

Company NOBLE ENERGY INC.
Well LDS D 08-30D
Field WATENBERG
County WELD State COLORADO

Location: API #: 5-123- 31987-00
SHL: 189' FSL & 1287' FWL SW SW
SEC. 5 TWP. 3N RGE. 64W
BHL: 114' FSL & 160' FEL SE SE
SEC 6 TWP 3N RGE 64W

Other Services
NONE

Permanent Datum GROUND LEVEL Elevation 4752
Log Measured From KELLY BSHING
Drilling Measured From KELLY BUSHING

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

Date	28-MARCH-2012
Run Number	ONE
Depth Driller	7409
Depth Logger	7295
Bottom Logged Interval	7294
Top Log Interval	1530
Open Hole Size	7 7/8
Type Fluid	WATER
Density / Viscosity	--
Max. Recorded Temp.	245
Estimated Cement Top	2104
Time Well Ready	--
Time Logger on Bottom	--
Equipment Number	2405/111/16 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	740
Prot. String				
Production String	4.5	11.6#	SURFACE	7399
Liner				

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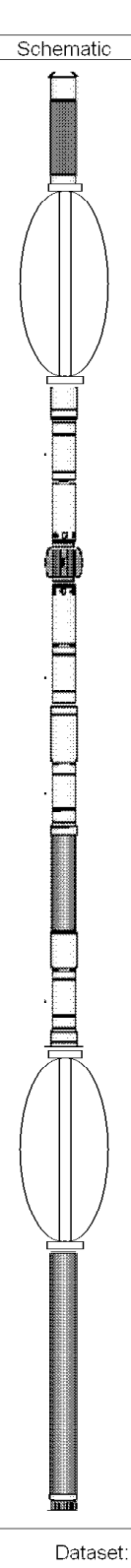
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 CD, CN, ML LOG
DATED 13-MARCH-2012

LOG SPLIT FOR CORRELATION PURPOSES

Sensor	Offset (ft)	Schematic	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 WVF5	11.00 10.17		CBL-3-5tekco169 (1) 1 11/16 Tekco w/o Temp	9.75	1.69	70.00
			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

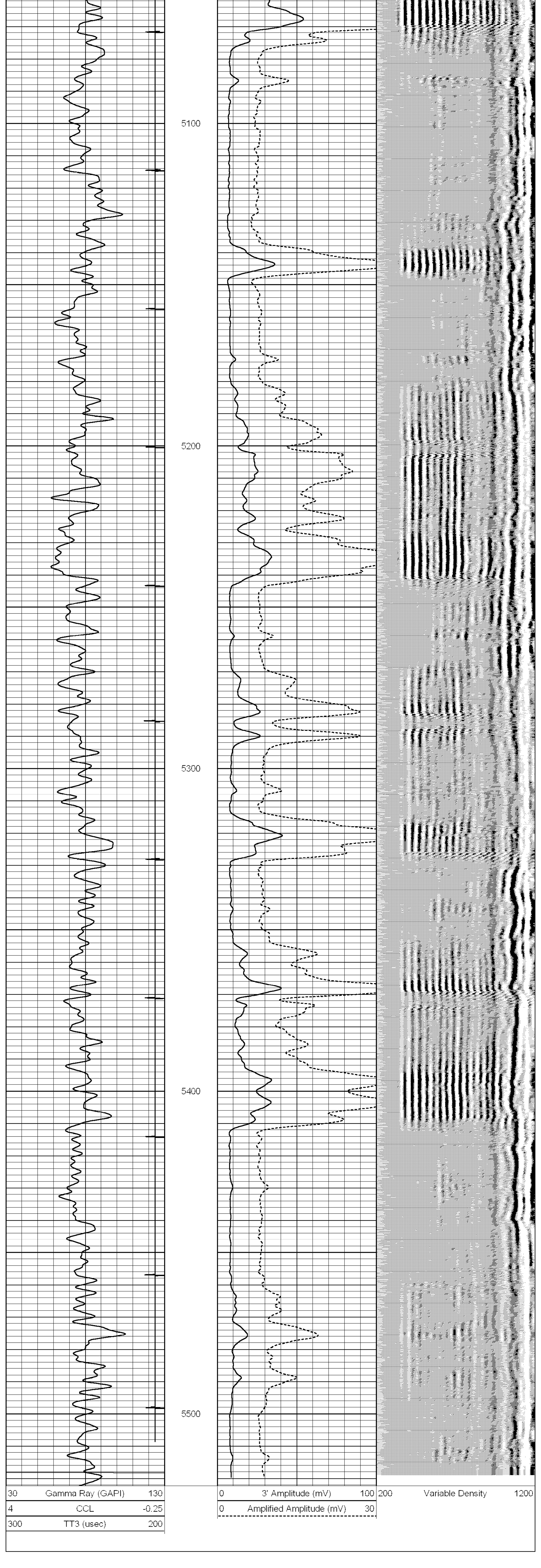
Dataset: lds 08-30d.db: field/well/run1/pass2
Total Length: 21.08 ft
Total Weight: 160.00 lb
O.D. 1.69 in

Database File: lds 08-30d.db
Dataset Pathname: pass2
Presentation Format: cblx
Dataset Creation: Wed Mar 28 12:03:12 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

30	Gamma Ray (GAPI)	130
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 08-30d.db
Dataset Pathname: pass1
Presentation Format: cblx
Dataset Creation: Wed Mar 28 11:32:37 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

Calibration Report

Database File: lds 08-30d.db
Dataset Pathname: pass2
Dataset Creation: Wed Mar 28 12:03:12 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	