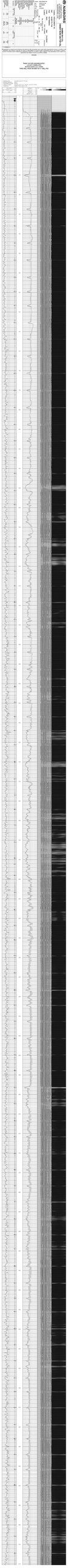

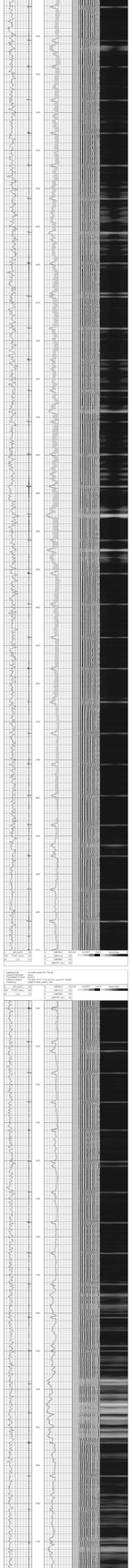

NABORS
COMPLETION & PRODUCTION SERVICES CO.

GAMMA RAY CCL CEMENT BOND SECTOR VDL

Company	NOBLE ENERGY INC.
Well	SAUER F33-77HN
Field	WATTENBERG
County	WELD
State	COLORADO

Company NOBLE ENERGY INC.

Well SAUER F33-77HN

Field WATTENBERG

County WELD State COLORADO

Location: API #: 0512336442

BHL: 535' FNL & 1320' FWL SE/SW

SEC 33 TWP 5N RGE 65W

Other Services

Permanent Datum	GL	Elevation 4671	Elevation K.B. 4684 D.F. G.L. 4671
Log Measured From	KB		
Drilling Measured From	KB		

Date	MAY 30, 2013
Run Number	ONE
Depth Driller	11354
Depth Logger	6408
Bottom Logged Interval	6408
Top Log Interval	SURFACE
Open Hole Size	8-3/4
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	225°F
Estimated Cement Top	990
Time Well Ready	PORTABLE MAST
Time Logger on Bottom	2-3/4 PROBE 101020
Equipment Number	4838
Location	45
Recorded By	GREG NOLAN
Witnessed By	BILL MANSFIELD

Borehole Record

Run Number	Bit	From	To

Tubing Record

Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9-5/8	36# J-55	13	610
Prot. String				
Production String	7	26# P-110	13	7342
Liner	4-1/2	11.6# P-110	7244.7	11339

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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

THANK YOU FOR CHOOSING NCPS!!!
LOG NOT CORRELATED
WCR 50 & WCR 41, E.1, N INTO
THIRD WELL FROM THE WEST OF A 7 WELL PAD

Database File:	cbl noble sauer f33-77hn.db
Dataset Pathname:	pass3
Presentation Format:	sector2
Dataset Creation:	Thu May 30 07:37:27 2013 by Log SCH 120430
Charted by:	Depth in Feet scaled 1:240

0	GR (GAPI)	150	0	AMPMAX	100	200	WVF5FT	1200	1	Sector Map	8
400	TT3FT (usec)	200	0	AMPAVG	100						
50	CCL	-5.5	0	AMPMIN	100						
			0	AMP3FT (mV)	100						

Database File: cbl noble sauer f33-77hn.db
Dataset Pathname: pass2
Presentation Format: sector2
Dataset Creation: Thu May 30 07:23:39 2013 by Log SCH 120430
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200	0	AMPMAX	100	200	WVF5FT	1200	1	Sector Map	8
400	TT3FT (usec)	200	0	AMPAVG	100						
50	CCL	-5.5	0	AMPMIN	100						
			0	AMP3FT (mV)	100						

0	GR (GAPI)	200	0	AMPMAX	100	200	WVF5FT	1200	1	Sector Map	8
400	TT3FT (usec)	200	0	AMPAVG	100						
50	CCL	-5.5	0	AMPMIN	100						
			0	AMP3FT (mV)	100						

Calibration Report

Database File: cbl noble sauer f33-77hn.db
Dataset Pathname: pass2
Dataset Creation: Thu May 30 07:23:39 2013 by Log SCH 120430

Gamma Ray Calibration Report

Type / Serial: Probe275dig / 110785

SHOP CALIBRATION	Mon May 13 11:26:24 2013				
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.4600			GAPI/cps
PRIMARY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number: 101020
Tool Model: Probe

Calibration Casing Diameter: 7.000 in
Calibration Depth: 425.692 ft

Master Calibration, performed Thu May 30 07:08:56 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	1.014	1.500	62.165	60.326	1.025
CAL	0.008	1.330				
5'	0.008	1.167	1.500	62.165	52.331	1.084
SUM						
S1	0.008	1.137	0.000	62.165	55.030	-0.425
S2	0.008	1.112	0.000	62.165	56.289	-0.439
S3	0.008	1.049	0.000	62.165	59.679	-0.456
S4	0.008	0.944	0.000	62.165	66.386	-0.513
S5	0.008	0.850	0.000	62.165	73.841	-0.571
S6	0.008	0.858	0.000	62.165	73.113	-0.560
S7	0.008	0.995	0.000	62.165	62.943	-0.483
S8	0.008	1.124	0.000	62.165	55.679	-0.430

Internal Reference Calibration, performed Fri Jan 13 14:30:16 2012:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.008	1.330	1.000	0.000

Air Zero Calibration, performed Thu May 30 07:09:12 2013:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.008	0.000	0.000
5'	0.008	0.000	0.000
SUM			
S1	0.008	0.000	-0.000
S2	0.008	0.000	0.000
S3	0.008	0.000	-0.000
S4	0.008	0.000	0.000
S5	0.008	0.000	-0.000
S6	0.008	0.000	-0.000
S7	0.008	0.000	-0.000
S8	0.008	0.000	0.000