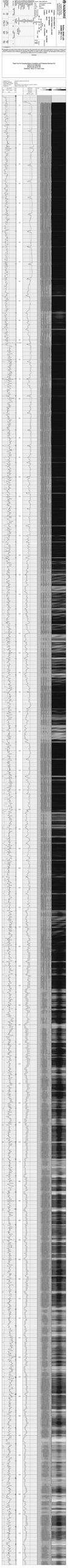

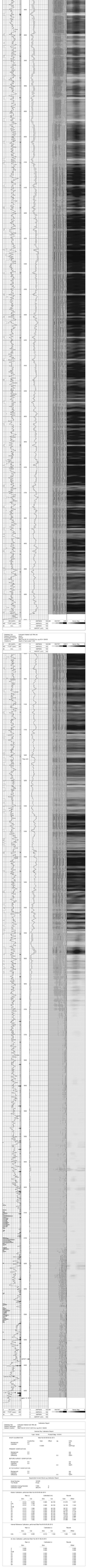

NABORS
COMPLETION & PRODUCTION SERVICES CO.

RADIAL BOND LOG
GAMMA RAY C C L
V D L

Company	NOBLE ENERGY INC.		
Well	CASTOR FEDERAL LC22-78HN		
Field	WATTENBERG		
County	WELD	State	COLORADO

Location: API #: 05123330800000
NW NW
BHL: 660' FSL & 660' FWL
SEC 22 TWP 9N RGE 59W

Other Services

Permanent Datum	GL	Elevation 4916	Elevation
Log Measured From	KB 30'		K.B. 4946
Drilling Measured From	KB		D.F. 4945 G.L. 4916

Company NOBLE ENERGY INC.
Well CASTOR FEDERAL LC22-78HN
Field WATTENBERG
County WELD
State COLORADO

Date	February 6, 2013	
Run Number	One	
Depth Driller	10,435	
Depth Logger	6465	
Bottom Logged Interval	6464	
Top Log Interval	Surface	
Casing Size	7.00"	
Type Fluid	Water	
Max. Recorded Temp.	203 deg F	
Estimated Cement Top	510 est.	
Time Well Ready	Crane	
Time Logger On Bottom	AM	
Unit Number	4367	4515
Tool Size / ID Number	2.75 Probe 101010	2.75 Probe 101020
Location	45	Platteville, CO
Recorded By	K. Monaghan	
Witnessed By	Chummy	

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625"	36 lb/ft J-55	Surface	656.9
Prot. String				
Production String	7.0"	26 lb/ft P-110	Surface	6560.6
Liner	4.50"	11.6 lb/ft P-110	6407.6	10,420

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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 Nabors Completion and Production Services CO!
API# 05-123-33080-0000
Wireline Zero @ 30' KB
Directions: 104 & 111, E 2mi, S Into

Database File:	scblcastor federal lc22-78hn.db
Dataset Pathname:	pass3
Presentation Format:	sector2
Dataset Creation:	Wed Feb 06 10:30:13 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						
30	CCL	-1.5	0	AMPMIN	100						
			0	AMP3FT (mV)	100						

Database File: scblcastor federal lc22-78hn.db
Dataset Pathname: pass2
Presentation Format: sector2
Dataset Creation: Wed Feb 06 10:14:38 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						
30	CCL	-1.5	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						
30	CCL	-1.5	0	AMPMIN	100						
			0	AMP3FT (mV)	100						

Calibration Report

Database File: scblcastor federal lc22-78hn.db
Dataset Pathname: pass3
Dataset Creation: Wed Feb 06 10:30:13 2013 by Log SCH 120430

Gamma Ray Calibration Report

Type / Serial: Probe275dig / 101010

SHOP CALIBRATION	Wed Feb 06 08:04:02 2013				
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.5200			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:	309.075	ft

Master Calibration, performed Wed Feb 06 09:56:48 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.012	0.978	0.900	62.165	61.875	1.637
CAL	-0.012	1.304				
5'	-0.012	1.119	0.900	62.165	54.158	1.543
SUM						
S1	-0.012	1.084	0.000	62.165	56.721	0.679
S2	-0.012	1.073	0.000	62.165	57.284	0.677
S3	-0.012	1.022	0.000	62.165	60.137	0.719
S4	-0.012	0.926	0.000	62.165	66.256	0.793
S5	-0.012	0.837	0.000	62.165	73.203	0.872
S6	-0.012	0.832	0.000	62.165	73.616	0.886
S7	-0.012	0.944	0.000	62.165	65.028	0.771
S8	-0.012	1.062	0.000	62.165	57.889	0.696

Internal Reference Calibration, performed Wed Feb 06 09:56:28 2013:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.012	1.304	1.000	0.000

Air Zero Calibration, performed Wed Feb 06 07:36:24 2013:

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