



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: HOWARD 27N-28HZ (Horizontal Hole Section)
Location: Section 28, T1N, R67W, WELD County, CO.
License Number: API: 05-123-36928
Spud Date: October 19, 2013
Surface Coordinates: NENE Sec 28 T1N R67W; 310' FNL 1094' FEL
Lat N 40.028474 Long W -104.89003
Bottom Hole Coordinates: NENE Sec 33, T1N, R67W Coordinates: 4487.68' N & 211.61' E

Ground Elevation (ft): 4983'
Logged Interval (ft): 6937' To: 12,017'
Formation: Pierre Shales/Sands, Niobrara B Target
Type of Drilling Fluid: Water & Poly to 7120', LSND 7120'-12,017'

Region: Wattenberg
Drilling Completed: October 25, 2013

K.B. Elevation (ft): 4999'
Total Depth (ft): 12,017' DTMD

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP
Address: Granite Tower - 1099 18th St, Ste 1800
Denver, CO 80202
CO Geologist, John Morgan

GEOLOGIST

Name: Ian Harris & Hank McCroskey
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

Casing	
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9 5/8" Surface Casing set @ 1019'
7" Intermediate Casing set @ 7952'
4 1/2" Production Liner Hung @ 12,002' on 10/27/2013

Comments

1) Drilling Contractor: XTREME, Rig #20
2) Company Man: Charlie Daigle & Tom Kibbe
3) Mud Comapny : AES Drilling Fluids
4) Directional Drilling: Baker Huges
Pulse Tool
Drillers: Barry Combs, Scott Stanford
MWD: Greg Dore & David Campbell
5) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-462 & Ratcliff Agitator
6) Well Site Geology: Goolsby Brothers & Associates
Geologists: Hank McCroskey & Ian Harris

ROCK TYPES

Anhy
 Bent
 Brec
 Cht
 Clyst
 Coal
 Oil sat.
 Congl
 Dol
 Gyp
 Lmst
 Mrlst
 Salt
 Shale
 Shcol
 Shgy
 Ss
 Sstst
 Ss
 Sstst
 Carb sh
 Silty sh

ACCESSORIES

MINERAL										FOSSIL										TEXTURE																																															
	Bit		Chtlt		Glau		Minxl		Sandy		Brach		Echin		Oolite		Plant		Anhy		Gyp		FinexIn		Packst																																										
	Anhy		Brecfrag		Dol		Gyp		Nodule		Silt		Algae		Bryozoa		Fish		Foram		Fossil		Gastro		Ostra		Pelec		Pellet		Pisolite		Strom		Chalkstg		Arg		Bent		Coal		Dol		Ls		Mrst		Sttstrg		Ssstrg		Boundst		Chalky		Cryxln		Earthy		Lithogr		Microxln		Mudst		Wackest
	Arggrn		Calc		Feldspar		Hvymin		Phos		Belm		Bioclst		Cephal		Coral		Fossil		Gastro		Chalkstg		Arg		Bent		Coal		Dol		Ls		Mrst		Sttstrg		Ssstrg		Boundst		Chalky		Cryxln		Earthy		Lithogr		Microxln		Mudst		Wackest												
	Arg		Carb		Ferrpel		Kaol		Pyr		Salt		Sulphur		Tuff		Brach		Echin		Oolite		Plant		Anhy		Gyp		FinexIn		Packst																																				
	Bent		Chtdk		Ferr		Marl		Salt		Sulphur		Tuff		Brach		Echin		Oolite		Plant		Anhy		Gyp		FinexIn		Packst																																						

OTHER SYMBOLS

<input checked="" type="radio"/> OIL SHOWS	<input type="radio"/> Spotted	<input type="radio"/> Dead	<input type="radio"/> near even	POROSITY TYPE	<input type="checkbox"/> Fenest	<input checked="" type="checkbox"/> Inter	<input type="checkbox"/> Organic	<input checked="" type="checkbox"/> Vuggy	ROUNDING	<input type="checkbox"/> Subrnd	<input type="checkbox"/> Angular	SORTING	<input type="checkbox"/> Moderate
<input checked="" type="radio"/> Even	<input type="radio"/> Ques	<input type="radio"/> Vspotty		<input type="checkbox"/> Earthy	<input type="checkbox"/> Fracture	<input checked="" type="checkbox"/> Moldic	<input type="checkbox"/> Pinpoint		<input checked="" type="checkbox"/> Rounded	<input type="checkbox"/> Subang		<input checked="" type="checkbox"/> Well	<input type="checkbox"/> Poor















