



WESLEY D. HANSEN Consulting Petroleum Geologist

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**KGS
AAPG
Kansas License #418**



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

Well Name: Murfin Drilling Co., Inc. #7-1 Mary Ann
Location: 1470' FNL, 1520' FWL of Section 1-1S-36W
License Number: API: 15-153-20980
Spud Date: 1-24-2014
Surface Coordinates: 1470' FNL, 1520' FWL of Section 1-1S-36W

Region: Rawlins County, KS

Drilling Completed: 1-27-2014

**Bottom Hole Vertical hole
Coordinates:**
Ground Elevation (ft): 3139' **K.B. Elevation (ft):** 3150'
Logged Interval (ft): 3460' **To:** RTD **Total Depth (ft):** 4520'
Formation: Marmaton at RTD
Type of Drilling Fluid: Chemical - Displaced at 3255'

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Murfin Drilling Co., Inc.
Address: 250 N. Water
Suite 300
Wichita, KS 67202

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
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COMMENTS

Contractor: Murfin Drilling Co., Inc. Rig #2
 Pusher: Arturo Cabezas

Surface Casing: 8 5/8" set at 224' w/225 sx
 Production Casing: 5 1/2" set at 4515' w/450 sx

Mud by: Morgan Mud - Cade Lines was the engineer

DST's by: No DST's

Logs by: Pioneer Wireline (DIL, CN-CD, MEL, BHCS)

Deviation Surveys: 1/4 deg. @ 224'; 1/4 deg. @ 4520'





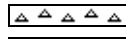
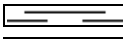



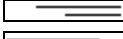




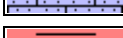


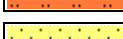


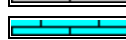






BIT RECORD

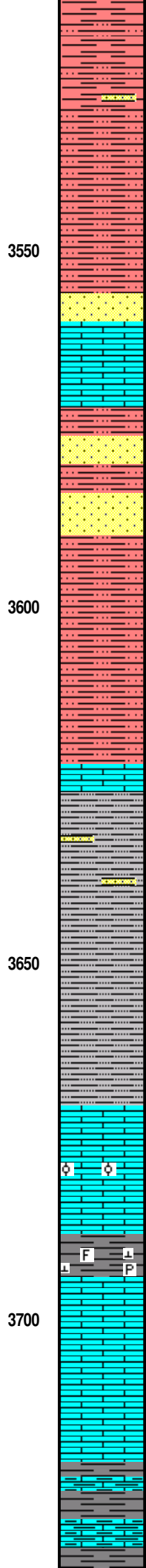
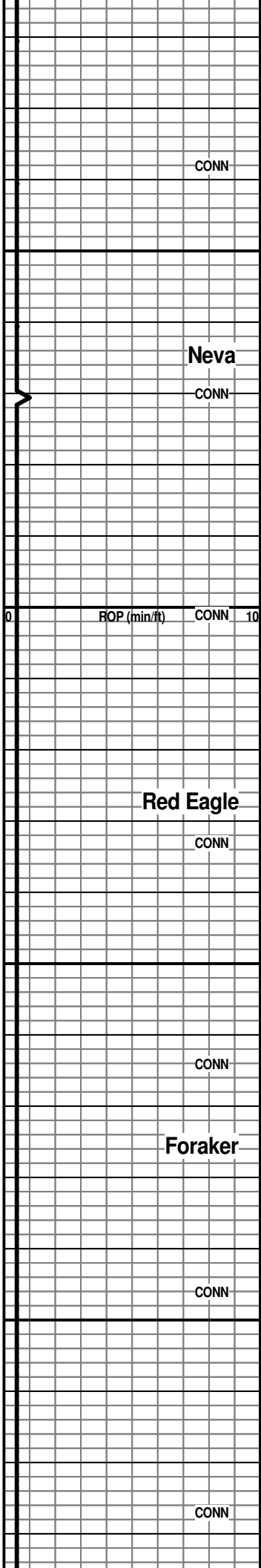
Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	HTC	FDS	224'	224'	1 1/2
2	7 7/8"	HTC	DP 506F	4520'	4296'	35 1/4

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL MDC #5-1 Mary Ann 900'FNL, 1075' FWL Section 1-1S-36W 3177' KB
	Depth	Datum	Depth	Datum	
Anhydrite	3081'	+69	3081'	+69	+1
B/Anhydrite	3115'	+35	3115'	+35	+2
Neva			3561'	-411	+1
Red Eagle			3623'	-473	+2
Foraker			3670'	-520	flat
Topeka			3884'	-734	+2
Oread			3998'	-848	-2
Lansing			4100'	-950	+1
Stark Shale			4316'	-1166	+1
BKC			4374'	-1224	+1
RTD	4520'	-1370			
LTD			4521'	-1371	

ROCK TYPES

 Anhy	 Salt	 Dol	 Shlyslts
 Cht	 Shale	 Dtd	 Sltysh
 Coal	 Shcol	 Gry sh	 Sdy dolo
 Congl	 Shgy	 Sandylms	 Silty dolo
 Gyp	 Slstst	 redshale	 Shy dolo
 Ls colorless	 Ss	 Shale	 Shaly ls
 Lmst	 Carb sh	 Slstsn	



Sh: very predom. red-brn, silty; occ lt gray vvfgr Sst, N.S.

CONN

3550

Neva

CONN

Ls: scatt. tan cryptoIn; sl influx lt gray quartzitic Sst, N.S.

Sh: lt to med red, silty with red Siltst; lesser offwhite, lt gray siltst and lt gray vvfgr sl micac. Sst

Poor samples

3600

ROP (min/ft) CONN 10

Sh: lt to med red, silty

Red Eagle

CONN

Ls: only scatt. offwhite mic-fnxIn, N.S.

60' spl - flood offwhite, lt gray shaly siltst and silty shale; scatt. lt gray vvfgr silty Sst with pp black dead stain, nfo, no odor

3650

CONN

Poor samples

Foraker

CONN

Ls: tan, offwhite, lt gray mic-vfxIn with some pp por.; some tan vf-cryptoIn, NVP; scatt. offwhite granular, sl oolitic with inter-particle por. with brn residual oil, no odor; Sh: lt to med gray, calcar. and foss.

3700

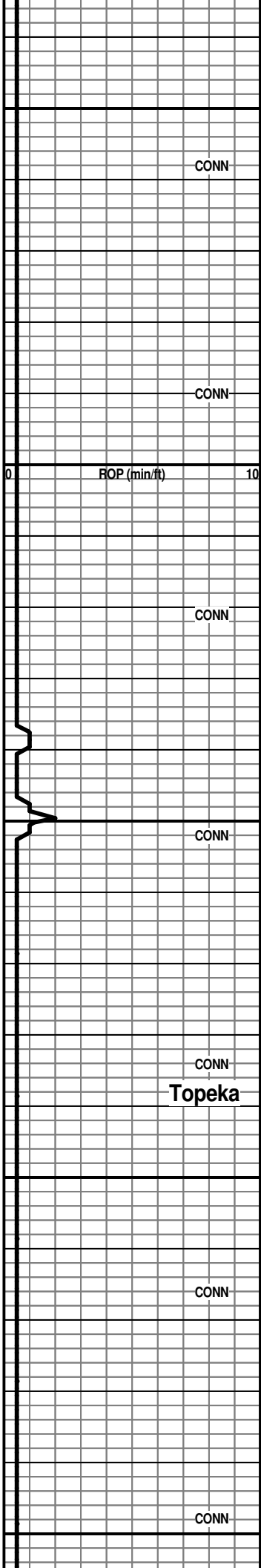
Ls: predom. offwhite, lt gray mic-vfxIn dense; rare chips with spotty stain AA; some gray shale and occ pyrite

Poor samples

Ls: various dense AA

CONN

Sh: lt to med gray calcar. and shaly gray dense Ls



3750

CONN

80' spl - Ls/Sh mix AA with sl influx tan, lt gray granular Ls with patchy brn stain, nfo, no odor; incr. % of Sh: lt gray, some pyritic; sl influx red-brn

Sh: flood red, red-brn, some soft and gummy

predom. red shale; scatt. tan, offwhite vf-cryptoxln Ls

CONN

Ls: scatt. offwhite micxln to fn granular, N.S.; predom. Sh: red silty; scatt. lt gray, gray-green

3800

ROP (min/ft) 10

Sh: predom. red-brn and lesser gray, silty; Ls: sl incr. % tan, lt gray sl granular, trace with black speckled stain, poor por.

CONN

Sh: various silty AA; Ls: lt gray, tan granular, sl foss.; some red-brn cryptoxln

F

3850

CONN

Ls: lt gray vfxln and tan, gray cryptoxln

Sh: mix AA with sl influx dark gray to black subfissile

Sh: mix lt to med red, silty; lesser gray

CONN

Topeka

Ls: mix offwhite, lt gray vfxln; scatt. red-brn, tan, lt gray cryptoxln, NVP, N.S.

Ls: incr. % - more tan, lt gray, lt brn cryptoxln, NVP and offwhite, lt gray mic-vfxln dense; some white subchalky; 1-2 chips offwhite sl granular with black gilsonite flecks

3900

CONN

Ls: various granular to cryptoxln AA; some mottled lt red and yellow

Sh: med to dark red-brn and red silty

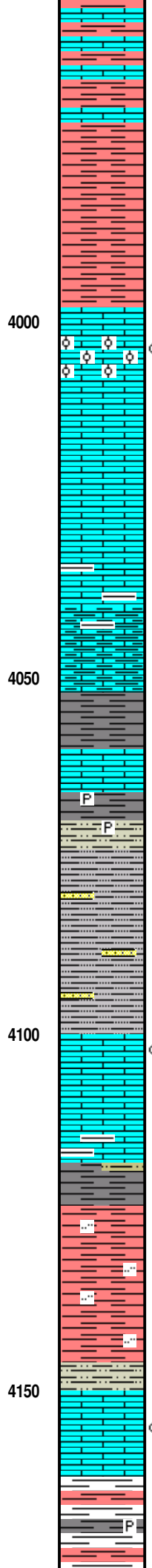
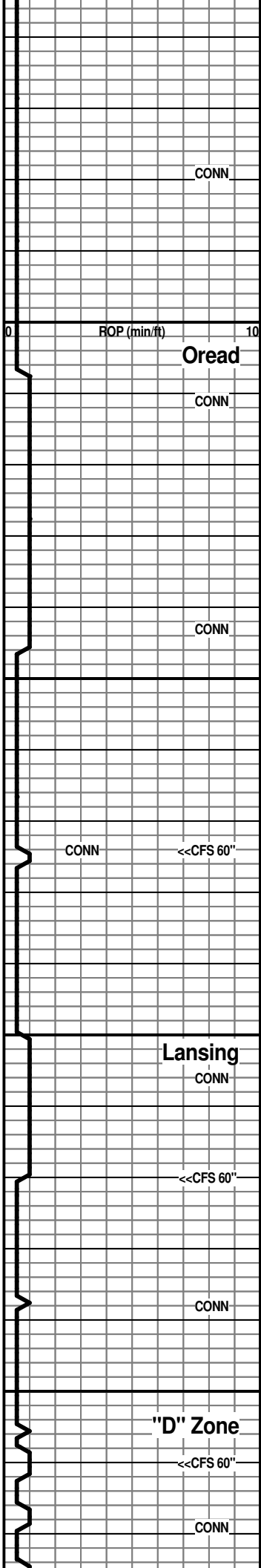
CONN

4000' spl - flood Sh: red-maroon, maroon; much decreased Ls %; trace tan oolitic with inter-oolitic por. with dark brn to black pp stain, trace fo, no odor

3950

Poor samples

Poor samples



20' spl - very predom. shales AA with very scatt. Ls with shows of oily film; occ white chalky Ls

CONN

ROP (min/ft)

Oread

CONN

4000

40' spl - Ls: strong influx offwhite, lt gray, tan vf-cryptoxln, NVP, N.S.; several chips offwhite, lt gray, tan granular to oolitic IP with pp dark brn to black stain, sfo, oily film, no odor

Fair samples

Ls: offwhite, lt gray, tan vf-cryptoxln and offwhite mic-vfxln dense, subchalky, N.S.; scatt. sloughing shows from above

4074' spl - Ls: predom. various dense AA, N.S.; scatt. oolitic/granular with inter-particle por. and some vug. por. with dark brn to black tarry stain; new??

CONN

4050

CFS 4074' 30" spl - flood lt to med gray dense shaly Ls and calcar. shale

Sh: dark gray

Ls: offwhite, lt gray mic-vfxln dense

P

Sh: gray, pyritic with some offwhite, lt gray Siltst; scatt. pyrite

CONN

<<CFS 60"

Siltst: offwhite, lt gray calcar., vf sandy IP with med to dark gray shales; some lt gray vf-fg Sst, N.S.

wiper trip at 4074'
CTCH 30" after wiper trip
Morgan Mud Check at 4074'
1:30 PM on 1-26-2014
wt vis wl pH chl
9.2 47 7.2 10.0 1200
PV YP GelS lcm solids
16 15 7/25 6# 6.4%

4100

CFS 4120' 30" spl - Ls: influx offwhite, tan mic-vfxln with patchy stain, sfo in pp and small vug. por., no odor

Lansing

CONN

CFS 4120' 60" spl - Ls: mix AA common shows; spls are very shaly with med to dark gray, red-brn shales; scatt. siltst and fg sst

<<CFS 60"

Sh: med to dark gray with strong influx of red-brn, silty IP

CONN

4150

Sh: predom. red-brn AA with lesser lt gray Siltst

Samples are poor

"D" Zone

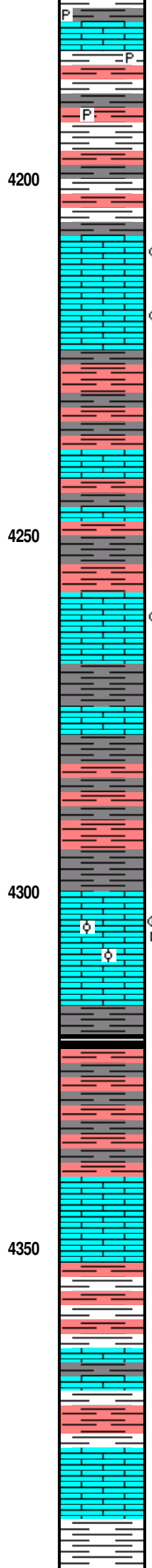
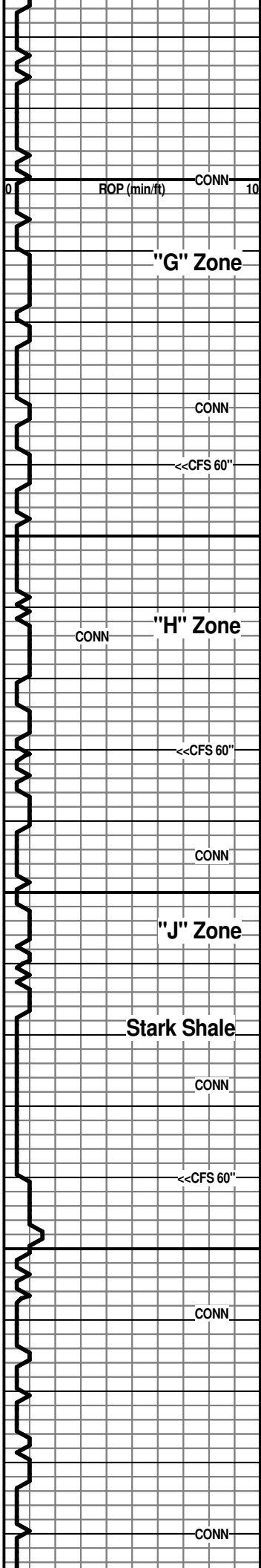
<<CFS 60"

Ls: lt brn, lt gray cryptoxln, some with vug. por. with stain, vsi sfo, no odor, stylitic IP; tan, offwhite vf-cryptoxln with some pp por. and scatt. vug. por. with shows of stain, fo, no odor

CONN

Sh: red-brn and gray, common pyrite

P



Sh: mix AA with some tan, offwhite vf-cryptoxln Ls

4200

"G" Zone

40' spl - influx Ls: common lt to med brn, lt gray cryptoxln, NVP, N.S.; several chips tan, lt gray, lt brn vf-cryptoxln with some pp and scatt. vug. por. with brn to black stain, vsl sfo, no odor

CFS 4240' 30" spl - Ls: incr. % of various lt gray, lt to med brn cryptoxln, NVP, N.S.; 2-3 chips tan, more granular with inter-particle and vug. por. with sfo, sat. stain, no odor

CONN

CFS 4240' 60" spl - Sh: abund. lt to med gray and red-brn; Ls: mix AA with new dark brn cryptoxln

<<CFS 60"

4250

"H" Zone

Ls: sl influx offwhite mic-vfxln dense with spotty stain, nfo, no odor; some tan more granular with scatt. tarry stain

Sh: influx dark gray

Ls: med brn, red-brn cryptoxln

<<CFS 60"

Sh: vc gray, red-brn, red

CONN

4300

"J" Zone

Ls: offwhite vf-cryptoxln, occ fn granular, sl oolitic with inter-particle and vug. por. with stain, some listless oil, no odor

Stark Shale

Sh: dark gray, trace black

Sh: lt to med red, lt to med gray, soft red

CONN

<<CFS 60"

Ls: offwhite, tan, lt gray mic-vfxln dense; lt gray vf-cryptoxln, N.S.

4350

CONN

Sh: various gray, red-brn

Ls: tan, lt gray vf-cryptoxln with interbedded gray and red-brn shales

CONN

Ls: offwhite, tan, lt gray mic-vfxln dense; some offwhite, tan cryptoxln

Poor samples

Poor samples

Very poor samples

