

Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGISTS' REPORT

DRILLING TIME AND SAMPLE LOGS

OPERATOR: **Murfin Drilling Company, Inc.**
LEASE: **Samson #1-24**
LOC. SPOT: **NW NW NW**

LOC. FOOTAGE: **330' FNL 30' FWL**
SEC: **24** TWP: **4S** RANG: **3SW**
COUNTY: **Rawlins** STATE: **Kansas**

API: **15-153-21078-00-00**
CONTRACTOR: **Murfin Drilling Co., Inc.** RFD NO: **7**
DRILLING STARTED: **11-14-2014** COMPLETED: **11-23-14**
MUD DISPLACED: **3.042** MUD TYPE: **Chemical**
DRILLING TIME LEFT FROM: **3:44:3** TO: **RTD**
SAMPLES SAVED FROM: **3:44:3** TO: **RTD**
SAMPLES EXAMINED FROM: **3:44:3** TO: **RTD**
GEOLOGICAL SUPERVISION FROM: **3:44:3** TO: **RTD**

MEASUREMENTS: **CASING RECORD**
CONDUIT:
Surface: **8.5/6" @ 219'**
Production: **5.1/2" @ 489'**
w/ 450 sacks cement

ELEVATIONS
KB: **3,024'**
CL: **3,019'**

FORMATION NAME: **Stone Corral**
LOGS: **TOP DATUM** SAMPLE: **TOP DATUM**

Stone Corral	2,708'	+316	2,711'	+313
Base Stone Corral	2,745'	+279	2,748'	+276
Topeka	3,730'	-706	3,733'	-709
Heebner	3,896'	-872	3,899'	-875
Lansing	3,940'	-916	3,943'	-919
B/KC	4,168'	-1144	4,171'	-1147
Pawnee	4,292'	-1268	4,294'	-1270
Cherokee	4,368'	-1344	4,370'	-1346
Mississippi	4,522'	-1498	4,524'	-1500
Total Depth	4,590'	-1566	4,590'	-1566

FORMATION NAME: **TOP DATUM** LOGS: **TOP DATUM** SAMPLE: **TOP DATUM**

Porosity Log
Microresistivity Log
Borehole Compensated



DATE	7:00 AM DEPTH	REMARKS
11-14-14	0'	Spud @ 12:15 pm. Plug down @ 5:00 pm. Drilled out plug @ 1:00 am on 11-15-14 w/ PDC bit
11-15-14	635'	Cut 635' in last 24 hrs. Lost circ. @ 2281' (80 bbls)
11-16-14	2,375'	Cut 1,740' in last 24 hrs; 21.5 hrs drlg. Trip to clean plugged bit @ 2407'
11-17-14	3,550'	Cut 1,175' in last 24 hrs; 18.5 hrs drlg. Bit trip @ 3643' (ran button bit). DST #1 @ 3820'
11-18-14	3,820'	Cut 270' in last 24 hrs; 8.75 hrs drlg. DST #2 @ 3960'
11-19-14	3,960'	Cut 140' in last 24 hrs; 7 hrs drlg. DST #3 @ 4003'
11-20-14	4,003'	Cut 43' in last 24 hrs; 2.5 hrs drlg. DST #4 @ 4052'
11-21-14	4,052'	Cut 49' in last 24 hrs; 1.5 hrs drlg. DST #5 @ 4125'
11-22-14	4,145'	Cut 93' in last 24 hrs; 3.75 hrs drlg. DST #6 @ 4347'
11-23-14	4,347'	Cut 202' in last 24 hrs; 10.25 hrs drlg. RTD 4590' @ 11:16 pm
11-24-14	4,590'	Cut 243' in last 24 hrs; 10 hrs drlg. Ran production casing.

Remarks

The electric log measurements correlate from 2' to 3' higher to the drilling measurements.
Formation tops and lithology on this report have been corrected to the electric log.
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford

Drill Stem Test Charts

