GEOLOGICAL REPORT

Larry A. Nicholson

COMPANY: Murfin Drilling Company, Inc.
API #: 15-063-22238 FIELD: Gasland West
LEASE: Abell Ranch 'B' WELL # 2-31
LOCATION: SE NE NW NW
SURVEY: 660 FNL 1169 FWL
SECTION: 31 TWP: 12S RGE: 30W
COUNTY: Gove STATE: Kansas

COMPANY, WELL, Multi Drilling, Abell Ranch 'B' #2-31
LOCATION, 660' FNL 1169' FWL
SEC., 31 TWP., 12S RGE., 30W
COUNTY, Gove STATE, Kansas

CONTRACTOR: Murfin Drilling Company, Inc Rig # 21
SPUD: 9:00 pm 12-13-14 COMP: 12-20-14
TOTAL DEPTH: 4387 UTD: 4387
MUD TYPE: Chemical, Morgan Mud

SAMPLES SAVED: from 3600 to RTD
DRILLING TIME: from 3600 to RTD
SAMPLES EXAMINED: from 3600 to RTD
GEOLOGICAL SUPERVISION: Pioneer Bob, Inc. - Kyle Hammerschmidt
WELLSITE GEOLOGIST: LARRY A. NICHOLSON

ELECTRICAL SURVEYS: Pioneer, Dan Nau, Cesar Moon, Sonic

MND 30
S-12 T-12S
R-30 E-GOVE
NE-NW-NW-660 FNL 1169 FWL

ELEVATIONS

K.B.: 2881
D.F.: 2879
G.L.: 2870
Measurements from K.B. 2881

CASING RECORD

Surface: 223 — 8 5/8 inch 23 lbs
Production: 170

FORMATION TOPS & STRUCTURAL POSITION

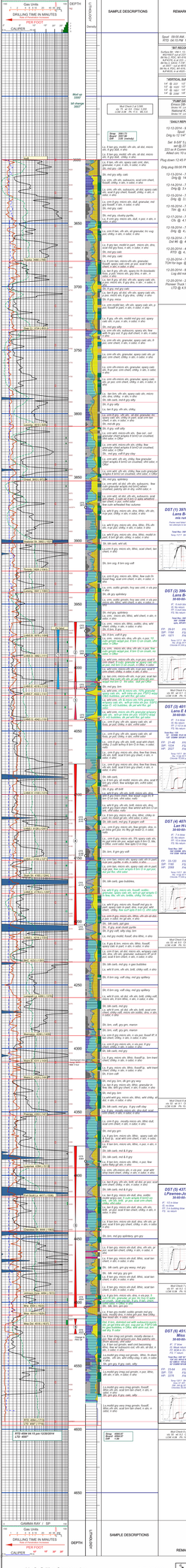
FORMATION	Abell Ranch 'B' #2-31	Abell Ranch 'B' #1-31	Abell Ranch 'B' #1-31	REFERENCE WELL: Murfin Drilling Co., Inc. - Abell Ranch 'B' #1-31 - 12S - 30W - Gove Co., Kansas		
	KB 2881	KB 2879	KB 2875	KB 2881	KB 2879	KB 2875
Anhydrite	2463	+418	+416	+411	+416	+412
Base Anhydrite	2500	+381	+381	+376	+381	+377
Topeka	3052	-171	-169	-175	-169	-173
Heebner Sh.	3502	-621	-620	-625	-620	-623
Lansing	3541	-660	-659	-664	-659	-662
Stark Sh.	4155	-1274	-1273	-1278	-1273	-1276
Pawnee	4263	-1382	-1383	-1388	-1383	-1386
Fort Scott Ls.	4321	-1440	-1441	-1446	-1441	-1444
Johnson Zone	4353	-1472	-1469	-1473	-1469	-1472
Miss.	4359	-1478	-1473	-1477	-1473	-1476
Miss Dol	4364	-1483	-1478	-1482	-1478	-1481
Kinderhook	4384	-1503		-1505	-1498	-1502
LTD			4387	-1506	-1503	-1505

REFERENCE WELL: Murfin Drilling Co., Inc. - Abell Ranch 'B' #1-31 - 12S - 30W - Gove Co., Kansas

REMARKS & RECOMMENDATIONS

Based on sample shows and drill results crew was set.

NOTE: ROP curve is roughly 1' high to strip curves.

Formation tops have been corrected to Log tops

LAN TSC Modified 5/25, 10/10, 4/12 Version: KS 5/2011 Scale 1:24 Imperial: 8.5 x 57.5 ; 216 min x 2460 min