

Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR: **Murfin Drilling Company, Inc.**
LEASE: **Hatch #1-30X**
LOC. SPOT: **20' N & 120' W of C NW SE**

LOC. FOOTAGE: **2,000' FSL 2,100' FEL**

SEC: **30** TWPSP: **15** RING: **36W**

COUNTY: **Rawlins** STATE: **Kansas**

API: **15-153-20904-00-00**

CONTRACTOR: **Murfin Drilling Co., Inc.** RIG NO.: **3**
DRILLING STARTED: **7-26-12** COMPLETED: **8-6-12**
MUD DISPLACED: **3,500** MUD TYPE: **Chemical**
DRILLING TIME KEPT FROM: **3,630'** TO: **RTD**
SAMPLES SAVED FROM: **3,630'** TO: **RTD**
SAMPLES EXAMINED FROM: **3,630'** TO: **RTD**
GEOLOGICAL SUPERVISION FROM: **3,401'** TO: **RTD**

Surface: **13-3/8" @ 281'**
Production: **5-1/2" @ 4899'**
w/ 175 sacks cement

ELECTRICAL SURVEYS:
Pioneer Wireline:
Dadl Induction Log
Dadl Comperstated -

Porosity Log
Microresistivity Log
Borehole Comperstated -

SOFT LOG

SONIC LOG

FORMATION NAME

LOG DWTUM TOP DATUM

LOG DWTUM TOP DATUM

Stone Corral	3,235'	+94	3,236'	+93
Base Stone Corral	3,269'	+80	3,271'	+88
Neva	3,711'	-382	3,711'	-382
Fordker	3,825'	-496	3,825'	-496
Topoka	4,050'	-721	4,051'	-722
Oread	4,174'	-845	4,175'	-846
Lansing	4,258'	-929	4,258'	-929
Stark	4,475'	-1146	4,476'	-1147
B/KC	4,527'	-1198	4,528'	-1199
Total Depth	4,600'	-1271	4,600'	-1271

DATE	7:00 AM DEPTH	REMARKS
7-25-12	0'	Spud @ 1:45 pm. 17.5" bit to 251'. Plug down @ 1:45 am on 7-26-12.
7-26-12	251'	Cut 251' in last 24 hrs. DO @ 9:45 am w/ 8.75" bit. Dev: 0.8° @ 1147'. Lost circ @ 1584'
7-27-12	1,584'	Cut 1,333' in last 24 hrs; 13.5 hrs drlg.. Bit trip @ 2045'; changed to 7-7/8" bit.
7-28-12	2,365'	Cut 781' in last 24 hrs; 16 hrs drlg.. Dev. 0.2° @ 2394'
7-29-12	3,010'	Cut 645' in last 24 hrs; 22 hrs drlg..
7-30-12	3,580'	Cut 570' in last 24 hrs; 21 hrs drlg. DST #1 @ 3850'
7-31-12	3,850'	Cut 270' in last 24 hrs; 8.75 hrs drlg. DST #2 @ 4044'
8-1-12	4,044'	Cut 194' in last 24 hrs; 9 hrs drlg. DST #3 @ 4188'
8-2-12	4,188'	Cut 144' in last 24 hrs; 8.75 hrs drlg.
8-3-12	4,290'	Cut 102' in last 24 hrs; 7 hrs drlg. DST #4 @ 4400'
8-4-12	4,400'	Cut 110' in last 24 hrs; 6.75 hrs drlg. DST #5 @ 4481'
8-5-12	4,481'	Cut 81' in last 24 hrs; 5.75 hrs drlg. RTD 4600' @ 11:55 pm
8-6-12	4,600'	Cut 119' in last 24 hrs; 8.5 hrs drlg. Ran production casing

Remarks

This well replaced the Hatch #1-30, which was P&A @ 1862' due to severe lost circ. in the Niobrara. The rig was moved 150' west for the location of the Hatch #1-30X.

Samples were poor throughout the well. See Remarks with the Sample Description for explanation.

The electric log measurements correlate from even to 2' higher to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

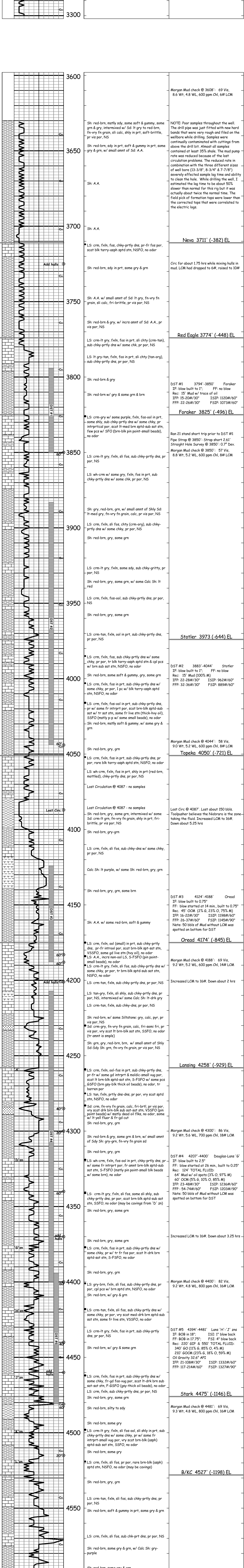
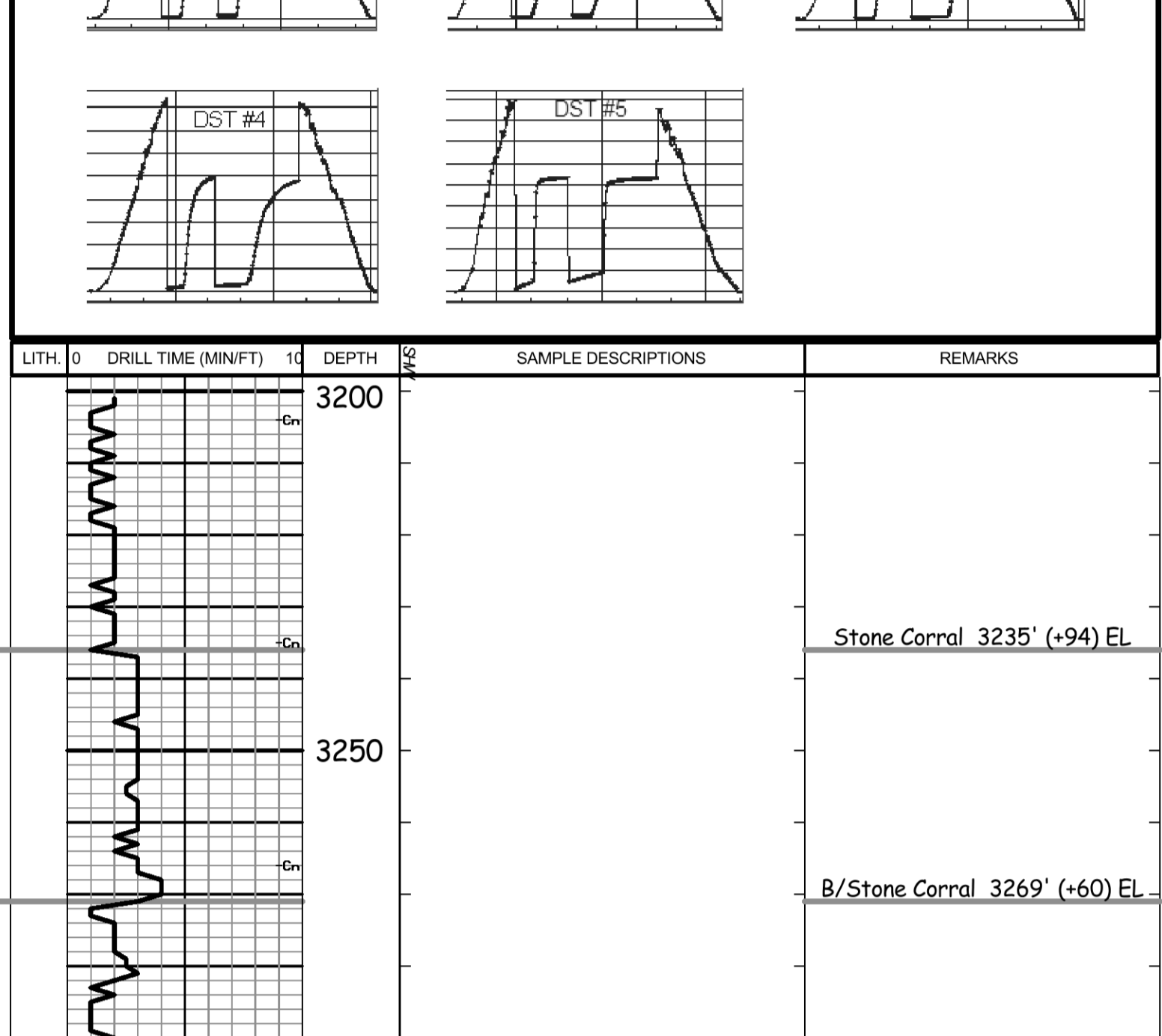
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford

Drill Stem Test Charts

Drill Stem Test by Trilobite Testing, Inc.



Ran 10 stand short trip after CFS
L.T.D. 4600' (-1271)
R.T.D. 4600' (-1271)
Straight Hole Survey @ 4600': 0.6° Dev.