



# Musgrove

Petroleum Geology  
212 Main Street, Claflin KS

## GEOLOGIST'S REPORT

### DRILLING TIME AND SAMPLE LOG

COMPANY Hupfer Operating, Inc.  
 LEASE Knop 'A' #3  
 FIELD Chase-Silica  
 LOCATION SW-NE-SE-SE (675' FSL & 350' FEL)  
 SEC 32 TWSP 19S RGE 11W  
 COUNTY Barton STATE Kansas

#### ELEVATIONS

KB 1786'  
 DF \_\_\_\_\_  
 GL 1778'  
 Measurements Are All  
 From KB

CONTRACTOR Discovery Drilling, Co. (Rig # 2)  
 SPUD 8/21/2018 COMP 08/27/2018  
 RTD 3339' LTD 3342'  
 MUD UP 2500' TYPE MUD Chemical

#### CASING

SURFACE 8 5/8" @ 257'  
 PRODUCTION 5 1/2" @ 3330'

#### ELECTRICAL SURVEYS

Gemini Wireline,  
 DIL,CDL/CNL,Micro

SAMPLES SAVED FROM \_\_\_\_\_ 2600' TO \_\_\_\_\_ RTD  
 DRILLING TIME KEPT FROM \_\_\_\_\_ 2600' TO \_\_\_\_\_ RTD  
 SAMPLES EXAMINED FROM \_\_\_\_\_ 2600' TO \_\_\_\_\_ RTD  
 GEOLOGICAL SUPERVISION FROM \_\_\_\_\_ 2700' TO \_\_\_\_\_ RTD  
 GEOLOGIST ON WELL Jim Musgrove

#### FORMATION TOPS

#### LOG

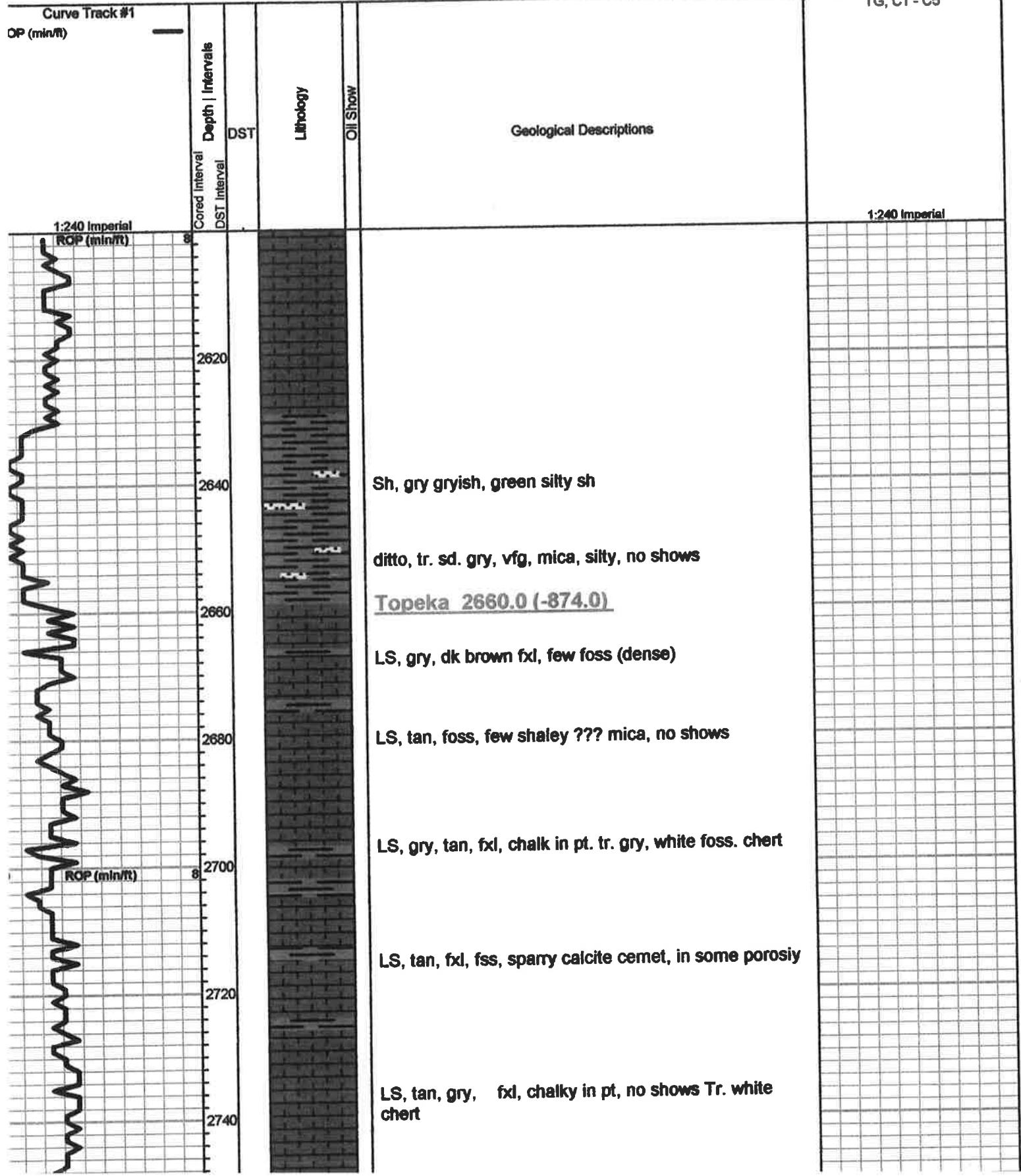
#### SAMPLES

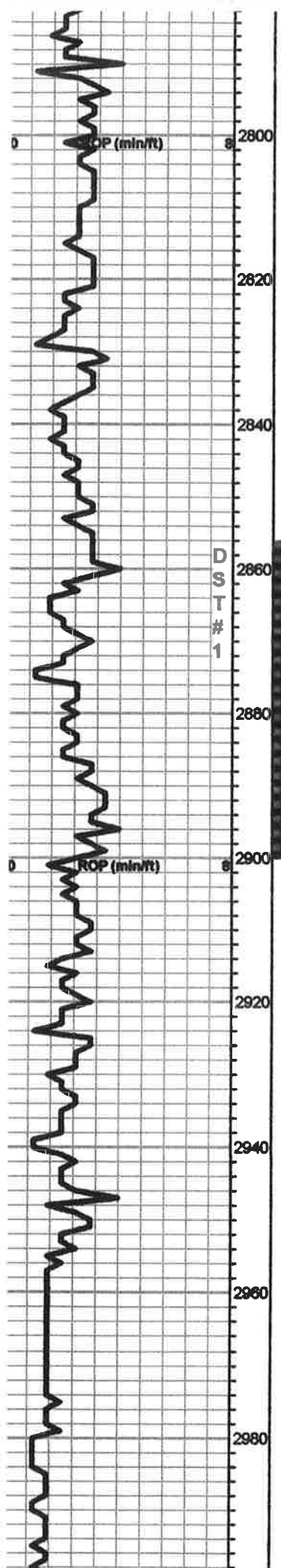
Anhydrite	517	+1269	RTD	3392	(-1553)
B. Anhydrite	541	+1245	LTD	3342	(-1556)
Topeka	2660	(-874)			
Heebner	2923	(-1137)			
Toronto	2941	(-1155)			


**II Show**  
 Good Show  
 Fair Show  
 Poor Show  
 Spotted or Trace  
 Questionable Stn  
 Dead Oil Stn  
 Fluorescence  
 Gas

**DST**  
 ■ DST Int  
 ■ DST alt  
 ■ Core  
 || tail pipe

TG, C1 - C5





LS, white, gry, fxl, foss, "crumbly" chalky, poor vis. porosity

LS, white, fxl, chalky, scattered p.p. porosity, no shows

LS, a/a, pyrite inclusions + white/ gry, foss, boney chert

Sh, black carb

LS, tan, fxl, ool/ foss, calky, scattered porosity, no shows

Tr. coal black chert

LS, gry, cream, foss, oom, fair porosity, bm/ blk / dk bm stain/sat./ sfo, no odor

a/a, ??? odor

LS, gry, tan, fxl, few foss, chalky, no shows

LS, gry, tan, fxl, few sl. chety, + tr. gry chert

Heebner 2920.0 (-1134.0)

Sh, black carb

Toronto 2940.0 (-1154.0)

LS, white/ cream, fxl, scattered vuggy type porosity, brown / gry/ blk sfo, faint odor

Douglas 2953.0 (-1167.0)

Sh, gry/ gryish, green rustsy brown

Douglas Sd 2979.0 (-1193.0)

Sd. tan, gry, vfg. sub rounded, friable, fair inner gran porosity, good dk bm sfo, ft. odor

DST#1 2856-2900  
**30-30-45-60**

**1st Open:**  
Strong blow

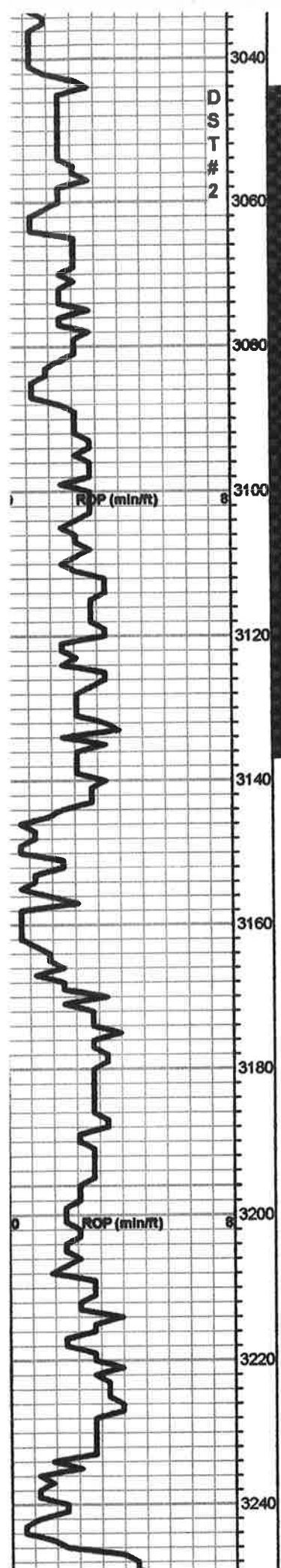
GTS 3 mins.  
[gauged as followed]  
10 mins 335,830  
cfgpd  
20" 274,910 "  
30" 273,960 "

**Final Flow**  
10 mins. 162,910  
cfgpd  
20" 126,140 "  
40" 115,690 "

**Rec.**  
300' Clean Oil

120' OCMW  
(40%O, 60%W)

**Pressures:**  
ISIP 980 psi  
FSIP 977 psi  
IFP 198-304 psi  
FFP 296-537 psi  
HSH 1417-1408 psi



Brown Lime 3042.0 (-1256.0)

LS, tan, bm fxl, dense few cherty, no shows

Lansing 3060.0 (-1274.0)

● LS, white, fxl, in pt, chalky in pt. fair p.p. porosity, golden brown str/sat., sfo, ft. odor

● LS, white, gry, oom, ool, fair / good oom porosity, brown-blk str/sat, sfo, ft. odor

○ LS, gry, ool, poor vis. porosity, tr. brown stain, nsfo, no odor

LS, gry, tan, foss/ ool, poor vis. porosity

○ LS, white/gry, foss, sub oom, fair porosity, good stain, sfo, ft. odor

○ LS, white, gry, oom, slightly ool, light bm/ golden brownstain, sfo, ft. odor

a/a

LS, brown, tan, fxl, slightly cherty, + tr. gry, boney chert

Sh, black carb

○ LS, white/ gry, sub oom, chalky, tr. blk stain, nsfo, no odor

○ LS, gry, white, cream, ool, chalky, poor vis. porosity, tr. blk brown sfo,

LS, gry, white, oom, chalky

DST#2 3405-3135

30-30-45-60

**1st Open:**  
Strong Surging blow

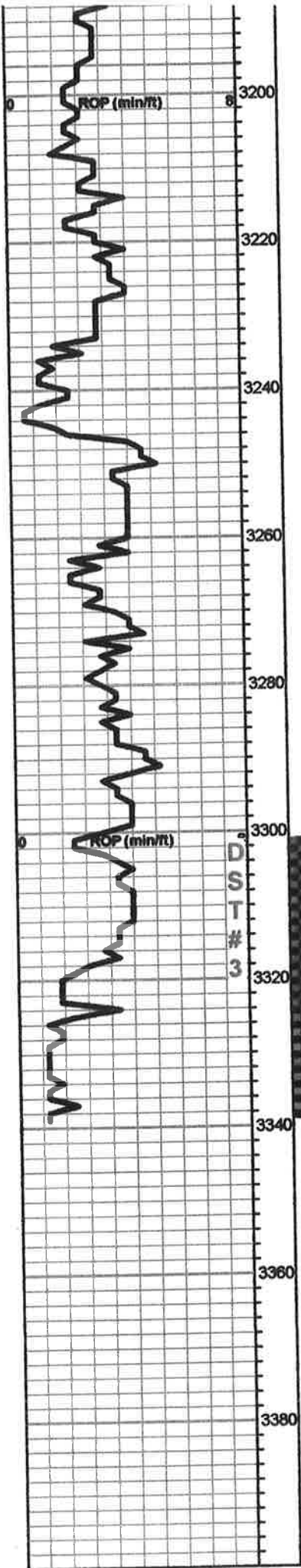
**2nd Open:**  
no blow; flushed tool Strong (BOB 1 min)

**Recovery:**  
70' Mud

120' Oil Cut Mud (10%O, 90%M)

**Pressures:**  
Invalid ; Plugged tool

**MISRUN**



Sh, black carb

LS, white/ gry, sub oom, chalky, tr. blk stain, nsfo , no odor

LS, gry, white, cream, ool, chalky, poor vis. porosity, tr. blk brown sfo,

LS, gry, white, oom, chalky

LS, gry, tan, fxl, slightly cherty, no shows

Sh, black carb

LS, gry, cream, white, sub oom, chalky, no shows, tr. LS, tan, ool, dense (odor in samples)

LS, white, ool, slightly chalky, scattered porosity, brown stain, tr. fo, ft. odor

LS, white, tan, foss/ ool brown/ dk brown stain, tr. fo

BKC 3312.0 (-1526.0)

tr. gry/ white chert

Arbuckle 3324.0 (-1538.0)

Dol. tan, suc. scattered p.p. porosity, golden brown stn, sat, sfo, odor

Dol. a/a, inc. p.p. type porosity, golden brown/ brown stain/ sat. sfo, odor

Dol, a/a few white/ tan, fxl, scattered p.p. porosity, sfo, odor

\*RTD 3339.0 (-1553.0)

LTD 3342.0 (-1556.0)

DST#3 3307-

3339

30-30-30-30

1st Open:  
Blow weak (2")

2nd Open:  
Weak (1/2")

Recovery  
40' Clean Oil

40' HOCM  
(10%G, 40%O,  
45%M) 5%W)

Pressures:  
ISIP 843 psi  
FSIP 719 psi  
IFP 45-65 psi  
FFP 70-83 psi  
HSH 1660-1609  
psi