COMPANY & WELL Shakespeare #1-12 Mazanec
LOCATION 1700' FNL, 335'FEL, NE
SEC 12 TWSP 17s RGE 35w
COUNTY Wichita STATE Ks

ELEVATIONS
KB 3174'
GL 3164'

Tim J. Lauer
Petroleum Geologist

Office 316.832.0530
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GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY Shakespeare Oil Co., Inc
LEASE Mazanec #1-12
FIELD
LOCATION 1700' FNL, 335' FEL, NE/4
SEC 12 TWSP 17s RGE 35w
COUNTY Wichita STATE Kansas
CONTRACTOR Southwind Drilling Rig #8
SPUD 10-23-2019 COMP 11-2-2019
RTD 4970' LTD 4970'
MUD UP 3550' TYPE MUD Chemical
SAMPLES SAVED FROM 3700 TO RTD
DRILLING TIME KEPT FROM 3700 TO RTD
SAMPLES EXAMINED FROM 3700 TO RTD
GEOLOGICAL SUPERVISION FROM 3845 RTD
GEOLOGIST ON WELL Tim J. Lauer

ELEVATIONS
KB 3174'
DF
GL 3164'
Measurements Are All From 3174' KB

CASING
CONDUCTOR
SURFACE 8 5/8" @ 265'
PRODUCTION None

ELECTRICAL SURVEYS
Pioneer - DCPL, DIL, ML, PE, Sonic
Engr: Ian Mabb

FORMATION TOPS	ELECTRIC LOG		SAMPLE LOG	
B/Anhydrite	2468	(+706)	2472	(+702)
Heebner	4015	(-841)	4017	(-843)
Lansing	4062	(-888)	4064	(-890)
Muncie Creek	4250	(-1076)	4252	(-1078)
Stark	4352	(-1178)	4353	(-1179)
Marmaton	4503	(-1329)	4502	(-1328)
Cherokee Shale	4658	(-1484)	4659	(-1485)
Johnson Zone	4716	(-1542)	4714	(-1540)
Mississippian	4891	(-1717)	4891	(-1717)
Total Depth	4970	(-1796)	4970	(-1796)

12

REMARKS
Due to drill stem test results, and log evaluation, operator elected to plug and abandon the location without any further testing.

Respectfully submitted,
Tim J. Lauer
11/3/2019

Lat: 38.593313951
Long: 101.129214580
NAD 83
API: 15-203-20,362-00-00

LEGEND
Anhydrite | Sandstone | Limestone | Shale | Carb Sh | Cherty LS | Chert | Dolomite

LITHOLOGY	DRILL STEM TESTS	DRILLING TIME IN MINUTES PER FOOT (Rate of Penetration Decreases →) 5 10 15	SHOWS	DEPTH	SAMPLE DESCRIPTION	REMARKS

2400

SPUD 4:45 PM 10-23-2019
RTD 3:25 PM 11-1-2019

"BIT RECORD"
1.) Varel HE29H (New)
Under Surface to 4970' RTD

"VERTICAL SURVEYS"
1/2° @ 265'
3/4° @ 3908'
3/4° @ 4321'
1° @ 4580'
1° @ 4970'

Anhy 2450 (+723)

50

B/Anhy 2472 (+702)

"DAILY ACTIVITY REPORT"
10-23-2019 - 7:00 AM
MI, RU, Prep to Spud

10-24-2019 - 7:00 AM
Drlg @ 280'
set 8-5/8"@ 265'

10-25-2019 - 7:00 AM
Drlg @ 2135'

10-26-2019 - 7:00 AM
Drlg @ 3160'

10-27-2019 - 7:00 AM
Drlg @ 3755'

10-28-2019 - 7:00 AM
Drlg @ 4165'

10-29-2019 - 7:00 AM
PTD @ 4321'
COOH with DST (1)

10-30-2019 - 7:00 AM
CFS @ 4550'

10-31-2019 - 7:00 AM
Drlg @ 4618'

11-1-2019 - 7:00 AM
CFS @ 4870'

11-2-2019 - 7:00 AM
Ran OH Pioneer Elogs
Plug and Abd loc.

2500

Drilling Time skip 2500' to 3700'

3650

3700

Geologist on location 3730'
6:00 AM 10-27-2019

50

Spls start at 3800 - 10 ft wet and dry

Ls; most md-dk.gry-brn, mott IP, micro-mdxln, foss IP, mealy txt, most dns, 1/10 scat pr IXLN. por, NS, n. flor, n. stn, n. odor.

3800
Ls; incr crm-bf. some md.gry, foss IP, mealy-gran txt, scat fr IG por, some Chalk; crm-bf, soft, OA pr vis por, NS, n. flor, n. stn, n. odor

Mud Check at 3797:
vis: 76 wt: 8.6 Chlor: 2,000
LCM: 2.0# Ph: 11.5 WL: 6.8

3810
3800
Ls; most tan-bf-crm, micro-mdgrdxln, AA, sli. foss, scat fr-occ gd IXLN por, NS, n. flor, n. stn, n. odor, some shale. drk. gry, blk.(3820 spl)

3820
Ls; gry-tan-buff, s. mott, micro-mdgrdxln, mealy-gran txt, 1/5 pr-occ fr IG and IXLN por, some chalk, soft, pr vis por, NS, n. flor, n. stn, n. odor, shaly IP, drk.

3830
Ls; gry-tan-brn, s. mott, micro-mdgrdxln, incr gran txt, 1/5 pr-fr IG & IXLN por, AA, NS, n. flor, n. stn, n. odor, incr chalk; gummy, NS

3840
Ls; 1/2 bf-tan, micro-fngrdxln, foss, most dns, pr por, NS, 1/2 gry-tan-brn, mott, micro-mdgrdxln, mealy-gran txt, pr

3850
por, NS, n. flor, n. stn, 1 pc AA, foss, ppt SFO w/brk, hvy, n. flor? n. odor. (3850 spl)

3860
Ls; most bf-tan, micro-fngrdxln, foss, soft, 1/4 mealy-gran txt, fr-scat gd IG por, NS, n. flor, n. stn., n. odor, slite chalk,

3870
soft, NS, some gry, micro-fnxln, dns, pr por, NS, shaly IP.

50

Ls; bf-tan, crm, s.mott brn-gry, vfn-mdgrdxln, incr mly-gran txt, 1/5 pr-fr IXLN, ppt, & microvug por, NS, scat dolo; tan, fngrdxln, sucr txt, gd IXLN por, NS, some chalk, crm-wht, fr IXLN por, NS, n. flor, n. stn, no odor

3880
Ls; bf-tan, crm, s.mott brn-dk gry, vfn-mdgrdxln, most mly-gran txt, decr to pr IXLN, ppt and vug por, dolo IP, scat gd IG por, NSFO, dull flor, n. stn?, (n. cut) scat cht; clr, gry, crm, fresh, NS, decr chalk, NS, intrvl has n. odor

3890
Ls; bf-tan, crm, mott brn & dk gry, vfn-mdgrdxln, most mly-gran txt, scat por AA, NS, incr Cht; transluc, fresh, NS, incr chalk, crm-wht, fr IXLN por, NS, n. flor, n. stn, no odor

3900
Ls; bf-tan, md.gry, mott IP, micro-fnxln, dns, scat pr IXLN por, NS, n. flor, n. stn, n. odor., incr Sh; drk, vcol, scat blk.

3910
Ls; most bf-tan, crm, some gry-md.gry, vfn-mdgrdxln, s. foss, subool, mealy-gran txt, 1/10 pr-fr IXLN por, scat vug por, NS,

3900
n. flor, trc gilson flakes, n. cut, n. live stn, some wht chalk, soft, fr IXLN por, NS, n. odor, decr dk.gry shale.

3920
Sh; most drk.gry, scat blk, vcol rd, grn, brn., some Ls gry-bf, micro-fngrdxln, dns, s. foss, pr por, NS, n. odor. (3930 spl)

Rig Check at 3910:
vis: 65 wt: 8.6 LCM: 2#

3930
Ls; incr tan, bf-lt brn, micro-fngrdxln, foss, mealy-gran txt, some dns, 1/10 fr IXLN por, scat ppt microvug por, NS, n. flor, n. stn., n. odor, incr chalk; crm; gummy, soft, fr IXLN por, few gilson flakes?, n. cut, some Sh; md-dk gry, blk,

3940
gritty IP, grn-gry, occ red (3940 spl)

Ls; crm-lt.gry-bf, micro-fngrdxln, sli. foss, incr mly-gran txt 1/4 pr IXLN por, occ chalk, soft, NS, n. flor, n. stn, n. odor,

3950
trc dolo Cht; scat fr por, NS, incr Sh; drk gry. (3950 spl)

Ls; bf-gry, micro-occ fngrdxln, dns, s. foss, scat pr IXLN por, NS, , scat Chert; crm. foss, devit, NS, n. stn, n. odor.

3960
Ls; crm-lt.gry-bf, micro-fngrdxln, foss, 1/4 gran txt scat fr-gd IXLN por, scat vug por, chalky IP, soft, pr-fr IXLN por, NSFO, n. flor, n. stn, n. cut, n. odor, spls wash wht.

50

3970
Ls; crm-bf, some mott brn-gry, decr por, NS, n. flor, n. stn, scat chalk; AA, soft, scat Cht; crm, fresh, opaq, n. por, NS, n. flor, n. stn, n. odor. (3980 spls)

3980
Ls; crm-bf, mott brn/gry, micro-mdgrdxln, most mealy-gran txt, fr-occ gd IG & IXLN por, most barren, few pcs (3 tot) SSFO (dk, hvy), scat minrl flor (n. cut) n. oil flor, some ppt stn (dry), n. odor, decr chalk, wht, soft, NS. scat Cht; AA, NS (3990 spl)

3990
Ls; bf-tan-crm, mott brn, micro-mdxln, foss IP, most mealy-gran txt, 1/10 pr-occ fr IXLN por, NS, scat minrl flor, n. cut,

4000
scat chlk, wht, soft, pr-occ fr IXLN por, scat ppt por, NS, n. flor, n. stn, few pcs Cht; crm, sharp, pr. por, NS, intrvl has n. odor. (4000 & 4010 spls)

Rig Check at 3985:
vis: 60 wt: 8.6 LCM: 2#

4010
Ls; md.gry-bf-tan, s. mott, micro-fngrdxln, s. foss, subool, scat dolomitic txt, gd IXLN por, rest mealy-gran txt, 1/4 fr-

4000
occ gd IXLN & scat IG por, most barren, few pcs (1-2 tray)

4023
SSFO (drk brn/blk, heavy) n. flor, patchy-spotted stn, fr slow drk ribbon cut, n. odor, some Chlk; wht, crm, fr por, NS (4023 and 15" cfs)

15cfs

Heeb 4017 (-843)

30cfs
Sh; md.gry-dk.gry, blk, carb, grn, red (30" and 45" cfs)

Rig Check at 4015:
vis: 65 wt: 8.6 LCM: 2#

45cfs
CFS 45"
4040
Sh; md.gry-dk.gry, vcol, abund Ls slough AA, some md.gry, micro-fnxln, dns, pr por, NS , n. stn, n. odor (45" cfs, 4040, and 4050 spls)

4050
Tor 4034 (-860)

15cfs
Ls; some lt.gry-crm, micro-fnxln, scat mealy txt, dns, NS, most lt. tan-bf, fn-mdgrdxln, foss, ool-subool, 1/5 mly-gran txt, fr IG & IXLN por, scat vug por, trc (2 pcs) gd oomold por, SSFO (hvy, brn/blk tarry), n. flor, trc w/blk stn, n. odor, incr chalk; wht,

30cfs
soft, NS, spls washes white, scat Cht; wht-crm, foss, opaq, fresh-devit, pr por, NS (15", 30", and 45" cfs)

CFS 60"

50
45cfs

25 Stand Short Trip at 4050'

Ls; bf-brn, lt.gry, micro-fnxln, most pr por, 1/10 micro-fngrdxln mly-gran txt, foss, subool, decr IG & vugs, decr cht; AA, crm, gry, opaq, s. foss, spic, fresh, NS, n flor, n. stn, n. odor.

4070
Sh; md-dk.gry, scat blk, some grn-gry, red

Lans 4064 (-890)

4080
Ls, most crm-bf-gry, most vfn-fnxln, soft IP, pr vis por, 1/4 fn-occ mdgrdxln, s. foss, subool, scat pr IXLN & IG por, NS, scat Cht; crm, wht, opaq, fresh-s. weath txt, pr por,

4090
NS, n. flor, n. stn, n. odor. (4090 spl)

Ls, bf-tan, vfn-fnxln, occ mdgrdxln, soft, s. foss, subool, 1/4 pr-fr IXLN por, NS, n. flor, n. stn, sharp incr chalk, crm-wht, pr por, NS, scat Cht; crm, wht, foss, spic, fresh-devit txt IP, mostly pr vis por, NS, intvl has n. odor, spls wash white, (4100 spl)

4100
Ls; lt.gry-bf-tan, AA, micro-fngrdxln, s. ool, most dns, NS, 1/10 gran txt, most pr IXLN por, NS, n. flor, n. stn, decr Chalk; crm, vfn-fnxln, soft NS, n. flor, n. stn, n. odor

Rig Check at 4095:
vis: 62 wt: 8.7 LCM: 2#

4110
Sh; med-dk.gry, scat blk, grn-gry, scat rd

4100

4120
Ls; most tan-gry, s. mott, micro-mdgrdxln, s. foss IP, ool, pr. dev por, most dns, NS, 1/10 soft, mealy-gran, scat gd chalky txt, occ Cht; crm-bf-wht, devit txt IP, sharp, NS, OA n. flor, n. stn, n. odor. (4120 & 4130 spls)

Ls; most crm-bf-lt.gry, AA, s. foss, scat pcs fr IXLN por,

4130
occ ppt por, NS, incr chalk, NS, scat Cht; AA, por por, NS, incr bf-lt.gry, micro-fnxln, dns, NS, n. flor, n. stn, n. odor

Ls; crm-bf, crypto-micro-fnxln, transluc IP, dns, some soft,

4140
chalky, pr IXLN por, NS, n. flor, n. stn, n. odor.

Ls, incr gry, micro-fngrdxln, some dns, pr por, NS, 1/4 mly-s. gran txt, softer, chalky, scat fr IXLN & IG por, trc ppt por, NS, n. flor, n. stn, n. odor (4150 spl)

4150
Ls; crm-bf-lt.gry, AA, micro-mdgrdxln, 1/3 mealy-gran txt, s. foss, sub ool IP, fr IXLN por, scat fr vug por, chalky IP, NS, n. flor, n. stn, some dns, pr por, NS, n. flor, n. stn, n. odor, scat foss Cht; fresh, n. vis por, NS, intrvl has n. odor

Mud Check at 4147:
vis: 64 wt: 8.9 Chlor: 4,000
LCM: 2.0# Ph: 10.0 WL: 8.0

Sh; med-dk.gry, scat blk, grn-gry, scat rd

50
4160
Shaly Ls; crm-lt.gry-tan, micro-fnxln, dns, pr por, NS, n. flor, stn, or odor, incr Sh; dk gry, blk, grn, rd. (4170 spl)

4170
Ls; most bf-tan, micro-fngrdxln, s. foss, ool, some dns, NS 10% pr-fr IG por, vug and scat oomold por, NSFO, n. flor, trc pcs patchy stn?, n. cut. scat Cht; crm, fresh, foss, poor por, NS, incr chalk; wht-crm, pr-fr IXLN & scat ppt por, NS,

4180
interval has n. odor (4180 spl)

Rig Check at 4155:
vis: 61 wt: 8.7 LCM: 2#

Sh; vcol, md-dk.gry, blk, red/brn, grn, platy (4190 & 4195)

4190
Ls; crm-md.gry, micro-mdxln, s. foss, s. gran-rgh txt IP, pr-scat fr IXLN por, NS, scat chalk, crm, soft, fr IXLN por,

4195
NS, n. flor, n. stn, n. odor, incr drk shale. (4195 spl)

15cfs
Ls; bf-tan-gry, AA, most micro-mdxln, dns, foss, scat fr IG por, scat vugs, NS, n. flor, n. stn, n. odor, scat Cht; gry-crm, transluc, fresh, NS (15", 30" and 45" cfs)

30cfs
CFS 60"
45cfs
Sh; md-dk.gry, blk, occ grn, red, abund Lst AA, NS, n. flor,

4210
n. stn, n. odor. (4210 spl)

4200

Ls; AA, micro-mdnxln, s. foss, most pr vis por, NS, scat chalk; wht, soft, NS, n. flor, n. stn?, n. cut, scat Cht; fresh,

4220
NS, n. odor.

Ls; tan-med.gry, most micro-vfnxln, dns, scat mealy txt, pr por, NS, scat mdgrdxln, gran txt, pr-fr IXLN por, incr Cht; smokey, gry, transluc, fresh, pr vis por, NS, n. flor, n. stn,

4230
n. odor, incr chalk; wht, soft (4230 spl washes white)

Ls; most tan-gry, some dk.gry, micro-mdxln, dns, gran-rgh txt IP AA, pr por, NS, decr chalk, decr chert, pr vis por, NS,

4240
n. flor, n. stn, n. odor.

Ls; crm-bf-gry, micro-mdxln, scat mealy txt, pr por, most dns, pr por, some softer, chalky, scat pcs fr IXLN por, NS, scatt'd Cht; smokey-milky, transluc, s. foss, fresh, sharp, n. por, NS, OA, n flor, n. stn, n. odor. (4250 spl)

4250
Ls; crm-bf-lt.gry, micro-fnxln, scat mealy txt, pr por, NS, occ Cht; smokey-milky, transluc, s. foss, fresh, sharp, n. por, NS, decr chalk; soft, fr IXLN por, NS, n flor, n. stn, n. odor.

Rig Check at 4265:
vis: 70 wt: 9.0 LCM: 2#

50
4260
Munc Crk
4252 (-1078)

Sh; md-dk.gry, vcol grn, rd-brn, minor amt blk, carb, gritty.

15 Stand Short Trip at 4321'
Pulled 30-60k over on stands 2 through 7

4270
Ls; bf-gry-tan, most crypto-fnxln, sharp IP, 1/10 s. mealy txt,

4275
pr por, NS, scat pelloids, few pcs soft, n. ool por, NS, 10% Cht; lt.gry, smokey, transluc, fresh, n. por, NS, scat chalk,

15cfs
crm, soft, NS, OA n. flor, n. stn, n. det odor. (4275 & 15" cfs)

Ls; bf-gry-crm, micro-fnxln, some mdgrdxln dolomitic, sucr txt,

30cfs
scat gd IXLN por & rare vug por, NS, incr Chalk; wht-crm,

CFS 1'19"
45cfs
soft, pr por, NS, s. foss, rugose coral, trc gd moldic por, NS,

4290
5% Cht; AA, fresh, NS, n. flor, n. stn, n. odor. (30" & 45" cfs)

Pipe Strap on DST (1)
Board: 4321.81'
Strap: 4324.94'
Diff: 3.13' long

Ls; tan-bf, md.gry, micro-fnxln, slite foss, decr por, scat pcs pr IXLN por, NS, scat minrl flor, n. cut, n. stn, incr Chalk; crm-bf, soft, NS, scat Cht; smokey, transluc, sharp, fresh, n. por, NS, n. odor. (4300 spl)

4300
Ls; gry-md.gry, brn, micro-fnxln, 1/10 fn-mdxln, scat mealy txt, dns, pr por, NS, decr chalk, NS, OA n. flor, n. stn, n. odor, sharp incr blk, carb shale.

4300

Ls; tan-crm-lt.gry, s.mott IP, micro-mdxln, s foss, ool, scat gran-rgh txt, pr IXLN por, n. foss por, NS, scat Chalk, wht, soft, NS, scat Cht; crm-gry, opaq, s. foss, fresh, OA pr por,

4321
NS, n. flor, n. stn, n. odor (4321 spl)

15cfs
(4312-21) Ls; bf-tan, patchy brn (stn) fn-mdgrdxln, foss, ool, softer IP, 10% fr IG and scat gd interool por, scat vug por,

30cfs
same 10% w/S-occ FSFO (slo ppt bleed, gd filmy oil w/brk)

CFS, DST
Co time: 16'38"
45cfs
4330
med-brite spkld-sat flor & patchy-satur dk brn stn, gd ribbon cut, brn oil in dish, fr odor 15" cfs, gd odor 30" cfs.

DST (1) 4286'- 4321'
30-30-30-30
Blow: weak, built to 1/2" on IFP, no blowback on ISIP; no blow on FFP, no blowback on FSIP

5' Oil
(0% gas, 100% oil, 0% mud, 0% wtr)
10' Mud
(0% gas, 0% oil, 100% mud, 0% wtr)
15' Total Fluid

IHP:	2146	FFP:	22-25
IFP:	21-24	FSIP:	1071*
ISIP:	1060*	FHP:	2144

Temp: 101°F
Chlorides MUD: 4,000 PPM
DST: NA
Rw = NA
Gravity = 24° API corrected to 60°F
*Notes: Both Shut-in curves still bldg, but beginning breakover

4340
(4321-26) Ls; crm-gry, most micro-fnxln, scat fn-mdgrdxln, s. gran txt IP. most pr vis por, NS, n. flor, n. stn, n odor, scat chalk, soft, Shaley; dk.gry, blk, red/brn. gry-grn, platy.

4350
(4332-43) Ls; bf-md.gry, micro-mdxln, foss, ool, 1/2 dns, pr por, NS, 1/2 fr-xcel oom and scat IXLN por, NS, n. flor, n. stn, n. odor (all barren), scat Chalk, crm-wht, soft, NS. (4350 and 15" cfs)

15cfs
30cfs
CFS 45"
50
45cfs

Stark 4353 (-1179)

Sh; md-dk.gry, blk, trc rd.
Ls; tan-bf-md.gry, micro-mdgrdxln, gran-rgh txt, sli. foss,

4370
ool, pr IXLN por, scat gd oom por, NS, n. flor, n. stn, n. odor, some Sh; med-drk gry.

15cfs
(4362-74) Ls; tan, bf, md.gry, micro-mdgrdxln, foss, ool, 1/4 fr-occ gd oomold, scat fr-gd IG por, most barren, scat pcs

30cfs
(2-3 tray) SSFO w/brk (ppt blk microdrops) n. flor, trc pcs

CFS 1'15"
45cfs
w/stn (dry) few pcs wk cut, n. odor, chalky IP, NS

4390
Ls; crm-bf-md.gry, spkld dk.gry, micro-mdgrdxln, foss, most dns, 1/3 w/gran txt, fr-scat gd IG and IXLN por, scat fr good oom por, NSFO, n. flor, n. stn, scat Cht; crm-gry, spkld, foss,

4400
most devit-subtrip txt, NS, n. flor or stn, intrvl has n. odor

Ls; crm-bf-md.gry, spkld dk.gry, micro-mdgrdxln, foss, incr gran txt, 1/3 fr-scat gd por AA, NS, n. flor, n. stn, decr Cht; crm-gry, spkld, frsh-devit txt, NS, n. flor or stn, n. odor.

4410
Ls; crm-bf-md.gry, AA, micro-mdgrdxln, foss, gran txt w/ por AA, incr Chalk; crm-wht, soft, NS, trc Chert; crm-gry, AA,

4400
NS.

Hush 4404 (-1230)

Sh; md-drk gry, blk, carb, vcol rd, scat grn.

4420
Ls; dk.gry-brn, micro-mdxln, foss, ool, dns, mly txt, pr por, NS, n. odor.

4430
Ls; gry, tan, brn, micro-mdxln, s. foss, ool, most dns, 1/10 fn-mdgrdxln, gran txt, same w/pr-fr IXLN & scat gd vugs, NS, n. flor, n. stn, scat chalk; wht, soft, NS, n odor. (4440 spl)

4440
Ls; most gry-bf-tan AA, micro-fngrdxln, sli foss, ool, most pr por, NS, scat pcs gd oom por, NS, 1/3 crm-lt.gry, microxln, softer IP, pr por, NS, n. flor, n. stn, n. odor, scat chalk; crm, NS, scat Cht; crm, spkl'd gry, foss, spic, pr por, NS

4450
Ls; AA, crm-gry-brn mott dk.gry, micro-crsgrdxln, s. foss, most pr vis por, scat Cht; crm-gry, spkl'd, foss, fresh, NS, chalky IP, wht, soft, NS, incr drk Sh; gry, blk, red, vcol

50
4460
Ls; most bf-tan-gry, 2/3 micro-fnxln, dns, comp, sharp IP, 1/3 fn-crsgrdxln, gran-rgh txt, pr por, NS, n. flor, n. stn, n.

4470
odor (4470 spl)

Ls; tan, brn, dk.gry, micro-mdgrdxln, foss, subool, dns, 1/4 gran-rgh txt, some softer w/scat fr IXLN, NS, n. flor, trc gilson stn?, n. cut, n. odor, chalky IP, wht, soft, NS.

4480
Ls; AA, drk, decr gran text, decr foss, still chalky IP, most

4490
pr por, NS, n. flor, n. stn, n. odor.

Rig Check at 4470:
vis: 65 wt: 9.1 LCM: 2#

Sdy siltstn; grn, dirty, gummy, scat Sd; grn-gry, silty-fngrd, soft, mushy IP, pr vis por, NS, n. flor, n. stn, n. odor

4500
Sh; md-dk.gry, vcol grn, silty, sdy IP, pr por, NS, n. odor.

Marmaton
4502 (-1328)

4500

Ls; most tan-brn/gry, micro-occ mdxln, pr vis por, NS, n. flor, n. stn, n. odor. (4510 and 4520 spls)
Sh; drk.gry, blk, vcol grn, trc red, (no ool or foss frag Ls)

4520
(4509-20) Ls; tan-md.gry, scat brn (stn), micro-mdgrdxln,

15cfs
foss, ool, crs grn ool, most dns, pr por, 5% pr-fr IXLN and IG por, scat fr interool por, rare vugs, same 5% S-FSFO, SSGB

30cfs
CFS 1'30"
45cfs
4530
(w/brk), mott med yell flor, patchy-satur stn, fr0gd cut (no brk) no detect odor scat Cht; gry, smokey, transluc, fresh, NS.

Mud Check at 4562 before DST:
vis: 61 wt: 9.3 Chlor: 5,000
LCM: 1.0# Ph: 10.5 WL: 7.2

14 Stand Short Trip at 4321'
Pulled 30-60k over on stands 2 through 9

Sh; md-dk.gry, blk, carb, strong vcol, grn-gry, rd-brn

4540
(4526-34) Ls; crm-md.gry, scat brn (stn), micro-fngrdxln, s. foss, crs grn oolites, most dns, pr por, some sharp, 10% gran txt, pr IG and pr interool por, scat rare vugs, same 10% SSFO (w/crush) NSGB, spkl'd flor, patchy stn, few

4550
pcs satur stn, fr stream'g ribbon cut w/o brk, n. odor.

Ls; AA, becom dns, NS, some Sh; md-dk.gry, blk, vcol,

15cfs
rd-brn, grn-gry. (15", and 30" cfs)

30cfs
CFS 1'15"
Sh; most drk, gry, blk, s. vcol, abund Ls slough, NS

50
45cfs

DST (2) 4468'- 4580'
30-30-45-60
Blow: weak, built to 1.8" on IFP, no blowback on ISIP; weak, built to 1.9" on FFP, no blowback on FSIP

30' SOCM, GSO on tool
(0% gas, 3% oil, 97% mud, 0% wtr)

IHP:	2287	FFP:	23-27
IFP:	20-22	FSIP:	800*
ISIP:	560*	FHP:	2278

Temp: 100°F
Chlorides MUD: 5,000 PPM
DST: NA
Rw = NA
*Notes: Both Shut-in curves concave up and still bldg, no break-over

4560
(4550-64) Ls; bf-gry/brn, mott, scat dk.brn (stn), micro-fnxln, 1/10 fn-mdxln, cherty, foss IP (ool) most dns, mostly pr por, occ gran txt, scat pcs pr IXLN por, fr ppt por & small vugs, scat pcs (3-4 tray) SSFO (w/brk), no flor, spottd-patchy drk

4570
stn, ribbon cut w/o brk, fr-gd cut crush'd, n. odor, Chert: crm-gry, foss, transluc-opaq, fresh, NS (4560 & 4570 spls)

(4564-74) Ls; AA, bf-gry/brn, mott, micro-mdxln, cherty IP, most dns, pr por, NSFO, n. flor, n. stn, n. odor, Chert: AA,

4580
foss, fresh, NS (4580 spl)

Pawnee
4580 (-1406)

15cfs
Sh; dk.gry, grn/gry, abund blk, carb, occ rd (30" & 45"cfs).

30cfs
CFS, DST
Co time: 16'37"

4590
Ls; buff-crm, micro-mdxln, AA, foss, subool, dns, pr por, NS, scat cht; AA, fresh, n. por, NS, OA, n. flor, stn, or odor

Ls; 1/2 crm-md.gry-brn, crypto-fnxln, dns, occ mly txt, pr por,

4600
incr bf-tan, vfn-mdgrdxln, gran txt, pr IXLN por, NSFO, n. flor, n. stn?, n. cut, scat Cht; crm-smokey, gry, blk, transluc-opaq, foss, sharp, n. vis por, NS, some chalk; wht, soft, fr IXLN por, NS, n. odor (4610 & 15" cfs)

Ls; 1/2 crm-md.gry-brn, AA, dns, scat mealy txt, pr por, 1/2

4600
bf-tan, AA, pr IXLN por, 1 pc ool Ls; fr interool por, n. moldic

15cfs
por, SSFO, n. flor, brn interool stn, SFO (slough?) no odor

30cfs
CFS 48"
45cfs
(30" cfs), incr drk Sh and dk gry Ls, mdxln, dns, NS (45" cfs)

Rig Check at 4606:
vis: 57 wt: 9.1 LCM: 2#

4620
Sh; dk.gry, blk, carb, rd-bn, grn (4625 and 4630 spl)

Ls; bf-gry-md.gry, brn, micro-medxln, s. foss, pelloids, most

4630
dns, scat mealy-rgh txt, pr IXLN por, scat ppt por, no moldic or foss por, NSFO, n. flor, n. stn, scat cht; crm-milky, smokey foss, transluc-opaq, fresh, n. por, NS. no odor. (4630 spl)

Sh; md-dk.gry, incr blk, carb, abund Ls; AA, dns, NS.

Ft.Scott
4629 (-1455)

4640
(4612-23) Ls; tan, gry-brn, micro-mdgrdxln, sli. foss, ool IP, most dns, pr por, scat pcs w/pr vug por, NS, n. flor, n. stn?, no cut, some chalky; AA, soft, NS, scat Cht; crm-gry, foss, transluc-opaq, sharp, n. flor, intvl has n. odor. (4650 spl)

4650
Sh; flood md-dk.gry, vcol. grn-gry, scat blk (4660 spl)

Ls; gry-drk.gry, gry-brn, micro-mdgrdxln, foss, incr ool, most

50
dns, OA mealy-rgh txt, most pr por, few pcs w/fr ppt & IXLN

4665
por (slough?), NSFO, n. flor, scat pcs (3 total) weak patchy stn, wk cut, n. odor. (4660, 4665, and 15"cfs)

Mud Check at 4655:
vis: 59 wt: 9.3 Chlor: 5,200
LCM: 1.0# Ph: 10.0 WL: 7.2

15cfs
Cher Sh
4659 (-1485)

30cfs
Sh; md-dk.gry, flood blk, carb, vcol. grn-gry, rd, some Ls; drk.gry/brn, fn-mdxln, dns, pr por, NS, n. odor.

CFS 1'07"
45cfs
Ls; md-dk.gry, brn, micro-mdgrdxln, foss, subool, dns, few

4680
pcs fr IXLN por NSFO, n. flor, n. stn, scat Cht; crm-gry, foss, ool, fresh, opaq-transluc, NS, n. odor, Shaly IP; vcol drk gry, blk, grn occ red (4680 and 4690 spls)

4690
Ls; crm-gry, dk.brn, mott drk gry, most micro-fnxln, foss, ool, dns, pr vis por, scat pcs mdgrdxln, rgh txt, pr vis por, n. ool por, NS, n. flor, n. stn, n. odor, trc Cht; AA, fresh, NS, incr blk & drk Shale IP.

4700
Ls; most md-drk.gry AA, some crm-lt.gry, micro-fnxln, s. foss, scat pr IXLN por, NS, n. flor, n. stn, n. odor, scat Cht; smokey, gray, transluc, fresh, NS, scat Shale; dk gry, blk.

Rig Check at 4696:
vis: 58 wt: 9.2 LCM: 1#

4700

Ls; md-drk.gry, some crm-lt.gry, AA, micro-fnxln, pr IXLN por, NS, n. flor, n. stn, n. odor, decr Cht; smokey, gray, AA, some chalk; crm, NS (4720 spl)

Johnson Zn
4714 (-1540)

4720

Ls; most crm-gry-md.gry, brn, micro-occ mdgrdxln, foss, scat pelloids, most pr vis por, some Cht; drk.gry, smokey, brn,

4730
transluc, s. foss, fresh, NS, n. flor, n. stn, n. odor.

Ls; most bf-tan, micro-mdxln, AA, foss, pelloids, most dns, NS, some softer, scat pr IXLN, trc vug por, NS, n. flor, n. stn, incr Chalk; wht-crm, soft, pr IXLN por, NS, trc Cht;

4740
smokey, AA, NS, n. odor

Ls; crm-gry, micro-fnxln, AA, incr tan-gry/brn, micro-mdxln, foss, scat pr IXLN, NS, n. flor, n. stn, n. odor, scat Cht; crm-gry, foss, fresh, NS, decr chalk?, incr Sh; blk, carb, grn-gry

4750
Ls; crm-gry,tan, most micro-fnxln, some fn-mdxln, s.foss, ool, gran-occ rgh txt, most pr IXLN por, NS, n. flor, n. stn, decr chalk, soft, NS, decr chert, AA, pr por, NS, incr Sh; md-drk.gry, blk, carb, pl-md.grn, (4760 spl)

50
4760

Ls; crm-gry, gry-brn, micro-fnxln, some micro-mdgrdxln, foss, pr IXLN por, NS, n. flor, n. stn, n. odor, scat cht; AA, fresh, NS.

4770
Ls; most crm-gry, micro-fnxln, AA, some tan-gry/brn, mott, micro-mdxln, scat pcs w/pr-fr IXLN & pr ppt por, NS, n. flor, n. stn, n. odor, scat cht; fresh, NS, some incr Sh; blk, vcol, drk grn, grn-gry, platy. (4780 spl)

4780
Ls; crm-gry, gry-brn, micro-mdxln, most dns, scat chalk softer IP, most pr por, NS, n. flor, n, stn, n. odor, scat Cht; fresh AA, NS, incr Sh; dk, AA, vcol.

4790
Ls; crm-gry, gry-brn, AA, micro-mdxln, most dns, some soft IP, most pr por, scat pcs pr IXLN por, trc (2 pcs) SSFO (with

4795
brk) wk flor, wk-fr cut crush'd, spkld stn, n. odor (4795)

Morrow Shale
4790 (-1616)

15cfs
30cfs
Sh; md-drk.gry, blk, carb, grn, incr red-brn, some brick red,

CFS 1'27
45cfs
decr Ls; AA, pr por, NS, n. flor, n. stn, n. odor, no cln sand

Sh; md-drk.gry, blk, carb, scat grn (4810 spl)

4800

(4802-10) Sh; drk, AA, 35% Sd; clr-pl.grn, vfn-occ fngrd,

4815
sli. glauc, fr sort, clean, subang-subrdd, qtz, brittle-s.friab IP, calc cem, most pr-fr IG por, NSFO, n. flor, n. stn, n. det

15cfs
odor (4815 & 15" cfs)

30cfs
CFS 45"
45cfs
Sh; md-drk.gry, blk, carb, some grn, red, scat yell., platy

4830
Sh; dk gry, blk, platy, vcol incr grn, purple/brn, maroon, trace red, 5% Sd; clr-gry, spkld dk,gry, grn, glauc IP, hard, glassy , shrp, pr vis por, NS, n. flor, n. stn, n. odor (4830 & 4840 spls)

4840
Sh; dk gry, blk, platy, strong vcol AA, decr to scat Sd; clr, gry, grn, spkld, AA, pr por, NS, n. odor., some tan microxln Ls; dns, pr por, NS

4850
Sh; dk gry, blk, platy, strong vcol AA, platy. scat Sd; clr, gry, grn, AA, pr por, NS, incr Ls; tan microxln, gry, micro-fnxln, dns, sharp, pr por, NS, n. odor.

50
4860
Sh; dk gry, blk, platy, vcol incr grn, brn, maroon, trace red, few scat clusters Sd; AA, NS, n. odor (4870, 15" & 30"cfs)

4870
15cfs
30cfs

45cfs
CFS 1'15
(4866-70) Sh; drk, vcol AA, 5% Sd; clr-pl.grn, vfn-fngrd, sli. glauc, fr sort, soft, subrdd, qtzite, v. friab, trc free grains in tray bottom, NSFO, n. flor, n. stn, n. odor, n. cut (45" cfs)

CFS 59"
4890
Sh; dk gry, blk, vcol AA, grn, purple/brn, maroon, red, platy

Basal Sd
4886 (-1712)

Sd; clr-crm-wht, spkld grn (glauc), vfn-fngrd, fr sort, subrdd-rdd, cln qtz, soft, friab, fr-gd IG por, NSFO, NSGB, n. flor, n. vis stn, n. odor (4840 spl)

Mississippi
4891 (-1717)

Ls; lt.gry-crm-bf, most vfn-fngrdxln, mealy-gran txt, dns, pr vis por, NS, sdy, vfngrd, gran-rgh txt, pr por, NS, n. flor, n.

4900
4910
stn, no odor. (4900 spl)

Mud Check at 4879:
vis: 59 wt: 9.2 Chlor: 3,000
LCM: 2# Ph: 11.5 WL: 6.4

Ls; lt-gry-crm, some bf, AA vfn-fngrdxln, most gran txt, dns, pr vis por, NS, incr chalk; wht, soft, pr IXLN por, NS, sandy AA, vfngrd, gran-rgh txt, pr por, NS, n. flor, n. stn, no odor.

4920
Ls; most crm-bf-gry, micro-crsxln, foss, ool, rgh txt IP, pr por, NS, some sdy IP, AA, n. por, NS, scat chalk; crm-wht, soft, NS, n. flor, n. stn, n. odor. (4930 spl) - appx 30% Mrw Sh

4930
Ls; flood crm-bf-lt.gry, micro-vfngrdxln, sdy, crm, decr to fn-mdgrd, gran-rgh txt, dns, pr por, NS, n. flor, n. stn. n. odor, sli decr chalk. (4940 spl)

incr to 50% Mrw Shale slough

4940
Ls; crm-lt.gry, micro-mdgrdxln, incr? ool, most dns, less sdy, most rgh-gran txt, pr por, NS, n. flor, n. stn, n. odor.

incr to 70% Mrw Shale slough

4950
Ls; crm-bf-gry, micro-fnxln, sli foss, ool, dns, pr por (n. ool por), gran-rgh ool txt IP, NS, n. flor, n. stn, n. odor.

50
4960
Ls; AA, most micro-mdgrdxln, decr foss, ool, incr Sdy Ls; gran-rgh txt, pr vis por, NS, incr chalk?, crm-wht, pr IXLN por, NS, n. flor, n. stn, n. odor. (4970 spl)

incr to 80-90% Mrw Shale slough

4970
15cfs
Ls; AA, micro-mdgrdxln, s. ool, sdy, txt AA, pr IG por, NS,

30cfs
decr chalk, crm-wht, pr por, NS, n. flor, n. stn, n. odor. (30"

RTD 4970 (-1796)
45cfs
and 45" cfs) (80-90% Mrw shale slough bottom hole spls)

CFS, CFL
Co time: 8'00"

RTD 4970' 3:25 PM 11-1-2019

Pioneer LTD 4970 (-1796)

5000

COMPANY & WELL Shakespeare #1-12 Mazanec
LOCATION 1700' FNL, 335' FEL, NE
SEC 12 TWSP 17s RGE 35w
COUNTY Wichita STATE Ks

ELEVATIONS
KB 3174'
GL 3164'

Chart for DST (1) Lansing I zone

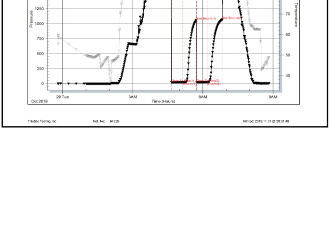
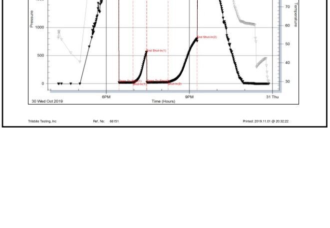
Chart for DST (2) Marmaton A-C zones