

WESLEY D. HANSEN Consulting Petroleum Geologist

KGS
AAPG
Kansas License #418

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Office: 316-267-7313 Cellular ; 316-772-6188

LITHOLOGY STRIP LOG

WellSight Systems

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Shakespeare Oil Company, Inc. #3-25 Carson
Location: 1000' FSL, 1600' FWL SW/4, Sec. 25-16S-34W
License Number: API #15-171-21064
Spud Date: 5-29-2014
Surface Coordinates: 1000' FSL, 1600' FWL SW/4, Sec. 25-16S-34W

Region: Scott County, KS
Drilling Completed: 6-8-2014

Bottom Hole Coordinates: Vertical hole

Ground Elevation (ft): 3102' K.B. Elevation (ft): 3114'
Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4870'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical - Displaced at 3504' -3536'

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Shakespeare Oil Company, Inc.
Address: 202 West Main Street
Salem, IL 62881

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
Address: 212 N. Market, Suite 257
Wichita, KS 67202
Office: 316-263-7313 Cellular: 316-772-6188

COMMENTS

Contractor: Southwind Drilling Rig #70
Pusher: Sam Staggs
Surface Casing: 8 5/8" set at 266' w/180 sx
Production Casing: 5 1/2" set at 4865' w/135 sx
Mud by: MudCo - Reid Atkins and Terry Ison were the engineers.
DST's by: Trilobite - Jace McKinney and Justin Harris were the testers.
Logs by: Weatherford - MAI/MFE, MPD/MDN, MML, Sonic
Deviation Surveys: 3/4 deg. @ 266'; 1 1/2 deg. @ 4470'; 2 deg. @ 4870'

BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	Reed	rerun	266'	266'	2 1/2
2	7 7/8"	Reed	S52	4870'	4604'	129 3/4

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS Depth Datum 3114' KB	LOG TOPS Depth Datum 3114' KB	COMPARISON WELL SOCO Carson #2-25 3112' KB 1230' FSL, 435' FWL of 25-16-34W	
B/Anhydrite Heebner	2455' 3984'	+659 -870	2446' 3970'	+666 -858

B/Anhydrite	2455'	+659	2454'	+664	2446'	+666
Heebner	3984'	-870	3984'	-870	3970'	-858
Toronto	4000'	-886	4002'	-888	3986'	-874
Lansing	4027'	-913	4025'	-911	4008'	-896
Muncie Creek Shale	4211'	-1097	4210'	-1096	4194'	-1082
Stark Shale	4307'	-1193	4308'	-1194	4292'	-1180
Hushpuckney Shale	4353'	-1239	4354'	-1240	4338'	-1226
BKC	4390'	-1276	4394'	-1280	4376'	-1264
Marmaton	4450'	-1336	4448'	-1334	4430'	-1318
Pawnee	4532'	-1418	4530'	-1416	4512'	-1400
Myrick Station	4570'	-1456	4566'	-1452	4546'	-1434
Fort Scott	4584'	-1470	4584'	-1470	4565'	-1453
Lower Cherokee Sh.	4614'	-1500	4612'	-1498	4591'	-1479
Johnson Zone	4661'	-1547	4656'	-1542	4638'	-1526
Morrow Shale	4740'	-1626	4732'	-1618	4711'	-1599
Mississippian	4781'	-1667	4779'	-1665	4772'	-1660
RTD	4870'	-1756	4869'	-1755		
LTD						

DRILL STEM TESTS

DST No. 1 Marmaton
Interval: 4420'-4450'

Times: 30-30-60-90

Recovery: 388' weak GIP; 55' MCO (30m, 70o);

63' G&OCM (10g, 30o, 60m)

FP: 24-40/42-64 SIP: 335-365

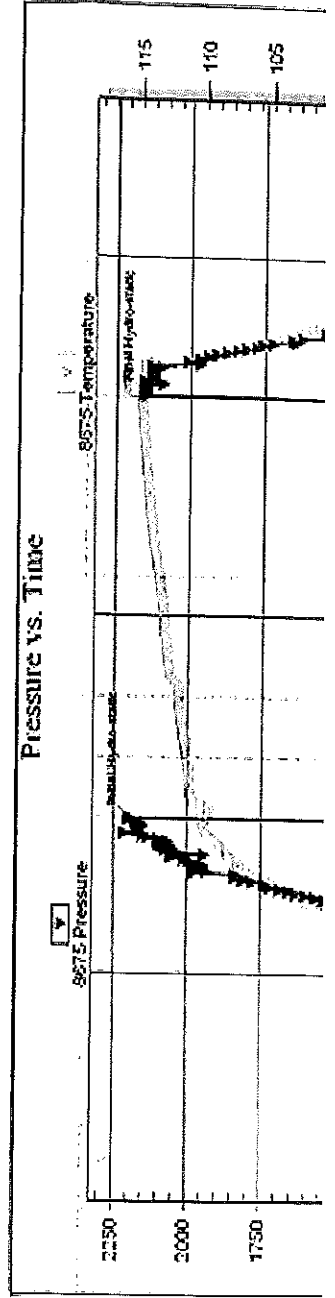
HP: 2193-2150 BHT: 115 deg. F

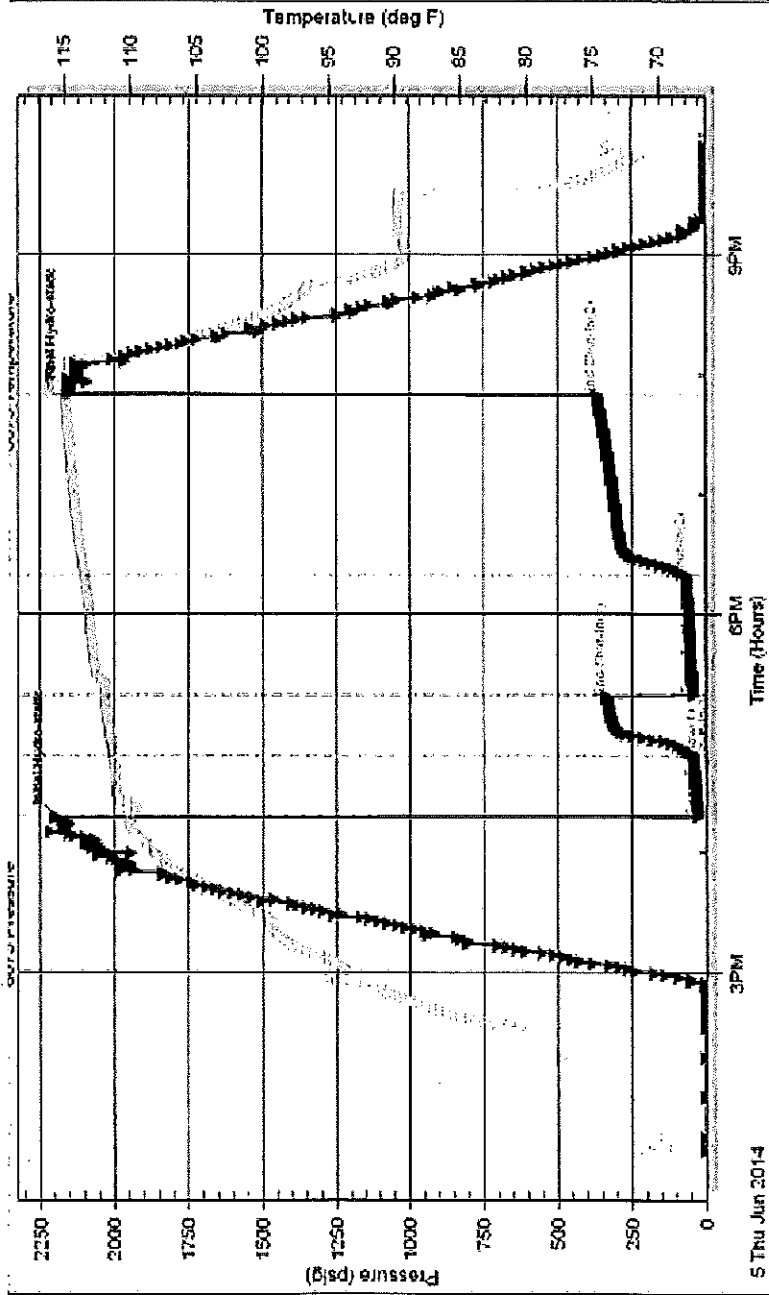
IFP: weak blow built to 7 inches
ISIP: no return blow
FFP: weak blow built to B.O.B. in 37 minutes
FSIP: weak return blow built to 1/2 inch, died in 75 minutes

Serial #: 8675 Inside Shalespear Oil Company, Inc.

Carson 40-25

DST Test Number: 1





Printed: 2014.06.05 @ 21:03:14

Ref. No: 57015

Tribble Testing, Inc

DRILL STEM TESTS

DST No. 2 Myrick Station/Fort Scott
 Interval: 4552'-4610'
 Times: 30-30-30-30
 Recovery: 5' mud
 FP: 21-25/24-27 SIP: 921-782
 HP: 2223-2146 BHT: 115 deg. F

IFP: weak surface blow, died in 5 minutes
 ISIP: no return blow
 FFP: no blow
 FSIP: no return blow

Serial #: 8675

Inside

Shakespears Oil Company, Inc.

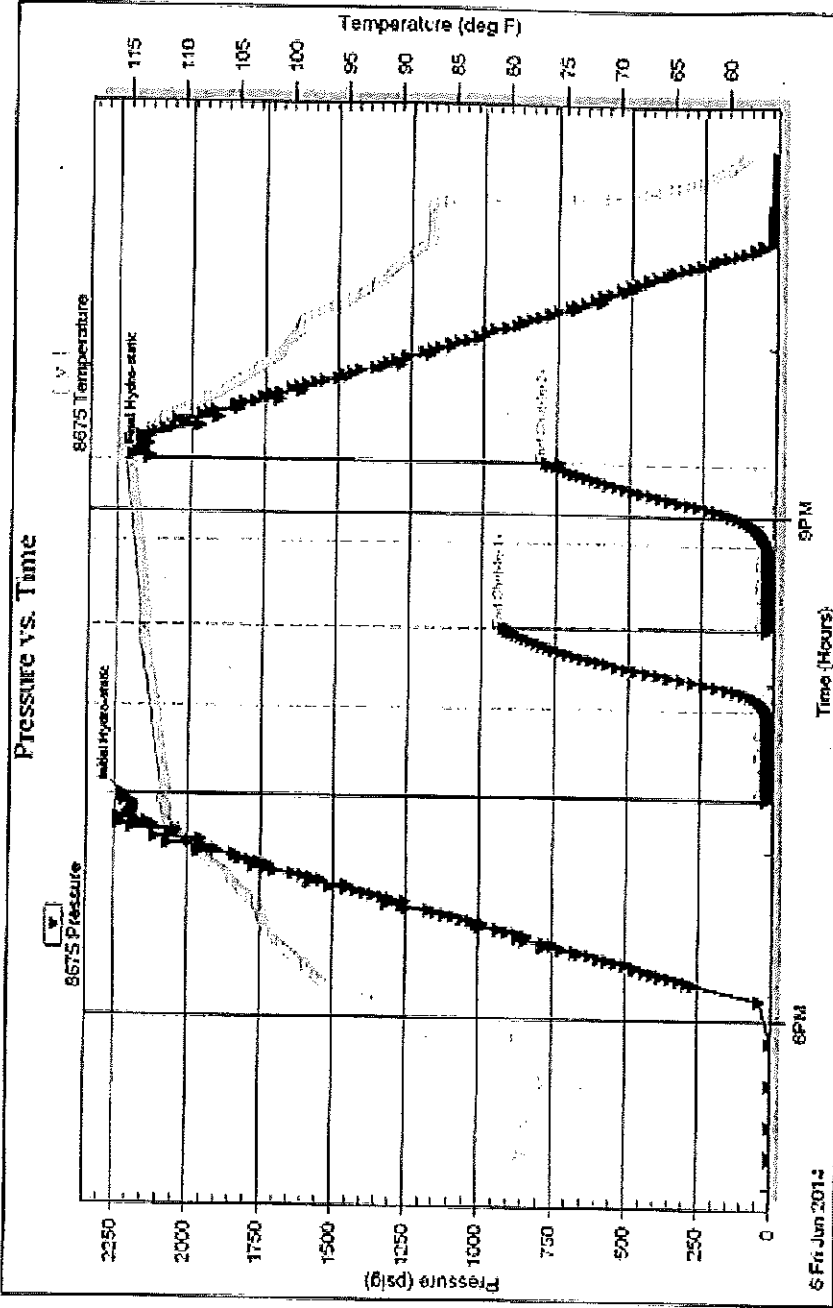
Corporation

DST Test Number: 2

Pressure vs. Time

HP: 2223-2146 BHT: 115 deg. F

Serial #: 8675 Inside Shattuck Oil Company, Inc. Carson # 25 DST Test Number: 2



Thecote Testing, Inc.

Ref. No: 57016

Printed: 2014.06.06 @ 22:17:09

DRILL STEM TESTS

DST No. 3 Johnson Zone
Interval: 4640'-4720'
Times: 30-30-30-30
Recovery: 50' mud, no shows
FP: 17-28/29-39 SIP: 695-675
HP: 2292-2221 BHT: 116 deg. F

IFP: weak surface blow built to 1 inch
ISIP: no return blow
FFP: no blow
FSIP: no return blow

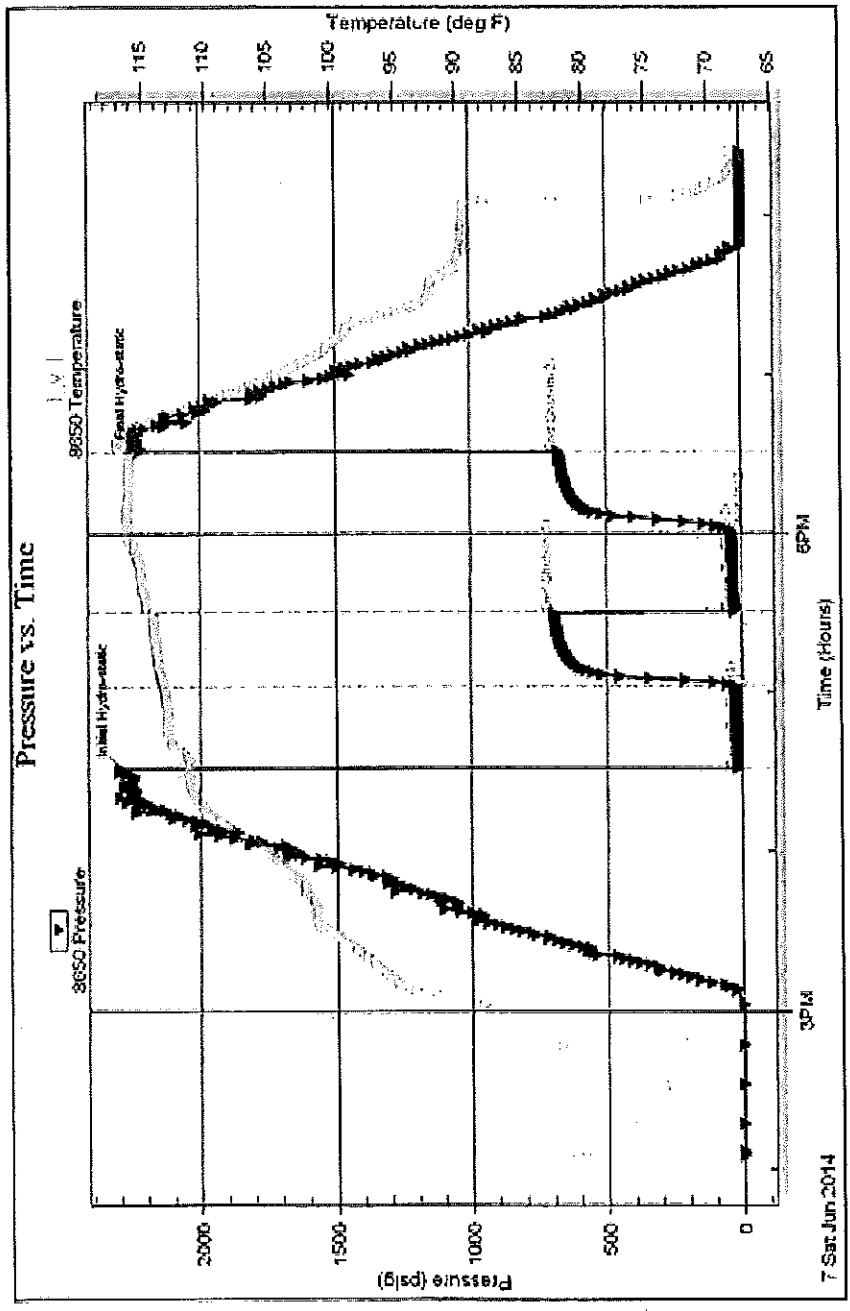
Times: 30-30-30-30
 Recovery: 50' mud, no shows
 FP: 17-28/29-39 SIP: 695-675
 HP: 2292-2221 BHT: 116 deg. F

FFP: no blow
 FSIP: no return blow

DST Test Number: 3

Carson 40-25

Serial #: 8650 Outside Shakespear Oil Company, Inc.



Printed: 2014.06.07 @ 15:37:16

Ref. No: 57017

Tribble Testing, Inc

ROCK TYPES

- | | | | | | |
|--|-------|--|-------------|--|----------------|
| | Anhy | | Salt | | Shylyts |
| | Cht | | green shale | | Slysh |
| | Coal | | Shale | | Sdy dolo |
| | Congl | | Shcol | | Shy dolo |
| | Dol | | Sltst | | Shaly ls |
| | | | | | light dolomite |
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FOSSIL

Cht
 Coal
 Congl
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 Gyp
 Lmst

green shale

Shale
 Shcol
 Sltst
 Ss
 Carb sh

STRINGER

Sltsh
 Sdy dolo
 Shy dolo
 Shaly ls
 light dolomite

ACCESSORIES

Glau
 Gyp
 Hvymin
 Kaol
 Marl
 Minxl
 Nodule
 Phos
 Pyr
 Salt
 Sandy
 Silt
 Sil
 Sulphur
 Tuff
 Chlorite
 Dol
 Sand
 Sity

MINERAL

Anhy
 Arg
 Bent
 Bit
 Brefrag
 Calc
 Carb
 Chtdk
 Chlft
 Dol
 Feldspar
 Ferrpel
 Ferr

Plant

Strom
 Fuss
 Oomold

STRINGER

Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 Ls
 Mrst
 Sltstrg
 Ssstrg
 Carbsh
 Clystrn
 Dol
 Grysh
 Gryslt
 Lms
 Sandy lms
 Sh
 Sltstrn

OTHER SYMBOLS

INTERVALS
 Core
 Dst
 Dst

EVENTS
 Rft
 Dst top/base

OIL SHOWS
 Even
 Spotted
 Quest.

Trace
 Dead
 Gas show

Curve Track 1 ROP (min/ft)	Depth	Lithology	Geological Descriptions	Remarks
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Depth	Lithology	Geological Descriptions	Remarks
3750		<p>10' spl - Ls: offwhite, tan, lt brn mic-fxln, some pp por.; some offwhite subchally and lt to med brn v/cryoxlin, dense, NVP, N.S.; Silt: med to dark gray, some black</p> <p>20' spl - Ls: influx lt gray, lt brn fn granular, poor-NVP, N.S.; Some shales A.A</p> <p>30' spl - Ls: lt gray, tan, lt brn fn granular, some pp por.; scant, offwhite subchally to chalky; other lt brn, lt gray mic-vfxln dense</p> <p>40' spl - Ls: predom. lt to med brn fn granular, poor-NVP; other tan, offwhite mic-vfxln dense; Silt: some dark gray to black</p> <p>50' spl - Ls: flood tan, offwhite mic-vfxln dense, subchally IP; common white chalky; tan, lt brn fn granular with some inter-particle por., N.S.</p> <p>60' spl - Ls: tan, lt brn, lt gray vfxln, poor-NVP, N.S.; common white chalky</p> <p>70' spl - Ls: influx of mottled lt brn fn granular, foss. IP, poor-NVP, N.S.</p>	<p>MudCo Mud Check at 3612' 10:20 AM on 6-3-2014 wt vis w/ pH chl 8.6 47 7.2 11.5 3,000 PV YP Gels lcm solids 17 13 6/17 1# 2.1%</p> <p>Report Depth and Activity 5-29-2014 MRT, Spud at 7:15 AM 5-30 WOC @ 266' 5-31 Drig. @ 1498' 6-1 Drig. @ 2485' 6-2 Drig. @ 3036' 6-3 Drig. @ 3536' 6-4 Drig. @ 4055' 6-5 Drig. @ 4470' - CFS 4470' DST No. 1 6-6 CFS @ 4520' 6-7 Drig. @ 4663' - post DST No. 2 6-8 Drig. @ 4800' - post DST No. 3 6-9 LDDP prepare to run 5 1/2" casing</p> <p>Start 10' samples at 3800'</p>
3800			
3850			

68005 110

ROP (min/ft)

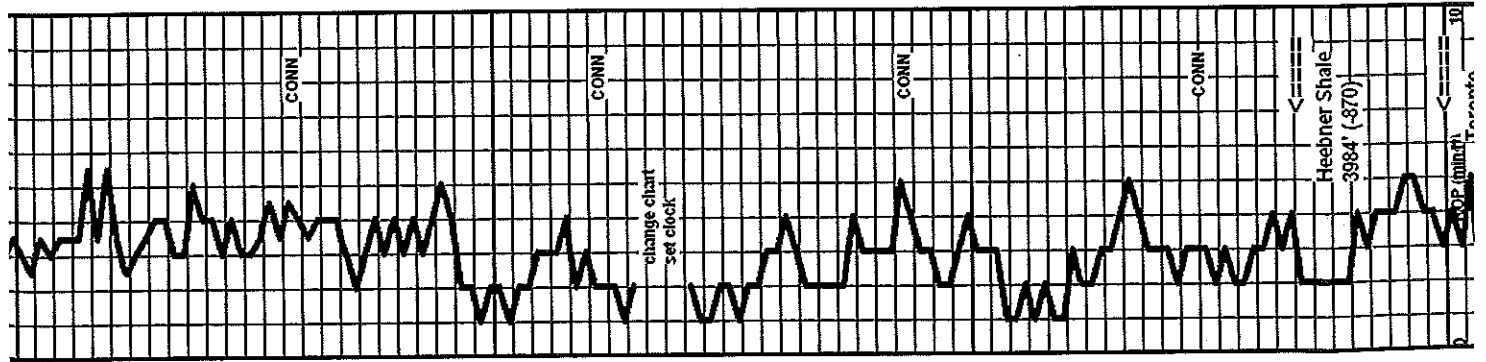
CONN

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ROP (min/ft)



Common white chalky

70' spl - Ls: influx sl mottled lt brn fn granular, foss. IP, poor-NVP, N.S.

80' spl - Sh: sl influx black carbon.; Ls: AA with lt gray, tan vrxn dense

90' spl - Ls: predom. tan, lt brn mxn with poor-NVP; scatt. lt gray, med brn cryptoxin and tan, lt gray mic-vrxn dense

3900' spl - Ls: AA with influx lt to med gray and brn v/cryptoxin, NVP; Sh: fair influx med to dark gray, some black

40' spl - Ls: influx tan, offwhite fn granular with micxin matrix, foss IP; common offwhite, tan mic-vrxn dense; lesser gray and brn cryptoxin

20' spl - Ls: mxk tan, lt brn granular, foss. with some inter-particle por.; offwhite, tan mic-vrxn dense; iner. gray and brn cryptoxin to granular, NVP

30' spl - Ls: mxk foss and granular AA; Sh: some lt to med gray

40' spl - Ls: mxk AA with influx white chalky; influx Dolo: tan, lt gray mxn with interx and some vug. por., N.S.

50' spl - Dolo: AA, more dense IP; Ls: tan, lt gray mic-vrxn dense

60' spl - Ls: tan, lt brn predom. vrxn dense; fair influx Chert: offwhite, lt gray ovg; scatt. dolomite AA

70' spl - Ls: sl influx tan, lt brn mic-vrxn with some inter-particle and small vug. por., N.S.

80' spl - Ls: flood tan, lt brn fn granular, foss IP with inter-particle and some vug. por.; other mic-vrxn dense, and offwhite, tan micxin subchally to chalky

90' spl - Ls: various tan, lt brn micxin to fn granular, foss IP AA; sl influx mottled lt brngray sl granular with micxin matrix, N.S.

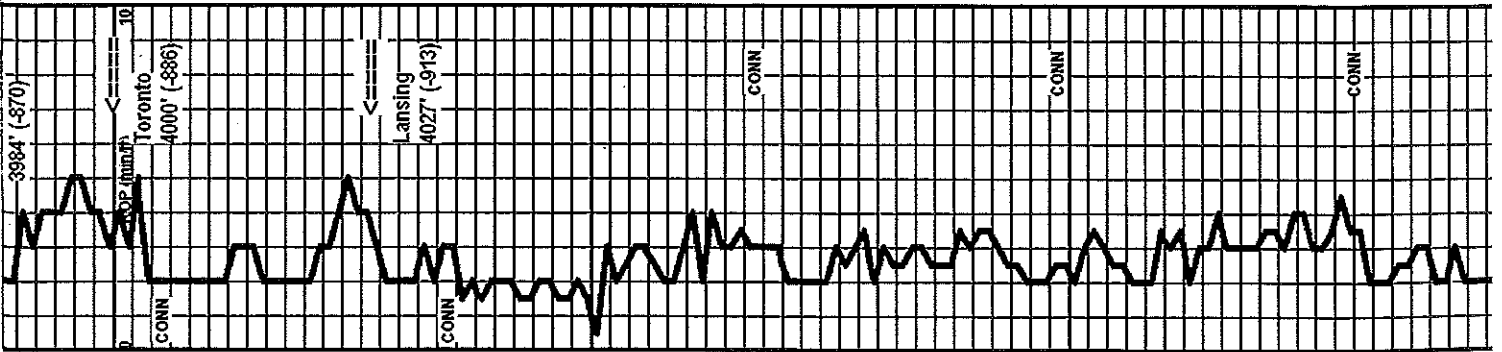
4000' spl - Ls: predom. various tan, lt gray, lt brn mic-vrxn dense; 3-4 chips lt brn vrxn to fn xin with patchy brn stain, no odor, info; Sh: influx black carbon.

10' spl - Ls: med brn, gray v/cryptoxin; Sh: med to dark gray, black, occ red-brn

20' spl - flood Ls: tan, lt brn mic-vrxn dense, subchally to sl granular, oen. poor visible por., N.S.; rare patchy stain AA

Heebner Shale 3984' (-870)

Toronto 4000' (-886)



Toronto 4000' (-886)

Lansing 4027' (-913)

7:00 AM at 4055' on 6-4-2014

- 10' spl - Ls: med brn, gray vf-cryptoxin; Slt: med to dark gray, black, occ red-brn
- 20' spl - flood Ls: tan, lt brn mic-vfxin dense, subchalky to sl granular, gen. poor visible por., N.S.; rare patchy stain AA (sibought?); Chert: sl influx offwhite opq
- 30' spl - Ls: various tan, lt brn, offwhite mic-vfxin dense; some lt brn cryptoxin; sl cherry AA
- 40' spl - Ls: very predom. tan, lt brn mic-vfxin dense; influx Chert: offwhite, tan opq, sl foss IP; Slt: med to dark gray, gray-green
- 50' spl - Ls: tan, lt brn mic-vfxin dense; some vf-cryptoxin; common offwhite, tan mic-vfxin dense, subchalky to chalky; scatt. offwhite, tan opq chert, N.S.
- 60' spl - Ls: mix tan, offwhite mic-vfxin dense AA; lt gray vfxin dense; scatt. tan vfxin foss with intra-particle por., N.S.; rare calcite xtal clusters with spotty stain, info, no odor
- 70' spl - Ls: flood tan, lt brn granular with inter-particle and small vug. por.; some finely oolitic with poor to fair inter-oolitic por., N.S.; some lt brn cryptoxin
- 80' spl - Slt: influx med to dark gray, green-gray; Ls: scatt. chips tan granular to oolitic with poor inter-particle por. with very spotty pp dark stain, sl sfo on break, gen. listless, no odor; med brn cryptoxin; Dolc: trace tan vfxin
- 90' spl - Dolc: fair influx tan, lt gray vfxin with poor-NVP, N.S.; Ls: mix AA, scatt. shows AA
- 4100' spl - Dolc: common AA with some small vug. and interxtn por., N.S.; Ls: various tan, offwhite dense; scatt. tan granular/oolitic with shows AA (sibought?)
- 10' spl - Ls: tan, lt brn gen. dense, some sl granular, poor-NVP; spils shaly (losing viscosity?); scatt. dolomite AA
- 20' spl - Ls: various dense AA with persistent dolomite; spils remain shaly AA
- 30' spl - Ls: influx lt gray, lt brn cryptoxin, sl granular IP, NVP, N.S.; rare chips granular Ls and frxn dolomite with patchy stain, no odor, info
- 40' spl - spils shaly AA, more dark red-brn; Ls: lt gray, tan cryptoxin and sl granular AA; lesser offwhite, tan mic-vfxin dense
- 50' spl - shaly AA with Ls: tan, offwhite vfxin and dolomite AA
- 60' spl - Ls: mix tan, lt brn predom. vfxin dense; other lt brn granular, poor-NVP and offwhite, tan mic-vfxin dense;

MudCo Mud Check at 4139'
 11:20 AM on 6-4-2014
 wt vis wl pH chl
 9.2 47 8.0 11.0 4.000

MudCo Mud Check at 4139'
 11:20 AM on 6-4-2014
 WT Vis w/ pH chl
 9.2 47 8.0 11.0 4.000
 PV YP Gels lcm solids
 17 14 9/23 1# 5.8%

Jet #1 pit

Muncie Creek 4211' (-1097)

- 50' spl - shaly AA with Ls; tan, offwhite vfxn and dolomite AA
- 60' spl - Ls: mix tan, it brn predom. vfxn dense; other it brn granular, poor-NVP and offwhite, tan mic-vfxn dense; persistent shales AA
- 70' spl - Ls: influx sl mottled it brn granular with micxdn matrix; tan vfxn-cryptoxin and tan, offwhite mic-vfxn dense; sl influx offwhite opq chert; spls less shaly
- 80' spl - Ls: mix offwhite, tan, it gray mic-vfxn dense; lesser sl mottled it brn granular, sl cherty AA
- 90' spl - Ls: various tan, it brn mic-vfxn, some fn granular, poor-NVP; sl cherty AA; scatt. med to dark gray and red-brn shale
- 4200' spl - Ls: tan mic-vfxn dense; tan, it gray cryptoxin; some tan mic-vfxn with pp por., N.S.; scatt. chert AA; minor it gray shale
- 10' spl - Ls: flood it gray, tan cryptoxin and tan mic-vfxn dense, subchally IP; scatt. offwhite opq chert
- 20' spl - Ls: sl cherty mix AA
- 30' spl - Ls: med gray, med brn cryptoxin; Str: good influx black carbon.
- 40' spl - Ls: it to med brn sl granular to cryptoxin; tan vfxn dense; Str: dark gray to black
- 50' spl - Ls: mix it gray, tan, it to med brn cryptoxin and tan vfxn dense; scatt. offwhite, it gray chert
- 60' spl - Ls: mix AA; mottled it brn gray granular with poor-NVP; incr. offwhite, it gray chert
- 70' spl - Ls: various cryptoxin and mottled AA; scatt. tan and gray with scatt. vug. por., N.S.; offwhite tan mic-vfxn dense, subchally to occ chally; Str: some dark gray to black
- 80' spl - Ls: various gray, tan, brn cryptoxin to sl mottled granular, poor-NVP, N.S.; scatt. tan; it brn granular with pp dark brn stain, faint odor, dead listless oil
- 90' spl - Ls: mix tan, it brn, it gray mic-vfxn dense and mottled it brn, it gray granular, poor-NVP, N.S.; scatt. spotty shows AA with vsi odor; Str: med to dark gray, black
- 4300' spl - Ls: various it gray, tan, it brn vfxn-cryptoxin, NVP and tan, offwhite mic-vfxn dense; sl influx it gray foss; oolitic with spar matrix; Str: minor gray-green
- 10' spl - Ls: influx tan, it gray oolitic with med to av.

4150

4200

4250

CONN

CONN

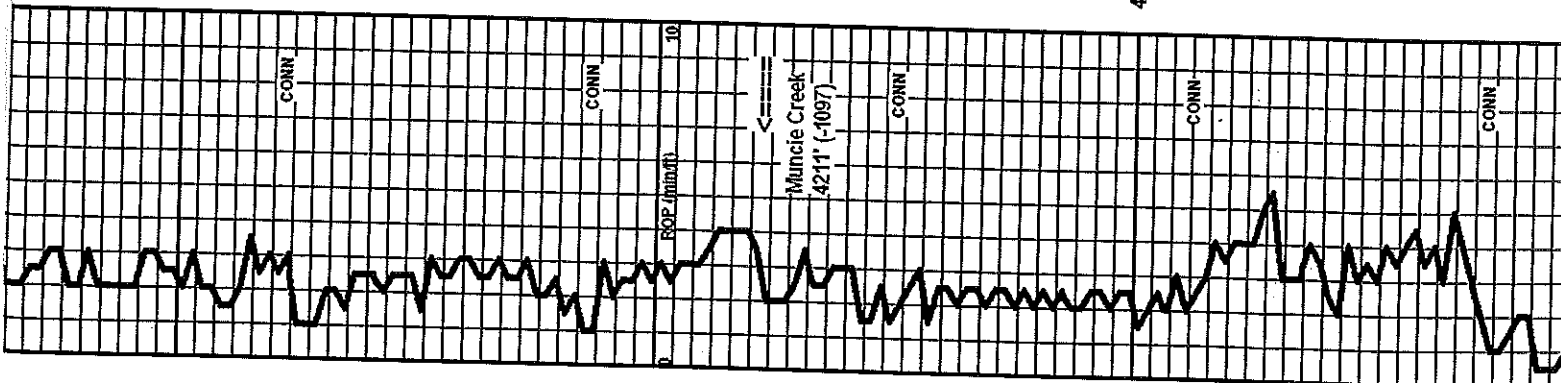
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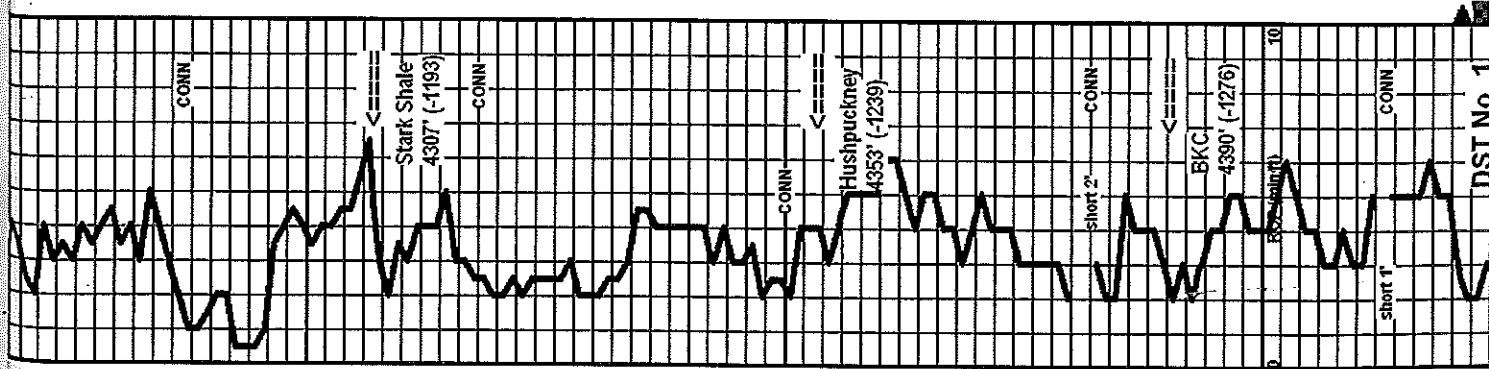
CONN

CONN

Muncie Creek
 4211' (-1097)

ROF (in feet)





4300

4350

4400

90' spl - Ls: mix tan, it brn, it gray mic-vfxin dense and mottled it brn, it gray granular, poor-NVP, N.S., scatt. spotty shows AA with vs1 odor; Sit: med to dark gray, black

4300' spl - Ls: various it gray, tan, it brn vf-cryptoxin, NVP and tan, offwhite mic-vfxin dense; sl influx it gray fossiliferous with spar matrix; Sit: minor gray-green

10' spl - Ls: influx tan, it gray oolitic with good to exc. oomoldic por., N.S.; tan, it brn cryptoxin and it gray, offwhite mic-vfxin dense, N.S.

20' spl - Ls: mix AA, more vf-cryptoxin; sl influx sl mottled it brn, it gray granular and white chalky

30' spl - Sit: influx black carbon; Ls: it to med gray, it to med brn cryptoxin; trace mottled gray/brn foss; with edge stain

40' spl - Ls: various brn, it gray cryptoxin to granular, poor-NVP; lesser offwhite, tan mic-vfxin dense, subchalky to chalky; some tan, it brn oolitic with poor to fair oomoldic por., N.S.

50' spl - Ls: mix it brn, it gray cryptoxin; common offwhite, tan mic-vfxin dense, subchalky to chalky; some tan, it gray granular with inter-particle por., N.S.

60' spl - Ls: flood tan, it brn, it gray vf-cryptoxin, NVP, scatt. inter-particle por. AA

70' spl - Sit: sl influx black carbon; Ls: mix AA with sl influx med brn, med gray cryptoxin, trace patery stain; other sl mottled it brn, it gray foss with poor-NVP, N.S.

80' spl - Ls: mix of sl mottled it to med brn granular, poor-NVP and tan vf-cryptoxin, NVP; scatt. offwhite in granular with inter-particle and vug. por., N.S. Chert; scatt. offwhite opq

90' spl - Ls: various tan, it gray sl mottled granular, NVP; tan, offwhite, it gray mic-vfxin dense, subchalky to occ chalky

4400' spl - Ls: subchalky to chalky AA; some mottled gray/brn granular and med gray cryptoxin, NVP; Chert; offwhite, it gray opq

10' spl - Sit: vs1 influx black carbon; Ls: tan, it to med brn vf-cryptoxin; mottled it brn and gray granular, NVP, N.S.; scatt. gray chert

20' spl - Ls: various it to med brn, tan, gray vf-cryptoxin, some mottled granular, poor-NVP, N.S.; sl cherty AA

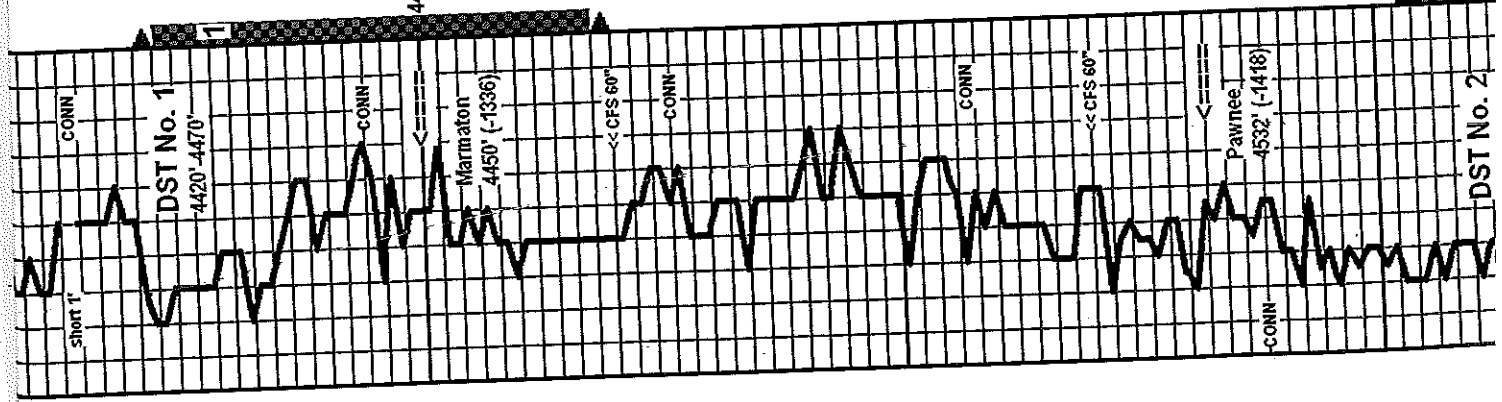
30' spl - Ls: various cryptoxin and granular AA

40' spl - common dense, light Ls's AA.; Sit: it to med gray with it gray shaly siltst

Stark Shale 4307' (-1193)

Hushpuckney 4353' (-1239)

BKC 4390' (-1276)



30° spl - Ls: various cryptoxin and granular AA

40° spl - common dense, tight Ls's A.A.; Sit: it to med gray with it gray shaly silst

50° spl - Sit: it to med gray, some very soft with shaly silst AA; Ls: common various dense AA; 2-3 chips brn vt-cryptoxin with patchy stain

60° spl - Ls: abund. mix tan, brn granular/foss with poor-NVP; it to med brn, gray cryptoxin and tan, offwhite mic-vrxin dense; Sit: soft it gray, med to dark gray, some shaly silst

70° spl - Sit: abund. med to dark gray, red-brn; Ls: various brn, gray cryptoxin, occ with patchy dark stain; sil influx tan, it brn in granular, sil foss and oolitic with inter-particle por., vs it odor to no odor, pp brn stain, sfo, sat stain in dry spls; CFS 4470 30°/60° spls - Ls: predom. various cryptoxin with N.S.; scatt. chips with shows AA; Sit: common med to dark gray, some red-brn

80° spl - trashy; Sit: very predom. it to med gray, gray-green, scatt. various cryptoxin Ls's

90° spl - Sit: very abund. med gray, some green-gray, occ pyritic; minor Ls: med brn cryptoxin

4500° spl - still very shaly AA; influx Ls: mix it to med brn cryptoxin and tan, brn granular to oolitic with spar matrix, poor-NVP, N.S.

10° spl - Sit: med to dark gray, decr. %; Ls: it brn, some gray smooth cryptoxin and offwhite, tan mic-vrxin dense

20° spl - Ls: various it to med brn, gray cryptoxin and offwhite, tan dense AA; Sit: med to dark gray, gray-green

CFS 4520° 30° spl - Ls: various cryptoxin and dense AA; some it brn granular with micvxn matrix, N.S.; Sit: AA: 60° spl - >>>

30° spl - no change; 40° spl - Sit: influx dark gray to black carbon; Ls: influx med to dark brn, dark gray cryptoxin; sil influx it brn granular to oolitic with micvxn matrix.

50° spl - very shaly with flood black carbon, viscosity decreased and water loss increased; Ls: various cryptoxin, granular and dense AA

60° spl - very shaly with abund. med to dark gray, black, lesser dark red-brn; Ls: various brn, gray cryptoxin and offwhite, it gray mic-vrxin dense, N.S.

70° spl - still very shaly and poor with shale mix AA; Ls: incr. tan, it gray vt-cryptoxin, NVP with offwhite, it gray dense

80° spl - Sit: very common med to dark gray, black carbon; Ls: mix tan, it brn vt-cryptoxin and offwhite mic-vrxin dense, sil influx it gray, it brn opq chert

DST No. 1 Marmaton
Interval: 4420'-4450'
Times: 30-30-60-90
ISP: no return blow
FPF: weak blow built to B.O.B. in 37 minutes
FSP: weak return blow built to 12 inch, died in 75 minutes
Recovery: 388' weak CIP: 55' MCO (30m, 700); 63'
G3OCM (10g, 30g, 60m)
EP: 24-40-42-64 SIP: 335-365
HP: 2183-2150 BHT: 115 deg. F

Marmaton 4450' (-1336)

Pipe strap at 4470' was 2.12' short to the board

7:00 AM at 4470' on 6-5-2014
MudCo Mud Check at 4470'
7:00 AM on 6-5-2014
wt vis wl pH chl
9.3 50 8.8 11.0 4.000
PV YP Gels lcm solids
18 16 9/30 1# 6.5%

CFS 4570° 60° spl - Ls: predom. it gray, tan, some it brn cryptoxin; lesser offwhite, it gray mic-vrxin dense; Sit: predom. it to med gray; occ mortified gray/offwhite opq chert

7:00 AM at 4520' on 6-6-2014

Pawnee 4532' (-1418)

MudCo Mud Check at 4538'
8:15 AM on 6-6-2014
wt vis wl pH chl
9.2 44 10.0 11.0 6.000
PV YP Gels lcm solids
15 12 12/38 0# 6.0%

ran premix

wt vis wl pH cti
 9.2 44 10.0 11.0 6,000
 PV YP Gels lcm solids
 15 12 12/38 0# 6.0%

ran premix

Myrick Station 4570' (-1456)
 CFS 4570' 60" spl - Ls: cherry mix AA; influx offwhite, it gray vfxn dense, NVP, N.S.; Sit: common dark gray, black AA

Fort Scott 4584' (-1470)
 Good samples to RTD
 DST No. 2 Myrick Station Fort Scott
 Interval: 4552-4610
 Times: 30-30-30-30
 IFF: weak surface blow, died in 5 minutes
 ISIF: no return blow
 FFF: no blow
 FSP: no return blow
 Recovery: 5' mud
 FP: 21-25/24-27 SIP: 921-782
 HP: 2223-2146 BHT: 115 deg. F

Cherokee Sh. 4614' (-1500)

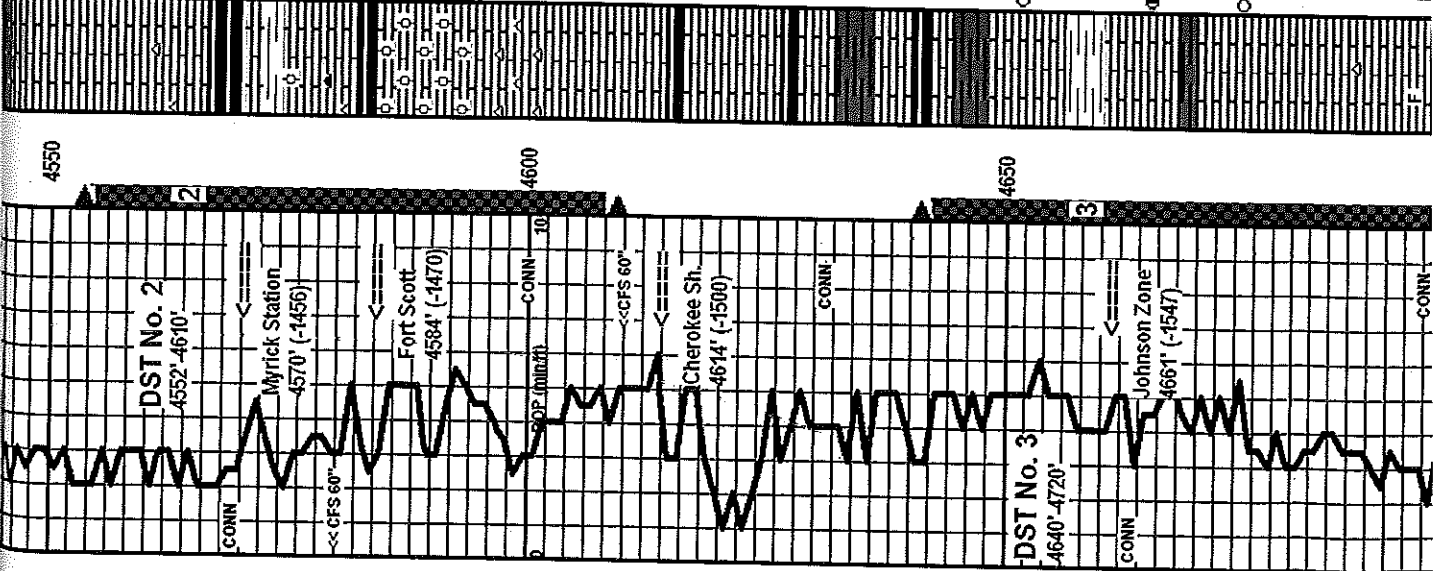
Johnson Zone 4661' (-1547)
 7:00 AM at 4663' on 6-7-2014
 DST No. 3 Johnson Zone
 Interval: 4640'-4720'
 Times: 30-30-30-30
 IFF: weak surface blow built to 1 inch
 ISIF: no return blow
 FFF: no blow
 FSP: no return blow
 Recovery: 50' mud, no shows
 FP: 17-28/25-39 SIP: 695-675
 HP: 2292-2221 BHT: 116 deg. F

70' spl - still very shaly and poor with shale mix AA; Ls: incr. tan, it gray vfxn, NVP with offwhite, it gray dense
 80' spl - Sit: very common med to dark gray, black carbon; Ls: max tan, it brn vfxn and offwhite mic-vfxn dense; sl influx it gray, it brn opq chert

CFS 4570' 30" spl - Sit: flood black carbon; Ls: influx dark gray, dark brn cryptoxin; lesser med brn, gray granular to oolitic, NVP, N.S.; one chip tan vfxn with brn patchy stain and stained microfractures, trc slow bleeding gas, no, no odor; some dark brn opq chert; 60" spl >>>

90' spl - Ls: offwhite, it gray dense; lesser mottled it brn, gray granular, poor-NVP, N.S.; scatt. mottled gray/offwhite it brn chert.
 4600' spl - Sit: flood black carbon; Ls: strong influx med brn oolitic with spat matrix; some gray, it brn granular/oolitic with micxin matrix, one chip with patchy stain, poor-NVP
 10' spl - Ls: various oolitic AA, N.S.; influx: mottled gray/brn/offwhite oolitic chert
 CFS 4610' 30" spl - Ls: influx it gray, tan, offwhite vfxn, NVP; gray, med to dark brn cryptoxin; 60" spl - Ls: predom. it to med gray, it to med brn cryptoxin, N.S.

20' spl - trashy, no new rocks; 30' spl - Sit: black carbon, dark gray; Ls: it to med gray, it brn vfxn cryptoxin
 40' spl - Ls: predom. offwhite, it gray mic-vfxn dense, subchally IP; Sit: flood black carbon, dark gray
 50' spl - Ls: it gray, it to med brn cryptoxin; offwhite, it gray mic-vfxn dense, subchally IP; streaks Sit: dark gray to black carbon.
 60' spl - Ls: various cryptoxin and dense with shales AA
 70' spl - Ls: predom. various gray cryptoxin, some silty; one chip med brn with pp brn stain, info; one chip it gray vfxn cryptoxin with spotty brn stain, info
 80' spl - Ls: various brn, gray cryptoxin to ooc granular, NVP, N.S.; 3-4 chips med brn granular with vug, por, fair odor, patchy to scatt. stain, sfo, sg
 90' spl - Ls: various cryptoxin and granular AA; more it gray, offwhite vfxn dense, one chip with patchy stain
 4700' spl - Ls: more it to med brn with various gray predom. cryptoxin, NVP, N.S.; scatt. brn chert
 10' spl - Ls: Various brn, gray predom. cryptoxin, NVP, N.S.



4550
 4600
 4650

DST No. 2
 4552-4610'

Myrick Station
 4570' (-1456)

Fort Scott
 4584' (-1470)

Cherokee Sh.
 4614' (-1500)

Johnson Zone
 4661' (-1547)

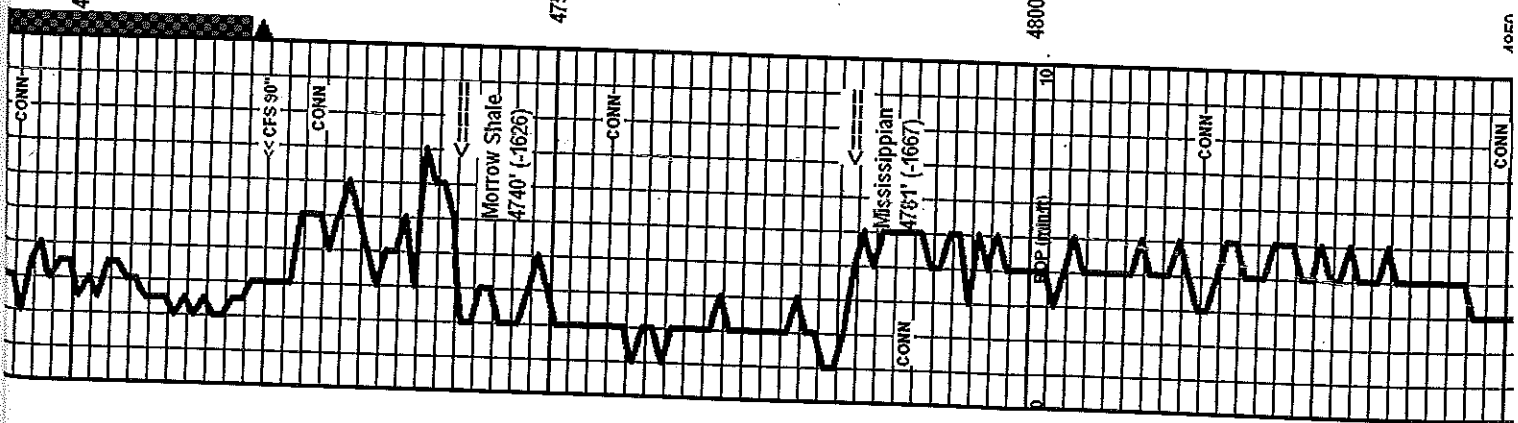
DST No. 3
 4640'-4720'

CONN

<<CFS 60''

CONN

CONN



10' spl - Ls: various brn, gray predom. cryptoxin, NVP, N.S. occ 10SS, lesser offwhite, lt gray mic-vrxin dense

20' spl - Ls: various cryptoxin to sl granular AA, N.S.; very scant lt brn, gray with edge stain, trace tan vrxin with sfc; trace med brn granular with vug. por., fair to good odor, sfo. sg.

CFS 4720' 30' spl - Ls: various gray, brn cryptoxin; incr. offwhite, lt gray mic-vrxin dense; 1-2 chips granular with vug. por. and shows AA, fair odor; scant, mottled oolitic chert and trace black chert; 60°/90° spls >>>

30°/40° spls - Ls: mottled offwhite; tan gray granular NVP; med brn, med gray cryptoxin; silt. incr. %; lt to med gray, gray-green, lt green; occ pyrite

50° spl - flood Ls: med brn, med gray cryptoxin, sl granular IP; influx offwhite, lt gray mic-vrxin dense; Sst: scant. lt gray vfg with shale partings; trace dark green fg glauc.; occ offwhite calcar. sst, N.S.

60° spl - still predom. various dense Ls's AA; Silt: dark gray with occ. dark green fg Sst: 70° spl - incr. Silt: dark gray and black

80° spl - flood Silt: med to dark gray, black, some pyritic; scant. free pyrite

90° spl - Silt: dark gray to black, rarely pyritic; trace coal

4800° spl - Sst: lt gray vfg friable, N.S.; Ls: good influx offwhite, tan predom. in granular with micrxn to spar matrix, sl sandy IP; trace orange chert, N.S.

10° spl - Ls: tan, lt brn granular, some cryptoxin; other offwhite in granular with micrxn matrix; some offwhite subchalky, N.S.

20° spl - Ls: mix AA with more lt brn, tan, lt gray cryptoxin and offwhite micrxn, subchalky to chalky, N.S.

30° spl - Ls: lt brn, lt gray granular, some cryptoxin; offwhite subchalky

40° spl - Ls: more med brn, gray granular, NVP

50° spl - Ls: predom. med brn, gray cryptoxin to sl granular, NVP

60° spl - Ls: mix lt to med brn, lt gray, tan cryptoxin; other offwhite in granular with micrxn matrix, N.S.

CFS 4720' 60° spl - Ls: mix AA; one chip tan vrxin with very spotty brn residual stain and listless oil; 90° spl - Ls: AA; influx lt gray, tan vt-cryptoxin; more offwhite, lt gray mic-vrxin dense; scant. brn opq chert

MudCo Mud Check at 4720'
 1:45 PM on 6-7-2014
 wt vis wl pH chl
 9.3 50 9.6 10.5 6,500
 PV YP Gels lcm solids
 18 22 16/50 1# 6.7%

Morrow Shale 4740' (-1626)

Mississippian 4781' (-1667)

7:00 AM at 4800' on 6-8-2014

MudCo Mud Check at 4805'
 7:45 AM on 6-8-2014
 wt vis wl pH chl
 9.3 50 9.6 10.5 6,200
 PV YP Gels lcm solids
 18 20 18/48 1# 6.8%

scatt. free pyrite

90' spl - Sh: dark gray to black, rarely pyritic; trace coal

4800' spl - Sst: lt gray v-fg friable, N.S.; Ls: good influx of white, tan predom. in granular with micxin to spar matrix; sl sandy IP; trace orange chert, N.S.

10' spl - Ls: tan, lt brn granular, some cryptoxin; other offwhite in granular with micxin matrix; some offwhite subchally, N.S.

20' spl - Ls: mix AA with more lt brn, tan, lt gray cryptoxin and offwhite micxin, subchally to chally, N.S.

30' spl - Ls: lt brn, lt gray granular, some cryptoxin; offwhite subchally

40' spl - Ls: more med brn, gray granular, NVP

50' spl - Ls: predom. med brn, gray cryptoxin to sl granular, NVP

60' spl - Ls: mix to med brn, lt gray, tan cryptoxin, other offwhite in granular with micxin matrix, N.S.

70' spl - Ls: mix AA with good influx tan, lt brn in granular with micxin to subchally matrix, N.S.

CFS 4870' spits - Ls: mix granular and cryptoxin AA

After review of DST's, samples and E-Logs, the decision was made to run 5 1/2" casing for production testing.

Respectfully submitted,

Wesley D. Hansen
Petroleum Geologist
Kansas License No. 418

Mississippian 4781' (-1667)

7:00 AM at 4800' on 6-8-2014

MudCo Mud Check at 4805'

7:45 AM on 6-8-2014

wt vis wl pH chl

9.3 50 9.6 10.5 6,200

PV YP Ge/S lcm solids

18 20 18/48 1# 6.8%

RTD reached at noon on 6-8-2014
CFS/CTCH 90" - drop survey - TOFL
Loggers on bottom at 5:30 PM

