

# K&N PETROLEUM, INC.

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
K&N- Norman Klepper #A-1					Hutchison Oil-Hunley #1-20				Bill Chew-Aiken North #1			
NE-SW-SE-SW 17-22S-11W					SW-NE-NW-NE 17-22S-11W				NE-NW-NW 17-22S-11W			
oil 1839 KB					oil 1831 KB				oil 1838 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	3095	-1256	3089	-1250	3091	-1260	4	10				
Toronto	3111	-1272	3107	-1268	3114	-1283	11	15				
Douglas	3132	-1293	3124	-1285	3123	-1292	-1	7				
Brown Lime	3230	-1391	3224	-1385	3227	-1396	5	11	3229	-1391	0	6
Lansing	3252	-1413	3248	-1409	3252	-1421	8	12	3254	-1416	3	7
BKC	3495	-1656	3495	-1656	3490	-1659	3	3				
Viola	3522	-1683	3522	-1683	3520	-1689	6	6	3504	-1666	-17	-17
Simpson	3531	-1692	3530	-1691	3530	-1699	7	8				
Simpson Sd.	3537	-1698	3537	-1698								
Arbuckle	3576	-1737	3578	-1739	3584	-1753	16	14	3583	-1745	8	6
RTD	3700	-1861	3700	-1861	3672	-1841	-20	-20	3662	-1824	-37	-37
LTD	3696	-1857	3696	-1857	3670	-1839	-18	-18				

### DRILLSTEM TESTS

No	Interval	Formation
1	3477-3563	Viola- Simpson
2	3475-3590	Arbuckle
3	3592-3604	Arbuckle
4	3592-3615	Arbuckle



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**28**  
 2017

**DST #1**  
**Formation:**  
 Simpson/Viola  
 Time On: 16:55 10/28  
 Time On Bottom: 19:09 10/28

**Test Interval: 3477 - 3563'**    **Total Depth: 3563'**  
 Time Off: 00:10 10/29  
 Time Off Bottom: 22:09 10/29

Mud Properties    Down Hole Makeup  
 Tester Communication

**Gas To Surface: NO**

**Well Flow: NO**

**Default View**

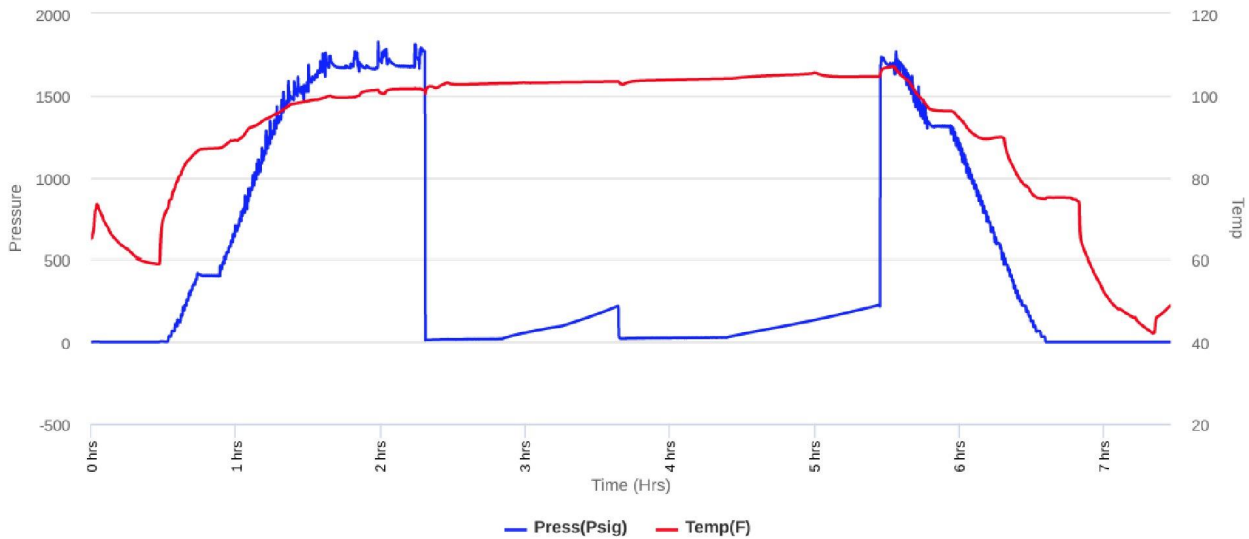
Electronic Volume Estimate:  
 525'

1st Open  
 Minutes: 30  
 7.5" at 30 min

1st Close  
 Minutes: 45  
 4" at 45 min

2nd Open  
 Minutes: 45  
 33.3" at 45 min

2nd Close  
 Minutes: 60  
 15.7" at 60 min



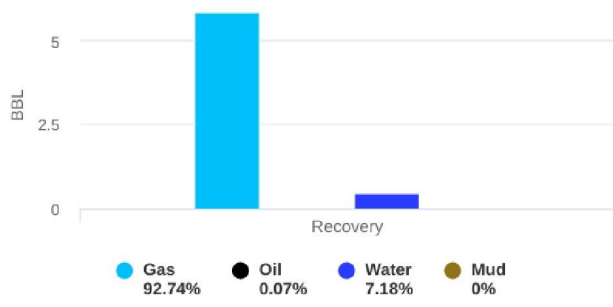
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
409	5.82007	G	100	0	0	0
32	0.45536	SLOCW	0	1	99	0

Total Recovered: 441 ft  
 Total Barrels Recovered: 6.27543

Reversed Out  
 NO

Recovery at a glance

Exclude Gas



Initial Hydrostatic Pressure	1678	PSI
Initial Flow	11 to 21	PSI
Initial Closed in Pressure	220	PSI
Final Flow Pressure	27 to 30	PSI
Final Closed in Pressure	227	PSI
Final Hydrostatic Pressure	1685	PSI
Temperature	106	°F
Pressure Change Initial Close / Final Close	0.0	%

Estimated Daily Production

REMARKS:

Initial Flow: Weak, surface blow increasing to 7 1/4 ins.  
 Initial Shut-in: 4 in. blow back.  
 Final Flow: 1 in. blow. BOB in 3 mins.  
 Final Shut-in: BOB blow back.

Tool Sample: 1% oil, 99% mud



Company: K & N Petroleum, Inc  
 Lease: Norman Klepper "A" #1

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

DATE  
 October  
 29  
 2017

DST #2 Formation: Simpson/Viola/Arbuckle Test Interval: 3475 - 3590' Total Depth: 3590'  
 Time On: 08:48 10/29 Time Off: 14:58 10/29  
 Time On Bottom: 10:20 10/29 Time Off Bottom: 13:20 10/29

Mud Properties

Down Hole Makeup

Gas To Surface: NO

Tester Communication

Well Flow: NO

Default View

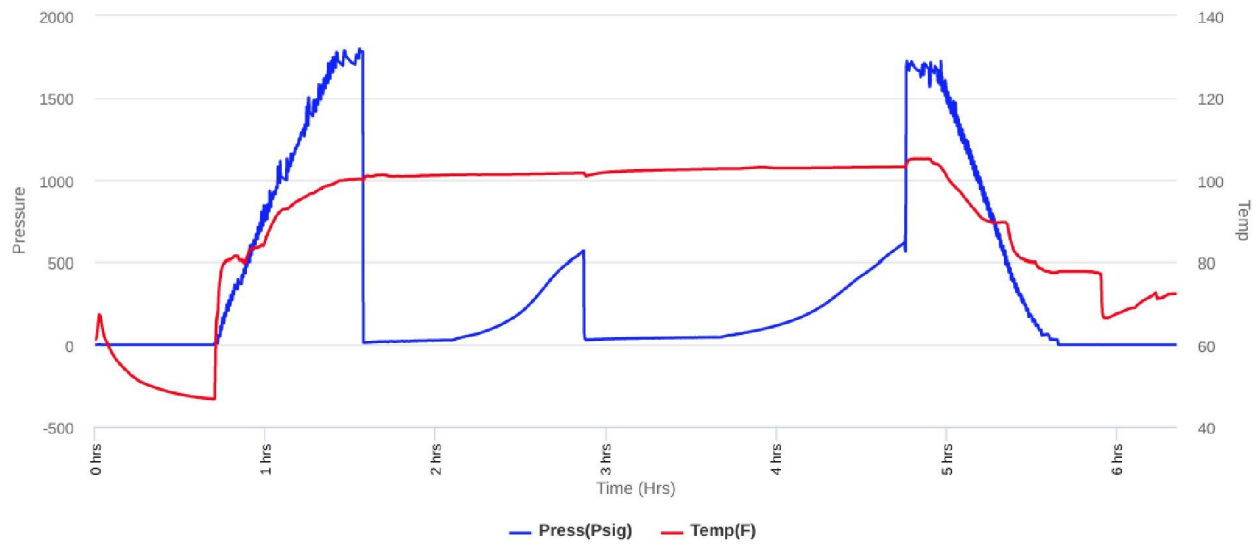
Electronic Volume Estimate:  
 322'

1st Open  
 Minutes: 30  
 8" at 30 min

1st Close  
 Minutes: 45  
 .7" at 45 min

2nd Open  
 Minutes: 45  
 27.3" at 45 min

2nd Close  
 Minutes: 60  
 0" at 60 min



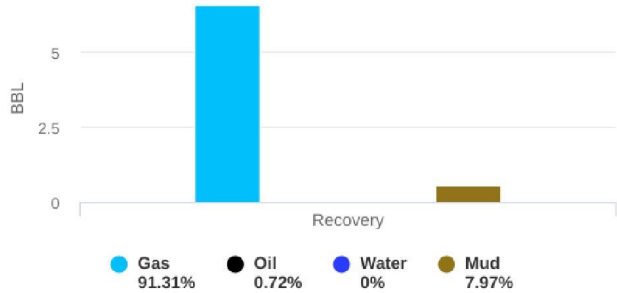
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
431	6.13313	G	100	0	0	0
73	1.03879	SLOCHGCM	40	5	0	55

Total Recovered: 504 ft  
 Total Barrels Recovered: 7.17192

Reversed Out  
NO

### Recovery at a glance

Exclude Gas



Initial Hydrostatic Pressure	1702	PSI
Initial Flow	14 to 30	PSI
<b>Initial Closed in Pressure</b>	<b>567</b>	<b>PSI</b>
Final Flow Pressure	32 to 46	PSI
<b>Final Closed in Pressure</b>	<b>613</b>	<b>PSI</b>
Final Hydrostatic Pressure	1693	PSI
Temperature	104	°F
Pressure Change Initial Close / Final Close	0.0	%

Estimated Daily Production

#### REMARKS:

Initial Flow: Weak, surface blow increasing to 8 ins. in 30 mins.  
 Initial Shut-in: 3/4 in. blow back.  
 Final Flow: BOB in 5 mins.  
 Final Shut-in: No blow back.

Tool Sample: 10% gas, 10% oil, 80% mud



## Company: K & N Petroleum, Inc Lease: Norman Klepper "A" #1

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**29**  
 2017

**DST #3**      **Formation: Arbuckle**      **Test Interval: 3592 - 3604'**      **Total Depth: 3604'**  
 Time On: 20:19 10/29      Time Off: 02:32 10/30  
 Time On Bottom: 21:53 10/29      Time Off Bottom: 00:27 10/30

Mud Properties

Down Hole Makeup

Gas To Surface: NO

Tester Communication

Well Flow: NO

Default View

Electronic Volume Estimate:  
 2323'

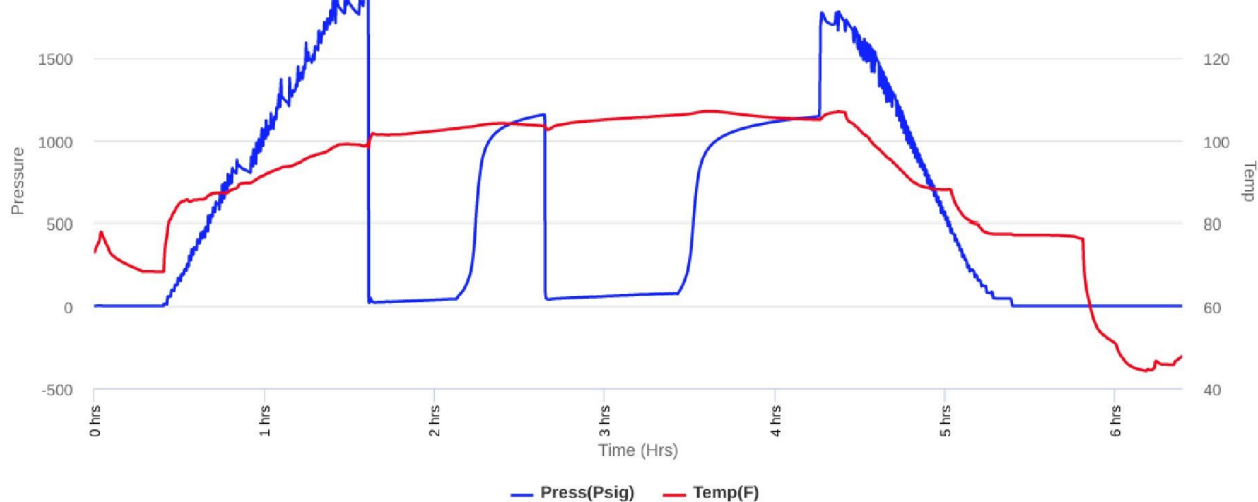
**1st Open**  
 Minutes: 30  
 117.5" at 30 min

**1st Close**  
 Minutes: .7  
 30" at .7 min

**2nd Open**  
 Minutes: 45  
 167.9" at 45 min

**2nd Close**  
 Minutes: 45  
 3.6" at 45 min

Download Recorder File



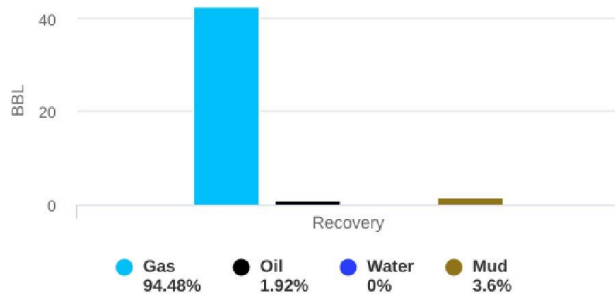
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
2976	42.34848	G	100	0	0	0
48	0.68304	O	0	100	0	0
126	1.79298	SLOCM	0	10	0	90

Total Recovered: 3150 ft  
 Total Barrels Recovered: 44.8245

Reversed Out  
NO

### Recovery at a glance

Exclude Gas



Initial Hydrostatic Pressure	1766	PSI
Initial Flow	20 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1152</b>	<b>PSI</b>
Final Flow Pressure	41 to 76	PSI
<b>Final Closed in Pressure</b>	<b>1143</b>	<b>PSI</b>
Final Hydrostatic Pressure	1767	PSI
Temperature	107	°F
Pressure Change Initial Close / Final Close	0.7	%

Estimated Daily Production

#### REMARKS:

Initial Flow: 1/2 in. blow. BOB in 2 1/4 mins.  
 Initial Shut-in: 3/4 in. blow back.  
 Final Flow: 1 in. blow. BOB in 1 min.  
 Final Shut-in: 3 1/2 in. blow back.

Tool Sample: 30% oil, 70% mud

Gravity: 40 @ 60 degrees F



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

**DST #4**      **Formation: Arbuckle**      **Test Interval: 3592 - 3615'**      **Total Depth: 3615'**  
 Time On: 09:55 10/30      Time Off: 16:18 10/30  
 Time On Bottom: 11:16 10/30      Time Off Bottom: 13:46 10/30

Mud Properties

Down Hole Makeup

Gas To Surface: NO

Tester Communication

Well Flow: NO

Default View

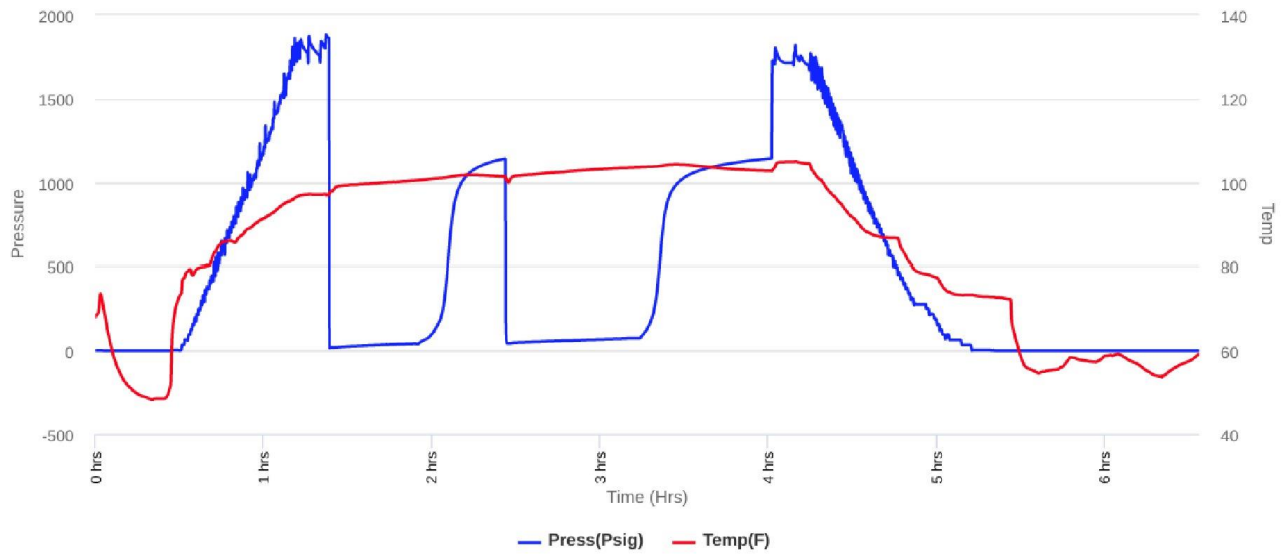
Electronic Volume Estimate:  
 1552'

1st Open  
 Minutes: 30  
 66.1" at 30 min

1st Close  
 Minutes: 30  
 1.9" at 30 min

2nd Open  
 Minutes: 45  
 114" at 45 min

2nd Close  
 Minutes: 45  
 5.5" at 45 min



Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLS					
2042	29.05766	G	100	0	0	0
37	0.52651	O	0	100	0	0
63	0.89649	SLWCOCMCG	45	25	3	27
63	0.89649	SLOCSLWCSLGCM	15	3	5	77

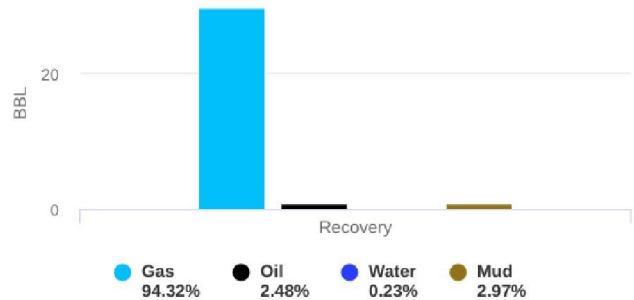
Total Recovered: 2205 ft  
 Total Barrels Recovered: 31.37715

**Reversed Out  
NO**

### Recovery at a glance

Exclude Gas

Initial Hydrostatic Pressure	1757	PSI
Initial Flow	16 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1139</b>	<b>PSI</b>
Final Flow Pressure	46 to 74	PSI
<b>Final Closed in Pressure</b>	<b>1142</b>	<b>PSI</b>
Final Hydrostatic Pressure	1756	PSI
Temperature	105	°F
Pressure Change Initial Close / Final Close	0.0	%



Estimated Daily Production

#### REMARKS:

Initial Flow: 3/4 in. blow. BOB in 5 1/2 mins.  
 Initial Shut-in: 1 3/4 in. blow back.  
 Final Flow: 1 1/2 in. blow. BOB in 1 1/2 mins.  
 Final Shut-in: 5 1/2 in. blow back.

Tool Sample: 10% oil, 5% water, 85% mud

Gravity: 40 @ 60 degrees F

#### ROCK TYPES

Cht	Lmst fw<7	shale, gry	shale, red
Dolprim	shale, grn	Carbon Sh	Ss

#### OTHER SYMBOLS

##### Oil Show

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- \* Gas

##### DST

- DST Int
- DST alt
- Core
- tail pipe

Curve Track #1		TG, C1 - C5
ROP (min/ft)	—	Total Gas (units) —

Depth | Intervals  
Cored Interval  
DST Interval

DST

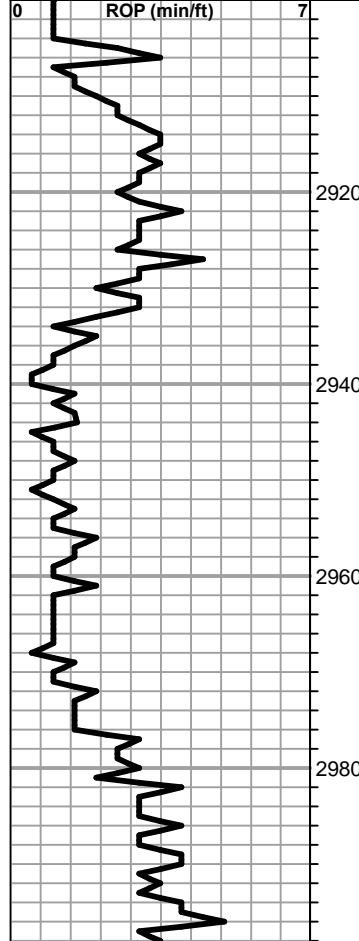
Lithology

Oil Show

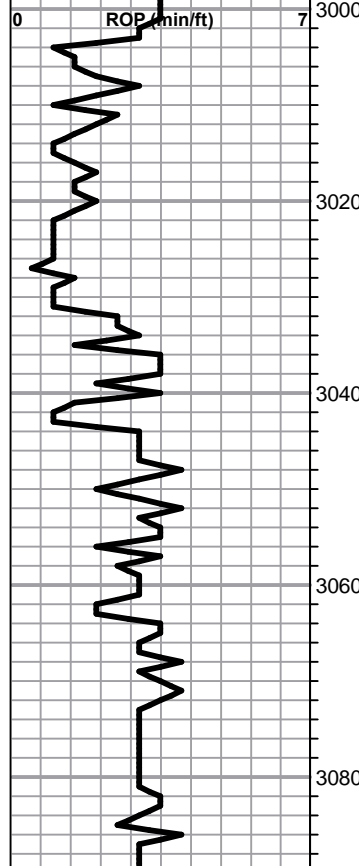
Geological Descriptions

C1 (units) —  
C2 (units) —  
C3 (units) —  
C4 (units) —

1:240 Imperial  
ROP (min/ft)



ROP (min/ft)



1:240 Imperial

Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100

Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100

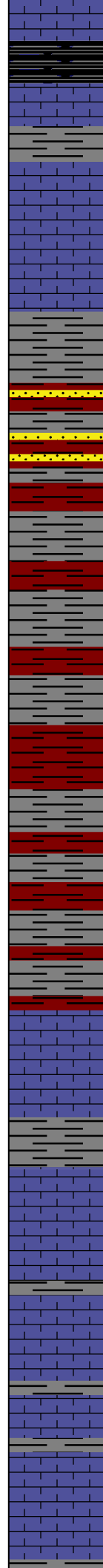
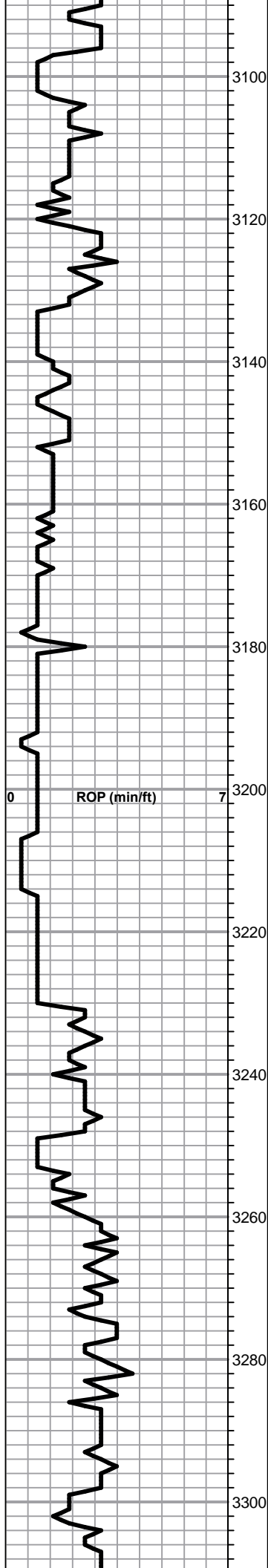
LS, white, tan, fxl, foss, poor visible porosity, chalky in pts, + abund. white chalk

LS, tan, fxl, dense, poor scattered p.p. porosity, chalky in pts, no shows

LS, tan, a/a, few scattered p.p porosity, no shows

LS, white, cream, fxl, gran. poor visible porosity, chalky, (abund. white chalk)

LS, tan, buff, scattered p.p. porosity, few ool, in pts, no shows, no odor



**Heebner 3095.0 (-1256.0)**

Sh, black carb  
 LS, tan, brn, fxl, dense, cherty, no shows

Sh, gry, soft, silty

**Toronto 3111.0 (-1272.0)**

○ LS, tan, buff, scattered vuggy type porosity, chalky, tr. brn spotty stain, nsfo, no odor

**Douglas 3132.0 (-1293.0)**

Sh, maroon, gry, greenish, mica

Sh, maroon, greenish, black, gry, silty, tr. sd. gry, f.grain, poorly developed, mica, nsfo, no odor

Sh, maroon, greenish, gry, mica.

Sh, a/a, tr. sd. gry, fxl, dense, nsfo, no odor

Sh, a/a, tr. pyrite

**Brown Lime 3230.0 (-1391.0)**

LS, brn, fxl, dense, cherty, poor visible porosity, no shows, no odor

Sh, gry, silty, soft

**Lansing 3252.0 (-1413.0)**

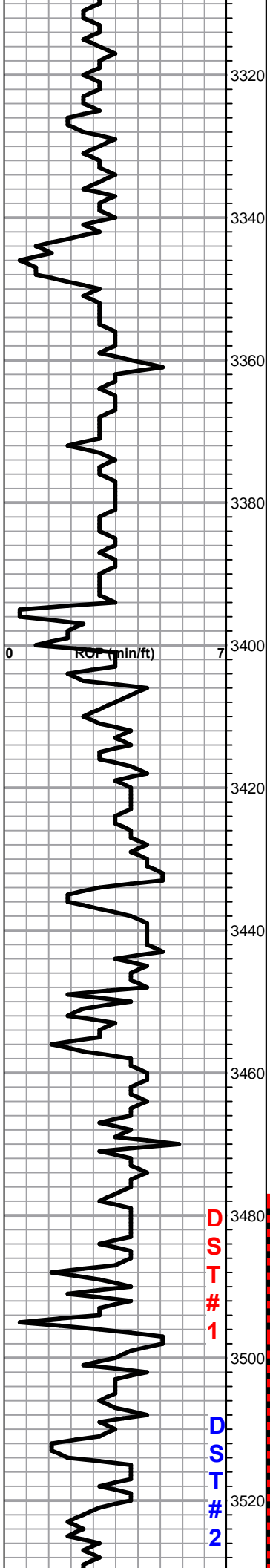
LS, tan, cream, fxl, few foss, poor visible porosity, poor inxln porosity, chalky, nsfo, no odor

○ LS, tan, buff, fxl, foss, poor scattered porosity, lt. brn stain, nsfo, no odor

○ LS, tan, gry, med-fine xln, scattered vuggy porosity, lt. black / grn stain, tr. sfo, (most dead, black flakes), odor

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100





LS, tan, buff, fxl, dense, poor scattered visible porosity, no shows

3320

LS, tan, foss, scattered p.p./ vuggy type porosity, chalky in pts. lt. trc. black stain, tr. sfo, ft. odor, no flur.

3340

LS, tan, cream, ool, scattered vuggy oom porosity, chalky, lt. brn stain, lt. sfo (few spty), ??? odor

3360

LS, tan, fxl, dense, poor visible porosity, no shows,

3380

LS, tan, ool, poor scattered oom p.p. porosity, (dense)

LS, cream, white, fxl, dense, cherty, tr. black stain, + opaque, white, tan cherts

3400

Black carb sh

LS, tan, oom, good scattered vuggy porosity, tr. black stain, tr. sfo, no odor

3420

LS, tan, cream, fxl, few foss, dense, poor visible porosity, tr. brn stain, nsfo

3440

Sh, gry, maroon, greenish, tr. cherts, tan, white, opaque

LS, tan, buff, fxl, dense, few foss, poor visible porosity, tr. brn stain

3460

LS, a/a, no shows, no odor

3480

Sh, black carb

LS, tan, buff, fxl, dense, poor scattered porosity, nsfo,

**BKC 3495.0 (-1656.0)**

Sh, gry, maroon, greenish, tr. pyrite

3500

LS, tan, fxl, dense, poor visible porosity, nsfo

LS, white, tan, foss, poor scattered porosity, tr. brn stain, nsfo

**Viola 3522.0 (-1683.0)**

V.C. Cherts, tan, opaque, scattered. vuggy porosity, lt. spty sfo, odor

**Simpson Sh. 3524.0 (-1688.0)**

**DST # 1 3477-3563**  
30-45-45-60

1st Open:  
Weak Surface Blow

1st Shut in:  
4" Blow back

2nd Open:  
BOB 3 mins

2nd Shut in:  
BBBB

Recovery:  
409' GIP

32' SLOCW  
(1%O, 99%W)

Pressures:  
ISIP 220 psi  
FSIP 227 psi  
IFP 11-21 psi  
FFP 27-30 psi  
HSH 1678-1685 psi

**DST#2 3475-3590**  
30-30-45-45

1st Open:  
Weak surface blow

1st Shut in:  
3/4" blow back

2nd Open:  
BOB in 5 mins.

2nd Shut in:  
No return

Recovery:  
431' GIP

73' SLOCHGCM  
(40%G, 5%O, 55% M)

Pressures:  
ISIP 567 psi

D  
S  
T  
#  
1

D  
S  
T  
#  
2

**Simpson Sh. 3531.0 (-1692.0)**

Sh, gry, maroon, greenish

**Simpson Sd. 3537.0 (-1698.0)**

Sd. tan, clear, med, grain, sub rounded, well sorted, lt. brn stain, sfo, lt. flur. strong odor

Sh, gry, silty, few greenish, tr. sd. clear, m-fine grain, black stain, nsfo, no odor

Sh, a/a, slug of soft, aqua green, sdy shale

**Arbuckle 3576.0 (-1737.0)**

Dol. tan, f-xln, (dense), poor inxln porosity, tr. brn stain on few, nsfo, strong odor

Dol. tan, suc. scattered vuggy porosity, dk brn stain, sfo, strong odor, good flur. cut, visible gas bubbles

Dol. tan, f- med xln, scattered vuggy porosity, golden brn stain, strong odor

Dol. tan, brn, med xln, suc. good inxln porosity, sfo, lt. brn stain, good odor

Dol. cream, white, med xln, suc. good inxln porosity, lt. brn stain, lt. sfo, fair odor

Dol. white, med xln, a/a, black stain, tr. sfo, odor

Dol. a/a, tr. white, opaque, tan, cherts, no shows, strong odor

Dol. white, med xln, suc. nsfo, odor, v. c. cherts, odor

Dol. white, med xln, suc. nsfo, odor, v. c. cherts, odor

Dol. white, cream, fxl, dense, cherty, nsfo, white, tan, cherts, odor

**RTD 3700.0 (-1861.0)**

**LTD 3694.0 (-1855.0)**

FSIP 613 psi  
IFP 14-30 psi  
FFP 32-46 psi  
HSH 1702-1639 psi

**DST#3 3592-3604**

30-30-45-45

1st Open:  
BOB 2.5 mins

2nd Open:  
BOB 1 mins

Recovery:  
2976' GIP

48' Clean Oil

126' SLOCHOM  
(10%O, 90%M)

Pressures:  
ISIP 1152 psi  
FSIP 1143 psi  
IFP 20-41 psi  
FFP 41-76 psi  
HSH 1766-1767 psi

**DST# 4 3592-3615**

30-30-45-45

1st Open:  
BOB 5.5 mins

1st Shut in:  
3/4" blow back

2nd Open:  
BOB 1.5 mins.

2nd Shut in:  
5.5" blow back

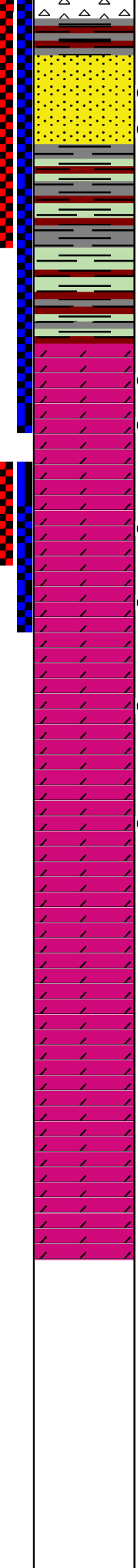
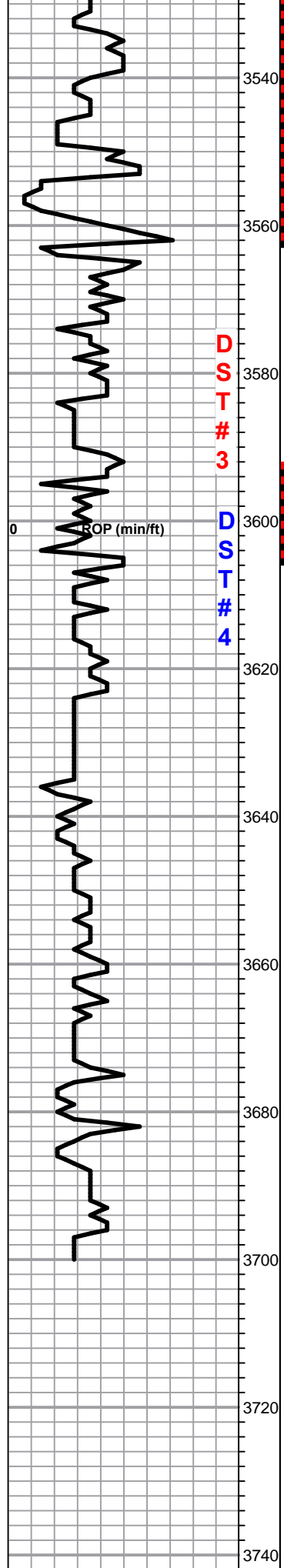
Recovery:

2042' GIP

37' Clean Oil

63' SLOCGM  
(45%G, 25%O, 3%  
W, 27%M)

63' SLOCWM  
(15%G, 3%O, 5%  
W, 77%M)



3540  
3560  
3580  
3600  
3620  
3640  
3660  
3680  
3700  
3720  
3740

3760

3780

Pressures:  
ISIP 1139 psi  
FSIP 1142 psi  
IFP 16-41 psi  
FFP 46-74 psi  
HSH 1757-1756 psi