Marc A. Downing

Consulting Petroleum Geologist

Geologic Report

Drilling Time and Sample Log

Operator **Downing-Nelson Oil Co., Inc.**

Lease **Stecklein** No. **2-34**

API # **15-195-23084-0000**

Field **Wildcat**

Location **335' FNL & 1800' FEL**

Sec. **34** Twp. **13s** Rge. **22w**

County **Trego** State **Kansas**

Elevation

KB **2358**
DF **2356**
GL **2350**

Casing Record

Surface
8 5/8" @ 222'
Production
5 1/2" @ 4397'

Electrical Surveys

CNDL, DIL
MEL

Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	1807	1805	+553	-1
Base Anhydrite	1852	1850	+508	FL
Topeka	3477	3475	-1117	+4
Heebner	3713	3710	-1352	+4
Toronto	3727	3726	-1368	+4
LKC	3743	3742	-1384	+4
BKC	3992	3990	-1632	-1
Marmaton	4096	4094	-1736	+1
Cherokee Sh	4143	4143	-1785	+1
Cherokee Sand	4187	4188	-1830	-3
Miss	4266	4264	-1906	-3
Arbuckle	4308	4308	-1950	Not Reached
Total Depth	4400	4400	-2042	

Reference Well For Structural Comparison **DNOCI - Stecklein Brothers #1-34**
748' FNL & 1057' FEL - Sec. 34-13s-22w

Drilling Contractor	**Discovery Drilling, Rig #4**		
Commenced	**3-7-19**	Completed	**3-14-19**
Samples Saved From	**3450'**	To	**RTD**
Drilling Time Kept From	**3350'**	To	**RTD**
Samples Examined From	**3450'**	To	**RTD**
Geological Supervision From	**3450'**	To	**RTD**

Summary and Recommendations

Due to structural position, DST recovery, and log evaluation, it was decid to set 5 1/2" production casing for completion.

Respectfully Submitted,

Marc A. Downing

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ROCK TYPES

▨	Cht	▨	Dolsec	▨	shale, gry	▨	Ss
▨	Cht vari	▨	sdy lmst	■	Carbon Sh		
▨	Dolprim	▨	Lmst fw7>	▨	shale, red		

ACCESSORIES

MINERAL
- ▲ Chert, dark
- △ Chert White

STRINGER
- ∴ Sandstone
- — green shale
- ▬ red shale

OTHER SYMBOLS

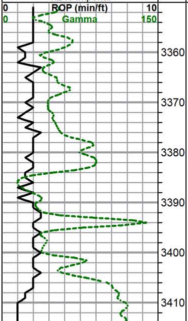
OIL SHOWS
- ● Even Stn
- ◕ Spotted Stn 50 - 75 %
- ◑ Spotted Stn 25 - 50 %
- ◔ Spotted Stn 1 - 25 %
- ○ Questionable Stn
- D Dead Oil Stn
- ■ Fluorescence

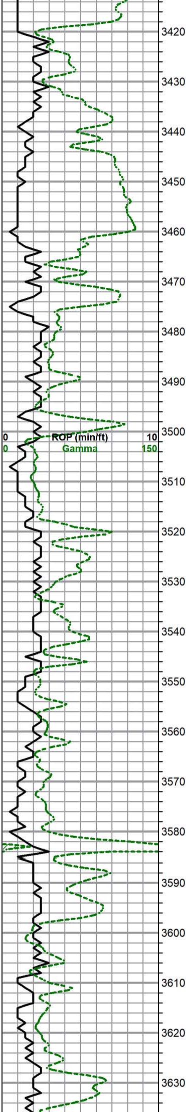
MISC
- DR Daily Report
- 📷 Digital Photo
- 🗎 Document
- 📁 Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

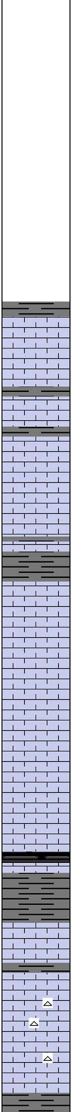
DST
- ▚ DST Int
- ▚ DST alt
- ▚ Core
- ‖ tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1 ROP (min/ft) — Gamma ---- 1:240 Imperial	Depth | Intervals Cored Interval DST Interval	DST	Lithology	Oil Shows	Geological Descriptions	Comment







Topeka 3477 (-1119)

LS: tan w/ some wht, fn xln and dns. No vis por and NS.

Sh: gry

LS: crm, md xln, foss. Subxln-chlky, NS.

Sh: gry

LS: wht, fn xln. Scat gd int xln por, suc in prt. Mostly chlky, totally barren, no od.

Sh: drk gry

Sh: gry

LS: tan, fn-md xln. No vis por and v dns, NS.

LS: much ala, trng frag foss in prt. Fr amt sub xln-chlky rx, scat int xln por. All NS.

LS: tan-wht, pr por and dns. Foss in prt.

LS: tan-wht, fn-md xln, foss in prt, sltly mtld. Mostly subxln-chlky w/ scat int foss por. Totally barren, no od.

Sh: Black Carb

Sh: brn w/ lt gry

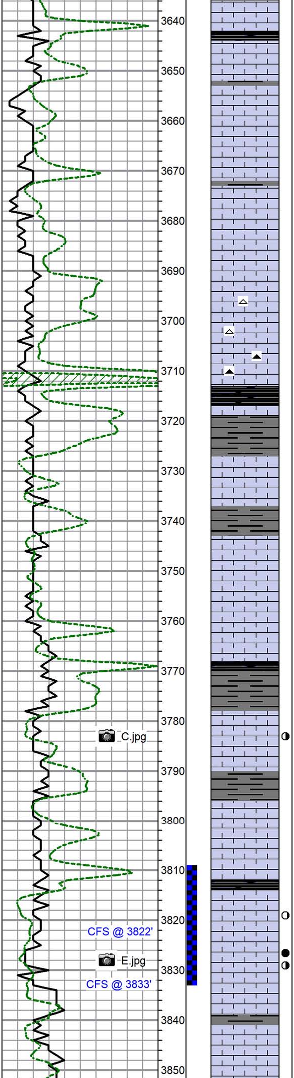
LS: wht, v fn xln, dns w/ pr por.

Sh: gry

LS: wht, fn xln, chlky. Scat wht foss cht, totally barren, no od.

LS: trng pr por and dns.

Sh: gry



Sh: Black Carb

LS: wht-tan, fn-d xln, dns. Pr por, NS.

LS: wht, fn-vfn xln, suc in prt. Scat rx w/ gd vug por, mostly chlky. Totally barren, no od.

LS: trng tan, fn-md xln, dns w/ pr por.

Sh: gry

LS: wht, fn xln, suc in prt. Trng sltly foss. Scat gd int xln por, some chlky. All NS and no od.

LS: wht-tan, md xln, pr por and dns.

LS:wht w/ some tan-brn, md xln, scat foss, mtld in prt. Fr amt chlky rx, totally barren w/ no od. Scat cht, some wht-tan, some drk gry.

Heebner 3713 (-1355)

Sh: Black Carb

Sh: gry

Toronto 3727 (-1369)

LS: wht, fn-vfn xln, chlky, all NS.

LKC 3743 (-1385)

LS: wht, fn-vfn xln, mostly pr por and dns. NS.

LS: much ala, fr amt tan and wht shp cht. Totally barren, no od.

Sh: black carb

Sh: gry

◑ LS: wht, fn-md xln, foss. Pr-fr vug por, chlky in prt. Scat pr sat w/ pr-fr hvy SFO in por. No od.

Sh: gry

LS: Tan and wht, fn-md xln. Many dns rx w/ some chlky. Mostly barren, scat hvy edge stn. Fr amt cht, tan-brn, amber-org. No od.

Sh: drk gry-black.

○ LS: wht, fn xln, mostly subxln-chlky and NS. 1-2 rx w/ pr stn in pr pp por, NSFO, no od.

● ◑ LS: wht, fn suc xln, v dolomitic. Gd int xln and vug por w/ gd lt brn sat stn, gd SFO, some gssy when broken. Fr amt barren por. Gd od. Some free oil on cup.

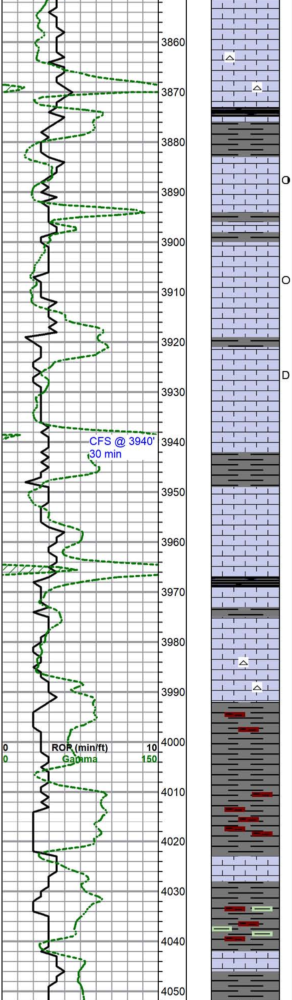
Sh: gry

LS: wht, fn xln, chlky. All NS.

Vis: 48 Wt: 8.9
DST #1
3809-3833
30-45-30-45
I.F. - BOB 16 min
F.F. - BOB 22 min

IFP:	14-89
FFP:	92-148
SIP:	1028-1017
HP:	1852-1791

Rec:
285' MW (70% w)
BHT: 115 Chlor: 83 K



LS: wht w/ some lt tan, v fn xln, no vis por, NS.

LS: mostly ala, scat shp wht cht.

Sh: Black Carb

Sh: gry

LS: wht, fn-vfn xln. Fr amt subxln rx, scat pp por. Mostly barren, scat hvy edge stn, rare SFO, fnt od. Scat wht cht.

Sh: gry

LS: fr amt subxln wht rx w/ rare hvy edge stn. Rest trng tan-brn, vfn xln and v dns, no vis por. Scat-fr amt shp tan cht. No od.

Sh: brn

LS: tan-lt gry, fn xln. Mostly dns, scat int xln por, subxln in prt. Few rx w/ dead blk stn, NSFO no od.

LS: some ala, trng v dns w/ no vis por.

Sh: drk gry

LS: wht, fn xln. Scat intxln por w/ few sml vugs, mostly subxln-chlky. Totally barren, no od. Trng dns w/ no vis por.

Sh: Black Carb

Sh: gry

LS: wht w/ lt tan, subxln, trng dns. All NS w/ no od. Scat cht.

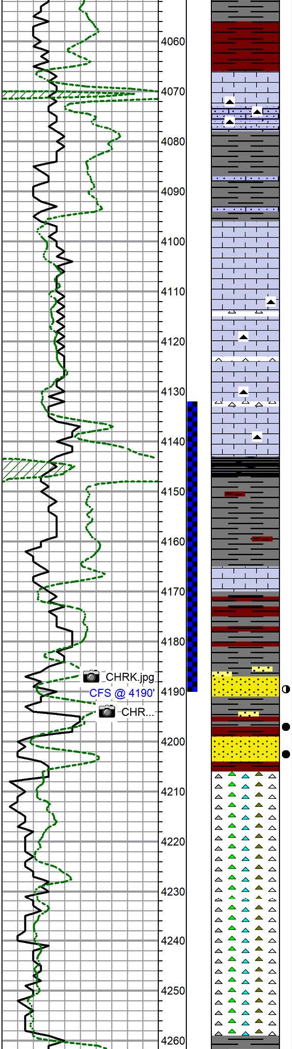
BKC 3992 (-1634)

Sh: gry w/ brn

Sh: ala, increasing amt brn, washes brn

LS: tan-wht, md xln, foss, dns.

Sh: brn w/ gry and lt grn



Sh: brn-red w/ gry, arg

LS: wht, fn xln, silty in prt. Fr amt org cht.

Sh: gry, brn, lt grn, w/ silty LS stringers

Marmaton 4096 (-1738)

LS: wht, trng tan-brn w/ gry. Mostly fn-vfn xln, v dns w/ no vis por, NS.

LS: tan-brn, vfn xln, v dns w/ no vis por. Scat org cht, all NS.

LS: much ala w/ increasing amt wht LS.

LS: ala

Cherokee Sh 4143 (-1785)

Sh: Black Carb

Sh: gry-lt gry, scat brn and lt grn

Vis: 52 Wt: 8.9
DST #2
4131-4190
30-45-30-45
I.F. - BOB 15 min
F.F. - BOB 22 min
IFP: 24-101
FFP: 103-154
SIP: 585-576
HP: 2080-2042
Rec:
15' CO
160' OCM (10% o)
125' OCMW (10% o, 65% w)
BHT: 121 G = 36 Chlor: 29K

Sh: red-brn w/ gry, washes slightly red, arg in prt.

Cherokee Sand 4187 (-1829)

◑ SS: clr-wht, fn grain, few cht inclusions. Frly well rnd, fr sort. Pr-fr IG por, frly tight. Pr stn and sat w/ fr SFO when broken, no od.

● SS: clr-wht, fn-vfn grain. Fr-well rnd, well sort, fr-gd IG por, more friable. Fr-gd sat w/ gd SFO when broken, fnt od when broken.

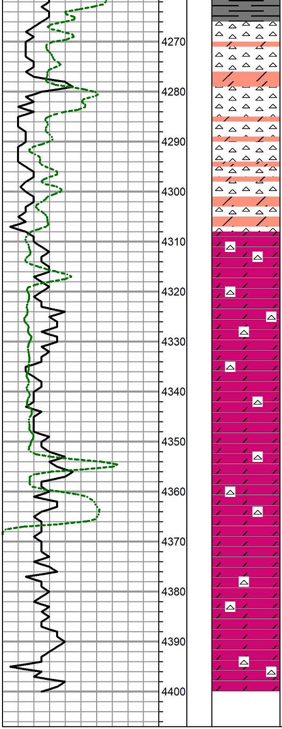
●

Conglomerate 4206 (-1848)

Mostly multi-color shp cht, wht, tan, yel, org, red. Fr amt red arg sh.

Much ala, trng more yel

Cht: abnt yel, some wht, shp. Totally barren, no od.



Mississippi 4266 (-1908)

Fr amt tan fn suc xln dolomite, cht trng mostly wht and shp.

Fr amt tan suc dolo ala, much shp wht cht, scat vugs. Totally barren, no od.

Mostly ala, much shp wht cht.

Arbuckle 4308 (-1950)

Dolo: tan-wht, md suc xln, few sml rhombs. Mostly pr por and tight, all NS. Less cht than above.

Dolo: tan, trng ff-md rhom xln, still much fn-md suc xln. Mostly pr por and dns, NS.

Dolo: tan, fn-md rhom xln, scat gd vug por, totally barren. Scat wht cht.

Dolo: tan, fn-md rhom xln, tight w/ pr por. Totally barren, no od. Scat wht cht.

Dolo: tan-wht, fn-md rhom xln, fr amt gd vug por, scat chlky rx, scat shp wht cht. Totally barren.

Dolo: much ala, scat gd vug por, all NS.

Dolo: tan, fn-md rhom xln, scat gd vug por w/ chlky rx. Some ool shp tan cht, all totally barren.