Marc A. Downing

Consulting Petroleum Geologist

Geologic Report

Drilling Time and Sample Log

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

Lease **Leta Faye** No. **1-20**

API # **15-145-21757-0000**

Field **Wildcat**

Location **565' FNL & 1595' FEL**

Sec. **20** Twp. **23s** Rge. **18w**

County **Pawnee** State **Kansas**

Elevation

KB **2150**
DF
GL **2137**

Casing Record

Surface
8 5/8" @ 1222
Production
5 1/2" @ 4646'

Electrical Surveys

CNDL, DIL, MEL, SONIC

Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	NA	1211	+939	+4
Base Anhydrite	NA	1230	+920	NA
Heebner	3761	3760	-1610	+6
Douglas Sh	3792	3789	-1639	NA
LKC	3878	3875	-1725	+6
BKC	4183	4180	-2030	+8
Fort Scott	4326	4324	-2174	NA
Conglomerate Sand	4389	4386	-2236	Absent
Miss	4424	4423	-2273	+26
Gilmore City	4474	4475	-2325	NA
Viola	4563	4562	-2412	-8
Simpson Dolomite	4653	4654	-2504	Not Reached
Arbuckle	4845	4841	-2691	
Total Depth	4880	4879	-2729	

Reference Well For Structural Comparison **Sunray Mid-Continent Oil Co.**
Lyman #1 **NE-NE-NE** **Sec. 20-23s-18w**

Drilling Contractor		**Ninnescah Drilling**		
Commenced	**5-19-14**	Completed		**5-27-14**
Samples Saved From		**3750**	To	**RTD**
Drilling Time Kept From		**3650**	To	**RTD**
Samples Examined From		**3750**	To	**RTD**
Geological Supervision From		**3750**	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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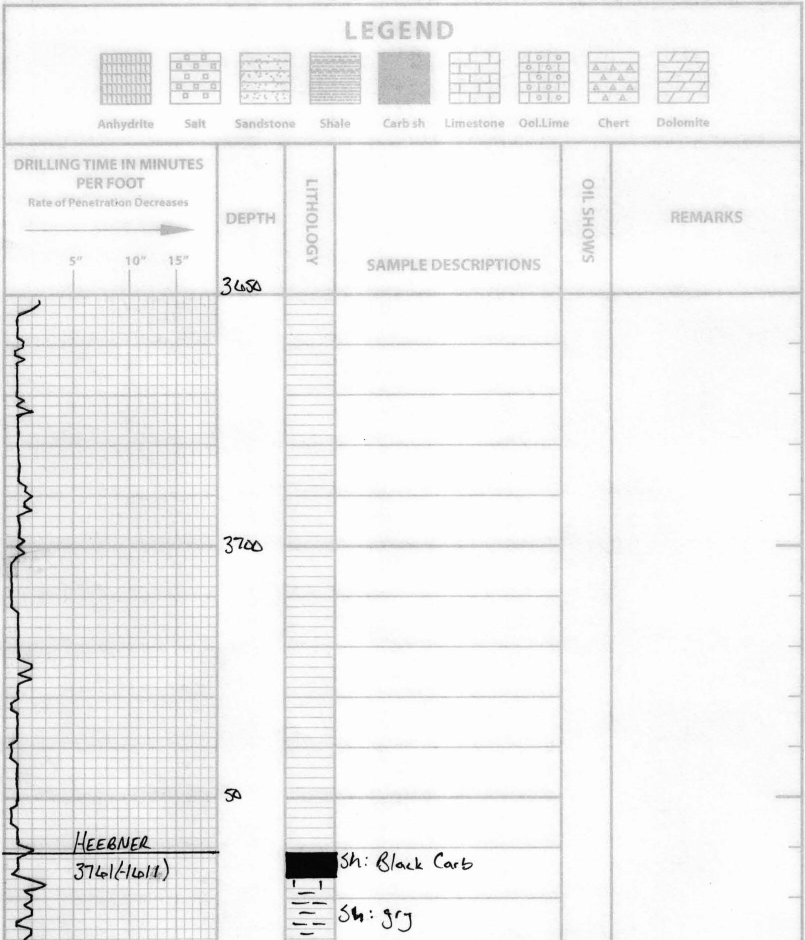
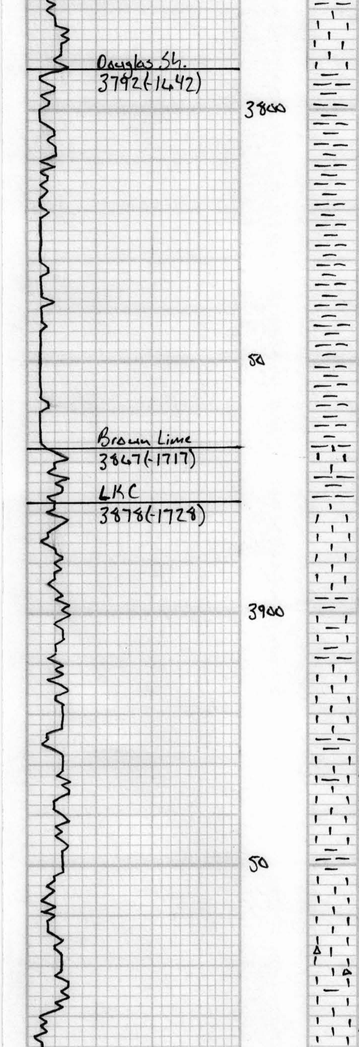


HEEBNER
3761(-1611)

Sh: Black Carb

Sh: gry



LS: wht, vfn xln, prϕ. scat subxln-chlky fx, NS.

Sh: gry

Sh: gry w/ brn, scat lt grn.

LS: brn, fn-md xln, prϕ + dns.
Sh: gry
LS: wht, fn xln, suc. fr intxlnϕ, NS. subxln in prt.

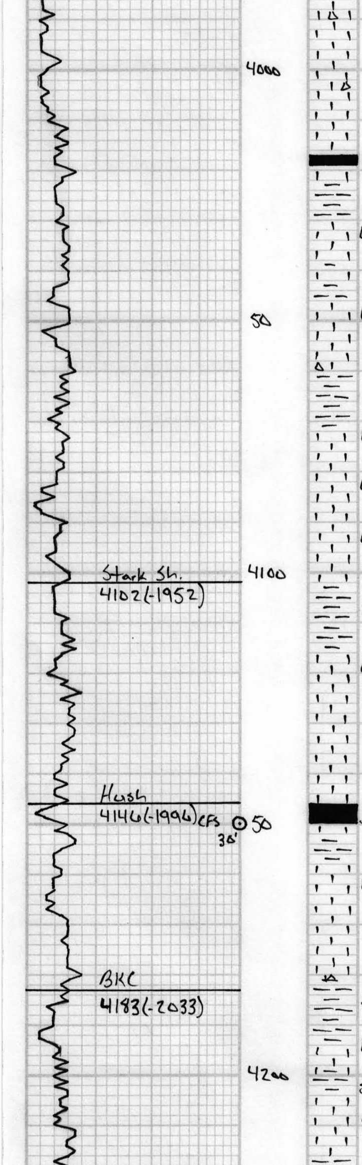
Sh: gry

Sh: gry
LS: wht, fn-md xln, prϕ, scat subxln fx, NS.

Sh: lt gry
LS: wht-tan, md xln, scat Foss. mostly prϕ, All NS.
Sh: gry
LS: wht, fn xln, subxln. chlky, All NS. Trng md xln, Few sml Foss, prϕ + dns.

Sh: gry

LS: wht, fn-md xln, scat



intxln∅, mostly subxln-chlky, All NS, NO Od. Few pcs tan shp chtΔ. Trmg pr∅ + dns

Sh: Black Carb

Sh: gry

LS: wht, fn-md xln, pr∅. Subxln in prt, All NS.

Sh: gry

LS: wht - tan, md xln, foss w/ scat ool. Subxln in prt, mostly pr∅ + dns.

Sh: gry

LS: wht, tst ool, pr∅ + dns.

LS: wht, ool. Fr voc∅, fr amt chlky rx, NS.

LS: wht, scat dns ool rx, pr∅

Sh: drk gry

LS: wht, fn-md xln, sub xln-chlky, tst barren. Trmg pr∅ + dns.

Sh: Black Carb

142

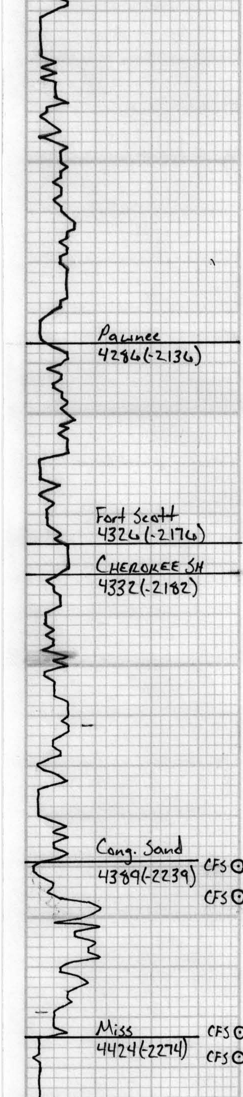
LS: wht, md xln, foss. Fr-gd int foss ∅, chlky. All NS w/ No Ød.

Sh: gry

LS: wht, fn xln, chlky

Sh: lt gry

LS: wht, fn xln, chlky. Trmg pr∅ + dns



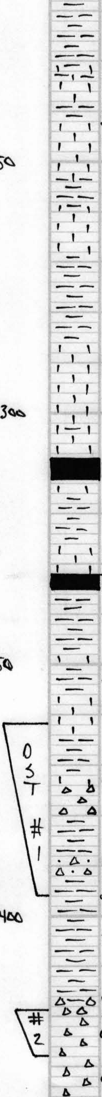
Pawnee
4286(-2136)

Fort Scott
4326(-2176)

CHEROKEE SH
4332(-2182)

Cong. Sand
4389(-2239) CFS ⊙
CFS ⊙

Miss
4424(-2274) CFS ⊙
CFS ⊙



Sh: lt grg

LS: wht, Fn-md xln, sltly suc

Sh: brn

LS: wht-tan, md xln, prφ

Sh: grg w/ lt grn

LS: wht, Fn-md xln, prφ +dns, Scat Foss

Sh: grn w/ grg. tmg drk grg-blk

LS: wht, Fn-md xln, sub xln in prt, mostly prφ + dns, NS.

Sh: Black Carb

Sh: grg

LS: tan, Fn-md xln, prφ

Sh: Black Carb

Sh: grg

Sh: grg w/ brn

LS: tan, Fn-md xln, prφ + dns. NS.

Sh: grg w/ brn

ChtΔ, multicolor, wht, tan, Org, yel. All NS, No Od.

Sh: brn w/ grg

mostly chtΔ AIA: 1-2 SS clast. Fn-md grain, Ang, w/ org chtΔ. gd IGφ, Fr-gd sat stn, hvy SFO, No Od.

Sh: brn - red

Cht: wht, suc-dolom. Fr ppφ, 1-2 rx w/ edge stn, NSFO, No Od, dull Fluor.

Cht: Trng gd ppφ w/ sml vugs, wht. Scat v lt stn, pr rnbw stn, No Od. Fr amt shp yel, pr- No Fluor.

Cht: wht, trng dolomitic. gd

88

112

.113

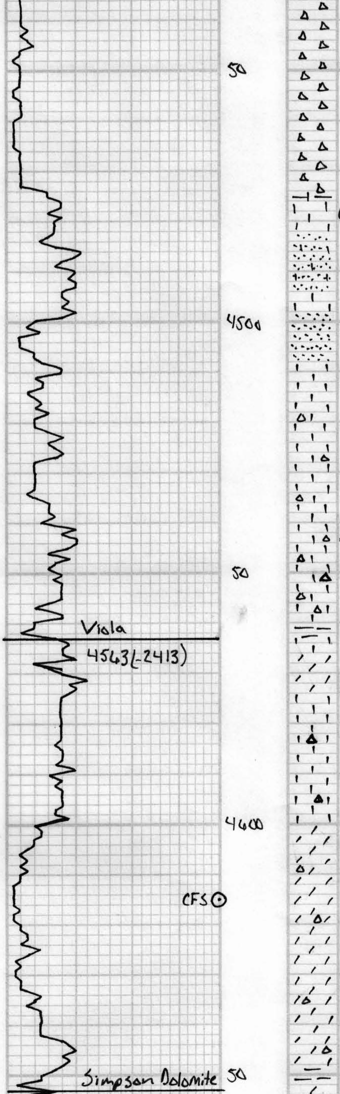
.227

.186

Vis: 51 wt: 9.2

DST #1
4362 - 4396
15-30-30-60
I.F. - BOB Imm. GTS 5 min
I.S. - Never bled off
F.F. - BOB Imm.
F.S. - Blead off 28 min wk surf blow
IFP: 1242-1181
FFP: 1153-1058
SIP: 1281-1186
HP: 2149-2158
Rec:
60' GO 70%
Gas Rate:
1ST 4724 mcf
last 5013 mcf
max 5732 mcf
BHT: 120° G=31

DST #2
4419 - 4428
30-30-30-30
I.F. - 3/4"
F.F. - Dead
IFP: 20-27
FFP: 29-37
SIP: 1354-1343
HP: 2218 - 2247



vug∅, some w/ lt brn stn, NSFO, No Od.

Cht: Mostly AIA, slty dolomite, gd vug∅, scat brn edge stn, NSFO, No Od.

LS: tan w/ wht, fn xln, vchs, No vis ∅

SS: clr-wht clust, fn grain, well sort, well rnd, fr-gd IG∅, NS.

SS: wht-clr clust, vfn grain, well sort, well rnd. gd IG∅, Friable, All NS.

Some AIA w/ fr amt slty sndy LS, Few pcs vfn sucxln dolo. All NS, shp wht chts.

Mostly tan LS, sndy in prt, pr∅. Much wht shp chts, All NS.

Some AIA, more chts, red Sh.

Much wht - lt tan, vfn suc xln dolo. pr∅ + tite, trng much wht chlky LS. All NS. Scat shp wht chts.

Dolo: wht trng lt tan. fn-md rhom xln, gd-vgd vug∅, Totally barren, No Od. Scat wht chts.

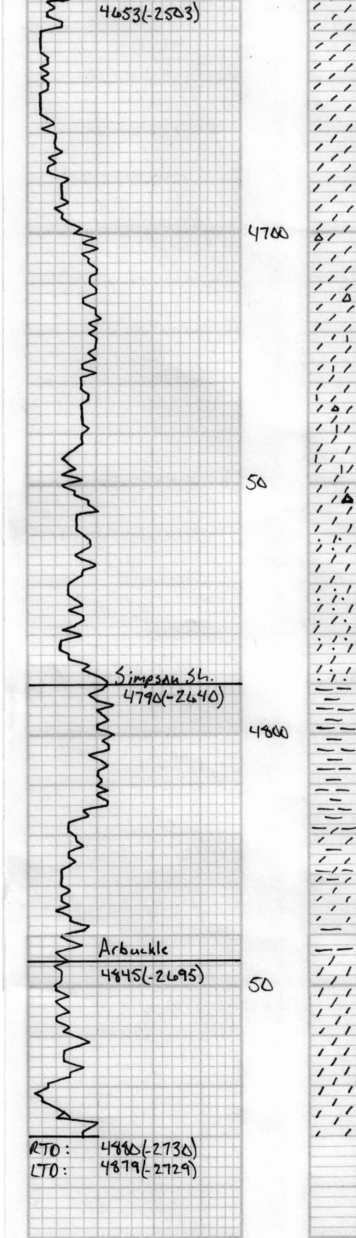
Dolo: wht - lt tan, trng md-crs suc xln, gd vug∅, Freqnt chlk rx, NS. Scat shp wht chts + selenite.

trng tan in prt.

Rec:

35' m w/ oil spts.

BHT: 119°



Dolo: Trng tan-brn, fn-md suc xln, gd vugφ, NS.

Dolo: Some AIA, trng mostly drk brn, suc xln, prφ + dns. NS.
Scat wht chts.

Dolo: brn-tan, suc xln, prφ + dns.

Much AIA w/ tan-brn LS + wht-gry chts.

Some AIA w/ chlky rx + shp gry chts.

Some AIA w/ scat SS clast. v fn grain, trng crs grain, fr-well rnd, well sort, wht-gry, w/ dark inclns. All NS. SS sltly dirty, Trng clean w/ depth

Much AIA w/ scat tourq Sh

Dolo: tan, scat md rhom xln, fr amt crs suc xln.
Some fr vugφ, All tst barren, No Od.

Dolo: wht, md rhom xln, mostly prφ + dns.

Dolo: wht, md rhom xln, gd vugφ, Few chlky rx, NS.