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GEOLOGIC REPORT LOG

COMPANY Downing-Nelson Oil Co., Inc.

WELL Erbes #1-3
FIELD Wildcat
LOCATION 1240' FSL + 1860' FEL
SEC. 3 TWP. 18s RGE. 18w
COUNTY Rush
STATE Kansas

18s 18w — 3

PRODUCTION Arbuckle

ELEVATION KB 2076 DF GL 2068

Drilling Measured From: KB
Samples Saved From 3400 To: TD
Drilling Time From 3300 To: TD
Samples Examined From: 3400 To: TD
Geological Supervision From 3300 To Total Depth
Wellsite Geologist Marc Downing
Electrical Surveys Superior
CNL/CDL
DIL
MEL

OPERATOR DNOCI
CONTRACTOR Discovery Drilling, Rig #4
COMM: 6-14-12 COMP: 6-20-12

CASING RECORD

SURF: 8⅝" @ 1234' PROD: 5½" @ 3909'
TOTAL DEPTH DRILLERS: 3910'
TOTAL DEPTH LOG 3908

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
Top Anhydrite	1223	1224	+852	NA
Base Anhydrite	1266	1256	+820	-3
Heebner	3406	3406	-1330	-1
Toranto	3426	3424	-1349	FL
LKC	3460	3458	-1382	+3
BKC	3729	3727	-1651	NA
Arbuckle	3924	3922	-1746	+15

REFERENCE WELL FOR STRUCTURE Bergman Oil Co.
Erbes #3 SE-NE-SE Sec. 3-18s-18w

DAILY PENETRATION / BIT RECORD

DATE	DEPTH	NO.	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS

FORMATION	INTERVAL	DESCRIPTION OF SHOW	LOG ANALYSIS

DRILL STEM TESTS

No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	BHP/TEMP	RECOVERY

REMARKS AND RECOMMENDATIONS
Perforate "I" zone (3640-42) + "C" zone (3478-85)
Before abandonment.

LEGEND

Anhydrite, Salt, Sandstone, Shale, Carb sh, Limestone, Oolitic Lime, Chert, Dolomite

DRILLING TIME IN MINUTES PER FOOT (Rate of Penetration Decreases →)	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS

Sh: Black Carb

Sh: gry

LS: wht w/ tan, Fn xln, pr∅. All vdms w/ NS, No Od.

Sh: gry - lt gry.

LS: wht, Fn-md xln. Scat pr ool∅, rx sub xln in prt. Trng vdms w/ No vis ∅, NS.

Sh: gry lt gry

LS: wht, md xln, Fr-gd ool∅, scat Fr-gd sat w/ Fr SFO. Fr amt barren ∅, lt-Fr Od.

LS: wht, Fn-md xln, ool∅ in prt, rx sltly suc w/ Fr intxln∅. lt sat stn w/ sptty SFO, lt Od.

LS: wht - lt tan, Fn-md xln, scat ool + Foss. All pr∅ + dns. Rx trng mtld w/ depth

Sh: Black Carb

LS: wht, Fn-md xln, Foss, Fr int+Foss∅, subxln. Few mtld rx, scat stn + sptld SFO, Fnt Od.

LS: wht, Fn-md xln, scat ool∅, mostly subxln. All NS.

LS: wht, ool. gd ool∅ w/ chlky rx. All NS.

LS: wht, Fn xln, pr∅, scat ool∅, 1-2 pcs w/ lt stn, Fnt Od. Many sub xln rx.

Sh: dk gry

LS: wht, Fn-md xln scat ool, All pr∅ + dns, NS.

Sh: gry

Sh: gry

LS: wht, md-Fn xln. Fr ool∅, sml ool. 1-2 pcs w/ pr stn, NSFO, No Odor.

Sh: gry

LS: wht. lt tan, ool. pr∅, mostly tite, Totally barren.

Sh: gry

LS: wht, Fn xln, scat sub xln-chlky rx, NS.

LS: wht, Fn xln, dns w/ pr∅, scat ool.

Sh: gry

LS: wht, Fn xln, Fr amt subxln-chlky rx, mtld in prt, NS.

Sh: brn w/ gry

Sh: gry w/ brn.

LS: tan-wht. md xln, mtld.

Sh: brn w/ red

LS: AIA

Sh: gry w/ brn

LS: wht, Fn-md xln, pr∅. Abnt org chts.

LS: some AIA, trng less chts, dns, few sndy pcs.

Sh: gry w/ some brn

DST #1 (3793–3840)

Dolo: wht, Fn-md rhom xln, Fr-gd intxln∅ w/ Few sml vugs. Fr v lt brn sat w/ lt SFO. Fnt-lt Od.

Dolo: wht, trng md-crs rhom xln, Fr intxln + Frac∅. Fr lt stn w/ lt SFO, Fnt-lt Od.

Dolo: wht, Fn-md rhom xln, gd int xln∅, Friable. gd sat stn w/ gd SFO, gssy in prt. lt-Fr Od. Rx trng md-crs rhom xln, sltly tite, scat barren rx.

Dolo: wht, md-crs rhom xln, gd int xln∅, Friable. Fr-gd sat w/ gd SFO, lt-Fr Od.

Dolo: wht, md-crs rhom xln, tite w/ pr∅, scat Fr stn w/ Fr SFO when broken. No Od.

Dolo: wht, md-crs rhom xln, Fr intxln + vug∅, sandy in prt. Trng mostly barren. 1-2 pcs w/ gilsonite, No Od.

Dolo: wht, md-crs rhom xln. pr∅ + tite. scat sndy rx. Barren.

[signature]

Remarks:

Vis: 53 Wt: 8.9

DST #1
3793-3840
15-30-15-60
I.F.-BOB 30sec/2" SIB
F.F.-BOB 30sec/2" SIB
IFP: 275-460
FFP: 645-686
SIP: 1109-1184
HP: 1909-1872
Rec:
270' GIP
1780' GO 80%o
120' GMCO 20%g, 45%o
BHT: 118° G=39