ORIGINAL

EAGLE ENERGY, INC.

ASHLAND NORTH 160
PROSPECT DEVELOPMENT
15-025-21152
#3-4 NUNEMACHER
1320' FSL, 3120' FEL Sec. 4 T33S - R22W
CLARK COUNTY, KANSAS

RICHARD P. O'DONNELL
CONSULTING GEOLOGIST

SYNOPSIS

The #3-4 Nunemacher was drilled as a northwest offset to Eagle Energy Inc.'s #1-4 Nunemacher oil discovery well and as a southwest offset to Eagle Energy Inc.'s #2-4 gas discovery well. The #1-4 wildcat was drilled in March, 1996, as an 'extensional' step-out to Ashland East Field, an upper Morrow Formation sandstone oil and gas field located more than one-half of a mile to the south. The #2-4 confirmation well was drilled in August, 1996 and encountered a thin, gas-saturated Morrow Sandstone slightly higher in the stratigraphic section than in the #1-4 oil productive well. The field presently remains unnamed. The #3-4 location was selected upon the basis of sub-surface geologic interpretation.

The primary objective was the upper Morrow sandstone oil reservoir productive in the #1-4 Nunemacher well. Secondary objectives included the upper Morrow sandstone gas reservoir, as well as porosity development within the carbonates of the Lansing and Marmaton Formations.

RESUME

Operator:	Eagle Energy, Inc.
Well Name:	#3-4 Nunemacher
Prospect:	Ashland North 160 Development
Location:	1320' FSL, 3120' FEL Section 4 T33S-R22W
County, State:	Clark County, Kansas
Elevation:	1966 K.B. 1955 G.L.
Spud Date:	February 17, 1997
Completion Date:	March 1, 1997
Hole Sizes:	12 1/4": 0' - 809' 7 7/8": 809' - 5398' R.T.D.
Casing Data:	8 5/8", 23#: 16 Jts. tallied @ 655', set @ 667' 4 1/2", 10.5# used: 114 Jts. tallied @ 5379', set @ 5392'
Logging Data:	Schlumberger Well Services, Liberal, KS: AIL/GR/SP, CNL/CDL/GR, ML/GR, BHC/GR, FMI
Prospect Geologist:	Richard P. O'Donnell
Drilling Engineer:	Doug Hoisington
Contractor:	Allen Drilling Company, Rig #3
Mud Type:	Chemical
Mud Company:	Lone Star Mud, Inc.
Drilling Days:	13
Rotating Hours:	145 1/4
Total Depth:	5394' L.T.D. 5398' R.T.D.
Bottom Formation:	Mississippian Chester
Status:	Oil Well

FORMATION TOPS AND CORRELATION

FORMATION	Comparison Well Eagle Energy, Inc. #1-4 Nunemacher 560'FSL, 2030'FEL - 4 1959' KB	Wire Line Log Tops Eagle Energy, Inc. #3-4 Nunemacher 1320'FSL, 3120'FEL - 4 1966' KB	Sample, Drilling Tops Eagle Energy, Inc. #3-4 Nunemacher 1320'FSL, 3120'FEL - 4 1966' KB
ANHYDRITE	936' (+1023)	946' (+1020)	-------
HEEBNER SHALE	4196' (-2237)	4204' (-2238)	4210' (-2244)
LANSING	4387' (-2428)	4388' (-2422)	4392' (-2426)
KANSAS CITY	4648' (-2689)	4653' (-2687)	4656' (-2690)
DRUMMOND LS.	4680' (-2721)	4679' (-2713)	4682' (-2716)
STARK SHALE	4821' (-2862)	4822' (-2856)	4827' (-2861)
BASE / K.C.	4922' (-2963)	4924' (-2958)	4929' (-2963)
MARMATON	4952' (-2993)	4952' (-2986)	4960' (-2994)
CHEROKEE	5080' (-3121)	5079' (-3113)	5084' (-3118)
MORROW SHALE	5224' (-3265)	5224' (-3258)	5224' (-3258)
'A' BAR SS.	Non-Developed	Non-Developed	Non-Developed
'B' CHANNEL SS.	5262' (-3306)	5266' (-3300)	5271' (-3305)
LOWER MORROW	5299' (-3340)	5294' (-3328)	5300' (-3334)
MISS. CHESTER	5373' (-3414)	5370' (-3404)	5370' (-3404)
TOTAL DEPTH	5451' (-3492)	5294' (-3428)	5398' (-3432)

BIT RECORD

BIT #	SIZE	MAKE	TYPE	JETS	IN	OUT	FOOTAGE	HOURS
1	12 1/4"	HTC	RR	3-15	0'	809'	809'	9
2	7 7/8"	Reed	HP-52M	3-14	809'	5229'	4420'	123 1/4
3	7 7/8"	Varel	527	3-14	5229'	5398'	169'	13

TOTAL ROTATING HOURS: 145 1/4 **AVERAGE FEET PER HOUR: 37.16**

DEVIATION SURVEYS

DEPTH	DEVIATION
809'	3/4°
1361'	1°
1857'	1°
2352'	1°
2885'	3/4°
3381'	1°
5161'	Misrun
5398'	1/2°

CHRONOLOGICAL LOG

DAYS ON WELL	DATE	7:00 AM DEPTH	24 HOUR FOOTAGE	DAILY ACTIVITY
1	2-17-97	- - -	- - -	MIRU. Spud 12 1/4" Surface Hole @ 10:15 pm.
2	2-18-97	580'	580'	Drill surf. hole to 809' RTD. RU, run & cmnt 8 5/8" surf.
				csng. WOC.
3	2-19-97	809'	229'	NU. Drill plug @ 3:30 am. Drlng.
4	2-20-97	2160'	1293'	Drlng.
5	2-21-97	2860'	700'	Drlng. Trip for hole in DP @ 3070'.
6	2-22-97	3580'	720'	Drlng. Displace mud. Drlng.
7	2-23-97	4230'	650'	Drlng. Weld BOP nipple. Drlng.
8	2-24-97	4770'	540'	Drlng.
9	2-25-97	5161'	391'	Drlng. Bit trip. Weld BOP nipple. Drlng. TOH f/ lost collars
10	2-26-97	5229'	68'	RU, TIH w/ fishing tools, fish collars, TOH. LD fish. TIH
				w/ bit. CTCH. Drlng.
11	2-27-97	5290'	61'	CFS. TOH w/ bit. RU, TIH w/ DST #1. Run DST #1. Drop
				bar, unld rcvry into tnk truck. TOH w/ DST #1. LD tool.
				TIH w/ bit. Drlng.
12	2-28-97	5385'	95'	Drill to RTD @ 5398'. CTCH. TOH f/ OH logs. RU, run
				OH logs. TIH.
13	3-01-97	5398'	13'	TIH, CTCH. TOH, LDDP. RU, run & cmnt 4 1/2" prod.
				csng.. Plug dn @ 12:10 pm.

MUD REPORTS

Date	2-22	2-23	2-24	2-25	2-26	2-27	2-28
Depth	4000'	4419'	4916'	5170'	5229'	5290'	5362'
Weight	8.8	9.1	9.2	9.3	9.2	9.2	9.2
Funnel Viscosity	38	41	43	45	43	44	53
Plastic Viscosity	13	13	16	14	15	16	18
Yield Point	12	10	10	11	6	8	12
Gel Strengths	6/10	4/10	6/14	6/15	2/9	2/9	3/13
pH	10.0	10.0	9.5	9.0	10.5	9.5	10.0
Water Loss	15.2	13.6	8.8	10.4	10.4	9.8	8.8
Filter Cake	1/32	1/32	1/32	1/32	2/32	2/32	2/32
Alkalinity, Pf/Mf	.3/.5	.4/.8	.1/.5	.1/.3	.5/.7	.3/.7	.6/.9
Chlorides	10,000	6,000	5,000	5,000	5,000	5,000	5,000
Calcium, Mg/L	320	120	160	2,000	200	80	80
Sand Content, %	Tr	Tr	Tr	Tr	.3	.3	.4
Solids, %	2.8	5.2	6.0	6.7	6.0	6.0	6.0
LCM, #'s/Bbl	Tr	Tr	Tr	Tr	Tr	Tr	0

LOST CIRCULATION INTERVALS

DEPTH OF OCCURRENCE	BARRELS LOST	PRIOR LCM LB / GAL	POST LCM LB / GAL
	NONE		

DRILL STEM TESTS

DST #1: **5222'-5290'** **Morrow Sandstone** **Primary Objective**
Valid Drill Stem Test

Test Times OP30" SI30" OP70" SI110"
Bottom Hole Temperature: 118° F

Pressures:		Remarks:
IHP	2578#	Tool set well
IFP	182-319#	Opened with strong blow off bottom of bucket in 30 seconds, followed by GTS in 4", gas did burn
ISIP	1465#	Blew down through 2" followed by building blow back
FFP	315-542#	Opened with strong blow, bottom of bucket in 1 minute, followed by OTS in 70"
FSIP	1474#	Bled off pipe recovery into tank truck; dropped bar, reverse circulated pipe recovery into tank truck
FHP	2541#	Tool pulled loose OK

Recoveries:

Gas gauged at 202 MCFGPD on initial open, 108 MCFGPD on final open

Drill Pipe:

No flow rate gauge taken

Reverse circulated ~13.4 Bbls. oil into tank truck

Sampler: 10.7 Cu. Ft. Gas
2600 ml Oil
1250 PSI

LITHOLOGIC SAMPLE DESCRIPTIONS

UNLAGGED SAMPLE DEPTHS AND LOG TOPS

*Note: Sample examination commenced at 4100 feet and continued to total depth at 5398 feet. Samples were caught by rig crews on depth intervals. Ten foot (10') sample intervals were used from 4100 feet to 5398 feet.

4110 Sh, lt gry-grnsh gry; s-plty/s-blky, frm; s-sft; pred smth txtr - fr amnt up-hole rdsh sh
4120 Sh, lt gry-grnsh gry, cont; inc, bec m gry i/p
4130 Sh, lt-m gry, cont; rdsh dec sli
4140 Sh, lt-m gry, cont; inc plty, s-rgh txtr
4150 Sh, cont
4160 Sh, cont

4170 Sh, m gry, inc; s-blky, s-rgh txtr
4180 Sh, cont; fr amnt v dk gry, blky; frm, s-hrd; s-rgh txtr; occ slty i/p
4190 Sh's, cont
4200 Sh's, cont; v dk gry, dec sli
4210 Sh's, cont
4220 Sh's, cont; Ls, sm amnt; lt gry, xtln pkstn, tr micro-suc; occ crmbly, arg; dns; v pr vis por, prm. No show.

HEEBNER SHALE 4204' (-2238)

4230 Ls, tr, cont; inc m gry, xtln wkstn, s-suc; v dns, hrd, cont; Sh, m-lt gry, cont; Sh, inc; blk, blky; frm, hrd; v carb; s-rgh txtr
4240 Sh, blk, def inc, cont; Ls, inc; lt gry-buff, xtln wkstn; occ arg; v dns, cont
4250 Sh, ls, cont
4260 Sh, ls, cont; Ls, fr amnt; v lt buff, xtln pkstn; occ foss; s-hrd, v dns, tight; no vis por, prm. No show.
4270 Ls, cont; Sh, cont; bec m gry, s-plty; v sft, frm; v fssl i/p; smth/s-smth txtr
4280 Sh, cont; bec v dk gry, blk i/p; s-blky/blky; frm, s-hrd; s-smth txtr
4290 Sh's, cont; blk inc sli
4300 Sh's, cont; tr lt tnsh gry, s-blky; v sft, s-frm; smth txtr
4310 Sh's, cont; Ls, inc sli; v lt buff, xtln wkstn; tr foss; v dns; no vis por, prm. No show.
4320 Sh's inc; pred m gry, s-plty/s-blky; s-frm, s-sft; fssl i/p; s-smth txtr
4330 Sh, cont, occ grnsh gry; plty, smth txtr, inc
4340 Sh, lt-m gry, cont
4350 Sh's, cont
4360 Sh's, cont
4370 Sh's, cont; bec micro-slty i/p
4380 Sh, lt-m gry, s-plty, occ s-slty, cont
4390 Sh's, cont; bec s-blky, cont
4400 Sh, pred lt gry, cont

POOR SAMPLES, ABUNDANT UP-HOLE SHALES-

4410 Sh, sli chg; m gry, s-blky; frm, sft; s-slty i/p; s-rgh txtr

LANSING FORMATION 4388' (-2422)

4420 Sh's, cont; Ls, sm amnt; buff, xtln pkstn; tr foss; crmbly, s-dns; v pr vis intrxtln por, prm. No show.
4430 Pred sh's, cont; Ls, tr, cont
4440 Ls, cont; tr bec tnsh-lt gry; microxtln i/p; occ v arg; v tight, cont
4450 Ls, lt tnsh gry, occ arg, cont; bec xtln pkstn i/p, tr ooltc; pr vis intrxtln, intrfoss por, v low prm. No show.
4460 Ls, cont
4470 Ls, sli chg; lt tan, xtln pkstn; ooltc i/p; s-crmbly; v dns, tight; no vis por, prm. No show.
4480 Ls, cont; bec hrd
4490 Ls, cont; inc buff, xtln pkstn; pred suc; crmbly; fr amnt intrxtln chlk; pr vis intrxtln por, prm. No show.
4500 Ls, Sh cont; Ls, tr; lt tan, xtln bndstn; v foss; crmbly, cln; gd vis vggy & intrfoss por, fr prm. No show.
4510 Ls, cont; Sh, m gry, s-plty; frm, fssl i/p; smth txtr
4520 Ls, lt buff, microxtln pkstn; crmbly, micro-suc i/p; fr vis intrxtln por, prm. No show.
4530 Ls, cont; bec v lt buff; intrxtln chlk inc, cont
4540 Ls, cont; bec xtln wkstn i/p; v dns, tight, cont
4550 Ls, inc; buff, xtln wkstn; arg i/p; occ intrxtln chlk; no vis por, prm. No show.
4560 Ls, inc, sli chg; lt gry, microxtln pkstn, foss i/p; s-hrs, s-dns; sctrd, fr intrxtln, intrfoss por, prm. No show.
4570 ls, cont; bec xtln wkstn i/p
4580 Ls, sli chg; bec lt buff, xtln wkstn; occ arg; fr amnt intrxtln chlk; v dns, s-hrd; cont
4590 Ls, cont; Sh, m gry, s-plty; cont
4600 Ls, inc; buff-lt gry, xtln wkstn; sctrd micro-foss; s-hrd, v dns; occ arg; v pr-no vis por, prm. No show.
4610 Ls, buff-lt gry, xtln wkstn, cont

4620 Ls, lt gry, microxtln pkstn; micro-suc i/p; crmbly; occ intrxtln chlk; dnspr vis intrxtln por, prm. No show.
4630 Ls, lt gry, cont
4640 Sh, inc; m gry, plty; frm, s-fssl; smth txtr; Ls, cont; w/ inc m gry, microxtln wkstn; s-crmbly, v dns; v arg i/p, cont
4650 Sh, cont; inc rgh txtr; Ls, sli chg; buff, xtln wkstn; occ intrxtln chlk, cont
4660 Sh, inc sli; m gry, s-plty, frm, fssl; s-smth txtr; Ls, buff, xtln wkstn, cont; occ arg
4670 Sh, def dec; Ls, lt gry; pred xtln pkstn, occ foss; suc i/p; crmbly; pr vis por, prm. No show.

KANSAS CITY FORMATION 4653' (-2687)

4680 Sh, inc; v dk gry; s-plty; frm, s-fssl; s-rgh txtr; Ls, cont; occ wkstn, chrt
4690 Ls, sli chg; buff-lt gry; pred xtln wkstn; v dns, s-hrd; no vis por, prm. No show. Sh, cont, dec
4700 Ls, cont; bec lt tan, arg i/p; occ intrxtln chlk
4710 Ls, cont

DRUMMOND LIMESTONE 4679' (-2713)

4720 Sh, inc; m gry, s-plty; frm, s-hrd, fssl; s-rgh txtr; Ls, chg; lt buff, xtln wkstn; sctrd foss; v dns, s-hrd; no vis por, prm. No show.
4730 Ls, sli chg; buff, xtln pkstn; occ v foss, tr arg; s-hrd; fr vis intrxtln-foss por, prm. No show.
4740 Ls, lt buff, cont; pred xtln wkstn, cont
4750 Ls, lt buff, xtln wkstn, cont
4760 Ls, cont; occ microxtln wkstn; occ trip chrt, bluish-tan
4770 Ls, xtln wkstn, cont; bec lt gry i/p
4780 Ls, sli chg; lt gry, microxtln pkstn; micro-foss; s-crmbly; occ intrxtln chlk; fr-pr vis intrxtln-foss por, prm. No show.
4790 Sh, inc sli; m-dk gry, s-plty; frm, s-sft; fssl i/p; s-rgh txtr; Ls, cont
4800 Ls, chg; buff-lt gry; pred microxtln wkstn; hrd; v dns; occ chlk; no vis por, prm. No show.
4810 Sh, m-dk gry, s-plty; frm, s-sft/s-hrd; fssl i/p; smth/s-smth txtr; Ls, lt gry, xtln wkstn, cont
4820 Sh, m gry, occ lt grn, cont, inc; Ls, chg; lt-m gry, xtln wkstn; s-hrd, v dns; no vis por, prm. No show.
4830 Sh, cont; Ls, inc; m-lt gry, xtln wkstn; cont; bec arg i/p
4840 Sh, cont; Ls, cont; bec dk tnsh gry, v arg; hrd, v dns; cont
4850 Sh, lt-m gry, cont; Ls, cont

STARK SHALE 4822' (-2856)

4860 Sh, cont; inc v dk gry-blk; s-plty; s-hrd, s-frm; occ intrlmntd pyr, carb; s-rgh txtr; Ls, buff, xtln wkstn, cont
4870 Ls, inc; buff, xtln pkstn; foss, v ooltc i/p; s-hrd, s-crmbly; pr vis intrxtln-foss por, prm. No show.
Sh, cont; blk dec sli

SWOPE LIMESTONE 4844' (-2878)

4880 Ls, chg; lt tan, xtln wkstn-pkstn; occ foss; s-hrd, s-dns; pr-v pr vis intrxtln por, prm; sctrd dd stn; vv sli tr FO, no odor
4890 Ls, cont; bec v lt tan; wksho, above, dec - no show
4900 Sh, inc; m gry, s-plty; frm, s-sft; fssl; pred s-smth txtr
4910 Sh, m gry, cont; tr blk Sh, s-blky; s-frm; v sft, fssl; rgh txtr; Ls, lt buff-lt gry, xtln wkstn; sctrd foss; s-sft, crmbly, dns; no vis por, prm. No show.
4920 Sh's, cont; Ls, buff-gry, xtln wkstn; occ arg, cont
4930 Ls, buff-lt gry; xtln wkstn; foss i/p; dns; s-crmbly/crmbly; no vis por, prm. No show.
4940 Sh, def inc; m gry, s-plty; frm, s-sft; s-fssl; s-rgh txtr
4950 Sh, cont; Ls, sm amnt; lt buff, xtln pkstn; v foss i/p; s-hrd; v micro-suc i/p; sctrd, fr vis intrfoss-vggy por, pr vis prm. No show.

BASE / KANSAS CITY FORMATION 4924' (-2958)

4960 Sh, def inc; m gry, s-blky; frm, s-sft/sft; s-slty; s-rgh txtr
4970 Sh, cont; bec sft, s-smth txtr; Ls, lt-m gry, xtln wkstn; s-hrd, v dns; no vis por, prm. No show.

MARMATON FORMATION **4952' (-2986)**

4980 Ls, chg; tnsh gry, xtln pkstn; occ intrxtln chlk; v dns, s-hrd; no vis por, prm, cont

4990 Ls, chg; pred lt gry-buff, xtln pkstn; v foss, v ooltc i/p; occ intrxtln chlk; v hrd, v dns, v tight; no vis por, prm. No show.

5000 Sh, lt-m gry; s-plty/s-blky; frm, s-sft; s-rgh txtr; Ls, cont; free chlk inc

5010 No Sample

5020 Ls, buff, xtln pkstn; v foss, ooltc i/p, cont

5030 Ls, pred xtln wkstn, occ pkstn; occ foss; micro-suc; hrd, dns i/p; occ chrt; pr vis por, prm. Vv lt, sctrd brt ylw fluor; v slo, wk cut; wk. flsh cut on brk; wk odor - 80 unit gas increase on hot wire

5040 Ls, cont; inc; show, fluor dec; no odor

5050 No Sample Recovery - Mud yielded w/ 55+ Vis

5060 Ls, pred lt-m gry, xtln wkstn; hrd/s-hrd, s-crmbly; dns; no vis por, prm. No show.

5070 Sh, inc; m gry, s-plty; frm, fssl i/p;s-smth txtr; Ls, cont; bec lt tan, arg i/p

5080 Ls, chg, inc; lt buff, xtln pkstn; sctrd foss; fr amnt intrxtln chlk; s-crmbly, s-dns; pr vis intrxtln por, prm. NSFO, no vis stn; v sctrd brt fluor, no cut, no odor

5090 Ls, cont; bec wkstn i/p

5100 Ls, cont; occ microxtln wkstn, arg i/p; tr chrt, lt blu opq, trip

CHEROKEE FORMATION **5079' (-3113)**

5110 Ls, cont; pred wkstn; Sh, sm amnt; blk, blky/s-blky; frm, s-sft; s-fssl, s-flky; s-rgh txtr

5120 Sh, blk, dec sli; Ls, sli inc; buff, s-xtln wkstn; s-hrd, v dns, tight; no vis por, prm. No show.

5130 Ls, cont; bec xtln i/p

5140 Ls, chg; m gry, xtln wkstn; v hrd, v dns, cont; Sh, def inc; v dk gry; plty/v plty; frm, s-sft; v fssl i/p; smth/s-smth txtr

5150 Ls, cont; bec lt tnsh gry i/p, s-arg; Sh, cont

5160 Sh, m gry, s-plty; frm, s-sft; fssl i/p; smth txtr; Ls, m gry, xtln pkstn; sctrd foss; arg-v arg i/p; s-hrd; v dns; cont

5170 Ls, cont; bec xtln wkstn i/p, inc sli; Sh, m gry, cont

5180 Ls, inc; m gry, xtln pkstn; foss, arg dec; v hrd, v dns, cont

5190 Sh, m gry, cont; inc rgh txtr, bec s-hrd, fssl dec; Ls, chg, inc; tan-brn, xtln wkstn, foss i/p; v hrd, v dns; cont

5200 Sh, inc sli; m gry, plty, frm, s-sft; fssl; smth txtr; Ls, tan-m gry, xtln wkstn, cont

5210 Sh, m gry, cont; Ls, tnsh-m gry, xtln wkstn, arg-v arg i/p, cont

5220 Sh, Ls, cont

TWISTED OFF ~330' OF COLLARS AT 5229'-

5230 Ls, inc; tnsh-m gry, cont; Sh, cont

5240 Sh, pred gry, sm amnt grn; cont; Ls, cont

MORROW SHALE 5224' (-3258)

5250 Sh, cont; sm amnt blk, plty; frm, s-hrd, fssl; carb; s-rgh txtr; Ls, lt grysh tan; xtln wkstn; occ sctrd foss; v hrd, v dns, tight; no vis por, prm. No show.

5260 Sh, cont; pred m gry, s-plty; frm, s-hrd; fssl; pred smth/s-smth txtr; Ls, inc sli; grysh tan, cont

5270 Sh, inc, sli chg; m gry, plty, frm; s-hrd; fssl; s-smth txtr; Ls, cont

5280 Sh, chg; m gry, s-plty/s-blky; wthrd, slty i/p; frm, s-sft, s-rgh txtr; Sltstn, tr; wh, arg, cnsldtd; fri/v fri

5290 Sh, chg; ylw/grn/rdsh; s-blky; sft/v sft, s-frm; v wthrd, s-rgh/rgh txtr; w/ SS, sm amnt; wh, vfg; clstrs, 50+ grns; fri, v well cmntd (calc); tight; tr chlrt; v pr vis intrgrnlr por, prm. Sli stn, SSFO; sptty, brt ylw fluor; s-slo wk cut, inc w/ brk, acid; no odor

Tested by D.S.T. #1.

CFS @ 5290' R.T.D.:

UPPER MORROW 'B' SANDSTONE INTERVAL 5266' (-3300)

15" Sh's, cont; SS, inc; fr amnt s-lg clstrs, 100+grns; vf-fg, pred qtz w/ occ chrt clsts, wh; prly srtd; ang/s-ang;

SUMMARY

The #3-4 Nunemacher was drilled as a northwest offset to Eagle Energy Inc.'s #1-4 Nunemacher oil discovery well and as a southwest offset to Eagle Energy Inc.'s #2-4 gas discovery well. The #1-4 wildcat was drilled in March, 1996, as an 'extensional' step-out to Ashland East Field, an upper Morrow Formation sandstone oil and gas field located more than one-half of a mile to the south. The #2-4 confirmation well was drilled in August, 1996 and encountered a thin, gas-saturated Morrow Sandstone slightly higher in the stratigraphic section than in the #1-4 oil productive well. The field presently remains unnamed. The #3-4 location was selected upon the basis of sub-surface geologic interpretation.

The primary objective was the upper Morrow sandstone oil reservoir productive in the #1-4 Nunemacher well. Secondary objectives included the upper Morrow sandstone gas reservoir, as well as porosity development within the carbonates of the Lansing and Marmaton Formations.

Ten feet (10') of gross upper Morrow sandstone was encountered (5266'-5276') within the stratigraphic interval equivalent to the oil reservoir sandstone in the #1-4 Nunemacher well. The sandstone was represented in the drilling samples by a fair amount of light tan, friable to very friable, 75+ grain clusters that were very fine to fine grained and calcareously cemented. Grains were predominantly poorly sorted, angular to sub-angular quartz with larger, scattered white chert clasts; traces of clay (chlorite(?)) were also present. Visual porosity was rated as poor to fair, the clusters possessing moderate staining with a good show of free oil with a sub-uniform, light yellow-green fluorescence that yielded a bright yellow, good semi-slow, milky cut. Odor was very weak to non-existent. There were no loose grains observed in the samples. A 158 unit hotwire increase was detected from the interval. Open hole logs indicate a clean Gamma-Ray sandstone possessing a maximum of 20% porosity with an overall average of 15%. The logs also indicate filter-cake build-up with a negative 20 millivolt SP deflection and clean Microlog separation; log resistivity averaged 50 ohms across the sandstone. This zone was confirmed to be oil and gas bearing through D.S.T. #1; details are provided in the appropriate section of this report.

A minor show of free oil accompanied with an 80 unit hotwire gas increase was also encountered in a crystalline wackestone - packstone in the Marmaton carbonate series. The limestone possessed poor visual porosity with very, very light scattered staining with a very scattered, bright yellow fluorescence that yielded a very slow, weak cut. A weak odor was detected. Open hole log characteristics indicate the zone to possess an average 6% porosity with no filter-cake build-up, a negative 40 millivolt SP deflection, no Microlog separation and 25 ohms of resistivity. This zone was not tested during drilling operations. There were no other shows of significance in the remaining secondary zones of interest.

Following open hole logging operations, 4 1/2" production casing was set in the well for further production testing.

Respectfully submitted,

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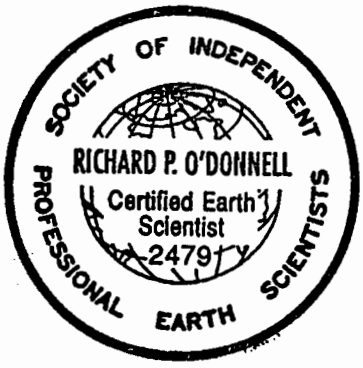

15" fri/v fri; tr chlrt; s-uni, lt grn fluor; brt ylw, gd s-slo mlky cut; v wk odor
30" SS, sm amnt (<20 clstrs/smpl tray), cont
45" SS, sm amnt, cont; fri inc; 1 ls grn, ylw, qtz, m-cg, s-rnd, sphrcl
60" SS, cont, dec sli
75" SS, cont; dec sli; Sh, def inc; dk gry-blk; s-plty/s-blky; frm, s-hrd; s-rgh txtr
Tested by D.S.T. #1.

5300 Pred sh, dk gry-blk, cont; fr amnt slough from D.S.T. #1.
5310 Sh, slough cont
LOWER MORROW LIMESTONE **5294' (-3328)**
5320 Cont; Ls, sm amnt; wh, xtln pkstn; suc; fr amnt intrxtln chlk; hrd, v dns; no vis por, prm. No show.
5330 Ls, wh, xtln pkstn, cont; occ foss, chlk dec
5340 Ls, cont; bec lt gry, suc dec
5350 Ls, cont; tr chrt, ylw opq; sh, inc, vari; m gry, brn, ylw, tr lt grn; all s-plty, frm,s-sft; s-rgh txtrs
5360 Ls, sh cont
5370 Sh, pred m gry; s-plty; frm, hrd/s-hrd; occ slty, lmntd; rgh txtr; Ls, def dec, cont
5380 Sh, cont; vari inc; sm amnt dssmntd & mssv pyr
MISSISSIPPIAN CHESTER **5370' (-3404)**
5390 Sh's, vari, cont; Ls, tr lt buff, xtln pkstn; v foss i/p; tr intrxtln chlrt; hrd, dns; no vis por, prm. No show.
5398 Ls, wh-v lt buff, cont; occ ooltc, v hrd; Sh's, vari, cont
CTCH @ 5398' - R.T.D.
30" Ls, v lt buff, cont; occ bec s-suc, dlmtc; cont. No show.
60" Ls, cont
90" Ls, cont