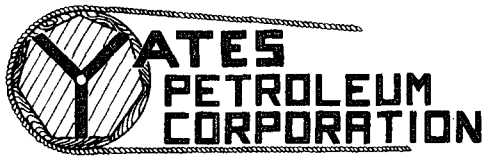
MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

Recd 4-11-91

April 11, 1991

State of New Mexico
OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, NM 87501
ATTN: Mr. David Catanach

Dear Mr. Catanach,

Enclosed are the necessary documents for obtaining approval for the downhole commingling of the Morrow and Strawn for the North Millman Unit #2, located in Unit G of Section 8, Township 19 South, Range 28 East.

Should you have any questions, please feel free to contact me at (505) 748-1471. Thank you.

Sincerely,

Brian Collins

Brian Collins
Petroleum Engineer

BC/th

COMMINGLING DATA FOR THE NORTH MILLMAN UNIT #2

1> Name and Address of the Operator:

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
ATTN: Brian Collins

2> Lease Name, Well Number, Well Location, Name of the Pools to be commingled:

North Millman Unit #2
Unit G Sec 8-T19S-R28E
1980' FNL & 1980' FEL
Pools: Millman Morrow Gas
Millman Strawn Gas

3> A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

See Attachment A (map)

4> A current (within 30 days) 24-hour productivity test on Division From C-116 showing the amount of oil, gas, and water produced from each zone.

The approximate test rates for each zone are:
Morrow
10891'-10926', 10986'-10990'
Estimate = 10 MCFPD
Had continuous gas blow between swab runs after acidizing, but gas TSTM with equipment at wellsite.
Strawn
9906'-9914', 9720'-9740'
Estimate stabilized rate of=250 MCFPD/40 BCPD
Due to low formation pressure, well would flow erratically and intermittantly. A stabilized flow rate could not be measured, so best engineering judgement was used to estimate a stabilized flow rate.

5> A production decline curve for both zones showing that

for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes. (This requirement may be dispensed with in the case of a newly completed or recently completed well which has little or no production history. However, a complete description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be submitted.)

See Attachment B (for completion history)

See Attachment C (N.Millman Unit #3 & 4 production history)

Prognostication of future Strawn production:
Production behavior of offset well, the North Millman Unit #3, suggests that the gas will decline at 60% / year for 1 1/2 years followed by a 13% / year decline.

- Gas:IP = 250 MCFPD d=60% / year, 1.5 yrs
  d=13% / year thereafter

$$Q,\ 1.5\ yrs = Qi\ (1-d)^{t} = 250\ (1-.6)^{1.5} = 63\ MCFPD$$

$$N,\ 1.5\ yrs = \frac{365\ (Q-Qi)}{ln\ (1-d)} = \frac{365\ (63-250)}{ln\ (1-.6)} = 74{,}490\ MCF$$

$$N,\ 1.5\ yrs\ plus = \frac{365\ (20-63)}{ln\ (1-.13)},\ E.L. = 20\ MCFPD$$

$$= 112{,}701\ MCF$$

N TOTAL = N, 1.5 yrs + N, 1.5 yrs plus = 74,490 MCF + 112,701 MCF = 187,191 MCF

- Condensate:100% of the condensate will come from the Strawn, so no prognostication of Strawn condensate production will be made.

Prognostication of future Morrow Production:
Production behavior of offset well, the North Millman Unit #4, suggests that the Morrow will decline at 25% / yr.

- Gas:IP = 10 MCFPD d = 25% / yr.

$$N = \frac{365\ (Q-Qi)}{ln\ (1-d)} = \frac{365\ (0-10)}{ln\ (1-.25)} = 12{,}688\ MCF$$

6> Estimated bottom-hole pressure for each artificially

lifted zone. A current (within 30 days) measured bottom-hole pressure for each zone capable of flowing.

Estimated BHP of Morrow = 1662 psi from BHP measurement taken 3-23-90.
Estimated BHP of Strawn = 1553 psi from BHP measurement taken 1-19-91.

7> A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.

Wellbore fluids will not be incompatible. The Morrow will produce dry, sweet gas. A standing valve located in a packer above the Morrow will protect the Morrow from any liquids produced by the Strawn.

8> A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams.

Morrow gas is sweet and will not decrease the value of the commingled gas streams.

Prognostication of each formation's reserves indicates that an additional 12,688 MCF of gas will be recovered by commingling production from the Morrow and Strawn.

9> A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determinging such formula.

Gas: Morrow - $\frac{12,688 \text{ MCF}}{199,879 \text{ MCF}} = 6.35\%$

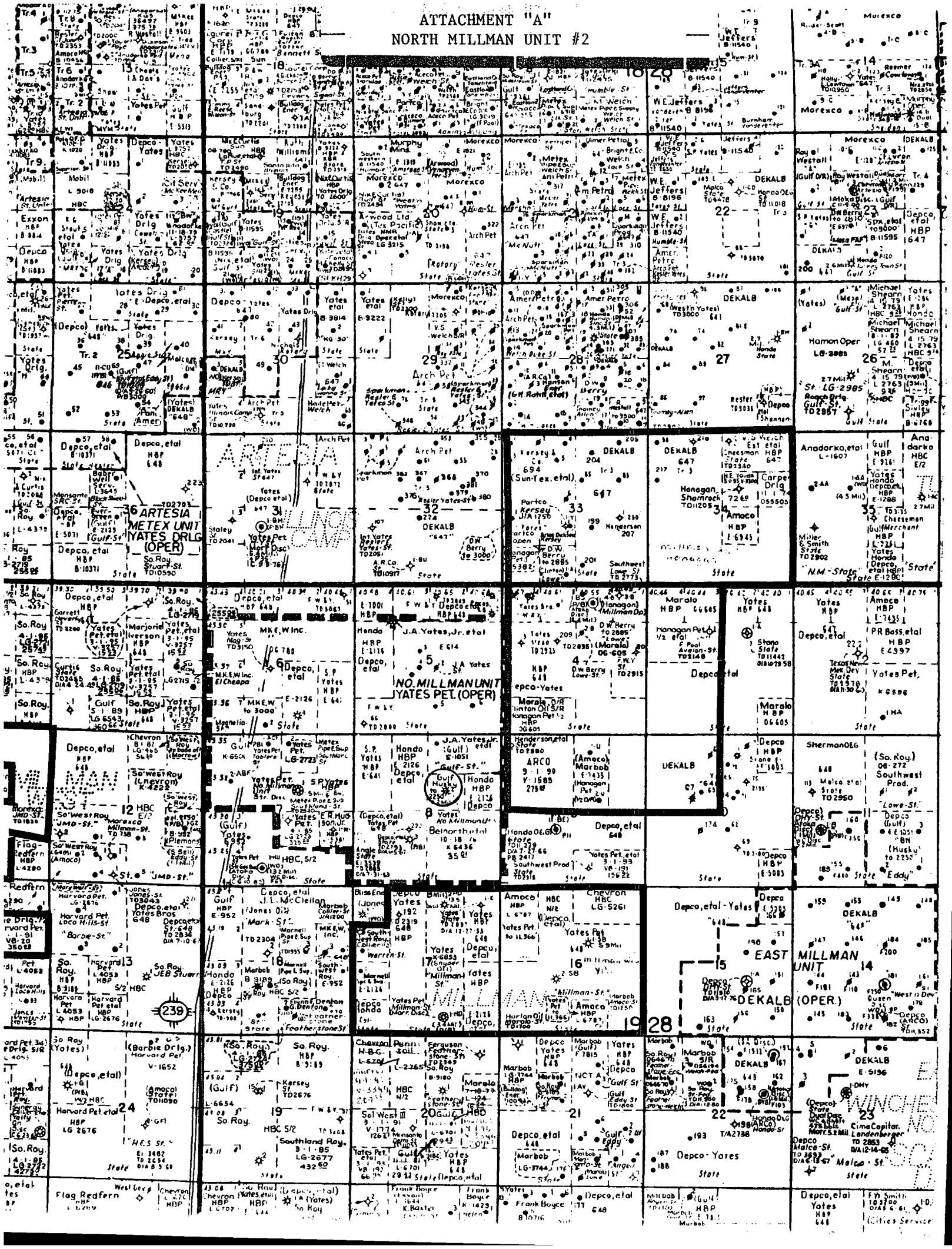
Strawn - $\frac{187,191 \text{ MCF}}{199,879 \text{ MCF}} = 93.65\%$

Condensate: Strawn - 100%

10> A statement that all offset operators and, in the case of a well on federal land, the US BLM, have been notified in writing of the proposed commingling.

The Offset Operators for this area were notified of the proposed commingling of the North Millman Unit #2.

ATTACHMENT "A"
NORTH MILLMAN UNIT #2



ATTACHMENT B

DRILLING REPORT - WORKOVER

Yates Petroleum Corp. - North Millman Unit #2 (Unit G) 8-19S-28E
**********Eddy County, New Mexico*****

12-13-90	Moved in and rigged up pulling unit. SITP 850# and SICP 1025#. Prep to perforate Morrow. DC $1692
12-14-90	SITP 900# and SICP 20#. Bled tubing down. WIH with 1-1/16" tubing gun and perforated 10,986-90' with 10 - .3" holes (2 SPF). No changes in blow on tubing. Initial fluid level 8000'. Swabbed dry at 3:30. Made 2 hourly runs, no fluid recovery. Recovered 14 bbls total for day. Shut in. Prep to acidize.
12-15-90	SITP 1200#. Bled well down. Made run from seating nipple. No fluid in hole. Acidized perfs 10,891-10,990' with 1500 gals Mod 101 7-1/2% acid with 1000 scf N2/bbl. Treating Pressures: Man 4680#, Min 3400#, AVg 3950# at 2-1/2 BPM (acid + N2). ISDP 3700#, 10 mins 2750#. Opened well on 1/2" choke. Well flowed 1 hour and died. Initial fluid level 3600'. Swabbed back 63 bbls fluid, no shows oil or gas. Shut in overnight. Prep to swab. Final fluid level at seating nipple. Load to recover 18 bbls. DC $11,687
12-16-17-90	SITP 300#. Bled down. Initial fluid level 8600'. Swabbed back 18 bbls fluid - dry to seating nipple. Waited 1 hour, no fluid entry. Show of gas on swab. Shut in at 4:00 PM. Prep to swab. Load left to recover 0 bbls. This AM - SITP 900#. Dc $1750
12-18-90	SITP 900#. Bled down. Rig up swab. Initial fluid level 9200'. Made 3 runs, recovered 7 bbls fluid. Dry to seating nipple. Made hourly runs from 10:30 to 5:00 PM. Recovering 1/2 bbl fluid per run with constant blow of gas. Recovered 11 bbls fluid total for day. Measured gas flow between runs - TSTM. Shut in overnight. Prep to move to Strawn. DC $1600
12-19-90	Rigged up Jarrell Service and installed 1.81" standing valve in packer at 10,837'. Got off on/off tool and installed 7-1/16" x 3000# BOP. Laid down 25 joints 2-7/8" tubing and tally out of hole. TIH with 5-1/2" Uni V packer and Uni VI RBP with K-valve to 10000'. Prep to hunt leak in casing. DC $5891
12-20-90	Set RBP at 10,059'. Tested to 1000#, OK. Pumped (via tubing) 230 bbls 2% KCL water. Strong blow, but no circulation. Moved packer up hole to find leak at 2904-2935'. Est circ to surface 4 BPM @ 500#. Spot 2 sacks sand on RBP at 10,059'. POH with packer. Prep to cement.
12-21-90	TIH and set cement retainer at 2842'. Establish circ to surface through 8-5/8" head. Mix 250 sacks Class "C" + 2% CaCl2. When lacking 2 bbls of flush, slowed down to 1 BPM @ 600#. Closed valve on 8-5/8" head and pressured tubing to 1300#. Bled to 1000# in 2 minutes. Repressured to 1300# and pulled out of retainer. Reversed out and POH with stinger. WOC. Prep to drill out. DC $4781; CC $28,781
12-22-26-90	Picked up 4-3/4" bit on 6 - 3-1/2" drill collars. TIH. Drilled retainer at 2842' and cement to 2933'. Tested to 1000# OK. TIH to RBP at 10,059'. Reverse sand and POH. Laid down drill collars. Prep to perforate Strawn. DC $4578; CC $33,359
12-27-90	Rigged up Computer-Log and perforated Strawn on wireline with 4" casing gun as follows: 9906-9914' (2 SPF) and 9720-9740' (2 SPF), total 56 - .42" holes. TIH with 5-1/2" Uni V packer set at 9997' and tested RBP to 1000#, OK. Moved packer to 9851'. Installed tree. Tested annulus to 600#, OK. Rigged up swab. Final fluid level 200'. Made 11 swab runs (65 bbls) to swab dry. No shows. Shut in. Overnight SITP 0#. Fluid level 9200'. Prep to acidize. DC $5406; Cc $38,765

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12-28-90 SITP 0#. Fluid level 9200'. Recovered 300' water, no shows of oil or gas. Load annulus with 5.5 bbls and pressure to 400#. Load tubing and break perfs 9906-14' at 3350#. Pumped 2.5 BPM at 2900# (2 bbls). ISDP 1990#, 5 mins 870# (annulus pressure was increasing during break down and 5 mins SI), 5 min bleed off was not real. Dropped standing valve and tested tubing to 2000#. Bled off 1200# in 1 minute. POH. Rigged up Hydrostatic testers and test tubing back in hole to 6000# above slips. Found pin hole in joint 40 stands above the seating nipple (7378'). Re-set packer at 9842'. Prep to acidize Strawn sand. DC $4364; CC $43,129

12-29-90 SITP 0 and SICP 0. Opened by-pass on packer and displace tubing with N2. Closed by-pass and pressure annulus to 500#. Acidized perfs 9906-14' with 2000 gals 15% NEFE acid and 24 balls. Good action, but no ball out. Treating Pressures: Min 4700#, Max 5350#, Avg 5000# at 4 BPM (acid & N2). ISDP 4890#, 15 mins 4180#. Load to recover 72 bbls. Flowed back on 3/8" choke for 3 hours until dead. Final fluid level 4000'. Made 5 swab runs to dry up. Had constant 8' flare. Placed on 1/4" choke at 5:00 PM. DC $7470; CC $50,599

12-30-31-90 FTP 20# = 48 MCF. Fluid level 7200', 10% oil. Placed on 1/4" choke for 2 hours. FTP 10# = 34 MCF. Fluid level 8800', 80% oil. Placed on 1/4" choke for 2 hours. FTP 15# = 41 MCF. Fluid level 8900', 100% oil. Shut in at 3:00 PM. Recovered 5 bbls oil this day. DC $1181; Cc $51,780

1-1-91 SITP 1900 psi. Bled well down. Rig up swab. Initial fluid level 7200'. Recovered 6 bbls fluid first run, 100% oil. Loaded tubing. Unset packer. Retrieved RBP. Moved tools. Straddled perf 9720-40'. Test RBP. Nipple down BOP. Nipple up wellhead. Rig up swab. Initial fluid level surface. Swabbed back 52 bbls fluid. Had trace of oil on last 2 runs. Shut well in. Prep to swab.

1-2-91 TP 1500#. Bled down to 300 psi. Started unloading fluid. At 8:00 AM FTP 250 psi on 1/2" choke. Unloading 100% oil.

1-3-91 SITP 1500 psi. Opened well on 1/4" choke. Flowed until 9:30. Recovered 19 bbls fluid - 100% oil. Rig up swab. Initial fluid level 1800'. Made run. Well started flowing. Flowed 9 bbls and died. Rig up swab.

TIME	FL	PULLED FROM SN	BBLS	OIL CUT
12:00	6000'	yes	6	80%
1:00	6000'	yes	6	80%
2:00	5600'	yes	6-1/2	80%
3:00	6000'	yes	6	80%
4:00	6300'	yes	5-1/2	80%
5:00	6300'	yes	5	80%
6:00	6300'	yes	5-1/2	80%

Recovered 68-1/2 bbls fluid total for day. Oi cut rangerd from 80-100% with constant strong blow of gas. Fluid level stayed from 6000' to 6300'. Fluid scattered to seating nipple. Shut well in overnight. Prep to acidize. DC $1570; CC $55889

WATER ANAYLSIS: 1-2-91

Resistivity	0.090 @ 70	Sp. Gravity	1.0652 @ 70
pH	6.7	Calcium	2172
Magnesium	1378	Chlorides	55,000
Sulfates	1400	Bicarbonates	610
Soluble Iron	500	API	45 deg

1-4-91 SITP 950 psi. Rig up and acidize perfs 9720-40' with 5000 gals 15% MCA acid and ball sealers and N2. AIR 4-1/2 BPM. Max 6500, Avg 5300 - good ball action but did not ball out. ISDP 4900, 15 min 2600. Opened well in 3/8" choke. Flowed back 60 bbls load. Started flowing oil.

TIME	CHOKE	TP	BBLS	OIL%
12:00 noon	3/8"	600		
1:00	3/8"	500	24	30
2:00	3/8"	500	31	50
3:00	3/8"	600	33	65
4:00	3/8"	550	28	75

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5:00	3/8"	500	26	80
6:00	3/8"	500	30	80
7:00	16/64"	500	21	80
8:00	16/64"	500	12	85
9:00	16/64"	500	10	90
10:00	18/64"	400	13	90
11:00	18/64"	400	13	90
12:00	18/64"	400	14	90
1:00	18/64"	400	14	90
2:00	18/64"	400	13	90
3:00	18/64"	400	13	90
4:00	18/64"	400	13	90
5:00	18/64"	400	13	70
6:00	18/64"	400	12	60
7:00	18/64"	400	10	50

Recovered 403 bbls fluid total for day. Prep to continue flowing well. DC $13,620; CC $69,509

1-5-7-91 Continue flowing well on 18/64" choke. Turn well to production. DC $870; CC $70,379

1-8-91 No report.

1-9-91 No report.

1-10-91 No report.

1-11-91 WATER ANAYLSIS: 1-10-91

Resistivity	0.061 @ 70	Sp. Gravity	1.1087 @ 70
pH	6.8	Calcium	16,472
Magnesium	689	Chlorides	95,000
Sulfates	1200	Bicarbonates	366
Soluble Iron	200		

1-12-14-91 No report.

1-15-91 No report.

1-15-91 Rig up swab unit. Well kicked off at 12:30. Started flowing from 12:30 to 4:00 PM on 32/64" choke with 240# = 106 bbls. At 4:00 PM pinched back to 20/64".

5:00 PM	160#	20/64"	9.36 bbls
6:00 PM	140/160	20/64"	5.85 bbls
7:00 PM	140/160	20/64"	5.85 bbls
8:00 PM	140/160	20/64"	5.85 bbls

At 8:00 PM left swab unit rigged up. Released crew.

1-16-91 At 7:00 PM well dead. Produced a total of 176 bbls oil, and 13 bbls water since well kicked off. Will swab today.

1-17-91 No report.

1-18-91 No report.

1-19-21-91 No report.

1-22-91 No report.

1-23-91 No report.

1-24-91 No report.

1-25-91 Shut in.

1-26-28-91 Shut in.

1-29-91 Shut in.

1-30-91 Shut in.

1-31-91 Shut in.

2-1-91 Shut in.

2-2-4-91 Shut in.

2-5-91 Shut in.

2-6-91 Shut in.

2-7-91 No report.

2-8-91 No report.

2-9-11-91 No report.

2-12-91 No report.

2-13-91 No report.

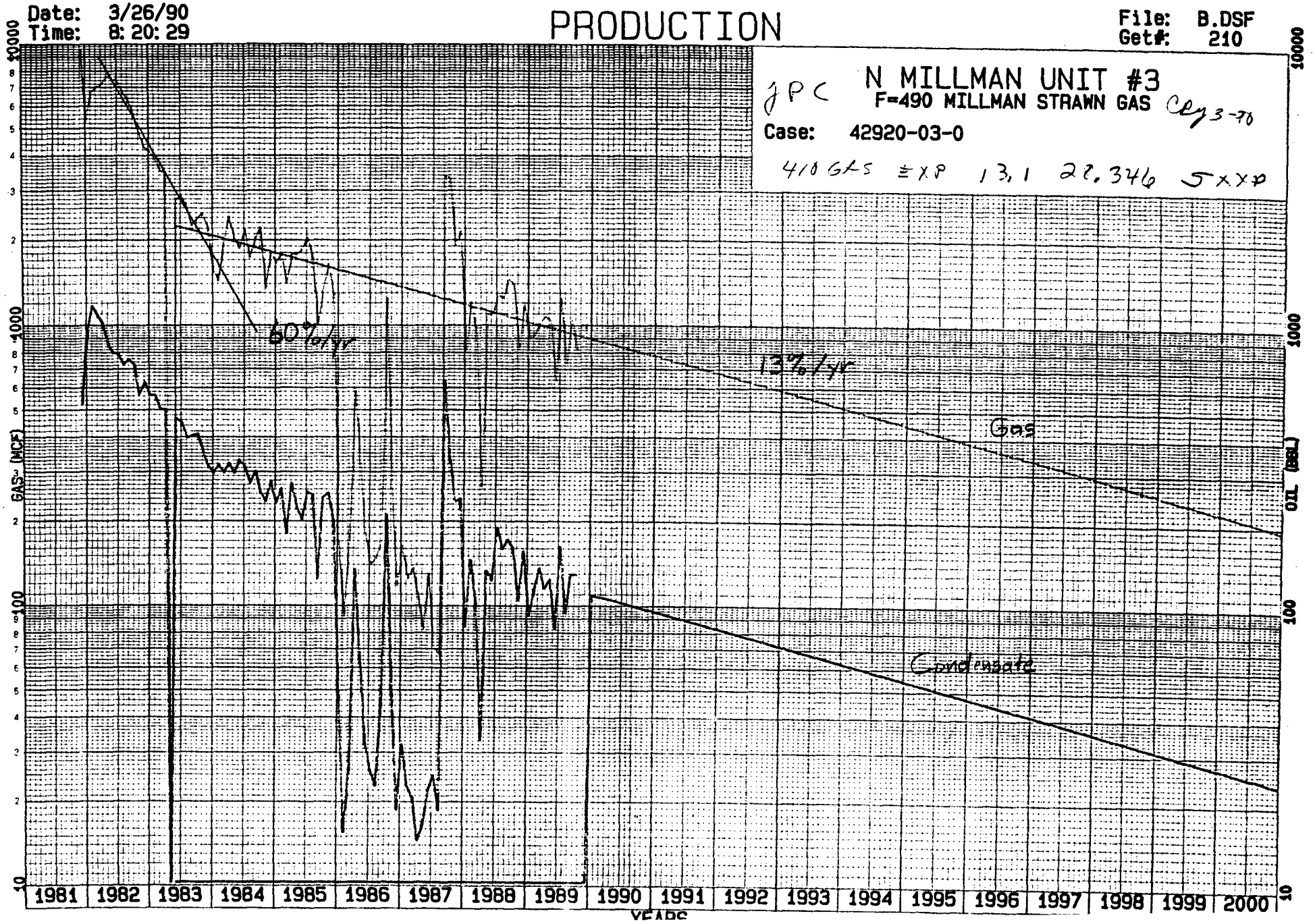
2-14-91 No report.

2-15-91 No report.

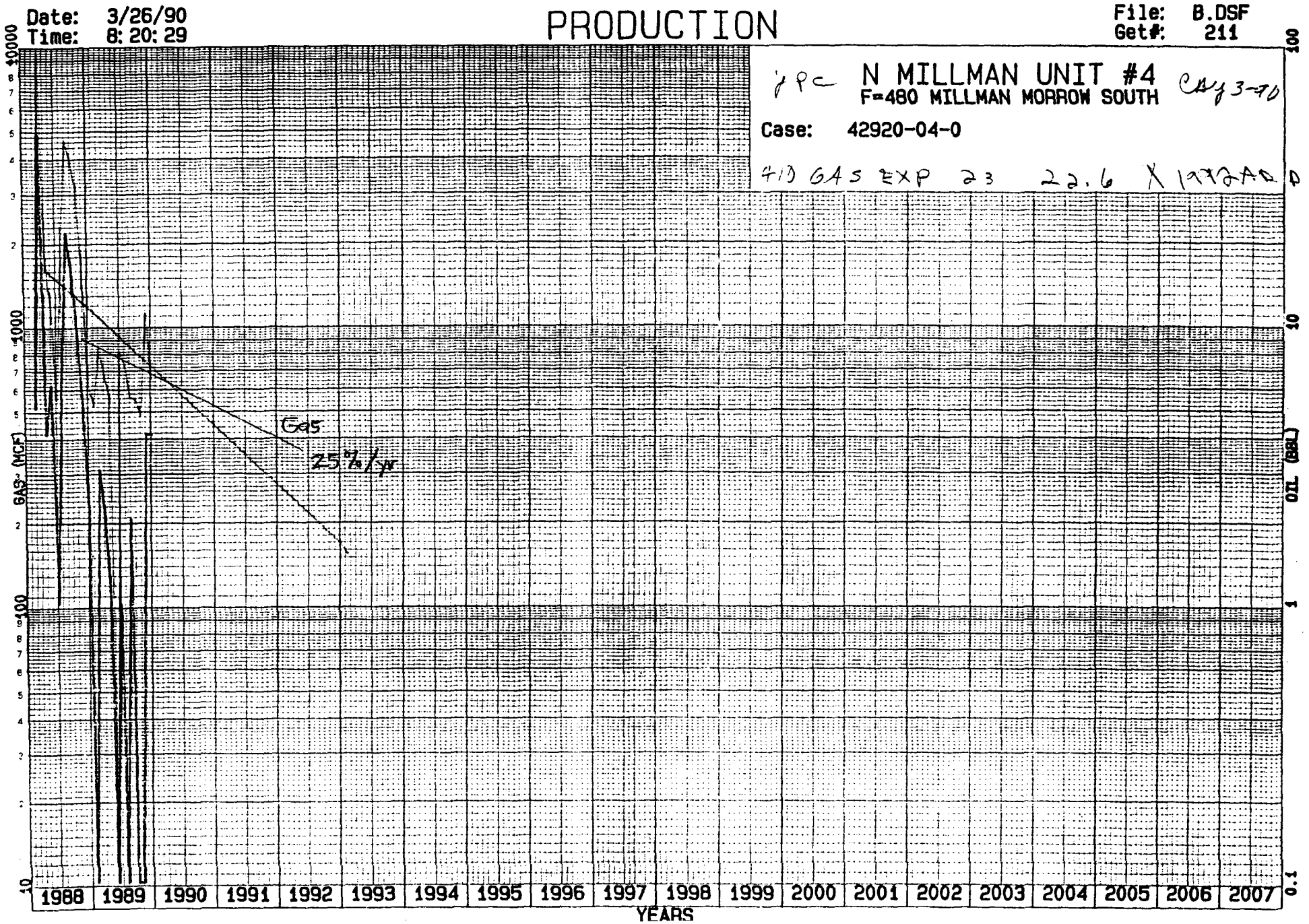
2-16-18-91 No report.

2-19-91 No report. TEMPORARILY DROPPED FROM REPORT.

ATTACHMENT C

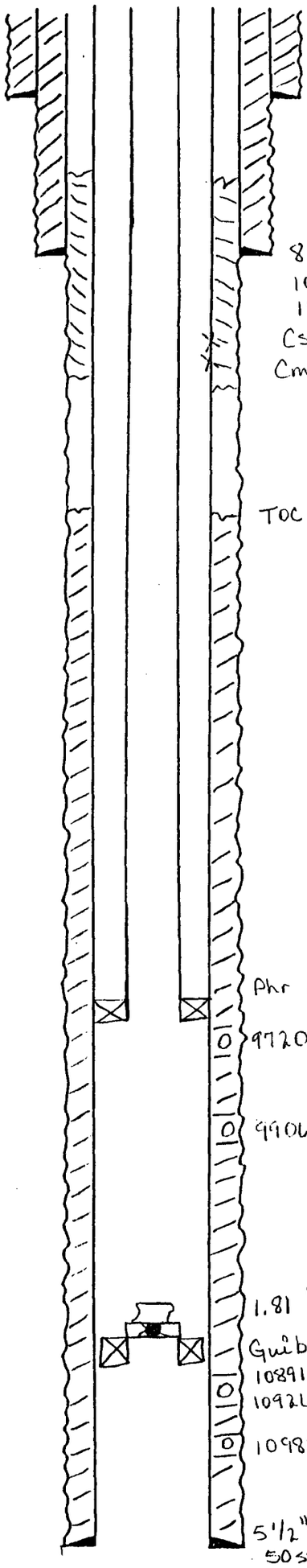


ATTACHMENT C



PROPOSED WELLBORE SCHEMATIC

NORTH MILLMAN UNIT #2
1980' FNL & 1980'FEL
G 8-19S-28E
EDDY COUNTY, NM



13 3/8" @ 372'
400 sx "C"

8 5/8 @ 2298'
1025 sx 65-35 Poz
150 sx "C"
Csg. leaks 2904'- 2935'
Cmt. 250 sx "C"

TOC 6850' TS

Phr @ 9600'

9720'-9740' (40) Strawn

9906'- 9914' (16)

1.81" SV

Guib. Phr. @ 10837' w/ 1.81" PN in O/O

10891'
10926' (11) Morrow

10986'-10990' (10) Morrow

5 1/2" @ 11197'
50 sx 75-25 Poz

11280' TD

- SKETCH NOT TO SCALE -

400 sx 50-50 Poz
475 sx "H"