



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

6-3-92

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

6-3-92

RE: Proposed:

MC _____
DHC X _____
NSL _____
NSP _____
SWD _____
WFX _____
PMX _____

Gentlemen:

I have examined the application for the:

Yates Petroleum Corp. - Julek 'VV' State # 1-I 28-14-32
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed

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



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 743-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
PRESIDENT
PEYTON YATES
EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

May 27, 1992

State of New Mexico
OIL CONSERVATION DIVISION
P. O. Drawer 1980
Hobbs, NM 88240
ATTN: Mr. Jerry Sexton

Dear Mr. Sexton,

Enclosed are the necessary documents for obtaining approval for the downhole
commingling of the Tulk VV State #1 located in I of Section 28, Township 14 South,
Range 32 East.

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

Sincerely,

Brian Collins
Petroleum Engineer

BC/th

COMMINGLING DATA FOR THE TULK VV STATE #1

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:

Tulk VV State #1
Unit I Sec 28-T14S-R32E
1980' FSL & 660' FEL
Pools: Tulk Penn
Undesignated Wolfcamp

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 Form C-116 showing the amount of oil, gas,
and water produced from each zone.

Penn

9623'-9844'

See attached workover summary (Attachment B). Penn
pumping approximately 22 BOPD plus 118 BWPD. Water
production will decline rapidly as well is produced.

Wolfcamp

9312'-9435'

See attached workover summary (Attachment B). Wolfcamp pumping approximately 3 BOPD plus 2
BWPD.

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 (workover history)

See Attachment C (Penn production history plot)

Prognostication of Penn reserves derived by assuming an exponential decline rate of 50%/yr. for 1 year followed by 13%/yr. decline thereafter. (best engineering estimate using historical decline rate derived from Attachment C).

$$Q_i = 22 \text{ BOPD}, Q \text{ 1 yr.} = 11 \text{ BOPD}$$

$$Q_{el} = 1 \text{ BOPD}$$

$$d = 50\% / \text{yr. first year followed by } 13\% / \text{yr.}$$

$$N \text{ oil} = \frac{365 (Q_{el} - Q_i)}{\ln(1-d)} = \frac{365 (11-22)}{\ln(.5)} + \frac{365 (1-11)}{\ln(.87)} = 32,002 \text{ BO}$$

$$\text{Using historical GOR of approximately 1000, } N \text{ gas} = (32,002 \text{ BO}) (1000) = 32 \text{ MMCF}$$

Prognostication of Wolfcamp reserves derived by assuming an exponential decline rate of 50% / yr. for 1 year followed by a 13% / yr. decline (best engineering estimate).

$$Q_i = 3 \text{ BOPD}$$

$$Q, \text{ 1 yr.} = 1.5 \text{ BOPD } Q, \text{ E.L.} = 1 \text{ BOPD}$$

$$d = 50\% / \text{yr. first year followed by } 13\% / \text{yr.}$$

$$N = \frac{365 (1.5-3)}{\ln(.5)} + \frac{365 (1-1.5)}{\ln(.87)} = 2100 \text{ BO}$$

$$\text{Using historical Penn GOR of approximately 1000, } N \text{ gas} = (2100 \text{ BO}) (1000) = 2 \text{ MMCF}$$

- 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 original Penn zone 9831'-9844' = 1000 psi. Estimated BHP Penn zones 9623'-9724' = 3153 psi at 9674' based on direct BHP measurement performed 1-15-83 (3188 psi @ 9781')

Estimated BHP of Wolfcamp = 3055 psi at 9374' from pressure gradient of Penn.

$$\frac{(3188 \text{ psi}) (9374 \text{ ft.})}{(9781 \text{ ft.})} = 3055 \text{ psi}$$

The well will be pumped off after a few days of beam pumping so no flow between zones will occur.

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

Both zones produce sweet oil and gas. There are no incompatibility problems.

- 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.

Both zones produce sweet oil and gas. The value of the commingled production will not be less than the sum of the values of the individual streams.

By commingling the Wolfcamp with the Penn, an estimated additional 2100 bbls. of oil and 2100 MCF of gas reserves will be produced during the life of the well.

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

$$\text{Oil: Penn} - \frac{32,002 \text{ BO}}{34102 \text{ BO}} = 93.84, \text{ say } 94\%$$

$$\text{Wolfcamp} - \frac{2100 \text{ BO}}{34102 \text{ BO}} = 6.16, \text{ say } 6\%$$

$$\text{Gas: Penn} - \frac{32 \text{ MMCF}}{34 \text{ MMCF}} = 94\%$$

$$\text{Wolfcamp} - \frac{2 \text{ MMCF}}{34 \text{ MMCF}} = 6\%$$

- 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 Tulk VV State #1.

ATTACHMENT A

DRILLING REPORT - WORKOVER

Page 1:

Yates Pet. Corp. - Tulk "VV" State #1 (Unit I) 28-14S-32E Lea Co., NM

5-13-92 Moved on. Rigged up. Set tank, water, BOP and pit. Prep to pull rods and tubing. DC \$2042

5-14-92 Pulled pump and laid down rods in singles. Pulled tubing. Went back in hole with 2-7/8" N-80 work string with packer and RBP. DC \$4192; CC \$6234

5-15-92 POH with 2-7/8" N-80 tubing with RBP and packer. WIH with bit and scraper. Clean out salt rings to TD. POH. WIH with RBP and packer to 9300'. Prep to test 5-1/2" casing to surface. DC \$5710; CC \$11,944

5-16-18-92 No report.

5-15-92 Reacidize existing Penn perfs
 WIH with packer and RBP. Acidized perfs 9831-9844' with 1000 gals 15% HCL and 8 ball sealers. Treating pressures: Max 0, Avg 0, Max rate 5.1 BPM, avg rate 4.5 BPM. ISDP 0. Total load 142 bbls. Moved RBP above perforations. Tested to 2000#. POH with packer. Shut down due to weather. DC \$4608

5-16-92 Add Penn 9718-24' 9623-25'
 Rigged up wireline. Perforated 9718', 20', 22', and 24'. WIH with packer. Set above perforations. Acidized with 1000 gals 15% NEFE HCL and 16 ball sealers. Break down 5040#. Treating pressures: Max 5040# @ 2.4 BPM, avg 4850# @ 2.4 BPM. ISDP 4180#, 5 min 4080#, 10 min 4010#, 15 min 3960#. Load to recover 82 bbls. POH with packer. Perforated 9623', 24', 25'. Acidized with 500 gals 15% HCL and 12 ball sealers. Break down 5500#. Treating pressures: Max 6000# @ 3.4 BPM, Avg rate 3.4 BPM. ISDP 4700#, 5 min 4580#, 10 min 4560#, 15 min 4540#. Load to recover 83 bbls. Set rBP below 9718'. Set packer above 9625'. Started to swab. Load to recover 160 bbls. Recovered 45 bbls until midnight. All water. DC \$3112

5-17-92 ± 1 BOPD ± 4 BWPD
 Continue swabbing. Fluid level stayed 100' from seating nipple. Swabbed 3-3/4 bbls with 20% oil cut. DC \$1318

5-18-92 SITP 40#. Fluid level 400' from seating nipple. Recovered 8 bbls with 20% oil cut. DC \$1318

WATER ANALYSIS: 5-18-92

Resistivity	0.063 @ 70	0.061 @ 74
Sp. Gravity	1.104 @ 70	1.120
pH	4.0	4.8
Calcium	31,666	***
Magnesium	9214	***
Chlorides	90,000	91,160
Sulfates	1500	light
Bicarbonates	0	nil
Soluble Iron	500	heavy
KCL	---	neg.
API Gravity	---	38.8 @ 60 deg F

NOTE: *** Iron content too heavy to get reliable color change.

5-20-92 No report.

5-21-92 No report.

5-20-92 Loaded tubing. POH with packer. Prep to perforate Wolfcamp. DC \$1359; CC \$23,659

5-21-92 Rigged up wireline. Perforate Wolfcamp zone #3 9429', 30', 31', 34', and 35' (10 holes). Acidized with 1000 gals of 15% NEFE and 20 balls. Broke at 3480#. Max pressure 5300# @ 3.1 BPM, avg 5200# @ 3.0 BPM. ISDP 4600#, 5 min 3910#, 10 min 3840#, 15 min 3785#. Moved RBP above 9429'. SET. Test to 2000#. POH with packer. Prep to perforate Wolfcamp zone #4. DC \$3075; CC \$26,734

5-22-92 Rigged up wireline. Perforated Wolfcamp zone #4 9312', 13', 14', 16', and 17' (2 SPF - 10 holes). RIH with packer. Tested to 1800#. Straddled perforated interval. Acidized with 1000 gals 15% NEFE and 20 ball sealers. Break down 4110#, avg rate 3.5 BPM. ISDP 3760#, 5 min 3530#, 10 min 3425#, 15 min 3350#. Moved packer and rBP. Straddled Wolfcamp zones 3 and 4. Started to swab. Load to recover 168 bbls. Recvoered 56-1/2 bbls until

July 21
Page 2

midnight. Swabbed dry. Made 2 hour runs until 6:00 AM. Last 2 runs recovered 100'-150' ~~of~~ of fluid with 70% oil cut. Total fluid recovered 61-1/2 bbls (60-1/4 water and 1-1/4 oil). DC \$13,443.86; CC \$40,177.86

$$100' - 150' / 2 \text{ hr} = \pm 0.72 \frac{\text{BF}}{2 \text{ hr}} \times \frac{\text{oil cut}}{.70} = \pm 0.5 \text{ BO} / 2 \text{ hr} = 6 \text{ BOPD} \pm 3 \text{ BWPD}$$

Put Penn + WC on pump	Day 1	10 hrs.	55 BOPD / 51 BWPD / 38 MCFD
	2	24 hrs.	25 BOPD / 120 BWPD / 94 MCFD
	3	"	22 BOPD / 99 BWPD / 108 MCFD

Summary

Wolfcamp 9429-35'
9312-17' Swab $\pm 6 \text{ BOPD}$
 $\pm 3 \text{ BWPD}$

Best Engr. Est.
Stabilized Production
 $\pm 3 \text{ BOPD}$
 $\pm 1.5 \text{ BWPD}$

Penn 9718-24'
9623-25' Swab $\pm 1 \text{ BOPD}$
 $\pm 4 \text{ BWPD}$ $\pm 0.5 \text{ BOPD}$
 $\pm 2 \text{ BWPD}$

PWOP Penn+WC Pump 25 BOPD $\pm 21.5 \text{ BOPD}$
120 BWPD $\pm 116.5 \text{ BWPD}$

o/c Orig Penn 9231-44'

o/c Total Penn = $\pm 22 \text{ BOPD}$
 $\pm 118.5 \text{ BWPD}$

Total WC = $\pm 3 \text{ BOPD}$
 $\pm 1.5 \text{ BWPD}$

Expect water production to decrease significantly as well is produced

Date: 12/31/91
Time: 13:53:08

PRODUCTION

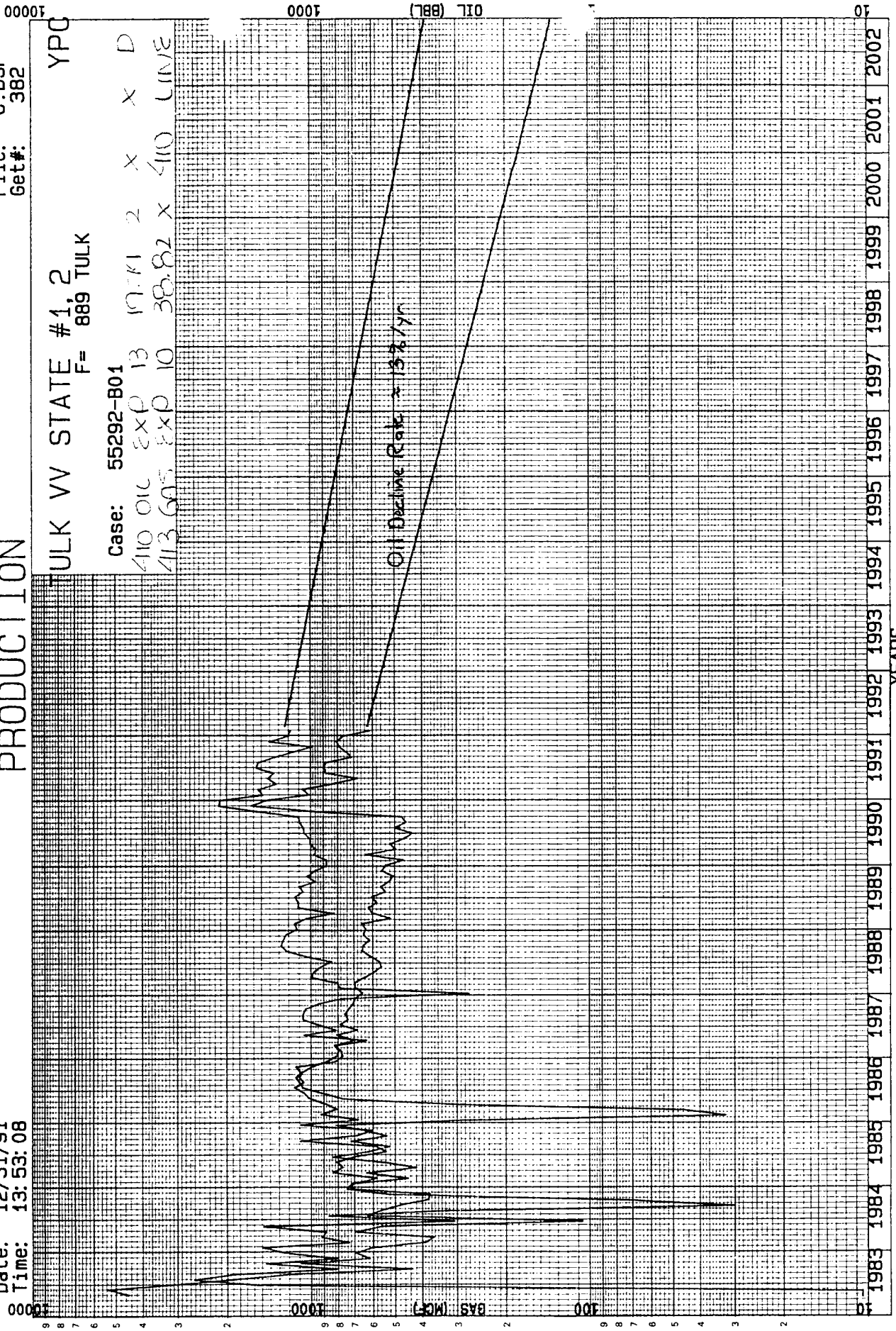
File: C.DSF
Get#: 382

TULK WV STATE #1, 2
F= 889 TULK YPG

Case: 55292-B01

410 OIC EXP 13 17.71 2 X X D

413 GOS EXP 10 38.82 X 410 LINE



WELL NAME: Tulk VV St. #1 FIELD AREA Tulk Penn

LOCATION: 1980' FSL, 660' FEL I-28-145-32e Lea NM

GL: 4309.8' ZERO: 21.5' AGL:

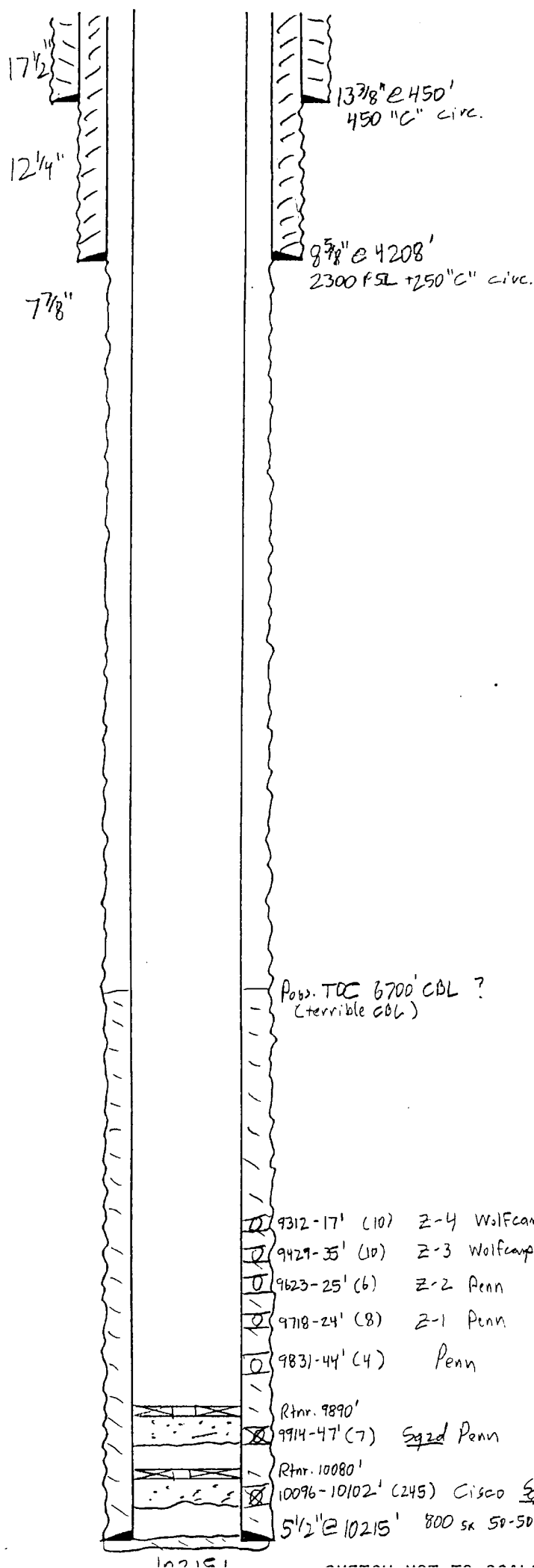
KB: 4331.3' ORIG. DRLG./COMPL. DATE:

COMMENTS:

CASING PROGRAM:

SIZE/WT./GR./CONN.	DEPTH SET
13 7/8 48 K55 STC	450'
8 7/8 32 J55	4208'
5 1/2 17 N80 LTC	993'
17 K55 LTC	7631'
17 N80 LTC	10215'
2 7/8"	

ATTACHMENT D



"AFTER"
E

Tops: Rsthr. 1470'
Base Salt 2461'
Yates 2533'
Queen 3296'
S. And. 3700'
Glor. 5584'
Tubb 6874'
Abo 7630'
WCLG 9030'
XX 9168'
Dolo 10060'

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DENNIS G. KINSEY
TREASURER

May 27, 1992

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 Tulk VV State #1 located in I of Section 28, Township 14 South, Range 32 East.

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

Sincerely,

Brian Collins
Petroleum Engineer

BC/th

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TREASURER

May 27, 1992

BTA Oil
105 S. Pecos
Midland, TX 79701

Gentlemen:

Enclosed please find a copy of the application for downhole commingling the Tulk VV State #1 located in I of Section 28-T14S-R32E. This copy of the application to commingle fulfills our requirement to notify offset operators per NMOCD Rule 303 D (10).

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

Sincerely,



Brian Collins
Petroleum Engineer

BC/th

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TREASURER

May 27, 1992

Texian Exploration
P. O. Box 10069
Midland, TX 79702

Gentlemen:

Enclosed please find a copy of the application for downhole commingling the Tulk VV State #1 located in I of Section 28-T14S-R32E. This copy of the application to commingle fulfills our requirement to notify offset operators per NMOC Rule 303 D (10).

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

Sincerely,

Brian Collins
Petroleum Engineer

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TREASURER

May 27, 1992

Coastal Oil & Gas Corporation
P. O. Box 749
Denver, CO 80201

Attn: Mr. Ed Baughman

Dear Mr. Baughman:

Enclosed please find a copy of the application for downhole commingling the Tulk VV State #1 located in I of Section 28-T14S-R32E. This copy of the application to commingle fulfills our requirement to notify offset operators per NMOC Rule 303 D (10).

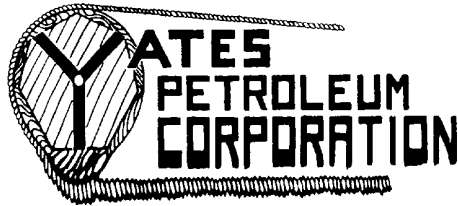
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DENNIS G. KINSEY
TREASURER

May 27, 1992

Lario Oil & Gas Company
P. O. Box 155
Midland, TX 79701

Gentlemen:

Enclosed please find a copy of the application for downhole commingling the Tulk VV State #1 located in Unit I of Section 28-T14S-R32E. This copy of the application to commingle fulfills our requirement to notify offset operators per NMOCD Rule 303 D (10).

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

Sincerely,

Brian Collins
Petroleum Engineer

BC/th