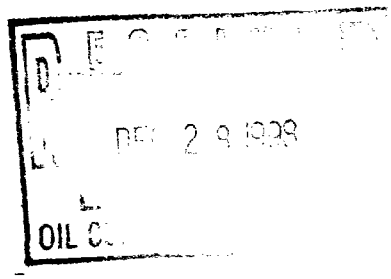
Cross Timbers Oil Company



December 22, 1998

New Mexico Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David Catanach

Re: Case No. 12098
Unorthodox Location and Simultaneous Well Dedication
Ute Mountain Tribal J # 6
SW/4 Section 1-31N-14W
San Juan County, New Mexico

Gentlemen:

Pursuant to our hearing last Thursday, please find enclosed volumetric calculations for the Dakota formation under the captioned land.

Should you have any questions or need additional information please call me at (817)877-2336.

Yours very truly,

Edwin S. Ryan, Jr.

Cc: Bureau of Land Management
San Juan Resource Area
701 Camino Del Rio
Durango, Colorado 81301
Attn: Mr. Dan Rabinowitz

Data Consultants Inc.
P.O. Box 14749
Albuquerque, New Mexico 87191
Attn: G.D. Simon

Mr. Jim Bruce
P.O. Box 1056
Santa Fe, New Mexico 87505

Ute Mountain Ute Tribe
P.O. Box 248
Towaoc, Colorado 81334
Attn: Mr. Gordon Hammond

810 Houston St., Suite 2000. Fort Worth. Texas 76102-6298
(817) 870-2800. Fax (817) 870-1671
www.crosstimbers.com

Volumetrics - SW/4 Sec 1 T31N R14W

The following pages contain the calculation sheets for the Upper Dakota Sands in the SW/4 of Section 1 T31N R14W. The following table summarizes the results.

Sand	OGIP (MMCF)	Rec Gas (85% RF) (MMCF)
First Dakota	338	287
Second Dakota	606	514
Third Dakota	120	101
Total	1064	902

Currently there are two wells producing in the SW/4 of Section 1: Ute Mountain Tribal J 1 and Ute Mountain Tribal J 4. The wells were drilled by Amoco to test fault separation. The Ute Mountain Tribal J 1 was completed in July of 1973. The well was completed in the upper 3 sands of the Dakota and the 6th sand. In June of 1984, the Dakota zones were reperforated and restimulated. The well showed no significant response to this action. In September of 1993, production fell from 1624 mcf/mo to 138 mcf/mo and continued to fall below 100 mcf/mo. In July of 1994, fill was cleaned out, and the Dakota was acidized. The well did not respond to this.

The Ute Mountain Tribal J 4 was completed in February of 1974. The well was completed in the Morrison and the 6th sand. It was produced from these zones until March of 1984 (cumulative production at this time: 586 MMCF). At this time, the 2nd , 3rd , and 5th sands were added, and the new and old zones were stimulated together. In July of 1988, fill was checked but none was found. In June of 1991, 17 feet of fill was cleaned out. In March of 1993 fill was checked but none was found. In July of 1994, the Morrison was abandoned with a CIBP, and the remaining zones were acidized. The well responded at about 500 mcfd. Currently the well is making approximately 60 mcfd.

The following table summarizes the production estimated from the two wells (J 4 production is less the cumulative production prior to the 1984 workover).

Well	Cumulative Production (MMCF)	Decline Curve EUR (MMCF)
Ute Mountain Tribal J 1	460	460
Ute Mountain Tribal J 4	309	506
Total	769	966

The J 1 well production also includes Lower Dakota sand production. If porosity thickness were used to determine the percentage of reserves attributable to the different productive zones, the Lower Dakota would account for approximately 26% of the production from the J 1. In addition, the J 1 is located 220 feet from the east-west center section line; therefore, some of its drainage is occurring in the north half of the section.

When the J 4 was completed to the upper Dakota in 1984, the J 1 had produced approximately 333 MMCF. The J 1 had a reported shut-in surface pressure of 458 psi in December of 1972 on a Multipoint and Back Pressure Test form submitted to the NMOCC. The J 4 had a reported shut-in surface pressure of 317 psi on the same type form after the workover in 1984. If the J 1 had depleted close to a third of the reserves in place in the upper Dakota, the surface pressure on the J 4 would have been expected to be lower than what was observed. Although, these pressures are suspect due to the fact that fluid level is unknown and insufficient build-up time.

One factor that points to the J 4 recovering unique reserves and pressure not attributable to the J 1 is the production curves. In 1994, a CIBP was set over the lower perfs in the J 4 and it was producing from the upper sands. The initial rate was over 500 mcfd as compared to the late production of approximately 50 mcfd on the J 1. Four years later in 1998, the J 4 is still producing at a rate of approximately 83 mcfd.

The Ute Mountain Tribal J 6 will be a Morrison and Dakota drill well located in the SW/4 of Section 1. The well is intended to test a fault block that has not been tested to date. To test for fault separation from the rest of the quarter section, RFT's are planned to test the pressure in the individual Dakota sands.

UTE DOME DAKOTA
SW/4 SECTION 1-T31N-R14W
1ST SAND

Fluid Properties

Gas Gravity	=	0.616	Gas Analysis
T_c	=	355 °R	Standing's correlation
P_c	=	671 psi	Standing's correlation
T_r	=	90 °F	Log Measurement
P_{ri}	=	732 psi	Calculated (0.32 psi/ft.)
P_{ra}	=	120 psi	Estimate
B_{gi}	=	0.01926 ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.12752 ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

$$RF_t = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_t = 1 - \frac{0.01926}{0.12752}$$

RF_t= 0.8489 (fraction)

Rock Properties

Acre - Feet	=	2,091	Planimetered from net pay thickness maps
Average Porosity	=	0.14	(fraction)ϕ_d Avg. (Ute Mountain Tribal J4 Log)
Water Saturation	=	0.49	(fraction) Avg.

Calculate GIP, Theoretical and Actual EUR

$$GIP = \frac{.04356Ah\phi(1-S_w)}{B_{gi}} \; MMCF$$

$$GIP = \frac{.04356(2,091)(0.14)(1-0.49)}{0.01926} \; MMCF$$

GIP = 338 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8489)(338)

EUR_t = 287 MMCF

UTE DOME DAKOTA
SW/4 SECTION 1-T31N-R14W
2nd SAND

Fluid Properties

Gas Gravity	=	0.616	Gas Analysis
T_c	=	355 °R	Standing's correlation
P_c	=	671 psi	Standing's correlation
T_r	=	90 °F	Log Measurement
P_{ri}	=	732 psi	Calculated (0.32 psi/ft.)
P_{ra}	=	120 psi	Estimate
B_{gi}	=	0.01926 ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.12752 ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

$$RF_t = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_t = 1 - \frac{0.01926}{0.12752}$$

$$RF_t = 0.8489 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	2,424	Planimetered from net pay thickness maps
Average Porosity	=	0.17	(fraction)ϕ_d Avg. (Ute Mountain Tribal J4 Log)
Water Saturation	=	0.35	(fraction) Avg.

Calculate GIP, Theoretical and Actual EUR

$$GIP = \frac{.04356Ah\phi(1-S_w)}{B_{gi}} \; MMCF$$

$$GIP = \frac{.04356(2,424)(0.17)(1-0.35)}{0.01926} \; MMCF$$

GIP = 606 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8489)(606)

EUR_t = 514 MMCF

UTE DOME DAKOTA
SW/4 SECTION 1-T31N-R14W
3rd Sand

Fluid Properties

Gas Gravity	=	0.616	Gas Analysis
T_c	=	355 °R	Standing's correlation
P_c	=	671 psi	Standing's correlation
T_r	=	90 °F	Log Measurement
P_{ri}	=	732 psi	Calculated (0.32 psi/ft.)
P_{ra}	=	120 psi	Estimate
B_{gi}	=	0.01926 ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.12752 ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

$$RF_t = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_t = 1 - \frac{0.01926}{0.12752}$$

RF_t= 0.8489 (fraction)

Rock Properties

Acre - Feet	=	782	Planimetered from net pay thickness maps
Average Porosity	=	0.13	(fraction)ϕ_d Avg. (Ute Mountain Tribal J4 Log)
Water Saturation	=	0.48	(fraction) Avg.

Calculate GIP, Theoretical and Actual EUR

$$GIP = \frac{.04356Ah\phi(1-S_w)}{B_{gi}} \; MMCF$$

$$GIP = \frac{.04356(782)(0.13)(1-0.48)}{0.01926} \; MMCF$$

GIP = 120 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8489)(120)

EUR_t = 101 MMCF

Cross Timbers Oil Company

	Oil (bbls/mo)	Gas (mcf/mo)
Qi	0	0
Qel	0	0
Decline	0.0 %	0.0 %

	Oil (bbls)	Gas (mcf)
Gross Cum @**/**	28	460,218
Gross Remaining	0	0
Gross Ultimate	28	460,218
Net Remaining	0	0

Res_Cat.
Life 0.000
As-of-Date
Setup file
Q_Prod
Q_Owner
Q_Other

WI - 0.00000 %
NRI - 0.00000 %

Oil Price ($/bbl)	Gas Price ($/mcf)	OPC ($/bbl)	Flat Life (years)	Last Production	Net Cash Flow	P.W. @ 0.0 %
0.00	0.00	0.00	0.0	05/95	$ 0	$ 0

UTE MOUNTAIN TRIBAL J 1
CROSS TIMBERS OPERATING COMPANY
UTE DOME (DAKOTA)
SAN JUAN, NEW MEXICO
1 31 N14 W
K
30045210110000

Run Date :
Run Time:

CTOC -

GAS (mcf/mo) ▽
OIL (bbls/mo) △

1st, 2nd, 3rd, & 6th Sand Production

10,000.
100.

1,000.
10.

100.
1.

70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

TIME (years)

12 / 20 / 1998 15 : 45 : 45 21 P

Cross Timbers Oil Company

	Oil (bbls/mo)	Gas (mcf/mo)
Qi	0	0
Qel	0	0
Decline	0.0 %	0.0 %

	Oil (bbls)	Gas (mcf)
Gross Cum @**/**	152	895,172
Gross Remaining	0	0
Gross Ultimate	152	895,172
Net Remaining	0	0

Res_Cat.
Life 0.000
As-of-Date
Setup File
Q_Prod
Q_Owner
Q_Other

WI - 0.000000 %
NRI - 0.000000 %

Oil Price ($/bbl)	Gas Price ($/mcf)	OPC ($/bbl)	Flat Life (years)	Last Production	Net Cash Flow	P.W. @ 0.0 %
0.00	0.00	0.00	0.0	05/98	$ 0	$ 0

UTE MOUNTAIN TRIBAL J 4
CROSS TIMBERS OPERATING COMPANY
UTE DOME (DAKOTA)
SAN JUAN, NEW MEXICO
I 31 N14 W
L *30045213320000*

Run Date :
Run Time:

CTOC -

GAS (mcf/mo)
OIL (bbls/mo)

1974- 3/84
Lower Sands Only
Cum 586,280

Current 895,172
- 586,280
308,892

2nd, 3rd, & 5th Sands

Current 308,892
Remaining 197,132
Dec EUR 506,024

25α @ 12%

10,000.
100.
1,000.
10.
100.
1.

70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

TIME (years)

12/20/1998 15:45:47 21 P