SE/4 Section 2 T31N R14W

Current Producing Dakota Wells

Well	10/00 CUM (mmcf)	Decline EUR (mmcf)
Ute Indians A #20	137	137
Total	137	137

Recoverable Gas In Place (RGIP)

Sand	GIP (mmcf)	RGIP (mmcf)
1st Dakota Sand	362	307
2nd Dakota Sand	251	213
3rd Dakota Sand	180	153
5th/6th Dakota Sand	890	756
Total	1,683	1,429
Current 160 Acre Recovery	0.08	0.10

Estimation of Remaining Recoverable Gas

	(mmcf)
Calculated RGIP from Net Sand Isopach	1,429
Less Decline EUR Current Producers	137
Estimated Remaining Recoverable Gas	1,292

OIL CONSERVATION DIVISION

CASE NUMBER _____

EXHIBIT 7

Cross Timbers Oil Company

Remaining Reserve Estimation		
Oct-00	0 MCFM Start Rate	0 MMCF Remaining
	0 % Decline	137 MMCF as of 10/00
		137 MMCF EUR

UTE INDIANS A 20

CROSS TIMBERS
UTE DOME (DAKOTA)
SAN JUAN, NEW MEXICO

BASE	*2J 31N 14W*	*SAN JUAN*
524605	*BGV*	*71072*

Run Date : 03/09/00
Run Time: 15:06:38

CTOC - 1/00 *TWD JEB SMJ*

GAS (mcf/mo) ∇
OIL (bbls/mo) Δ

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

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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 00 01 02 03 04

01 / 12 / 2001 14 : 54 : 06 21 Pn

TIME (years)

524605

UTE DOME DAKOTA
SE/4 SECTION 2-T31N-R14W
1ST SAND

Fluid Properties

Gas Gravity	=	0.703		Gas Analysis
T_c	=	389 °R		Standing's correlation
P_c	=	667 psi		Standing's correlation
T_r	=	110 °F		Log Measurement
P_{ri}	=	800 psi		(Calculated from Surface Pressures)
P_{ra}	=	135 psi		Estimate
B_{gi}	=	0.01762	ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.11679	ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_t = 1 - \frac{0.01762}{0.11679}$$

$$RF_t = 0.8491 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	2,132	Planimetered from net sand thickness maps
Average Porosity	=	0.14	(fraction) ϕ_{nd} Avg. of offsets
Water Saturation	=	0.51	(fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(2,132)(0.14)(1-0.51)}{0.01762} \; MMCF$$

GIP = 362 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8491)(362)

EUR_t = 307 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/05/00

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

Fluid Properties

Gas Gravity	=	0.703		Gas Analysis
T_c	=	389 °R		Standing's correlation
P_c	=	667 psi		Standing's correlation
T_r	=	110 °F		Log Measurement
P_{ri}	=	800 psi		(Calculated from Surface Pressures)
P_{ra}	=	135 psi		Estimate
B_{gi}	=	0.01762	ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.11679	ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_t = 1 - \frac{0.01762}{0.11679}$$

RF_t= 0.8491 (fraction)

Rock Properties

Acre - Feet	=	1,473	Planimetered from net sand thickness maps
Average Porosity	=	0.15	(fraction)$\varnothing_{nd}$ Avg. of offsets
Water Saturation	=	0.54	(fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(1{,}473)(0.15)(1-0.54)}{0.01762} \; MMCF$$

GIP = 251 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8491)(251)

EUR_t = 213 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/05/00

UTE DOME DAKOTA
SE/4 SECTION 2-T31N-R14W
3rd SAND

Fluid Properties

Gas Gravity	=	0.703	Gas Analysis
T_c	=	389 °R	Standing's correlation
P_c	=	667 psi	Standing's correlation
T_r	=	110 °F	Log Measurement
P_{ri}	=	800 psi	(Calculated from Surface Pressures)
P_{ra}	=	135 psi	Estimate
B_{gi}	=	0.01762 ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.11679 ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_t = 1 - \frac{0.01762}{0.11679}$$

RF_t = 0.8491 (fraction)

Rock Properties

Acre - Feet	=	876	Planimetered from net sand thickness maps
Average Porosity	=	0.16	(fraction)$\varnothing_{nd}$ Avg. of offsets
Water Saturation	=	0.48	(fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(876)(0.16)(1-0.48)}{0.01762} \; MMCF$$

GIP = 180 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8491)(180)

EUR_t = 153 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/05/00

UTE DOME DAKOTA
SE/4 SECTION 2-T31N-R14W
$5^{th}/6^{th}$ Sand

Fluid Properties

Gas Gravity	=	0.703		Gas Analysis
T_c	=	389 °R		Standing's correlation
P_c	=	667 psi		Standing's correlation
T_r	=	110 °F		Log Measurement
P_{ri}	=	800 psi		(Calculated from Surface Pressures)
P_{ra}	=	135 psi		Estimate
B_{gi}	=	0.01762	ft^3/SCF	Standing & Katz's correlation
B_{ga}	=	0.11679	ft^3/SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_t = 1 - \frac{0.01762}{0.11679}$$

RF_t = 0.8491 (fraction)

Rock Properties

Acre - Feet	=	3,463	Planimetered from net sand thickness maps
Average Porosity	=	0.16	(fraction)$\varnothing_{nd}$ Avg. of offsets
Water Saturation	=	0.35	(fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(3{,}463)(0.16)(1-0.35)}{0.01762} \; MMCF$$

GIP = 890 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8491)(890)

EUR_t = 756 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/05/00