

Ute Indians A 27
SE/4 Section 2 T31N R14W

Volumetrics - SE/4 Section 2

First Dakota Sand GIP	405	MMCF
Second Dakota Sand GIP	355	MMCF
Third Dakota Sand GIP	189	MMCF
Total GIP	949	MMCF

Ute Indians A 20

Cumulative Production (5/98)	133	MMCF
Decline Curve EUR	133	MMCF
Recovery of GIP	0.14	

Remaining Reserves

SE/4 Sec 2 GIP @ 85% RF	807	MMCF
Less Ute Indians A 20 EUR	133	MMCF
Remaining Reserves	674	MMCF

EXHIBIT **5**

NO.

UTE DOME DAKOTA
SE/4 SECTION 2-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	=	110 °F	Log Measurement
P _{ni}	=	843 psi	Calculated (0.32 psi/ft.)
P _{ra}	=	135 psi	Estimate
B _{gi}	=	0.01734 ft ³ /SCF	Standing & Katz's correlation
B _{ga}	=	0.11747 ft ³ /SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_t = 1 - \frac{0.01734}{0.11747}$$

$$RF_t = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	1,833	Planimetered from net pay thickness maps
Average Porosity	=	0.16	(fraction) ϕ_{nd} Avg. (Ute Indians A20 Log)
Water Saturation	=	0.45	(fraction) Avg.

Ute Dome Dakota
1" Sand
Page 2

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(1,833)(0.16)(1-0.45)}{0.01734} MMCF$$

$$GIP = 405 \text{ MMCF}$$

$$EUR_t = RF_t \times GIP$$

$$EUR_t = (0.8524)(405)$$

$$EUR_t = 345 \text{ MMCF}$$

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/15/98

UTE DOME DAKOTA
SE/4 SECTION 2-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	=	110 °F	Log Measurement
P _{ri}	=	843 psi	Calculated (0.32 psi/ft.)
P _{ra}	=	135 psi	Estimate
B _{gi}	=	0.01734 ft ³ /SCF	Standing & Katz's correlation
B _{ga}	=	0.11747 ft ³ /SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_i = 1 - \frac{0.01734}{0.11747}$$

$$RF_i = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	1,730	Planimetered from net pay thickness maps
Average Porosity	=	0.16	(fraction) ϕ_{nd} Avg. (Ute Indians A20 Log)
Water Saturation	=	0.49	(fraction) Avg.

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(1,730)(0.16)(1 - 0.49)}{0.01734} \text{ MMCF}$$

$$GIP = 355 \text{ MMCF}$$

$$EUR_t = RF_t \times GIP$$

$$EUR_t = (0.8524)(355)$$

$$EUR_t = 302 \text{ MMCF}$$

UTE DOME DAKOTA
SE/4 SECTION 2-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	=	110 °F	Log Measurement
P _{ri}	=	843 psi	Calculated (0.32 psi/ft.)
P _{ra}	=	135 psi	Estimate
B _{gi}	=	0.01734 ft ³ /SCF	Standing & Katz's correlation
B _{ga}	=	0.11747 ft ³ /SCF	Standing & Katz's correlation

Calculate Theoretical Recovery Factor

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

$$RF_i = 1 - \frac{0.01734}{0.11747}$$

$$RF_i = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	770	Planimetered from net pay thickness maps
Average Porosity	=	0.15	(fraction) ϕ_{nd} Avg. (Ute Indians A20 Log)
Water Saturation	=	0.35	(fraction) Avg.

Calculate GIP, Theoretical and Actual EUR

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

$$GIP = \frac{.04356(770)(0.15)(1 - 0.35)}{0.01734} \text{ MMCF}$$

$$GIP = 189 \text{ MMCF}$$

$$EUR_i = RF_i \times GIP$$

$$EUR_i = (0.8524)(189)$$

$$EUR_i = 161 \text{ MMCF}$$

CROSS TIMBERS OIL COMPANY
Barry Voigt
12/15/98

Cross Timbers Oil Company

UTE INDIANS A 20
CROSS TIMBERS OPERATING COMPANY
UTE DOME (DAKOTA)
SAN JUAN, NEW MEXICO

2 31 N14 W
J

30045246050000

CTOC -

Oil (bbls/mo)		Gas (mcf/mo)		Oil (bbls)		Gas (mcf)		Res. Cat	
Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas
Q ₁	0	0	0	0	0	0	0	0	0
Q ₂	0	0	0	0	0	0	0	0	0
Decline	0.0 %	0.0 %	0.0 %	0	0	0	0	0	0
W1 - 0.00000 %		Gas Price (\$/mcf)		Flat Life (years)		Last Production		Net Cash Flow	
NRI - 0.00000 %		0.00		0.0		05/98		\$ 0	
		Oil Price (\$/bbl)		OPC (\$/bbl)		Cash Flow		P.W. @ 0.0 %	
		0.00		0.00		\$ 0		\$ 0	
		Gas Price (\$/mcf)		Gross Cum. @ 2.5 %		Gross Remaining		Gross Ultimate	
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