

NSL 12/9/98



**Cross Timbers Oil Company**

November 16, 1998

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

RECEIVED

NOV 19 1998

Re: Application for Unorthodox Location  
Ute Dome Paradox Pool  
Mountain Ute Gas Com N #1  
Section 10-31N-14W  
San Juan County, New Mexico

Gentlemen:

Cross Timbers Operating Company hereby requests approval of the following unorthodox location:

Well Name:	Mountain Ute Gas Com N #1
Pool:	Ute Dome Paradox
Location:	655' FNL & 520' FEL
Acreage Dedication:	Section 10-31N-14W, containing 640 acres, more or less
County/State:	San Juan County, New Mexico
Pool Rules:	1650' from lease lines
Existing Well:	Ute Mountain Tribal D #1 (Cross Timbers will shut-in prior to producing the captioned well)

Attached is the following support and documentation for said application:

1. C-102 Plat
2. Geologic discussion
3. Copy of certified letter sent to offset operators/owners
  - A. Plat of offset operators
  - B. List of offset operators

We look forward to your approval and please call me at (817) 877-2336 with any questions.

Yours very truly,

Edwin S. Ryan, Jr.

cc: Lori Wrotenbery, Director  
New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

NMCOD - Aztec District Office  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

Offset Operators

Gary Burch

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

Bureau of Indian Affairs  
Ute Mountain Ute Agency  
P.O. Box KK  
Towaoc, Colorado 81334

Bobby Smith - CTOC Midland

Barry Voigt

District I  
PO Box 1980, Hobbs, NM 88241-1980

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

District II  
PO Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

District III  
1000 Rio Brazos Rd., Aztec, NM 87410

District IV  
PO Box 2088, Santa Fe, NM 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code 86760	*Pool Name UTE DOME PARADOX
*Property Code	*Property Name MOUNTAIN UTE GAS COM N		*Well Number 1
*GRID No. 157067	*Operator Name CROSS TIMBERS OPERATING COMPANY		*Elevation 5916'

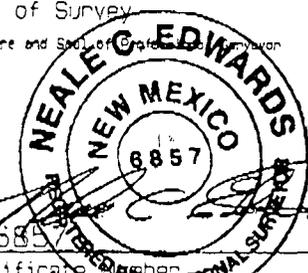
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	31N	14W		655	NORTH	520	EAST	SAN JUAN

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
*Dedicated Acres		*Joint or Infill	*Consolidation Code		*Order No.				

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<sup>15</sup> 5280.00'	5282.64'	655' 520'	<sup>17</sup> OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and consists to the best of my knowledge and belief.
	10		
5280.00'	5281.32'	<sup>18</sup> SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.	OCTOBER 15, 1998 Date of Survey Signature and Seal of <b>NEALE C. EDWARDS</b>  Certificate

## MOUNTAIN UTE GAS COM "N" #1 GEOLOGIC/GEOPHYSICAL DISCUSSION

The Mountain Ute Gas Com "N" #1 is a proposed 8500' Pennsylvanian Paradox Formation test to be located approximately 655' FNL and 520' FEL of Section 10-T31N-R14W, San Juan County, New Mexico.

The Paradox Formation at Ute Dome is approximately 700 ft. thick and composed mostly of algal and fossiliferous carbonates deposited in a shallow water, shelf environment. The Paradox has been subdivided into 5 members, which are, in ascending order, the Alkali Gulch, Barker Creek, Akah, Desert Creek and Ismay. All of these members are productive at Ute Dome. It is implied by Neil Whitehead (1993) that there is no natural vertical communication between the various members of the Paradox, as each appear to have their own unique gas/water contact.

The Ute Dome feature is a structural high formed at the crest of an asymmetrical, northeast plunging anticline. Steeper dips are found on the southern and eastern sides of the anticline, which forms the edge of the present day San Juan Basin. The attached seismic structure map on the top of the Akah Member was interpreted from a vibroseis 3-D seismic survey shot by Amoco in 1995, and reprocessed by Cross Timbers in 1998. It shows the current producing Paradox wells in sections 10 and 11 as being well off of the crest of the structure and at essentially the same subsea depth at the Akah level.

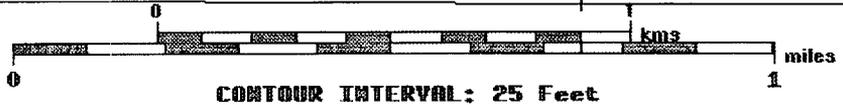
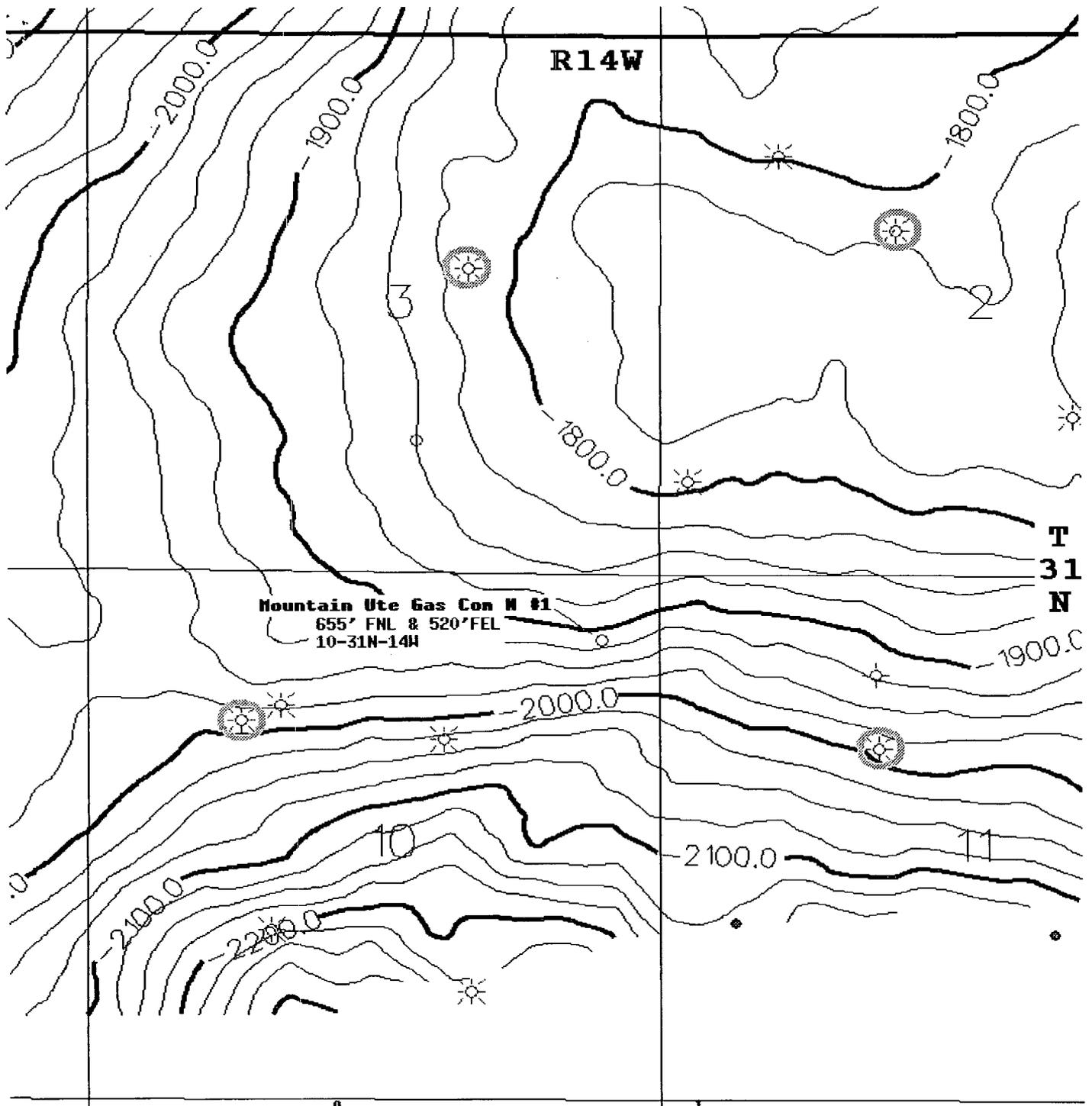
At the Barker Creek level, the Ute Mountain Tribal "D" #1 in Section 10 is structurally the 2nd lowest active producing well in the field. The top of the Barker Creek in this well is only 70 ft. above the original oil/water contact reported by Neil Whitehead (1993). Around 1971, production from this well plunged from over 50,000 MCF/month to around 2000 MCF/month. Numerous attempts have been made through the years to get the rate back up to where it should be according to its previous decline rate but all were unsuccessful. We believe that the major contributing factor is the influx of water and that the only way to recover the remaining hydrocarbons in Section 10 is to shut-in the existing well and drill another well as far up dip in the section as possible.

The lateral heterogeneity of the reservoir is exemplified by the Ute Mountain Gas Com "M" #1 well in Section 11. This well, when drilled in 1977 was offset by 4 high-rate wells drilled from 1957-1971, yet encountered essentially virgin pressures.

The primary reason for this is the presence of a 75 ft. thick porous carbonate buildup in the Basal Ismay Member which is not present in any of the offsetting wells. This well today, still produces at more than 3 times the rate of the best offset, primarily due to the laterally discontinuous buildup. Depending on depositional interpretations, this buildup could extend in a northwesterly direction into the northeast corner of Section 10, or northeasterly into the SE $\frac{1}{4}$  of Section 2. Other localized carbonate buildups may also underlie areas not penetrated by the current wells.

The proposed location was chosen because it is at or near the structurally highest position in the section, and it is in an area most likely to encounter the Basal Ismay porosity zone seen in the well in Section 11.

*Gary K. Burch*  
*Nov. 11, 1998*



 Paradox Producer

 <b>Cross Timbers Oil Company</b>
<b>UTE DOME FIELD</b> San Juan County, New Mexico
<b>STRUCTURE: Top of Akah</b>
November, 1998 <span style="float: right;">GKB/MSV</span>



OFFSET OPERATORS/OWNERS

Cross Timbers Oil Company, Applicant, is the only offset operator.

