Sun Production
Operations Division
Southwestern District

SUN

Sun Exploration and
Production Company
No 24 Smith Road
ClayDesta Plaza
PO Box 1861
Midland TX 79702 9970
915 688 0300

To: David Catanach

From: Dee Ann Kemp

Enclosed is information and a C-102 form for the New Mexico Federal Lease, Well No. 1. This is the well which has been set up for hearing January 22, 1986, for an unorthdox location.

If you need addional information, please contact me at (915) 688-0374.

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Sun Exploration and Production Co.	NEW MEXICO FEDERAL	1

Unit Letter	Section	Township	Range	County
H	24	18 SOUTH	33 EAST	LEA

Actual Footage Location of Well:
2080 feet from the NORTH line and 750 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3952.3'	Morrow Gas	Wildcat (Morrow)	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

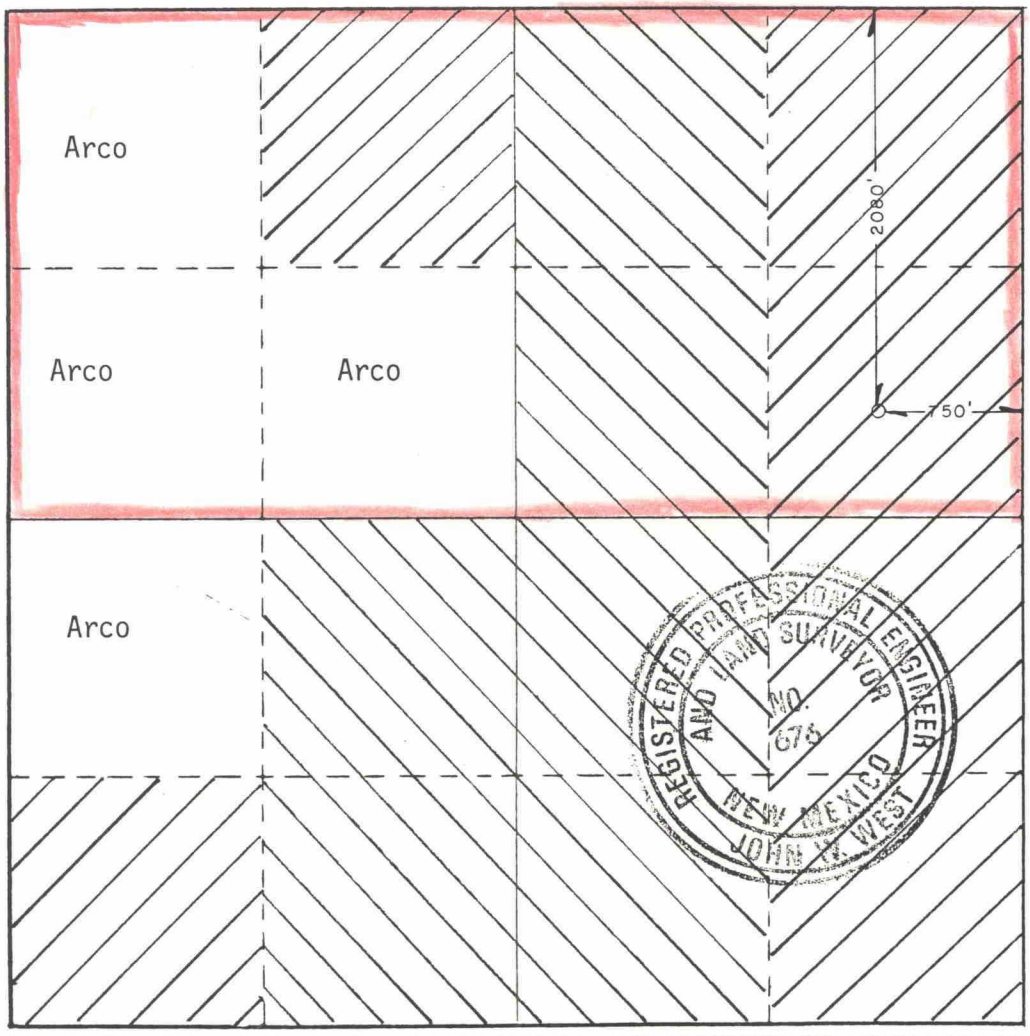
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

[X] Yes [ ] No If answer is "yes," type of consolidation Arco Oil and Gas Communitiaztion

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Dee Ann Kemp

Name: Dee Ann Kemp

Position: Assoicate Accountant

Company: Sun Exploration and Production

Date: 1-6-86

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 knowledge and belief.

Date Surveyed: DECEMBER 19, 1985

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

91746

Fed Lse NM-04591 Fed Lse LC-063645 State Lse E-316

Sun Production Operations Division
Southwestern District

Case 8812

SUN

Sun Exploration and Production Company
No 24 Smith Road
ClayDesta Plaza
PO Box 1861
Midland TX 79702 9970
915 688 0300

January 16, 1986

Mr. David Catanach
State of New Mexico
Energy & Mineral Dept.
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: New Mexico Federal Comm.
Well No. 1
Unorthodox location
Wildcat Morrow Field
Sec. 24, T-18-S, R-33-E
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed are three copies of a revised geological report and plats for the referenced well. This information was sent to you earlier for an unorthodox location, but since then the location had to be moved due to an archeology survey. Please replace the data you have now with the revised data.

If you have any questions, please contact me at (915) 688-0374.

Very truly yours,
SUN EXPLORATION & PRODUCTION COMPANY

Dee Ann Kemp

Dee Ann Kemp
Associate Accountant

DAK:skw
Encs.

GEOLOGICAL REPORT
PROPOSED UNORTHODOX LOCATION
NEW MEXICO FEDERAL COMM. #1
LEA COUNTY, NEW MEXICO

Sun Exploration and Production Company proposes to drill a 13,700' Morrow test in an unorthodox location. The location is roughly 20 miles southwest of Lovington, New Mexico and measures 2080' FNL and 600' FEL of Section 24 in Township 18 South, Range 33 East.

GEOLOGY

The proposed test is located on the northern flank of the Delaware Basin, approximately 15 miles west of the Central Basin Platform. Regional dip in this portion of the basin is to the southwest. Local structural anomalies occur as a result of deep-seated faulting during Mississippian through Permian time.

The primary objective of the proposed test is the Pennsylvanian Morrow formation. In the Delaware Basin, the Morrow is a sequence of interbedded sands, shales, and carbonates of fluvio-deltaic origin. Optimum hydrocarbon production occurs when porous sands are encountered on the flanks and crests of structural highs.

STRUCTURAL BASIN FOR UNORTHODOX LOCATION

Structure is the primary reason for selecting an unorthodox location for New Mexico Federal Comm. #1. Exhibit B is a structure map on the top of the Middle Morrow zone. This interpretation uses subsurface data only. Clearly, subsurface data alone is insufficient to adequately define structure at the proposed location. Thus, geophysical data was integrated into the subsurface structural interpretation in order to better define structure.

Exhibit C is an isochron map of the interval Yates to Mississippian. The isochron map reflects structural dip such that thicks on the isochron correspond to structural lows, while thins represent structural highs. Note the north-northeast trending thin which extends from the southeast quarter of Section 24 to the northeast quarter of Section 18. This thin suggests a fault block which is upthrown and tilted to the west.

PROPOSED UNORTHODOX LOCATION

Our objective in the New Mexico Federal Comm. #1 is to penetrate Morrow sands on the flank of the west dipping fault block described above. Exhibit 'D' shows that in a standard location (1980' FNL & 1980' FEL) in Section 24) the Morrow is structurally low. Morrow sands would be shaley and tight as in the Southland Royalty Aztec '22' Fed Com #1, located in Section 22, T18S, R33E. (See Exhibit C) At the proposed unorthodox location, (2080' FNL and 600' FEL in Section 24) the Morrow would be structurally higher, thereby enhancing our chance of encountering porous, productive Morrow sands similar to those in the Aztec Federal 'MA' #1 located in Section 27. Our objective then, in seeking an unorthodox

rather than a standard location, is to move updip on structure. This increases the odds of 1) trapping hydrocarbons and 2) encountering porous reservoir rock.

BASIS FOR LAY-DOWN PRORATION UNIT

It is geological conditions - specifically, structural configuration - which dictate the need for lay-down proration units in Section 24. Exhibit 'C' shows that the east half of Section 24 coincides with the crest of a structural high, while the west half of Section 24 is relatively low. Utilizing lay-down proration units in this section would allow us to drill not one, but two wells near the structural crest, thus enhancing effective drainage of the reservoir.

R33E

R34E

T18S

PROPOSED LOCATION
SUN NEW MEXICO FEDERAL #1

CITIES SERV Stoltz, et al 1 13600
5382
CARPER Carper St 2 12910
5480
9145
YATES W Vacuum 1 9000
4540
5481
CITIES St "DW" 1 11094
GULF Lea "XA" St 1 8950
4500
4460
AMOCO State "HS" Com
4290
BTA Corbin 1 13500
4271
UNION TX Amoco St 1 14002
4546
AZTEC Fed MA 2 13461
L R FRENCH Aztec Uncle 1 14858
13771
13510
13316
5298
HILLIARD McElvain 1 14075
10260
CW TRAINER McElvain 2 13650
SUN Pennzoil Fed 1 13694
4946
4897
SANTA FE Ard St 1 5500
HILLIARD Union Tx 1 10000
4866
AMOCO Fed AB 1 13655
4296
UNION CAL Pipeline St 1 13716
BROWN State 1 12670

SUN	CLARENCE STUMHOFFER
ARCO O & G CO.	MARATHON OIL CO.
TEXACO, INC.	SANTA FE EXPL. CO.
CONOCO, INC.	J. I. O'NEILL, JR.
HNG OIL CO.	DEPCO, INC. & MARATHON OIL CO.
CAL-MON OIL CO.	MANZANO OIL CO.

Central Region

Sun Exploration and Production Company

EXHIBIT A

MESCALERO RIDGE AREA
LEA CO., NEW MEXICO

Horizon Contoured

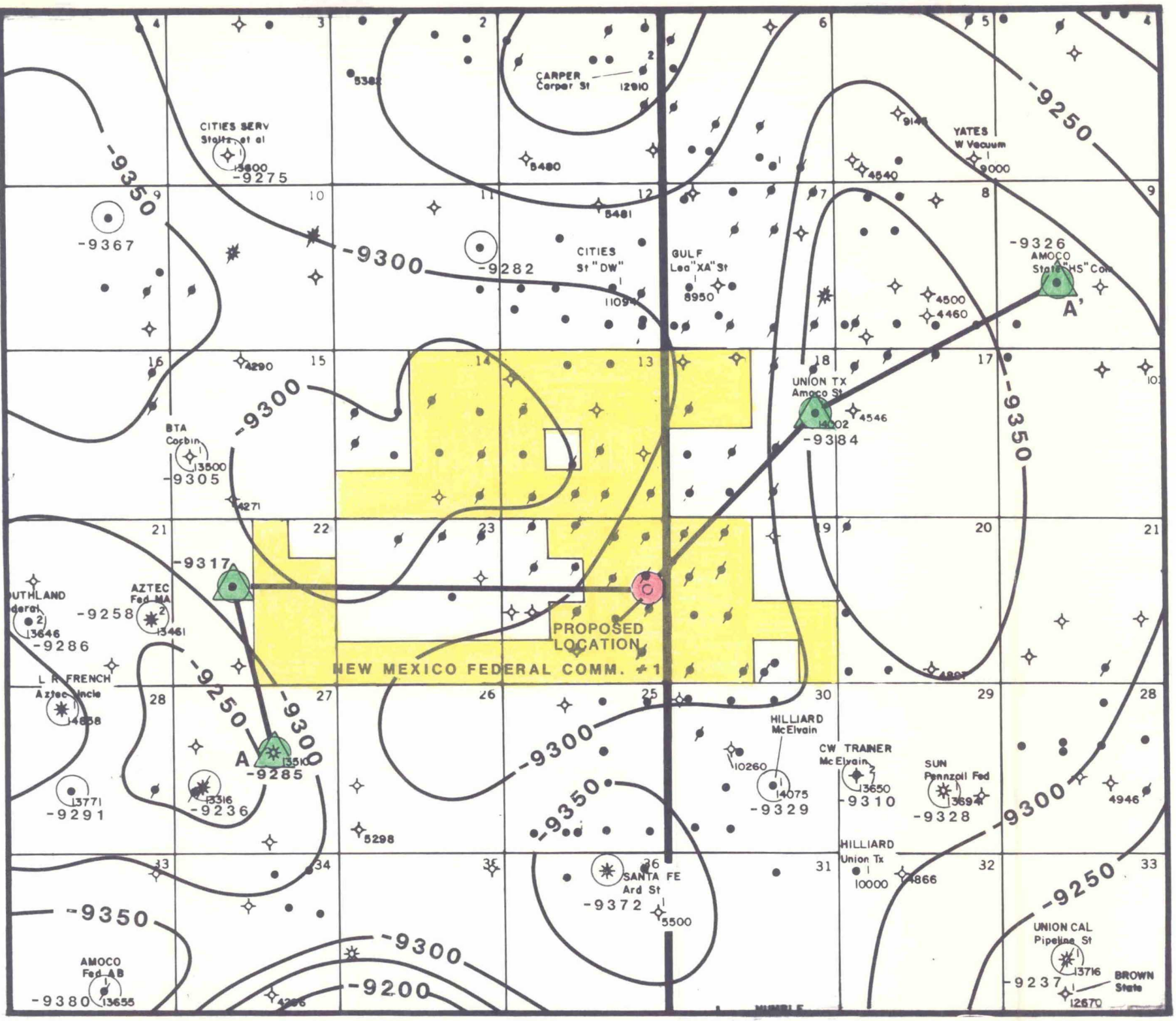
Interpretation By | Date | Contour Interval

Scale | Datum | Drafting By

Author | Rev. No.

R33E R34E

T18S



Central Region

SUN Sun Exploration and Production Company

EXHIBIT B

MESCALERO RIDGE AREA

⊛ — WELLS WHICH PENETRATED MORROW

SUBSURFACE STRUCTURE MAP:

Horizon Contoured: **TOP MIDDLE MORROW**

Interpretation By	Date	Contour Interval
J.A.FERRIS	10/85	C.I. 50'

Scale — Datum — Drafting By