



American Exploration Company

May 9, 1989

RECEIVED

MAY 15 1989

**OIL CONSERVATION DIV.
SANTA FE**

Re: Application for Downhole
Commingling of the Teague
Blinebry and Abo Pools
Elk State No. 1
Sec. 16, T23S, R37E
Lea County, New Mexico

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

American Exploration Company respectfully requests administrative approval under the provisions of Rule 303-C to downhole commingle the Teague Blinebry and Abo/Drinkard pools in the Elk State No. 1 Well. This well is presently completed in the Teague Blinebry Oil Pool and produces 9 BOPD, 40 MCFPD and 2 BWPD. We recently tested the undesignated Abo for 10 BOPD, 130 MCFPD and 30 BWPD. Producing only the Blinebry is economically marginal due to the low rates, but commingling the two zones should return the well to profitability.

A summary of information required for commingling is attached. Additionally, American has a 100% interest in this lease and the royalty interests of each zone are common. Based on the information we have gathered, we believe the request to commingle is justified in the interest of conservataion.

If there are any questions, please contact the undersigned as soon as possible.

Very truly yours,

AMERICAN EXPLORATION COMPANY

Marty B. McClanahan
Marty B. McClanahan
Sr. Production Analyst

MBM:mm
Encl.

cc: Mr. J. T. Sexton
New Mexico Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

Elk State No. 1
Information for Downhole Commingling

- a. Operator: American Exploration Company
2100 RepublicBank Center
Houston, Texas 77002
- b. Lease, Well Location and Pools:
Elk State No. 1
330' FSL & 2310' FWL of Sec. 16, T23S, R37E
Lea County, New Mexico
Teague Blinebry and Undesignated Abo Pools
- c. Acreage Dedication (40 acres) Form C-102 is attached. Offset operators are listed on schedule attached.
- d. 24 hour productivity test - Form C-116 attached.
- e. Commingling Computations - Attached.
- f. Allocation of Production - based on latest production tests.

	<u>Oil</u>	<u>Gas</u>	<u>Water</u>
Blinebry	47%	24%	6%
Undesignated Abo	53%	76%	94%

- g. Notification to Offset Operators.
A copy of the notice sent to offset operators.
- h. A complete resume of the well's completion history.
- i. Fluid Compatibility - See attached water analysis.



American Exploration Company

May 8, 1989

Re: Notification of Intent to
Commingle the Teague
Blineby and Abo Pools
Elk State No. 1
330' FSL & 2310' FWL of
Sec. 16, T23S, R37E
Lea County, New Mexico

OFFSET OPERATORS
ELK STATE NO. 1 LEASE

Gentlemen:

In accordance with New Mexico Oil Conservation Division regulations, you are hereby notified of American Exploration Company's application to downhole commingle production from the Teague Blineby and Undesignated Abo pools in the Elk State Well No. 1 Lease.

Very truly yours,

AMERICAN EXPLORATION COMPANY

Marty B. McClanahan
Marty B. McClanahan
Sr. Production Analyst

MBM:mm

LIST OF OFFSET OWNERS
ELK STATE NO. 1 LEASE

NE/4, SW/4, Sec. 16, T23S, R37E, Lea County, New Mexico

Texaco, Inc.
P. O. Box 3109
Midland, Texas 79702
(NE/4 SW/4 of Sec. 16, 3800-6200')

Chevron, U.S.A. Inc. (D/R NW/4-21)
P. O. Box 1635 (D/R W/2 NE/4-21)
Houston, Texas 77251

Zachary Oil Operating (to 3700'-W/2 NE/4-21)
1212 Commerce Building
Fort Worth, Texas 76102

Penroc Oil Corporation (To 3800'-SW/4-16)
P. O. Box 5970
Hobbs, New Mexico 88241

Elk Oil Company (D/R-SW/4-16)
P. O. Box 310
Roswell, New Mexico 88202

M.Y. Merchant Trading Co. (to 3700' NE/4 NW/4-21)
P. O. Box 5970
Hobbs, New Mexico 88240

MEMORANDUM

TO WHOM IT MAY CONCERN:

Pursuant to Rule 303 (C) (2) (i) of the rules and regulations of the State of New Mexico for downhole commingling, the following formula should apply as to the production allocation for the new zone added to the following well:

Elk State #1 located in Unit N; 330' FSL and 2310' FWL of Section 16, T23S, R37E, Lea County, New Mexico.

Prior Production (Before Recent Workover)

°195 BOPM @ 9% Decline GOR 5700

$$\frac{(\text{Initial Prod.}) - (\text{Economic Limit}) (12 \text{ Mo.})}{-\ln (1-\text{decline})} = \text{Total Production Rem.}$$

$$\frac{(195-45) (12)}{-\ln (1-.09)} = °19,000 \text{ BO}$$

195 BOPM (IP)
45 BOPM (E.L.)
9% decline

Current Production (After Workover)

°490 BOPM @ 9% Decline

$$\frac{(490-45) (12)}{-\ln (1-.09)} = °56,000 \text{ BO}$$

490 BOPM (IP)
45 BOPM (EL)
9% decline

56 MBO -19 MBO = °37 MBO

Submit 2 copies to Appropriate District Office.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator American Exploration Company		Pool Teague Blinberry		County Lea												
Address 2100 RepublicBank Center, Houston, Texas 77002		TYPE OF TEST - (X)		Scheduled <input type="checkbox"/> Completion <input type="checkbox"/> Special <input type="checkbox"/>												
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	% OF TESTS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU FT/BL.
		U	S	T	R							WATER BBL.S.	GRAV. OIL	OIL BBL.S.	GAS M.C.F.	
Elk State	1	N	16	23	37		P	2"	23	M	24	2	38	9	40	4.4444

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

Signature *Marty B. McClanahan*

Marty B. McClanahan, Sr., Production Analyst
Printed name and title

Date _____ 713-237-0800
Telephone No.

Submit 2 copies to Appropriate District Office.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator		Pool		County												
American Exploration Company		Undesignated Abo		Lea												
Address		TYPE OF TEST - (X)		Completion <input checked="" type="checkbox"/> Special <input type="checkbox"/>												
2100 RepublicBank Center, Houston, Texas 77002		Scheduled <input type="checkbox"/>														
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATES	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL.	
		U	S	T	R							WATER BBL.S.	GRAV. OIL	OIL BBL.S.		GAS M.C.F.
Elk. State	1	N	16	23	37	3/13/89	P	2"	23	M	24	30	38	10	130	13

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

Signature Marty B. McLanahan
Marty B. McLanahan, Sr. Production Analyst

Printed name and title

4/11/89

713-237-0800

Date

Telephone No.

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:
OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER ☐

b. Type of Completion:

NEW WELL ☐ WORK OVER ☐ DEEPEN ☒ PLUG BACK ☐ DIFF RESVR ☐ OTHER ☐

2. Name of Operator

American Exploration Company

3. Address of Operator

2100 RepublicBank Center, Houston, Texas 77002

4. Well Location

Unit Letter N: 330 Feet From The South Line and 2310 Feet From The West Line

Section 16

Township 23S

Range 37E

NMPM

Lea

County

10. Date Spudded

12/22/67

11. Date T.D. Reached

1/18/68

12. Date Compl. (Ready to Prod.)

3/16/89

13. Elevations (DF& RKB, RT, GR, etc.)

3296.6 GL

14. Elev. Casinghead

15. Total Depth

7316

16. Plug Back T.D.

7250

17. If Multiple Compl. How Many Zones?

3

18. Intervals Drilled By

Rotary Tools

Cable Tools

X

19. Producing Interval(s), of this completion - Top, Bottom, Name

6718-78 6815-96 6904-95 7009-38 Undesignated Abo

20. Was Directional Survey Made

No

21. Type Electric and Other Logs Run

No

22. Was Well Cored

No

23.

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB/FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	32.3#	1055	12-1/4	450 sx.	
7"	25 & 26#	7350	8-3/4	550 sx.	

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
					2-7/8"	6680	6680

25. TUBING RECORD

26. Perforation record (interval, size, and number)

6718-78 (14 shots)

6815-96 (18 shots)

6904-95 (32 shots)

7009-38 (8 shots)

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL

AMOUNT AND KIND MATERIAL USED

6718- 7038 10,000 gals. 15% NEEF w/90

bbls. KCL wtr.

28. PRODUCTION

Date First Production

3/16/89

Production Method (Flowing, gas lift, pumping - Size and type pump)

P

Well Status (Prod. or Shut-in)

Prod.

Date of Test

3/13/89

Hours Tested

24

Choke Size

Prod'n For Test Period

Oil - Bbl.

10

Gas - MCF

130

Water - Bbl.

40

Gas - Oil Ratio

13

Flow Tubing Press.

23

Casing Pressure

Calculated 24-Hour Rate

Oil - Bbl.

10

Gas - MCF

130

Water - Bbl.

4

Oil Gravity - API - (Corr.)

42.1

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Sold to El Paso Natural Gas

Test Witnessed By

30. List Attachments

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature

Marty B. McClanahan

Printed Name

Marty B. McClanahan

Title

Sr. Prod. Analyst

Date

4/04/89

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy _____	T. Canyon _____	T. Ojo Alamo _____	T. Penn. "B" _____
T. Salt _____	T. Strawn _____	T. Kirtland-Fruitland _____	T. Penn. "C" _____
B. Salt _____	T. Atoka _____	T. Pictured Cliffs _____	T. Penn. "D" _____
T. Yates _____	T. Miss _____	T. Cliff House _____	T. Leadville _____
T. 7 Rivers _____	T. Devonian _____	T. Menefee _____	T. Madison _____
T. Queen _____	T. Silurian _____	T. Point Lookout _____	T. Elbert _____
T. Grayburg _____	T. Montoya _____	T. Mancos _____	T. McCracken _____
T. San Andres _____	T. Simpson _____	T. Gallup _____	T. Ignacio Otzte _____
T. Glorieta _____	T. McKee _____	Base Greenhorn _____	T. Granite _____
T. Paddock _____	T. Ellenburger _____	T. Dakota _____	T. _____
T. Blinebry _____	T. Gr. Wash _____	T. Morrison _____	T. _____
T. Tubb _____	T. Delaware Sand _____	T. Todilto _____	T. _____
T. Drinkard _____	T. Bone Springs _____	T. Entrada _____	T. _____
T. Abo _____	T. _____	T. Wingate _____	T. _____
T. Wolfcamp _____	T. _____	T. Chinle _____	T. _____
T. Penn _____	T. _____	T. Permian _____	T. _____
T. Cisco (Bough C) _____	T. _____	T. Penn "A" _____	T. _____

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....
No. 2, from.....to.....
No. 3, from.....to.....
No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....
 No. 2, from.....to.....feet.....
 No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology

From	To	Thickness in Feet	Lithology

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

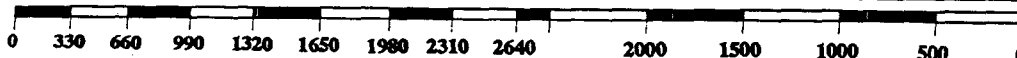
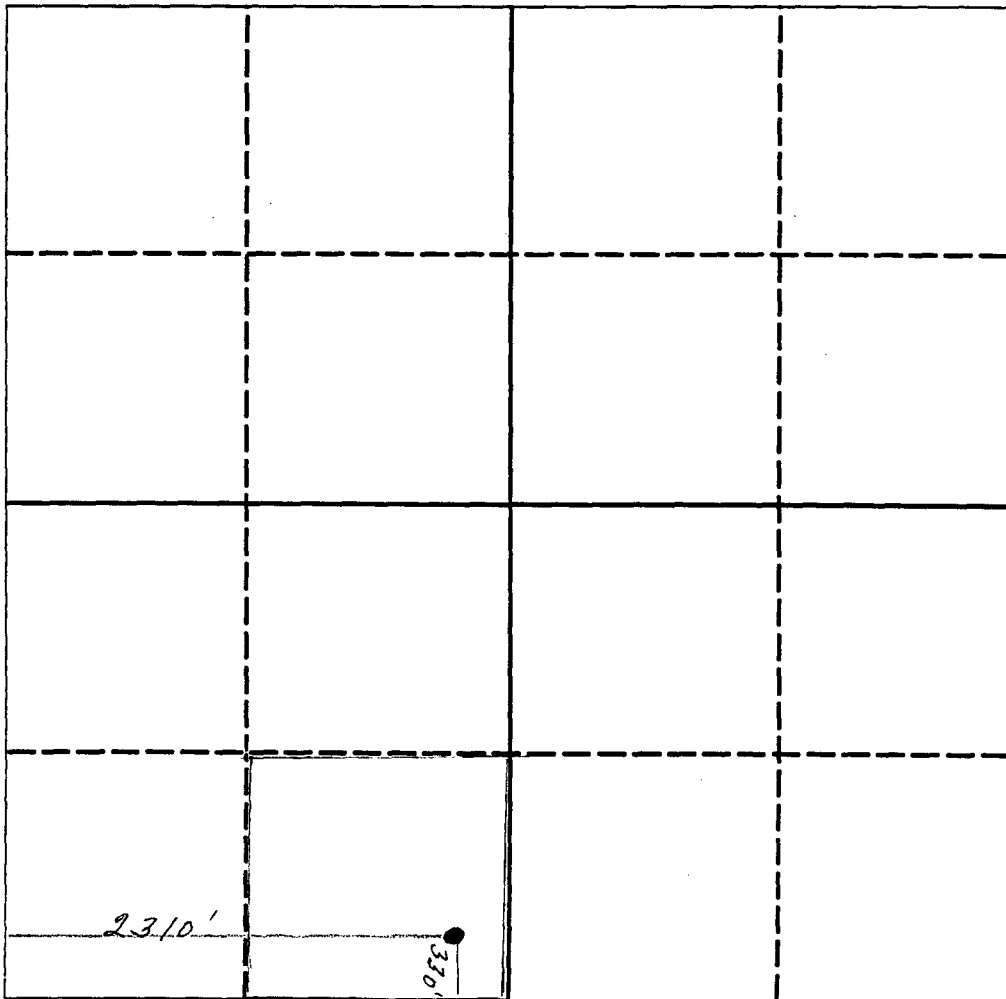
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator American Exploration Company			Lease Elk State		Well No. 1
Unit Letter N	Section 16	Township 23S	Range 37E	County Lea	
Actual Footage Location of Well: 330 feet from the South line and 2310 feet from the West line					
Ground level Elev. 3296.6	Producing Formation Abo/Drinkard		Pool Undesignated Abo		Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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 interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
☐ Yes ☐ No If answer is "yes" type of consolidation _____
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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature

Marty B. McClanahan

Printed Name

Marty B. McClanahan

Position

Sr. Production Analyst

Company

American Exploration Company

Date

May 9, 1989

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 knowledge and belief.

Date Surveyed

Signature & Seal of
Professional Surveyor

Certificate No.



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

5-15-89

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:

MC _____
DHC X _____
NSL _____
NSP _____
SWD _____
WFX _____
PMX _____

RECEIVED

MAY 19 1989

OIL CONSERVATION DIV.
SANTA FE

Gentlemen:

I have examined the application for the:

American Expl. Co. Elk State #1-N 16-23-37
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed