

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

**APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK**

1a. TYPE OF WORK  
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL  
OIL WELL ☐ GAS WELL ☒ OTHER ☐ SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR  
Estoril Producing Corporation ✓

3. ADDRESS OF OPERATOR  
11th Floor, Vaughn Bldg. Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
At surface 1980' FNL & 660' FWL, Sec. 11, T-4S, R-23E  
At proposed prod. zone Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
35 miles north of Roswell, N.M.

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any) 660' FWL

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
1320' NW Hoff Fed. 1

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
4100.8 GR

23. PROPOSED CASING AND CEMENTING PROGRAM

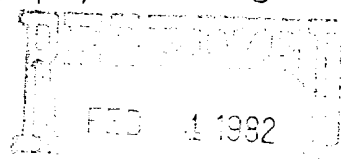
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
14 3/4"	10 3/4"	32.75	900'	550 SX CIRCULATE
* 9 7/8"	7 5/8"	24.00	1600'	300 SX CIRCULATE
7 7/8"	4 1/2"	10.50	5000'	900 SX

Blowout Prevention:

Cameron 10" 900 series BOP with 3400 psi working pressure, 4 1/2" pipe rams.

\* Intermediate casing will be set only if there are problems encountered through this section of the hole. If intermediate casing is set, reduce the hole size to 6 1/2" to total depth and run 4 1/2" casing and cement as planned.

*GAS IS DEDICATED.*



Posted ID-1  
API + NL Book  
3-19-82

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout prevention program, if any.

24. SIGNED Jerry W. Franklin TITLE Agent DATE 2/1/82

(This space for Federal or State office use)

PERMIT NO.

APPROVED

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY

MAR 12 1982

JAMES A. GILLHAM  
DISTRICT SUPERVISOR

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

DATE

2-16-82

5. LEASE DESIGNATION AND RECEIVED  
NM-33659  
6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
MAR 15 1982  
7. UNIT AGREEMENT NAME  
O. C. D.  
8. FARM OR LEASE NAME  
ARTESIA, OFFICE  
Hoffman Federal  
9. WELL NO.  
2  
10. FIELD AND POOL, OR WILDCAT  
X Wildcat-Abo  
11. SEC., T., R., M., OR BLK.  
AND SURVEY OR AREA  
Sec. 11, T-4S, R-23E  
12. COUNTY OR PARISH  
Chaves  
13. STATE  
N.M.

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.

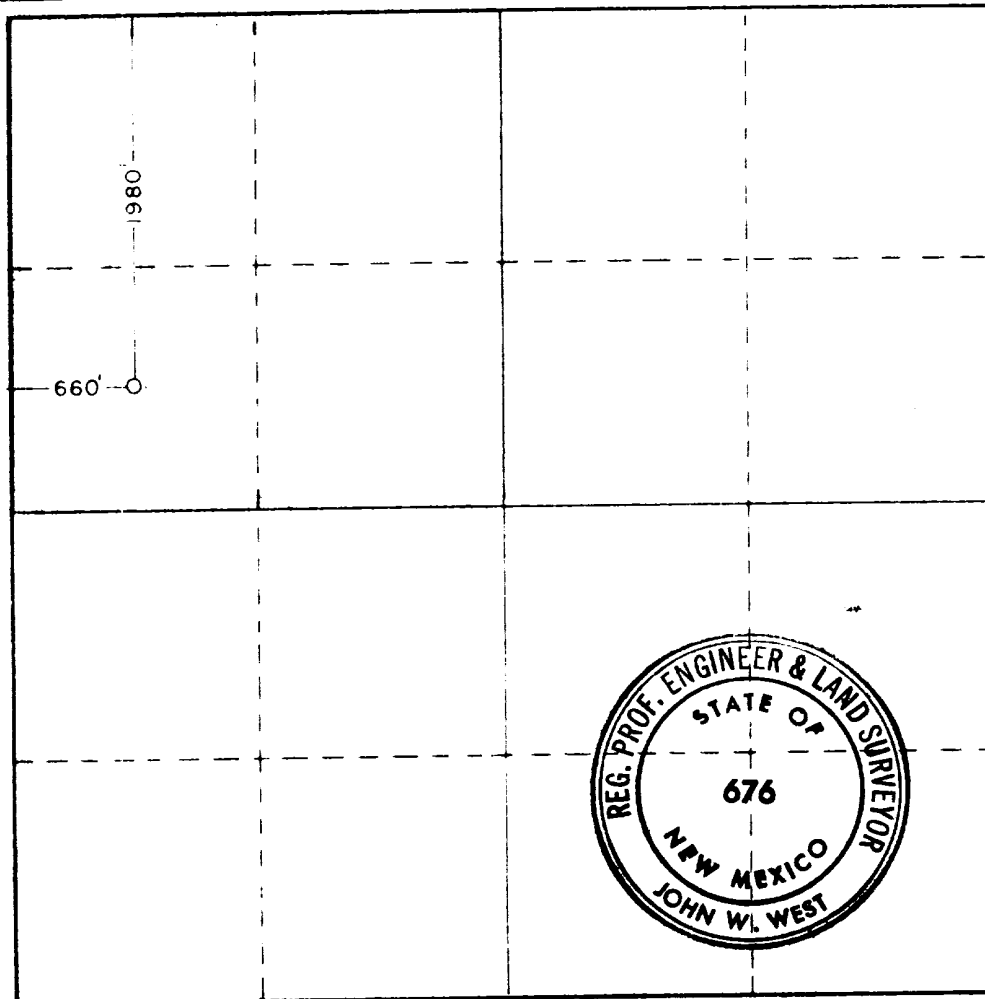
Operator <b>Estoril Producing Corp.</b>		Lease <b>Hoffman Federal</b>		Well No. <b>2</b>
Section Letter <b>E</b>	Section <b>11</b>	Township <b>4 South</b>	Range <b>23 East</b>	County <b>Chaves</b>
Actual Facture Location of Well: <b>1980</b> feet from the <b>North</b> line and <b>660</b> feet from the <b>West</b> line				
Ground Level Elev. <b>4100.8'</b>	Producing Formation <b>ABO</b>	Pool <b>WILDCAT</b>	Dedicated Acreage: <b>160</b> Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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?

☐ 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 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.

Name Jerry W. Franklin  
Position AGENT  
Company ESTORIL PRODUCING CORP.  
Date 12/30/81

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  
Dec. 21, 1981

Registered Professional Engineer and/or Land Surveyor

John W. West  
Certificate No. JOHN W. WEST 676  
PATRICK A. ROMERO 6868  
Ronald J. Eidson 3239

U.S. Geological Survey  
P.O. Drawer 1857  
Roswell, N.M. 88201

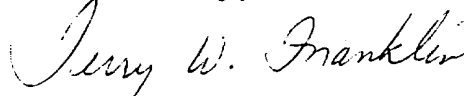
Re: Estoril Producing Corp.  
Hoffman Federal No. 2  
1980' FNL & 660' FWL  
Sec. 11, T-4S, R-23E  
Chaves County, N.M.

Dear Mr. Stewart,

This letter is being written as notification to your department that I, Terry W. Franklin, agent for Estoril Producing Corp., have contacted the surface owner of the above mentioned surface, and have received permission for construction of a drillsite on the referenced well. The surface owner will be compensated for the damages resulting from construction of the drillsite.

If the test well results in a dry hole, the drillsite will be left intact. A dry hole marker will be placed at the wellsite and location cleaned of all debris. Pits will be leveled to their original land contour in reasonable time.

Yours truly,



Terry W. Franklin  
Agent  
Estoril Producing Corp.

## APPLICATION TO DRILL

### ESTORIL PRODUCING CORPORATION

Hoffman Federal No. 2  
1980' FNL & 660' FWL  
Section 11, T-4S, R-23E  
Chaves County, New Mexico

The following answers are provided for your consideration in response to your outline under Section II of Bulletin NTL-6:

1. Location: 1980' FNL & 660' FWL, Section 11, T-4S, R-23E, Chaves County, New Mexico.
2. Elevation Above Sea Level: 4100.8'
3. Geologic Name of Surface Formation: Alluvium
4. Drilling Tools and Associated Equipment: Conventional rotary drilling tools using mud for the circulation medium.
5. Proposed Drilling Depth: 5000' +or-
6. Estimated Geological Marker Tops: San Andres 620'; Glorietta 1586'; Abo 3480'; Wolfcamp 3878'; Pennsylvanian 4065'; Granite Wash 4775'.
7. Mineral Bearing Formation: Gas bearing at 3670'.
8. Casing Program: (A) Surface Casing: 10 3/4", 32.75# new casing. (B)\*Intermediate Casing: 7 5/8", 24.0# new casing. (C) Production Casing: 4 1/2", 10.5# new casing.
9. Setting Depth of Casing and Cement for Same: (A) 10 3/4" casing set at 900'. Cement will be circulated to surface using 550 sacks of class 'C', 3% CaCl. (B) \*7 5/8" casing set at 1600' +or-. Cement will be circulated to surface using 300 sacks of class 'C' cement. This string of casing will be run only if there are problems encountered in this section of the hole. (C) 4 1/2" casing set at 5000' +or-. Cement will be brought up to cover the Abo section using 700 sacks of Pacesetter 'C', 1# Perma Check/sk, 1/4# Cello-Seal/sk, 2% KCl, followed by 200 sacks of 50-50 Pozmix, .6% CF-9, .3% TF-4, 3% KCl.
10. Pressure Control Equipment: After surface casing is set, blowout preventers will be installed. They will be Cameron 10" 900 series BOP with 3400 psi working pressure with 4 1/2" pipe rams. The blowout preventers will be tested to 1000psi after they are installed.
11. Proposed Circulation Medium: Surface hole: 14 3/4" to 900'. Spud mud containing the following properties- viscosity 32-35 with a mud weight of 9.5 ppg. Intermediate hole: 9 7/8" hole to 1600'.

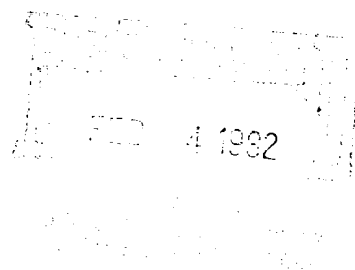
Drill out under surface casing with brine water. Add paper for seepage. Production hole: 7 7/8" hole to 5000' +or-. Brine water. 3400'-TD: Salt mud with 3-6% oil content with a water loss of 10cc to get through the Abo shale. \*If intermediate casing is set, reduce the hole size to 6 1/2" to total depth and run 4 1/2" casing as planned.

12. Testing, Logging, and Coring Program: (A) Testing: All testing will be commenced after the well has been drilled and casing set and cemented. (B) Logging: At total depth the following logs will be run: 1. Compensated Neutron Formation Density with Gamma Ray and Caliper. 2. Dual Laterolog-RXO. (C) No coring is anticipated.
13. Potential Hazards: No abnormal pressure or temperature zones are anticipated.
14. Anticipated Starting Date and Duration of Operations: February 19-March 2 for drilling operations. March 8-15 for completion.
15. Other Facets of Operation: After running 4 1/2" casing, cased hole gamma ray correlation logs will be run from total depth over and above the pay zones. The zones of interest will then be tested for commercial production.

## SURFACE USE AND OPERATION PLAN

### ESTORIL PRODUCING CORPORATION

Hoffman Federal No. 2  
1980' FNL & 660' FWL  
Section 11, T-4S, R-23E  
Chaves County, New Mexico



#### 1. Existing Roads

- A. Exhibit 'A' is a portion of a topographic map displaying the location of the proposed well as staked. The proposed location is approximately 36 miles north of Roswell, New Mexico.
- B. Exhibit 'B' consists of the existing roads within the immediate area of the proposed location.

#### 2. Access Roads

- A. Planned access roads are also shown on Exhibit 'B'.
- B. The road will be partially constructed of caliche and will be 12' wide and 300' in length. The existing ranch road will be upgraded.

#### 3. Location of Existing Wells

- A. Existing wells within the immediate area are shown on Exhibit 'B'.

#### 4. Location of Existing Tank Battery

- A. A tank battery will be installed in the drilling pad on this well. Exhibit 'C' illustrates the proposed layout.

#### 5. Location and Type of Water Supply

- A. There is no known surface water in the immediate area.
- B. All water used in drilling operations will be trucked to the drillsite from commercial sources.

#### 6. Source of Construction Materials

- A. Construction materials will be partially caliche which will be purchased from a pit located in SE/4 of SE/4, section 13, T-4S, R-23E, Chaves County, New Mexico.

#### 7. Methods for Handling Waste Disposal

- A. Well cuttings will be disposed of in the reserve pit. All waste will be buried in a separate pit.
- B. After completion, any produced water will be collected in tanks and trucked to an appropriate disposal system.

8. Auxiliary Facilities

- A. None anticipated.

9. Wellsite Layout

- A. Attached is a plat of the wellsite and rig layout. Exhibit 'D' illustrates the layout.

10. Plans for Restoration of the Surface

- A. After completion of the well, pits will be filled and the location cleaned of all trash and junk to leave the wellsite in good condition.
- B. Any ungarded pits containing fluids will be fenced off until they are filled.

11. Other Information

- A. Topography: Terrain in the area consists of a southeast facing slope of an igneous ridge. Drainage tributary to South Wylie Draw.
- B. Soil: Consists of moderately compacted sandy clay loams and loamy sands.
- C. Vegetation: Consists of Prosopis juliflora, Yucca glauca, Atriplex canescens, and Ephedra.
- D. Fauna: Lepus alleni, mephitis, and antalopus.
- E. The surface is being utilized as grazing land for cattle.
- F. The surface is private.
- G. Two isolated cultural occurrences were recorded in the vicinity of the proposed drill location. CR1: quartzite chopper and one chert primary decortication flake situated 40 ' to the east of the northwest corner of the proposed pad. CR2: single quartzite secondary decortication flake, situated 25' north of the proposed location.

12. Operator's Representative

Terry W. Franklin  
2607 Sunset Circle  
Hobbs, N.M. 88240  
Res: (505) 392-3212  
Off: (505) 397-4315

13. Certification

I hereby certify that I, or persons under my direct supervision have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and the work associated with the operations herein will be performed by ESTORIL PRODUCING CORP. and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

2-2-82  
Date

Terry W. Franklin  
Terry W. Franklin  
Agent  
Estoril Producing Corp.





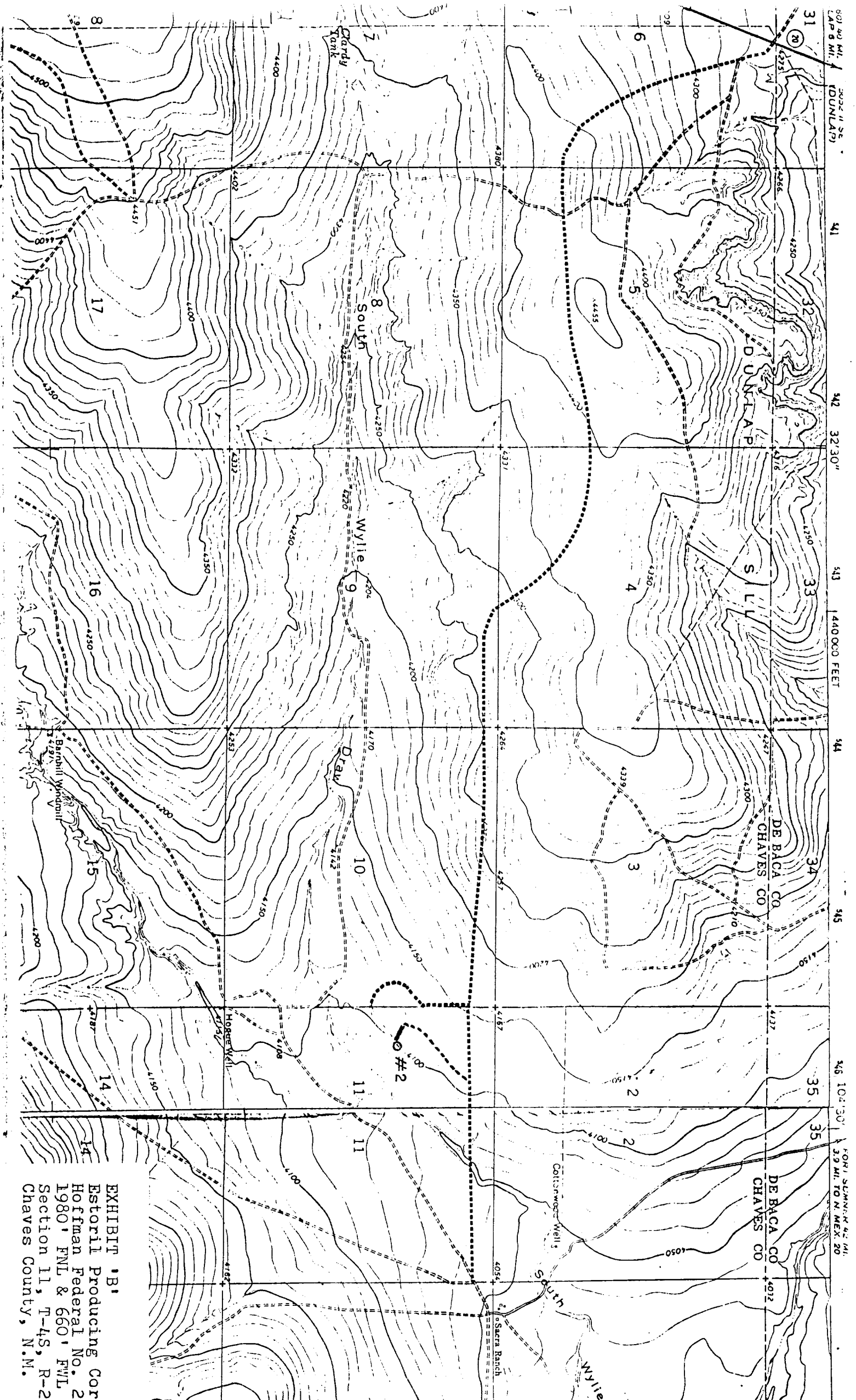
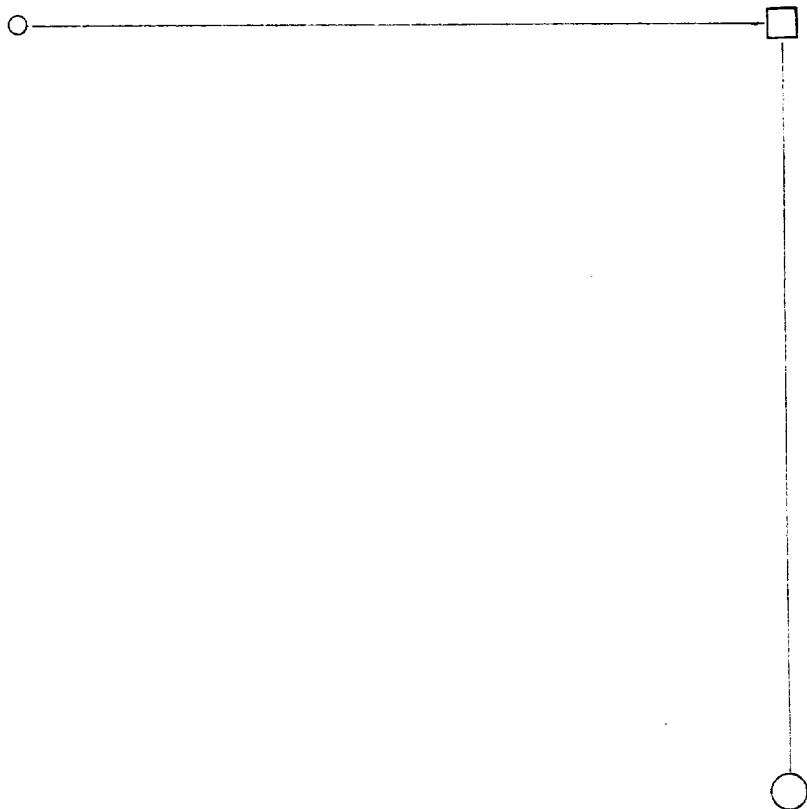


EXHIBIT 'B'  
Estoril Producing Corp  
Hoffman Federal No. 2  
1980' FNL & 660' FWL  
Section 11, T-4S, R-21  
Chaves County, N.M.



○ Well

□ Separator

○ Stock Tank

Exhibit 'C'  
Estoril Producing Corp.  
Hoffman Federal No. 2  
Sec. 11, T-4S, R-23E  
Chaves County, N.M.



NMAS  
New Mexico Archaeological Services, Inc.

P. O. Box 1241  
Carlsbad, New Mexico 88220  
(505) 887-7646

25 January 1982

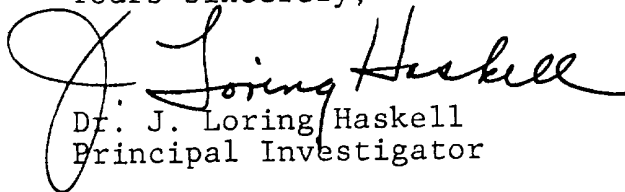
Mr. Terry Franklin  
Agent for  
ESTORIL PRODUCING CORPORATION  
2607 Sunset Circle  
Hobbs, New Mexico 88240

Dear Mr. Franklin:

Enclosed please find NMAS' Archaeological Clearance Report for ESTORIL PRODUCING CORPORATION's proposed Hoffman Federal Well No. 2, Hoffman Federal Well No. 3, Hoffman Federal Well No. 5, associated access roads, and modifications to the existing ranch road in Section 11, T4S, R23E, NMPM, Chaves County, New Mexico. Three isolated cultural resources (CR) were recorded during this reconnaissance. These remains are attributed to en passant activities and hence NMAS is suggesting clearance for these projects.

If you have any questions pertaining to this report, please call my office. Thank you for asking NMAS to do this reconnaissance.

Yours sincerely,

  
Dr. J. Loring Haskell  
Principal Investigator

Enclosure

cc: Ms. Ann Ramage, BLM, Roswell  
Mr. George Stewart, USGS, Roswell  
Mr. Curtis Schaafsma, Laboratory of Anthropology,  
Santa Fe  
Mr. Thomas W. Merlan, SHPO, Santa Fe

as

Archaeological Clearance Report

for

ESTORIL PRODUCING CORPORATION

Hoffman Federal Well No. 2  
Ranch Road to be Upgraded,  
Section 11, T4S, R23E, NMPM, Chaves County, New Mexico  
Hoffman Federal Well No. 3  
Hoffman Federal Well No. 5

Prepared

By

John W. Hoopes  
and  
J. Loring Haskell

Submitted

By

Dr. J. Loring Haskell  
Principal Investigator  
New Mexico Archaeological Services, Inc.  
Carlsbad, New Mexico

25 January 1982

Permit No. 81-NM-306

# ABSTRACT

New Mexico Archaeological Services, Inc., representing ESTORIL PRODUCING CORPORATION, Midland, undertook an archaeological reconnaissance of Bureau of Land Management lands scheduled to be impacted by the construction of three drill locations, their access roads, and a ranch road to be upgraded. The investigated areas are situated in Sections 11 and 12, T4S, R23E, NMPM, Chaves County, New Mexico. Two isolated cultural occurrences (CR) were recorded in the vicinity of the proposed Hoffman Federal Well No. 2 and a single isolated occurrence (CR) was noted on the ranch road to be upgraded. Clearance is suggested for all proposed ESTORIL work.

## Introduction

On 23 January 1982, New Mexico Archaeological Services, Inc., (NMA), Carlsbad, undertook for ESTORIL PRODUCING CORPORATION, Midland, an archaeological reconnaissance of federal lands administered by the Bureau of Land Management in Chaves County, New Mexico. Reconnoitered areas will be impacted by the construction of three drill locations, their associated access roads, and a ranch road to be upgraded. This project was advanced by Mr. Terry W. Franklin, Agent, ESTORIL PRODUCING CORPORATION, and administered by Dr. J. Loring Haskell, Principal Investigator, NMA, Inc. This reconnaissance was undertaken by Mr. John C. Haight and Mr. John W. Hoopes, Research Assistants, NMA.

## Survey Technique

For this investigation, ESTORIL PRODUCING CORPORATION's proposed locations were reconnoitered for evidence of man's past activities by walking them in a series of 25 ft wide, close interval ( $15^\circ$  or less), zigzag transects. In addition, an added zone embracing to 20 ft on each side of the staked 400 X 400 ft locations, and hence lying outside the bounds of the proposed work areas, was reconnoitered by a similar means. As for the access roads and the road to be modified, they were walked in two 25 ft wide transects. Methodologically, this procedure served to promote optimal conditions for the visual examination of areas to be impacted by construction-related activities.

Hoffman Federal Well No. 2

## Location

The proposed location will measure 400 X 400 ft on federal lands and will be situated 1980 ft from the north line and 660 ft from the west line of:

Section 11, T4S, R23E, NMPM, Chaves County, NM

Thus it will be situated in the:



SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

The associated access road will measure 20 X 300 ft and will be situated in the:

SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

Map Reference: USGS DUNLAP SILL QUADRANGLE,, 7.5 Minute Series, 1967.

### Terrain

ESTORIL PRODUCING CORPORATION's proposed drill location will be situated on the southeast-facing slope of an igneous ridge system known as Dunlap Sill. This landform is subject to ephemeral sheetwash with drainage tributary to South Wylie Draw. Soils consist of moderately-compacted sandy clay loams and loamy sands. Inclusions consist of chert, quartzite, and basalt cobbles and gravels. Occasional gypsiferous outcroppings were noted as well.

### Floristics

Local soils host a moderate overstory of Prosopis juliflora, Yucca glauca, Atriplex canescens, and Ephedra sp. Attendant forbs include Gutierrezia sarothrae, Senecio longilobus, Perezia nana, and Coldenia canescens. Grasses present in the floral community include Sporobolus airoides, Bouteloua sp., Scleropogon brevifolius, and Tridens pulchellus.

### Cultural Resources

Two isolated cultural occurrences (CR) were recorded in the vicinity of the proposed drill location. CR 1, consisting of a quartzite chopper and one chert primary decortication flake, is situated 40 ft to the east of the northwest corner of the proposed pad. It is thus located in the:

SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

UTM: Zone 13, N3,759;540; E545,770

Map Reference: USGS DUNLAP SILL QUADRANGLE, 7.5 Minute Series, 1967.

CR 2, consisting of a single quartzite secondary decortication flake,

situated 25 ft north of the center of the proposed location. It is thus located in the:

SW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

UTM: Zone 13, N3,759, 410; E545,810

Map Reference: USGS DUNLAP SILL QUADRANGLE, 7.5 Minute Series, 1967.

These remains are indicative of prehistoric activity in the area; however, occupation of the surveyed area was probably limited to periods of time encompassing no more than a day or two. Usage was limited to hunting and gathering activities requiring the manufacture of stone tools. More intensive occupation was to the southeast, i.e., on the banks of South Wylie Draw.

#### Recommendations

NMAS recommends clearance for ESTORIL PRODUCING CORPORATION's proposed Hoffman Federal Well No. 2 and its access road and suggests that work-related activities proceed in accordance with company plans. Clearance, of course, is granted by the Bureau of Land Management. If additional cultural resources are encountered during construction, the BLM and NMAS should be notified immediately.

#### Modifications to Existing Ranch Road

##### Location

As proposed, ESTORIL PRODUCING CORPORATION will upgrade approximately 1500 ft of existing ranch road. It will measure 20 ft in breadth and is situated in the:

SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

NW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

Map Reference: USGS DUNLAP SILL QUADRANGLE, 7.5 Minute Series, 1967.

##### Terrain

ESTORIL PRODUCING CORPORATION's road to be upgraded is situated on a mild slope overlooking South Wylie Draw to the east. Subject to sheetwash,

drainage is to this catchment. Soils are moderately-compacted sandy clay loams and loamy sands, hosting occasional basaltic and gypsiferous inclusions as well as chert and quartzite gravels and cobbles.

### Floristics

This landform is marked by an overstory consisting of Prosopis juliflora, Yucca glauca, Atriplex canescens, and Ephedra sp. The forbs recorded include Gutierrezia sarothrae, Senecio longilobus, Perezia nana, and Coldenia canescens. The Gramineae is represented by Sporobolus airoides, Bouteloua sp., Scleropogon brevifolius, and Tridens pulchellus.

### Cultural Resources

A third isolated cultural occurrence was recorded on the existing ranch road to be upgraded. CR 3, consisting of a single quartzite primary decortication flake, is situated 1000 ft south of the beginning of the road to be upgraded. Its location is in the:

NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 11, T4S, R23E, NMPM, Chaves County, NM

UTM: Zone 13, N3,759,660; E545,800

Map Reference: USGS DUNLAP SILL QUADRANGLE, 7.5 Minute Series, 1967.

This remain is attributed to brief exploitation of the landform's lithic resources by Archaic (A.D. 750-950) or Jornada Mogollon (A.D. 950-1350) social units.

### Recommendations

NMAS recommends clearance for ESTORIL PRODUCING CORPORATION's proposed modifications to the existing ranch road and suggests that work-related activities proceed in accordance with company plans. Clearance, of course, is granted by the Bureau of Land Management. If additional cultural resources are encountered during construction, the BLM and NMAS should be notified immediately.