

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

30-025-26439

## 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

Amoco Production Company

## 3. ADDRESS OF OPERATOR

P. O. Box 68, Hobbs, NM 88240

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*)

At surface

660' FNL & 1980' FEL  
(Unit B NW 1/4 NE 1/4)

At proposed prod. zone

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

45.8 miles south of Hobbs, NM

## 15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

## 18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

## 16. NO. OF ACRES IN LEASE

## 19. PROPOSED DEPTH

13,700

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

320

## 20. ROTARY OR CABLE TOOLS

Rotary

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

3641.2

## 22. APPROX. DATE WORK WILL START\*

8-15-79

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	54.5#	450'	Circ. to Surf
12-1/4"	9-5/8"	40.0#	5,000'	Circ. to Surf
8-3/4"	5-1/2"	17 & 20#	13,700'	Tie back to 9-5/8"

Propose to drill and equip well in the Penn Zone. After reaching TD, logs will be run and evaluated; perforate and/or stimulate as necessary in attempting commercial production.

Mud Program:

0 - 450'  
450' - 5000'  
5000' - 12400'  
12400' - 13700'

Native mud and fresh water

Native mud and brine

Add Fresh water to brine and  
circ. reserve pitAdd KCL for a 6% system. Use brine  
for make up water. At 12,800'  
raise viscosity and reduce water loss  
to 6cc for Morrow penetration.Archaeological Survey attached  
BOP Program attached  
Gas is not dedicated

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HOBBS, NEW MEXICO

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 preventer program, if any.

## 24.

SIGNED

Bob Davis

TITLE

Asst. Admin. Analyst

DATE

8-3-79

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

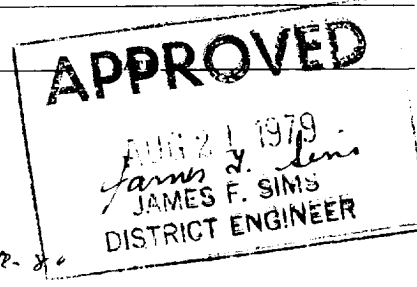
APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

0+5 - USGS, H; 1 - Hou; 1 - Susp; 1 - BD



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

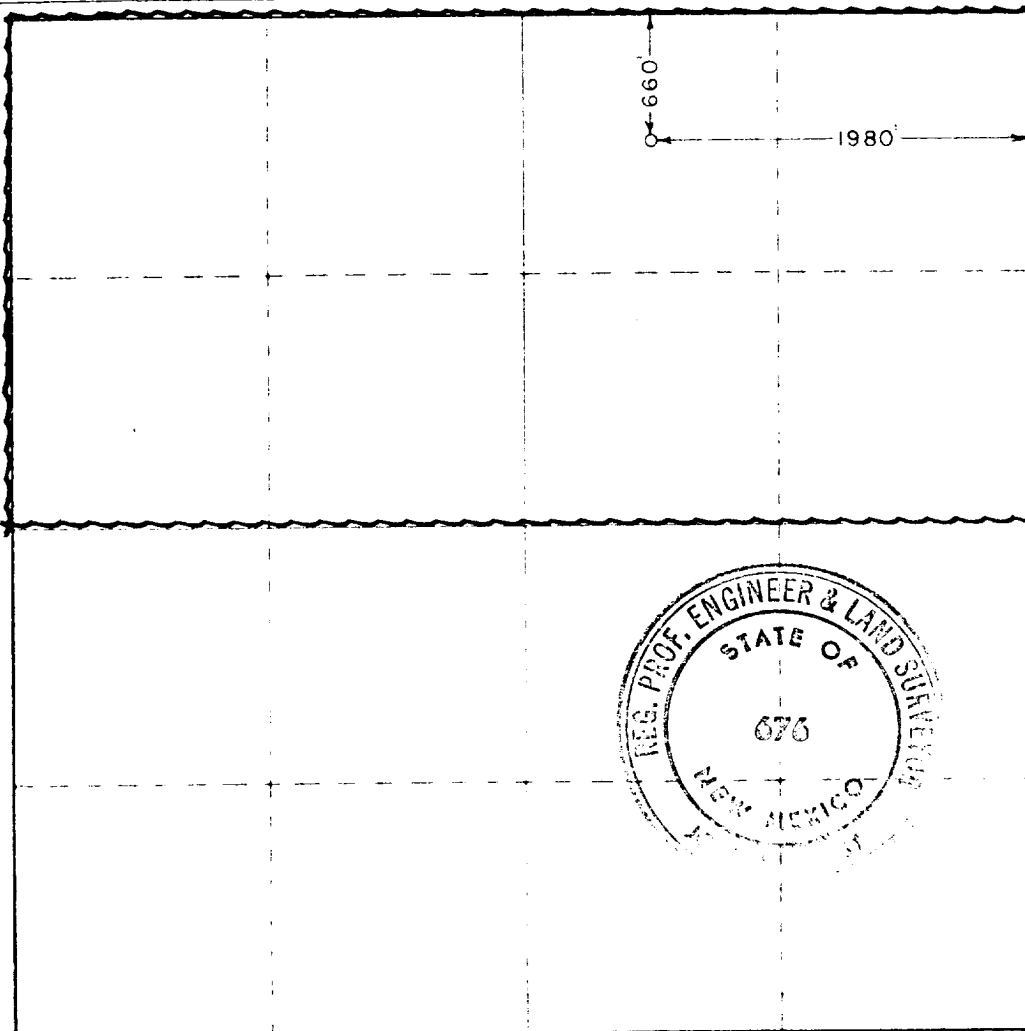
Amoco Production Company		Lease Bondurant Fed.		Acreage 6	
B	13	19 South	32 East	Lea	
660		North		1980 East	
3641.2		Penn		320	

- Outline the acreage dedicated to the subject well by colored pencil or hatchure 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.

*Bob Davis*

Asst. Admin. Analyst

Amoco Production Company

8-3-79

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.

June 7, 1979

Registered Professional Engineer  
No. 12345

*John W. West*

Certificate No. John W. West 676  
Ronald J. Eidson 3239

110 660 90 1320 660 1980 2310 2640 2000 1600 1000 500

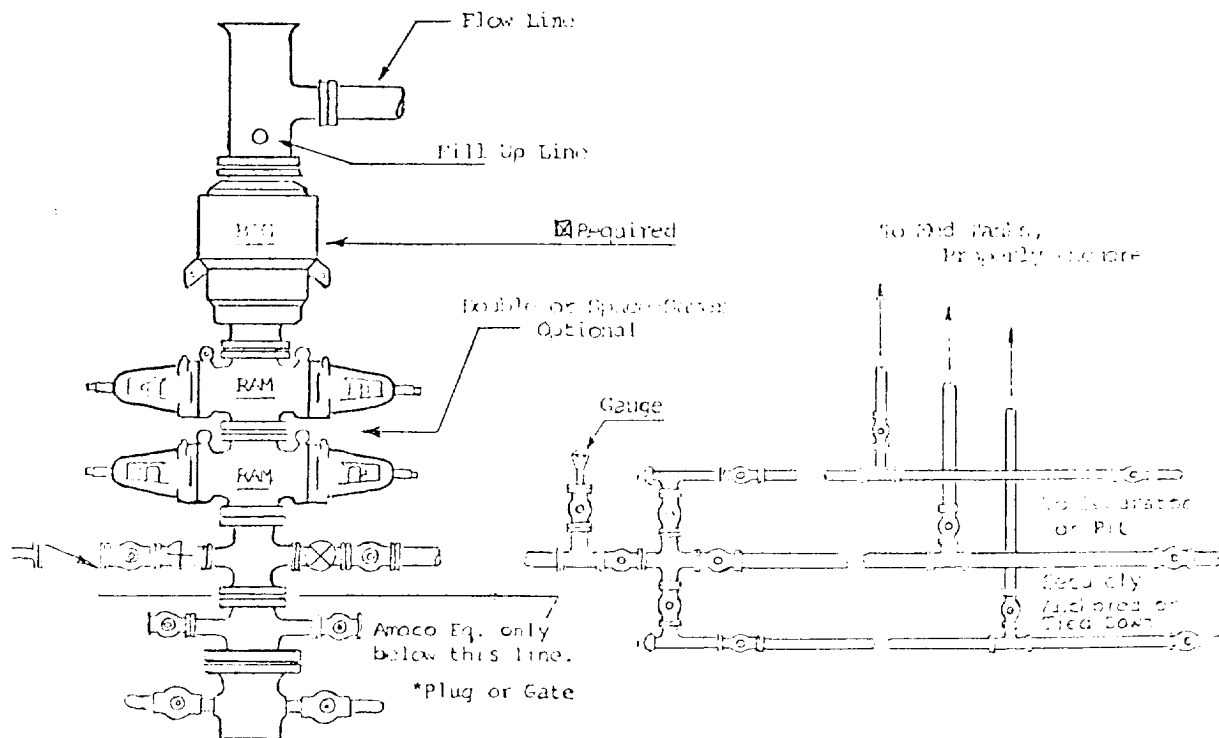
1. BOP'S TO BE FLUID OPERATED.
2. BOP'S AND ALL FITTINGS MUST BE IN GOOD CONDITION AND RATED AT 3000 PSI W.P. MINIMUM.
3. EQUIPMENT THROUGH WHICH BIT MUST PASS SHALL BE AT LEAST AS LARGE AS CASING SIZE BEING DRILLED THROUGH.
4. NIPPLE ABOVE BOP'S SHALL BE SAME SIZE AS LAST CASING SET.
5. UPPER KELLY COCK IS REQUIRED AND SHALL BE 3000# W.P. MINIMUM.
6. T. I. W. OR COMPARABLE SAFETY VALVE SHALL BE AVAILABLE ON RIG FLOOR WITH CONNECTION OR SUBS TO FIT ANY TOOL JOINT IN THE STRING. VALVE TO BE FULL BORE 5000# MIN.
7. VALVE NEXT TO SPOOL SHALL BE 4". OTHER EQUIPMENT MAY BE 3" OR 4". ALL CHOKE MANIFOLD EQUIPMENT SHALL BE FLANGED. FLOW LINE FROM MANIFOLD TO BE MINIMUM OF 3" AND STRAIGHT AS POSSIBLE WITH MINIMUM BENDS.
8. FLUID LINES FROM ACCUMULATOR TO BOP'S AND ALL REMOTE CONTROL FLUID LINES SHALL BE STEEL, AND RATED AT OR ABOVE MAXIMUM ACCUMULATOR PRESSURE. LINES SHALL BE ROUTED IN BUNDLES AND ADEQUATELY PROTECTED FROM DAMAGE.
9. USE RAMS IN FOLLOWING POSITIONS:\*

	<u>DRILLING</u>	<u>RUNNING CASING</u>
UPPER RAM	DRILL PIPE	CASING
LOWER RAM	BLIND	BLIND

\*AMOCO AREA SUPT. MAY REVERSE LOCATION OF RAMS.

10. CHOKE MANIFOLD, BEYOND SECOND VALVE FROM CROSS MAY BE OPTIONALLY POSITIONED OUTSIDE OF SUBSTRUCTURE.
11. EXTENSIONS AND HAND WHEELS TO BE INSTALLED AND BRACED AT ALL TIMES.
12. TWO INCH (2") LINES AND VALVES ARE PERMITTED ON THE KILL LINE.

NOTE: ALL UNMARKED VALVES MAY BE PLUG OR GATE VALVE, METAL TO METAL SEAL.



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Attachment to "Application for Permit to Drill", Form 9-331 C

Bondurant Federal #6  
660' FNL & 1980' FEL, Sec. 13, T-19-S R-32-E  
Lea County, New Mexico

1. Location

See attached Form C-102

2. Elevation

See attached Form C-102

3. Geologic name of surface formation.

Ogalalla

4. Type of drilling tools and associated equipment to be utilized.

See Form 9-331 C

5. Proposed drilling depth.

See Form 9-331 C

6. Estimated tops of important geologic markers.

Rustler	1510'	Bone Springs	7600'	Mid Morrow	13,200'
Queen	4140'	Wolfcamp	10702'	Miss	13,700'
Delaware	5530'	Strawn	12100'		

7. Estimated depths at which anticipated water, oil, gas or other mineral-bearing formations are expected to be encountered.

Wolfcamp 10702'  
Mid Morrow 13200'

8. Proposed casing program, including size, grade, and weight of each string and whether it is new or used.

<u>Depth</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>New or Used</u>
450'	13-3/8"	54.5#	K-55	New
5000'	9-5/8"	40#	K-55	New
13700'	5-1/2"	17 & 20#	K-55 & N-80	New

9. Proposed cementing program.

13-3/8"	Circulate to surface
9-5/8"	Circulate to surface
5-1/2"	Tie back to 9-5/8"

10. Blowout Preventer Program is attached.
11. Type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling, and the quantities and types of mud and weighting material to be maintained.
- 0 - 450' Native mud and fresh water
  - 450' - 5000' Native mud and brine
  - 5000' - 12400' Add fresh water to brine and circ reserve pit
  - 12400' - 13700' Add KCL for a 6% system, use brine for make up. At 12,800' raise viscosity and reduce water loss to 6cc for Morrow penetration.
12. Testing, logging and coring programs to be followed with provisions made for required flexibility.

CNL-FDC, GR with caliper	Surf to TD
Dual LL with MSFL - GR	Surf to TD

13. Any anticipated abnormal pressure or temperatures expected to be encountered or potential hazards, such as hydrogen sulfide gas, along with plans for mitigating such hazards.

None anticipated

14. Anticipated starting date and duration of operation.

8-15-79                      10-15-79

15. Other facets of the proposed operation operator wishes to point out for the Geological Survey's consideration of the application.

Request exemptions from the painting stipulations of Sec. 102 (a) (8) of the "Federal Land Policy and Management Act of 1976" to paint any tanks, separators, and treaters required for the production of this well, Amoco's standard gray color. If a pumping unit is required for the continued production of this well, it will be painted black with orange safety color coding which conforms with your current painting guidelines.

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## Proposed Development Plan for Surface Use

1. Existing roads including location of exit from main highway.

Detailed map showing drillsite location in relation to the nearest town and all existing roads within one mile of the wellsite are shown on Exhibit A. From Hobbs go 34.6 miles west on 180. Turn North on 176 and go 6.1 miles. Turn east and go 4.8 miles, Turn north 1600'.

2. Planned access roads.

Approx. 1600' of access road will be built. Caliche will be used.

3. Location of existing wells.

All existing well within one mile radius are shown on Exhibit C.

4. Location of tank batteries and flow lines

If the well is commercially productive, the production facilities (i.e. tanks, separators, & treaters) will be located on existing drilling pad.

5. Location and type of water supply.

Fresh & brine water to be hauled by commercial hauler.

6. Source of construction materials. Caliche will be obtained by contractor.

7. WASTE DISPOSAL

- a. Drill cuttings will be disposed of in the reserve pit.
- b. Drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry.



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- c. Trash, waste paper, garbage and junk will be burned or buried with a minimum of 24" cover. Waste material will be contained to prevent scattering by wind prior to ultimate disposal.
- d. Any produced water will be contained in tanks and be disposed of in an approved manner. Oil produced will be stored in tanks until sold, at which time it will be hauled from location.
- e. Current laws and regulations pertaining to disposal of human waste will be complied with.
- f. If productive, maintenance waste will be placed in special containers and buried or hauled away periodically.

8. ANCILLARY FACILITIES-

No camps, airstrips, etc. will be constructed.

9. WELLSITE LAYOUT-

- a. Size of Drilling Pad - 330' x 210' x 6"
- b. Compacted - Caliche
- c. Surfaced - No
- d. 450' square area around wellsite has been cleared by archaeologist.
- e. See Exhibit "D".

10. RESTORATION OF SURFACE-

Producing Well - all pits will be cut, filled, and leveled as soon as practical to original condition with rehabilitation to commence following removal of drilling and completion equipment. Rehabilitation to be completed in 180 days if possible.

Dry Hole - same as above with dry hole marker to be installed and surface reseeded if required.

11. OTHER INFORMATION-

- a. Terrain - Undulating plain
- b. Soil- Sandy loam
- c. Vegetation- Oak brush, Yucca, Broom Snakeweed, Mesquite, Muhly, Threeawn
- d. Surface Use- Grazing
- e. Ponds and Streams - None
- f. Water Wells - None
- g. Residences and Building - None
- h. Arroyos, Canyons, etc. - None
- i. Well Sign - Posted at drill site
- j. Open Pits - All pits containing liquid or mud will be fenced
- k. Archaeological Resources - None

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12. OPERATOR'S REPRESENTATIVE -

Field personnel responsible for compliance with development plan for surface use is:

J. H. Hankins, Drilling Supervisor  
P. O. Box 68  
Hobbs, NM 88240  
Office Phone: (505) 393-2167

LEASE & WELL NUMBER Bondurant Federal #6

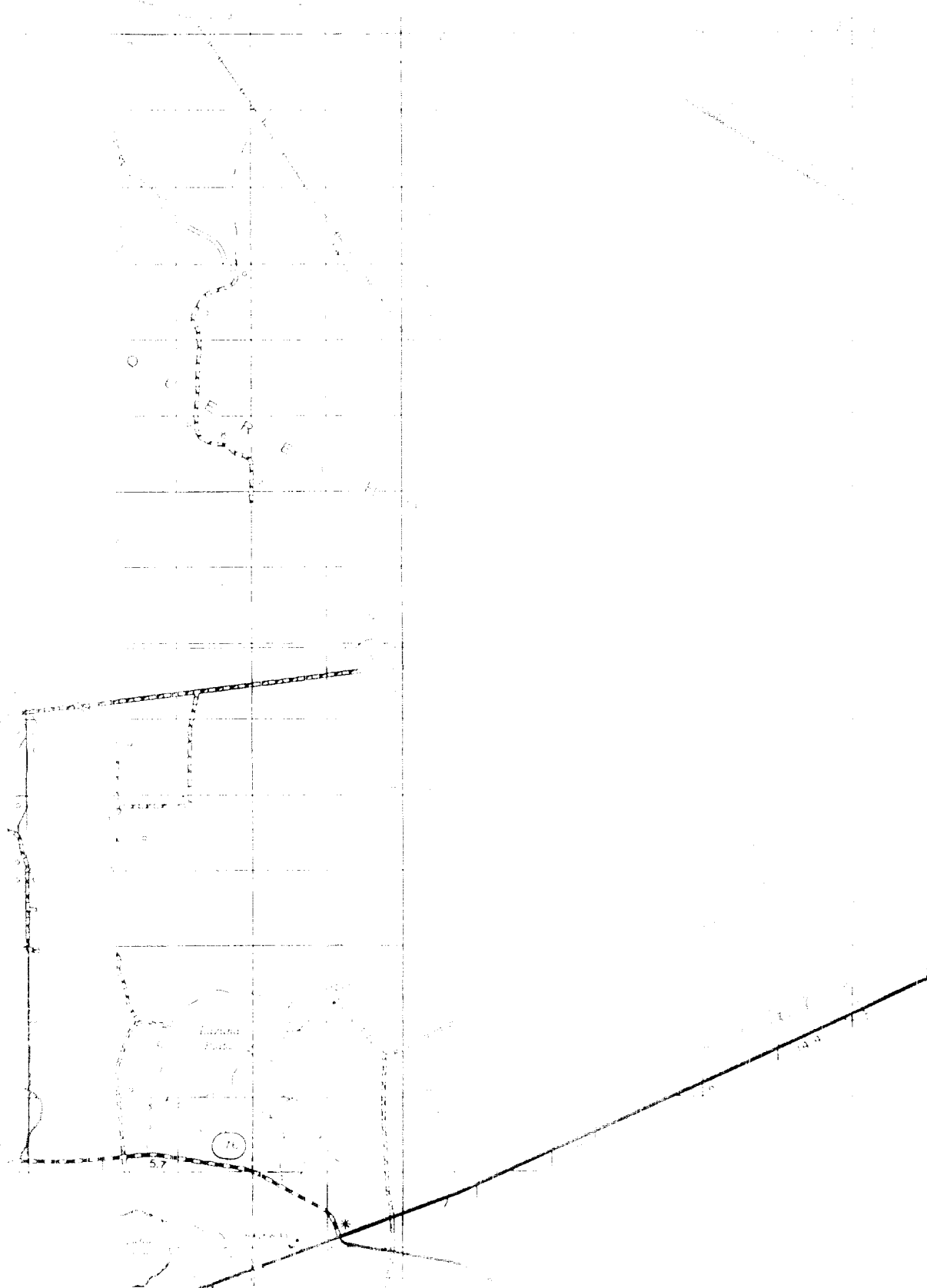
LOCATION 660' FWL & 1980' FEL, Sec. 13, T-19-S R-32-E

Certification: The following statement is to be incorporated in the plan and must be signed by the lessee's or operator's field representative who is identified in Item No. 12 of the plan.

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, that the work associated with the operations proposed herein will be performed by AMOCO PRODUCTION COMPANY and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

\_\_\_\_\_  
DATE

J. H. Hankins Drilling Supervisor  
NAME AND TITLE



300' mant. to road of  
 60' F.L. 8 1/2' 1/2' 1/2' 1/2'  
 1-1-4-S R-32-1 1/2' 1/2' 1/2' 1/2'

1-1-4-S R-32-1 1/2' 1/2' 1/2' 1/2'

31E.

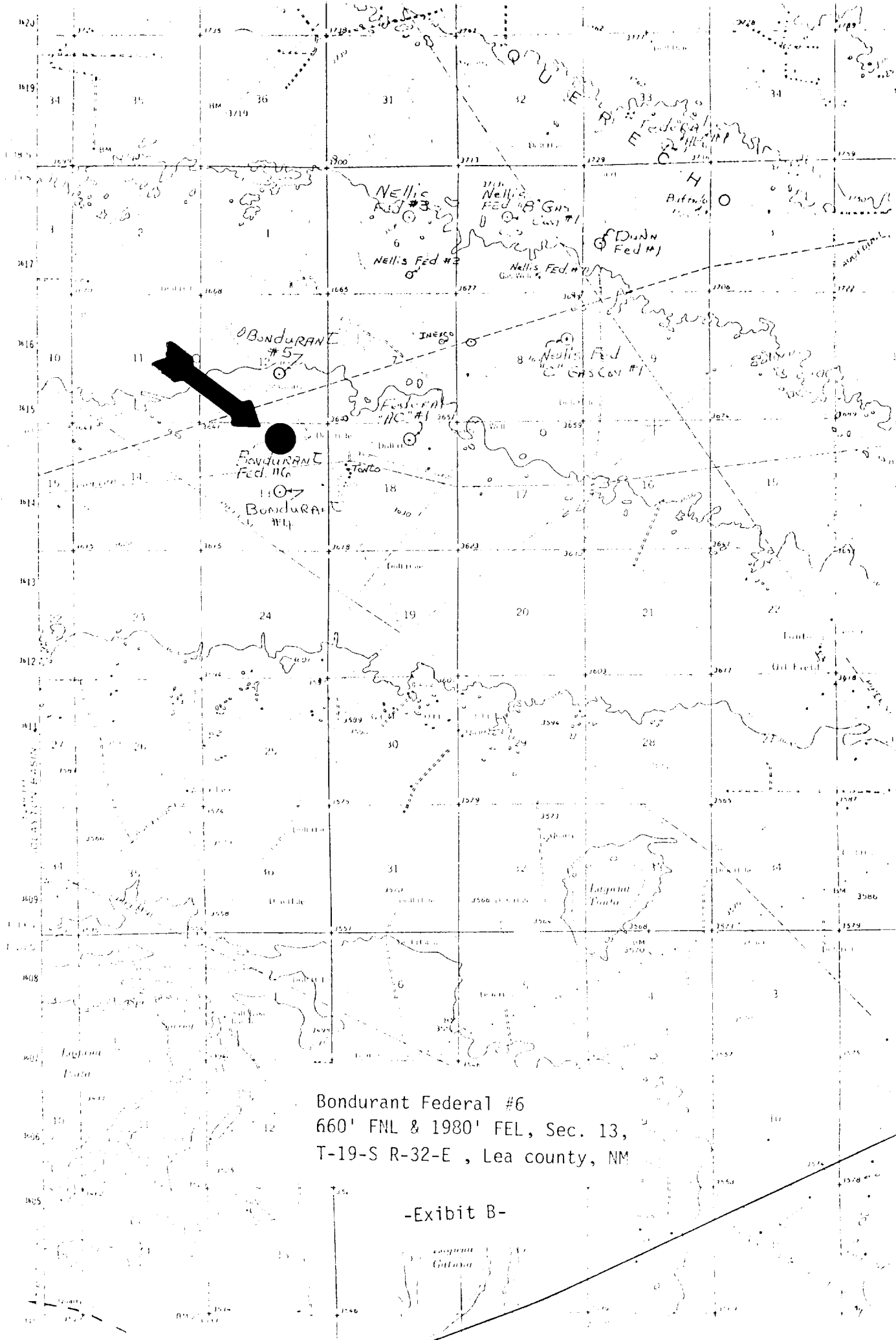
1-1-4-S R-32-1 1/2' 1/2' 1/2' 1/2'

1-1-4-S R-32-1 1/2' 1/2' 1/2' 1/2'

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Bondurant Federal #6  
660' FNL & 1980' FEL, Sec. 13,  
T-19-S R-32-E, Lea county, NM

-Exhibit B-





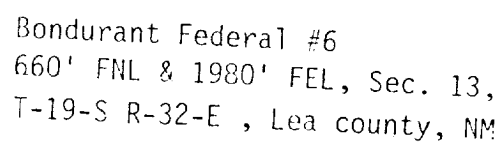
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8000' to 14000'

450



4-12' Wide Road

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Archaeological Clearance Report

for

Amoco Production Company

~~Shadash Federal~~  
Federal Z Com. Well No.1  
Federal AC Well No.1  
Federal AB Well No.1  
Wellis Federal "C" Gas Com. Well No.1

Prepared

By

Dr. J. Loring Haskell

and

Charles A. Aylward

Submitted

By

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

2 July 1979

Permit No. 78-NM-120

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## Introduction

On 2 July 1979, New Mexico Archaeological Services, Inc., (NMAS), Carlsbad, undertook for Amoco Production Company, Hobbs, an archaeological reconnaissance of lands administered by the Bureau of Land Management in Lea and Eddy Counties, New Mexico. Reconnoitered areas will be impacted by the construction of drill locations and accompanying access roads. This project was advanced by Mr. Ray Cox, Amoco Production Company, and expedited by Dr. J. Loring Haskell, Principal Investigator, NMAS. Dr. Haskell was assisted in the field by Mr. Charles A. Aylward, Staff Archaeologist.

## Survey Technique

For this investigation, Amoco Production Company's proposed locations were reconnoitered for evidence of man's past activities by walking them in a series of 20 ft wide, close interval ( $15^{\circ}$  or less), zigzag transects. In addition, an added zone embracing 20 ft on each side of the staked 450 X 450 ft locations was reconnoitered by a similar means as was accompanying access roads. Methodologically, this procedure served to promote optimal conditions for the visual examination of areas to be impacted by construction-related activities.

~~Warrant Federal Verdict~~

## Location

Amoco Production Company's proposed location will measure 450 X 450 ft on federal lands and will be situated 660 ft from the north line and 1980 ft from the east line of:

Section 13, T19S, R32E, NMPM, Lea County, NM

Thus it will be situated in the:

NW<sup>1</sup>/4NE<sup>1</sup>/4, Section 13, T19S, R32E, NMPM, Lea County, NM

The associated access road will measure 12 X 1590 ft and will be situated in the:

NW<sup>1</sup>/4NE<sup>1</sup>/4, Section 13, T19S, R32E, NMPM, Lea County, NM

SW<sup>1</sup>/4NE<sup>1</sup>/4, Section 13, T19S, R32E, NMPM, Lea County, NM

Map Reference: USGS Laguna Gatuna Quadrangle, 15 Minute Series, 1963.

### Terrain

Areal terrain is characterized by a broad and generally undulating plain which trends toward the northwest into a depressional trough west of the Llano Estacado. This landform is coextensive with the Querecho Plains. The coeval surface is overlain by a deep aeolian cover of probable Holocene-aged deposits consisting of medium-coarse textured sandy loams lacking lithic inclusions. Coppice dunes and deflation basins, while present, are poorly developed in the immediate area. Basins tend to be shallow and open-ended. Peds uniformly belong to the Typic Torrinsamment subgroup and several of its intergrades.

### Floristics

In general, this district supports an overstory dominated by Quercus bayardii and occasional occurrences of Yucca glauca and Prosopis juliflora. Gutierrezia sarothrae is present on a sporadic basis. Principal forbs include: Monarda punctata, Suaeda sp., Hymenoxys sp., Dithyrea sp., Oenothera sp., Solanum elaeagnifolium, Euphorbia missourica, Linum sp., Hoffmanseggia sp., Hedysotis humifusa, and Dalea sp. Cyperus onerosus occurs in localities marked by deep sandy loams and hence somewhat



more mesic conditions. The Gramineae is represented by Muhlenbergia arenacea, Aristida sp., and Paspalum distichum.

#### Cultural Resources

No cultural resources were recorded during this reconnaissance. The complete absence of material cultural remains can be attributed to an overall lack of lithic resources suited for tool and hearth manufacture, a scarce supply of surface water, and isolation from localities bearing these resources. Prehistoric usage would have been limited to ephemeral and sporadic occupation by task groups engaged in hunting.

#### Recommendations

NMAS recommends clearance for Amoco's proposed Bondurant Federal Well No.6 and its access road and suggests that work-related activities proceed in accordance with company plans.

Federal Z Com. Well No.1

#### Location

This Amoco Production Company location will measure 450 X 450 ft on federal lands and will be situated 2080 ft from the north line and 760 ft from the east line of:

Section 33, T17S, R27E, NMPM, Eddy County, NM

Thus it will be situated in the:

SE1/4, Section 33, T17S, R27E, NMPM, Eddy County, NM

The associated access road will measure 12 X 400 ft and will be situated in the:

SE1/4, Section 33, T17S, R27E, NMPM, Eddy County, NM

Map Reference: USGS Spring Lake Quadrangle, 7.5 Minute Series, 1955.

#### Terrain

This location is situated in a district marked by the west-facing slope of a prominent ridge situated due east of the Pecos Valley. Attendant geomorphological features include a series of draws which alternate with truncated bench-like features. Collectively, these features are oriented toward the west to west-northwest. Local soils, while pedologically complex, belong principally to the Typic Gypsiorthid, Calcic Gypsiorthid, Typic Paleorethid, and Typic Torriorthent subgroups. Uniformly, areal soils are fine-grained silty loams and silty clay loams containing gypsum and limestone inclusions. Chert and quartzite nodules were not noted in areal soil individuals.

#### Floristics

In general, local soils support a sparse overstory of Larrea tridentata, Opuntia leptocaulis, and Yucca sp. Typically, these plants are confined to Calcic Gypsiorthid soils. The attendant understory is largely dominated by Hilaria mutica which is associated with Cirsium sp., Lepidium sp., Plantago sp., and Gutierrezia sp. Cacti occurring in these soils are limited to occasional Echinocereus pectinatus, Opuntia macrocentra, and Opuntia leptocaulis. Typic Gypsiorthids uniformly support a fair stand of Coldenia canescens, Routeloua brevifolia, Merisvrenia linearifolia, Gilia sp., and Psilostrophe sp.

#### Cultural Resources

No cultural resources were recorded during this reconnaissance. Although not encountered during this project, areal cultural remains typically consist of a scatter of lithic detritus associated with stone cairns and less frequently with burned-

caliche cobbles. Ceramics, while not common in this district usually are limited to Brown Wares and Three Rivers Red-on-terracotta, circa A.D. 900-1350.

### Recommendations

HMAS recommends clearance for Amoco Production Company's proposed Federal Z Com. Well No.1 and its accompanying access road and suggests that work-related activities proceed in accordance with company plans.

### Federal AC Well No1

### Location

Amoco Production Company's proposed location will measure 450 X 450 ft on federal lands and will be situated 660 ft from the north line and 1980 ft from the east line of:

Section 18, T19S, R33E, NMPM, Lea County, NM

Thus it will be situated in the:

SW1/4, Section 18, T19S, R33E, NMPM, Lea County, NM

The associated access road will measure 12 X 1050 ft and will be situated in the:

SW1/4, Section 18, T19S, R33E, NMPM, Lea County, NM

SW1/4, Section 18, T19S, R33E, NMPM, Lea County, NM

Map Reference: USGS Laguna Gatuna Quadrangle, 15 Minute Series, 1963.

### Terrain

Topographically, this location rests on a generally undulating plain at a point immediately west of a slight swale. The contemporary surface is characterized by an overlay of deep, aeolian sands of medium- to coarse texture. Dunal areas to the north stand approximately 4 m high. Within the location,

dunes are few and less than 1 m in height with shallow, poorly developed deflation basins. Local soils are sandy loams and occasional loamy sands which are generally lacking in lithic inclusions.

#### Floristics

The local overstory is predominantly Quercus havardii with occasional specimens of Yucca glauca, Prosopis juliflora, and Chrysothamnus pulchellus. Sparse, random stands of Gutierrezia sarothrae also occur. Attendant forbs include: Monarda punctata, Gaillardia sp., Hymenoxys sp., Dithyrea sp., Oenothera sp., Hoffmanseggia sp., and Euphorbia sp. Grasses found are Andropogon glomeratus, Aristida sp., Muhlenbergia arenacea and Paspalum distichum.

#### Cultural Resources

No archaeological resources were recorded during this reconnaissance. Owing to the nature of local soils, the lack of lithic raw materials and potable water, and the shelterless landform, it is improbable to find evidence of extensive human occupation. Prehistoric usage in this area was limited to sporadic hunting and gathering activities.

#### Recommendations

NMA recommends clearance for Amoco's Federal AC Well No.1 and access road and suggests that work-related activities proceed in accordance with company plans.

#### Federal AB Well No.1

#### Location

Amoco Production Company's proposed location will measure 450 X 450 ft on federal lands and will be situated 660 ft from

the south line and 2130 ft from the east line of:

Section 33, T18S, R33E, NMPM, Lea County, NM

Thus it will be situated in the:

SW<sup>1</sup>SE<sup>1</sup>, Section 33, T18S, R33E, NMPM, Lea County, NM

The associated access road will measure 12 X 1050 ft and will be situated in the:

SW<sup>1</sup>SE<sup>1</sup>, Section 33, T18S, R33E, NMPM, Lea County, NM

SE<sup>1</sup>SE<sup>1</sup>, Section 33, T18S, R33E, NMPM, Lea County, NM

Map Reference: USGS Laguna Gatuna Quadrangle, 15 Minute Series, 1963.

### Terrain

This location is situated on an undulating plain which locally is distinguished by a moderate-sized subsidence structure of probable Pleistocene-age. Zones of large- to moderate-sized conical dunes lie to the north, east, and south and serve to crenulate the horizon. In general, the immediate vicinity is marked by dunes which typically average 1 m or less in height. Areal soils uniformly belong to the Typic Torripsamment subgroup and its intergrades. Lacustrine deposits outcrop to the southeast. Chert and quartzite nodules, many of excellent quality and size occur immediately west of this feature and seemingly indicate a shore line situation.

### Floristics

The local floral assemblage is marked by a mixed overstory of Quercus laevis and Artemisia filifolia. Sporadic occurrences of Prosopis juliflora, Yucca glauca, and Chrysothamnus pulchellus are present in this association. Observed forbs include: Monarda punctata, Penstemon sp., Hillanthus sp.,

Abronia sp., Dithyrea sp., Euphorbia sp., Croton sp., Eriogonum sp., Hymenoxys sp., Mentzelia sp., and Hedyotis humifusa.

Grasses are represented principally by Aristida sp., Sporobolus spp., and Cenchrus incertus.

#### Cultural Resources

No archaeological sites were recorded during this reconnaissance; however, NMAS did observe an isolated manifestation immediately south of the southwestern corner of the location. Associated remains consist of a light scatter of chert quartzite, and anhydrous quartz primary and secondary decortication flakes associated with burned caliche. Without exception, resources are confined to a single, linear-shaped, deflation basin.

#### Recommendations

NMAS recommends clearance for Amoco Production Company's proposed AB Federal Well No.1 location and access road and suggests that work-related activities proceed in accordance with company plans.

Wellis Federal "C" Gas Com Well No.1

#### Location

This Amoco Production Company proposed location will measure 450 X 450 ft on federal lands and will be situated 1980 ft from the north line and 660 ft from the east line of:

Section 8, T19S, R33E, NMPM, Lea County, NM

Thus it will be situated in the:

SW1/4, Section 8, T19S, R33E, NMPM, Lea County, NM

The associated access road will measure 12 X 1500 ft and will be situated in the:

SE14NE14, Section 8, T19S, R33E, NMPM, Lea County, NM  
 SW14NE14, Section 9, T19S, R33E, NMPM, Lea County, NM

Map Reference: USGS Laguna Gatuna Quadrangle, 15 Minute Series, 1963.

### Terrain

This proposed location is situated on an undulating plain demarked by coppice dunes to approximately 5 m in height. Associated deflation basins are lobe-shaped and open toward the northwest. Prominent dunes crenulate the horizon in all directions. The entire area is coextensive with the Querecho Plains and trends to the northeast. Soils belong uniformly to the Typic Torripsamment subgroup. Diminutive chert inclusions are found in these soils on a very sparse basis.

### Floristics

Local soils commonly support an overstory dominated by Quercus havardii. In association are also Yucca glauca, Prosopis juliflora, Artemisia filifolia and Chrysothamnus pulchellus. Specimens of Monarda punctata, Helianthus sp., Penstemon sp., Hymenoxys sp., Shrunka occidentalis, Mentzelia sp., Senecio sp., Hoffmanseggia sp., Asclepias sp., and Euphorbia sp. represent the forbs. Local grasses include: Aristida sp., Bouteloua sp., Andropogon spp., and Paspalum distichum.

### Cultural Resources

No cultural resources were recorded during this reconnaissance. Locally, the complete absence of cultural resources can be explained by the fact that this locality is overlain by a thick deposit of aeolian material which precludes easy

access to underlying lithic resources. In addition, the high porosity of limited occupation owing to difficulties inherent in the easy acquisition of water.

Recommendations

NMAS recommends clearance for Amoco Production Company's proposed Nellis Federal "C" Gas Com. Well No.1 and accompanying access road and suggests that work-related activities proceed in accordance with company plans.