

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

AMOCO PRODUCTION COMPANY

3. ADDRESS OF OPERATOR

P.O. DRAWER A, LEWELAND, TEXAS 79336

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

At surface

1986' FSL x 1833' FWL SEC 19 (UNIT 4 SW 1/4)

At proposed prod. zone

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

9 MILES SE OF CARLSBAD, 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.

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

3062.4 GR

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24#	400'	CIRCULATE
7 7/8"	5 1/2"	14-15.5#	5900'	SUFFICIENT TO TIE BACK INTO SURFACE PIPE.

AFTER DRILLING WELL, LOGS WILL BE RUN AND EVALUATIONS MADE, PERFORATING AND OR STIMULATING AS NECESSARY IN ATTEMPTING COMMERCIAL PRODUCTION.

MUD PROGRAM : O-SCP  
SCP-TD

WATER & NATIVE MUD.  
BRINE & NATIVE MUD.

BOP PROGRAM : ATTACHED

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MAR 24 1977

U.S. GEOLOGICAL SURVEY  
ARTESIA, 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

Allen V. Hendley

TITLE

STAFF ASSISTANT [SG]

DATE

3-23-77

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

CONDITIONS OF APPROVAL

TITLE

DATE

DE 4 USGS - ART

- 1- DIV
- 1- SUSP
- 1- RC
- 9- BASS

APR 11 1977

EXPIRES

JUL 1 1977

\*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form O-172  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator <b>Amoco Production Company</b>			Lease <b>Old Indian Draw</b>		Well No. <b>20</b>
Section <b>K</b>	Section <b>19</b>	Township <b>27 South</b>	Range <b>28 East</b>	County <b>Eddy</b>	
Approximate Location of Well: <div style="display: flex; justify-content: space-between;"> <span>1986 feet from the <b>South</b> line and 1833 feet from the <b>West</b> line</span> </div>					
Section Area <b>3067.4</b>	Producing Formation <b>DELAWARE</b>	Field <b>INDIAN DRAW DELAWARE</b>		Section Area <b>40</b>	

- 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 (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.

**RECEIVED**  
**MAR 24 1977**  
**U.S. GEOLOGICAL SURVEY**  
**ARTESIA, NEW MEXICO**

CERTIFICATION

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

Name Ray W. Cox  
Position Administrative Assistant

Company AMOCO PRODUCTION COMPANY

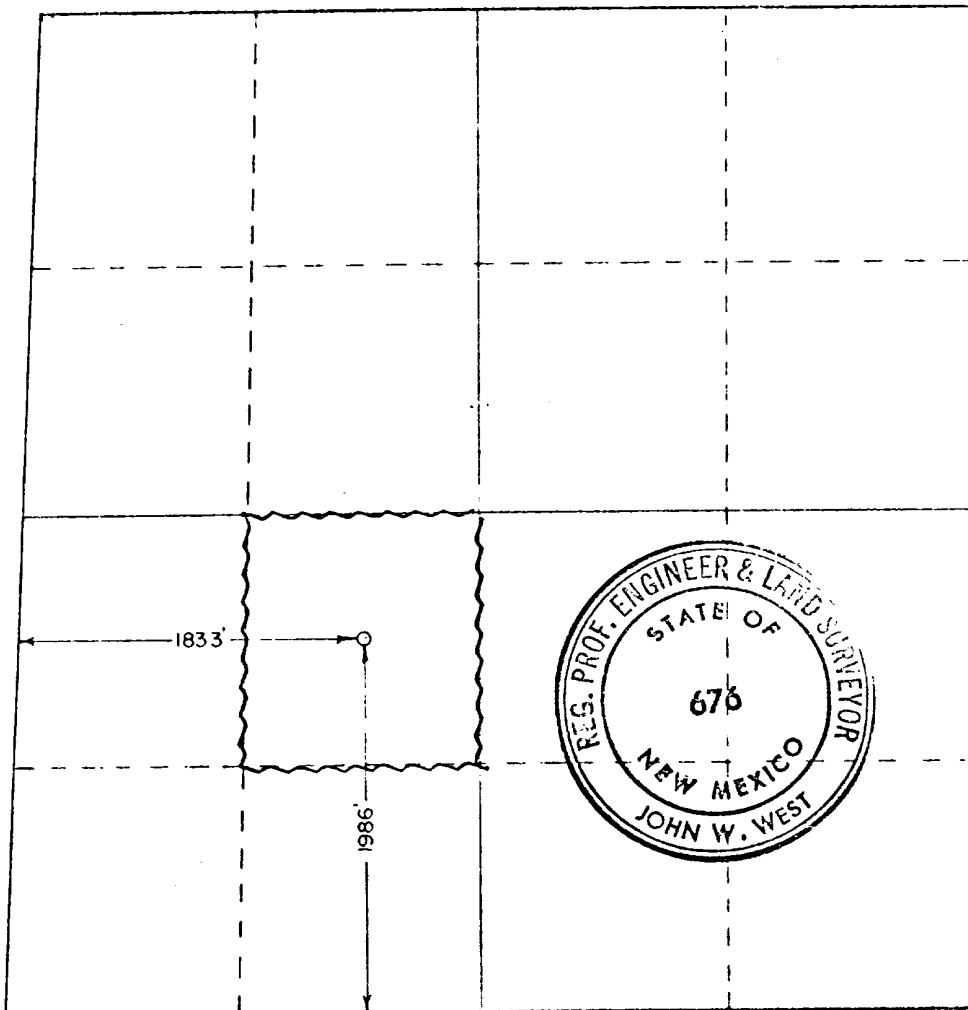
Date MARCH 7, 1977

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 February 16, 1977

Registered Professional Engineer and/or Land Surveyor

John W. West  
Certificate No. **676**



330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

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

Old Indian Draw Unit Well No. 20, Unit K, 1986' FSL and 1833'FWL, Section 19,  
Township 22 South, Range 28 East, Eddy County, New Mexico

1. Location (See Attached Form C-102)
2. Elevation (See Attached Form C-102)
3. Geologic name of surface formation  
Unknown
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.  
Base Salt - 2300'  
Delaware Sand - 2400'  
Old Indian Draw Sand - 3260'  
Bone Springs - 5820'
7. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.  
Indian Draw Sand - 3260'  
Bone Springs - 5820'
8. Proposed casing program including size, grade, and weight of each string and whether it is new or used. (See Form 9-331 C)
9. Proposed setting depth of each casing string and the amount and type of cement (including additives) to be used. (See Form 9-331 C)

10. Operator's minimum specifications for pressure control equipment which is to be used, a schematic diagram thereof showing sizes, pressure ratings (or API series) and the testing procedures and testing frequency. (See Attached BOP Program)

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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 to Surface Casing Point -- Water x Native Mud

SCP to Total Depth -- Brine x Native Mud

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12. Testing, logging and coring programs to be followed with provisions made for required flexibility.

Dual Laterolog Micro - SFL

Borehole Compensated Sonic Log

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

None

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14. Anticipated starting date and duration of operation.

ASAP

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

None

ATTACHMENT TO FORM 9-331C

APPLICATION FOR PERMIT TO DRILL

LEASE OLD INDIAN DRAW UNIT FED. WELL NO. 20

LOCATION UNIT K, SEC. 19, T-22-S, R-28-E

POOL INDIAN DRAW DELAWARE

COUNTY EDDY

The undersigned hereby states that Amoco's representative, Mr. J. H. HANKINS, personally contacted MR. HENRY H. GRANDZ, CARLSBAD, the ~~owner~~ lessee of the surface land where the proposed work is to be conducted and advised him of the proposed work, the construction site and pertinent roads included in the project. It is further stated that, upon being fully advised of the extent of the work and the effect upon the surface, said owner has consented to the said work and that agreement as to the compensation for damages to the surface estate has been reached.

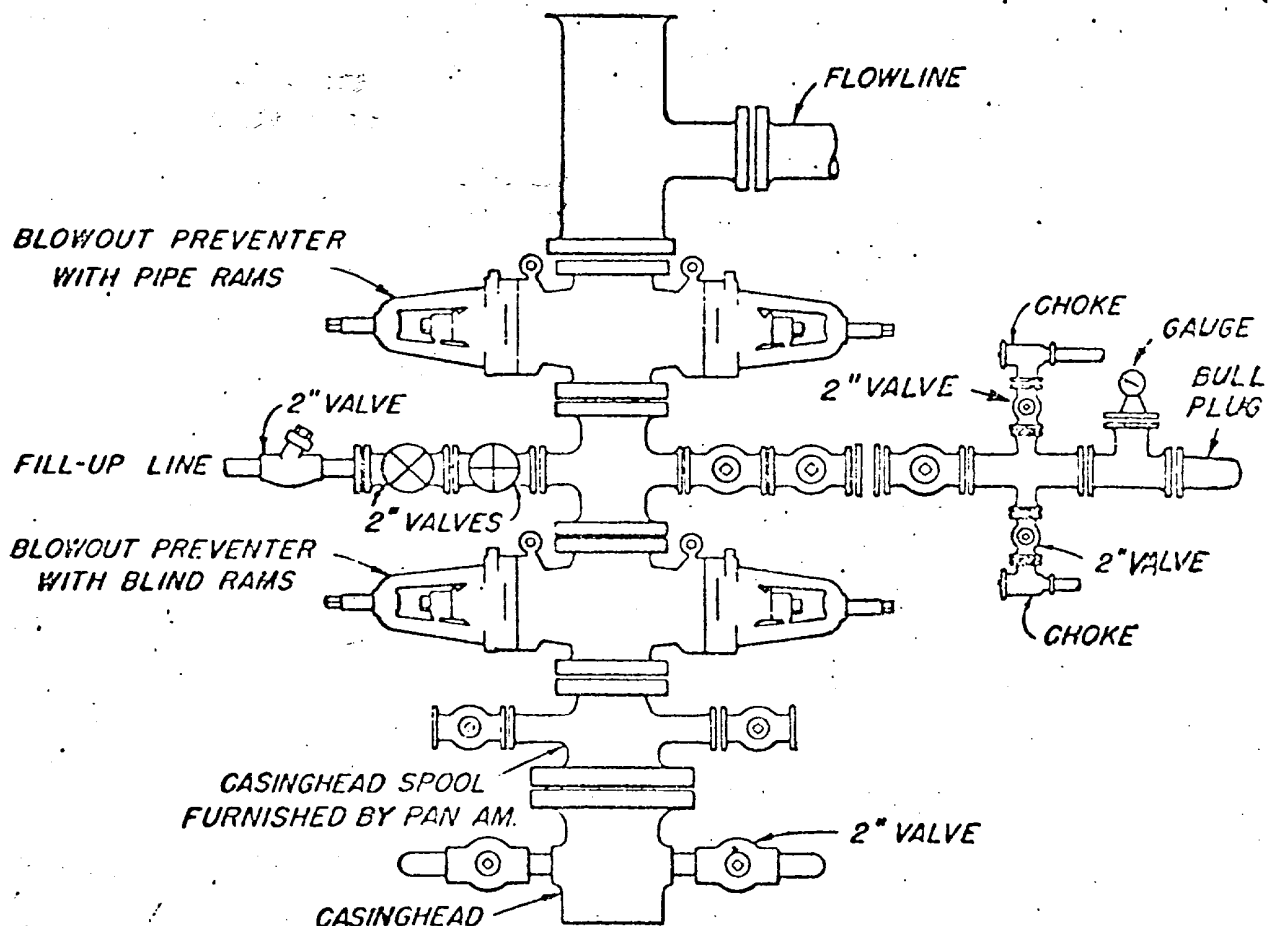
Ray W. Cox  
Ray W. Cox  
Administrative Assistant

3-23-77  
DATE

# NOTES

1. Blow-out preventer and master valve to be fluid operat and all fittings must be in good condition, 3,000# W.P. (6,000 p.s.i. test), minimum.
2. Equipment through which bit must pass shall be as large as the inside diameter of the casing that is being drilled through.
3. Nipple above blow-out preventer shall be same size as casing being drilled through.
4. Kelly cock required, 3,000# W.P. (6,000 p.s.i. test), minimum.
5. OMSCO or comparable safety valve must be available on rig floor at all times with proper connection or sub, 3,000# W.P. (6,000 p.s.i. test), minimum.
6. Blow-out preventers and master valve while drilling intermediate hole to 6,000' may be 2,000# W.P. (4,000 p.s.i. test), minimum.
7. Choke assembly, beyond second valve from cross, may be positioned (Optional) outside of derrick foundation.
8. Spool or cross may be eliminated if connections are available in the lower part of the blow-out preventer body.
9. Plug valves - gate valves are optional. Valves shown as 2" are minimum size.
10. Casing head and casing head spool, including attached valves, to be furnished by Pan American.
11. Rams in preventers will be installed as follows:
 

When drilling, use: Top Preventer - Drill pipe rams Bottom Preventer - Blind rams or master valve	When running casing, use: Top Preventer - Casing rams Bottom Preventer - Blind rams or master valve.
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BLOWOUT PREVENTER HOOK-UP  
PAN AMERICAN PETROLEUM CORP.

Proposed Development Plan for Surface Use

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MAR 24 1977

U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

Amoco Production Company's Old Indian Draw Unit Wells No.

20, 22, 23, 25, 26, 27, 28, 29, 31, & 32, Sec. 7, 18, 19, T-22-S,

R-28-E, Eddy Co. New Mexico

This plan is an attachment to "Application for Permit to Drill" and is a discussion of the possible effects the drilling of this well/wells might have on the environment. A copy will be posted on the derrick floor so that all contractors and sub-contractors will be aware of all items of this plan.

1. Existing roads including location of exit from main highway. (See attached map)

Location is approximately 9 miles SE of Carlsbad, New Mexico.

2. Planned access roads. (Width, maximum grade, turnout, drainage design, location and size of culverts and surfacing material, where fences will be cut, and where gates or cattleguard will be used.) (See Exhibit B)

Roads will be 12 ft. wide x 6 in. thick, watered and compacted caliche.

Approximately 11,700 ft. of new roads to be constructed. Approximately  
1200 ft. of an existing ranch road is to be improved to the above  
specifications.

3. Location of existing wells. (See Exhibit C)  
(2-Mile radius for exploratory wells; 1-Mile radius for development wells)

4. Location of tank batteries and flow lines.

See attached map.

5. Location and type of water supply.

X Water to be hauled Water to be piped.

See attached map. Fresh water to be hauled from B & E, Inc. yard in  
Carlsbad. Brine water to be hauled from Champion Brine Water Station  
3½ miles east and 2½ miles south of Carlsbad.

6. Source of construction materials.

See attached map.

Existing caliche pit 300' north of Old Indian Draw Well #2.

7. Methods for handling waste disposal. Well cuttings will be disposed of  
in reserve pit. Suitable trash pits or containers will be provided at  
location for containment. If well is productive, maintenance waste will  
be placed in special trash cans and hauled away periodically.

Other (See attached map)



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- 
- 
- 
-

12. Operators Representative.  
(Field personnel responsible for compliance with development plan for surface use.)

O. R. Williams, Area Foreman

P. O. Drawer A

Levelland, Texas 79336

Phone ( 806 ) 894-3167

ATTACHMENT TO PROPOSED DEVELOPMENT PLAN FOR SURFACE USE, AND FORM 9-331C

13. 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.

3-23-77  
DATE

William J. [Signature]  
NAME AND TITLE

EL PASO COUNTY

R.28 E.

R.29 E.

ajumar-107

T.21 S.

## OLD INDIAN DRAW UNIT

T.22 S.

23 S.

.24 S.

CARLSBAD, NM

# ROAD TO LEASE

~~LEASE BOUNDARY~~



# Amoco Production Company

ENGINEERING CHART

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

FILE \_\_\_\_\_

APPN \_\_\_\_\_

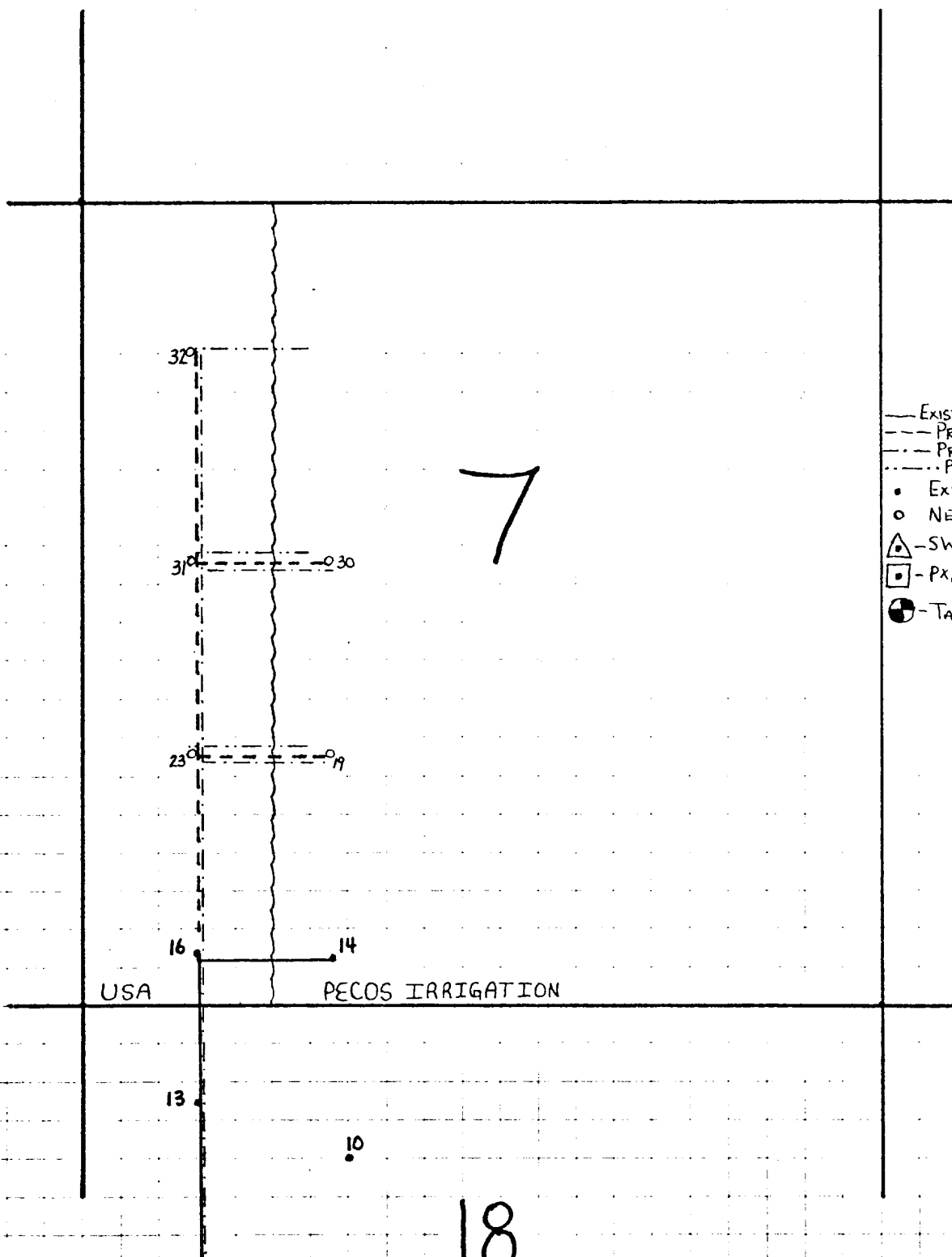
DATE \_\_\_\_\_

BY AVH

SUBJECT OLD INDIAN DRAW UNIT

SEC 7, 18, & 19, T-22-S, R-28-E, EDDY CO., N.M.

'B'







# Amoco Production Company

## ENGINEERING CHART

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

FILE \_\_\_\_\_

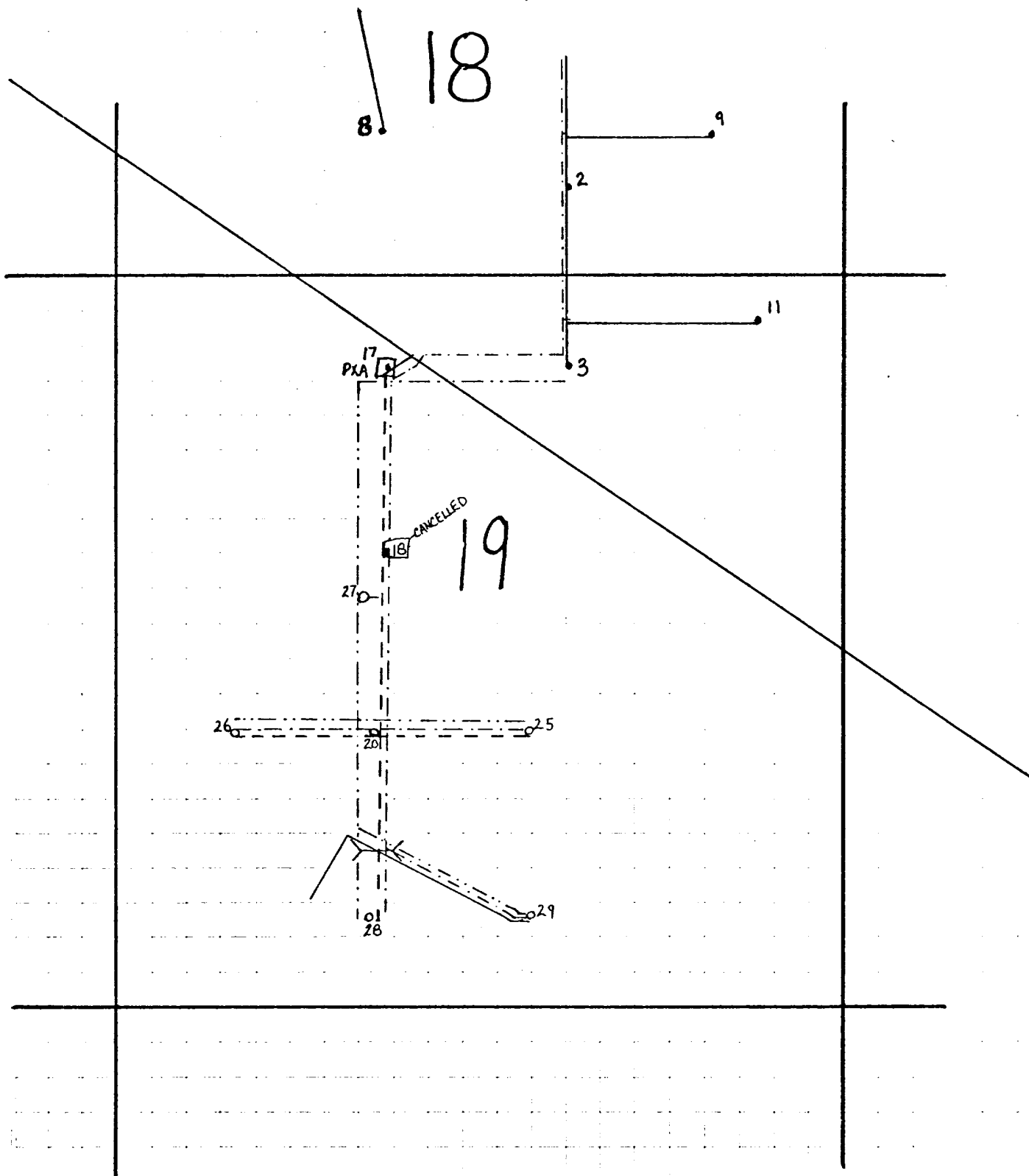
APPN \_\_\_\_\_

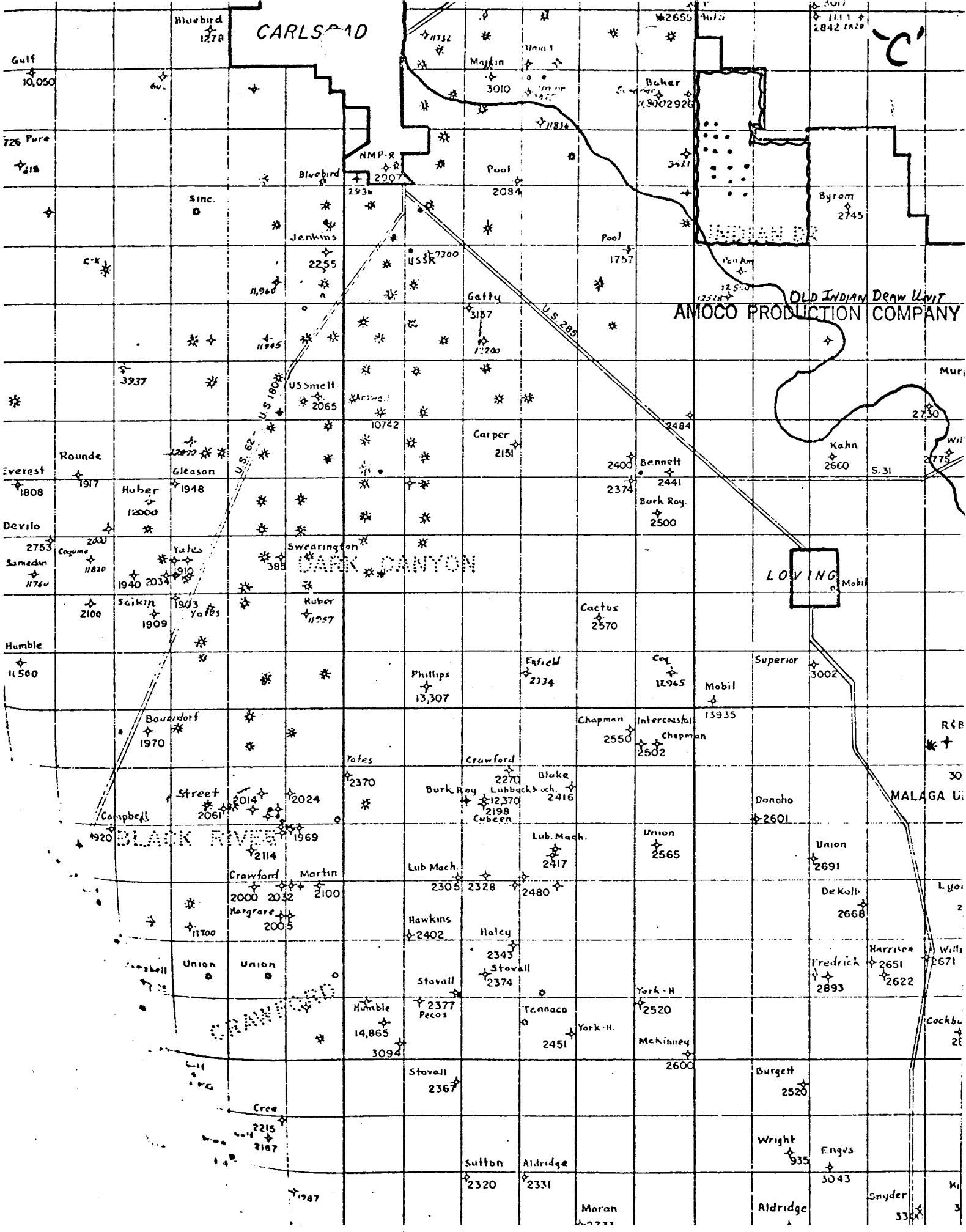
DATE \_\_\_\_\_

BY AVH \_\_\_\_\_

SUBJECT OLD INDIAN DRAW UNIT

SEC. 7, 18, & 19, T-22-S, R-28-E, Eddy Co., N.M.





CARLSBAD

C

OLD INDIAN DRAW UNIT  
AMOCO PRODUCTION COMPANY

DARK CANYON

LOVING

BLACK RIVER

CRANFORD

MALAGA U.





# Amoco Production Company

ENGINEERING CHART

SHEET NO

OF

FILE

APPN

DATE 10-29-76

BY R.C.

SCALE - 1" = 60'

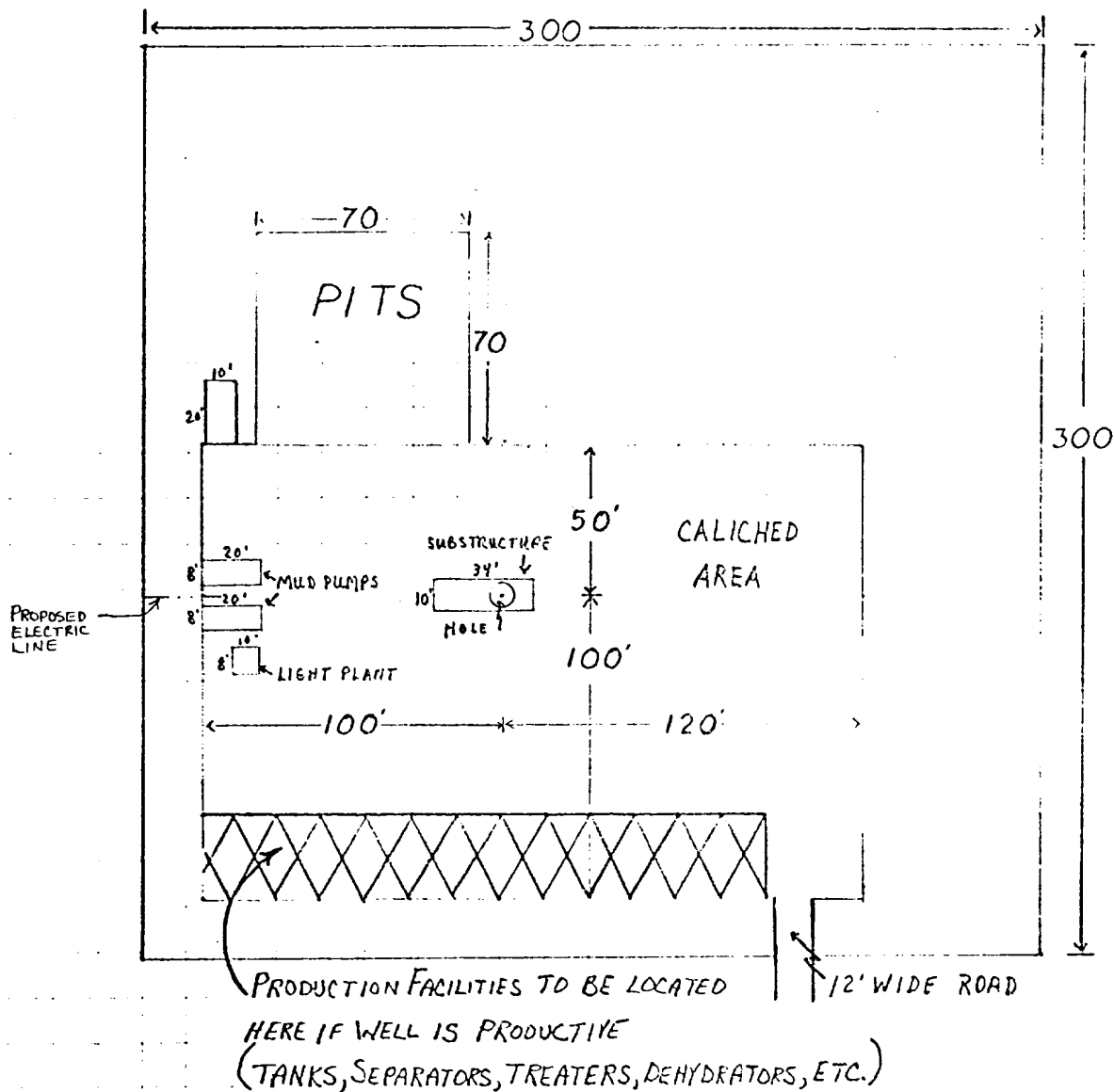
SUBJECT DRILL SITE LAYOUT

SHALLOW WELLS (LESS THAN 7500')

OLD INDIAN DRAW UNIT WELL NO 20

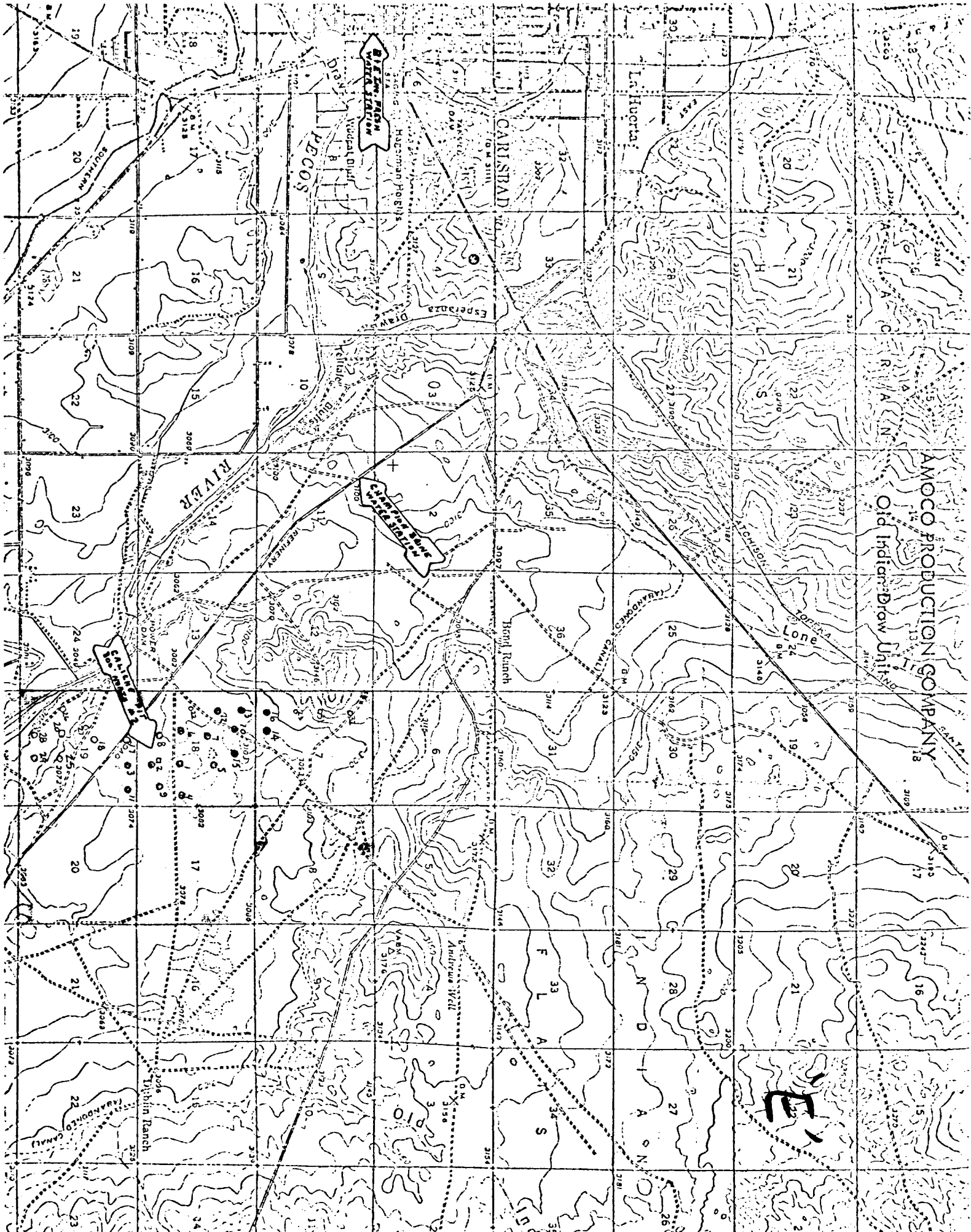
UNIT K (NE 1/4-SW 1/4) 1986 FT FROM SOUTH LINE, 1833 FT

FROM WEST LINE, SECTION 19, T-22-S, R-28-E, EDDY CO., NM



CELLAR SIZE

5'X5'X4'



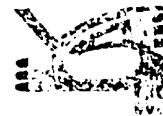
## ACA



## AGENCY OF CONSERVATION ARCHAEOLOGY

Eastern New Mexico  
University

San Juan County  
Museum Association



RECEIVED	
Levelland, Texas	
MAR 21 1977	
VC	
JLW	
CCD	
CCS	
ARG	
ORW	
KFS	
HSM	
BGW	
File	

Executive Director

Dr. G. A. Agogino

18 March 1977

Operations Director

Dr. J. Loring Haskell

Director

Dr. C. Irwin Williams

Services

Planning  
Archaeological Survey  
Excavation  
Analysis  
Reporting  
Research

Mr. Ray Cox  
Amoco Production Company  
P.O. Drawer A  
Levelland, Texas 79336

LaboratoriesLaszlo Veres Laboratory

Ceramic Analysis  
Paleo-Botanical Analysis

Kay Irwin Laboratory

Lithic Analysis  
Obsidian Hydration Dating

San Juan County ArchaeologicalResearch Center

Ceramic Analysis  
Lithic Analysis  
Paleo-Botanical Analysis

Anthropological Computer ServicesCenterReporting and Publication Division

Eastern New Mexico University  
Contributions in Anthropology

Dear Mr. Cox:

Enclosed please find the Agency of Conservation Archaeology's clearance report for Amoco's proposed access roads, flow lines, electrical lines, and well pads located in Eddy County. No cultural resources were observed during this reconnaissance.

Yours sincerely,

Dr. J. Loring Haskell  
Operations Director and  
Principal Investigator

ep  
Enclosure

Offices

Eastern New Mexico University  
Portales, New Mexico 88130  
(505) 562-3332 or 562-2915

San Juan County  
Arch. Res. Center  
Rte. 3, Box 169

233 Chama N.E.  
Albuquerque, New Mexico 87108  
(505) 268-4090

Archaeological Clearance Report  
for  
Amoco Production Company  
Proposed Well Heads and Accesses,  
Eddy County, New Mexico

Access Road from 17 to 3

Wells 20, 22, 23, 25, 26, 27, 28, 29, 31, 32

by

Ralph C. Izard

Submitted by

Dr. J. Loring Haskell  
Operations Director and  
Principal Investigator  
Agency of Conservation Archaeology  
Eastern New Mexico University  
Portales

17 March 1977

## INTRODUCTION

An archaeological reconnaissance was recently completed by the Agency of Conservation Archaeology, Eastern New Mexico University for Amoco Production Company in Eddy County, New Mexico.

This project was administered by Mr. Alan Hundley, representative for Amoco Production Company, and Dr. J. Lorine Haskell, Operations Director and Principal Investigator, Agency of Conservation Archaeology, Eastern New Mexico University, Portales, New Mexico.

The reconnaissance was completed by Ralph C. Izard on March 7, 1977.

## SURVEY TECHNIQUE

The archaeologist accomplished the reconnaissance by walking a zigzag pattern across the proposed access roads, flow lines, and electrical lines. Well pads were walked in parallel 50 ft. Areas of both primary and secondary impact were investigated.

### Amoco Well "17 to "3

#### Location:

A 420 ft x 50 ft strip of land connects extant Well "17 to extant Well "3 for flow and electrical lines. This proposed access route passes through:

NE $\frac{1}{4}$ NW $\frac{1}{4}$  and NW $\frac{1}{4}$ NE $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: Carlsbad Quadrangle, 15 Minute Series (USGS).

#### Terrain:

Terrain consists of a gently rolling plain with a thin sandy topsoil overlying caliche with occasional limestone outcrops.

#### Floristics:

The dominant cover consists of Prosopis juliflora, Gutierrezia sarothrae, Scleropogon brevifolius, and Pouteloua sp.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well head and accesses and suggests that construction proceed without modification of existant plans.

Amoco Well #20

Location:

The proposed well head measures 300 ft by 300 ft and is located in:

NE $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed well head lies on a proposed access 100 ft wide and 3,960 ft long connecting proposed Well Heads #17 and #28. The access road includes a 12 ft wide road and flow and electrical lines located in:

NE $\frac{1}{4}$ NW $\frac{1}{4}$ ; SE $\frac{1}{4}$ NW $\frac{1}{4}$ ; NE $\frac{1}{4}$ SW $\frac{1}{4}$ ; and SE $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a rolling plain with sand dunes interspersed with shallow blowouts.

Floristics:

The dominant cover consists of Yucca glauca, Prosopis juliflora, Larrea tridentata, Scleropogon brevifolius, and Senecio sp.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for this proposed well head and access and suggests that construction proceed without modification of existing plans.

Amoco Well #22Location:

The proposed well head measures 300 ft x 300 ft and is located in:

NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 18, T22S, R28E, Eddy County, New Mexico (BLM).

A proposed 790 ft long and 50 ft wide access for a 12 ft wide road and a flow line connects an existant road and flow line. A proposed 470 ft electrical line connects an existant electrical line located in:

(road and flow line) NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 18, T22S, R28E, Eddy County,  
New Mexico (BLM).

(electrical line) NW $\frac{1}{4}$ SW $\frac{1}{4}$ ; SW $\frac{1}{4}$ NW $\frac{1}{4}$  Section 18, T22S, R28E, Eddy County,  
New Mexico (BLM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a gently rolling plain with a thin sandy topsoil overlying caliche.

Floristics:

The dominant cover consists of Prosopis juliflora, Gutierrezia sarothrae, and Scleropogon brevifolius.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.

Amoco Well #23Location:

The proposed well head measures 300 ft and is located in:

NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed well head lies on a proposed access 50 ft wide and 420 ft long connecting proposed well head #32 and existand well head #16. A futher proposed

access for a 12 ft road, flow and electrical lines, 50 ft wide connecting proposed well head #23 to proposed well head #19 extends 470 ft through BLM land and thence onto private property. The proposed road and flow line from existing #16 to proposed #32 are located in:

NW $\frac{1}{4}$ NW $\frac{1}{4}$ ; SW $\frac{1}{4}$ NW $\frac{1}{4}$ ; NW $\frac{1}{4}$ SW $\frac{1}{4}$ ; SW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed access from #23 to #19 is located in:

NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: USGS Carlsbad New Mexico Quadrangle, 15 Minute Series.

#### Terrain:

Terrain consists of a gently rolling plain with thin sandy topsoil overlying caliche.

#### Floristics:

The dominant cover consists of Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

#### Cultural Resources:

No cultural resources were noted during this reconnaissance.

#### Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.

### Amoco Well #25

#### Location:

The proposed well head measures 300 ft x 300 ft and is located in:

NW $\frac{1}{4}$ SE $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

A proposed access for a 12 ft road, flow and electrical lines 75 ft wide and 1,050 ft long connects proposed #25 to proposed #20 in:

NE $\frac{1}{4}$ SW $\frac{1}{4}$ ; NW $\frac{1}{4}$ SE $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.



Terrain:

Terrain consists of a gently rolling plain with thin sandy topsoil overlying caliche which occasionally outcrops.

Floristics:

The dominant cover consists of Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.

Amoco Well #26Location:

The proposed well head measures 300 ft x 300 ft and is located in:

NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (ELM).

A proposed access for a 12 ft road, flow and electrical lines 75 ft wide and 980 ft long connects proposed #26 to proposed #20 and is located in:

NW $\frac{1}{4}$ SW $\frac{1}{4}$ ; NE $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (ELM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a gently rolling plain with thin sandy topsoil overlying caliche which occasionally outcrops.

Floristics:

The dominant plant cover consists of Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.

Amoco Well #27

Location:

The proposed well head measures 300 ft x 300 ft and is located in:

SE $\frac{1}{4}$ NW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed well head lies on a proposed access 100 ft wide and 3.560 ft long connecting proposed well heads #17 and #28. The access includes a 12 ft wide road and flow and electrical lines located in:

NE $\frac{1}{4}$ NW $\frac{1}{4}$ ; SE $\frac{1}{4}$ NW $\frac{1}{4}$ ; NE $\frac{1}{4}$ SW $\frac{1}{4}$ ; and SE $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a gently rolling plain with thin sandy topsoil overlying caliche which occasionally outcrops.

Floristics:

The dominant plant cover consists of Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well and access and suggests that construction proceed without modification of existing plans.

Amoco Well #28

Location:

The proposed well head measures 300 ft x 300 ft and is located in:

SE $\frac{1}{4}$ SW $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (ELN).

The proposed well head lies on a proposed access 100 ft wide and 3,360 ft long connecting proposed #28 to proposed #17. The access includes a 12 ft wide road and flow and electrical lines located in:

SE $\frac{1}{4}$ NW $\frac{1}{4}$ ; SE $\frac{1}{4}$ NW $\frac{1}{4}$ ; NE $\frac{1}{4}$ SW $\frac{1}{4}$ ; SE $\frac{1}{4}$ SW $\frac{1}{4}$ ; Section 19, T22S, R28E, Eddy County, New Mexico (ELN).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a rolling plain with sand dunes interspersed with shallow blowouts.

Floristics:

The dominant cover consists of Yucca glauca, Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, and Scleropogon brevifolius.

Cultural Resources:

No cultural resources were noted during the reconnaissance.

Recommendations:

ACA recommends clearance for this proposed well head and suggests that construction proceed without modification of existing plans.

Amoco Well #29

Location:

The proposed well head measures 300 ft x 300 ft and is located in:

SW $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 19, T22S, R28E, Eddy County, New Mexico (ELN).

The proposed access follows an existant road which parallels an extant fence (See Figure 1). The new proposed access for flow and electrical lines is 25 ft wide and 1150 ft long located in:

SE $\frac{1}{4}$ SW $\frac{1}{4}$ ; SW $\frac{1}{4}$ SE $\frac{1}{4}$  Section 19, T22S, R28E, Eddy County, New Mexico (ELN).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a rolling plain with sand dunes interspersed with shallow blowouts.

Floristics:

The dominant cover consists of Yucca glauca, Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, and Scleropogon brevifolius.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for this proposed well head and suggests that construction proceed without modification of existant plans.

Amoco Well #31

Location:

The proposed well head measures 300 ft x 300 ft and is located in:

SW $\frac{1}{4}$ NW $\frac{1}{4}$  Section 7, T22S, R28E, Eddy County, New Mexico (ELN).

The proposed well head lies on a proposed access for a 12 ft road and a flow line that is 50 ft wide and 4,020 ft long connecting proposed well head #32 and existing well head #16. A further proposed 50 ft wide access connecting proposed well head #31 to proposed well head #30 extends 470 ft through ELN land and thence onto private property. The proposed road and flow line from existing #16 to proposed #32 pass through:



NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>; SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>; NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>; and SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed access from #31 to #30 passes through:

SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>; and SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

Map Reference: USGS Carlsbad Quadrangle, 15 Minute Series.

#### Terrain:

Terrain consists of a gently rolling plain with a thin sandy topsoil overlying caliche which occasionally outcrops.

#### Floristics:

The dominant plant cover consists of Prosopis juliflora, Larrea tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

#### Cultural Resources:

No cultural resources were noted during this reconnaissance.

#### Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.

#### Amoco Well #32

#### Location:

The proposed well head measures 300 ft x 300 ft and is located in:

NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed well head lies on a proposed access for a 12 ft road and a flow line is 50 ft wide and 4,020 ft long connecting proposed #32 with existing well head #16. A further proposed 50 ft wide access connecting proposed well head #32 to existing electrical lines on private land extends 470 ft through BLM land and onto private land. Proposed road and flow line from existing #16 to proposed #32 passes through:

NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>; SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>; NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>; and SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> Section 7, T22S, R28E, Eddy County, New Mexico (BLM).

The proposed electrical line access from "32 to Existing electrical lines passes through: NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> and NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> Section 7, T22S, R28E, Eddy County, New Mexico (PLM).

Map Source: USGS Carlsbad Quadrangle, 15 Minute Series.

Terrain:

Terrain consists of a gently rolling plain with a thin sandy topsoil overlying caliche which occasionally outcrops.

Floristics:

The dominant plant cover consists of Prosopis juliflora, Leuca tridentata, Gutierrezia sarothrae, Scleropogon brevifolius, and Hilaria mutica.

Cultural Resources:

No cultural resources were noted during this reconnaissance.

Recommendations:

ACA recommends clearance for the proposed well and accesses and suggests that construction proceed without modification of existing plans.