

7482

Form 3160-3  
(August 1999)

OCD-ARTESIA

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM27451
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator ARCO PERMIAN <b>990</b>		7. If Unit or CA Agreement, Name and No. <b>24383</b>
Contact: AMY T. SPANG E-Mail: amy.t.spang@bp.com		8. Lease Name and Well No. HILLTOP FEDERAL 3
3a. Address 200 WESTLAKE PARK BLVD HOUSTON, TX 77079	3b. Phone No. (include area code) Ph: 281.366.7655 Fx: 281.366.7688	9. API Well No. <b>30-015-32223</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE 750FSL 950FEL At proposed prod. zone SESE 750FSL 950FEL <b>Ungr</b>		10. Field and Pool, or Exploratory LITTLE BOX CANYON <b>Marrow</b>
14. Distance in miles and direction from nearest town or post office* 35 MILES NW OF CARLSBAD		11. Sec., T., R., M., or Blk. and Survey or Area Sec 1 T21S R21E Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 750	16. No. of Acres Lease 5.2 0000 RECEIVED OCD - ARTESIA	12. County or Parish EDDY
17. Spacing Unit dedicated to this well 320.00	13. State NM	
18. Distance from proposed location to nearest well, drilling completed, applied for, on this lease, ft. 3550	19. Proposed Depth 8600 MD	20. BLM/BIA Bond No. on file
21. Elevations (Show whether DF, KB, RL, GL, etc) 4431 GL	22. Approximate date work will start	23. Estimated duration

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
- Bond to cover the operations unless covered by an existing bond on file (see item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature (Electronic Submission)	Name (Printed Typed) AMY T. SPANG	Date 11/29/2001
Title AUTHORIZED REPRESENTATIVE		
Approved by (Signature) <b>/s/ JOE G. LARA</b>	Name (Printed Typed) <b>/s/ JOE G. LARA</b>	Date <b>FEB 25 2002</b>
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator's marks (see next page)



Electronic Submission #9482 verified by the BLM Well Information System  
For ARCO PERMIAN, sent to the Carlsbad  
Committed to AFMSS for processing by Armando Lopez on 11/30/2001 (02AL0081AE)

Revised Controlled Water Basin

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS**

\*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\* REVISED \*\*

**Additional Operator Remarks:**

- Subject well is planned as a 8600' straight hole.  
3,000 psi BOPE will be used from 1400' to TD.

Plans are to perf and test the Morrow.

Attachments are as follows:

1. Certified location plat
2. Drilling plan w/ attachments
3. Surface use plan w/ attachments

Energy, Minerals and Natural Resources Department

## DISTRICT I

P.O. Box 1988, Hobbs, NM 88241-1988

## DISTRICT II

P.O. Box 1988, Hobbs, NM 88241-1988

## DISTRICT III

1000 Elie Brown Rd., Artes, NM 87410

## DISTRICT IV

P.O. Box 2088, Santa Fe, N.M. 87504-2088

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 80240	Pool Name Little Box Canyon (Morrow)
Property Code	Property Name HILLTOP FEDERAL	Well Number 3
OGUID No. 000990	Operator Name ARCO PERMIAN	Elevation 4431'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Mn	Feet from the	North/South line	Feet from the	East/West line	County
P	1	21-S	21-E		750	SOUTH	950	EAST	EDDY

## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Mn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><u>Amy Spang</u> Signature</p> <p><u>Amy Spang</u> Printed Name</p> <p><u>Reg. Comp. Analyst</u> Title</p> <p><u>11/29/01</u> Date</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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 belief.</p> <p><u>AUGUST 22, 2001</u> Date Surveyed</p> <p><u>AWB</u> Signature</p> <p><u>Professional Surveyor</u> Title</p> <p><u>NEW MEXICO</u> State</p> <p><u>81.11.09600</u> Certificate No.</p> <p><u>22841</u> Surveyor No.</p>
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## DRILLING PLAN

Attachment to BLM Form 3160-3

ARCO Permian

Well: Hilltop Federal #3

Unit Letter - P

750 FSL, 950 FEL

Section 1, T21S, R21E

Eddy County, New Mexico

### 1. Surface Geological Formation

Quaternary Formation

### 2. Estimated Tops of Geological Markers

<u>Formation</u>	<u>TVD</u>
Glorieta	1530
Tubb Sand	2940
Abo Dolomite	3500
Cisco	6200
Canyon	6625
Strawn	7250
Atoka	7560
Lower Morrow	7825
Mississippian	8350

### 3. Estimated Tops of Possible Water, Oil, Gas or Mineral:

Sands above 1000'	Water
Cisco and Morrow	Oil or Gas

### 4. Pressure Control Equipment

<u>Interval, TVD</u>	<u>Pressure Control Equipment</u>
0' - 1400'	Rotating Head
1400' - TD	11" 3M psi double ram preventer and 2M psi annular preventer and 2M psi choke manifold

MINIMUM WORKING  
PRESSURE OF BOP AND  
RELATED EQUIPMENT

Exhibits 1, 2 and 3 show the BOP stack arrangement, the choke manifold arrangements and the BOP specifications, respectively. The BOPE will be hydraulically tested per BLM requirements outlined by Onshore Oil and Gas Order No. 2. Pipe rams and blind rams will be functioned on each trip out of the hole. All BOPE checks and test will be witnessed by ARCO's representative and will be noted on the IADC daily drilling report. Accessories to BOPE will include an upper kelly cock, lower kelly cock, and floor safety valve; all with pressure rating equivalent to or above the approved pressure requirements.

MUST  
BE  
3000 psi

### 5. Proposed Casing and Cementing Program

<b>WITNESS</b>	<u>Hole Size</u>	<u>Interval M.D.</u>	<u>Casing Size</u>	<u>Weight &amp; Grade</u>
Surface	12-1/4"	0'-1400'	8-5/8"	24.0# J-55
Production	7-7/8"	1400'-8600'	5-1/2"	17&15.5# J-55

**ROSWELL CONTROLLED WATER BASIN**

**Cement Program: (Actual volumes will be based on caliper log when available)****Conductor – Cement to surface as follows:**

Slurry – 165 sxs "C" + 2% CaCl

If cement does not circulate will run 1" tubing down the hole beside the 13 3/8" casing and cement to surface using Class "C" + 2% CaCl mixed in 50 sx stages.

**Surface – Cement to surface as follows:**

Lead – 200 sxs Class "H" + 10% bwoc A-10B + 10 #/sx LCM-1 + 1/4 #/sx Cell Flake + 1% CaCl

Tail – 200 sxs "C" + 2% CaCl

If cement does not circulate will run temperature survey to determine TOC. Will run 1" tubing down the hole beside the 8 5/8" casing and cement to surface using Class "C" Thixotropic mixed in 25-50 sx stages as appropriate.

**Production - Cement to 5300' as follows:**

Slurry – 460 sx (15:61:11) POZ:C:CSE + 0.3%bwoc FL-25 + 0.3%bwoc FL-52

**6. Mud Program**

<u>Depth</u>	<u>Mud Type</u>	<u>Weight ppg</u>	<u>Funnel Viscosity</u>	<u>Water Loss</u>
0'-1400'	Water or Air Drilled			
1400-6750'	Cut Brine	9.0/9.5	28-30	NC
6750-8600'	XCD Polymer	9.5/9.7	34-36	8-10 cc

**7. Auxiliary Equipment**

Upper Kelly Cock, Lower Kelly Cock, and Full Opening Stabbing Valve

**8. Testing, Coring and Logging Program**

- A. Drill Stem Tests – None planned
- B. Coring – None planned
- C. Logging – Mud logging planned from 1400' to TD
- D. Electric Logs
  - Open Hole: GR, DLL/MLL, CNL/LDT Shoe of 8-5/8" csg to TD
  - Cased Hole: GR/CCL TD to top cement in prod csg

**9. Anticipated Abnormal Temperature, Pressure, or Hazards**

Normally have severe lost circulation from surface to 1400'. Air drilling should alleviate this. Lost circulation has not been experienced in the area and is not anticipated below 1400'.

**10. Anticipated Starting Date and Duration of Operations**

Pending favorable weather and permit approval, construction work on this location is planned to begin in December, 2001. Construction work will require 5 days, move-in and rig up rotary tools, 2 days, drill and complete, 40 days. It is planned to spud the well in January, 2002.

# **SURFACE USE PLAN**

*Attachment to BLM Form 3160-3*

ARCO Permian

Well: Hilltop Federal #3

Unit Letter - P

750 FSL, 950 FEL

Section 1, T21S, R21E

Eddy County, New Mexico

## **1. Directions to location Existing Roads**

From Carlsbad, New Mexico go North +/- 20 miles on Highway 285 to Eddy County Rd. 23 (Rock Daisy Rd.). Go West on Rock Daisy Rd. 19 miles to Armstrong Rd (ECR 21). Go South on Armstrong Rd. 6 miles. Turn left at ARCO lease sign. Go South 1.6 miles. Turn left and go East 0.3 miles. Turn right and go 2.5 miles SW to location. Exhibits "4" and "5" are the Vicinity Map and the Location Verification Map.

- A. The proposed development wellsite is staked as shown on the certified location plat attached.
- B. The existing roads will require improvement. Any existing sections of road that needs improvement or repair will be fixed to a condition equal to that of the good sections of the existing road. All roads will be maintained in a condition equal to that which existed prior to the start of the construction.

## **2. Planned Access Roads**

- A. Approximately 4950' of new access road will be required.
- B. New access roads will have a 12' wide travel lane and be surfaced with 6" compacted caliche.
- C. Turnouts: One
- D. Culverts: If needed, across creeks cutting new or existing dirt road.
- E. Cuts and fills: No major road cuts or fill will be necessary.

## **3. Location of Existing Wells**

- A. The existing wells within a one-mile radius of this location are shown on Exhibit "6".

## **4. Location of Existing or Proposed Facilities**

- A. Existing Facilities – No facilities currently exist for this well.
- B. New Facilities Proposed – If a successful Morrow producer is completed, surface facilities will consist of a separator, line heater and collection tanks for oil and water.

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

Fresh water will be produced from a well on lease or will be purchased from independent trucking companies and brine water used in drilling and completion operations will be purchased from independent trucking companies located in Artesia or Carlsbad, New Mexico. The water will be hauled over existing and new roads to the location.

**6. Source of Construction Materials**

Caliche for the road and well pad construction will be from the designated BLM caliche pit.

**7. Methods of Handling Waste Disposal**

- A. Drill cuttings will be handled in the reserve pit and buried during reclamation operations.
- B. Trash, waste paper, garbage and junk will be contained in a fenced trash trailer to prevent scattering by the wind and hauled to a municipal sanitary landfill. The supplier will pick up all sacked drilling mud. The drilling contractor will haul away any chemicals that they used while drilling.
- C. Toilet facilities will be provided for human waste. Sewage disposal facilities will be in accordance with State and Local Regulations.
- D. Drilling fluids will be handled as follows. The free water will be either hauled to the reserve pit of the next drilling well for re-use or hauled to a permitted SWD. If any mud is hauled away it will be disposed of at an approved mud disposal site. Remaining drilling fluids will be allowed to evaporate in the reserve pit until dry enough for reclamation.
- E. Any fluids produced during swab testing the well while the pulling unit is on location will be collected in a test tank. Produced water will be hauled to a permitted SWD. Oil produced will remain in the test tank until sold and hauled from the site.

**8. Auxiliary Facilities**

No new facilities will be built during drilling of this well. A trailer will be used as an office and temporary living quarters for wellsite supervision.

**9. Wellsite Layout**

- A. Exhibit "7" shows the proposed wellsite layout and dimensions. Major rig components and reserve pits are shown.
- B. No significant cuts or fills will be required.
- C. The reserve pits will be plastic lined with minimum 6 mil double x laminated plastic. The liner will overlap the pit dikes and be anchored down. The reserve pit will be fenced on three sides during drilling operations. After drilling operations have ceased the fourth side of the pit will be fenced.

**10. Plans for Reclamation of the Surface**

- A. In a timely manner, after finishing the drilling and/or completion operations all equipment and other material not needed for production operations will be removed. The location will be cleared of all trash and debris then any ruts, etc. will be filled. The cellar will be filled around the wellhead.
- B. Any pits containing fluids will be fenced until they are filled. The NMOCD pit netting rules will be followed. The reserve pits will be reclaimed by deep burying the drill cuttings. The pit area will be leveled and contoured to conform to the surrounding area. A stockpile of topsoil from the location construction will be evenly distributed over the disturbed area. Re-vegetation procedures will comply with BLM standards.
- C. Upon abandonment of the well, surface restoration will be in accordance with the surface owner requirements and will be accomplished as expediently as possible.

**11. Surface Ownership**

The surface for the wellsite locations is on BLM surface and minerals and Leased by Corrales Livestock Corp., Hope, New Mexico.

**12. Additional Information**

- A. Topography: Hilly with canyons. Location is in a relatively flat area.
- B. Vegetation includes mesquite, catclaw, creosote, broom snakeweed, various cacti, shin oak, sand sage, narrowleaf yucca, and mixed grasses.
- C. The soil is stony and rocky with loamy soils over limestone.
- D. Primary use of the land is livestock grazing and accessing producing wells.
- E. There are no dwellings in the vicinity.
- F. An archaeological block survey will be prepared; a copy of which will be sent to your office.
- G. The selected dirt contractor will be furnished with an approved copy of the Surface Use Plan and any additional stipulations prior to beginning and work.

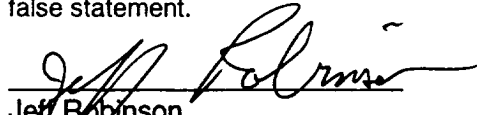


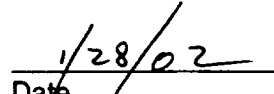
**13. Operator's Representatives**

Jeff Robinson  
Reservoir Engineer  
200 Westlake Park Blvd, Rm 245  
Houston, TX 77079  
(281) 366-3706

**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 that currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct. The work associated with the operations proposed herein, will be performed by ARCO Permian and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for filing of a false statement.

  
\_\_\_\_\_  
Jeff Robinson  
Reservoir Engineer

  
\_\_\_\_\_  
Date

# EXHIBIT 1

DRILLING OPERATIONS  
 CLASS - 1: NORMAL PRESSURE < 10PPG  
 OPTION - 2: MMS STANDARD; SINGLE SIZE DRILL STRING

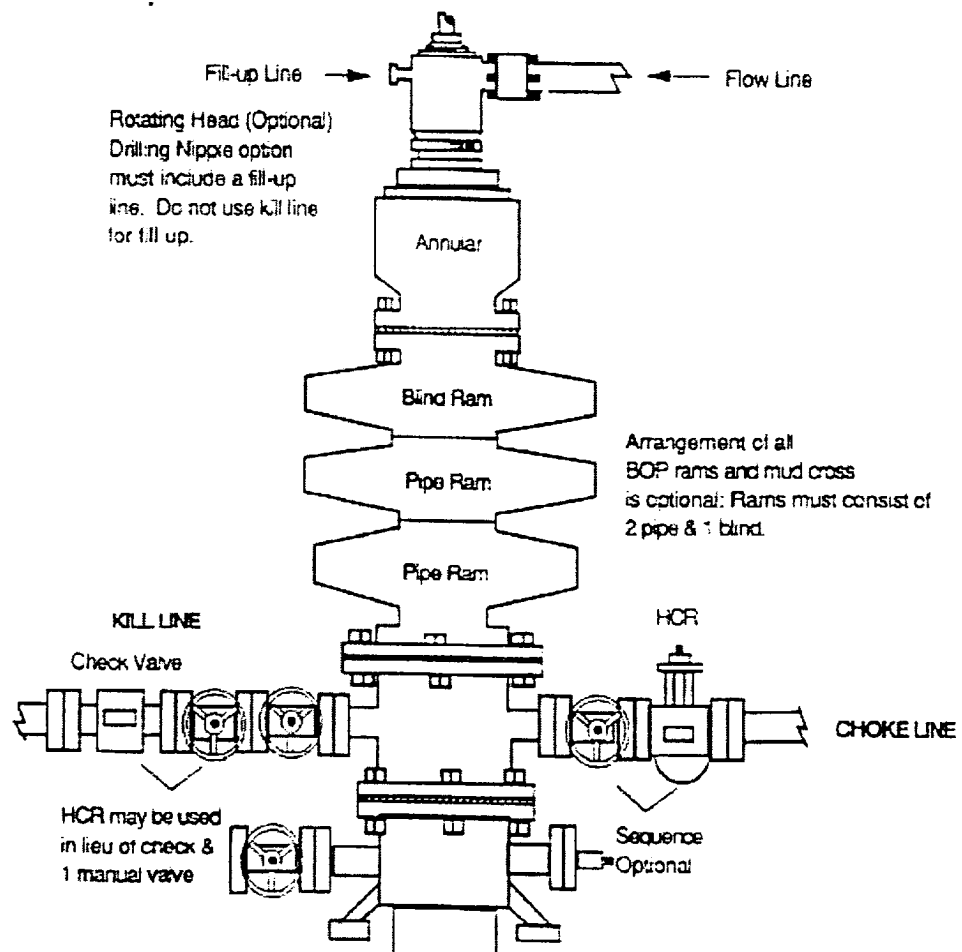
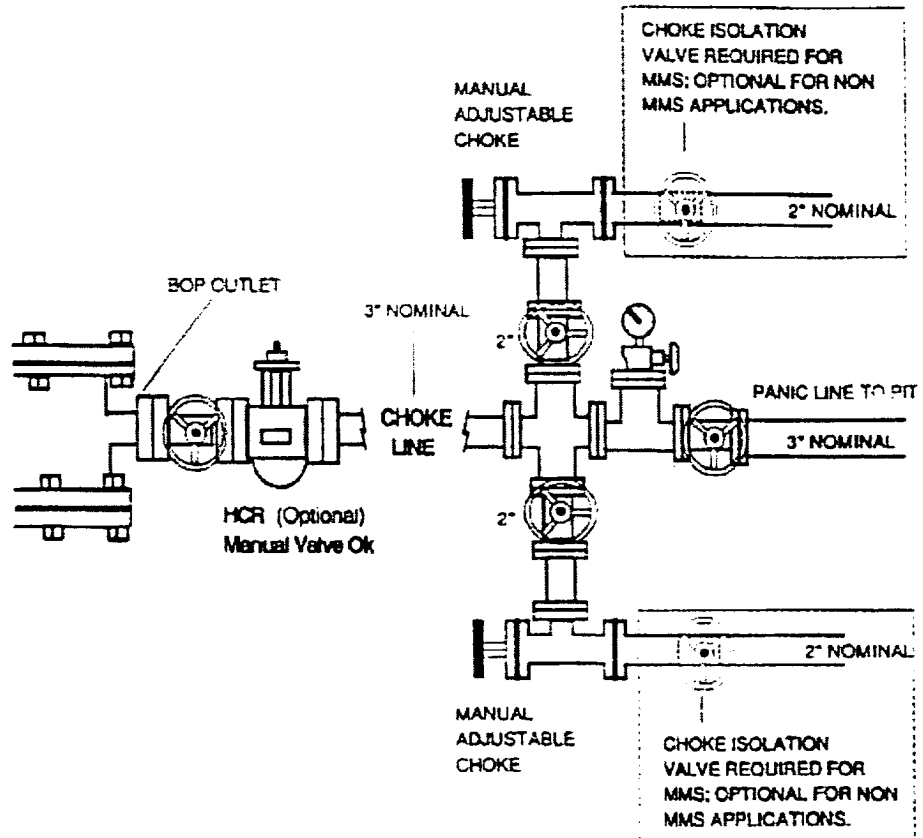


EXHIBIT 2

DRILLING OPERATIONS  
CHOKE MANIFOLD  
2M AND 3M SERVICE



### **BLOWOUT PREVENTION EQUIPMENT SPECIFICATIONS**

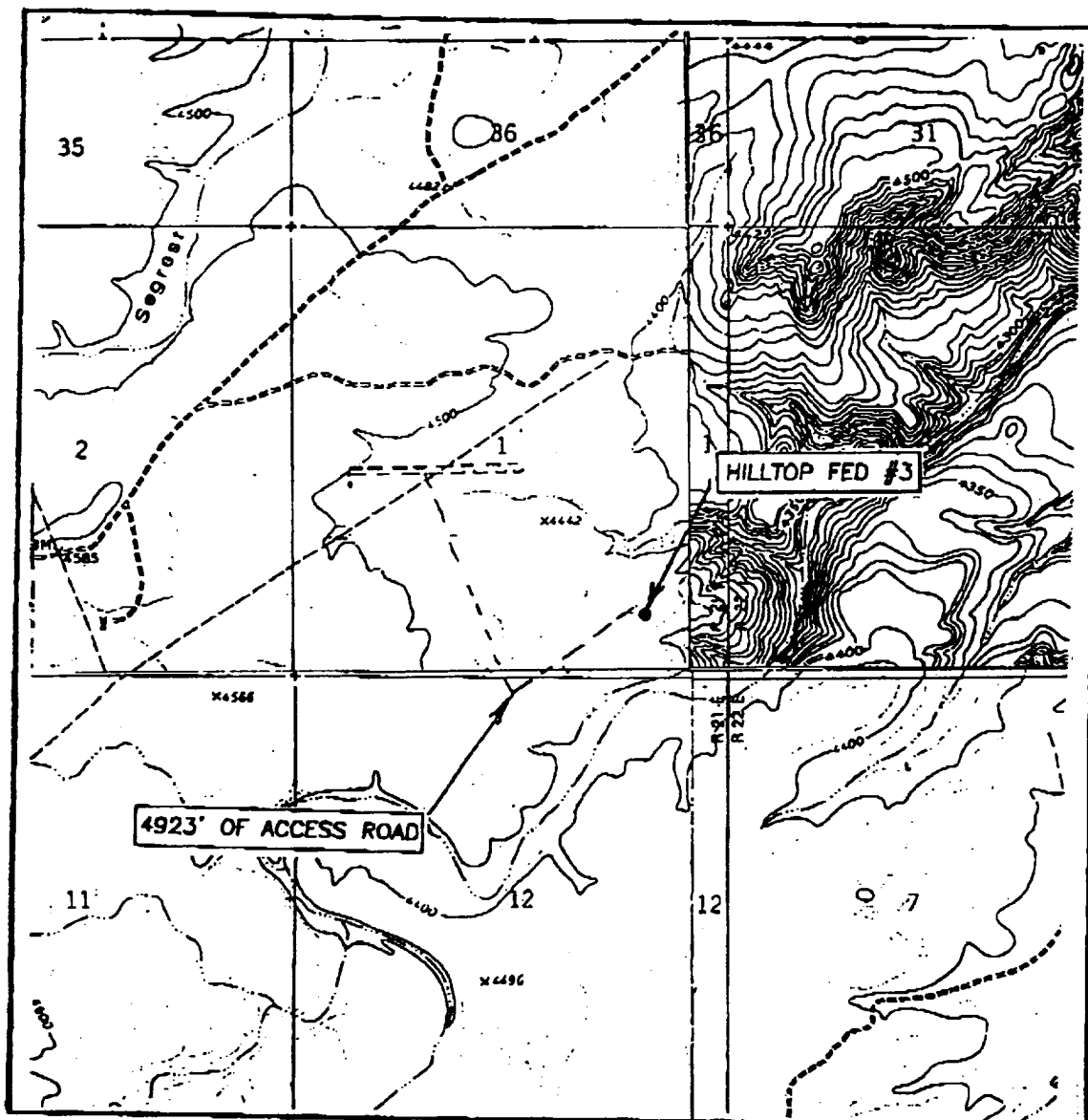
1. All BOP equipment shall be fluid and/or mechanically operated.
2. BOP's and all fittings will be in good working condition.
3. Equipment through which the bit must pass shall be at least as large as the casing size being drilled.
4. The nipple above the BOP shall be at least the same size as the last casing set.
5. The upper kelly cock with handle and lower kelly cock shall be rated at the BOP working pressure.
6. A floor safety valve (full opening) or drill string BOP with appropriate pressure ratings shall be available on the rig floor with connections or subs to fit any tool joint in the string.
7. The minimum size choke line shall be 3 inches nominal diameter, with a minimum size for vent lines downstream of chokes of 2 inches nominal, and vent lines which by-pass shall be a minimum of 3 inches nominal and as straight as possible.
8. All valves, fittings and lines between the closing unit and the blowout preventer stack should be of steel construction with rated working pressure at least equal to working pressure rating of the stack. Lines shall be bundled and protected from damage.
9. Minimum size for kill line is 2 inches nominal.
10. Ram type preventers shall be equipped with extension hand wheels or hydraulic locks.

[illegible]

SEC. 1 TWP. 21-S RGE. 21-E  
SURVEY N.M.P.M.  
COUNTY EDDY  
DESCRIPTION 750' FSL & 950' FEL  
ELEVATION 4431'  
OPERATOR ARCO PERMIAN  
LEASE HILLTOP FEDERAL

JOHN WEST SURVEYING  
HOBBS, NEW MEXICO  
(505) 393-3117

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

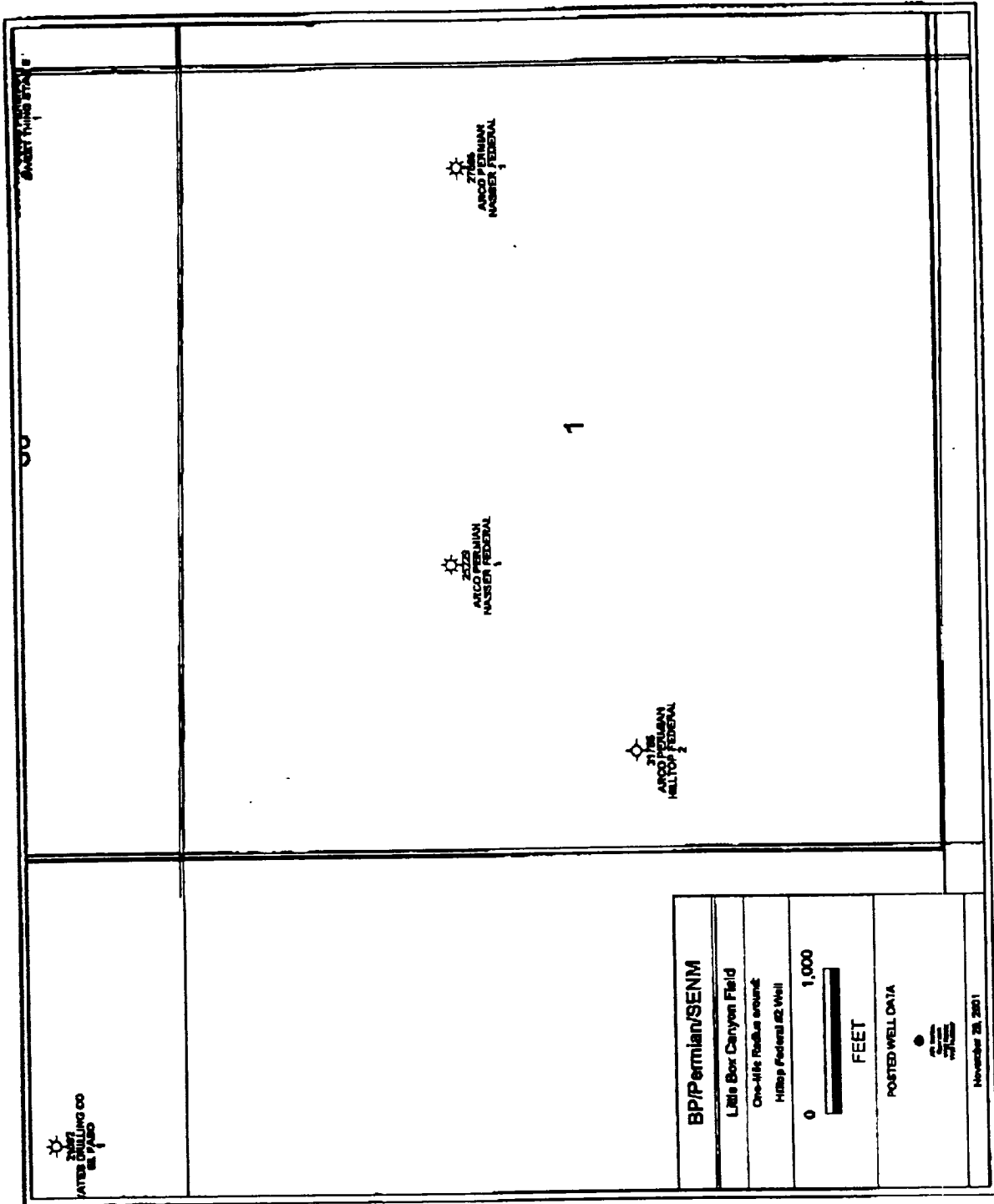
CONTOUR INTERVAL: 10', 20'

BOX CANYON, STRYCHNINE DRAW, N.M.

SEC. 1 TWP. 21-S RGE. 21-ESURVEY N.M.P.M.COUNTY EDDYDESCRIPTION 750' FSL & 950' FELELEVATION 4431'OPERATOR ARCO PERMIANLEASE HILLTOP FEDERALU.S.G.S. TOPOGRAPHIC MAP  
BOX CANYON, STRYCHNINE DRAW, N.M.

JOHN WEST SURVEYING  
HOBBS, NEW MEXICO  
(505) 393-3117

EXHIBIT # 6



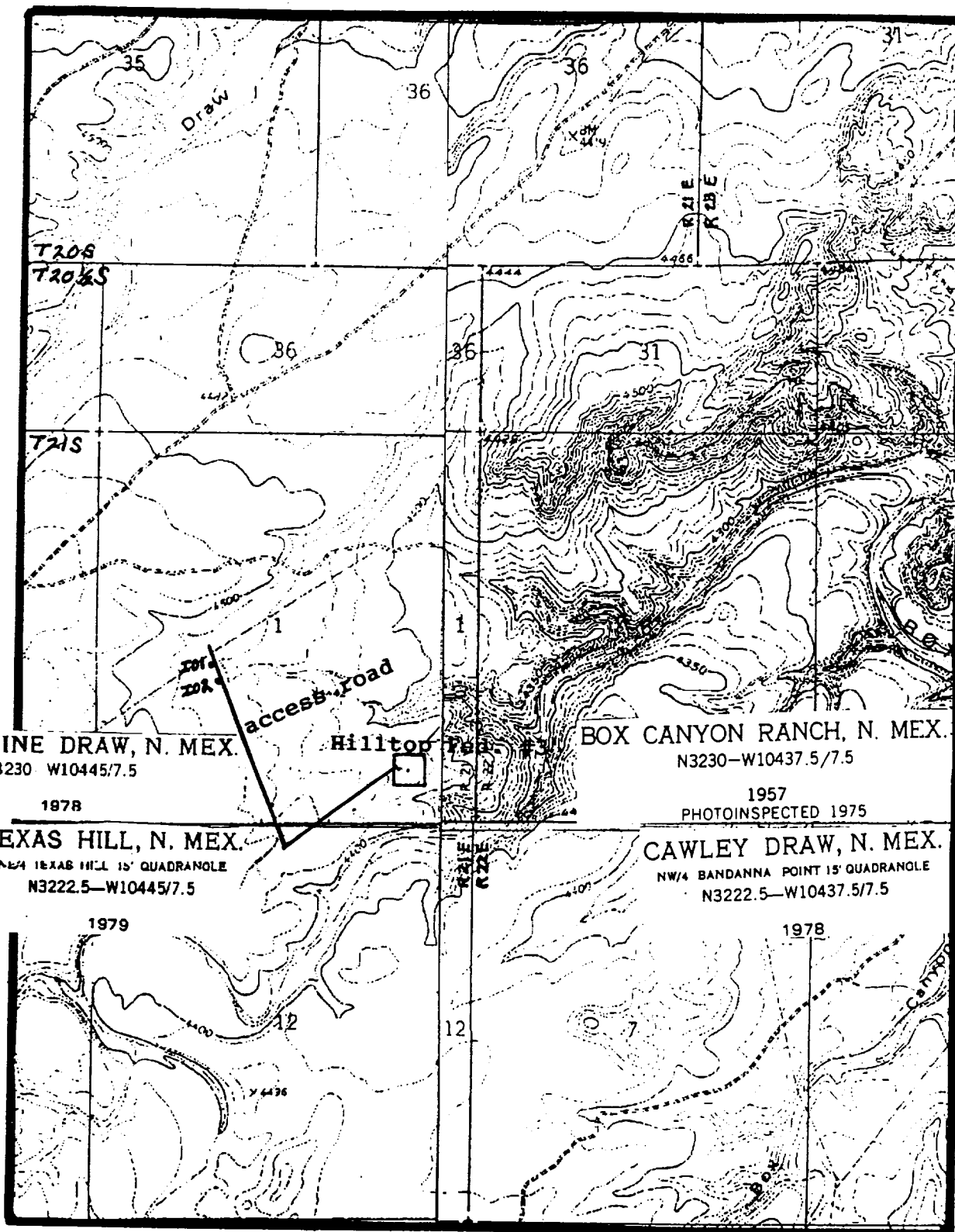
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Approved by \_\_\_\_\_

三

**AND JUSTICE**





STRYCHNINE DRAW, N. MEX.  
N3230 W10445/7.5

1978

TEXAS HILL, N. MEX.  
NW/4 TEXAS HILL 15' QUADRANGLE  
N3222.5-W10445/7.5

BOX CANYON RANCH, N. MEX.  
N3230-W10437.5/7.5

1957  
PHOTOINSPECTED 1975

CAWLEY DRAW, N. MEX.  
NW/4 BANDANNA POINT 15' QUADRANGLE  
N3222.5-W10437.5/7.5

SCALE 1:24 000

