

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

ARTESIA

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.  
NM-58940

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
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7. UNIT AGREEMENT NAME  
-----

8. FARM OR LEASE NAME WELL NO.  
WBR FEDERAL # 4

9. AP WELL NO.  
30-025-35818

10. FIELD AND POOL OR WILDCAT  
RED TANK-BONE SPRING

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA  
SEC. 13 T22S-R32E

12. COUNTY OR PARISH  
LEA EDDY CO.

13. STATE  
NEW MEXICO

1a. TYPE OF WORK  
DRILL  DEEPEN  801

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

2. NAME OF OPERATOR  
POGO PRODUCING COMPANY (RICHARD WRIGHT 915-685-8140)

3. ADDRESS AND TELEPHONE NO.  
P.O. BOX 10340 MIDLAND, TEXAS 79702-7340 (915-695-8100)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
At surface  
2080' FSL & 1980' FEL SEC. 13 T22S-R32E LEA CO. NM  
At proposed prod. zone SAME

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
Approximately 30 miles East of Carlsbad New Mexico

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. unit line, if any) 750'

16. NO. OF ACRES IN LEASE 600

17. NO. OF ACRES ASSIGNED TO THIS WELL 40

18. PROPOSED DEPTH 10,200'

19. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 1000'

20. ROTARY OR CABLE TOOLS ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3675 GR.

22. APPROX. DATE WORK WILL START\* WHEN APPROVED

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
25"	Conductor	NA	40'	Cement to surface with Redi-mix.
17 1/2"	H-40 13 3/8"	48	1000'	1000 Sx. circulate cement to surface
12 1/2"	S-80, J-55 8 5/8"	32	4700'	1800 Sx. " " " "
7 7/8"	N-80, J-55 5 1/2"	17	10,200'	1200 Sx. in two stages T.C. 3000'

1. Drill 25" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17 1/2" hole to 1000'. Run and set 1000' of 13 3/8" 48# H-40 ST&C casing. Cement with 1000 Sx. of Class "C" cement + 2% CaCl, + 1/2# Flocele/Sx., circulate cement to surface.
3. Drill 12 1/2" hole to 4700'. Run and set 4700' of 8 5/8" 32# ST&C casing as follows: 500' of 8 5/8" 32# S-80 ST&C, 4200' of 8 5/8" 32# J-55 ST&C casing. Cement with 1800 Sx. of Class "C" cement + 2% CaCl, + 1/2# Flocele/Sx., circulate cement to surface.
4. Drill 7 7/8" hole to 10,200'. Run and set 10,200' of 5 1/2" casing as follows: 3200' of 5 1/2" 17# N-80 LT&C, 5000' of 5 1/2" 17# J-55 LT&C, 2000' of 5 1/2" 17# N-80 LT&C casing. Cement in two stages, set stage tool at 7000'±. Cement with 1200 Sx. of Class "H" cement + additives estimate top of cement 3000' from surface.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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.

SIGNED Joe G. Larra TITLE Agent DATE 05/09/01

(This space for Federal or State Office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease or CONDITIONS OF APPROVAL IF ANY:

CORR. GRID NO. 17891  
PROPERTY NO. 9350  
POOL CODE 51683  
EFF. DATE 1-30-02  
API NO. 30-025-35818

APPROVED BY /s/ JOE G. LARA TITLE FIELD MANAGER DATE JAN 25 2002

IS JOE G. LARA

RECEIVED

2001 MAY 10 AM 8:55

BUREAU OF LAND MGMT  
POLICE OFFICE

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102  
Revised February 10, 1994  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
P.O. Drawer DD, Artesia, NM 86211-0719

OIL CONSERVATION DIVISION

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

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT IV  
P.O. Box 2088, Santa Fe, NM 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-025-</b>	Pool Code 51683	Pool Name RED TANK - BONE SPRING
Property Code 9350	Property Name WRB FEDERAL	Well Number 4
OGRID No. 17891	Operator Name POGO PRODUCING COMPANY	Elevation 3675

Surface Location

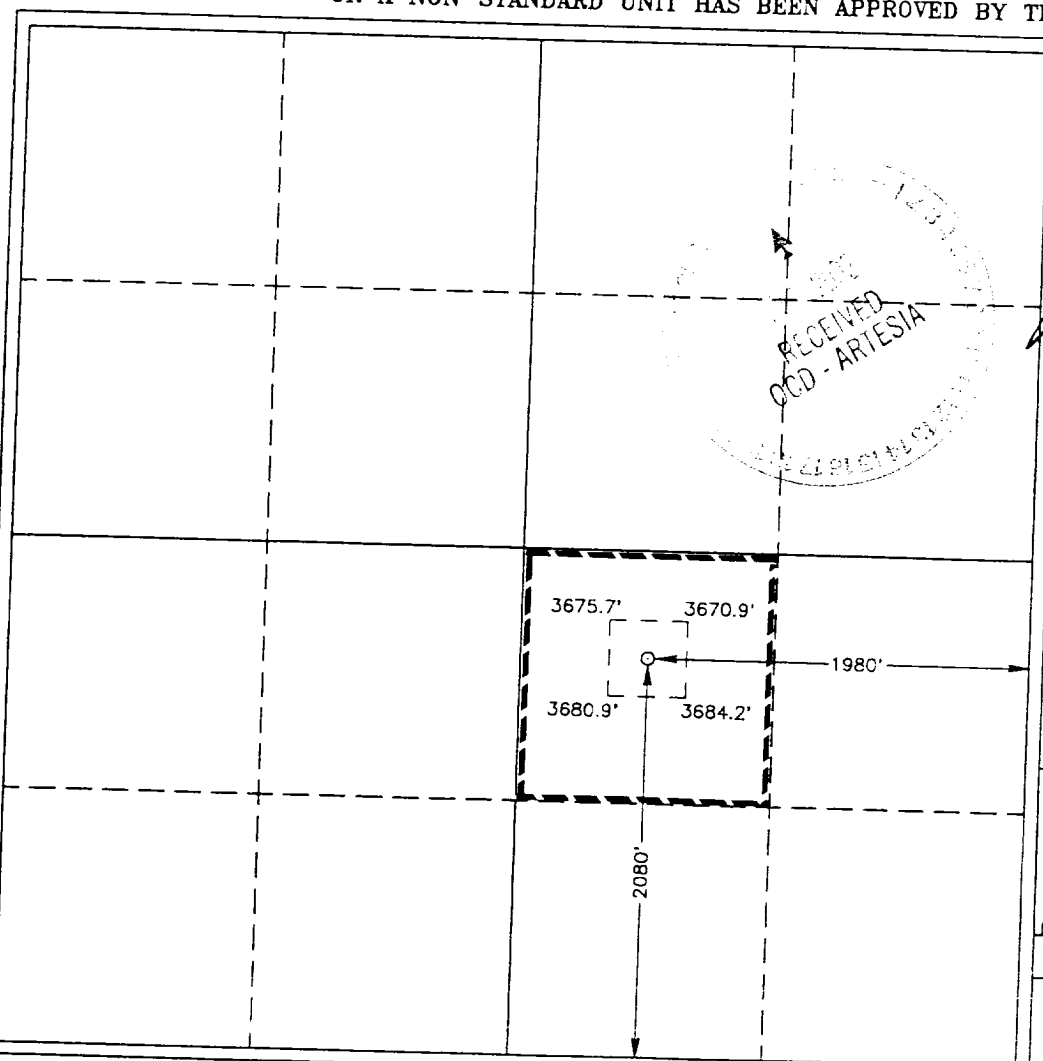
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	13	22 S	32 E		2080	SOUTH	1980	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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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



**OPERATOR CERTIFICATION**

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

*Joe T. Janica*  
Signature  
Joe T. Janica  
Printed Name  
Agent  
Title  
05/09/01  
Date

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**SURVEYOR CERTIFICATION**

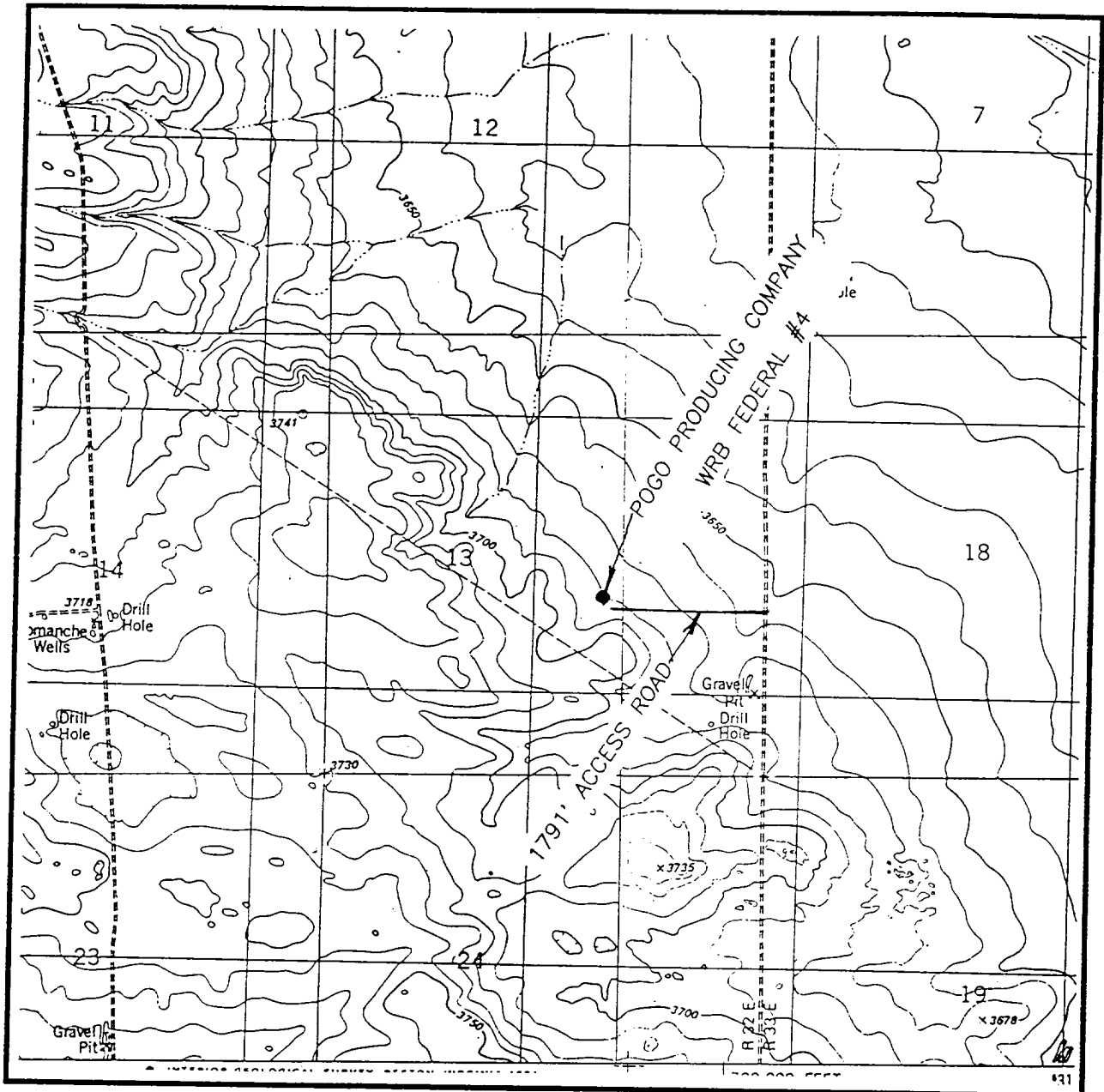
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MAY 20, 1998  
Date Surveyed JLP

*Ronald J. Edson*  
Signature & Seal of Professional Surveyor  
5-26-98  
W.O. Num. 98-11-0741

Certificate No. RONALD V. EDSON, 3239  
GARY G. EDSON, 12641  
MACON McDONALD, 12155

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL 10'

SEC. 13 TWP. 22-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 2080 FSL & 1980' FEL

ELEVATION 3675'

OPERATOR POGO PRODUCING COMPANY

LEASE WRB FEDERAL

U.S.G.S. TOPOGRAPHIC MAP

GRAMA RIDGE, & THE DIVIDE, N.M.

**JOHN WEST ENGINEERING  
HOBBS, NEW MEXICO**

**(505) 393-3117**



APPLICATION TO DRILL

POGO PRODUCING COMPANY

WBR FEDERAL # 4

UNIT "J" SECTION 13

T22S-R32E LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6 the following information on the above well is provided for your consideration.

1. Location: 2080' FSL & 1980' FEL SEC. 13 T22S-R32E LEA CO. NM

2. Elevation above Sea Level: 3675' GR.

3. Geologic name of surface formation: Quaternary Aeolian Deposits.

4. Drilling tools and associated equipment: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.

5. Proposed drilling depth: 10,200'

6. Estimated tops of geological markers:

Rustler Anhydrite	900'	Cherry Canyon	6000'
Basal Anhydrite	4500'	Brushy Canyon	7000'
Delaware	4842'	Bone Spring	8730'
Ramsey Sand	4920'	1st Bone Spring Sand	9850'

7. Possible mineral bearing formations:

Delaware	Oil	Brushy Canyon	Oil
Cherry Canyon	Oil	Bone Spring	Oil

8. Casing program:

Hole size	Interval	OD of casing	Weight	Thread	Collar	Grade
25"	0-40	20"	NA	NA	NA	Conductor
17½"	0-1000'	13 3/8"	48	8-R	ST&C	H-40
12½"	0-4700'	8 5/8"	32	8-R	ST&C	J-55 S-80
7 7/8"	0-10,200'	5½"	17	8-R	LT&C	N-80 J-55

APPLICATION TO DRILL

POGO PRODUCING COMPANY  
 WBR FEDERAL # 4  
 UNIT "J" SECTION 13  
 T22S-R32E LEA CO. NM

9. CEMENTING & SETTING DEPTH:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Set 1000' of 13 3/8" 48# H-40 ST&C casing. Cement with 1000 Sx. of Class "C" cement + additives circulate to surface.
8 5/8"	Intermediate	Set 4700' of 8 5/8" 32# J-55 ST&C casing. Cement with 1800 Sx. of Class "C" cement + 2% CaCl <sub>2</sub> + 1/4# Flocele/Sx. circulate cement to surface.
5 1/2"	Production	Set 10,200' of 5 1/2" casing as follows: 3200' of 5 1/2" 17# N-80 LT&C, 5000' of 5 1/2" 17# J-55 LT&C, 2000' of 5 1/2" 17# N-80 LT&C. Cement in two stages, DV Tool at 7000'±, cement with 1200 Sx. of Class "H" Premium Plus cement + additives, estimate top of cement 3000' from surface.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 1500 Series 5000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams and bottom pipe rams. The B.O.P. will be nipped up on the 13 3/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period and the blind rams will be operated when drill pipe is out of hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. Exhibit "E-1" shows a hydraulically operated closing unit and a 2" 5000 PSI choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-1000'	8.4-8.7	29-38	NC	Fresh water mud add paper to control seepage and use high viscosity sweeps to clean hole.
1000-4700'	10.2-10.3	29-38	NC	Brine water using high viscosity sweeps to clean hole.
4700-10,200'	8.4-8.8	29-39	NC	Fresh water using high viscosity sweeps to clean hole. water loss may be needed to run logs and/or casing, if needed use a polymer system to accomplish this

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing viscosity and/or water loss may have to be adjusted to meet these needs.

APPLICATION TO DRILL

POGO PRODUCING COMPANY

WBR FEDERAL # 4

UNIT "J" SECTION 13

T22S-R32E LEA CO. NM

12. Testing, Logging and Coring Program:

- A. Open hole logs: Dual Induction, SNP, LDT, Sonic, Caliper & Gamma Ray from TD to 4700'. Run Gamma Ray, Neutron from 4700' to surface.
- B. Mud logger will be put on hole at 4700'± and remain on hole to TD.
- C. No DST's or cores are planned at this time

13. Potential Hazards:

No abnormal pressures or temperatures are expected. Hydrogen Sulfide gas may be encountered, H<sub>2</sub>S detectors will be in place to detect any presence. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used. Estimated BHP 5000 PSI, estimated BHT 175° .

14. Anticipated Starting Date and Duration of Operation:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 40 days. If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15. Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals. The Bone Spring pay will be perforated and stimulated. The well will be swab tested and potentialized as an oil well.



## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blosie line (mud pit) and on derrick floor or doghouse.
3. Windsack and/or wind streamers
  - A. Windsack at mudpit area should be high enough to be visible.
  - B. Windsack at briefing area should be high enough to be visible.
  - C. There should be a windsack at entrance to location.
4. Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E"
6. Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If the location is near to a dwelling a closed DST will be performed.

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
9. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

SURFACE USE PLAN

POGO PRODUCING COMPANY  
WBR FEDERAL # 4  
UNIT "J" SECTION 13  
T22S-R32E LEA CO. NM

1. EXISTING ROADS: Area maps, Exhibit "B" is a reproduction of a County General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
  - A. Exhibit "A" shows the proposed well site as staked.
  - B. From Hobbs, New Mexico take U.S. Hi-way 62-180 West toward Carlsbad New Mexico go 38 miles to Cr-29 turn South go 14 miles to Mills Ranch road, turn East follow road 7.3 miles Northeasterly, turn South go 1.3 miles turn East go 1.5 miles turn North go 1.8 miles turn West go 1000' to well # 1 turn Left go .3 miles to location.
  - C. Lay flow lines and construct powerlines along roads of existing R-O-W's.
2. PLANNED ACCESS ROADS: Approximately 1600' of new road will be constructed.
  - A. The access road will be crowned and ditched to a 12'00" wide travel surface with a 40' right-of-way.
  - B. Gradient on all roads will be less than 5.00%.
  - C. No turnouts will be necessary.
  - D. If needed, road will be surfaced with a minimum of 4" of caliche. This material will be obtained from a local source.
  - E. Centerline for the new access road has been flagged. Earthwork will be as required by field conditions.
  - F. Culverts in the access road will not be used. The road will be constructed to utilize low water crossings for drainage as required by the Topography.
3. LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS EXHIBIT "A-1"
  - A. Water wells - One approximately 1.5 miles West.
  - B. Disposal wells - None known
  - C. Drilling wells - None Known
  - D. Producing wells - As shown on Exhibit "A-1"
  - E. Abandoned wells - As shown on Exhibit "A-1"

SURFACE USE PLAN

POGO PRODUCING COMPANY  
WBR FEDERAL # 4  
UNIT "J" SECTION 13  
T22S-R32E LEA CO. NM

4. If, upon completion this well is a producer Pogo Producing Company will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied with a Sundry Notice.

5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction will be obtained from the excavation of drill site, if additional material is needed it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE MATERIAL:

- A. Drill cuttings will be disposed of in the reserve pit.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in a approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holes with a minimum depth of 10'. These holes will be covered during drilling and will be back filled upon completion. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for breaking out. In the event that drilling fluids do not evaporate in a reasonable time they will be hauled off by transports and be disposed of at a state approved disposal facility. Later pits will be broken out to speed drying. Water produced during casing will be put in reserve pits. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. ANCILLARY FACILITIES:

- A. No camps or airstrips to be constructed.

SURFACE USE PLAN

POGO PRODUCING COMPANY  
WBR FEDERAL # 4  
UNIT "J" SECTION 13  
T22S-R32E LEA CO. NM

9. WELL SITE LAYOUT

- A. Exhibit "D" shows the proposed well site layout.
- B. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with polyethelene. The pit liner will be 6 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.3 as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be contoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

POGO PRODUCING COMPANY  
WBR FEDERAL # 4  
UNIT "J" SECTION 13  
T22S-R32E LEA CO. NM

11. OTHER INFORMATION:

- A. Topography consists of sand dunes with a slight dip toward the West. Deep sandy soil supports native grasses, mesquite, and shinnery Oak.
- B. Surface is owned by the Bureau of Land Management U.S. Department of Interior. Surface is used for grazing of livestock and is leased to ranchers for this purpose.
- C. An archaeological survey will be conducted and copies of the survey will be filed in the Carlsbad Office of The Bureau of Land Management. An archaeological report has been filed with Carlsbad BLM office, in June 1998. Project # SNMAS 98-NM-160, NMCRIS # 61275.
- D. There are no dwellings or habitation within three miles of this location.

12. OPERATORS REPRESENTATIVE:

Before construction:

TIERRA EXPLORATION INC.  
P.O. BOX 2188  
HOEBS, NEW MEXICO 88241  
OFFICE PHONE 505-391-8503  
JOE T. JANICA

During and after construction:

POGO PRODUCING COMPANY  
P.O. BOX 10340  
MIDLAND, TEXAS 79702-7340  
OFFICE PHONE 915-685-8100  
MR. RICHARD WRIGHT 915-685-8140

- 13. CERTIFICATION: - I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently 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 Pogo Producing company, its contractors/subcontractors is in the conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME : Joe T Janica  
 DATE : 05/09/01  
 TITLE : Agent



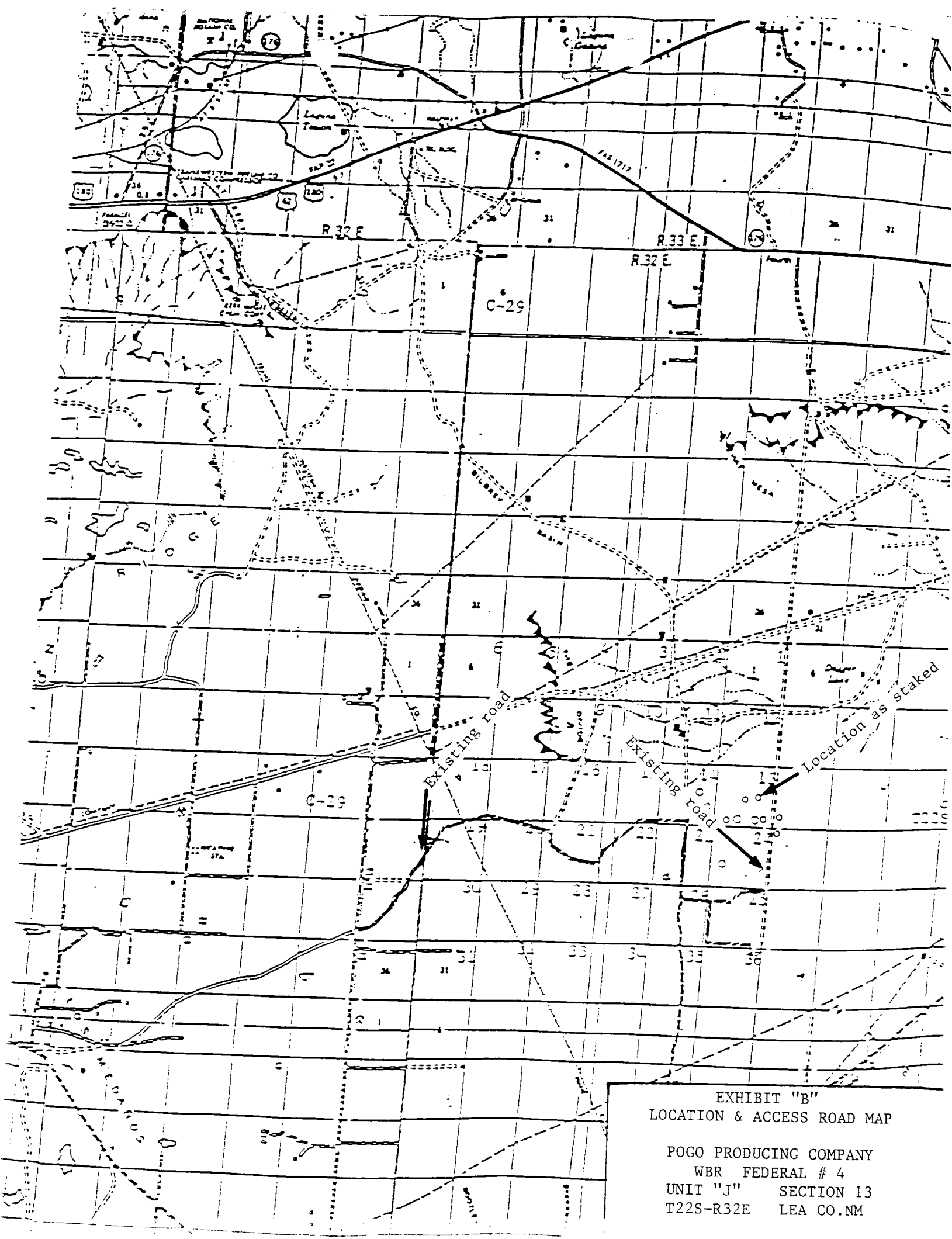


EXHIBIT "B"  
 LOCATION & ACCESS ROAD MAP

POGO PRODUCING COMPANY  
 WBR FEDERAL # 4  
 UNIT "J" SECTION 13  
 T22S-R32E LEA CO. NM



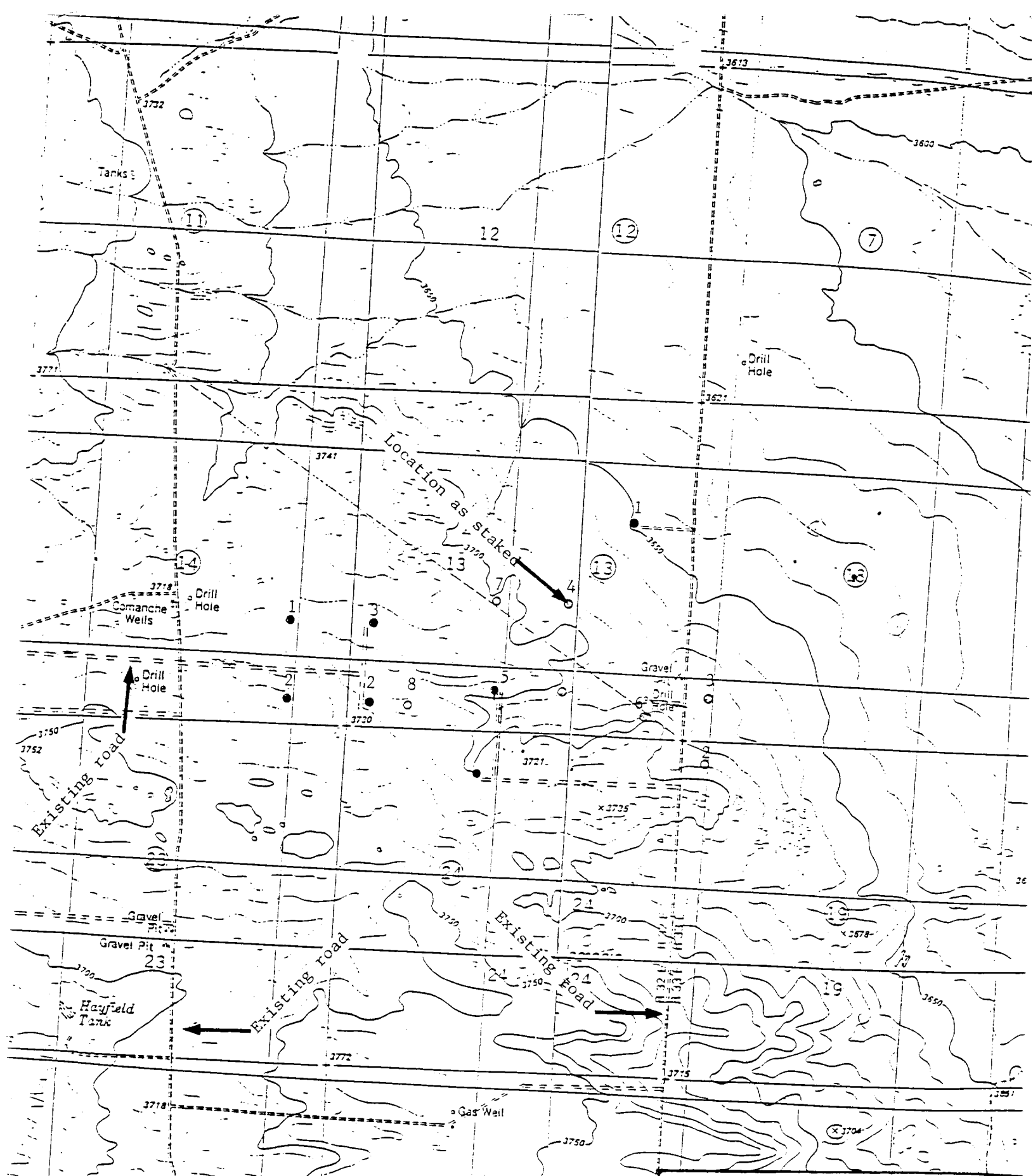
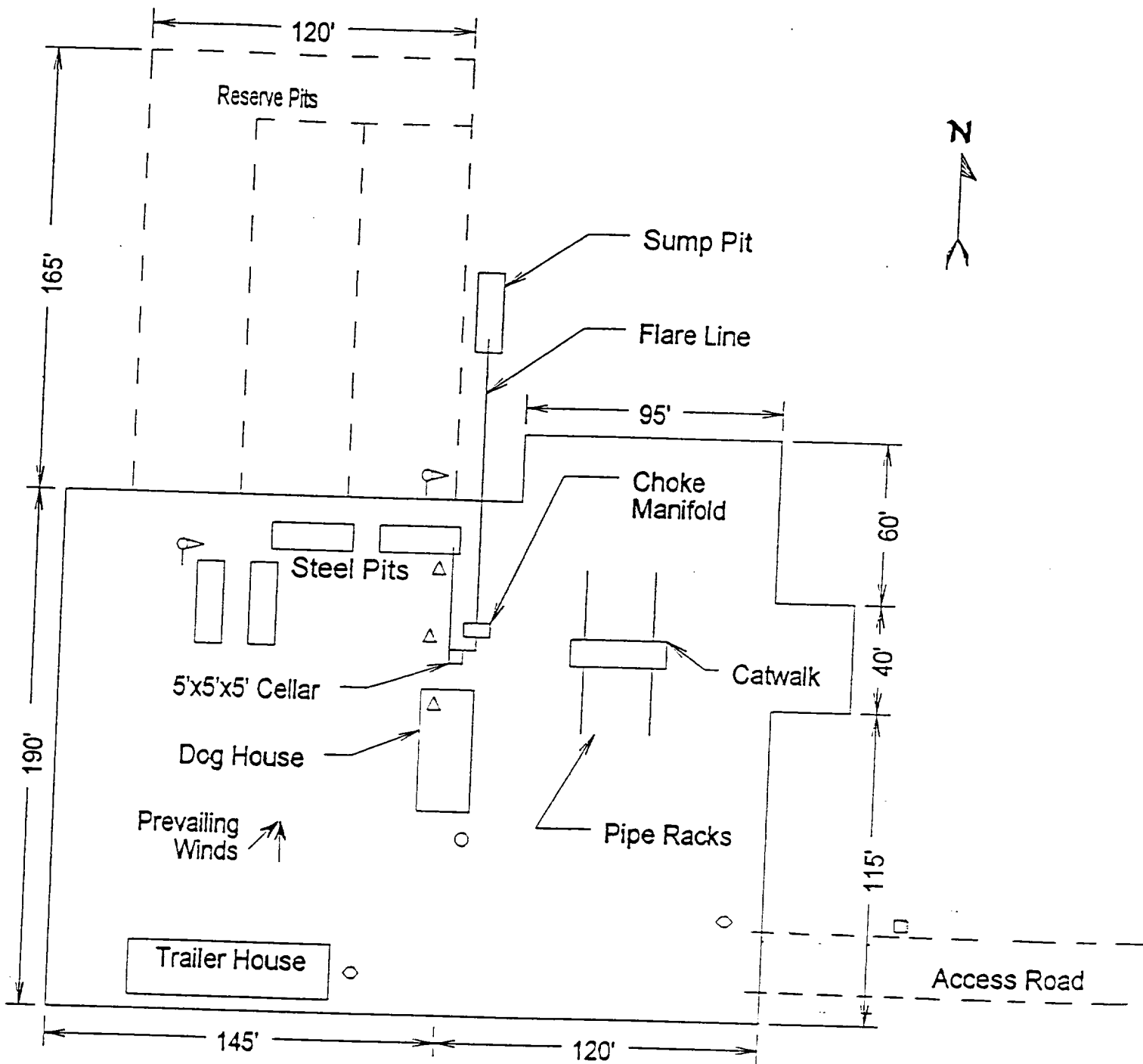


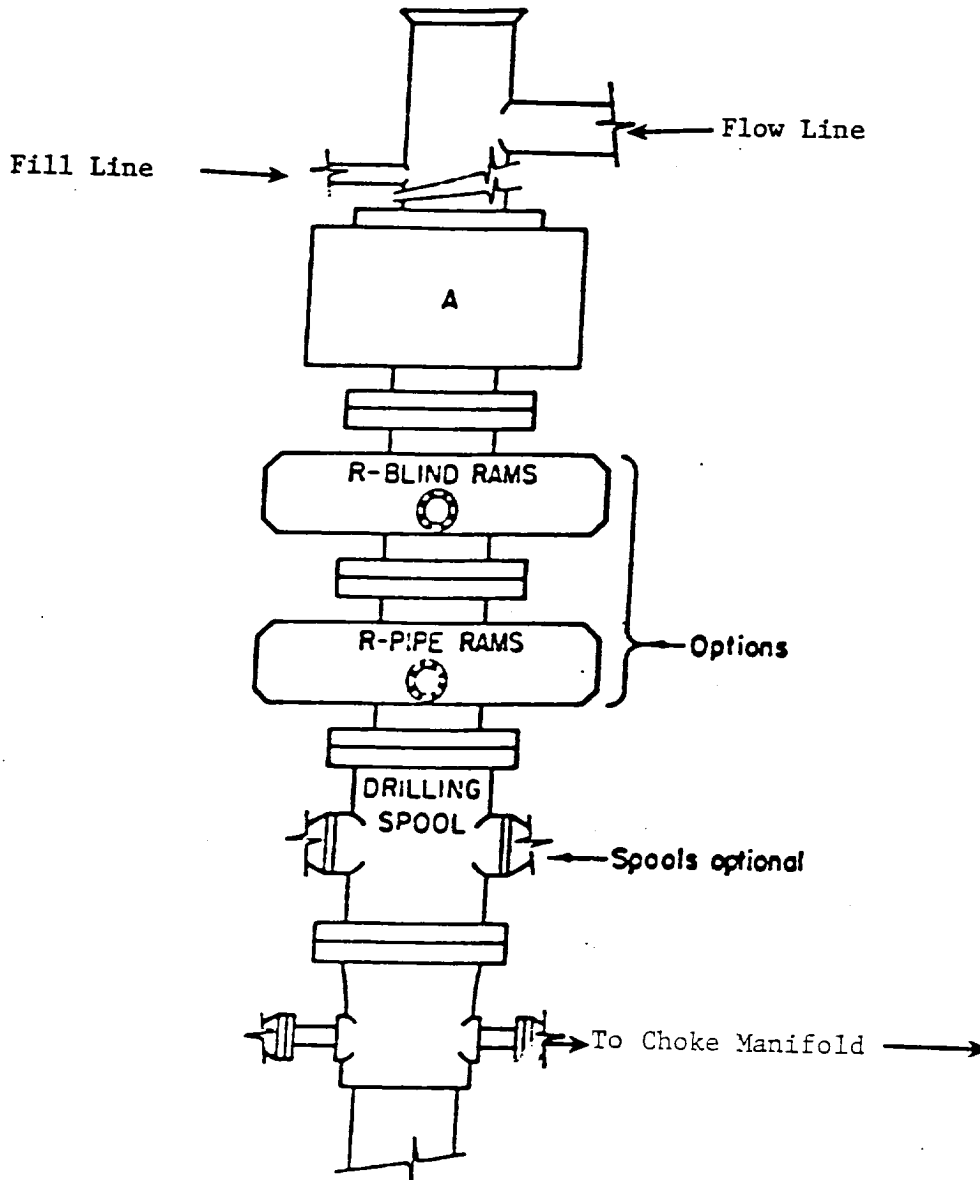
EXHIBIT "C"  
 TOPOGRAPHIC MAP SHOWING  
 ROADS & DIRECTIONS TO  
 POGO PRODUCING COMPANY  
 WBR FEDERAL # 4  
 UNIT "J" SECTION 13  
 TANKS, WELLS, AND GAS WELLS



- ☞ Wind Direction Indicators  
(wind sock or streamers)
- △ H2S Monitors  
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit
- Sign and Condition Flags

EXHIBIT "D"  
 RIG LAY OUT PLAT

POGO PRODUCING COMPANY  
 WBR FEDERAL # 4  
 UNIT "J" SECTION 13  
 T22S-R32E LEA CO. NM



**ARRANGEMENT SRRA**

1500 Series  
 5000# Working Pressure

EXHIBIT "E"  
 SKETCH OF B.O.P. TO BE USED ON  
 POGO PRODUCING COMPANY  
 WBR FEDERAL # 4  
 UNIT "J" SECTION 13  
 T22S-R32E LEA CO. NM

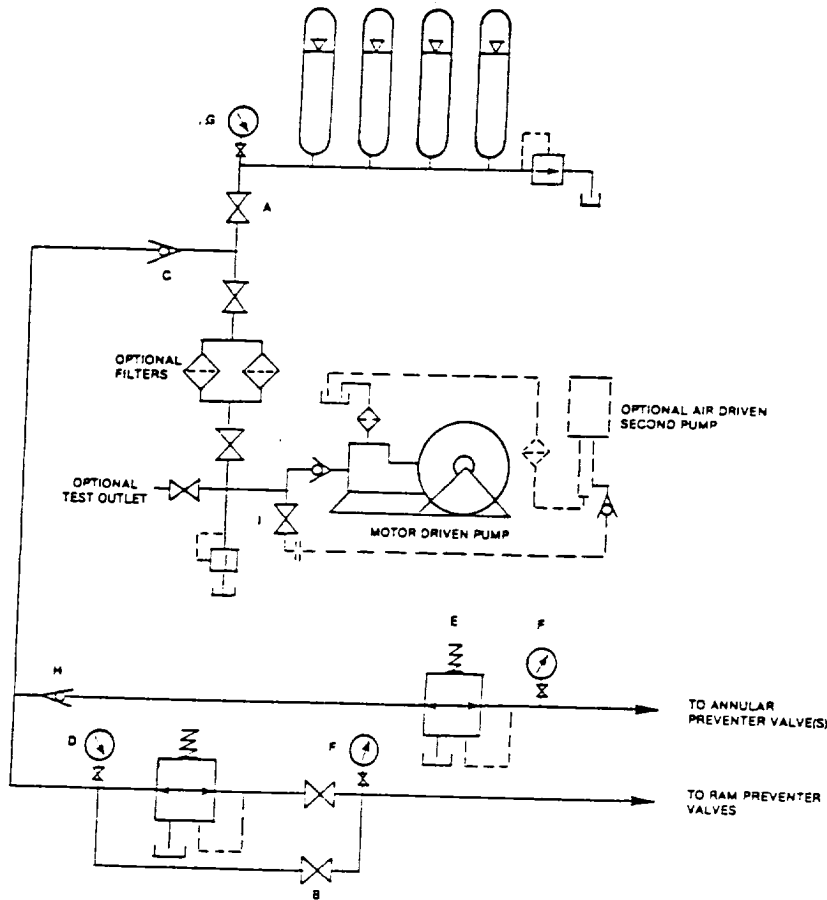


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

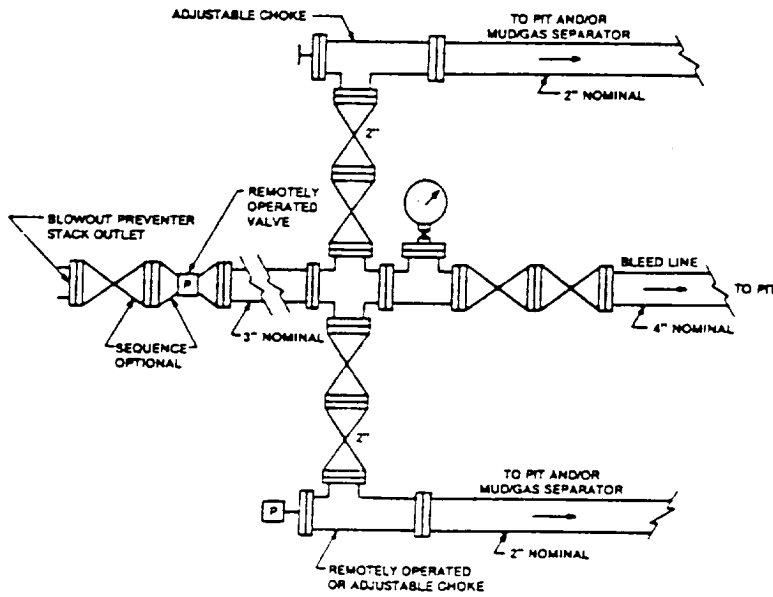


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

POGO PRODUCING COMPANY  
WBR FEDERAL # 4  
UNIT "J" SECTION 13  
T22S-R32F I.F.A. CO. NM