

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JAN 22 2008

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007


APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMM-28277	
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 type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Energen Resources Corporation		7. Unit or CA Agreement Name and No.	
3a. Address 2010 Afton Place Farmington, New Mexico 87401		8. Lease Name and Well No. Carracas 17 B #3	
3b. Phone No. (include area code) (505) 325-6800		9. API Well No. 36-039-30467	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 802 fsl, 1853 fwl - N At proposed prod. zone 760 fnl, 1700 fwl - C		10. Field and Pool, or Exploratory Basin Fruitland Coal	
14. Distance in miles and direction from nearest town or post office* Approx. 9 miles SE of Arboles, CO.		11. Sec., T., R., M., or Blk. and Survey or Area (N) Sec 17, T32N, R4W	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg. unit line, if any) 760'	16. No. of Acres in lease 2525.47	17. Spacing Unit dedicated to this well W/2 - 316.47 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 75'	19. Proposed Depth 7151' 6911' (MD)	20. BLM/BIA Bond No. on file NM2707	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7441' GL	22. Approximate date work will start* 4/25/08	23. Estimated duration 25 days	

24. Attachments

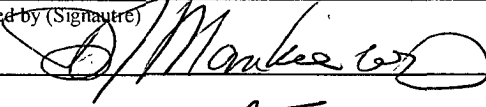
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- | | |
|---|--|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) Nathan Smith	Date 1/11/08
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Title

Drilling Engineer

Approved by (Signature) 	Name (Printed/Typed)	Date 1/5/09
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Title

AFM

Office

FED

Application approval does not warrant or certify that 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

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.

*(Instructions on page 2)

JAN 08 2009

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

Hold C104

for Directional Survey
and "As Drilled" plat

NMOCD

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

DISTRICT II
1301 Grand Avenue, Artesia, N.M. 88210DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 CopiesRCVD AUG 25 '08
☐ AMENDED REPORT
OIL CONS. DIV.
DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30.039.30467		Pool Code 71629	Pool Name BASIN FRUITLAND COAL
Property Code 35657	Property Name CARRACAS 17B		Well Number 3
GRID No. 162928	Operator Name ENERGEN RESOURCES CORPORATION		Elevation 7441'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	17	32N	4W		802'	SOUTH	1853'	WEST	RIO ARriba

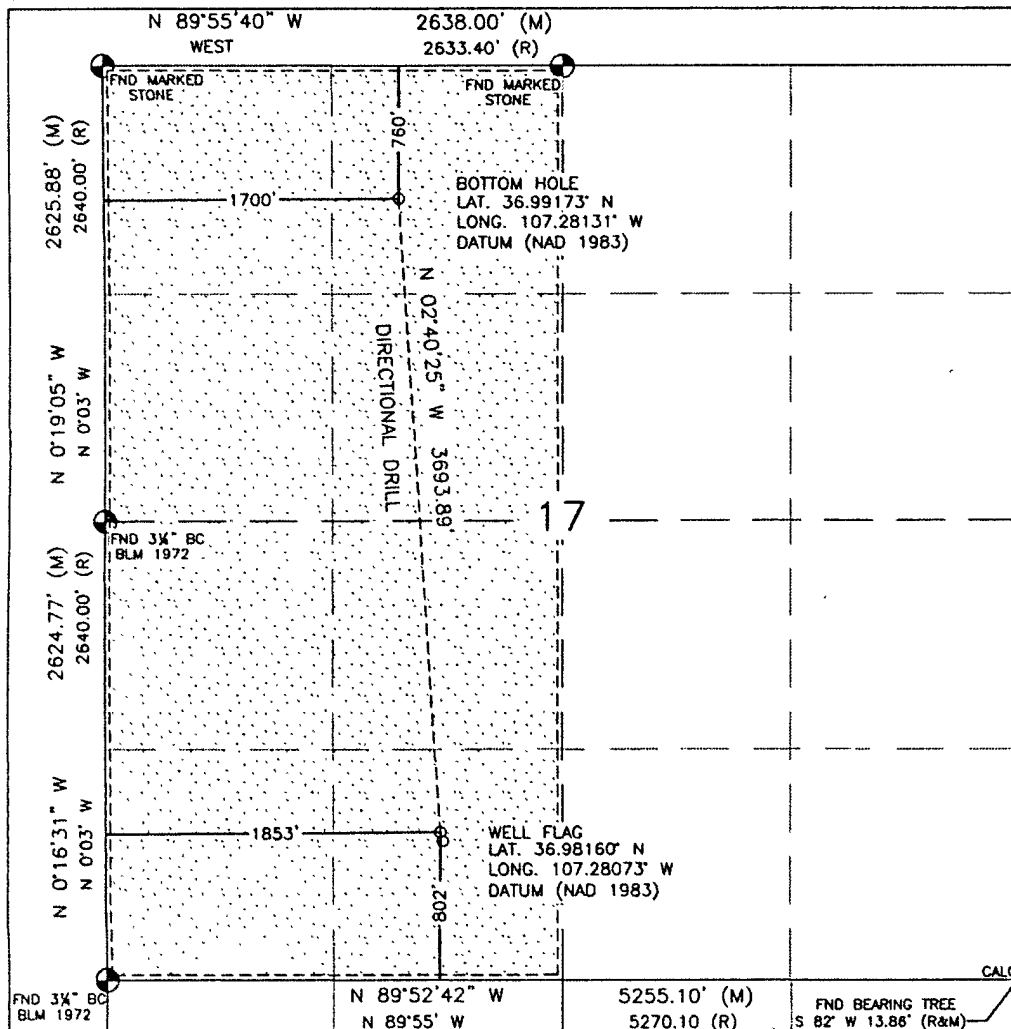
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	17	32N	4W		760'	NORTH	1700'	WEST	RIO ARriba

Dedicated Acres 316.47 ACRES - (W/2)	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

16



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner or a compulsory pooling order heretofore entered by the division.

Nathan Smith 8-20-08
Signature Date

Nathan Smith
Printed Name

18 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.

SEPTEMBER 20, 2007

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell
DAVID R. RUSSELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
10201

DAVID RUSSELL

Certificate Number

10201

Operations Plan
Revised April 29, 2008

Carracas 17 B #3

General Information

Location	802' fsl, 1853' fwl at surface 760' fnl, 1700' fwl at bottom nenw 17, T32N, R4W Rio Arriba County, New Mexico
Elevations	7441' GL
Total Depth	7151' (MD), 4250' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2366' (TVD)
Ojo Alamo Ss	3585' (TVD), 3685' (MD)
Kirtland Sh	3705' (TVD), 3847' (MD)
Fruitland Fm	3785' (TVD), 3963' (MD)
Top Coal	4239' (TVD), 5099' (MD)
Bottom Coal	4263' (TVD)
Total Depth	4263' (TVD), 7151' (MD)

Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.

The 8 ¾" wellbore will be drilled with a low solids fresh water/polymer mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.9 ppg to 9.5 ppg.

Projected KOP is 2410' TVD with 3.11°/100' doglegs.

The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1100 psi.

Blowout Control Specifications:

A 3000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle and drill string valve should be available to fit each drill string and be available on the rig floor during drilling operations. Test BOP to 250 psi and 1500 psi following nipple up after surface and intermediate casing strings. Test manifold to 1500 psi.

Logging Program:

Open hole logs: None

Mud logs: From 3785' (TVD), 3963' (MD) to TD.

Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt.	Grade
Surface	0'-200'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4250' (TVD) 5375' (MD)	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	4239'-4263' (TVD) 5325'-7151' (MD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-5275' (MD)		2 3/8"	4.7 ppf	J-55

Casing Equipment:

Surface Casing: Depending on wellbore conditions, a Texas Pattern Guide Shoe on bottom. Casing centralization with no less than 3 standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: A self fill float shoe on the bottom of the first joint and a self fill float collar on top of the first joint and casing centralization with double bow spring and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Liner: Bull nose guide shoe on bottom of first joint, H-Latch liner drop off tool on top of last joint. Liner will consist of two blank joints for liner lap and one blank joint for a shoe track with pre-perforated joints in between.

Wellhead

3000 psi 11" x 9 5/8" weld on casing head. 9 5/8" x 7" x 2 3/8" 3000 psi Flanged Wellhead .

Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % CaCl₂ and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk 148 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. See BOP specs for BOP testing.

Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 760 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 125 sks Class G with 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1498 ft³ of slurry, 100 % excess to circulate to surface). Test casing to ~~750~~ 1500 psi for 30 min. See BOP specs for BOP testing.

Other Information

- 1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The intermediate string may need to be cemented in multiple stages with a slurry design deviated from that listed above.
- 3) If high reservoir pressures or water flows are encountered slurry design may need to be deviated to from those listed above to satisfy wellbore and formation conditions.
- 4) No abnormal temperatures or pressures are anticipated. This gas is dedicated.



Project: Carson Nat'l Forest - NW S17, T32N, R4W
Site: Carracas Mesa
Well: Carracas 17 B #3
Wellbore: Preliminary Plan
Plan: Plan #2 (Carracas 17 B #3/Preliminary Plan)

PROJECT DETAILS: Carson Nat'l Forest - NW S17, T32N, R4W

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
System Datum: Mean Sea Level

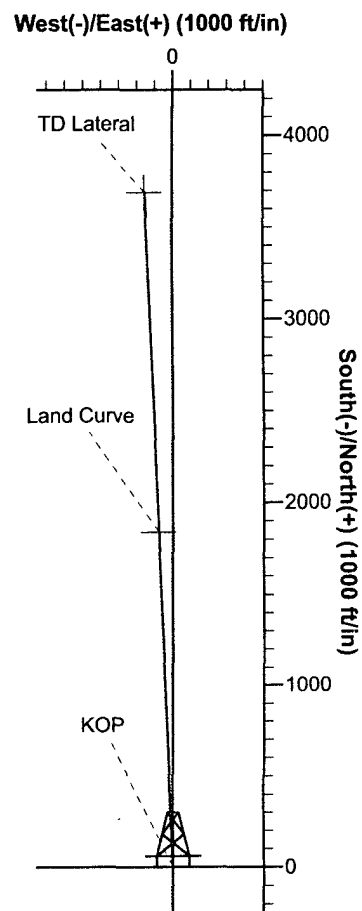
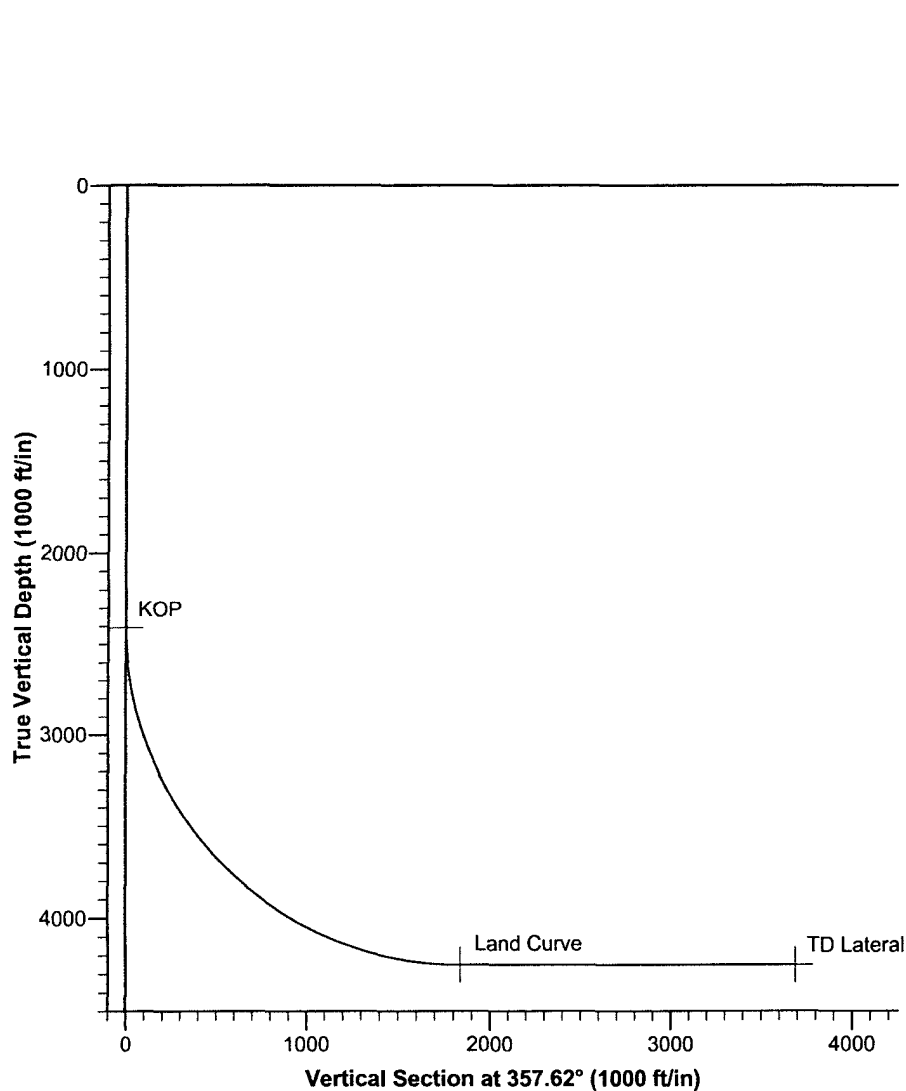


Azimuths to True North
Magnetic North: 10.12°

Magnetic Field
Strength: 51293.6snT
Dip Angle: 63.85°
Date: 1/10/2008
Model: IGRF200510

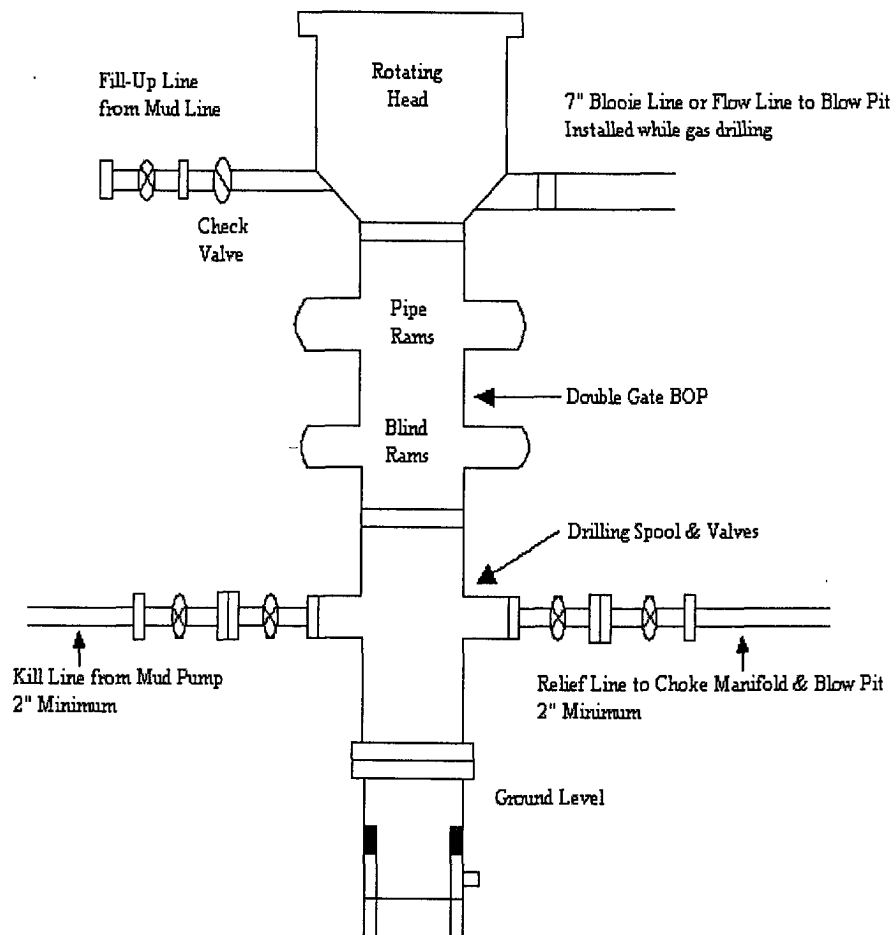
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2410.0	0.00	0.00	2410.0	0.0	0.0	0.00	0.00	0.0	KOP
3	5301.8	90.05	357.63	4250.0	1840.0	-76.0	3.11	357.63	1841.6	Land Curve
4	7151.4	89.95	357.59	4250.0	3688.0	-153.0	0.01	-157.00	3691.2	TD Lateral

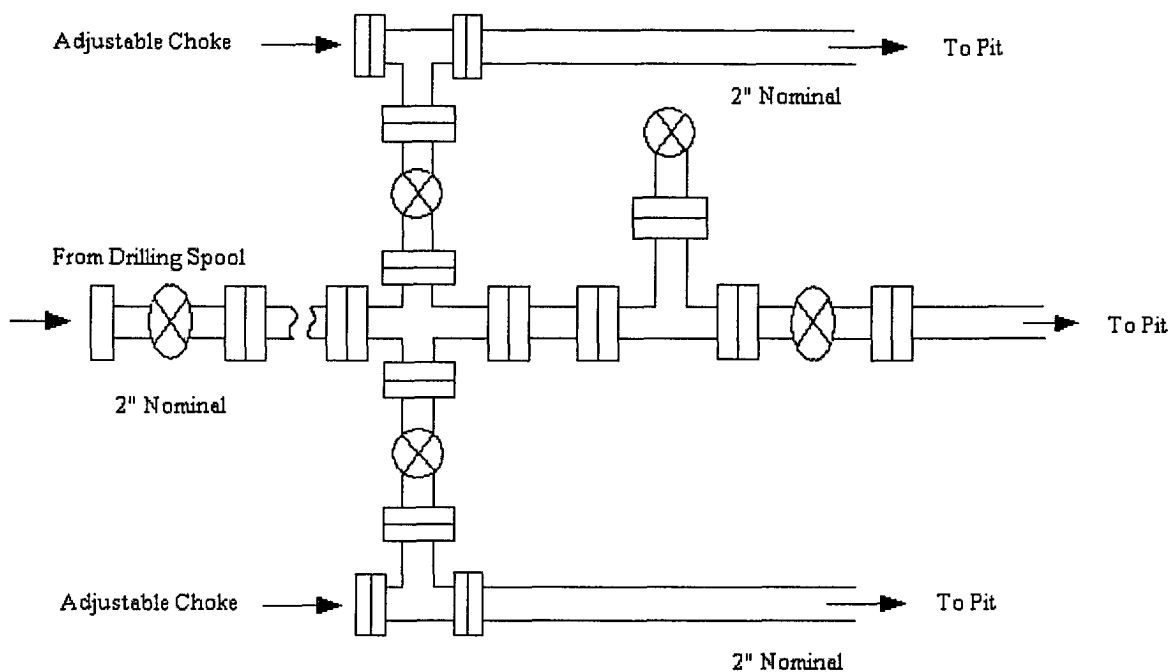


Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation
Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD