

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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. NM 013688
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 2198 Bloomfield Highway Farmington, New Mexico 87401		8. Lease Name and Well No. Hart Canyon 25 #2S
3b. Phone No. (include area code) (505) 325-6800		9. API Well No. 38-045-32914
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1580' fsl, 0860' fe1 At proposed prod. zone		10. Field and Pool, or Exploratory Basin Fruitland Coal
14. Distance in miles and direction from nearest town or post office* Approximately 9.5 miles north east of Aztec		11. Sec., T., R., M., or Blk. and Survey or Area I S25, T31N, R10W
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 860'	16. No. of Acres in lease 2066.44	12. County or Parish San Juan
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Approx. 350'	19. Proposed Depth 3644'	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 6667'	22. Approximate date work will start* 04/05/05	17. Spacing Unit dedicated to this well 320' x 14' 240' x 14' 5 1/2
		20. BLM/BIA Bond No. on file
		23. Estimated duration 14 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 2/23/05
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Title
Drilling Engineer

Approved by (Signature) 	Name (Printed/Typed)	Date 4.4-05
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Title AFM	Office FFO
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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)

NMOCD

RECEIVED
FEB 24 AM 7 43
070 FARMINGTON NM

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised June 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-32914	² Pool Code	³ Pool Name Basin OF FRUITLAND COAL
⁴ Property Code 300462	⁵ Property Name Hart Canyon #25	⁶ Well Number 2S
⁷ OGRID No. 16298	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 6667'

¹⁰ Surface Location

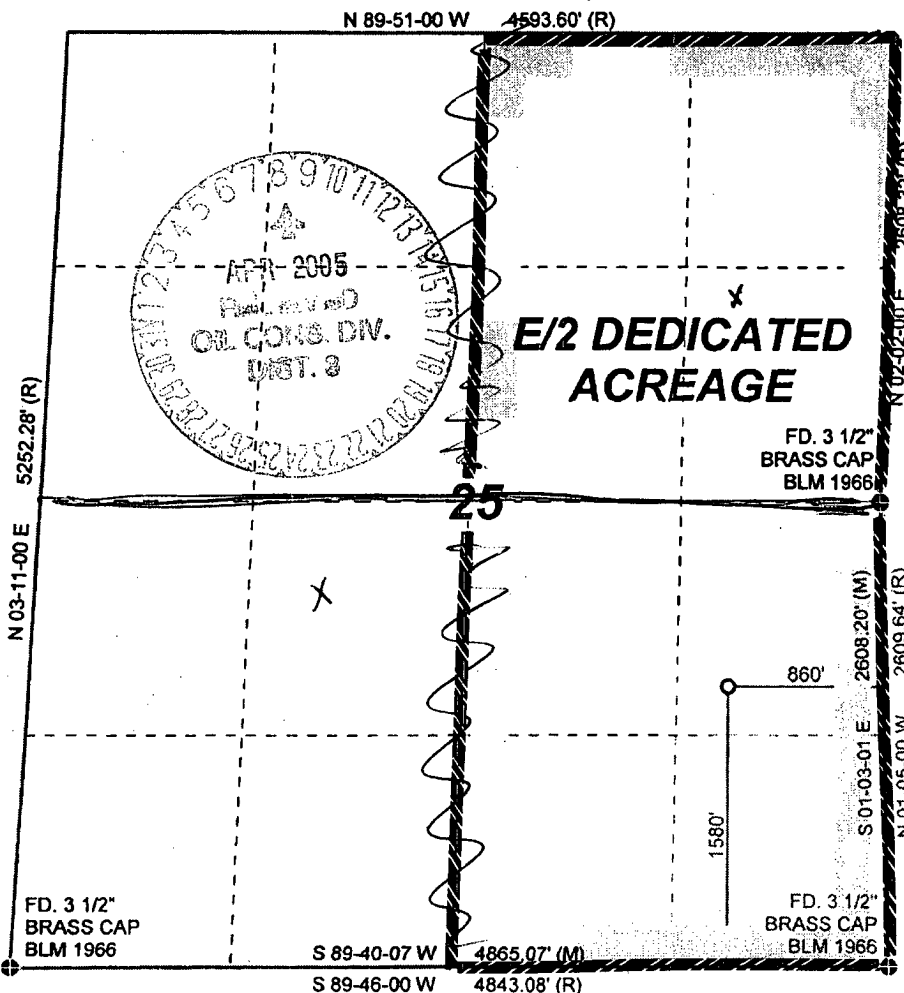
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	25	31N	10W		1580	SOUTH	860	EAST	SAN JUAN

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

¹² Dedicated Acres 320-320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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

¹⁷ OPERATOR CERTIFICATION

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

Nathan Smith
Signature

Nathan Smith
Printed Name

Drilling Engineer
Title and E-mail Address

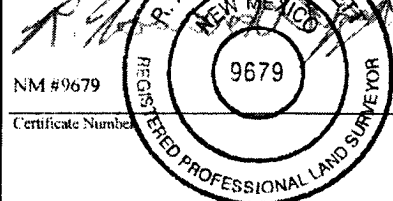
2/1/05
Date

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.

01/31/05
Date of Survey

R. Howard Daggett
Signature and Seal of Professional Land Surveyor



Submit 3 Copies To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 87240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
May 27, 2004

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO.

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.
NM 013688

7. Lease Name or Unit Agreement Name:
Hart Canyon 25

8. Well Number
2S

9. OGRID Number
162928

10. Pool name or Wildcat
Basin Fruitland Coal

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:

Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

Energen Resources Corporation

3. Address of Operator

2198 Bloomfield Highway, Farmington, NM 87401

4. Well Location

Unit Letter I: 1580 feet from the South line and 860 feet from the East line

Section 25 Township 31N Range 10W NMPM County San Juan

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6667' GL

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Drill Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water >200'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPLETION ☐

OTHER: Build drilling pit ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Energen Resources plans to build a lined pit according to "OCD Pit and Below-grade Tank Guidelines", as issued on November 1, 2004. Energen anticipates the submittal of a C-144 for closure of this pit in accordance with BIM and "OCD Pit and Below-grade Tank Guidelines".

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☒ , a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE Nathan Smith TITLE Drilling Engineer DATE 02/23/05

Type or print name Nathan Smith

E-mail address: nsmith@energen.com
Telephone No. 505.325.6800

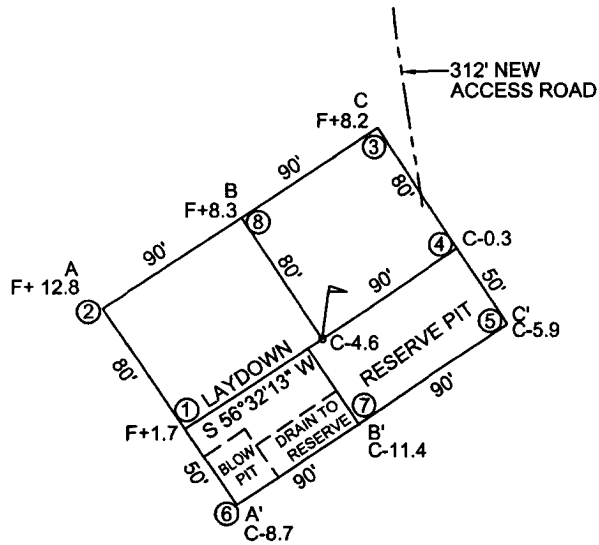
For State Use Only

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 00 DATE APR - 8 2005

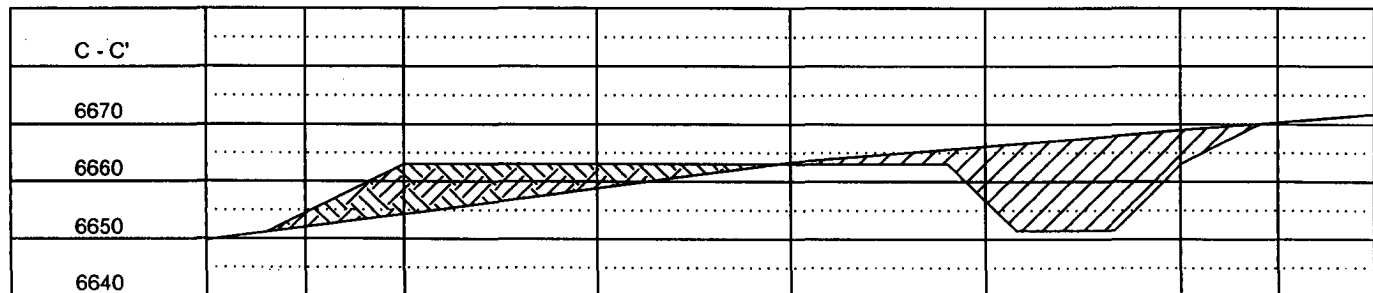
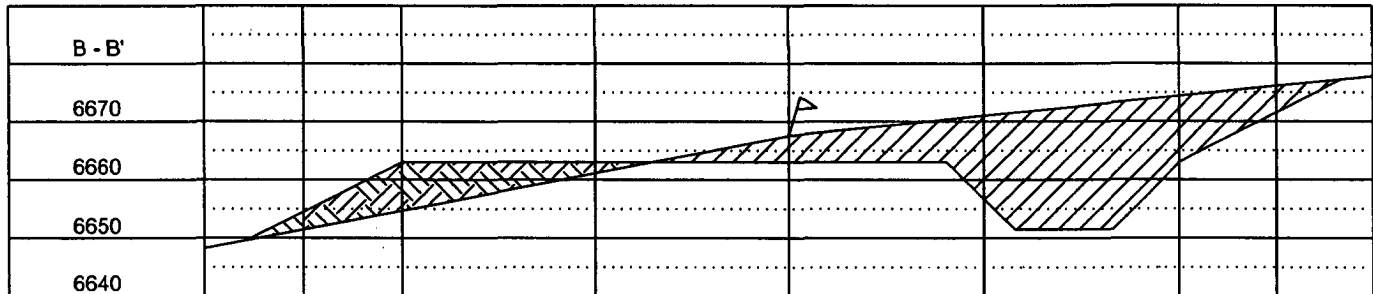
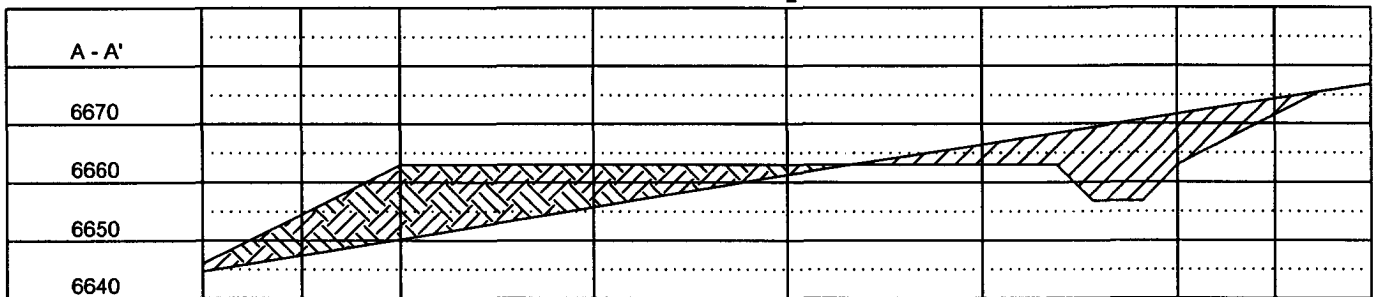
Conditions of Approval, if any:

ENERGEN RESOURCES CORPORATION

HART CANYON 25 #2S
1580' FSL, 860' FEL
LOCATED IN THE NE/4 SE/4 OF
SECTION 25, T31N, R10W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO
ELEVATION: 6667', NAVD 88



LATITUDE: 36°52'00"N
LONGITUDE: 107°49'50"W
DATUM: NAD 83



1909 E. 20th Street, #7

Farmington, NM 87402

Geographic Solutions

Phone: (505) 325-6841

Fax: (505) 325-6842

Operations Plan

February 22, 2005

Hart Canyon 25 #2S

General Information

Location	1580' fsl, 0860' fel nese S25, T31N, R10W San Juan County, New Mexico
Elevations	6667' GL
Total Depth	3644' (MD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	679'
Ojo Alamo Ss	2159'
Kirtland Sh	2229'
Fruitland Fm	3074'
Top Coal	3209'
Bottom Coal	3444'
Pictured Cliffs Ss	3454'
Total Depth	3644'

Drilling

The 12 1/4" wellbore will be drilled with a fresh water mud system.

The 7 7/8" 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 8.3 ppg to 8.9 ppg.

Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack (figure 1) 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.

Logging Program:

Open hole logs: Induction/Gamma Ray and Density Logs

Coring: None

Natural Gauges: None

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-300	12 ¼"	8 5/8"	24.0 ppf	J-55 ST&C
Production	300'-3644'	7 7/8"	5 ½"	15.5 ppf	J-55 LT&C
Tubing	0'-3600		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 standard bow spring centralizers to achieve optimal standoff.

Production Casing: Depending on wellbore conditions, a Cement nose guide shoe with self fill insert float collar on top of bottom joint and casing centralization with standard bow spring centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Wellhead

8 5/8" 2000 x 5 ½" Larkin casing head. 5 ½" 2000 x 2" tubing head.

Cementing

Surface Casing: 160 sks Std (class B) with 2.0 % CaCl₂ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk 187.9 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min. ⁵⁰

Production Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 560 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 145 sks of Standard (Class B) cement with 5.0 #/sk Gilsonite, and ¼ #/sk Flocele (15.2ppg, 1.24 ft³/sk). ~~1292.2~~ ¹²⁷⁸ ft³ of slurry, 100 % excess to circulate to surface).

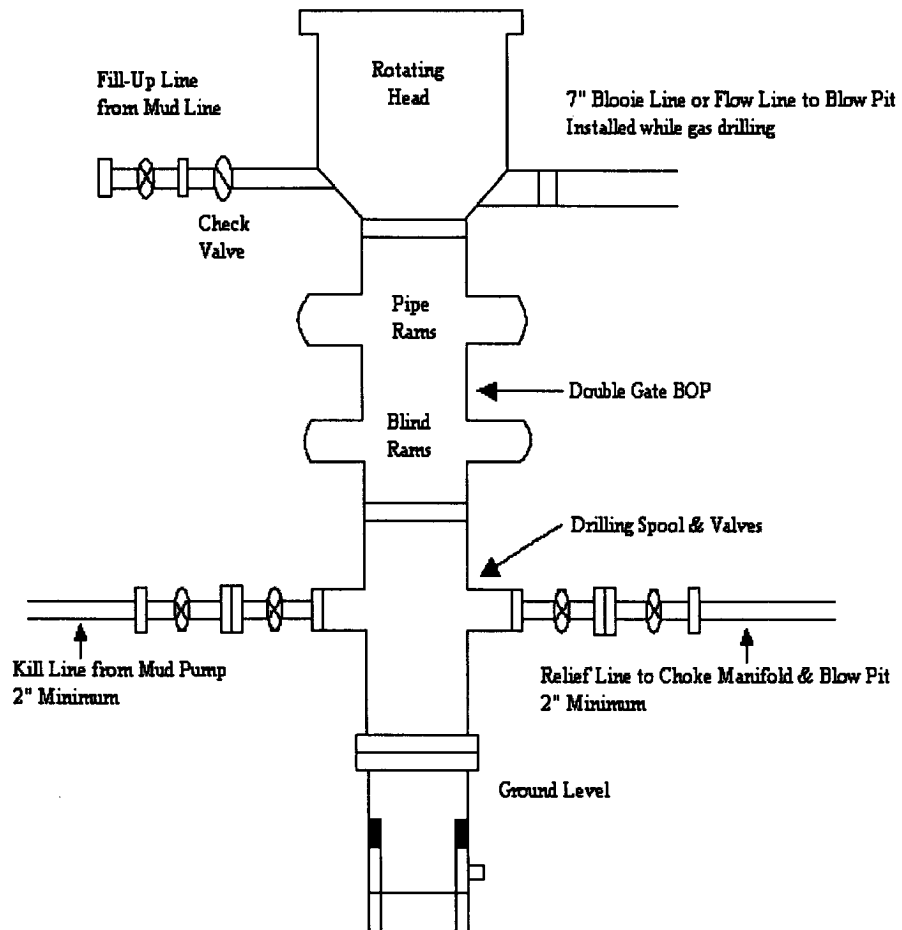
Pump 30 sks of flyash scavenger spacer consisting of 15.0 % Benonite and 0.15 % HR-5 ahead of cement

Other Information

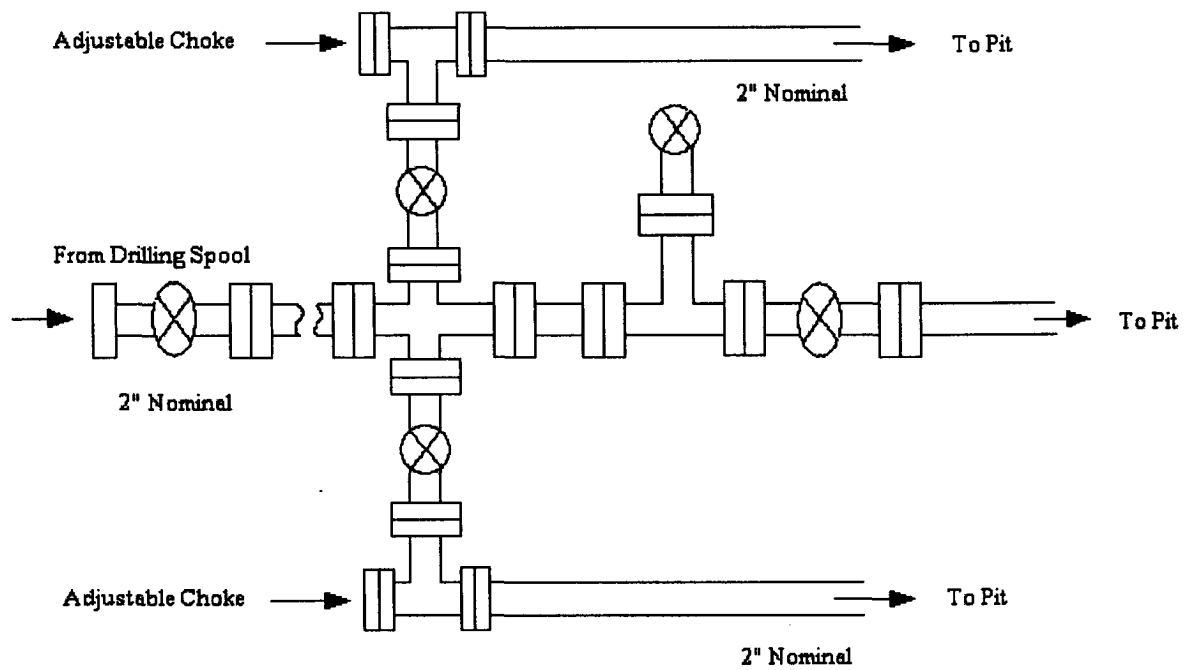
- 1) This well will be cased and the Basin Fruitland Coal fracture stimulated.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The production string may need to be cemented in multiple stages with a slurry design deviated from that listed 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.
- 5) This gas is dedicated.

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