

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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


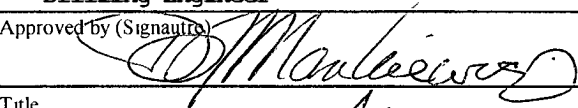
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NMSE-077968</b>
1b Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> <b>SWD</b> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2 Name of Operator <b>Energex Resources Corporation</b>		7. Unit or CA Agreement Name and No
3a Address <b>2198 Bloomfield Highway Farmington, New Mexico 87401</b>	3b. Phone No. (include area code) <b>(505) 325-6800</b>	8. Lease Name and Well No. <b>Central Basin SWD #1</b>
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface <b>690 fsl, 1727 fwl</b> At proposed prod. zone		9. API Well No. <b>30-045-34426</b>
14 Distance in miles and direction from nearest town or post office* <b>4 miles south of Farmington</b>		10. Field and Pool, or Exploratory <b>Mesa Verde, 96160</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg unit line, if any) <b>690'</b>	16. No. of Acres in lease	11. Sec., T, R., M, or Blk. and Survey or Area <b>(N) Sec 9, T28N, R13W</b>
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>50'</b>	19. Proposed Depth <b>4645'</b>	12. County or Parish <b>San Juan</b>
21 Elevations (Show whether DF, KDB, RT, GL, etc.) <b>6015' GL</b>	22. Approximate date work will start* <b>11/15/07</b>	13. State <b>NM</b>
20. BLM/BIA Bond No. on file <b>NM 2707</b>		17. Spacing Unit dedicated to this well <b>RCVD NOV 13 '07 OIL CONS. DIV.</b>
23. Estimated duration <b>25 days</b>		

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) <b>Nathan Smith</b>	Date <b>9/11/07</b>
Title <b>Drilling Engineer</b>		
NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT		
Approved by (Signature) 	Name (Printed/Typed) <b>[illegible]</b>	Date <b>11/8/07</b>
Title <b>AFM</b>		
Office <b>FEO</b>		

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)

**C.O.A. obtain S.W.D. order from NM OCD**

**RECEIVED**

**SEP 12 2007**

**Bureau of Land Management  
Farmington Field Office**

**NMOCN NOV 20 2007**

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

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

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

**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 October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number <b>30-045-34420</b>	<sup>2</sup> Pool Code <b>96160</b>	<sup>3</sup> Pool Name <b>SWD Mesa Verde</b>
<sup>4</sup> Property Code <b>36836</b>	<sup>5</sup> Property Name <b>Central Basin SWD</b>	<sup>6</sup> Well Number <b># 1</b>
<sup>7</sup> OGRID No. <b>162928</b>	<sup>8</sup> Operator Name <b>ENERGEN RESOURCES CORPORATION</b>	<sup>9</sup> Elevation <b>6015'</b>

<sup>10</sup> Surface Location

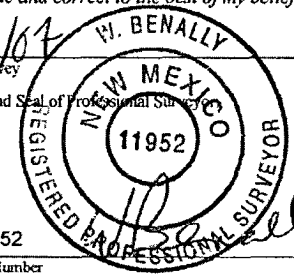
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	9	28N	13W		690	SOUTH	1727	WEST	SAN JUAN

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

<div style="text-align: center;"> <b>RECEIVED</b>  <b>SEP 12 2007</b>  <b>Bureau of Land Management</b>  <b>Farmington Field Office</b> </div>		<sup>17</sup> <b>OPERATOR CERTIFICATION</b> 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 of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <div style="display: flex; justify-content: space-between;"> <div>Signature <i>Nathan Smith</i></div> <div>Date <b>9/11/07</b></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Printed Name <b>Nathan Smith</b></div> </div>	
		<sup>18</sup> <b>SURVEYOR CERTIFICATION</b> 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. <div style="display: flex; justify-content: space-between;"> <div>Date of Survey <b>8/29/07</b></div> <div>Signature and Seal of Professional Surveyor   </div> </div> <div style="display: flex; justify-content: space-between;"> <div>Certificate Number <b>NM #11952</b></div> </div>	

**FD. 2 1/4" BRASS CAP GLO 1911**      **T29N**      **9**      **FD. 3 1/4" BRASS CAP BLM 1961**

**T28N**

**1727'**

**SHL Lot: N36.67145° Long: W108.22770° NAD 83**

**FD. 2 1/4" BRASS CAP GLO 1913**      **FD. 2" ALUM. CAP PLS# 1999**

**N89°55'05"E 2661.17' (M) S89°54'00"W 5289.90' (R)**

**N89°58'55"E 2625.14' (M)**

**2306.70' (R) 2299.89' (M)**

**N00°03'00"W N00°11'38"E**

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.  
30-045-34426

5. Indicate Type of Lease  
STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name:  
Central Basin SWD

8. Well Number  
1

9. OGRID Number  
162928

10. Pool name or Wildcat  
Mancos Shale

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 N : 690 feet from the South line and 1727 feet from the West line  
Section 09 Township 28N Range 13W NMPM County San Juan

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
6015' 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 250'

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 NMOCD guidelines ☒ , a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE Nathan Smith TITLE Drilling Engineer DATE 09/11/07

Type or print name Nathan Smith E-mail address: \_\_\_\_\_ Telephone No. 505.325.6800

For State Use Only

APPROVED BY [Signature] TITLE Deputy Oil & Gas Inspector, District #3 DATE NOV 20 2007

Conditions of Approval, if any:

**Drilling Plan**  
September 11, 2007  
**Central Basin SWD #1**

**General Information**

Location	690' fsl, 1727' fwl sesw S99, T28N, R13W San Juan County, New Mexico
Elevations	6015' GL
Total Depth	4645' (MD)
Formation Objective	Mancos Shale

**Formation Tops**

Nacimiento	Surface
Ojo Alamo Ss	240'
Kirtland Sh	355'
Fruitland Fm	1298'
Pictured Cliffs Ss	1665
Lewis Shale	1857'
Cliff House Ss	3215'
Menefee Fm	3255'
Point Lookout Ss	4145'
Mancos Shale	4430'
<b>Total Depth</b>	<b>4645'</b>

**Drilling**

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

The 8 3/4" wellbore will be drilled with a low solids non-dispersed fresh water mud system. Weighting materials will be drill cuttings. 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 will be used following nipple up of casing head. During air drilling operations, a Shaffer Type 50 or equivalent rotating head will be installed on top of the stack. 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: From Surface to TD – Temp / HRI / CNT, LDT / GR

Coring: None

Surveys: Surface and/or every 500' to TD

## Tubulars

### Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-350'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Production	350'-4645'	8 3/4"	7"	23 ppf	J-55 LT&C
Tubing	0'-4400'		3 1/2"	9.3 ppf	N-80

### 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:** String will be cemented in multiple (2) stages. Cement float shoe on bottom with float collar on top of 2<sup>nd</sup> shoe joint. One centralizer every 3<sup>rd</sup> joint up to the stage collar and one every 3<sup>rd</sup> joint to surface.

## Wellhead

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

## Cementing

Surface Casing: <sup>225 ?</sup> ~~500~~ sks Type V with 2.0 % CaCl<sub>2</sub> and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk <sup>- ok</sup> ~~266~~ ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min.

First Stage: Depending on wellbore conditions, cement may consist of 375 sks 65/35 Class G with 0.20 % Halad-344, 10 #/sk Gilsonite, and 1/2 #/sk Cellophane Flakes (12.3 ppg, 1.93 ft<sup>3</sup>/sk), followed by 125 sks 50/50 Glass G with 0.30 % Halad-344, 0.10 % CFR-3, 5 #/sk Gilsonite and 1/4 #/sk Cellophane Flakes (853.8 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface). **Stage Collar at 1900"**. Circulate 4 hours starting at time of plug down.

Second Stage: Depending on wellbore conditions, cement may consist a lead of 300 sks 65/35 Type V with 2.0% CaCl<sub>2</sub>, 10 #/sk Gilsonite, and 1/2 #/sk Flocele and a tail of 50 sks Type V with 1.0 % CaCl<sub>2</sub>. (12.3 ppg, 1.93 ft<sup>3</sup>/sk and 15.6 ppg, 1.18 ft<sup>3</sup>/sk respectively). (638 ft<sup>3</sup> of slurry, 100% excess to circulate to surface).

### Set slips with full string weight

WOC 12 hrs. If cement does not circulate, run temperature survey in 8 hrs. to determine TOC.

Nipple up 11" 3000 psi double gate BOP in preparation to start air drilling.

### Other Information

- 1) This well will be cased and the target formation fracture stimulated if no natural fracturing is found.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control.
- 3) Mesa Verde pore pressure is anticipated to be 700 psi, the Pictured Cliffs is 500 psi and the Fruitland is 300 psi.
- 4) No abnormal temperatures or pressures are anticipated.
- 5) This gas is dedicated.

# ENERGEN RESOURCES CORPORATION

*Central Basin SWD #1*

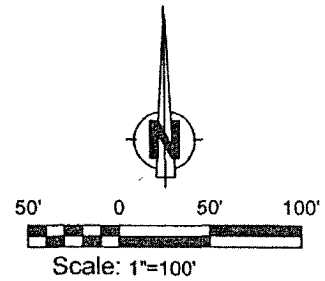
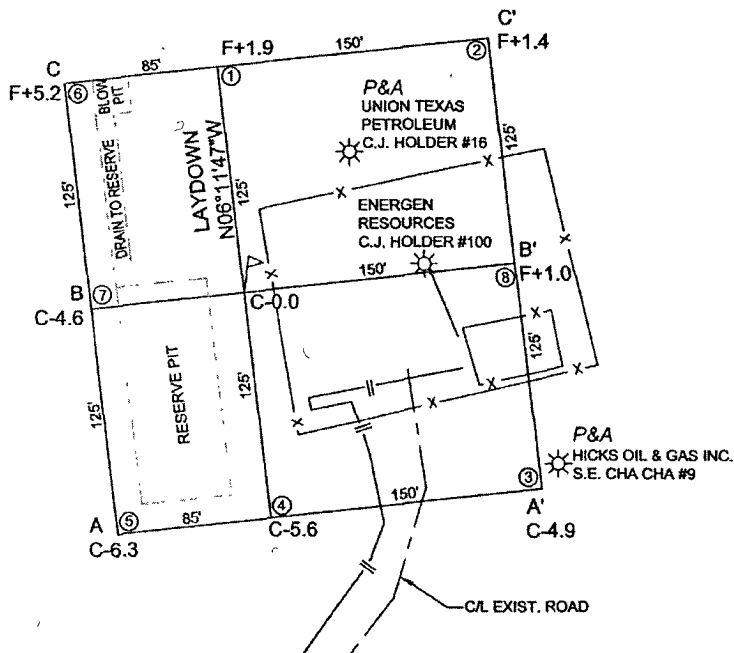
690' FSL & 1727' FWL

LOCATED IN THE SE/4 SW/4 OF SECTION 9,

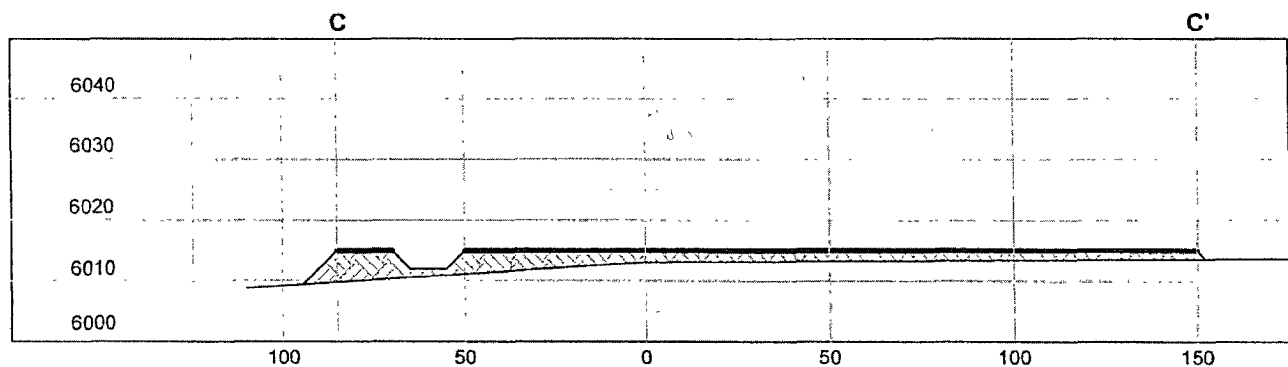
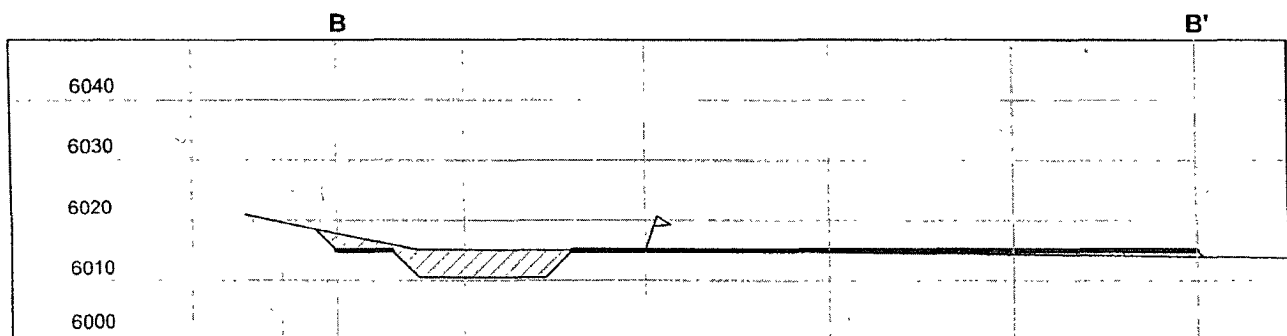
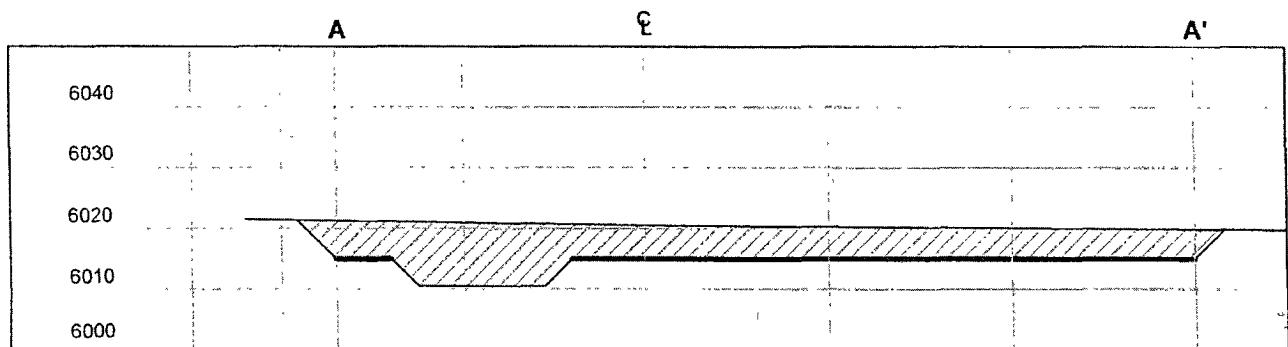
T28N, R13W, N.M.P.M.,

SAN JUAN COUNTY, NEW MEXICO

ELEVATION: 6015', NAVD 88



LATITUDE: 36.67145 N  
LONGITUDE: 108.22770 W  
DATUM: NAD 83



HORIZ. SCALE: 1"=50'  
VERT. SCALE: 1"=30'

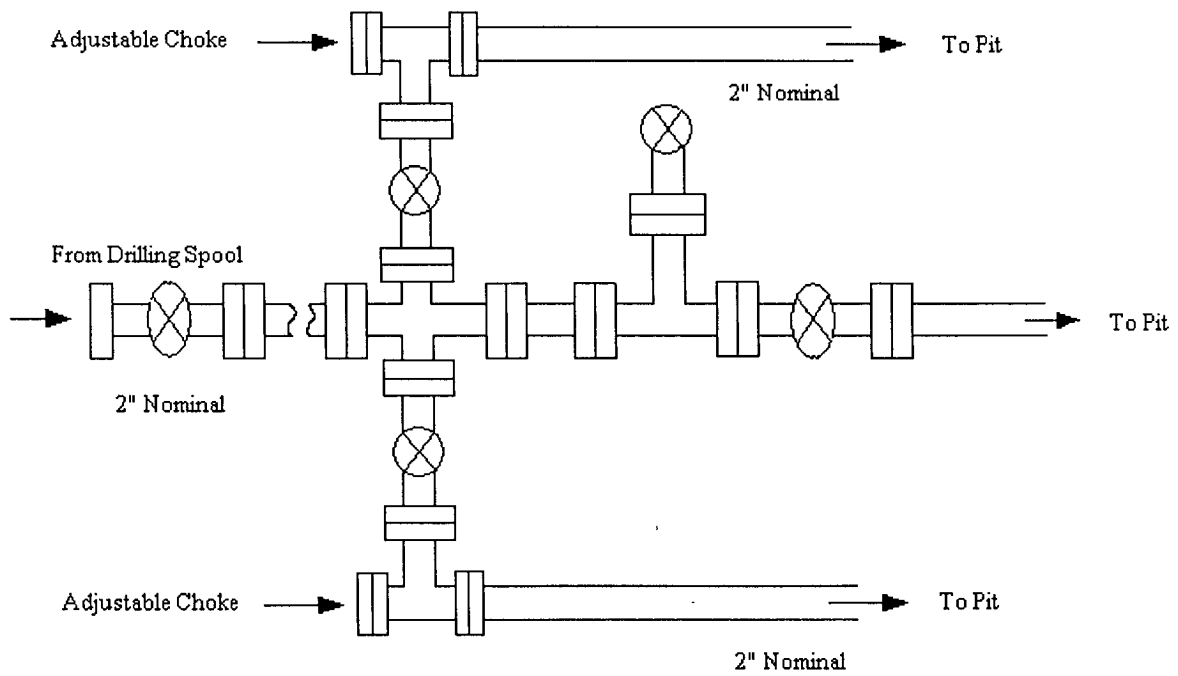
**Red Skies Surveying & Mapping, Inc.**

A Native American Owned Company

101 Fauver Lane, Bloomfield, New Mexico 87413  
Phone/Fax: (505) 632-8906 Cell No: (505) 793-5325

## Energien Resources Corporation

### Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD



# Energen Resources Corporation

## Typical BOP Configuration for Gas Drilling

