

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM 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>Jicarilla Contract 152</b>	
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 <b>Jicarilla Apache</b>	
2. Name of Operator <b>Energizer Resources Corporation</b>		7. Unit or CA Agreement Name and No.	
3a. Address <b>2198 Bloomfield Hwy Farmington, NM 87401</b>		8. Lease Name and Well No. <b>Jicarilla 152W #4N</b>	
3b. Phone No. (include area code) <b>505.325.6800</b>		9. API Well No. <b>30-039-38123</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface <b>1130' fsl, 1100' fwl</b> At proposed prod. zone		10. Field and Pool, or Exploratory <b>Blanco Mesa Verde/Dakota</b>	
14. Distance in miles and direction from nearest town or post office* <b>Approximatley 40 miles south southwest from Dulce, NM</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>(M) S5, T26N, R5W</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>1100'</b>	16. No. of Acres in lease <b>1278.8</b>	17. Spacing Unit dedicated to this well <b>319.61 W/2</b>	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>Approx 500'</b>	19. Proposed Depth <b>7673'</b>	20. BLM/BIA Bond No. on file <b>RCVD MAY18'07 OIL CONS. DIV. DIST 3</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>6571' GL</b>	22. Approximate date work will start* <b>9/15/07</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>11/29/06</b>
Title <b>Drilling Engineer</b>		
Approved by (Signature) 	Name (Printed/Typed) <b>AEM</b>	Date <b>5/15/07</b>
Title <b>FFO</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. **Mun. BOPE test pressure: 500#**

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)

✓ NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

4/18/07

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-30123	*Pool Code 12319 / 11599	*Pool Name MESA VERDE/DAKOTA
*Property Code 21949	*Property Name JICARILLA 152W	*Well Number 4N
*GRID No. 1102928	*Operator Name ENERGEN RESOURCES CORPORATION	*Elevation 6571'

<sup>10</sup> Surface Location

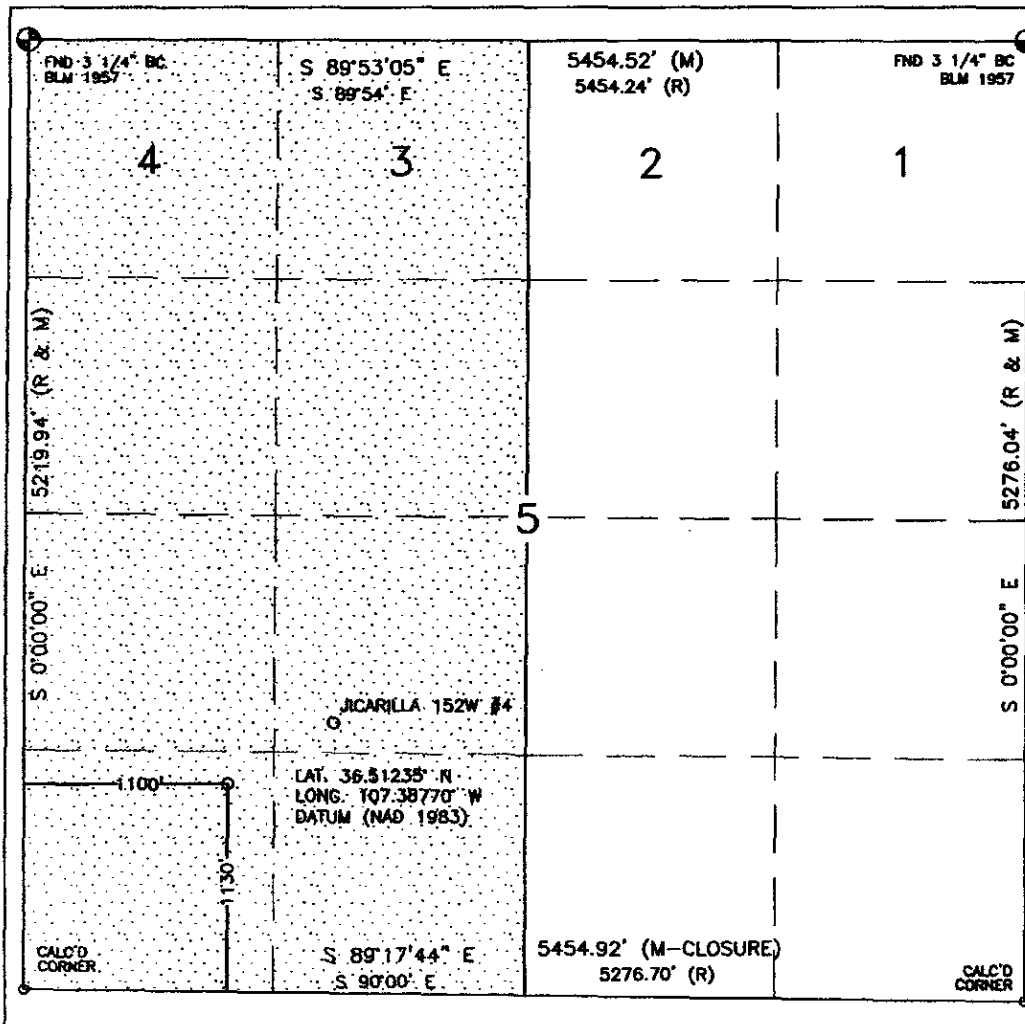
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	5	26N	5W		1130'	SOUTH	1100'	WEST	RIO ARriba

<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
*Dedicated Acres 319.61 329.45 Acres - (W/2)					*Joint or Infill		*Consolidation Code		*Order No. OIL CONS. DIV. DIST. 3

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

Nathan Smith  
Signature  
Nathan Smith  
Printed Name  
Drilling Engineer  
Title  
11/28/06  
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.

NOVEMBER 18, 2006

Date of Survey  
Signature and Seal of Professional Surveyor:

David A Russell



DAVID RUSSELL  
Certificate Number 10201

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

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

Form C-103  
May 27, 2004

WELL API NO.  
**30-039-30123**

5. Indicate Type of Lease  
STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name:  
**Jicarilla 152W**

8. Well Number  
# **4N**

9. OGRID Number  
**162928**

10. Pool name or Wildcat  
**Blanco Mesa Verde/Dakota**

**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 **M** : **1130** feet from the **South** line and **1100** feet from the **West** line

Section **05** Township **26N** Range **05W** NMPM County **Rio Arriba**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
**6571' 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 EHM 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 **Vicki Donaghey** TITLE **Regulatory Analyst** DATE **11/29/06**

Type or print name **Vicki Donaghey** E-mail address: **vdonaghe@energen.com** Telephone No. **505.325.6800**

For State Use Only

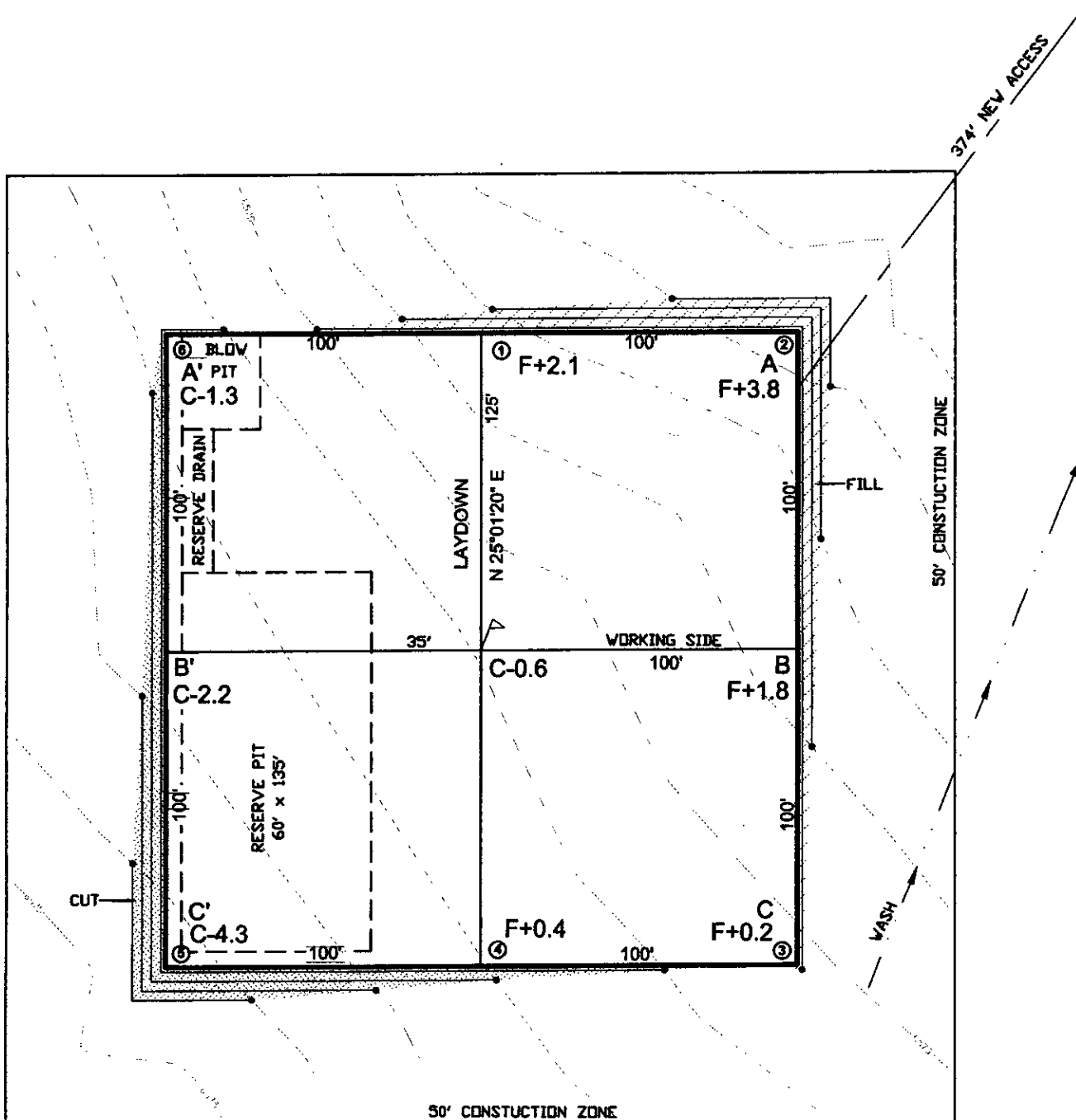
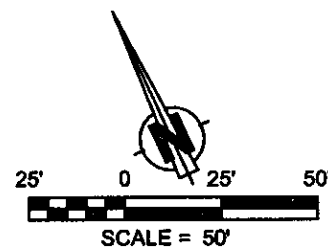
APPROVED BY **[Signature]** TITLE **DEPUTY OIL & GAS INSPECTOR, DIST. IV** DATE **MAY 18 2007**

Conditions of Approval, if any:

LATITUDE: 36.51235°N  
LONGITUDE: 107.38770°W  
DATUM: NAD 83

# ENERGEN RESOURCES CORPORATION

JICARILLA 152W #4N  
1130' FSL & 1100' FWL  
LOCATED IN THE SW/4 SW/4 OF  
SECTION 5, T26N, R5W, N.M.P.M.,  
RIO ARriba COUNTY, NEW MEXICO  
GROUND ELEVATION: 6571', NAVD 88  
FINISHED PAD ELEVATION: 6570.4', NAVD 88



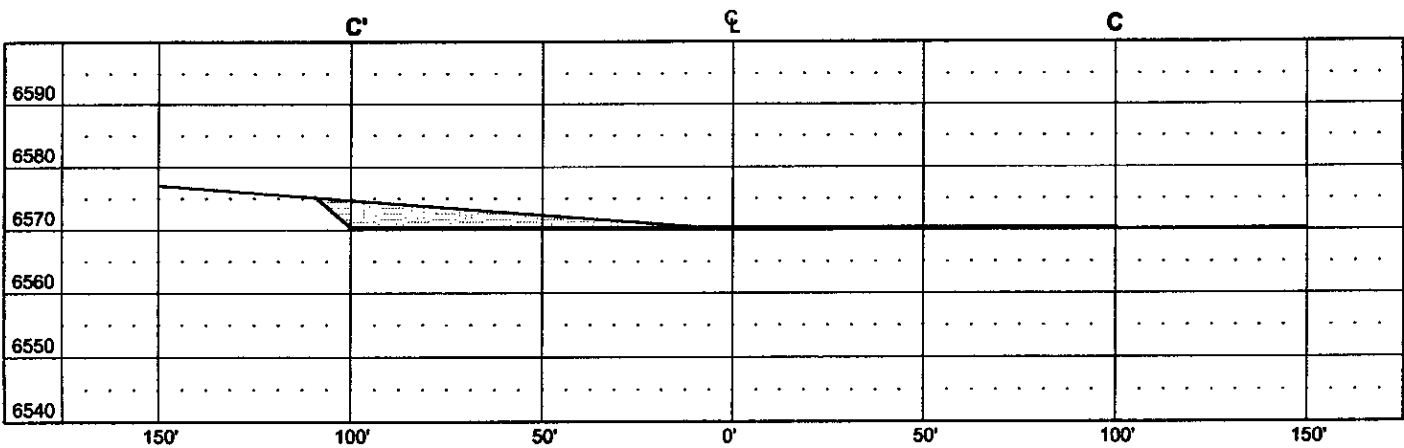
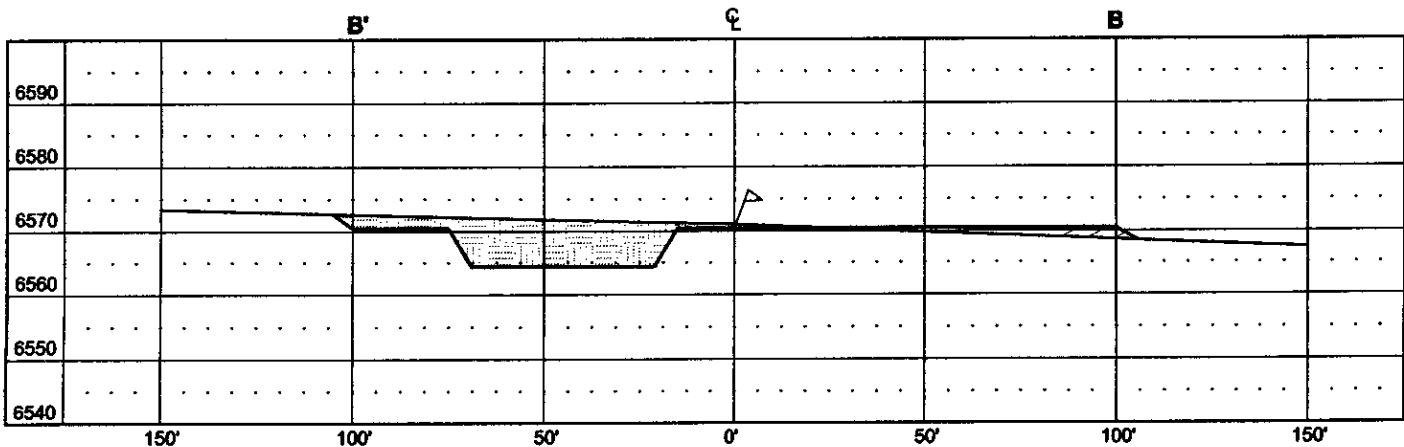
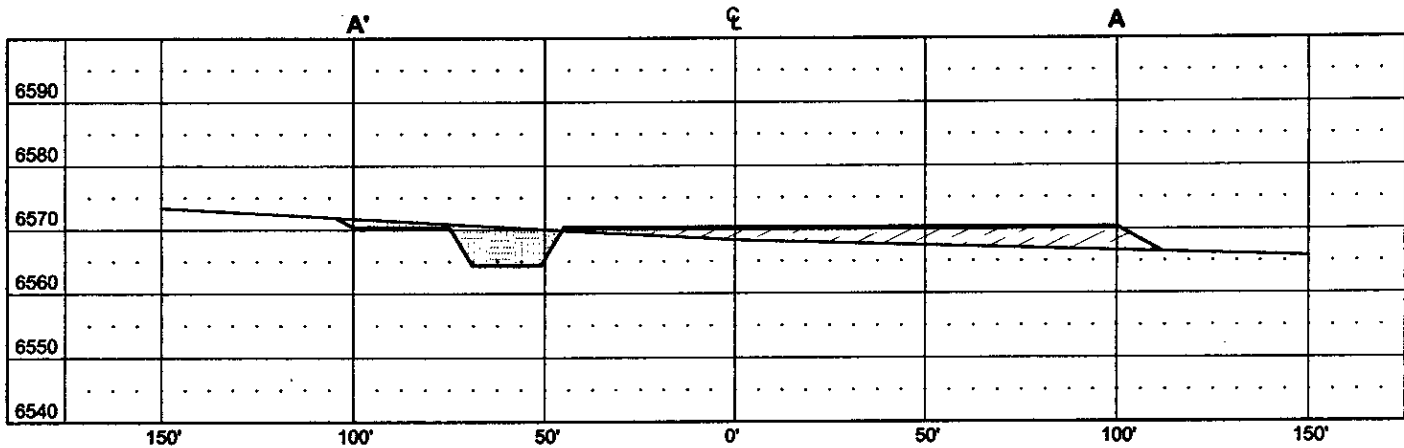
374 LF OF NEW ACCESS TO EXISTING  
ERC - JICARILLA 152W #4 WELL PAD

1 FOOT CONTOUR INTERVAL SHOWN  
SCALE: 1" = 50'  
JOB No.: ERG140  
DATE: 11/22/06; REV1





**Russell Surveying**  
1409 W. Aztec Blvd. #5  
Aztec, New Mexico 87410  
(505) 334-8637

**JICARILLA 152W #4N  
1130' FSL & 1100' FWL  
LOCATED IN THE SW/4 SW/4 OF  
SECTION 5, T26N, R5W, N.M.P.M.,  
RIO ARriba COUNTY, NEW MEXICO  
GROUND ELEVATION: 6571', NAVD 88  
FINISHED PAD ELEVATION: 6570.4', NAVD 88**



**VERT. SCALE: 1" = 30'**  
**HORZ. SCALE: 1" = 50'**  
**JOB No.: ERG140**  
**DATE: 11/22/06; REV1**

 **CUT**

 **FILL**



**Russell Surveying**  
1409 W. Aztec Blvd. #5  
Aztec, New Mexico 87410  
(505) 334-8637

**Operations Plan**  
November 29, 2006  
**Jicarilla 152W #4N**

**General Information**

Location	1130' fsl, 1100' fwl sww S5, T26N, R05W Rio Arriba County, New Mexico
Elevations	6571' GL
Total Depth	7673' (MD)
Formation Objective	Blanco MV / Basin DK

**Formation Tops**

San Jose	Surface	Cliffhouse Ss	4863'
Nacimiento	1463'	Menefee Fm	4953'
Ojo Alamo Ss	2498'	Point Lookout Ss	5378'
Kirtland Sh	2728'	Mancos Shale	5673'
Fruitland Fm	3003'	Graneros Shale	7353'
Top Coal	3058'	Dakota "Twowells" Ss	7378'
Bottom Coal	3173'	Dakota "Paguete" Ss	7468'
Pictured Cliffs Ss	3173'	Dakota "Cubero" Ss	7508'
Lewis Shale	3328'	Dakota "Oak Canyon" Sh	7623'
Int Csg Point	3523'	<b>Total Depth</b>	<b>7673'</b>

**Drilling**

The 12 1/4" wellbore will be drilled with a fresh water 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. The 6 1/4" wellbore will be drilled with an air/mist from intermediate setting depth to TD.

**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: From Surface to Intermediate setting depth - None  
From Intermediate setting depth to TD - Temp / HRI / CNT, LDT / GR

Mud Logs: From 3600' to TD

Coring: None

Surveys: Surface and/or every 500' to TD

**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	200'-3523'	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	0'-7673'	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-7615'		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.

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

**Production Casing:** Depending on wellbore conditions, a cement nose guide shoe on bottom with self fill insert float collar on top of shoe joint and casing centralization with standard bow spring centralizers to optimize standoff. If multistage cementing is required, DV tool will be placed based on formation characteristics.

### Wellhead

11" 3000 x 9 5/8" Casing Head. 11" 3000 x 11" 3000 spool. 11" 5000 x 7 1/16" 5000 Christmas Tree

### Cementing

**Surface Casing:** 225 sks Type V with 2.0 % CaCl<sub>2</sub> and ¼ #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 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.

**Intermediate 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 475 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft<sup>3</sup>/sk) and a tail of 125 sks of Type V cement with 5.0 #/sk Gilsonite, and ¼ #/sk Flocele (15.2ppg, 1.24 ft<sup>3</sup>/sk). (1072 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface).

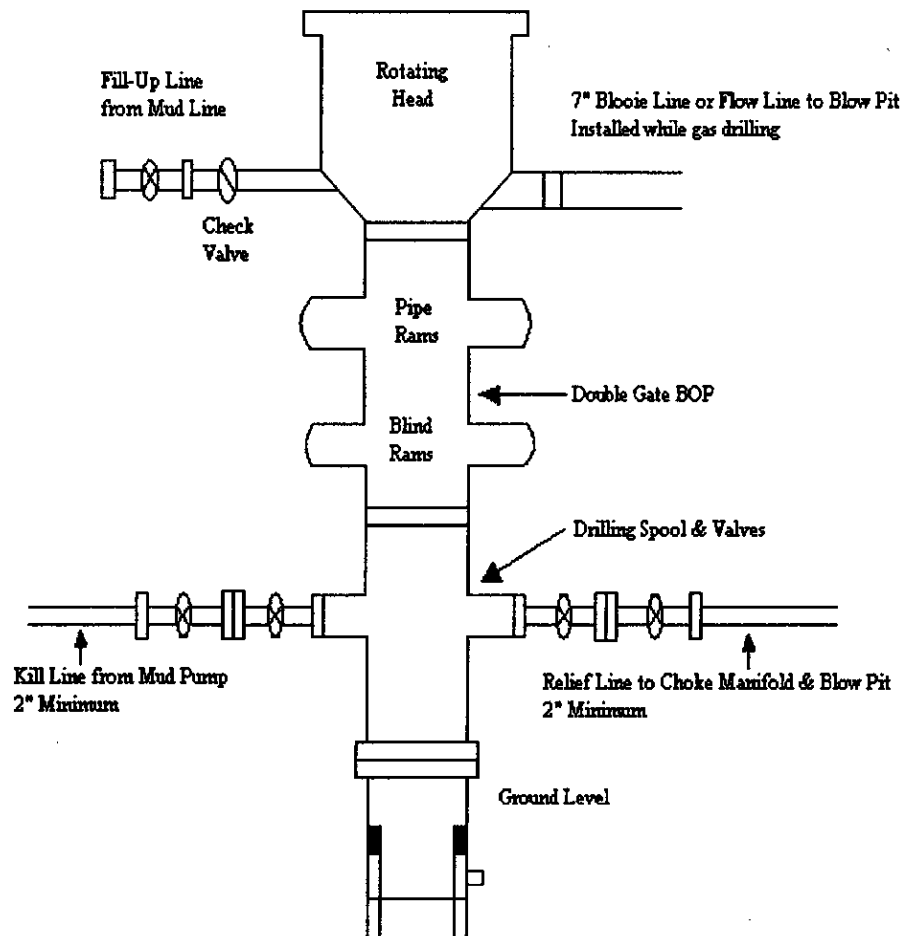
**Production Casing:** Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 700 sks 50/50 Type V with 2.0 % Bentonite, 0.50% Halad-9, 0.10% HR-5, 0.10% CFR-3, 5 #/sk Gilsonite, and ¼ #/sk Flocele (13.5 ppg, 1.30 ft<sup>3</sup>/sk). (910 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface).

### Other Information

- 1) This well will be cased and the Blanco Mesa Verde / Basin Dakota 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) Mesa Verde pore pressure is anticipated to be 800 psi, the Pictured Cliffs is 600 psi and the Fruitland is 500 psi.
- 4) No abnormal temperatures or pressures are anticipated.
- 5) This gas is dedicated.

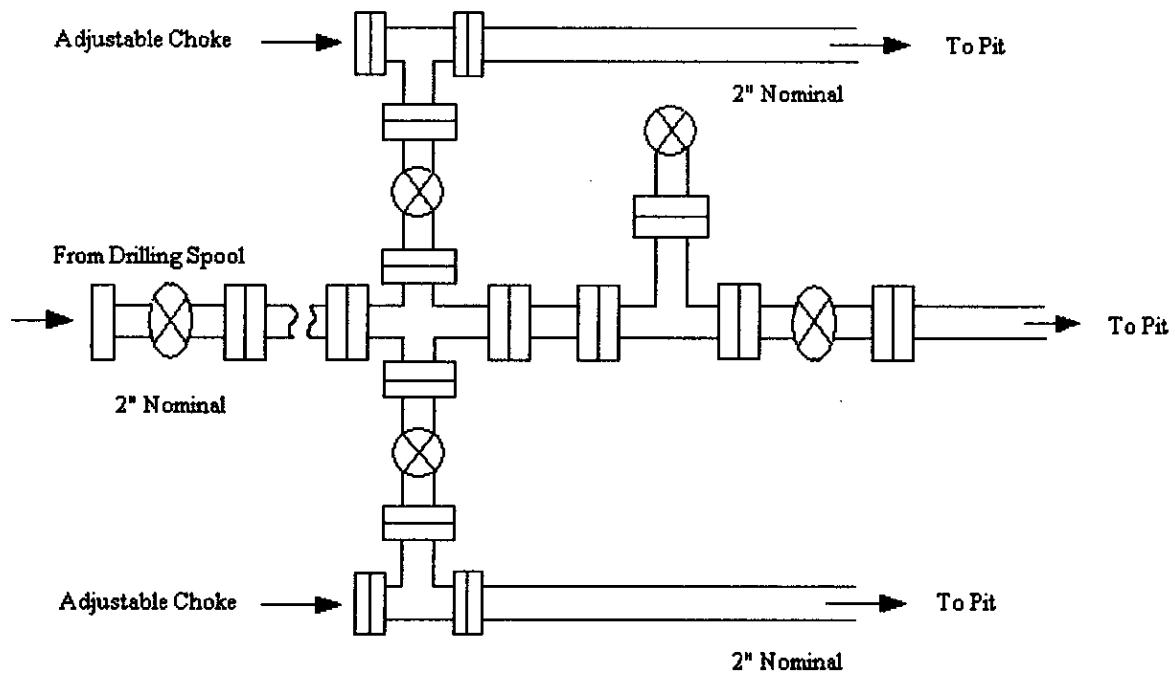
## Energen Resources Corporation

### Typical BOP Configuration for Gas Drilling





**Energen Resources Corporation**  
Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD