

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

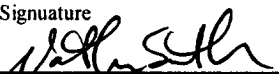
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SF-079485A
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 Hwy Farmington, NM 87401	3b. Phone No. (include area code) 505.325.6800	8. Lease Name and Well No. San Juan 30-4 Unit #105
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1375' fnl, 665' fw1 At proposed prod. zone 760' fnl, 760' fel		9. API Well No. #105 30-039-30159
14. Distance in miles and direction from nearest town or post office* Approximately 10.25 mile N NW of Gobernador		10. Field and Pool, or Exploratory Basin Fruitland Coal
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 665'	16. No. of Acres in lease 539.04	11. Sec., T., R., M., or Blk. and Survey or Area (E) S18, T30N, R4W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50'	19. Proposed Depth 5989' (MD)	12. County or Parish Rio Arriba
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7094' GL	22. Approximate date work will start* 5/1/2007	13. State NM
23. Estimated duration 25 days		

24. Attachments

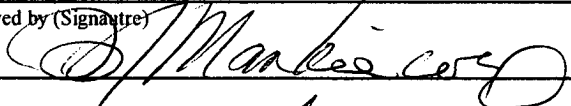
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- | | |
|---|--|
| 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 1/12/07
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Title

Drilling Engineer

Approved by (Signature) 	Name (Printed/Typed) AFM	Date 4/9/07
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Title

Office

FFOApplication 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. **Minimum BOPD test pressure: 750^{psi}**

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****NMOCD****HOLD 6194 FOR directional Survey**
RCVD APR 12 '07**OIL CONS. DIV.****DIST. 3****4/16/07**

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 15, 2000

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

RCVD APR 12 '07
OIL CONS. DIV.

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30159	² Pool Code 71629	³ Pool Name FRUITLAND COAL	DIST. 3
⁴ Property Code 21994	⁵ Property Name San Juan 30 - 4 Unit		⁶ Well Number 105
⁷ OGED No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION		⁹ Elevation 7094'

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
F	18	30N	4W		1375'	NORTH	665'	WEST	RIO ARriba

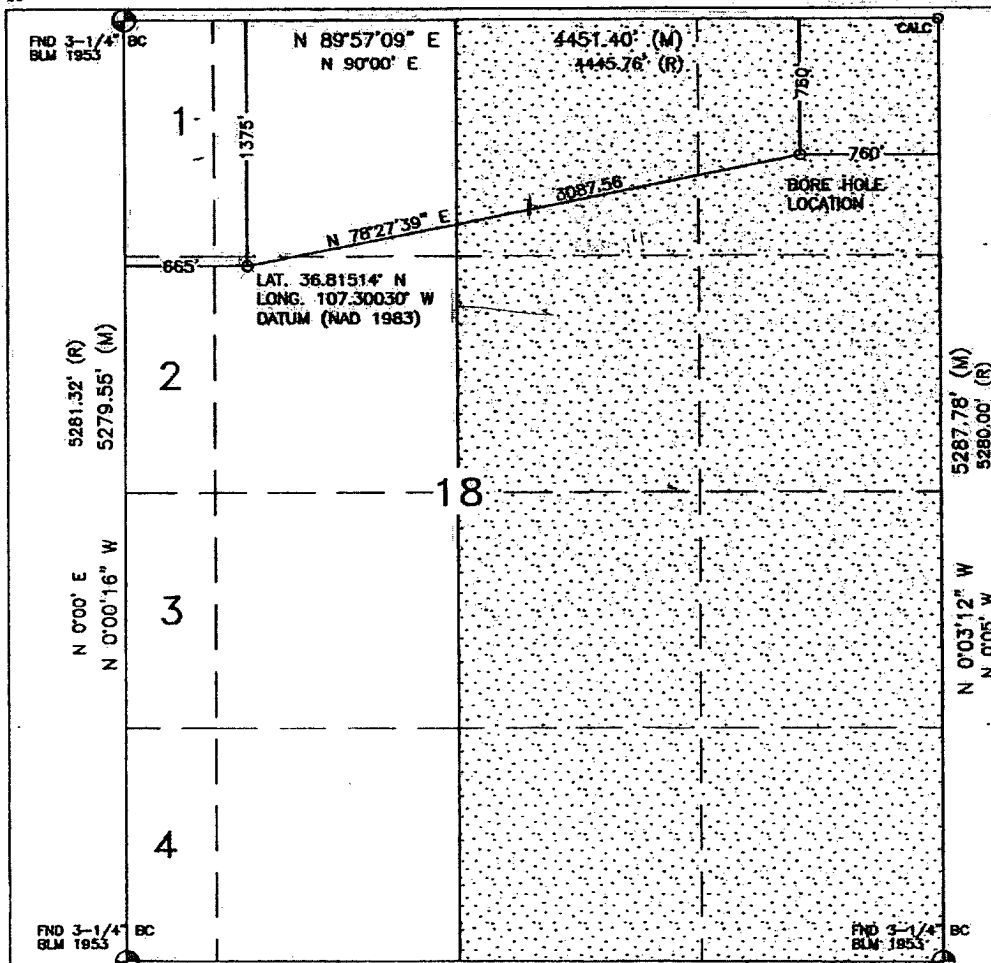
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	30N	4W		760'	NORTH	760'	EAST	RIO ARriba

¹² Dedicated Acres 320.57 Acres - (E/2)	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

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

1/12/07
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.

JUNE 2, 2006

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell
DAVID R. RUSSELL
NEW MEXICO
PROFESSIONAL LAND SURVEYOR
0201
Certificate Number

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. <u>30-039-30159</u>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name: <u>San Juan 30-4 Unit</u>
8. Well Number <u>#105S</u>
9. OGRID Number <u>162928</u>
10. Pool name or Wildcat <u>Basin Fruitland Coal</u>

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 Hwy Farmington, NM 87401

4. Well Location

Unit Letter F : 1375 feet from the North line and 665 feet from the West line

Section 18 Township 30N Range 4W NMPM County Rio Arriba

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
7094' 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:

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

REMEDIAL WORK ☐ ALTERING CASING ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

COMMENCE DRILLING OPNS. ☐ PLUG AND ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPLETION ☐

CASING TEST AND CEMENT JOB ☐ ABANDONMENT ☐

OTHER: Build drilling pit ☒

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 drilling pit in accordance with 'OCD Pit and Below Tank Guidelines' issued on November 1, 2004 and also plans to submit a C-144 for closure of such pit in accordance with EIM 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 1/12/07

E-mail address:

Type or print name Nathan Smith

Telephone No. 505.325.6800

For State Use Only

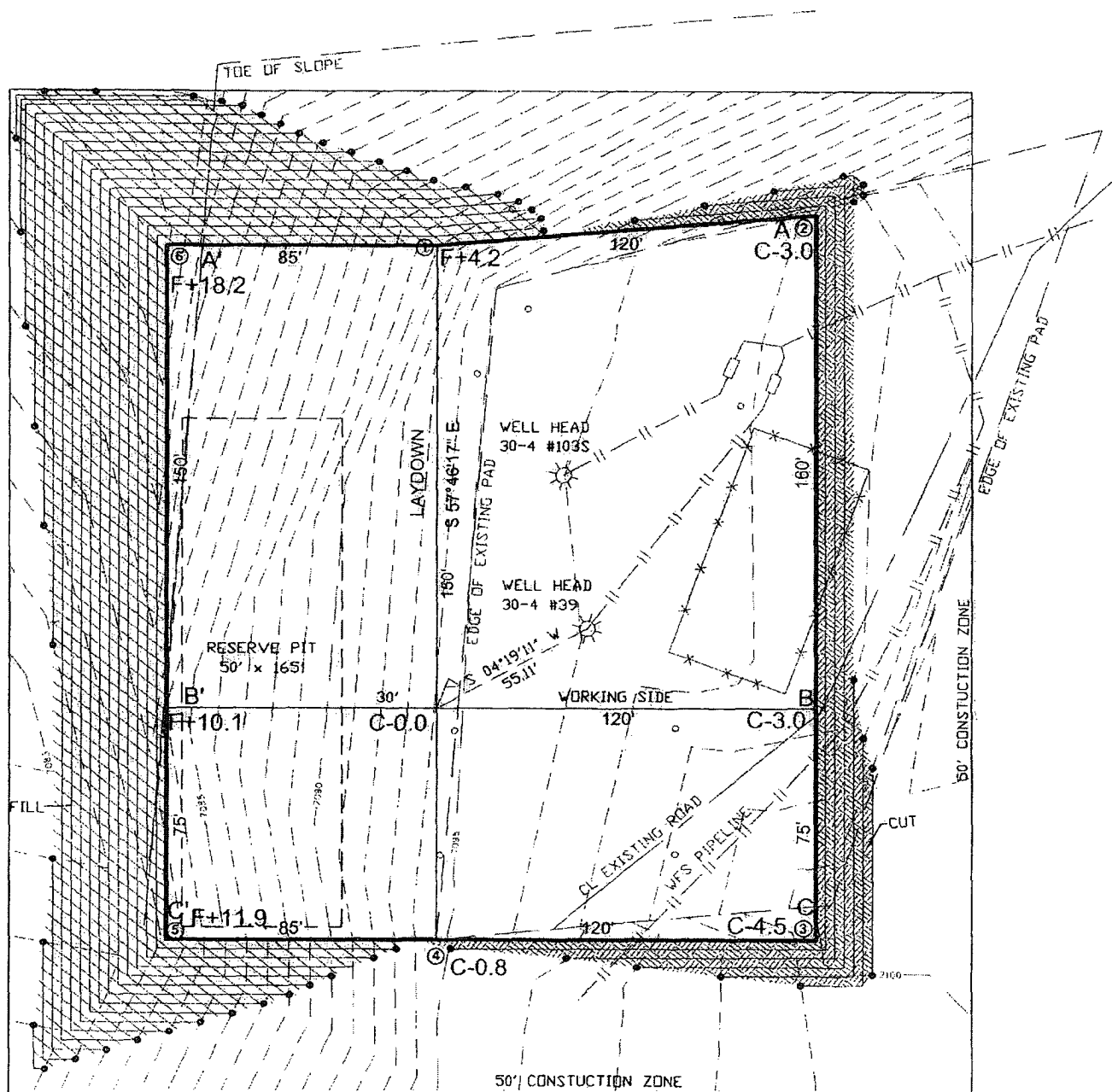
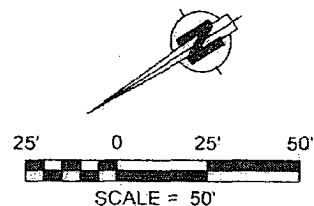
APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 64 DATE APR 16 2007

Conditions of Approval, if any:


LATITUDE: 36.81514°N
LONGITUDE: 107.30030°W
DATUM: NAD 83

ENERGEN RESOURCES CORPORATION

30 - 4 UNIT 105
1375' FNL & 665' FWL
LOCATED IN THE SE/4 NW/4 OF SECTION 18,
T30N, R4W, N.M.P.M.,
RIO ARRIBA, NEW MEXICO
ELEVATION: 7094', NAVD 88



1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: ERG111
DATE: 06/05/06

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

ENERGEN RESOURCES CORPORATION

30 - 4 UNIT 105

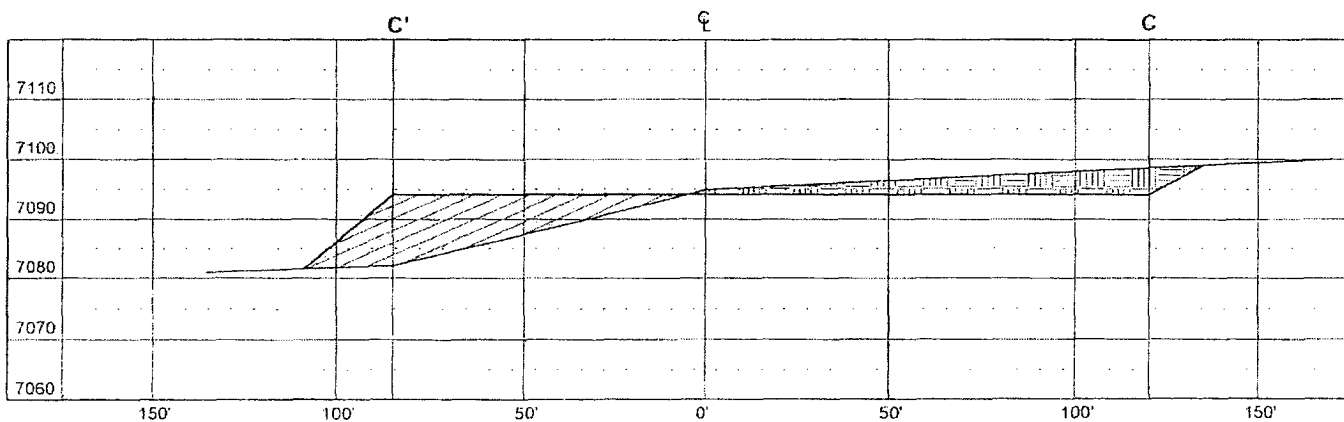
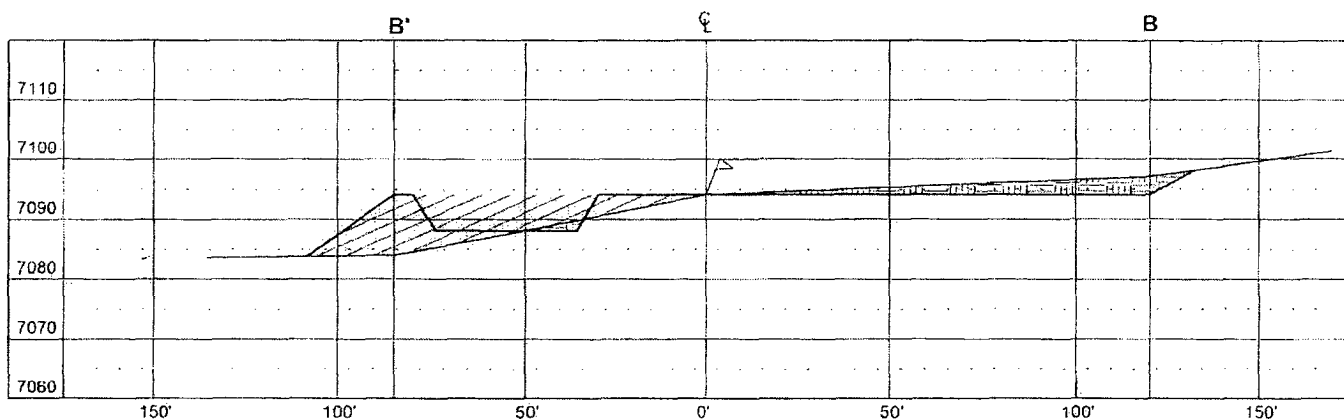
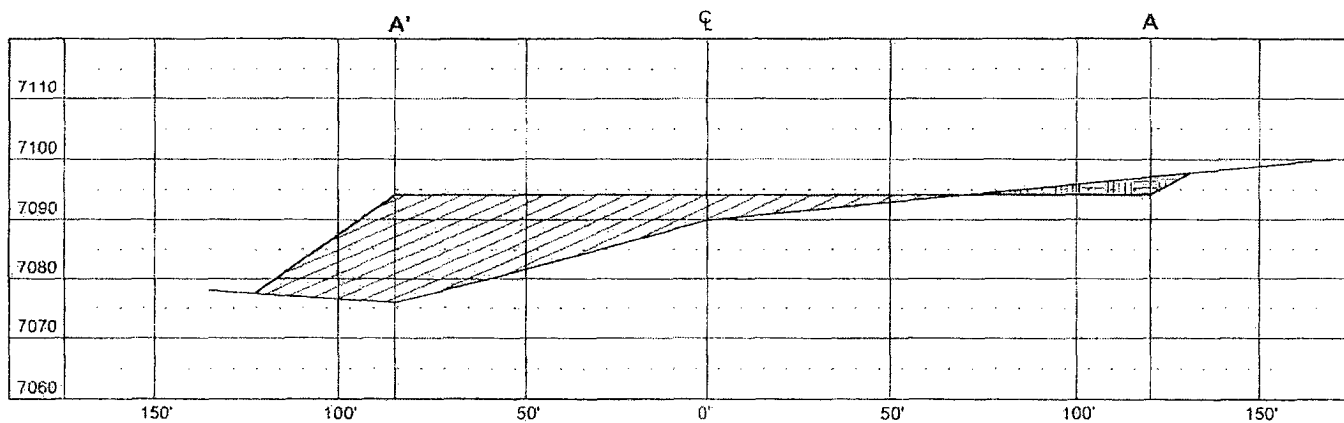
1375' FNL & 665' FWL

LOCATED IN THE SE/4 NW/4 OF SECTION 18,

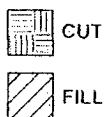
T30N, R4W, N.M.P.M.,


RIO ARRIBA, NEW MEXICO

ELEVATION: 7094', NAVD 88



VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: ERG111
DATE: 06/05/06



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

Operations Plan

January 12, 2007

San Juan 30-4 Unit #105

General Information

Location	1375' fnl, 665' fwl at surface 760' fnl, 760' fwl at bottom nene S18, T30N, R4W Rio Arriba County, New Mexico
Elevations	7094' GL
Total Depth	5989' (MD), 3810' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	1929' (TVD)
Ojo Alamo Ss	3174' (TVD), 3333' (MD)
Kirtland Sh	3422' (TVD), 3718' (MD)
Fruitland Fm	3432' (TVD), 3735' (MD)
Top Coal	3801' (TVD), 4813' (MD)
Bottom Coal	3821' (TVD)
Total Depth	3810' (TVD), 5989' (MD)

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 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 1700' TVD with 2.73°/100' doglegs.

The 6 1/4" 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 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: None

Mud logs: From 3432' (TVD), 3735' (MD) to TD. (Top of Fruitland Fm)

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 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3810' (TVD) 4970' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3810'-3810' (TVD) 4940'-5989' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4635' (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 standard bow spring centralizers to achieve optimal standoff.

Intermediate 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 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.

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: 125 sks Std (class B) with 2.0 % CaCl₂ and ¼ #/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 600 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 700 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft³/sk) and a tail of 125 sks Sks with ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1498 ft³ of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min.

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 National Forest; S18, T30N, R4W

Site: SJ BR

Well: San Juan 30-4 Unit #105

Wellbore: Preliminary Design

Plan: Plan #1 (San Juan 30-4 Unit #105/Preliminary Design)

Azimuths to Grid North
 True North: -0.32°
 Magnetic North: -0.32°

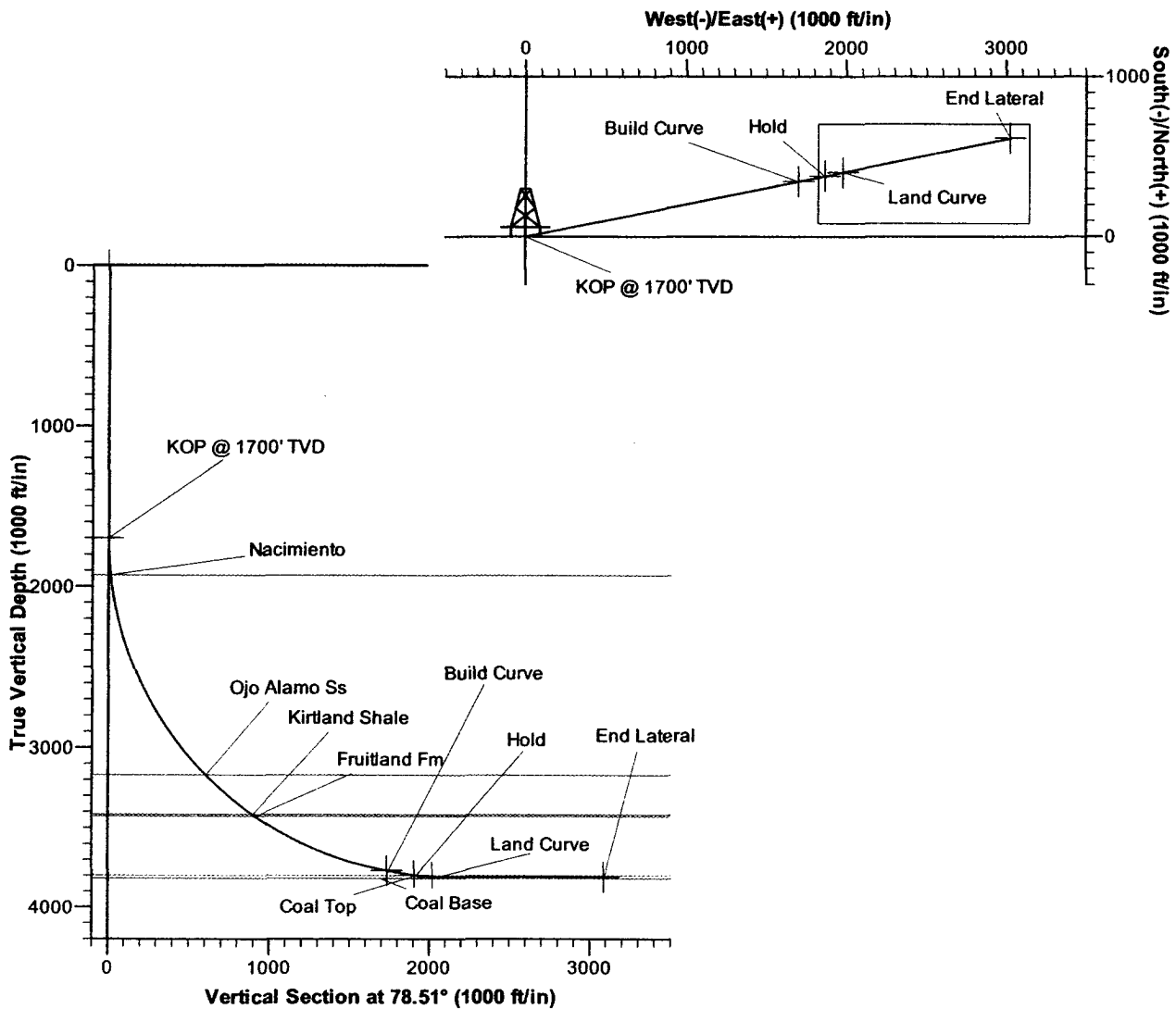
Magnetic Field
 Strength: 0.0snT
 Dip Angle: 0.00°
 Date: 1/12/2007
 Model: USER DEFINED

PROJECT DETAILS: Carson National Forest; S18, T30N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Western Zone
System Datum:	Mean Sea Level

SURFACE LOCATION	
Easting:	2879118.37
Northing:	2116467.08

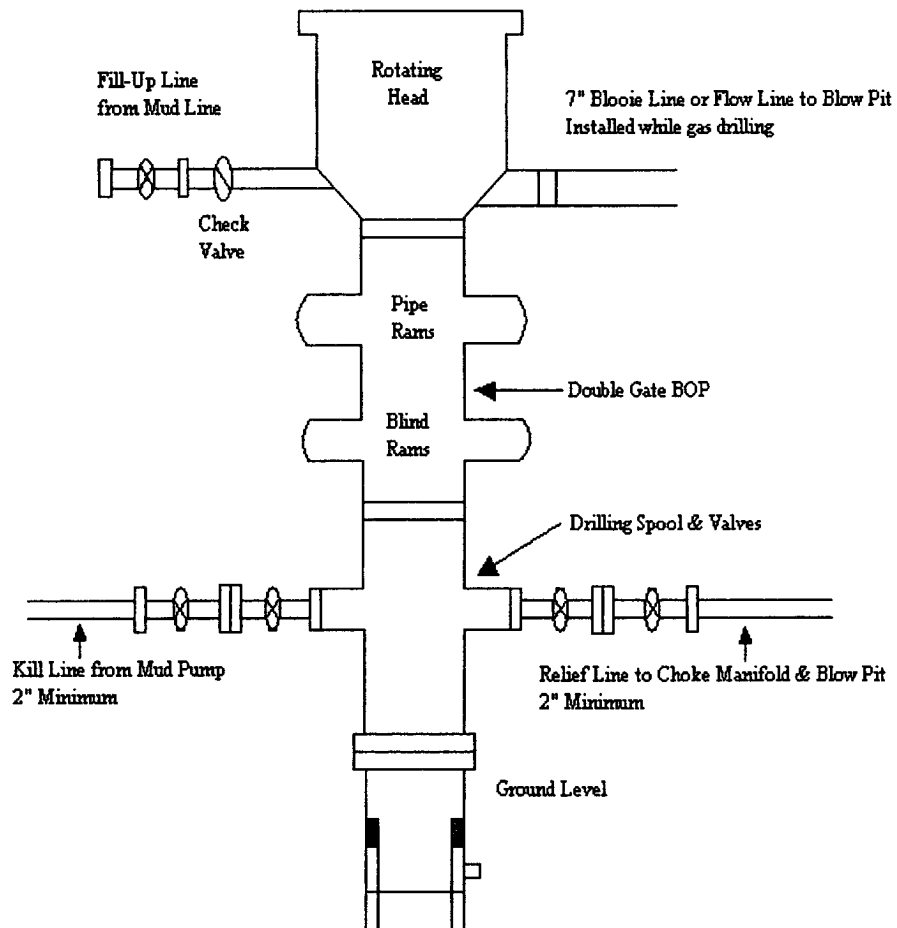
SECTION DETAILS

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	1700.0	0.00	0.00	1700.0	0.0	0.0	0.00	0.00	0.0	KOP @ 1700' TVD
3	4634.8	80.00	78.51	3770.0	346.0	1702.1	2.73	78.51	1736.9	Build Curve
4	4807.6	80.01	78.51	3800.0	379.9	1868.9	0.01	0.00	1907.1	Hold
5	4922.5	89.99	78.51	3810.0	402.7	1980.9	8.69	0.00	2021.4	Land Curve
6	5989.1	90.01	78.51	3810.0	615.1	3026.1	0.00	0.00	3088.0	End Lateral

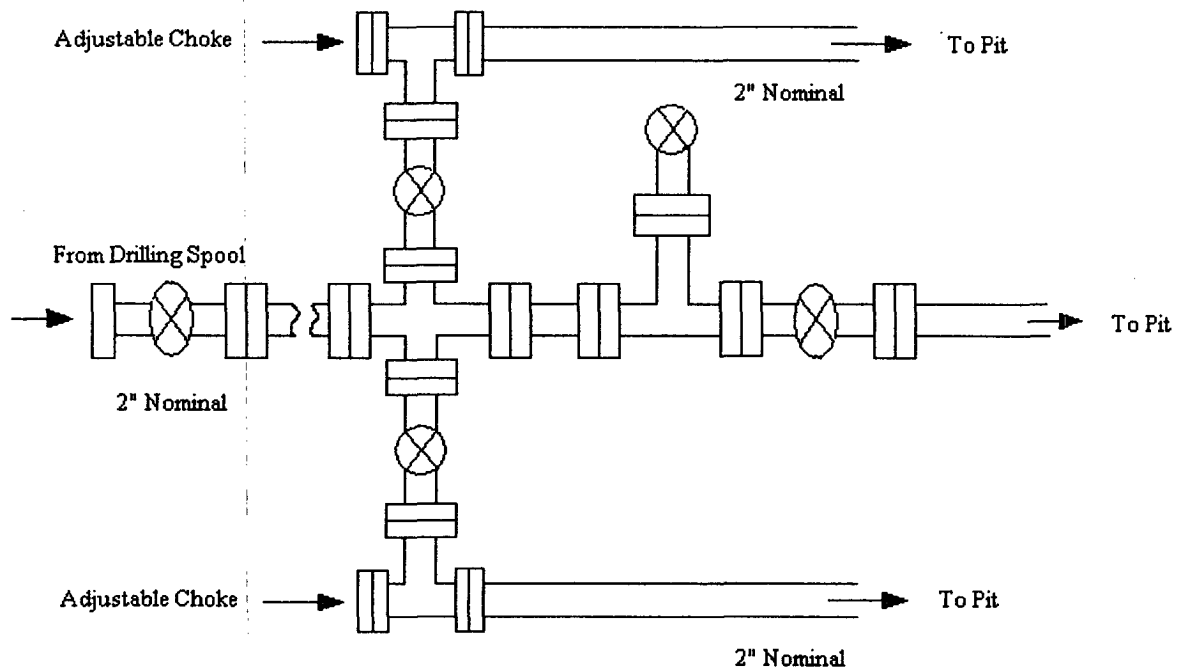


Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation
Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD