Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
DEC 01 2008
Bureau of Land Management
Farmington Field Office

FORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
USA NM 30015

1a. Type of Work [X] DRILL [ ] REENTER

6. If Indian, Allotee or Tribe Name

1b. Type of Well [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

7. Unit or CA Agreement Name and No.

2 Name of Operator
Energen Resources Corporation

8. Lease Name and Well No
Carracas 30B #13R

3a. Address
2010 Afton Place, Farmington, New Mexico 87401

3b. Phone No. *(include area code)*
(505) 325-6800

9. API Well No.
30-039-30602

4. Location of Well *(Report location clearly and in accordance with any State equirements)**
At surface 990 FSL, 915 FEL
At proposed prod. zone 1880 FSL, 760 FWL

10. Field and Pool, or Exploratory
Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area
P-Sec.30-T32N-R04W NMPM

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MAR 2009
OIL CONS. DIV. DIST.

14. Distance in miles and direction from nearest town or post office*
42 miles NE of Blanco, NM

12. County or Parish
Rio Arriba

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg unit line, if any)	16. No of Acres in lease	17. Spacing Unit dedicated to this well
760'	2482.20	320.55 309.14 Acres - S 1/2

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19 Proposed Depth	20. BLM/BIA Bond No on file
Approximatley 75'	7506'	

21. Elevations (Show whether DF, KDB, RT, GL, etc.	22. Approximate date work will start*	23. Estimated duration
7248' GL	May 2009	22 days

24. Attachments

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

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

25 Signature	Name (*Printed/Typed*)	Date
	Nathan Smith	11/20/08

Title
Drilling Engineer

Approved by (*Signature*)	Name (*Printed/Typed*)	Date
		3/25/09

Title	Office
Acting AFM Minerals	

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 knowlingly 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.

(Continued on page 2)

*(Instructions on page 2)

Hold C104 for Directional Survey "As Drilled" plat

APR 0 1 2009

NMOCD

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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".

HOLD C104 For Change in Status to Carracas 30B #16 & #13

RECEIVED

DEC 01 2008

Bureau of Land Management
Farmington Field Office

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

DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210

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

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30002	71629	BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
35597	CARRACAS 30B	13 R

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7248'

[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
P	30	32N	4W		990'	SOUTH	915'	EAST	RIO ARRIBA

[11] Bottom Hole Location If Different From Surface

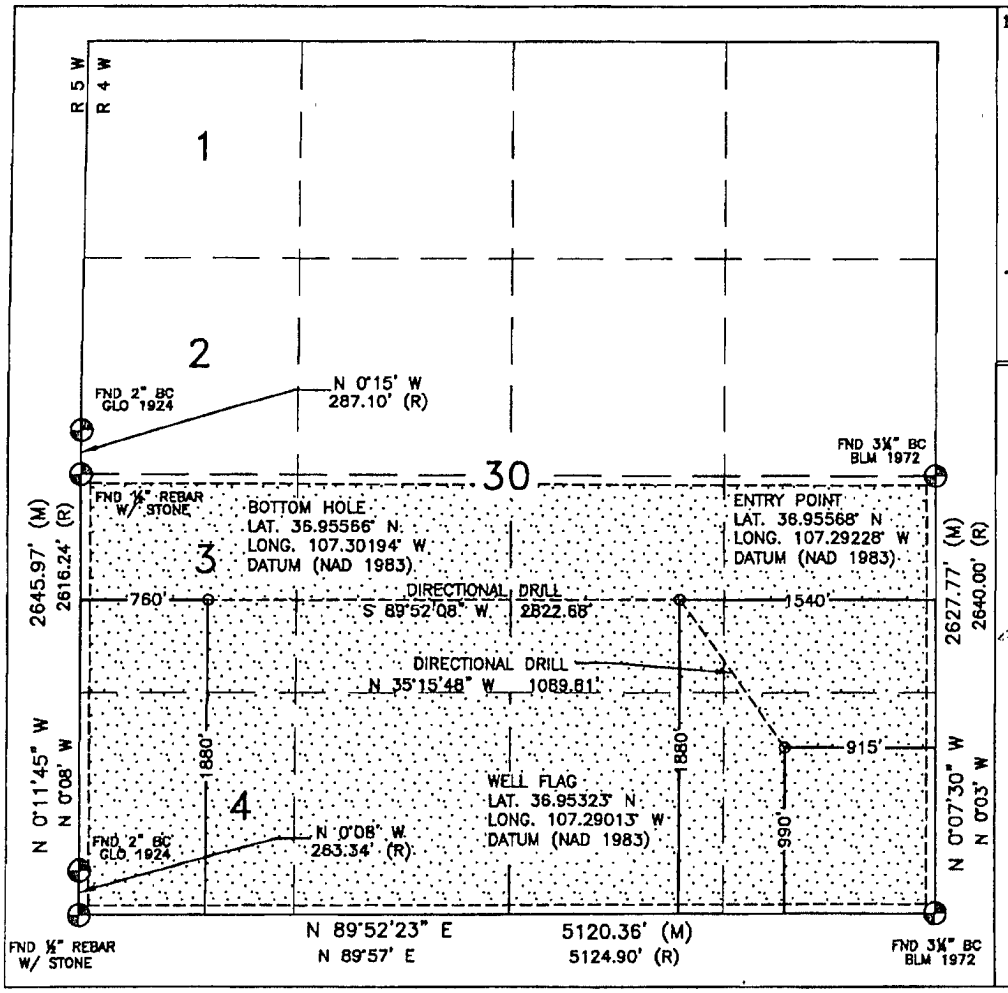
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	30	32N	4W	3	1880'	SOUTH	760'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
~~310.55~~ 309.44 Acres - S/2			

NOT 12/2/08

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.

Signature 11/24/08 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.

JUNE 26, 2008
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL NEW MEXICO 10201 REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

Operations Plan
November 20, 2008

Carracas 30 B #13R

General Information

Location	990 fsl, 915 fel at surface 1880 fsl, 760 fwl at bottom nwsw 30, T32N, R4W Rio Arriba County, New Mexico
Elevations	7248' GL
Total Depth	7506' (MD), 3989' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2283' (TVD)
Ojo Alamo Ss	3359' (TVD), 3396' (MD)
Kirtland Sh	3480' (TVD), 3561' (MD)
Fruitland Fm	3603' (TVD), 3767' (MD)
Top Coal	3967' (TVD), 4685' (MD)
Bottom Coal	3989' (TVD)
Total Depth	**3989' (TVD), 7506' (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 2850' TVD with 6.04°/100' average 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. Pressure test BOP to 250 psi for 15 min and 1500 psi for 15 min. Pressure test choke manifold to 1500 psi for 30 min.

Logging Program:

Open hole logs: None
Mud logs: From 3603' (TVD), 3767' (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 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3972'(TVD) 4750' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3967'-3989' (TVD) 4700'-7506' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4650' (MD)		2 3/8"	4.7 ppf	J-55

Casing Equipment:

Surface Casing: A Texas Pattern Guide Shoe on bottom of the first joint with an insert float valve on top of the first joint. Casing centralization with three (3) standard bow spring centralizers to achieve standoff.

Intermediate Casing: A self fill float shoe on bottom of the first joint of casing with self fill float collar on top of first joint of 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.

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 Type V with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 148 ft^3 of slurry to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. Pressure test BOP as outlined above in the 'Drilling' section.

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 660 sks 65/35 with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft^3/sk) and a tail of 150 sks Class G with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (1451 ft^3 of slurry to circulate to surface). WOC 12 hours. Test casing to 1200 psi for 30 min. Test BOP as outlined above in the 'Drilling' section.

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 Natl Forest - S/2 Sec 30, T32N, R4W
Site: Carracas Mesa
Well: Carracas 30 B #13R
Wellbore: Preliminary Design
Plan: Plan #1 (Carracas 30 B #13R/Preliminary Design)

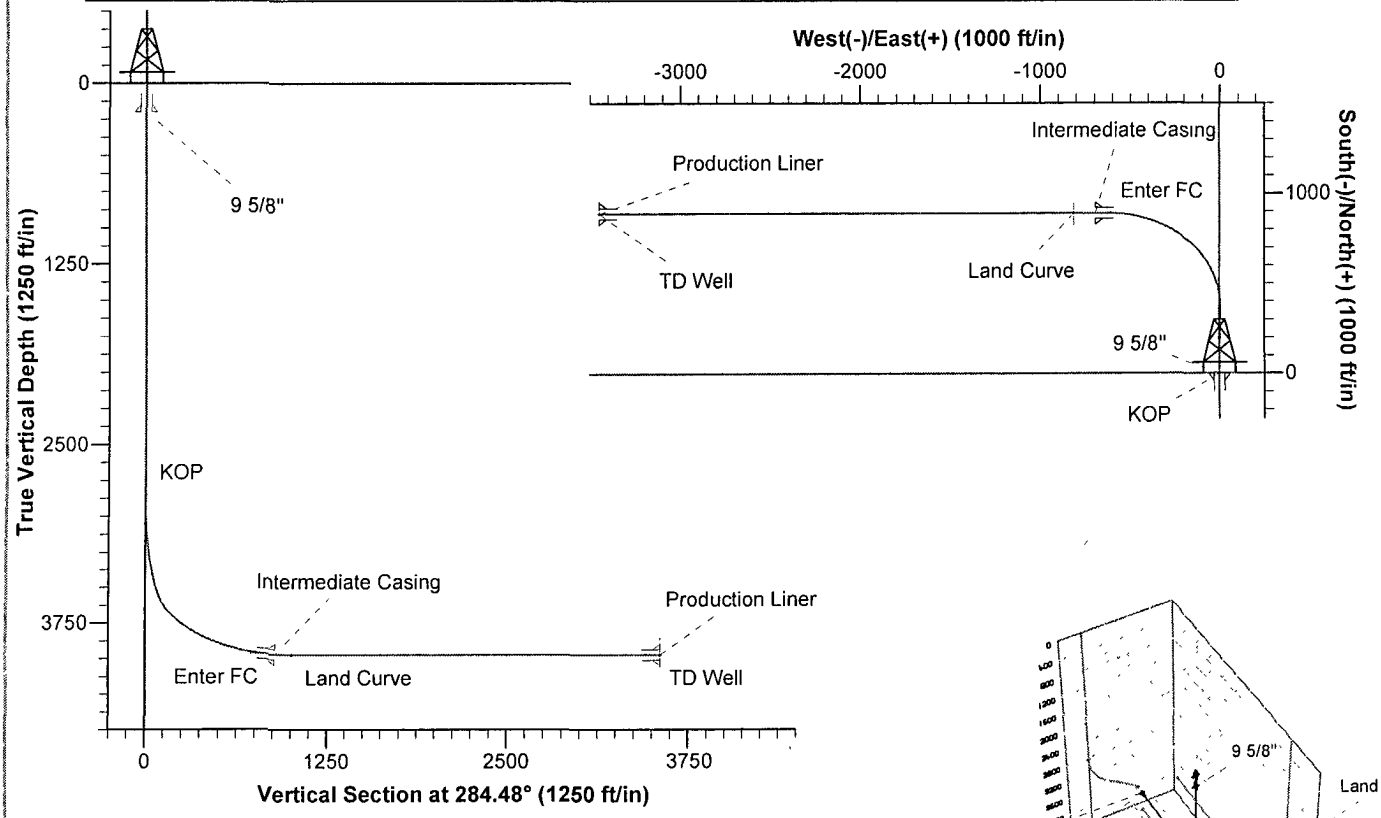
PROJECT DETAILS: Carson Natl Forest - S/2 Sec 30, T32N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Central Zone
System Datum:	Mean Sea Level

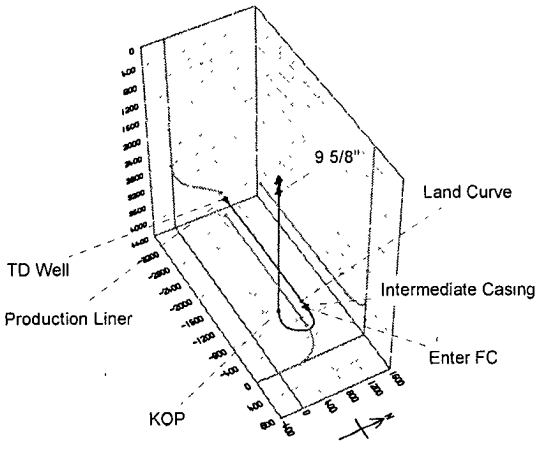
Azimuths to True North
Magnetic North: 10.02°

Magnetic Field
Strength: 51194.9snT
Dip Angle: 63.81°
Date: 11/20/2008
Model: IGRF200510

SECTION DETAILS

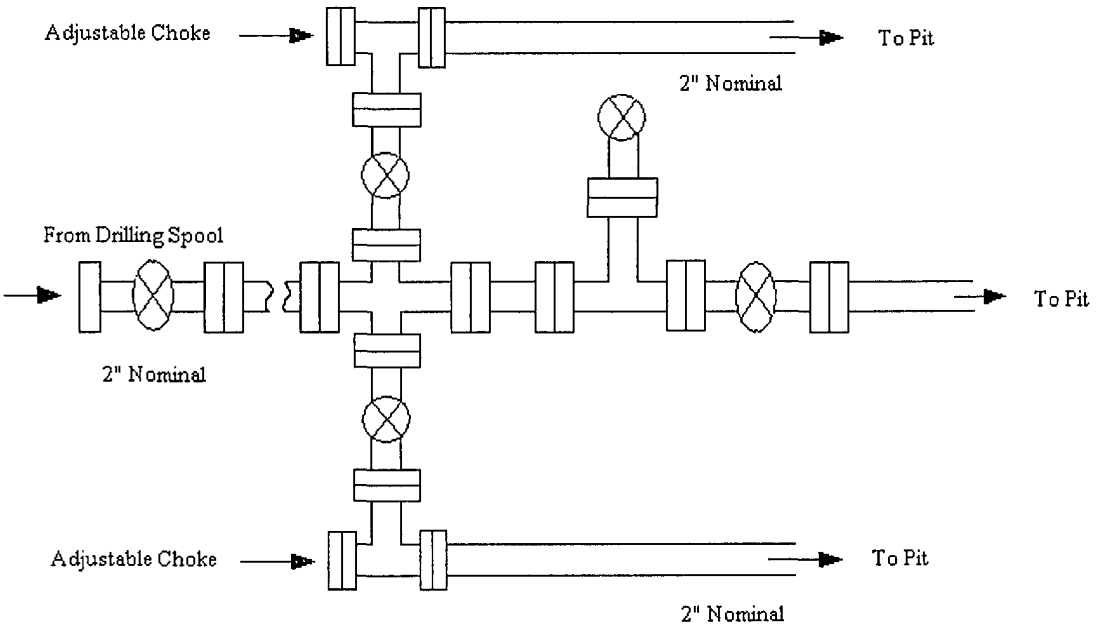
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2850.0	0.00	0.00	2850.0	0.0	0.0	0.00	0.00	0.0	KOP
3	3662.7	55.12	0.74	3543.0	361.7	4.7	6.78	0.74	85.9	
4	3667.8	55.12	0.74	3546.0	365.9	4.7	0.00	0.00	86.9	
5	4685.6	85.00	270.00	3967.0	890.0	-625.0	8.62	-94.53	827.7	Enter FC
6	4869.0	90.00	270.00	3975.0	890.0	-808.2	2.73	0.00	1005.1	Land Curve
7	7506.2	90.00	270.00	3975.0	890.0	-3445.4	0.00	0.00	3558.5	TD Well





Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

Energen Resources Corporation

Typical BOP Configuration for Gas Drilling