

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JUN 17 2008

Bureau of Land Management

Farmington Field Office

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		6. If Indian, Allottee or Tribe Name	
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		7. Unit or CA Agreement Name and No.	
2. Name of Operator Energen Resources Corporation		8. Lease Name and Well No. Carracas 33B #2	
3a. Address 2010 Afton Place Farmington, New Mexico 87401		9. API Well No. 30-039-30550	
3b. Phone No. (include area code) (505) 325-6800		10. Field and Pool, or Exploratory Basin Fruitland Coal	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1105' FNL 1000' FWL 1135' 1015' N E At proposed prod. zone 900' FSL 110' FWL		11. Sec., T., R., M., or Blk. and Survey or Area Sec. 33 T 32N R 4W	
14. Distance in miles and direction from nearest town or post office* 9 miles from Arboles		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) 1000'	16. No. of Acres in lease 2480.00 320	17. Spacing Unit dedicated to this well 320 N/2	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 63'	19. Proposed Depth 7665' MD	20. BLM/BIA Bond No. on file	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7295' GL	22. Approximate date work will start* 7/7/2008	23. Estimated duration 30 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) Devin Mills	Date 7/16/2008
Title Drilling Engineer		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 8/18/08
Title Office		

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)

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

Hold C104

for Directional Survey
and "As Drilled" plat

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

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

AUG 28 2008

NMOC

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

AFM

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

SUNDRY NOTICES AND REPORTS ON WELLS

AUG 20 2008

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.
MMM 30014

6. If Indian, Allottee or Tribe Name
**Bureau of Land Management
Farmington Field Office**

7. If Unit or CA/Agreement, Name and/or No.
NMN 078384F-FC

8. Well Name and No.
Carracas 33 B #2

9. API Well No.
30-039-30550

10. Field and Pool, or Exploratory Area
Basin Fruitland Coal

11. County or Parish, State
Rio Arriba NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Energen Resources Corporation

3a. Address
2010 Afton Place, Farmington, NM 87401

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

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1135' ENL, 1015' FWL Sec 33, T32N, R 4W

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Name change
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomplate in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

Energen Resources would like to change the name of this well from Carracas 33B #2 to Carracas Unit 33B #2

RCVD AUG 25 '08

OIL CONS. DIV.

DIST. 3

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed) **Vicki Donaghey** Title **Regulatory Analyst**

Signature **Vicki Donaghey** Date **08/20/08**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by **Cynthia Marquez** Title **JE** Date **08/22/08**

Conditions of approval, if any, are attached. Approval of this notice 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

Office **FEO**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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OMB NO. 1004-0137
Expires July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

JUL 25 2008

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Bureau of Land Management
Farmington Field Office

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Energen Resources Corporation

3a. Address

2010 Afton Place, Farmington, NM 87401

3b. Phone No. (include area code)

(505) 325-6800

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1105 fml, 1000 fwl Sec 33, T32N, R 4W at surface
900 fml, 110 fel Sec 33, T32N, R4W at bottom

5. Lease Serial No.

NMM-30014

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.

Carracas 33 B #2

9. API Well No.

30-039-30550

10. Field and Pool, or Exploratory Area

Basin Fruitland Coal

11. County or Parish, State

Rio Arriba NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Acidize ☐ Deepen ☐ Production (Start/Resume) ☐ Water Shut-Off
☐ Alter Casing ☐ Fracture Treat ☐ Reclamation ☐ Well Integrity
☐ Casing Repair ☐ New Construction ☐ Recomplete ☒ Other SHL Change
☐ Change Plans ☐ Plug and Abandon ☐ Temporarily Abandon
☐ Convert to Injection ☐ Plug Back ☐ Water Disposal

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection)

Energen Resources would like to change the surface hole location on the Carracas 33 B #2 from 1105 fml, 1000 fwl to 1135 fml, 1015 fwl to accomodate archeology sites.

Attached is a revised C-102.

RCVD AUG 20 '08
OIL CONS. DIV.

DIST. 3

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Nathan Smith

Title Drilling Engineer

Signature

Date 7/25/08

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

AFM

Date

8/18/08

Conditions of approval, if any, are attached. Approval of this notice 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

Office

FEO

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NMOCD

RCVD AUG 22 '08

OIL CONS. DIV.

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240State of New Mexico
Energy, Minerals & Natural Resources DepartmentDIST. Form C-102
Revised October 12, 2005DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 CopiesDISTRICT III
1015 Rio Brazos Rd., Aztec, N.M. 87410OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505☐ AMENDED REPORTDISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30550	² Pool Code 71629	³ Pool Name FRUETLAND COAL
⁴ Property Code 37321	⁵ Property Name CARRACAS 33 B	⁶ Well Number 2
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 7295'

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
D	33	32N	4W		1135'	NORTH	1015'	WEST	RIO ARRIBA

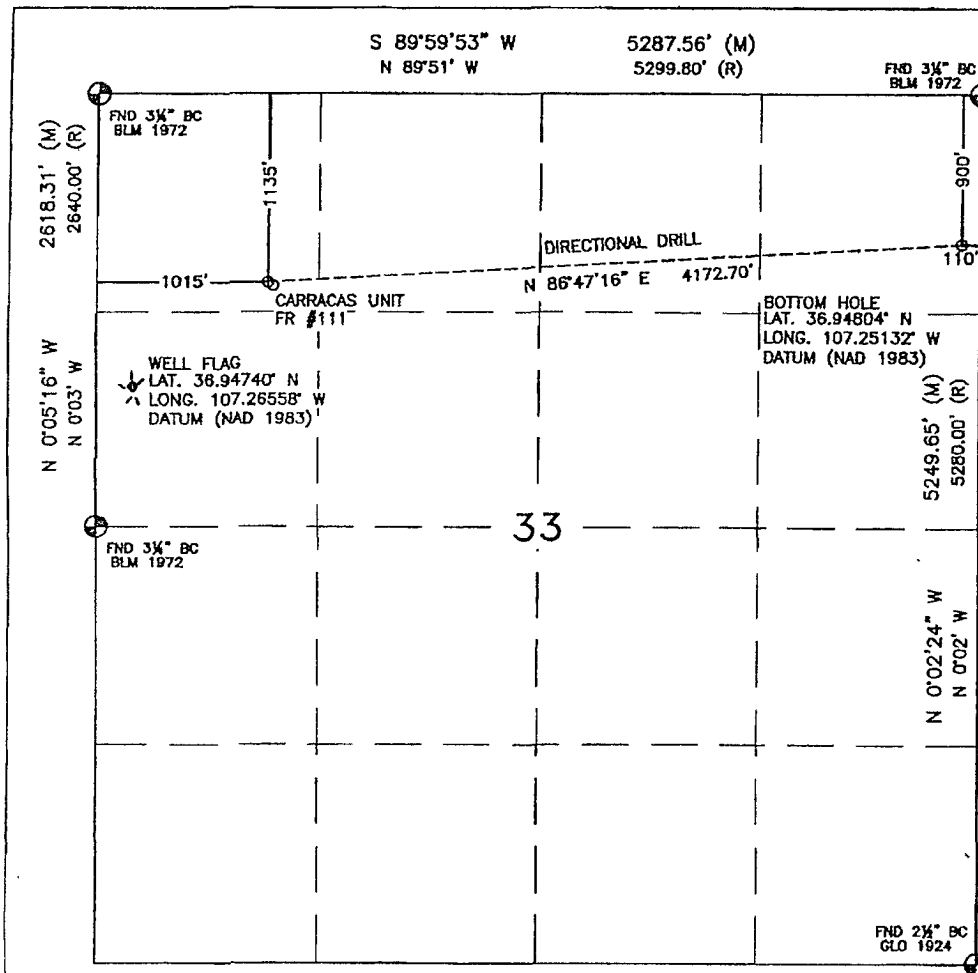
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	33	32N	4W		900'	NORTH	110'	EAST	RIO ARRIBA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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

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.

Nathan Smith 7/23/08
Signature Date

Nathan Smith
Printed Name

18 SURVEYOR CERTIFICATION

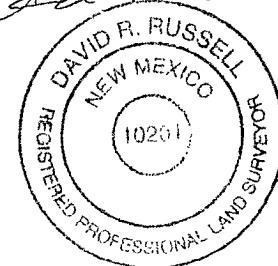
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

APRIL 28, 2008

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell



DAVID RUSSELL

Certificate Number 10201

RECEIVED

Operations Plan
May 27, 2008

JUN 13 2008

Carracas 33 B #2

Bureau of Land Management
Farmington Field Office

General Information

Location 1135 1015
~~1105' fml, 1000' fwl at surface~~
900' fml, 110' fwl at bottom
Sec. 33, T32N, R4W
Rio Arriba County, New Mexico

Elevations 7295' GL
Total Depth 7665' (MD), 4119' (TVD)
Formation Objective Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2360' (TVD)
Ojo Alamo Ss	3530' (TVD), 3268' (MD)
Kirtland Sh	3590' (TVD), 3447' (MD)
Fruitland Fm	3620' (TVD), 3580' (MD)
Top Coal	4105' (TVD), 4649' (MD)
Bottom Coal	4119' (TVD)
Total Depth	4119' (TVD), 7665' (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 2650' TVD with 3.92°/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 2000 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 3905' (TVD), 4160' (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' 200' 320'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4105' (TVD) 5155' (MD)	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	4105'-4119' (TVD) 5125'-7665' (MD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-4700' (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: 112 sks Std (class B) with 2.0 % CaCl₂ and 1/4 #/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.

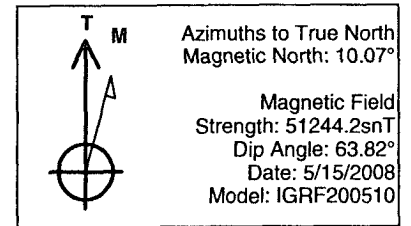
Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 635 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 264 sks Type V with 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1537 ft³ of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min.

Other Information

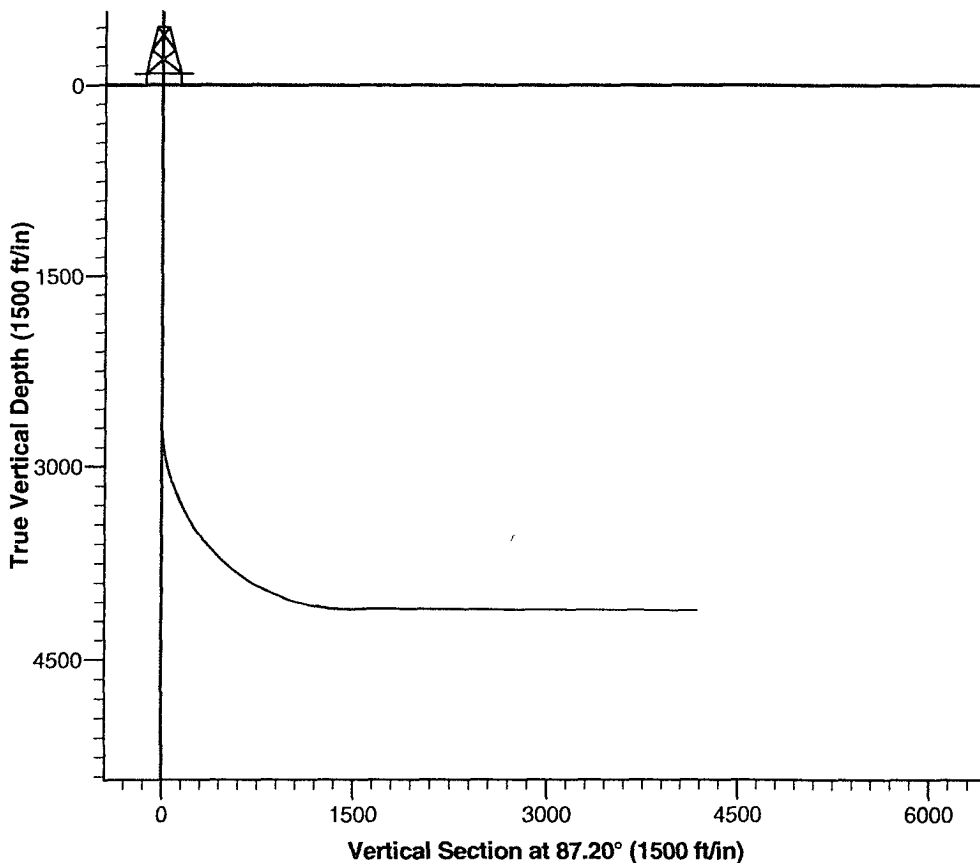
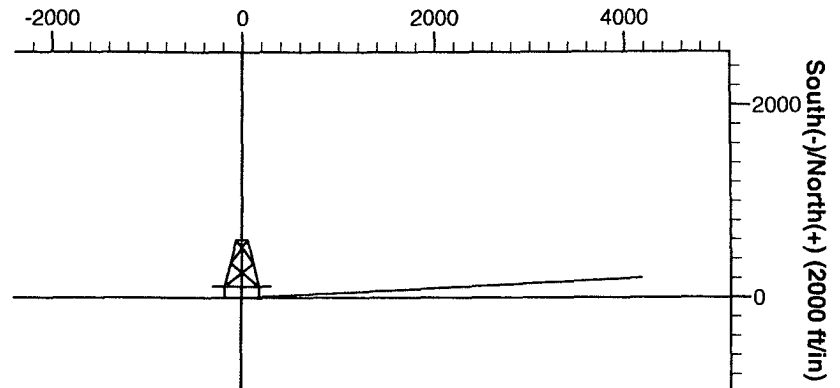
- 1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The intermediate string may need to be cemented in multiple stages with a slurry design deviated 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
Site: 33B; Sec 33 T 32N R 4W
Well: Carracas 33b #2
Wellbore: Wellbore #1
Plan: Design #1 (Carracas 33b #2/Wellbore #1)

PROJECT DETAILS: Carson National Forest	
Geodetic System: US State Plane 1983	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: New Mexico Central Zone	
System Datum: Mean Sea Level	



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	2650.0	0.00	0.00	2650.0	0.0	0.0	0.00	0.00	0.0	
3	5030.5	93.41	87.21	4107.6	75.4	1545.2	3.92	87.21	1547.0	
4	5125.5	89.68	87.20	4105.0	80.0	1640.0	3.92	-179.82	1642.0	Top Target #2
5	7664.6	89.68	87.20	4119.0	204.2	4176.0	0.00	0.00	4181.0	Bottom Target #2



Energen

APD REPORT

Company: Energen Resources
Project: Carson National Forest
Site: 33B; Sec 33 T 32N R 4W
Well: Carracas 33b #2
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Carracas 33b #2
TVD Reference: WELL @ 7309.0ft (Original Well Elev)
MD Reference: WELL @ 7309.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 Single User Db

Project	Carson National Forest		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	33B; Sec 33 T 32N R 4W		
Site Position:		Northing:	2,165,757.07 ft
From:	Lat/Long	Easting:	1,343,647.04 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	36° 56' 50.928 N
		Longitude:	107° 15' 56.196 W
		Grid Convergence:	-0.61°

Well	Carracas 33b #2		
Well Position	+N/-S	0.0 ft	Northing: 2,165,757.07 ft
	+E/-W	0.0 ft	Easting: 1,343,647.04 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36° 56' 50.928 N
		Longitude:	107° 15' 56.196 W
		Ground Level:	7,295.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	5/15/2008	(°)
			10.07
		Dip Angle	(°)
		63.82	
		Field Strength	(nT)
		51,244	

Design	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction (°)
			87.20

Survey Tool Program	Date 5/21/2008		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		Description
0.0	7,664.6	Design #1 (Wellbore #1)	

Planned Survey							
MD (ft)	TVD (ft)	Inc (°)	Azi (azimuth) (°)	Build (°/100ft)	V. Sec (ft)	Northing (ft)	Easting (ft)
0.0	0.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
100.0	100.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
200.0	200.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
300.0	300.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
400.0	400.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
500.0	500.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
600.0	600.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
700.0	700.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
800.0	800.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
900.0	900.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,000.0	1,000.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,100.0	1,100.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04

Energen APD REPORT

Company: Energen Resources
Project: Carson National Forest
Site: 33B; Sec 33 T 32N R 4W
Well: Carracas 33b #2
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Carracas 33b #2
TVD Reference: WELL @ 7309.0ft (Original Well Elev)
MD Reference: WELL @ 7309.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (azimuth) (°)	Build (°/100ft)	V. Sec (ft)	Northing (ft)	Easting (ft)
1,200.0	1,200.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,300.0	1,300.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,400.0	1,400.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,500.0	1,500.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,600.0	1,600.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,700.0	1,700.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,800.0	1,800.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
1,900.0	1,900.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,000.0	2,000.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,100.0	2,100.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,200.0	2,200.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,300.0	2,300.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,400.0	2,400.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,500.0	2,500.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,600.0	2,600.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,650.0	2,650.0	0.00	0.00	0.00	0.0	2,165,757.07	1,343,647.04
2,700.0	2,700.0	1.96	87.21	3.92	0.9	2,165,757.10	1,343,647.90
2,800.0	2,799.7	5.89	87.21	3.92	7.7	2,165,757.36	1,343,654.73
2,900.0	2,898.8	9.81	87.21	3.92	21.3	2,165,757.88	1,343,668.37
3,000.0	2,996.7	13.73	87.21	3.92	41.7	2,165,758.66	1,343,688.76
3,100.0	3,092.9	17.66	87.21	3.92	68.8	2,165,759.69	1,343,715.79
3,200.0	3,187.1	21.58	87.21	3.92	102.4	2,165,760.97	1,343,749.33
3,300.0	3,278.7	25.51	87.21	3.92	142.3	2,165,762.49	1,343,789.24
3,400.0	3,367.5	29.43	87.21	3.92	188.4	2,165,764.24	1,343,835.32
3,500.0	3,452.8	33.35	87.21	3.92	240.5	2,165,766.23	1,343,887.36
3,600.0	3,534.4	37.28	87.21	3.92	298.3	2,165,768.43	1,343,945.12
3,700.0	3,611.8	41.20	87.21	3.92	361.5	2,165,770.83	1,344,008.32
3,800.0	3,684.7	45.13	87.21	3.92	429.9	2,165,773.44	1,344,076.66
3,900.0	3,752.8	49.05	87.21	3.92	503.2	2,165,776.23	1,344,149.83
4,000.0	3,815.7	52.97	87.21	3.92	580.9	2,165,779.18	1,344,227.49
4,100.0	3,873.2	56.90	87.21	3.92	662.7	2,165,782.30	1,344,309.26
4,200.0	3,924.9	60.82	87.21	3.92	748.3	2,165,785.56	1,344,394.78
4,300.0	3,970.6	64.75	87.21	3.92	837.2	2,165,788.94	1,344,483.62
4,400.0	4,010.1	68.67	87.21	3.92	929.0	2,165,792.44	1,344,575.39
4,500.0	4,043.3	72.59	87.21	3.92	1,023.3	2,165,796.03	1,344,669.64
4,600.0	4,069.9	76.52	87.21	3.92	1,119.7	2,165,799.70	1,344,765.94
4,700.0	4,089.9	80.44	87.21	3.92	1,217.7	2,165,803.43	1,344,863.83
4,800.0	4,103.1	84.37	87.21	3.92	1,316.8	2,165,807.20	1,344,962.87
4,900.0	4,109.5	88.29	87.21	3.92	1,416.6	2,165,811.00	1,345,062.57
5,000.0	4,109.1	92.21	87.21	3.92	1,516.5	2,165,814.81	1,345,162.47
5,030.5	4,107.6	93.41	87.21	3.92	1,547.0	2,165,815.97	1,345,192.94
5,100.0	4,105.1	90.68	87.20	-3.92	1,616.4	2,165,818.61	1,345,262.31
5,125.5	4,105.0	89.68	87.20	-3.92	1,642.0	2,165,819.59	1,345,287.80
5,200.0	4,105.4	89.68	87.20	0.00	1,716.4	2,165,822.44	1,345,362.24

Energen APD REPORT

Company: Energen Resources
Project: Carson National Forest
Site: 33B; Sec 33 T 32N R 4W
Well: Carracas 33b #2
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Carracas 33b #2
TVD Reference: WELL @ 7309.0ft (Original Well Elev)
MD Reference: WELL @ 7309.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (azimuth) (°)	Build (°/100ft)	V. Sec (ft)	Northing (ft)	Easting (ft)
5,300.0	4,106.0	89.68	87.20	0.00	1,816.4	2,165,826.27	1,345,462.16
5,400.0	4,106.5	89.68	87.20	0.00	1,916.4	2,165,830.10	1,345,562.09
5,500.0	4,107.1	89.68	87.20	0.00	2,016.4	2,165,833.92	1,345,662.01
5,600.0	4,107.6	89.68	87.20	0.00	2,116.4	2,165,837.75	1,345,761.94
5,700.0	4,108.2	89.68	87.20	0.00	2,216.4	2,165,841.58	1,345,861.86
5,800.0	4,108.7	89.68	87.20	0.00	2,316.4	2,165,845.40	1,345,961.79
5,900.0	4,109.3	89.68	87.20	0.00	2,416.4	2,165,849.23	1,346,061.71
6,000.0	4,109.8	89.68	87.20	0.00	2,516.4	2,165,853.06	1,346,161.64
6,100.0	4,110.4	89.68	87.20	0.00	2,616.4	2,165,856.89	1,346,261.56
6,200.0	4,110.9	89.68	87.20	0.00	2,716.4	2,165,860.71	1,346,361.49
6,300.0	4,111.5	89.68	87.20	0.00	2,816.4	2,165,864.54	1,346,461.41
6,400.0	4,112.0	89.68	87.20	0.00	2,916.4	2,165,868.37	1,346,561.34
6,500.0	4,112.6	89.68	87.20	0.00	3,016.4	2,165,872.20	1,346,661.26
6,600.0	4,113.1	89.68	87.20	0.00	3,116.4	2,165,876.02	1,346,761.19
6,700.0	4,113.7	89.68	87.20	0.00	3,216.4	2,165,879.85	1,346,861.11
6,800.0	4,114.2	89.68	87.20	0.00	3,316.4	2,165,883.68	1,346,961.04
6,900.0	4,114.8	89.68	87.20	0.00	3,416.4	2,165,887.51	1,347,060.96
7,000.0	4,115.3	89.68	87.20	0.00	3,516.4	2,165,891.33	1,347,160.89
7,100.0	4,115.9	89.68	87.20	0.00	3,616.4	2,165,895.16	1,347,260.81
7,200.0	4,116.4	89.68	87.20	0.00	3,716.4	2,165,898.99	1,347,360.74
7,300.0	4,117.0	89.68	87.20	0.00	3,816.4	2,165,902.82	1,347,460.66
7,400.0	4,117.5	89.68	87.20	0.00	3,916.4	2,165,906.64	1,347,560.59
7,500.0	4,118.1	89.68	87.20	0.00	4,016.4	2,165,910.47	1,347,660.51
7,600.0	4,118.6	89.68	87.20	0.00	4,116.4	2,165,914.30	1,347,760.44
7,664.6	4,119.0	89.68	87.20	0.00	4,181.0	2,165,916.77	1,347,824.96

Checked By: _____ Approved By: _____ Date: _____