Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side

2006 JUN 15 AM 2 24

RECEIVED
070 FARMINGTON NM

5. Lease Serial No.
NMNM 30015

6. If Indian, Allottee or Tribe Name

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

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

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

2. Name of Operator
Energen Resources Corporation

9. API Well No.
30-039-27872-~~01~~

3a. Address
2198 Bloomfield Highway, Farmington, NM 87401

3b. Phone No. *(include area code)*
505.325.6800

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

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Surface: 800' FSL, 70' FWL swsw S30, T32N, R4W
Bottom: 1880' FSL, 2375' FWL nesw S30, T32N, R4W

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	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ 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 recomplete 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 recompletion 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 Carracas 30B #13 from a vertical drill and cavitaion well to a horizontal drill and open hole completion well with the following information:

*Change the 7" casing setting depth to 4325' (MD), 3923' (TVD).
*Change the setting depth of the liner to 6200' (MD), 3923' (TVD).
*Change the production liner to a 4 1/2" 11.6 ppf pre-drilled liner.
*Cement the 7" casing with 580 sks (1137 cuft) lead and 125 sks (155 cuft) tail.

Energen Resources would also like to change the dedication from a west half to a south half dedication.

Changes are noted on the attached revised C-102, Operations Plan, and Directional Planning Report.

JUN 2006
OIL CONS. DIV.
DIST. 3

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

Title
Drilling Engineer

Date 6/14/06

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title Pet. Eng.

Date 6/20/06

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

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, makes 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.

NMOCD

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

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000

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
		BASIN FRUITLAND COAL

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

[7] OGRID No.	[8] Operator Name	[9] Elevation
	ENERGEN RESOURCES CORPORATION	7198'

[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
M	30	32N	4W		800'	SOUTH	70'	WEST	RIO ARRIBA

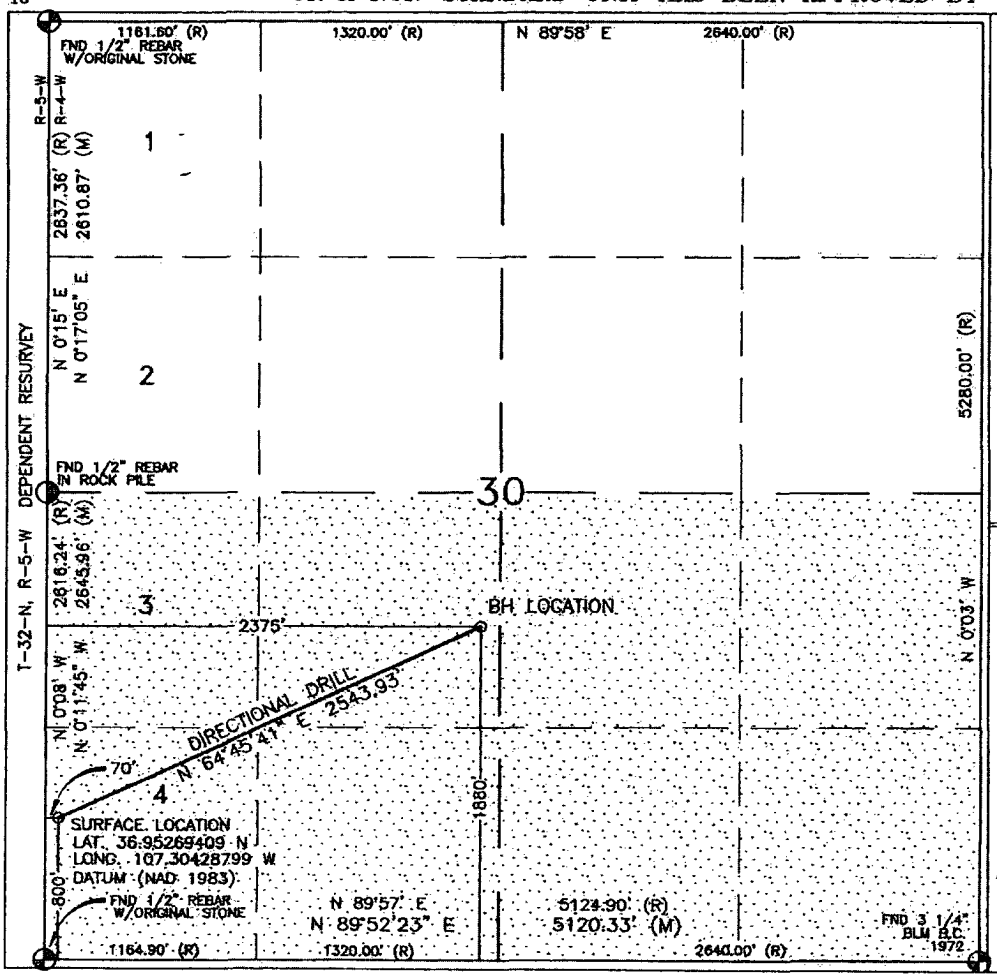
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	30	32N	4W		1880'	SOUTH	2375'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
309.14 Acres - (S/2)			

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

Signature

Nathan Smith
Printed Name

Drilling Engineer
Title

6/14/06
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.

JANUARY 23, 2006
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID R. RUSSELL
Certificate Number 10201

Operations Plan

Revised June 14, 2006

Carracas # 30B-13

General Information

Location	800' fsl, 70' fwl at surface 1880' fsl, 2375' fwl at bottom S30, T32N, R4W Rio Arriba County, New Mexico
Elevations	7203' GL
Total Depth	3923' (TVD), 6200' (MD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2208' (TVD),
Ojo Alamo Ss	3333' (TVD), 3335' (MD)
Kirtland Sh	3428' (TVD), 3425' (MD)
Fruitland Fm	3793' (TVD), 3860' (MD)
Top Main Coal	3903' (TVD), 4150' (MD)
Bottom Coal	3923' (TVD)
Pictured Cliffs Ss	3978'(TVD)
Total Depth	**3923' (TVD), 6200' (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.
Expected Kick Off Point (KOP) is 3313' TVD with a build angle of 9.5°/100ft.
The 6 ¼" wellbore will be drilled with a produced coal water and low polymer system.
Blowout Control Specifications:

An 11" 2000 psi minimum double gate BOP stack (figure 1) 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 stack. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle available and drill string valve to fit each drill string will be available on the rig floor during drilling operations.

Logging Program:

Open hole logs: None
Mud logs: From 3700' (TVD), 3740' (MD) to Intermediate TD and Production TD
Surveys: Every 500' to KOP, every 200' to TD or as directional drilling requires.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-300'	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4325' (MD) 0-3923' (TVD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4295-6200' (MD) 3903-3923' (TVD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4295'		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 9 5/8" x 7"x 2 3/8" Flanged Wellhead .

Cementing

Surface Casing: 175 sks Std (class B) with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 220 ft^3 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 580 sks 65/35 Std (class B) with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft^3/sk) and a tail of 125 sks Std (class B) with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (1292 ft^3 of slurry, 100 % excess to circulate to surface).

Liner: Open hole completion, no cement.

Other Information

1) This well will be an open hole completion and the Basin Fruitland Coal cavitated.
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/

PATHFINDER
ENERGY SERVICES

Energen Resources Corporation

Rio Arriba, NM
Sec.30 T32N-R4W
Carracas 30B-13
Wellbore #1

Plan: Plan #1

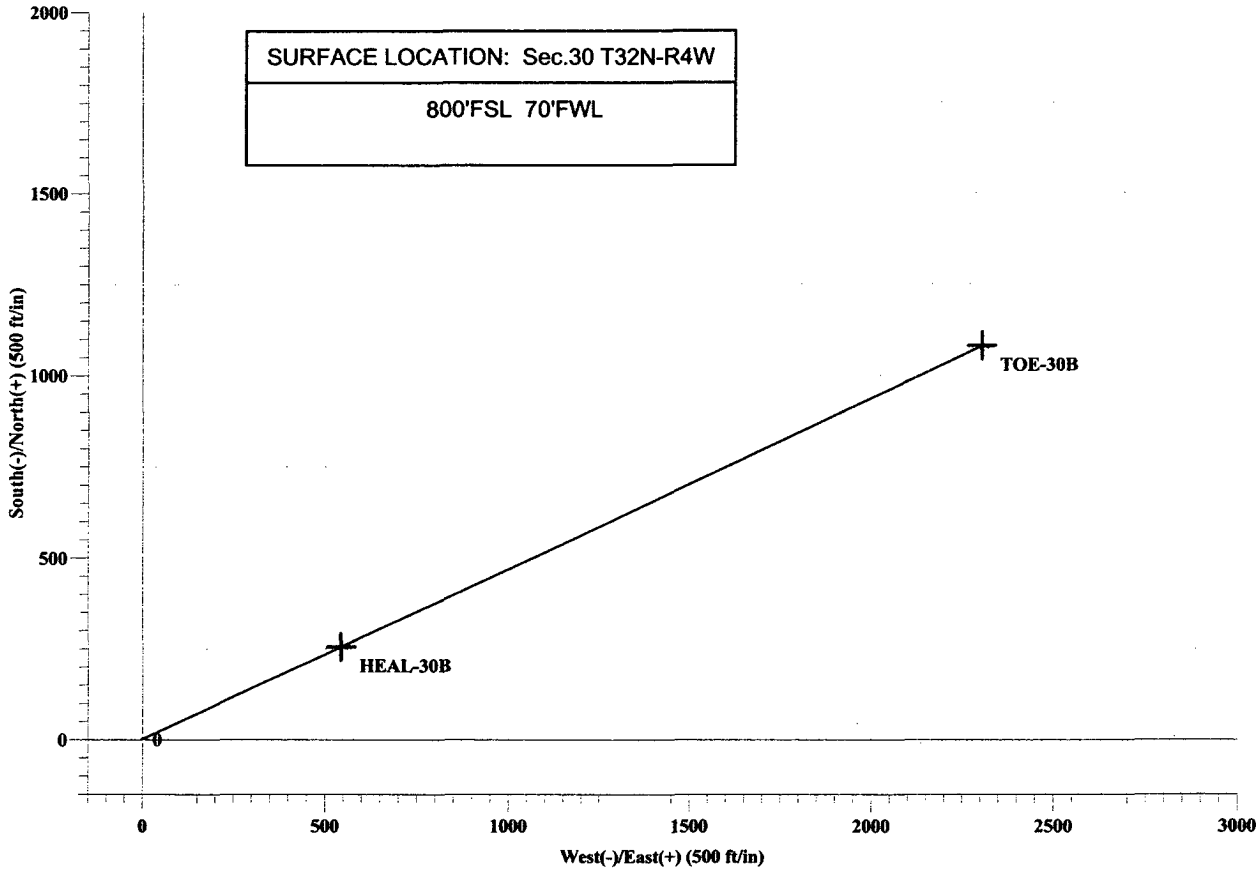
Standard Planning Report

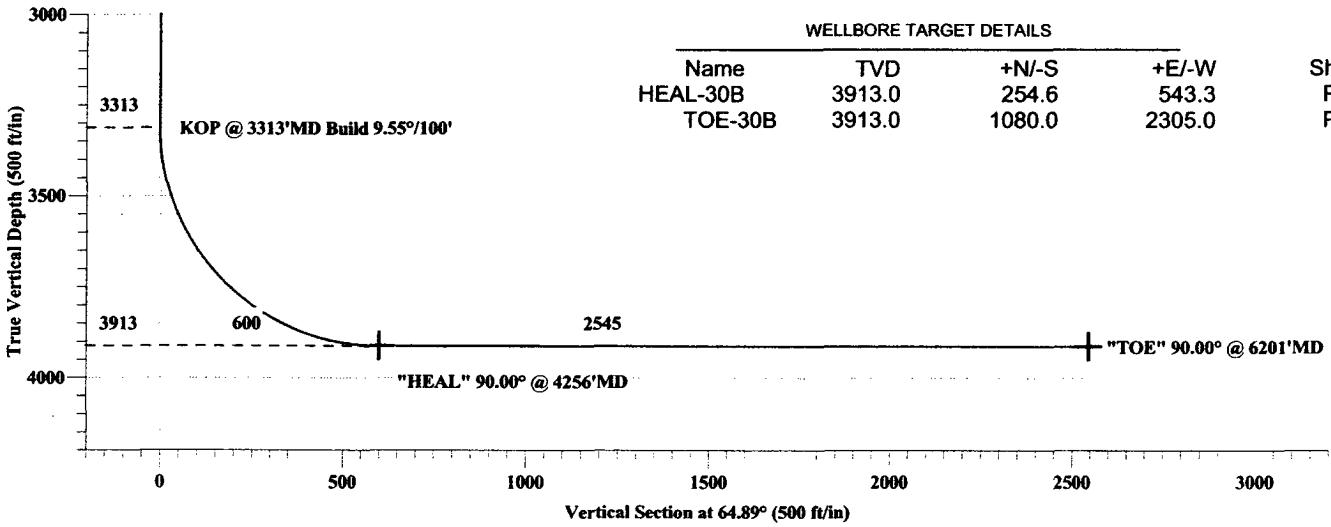
14 February, 2006

Energen Resources Corp

PATHFINDER ENERGY SERVICES

Carracas 30B-13
Sec.30 T32N-R4W
Rio Arriba, NM





WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
HEAL-30B	3913.0	254.6	543.3	Point
TOE-30B	3913.0	1080.0	2305.0	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg		VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00		0.0	
2	3313.0	0.00		3313.0	0.0	0.0	0.00		0.0	
3	4255.5	90.00	64.89	3913.0	254.6	543.3	9.55	64.89	600.0	HEAL-30B
4	6200.5	90.00	64.89	3913.0	1080.0	2304.5	0.00	0.00	2545.0	TOE-30B

Plan: Plan #1 (Carracas 30B-13/Wellbore #1)

Created By: Frank C. Scardino Date: 1/5/2006

PATHFINDER ENERGY SERVICES

Pathfinder
Planning Report

Database:	EDM 2003.14 Single User Db	**Local Co-ordinate Reference:**	Well Carracas 30B-13
Company:	Energen Resources Corporation	**TVD Reference:**	WELL @ 0.0ft (Original Well Elev)
Project:	Rio Arriba, NM	**MD Reference:**	WELL @ 0.0ft (Original Well Elev)
Site:	Sec.30 T32N-R4W	**North Reference:**	True
Well:	Carracas 30B-13	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Rio Arriba, NM		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site	Sec.30 T32N-R4W				
Site Position:		**Northing:**	ft	**Latitude:**	
From:	None	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.00 °

Well	Carracas 30B-13					
Well Position	**+N/-S**	0.0 ft	**Northing:**	0.00 ft	**Latitude:**	30° 59' 24.511 N
	+E/-W	0.0 ft	**Easting:**	0.00 ft	**Longitude:**	107° 50' 44.190 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	0.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	User Defined	2/14/2006	0.00	0.00	0

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	64.89	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,313.0	0.00	0.00	3,313.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,255.5	90.00	64.89	3,913.0	254.6	543.3	9.55	9.55	0.00	64.89	HEAL-30B
6,200.5	90.00	64.89	3,913.0	1,080.0	2,304.5	0.00	0.00	0.00	0.00	TOE-30B

Database:	EDM 2003.14 Single User Db	**Local Co-ordinate Reference:**	Well Carracas 30B-13
Company:	Energen Resources Corporation	**TVD Reference:**	WELL @ 0.0ft (Original Well Elev)
Project:	Rio Arriba, NM	**MD Reference:**	WELL @ 0.0ft (Original Well Elev)
Site:	Sec.30 T32N-R4W	**North Reference:**	True
Well:	Carracas 30B-13	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,313.0	0.00	0.00	3,313.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP @ 3313'MD Build 9.55°/100'									
3,350.0	3.53	64.89	3,350.0	0.5	1.0	1.1	9.55	9.55	0.00
3,400.0	8.31	64.89	3,399.7	2.7	5.7	6.3	9.55	9.55	0.00
3,450.0	13.08	64.89	3,448.8	6.6	14.1	15.6	9.55	9.55	0.00
3,500.0	17.86	64.89	3,497.0	12.3	26.2	28.9	9.55	9.55	0.00
3,550.0	22.63	64.89	3,543.9	19.6	41.8	46.2	9.55	9.55	0.00
3,600.0	27.41	64.89	3,589.2	28.6	61.0	67.3	9.55	9.55	0.00
3,650.0	32.18	64.89	3,632.6	39.1	83.5	92.2	9.55	9.55	0.00
3,700.0	36.96	64.89	3,673.7	51.2	109.1	120.5	9.55	9.55	0.00
3,750.0	41.73	64.89	3,712.4	64.6	137.8	152.2	9.55	9.55	0.00
3,800.0	46.51	64.89	3,748.3	79.4	169.4	187.0	9.55	9.55	0.00
3,850.0	51.28	64.89	3,781.1	95.3	203.5	224.7	9.55	9.55	0.00
3,900.0	56.05	64.89	3,810.7	112.4	239.9	265.0	9.55	9.55	0.00
3,950.0	60.83	64.89	3,836.9	130.5	278.5	307.5	9.55	9.55	0.00
4,000.0	65.60	64.89	3,859.4	149.4	318.9	352.2	9.55	9.55	0.00
4,050.0	70.38	64.89	3,878.2	169.1	360.9	398.5	9.55	9.55	0.00
4,100.0	75.15	64.89	3,893.0	189.4	404.1	446.3	9.55	9.55	0.00
4,150.0	79.93	64.89	3,903.8	210.1	448.3	495.1	9.55	9.55	0.00
4,200.0	84.70	64.89	3,910.4	231.1	493.1	544.6	9.55	9.55	0.00
4,250.0	89.48	64.89	3,913.0	252.3	538.3	594.5	9.55	9.55	0.00
4,255.5	90.00	64.89	3,913.0	254.6	543.3	600.0	9.55	9.55	0.00
"HEAL" 90.00° @ 4256'MD - HEAL-30B									
4,300.0	90.00	64.89	3,913.0	273.5	583.6	644.5	0.00	0.00	0.00
4,400.0	90.00	64.89	3,913.0	315.9	674.2	744.5	0.00	0.00	0.00
4,500.0	90.00	64.89	3,913.0	358.4	764.7	844.5	0.00	0.00	0.00
4,600.0	90.00	64.89	3,913.0	400.8	855.3	944.5	0.00	0.00	0.00
4,700.0	90.00	64.89	3,913.0	443.3	945.8	1,044.5	0.00	0.00	0.00
4,800.0	90.00	64.89	3,913.0	485.7	1,036.4	1,144.5	0.00	0.00	0.00
4,900.0	90.00	64.89	3,913.0	528.1	1,126.9	1,244.5	0.00	0.00	0.00
5,000.0	90.00	64.89	3,913.0	570.6	1,217.5	1,344.5	0.00	0.00	0.00
5,100.0	90.00	64.89	3,913.0	613.0	1,308.0	1,444.5	0.00	0.00	0.00
5,200.0	90.00	64.89	3,913.0	655.4	1,398.6	1,544.5	0.00	0.00	0.00
5,300.0	90.00	64.89	3,913.0	697.9	1,489.1	1,644.5	0.00	0.00	0.00
5,400.0	90.00	64.89	3,913.0	740.3	1,579.7	1,744.5	0.00	0.00	0.00
5,500.0	90.00	64.89	3,913.0	782.7	1,670.2	1,844.5	0.00	0.00	0.00
5,600.0	90.00	64.89	3,913.0	825.2	1,760.8	1,944.5	0.00	0.00	0.00
5,700.0	90.00	64.89	3,913.0	867.6	1,851.3	2,044.5	0.00	0.00	0.00
5,800.0	90.00	64.89	3,913.0	910.0	1,941.9	2,144.5	0.00	0.00	0.00
5,900.0	90.00	64.89	3,913.0	952.5	2,032.4	2,244.5	0.00	0.00	0.00
6,000.0	90.00	64.89	3,913.0	994.9	2,123.0	2,344.5	0.00	0.00	0.00
6,100.0	90.00	64.89	3,913.0	1,037.4	2,213.5	2,444.5	0.00	0.00	0.00
6,200.5	90.00	64.89	3,913.0	1,080.0	2,304.5	2,545.0	0.00	0.00	0.00
"TOE" 90.00° @ 6201'MD - TOE-30B									

Database:	EDM 2003.14 Single User Db	**Local Co-ordinate Reference:**	Well Carracas 30B-13
Company:	Energen Resources Corporation	**TVD Reference:**	WELL @ 0.0ft (Original Well Elev)
Project:	Rio Arriba, NM	**MD Reference:**	WELL @ 0.0ft (Original Well Elev)
Site:	Sec.30 T32N-R4W	**North Reference:**	True
Well:	Carracas 30B-13	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TOE-30B - plan hits target - Point	0.00	0.00	3,913.0	1,080.0	2,305.0	1,046.83	2,320.25	30° 59' 35.197 N	107° 50' 17.714 W
HEAL-30B - plan hits target - Point	0.00	0.00	3,913.0	254.6	543.3	246.80	546.89	30° 59' 27.031 N	107° 50' 37.949 W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
3,313.0	3,313.0	0.0	0.0	KOP @ 3313'MD Build 9.55°/100'
4,255.5	3,913.0	254.6	543.3	"HEAL" 90.00° @ 4256'MD
6,200.5	3,913.0	1,080.0	2,304.5	"TOE" 90.00° @ 6201'MD