

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

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Energen Resources Corporation

3a. Address

2198 Bloomfield Highway, Farmington, NM 87401

3b. Phone No. (include area code)

505.325.6800

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

Surface: 2235' FSL, 1850' FEL NESE S24, T32N, R5W  
Bottom: 760' FSL, 1880' FEL SWSE

5. Lease Serial No.

NMM 29760

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Carracas 24A #10

9. API Well No.

30-039-27547

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

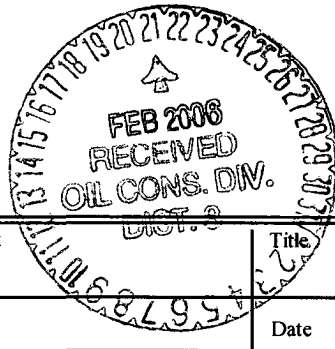
- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> Acidize                 | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Alter Casing            | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Casing Repair           | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |
| <input checked="" 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 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 Carracas 24A #10 from a vertical drill and cavitation well to a horizontal drill and open hole completion well with the following information:

- \*Change the 7" casing setting depth to 4350' (MD), 3927' (TVD).
- \*Change the setting depth of the liner to 5127' (MD), 3927' (TVD).
- \*Change the production liner to a 4 1/2" 11.6 ppf pre-drilled liner.
- \*Cement the 7" casing with 590 sks (1156 cuft) lead and 125 sks (155 cuft) tail.

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



2008 FEB 11 AM 9 14  
RECEIVED  
OIL CONSERVATION DIV.  
HOLD C104 FOR Directional Survey

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

Nathan Smith

Title

Drilling Engineer

Date

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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.

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

DISTRICT II  
611 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		*Pool Code	*Pool Name BASIN FRUITLAND COAL
*Property Code	*Property Name CARRACAS 24A		*Well Number 10
*GRID No.	*Operator Name ENERGEN RESOURCES CORPORATION		*Elevation 7296'

<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
J	24	32N	5W		2235'	SOUTH	1850'	EAST	RIO ARriba

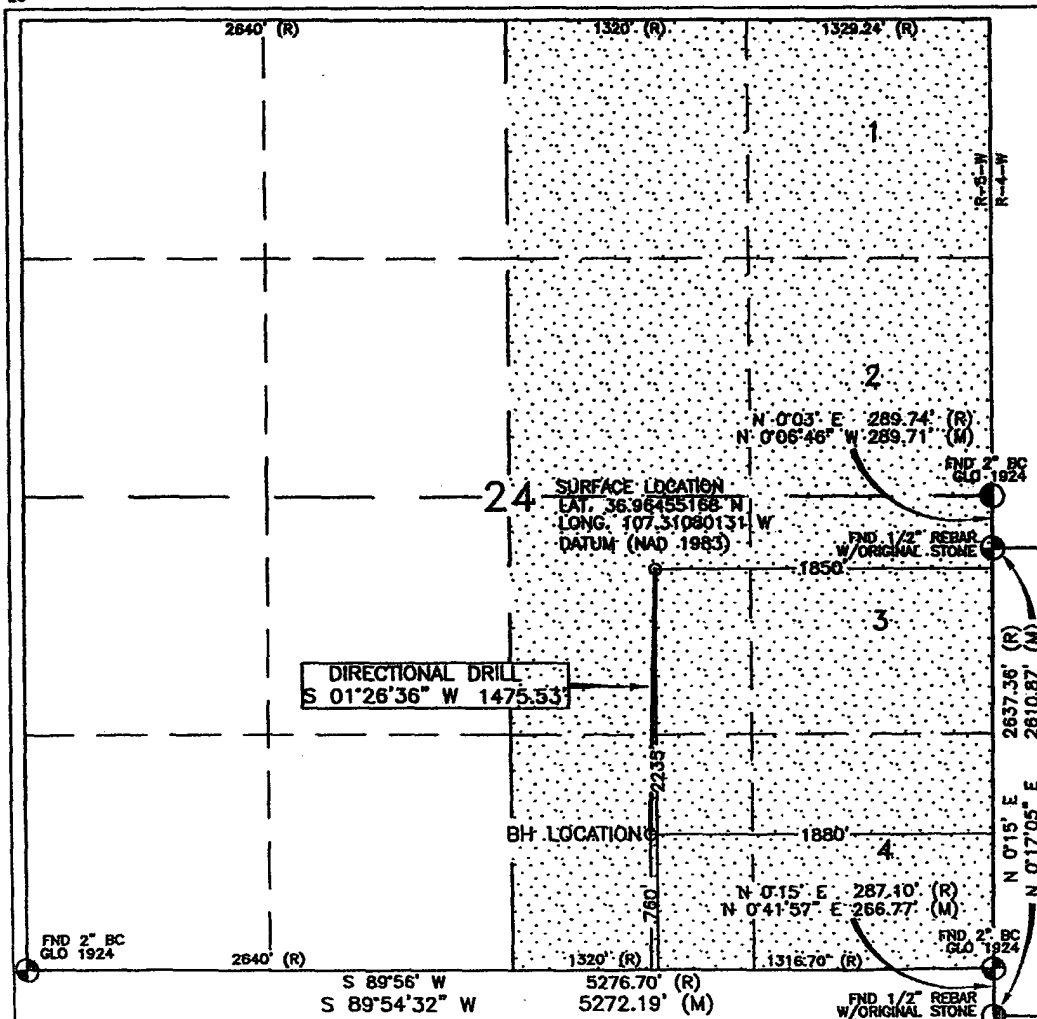
<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	24	32N	5W		760'	SOUTH	1880'	EAST	RIO ARriba

<sup>12</sup> Dedicated Acres 319.61 Acres - (E/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

Signature: Nathan Smith  
Printed Name: Nathan Smith  
Title: Drilling Engineer  
Date: 2/13/06

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.

Date of Survey: JANUARY 30, 2006  
Signature and Seal of Registered Surveyor: DAVID R. RUSSELL  
Certificate Number: 10201

## Operations Plan

Revised February 13, 2006

### **Carracas 24A #10**

#### **General Information**

Location	2235' fsl, 1850' fel at surface 760' fsl, 1880' fel at bottom nese S24, T32N, R5W Rio Arriba County, New Mexico
Elevations	7296' GL
Total Depth	5127' (MD), 3927' (TVD)
Formation Objective	Basin Fruitland Coal

#### **Formation Tops**

San Jose	Surface
Nacimiento	1891' (TVD)
Ojo Alamo Ss	3281' (TVD)
Kirtland Sh	3431' (TVD)
Fruitland Fm	3816' (TVD), 3255' (MD)**
Top Coal	3920' (TVD), 4200' (MD)**
Bottom Coal	3936' (TVD)
<b>Total Depth</b>	<b>3927' (TVD), 5127' (MD)</b>
Pictured Cliffs Ss	3971' (TVD)

**\*\*Measured depths are approximations\*\***

#### **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.

**KOP is 3295' TVD with 9°/100' doglegs.**

The 6 1/4" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics.

##### **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: Gamma ray at the bit

Mud logs: From kick off point to TD

Surveys: Surface and a minimum of every 250' for directional or 500' up to kickoff point

## 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	0'-3927' (TVD) 4350' (MD)	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	3920'-3936' (TVD) 4290'-5127' (MD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-4220'		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: Cement nose guide shoe on bottom of first joint. No centralizers.

## 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: 110 sks Std (class B) with 2.0 % CaCl<sub>2</sub> and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 130 ft<sup>3</sup> 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 590 sks 65/35 Std (class B) with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft<sup>3</sup>/sk) and a tail of 125 sks Sts (class B) with 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk). (1311 ft<sup>3</sup> 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.
- 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.



## **Energen Resources Corporation**

**Rio Arriba, NM**

**Sec.24 T32N-R5W**

**Carracas 24A-10**

**Wellbore #1**

**Plan: Plan #1**

## **Standard Planning Report**

**13 February, 2006**

# Energen Resources Corp

Carracas 24A-10  
Sec.24 T32N-R5W  
Rio Arriba, NM

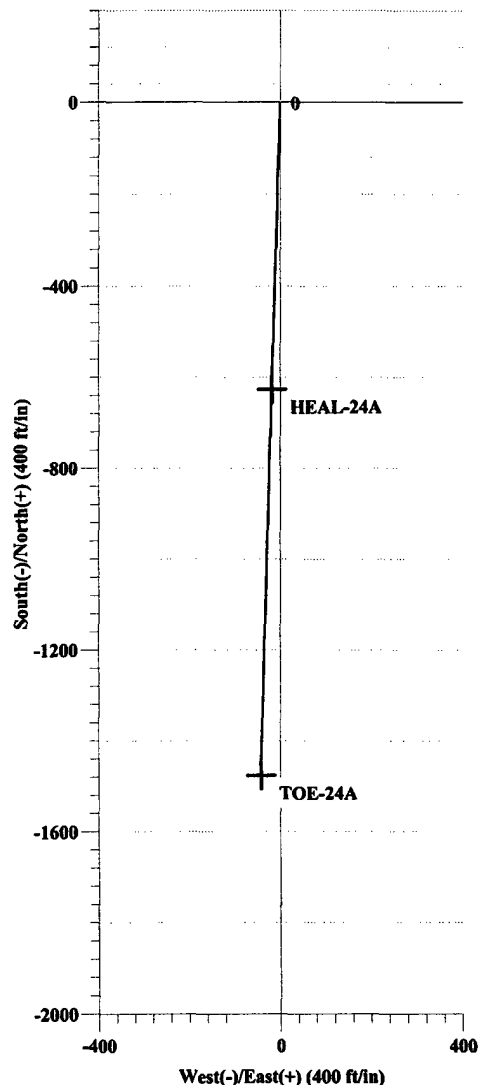
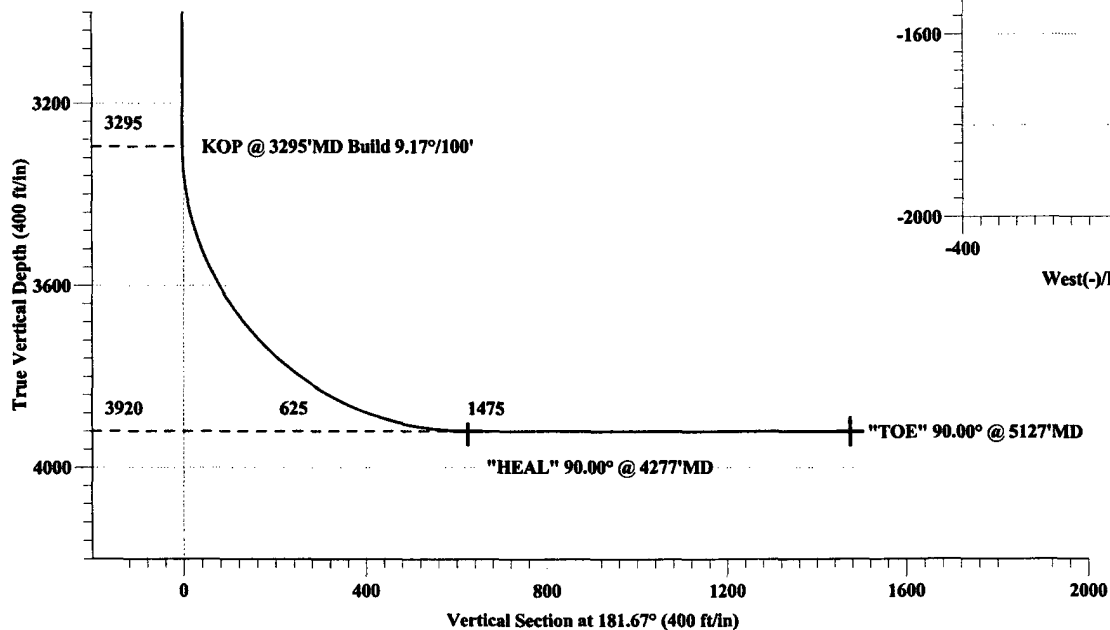


SURFACE LOCATION: Sec.24 T32N-R5W

2235'FSL 1850'FEL

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
HEAL-24A	3920.0	-624.7	-18.2	Point
TOE-24A	3920.0	-1474.7	-43.0	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	3295.0	0.00		3295.0	0.0	0.0	0.00	0.0	
3	4276.7	90.00	181.67	3920.0	-624.7	-18.2	9.17	181.67	HEAL-24A
4	5127.1	90.00	181.67	3920.0	-1474.7	-43.0	0.00	0.00	TOE-24A

Plan: Plan #1 (Carracas 24A-10/Wellbore #1)

Database: EDM 2003.14 Single User Db  
 Company: Energen Resources Corporation  
 Project: Rio Arriba, NM  
 Site: Sec.24 T32N-R5W  
 Well: Carracas 24A-10  
 Wellbore: Wellbore #1  
 Design: Plan #1

Local Co-ordinate Reference: Well Carracas 24A-10  
 TVD Reference: WELL @ 0.0ft (Original Well Elev)  
 MD Reference: WELL @ 0.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

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.24 T32N-R5W		
Site Position:		Northing:	ft
From:	None	Easting:	ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	
		Longitude:	
		Grid Convergence:	0.00 °

Well	Carracas 24A-10		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	30° 59' 24.511 N
		Longitude:	107° 50' 44.190 W
		Ground Level:	0.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	User Defined	2/13/2006	(°)
			0.00
			Dip Angle
			(°)
			0.00
			Field Strength
			(nT)
			0

Design	Plan #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
			(°)
			181.67

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,295.0	0.00	0.00	3,295.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,276.7	90.00	181.67	3,920.0	-624.7	-18.2	9.17	9.17	0.00	181.67	HEAL-24A
5,127.1	90.00	181.67	3,920.0	-1,474.7	-43.0	0.00	0.00	0.00	0.00	TOE-24A

# Pathfinder

## Planning Report

**Database:** EDM 2003.14 Single User Db  
**Company:** Energen Resources Corporation  
**Project:** Rio Arriba, NM  
**Site:** Sec.24 T32N-R5W  
**Well:** Carracas 24A-10  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Carracas 24A-10  
**TVD Reference:** WELL @ 0.0ft (Original Well Elev)  
**MD Reference:** WELL @ 0.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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)
3,295.0	0.00	0.00	3,295.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP @ 3295MD Build 9.17°/100'</b>									
3,300.0	0.46	181.67	3,300.0	0.0	0.0	0.0	9.17	9.17	0.00
3,350.0	5.04	181.67	3,349.9	-2.4	-0.1	2.4	9.17	9.17	0.00
3,400.0	9.63	181.67	3,399.5	-8.8	-0.3	8.8	9.17	9.17	0.00
3,450.0	14.21	181.67	3,448.4	-19.1	-0.6	19.1	9.17	9.17	0.00
3,500.0	18.79	181.67	3,496.3	-33.3	-1.0	33.3	9.17	9.17	0.00
3,550.0	23.38	181.67	3,543.0	-51.3	-1.5	51.3	9.17	9.17	0.00
3,600.0	27.96	181.67	3,588.0	-72.9	-2.1	73.0	9.17	9.17	0.00
3,650.0	32.54	181.67	3,631.2	-98.1	-2.9	98.1	9.17	9.17	0.00
3,700.0	37.13	181.67	3,672.2	-126.6	-3.7	126.7	9.17	9.17	0.00
3,750.0	41.71	181.67	3,710.9	-158.4	-4.6	158.4	9.17	9.17	0.00
3,800.0	46.29	181.67	3,746.8	-193.1	-5.6	193.2	9.17	9.17	0.00
3,850.0	50.88	181.67	3,779.9	-230.5	-6.7	230.6	9.17	9.17	0.00
3,900.0	55.46	181.67	3,809.8	-270.5	-7.9	270.7	9.17	9.17	0.00
3,950.0	60.05	181.67	3,836.5	-312.8	-9.1	312.9	9.17	9.17	0.00
4,000.0	64.63	181.67	3,859.7	-357.1	-10.4	357.2	9.17	9.17	0.00
4,050.0	69.21	181.67	3,879.3	-403.0	-11.8	403.2	9.17	9.17	0.00
4,100.0	73.80	181.67	3,895.2	-450.4	-13.1	450.6	9.17	9.17	0.00
4,150.0	78.38	181.67	3,907.2	-498.9	-14.5	499.1	9.17	9.17	0.00
4,200.0	82.96	181.67	3,915.3	-548.2	-16.0	548.4	9.17	9.17	0.00
4,250.0	87.55	181.67	3,919.4	-598.0	-17.4	598.3	9.17	9.17	0.00
4,276.7	90.00	181.67	3,920.0	-624.7	-18.2	625.0	9.17	9.17	0.00
<b>"HEAL" 90.00° @ 4277MD - HEAL-24A</b>									
4,300.0	90.00	181.67	3,920.0	-648.0	-18.9	648.3	0.00	0.00	0.00
4,400.0	90.00	181.67	3,920.0	-747.9	-21.8	748.3	0.00	0.00	0.00
4,500.0	90.00	181.67	3,920.0	-847.9	-24.7	848.3	0.00	0.00	0.00
4,600.0	90.00	181.67	3,920.0	-947.8	-27.6	948.3	0.00	0.00	0.00
4,700.0	90.00	181.67	3,920.0	-1,047.8	-30.5	1,048.3	0.00	0.00	0.00
4,800.0	90.00	181.67	3,920.0	-1,147.8	-33.5	1,148.3	0.00	0.00	0.00
4,900.0	90.00	181.67	3,920.0	-1,247.7	-36.4	1,248.3	0.00	0.00	0.00
5,000.0	90.00	181.67	3,920.0	-1,347.7	-39.3	1,348.3	0.00	0.00	0.00
5,100.0	90.00	181.67	3,920.0	-1,447.6	-42.2	1,448.3	0.00	0.00	0.00
5,127.1	90.00	181.67	3,920.0	-1,474.7	-43.0	1,475.3	0.00	0.00	0.00
<b>"TOE" 90.00° @ 5127MD - TOE-24A</b>									

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TOE-24A	0.00	0.00	3,920.0	-1,474.7	-43.0	-1,473.92	-64.14	30° 59' 9.918 N	107° 50' 44.683 W
- hit/miss target									
- Shape									
- Point									
HEAL-24A	0.00	0.00	3,920.0	-624.7	-18.2	-624.41	-27.17	30° 59' 18.329 N	107° 50' 44.399 W
- plan hits target									
- Point									



**Database:** EDM 2003.14 Single User Db  
**Company:** Energen Resources Corporation  
**Project:** Rio Arriba, NM  
**Site:** Sec.24 T32N-R5W  
**Well:** Carracas 24A-10  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Carracas 24A-10  
**TVD Reference:** WELL @ 0.0ft (Original Well Elev)  
**MD Reference:** WELL @ 0.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,295.0	3,295.0	0.0	0.0	KOP @ 3295' MD Build 9.17°/100'
4,276.7	3,920.0	-624.7	-18.2	"HEAL" 90.00° @ 4277' MD
5,127.1	3,920.0	-1,474.7	-43.0	"TOE" 90.00° @ 5127' MD