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.

'2007 JUN 19 AM 11: 32

SUBMIT IN TRIPLICATE - Other instructions on reverse side

5. Lease Serial No.
NM 30351

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 21 A #1

2. Name of Operator
Energen Resources Corporation

9. API Well No.
30-039-30167

3a. Address
2198 Bloomfield Hwy, 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*)
At surface: 700 fsl, 2045 fel
At bottom: 760 fnl, 760 fel

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 Adjust formation tops and directional plan
	☐ 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 adjust the formation tops previously submitted on the operations plan in the APD package by increasing them by 100' as reflected on the attached revised operations plan. Also, a revised directional drilling plan is attached to reflect this adjustment.

RCVD AUG 25 '08
OIL CONS. DIV.
DIST. 3

Hold C104
for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

Title
Drilling Engineer

Date 6/19/07

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title Acting

Date 8/22/08

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 FFO

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

Operations Plan
Revised June 19, 2007

Carracas 21 A #1

General Information

Location	700' fsl, 2045' fel at surface 760' fnl, 760' fel at bottom nene S21, T32N, R5W Rio Arriba County, New Mexico
Elevations	7065' GL
Total Depth	6698' (MD), 3653' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	1660' (TVD)
Ojo Alamo Ss	3036' (TVD), 3240' (MD)
Kirtland Sh	3171' (TVD), 3449' (MD)
Fruitland Fm	3321' (TVD), 3716' (MD)
Top Coal	3641' (TVD), 4726' (MD)
Bottom Coal	3665' (TVD)
Total Depth	**3653' (TVD), 6698' (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 1365' TVD with 2.51°/100' 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 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 3321' (TVD), 3740' (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'-3653' (TVD) 4900' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3641'-3653' (TVD) 4870'-6698' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4800' (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 (Type V) with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 148 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 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 685 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 125 sks Sks with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (1440 ft^3 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.

Energen Resources

Carson Nat'l Forest-S21, T32N, R5W
Middle Mesa
Carracas 21 A #1
Preliminary Design

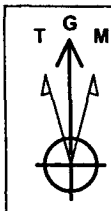
Plan: Plan #1

Energen Resources

19 June, 2007

ENERGEN RESOURCES

Project: Carson Nat'l Forest-S21, T32N, R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Preliminary Design
Plan: Plan #1 (Carracas 21 A #1/Preliminary Design)



Azimuths to Grid North
True North: -0.28°
Magnetic North: 10.00°

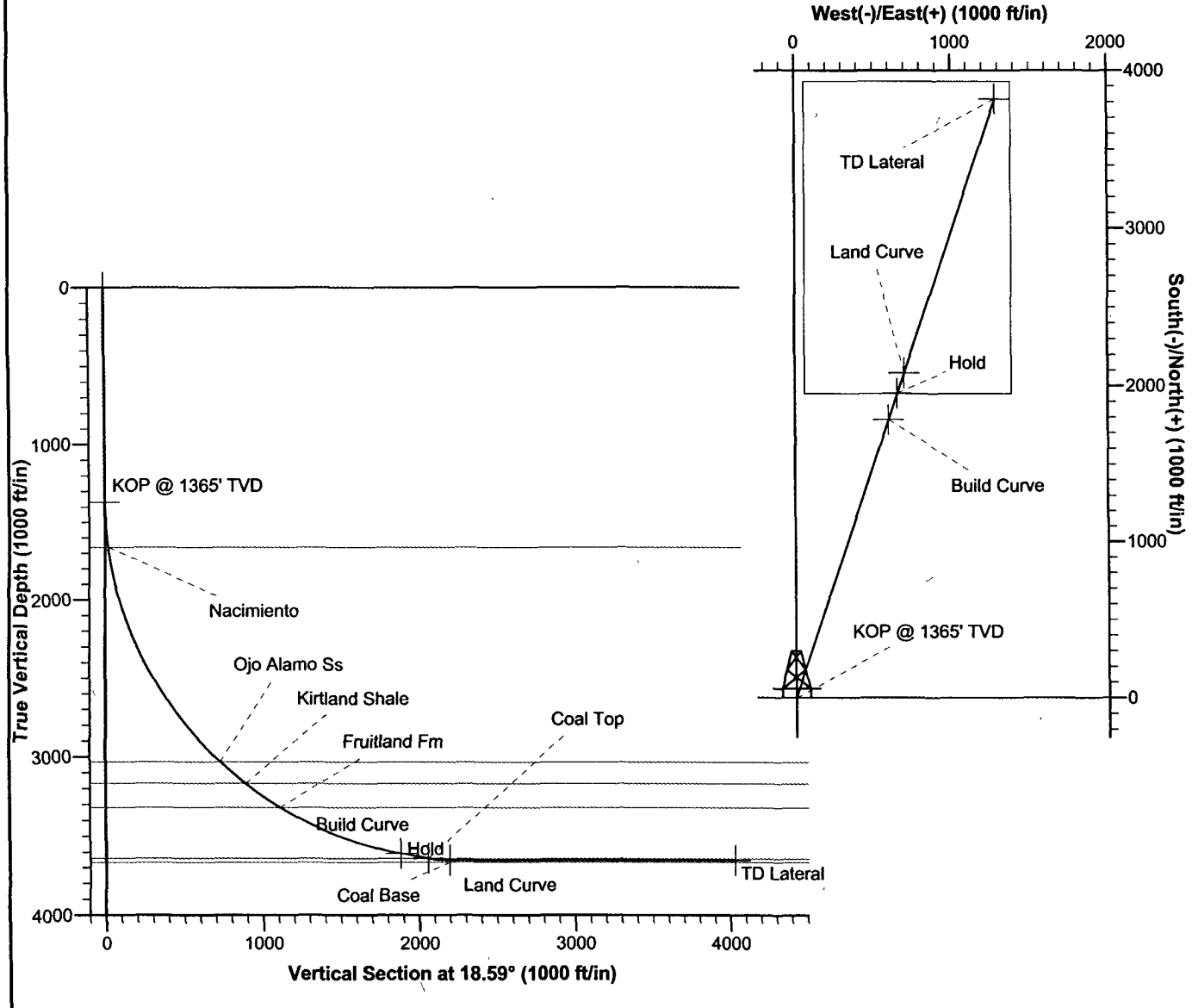
Magnetic Field
Strength: 51366.4snT
Dip Angle: 63.84°
Date: 1/19/2007
Model: IGRF200510

PROJECT DETAILS: Carson Nat'l Forest-S21, T32N, R5W	
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:	2859706.77
Northing:	2169265.55

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	1365.0	0.00	0.00	1365.0	0.0	0.0	0.00	0.00	0.0	KOP @ 1365' TVD
3	4548.0	80.00	18.59	3610.0	1785.5	600.5	2.51	18.59	1883.8	Build Curve
4	4726.5	80.00	18.59	3641.0	1952.1	656.6	0.00	0.00	2059.6	Hold
5	4864.3	90.00	18.59	3653.0	2082.1	700.3	7.26	0.00	2196.7	Land Curve
6	6697.6	90.00	18.59	3653.0	3819.7	1284.7	0.00	0.00	4030.0	TD Lateral



Energen

Energen Resources - Design

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 21 A #1
Project:	Carson Nat'l Forest-S21, T32N, R5W	**TVD Reference:**	KB @ 7080.0ft (Drilling Rig)
Site:	Middle Mesa	**MD Reference:**	KB @ 7080.0ft (Drilling Rig)
Well:	Carracas 21 A #1	**North Reference:**	Grid
Wellbore:	Preliminary Design	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Project Carson Nat'l Forest-S21, T32N, R5W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site Middle Mesa

Site Position:		**Northing:**	2,169,265.55 ft	**Latitude:**	36° 57' 37.584 N
From:	Lat/Long	**Easting:**	2,859,706.77 ft	**Longitude:**	107° 21' 56.628 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.28 °

Well Carracas 21 A #1

Well Position	**+N/-S**	0.0 ft	**Northing:**	2,169,265.55 ft	**Latitude:**	36° 57' 37.584 N
	+E/-W	0.0 ft	**Easting:**	2,859,706.77 ft	**Longitude:**	107° 21' 56.628 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	7,065.0 ft	**Ground Level:**	7,065.0 ft

Wellbore Preliminary Design

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/19/2007	10.28	63.84	51,366

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	18.59

Survey Tool Program **Date** 6/19/2007

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	6,697.6	Plan #1 (Preliminary Design)	MWD	MWD - Standard

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
San Jose							
100.0	100.0	0.00	0.00	0.00	0.0	0.0	0.0
200.0	200.0	0.00	0.00	0.00	0.0	0.0	0.0
300.0	300.0	0.00	0.00	0.00	0.0	0.0	0.0
400.0	400.0	0.00	0.00	0.00	0.0	0.0	0.0
500.0	500.0	0.00	0.00	0.00	0.0	0.0	0.0
600.0	600.0	0.00	0.00	0.00	0.0	0.0	0.0
700.0	700.0	0.00	0.00	0.00	0.0	0.0	0.0
800.0	800.0	0.00	0.00	0.00	0.0	0.0	0.0
900.0	900.0	0.00	0.00	0.00	0.0	0.0	0.0
1,000.0	1,000.0	0.00	0.00	0.00	0.0	0.0	0.0

Energen

Energen Resources - Design

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 21 A #1
Project:	Carson Nat'l Forest-S21, T32N, R5W	**TVD Reference:**	KB @ 7080.0ft (Drilling Rig)
Site:	Middle Mesa	**MD Reference:**	KB @ 7080.0ft (Drilling Rig)
Well:	Carracas 21 A #1	**North Reference:**	Grid
Wellbore:	Preliminary Design	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
1,100.0	1,100.0	0.00	0.00	0.00	0.0	0.0	0.0
1,200.0	1,200.0	0.00	0.00	0.00	0.0	0.0	0.0
1,300.0	1,300.0	0.00	0.00	0.00	0.0	0.0	0.0
1,365.0	1,365.0	0.00	0.00	0.00	0.0	0.0	0.0
KOP @ 1365' TVD							
1,400.0	1,400.0	0.88	18.59	2.51	0.3	0.3	0.1
1,500.0	1,499.9	3.39	18.59	2.51	4.0	3.8	1.3
1,600.0	1,599.6	5.91	18.59	2.51	12.1	11.5	3.9
1,660.8	1,660.0	7.44	18.59	2.51	19.2	18.2	6.1
Nacimiento							
1,700.0	1,698.8	8.42	18.59	2.51	24.6	23.3	7.8
1,800.0	1,797.4	10.93	18.59	2.51	41.4	39.2	13.2
1,900.0	1,895.1	13.45	18.59	2.51	62.5	59.2	19.9
2,000.0	1,991.8	15.96	18.59	2.51	87.9	83.3	28.0
2,100.0	2,087.3	18.47	18.59	2.51	117.5	111.3	37.4
2,200.0	2,181.5	20.99	18.59	2.51	151.2	143.3	48.2
2,300.0	2,274.0	23.50	18.59	2.51	189.1	179.2	60.3
2,400.0	2,364.8	26.01	18.59	2.51	230.9	218.9	73.6
2,500.0	2,453.7	28.53	18.59	2.51	276.8	262.3	88.2
2,600.0	2,540.5	31.04	18.59	2.51	326.4	309.4	104.1
2,700.0	2,625.0	33.55	18.59	2.51	379.9	360.0	121.1
2,800.0	2,707.1	36.07	18.59	2.51	436.9	414.1	139.3
2,900.0	2,786.6	38.58	18.59	2.51	497.6	471.6	158.6
3,000.0	2,863.4	41.09	18.59	2.51	561.6	532.3	179.0
3,100.0	2,937.3	43.61	18.59	2.51	629.0	596.2	200.5
3,200.0	3,008.2	46.12	18.59	2.51	699.5	663.0	223.0
3,240.5	3,036.0	47.14	18.59	2.51	729.0	691.0	232.4
Ojo Alamo Ss							
3,300.0	3,075.9	48.63	18.59	2.51	773.1	732.8	246.5
3,400.0	3,140.3	51.15	18.59	2.51	849.6	805.2	270.8
3,449.6	3,171.0	52.39	18.59	2.51	888.6	842.2	283.3
Kirtland Shale							
3,500.0	3,201.3	53.66	18.59	2.51	928.8	880.3	296.1
3,600.0	3,258.8	56.17	18.59	2.51	1,010.6	957.9	322.2
3,700.0	3,312.6	58.69	18.59	2.51	1,094.9	1,037.8	349.0
3,716.3	3,321.0	59.10	18.59	2.51	1,108.8	1,051.0	353.5
Fruitland Fm							
3,800.0	3,362.7	61.20	18.59	2.51	1,181.4	1,119.8	376.6
3,900.0	3,408.9	63.71	18.59	2.51	1,270.1	1,203.8	404.9
4,000.0	3,451.2	66.23	18.59	2.51	1,360.7	1,289.7	433.8
4,100.0	3,489.5	68.74	18.59	2.51	1,453.1	1,377.3	463.2
4,200.0	3,523.7	71.25	18.59	2.51	1,547.0	1,466.3	493.2
4,300.0	3,553.8	73.77	18.59	2.51	1,642.4	1,556.7	523.6
4,400.0	3,579.6	76.28	18.59	2.51	1,739.0	1,648.3	554.4
4,500.0	3,601.2	78.79	18.59	2.51	1,836.6	1,740.8	585.5

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 21 A #1
Project:	Carson Nat'l Forest-S21, T32N, R5W	**TVD Reference:**	KB @ 7080.0ft (Drilling Rig)
Site:	Middle Mesa	**MD Reference:**	KB @ 7080.0ft (Drilling Rig)
Well:	Carracas 21 A #1	**North Reference:**	Grid
Wellbore:	Preliminary Design	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,548.0	3,610.0	80.00	18.59	2.51	1,883.8	1,785.5	600.5
Build Curve							
4,600.0	3,619.0	80.00	18.59	0.00	1,935.0	1,834.1	616.9
4,700.0	3,636.4	80.00	18.59	0.00	2,033.5	1,927.4	648.3
4,726.5	3,641.0	80.00	18.59	-0.02	2,059.6	1,952.1	656.6
Coal Top - Hold							
4,750.0	3,644.7	81.70	18.59	7.26	2,082.8	1,974.1	664.0
4,800.0	3,650.4	85.33	18.59	7.26	2,132.5	2,021.2	679.8
4,850.0	3,652.9	88.96	18.59	7.26	2,182.4	2,068.5	695.7
4,864.3	3,653.0	90.00	18.59	7.26	2,196.7	2,082.1	700.3
Land Curve							
4,900.0	3,653.0	90.00	18.59	0.00	2,232.4	2,115.9	711.7
5,000.0	3,653.0	90.00	18.59	0.00	2,332.4	2,210.7	743.6
5,100.0	3,653.0	90.00	18.59	0.00	2,432.4	2,305.5	775.4
5,200.0	3,653.0	90.00	18.59	0.00	2,532.4	2,400.3	807.3
5,300.0	3,653.0	90.00	18.59	0.00	2,632.4	2,495.1	839.2
5,400.0	3,653.0	90.00	18.59	0.00	2,732.4	2,589.8	871.1
5,500.0	3,653.0	90.00	18.59	0.00	2,832.4	2,684.6	903.0
5,600.0	3,653.0	90.00	18.59	0.00	2,932.4	2,779.4	934.8
5,700.0	3,653.0	90.00	18.59	0.00	3,032.4	2,874.2	966.7
5,800.0	3,653.0	90.00	18.59	0.00	3,132.4	2,969.0	998.6
5,900.0	3,653.0	90.00	18.59	0.00	3,232.4	3,063.7	1,030.5
6,000.0	3,653.0	90.00	18.59	0.00	3,332.4	3,158.5	1,062.3
6,100.0	3,653.0	90.00	18.59	0.00	3,432.4	3,253.3	1,094.2
6,200.0	3,653.0	90.00	18.59	0.00	3,532.4	3,348.1	1,126.1
6,300.0	3,653.0	90.00	18.59	0.00	3,632.4	3,442.9	1,158.0
6,400.0	3,653.0	90.00	18.59	0.00	3,732.4	3,537.7	1,189.9
6,500.0	3,653.0	90.00	18.59	0.00	3,832.4	3,632.4	1,221.7
6,600.0	3,653.0	90.00	18.59	0.00	3,932.4	3,727.2	1,253.6
6,697.6	3,653.0	90.00	18.59	0.00	4,030.0	3,819.7	1,284.7
TD Lateral							

Energen

Energen Resources - Design

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 21 A #1
Project:	Carson Nat'l Forest-S21, T32N, R5W	**TVD Reference:**	KB @ 7080.0ft (Drilling Rig)
Site:	Middle Mesa	**MD Reference:**	KB @ 7080.0ft (Drilling Rig)
Well:	Carracas 21 A #1	**North Reference:**	Grid
Wellbore:	Preliminary Design	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

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
KOP @ 1365' TVD - plan hits target - Point	0.00	0.00	1,365.0	0.0	0.0	2,169,265.55	2,859,706.77	36° 57' 37.584 N	107° 21' 56.628 W
Drill Window - plan hits target - Rectangle (sides W1,980.0 H1,320.0 D0.0)	0.00	0.00	0.0	0.0	0.0	2,169,265.55	2,859,706.77	36° 57' 37.584 N	107° 21' 56.628 W
TD Lateral - plan hits target - Point	0.00	0.00	3,653.0	3,819.7	1,284.7	2,173,085.28	2,860,991.51	36° 58' 15.291 N	107° 21' 40.565 W
Land Curve - plan hits target - Point	0.00	0.00	3,653.0	2,082.1	700.3	2,171,347.63	2,860,407.06	36° 57' 58.138 N	107° 21' 47.873 W
Build Curve - plan hits target - Point	0.00	0.00	3,610.0	1,785.5	600.5	2,171,051.06	2,860,307.31	36° 57' 55.210 N	107° 21' 49.120 W
Hold - plan hits target - Point	0.00	0.00	3,641.0	1,952.1	656.6	2,171,217.69	2,860,363.36	36° 57' 56.855 N	107° 21' 48.419 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,726.5	3,641.0	Coal Top		0.00	
3,716.3	3,321.0	Fruitland Fm		0.00	
3,449.6	3,171.0	Kirtland Shale		0.00	
0.0	0.0	San Jose		0.00	
3,240.5	3,036.0	Ojo Alamo Ss		0.00	
	3,665.0	Coal Base		0.00	
1,660.8	1,660.0	Nacimiento		0.00	

Checked By: _____ Approved By: _____ Date: 6/19/07