



Cimarex Energy Co.

Lea County (NAD 83)

Sec 32 - T19S - 34E

Quail Ridge 32 State #4

Wellbore #1

Plan: Plan #1

Standard Planning Report

09 February, 2011



Great White Directional Services Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Quail Ridge 32 State #4
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Lea County (NAD 83)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 32 - T19S - 34E	North Reference:	Grid
Well:	Quail Ridge 32 State #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Lea County (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 32 - T19S - 34E		
Site Position:		Northing:	587,927.10 usft
From:	Map	Easting:	774,883.50 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 36' 50.300 N
		Longitude:	103° 34' 29.430 W
		Grid Convergence:	0.41 °

Well	Quail Ridge 32 State #4		
Well Position	+N/-S	-659.9 usft	Northing: 587,267.20 usft
	+E/-W	7.0 usft	Easting: 774,890.50 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level: 0.0 usft
		Latitude:	32° 36' 43.770 N
		Longitude:	103° 34' 29.403 W

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	02/09/11	7.65
			Dip Angle
			60.58
			Field Strength
			48,945

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			265.36

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,529.5	0.00	0.00	10,529.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,979.5	90.00	265.36	10,816.0	-23.2	-285.5	20.00	20.00	0.00	265.36	
15,323.4	90.00	265.36	10,816.0	-374.6	-4,615.2	0.00	0.00	0.00	0.00	Quail #4



Great White Directional Services Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Quail Ridge 32 State #4
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Lea County (NAD 83)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 32 - T19S - 34E	North Reference:	Grid
Well:	Quail Ridge 32 State #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,529.5	0.00	0.00	10,529.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP 20°/100 DLS @ 265.36° AZI									
10,550.0	4.10	265.36	10,550.0	-0.1	-0.7	0.7	20.00	20.00	0.00
10,575.0	9.10	265.36	10,574.8	-0.3	-3.6	3.6	20.00	20.00	0.00
10,600.0	14.10	265.36	10,599.3	-0.7	-8.6	8.6	20.00	20.00	0.00
10,625.0	19.10	265.36	10,623.2	-1.3	-15.7	15.8	20.00	20.00	0.00
10,650.0	24.10	265.36	10,646.5	-2.0	-24.9	25.0	20.00	20.00	0.00
10,675.0	29.10	265.36	10,668.8	-2.9	-36.0	36.2	20.00	20.00	0.00
10,700.0	34.10	265.36	10,690.1	-4.0	-49.1	49.3	20.00	20.00	0.00
10,725.0	39.10	265.36	10,710.2	-5.2	-63.9	64.2	20.00	20.00	0.00
10,750.0	44.10	265.36	10,728.9	-6.5	-80.5	80.8	20.00	20.00	0.00
10,775.0	49.10	265.36	10,746.0	-8.0	-98.6	98.9	20.00	20.00	0.00
10,800.0	54.10	265.36	10,761.6	-9.6	-118.1	118.5	20.00	20.00	0.00
10,825.0	59.10	265.36	10,775.3	-11.3	-138.9	139.4	20.00	20.00	0.00
10,850.0	64.10	265.36	10,787.2	-13.1	-160.8	161.3	20.00	20.00	0.00
10,875.0	69.10	265.36	10,797.1	-14.9	-183.7	184.3	20.00	20.00	0.00
10,900.0	74.10	265.36	10,805.0	-16.8	-207.3	208.0	20.00	20.00	0.00
10,925.0	79.10	265.36	10,810.8	-18.8	-231.5	232.3	20.00	20.00	0.00
10,950.0	84.10	265.36	10,814.5	-20.8	-256.2	257.0	20.00	20.00	0.00
10,975.0	89.10	265.36	10,815.9	-22.8	-281.1	282.0	20.00	20.00	0.00
10,979.5	90.00	265.36	10,816.0	-23.2	-285.5	286.5	20.00	20.00	0.00
EOC - Hold to TD									
11,000.0	90.00	265.36	10,816.0	-24.8	-306.0	307.0	0.00	0.00	0.00
11,100.0	90.00	265.36	10,816.0	-32.9	-405.6	407.0	0.00	0.00	0.00
11,200.0	90.00	265.36	10,816.0	-41.0	-505.3	507.0	0.00	0.00	0.00
11,300.0	90.00	265.36	10,816.0	-49.1	-605.0	607.0	0.00	0.00	0.00
11,400.0	90.00	265.36	10,816.0	-57.2	-704.7	707.0	0.00	0.00	0.00
11,500.0	90.00	265.36	10,816.0	-65.3	-804.3	807.0	0.00	0.00	0.00
11,600.0	90.00	265.36	10,816.0	-73.4	-904.0	907.0	0.00	0.00	0.00
11,700.0	90.00	265.36	10,816.0	-81.5	-1,003.7	1,007.0	0.00	0.00	0.00
11,800.0	90.00	265.36	10,816.0	-89.5	-1,103.4	1,107.0	0.00	0.00	0.00
11,900.0	90.00	265.36	10,816.0	-97.6	-1,203.0	1,207.0	0.00	0.00	0.00
12,000.0	90.00	265.36	10,816.0	-105.7	-1,302.7	1,307.0	0.00	0.00	0.00
12,100.0	90.00	265.36	10,816.0	-113.8	-1,402.4	1,407.0	0.00	0.00	0.00
12,200.0	90.00	265.36	10,816.0	-121.9	-1,502.0	1,507.0	0.00	0.00	0.00
12,300.0	90.00	265.36	10,816.0	-130.0	-1,601.7	1,607.0	0.00	0.00	0.00
12,400.0	90.00	265.36	10,816.0	-138.1	-1,701.4	1,707.0	0.00	0.00	0.00
12,500.0	90.00	265.36	10,816.0	-146.2	-1,801.1	1,807.0	0.00	0.00	0.00
12,600.0	90.00	265.36	10,816.0	-154.3	-1,900.7	1,907.0	0.00	0.00	0.00
12,700.0	90.00	265.36	10,816.0	-162.4	-2,000.4	2,007.0	0.00	0.00	0.00
12,800.0	90.00	265.36	10,816.0	-170.4	-2,100.1	2,107.0	0.00	0.00	0.00
12,900.0	90.00	265.36	10,816.0	-178.5	-2,199.7	2,207.0	0.00	0.00	0.00
13,000.0	90.00	265.36	10,816.0	-186.6	-2,299.4	2,307.0	0.00	0.00	0.00
13,100.0	90.00	265.36	10,816.0	-194.7	-2,399.1	2,407.0	0.00	0.00	0.00
13,200.0	90.00	265.36	10,816.0	-202.8	-2,498.8	2,507.0	0.00	0.00	0.00
13,300.0	90.00	265.36	10,816.0	-210.9	-2,598.4	2,607.0	0.00	0.00	0.00
13,400.0	90.00	265.36	10,816.0	-219.0	-2,698.1	2,707.0	0.00	0.00	0.00
13,500.0	90.00	265.36	10,816.0	-227.1	-2,797.8	2,807.0	0.00	0.00	0.00
13,600.0	90.00	265.36	10,816.0	-235.2	-2,897.5	2,907.0	0.00	0.00	0.00
13,700.0	90.00	265.36	10,816.0	-243.2	-2,997.1	3,007.0	0.00	0.00	0.00
13,800.0	90.00	265.36	10,816.0	-251.3	-3,096.8	3,107.0	0.00	0.00	0.00
13,900.0	90.00	265.36	10,816.0	-259.4	-3,196.5	3,207.0	0.00	0.00	0.00
14,000.0	90.00	265.36	10,816.0	-267.5	-3,296.1	3,307.0	0.00	0.00	0.00
14,100.0	90.00	265.36	10,816.0	-275.6	-3,395.8	3,407.0	0.00	0.00	0.00



Great White Directional Services Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Quail Ridge 32 State #4
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Lea County (NAD 83)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 32 - T19S - 34E	North Reference:	Grid
Well:	Quail Ridge 32 State #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,200.0	90.00	265.36	10,816.0	-283.7	-3,495.5	3,507.0	0.00	0.00	0.00	
14,300.0	90.00	265.36	10,816.0	-291.8	-3,595.2	3,607.0	0.00	0.00	0.00	
14,400.0	90.00	265.36	10,816.0	-299.9	-3,694.8	3,707.0	0.00	0.00	0.00	
14,500.0	90.00	265.36	10,816.0	-308.0	-3,794.5	3,807.0	0.00	0.00	0.00	
14,600.0	90.00	265.36	10,816.0	-316.1	-3,894.2	3,907.0	0.00	0.00	0.00	
14,700.0	90.00	265.36	10,816.0	-324.1	-3,993.8	4,007.0	0.00	0.00	0.00	
14,800.0	90.00	265.36	10,816.0	-332.2	-4,093.5	4,107.0	0.00	0.00	0.00	
14,900.0	90.00	265.36	10,816.0	-340.3	-4,193.2	4,207.0	0.00	0.00	0.00	
15,000.0	90.00	265.36	10,816.0	-348.4	-4,292.9	4,307.0	0.00	0.00	0.00	
15,100.0	90.00	265.36	10,816.0	-356.5	-4,392.5	4,407.0	0.00	0.00	0.00	
15,200.0	90.00	265.36	10,816.0	-364.6	-4,492.2	4,507.0	0.00	0.00	0.00	
15,300.0	90.00	265.36	10,816.0	-372.7	-4,591.9	4,607.0	0.00	0.00	0.00	
15,323.4	90.00	265.36	10,816.0	-374.6	-4,615.2	4,630.4	0.00	0.00	0.00	
TD at 15323.4										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Quail #4	0.00	0.00	10,816.0	-374.5	-4,615.2	586,892.73	770,275.30	32° 36' 40.388 N	103° 35' 23.388 W
- plan misses target center by 0.1usft at 15323.4usft MD (10816.0 TVD, -374.6 N, -4615.2 E)									
- Point									

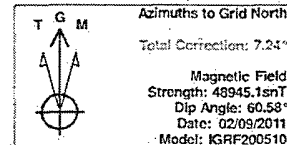
Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,529.5	10,529.5	0.0	0.0	KOP 20°/100 DLS @ 265.36° AZI	
10,979.5	10,816.0	-23.2	-285.5	EOC - Hold to TD	
15,323.4	10,816.0	-374.6	-4,615.2	TD at 15323.4	



Cimarex Energy Co.
Project: Lea County (NAD 83)
Site: Sec 32 - T19S - 34E
Well: Quail Ridge 32 State #4
Wellbore: Wellbore #1

WELL DETAILS: Quail Ridge 32 State #4

+N-S	+E-W	Northing	Ground Level	Easting	Latitude	Longitude
0.0	0.0	587267.20	0.0	774890.50	32° 36' 43.770 N	103° 34' 29.403 W
SHL: 990' FSL / 330' FEL						
BHL: 660' FSL / 330' FWL						



WELLBORE TARGET DETAILS (LAT/LONG)

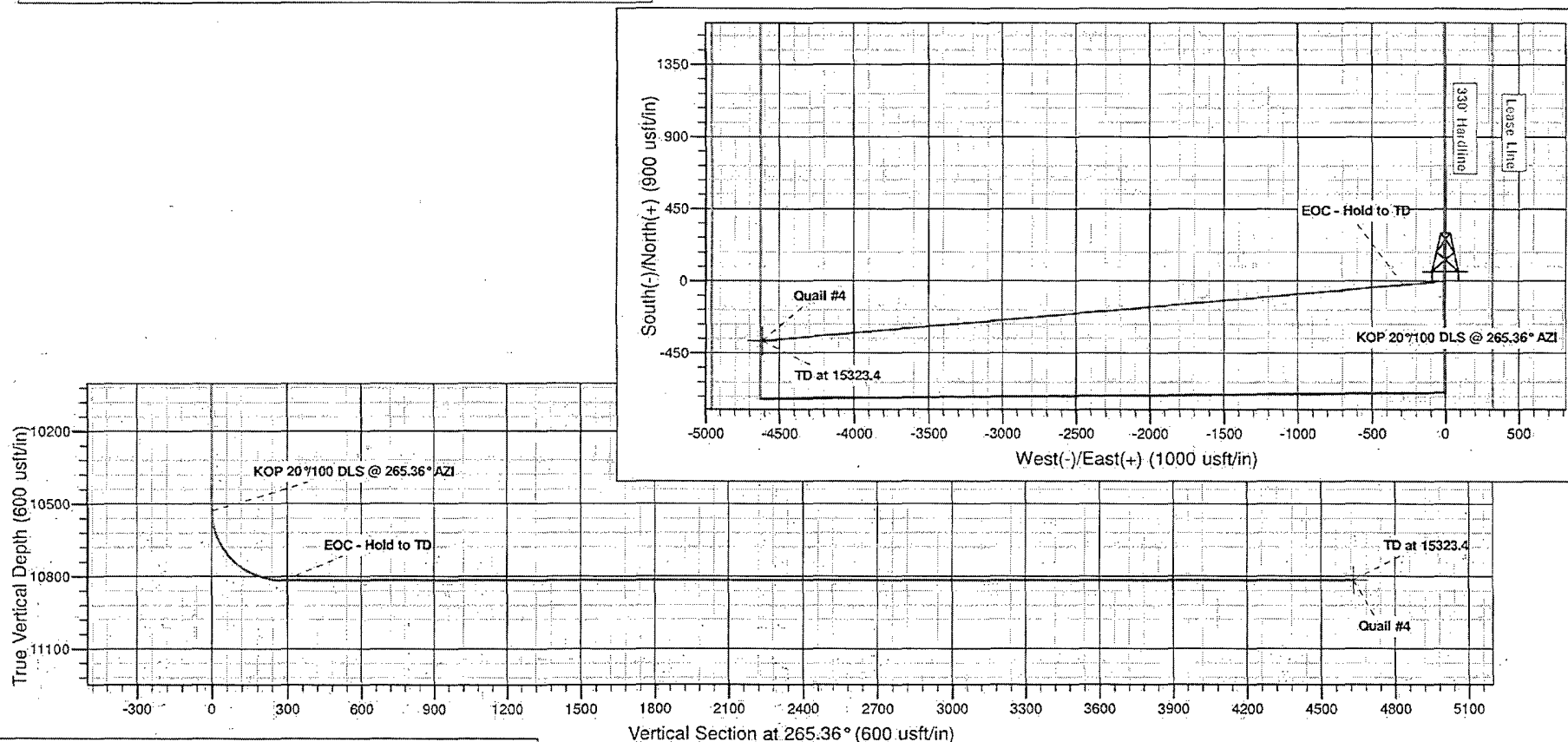
Name	TVD	+N-S	+E-W	Latitude	Longitude
Quail #4	10816.0	-374.5	-4615.2	32° 36' 40.389 N	103° 35' 23.388 W

ANNOTATIONS

TVD	MD	Inc	Azi	+N-S	+E-W	VSec	Departure	Annotation
10529.5	10529.5	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°100 DLS @ 265.36° AZI
10816.0	10979.5	90.00	265.36	-23.2	-285.5	286.5	286.5	EOC - Hold to TD
10816.0	15323.4	90.00	265.36	-374.6	-4615.2	4630.4	4630.4	TD at 15323.4

SECTION DETAILS

TVD	MD	Inc	Azi	+N-S	+E-W	VSec	Departure	Annotation
10529.5	10529.5	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°100 DLS @ 265.36° AZI
10816.0	10979.5	90.00	265.36	-23.2	-285.5	286.5	286.5	EOC - Hold to TD
10816.0	15323.4	90.00	265.36	-374.6	-4615.2	4630.4	4630.4	TD at 15323.4



Plan: Plan #1 (Quail Ridge 32 State #4/Wellbore #1)

Created By: Aaron Pullin

Date: 13:54, February 09 2011