



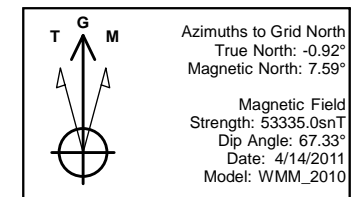
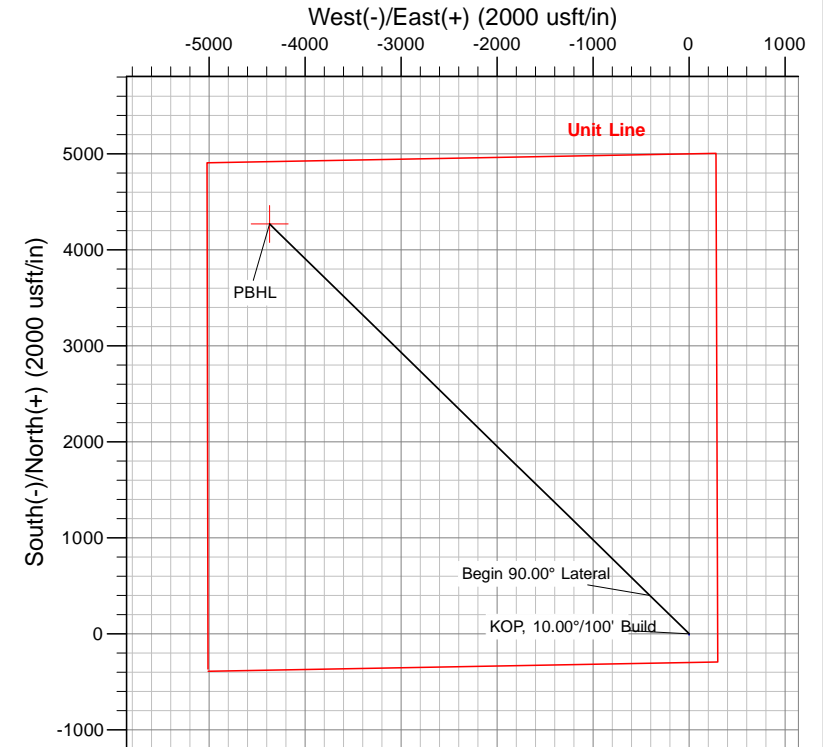
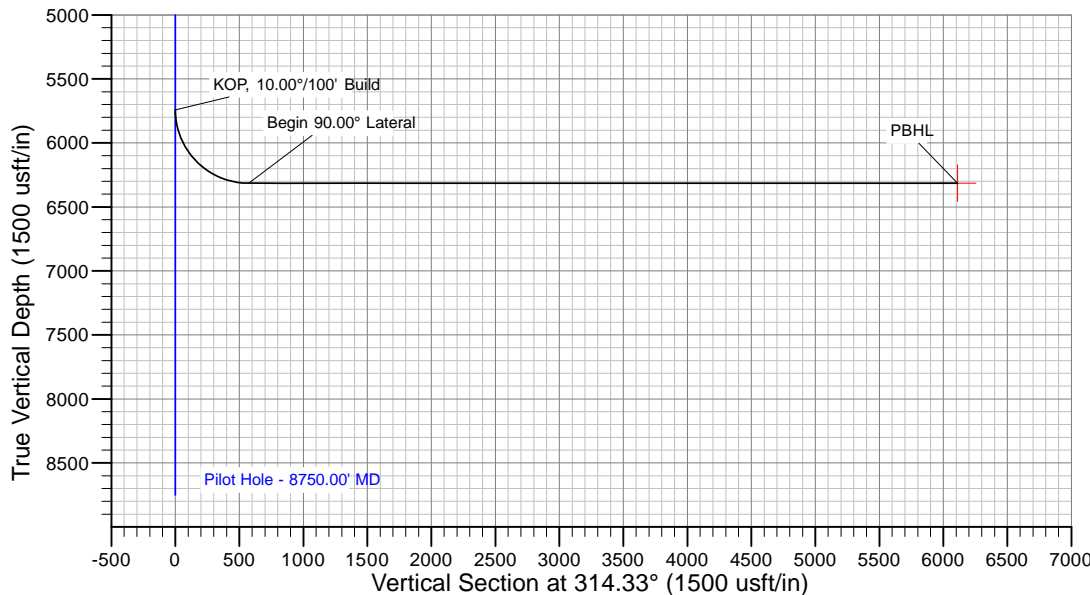
Company: Carrizo Oil & Gas
 Site: Pergamos
 Well: 3-44-7-60
 Project: Weld County, Colorado (NAD83)
 Rig Name: Extreme



Planning: 936.442.2510 Fax: 936.442.2515
 Operations: 936.442.2500 Fax: 936.442.2599

PILOT HOLE									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
8750.00	0.00	0.00	8750.00	0.00	0.00	0.00	0.00	Pilot Hole - 8750.00' MD	

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
5742.04	0.00	0.00	5742.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build	
6642.04	90.00	314.33	6315.00	400.38	-409.85	572.96	572.96	Begin 90.00° Lateral	
12180.49	90.00	314.33	6315.00	4270.62	-4371.62	6111.40	6111.40	PBHL	



US State Plane 1983
 Colorado Northern Zone

Created By: Vanessa Thom
 Date: 16:05, April 14 2011
 Plan: Design #1

The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.



Carrizo Oil & Gas

Weld County, Colorado (NAD83)

Pergamos

3-44-7-60

Wellbore #1

Plan: Design #1

Standard Planning Report

14 April, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 3-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4950.00usft (Extreme)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4950.00usft (Extreme)
Site:	Pergamos	North Reference:	Grid
Well:	3-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Weld County, Colorado (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Well	3-44-7-60			
Well Position	+N/-S	1,463,820.17 usft	Northing:	1,463,820.17 usft
	+E/-W	3,397,034.27 usft	Easting:	3,397,034.27 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	40° 35' 52.0719 N
			Longitude:	104° 4' 12.730 W
			Ground Level:	4,935.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	4/14/2011	8.52	67.33	53,335

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,742.04
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	314.33

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
5,742.04	0.00	0.00	5,742.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,642.04	90.00	314.33	6,315.00	400.38	-409.85	10.00	10.00	-5.07	314.33	
12,180.49	90.00	314.33	6,315.00	4,270.62	-4,371.62	0.00	0.00	0.00	0.00	Pergamos 3-44-7-60

Database:	Southern Region	Local Co-ordinate Reference:	Well 3-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4950.00usft (Extreme)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4950.00usft (Extreme)
Site:	Pergamos	North Reference:	Grid
Well:	3-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
5,742.04	0.00	0.00	5,742.04	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,750.00	0.80	314.33	5,750.00	0.04	-0.04	0.06	10.00	10.00	0.00	
5,800.00	5.80	314.33	5,799.90	2.05	-2.10	2.93	10.00	10.00	0.00	
5,850.00	10.80	314.33	5,849.36	7.09	-7.25	10.14	10.00	10.00	0.00	
5,900.00	15.80	314.33	5,898.01	15.12	-15.48	21.64	10.00	10.00	0.00	
5,950.00	20.80	314.33	5,945.46	26.08	-26.70	37.33	10.00	10.00	0.00	
6,000.00	25.80	314.33	5,991.37	39.90	-40.84	57.10	10.00	10.00	0.00	
6,050.00	30.80	314.33	6,035.38	56.46	-57.79	80.79	10.00	10.00	0.00	
6,100.00	35.80	314.33	6,077.16	75.63	-77.42	108.23	10.00	10.00	0.00	
6,150.00	40.80	314.33	6,116.39	97.28	-99.58	139.21	10.00	10.00	0.00	
6,200.00	45.80	314.33	6,152.77	121.23	-124.10	173.48	10.00	10.00	0.00	
6,250.00	50.80	314.33	6,186.03	147.31	-150.79	210.80	10.00	10.00	0.00	
6,300.00	55.80	314.33	6,215.90	175.31	-179.46	250.87	10.00	10.00	0.00	
6,350.00	60.80	314.33	6,242.17	205.03	-209.88	293.40	10.00	10.00	0.00	
6,400.00	65.80	314.33	6,264.63	236.23	-241.82	338.05	10.00	10.00	0.00	
6,450.00	70.80	314.33	6,283.11	268.68	-275.04	384.49	10.00	10.00	0.00	
6,500.00	75.80	314.33	6,297.48	302.14	-309.28	432.37	10.00	10.00	0.00	
6,550.00	80.80	314.33	6,307.62	336.34	-344.29	481.31	10.00	10.00	0.00	
6,600.00	85.80	314.33	6,313.46	371.03	-379.80	530.96	10.00	10.00	0.00	
6,642.04	90.00	314.33	6,315.00	400.38	-409.85	572.96	10.00	10.00	0.00	
Begin 90.00° Lateral										
6,700.00	90.00	314.33	6,315.00	440.88	-451.31	630.92	0.00	0.00	0.00	
6,800.00	90.00	314.33	6,315.00	510.76	-522.84	730.92	0.00	0.00	0.00	
6,900.00	90.00	314.33	6,315.00	580.64	-594.37	830.92	0.00	0.00	0.00	
7,000.00	90.00	314.33	6,315.00	650.52	-665.91	930.92	0.00	0.00	0.00	
7,100.00	90.00	314.33	6,315.00	720.40	-737.44	1,030.92	0.00	0.00	0.00	
7,200.00	90.00	314.33	6,315.00	790.28	-808.97	1,130.92	0.00	0.00	0.00	
7,300.00	90.00	314.33	6,315.00	860.16	-880.50	1,230.92	0.00	0.00	0.00	
7,400.00	90.00	314.33	6,315.00	930.04	-952.03	1,330.92	0.00	0.00	0.00	
7,500.00	90.00	314.33	6,315.00	999.92	-1,023.57	1,430.92	0.00	0.00	0.00	
7,600.00	90.00	314.33	6,315.00	1,069.80	-1,095.10	1,530.92	0.00	0.00	0.00	
7,700.00	90.00	314.33	6,315.00	1,139.68	-1,166.63	1,630.92	0.00	0.00	0.00	
7,800.00	90.00	314.33	6,315.00	1,209.56	-1,238.16	1,730.92	0.00	0.00	0.00	
7,900.00	90.00	314.33	6,315.00	1,279.44	-1,309.70	1,830.92	0.00	0.00	0.00	
8,000.00	90.00	314.33	6,315.00	1,349.32	-1,381.23	1,930.92	0.00	0.00	0.00	
8,100.00	90.00	314.33	6,315.00	1,419.20	-1,452.76	2,030.92	0.00	0.00	0.00	
8,200.00	90.00	314.33	6,315.00	1,489.08	-1,524.29	2,130.92	0.00	0.00	0.00	
8,300.00	90.00	314.33	6,315.00	1,558.95	-1,595.82	2,230.92	0.00	0.00	0.00	
8,400.00	90.00	314.33	6,315.00	1,628.83	-1,667.36	2,330.92	0.00	0.00	0.00	
8,500.00	90.00	314.33	6,315.00	1,698.71	-1,738.89	2,430.92	0.00	0.00	0.00	
8,600.00	90.00	314.33	6,315.00	1,768.59	-1,810.42	2,530.92	0.00	0.00	0.00	
8,700.00	90.00	314.33	6,315.00	1,838.47	-1,881.95	2,630.92	0.00	0.00	0.00	
8,800.00	90.00	314.33	6,315.00	1,908.35	-1,953.48	2,730.92	0.00	0.00	0.00	
8,900.00	90.00	314.33	6,315.00	1,978.23	-2,025.02	2,830.92	0.00	0.00	0.00	
9,000.00	90.00	314.33	6,315.00	2,048.11	-2,096.55	2,930.92	0.00	0.00	0.00	
9,100.00	90.00	314.33	6,315.00	2,117.99	-2,168.08	3,030.92	0.00	0.00	0.00	
9,200.00	90.00	314.33	6,315.00	2,187.87	-2,239.61	3,130.92	0.00	0.00	0.00	
9,300.00	90.00	314.33	6,315.00	2,257.75	-2,311.15	3,230.92	0.00	0.00	0.00	
9,400.00	90.00	314.33	6,315.00	2,327.63	-2,382.68	3,330.92	0.00	0.00	0.00	
9,500.00	90.00	314.33	6,315.00	2,397.51	-2,454.21	3,430.92	0.00	0.00	0.00	
9,600.00	90.00	314.33	6,315.00	2,467.39	-2,525.74	3,530.92	0.00	0.00	0.00	
9,700.00	90.00	314.33	6,315.00	2,537.27	-2,597.27	3,630.92	0.00	0.00	0.00	
9,800.00	90.00	314.33	6,315.00	2,607.15	-2,668.81	3,730.92	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 3-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4950.00usft (Extreme)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4950.00usft (Extreme)
Site:	Pergamos	North Reference:	Grid
Well:	3-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
9,900.00	90.00	314.33	6,315.00	2,677.03	-2,740.34	3,830.92	0.00	0.00	0.00	
10,000.00	90.00	314.33	6,315.00	2,746.91	-2,811.87	3,930.92	0.00	0.00	0.00	
10,100.00	90.00	314.33	6,315.00	2,816.79	-2,883.40	4,030.92	0.00	0.00	0.00	
10,200.00	90.00	314.33	6,315.00	2,886.67	-2,954.94	4,130.92	0.00	0.00	0.00	
10,300.00	90.00	314.33	6,315.00	2,956.55	-3,026.47	4,230.92	0.00	0.00	0.00	
10,400.00	90.00	314.33	6,315.00	3,026.42	-3,098.00	4,330.92	0.00	0.00	0.00	
10,500.00	90.00	314.33	6,315.00	3,096.30	-3,169.53	4,430.92	0.00	0.00	0.00	
10,600.00	90.00	314.33	6,315.00	3,166.18	-3,241.06	4,530.92	0.00	0.00	0.00	
10,700.00	90.00	314.33	6,315.00	3,236.06	-3,312.60	4,630.92	0.00	0.00	0.00	
10,800.00	90.00	314.33	6,315.00	3,305.94	-3,384.13	4,730.92	0.00	0.00	0.00	
10,900.00	90.00	314.33	6,315.00	3,375.82	-3,455.66	4,830.92	0.00	0.00	0.00	
11,000.00	90.00	314.33	6,315.00	3,445.70	-3,527.19	4,930.92	0.00	0.00	0.00	
11,100.00	90.00	314.33	6,315.00	3,515.58	-3,598.72	5,030.92	0.00	0.00	0.00	
11,200.00	90.00	314.33	6,315.00	3,585.46	-3,670.26	5,130.92	0.00	0.00	0.00	
11,300.00	90.00	314.33	6,315.00	3,655.34	-3,741.79	5,230.92	0.00	0.00	0.00	
11,400.00	90.00	314.33	6,315.00	3,725.22	-3,813.32	5,330.92	0.00	0.00	0.00	
11,500.00	90.00	314.33	6,315.00	3,795.10	-3,884.85	5,430.92	0.00	0.00	0.00	
11,600.00	90.00	314.33	6,315.00	3,864.98	-3,956.39	5,530.92	0.00	0.00	0.00	
11,700.00	90.00	314.33	6,315.00	3,934.86	-4,027.92	5,630.92	0.00	0.00	0.00	
11,800.00	90.00	314.33	6,315.00	4,004.74	-4,099.45	5,730.92	0.00	0.00	0.00	
11,900.00	90.00	314.33	6,315.00	4,074.62	-4,170.98	5,830.92	0.00	0.00	0.00	
12,000.00	90.00	314.33	6,315.00	4,144.50	-4,242.51	5,930.92	0.00	0.00	0.00	
12,100.00	90.00	314.33	6,315.00	4,214.38	-4,314.05	6,030.92	0.00	0.00	0.00	
12,180.49	90.00	314.33	6,315.00	4,270.62	-4,371.62	6,111.40	0.00	0.00	0.00	
PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Pergamos 3-44-7-60 - P	0.00	0.00	6,315.00	4,270.62	-4,371.62	1,468,090.79	3,392,662.65	40° 36' 34.9595 N	104° 5' 8.512 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,742.04	5,742.04	0.00	0.00	KOP, 10.00°/100' Build
6,642.04	6,315.00	400.38	-409.85	Begin 90.00° Lateral
12,180.49	6,315.00	4,270.62	-4,371.62	PBHL