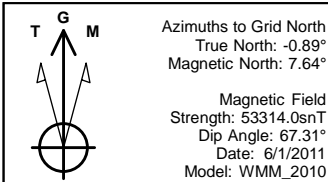




Company: Carrizo Oil & Gas
 Site: Pergamos
 Well: 8-11-7-60
 Project: Weld County, Colorado (NAD83)
 Rig Name: Xtreme 19



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



US State Plane 1983
 Colorado Northern Zone

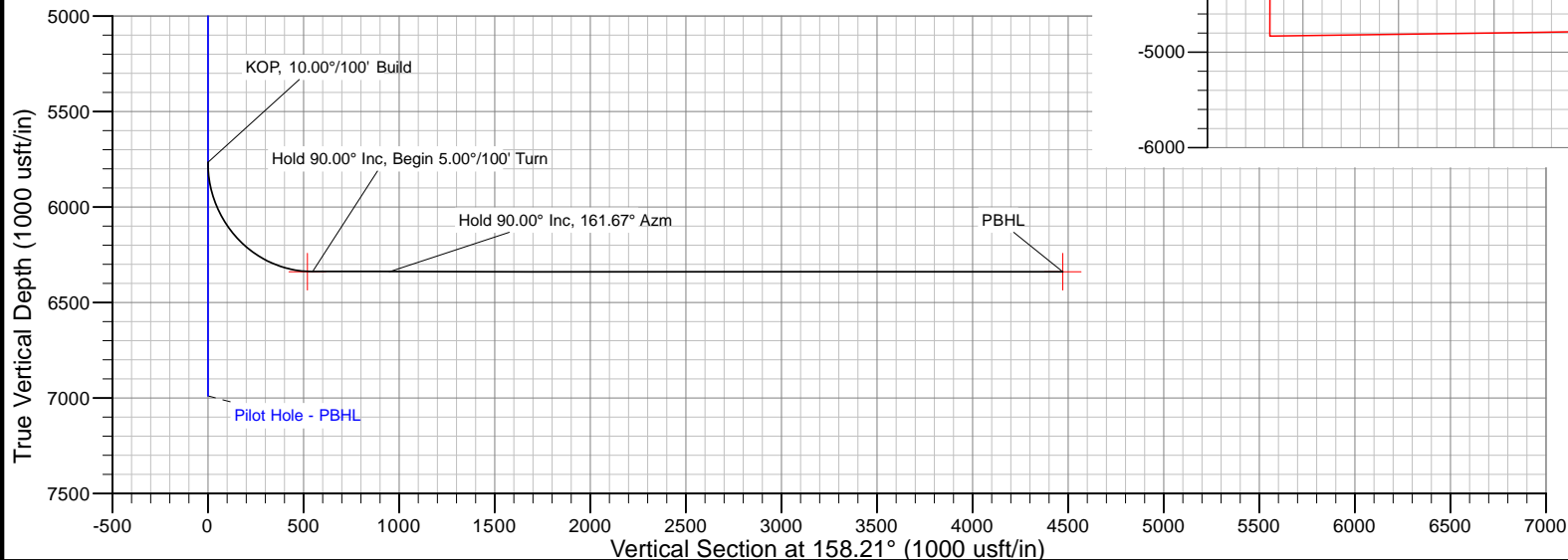
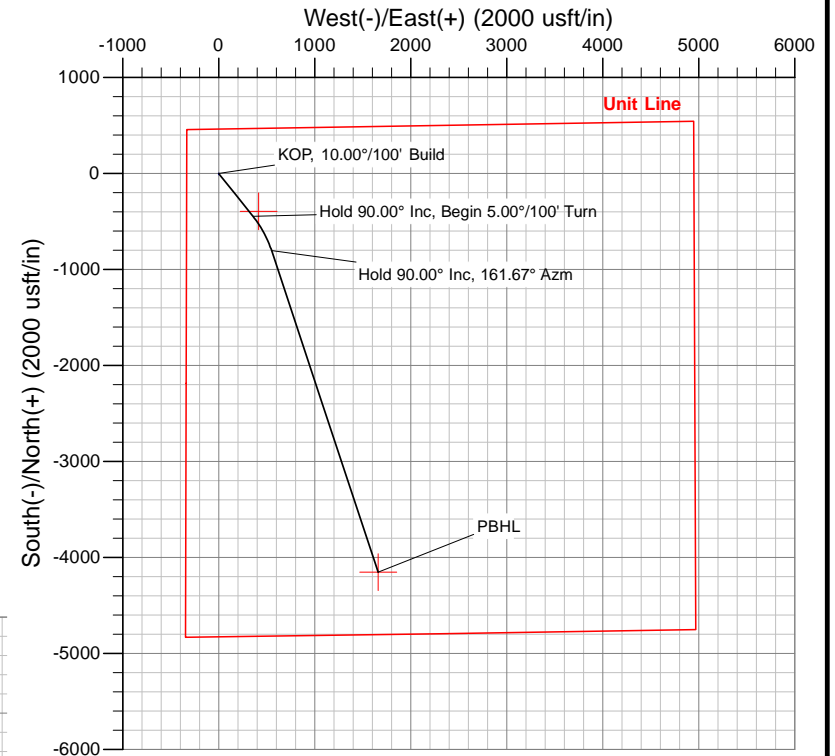
Created By: Vanessa Thom
 Date: 13:37, May 27 2011
 Plan: Design #3

PILOT HOLE ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	V Sect	Departure	Annotation
6989.00	0.00	0.00	6989.00	0.00	0.00	0.00	0.00	Pilot Hole - PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	V Sect	Departure	Annotation
5766.09	0.00	0.00	5766.09	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6666.00	90.00	141.39	6339.00	-447.69	357.47	548.39	572.90	Hold 90.00° Inc, Begin 5.00°/100' Turn
7071.49	90.00	161.67	6339.00	-802.28	549.77	949.03	978.39	Hold 90.00° Inc, 161.67° Azm
10601.49	90.00	161.67	6339.00	-4153.08	1660.20	4472.62	4508.39	PBHL



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

8-11-7-60

Wellbore #2

Plan: Design #3

Standard Planning Report

27 May, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 8-11-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4951.70usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4951.70usft (Xtreme 19)
Site:	Pergamos	North Reference:	Grid
Well:	8-11-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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	8-11-7-60			
Well Position	+N/-S	1,462,808.17 usft	Northing:	1,462,808.17 usft
	+E/-W	3,381,754.86 usft	Easting:	3,381,754.86 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 35' 44.4605 N
				Longitude: 104° 7' 30.988 W
				Ground Level: 4,936.70 usft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	6/1/2011	8.53	67.31	53,314

Design	Design #3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,766.09
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	158.21

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
5,766.09	0.00	0.00	5,766.09	0.00	0.00	0.00	0.00	0.00	0.00	
6,666.00	90.00	141.39	6,339.00	-447.69	357.47	10.00	10.00	0.00	141.39	
7,071.49	90.00	161.67	6,339.00	-802.28	549.77	5.00	0.00	5.00	90.00	
10,601.49	90.00	161.67	6,339.00	-4,153.08	1,660.20	0.00	0.00	0.00	0.00	PBHL - Pergamos 8-1

Database:	Southern Region	Local Co-ordinate Reference:	Well 8-11-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4951.70usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4951.70usft (Xtreme 19)
Site:	Pergamos	North Reference:	Grid
Well:	8-11-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)	
5,766.09	0.00	0.00	5,766.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 10.00°/100' Build										
5,800.00	3.39	141.39	5,799.98	-0.78	0.63	0.96	10.00	10.00	10.00	0.00
5,850.00	8.39	141.39	5,849.70	-4.79	3.83	5.87	10.00	10.00	10.00	0.00
5,900.00	13.39	141.39	5,898.78	-12.17	9.72	14.91	10.00	10.00	10.00	0.00
5,950.00	18.39	141.39	5,946.86	-22.87	18.26	28.01	10.00	10.00	10.00	0.00
6,000.00	23.39	141.39	5,993.56	-36.80	29.38	45.08	10.00	10.00	10.00	0.00
6,050.00	28.39	141.39	6,038.52	-53.86	43.00	65.97	10.00	10.00	10.00	0.00
6,100.00	33.39	141.39	6,081.41	-73.91	59.02	90.54	10.00	10.00	10.00	0.00
6,150.00	38.39	141.39	6,121.91	-96.81	77.30	118.59	10.00	10.00	10.00	0.00
6,200.00	43.39	141.39	6,159.69	-122.38	97.72	149.91	10.00	10.00	10.00	0.00
6,250.00	48.40	141.39	6,194.48	-150.43	120.12	184.27	10.00	10.00	10.00	0.00
6,300.00	53.40	141.39	6,226.00	-180.74	144.32	221.40	10.00	10.00	10.00	0.00
6,350.00	58.40	141.39	6,254.03	-213.08	170.14	261.02	10.00	10.00	10.00	0.00
6,400.00	63.40	141.39	6,278.34	-247.21	197.39	302.82	10.00	10.00	10.00	0.00
6,450.00	68.40	141.39	6,298.75	-282.87	225.86	346.50	10.00	10.00	10.00	0.00
6,500.00	73.40	141.39	6,315.11	-319.78	255.34	391.71	10.00	10.00	10.00	0.00
6,550.00	78.40	141.39	6,327.29	-357.66	285.58	438.11	10.00	10.00	10.00	0.00
6,600.00	83.40	141.39	6,335.20	-396.23	316.38	485.36	10.00	10.00	10.00	0.00
6,650.00	88.40	141.39	6,338.77	-435.19	347.49	533.08	10.00	10.00	10.00	0.00
6,666.00	90.00	141.39	6,339.00	-447.69	357.47	548.39	10.00	10.00	10.00	0.00
Hold 90.00° Inc, Begin 5.00°/100' Turn										
6,700.00	90.00	143.09	6,339.00	-474.57	378.29	581.08	5.00	0.00	0.00	5.00
6,800.00	90.00	148.09	6,339.00	-557.05	434.78	678.64	5.00	0.00	0.00	5.00
6,900.00	90.00	153.09	6,339.00	-644.13	483.86	777.72	5.00	0.00	0.00	5.00
7,000.00	90.00	158.09	6,339.00	-735.17	525.18	877.59	5.00	0.00	0.00	5.00
7,071.49	90.00	161.67	6,339.00	-802.28	549.77	949.03	5.00	0.00	0.00	5.00
Hold 90.00° Inc, 161.67° Azm										
7,100.00	90.00	161.67	6,339.00	-829.35	558.73	977.49	0.00	0.00	0.00	0.00
7,200.00	90.00	161.67	6,339.00	-924.27	590.19	1,077.31	0.00	0.00	0.00	0.00
7,300.00	90.00	161.67	6,339.00	-1,019.19	621.65	1,177.13	0.00	0.00	0.00	0.00
7,400.00	90.00	161.67	6,339.00	-1,114.12	653.10	1,276.95	0.00	0.00	0.00	0.00
7,500.00	90.00	161.67	6,339.00	-1,209.04	684.56	1,376.77	0.00	0.00	0.00	0.00
7,600.00	90.00	161.67	6,339.00	-1,303.96	716.02	1,476.58	0.00	0.00	0.00	0.00
7,700.00	90.00	161.67	6,339.00	-1,398.89	747.48	1,576.40	0.00	0.00	0.00	0.00
7,800.00	90.00	161.67	6,339.00	-1,493.81	778.93	1,676.22	0.00	0.00	0.00	0.00
7,900.00	90.00	161.67	6,339.00	-1,588.73	810.39	1,776.04	0.00	0.00	0.00	0.00
8,000.00	90.00	161.67	6,339.00	-1,683.66	841.85	1,875.86	0.00	0.00	0.00	0.00
8,100.00	90.00	161.67	6,339.00	-1,778.58	873.30	1,975.68	0.00	0.00	0.00	0.00
8,200.00	90.00	161.67	6,339.00	-1,873.50	904.76	2,075.49	0.00	0.00	0.00	0.00
8,300.00	90.00	161.67	6,339.00	-1,968.43	936.22	2,175.31	0.00	0.00	0.00	0.00
8,400.00	90.00	161.67	6,339.00	-2,063.35	967.68	2,275.13	0.00	0.00	0.00	0.00
8,500.00	90.00	161.67	6,339.00	-2,158.27	999.13	2,374.95	0.00	0.00	0.00	0.00
8,600.00	90.00	161.67	6,339.00	-2,253.20	1,030.59	2,474.77	0.00	0.00	0.00	0.00
8,700.00	90.00	161.67	6,339.00	-2,348.12	1,062.05	2,574.59	0.00	0.00	0.00	0.00
8,800.00	90.00	161.67	6,339.00	-2,443.04	1,093.50	2,674.40	0.00	0.00	0.00	0.00
8,900.00	90.00	161.67	6,339.00	-2,537.97	1,124.96	2,774.22	0.00	0.00	0.00	0.00
9,000.00	90.00	161.67	6,339.00	-2,632.89	1,156.42	2,874.04	0.00	0.00	0.00	0.00
9,100.00	90.00	161.67	6,339.00	-2,727.81	1,187.88	2,973.86	0.00	0.00	0.00	0.00
9,200.00	90.00	161.67	6,339.00	-2,822.74	1,219.33	3,073.68	0.00	0.00	0.00	0.00
9,300.00	90.00	161.67	6,339.00	-2,917.66	1,250.79	3,173.50	0.00	0.00	0.00	0.00
9,400.00	90.00	161.67	6,339.00	-3,012.58	1,282.25	3,273.31	0.00	0.00	0.00	0.00
9,500.00	90.00	161.67	6,339.00	-3,107.51	1,313.70	3,373.13	0.00	0.00	0.00	0.00

Database:	Southern Region	Local Co-ordinate Reference:	Well 8-11-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4951.70usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4951.70usft (Xtreme 19)
Site:	Pergamos	North Reference:	Grid
Well:	8-11-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Design #3		

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)	
9,600.00	90.00	161.67	6,339.00	-3,202.43	1,345.16	3,472.95	0.00	0.00	0.00	
9,700.00	90.00	161.67	6,339.00	-3,297.35	1,376.62	3,572.77	0.00	0.00	0.00	
9,800.00	90.00	161.67	6,339.00	-3,392.28	1,408.07	3,672.59	0.00	0.00	0.00	
9,900.00	90.00	161.67	6,339.00	-3,487.20	1,439.53	3,772.41	0.00	0.00	0.00	
10,000.00	90.00	161.67	6,339.00	-3,582.13	1,470.99	3,872.22	0.00	0.00	0.00	
10,100.00	90.00	161.67	6,339.00	-3,677.05	1,502.45	3,972.04	0.00	0.00	0.00	
10,200.00	90.00	161.67	6,339.00	-3,771.97	1,533.90	4,071.86	0.00	0.00	0.00	
10,300.00	90.00	161.67	6,339.00	-3,866.90	1,565.36	4,171.68	0.00	0.00	0.00	
10,400.00	90.00	161.67	6,339.00	-3,961.82	1,596.82	4,271.50	0.00	0.00	0.00	
10,500.00	90.00	161.67	6,339.00	-4,056.74	1,628.27	4,371.32	0.00	0.00	0.00	
10,601.49	90.00	161.67	6,339.00	-4,153.08	1,660.20	4,472.62	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	
LP - Pergamos 8-11-7-6 - hit/miss target - Shape - Point	0.00	0.00	6,339.00	-395.23	414.87	1,462,412.94	3,382,169.73	40° 35' 40.4919 N	104° 7' 25.690 W	- plan misses target center by 77.59usft at 6660.82usft MD (6338.97 TVD, -443.64 N, 354.24 E)
PBHL - Pergamos 8-11- - plan hits target center - Point	0.00	0.00	6,339.00	-4,153.08	1,660.20	1,458,655.09	3,383,415.06	40° 35' 3.1716 N	104° 7' 10.307 W	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,766.09	5,766.09	0.00	0.00	KOP, 10.00°/100' Build	
6,666.00	6,339.00	-447.69	357.47	Hold 90.00° Inc, Begin 5.00°/100' Turn	
7,071.49	6,339.00	-802.28	549.77	Hold 90.00° Inc, 161.67° Azm	
10,601.49	6,339.00	-4,153.08	1,660.20	PBHL	