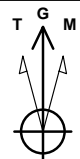




Company: Carrizo Oil & Gas
 Site: Castor
 Well: 9-11-8-59
 Project: Weld County, Colorado (NAD83)
 Rig Name: Xtreme 19



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



Azimuths to Grid North
 True North: -0.98°
 Magnetic North: 7.46°

Magnetic Field
 Strength: 53351.0snT
 Dip Angle: 67.40°
 Date: 8/18/2011
 Model: WMM_2010

US State Plane 1983
 Colorado Northern Zone

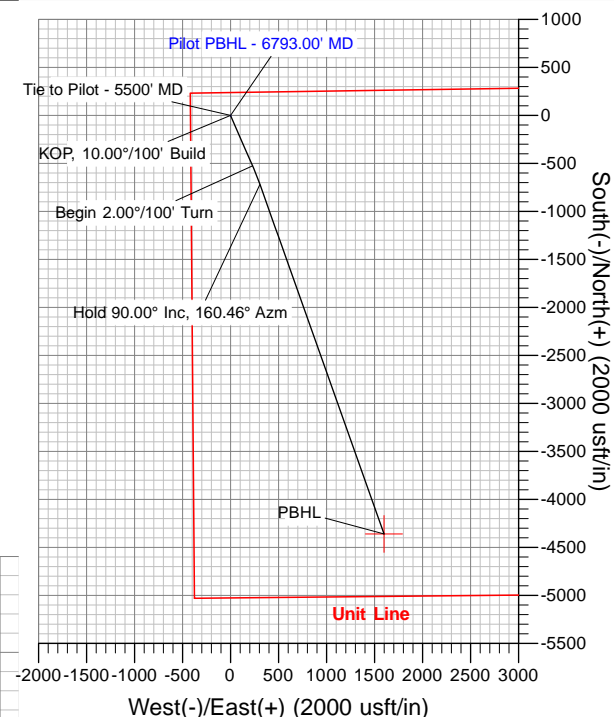
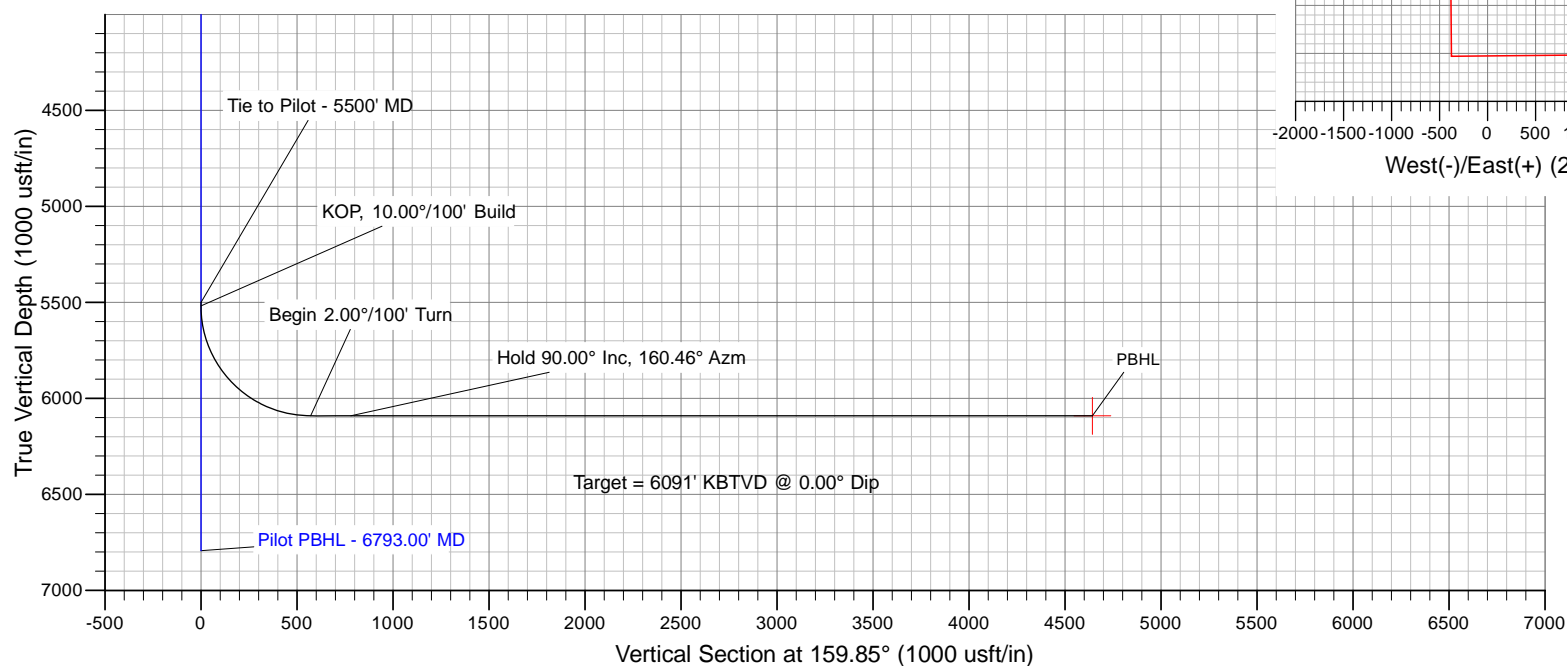
Created By: Vanessa Thom
 Date: 13:41, August 18 2011
 Plan: Design #1

PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
6793.00	0.00	0.00	6793.00	0.00	0.00	0.00	0.00	Pilot PBHL - 6793.00' MD

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	Tie to Pilot - 5500' MD
5518.05	0.00	0.00	5518.05	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6418.05	90.00	156.28	6091.01	-524.56	230.48	571.85	572.96	Begin 2.00°/100' Turn
6626.88	90.00	160.46	6091.01	-718.64	307.45	780.56	781.79	Hold 90.00° Inc, 160.46° Azm
10489.91	90.00	160.46	6091.00	-4359.11	1599.71	4643.37	4644.82	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)

Castor

9-11-8-59

Wellbore #1

Plan: Design #1

Standard Planning Report

18 August, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 9-11-8-59
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4870.90usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4870.90usft (Xtreme 19)
Site:	Castor	North Reference:	Grid
Well:	9-11-8-59	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	9-11-8-59			
Well Position	+N/-S	1,495,399.34 usft	Northing:	1,495,399.34 usft
	+E/-W	3,418,962.49 usft	Easting:	3,418,962.49 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	40° 41' 0.4843 N
			Longitude:	103° 59' 21.525 W
			Ground Level:	4,855.90 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	8/18/2011	8.43	67.40	53,351

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,500.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	159.85

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
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,518.05	0.00	0.00	5,518.05	0.00	0.00	0.00	0.00	0.00	0.00	
6,418.05	90.00	156.28	6,091.01	-524.56	230.48	10.00	10.00	0.00	156.28	
6,626.88	90.00	160.46	6,091.01	-718.64	307.45	2.00	0.00	2.00	90.00	
10,489.91	90.00	160.46	6,091.00	-4,359.11	1,599.71	0.00	0.00	0.00	0.00	PBHL v1 - Caster 9-1

Database:	Southern Region	Local Co-ordinate Reference:	Well 9-11-8-59
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4870.90usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4870.90usft (Xtreme 19)
Site:	Castor	North Reference:	Grid
Well:	9-11-8-59	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)	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tie to Pilot - 5500' MD										
5,518.05	0.00	0.00	5,518.05	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,550.00	3.20	156.28	5,549.98	-0.82	0.36	0.89	10.00	10.00	0.00	
5,600.00	8.20	156.28	5,599.72	-5.36	2.35	5.84	10.00	10.00	0.00	
5,650.00	13.20	156.28	5,648.84	-13.85	6.09	15.10	10.00	10.00	0.00	
5,700.00	18.20	156.28	5,696.96	-26.23	11.52	28.59	10.00	10.00	0.00	
5,750.00	23.20	156.28	5,743.72	-42.40	18.63	46.22	10.00	10.00	0.00	
5,800.00	28.20	156.28	5,788.76	-62.24	27.35	67.85	10.00	10.00	0.00	
5,850.00	33.20	156.28	5,831.74	-85.60	37.61	93.32	10.00	10.00	0.00	
5,900.00	38.20	156.28	5,872.33	-112.30	49.34	122.43	10.00	10.00	0.00	
5,950.00	43.20	156.28	5,910.23	-142.14	62.45	154.95	10.00	10.00	0.00	
6,000.00	48.20	156.28	5,945.14	-174.89	76.84	190.66	10.00	10.00	0.00	
6,050.00	53.20	156.28	5,976.81	-210.30	92.40	229.26	10.00	10.00	0.00	
6,100.00	58.20	156.28	6,004.98	-248.10	109.01	270.47	10.00	10.00	0.00	
6,150.00	63.20	156.28	6,029.44	-288.00	126.55	313.97	10.00	10.00	0.00	
6,200.00	68.20	156.28	6,050.01	-329.71	144.87	359.44	10.00	10.00	0.00	
6,250.00	73.20	156.28	6,066.54	-372.90	163.85	406.52	10.00	10.00	0.00	
6,300.00	78.20	156.28	6,078.89	-417.24	183.33	454.86	10.00	10.00	0.00	
6,350.00	83.20	156.28	6,086.97	-462.40	203.17	504.09	10.00	10.00	0.00	
6,400.00	88.20	156.28	6,090.72	-508.03	223.22	553.84	10.00	10.00	0.00	
6,418.05	90.00	156.28	6,091.01	-524.56	230.48	571.85	10.00	10.00	0.00	
Begin 2.00°/100' Turn										
6,500.00	90.00	157.92	6,091.01	-600.04	262.37	653.70	2.00	0.00	2.00	
6,600.00	90.00	159.92	6,091.01	-693.35	298.34	753.68	2.00	0.00	2.00	
6,626.88	90.00	160.46	6,091.01	-718.64	307.45	780.56	2.00	0.00	2.00	
Hold 90.00° Inc, 160.46° Azm										
6,700.00	90.00	160.46	6,091.01	-787.54	331.91	853.68	0.00	0.00	0.00	
6,800.00	90.00	160.46	6,091.01	-881.78	365.36	953.67	0.00	0.00	0.00	
6,900.00	90.00	160.46	6,091.01	-976.02	398.81	1,053.67	0.00	0.00	0.00	
7,000.00	90.00	160.46	6,091.01	-1,070.26	432.26	1,153.66	0.00	0.00	0.00	
7,100.00	90.00	160.46	6,091.01	-1,164.50	465.72	1,253.65	0.00	0.00	0.00	
7,200.00	90.00	160.46	6,091.01	-1,258.74	499.17	1,353.65	0.00	0.00	0.00	
7,300.00	90.00	160.46	6,091.01	-1,352.98	532.62	1,453.64	0.00	0.00	0.00	
7,400.00	90.00	160.46	6,091.01	-1,447.21	566.07	1,553.64	0.00	0.00	0.00	
7,500.00	90.00	160.46	6,091.01	-1,541.45	599.52	1,653.63	0.00	0.00	0.00	
7,600.00	90.00	160.46	6,091.01	-1,635.69	632.98	1,753.63	0.00	0.00	0.00	
7,700.00	90.00	160.46	6,091.01	-1,729.93	666.43	1,853.62	0.00	0.00	0.00	
7,800.00	90.00	160.46	6,091.01	-1,824.17	699.88	1,953.62	0.00	0.00	0.00	
7,900.00	90.00	160.46	6,091.01	-1,918.41	733.33	2,053.61	0.00	0.00	0.00	
8,000.00	90.00	160.46	6,091.01	-2,012.65	766.78	2,153.60	0.00	0.00	0.00	
8,100.00	90.00	160.46	6,091.00	-2,106.89	800.24	2,253.60	0.00	0.00	0.00	
8,200.00	90.00	160.46	6,091.00	-2,201.13	833.69	2,353.59	0.00	0.00	0.00	
8,300.00	90.00	160.46	6,091.00	-2,295.36	867.14	2,453.59	0.00	0.00	0.00	
8,400.00	90.00	160.46	6,091.00	-2,389.60	900.59	2,553.58	0.00	0.00	0.00	
8,500.00	90.00	160.46	6,091.00	-2,483.84	934.04	2,653.58	0.00	0.00	0.00	
8,600.00	90.00	160.46	6,091.00	-2,578.08	967.50	2,753.57	0.00	0.00	0.00	
8,700.00	90.00	160.46	6,091.00	-2,672.32	1,000.95	2,853.56	0.00	0.00	0.00	
8,800.00	90.00	160.46	6,091.00	-2,766.56	1,034.40	2,953.56	0.00	0.00	0.00	
8,900.00	90.00	160.46	6,091.00	-2,860.80	1,067.85	3,053.55	0.00	0.00	0.00	
9,000.00	90.00	160.46	6,091.00	-2,955.04	1,101.30	3,153.55	0.00	0.00	0.00	
9,100.00	90.00	160.46	6,091.00	-3,049.28	1,134.76	3,253.54	0.00	0.00	0.00	
9,200.00	90.00	160.46	6,091.00	-3,143.51	1,168.21	3,353.54	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 9-11-8-59
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4870.90usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4870.90usft (Xtreme 19)
Site:	Castor	North Reference:	Grid
Well:	9-11-8-59	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)
9,300.00	90.00	160.46	6,091.00	-3,237.75	1,201.66	3,453.53	0.00	0.00	0.00
9,400.00	90.00	160.46	6,091.00	-3,331.99	1,235.11	3,553.53	0.00	0.00	0.00
9,500.00	90.00	160.46	6,091.00	-3,426.23	1,268.57	3,653.52	0.00	0.00	0.00
9,600.00	90.00	160.46	6,091.00	-3,520.47	1,302.02	3,753.51	0.00	0.00	0.00
9,700.00	90.00	160.46	6,091.00	-3,614.71	1,335.47	3,853.51	0.00	0.00	0.00
9,800.00	90.00	160.46	6,091.00	-3,708.95	1,368.92	3,953.50	0.00	0.00	0.00
9,900.00	90.00	160.46	6,091.00	-3,803.19	1,402.37	4,053.50	0.00	0.00	0.00
10,000.00	90.00	160.46	6,091.00	-3,897.42	1,435.83	4,153.49	0.00	0.00	0.00
10,100.00	90.00	160.46	6,091.00	-3,991.66	1,469.28	4,253.49	0.00	0.00	0.00
10,200.00	90.00	160.46	6,091.00	-4,085.90	1,502.73	4,353.48	0.00	0.00	0.00
10,300.00	90.00	160.46	6,091.00	-4,180.14	1,536.18	4,453.47	0.00	0.00	0.00
10,400.00	90.00	160.46	6,091.00	-4,274.38	1,569.63	4,553.47	0.00	0.00	0.00
10,489.91	90.00	160.46	6,091.00	-4,359.11	1,599.71	4,643.37	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									
PBHL v1 - Caster 9-11-8-59	0.00	0.00	6,091.00	-4,359.11	1,599.71	1,491,040.23	3,420,562.20	40° 40' 17.1469 N	103° 59' 1.731 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,500.00	5,500.00	0.00	0.00	Tie to Pilot - 5500' MD
5,518.05	5,518.05	0.00	0.00	KOP, 10.00°/100' Build
6,418.05	6,091.01	-524.56	230.48	Begin 2.00°/100' Turn
6,626.88	6,091.01	-718.64	307.45	Hold 90.00° Inc, 160.46° Azm
10,489.91	6,091.00	-4,359.11	1,599.71	PBHL