



Company: Carrizo Oil & Gas
 Site: Hemberger
 Well: 26-41-8-60
 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

ANNOTATIONS

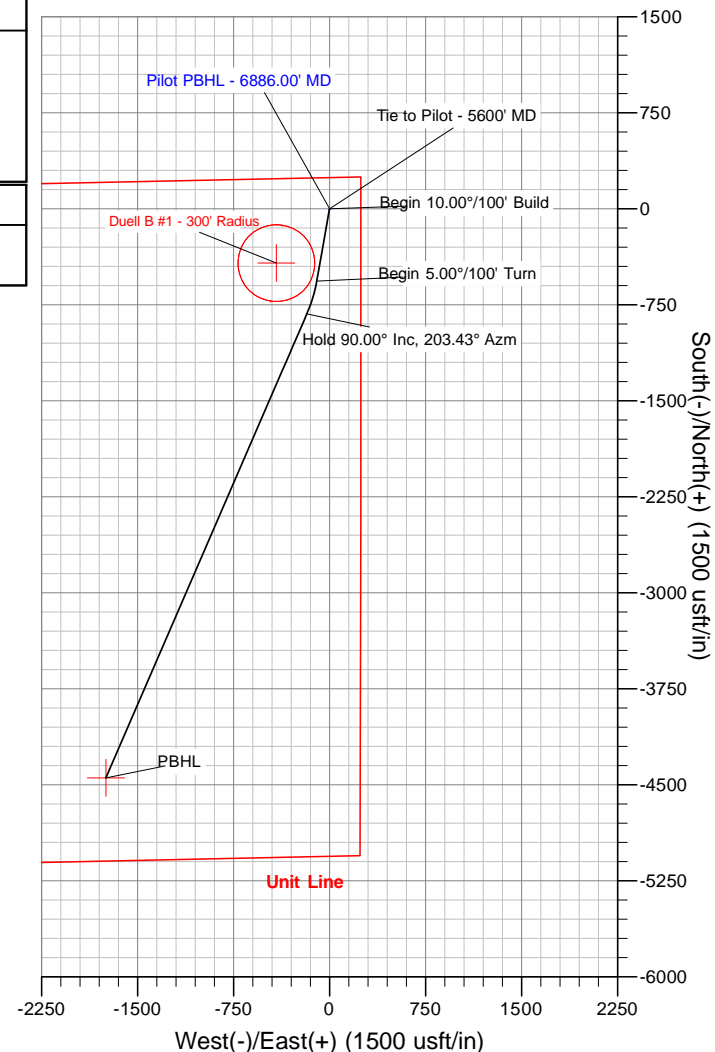
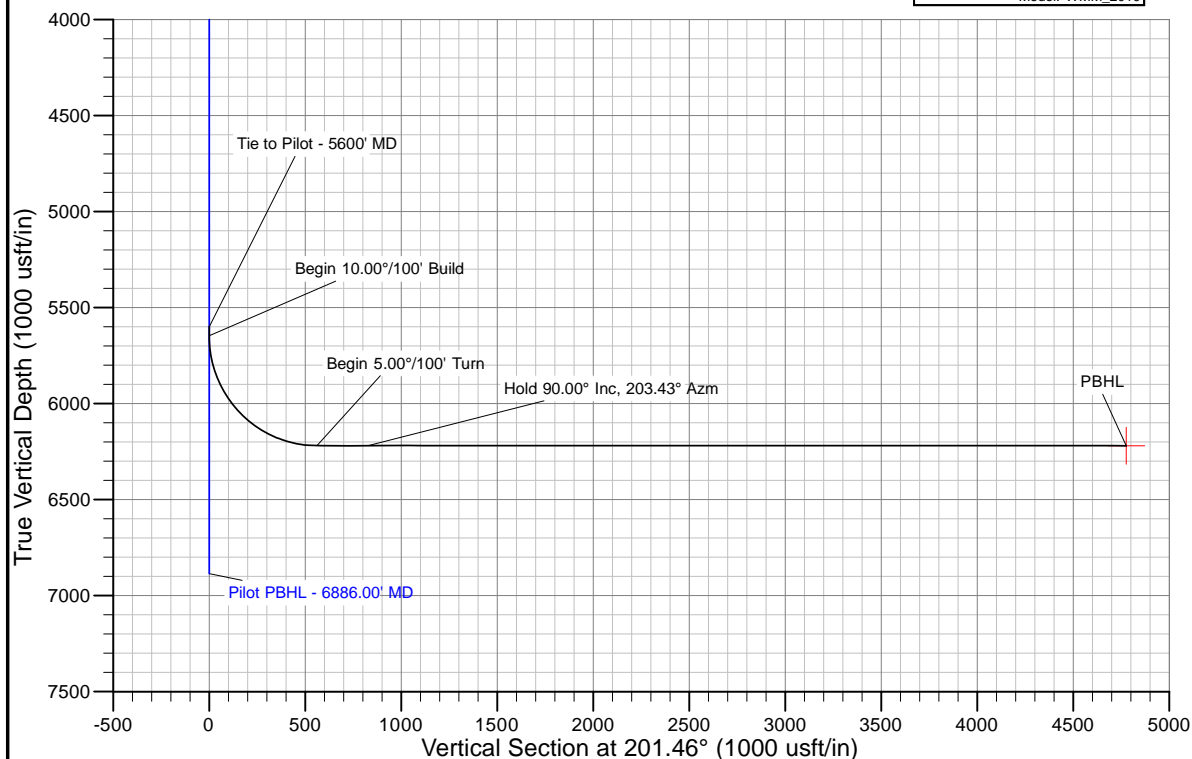
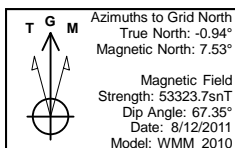
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	Tie to Pilot - 5600' MD
5647.04	0.00	0.00	5647.04	0.00	0.00	0.00	0.00	Begin 10.00°/100' Build
6547.04	90.00	190.00	6220.00	-564.25	-99.49	561.54	572.96	Begin 5.00°/100' Turn
6815.65	90.00	203.43	6220.00	-820.92	-176.57	828.62	841.57	Hold 90.00° Inc, 203.43° Azm
10765.84	90.00	203.43	6220.00	-4445.40	-1747.31	4776.47	4791.76	PBHL

PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
6886.00	0.00	0.00	6886.00	0.00	0.00	0.00	0.00	Pilot PBHL - 6886.00' MD

Created By: Vanessa Thom
 Date: 16:43, August 23 2011
 Plan: Design #2

US State Plane 1983
 Colorado Northern Zone



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)

Hemberger

26-41-8-60

Wellbore #1

Plan: Design #2

Standard Planning Report

23 August, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 26-41-8-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4915.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4915.00usft (Xtreme 19)
Site:	Hemberger	North Reference:	Grid
Well:	26-41-8-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	26-41-8-60			
Well Position	+N/-S	1,479,295.01 usft	Northing:	1,479,295.01 usft
	+E/-W	3,402,388.07 usft	Easting:	3,402,388.07 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 38' 24.1074 N
				Longitude: 104° 3' 0.054 W
				Ground Level: 4,900.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	8/12/2011	8.47	67.35	53,324

Design	Design #2				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,600.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	201.46	

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
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,647.04	0.00	0.00	5,647.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,547.04	90.00	190.00	6,220.00	-564.25	-99.49	10.00	10.00	0.00	190.00	
6,815.65	90.00	203.43	6,220.00	-820.92	-176.57	5.00	0.00	5.00	90.00	
10,765.84	90.00	203.43	6,220.00	-4,445.40	-1,747.31	0.00	0.00	0.00	0.00	PBHL v1 - Hemberger

Database:	Southern Region	Local Co-ordinate Reference:	Well 26-41-8-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4915.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4915.00usft (Xtreme 19)
Site:	Hemberger	North Reference:	Grid
Well:	26-41-8-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)	
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tie to Pilot - 5600' MD										
5,647.04	0.00	0.00	5,647.04	0.00	0.00	0.00	0.00	0.00	0.00	
Begin 10.00°/100' Build										
5,650.00	0.30	190.00	5,650.00	-0.01	0.00	0.01	10.00	10.00	0.00	
5,700.00	5.30	190.00	5,699.92	-2.41	-0.42	2.40	10.00	10.00	0.00	
5,750.00	10.30	190.00	5,749.45	-9.09	-1.60	9.04	10.00	10.00	0.00	
5,800.00	15.30	190.00	5,798.19	-19.99	-3.52	19.89	10.00	10.00	0.00	
5,850.00	20.30	190.00	5,845.78	-35.03	-6.18	34.86	10.00	10.00	0.00	
5,900.00	25.30	190.00	5,891.86	-54.10	-9.54	53.84	10.00	10.00	0.00	
5,950.00	30.30	190.00	5,936.08	-77.06	-13.59	76.69	10.00	10.00	0.00	
6,000.00	35.30	190.00	5,978.10	-103.72	-18.29	103.22	10.00	10.00	0.00	
6,050.00	40.30	190.00	6,017.59	-133.89	-23.61	133.25	10.00	10.00	0.00	
6,100.00	45.30	190.00	6,054.27	-167.33	-29.51	166.53	10.00	10.00	0.00	
6,150.00	50.30	190.00	6,087.85	-203.80	-35.93	202.82	10.00	10.00	0.00	
6,200.00	55.30	190.00	6,118.07	-243.00	-42.85	241.83	10.00	10.00	0.00	
6,250.00	60.30	190.00	6,144.71	-284.65	-50.19	283.29	10.00	10.00	0.00	
6,300.00	65.30	190.00	6,167.56	-328.43	-57.91	326.85	10.00	10.00	0.00	
6,350.00	70.30	190.00	6,186.45	-374.01	-65.95	372.21	10.00	10.00	0.00	
6,400.00	75.30	190.00	6,201.23	-421.03	-74.24	419.01	10.00	10.00	0.00	
6,450.00	80.30	190.00	6,211.80	-469.14	-82.72	466.89	10.00	10.00	0.00	
6,500.00	85.30	190.00	6,218.07	-517.98	-91.33	515.49	10.00	10.00	0.00	
6,547.04	90.00	190.00	6,220.00	-564.25	-99.49	561.54	10.00	10.00	0.00	
Begin 5.00°/100' Turn										
6,600.00	90.00	192.65	6,220.00	-616.18	-109.89	613.67	5.00	0.00	5.00	
6,700.00	90.00	197.65	6,220.00	-712.67	-136.01	713.03	5.00	0.00	5.00	
6,800.00	90.00	202.65	6,220.00	-806.52	-170.45	812.97	5.00	0.00	5.00	
6,815.65	90.00	203.43	6,220.00	-820.92	-176.57	828.62	5.00	0.00	5.00	
Hold 90.00° Inc, 203.43° Azm										
6,900.00	90.00	203.43	6,220.00	-898.32	-210.11	912.92	0.00	0.00	0.00	
7,000.00	90.00	203.43	6,220.00	-990.07	-249.88	1,012.86	0.00	0.00	0.00	
7,100.00	90.00	203.43	6,220.00	-1,081.83	-289.64	1,112.80	0.00	0.00	0.00	
7,200.00	90.00	203.43	6,220.00	-1,173.58	-329.40	1,212.74	0.00	0.00	0.00	
7,300.00	90.00	203.43	6,220.00	-1,265.34	-369.17	1,312.68	0.00	0.00	0.00	
7,400.00	90.00	203.43	6,220.00	-1,357.09	-408.93	1,412.62	0.00	0.00	0.00	
7,500.00	90.00	203.43	6,220.00	-1,448.85	-448.69	1,512.56	0.00	0.00	0.00	
7,600.00	90.00	203.43	6,220.00	-1,540.60	-488.46	1,612.50	0.00	0.00	0.00	
7,700.00	90.00	203.43	6,220.00	-1,632.35	-528.22	1,712.44	0.00	0.00	0.00	
7,800.00	90.00	203.43	6,220.00	-1,724.11	-567.99	1,812.38	0.00	0.00	0.00	
7,900.00	90.00	203.43	6,220.00	-1,815.86	-607.75	1,912.32	0.00	0.00	0.00	
8,000.00	90.00	203.43	6,220.00	-1,907.62	-647.51	2,012.27	0.00	0.00	0.00	
8,100.00	90.00	203.43	6,220.00	-1,999.37	-687.28	2,112.21	0.00	0.00	0.00	
8,200.00	90.00	203.43	6,220.00	-2,091.13	-727.04	2,212.15	0.00	0.00	0.00	
8,300.00	90.00	203.43	6,220.00	-2,182.88	-766.80	2,312.09	0.00	0.00	0.00	
8,400.00	90.00	203.43	6,220.00	-2,274.63	-806.57	2,412.03	0.00	0.00	0.00	
8,500.00	90.00	203.43	6,220.00	-2,366.39	-846.33	2,511.97	0.00	0.00	0.00	
8,600.00	90.00	203.43	6,220.00	-2,458.14	-886.09	2,611.91	0.00	0.00	0.00	
8,700.00	90.00	203.43	6,220.00	-2,549.90	-925.86	2,711.85	0.00	0.00	0.00	
8,800.00	90.00	203.43	6,220.00	-2,641.65	-965.62	2,811.79	0.00	0.00	0.00	
8,900.00	90.00	203.43	6,220.00	-2,733.41	-1,005.38	2,911.73	0.00	0.00	0.00	
9,000.00	90.00	203.43	6,220.00	-2,825.16	-1,045.15	3,011.67	0.00	0.00	0.00	
9,100.00	90.00	203.43	6,220.00	-2,916.92	-1,084.91	3,111.61	0.00	0.00	0.00	
9,200.00	90.00	203.43	6,220.00	-3,008.67	-1,124.67	3,211.55	0.00	0.00	0.00	
9,300.00	90.00	203.43	6,220.00	-3,100.42	-1,164.44	3,311.50	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 26-41-8-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4915.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4915.00usft (Xtreme 19)
Site:	Hemberger	North Reference:	Grid
Well:	26-41-8-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)	
9,400.00	90.00	203.43	6,220.00	-3,192.18	-1,204.20	3,411.44	0.00	0.00	0.00	
9,500.00	90.00	203.43	6,220.00	-3,283.93	-1,243.97	3,511.38	0.00	0.00	0.00	
9,600.00	90.00	203.43	6,220.00	-3,375.69	-1,283.73	3,611.32	0.00	0.00	0.00	
9,700.00	90.00	203.43	6,220.00	-3,467.44	-1,323.49	3,711.26	0.00	0.00	0.00	
9,800.00	90.00	203.43	6,220.00	-3,559.20	-1,363.26	3,811.20	0.00	0.00	0.00	
9,900.00	90.00	203.43	6,220.00	-3,650.95	-1,403.02	3,911.14	0.00	0.00	0.00	
10,000.00	90.00	203.43	6,220.00	-3,742.70	-1,442.78	4,011.08	0.00	0.00	0.00	
10,100.00	90.00	203.43	6,220.00	-3,834.46	-1,482.55	4,111.02	0.00	0.00	0.00	
10,200.00	90.00	203.43	6,220.00	-3,926.21	-1,522.31	4,210.96	0.00	0.00	0.00	
10,300.00	90.00	203.43	6,220.00	-4,017.97	-1,562.07	4,310.90	0.00	0.00	0.00	
10,400.00	90.00	203.43	6,220.00	-4,109.72	-1,601.84	4,410.84	0.00	0.00	0.00	
10,500.00	90.00	203.43	6,220.00	-4,201.48	-1,641.60	4,510.78	0.00	0.00	0.00	
10,600.00	90.00	203.43	6,220.00	-4,293.23	-1,681.36	4,610.72	0.00	0.00	0.00	
10,700.00	90.00	203.43	6,220.00	-4,384.99	-1,721.13	4,710.67	0.00	0.00	0.00	
10,765.84	90.00	203.43	6,220.00	-4,445.40	-1,747.31	4,776.47	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
PBHL v1 - Hemberger 2'	0.00	0.00	6,220.00	-4,445.40	-1,747.31	1,474,849.61	3,400,640.76	40° 37' 40.4679 N		104° 3' 23.655 W
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,600.00	5,600.00	0.00	0.00	Tie to Pilot - 5600' MD	
5,647.04	5,647.04	0.00	0.00	Begin 10.00°/100' Build	
6,547.04	6,220.00	-564.25	-99.49	Begin 5.00°/100' Turn	
6,815.65	6,220.00	-820.92	-176.57	Hold 90.00° Inc, 203.43° Azm	
10,765.84	6,220.00	-4,445.40	-1,747.31	PBHL	