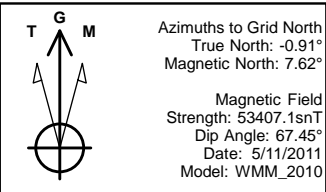




Company: Carrizo Oil & Gas
 Site: Dietzler
 Well: 10-14-9-60
 Project: Weld County, Colorado (NAD83)
 Rig Name: Extreme 19



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

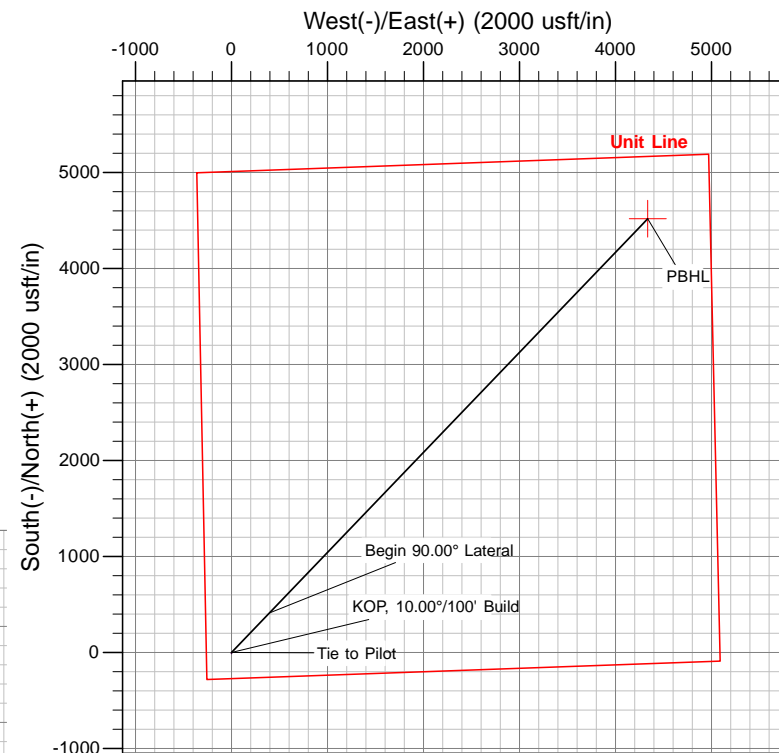
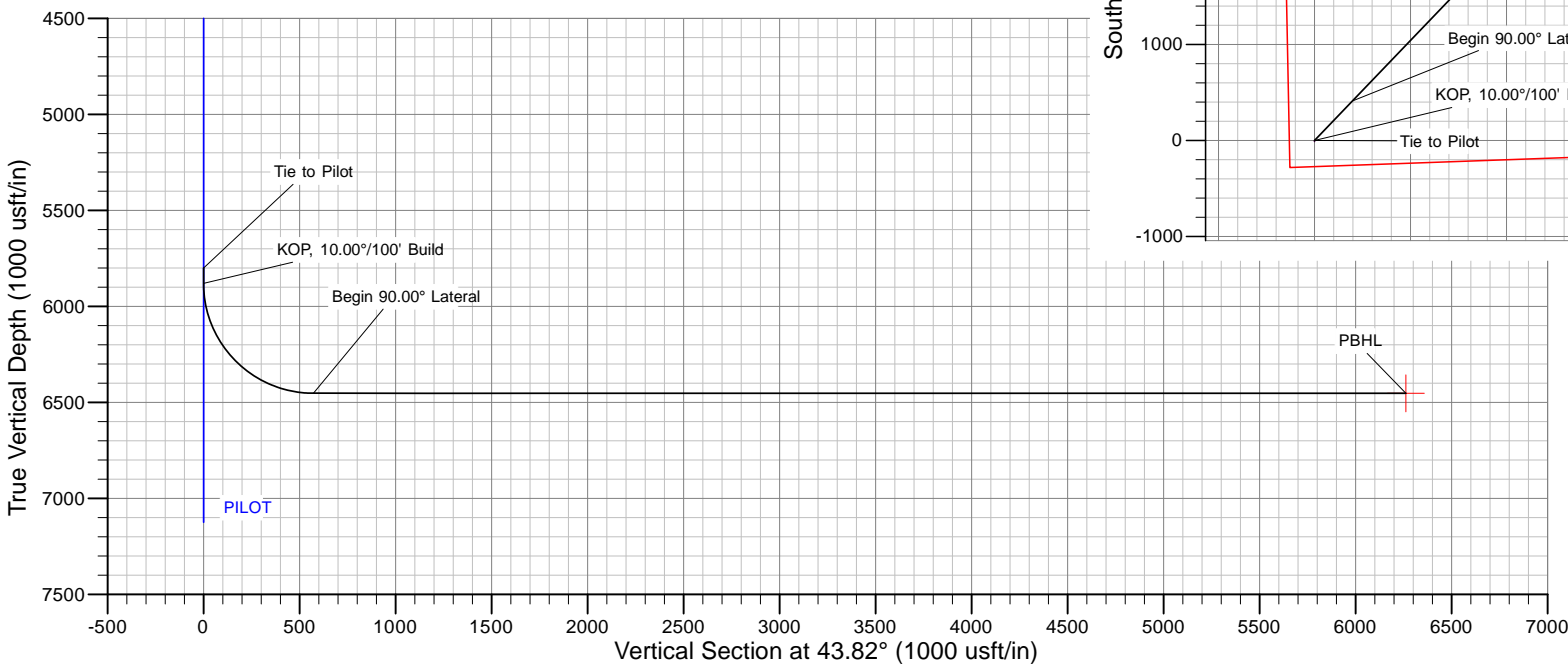


US State Plane 1983
 Colorado Northern Zone

Created By: Vanessa Thom
 Date: 14:54, May 11 2011
 Plan: Design #1

PILOT									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
7124.00	0.00	0.00	7124.00	0.00	0.00	0.00	0.00	PBHL	

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	Tie to Pilot	
5880.04	0.00	0.00	5880.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build	
6780.04	90.00	43.82	6453.00	413.37	396.75	572.96	572.96	Begin 90.00° Lateral	
12469.45	90.00	43.82	6453.00	4518.04	4336.42	6262.37	6262.37	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)

Dietzler

10-14-9-60

Wellbore #2

Plan: Design #1

Standard Planning Report

11 May, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 10-14-9-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5104.90usft (Extreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5104.90usft (Extreme 19)
Site:	Dietzler	North Reference:	Grid
Well:	10-14-9-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
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	10-14-9-60			
Well Position	+N/-S	1,522,108.75 usft	Northing:	1,522,108.75 usft
	+E/-W	3,391,371.39 usft	Easting:	3,391,371.39 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 45' 28.8634 N
				Longitude: 104° 5' 14.094 W
				Ground Level: 5,089.90 usft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	5/11/2011	8.53	67.45	53,407

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,800.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	43.82

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
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,880.04	0.00	0.00	5,880.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,780.04	90.00	43.82	6,453.00	413.37	396.75	10.00	10.00	0.00	43.82	
12,469.45	90.00	43.82	6,453.00	4,518.04	4,336.42	0.00	0.00	0.00	0.00	PBHL - Dietzler 10-14

Database:	Southern Region	Local Co-ordinate Reference:	Well 10-14-9-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5104.90usft (Extreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5104.90usft (Extreme 19)
Site:	Dietzler	North Reference:	Grid
Well:	10-14-9-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
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)	
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tie to Pilot										
5,880.04	0.00	0.00	5,880.04	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,900.00	2.00	43.82	5,900.00	0.25	0.24	0.35	10.00	10.00	0.00	
5,950.00	7.00	43.82	5,949.83	3.08	2.95	4.27	10.00	10.00	0.00	
6,000.00	12.00	43.82	5,999.13	9.03	8.66	12.51	10.00	10.00	0.00	
6,050.00	17.00	43.82	6,047.52	18.05	17.33	25.02	10.00	10.00	0.00	
6,100.00	22.00	43.82	6,094.64	30.09	28.88	41.70	10.00	10.00	0.00	
6,150.00	27.00	43.82	6,140.12	45.04	43.23	62.43	10.00	10.00	0.00	
6,200.00	32.00	43.82	6,183.63	62.80	60.27	87.04	10.00	10.00	0.00	
6,250.00	37.00	43.82	6,224.82	83.22	79.87	115.35	10.00	10.00	0.00	
6,300.00	42.00	43.82	6,263.39	106.15	101.89	147.14	10.00	10.00	0.00	
6,350.00	47.00	43.82	6,299.05	131.43	126.15	182.17	10.00	10.00	0.00	
6,400.00	52.00	43.82	6,331.51	158.85	152.46	220.18	10.00	10.00	0.00	
6,450.00	57.00	43.82	6,360.54	188.21	180.64	260.87	10.00	10.00	0.00	
6,500.00	62.00	43.82	6,385.91	219.28	210.46	303.93	10.00	10.00	0.00	
6,550.00	67.00	43.82	6,407.44	251.82	241.70	349.05	10.00	10.00	0.00	
6,600.00	72.00	43.82	6,424.94	285.60	274.12	395.86	10.00	10.00	0.00	
6,650.00	77.00	43.82	6,438.31	320.35	307.47	444.03	10.00	10.00	0.00	
6,700.00	82.00	43.82	6,447.42	355.81	341.50	493.18	10.00	10.00	0.00	
6,750.00	87.00	43.82	6,452.21	391.70	375.96	542.93	10.00	10.00	0.00	
6,780.04	90.00	43.82	6,453.00	413.37	396.75	572.96	10.00	10.00	0.00	
Begin 90.00° Lateral										
6,800.00	90.00	43.82	6,453.00	427.76	410.57	592.92	0.00	0.00	0.00	
6,900.00	90.00	43.82	6,453.00	499.91	479.81	692.92	0.00	0.00	0.00	
7,000.00	90.00	43.82	6,453.00	572.06	549.06	792.92	0.00	0.00	0.00	
7,100.00	90.00	43.82	6,453.00	644.20	618.31	892.92	0.00	0.00	0.00	
7,200.00	90.00	43.82	6,453.00	716.35	687.55	992.92	0.00	0.00	0.00	
7,300.00	90.00	43.82	6,453.00	788.49	756.80	1,092.92	0.00	0.00	0.00	
7,400.00	90.00	43.82	6,453.00	860.64	826.04	1,192.92	0.00	0.00	0.00	
7,500.00	90.00	43.82	6,453.00	932.79	895.29	1,292.92	0.00	0.00	0.00	
7,600.00	90.00	43.82	6,453.00	1,004.93	964.53	1,392.92	0.00	0.00	0.00	
7,700.00	90.00	43.82	6,453.00	1,077.08	1,033.78	1,492.92	0.00	0.00	0.00	
7,800.00	90.00	43.82	6,453.00	1,149.22	1,103.03	1,592.92	0.00	0.00	0.00	
7,900.00	90.00	43.82	6,453.00	1,221.37	1,172.27	1,692.92	0.00	0.00	0.00	
8,000.00	90.00	43.82	6,453.00	1,293.52	1,241.52	1,792.92	0.00	0.00	0.00	
8,100.00	90.00	43.82	6,453.00	1,365.66	1,310.76	1,892.92	0.00	0.00	0.00	
8,200.00	90.00	43.82	6,453.00	1,437.81	1,380.01	1,992.92	0.00	0.00	0.00	
8,300.00	90.00	43.82	6,453.00	1,509.95	1,449.25	2,092.92	0.00	0.00	0.00	
8,400.00	90.00	43.82	6,453.00	1,582.10	1,518.50	2,192.92	0.00	0.00	0.00	
8,500.00	90.00	43.82	6,453.00	1,654.24	1,587.75	2,292.92	0.00	0.00	0.00	
8,600.00	90.00	43.82	6,453.00	1,726.39	1,656.99	2,392.92	0.00	0.00	0.00	
8,700.00	90.00	43.82	6,453.00	1,798.54	1,726.24	2,492.92	0.00	0.00	0.00	
8,800.00	90.00	43.82	6,453.00	1,870.68	1,795.48	2,592.92	0.00	0.00	0.00	
8,900.00	90.00	43.82	6,453.00	1,942.83	1,864.73	2,692.92	0.00	0.00	0.00	
9,000.00	90.00	43.82	6,453.00	2,014.97	1,933.97	2,792.92	0.00	0.00	0.00	
9,100.00	90.00	43.82	6,453.00	2,087.12	2,003.22	2,892.92	0.00	0.00	0.00	
9,200.00	90.00	43.82	6,453.00	2,159.27	2,072.47	2,992.92	0.00	0.00	0.00	
9,300.00	90.00	43.82	6,453.00	2,231.41	2,141.71	3,092.92	0.00	0.00	0.00	
9,400.00	90.00	43.82	6,453.00	2,303.56	2,210.96	3,192.92	0.00	0.00	0.00	
9,500.00	90.00	43.82	6,453.00	2,375.70	2,280.20	3,292.92	0.00	0.00	0.00	
9,600.00	90.00	43.82	6,453.00	2,447.85	2,349.45	3,392.92	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 10-14-9-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5104.90usft (Extreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5104.90usft (Extreme 19)
Site:	Dietzler	North Reference:	Grid
Well:	10-14-9-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
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)	
9,700.00	90.00	43.82	6,453.00	2,520.00	2,418.69	3,492.92	0.00	0.00	0.00	
9,800.00	90.00	43.82	6,453.00	2,592.14	2,487.94	3,592.92	0.00	0.00	0.00	
9,900.00	90.00	43.82	6,453.00	2,664.29	2,557.19	3,692.92	0.00	0.00	0.00	
10,000.00	90.00	43.82	6,453.00	2,736.43	2,626.43	3,792.92	0.00	0.00	0.00	
10,100.00	90.00	43.82	6,453.00	2,808.58	2,695.68	3,892.92	0.00	0.00	0.00	
10,200.00	90.00	43.82	6,453.00	2,880.72	2,764.92	3,992.92	0.00	0.00	0.00	
10,300.00	90.00	43.82	6,453.00	2,952.87	2,834.17	4,092.92	0.00	0.00	0.00	
10,400.00	90.00	43.82	6,453.00	3,025.02	2,903.41	4,192.92	0.00	0.00	0.00	
10,500.00	90.00	43.82	6,453.00	3,097.16	2,972.66	4,292.92	0.00	0.00	0.00	
10,600.00	90.00	43.82	6,453.00	3,169.31	3,041.91	4,392.92	0.00	0.00	0.00	
10,700.00	90.00	43.82	6,453.00	3,241.45	3,111.15	4,492.92	0.00	0.00	0.00	
10,800.00	90.00	43.82	6,453.00	3,313.60	3,180.40	4,592.92	0.00	0.00	0.00	
10,900.00	90.00	43.82	6,453.00	3,385.75	3,249.64	4,692.92	0.00	0.00	0.00	
11,000.00	90.00	43.82	6,453.00	3,457.89	3,318.89	4,792.92	0.00	0.00	0.00	
11,100.00	90.00	43.82	6,453.00	3,530.04	3,388.13	4,892.92	0.00	0.00	0.00	
11,200.00	90.00	43.82	6,453.00	3,602.18	3,457.38	4,992.92	0.00	0.00	0.00	
11,300.00	90.00	43.82	6,453.00	3,674.33	3,526.63	5,092.92	0.00	0.00	0.00	
11,400.00	90.00	43.82	6,453.00	3,746.48	3,595.87	5,192.92	0.00	0.00	0.00	
11,500.00	90.00	43.82	6,453.00	3,818.62	3,665.12	5,292.92	0.00	0.00	0.00	
11,600.00	90.00	43.82	6,453.00	3,890.77	3,734.36	5,392.92	0.00	0.00	0.00	
11,700.00	90.00	43.82	6,453.00	3,962.91	3,803.61	5,492.92	0.00	0.00	0.00	
11,800.00	90.00	43.82	6,453.00	4,035.06	3,872.85	5,592.92	0.00	0.00	0.00	
11,900.00	90.00	43.82	6,453.00	4,107.21	3,942.10	5,692.92	0.00	0.00	0.00	
12,000.00	90.00	43.82	6,453.00	4,179.35	4,011.35	5,792.92	0.00	0.00	0.00	
12,100.00	90.00	43.82	6,453.00	4,251.50	4,080.59	5,892.92	0.00	0.00	0.00	
12,200.00	90.00	43.82	6,453.00	4,323.64	4,149.84	5,992.92	0.00	0.00	0.00	
12,300.00	90.00	43.82	6,453.00	4,395.79	4,219.08	6,092.92	0.00	0.00	0.00	
12,400.00	90.00	43.82	6,453.00	4,467.93	4,288.33	6,192.92	0.00	0.00	0.00	
12,469.45	90.00	43.82	6,453.00	4,518.04	4,336.42	6,262.37	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
PBHL - Dietzler 10-14-9- - plan hits target center - Point	0.00	0.00	6,453.00	4,518.04	4,336.42	1,526,626.79	3,395,707.81	40° 46' 12.8142 N	104° 4' 16.806 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
5,800.00	5,800.00	0.00	0.00	Tie to Pilot
5,880.04	5,880.04	0.00	0.00	KOP, 10.00°/100' Build
6,780.04	6,453.00	413.37	396.75	Begin 90.00° Lateral
12,469.45	6,453.00	4,518.04	4,336.42	PBHL