




Company: Carrizo Oil & Gas  
 Site: Vawter  
 Well: 11-31-8-61  
 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: -0.86°  
 Magnetic North: 7.70°

Magnetic Field  
 Strength: 53353.0snT  
 Dip Angle: 67.38°  
 Date: 6/6/2011  
 Model: WMM\_2010

US State Plane 1983  
 Colorado Northern Zone

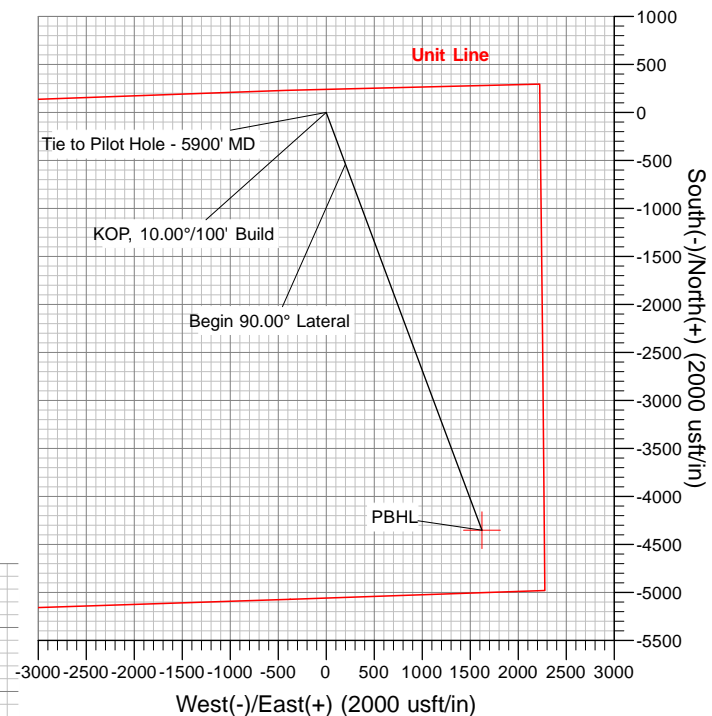
Created By: Vanessa Thom  
 Date: 10:24, June 07 2011  
 Plan: Design #1

#### PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
7189.00	0.00	0.00	7189.00	0.00	0.00	0.00	0.00	Pilot PBHL - 7189.00' MD

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	Tie to Pilot Hole - 5900' MD
5915.04	0.00	0.00	5915.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6815.04	90.00	159.54	6488.00	-536.81	200.29	572.96	572.96	Begin 90.00° Lateral
10886.14	90.00	159.54	6488.00	-4351.05	1623.47	4644.06	4644.06	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)**

**Vawter**

**11-31-8-61**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**07 June, 2011**

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 11-31-8-61
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4998.30usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4998.30usft (Xtreme 19)
<b>Site:</b>	Vawter	<b>North Reference:</b>	Grid
<b>Well:</b>	11-31-8-61	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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

<b>Well</b>	11-31-8-61			
<b>Well Position</b>	<b>+N/-S</b>	1,494,485.54 usft	<b>Northing:</b>	1,494,485.54 usft
	<b>+E/-W</b>	3,368,672.24 usft	<b>Easting:</b>	3,368,672.24 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	
			<b>Latitude:</b>	40° 40' 59.4133 N
			<b>Longitude:</b>	104° 10' 14.407 W
			<b>Ground Level:</b>	4,983.30 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	WMM_2010	6/6/2011	8.56	67.38	53,353

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	5,900.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	159.54

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,915.04	0.00	0.00	5,915.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,815.04	90.00	159.54	6,488.00	-536.81	200.29	10.00	10.00	0.00	159.54	
10,886.14	90.00	159.54	6,488.00	-4,351.05	1,623.47	0.00	0.00	0.00	0.00	PBHL - Vawter 11-31-

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 11-31-8-61
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4998.30usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4998.30usft (Xtreme 19)
<b>Site:</b>	Vawter	<b>North Reference:</b>	Grid
<b>Well:</b>	11-31-8-61	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)	
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Tie to Pilot Hole - 5900' MD</b>										
5,915.04	0.00	0.00	5,915.04	0.00	0.00	0.00	0.00	0.00	0.00	
<b>KOP, 10.00°/100' Build</b>										
5,950.00	3.50	159.54	5,949.98	-1.00	0.37	1.07	10.00	10.00	0.00	
6,000.00	8.50	159.54	5,999.69	-5.89	2.20	6.29	10.00	10.00	0.00	
6,050.00	13.50	159.54	6,048.76	-14.82	5.53	15.82	10.00	10.00	0.00	
6,100.00	18.50	159.54	6,096.80	-27.73	10.35	29.59	10.00	10.00	0.00	
6,150.00	23.50	159.54	6,143.47	-44.51	16.61	47.50	10.00	10.00	0.00	
6,200.00	28.50	159.54	6,188.40	-65.03	24.27	69.41	10.00	10.00	0.00	
6,250.00	33.50	159.54	6,231.24	-89.15	33.26	95.15	10.00	10.00	0.00	
6,300.00	38.50	159.54	6,271.68	-116.67	43.53	124.53	10.00	10.00	0.00	
6,350.00	43.50	159.54	6,309.41	-147.39	55.00	157.32	10.00	10.00	0.00	
6,400.00	48.50	159.54	6,344.13	-181.08	67.56	193.27	10.00	10.00	0.00	
6,450.00	53.50	159.54	6,375.59	-217.47	81.14	232.12	10.00	10.00	0.00	
6,500.00	58.50	159.54	6,403.55	-256.29	95.63	273.55	10.00	10.00	0.00	
6,550.00	63.50	159.54	6,427.78	-297.25	110.91	317.27	10.00	10.00	0.00	
6,600.00	68.50	159.54	6,448.12	-340.03	126.87	362.93	10.00	10.00	0.00	
6,650.00	73.50	159.54	6,464.39	-384.31	143.39	410.19	10.00	10.00	0.00	
6,700.00	78.50	159.54	6,476.49	-429.75	160.35	458.69	10.00	10.00	0.00	
6,750.00	83.50	159.54	6,484.31	-476.00	177.61	508.06	10.00	10.00	0.00	
6,800.00	88.50	159.54	6,487.80	-522.72	195.04	557.92	10.00	10.00	0.00	
6,815.04	90.00	159.54	6,488.00	-536.81	200.29	572.96	10.00	10.00	0.00	
<b>Begin 90.00° Lateral</b>										
6,900.00	90.00	159.54	6,488.00	-616.41	229.99	657.92	0.00	0.00	0.00	
7,000.00	90.00	159.54	6,488.00	-710.10	264.95	757.92	0.00	0.00	0.00	
7,100.00	90.00	159.54	6,488.00	-803.79	299.91	857.92	0.00	0.00	0.00	
7,200.00	90.00	159.54	6,488.00	-897.48	334.87	957.92	0.00	0.00	0.00	
7,300.00	90.00	159.54	6,488.00	-991.17	369.83	1,057.92	0.00	0.00	0.00	
7,400.00	90.00	159.54	6,488.00	-1,084.86	404.78	1,157.92	0.00	0.00	0.00	
7,500.00	90.00	159.54	6,488.00	-1,178.55	439.74	1,257.92	0.00	0.00	0.00	
7,600.00	90.00	159.54	6,488.00	-1,272.24	474.70	1,357.92	0.00	0.00	0.00	
7,700.00	90.00	159.54	6,488.00	-1,365.93	509.66	1,457.92	0.00	0.00	0.00	
7,800.00	90.00	159.54	6,488.00	-1,459.62	544.62	1,557.92	0.00	0.00	0.00	
7,900.00	90.00	159.54	6,488.00	-1,553.31	579.57	1,657.92	0.00	0.00	0.00	
8,000.00	90.00	159.54	6,488.00	-1,647.00	614.53	1,757.92	0.00	0.00	0.00	
8,100.00	90.00	159.54	6,488.00	-1,740.69	649.49	1,857.92	0.00	0.00	0.00	
8,200.00	90.00	159.54	6,488.00	-1,834.38	684.45	1,957.92	0.00	0.00	0.00	
8,300.00	90.00	159.54	6,488.00	-1,928.07	719.41	2,057.92	0.00	0.00	0.00	
8,400.00	90.00	159.54	6,488.00	-2,021.77	754.36	2,157.92	0.00	0.00	0.00	
8,500.00	90.00	159.54	6,488.00	-2,115.46	789.32	2,257.92	0.00	0.00	0.00	
8,600.00	90.00	159.54	6,488.00	-2,209.15	824.28	2,357.92	0.00	0.00	0.00	
8,700.00	90.00	159.54	6,488.00	-2,302.84	859.24	2,457.92	0.00	0.00	0.00	
8,800.00	90.00	159.54	6,488.00	-2,396.53	894.20	2,557.92	0.00	0.00	0.00	
8,900.00	90.00	159.54	6,488.00	-2,490.22	929.15	2,657.92	0.00	0.00	0.00	
9,000.00	90.00	159.54	6,488.00	-2,583.91	964.11	2,757.92	0.00	0.00	0.00	
9,100.00	90.00	159.54	6,488.00	-2,677.60	999.07	2,857.92	0.00	0.00	0.00	
9,200.00	90.00	159.54	6,488.00	-2,771.29	1,034.03	2,957.92	0.00	0.00	0.00	
9,300.00	90.00	159.54	6,488.00	-2,864.98	1,068.99	3,057.92	0.00	0.00	0.00	
9,400.00	90.00	159.54	6,488.00	-2,958.67	1,103.94	3,157.92	0.00	0.00	0.00	
9,500.00	90.00	159.54	6,488.00	-3,052.36	1,138.90	3,257.92	0.00	0.00	0.00	
9,600.00	90.00	159.54	6,488.00	-3,146.05	1,173.86	3,357.92	0.00	0.00	0.00	
9,700.00	90.00	159.54	6,488.00	-3,239.74	1,208.82	3,457.92	0.00	0.00	0.00	

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 11-31-8-61
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<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4998.30usft (Xtreme 19)
<b>Site:</b>	Vawter	<b>North Reference:</b>	Grid
<b>Well:</b>	11-31-8-61	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)	
9,800.00	90.00	159.54	6,488.00	-3,333.43	1,243.78	3,557.92	0.00	0.00	0.00	
9,900.00	90.00	159.54	6,488.00	-3,427.13	1,278.73	3,657.92	0.00	0.00	0.00	
10,000.00	90.00	159.54	6,488.00	-3,520.82	1,313.69	3,757.92	0.00	0.00	0.00	
10,100.00	90.00	159.54	6,488.00	-3,614.51	1,348.65	3,857.92	0.00	0.00	0.00	
10,200.00	90.00	159.54	6,488.00	-3,708.20	1,383.61	3,957.92	0.00	0.00	0.00	
10,300.00	90.00	159.54	6,488.00	-3,801.89	1,418.57	4,057.92	0.00	0.00	0.00	
10,400.00	90.00	159.54	6,488.00	-3,895.58	1,453.52	4,157.92	0.00	0.00	0.00	
10,500.00	90.00	159.54	6,488.00	-3,989.27	1,488.48	4,257.92	0.00	0.00	0.00	
10,600.00	90.00	159.54	6,488.00	-4,082.96	1,523.44	4,357.92	0.00	0.00	0.00	
10,700.00	90.00	159.54	6,488.00	-4,176.65	1,558.40	4,457.92	0.00	0.00	0.00	
10,800.00	90.00	159.54	6,488.00	-4,270.34	1,593.36	4,557.92	0.00	0.00	0.00	
10,886.14	90.00	159.54	6,488.00	-4,351.05	1,623.47	4,644.06	0.00	0.00	0.00	

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 - Vawter 11-31-8-61	0.00	0.00	6,488.00	-4,351.05	1,623.47	1,490,134.49	3,370,295.71	40° 40' 16.1830 N	104° 9' 54.187 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,900.00	5,900.00	0.00	0.00	Tie to Pilot Hole - 5900' MD	
5,915.04	5,915.04	0.00	0.00	KOP, 10.00°/100' Build	
6,815.04	6,488.00	-536.81	200.29	Begin 90.00° Lateral	
10,886.14	6,488.00	-4,351.05	1,623.47	PBHL	