




Company: Carrizo Oil & Gas
 Site: Slick Rock
 Well: 18-44-7-60
 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



Azimuths to Grid North
 True North: -0.86°
 Magnetic North: 7.69°

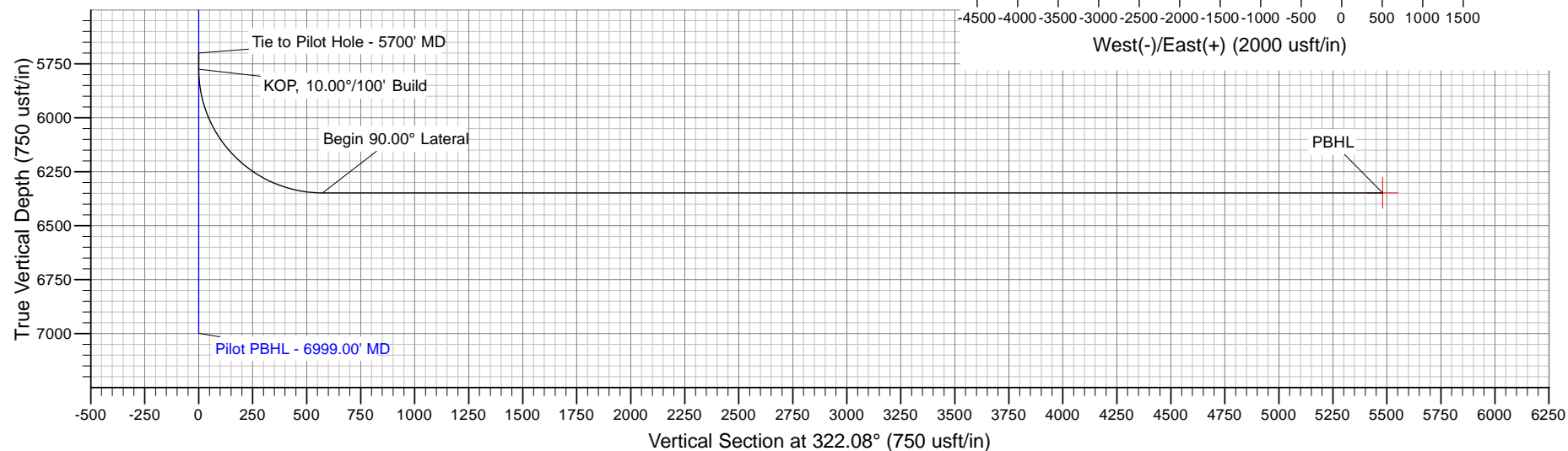
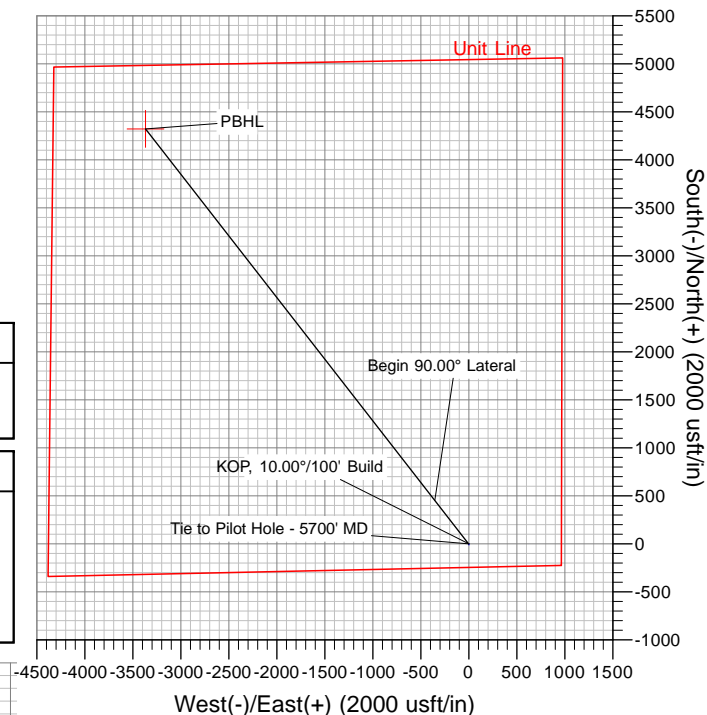
Magnetic Field
 Strength: 53297.8snT
 Dip Angle: 67.29°
 Date: 5/26/2011
 Model: WMM_2010

US State Plane 1983
 Colorado Northern Zone

Created By: Vanessa Thom
 Date: 11:02, May 26 2011
 Plan: Design #2

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
6999.00	0.00	0.00	6999.00	0.00	0.00	0.00	0.00	Pilot PBHL - 6999.00' MD

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	Tie to Pilot Hole - 5700' MD
5775.04	0.00	0.00	5775.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6675.04	90.00	322.08	6348.00	452.01	-352.10	572.96	572.96	Begin 90.00° Lateral
11582.15	90.00	322.08	6348.00	4323.22	-3367.63	5480.07	5480.07	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)

Slick Rock

18-44-7-60

Wellbore #1

Plan: Design #2

Standard Planning Report

26 May, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 18-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4937.50usft (Extreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4937.50usft (Extreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	18-44-7-60	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	18-44-7-60			
Well Position	+N/-S	1,452,770.00 usft	Northing:	1,452,770.00 usft
	+E/-W	3,371,200.05 usft	Easting:	3,371,200.05 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 34' 6.8730 N
				Longitude: 104° 9' 49.758 W
				Ground Level: 4,922.50 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	5/26/2011	8.55	67.29	53,298

Design	Design #2				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,700.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	322.08	

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
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,775.04	0.00	0.00	5,775.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,675.04	90.00	322.08	6,348.00	452.01	-352.10	10.00	10.00	0.00	322.08	
11,582.15	90.00	322.08	6,348.00	4,323.22	-3,367.63	0.00	0.00	0.00	0.00	PBHL - 18-44-7-60 - \

Database:	Southern Region	Local Co-ordinate Reference:	Well 18-44-7-60
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Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4937.50usft (Extreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	18-44-7-60	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)	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tie to Pilot Hole - 5700' MD										
5,775.04	0.00	0.00	5,775.04	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,800.00	2.50	322.08	5,799.99	0.43	-0.33	0.54	10.00	10.00	0.00	
5,850.00	7.50	322.08	5,849.79	3.86	-3.01	4.90	10.00	10.00	0.00	
5,900.00	12.50	322.08	5,899.01	10.71	-8.34	13.57	10.00	10.00	0.00	
5,950.00	17.50	322.08	5,947.29	20.91	-16.29	26.51	10.00	10.00	0.00	
6,000.00	22.50	322.08	5,994.26	34.39	-26.79	43.60	10.00	10.00	0.00	
6,050.00	27.50	322.08	6,039.57	51.06	-39.77	64.72	10.00	10.00	0.00	
6,100.00	32.50	322.08	6,082.86	70.77	-55.13	89.71	10.00	10.00	0.00	
6,150.00	37.50	322.08	6,123.80	93.39	-72.74	118.37	10.00	10.00	0.00	
6,200.00	42.50	322.08	6,162.10	118.73	-92.49	150.50	10.00	10.00	0.00	
6,250.00	47.50	322.08	6,197.44	146.61	-114.20	185.84	10.00	10.00	0.00	
6,300.00	52.50	322.08	6,229.57	176.82	-137.73	224.13	10.00	10.00	0.00	
6,350.00	57.50	322.08	6,258.25	209.12	-162.89	265.07	10.00	10.00	0.00	
6,400.00	62.50	322.08	6,283.24	243.26	-189.49	308.36	10.00	10.00	0.00	
6,450.00	67.50	322.08	6,304.37	279.00	-217.33	353.66	10.00	10.00	0.00	
6,500.00	72.50	322.08	6,321.47	316.05	-246.19	400.63	10.00	10.00	0.00	
6,550.00	77.50	322.08	6,334.41	354.14	-275.86	448.91	10.00	10.00	0.00	
6,600.00	82.50	322.08	6,343.09	392.97	-306.11	498.13	10.00	10.00	0.00	
6,650.00	87.50	322.08	6,347.45	432.26	-336.71	547.92	10.00	10.00	0.00	
6,675.04	90.00	322.08	6,348.00	452.01	-352.10	572.96	10.00	10.00	0.00	
Begin 90.00° Lateral										
6,700.00	90.00	322.08	6,348.00	471.69	-367.43	597.92	0.00	0.00	0.00	
6,800.00	90.00	322.08	6,348.00	550.58	-428.89	697.92	0.00	0.00	0.00	
6,900.00	90.00	322.08	6,348.00	629.47	-490.34	797.92	0.00	0.00	0.00	
7,000.00	90.00	322.08	6,348.00	708.36	-551.79	897.92	0.00	0.00	0.00	
7,100.00	90.00	322.08	6,348.00	787.25	-613.24	997.92	0.00	0.00	0.00	
7,200.00	90.00	322.08	6,348.00	866.14	-674.69	1,097.92	0.00	0.00	0.00	
7,300.00	90.00	322.08	6,348.00	945.03	-736.15	1,197.92	0.00	0.00	0.00	
7,400.00	90.00	322.08	6,348.00	1,023.92	-797.60	1,297.92	0.00	0.00	0.00	
7,500.00	90.00	322.08	6,348.00	1,102.81	-859.05	1,397.92	0.00	0.00	0.00	
7,600.00	90.00	322.08	6,348.00	1,181.70	-920.50	1,497.92	0.00	0.00	0.00	
7,700.00	90.00	322.08	6,348.00	1,260.59	-981.96	1,597.92	0.00	0.00	0.00	
7,800.00	90.00	322.08	6,348.00	1,339.48	-1,043.41	1,697.92	0.00	0.00	0.00	
7,900.00	90.00	322.08	6,348.00	1,418.37	-1,104.86	1,797.92	0.00	0.00	0.00	
8,000.00	90.00	322.08	6,348.00	1,497.26	-1,166.31	1,897.92	0.00	0.00	0.00	
8,100.00	90.00	322.08	6,348.00	1,576.15	-1,227.77	1,997.92	0.00	0.00	0.00	
8,200.00	90.00	322.08	6,348.00	1,655.04	-1,289.22	2,097.92	0.00	0.00	0.00	
8,300.00	90.00	322.08	6,348.00	1,733.93	-1,350.67	2,197.92	0.00	0.00	0.00	
8,400.00	90.00	322.08	6,348.00	1,812.82	-1,412.12	2,297.92	0.00	0.00	0.00	
8,500.00	90.00	322.08	6,348.00	1,891.71	-1,473.57	2,397.92	0.00	0.00	0.00	
8,600.00	90.00	322.08	6,348.00	1,970.60	-1,535.03	2,497.92	0.00	0.00	0.00	
8,700.00	90.00	322.08	6,348.00	2,049.49	-1,596.48	2,597.92	0.00	0.00	0.00	
8,800.00	90.00	322.08	6,348.00	2,128.38	-1,657.93	2,697.92	0.00	0.00	0.00	
8,900.00	90.00	322.08	6,348.00	2,207.27	-1,719.38	2,797.92	0.00	0.00	0.00	
9,000.00	90.00	322.08	6,348.00	2,286.16	-1,780.84	2,897.92	0.00	0.00	0.00	
9,100.00	90.00	322.08	6,348.00	2,365.05	-1,842.29	2,997.92	0.00	0.00	0.00	
9,200.00	90.00	322.08	6,348.00	2,443.94	-1,903.74	3,097.92	0.00	0.00	0.00	
9,300.00	90.00	322.08	6,348.00	2,522.83	-1,965.19	3,197.92	0.00	0.00	0.00	
9,400.00	90.00	322.08	6,348.00	2,601.72	-2,026.65	3,297.92	0.00	0.00	0.00	
9,500.00	90.00	322.08	6,348.00	2,680.61	-2,088.10	3,397.92	0.00	0.00	0.00	

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Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4937.50usft (Extreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	18-44-7-60	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)	
9,600.00	90.00	322.08	6,348.00	2,759.50	-2,149.55	3,497.92	0.00	0.00	0.00	
9,700.00	90.00	322.08	6,348.00	2,838.39	-2,211.00	3,597.92	0.00	0.00	0.00	
9,800.00	90.00	322.08	6,348.00	2,917.28	-2,272.46	3,697.92	0.00	0.00	0.00	
9,900.00	90.00	322.08	6,348.00	2,996.17	-2,333.91	3,797.92	0.00	0.00	0.00	
10,000.00	90.00	322.08	6,348.00	3,075.06	-2,395.36	3,897.92	0.00	0.00	0.00	
10,100.00	90.00	322.08	6,348.00	3,153.95	-2,456.81	3,997.92	0.00	0.00	0.00	
10,200.00	90.00	322.08	6,348.00	3,232.84	-2,518.26	4,097.92	0.00	0.00	0.00	
10,300.00	90.00	322.08	6,348.00	3,311.73	-2,579.72	4,197.92	0.00	0.00	0.00	
10,400.00	90.00	322.08	6,348.00	3,390.62	-2,641.17	4,297.92	0.00	0.00	0.00	
10,500.00	90.00	322.08	6,348.00	3,469.51	-2,702.62	4,397.92	0.00	0.00	0.00	
10,600.00	90.00	322.08	6,348.00	3,548.40	-2,764.07	4,497.92	0.00	0.00	0.00	
10,700.00	90.00	322.08	6,348.00	3,627.29	-2,825.53	4,597.92	0.00	0.00	0.00	
10,800.00	90.00	322.08	6,348.00	3,706.18	-2,886.98	4,697.92	0.00	0.00	0.00	
10,900.00	90.00	322.08	6,348.00	3,785.07	-2,948.43	4,797.92	0.00	0.00	0.00	
11,000.00	90.00	322.08	6,348.00	3,863.96	-3,009.88	4,897.92	0.00	0.00	0.00	
11,100.00	90.00	322.08	6,348.00	3,942.85	-3,071.34	4,997.92	0.00	0.00	0.00	
11,200.00	90.00	322.08	6,348.00	4,021.74	-3,132.79	5,097.92	0.00	0.00	0.00	
11,300.00	90.00	322.08	6,348.00	4,100.63	-3,194.24	5,197.92	0.00	0.00	0.00	
11,400.00	90.00	322.08	6,348.00	4,179.52	-3,255.69	5,297.92	0.00	0.00	0.00	
11,500.00	90.00	322.08	6,348.00	4,258.41	-3,317.14	5,397.92	0.00	0.00	0.00	
11,582.15	90.00	322.08	6,348.00	4,323.22	-3,367.63	5,480.07	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 - 18-44-7-60 - v2	0.00	0.00	6,348.00	4,323.22	-3,367.63	1,457,093.22	3,367,832.42	40° 34' 50.0879 N	104° 10' 32.555 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,700.00	5,700.00	0.00	0.00	Tie to Pilot Hole - 5700' MD	
5,775.04	5,775.04	0.00	0.00	KOP, 10.00°/100' Build	
6,675.04	6,348.00	452.01	-352.10	Begin 90.00° Lateral	
11,582.15	6,348.00	4,323.22	-3,367.63	PBHL	